PENTAIR
HYPRO® · SHURFLO®

# PUMPS, SPRAY NOZZLES, AND, ACCESSORIES

## PRODUCT CATALOG

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# PUMPS AND ENGINES


**CENTRIFUGAL PUMPS ..... PAGE 11**

Commonly used with self-propelled sprayers, large-trailed sprayers, and construction equipment

- Material Options: Cast Iron, Polypropylene, 316 Stainless Steel
- Pressure Range: 0-150 psi (0-10 bar)
- Flow Range: 0-1078 gpm (0-4080 lpm)

**TRANSFER PUMPS ..... PAGE 61**

Commonly used with tender trailers and fluid transfer stations

- Material Options: Polypropylene, Aluminum, Cast Iron
- Pressure Range: 0-55 psi (0-3.8 bar)
- Flow Range: 0-460 gpm (0-1740 lpm)

**ROLLER PUMPS ..... PAGE 68**

Commonly used with 3-point sprayers, pest control, and de-icing skids

- Material Options: Cast Iron, Ni-Resist, Silver Series XL
- Pressure Range: 0-300 psi (0-20 bar)
- Flow Range: 0-60 gpm (0-227 lpm)

**DIAPHRAGM PUMPS ..... PAGE 79**

Commonly used with nutrient application systems, fruit & vegetable sprayers, and pressure cleaning system

- Material Options: Aluminum, Brass, Polypropylene
- Pressure Range: 0-725 psi (0-50 bar)
- Flow Range: 0-66 gpm (0-250 lpm)

**SHURFLO DIAPHRAGM PUMPS ..... PAGE 94**

Commonly used with ATV sprayers and nutrient application systems

- Material Options: Polypropylene, Nylon
- Pressure Range: 0-150 psi (0-10 bar)
- Flow Range: 0-5 gpm (0-19 lpm)

**PISTON & PLUNGER PUMPS ..... PAGE 110**

Commonly used with pressure-cleaning and car wash systems

- Material Options: Cast Iron, 316 Stainless Steel, Brass
- Pressure Range: 0-3600 psi (0-248 bar)
- Flow Range: 0-45 gpm (0-170 lpm)

**SPECIALTY PUMPS ..... PAGE 128**

- Versa-Twin: transferring liquids in carpet cleaning, pest control, and turf spraying
- Noryl: bulk transfer of fertilizer and agricultural chemicals
- Aqua-Tiger: general pumping applications where a flooded intake is provided

**POWERPRO ENGINES ..... PAGE 134**

# SELECTING THE RIGHT PUMP

Because the pump is the "heart of the liquid system" on equipment, careful consideration must be made in selecting the right pump. Seldom is there only one pump that will do the job. To make a wise choice, you will need to know about pump types, how the pump is driven, and the flow and pressure requirements for your specific spraying system and application.

## PUMP TYPES

To ensure you can closely match the pump to your needs, Pentair manufactures six different types of pumps under the Hypro and Shuflo brands: centrifugal, transfer, roller, diaphragm, piston and plunger pumps.

**"Positive displacement" vs. "Non-positive displacement"**
Pumps can be divided into two general categories: "positive displacement" and "non-positive displacement."

**Positive Displacement** – In a positive displacement pump the flow from the pump is directly proportional to the pump speed. Liquid is captured and discharged as a fixed volume per revolution of the pump shaft. This positive flow is why all positive displacement pump installations must include a relief valve and bypass line between the pump outlet and the nozzle shut-off valve. Roller, diaphragm, piston and plunger pumps are positive displacement pumps.

**Non-positive Displacement** – In a non-positive displacement pump a rotating impeller creates a centrifugal force that overcomes the restriction of liquid flow through the system. If the outlet is closed, the impeller continues to rotate harmlessly without damaging system components. Centrifugal and transfer pumps are non-positive displacement pumps.

**Centrifugal Pumps -Spray & Transfer Applications (non-positive displacement)**
In centrifugal pumps, liquid enters through the center of a rotating impeller that is driven at speeds up to 6000 RPM. Liquid is forced to the outer edge of the housing; this centrifugal force is what delivers the liquid to the nozzle. Traditionally thought of as low to medium pressure pumps, the Hypro line of centrifugal pumps can deliver from 0-150 psi (0-10 bar) and flow rates up to 440 gpm (1760 lpm). 1078 gpm [4080 lpm] is the max flow achieved by the 9308 series centrifugal pumps. Centrifugal pumps have minimum surfaces to wear and no poppet valves, making them very durable, easy to maintain and well suited for pumping abrasive and corrosive materials. Because centrifugal pumps operate at higher speeds then the RPMs of a tractor PTO, the speed must be increased through a gear drive, belt drive, gas engine drive, or high-speed hydraulic motor drive. Pump models are specifically designed for each of these drive applications. The broad, versatile line includes models with rugged housings and components of cast iron, polypropylene, engineered plastics and stainless steel that endure the wide variety of agricultural chemicals.

# SELECTING THE RIGHT PUMP

**Diaphragm Pumps (positive displacement)**
Diaphragm pumps are designed to isolate abrasive and corrosive solutions being pumped from its mechanical drive components through the use of synthetic diaphragms.

Diaphragm pumps are compact, self-priming and produce low-to-high pressures 0 to 725 psi (0-50 bar) with flow rates of 3.8 to 65.7 gpm (14.5 -260 lpm). Driven by 540 rpm PTO, gas engine, or hydraulic motor, diaphragm pumps are used for a variety of agricultural, horticultural and pest control spraying applications.

Shurflo pumps are efficient, 12 VDC electric motor driven low pressure diaphragm pumps designed for smaller spray applications with pressures 0-150 psi (0-10 bar) and flows 0-5.3 gpm (0-20 lpm). Shurflo pumps fit uniquely into mobile applications on ATV, home lawn care, fertilizer and pesticide equipment.

**Roller Pumps (positive displacement)**
The Hypro line of roller pumps are an economical choice by farmers throughout the world. The rollers revolve inside the pump housing on an eccentric profile to force spray solution through the pump which then develops pressure and flow. The roller pump offers a compact design with mechanical simplicity to provide a low initial cost pump that is extremely versatile. They operate efficiently at PTO speeds of 540 and 1000 rpm and have a wide pressure range of up to 300 psi (20 bar) and flow rates of 2 to 62 gpm (7 to 235 lpm). Roller pumps are self-priming and easily adapt to PTO or gas engine drives. Specific seal, roller and casting materials can be selected for compatibility with certain herbicides, pesticides, fungicides and fertilizers.

**Piston and Plunger Pumps (positive displacement)**
Piston/Plunger pumps have a shaft, pistons or plungers and "inlet" and "outlet" poppet valves. The design of the pump converts the rotational drive into a oscillating vertical motion. On the down-stroke, the inlet valve opens, filling the chamber with solution. On the up-stroke, the outlet valve opens, and the piston forces the solution to the nozzle. Piston pumps deliver relatively low flow rate, less than 10 gpm (40 lpm), at pressures up to 1000 psi (69 bar). Plunger pumps are designed with ceramic plungers which can operate at higher pressures up to 3600 psi (248 bar) at flows up to 45 gpm (170 lpm). The main difference of construction is in a piston pump the sealing material moves with the piston while in a plunger pump the sealing material (u-cups) are stationary with only the plunger in motion. The replaceable piston cups can be of leather, fabric or Buna-N rubber, depending on the type of solution to be sprayed. They can be driven by 540 rpm PTO, gas engine, hydraulic or electric motor. Their low volume/ high pressure capability permits use in general spraying as well as task-oriented applications such as spraying fence rows and ditches, and hydrostatic testing. Plunger pumps are used primarily for cleaning operations.

## PUMP DRIVES

How a pump is to be driven is often a primary consideration in selecting the proper type of pump. If the power source has already been determined, the following chart may be of further help in selecting the type of pump that is best suited to your needs.

### HOW DO YOU PLAN TO DRIVE THE PUMP?

| If your power source is: | Method | Roller | Centrifugal and Transfer | Diaphragm | Piston/Plunger |
|---|---|---|---|---|---|
| 540 rpm PTO | direct coupled: | X | | X | X |
| | through gear drive: | | X | | |
| | through belt/pulley: | | X | | |
| 1000 rpm PTO | direct coupled: | X | | | |
| | through gear drive: | | X | | |
| | through belt/pulley: | | X | | |
| Hydraulic Motor | | X | X | X | X |
| 12 Volt DC Motor | | X | | X | X |
| Gas Engine | direct coupled: | X | X | | |
| | through gear reduction: | X | | X | X |
| | through belt/pulley: | X | X | X | X |
| Electric Motor | direct coupled: | X | X | | |
| | through belt/pulley: | X | X | X | X |

## FLOW AND PRESSURE REQUIREMENTS

Pump pressure required is often dependent on the application. Whether it be low pressure band spraying or high pressure tree spraying, it is the application that dictates what pressure is needed to get the right performance at the spray nozzle. Once you know what pressure is desired choose a pump with extra pressure capacity due to losses in pressure as it goes through the system components (strainer, valves, elbows, hose, etc.) out to the nozzle.

### HOW MUCH PRESSURE DO YOU NEED?

| Pressure | | Flow | | Pump |
|---|---|---|---|---|
| 0-150 psi (0-10 bar) | | 0-1078 gpm (0-4080 lpm) | | Centrifugal |
| 0-150 psi (0-10 bar) | | 0-5 gpm (0-20 lpm) | | Shurflo Diaphragm |
| 0-300 psi (0-20 bar) | | 0-60 gpm (0-225 lpm) | | Roller |
| 0-725 psi (0-50 bar) | | 0-60 gpm (0-225 lpm) | | HYPRO Diaphragm |
| 0-1000 psi (0-69 bar) | | 0-10 gpm (0-38 lpm) | | Piston/Plunger |
| 0-3600 psi (0-248 bar) | | 0-45 gpm (0-170 lpm) | | Plunger |

Pump flow required is dependent on several factors. Application rate, width of boom or size of nozzle, speed of travel and agitation. To review your pump flow requirements follow through the calculations presented on the following pages. As with pressure you will want to choose a pump that has additional flow so that it meets your application needs over time as performance drops due to component wear.

### HOW MUCH FLOW DO YOU NEED?

| Flow | | Pressure | | Pump |
|---|---|---|---|---|
| 0-5 gpm (0-20 lpm) | | 0-150 psi (0-10 bar) | | Shurflo Diaphragm |
| 0-10 gpm (0-38 lpm) | | 0-1000 psi (0-70 bar) | | Piston/Plunger |
| 0-45 gpm (0-170 lpm) | | 0-3600+ psi (248+ bar) | | Plunger |
| 0-60 gpm (0-225 lpm) | | 0-300 psi (0-20 bar) | | Roller |
| 0-60 gpm (0-225 lpm) | | 0-725 psi (0-50 bar) | | HYPRO Diaphragm |
| 0-1078 gpm (0-4080 lpm) | | 0-150 psi (0-10 bar) | | Centrifugal |

**Determining Pump Flow and Pressure Requirements**

Every pumping task has an optimum volume and pressure requirement. Determining that optimum (and selecting the pump that delivers it) is key to an efficient and economical spraying system operation.

Pressure requirements for agricultural pumps are dependent on both the material to be applied and application targets. Soil-applied herbicides generally require a relatively low pressure pump rating of 30-60 psi with foliar-applied herbicides at the top end of that range and slightly higher. Insecticides and fungicides can require higher pressure ratings of 100 to 500 psi. Pressure must be sufficient, in the case of heavy foliage field crops and orchard crops, to penetrate the leaf foliage. In the case of orchard crops, pressure must also be sufficient to carry material up and over as well as into the canopy.

A number of factors must be considered to properly determine the total flow you will need from your pump. They include:

- Type of spray operation (broadcast, banding, low-level, etc.)
- The chemical's application rate, ground speed, boom width, hose length, tank agitation, etc.

The spray task is the first consideration in determining flow rate and pressure needs. The following formulas and calculations may help.

**Calculating Agitation Requirements**

The pump must produce enough flow for both the application rate and tank agitation requirements. Too little agitation will not keep the solution in proper suspension and too much agitation may cause foaming. Here are rule of thumb formulas for calculating how much additional pump flow you will need for agitation.

Liquids:

Tank volume (gallons) x .05 = total agitation in gpm **or** Tank volume (litres) x .05 = total agitation in lpm

Wetable Powders and Flowables:

Tank volume (gallons) x .125 = total agitation in gpm **or** Tank volume (litres) x .125 = total agitation in lpm

EXAMPLE: If you will be spraying a wettable powder from a 100-gallon tank, proper agitation will require 12.5 gpm additional flow from the pump.

**Reducing Agitation Flow Requirements**

Agitation flow requirements can be reduced by using jet agitation in the tank. Jet agitators use a venturi design to multiply agitation output. Depending on the jet agitator model and pressure, one gallon per minute input can provide two to ten gallons per minute agitation output. If your sprayer is equipped with a jet agitator, consult the operator's manual or documentation to find the output to input ratio and adjust your flow required for agitation accordingly.

Agitation Flow with Jet Agitation:

$$\text{required gpm} \times \frac{\text{input}}{\text{output}} \quad \textbf{or} \quad \text{required lpm} \times \frac{\text{input}}{\text{output}}$$

For example: If you calculate a requirement of 63 gpm of agitation and your jet agitator produces 3 to 1 output to input ratio, your pump would only need 1/3 of 63 gpm, or 21 gpm.

# SELECTING THE RIGHT PUMP

**Factor in an "Excess Flow" Requirement**

It is wise to have some excess flow capacity so you will not end up with an undersized pump because actual operation conditions may cause changes in spray system performance (such as normal pump wear, operating at less than rated speeds, etc.). Hypro recommends you add an additional 20% to your calculated total pump flow requirement to compensate for these variables. Plumbing systems have a number of restrictions that will result in a pressure drop from the pump to the actual spray point. These must be taken into account and minimized.

**Calculating Pump Flow for Broadcast Boom Sprayers**

Chemical application is measured in gallons per acre (gpa) or litres per heactres (l/ha), whereas pump flow is stated in gallons per minute (gpm) or litres per minute (lpm). To calculate the pump flow required by a broadcast boom sprayer, multiply the application rate (from the chemical label) by the sprayer ground speed. Multiply the sum by the boom width on your sprayer. Then, divide that number by 495 for US units or by 600 for metric units. As a formula, it is written like this:

Flow required for boom:

$$gpm = \frac{gpa \times mph \times boom\ width\ (ft.)}{495} \quad \textbf{or} \quad lpm = \frac{l/ha \times km/hr \times boom\ width\ (m)}{600}$$

The result will be the pump flow required to deliver the proper application rate at the boom's nozzles. Then calculate your total pump flow requirement (broadcast):

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Flow required for boom | _____ gpm | | | Flow required for boom | _____ lpm |
| Flow required for agitation | + _____ gpm | | | Flow required for agitation | + _____ lpm |
| Sub-total | = _____ gpm | | | Sub-total | = _____ lpm |
| Excess flow requirement | x 1.20 | **OR** | | Excess flow requirement | x 1.20 |
| **TOTAL PUMP FLOW NEEDED** | _____ gpm | | | **TOTAL PUMP FLOW NEEDED** | _____ lpm |

**Calculating Pump Flow for Banding Sprayers**

First, multiply the band width by the number of rows to determine the total width (w). Then, multiply the application rate (from the chemical label) by the ground speed. Multiply that result by the total width (w) calculated earlier, then divide the result by 5940 for US units or 60,000 for metric units. Here's how the formula appears:

Total band width of sprayer:

$w = rows \times band\ width\ (inches)$ **or** $w = rows \times band\ width\ (cm)$

Flow required for banding nozzles:

$$gpm = \frac{gpa \times mph \times w}{5940} \quad \textbf{or} \quad lpm = \frac{l/ha \times km/hr \times w}{60{,}000}$$

The result will be the pump flow required to deliver the proper application rate at the boom's nozzles. Then calculate your total pump flow requirement (banding):

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Flow required for boom | _____ gpm | | | Flow required for boom | _____ lpm |
| Flow required for agitation | + _____ gpm | | | Flow required for agitation | + _____ lpm |
| Sub-total | = _____ gpm | | | Sub-total | = _____ lpm |
| Excess flow requirement | x 1.20 | **OR** | | Excess flow requirement | x 1.20 |
| **TOTAL PUMP FLOW NEEDED** | _____ gpm | | | **TOTAL PUMP FLOW NEEDED** | _____ lpm |

**Calculating Pump Flow for Hand Gun Spraying**

For low-level spraying with a hand gun, such as for lawn and turf care, professional applicators typically "walk" the lawn at about 1,000 sq. ft. per minute or 100 sq. m per minute. That means the "gpm" or "lpm" rate of the hand gun will generally be the same as "gallons per 1,000 sq. ft." or "litres per 100 sq. m."

**To Determine Your Total Pump Flow Requirement:**

| | | | | | |
|---|---|---|---|---|---|
| Flow required for gun/nozzle: | | _____ | Litres per 1,000ft² (same as gpm) | | |
| Flow required for agitation: | + | _____ | gpm | | |
| Sub-total | = | _____ | gpm | | |
| Excess flow requirement: | x | 1.20 | | | |
| **TOTAL PUMP FLOW NEEDED:** | | _____ | gpm | | |

| | | | |
|---|---|---|---|
| Flow required for gun/nozzle: | _____ | Litres per 1,000ft² (same as gpm) | |
| Flow required for agitation: + | _____ | lpm | |
| Sub-total = | _____ | lpm | |
| Excess flow requirement: x | 1.20 | | |
| **TOTAL PUMP FLOW NEEDED:** | | lpm | |

Use this same method for calculating the pump flow requirement for high pressure spraying, such as trees. Even though the application "rate" is usually a visual saturation of the tree, the known gpm or lpm factor will be the hand gun nozzle output, which is the rate you use for the calculation.

**Calculating Pump Pressure for Hand Gun Spraying**

For most hand gun chemical spraying, 40 psi (3 bar) at the nozzle is typical. To properly select a pump that can deliver the right nozzle pressure, you must consider the normal "pressure drop" that occurs within the length of hose. The amount of pressure drop through the hose depends on hose length, hose diameter and flow rate. For example, 300' (90 m) of 1/2" hose spraying at 6 gpm (23 lpm), will have a pressure drop of approximately 120 psi (8 bar). That means you need a pump delivering at least 160 psi (12 bar) in order to ensure 40 psi (3 bar) at the nozzle.

| | | | |
|---|---|---|---|
| Desired pressure at gun nozzle: | | _____ | psi |
| Hose pressure loss: | + | _____ | psi |
| **TOTAL PUMP PRESSURE NEEDED:** | = | _____ | psi |

**or**

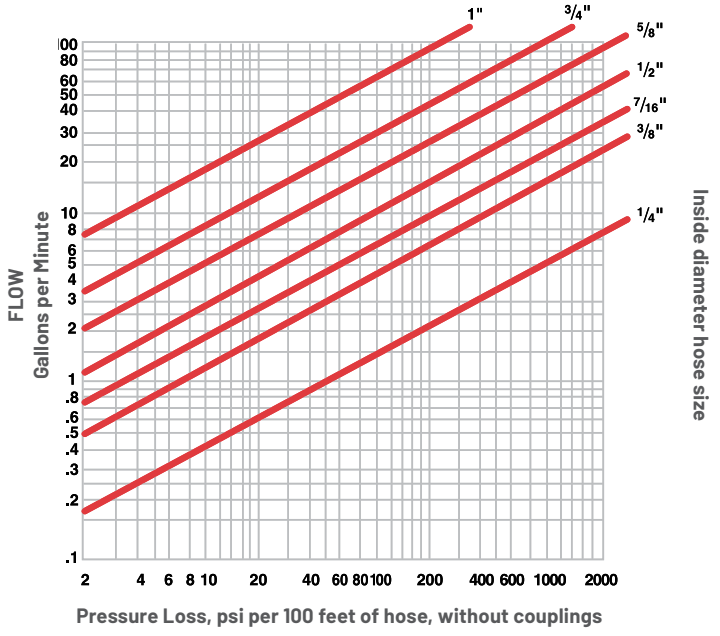
| | | |
|---|---|---|
| Desired pressure at gun nozzle: | _____ | bar |
| Hose pressure loss: | +_____ | bar |
| **TOTAL PUMP PRESSURE NEEDED:** | =_____ | bar |

NOTE: When determining the total pump pressure requirement for high tree spraying, you must also consider the spray height (or reach) you need to attain. Generally, pumps of up to 700 psi (50 bar) are used for this purpose.

**Pressure Loss at Various Rates of Flow of Water Through Hose***

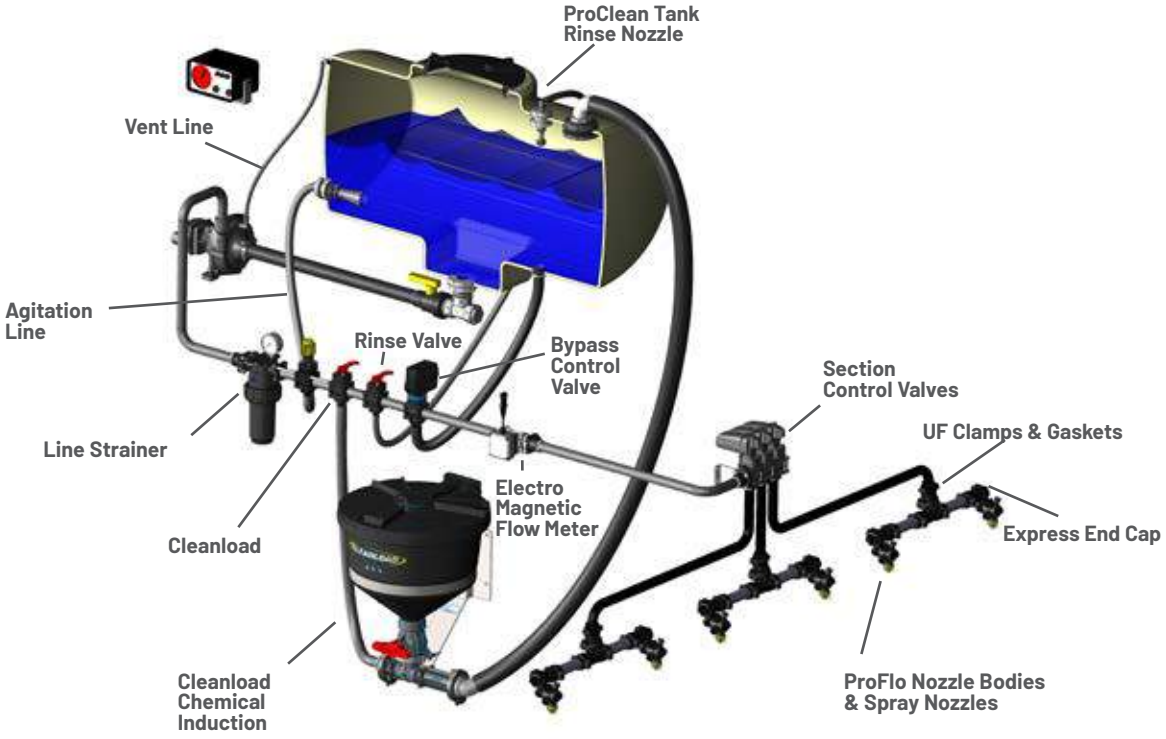
at temperature of 68° Fahrenheit (20°C.)

*1/4-inch to 1-inch inside diameter



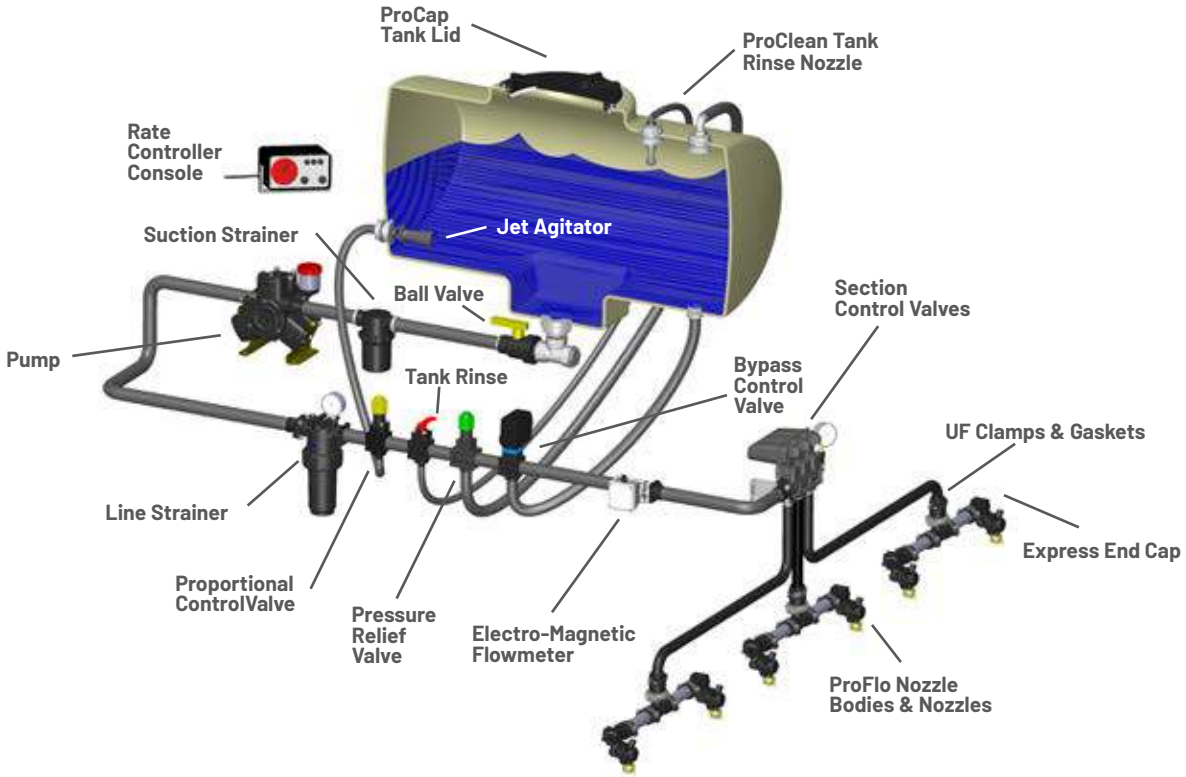
# SYSTEM HOOK-UPS

## Centrifugal Pumps




# SYSTEM HOOK-UPS

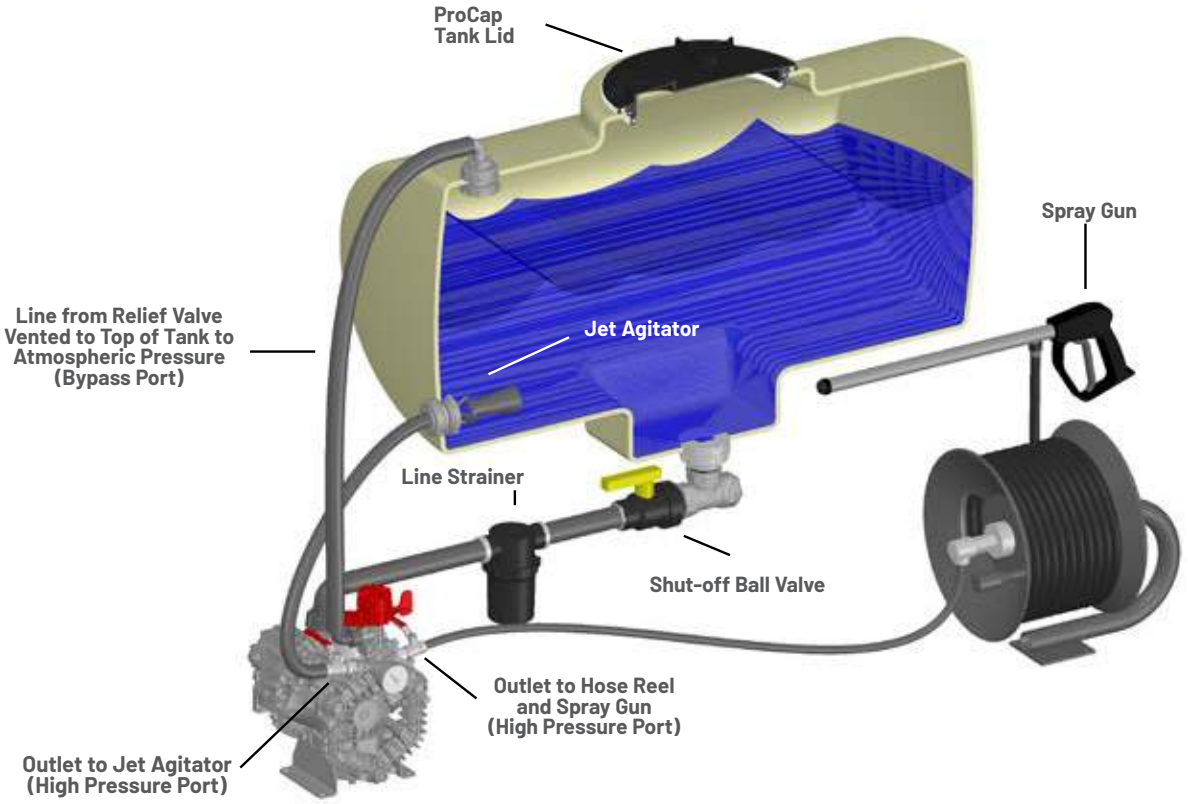
## Roller, Diaphragm Pumps




Hypro carries all parts labeled above. Please contact your local Hypro dealer by using the "Where to Buy" function on our website at pentair.com, or call 1-800-424-9776 for more information.

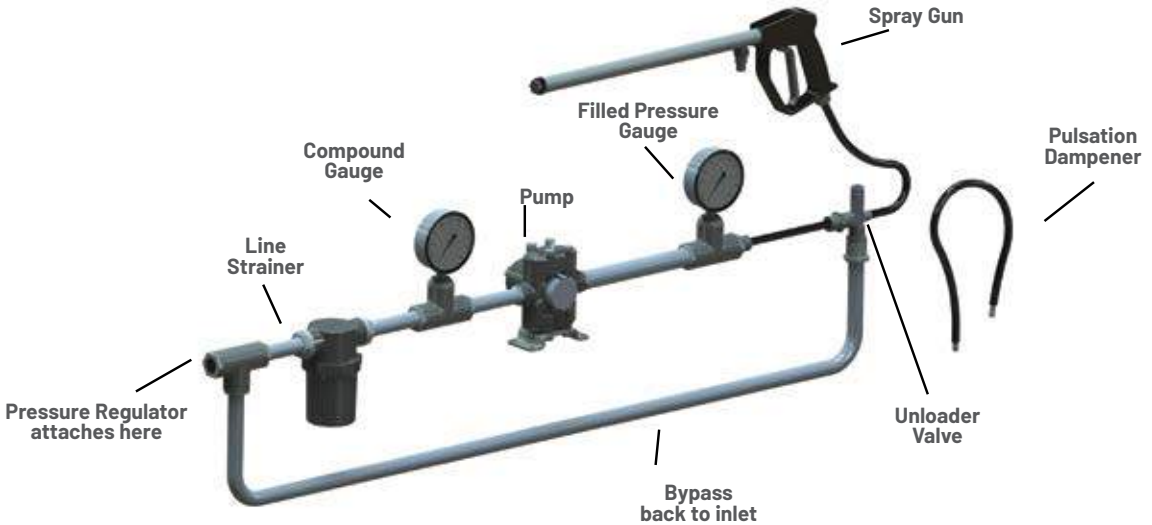
# SYSTEM HOOK-UPS

## Diaphragm Pumps, High Pressure Applications




# SYSTEM HOOK-UPS

## Small Twin® Piston Pumps




Hypro carries all parts labeled above. Please contact your local Hypro dealer by using the "Where to Buy" function on our website at pentair.com, or call 1-800-424-9776 for more information.

# GEAR DRIVEN, CAST IRON

## Series 9000C-0

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES**

- Planetary oil-bath gear drive
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Cast iron
- Impeller: Nylon
- Pump shaft rotation: Counter clockwise when looking at the shaft end
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 44 lbs./20 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | PTO Output | Locking Collar and Mounting Clip |
|---|---|---|---|---|---|---|---|
| 9006C-0 | 117 | 443 | 78 | 5.4 | 600 | 1-3/8" 6 spline (SAE) 540 rpm female | x |
| 9008C-0 | 110 | 416 | 75 | 5.2 | 1000 | 1-3/8" 21 spline (SAE) 1000 rpm female | x |
| 9016C-0 | 117 | 443 | 78 | 5.4 | 600 | 1" ( 25.4 mm) Solid Shaft | |
| 9018C-0 | 110 | 416 | 75 | 5.2 | 1000 | 1" ( 25.4 mm) Solid Shaft | |
| 9028C-0 | 110 | 416 | 75 | 5.2 | 1000 | 1-3/4" 20 spline (SAE) 1000 rpm female | x |
| 90029 | 110 | 416 | 75 | 5.2 | 1000 | 38mm 8 spline 1000 rpm female | x |
| 3430-0334 | | | | | | Seal and o-ring repair kit | |
| 3430-0591 | | | | | | Life Guard silicon carbide seal kit | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9006C-0-B)

**9006C-0, 9016C-0** **U.S. UNITS**

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|
| 500 | 97 | 86 | 71 | 47 | | |
| 540 | 106 | 96 | 87 | 70 | 47 | |
| 600 | 117 | 113 | 104 | 96 | 82 | 63 |

**9008C-0, 9018C-0, 9028C-0, 90029** **U.S. UNITS**

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|
| 800 | 82 | 70 | 53 | | | |
| 900 | 96 | 88 | 76 | 60 | 24 | |
| 1000 | 110 | 102 | 96 | 86 | 70 | 46 |

**9006C-0, 9016C-0** **METRIC UNITS**

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|
| 500 | 367 | 326 | 269 | 178 | | |
| 540 | 401 | 363 | 329 | 265 | 178 | |
| 600 | 443 | 428 | 394 | 363 | 310 | 238 |

**9008C-0, 9018C-0, 9028C-0, 90029** **METRIC UNITS**

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|
| 800 | 310 | 265 | 201 | | | |
| 900 | 363 | 333 | 288 | 227 | 91 | |
| 1000 | 416 | 386 | 363 | 326 | 265 | 174 |

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# GEAR DRIVEN, CAST IRON, SELF-PRIMING

## Series 9000C-0-SP

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Planetary oil-bath gear drive
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Cast iron
- Impeller: Nylon
- Pump shaft rotation: Counter clockwise when looking at the shaft end
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 62 lbs./28.2 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | PTO Output | Locking Collar and Mounting Clip |
|---|---|---|---|---|---|---|---|
| 9006C-0-SP | 119 | 450 | 77 | 5.3 | 600 | 1-3/8" 6 spline (SAE) 540 rpm | x |
| 9016C-0-SP | 119 | 450 | 77 | 5.3 | 600 | 1" (25.4 mm) solid shaft | |
| 9028C-0-SP | 117 | 443 | 69 | 4.35 | 1000 | 1-3/4" 20 spline (SAE) 1000 rpm | x |
| 3430-0334 | | | | | | Seal and o-ring repair kit | |
| 3430-0591 | | | | | | Life Guard silicon carbide seal kit | |
| 3430-0480SP | | | | | | Self priming chamber kit | |

Life Guard silicon carbide seal - Available upon request

**9006C-0-SP, 9016C-0-SP** **U.S. UNITS**

| RPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|---|
| 500 | 101 | 95 | 77 | 51 | 12 | | |
| 540 | 111 | 109 | 94 | 74 | 47 | 11 | |
| 600 | 119 | 118 | 112 | 97 | 79 | 54 | 23 |

**9028C-0-SP** **U.S. UNITS**

| RPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|---|
| 800 | 91 | 81 | 57 | 19 | | | |
| 940 | 105 | 101 | 84 | 60 | 25 | | |
| 1000 | 117 | 114 | 104 | 87 | 65 | 33 | 23 |

**9006C-0-SP, 9016C-0-SP** **METRIC UNITS**

| RPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|---|
| 500 | 382 | 360 | 291 | 193 | 45 | | |
| 540 | 420 | 413 | 356 | 280 | 178 | 42 | |
| 600 | 450 | 447 | 424 | 367 | 299 | 204 | 87 |

**9028C-0-SP** **METRIC UNITS**

| RPM | LPM at .07 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|---|
| 800 | 344 | 307 | 216 | 72 | | | |
| 940 | 397 | 382 | 318 | 227 | 95 | | |
| 1000 | 443 | 432 | 394 | 329 | 246 | 125 | 87 |

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# GEAR DRIVEN, POLYPROPYLENE

## Series 9000P-0

**UPGRADE OPTIONS:**

- Increase abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Planetary oil-bath gear drive
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Polypropylene
- Impeller: Polypropylene
- Pump shaft rotation: Counter clockwise when looking at the shaft end
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 37 lbs./16.8 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | PTO Output | Locking Collar Kit |
|---|---|---|---|---|---|---|---|
| 9006P-0 | 97 | 367 | 83 | 5.7 | 600 | 1 3/8" 6 spline (SAE) 540 rpm female | x |
| 9008P-0 | 94 | 355 | 67 | 4.6 | 1000 | 1 3/8" 21 spline (SAE) 1000 rpm female | x |
| 9016P-0 | 97 | 367 | 83 | 5.7 | 600 | 1" (25.4 mm) solid shaft | |
| 9018P-0 | 94 | 355 | 67 | 4.6 | 1000 | 1" (25.4 mm) solid shaft | |
| 3430-0333 | | | | | | Seal and o-ring repair kit | |
| 3430-0590 | | | | | | Life Guard silicon carbide seal kit | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9006P-0-B)

**9006P-0, 9016P-0** **U.S. UNITS**

| RPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|---|
| 450 | 73 | 63 | 52 | 34 | | | |
| 500 | 81 | 77 | 67 | 55 | 37 | | |
| 550 | 88 | 85 | 78 | 68 | 56 | 36 | |
| 600 | 97 | 97 | 93 | 85 | 76 | 66 | 52 |

**9006P-0, 9016P-0** **METRIC UNITS**

| RPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|---|
| 450 | 276 | 239 | 196 | 129 | | | |
| 500 | 307 | 291 | 255 | 208 | 142 | | |
| 550 | 333 | 323 | 295 | 257 | 210 | 137 | |
| 600 | 367 | 367 | 354 | 323 | 288 | 249 | 198 |

**9008P-0, 9018P-0** **U.S. UNITS**

| RPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI |
|---|---|---|---|---|---|---|
| 800 | 70 | 64 | 53 | 34 | | |
| 900 | 83 | 79 | 70 | 58 | 42 | |
| 1000 | 96 | 92 | 86 | 78 | 67 | 52 |

**9008P-0, 9018P-0** **METRIC UNITS**

| RPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR |
|---|---|---|---|---|---|---|
| 800 | 314 | 243 | 200 | 128 | | |
| 900 | 363 | 299 | 265 | 220 | 161 | |
| 1000 | 327 | 348 | 327 | 296 | 254 | 198 |

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# PEDESTAL MOUNT, CAST IRON & STAINLESS STEEL

## Series 9202C and 9202S

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

### FEATURES:

- Available in cast iron and 316 stainless steel for extended pump life
- Pedestal mount, direct drive
- Port sizes: 1-1/4" NPT inlet, 1" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Impeller: Nylon (cast iron standard); polypropylene (stainless standard)
- Pump shaft rotation: Counter clockwise when looking at the shaft end, 9202S-R is Clockwise
- Pump seals: Viton®/ceramic standard (Life Guard silicon carbide (B) available); Life Guard silicon carbide standard in stainless steel pumps
- Life Guard seals are the industry standard on OEM equipment
- Weight: 18 lbs./8.2 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9202C | 103 | 390 | 170 | 11.7 | 6000 | 5/8" (15.9 mm) solid shaft |
| 9202S | 103 | 390 | 170 | 11.7 | 6000 | 5/8" (15.9 mm) stainless steel shaft |
| 9202S-R | 103 | 390 | 170 | 11.7 | 6000 | 5/8" (15.9 mm) stainless steel shaft |
| 3430-0332 | | | | | | Seal and o-ring repair kit |
| 3430-0589 | | | | | | Life Guard silicon carbide seal kit |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9202C-B)

### 9202C, 9202S, 9202S-R — U.S. UNITS

| RPM | 10 PSI | | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | | 120 PSI | | 140 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 50 | 1.3 | 46 | 1.2 | | | | | | | | | | | | |
| 3600 | 67 | 3.7 | 66 | 3.7 | 62 | 3.5 | 34 | 2.6 | | | | | | | | |
| 4200 | 75 | 5.7 | 75 | 5.7 | 75 | 5.7 | 66 | 5.3 | 44 | 4.2 | | | | | | |
| 5000 | 88 | 9.3 | 88 | 9.3 | 88 | 9.3 | 88 | 9.3 | 77 | 8.6 | 60 | 7.5 | 24 | 6.4 | | |
| 6000 | 103 | 15.6 | 103 | 15.6 | 103 | 15.6 | 103 | 15.6 | 103 | 15.6 | 100 | 15.5 | 91 | 14.8 | 75 | 14 |

### 9202C, 9202S, 9202S-R — METRIC UNITS

| RPM | 0.7 BAR | | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | | 8.3 BAR | | 9.7 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 189 | 1.3 | 174 | 1.2 | | | | | | | | | | | | |
| 3600 | 254 | 3.7 | 250 | 3.7 | 235 | 3.5 | 129 | 2.6 | | | | | | | | |
| 4200 | 284 | 5.7 | 284 | 5.7 | 284 | 5.7 | 250 | 5.3 | 167 | 4.2 | | | | | | |
| 5000 | 333 | 9.3 | 333 | 9.3 | 333 | 9.3 | 333 | 9.3 | 291 | 8.6 | 227 | 7.5 | 91 | 6.4 | | |
| 6000 | 390 | 15.6 | 390 | 15.6 | 390 | 15.6 | 390 | 15.6 | 390 | 15.6 | 379 | 15.5 | 344 | 14.8 | 284 | 14 |

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# PEDESTAL MOUNT, CAST IRON & STAINLESS STEEL

## Series 9203C and 9203S

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

### FEATURES:

- Available in cast iron and 316 stainless steel for extended pump life
- Pedestal mount, direct drive
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- 220 x 200 Universal flange available (U)
- Max. fluid temperature: 140°F/60°C
- Impeller: Nylon (cast iron standard); polypropylene (stainless standard); GTX available
- Pump shaft rotation: Counter clockwise when looking at the shaft end; 9203C-R is clockwise
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models – Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- Weight: 19 lbs./8.6 kg

### FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max PSI (BAR) | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9203C † | 140 | 530 | 170 | 11.7 | 6000 | 5/8" (15.9 mm) solid shaft |
| 9203C-R (CW) | 140 | 530 | 170 | 11.7 | 6000 | 5/8" (15.9 mm) solid shaft |
| 9203S † | 140 | 530 | 170 | 11.7 | 6000 | 5/8" (15.9 mm) stainless steel shaft |
| 9203S-R (CW) | 140 | 530 | 170 | 11.7 | 6000 | 5/8" (15.9 mm) stainless steel shaft |
| 3430-0332 | | | | | | Seal and o-ring repair kit |
| 3430-0589 | | | | | | Life Guard silicon carbide seal kit |

† Universal Flange (220 x 200) - Add Suffix "U" (i.e.: 9203C-U
Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9203C-B)

### 9203C, 9203S, 9203C-R, 9203S-R — U.S. UNITS

| RPM | 10 PSI | | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | | 120 PSI | | 140 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 80 | 1.9 | 65 | 1.8 | | | | | | | | | | | | |
| 3600 | 105 | 5.3 | 105 | 5.3 | 92 | 5.0 | 50 | 3.7 | | | | | | | | |
| 4200 | 122 | 8.2 | 120 | 7.9 | 115 | 7.7 | 98 | 7.1 | 56 | 5.3 | | | | | | |
| 5000 | 140 | 12.6 | 140 | 12.6 | 138 | 12.6 | 130 | 12.2 | 118 | 11.6 | 88 | 9.9 | 45 | 7.2 | | |
| 5500 | 140 | 14.9 | 140 | 14.9 | 138 | 14.9 | 135 | 15.2 | 130 | 15.2 | 118 | 14.4 | 90 | 12.5 | 60 | 9.8 |
| 6000 | 140 | 17.1 | 140 | 17.1 | 140 | 17.5 | 140 | 18.0 | 135 | 18.2 | 132 | 18 | 125 | 18.2 | 103 | 16.3 |

### 9203C, 9203S, 9203C-R, 9203S-R — METRIC UNITS

| RPM | 0.7 BAR | | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | | 8.3 BAR | | 9.7 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 303 | 1.9 | 246 | 1.8 | | | | | | | | | | | | |
| 3600 | 397 | 5.3 | 397 | 5.3 | 348 | 5.0 | 189 | 3.7 | | | | | | | | |
| 4200 | 462 | 8.2 | 454 | 7.9 | 435 | 7.7 | 371 | 7.1 | 212 | 5.3 | | | | | | |
| 5000 | 530 | 12.6 | 530 | 12.6 | 522 | 12.6 | 492 | 12.2 | 447 | 11.6 | 333 | 9.9 | 170 | 7.2 | | |
| 5500 | 530 | 14.9 | 530 | 14.9 | 522 | 14.9 | 511 | 15.2 | 492 | 15.2 | 447 | 14.4 | 341 | 12.5 | 227 | 9.8 |
| 6000 | 530 | 17.1 | 530 | 17.1 | 530 | 17.5 | 530 | 18.0 | 511 | 18.2 | 500 | 18 | 473 | 18.2 | 409 | 16.3 |

# PEDESTAL MOUNT, CAST IRON & STAINLESS STEEL, SELF-PRIMING

## Series 9203C-SP and 9203S-SP

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

**FEATURES:**

- Available in cast iron and 316 stainless steel for extended pump life
- Pedestal mount, direct drive
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet (9203C-SP, 9203S-SP); 2" NPT inlet, 2" NPT outlet (9203C-R-SP)
- Max. fluid temperature: 140°F/60°C
- Impeller: Nylon (cast iron standard); polypropylene (stainless steel); GTX available
- Pump shaft rotation: Counter clockwise when looking at the shaft end; 9203C-R-SP is clockwise
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models – Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- Weight: 31.7 lbs./14.4 kg – Stainless Steel; 29 lbs./13.2 kg - Cast Iron

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9203C-SP | 120 | 454 | 157 | 10.8 | 6000 | 5/8" (15.9 mm) solid shaft |
| 9203C-R-SP (CW) | 140 | 530 | 155 | 10.7 | 6000 | 5/8" (15.9 mm) solid shaft |
| 9203S-SP | 120 | 454 | 157 | 10.8 | 6000 | 5/8" (15.9 mm) stainless steel shaft |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |
| 3430-0480SP | Self priming chamber kit | | | | | |
| 3430-0482SP | Self priming chamber kit for reverse rotation ONLY | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9203C-SP-B)

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# PEDESTAL MOUNT, CAST IRON & STAINLESS STEEL, SELF-PRIMING

## Series 9203C-SP and 9203S-SP

### 9203C-R-SP — U.S. UNITS

| RPM | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | | 120 PSI | | 140 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 3600 | 80 | 3.8 | 43 | 2.9 | | | | | | | | | | |
| 4200 | 102 | 6.1 | 76 | 5.4 | 38 | 4 | | | | | | | | |
| 5000 | 127 | 10.5 | 109 | 9.8 | 86 | 8.7 | 55 | 7.2 | 18 | 5.4 | | | | |
| 5500 | 135 | 13.5 | 125 | 13.1 | 110 | 12.3 | 83 | 10.9 | 57 | 9.3 | 21 | 6.9 | | |
| 6000 | 138 | 15.7 | 132 | 15.7 | 122 | 15.1 | 111 | 14.1 | 93 | 13.2 | 67 | 12.2 | 32 | 9.5 |

### 9203C-R-SP — METRIC UNITS

| RPM | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | | 8.3 BAR | | 9.7 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 3600 | 303 | 3.8 | 163 | 2.9 | | | | | | | | | | |
| 4200 | 386 | 6.1 | 288 | 5.4 | 144 | 4 | | | | | | | | |
| 5000 | 481 | 10.5 | 413 | 9.8 | 326 | 8.7 | 208 | 7.2 | 68 | 5.4 | | | | |
| 5500 | 511 | 13.5 | 473 | 13.1 | 416 | 12.3 | 314 | 10.9 | 216 | 9.3 | 79 | 6.9 | | |
| 6000 | 522 | 15.7 | 500 | 15.7 | 462 | 15.1 | 420 | 14.1 | 352 | 13.2 | 254 | 12.2 | 121 | 9.5 |

### 9203C-SP, 9203S-SP — U.S. UNITS

| RPM | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | | 120PSI | | 140 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 3600 | 101 | 4.2 | 60 | 3.4 | | | | | | | | | | |
| 4200 | 118 | 6.7 | 97 | 6.1 | 54 | 4.7 | | | | | | | | |
| 5000 | 120 | 10.1 | 119 | 10.3 | 110 | 10.1 | 78 | 8.7 | 25 | 5.8 | | | | |
| 5500 | 120 | 12.1 | 119 | 12.7 | 116 | 13.2 | 110 | 12.8 | 79 | 11.0 | 29 | 7.6 | | |
| 6000 | 120 | 14.3 | 119 | 15.0 | 116 | 15.7 | 114 | 16.0 | 110 | 16.0 | 82 | 14.0 | 40 | 10.6 |

### 9203C-SP, 9203S-SP — METRIC UNITS

| RPM | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | | 8.3 BAR | | 9.7 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 3600 | 382 | 4.2 | 227 | 3.4 | | | | | | | | | | |
| 4200 | 447 | 6.7 | 367 | 6.1 | 204 | 4.7 | | | | | | | | |
| 5000 | 458 | 10.1 | 450 | 10.3 | 416 | 10.1 | 295 | 8.7 | 95 | 5.8 | | | | |
| 5500 | 458 | 12.1 | 450 | 12.7 | 439 | 13.2 | 416 | 12.8 | 299 | 11.0 | 110 | 7.6 | | |
| 6000 | 458 | 14.3 | 450 | 15.0 | 439 | 15.7 | 432 | 16.0 | 416 | 16.0 | 310 | 14.0 | 157 | 10.6 |

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# PEDESTAL MOUNT, CAST IRON

## Series 9205C

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Pedestal mount, direct drive
- Port sizes: 2" NPT inlet, 1-1/2" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Cast iron
- Impeller: Nylon
- Pump shaft rotation: Counter clockwise when looking at the shaft end
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 47 lbs./21.4 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9205C | 180 | 681 | 196 | 13.5 | 4200 | 7/8" (22.2 mm) solid keyed shaft |
| 3430-0537 | | | | | | Seal and o-ring repair kit |
| 3430-0646 | | | | | | Life Guard silicon carbide seal kit |
| 2526-0011 | | | | | | Clutch/single groove |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9205C-B)

**9205C** **U.S. UNITS**

| RPM | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | | 120 PSI | | 140 PSI | | 160 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 3000 | 165 | 11.4 | 164 | 11.7 | 154 | 11.6 | 104 | 9.5 | | | | | | | | |
| 3400 | 175 | 14.8 | 175 | 15.5 | 173 | 16.3 | 168 | 16.3 | 127 | 14.2 | 43 | 8.7 | | | | |
| 3800 | 180 | 18.2 | 180 | 18.8 | 180 | 19.8 | 178 | 21.1 | 173 | 21.8 | 156 | 20.7 | 112 | 17.5 | | |
| 4200 | 180 | 21.9 | 180 | 22.0 | 180 | 24.0 | 180 | 25.3 | 180 | 26.9 | 177 | 27.9 | 173 | 28.1 | 157 | 26.4 |

**9205C** **METRIC UNITS**

| RPM | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | | 8.3 BAR | | 9.7 BAR | | 11.0 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 3000 | 625 | 11.4 | 621 | 11.7 | 583 | 11.6 | 394 | 9.5 | | | | | | | | |
| 3400 | 662 | 14.8 | 662 | 15.5 | 655 | 16.3 | 636 | 16.3 | 481 | 14.2 | 163 | 8.7 | | | | |
| 3800 | 681 | 18.2 | 681 | 18.8 | 681 | 19.8 | 674 | 21.1 | 655 | 21.8 | 591 | 20.7 | 424 | 17.5 | | |
| 4200 | 681 | 21.9 | 681 | 22.0 | 681 | 24.0 | 681 | 25.3 | 681 | 26.9 | 670 | 27.9 | 655 | 28.1 | 594 | 26.4 |

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# PEDESTAL MOUNT, CAST IRON, SELF-PRIMING

## Series 9205C-SP

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Pedestal mount, direct drive
- Port sizes:
  2" NPT inlet, 2" NPT outlet (9205C-SP)
  2" BSP inlet, 2" BSP outlet (9205C-BSP)
- Max. fluid temperature: 140°F/60°C
- Housing: Cast iron
- Impeller: Nylon
- Pump shaft rotation: Counter clockwise when looking at the shaft end
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 48 lbs./21.8 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9205C-SP | 160 | 606 | 145 | 10.0 | 3800 | 7/8" (22.2 mm) solid keyed shaft |
| 9205C-BSP | 160 | 606 | 145 | 10.0 | 3800 | 7/8" (22.2 mm) solid keyed shaft |
| 3430-0537 | | | | | | Seal and o-ring repair kit |
| 3430-0646 | | | | | | Life Guard silicon carbide seal kit |
| 3430-0481SP | | | | | | Self priming chamber kit |
| 2526-0011 | | | | | | Clutch/single groove |
| 3430-0481BSP | | | | | | Self priming chamber kit (BSP) |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9205C-SP-B)

**9205C-SP, 9205C-BSP** **U.S. UNITS**

| RPM | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI | GPM at 140 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 155 | 154 | 153 | 150 | 131 | 110 | 84 | 35 | | | |
| 3600 | 158 | 157 | 156 | 155 | 153 | 137 | 114 | 88 | 58 | | |
| 3800 | 160 | 159 | 158 | 157 | 156 | 155 | 142 | 123 | 102 | 74 | 28 |

**9205C-SP, 9205C-BSP** **METRIC UNITS**

| RPM | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 8.9 BAR | LPM at 9.7 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 587 | 583 | 579 | 568 | 496 | 416 | 318 | 132 | | | |
| 3600 | 598 | 594 | 591 | 587 | 579 | 518 | 432 | 333 | 220 | | |
| 3800 | 606 | 602 | 598 | 594 | 591 | 587 | 538 | 466 | 383 | 280 | 106 |

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# PEDESTAL MOUNT, CAST IRON & STAINLESS STEEL

## Series 9206C and 9206S

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

### FEATURES:

- Available in cast iron and 316 stainless steel for extended pump life
- Pedestal mount, direct drive
- Port sizes: 2" NPT inlet, 1-1/2" NPT outlet
- 220 x 220 (U) and 300 x 220 (-3U models) universal flange available
- Max. fluid temperature: 140°F/60°C
- Impeller: Nylon (standard in cast iron); polypropylene (standard in stainless steel); GTX available
- Pump shaft rotation: Counter clockwise when looking at the shaft end
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models – Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- Weight: 23 lbs./10.5 kg

### FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9206C* | 225 | 852 | 80 | 5.5 | 4200 | 5/8" ( 15.9 mm) solid shaft |
| 9206S | 225 | 852 | 80 | 5.5 | 4200 | 5/8" ( 15.9 mm) stainless steel shaft |
| 3430-0332 | | | | | | Seal and o-ring repair kit |
| 3430-0589 | | | | | | Life Guard silicon carbide seal kit |

*Universal Flange (220 x 220) - Add Suffix "U" (i.e.: 9206C-U),
Universal Flange (300 x 220) - Add Suffix "3U" (i.e.: 9206C-3U),
Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9206C-B)

### 9206C, 9206S, 9206C-U, 9206S-3U — U.S. UNITS

| RPM | 10 PSI | | 20 PSI | | 30 PSI | | 40 PSI | | 50 PSI | | 60 PSI | | 70 PSI | | 80 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 171 | 2.3 | 114 | 2.0 | | | | | | | | | | | | |
| 3600 | 225 | 7.0 | 225 | 7.1 | 225 | 7.5 | 196 | 7.3 | 143 | 6.1 | | | | | | |
| 4200 | 225 | 9.2 | 225 | 9.4 | 225 | 10.7 | 225 | 11.0 | 225 | 11.3 | 202 | 10.9 | 158 | 9.5 | 80 | 6.4 |

### 9206C, 9206S, 9206C-U, 9206S-3U — METRIC UNITS

| RPM | 0.7 BAR | | 1.4 BAR | | 2.1 BAR | | 2.8 BAR | | 3.4 BAR | | 4.1 BAR | | 4.8 BAR | | 5.5 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 647 | 2.3 | 432 | 2.0 | | | | | | | | | | | | |
| 3600 | 852 | 7.0 | 852 | 7.1 | 852 | 7.5 | 742 | 7.3 | 541 | 6.1 | | | | | | |
| 4200 | 852 | 9.2 | 852 | 9.4 | 852 | 10.7 | 852 | 11.0 | 852 | 11.3 | 765 | 10.9 | 598 | 9.5 | 303 | 6.4 |

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# PEDESTAL MOUNT, CAST IRON

Series 9208

**FEATURES:**

- 5" ANSI-flanged inlet x 4" ANSI-flanged outlet
- 316 stainless steel impeller for superior corrosion resistance
- 9208 version includes a solid 416 stainless steel shaft for corrosion resistance
- The 9208 shaft diameter is 1.63" (41.3 mm) to allow direct coupling to electric motors
- Life Guard silicon carbide seal for premium abrasion resistance and dry run protection
- Life Guard seals are the industry standard on OEM equipment
- Pump shaft rotation: Counter clockwise when looking at the shaft end

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9208C | 1400 | 5300 | 85 | 5.9 | 3000 | 1-5/8" (41.3 mm) solid keyed Stainless Steel shaft |
| 3430-0604 | | | | | | Life Guard silicon carbide seal kit |

**9208C** **U.S. UNITS**

| RPM | 20 PSI | | 40 PSI | | 60 PSI | |
|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP |
| 1750 | 607 | 10.8 | | | | |
| 2500 | 1071 | 32.3 | 852 | 31.0 | 474 | 24.4 |
| 2750 | 1052 | 38.5 | 1027 | 42.0 | 788 | 38.2 |

**9208C** **METRIC UNITS**

| RPM | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| 1750 | 2298 | 10.8 | | | | |
| 2500 | 4054 | 32.3 | 3225 | 31.0 | 1794 | 24.4 |
| 2750 | 3982 | 38.5 | 3888 | 42.0 | 2983 | 38.2 |

# PEDESTAL MOUNT, POLYPROPYLENE

Series 9203P-S

**UPGRADE OPTIONS:**

- Increase abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Pedestal mount
- For belt and pulley drive
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Polypropylene
- Impeller: Polypropylene
- Pump shaft rotation: Counter clockwise 9203P-S, when looking at the shaft end; 9203P-SR is clockwise
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 14 lbs./6.4 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9203P-S | 100 | 379 | 82 | 5.7 | 4200 | 7/8" (22.2 mm) solid keyed stainless steel shaft |
| 9203P-SR | 100 | 379 | 82 | 5.7 | 4200 | 7/8" (22.2 mm) solid keyed stainless steel shaft |
| 3430-0333 | | | | | | Seal and o-ring repair kit |
| 3430-0590 | | | | | | Life Guard silicon carbide seal kit |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9203P-S-B)

**9203P-S, 9203P-SR** **U.S. UNITS**

| RPM | 10 PSI | | 20 PSI | | 30 PSI | | 40 PSI | | 50 PSI | | 60 PSI | | 70 PSI | | 80 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 55 | 1.5 | 49 | 1.4 | 32 | 1.1 | | | | | | | | | | |
| 3600 | 89 | 4.4 | 87 | 4.3 | 81 | 4.1 | 71 | 3.9 | 58 | 3.6 | 37 | 3.1 | | | | |
| 4200 | 100 | 6.7 | 100 | 6.6 | 97 | 6.5 | 90 | 6.3 | 82 | 6.0 | 71 | 5.7 | 60 | 5.2 | 39 | 4.4 |

**9203P-S, 9203P-SR** **METRIC UNITS**

| RPM | 0.7 BAR | | 1.4 BAR | | 2.1 BAR | | 2.8 BAR | | 3.4 BAR | | 4.1 BAR | | 4.8 BAR | | 5.5 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 208 | 1.5 | 185 | 1.4 | 121 | 1.1 | | | | | | | | | | |
| 3600 | 337 | 4.4 | 329 | 4.3 | 307 | 4.1 | 269 | 3.9 | 220 | 3.6 | 140 | 3.1 | | | | |
| 4200 | 379 | 6.7 | 379 | 6.6 | 367 | 6.5 | 341 | 6.3 | 310 | 6.0 | 269 | 5.7 | 227 | 5.2 | 148 | 4.4 |

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# FLANGE MOUNT, POLYPROPYLENE

## Series 9213P

**UPGRADE OPTIONS:**

- Increase abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Mounts clockwise rotation (when looking at the shaft end) — for direct mount to gasoline engines
- Shaft: 3/4" (19 mm) hollow, 416 stainless steel
- Port size: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Polypropylene
- Impeller: Polypropylene
- Flange bolt pattern for 5 hp gas engine
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 19 lbs./8.6 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | PTO Output |
|---|---|---|---|---|---|---|
| 9213P | 91 | 344 | 65 | 4.5 | 3600 | 3/4" hollow keyed stainless steel shaft for direct coupling to 5hp engine |
| 3430-0333 | | | | | | Seal and o-ring repair kit |
| 3430-0590 | | | | | | Life Guard silicon carbide seal kit |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9213P-B)

**9213P — BASED ON 5.5 HP HONDA® ENGINE U.S. UNITS**

| GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI |
|---|---|---|---|---|---|---|
| 92 | 91 | 88 | 81 | 70 | 58 | 42 |

**9213P — BASED ON 5.5 HP HONDA® ENGINE METRIC UNITS**

| LPM at 0.0 BAR | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR |
|---|---|---|---|---|---|---|
| 348 | 344 | 333 | 307 | 265 | 220 | 159 |

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# PEDESTAL MOUNT, CLUTCH-DRIVEN, POLYPROPYLENE

## Series 9260P

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Pedestal mount with DC clutch drive
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Polypropylene
- Impeller: Polypropylene
- Pump shaft rotation: Counter clockwise 9260P, when looking at the shaft end; 9260P-R is clockwise
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Clutch: 12 volt with 5-1/2" (140 mm) diameter A-section pulley (part # 2526-0011)
- Weight: 19 lbs./8.6 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Rotation |
|---|---|---|---|---|---|---|
| 9260P | 100 | 379 | 82 | 5.7 | 4200 | CCW |
| 9260P-R | 100 | 379 | 82 | 5.7 | 4200 | CW |
| 3430-0333 | Seal and o-ring repair kit | | | | | |
| 3430-0590 | Life Guard silicon carbide seal kit | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9260P-B)

**9260P, 9260P-R** **U.S. UNITS**

| RPM | 10 PSI | | 20 PSI | | 30 PSI | | 40 PSI | | 50 PSI | | 60 PSI | | 70 PSI | | 80 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 55 | 1.5 | 49 | 1.4 | 32 | 1.1 | | | | | | | | | | |
| 3600 | 89 | 4.4 | 87 | 4.3 | 81 | 4.1 | 71 | 3.9 | 58 | 3.6 | 37 | 3.1 | | | | |
| 4200 | 100 | 6.7 | 100 | 6.6 | 97 | 6.5 | 90 | 6.3 | 82 | 6.0 | 71 | 5.7 | 60 | 5.2 | 39 | 4.4 |

**9260P, 9260P-R** **METRIC UNITS**

| RPM | 0.7 BAR | | 1.4 BAR | | 2.1 BAR | | 2.8 BAR | | 3.4 BAR | | 4.1 BAR | | 4.8 BAR | | 5.5 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 208 | 1.5 | 185 | 1.4 | 121 | 1.1 | | | | | | | | | | |
| 3600 | 337 | 4.4 | 329 | 4.3 | 307 | 4.1 | 269 | 3.9 | 220 | 3.6 | 140 | 3.1 | | | | |
| 4200 | 379 | 6.7 | 379 | 6.6 | 367 | 6.5 | 341 | 6.3 | 310 | 6.0 | 269 | 5.7 | 227 | 5.2 | 148 | 4.4 |

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# PEDESTAL MOUNT, CLUTCH-DRIVEN, CAST IRON & STAINLESS STEEL

## Series 9262C-C and 9262S-C

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

### FEATURES:

- Pedestal mount with DC clutch drive
- Double "A" groove pulley (5"/125 mm diameter)
- Port sizes: 1-1/4" NPT inlet, 1" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Available in cast iron and 316 stainless steel for extended pump life
- Impeller: Nylon (standard in cast iron); polypropylene (standard in stainless steel); GTX available
- Pump shaft rotation: Counter clockwise when looking at the shaft end; Clockwise for -CR models
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models ( Life Guard silicon carbide standard)
  - Life Guard seals are the industry standard on OEM equipment
- 3.75 Amp draw (45 watts at 12 volts)
- Weight: 23 lbs./10.5 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max PSI | Max RPM | Rotation |
|---|---|---|---|---|---|---|
| 9262C-C | 88 | 333 | 114 | 7.9 | 5000 | CCW* |
| 9262S-C | 145 | 549 | 114 | 7.9 | 5000 | CCW* |
| 9262S-CR | 145 | 549 | 114 | 7.9 | 5000 | CW* |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9262C-CB) *CCW (counterclockwise) CW (clockwise) are determined when looking at the shaft end.

### 9262C-C — U.S. UNITS

| RPM | 10 PSI | | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 50 | 1.3 | 46 | 1.2 | | | | | | | | |
| 3600 | 67 | 3.7 | 66 | 3.7 | 62 | 3.5 | 25 | 2.8 | | | | |
| 4200 | 75 | 5.7 | 75 | 5.7 | 75 | 5.7 | 66 | 5.3 | 40 | 4.6 | | |
| 5000 | 88 | 9.3 | 88 | 9.3 | 88 | 9.3 | 88 | 9.3 | 77 | 8.6 | 60 | 7.5 |

### 9262C-C — METRIC UNITS

| RPM | 0.7 BAR | | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 189 | 1.3 | 174 | 1.2 | | | | | | | | |
| 3600 | 254 | 3.7 | 250 | 3.7 | 235 | 3.5 | 95 | 2.8 | | | | |
| 4200 | 284 | 5.7 | 284 | 5.7 | 284 | 5.7 | 250 | 5.3 | 151 | 4.6 | | |
| 5000 | 333 | 9.3 | 333 | 9.3 | 333 | 9.3 | 333 | 9.3 | 291 | 8.6 | 227 | 7.5 |

### 9262S-C, 9262S-CR — U.S. UNITS

| RPM | 10 PSI | | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 73 | 1.4 | 55 | 1.2 | | | | | | | | |
| 3600 | 112 | 4.5 | 109 | 4.5 | 86 | 4.0 | 25 | 2.8 | | | | |
| 4200 | 128 | 7.1 | 127 | 7.1 | 116 | 6.8 | 92 | 6.1 | 40 | 4.6 | | |
| 5000 | 145 | 11.8 | 145 | 11.8 | 143 | 11.7 | 133 | 11.3 | 115 | 10.4 | 86 | 9.1 |

### 9262S-C, 9262S-CR — METRIC UNITS

| RPM | 0.7 BAR | | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 276 | 1.4 | 208 | 1.2 | | | | | | | | |
| 3600 | 424 | 4.5 | 413 | 4.5 | 326 | 4.0 | 95 | 2.8 | | | | |
| 4200 | 484 | 7.1 | 481 | 7.1 | 439 | 6.8 | 348 | 6.1 | 151 | 4.6 | | |
| 5000 | 549 | 11.8 | 549 | 11.8 | 541 | 11.7 | 503 | 11.3 | 435 | 10.4 | 326 | 9.1 |

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# PEDESTAL MOUNT, CLUTCH-DRIVEN, CAST IRON & STAINLESS STEEL, SELF-PRIMING

## Series 9263C-SP and 9263S-SP

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

### FEATURES:

- Available in cast iron and 316 stainless steel for extended pump life
- Double "A" groove pulley (5"/125 mm diameter)
- Pedestal mount with DC clutch drive
- Max fluid temperature: 140˚ F/60˚ C
- Impeller: Nylon (standard in cast iron); polypropylene (standard in stainless steel); GTX available
- Pump seals: Cast Iron models - Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models (Life Guard silicon carbide standard)
- Life Guard seals are the industry standard on OEM equipment
- 3.75 Amp draw (45 watts at 12 volts)

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Rotation | Port Sizes |
|---|---|---|---|---|---|---|---|
| 9263C-CR-SP | 127 | 481 | 110 | 7.6 | 5000 | CW* | 2" NPT inlet x 2" NPT outlet |
| 9263C-CR-SP-B | 127 | 481 | 110 | 7.6 | 5000 | CW* | 2" NPT inlet x 2" NPT outlet |
| 9263C-C-SP | 120 | 454 | 110 | 7.6 | 5000 | CCW* | 1-1/2" NPT inlet x 1-1/4" NPT outlet |
| 9263S-C-SP | 120 | 454 | 110 | 7.6 | 5000 | CCW* | 1-1/2" NPT inlet x 1-1/4" NPT outlet |
| 3430-0332 | Seal and o-ring repair kit | | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9263-CR-SP-B) *CCW (counterclockwise) CW (clockwise) are determined when looking at the shaft end.

### 9263C-CR-SP, 9263C-CR-SP-B — U.S. UNITS

| RPM | 20 PSI | | 30 PSI | | 40 PSI | | 50 PSI | | 60 PSI | | 70 PSI | | 80 PSI | | 90 PSI | | 100 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 3600 | 80 | 3.8 | 64 | 3.4 | 43 | 2.9 | 17 | 2.6 | | | | | | | | | | |
| 4200 | 102 | 6.1 | 90 | 5.8 | 76 | 5.4 | 59 | 4.7 | 38 | 4.0 | 16 | 3.7 | | | | | | |
| 5000 | 127 | 10.5 | 119 | 10.2 | 109 | 9.8 | 99 | 9.3 | 86 | 8.7 | 70 | 7.9 | 55 | 7.2 | 37 | 6.2 | 18 | 5.4 |

### 9263C-CR-SP, 9263C-CR-SP-B — METRIC UNITS

| RPM | 1.4 BAR | | 2.1 BAR | | 2.8 BAR | | 3.4 BAR | | 4.1 BAR | | 4.8 BAR | | 5.5 BAR | | 6.2 BAR | | 6.9 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 3600 | 303 | 3.8 | 242 | 3.4 | 163 | 2.9 | 64 | 2.6 | | | | | | | | | | |
| 4200 | 386 | 6.1 | 341 | 5.8 | 288 | 5.4 | 223 | 4.7 | 144 | 4.0 | 61 | 3.7 | | | | | | |
| 5000 | 481 | 10.5 | 450 | 10.2 | 413 | 9.8 | 375 | 9.3 | 326 | 8.7 | 265 | 7.9 | 208 | 7.2 | 140 | 6.2 | 68 | 5.4 |

### 9263C-C-SP, 9263S-C-SP — U.S. UNITS

| RPM | 20 PSI | | 30 PSI | | 40 PSI | | 50 PSI | | 60 PSI | | 70 PSI | | 80 PSI | | 90 PSI | | 100 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 3600 | 101 | 4.2 | 84 | 3.9 | 60 | 3.4 | 25 | 2.6 | | | | | | | | | | |
| 4200 | 118 | 6.7 | 112 | 6.7 | 97 | 6.1 | 79 | 5.5 | 54 | 4.7 | 23 | 4.0 | | | | | | |
| 5000 | 120 | 10.1 | 120 | 10.3 | 119 | 10.3 | 117 | 10.2 | 110 | 10.1 | 96 | 9.6 | 78 | 8.7 | 52 | 7.2 | 25 | 5.8 |

### 9263C-C-SP, 9263S-C-SP — METRIC UNITS

| RPM | 1.4 BAR | | 2.1 BAR | | 2.8 BAR | | 3.4 BAR | | 4.1 BAR | | 4.8 BAR | | 5.5 BAR | | 6.2 BAR | | 6.9 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 3600 | 382 | 4.2 | 318 | 3.9 | 227 | 3.4 | 95 | 2.6 | | | | | | | | | | |
| 4200 | 447 | 6.7 | 424 | 6.7 | 367 | 6.1 | 299 | 5.5 | 204 | 4.7 | 87 | 4.0 | | | | | | |
| 5000 | 454 | 10.1 | 454 | 10.3 | 450 | 10.3 | 443 | 10.2 | 416 | 10.1 | 363 | 9.6 | 295 | 8.7 | 197 | 7.2 | 95 | 5.8 |

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# PEDESTAL MOUNT, CLUTCH-DRIVEN, CAST IRON & STAINLESS STEEL

## Series 9263C-C and 9263S-C

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

### FEATURES:

- Available in cast iron and 316 stainless steel for extended pump life
- Pedestal mount with DC clutch drive
- Double "A" groove pulley (5"/125 mm diameter)
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet (BSP available on 9263C)
- 220 x 200 universal flange available (U)
- Max. fluid temperature: 140°F/60°C
- Impeller: Nylon (standard in cast iron); polypropylene (standard in stainless steel); GTX available
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models – Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- 3.75 Amp draw (45 watts at 12 volts)
- Weight: 23 lbs./10.5 kg

### FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Rotation |
|---|---|---|---|---|---|---|
| 9263C-C † (BSP Version - 9263C-BT) | 140 | 530 | 114 | 7.9 | 5000 | CCW* |
| 9263C-CR | 140 | 530 | 114 | 7.9 | 5000 | CW* |
| 9263S-C † | 140 | 530 | 114 | 7.9 | 5000 | CCW* |
| 9263S-CR | 140 | 530 | 114 | 7.9 | 5000 | CW* |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |

† Universal Flange (220 x 200) - Add Suffix "U" (i.e.: 9263C-C-U)
Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9263C-CB)
*CCW (counterclockwise) CW (clockwise) are determined when looking at the shaft end.

### 9263C-C, 9263S-C, 9263C-CR, 9263S-CR, 9263C-C-U, 9263S-C-U — U.S. UNITS

| RPM | 10 PSI | | 20 PSI | | 40 PSI | | 60 PSI | | 80 PSI | | 100 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2400 | 80 | 1.9 | 65 | 1.8 | | | | | | | | |
| 3600 | 105 | 5.3 | 105 | 5.3 | 92 | 5.0 | 50 | 3.7 | | | | |
| 4200 | 122 | 8.2 | 120 | 7.9 | 115 | 7.7 | 98 | 7.1 | 56 | 5.3 | | |
| 5000 | 140 | 12.6 | 140 | 12.6 | 138 | 12.6 | 130 | 12.2 | 118 | 11.6 | 88 | 9.9 |

### 9263C-C, 9263S-C, 9263C-CR, 9263S-CR, 9263C-C-U, 9263S-C-U — METRIC UNITS

| RPM | 0.7 BAR | | 1.4 BAR | | 2.8 BAR | | 4.1 BAR | | 5.5 BAR | | 6.9 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 2400 | 303 | 1.9 | 246 | 1.8 | | | | | | | | |
| 3600 | 397 | 5.3 | 397 | 5.3 | 348 | 5.0 | 189 | 3.7 | | | | |
| 4200 | 462 | 8.2 | 454 | 7.9 | 435 | 7.7 | 371 | 7.1 | 212 | 5.3 | | |
| 5000 | 530 | 12.6 | 530 | 12.6 | 522 | 12.6 | 492 | 12.2 | 447 | 11.6 | 333 | 9.9 |

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# HYDRAULICALLY-DRIVEN, CAST IRON AND STAINLESS STEEL

## Series 9302C and 9302S

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

**FEATURES:**

- Available in cast iron and 316 stainless steel for extended pump life
- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port sizes: 1-1/4" NPT inlet, 1" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Impeller: Cast Iron models – Nylon;
  Stainless Steel models – Polypropylene
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet-HM Series
- Hydraulic ports on GM1 Series: 3/4" 16 UNF #8 SAE
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models (Life Guard silicon carbide standard)
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Max. motor psi: 3000 (bar: 207)
- Weight: 26 lbs./11.8 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9302CT-GM1 | 63 | 238 | 90 | 6.2 | 3 | 11.4 | Open/Closed |
| 9302C-HM1C | 72 | 273 | 150 | 10.3 | 13 | 49.2 | Open/Closed |
| 9302C-HM2C | 65 | 246 | 96 | 6.6 | 6 | 22.7 | Open/Closed |
| 9302C-HM4C | 72 | 273 | 120 | 8.3 | 7 | 26.5 | Open/Closed |
| 9302ST-GM1 | 63 | 238 | 90 | 6.2 | 3 | 11.4 | Open/Closed |
| 9302S-HM1C | 72 | 273 | 150 | 10.3 | 13 | 49.2 | Open/Closed |
| 9302S-HM2C | 65 | 246 | 96 | 6.6 | 6 | 22.7 | Open/Closed |
| 9302S-HM4C | 72 | 273 | 120 | 8.3 | 7 | 26.5 | Open/Closed |
| 3430-0332 | Seal and o-ring repair kit | | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9302CT-GM1-B)

Teflon® is a registered trademark of E.I. DuPont de Nemours and Co.
Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# HYDRAULICALLY-DRIVEN, CAST IRON AND STAINLESS STEEL

## Series 9302C and 9302S

### 9302CT-GM1, 9302ST-GM1 — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 51 | 48 | 39 | 21 | | | | | |
| 2.5 | 60 | 59 | 56 | 48 | 37 | 23 | | | |
| 3.0 | 63 | 63 | 62 | 61 | 58 | 50 | 39 | 25 | 0 |

### 9302CT-GM1, 9302ST-GM1 — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.5 BAR | LPM at 4.2 BAR | LPM at 4.9 BAR | LPM at 5.6 BAR | LPM at 6.3 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 7.6 | 193 | 182 | 148 | 79 | | | | | |
| 9.5 | 227 | 223 | 212 | 182 | 140 | 87 | | | |
| 11.4 | 238 | 238 | 235 | 231 | 220 | 189 | 148 | 95 | 0 |

### 9302C-HM1C, 9302S-HM1C — U.S. UNITS

| Hyd. Flow GPM | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI | GPM at 140 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 72 | 72 | 71 | 65 | 56 | 45 | 29 | | | | |
| 12 | 72 | 72 | 72 | 72 | 70 | 63 | 53 | 40 | | | |
| 13 | 72 | 72 | 72 | 72 | 72 | 71 | 68 | 63 | 56 | 48 | 35 |

### 9302C-HM1C, 9302S-HM1C — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR | LPM at 9.7 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 273 | 273 | 269 | 246 | 212 | 170 | 110 | | | | |
| 45.4 | 273 | 273 | 273 | 273 | 265 | 238 | 201 | 151 | | | |
| 49.2 | 273 | 273 | 273 | 273 | 273 | 269 | 257 | 238 | 212 | 182 | 132 |

### 9302C-HM2C, 9302S-HM2C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 54 | 49 | 42 | 34 | 19 | | | | |
| 5 | 59 | 57 | 50 | 42 | 34 | 25 | 11 | | |
| 6 | 64 | 63 | 60 | 52 | 44 | 36 | 27 | 18 | 9 |

### 9302C-HM2C, 9302S-HM2C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 15.1 | 204 | 185 | 159 | 129 | 72 | | | | |
| 18.9 | 223 | 216 | 189 | 159 | 129 | 95 | 42 | | |
| 22.7 | 244 | 238 | 227 | 197 | 167 | 136 | 102 | 68 | 34 |

### 9302C-HM4C, 9302S-HM4C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 65 | 63 | 59 | 51 | 41 | 29 | 12 | | | | |
| 7 | 72 | 72 | 71 | 67 | 60 | 51 | 42 | 31 | 17 | | |
| 8 | 72 | 72 | 72 | 72 | 70 | 64 | 57 | 50 | 42 | 32 | 16 |

### 9302C-HM4C, 9302S-HM4C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 22.7 | 246 | 238 | 223 | 193 | 155 | 110 | 45 | | | | |
| 26.5 | 273 | 273 | 269 | 254 | 227 | 193 | 159 | 117 | 64 | | |
| 30.3 | 273 | 273 | 273 | 273 | 265 | 242 | 216 | 189 | 159 | 121 | 61 |

# HYDRAULICALLY-DRIVEN, CAST IRON & STAINLESS STEEL

## Series 9303C and 9303S

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

**FEATURES:**

- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- 220 x 200 universal flange available (U)
- Max. fluid temperature: 140°F/60°C
- Impeller: Cast Iron models – Nylon; (GTX available)
  Stainless Steel models – Polypropylene
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available;
  Stainless Steel models – Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Max. motor psi: 3000 (bar: 207)
- Weight: 26 lbs./11.8 kg

**FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:**

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9303C-HM1C | 114 | 432 | 130 | 9.0 | 13 | 49.2 | Open/Closed |
| 9303C-HM2C | 97 | 367 | 95 | 6.5 | 6 | 22.7 | Open/Closed |
| 9303C-HM3C | 125 | 473 | 98 | 6.8 | 24 | 90.8 | Open/Closed |
| 9303C-HM4C | 115 | 435 | 93 | 6.4 | 7 | 26.5 | Open/Closed |
| 9303C-HM5C | 147 | 556 | 145 | 10.0 | 16 | 60.6 | Open/Closed |
| 9303S-HM1C | 114 | 432 | 130 | 9.0 | 13 | 49.2 | Open/Closed |
| 9303S-HM2C | 97 | 367 | 95 | 6.5 | 6 | 22.7 | Open/Closed |
| 9303S-HM3C | 125 | 473 | 98 | 6.8 | 24 | 90.8 | Open/Closed |
| 9303S-HM4C | 115 | 435 | 93 | 6.4 | 7 | 26.5 | Open/Closed |
| 9303S-HM5C | 147 | 556 | 145 | 10.0 | 16 | 60.6 | Open/Closed |
| 3430-0332 | Seal and o-ring repair kit | | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | | |

Universal Flange (220 x 200) - Add suffix "U" (i.e.: 9303C-HM3C-U)
Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9303C-HM1C-B)

Teflon® is a registered trademark of E.I. DuPont de Nemours and Co.
Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# HYDRAULICALLY-DRIVEN, CAST IRON & STAINLESS STEEL

## Series 9303C and 9303S

### 9303C-HM1C, 9303S-HM1C — U.S. UNITS

| Hyd. Flow GPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 104 | 101 | 96 | 90 | 82 | 71 | 60 | 47 | 31 | | |
| 12 | 110 | 109 | 107 | 105 | 101 | 92 | 81 | 67 | 53 | 36 | 9 |
| 13 | 112 | 111 | 109 | 107 | 104 | 102 | 96 | 85 | 76 | 63 | 33 |

### 9303C-HM1C, 9303S-HM1C — METRIC UNITS

| Hyd. Flow LPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 394 | 382 | 363 | 341 | 310 | 269 | 227 | 178 | 117 | | |
| 45.4 | 416 | 413 | 405 | 397 | 382 | 348 | 307 | 254 | 201 | 136 | 34 |
| 49.2 | 424 | 420 | 413 | 405 | 394 | 386 | 363 | 322 | 288 | 238 | 125 |

### 9303C-HM2C, 9303S-HM2C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 70 | 60 | 45 | 25 | | | | | |
| 5 | 83 | 74 | 65 | 50 | 37 | 22 | 4 | | |
| 6 | 94 | 86 | 80 | 72 | 62 | 50 | 37 | 22 | 7 |

### 9303C-HM2C, 9303S-HM2C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 15.1 | 265 | 227 | 170 | 95 | | | | | |
| 18.9 | 314 | 280 | 246 | 189 | 140 | 83 | 15 | | |
| 22.7 | 356 | 326 | 303 | 273 | 235 | 189 | 140 | 83 | 26 |

### 9303C-HM3C, 9303S-HM3C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 100 | 92 | 83 | 69 | 47 | | | | |
| 18 | 116 | 114 | 108 | 100 | 90 | 76 | 55 | 33 | |
| 20 | 125 | 123 | 120 | 114 | 107 | 96 | 85 | 71 | 50 |

### 9303C-HM3C, 9303S-HM3C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 56.8 | 379 | 348 | 314 | 261 | 178 | | | | |
| 68.1 | 439 | 432 | 409 | 379 | 341 | 288 | 208 | 125 | |
| 75.7 | 473 | 466 | 454 | 432 | 405 | 363 | 322 | 269 | 189 |

### 9303C-HM4C, 9303S-HM4C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 84 | 76 | 66 | 52 | 34 | | | | |
| 6 | 97 | 92 | 86 | 78 | 67 | 50 | 25 | | |
| 7 | 110 | 104 | 98 | 91 | 82 | 69 | 55 | 38 | 14 |

### 9303C-HM4C, 9303S-HM4C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 18.9 | 318 | 288 | 250 | 197 | 129 | | | | |
| 22.7 | 367 | 348 | 326 | 295 | 254 | 189 | 95 | | |
| 26.5 | 416 | 394 | 371 | 344 | 310 | 261 | 208 | 144 | 53 |

### 9303C-HM5C, 9303S-HM5C — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 113 | 105 | 97 | 86 | 73 | 59 | 44 | | | | |
| 14 | 128 | 123 | 116 | 108 | 98 | 88 | 74 | 61 | 44 | | |
| 15 | 135 | 132 | 126 | 119 | 110 | 100 | 89 | 77 | 66 | 50 | 20 |
| 16 | 145 | 142 | 137 | 132 | 126 | 117 | 107 | 95 | 83 | 70 | 55 |

### 9303C-HM5C, 9303S-HM5C — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 49.2 | 428 | 397 | 367 | 326 | 276 | 223 | 167 | | | | |
| 53.0 | 485 | 466 | 439 | 409 | 371 | 333 | 280 | 231 | 167 | | |
| 56.8 | 511 | 500 | 477 | 450 | 416 | 379 | 337 | 291 | 250 | 189 | 76 |
| 60.6 | 549 | 538 | 519 | 500 | 477 | 443 | 405 | 360 | 314 | 265 | 208 |

# FORCEFIELD, CAST IRON AND STAINLESS STEEL

## Series 9313

### UPGRADE OPTIONS:

- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending wear life
- Hydraulic motor with case drain for maximum motor life

### FEATURES:

- ForceField Technology is a superior wet seal technology that provides the ultimate protection for the mechanical seal and avoids costly downtime
- Protects the mechanical seal against common failures related to dry run and chemical bonding by using a barrier fluid to keep it cool and lubricated
- Actively maintains a pressure differential between the barrier fluid and the pumping solution, which results in longer life and worry free operation.
- Capable of flows up to 197 GPM (746 LPM) and can produce up to 150 PSI (10.3 bar)
- Designed to be a drop-in replacement for standard Hypro hydraulically driven centrifugal pumps
- One year warranty covering pump, motor and seals

### FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Part Number | Current Product Equivalent | Inlet/Outlet | Max GPM | Max LPM | Max PSI | Max Bar | Max Hyd. GPM | Max Hyd. LPM |
|---|---|---|---|---|---|---|---|---|
| 9313C-M04 | 9303C-HM2C | 1-1/2" NPT x 1-1/4" NPT | 140 | 530 | 90 | 6.2 | 7 | 26.5 |
| 9313CU-M04 | 9303C-HM2C-U | 220 x 200 Universal Flange | 140 | 530 | 90 | 6.2 | 7 | 26.5 |
| 9313C-M05 | 9303C-HM4C | 1-1/2" NPT x 1-1/4" NPT | 155 | 587 | 100 | 6.9 | 8 | 30.3 |
| 9313CU-M05 | 9303C-HM4C-U | 220 x 200 Universal Flange | 155 | 587 | 100 | 6.9 | 8 | 30.3 |
| 9313C-M08 | 9303C-HM1C | 1-1/2" NPT x 1-1/4" NPT | 188 | 712 | 137 | 9.4 | 13 | 49.2 |
| 9313CU-M08 | 9303C-HM1C-U | 220 x 200 Universal Flange | 188 | 712 | 137 | 9.4 | 13 | 49.2 |
| 9313C-M10 | 9303C-HM5C | 1-1/2" NPT x 1-1/4" NPT | 197 | 746 | 150 | 10.3 | 16 | 60.6 |
| 9313CU-M10 | 9303C-HM5C-U | 220 x 200 Universal Flange | 197 | 746 | 150 | 10.3 | 16 | 60.6 |
| 9313C-M16 | 9303C-HM3C | 1-1/2" NPT x 1-1/4" NPT | 194 | 734 | 103 | 7.1 | 20 | 75.7 |
| 9313CU-M16 | 9303C-HM3C-U | 220 x 200 Universal Flange | 194 | 734 | 103 | 7.1 | 20 | 75.7 |
| 9313S-M04 | 9303S-HM2C | 1-1/2" NPT x 1-1/4" NPT | 140 | 530 | 90 | 6.2 | 7 | 26.5 |
| 9313SU-M04 | 9303S-HM2C-U | 220 x 200 Universal Flange | 140 | 530 | 90 | 6.2 | 7 | 26.5 |
| 9313S-M05 | 9303S-HM4C | 1-1/2" NPT x 1-1/4" NPT | 155 | 587 | 100 | 6.9 | 8 | 30.3 |
| 9313SU-M05 | 9303S-HM4C-U | 220 x 200 Universal Flange | 155 | 587 | 100 | 6.9 | 8 | 30.3 |
| 9313S-M08 | 9303S-HM1C | 1-1/2" NPT x 1-1/4" NPT | 188 | 712 | 137 | 9.4 | 13 | 49.2 |
| 9313SU-M08 | 9303S-HM1C-U | 220 x 200 Universal Flange | 188 | 712 | 137 | 9.4 | 13 | 49.2 |
| 9313S-M10 | 9303S-HM5C | 1-1/2" NPT x 1-1/4" NPT | 197 | 746 | 150 | 10.3 | 16 | 60.6 |
| 9313SU-M10 | 9303S-HM5C-U | 220 x 200 Universal Flange | 197 | 746 | 150 | 10.3 | 16 | 60.6 |
| 9313S-M16 | 9303S-HM3C | 1-1/2" NPT x 1-1/4" NPT | 194 | 734 | 103 | 7.1 | 20 | 75.7 |
| 9313SU-M16 | 9303S-HM3C-U | 220 x 200 Universal Flange | 194 | 734 | 103 | 7.1 | 20 | 75.7 |

Case Drain motor available - Add suffix "Y" (i.e. 9313CU-M08Y)

### 9313C-M04, 9313CU-M04, 9313S-M04, 9313SU-M04 — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI |
|---|---|---|---|---|---|---|---|---|
| 5 | 128 | 111 | 85 | 60 | 36 | 15 | | |
| 6 | 134* | 120 | 97 | 74 | 55 | 36 | 18 | |
| 7 | 140* | 127 | 104 | 83 | 64 | 45 | 29 | 14 |

### 9313C-M04, 9313CU-M04, 9313S-M04, 9313SU-M04 — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR |
|---|---|---|---|---|---|---|---|---|
| 18.9 | 485 | 420 | 322 | 227 | 136 | 57 | | |
| 22.7 | 507* | 454 | 367 | 280 | 208 | 136 | 68 | |
| 26.5 | 530* | 481 | 394 | 314 | 242 | 170 | 110 | 53 |

# FORCEFIELD, CAST IRON AND STAINLESS STEEL

## Series 9313

### 9313C-M05, 9313CU-M05, 9313S-M05, 9313SU-M05

**U.S. UNITS**

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 144* | 130 | 106 | 82 | 58 | 30 | | | |
| 7 | 150* | 138 | 119 | 96 | 75 | 55 | 34 | 14 | |
| 8 | 155* | 145* | 130 | 108 | 88 | 70 | 52 | 35 | 17 |

### 9313C-M05, 9313CU-M05, 9313S-M05, 9313SU-M05

**METRIC UNITS**

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 22.7 | 545* | 492 | 401 | 310 | 220 | 114 | | | |
| 26.5 | 568* | 522* | 450 | 363 | 284 | 208 | 129 | 53 | |
| 30.3 | 587* | 549* | 492 | 409 | 333 | 265 | 197 | 132 | 64 |

### 9313C-M08, 9313CU-M08, 9313S-M08, 9313SU-M08

**U.S. UNITS**

| Hyd. Flow GPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 178* | 169* | 157* | 138 | 117 | 97 | 72 | 48 | 22 | | |
| 12 | 183* | 176* | 165* | 149* | 131 | 111 | 93 | 74 | 52 | 29 | |
| 13 | 188* | 182* | 173* | 159* | 141 | 124 | 106 | 89 | 71 | 53 | 33 |

### 9313C-M08, 9313CU-M08, 9313S-M08, 9313SU-M08

**METRIC UNITS**

| Hyd. Flow LPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 674* | 640* | 594* | 522 | 443 | 367 | 273 | 182 | 83 | | |
| 45.4 | 693* | 666* | 625* | 564* | 496 | 420 | 352 | 280 | 197 | 110 | |
| 49.2 | 712* | 689* | 655* | 602* | 534 | 469 | 401 | 337 | 269 | 201 | 125 |

### 9313C-M10, 9313CU-M10, 9313S-M10, 9313SU-M10

**U.S. UNITS**

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 185* | 176* | 162* | 143 | 122 | 99 | 68 | 24 | | | |
| 14 | 190* | 183* | 172* | 155* | 137 | 117 | 96 | 70 | 35 | | |
| 15 | 193* | 187* | 179* | 168* | 154* | 135 | 113 | 91 | 66 | 41 | 16 |
| 16 | 197* | 192* | 186* | 178* | 166* | 150 | 132 | 114 | 96 | 76 | 55 |

### 9313C-M10, 9313CU-M10, 9313S-M10, 9313SU-M10

**METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 49.2 | 700* | 666* | 613* | 541 | 462 | 375 | 257 | 91 | | | |
| 53.0 | 719* | 693* | 651* | 587* | 519 | 443 | 363 | 265 | 132 | | |
| 56.8 | 731* | 708* | 678* | 636* | 583* | 511 | 428 | 344 | 250 | 155 | 61 |
| 60.6 | 746* | 727* | 704* | 674* | 628* | 568 | 500 | 432 | 363 | 288 | 208 |

### 9313C-M16, 9313CU-M16, 9313S-M16, 9313SU-M16

**U.S. UNITS**

| Hyd. Flow GPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 168* | 154* | 134 | 105 | 66 | | | | |
| 18 | 185* | 177* | 165* | 145* | 119 | 85 | 41 | | |
| 20 | 194* | 190* | 184* | 175* | 160* | 139 | 115 | 78 | 20 |

### 9313C-M16, 9313CU-M16, 9313S-M16, 9313SU-M16

**METRIC UNITS**

| Hyd. Flow LPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 60.6 | 636* | 583* | 507* | 397 | 250 | | | | |
| 68.1 | 700* | 670* | 625* | 549* | 450 | 322 | 155 | | |
| 75.7 | 734* | 719* | 697* | 662* | 606* | 526 | 435 | 295 | 76 |

*Flow rates can only be achieved with sufficient NPSHA (Net Positive Suction Head Available), refer to OIPM for details.

# HYDRAULICALLY-DRIVEN, CAST IRON & STAINLESS STEEL, SELF-PRIMING

## Series 9303C-SP and 9303S-SP

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

**FEATURES:**

- Available in cast iron and 316 stainless steel for extended pump life
- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Impeller: Cast Iron models – Nylon; (GTX available)
  Stainless Steel models – Polypropylene
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet
- Max. motor psi: 3000 (bar: 207)
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models – Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Weight: 38 lbs./17.3 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9303C-HM1C-SP | 122 | 462 | 130 | 9.0 | 13 | 49.2 | Open/Closed |
| 9303C-HM2C-SP | 104 | 398 | 80 | 5.5 | 6 | 22.7 | Open/Closed |
| 9303C-HM3C-SP | 120 | 454 | 95 | 6.5 | 24 | 90.8 | Open/Closed |
| 9303C-HM4C-SP | 99 | 375 | 97 | 6.7 | 7 | 26.5 | Open/Closed |
| 9303C-HM5C-SP | 140 | 530 | 140 | 9.7 | 16 | 60.5 | Open/Closed |
| 9303S-HM1C-SP | 114 | 432 | 130 | 9.0 | 13 | 49.2 | Open/Closed |
| 9303S-HM2C-SP | 97 | 361 | 95 | 6.5 | 6 | 22.7 | Open/Closed |
| 9303S-HM3C-SP | 125 | 473 | 98 | 6.8 | 20 | 75.7 | Open/Closed |
| 9303S-HM4C-SP | 115 | 435 | 93 | 6.4 | 7 | 26.5 | Open/Closed |
| 9303S-HM5C-SP | 147 | 556 | 145 | 9.9 | 16 | 60.5 | Open/Closed |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | | |
| 3430-0480SP | Self priming chamber kit | | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9303C-HM1C-SP-B)

Teflon® is a registered trademark of E.I. DuPont de Nemours and Co.
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# HYDRAULICALLY-DRIVEN, CAST IRON & STAINLESS STEEL, SELF-PRIMING

## Series 9303C-SP and 9303S-SP

### 9303C-HM1C-SP, 9303S-HM1C-SP — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 119 | 111 | 102 | 89 | 75 | 58 | 42 | 25 | | | |
| 12 | 122 | 120 | 113 | 104 | 94 | 81 | 69 | 55 | 39 | 24 | |
| 13 | 122 | 121 | 119 | 111 | 102 | 90 | 78 | 65 | 52 | 39 | 26 |

### 9303C-HM1C-SP, 9303S-HM1C-SP — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 450 | 420 | 386 | 337 | 284 | 220 | 159 | 95 | | | |
| 45.4 | 462 | 454 | 428 | 394 | 356 | 307 | 261 | 208 | 148 | 91 | |
| 49.2 | 462 | 458 | 450 | 420 | 386 | 341 | 295 | 246 | 197 | 148 | 98 |

### 9303C-HM2C-SP, 9303S-HM2C-SP — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|---|
| 4 | 57 | 43 | 26 | | | | |
| 5 | 80 | 67 | 53 | 39 | 23 | | |
| 6 | 98 | 88 | 78 | 67 | 55 | 42 | 29 |

### 9303C-HM2C-SP, 9303S-HM2C-SP — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|---|
| 15.1 | 216 | 163 | 98 | | | | |
| 18.9 | 303 | 254 | 201 | 148 | 87 | | |
| 22.7 | 371 | 333 | 295 | 254 | 208 | 159 | 110 |

### 9303C-HM3C-SP, 9303S-HM3C-SP — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI |
|---|---|---|---|---|---|---|---|---|
| 15 | 104 | 90 | 74 | 55 | 23 | | | |
| 18 | 119 | 113 | 102 | 87 | 69 | 46 | | |
| 20 | 120 | 119 | 114 | 106 | 91 | 74 | 55 | 33 |

### 9303C-HM3C-SP, 9303S-HM3C-SP — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR |
|---|---|---|---|---|---|---|---|---|
| 56.8 | 394 | 341 | 280 | 208 | 87 | | | |
| 68.1 | 450 | 428 | 386 | 329 | 261 | 174 | | |
| 75.7 | 454 | 450 | 432 | 401 | 344 | 280 | 208 | 125 |

### 9303C-HM4C-SP, 9303S-HM4C-SP — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI |
|---|---|---|---|---|---|---|---|---|
| 5 | 72 | 60 | 46 | 30 | 15 | | | |
| 6 | 87 | 79 | 66 | 52 | 38 | 27 | 13 | |
| 7 | 95 | 91 | 84 | 71 | 58 | 42 | 30 | 16 |

### 9303C-HM4C-SP, 9303S-HM4C-SP — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR |
|---|---|---|---|---|---|---|---|---|
| 18.9 | 273 | 227 | 174 | 114 | 57 | | | |
| 22.7 | 329 | 299 | 250 | 197 | 144 | 102 | 49 | |
| 26.5 | 360 | 344 | 318 | 269 | 220 | 159 | 114 | 61 |

### 9303C-HM5C-SP, 9303S-HM5C-SP — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 450 | 420 | 386 | 337 | 284 | 220 | 159 | 95 | | | |
| 45.4 | 462 | 454 | 428 | 394 | 356 | 307 | 261 | 208 | 148 | 91 | |
| 49.2 | 462 | 458 | 450 | 420 | 386 | 341 | 295 | 246 | 197 | 148 | 98 |

### 9303C-HM5C-SP, 9303S-HM5C-SP — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 49.2 | 432 | 420 | 386 | 337 | 284 | 220 | 159 | 95 | | | |
| 53.0 | 447 | 443 | 428 | 394 | 356 | 307 | 261 | 208 | 148 | 91 | |
| 56.8 | 462 | 458 | 450 | 420 | 386 | 341 | 295 | 246 | 197 | 148 | 98 |

# HYDRAULICALLY-DRIVEN, POLYPROPYLENE

## Series 9303P

**UPGRADE OPTIONS:**

- Increase abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Polypropylene
- Impeller: Polypropylene
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Max. motor psi: 3000 (bar: 207)
- Weight: 21 lbs./9.5 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9303P-HM1C | 110 | 416 | 130 | 9.0 | 13 | 49.2 | Open/Closed |
| 9303P-HM2C | 82 | 310 | 95 | 6.5 | 6 | 22.7 | Open/Closed |
| 9303P-HM3C | 110 | 416 | 93 | 6.4 | 24 | 90.8 | Open/Closed |
| 9303P-HM4C | 82 | 310 | 84 | 5.3 | 7 | 26.5 | Open/Closed |
| 9303P-HM5C | 113 | 427 | 120 | 8.3 | 16 | 60.5 | Open/Closed |
| 3430-0445 | Seal and o-ring repair kit | | | | | | |
| 3430-0593 | Life Guard silicon carbide seal kit | | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9303P-HM1C-B)

Teflon® is a registered trademark of E.I. DuPont de Nemours and Co.
Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

### 9303P-HM1C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 93 | 90 | 86 | 80 | 74 | 67 | 59 | 49 | 36 | 18 | | |
| 12 | 102 | 99 | 95 | 91 | 87 | 81 | 74 | 66 | 55 | 39 | 19 | |
| 13 | 109 | 106 | 103 | 99 | 94 | 88 | 82 | 74 | 65 | 54 | 42 | 28 |

### 9303P-HM1C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 352 | 341 | 326 | 303 | 280 | 254 | 223 | 185 | 136 | 68 | | |
| 45.4 | 386 | 375 | 360 | 344 | 329 | 307 | 280 | 250 | 208 | 148 | 72 | |
| 49.2 | 413 | 401 | 390 | 375 | 356 | 333 | 310 | 280 | 246 | 204 | 159 | 106 |

### 9303P-HM2C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 65 | 56 | 46 | 38 | 20 | | | | |
| 6 | 74 | 72 | 64 | 56 | 48 | 38 | 21 | | |
| 7 | 80 | 75 | 70 | 62 | 57 | 48 | 40 | 28 | 9 |

### 9303P-HM2C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 18.9 | 246 | 212 | 174 | 144 | 76 | | | | |
| 22.7 | 280 | 273 | 242 | 212 | 182 | 144 | 79 | | |
| 26.5 | 303 | 284 | 265 | 235 | 216 | 182 | 151 | 106 | 34 |

### 9303P-HM3C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 85 | 80 | 70 | 60 | 44 | | | | |
| 18 | 100 | 97 | 92 | 84 | 76 | 63 | 48 | | |
| 20 | 109 | 108 | 104 | 99 | 90 | 82 | 71 | 60 | 39 |

### 9303P-HM3C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 56.8 | 322 | 303 | 265 | 227 | 167 | | | | |
| 68.1 | 379 | 367 | 348 | 318 | 288 | 238 | 182 | | |
| 75.7 | 413 | 409 | 394 | 375 | 341 | 310 | 269 | 227 | 148 |

### 9303P-HM4C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI |
|---|---|---|---|---|---|---|---|---|
| 5 | 60 | 52 | 41 | 26 | | | | |
| 6 | 70 | 66 | 58 | 48 | 37 | 21 | | |
| 7 | 80 | 76 | 70 | 63 | 55 | 45 | 32 | 15 |

### 9303P-HM4C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR |
|---|---|---|---|---|---|---|---|---|
| 18.9 | 227 | 197 | 155 | 98 | | | | |
| 22.7 | 265 | 250 | 220 | 182 | 140 | 79 | | |
| 26.5 | 303 | 288 | 265 | 238 | 208 | 170 | 121 | 57 |

### 9303P-HM5C — U.S. UNITS

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 94 | 92 | 86 | 78 | 68 | 58 | 44 | 15 | | | |
| 13 | 100 | 98 | 94 | 88 | 79 | 70 | 60 | 48 | 25 | | |
| 14 | 108 | 107 | 104 | 100 | 94 | 86 | 77 | 68 | 57 | 42 | |
| 15 | 113 | 112 | 110 | 106 | 100 | 93 | 86 | 78 | 68 | 56 | 40 |

### 9303P-HM5C — METRIC UNITS

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45.4 | 356 | 348 | 326 | 295 | 257 | 220 | 167 | 57 | | | |
| 49.2 | 379 | 371 | 356 | 333 | 299 | 265 | 227 | 182 | 95 | | |
| 53.0 | 409 | 405 | 394 | 379 | 356 | 326 | 291 | 257 | 216 | 159 | |
| 56.8 | 428 | 424 | 416 | 401 | 379 | 352 | 326 | 295 | 257 | 212 | 151 |

# HYDRAULICALLY-DRIVEN, CAST IRON

## Series 9305C

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Available in cast iron
- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port sizes: 2" NPT inlet, 1-1/2" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Impeller: Nylon
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet
- Max. motor psi: 3000 (bar: 207)
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Weight: 48 lbs./21.8 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9305C-HM3C | 182 | 689 | 156 | 10.8 | 19 | 72 | Open/Closed |
| 3430-0500 | | | | | | | Seal and o-ring repair kit |
| 3430-0601 | | | | | | | Life Guard silicon carbide seal kit |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9305C-HM3C-B)

**9305C-HM3C** **U.S. UNITS**

| Hyd. Flow GPM | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI | GPM at 140 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 173 | 164 | 148 | 127 | 97 | 70 | 44 | 14 | | |
| 18 | 177 | 175 | 168 | 154 | 135 | 109 | 87 | 62 | 34 | |
| 19 | 180 | 179 | 177 | 167 | 151 | 134 | 115 | 95 | 72 | 44 |

**9305C-HM3C** **METRIC UNITS**

| Hyd. Flow LPM | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR | LPM at 9.7 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 64.4 | 655 | 621 | 560 | 481 | 367 | 265 | 167 | 53 | | |
| 68.1 | 670 | 662 | 636 | 583 | 511 | 413 | 329 | 235 | 129 | |
| 71.9 | 685 | 678 | 670 | 632 | 572 | 507 | 435 | 360 | 273 | 167 |

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Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# HYDRAULICALLY-DRIVEN, CAST IRON, SELF-PRIMING

## Series 9305C-SP and 9305C-BSP

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Available in cast iron
- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port sizes: 2" NPT inlet, 2" NPT outlet (Model 9305C-HM3C-SP), 2" BSP inlet, 2" BSP outlet (Model 9305C-HM3C-BSP)
- Max. fluid temperature: 140°F/60°C
- Impeller: Nylon
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet
- Max. motor psi: 3000 (bar: 207)
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Weight: 59 lbs./26.8 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9305C-HM3C-SP | 155 | 587 | 143 | 9.9 | 19 | 72 | Open/Closed |
| 9305C-HM3C-BSP | 155 | 587 | 143 | 9.9 | 19 | 72 | Open/Closed |
| 3430-0601 | | | | | | | Life Guard silicon carbide seal kit |
| 3430-0481SP | | | | | | | Self priming chamber kit |
| 3430-0481BSP | | | | | | | Self priming chamber kit (BSP) |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9305C-HM3C-B-SP)

**9305C-HM3C-SP, 9305C-HM3C-BSP** — **U.S. UNITS**

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 148 | 145 | 135 | 118 | 100 | 81 | 60 | 37 | 17 | | |
| 18 | 150 | 149 | 147 | 138 | 120 | 102 | 81 | 60 | 38 | 14 | |
| 19 | 153 | 152 | 150 | 147 | 140 | 120 | 104 | 85 | 66 | 45 | 28 |

**9305C-HM3C-SP, 9305C-HM3C-BSP** — **METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 64.4 | 560 | 549 | 511 | 447 | 379 | 307 | 227 | 140 | 64 | | |
| 68.1 | 568 | 564 | 556 | 522 | 454 | 386 | 307 | 227 | 144 | 53 | |
| 71.9 | 579 | 575 | 568 | 556 | 553 | 454 | 394 | 322 | 250 | 170 | 106 |

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Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# HYDRAULICALLY-DRIVEN, CAST IRON & STAINLESS STEEL

## Series 9306C and 9306S

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

**FEATURES:**

- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port sizes: 2" NPT inlet, 1-1/2" NPT outlet; 220 x 220 (U) Universal flange available
- Max. fluid temperature: 140°F/60°C
- Available in cast iron and 316 stainless steel for extended pump life
- Impeller: Nylon (cast iron models); polypropylene (stainless steel models); (GTX available)
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet
- Max. motor psi: 3000 (bar: 207)
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models – Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Weight: 33 lbs./15 kg

**FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:**

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9306C-HM1C* | 207 | 784 | 127 | 8.8 | 13 | 49.2 | Open/Closed |
| 9306C-HM3C* | 214 | 810 | 128 | 8.8 | 24 | 90.8 | Open/Closed |
| 9306C-HM5C* | 212 | 803 | 140 | 9.6 | 17 | 64.4 | Open/Closed |
| 9306S-HM1C | 207 | 784 | 127 | 8.8 | 13 | 49.2 | Open/Closed |
| 9306S-HM3C | 214 | 810 | 128 | 8.8 | 24 | 90.8 | Open/Closed |
| 9306S-HM5C | 212 | 803 | 140 | 9.6 | 17 | 64.4 | Open/Closed |
| 3430-0332 | Seal and o-ring repair kit | | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | | |

*Universal Flange (220 x 220) - Add Suffix "U" (i.e.: 9306C-HM3C-U) - Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9306C-HM3C-B)

**9306C-HM1C, 9306S-HM1C, 9306C-HM1C-U, 9306S-HM1C-U** — **U.S. UNITS**

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 207 | 200 | 186 | 155 | 122 | 88 | 44 | | | |
| 12 | 207 | 207 | 196 | 179 | 149 | 119 | 88 | 53 | | |
| 13 | 207 | 207 | 207 | 195 | 171 | 144 | 115 | 85 | 53 | 20 |

**9306C-HM1C, 9306S-HM1C, 9306C-HM1C-U, 9306S-HM1C-U** — **METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 784 | 757 | 704 | 587 | 462 | 333 | 167 | | | |
| 45.4 | 784 | 784 | 742 | 678 | 564 | 450 | 333 | 201 | | |
| 49.2 | 784 | 784 | 784 | 738 | 647 | 545 | 435 | 322 | 201 | 76 |

**9306C-HM3C, 9306S-HM3C, 9306C-HM3C-U, 9306S-HM3C-U** — **U.S. UNITS**

| Hyd. Flow GPM | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 190 | 179 | 159 | 90 | | | | | |
| 20 | 214 | 203 | 199 | 181 | 139 | 49 | | | |
| 22 | 214 | 214 | 214 | 210 | 198 | 176 | 127 | 16 | |
| 24 | 214 | 214 | 214 | 214 | 214 | 210 | 190 | 154 | 101 |

**9306C-HM3C, 9306S-HM3C, 9306C-HM3C-U, 9306S-HM3C-U** — **METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 68.1 | 719 | 678 | 602 | 341 | | | | | |
| 75.7 | 810 | 768 | 753 | 685 | 526 | 185 | | | |
| 83.3 | 810 | 810 | 810 | 795 | 750 | 666 | 481 | 61 | |
| 90.8 | 810 | 810 | 810 | 810 | 810 | 795 | 719 | 583 | 382 |

**9306C-HM5C, 9306S-HM5C, 9306C-HM5C-U, 9306S-HM5C-U** — **U.S. UNITS**

| Hyd. Flow GPM | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 212 | 212 | 212 | 187 | 150 | 114 | 65 | 19 | | |
| 16 | 212 | 212 | 212 | 212 | 189 | 158 | 125 | 87 | 42 | |
| 17 | 212 | 212 | 212 | 212 | 212 | 189 | 162 | 133 | 102 | 58 |

**9306C-HM5C, 9306S-HM5C, 9306C-HM5C-U, 9306S-HM5C-U** — **METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 56.8 | 803 | 803 | 803 | 708 | 568 | 432 | 246 | 72 | | |
| 60.6 | 803 | 803 | 803 | 803 | 715 | 598 | 473 | 329 | 159 | |
| 64.4 | 803 | 803 | 803 | 803 | 803 | 715 | 613 | 503 | 386 | 220 |

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Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# HYDRAULICALLY-DRIVEN, CAST IRON & STAINLESS STEEL-3U FLANGED

## Series 9306C-3U and 9306S-3U

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

**FEATURES:**

- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Port Sizes: 300 x 220 (3U) Universal flange
- Max. fluid temperature: 140°F/60°C
- Available in cast iron and 316 stainless steel for extended pump life
- Impeller: Nylon (cast iron models); polypropylene (stainless steel models); (GTX available)
- Motor: internal gear gerotor
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet
- Max. motor psi: 3000 (bar: 207)
- Pump seals: Cast Iron models – Viton®/ceramic standard; Life Guard silicon carbide (B) available; Stainless Steel models – Life Guard silicon carbide
- Life Guard seals are the industry standard on OEM equipment
- Hydraulic motor seal: double-lip Teflon®
- Weight: 33 lbs./15 kg

**FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:**

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

**ORDER INFORMATION**

| Model Number | Max GPM | MaxLPM | MaxPSI | MaxBAR | Max Hyd.GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9306C-HM1C-3U | 283 | 1071 | 127 | 8.8 | 13 | 49.2 | Open/Closed |
| 9306C-HM3C-3U | 322 | 1219 | 128 | 8.8 | 24 | 90.3 | Open/Closed |
| 9306C-HM5C-3U | 312 | 1181 | 140 | 9.6 | 17 | 64.4 | Open/Closed |
| 9306S-HM1C-3U | 283 | 1071 | 127 | 8.8 | 13 | 49.2 | Open/Closed |
| 9306S-HM3C-3U | 322 | 1219 | 128 | 8.8 | 24 | 90.3 | Open/Closed |
| 9306S-HM5C-3U | 312 | 1181 | 140 | 9.6 | 17 | 64.4 | Open/Closed |
| 3430-0332 | Seal and o-ring repair kit | | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9306C-HM1C-B3U)

**9306C-HM1C-3U, 9306S-HM1C-3U** — **U.S. UNITS**

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 255 | 225 | 190 | 155 | 122 | 88 | 44 | 5 | | |
| 12 | 271 | 242 | 211 | 179 | 149 | 119 | 88 | 53 | 19 | |
| 13 | 283 | 258 | 226 | 199 | 171 | 144 | 115 | 85 | 53 | 24 |

**9306C-HM1C-3U, 9306S-HM1C-3U** — **METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 965 | 852 | 719 | 587 | 462 | 333 | 167 | 19 | | |
| 45.4 | 1026 | 916 | 799 | 678 | 564 | 450 | 333 | 201 | 72 | |
| 49.2 | 1071 | 977 | 856 | 753 | 647 | 545 | 435 | 322 | 201 | 91 |

**9306C-HM3C-3U, 9306S-HM3C-3U** — **U.S. UNITS**

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 285 | 256 | 213 | 165 | 90 | | | | | |
| 20 | 308 | 297 | 268 | 233 | 192 | 139 | 49 | | | |
| 22 | 312 | 312 | 308 | 288 | 255 | 219 | 176 | 127 | 16 | |
| 24 | 322 | 322 | 320 | 316 | 298 | 265 | 231 | 196 | 154 | 101 |

**9306C-HM3C-3U, 9306S-HM3C-3U** — **METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 68.1 | 1079 | 969 | 806 | 624 | 341 | | | | | |
| 75.7 | 1166 | 1124 | 1014 | 882 | 727 | 526 | 185 | | | |
| 83.3 | 1181 | 1181 | 1166 | 1090 | 965 | 829 | 666 | 481 | 61 | |
| 90.8 | 1219 | 1219 | 1211 | 1196 | 1128 | 1003 | 874 | 742 | 583 | 382 |

**9306C-HM5C-3U, 9306S-HM5C-3U** — **U.S. UNITS**

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 285 | 269 | 242 | 212 | 182 | 149 | 112 | 68 | 19 | | |
| 16 | 308 | 291 | 269 | 242 | 212 | 179 | 149 | 115 | 78 | 37 | |
| 17 | 312 | 312 | 297 | 270 | 242 | 214 | 187 | 154 | 122 | 82 | 44 |

**9306C-HM5C-3U, 9306S-HM5C-3U** — **METRIC UNITS**

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 8.9 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 56.8 | 1079 | 1018 | 916 | 802 | 689 | 564 | 424 | 257 | 72 | | |
| 60.6 | 1166 | 1101 | 1018 | 916 | 802 | 677 | 564 | 435 | 307 | 159 | |
| 64.4 | 1181 | 1181 | 1124 | 1022 | 916 | 810 | 708 | 583 | 462 | 310 | 167 |

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# FORCEFIELD, CAST IRON & STAINLESS STEEL

## Series 9314

### UPGRADE OPTIONS:

- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending wear life
- Hydraulic motor with case drain for maximum motor life

### FEATURES:

- ForceField Technology is a superior wet seal technology that provides the ultimate protection for the mechanical seal and avoids costly downtime
- Protects the mechanical seal against common failures related to dry run and chemical bonding by using a barrier fluid to keep it cool and lubricated
- Actively maintains a pressure differential between the barrier fluid and the pumping solution, which results in longer life and worry free operation.
- Capable of flows up to 233 GPM (882 LPM) and can produce up to 150 PSI (10.3 bar)
- Designed to be a drop-in replacement for standard Hypro hydraulically driven centrifugal pumps
- One year warranty covering pump, motor and seals

### FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Part Number | Current Product Equivalent | Inlet/Outlet | Max GPM | Max LPM | Max PSI | Max Bar | Max Hyd. GPM | Max Hyd. LPM |
|---|---|---|---|---|---|---|---|---|
| 9314C-M08 | 9306C-HM1C | 2" NPT x 1-1/2" NPT | 227 | 859 | 132 | 9.1 | 14 | 53 |
| 9314CU-M08 | 9306C-HM1C-U | 220 x 220 Universal Flange | 227 | 859 | 132 | 9.1 | 14 | 53 |
| 9314C-M10 | 9306C-HM5C | 2" NPT x 1-1/2" NPT | 233 | 882 | 150 | 10.3 | 17 | 64.4 |
| 9314CU-M10 | 9306C-HM5C-U | 220 x 220 Universal Flange | 233 | 882 | 150 | 10.3 | 17 | 64.4 |
| 9314C-M16 | 9306C-HM3C | 2" NPT x 1-1/2" NPT | 232 | 878 | 138 | 9.5 | 24 | 90.8 |
| 9314CU-M16 | 9306C-HM3C-U | 220 x 220 Universal Flange | 232 | 878 | 138 | 9.5 | 24 | 90.8 |
| 9314S-M08 | 9306S-HM1C | 2" NPT x 1-1/2" NPT | 227 | 859 | 132 | 9.1 | 14 | 53 |
| 9314SU-M08 | 9306S-HM1C-U | 220 x 220 Universal Flange | 227 | 859 | 132 | 9.1 | 14 | 53 |
| 9314S-M10 | 9306S-HM5C | 2" NPT x 1-1/2" NPT | 233 | 882 | 150 | 10.3 | 17 | 64.4 |
| 9314SU-M10 | 9306S-HM5C-U | 220 x 220 Universal Flange | 233 | 882 | 150 | 10.3 | 17 | 64.4 |
| 9314S-M16 | 9306S-HM3C | 2" NPT x 1-1/2" NPT | 232 | 878 | 138 | 9.5 | 24 | 90.8 |
| 9314SU-M16 | 9306S-HM3C-U | 220 x 220 Universal Flange | 232 | 878 | 138 | 9.5 | 24 | 90.8 |

Case Drain motor available - Add suffix "Y" (i.e. 9314CU-M08Y)

# FORCEFIELD, CAST IRON & STAINLESS STEEL

## Series 9314

### 9314C-M08, 9314CU-M08, 9314S-M08, 9314SU-M08 — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 217 | 190 | 152 | 111 | 73 | 43 | 12 | | | |
| 12 | 224* | 203 | 175 | 146 | 115 | 80 | 49 | 24 | | |
| 13 | 226* | 211* | 186 | 160 | 131 | 106 | 81 | 56 | 29 | |
| 14 | 227* | 216* | 196 | 171 | 146 | 120 | 95 | 71 | 50 | 27 |

### 9314C-M08, 9314CU-M08, 9314S-M08, 9314SU-M08 — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 821 | 719 | 575 | 420 | 276 | 163 | 45 | | | |
| 45.4 | 848* | 768 | 662 | 553 | 435 | 303 | 185 | 91 | | |
| 49.2 | 856* | 799* | 704 | 606 | 496 | 401 | 307 | 212 | | |
| 53.0 | 859* | 818* | 742 | 647 | 553 | 454 | 360 | 269 | 189 | 102 |

### 9314C-M10, 9314CU-M10, 9314S-M10, 9314SU-M10 — U.S. UNITS

| Hyd. Flow GPM | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 227* | 217* | 200 | 175 | 147 | 120 | 87 | 57 | 22 | |
| 16 | 231* | 224* | 212 | 190 | 163 | 136 | 111 | 83 | 53 | 17 |
| 17 | 233* | 228* | 220* | 205 | 179 | 151 | 125 | 100 | 74 | 49 |

### 9314C-M10, 9314CU-M10, 9314S-M10, 9314SU-M10 — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 56.8 | 859* | 821* | 757 | 662 | 556 | 454 | 329 | | | |
| 60.6 | 874* | 848* | 803 | 719 | 617 | 515 | 420 | 314 | | |
| 64.4 | 882* | 863* | 833* | 776 | 678 | 572 | 473 | 379 | 280 | 185 |

### 9314C-M16, 9314CU-M16, 9314S-M16, 9314SU-M16 — U.S. UNITS

| Hyd. Flow GPM | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 216 | 191 | 155 | 100 | 30 | | | | | |
| 20 | 232* | 224* | 203 | 175 | 135 | 78 | | | | |
| 22 | 232* | 230* | 224* | 211 | 187 | 153 | 107 | 51 | | |
| 24 | 232* | 230* | 226* | 222* | 212 | 190 | 162 | 126 | 85 | 34 |

### 9314C-M16, 9314CU-M16, 9314S-M16, 9314SU-M16 — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 68.1 | 818 | 723 | 587 | 379 | 114 | | | | | |
| 75.7 | 878* | 848* | 768 | 662 | 511 | 295 | | | | |
| 83.3 | 878* | 871* | 848* | 799 | 708 | 579 | 405 | 193 | | |
| 90.8 | 878* | 871* | 856* | 840* | 803 | 719 | 613 | 477 | 322 | 129 |

*Flow rates can only be achieved with sufficient NPSHA (Net Positive Suction Head Available), refer to OIPM for details.

# FORCEFIELD, CAST IRON & STAINLESS STEEL

## Series 9316

**UPGRADE OPTIONS:**

- Hydraulic motor includes a case drain for maximum motor life
  - Life Guard seals are the OEM standard
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

**FEATURES:**

- ForceField Technology is a superior wet seal technology that provides the ultimate protection for the mechanical seal and avoids costly downtime
- Protects the mechanical seal against common failures related to dry run and chemical bonding by using a barrier fluid to keep it cool and lubricated
- Actively maintains a pressure differential between the barrier fluid and the pumping solution, which results in longer life and worry free operation.
- Capable of flows up to 311 GPM (1177 LPM) and can produce up to 150 PSI (10.3 bar)
- Designed to be a drop-in replacement for standard Hypro hydraulically driven centrifugal pumps
- One year warranty covering pump, motor and seals

**FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:**

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

**ORDER INFORMATION**

| Part Number | Current Product Equivalent | Inlet/Outlet | Max GPM | Max LPM | Max PSI | Max Bar | Max Hyd. GPM | Max Hyd. LPM |
|---|---|---|---|---|---|---|---|---|
| 9316C3U-M08 | 9306C-HM1C-3U | 300 x 220 Universal Flange | 286 | 1083 | 127 | 8.8 | 14 | 53 |
| 9316C3U-M10 | 9306C-HM5C-3U | 300 x 220 Universal Flange | 311 | 1177 | 150 | 10.3 | 18 | 68.1 |
| 9316C3U-M16 | 9306C-HM3C-3U | 300 x 220 Universal Flange | 307 | 1162 | 128 | 8.8 | 24 | 90.8 |
| 9316S3U-M08 | 9306S-HM1C-3U | 300 x 220 Universal Flange | 286 | 1083 | 127 | 8.8 | 14 | 53 |
| 9316S3U-M10 | 9306S-HM5C-3U | 300 x 220 Universal Flange | 311 | 1177 | 150 | 10.3 | 18 | 68.1 |
| 9316S3U-M16 | 9306S-HM3C-3U | 300 x 220 Universal Flange | 307 | 1162 | 128 | 8.8 | 24 | 90.8 |

Case Drain motor available - Add suffix "Y" (i.e. 9313CU-M08Y)

# FORCEFIELD, CAST IRON & STAINLESS STEEL

## Series 9316

### 9316C3U-M08, 9316S3U-M08 — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 250 | 213 | 175 | 131 | 86 | 40 | | | | |
| 12 | 266* | 232 | 194 | 154 | 116 | 82 | 48 | | | |
| 13 | 274* | 243 | 207 | 174 | 140 | 109 | 78 | 48 | | |
| 14 | 286* | 262* | 230 | 196 | 166 | 134 | 104 | 76 | 49 | 20 |

### 9316C3U-M08, 9316S3U-M08 — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 946 | 806 | 662 | 496 | 326 | 151 | | | | |
| 45.4 | 1007* | 878 | 734 | 583 | 439 | 310 | 182 | | | |
| 49.2 | 1037* | 920 | 784 | 659 | 530 | 413 | 295 | 182 | | |
| 53.0 | 1083* | 992* | 871 | 742 | 628 | 507 | 394 | 288 | 185 | 76 |

### 9316C3U-M10, 9316S3U-M10 — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 298* | 283* | 255 | 223 | 189 | 151 | 108 | 65 | | | |
| 16 | 304* | 295* | 276* | 247 | 212 | 175 | 139 | 104 | 65 | 29 | |
| 17 | 307* | 299* | 284* | 261* | 229 | 197 | 162 | 130 | 98 | 67 | 35 |
| 18 | 311* | 303* | 291* | 271* | 242 | 210 | 178 | 150 | 121 | 93 | 62 |

### 9316C3U-M10, 9316S3U-M10 — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 56.8 | 1128* | 1071* | 965 | 844 | 715 | 572 | 409 | 246 | | | |
| 60.6 | 1151* | 1117* | 1045* | 935 | 803 | 662 | 526 | 394 | 246 | 110 | |
| 64.4 | 1162* | 1132* | 1075* | 988* | 867 | 746 | 613 | 492 | 371 | 254 | 132 |
| 68.1 | 1177* | 1147* | 1102* | 1026* | 916 | 795 | 674 | 568 | 458 | 352 | 235 |

### 9316C3U-M16, 9316S3U-M16 — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 279* | 249 | 210 | 164 | 94 | | | | | |
| 20 | 302* | 290* | 265* | 231 | 190 | 128 | 35 | | | |
| 22 | - | 305* | 299* | 277* | 243 | 202 | 151 | 91 | | |
| 24 | - | - | 307* | 301* | 280* | 252 | 217 | 177 | 130 | 63 |

### 9316C3U-M16, 9316S3U-M16 — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 68.1 | 1056* | 943 | 795 | 621 | 356 | | | | | |
| 75.7 | 1143* | 1098* | 1003* | 874 | 719 | 485 | 132 | | | |
| 83.3 | - | 1155* | 1132* | 1049* | 920 | 765 | 572 | 344 | | |
| 90.8 | - | - | 1162* | 1139* | 1060* | 954 | 821 | 670 | 492 | 238 |

*Flow rates can only be achieved with sufficient NPSHA (Net Positive Suction Head Available), refer to OIPM for details.

# HYDRAULICALLY-DRIVEN, CAST IRON

## Series 9307C

### FEATURES:

- Hydraulic motor drive (for open center closed center and load-sensing systems)
- Port sizes: 3" NPT inlet, 2" NPT outlet
- 300 x 220 universal flange available (U)
- Max. fluid temperature: 140°F/60°C
- Impeller: stainless steel
- Motor: external gear
- Hydraulic ports: -10 SAE inlet and -12 SAE outlet
- Max. motor psi: 3000 (bar: 207)
- Pump seals: Life Guard silicon carbide standard
- Life Guard seals are the industry standard on OEM equipment
- Weight: 86 lbs./39 kg

### FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9307C-GM10 | 370 | 1400 | 135 | 9.3 | 20 | 75.7 | Open/Closed |
| 9307C-GM12 | 370 | 1400 | 135 | 9.3 | 23 | 87.1 | Open/Closed |
| 3430-0604 | Life Guard silicon carbide seal kit | | | | | | |
| 9307CX | Pump head only, no hydraulic motor | | | | | | |

*Universal Flange (300 x 220) - Add Suffix "U" (i.e.: 9307C-GM10-U)

### 9307C-GM10, 9307C-GM10-U — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 282 | 253 | 219 | 168 | 73 | | | | |
| 17 | 318 | 288 | 258 | 222 | 174 | 95 | | | |
| 18 | 346 | 318 | 291 | 258 | 222 | 166 | 90 | | |
| 19 | 361 | 361 | 338 | 311 | 281 | 250 | 201 | 137 | |
| 20 | 370 | 370 | 351 | 328 | 301 | 275 | 241 | 184 | 106 |

### 9307C-GM10, 9307C-GM10-U — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 60.6 | 1067 | 958 | 829 | 636 | 276 | | | | |
| 64.4 | 1204 | 1090 | 977 | 840 | 659 | 360 | | | |
| 68.1 | 1310 | 1204 | 1101 | 977 | 840 | 628 | 341 | | |
| 71.9 | 1366 | 1366 | 1279 | 1177 | 1064 | 946 | 761 | 519 | |
| 75.7 | 1400 | 1400 | 1329 | 1241 | 1139 | 1041 | 912 | 696 | 401 |

### 9307C-GM12, 9307C-GM12-U — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 222 | 180 | 115 | | | | | | |
| 17 | 246 | 212 | 166 | 92 | | | | | |
| 18 | 274 | 245 | 209 | 157 | 58 | | | | |
| 19 | 302 | 272 | 242 | 203 | 150 | | | | |
| 20 | 326 | 298 | 271 | 240 | 196 | 142 | | | |
| 21 | 345 | 324 | 297 | 269 | 238 | 194 | 140 | | |
| 22 | | 345 | 322 | 297 | 270 | 236 | 193 | 138 | |
| 23 | | 370 | 344 | 323 | 299 | 273 | 235 | 194 | 137 |

### 9307C-GM12, 9307C-GM12-U — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 60.6 | 840 | 681 | 435 | | | | | | |
| 64.4 | 931 | 802 | 628 | 348 | | | | | |
| 68.1 | 1037 | 927 | 791 | 594 | 220 | | | | |
| 71.9 | 1143 | 1030 | 916 | 768 | 568 | | | | |
| 75.7 | 1234 | 1128 | 1026 | 908 | 742 | 537 | | | |
| 79.5 | 1306 | 1226 | 1124 | 1018 | 901 | 734 | 530 | | |
| 83.3 | | 1306 | 1219 | 1124 | 1022 | 893 | 731 | 522 | |
| 87.1 | | 1400 | 1302 | 1223 | 1132 | 1033 | 889 | 734 | 519 |

# HYDRAULICALLY-DRIVEN, CAST IRON WITH FORCEFIELD TECHNOLOGY

## Series 9307CWS

**FEATURES:**

- ForceField seal technology to protect your pump against today's harshest application environments:
  - Eliminates dry run failures
  - Eliminates chemical and fertilizer bonding failures
  - Prevents costly in-season downtime
  - Self-regulating, maintenance free chamber,provides pressure when needed and safe serviceability when it is not needed
  - Direct drop-in for current 9307 designs
- Components designed for today's high volume liquid fertilizer application on large capacity sprayers:
  - Hydraulic motor includes a case drain for maximum motor life
  - 316 stainless steel impeller
  - Two-piece shaft design includes 416 stainless steel wet end and 8620 hardened steel drive end
  - Bearings designed to handle continuous high volume pump loading

300 universal flange inlet x 220 universal flange outlet

One-year warranty that includes pump, motor and seals

**FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:**

☐ Universal Flange Gasket

☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd. GPM | Max Hyd. LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9307CWS-GM12 | 370 | 1400 | 135 | 9.8 | 23 | 87.1 | Open/Closed |
| 9307CWS-GM12-002 (NPT) | 370 | 1400 | 135 | 9.8 | 23 | 87.1 | Open/Closed |
| 9307CWS-GM12-004 (90°) | 370 | 1400 | 135 | 9.8 | 23 | 87.1 | Open/Closed |
| 9307CWS-GM12-005 (180°) | 370 | 1400 | 135 | 9.8 | 23 | 87.1 | Open/Closed |
| 9307CWS-GM12-006 (270°) | 370 | 1400 | 135 | 9.8 | 23 | 87.1 | Open/Closed |

### 9307CWS-GM12: PERFORMANCE IN WATER — U.S. UNITS

| Hyd. Flow GPM | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 222 | 180 | 115 | | | | | | |
| 17 | 246 | 212 | 166 | 92 | | | | | |
| 18 | 274 | 245 | 209 | 157 | 58 | | | | |
| 19 | 302 | 272 | 242 | 203 | 150 | | | | |
| 20 | 326 | 298 | 271 | 240 | 196 | 142 | | | |
| 21 | 345 | 324 | 297 | 269 | 238 | 194 | 140 | | |
| 22 | 345 | 345 | 322 | 297 | 270 | 236 | 193 | 138 | |
| 23 | 370 | 370 | 344 | 323 | 299 | 273 | 235 | 194 | 137 |

### 9307CWS-GM12: PERFORMANCE IN WATER — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 60.6 | 840 | 681 | 435 | | | | | | |
| 64.4 | 931 | 802 | 628 | 348 | | | | | |
| 68.1 | 1037 | 927 | 791 | 594 | 220 | | | | |
| 71.9 | 1143 | 1030 | 916 | 768 | 568 | | | | |
| 75.7 | 1234 | 1128 | 1026 | 908 | 742 | 537 | | | |
| 79.5 | 1306 | 1226 | 1124 | 1018 | 901 | 734 | 530 | | |
| 83.3 | 1306 | 1306 | 1219 | 1124 | 1022 | 893 | 731 | 522 | |
| 87.1 | 1400 | 1400 | 1302 | 1223 | 1132 | 1033 | 889 | 734 | 519 |

### 9307CWS-GM12: PERFORMANCE IN 28% LIQUID FERTILIZER — U.S. UNITS

| Hyd. Flow GPM | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI | GPM at 120 PSI | GPM at 130 PSI | GPM at 140 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 228 | 204 | 159 | 100 | | | | | | | |
| 17 | 234 | 219 | 190 | 147 | 49 | | | | | | |
| 18 | 247 | 247 | 223 | 194 | 146 | 49 | | | | | |
| 19 | 255 | 255 | 239 | 221 | 191 | 151 | 55 | | | | |
| 20 | 260 | 260 | 252 | 240 | 220 | 191 | 150 | 63 | | | |
| 21 | 260 | 260 | 254 | 248 | 237 | 224 | 196 | 159 | 87 | | |
| 22 | 260 | 260 | 254 | 248 | 240 | 230 | 214 | 194 | 159 | 101 | |
| 23 | 260 | 260 | 254 | 249 | 249 | 242 | 237 | 227 | 211 | 174 | 133 |

### 9307CWS-GM12: PERFORMANCE IN 28% LIQUID FERTILIZER — METRIC UNITS

| Hyd. Flow LPM | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR | LPM at 7.6 BAR | LPM at 8.3 BAR | LPM at 9.0 BAR | LPM at 9.7 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 60.6 | 863 | 772 | 602 | 379 | - | | | | | | |
| 64.4 | 886 | 829 | 719 | 556 | 185 | | | | | | |
| 68.1 | 935 | 935 | 844 | 734 | 553 | 185 | | | | | |
| 71.9 | 965 | 965 | 905 | 836 | 723 | 572 | 208 | | | | |
| 75.7 | 984 | 984 | 954 | 908 | 833 | 723 | 568 | 238 | | | |
| 79.5 | 984 | 984 | 961 | 939 | 897 | 848 | 742 | 602 | 329 | | |
| 83.3 | 984 | 984 | 961 | 939 | 908 | 871 | 810 | 734 | 602 | 382 | |
| 87.1 | 984 | 984 | 961 | 942 | 942 | 916 | 897 | 859 | 799 | 659 | 503 |

# HYDRAULICALLY-DRIVEN, CAST IRON

## Series 9308C

**FEATURES:**

- 5" ANSI-flanged inlet x 4" ANSI-flanged outlet
- 316 stainless steel impeller for superior corrosion resistance
- 9308 versions include a two-piece shaft design with a 416 stainless steel wet end and hardened 8620 drive end for extended life
- Life Guard silicon carbide seal for premium abrasion resistance and dry-run protection
- Life Guard seals are the industry standard on OEM equipment

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd GPM | Max Hyd LPM | Hydraulic Selection System |
|---|---|---|---|---|---|---|---|
| 9308C-PM15 | 900 | 3407 | 58 | 4.0 | 16 | 60.6 | Open/Closed |
| 9308C-GM25 | 1078 | 4081 | 72 | 5.0 | 28 | 106 | Open/Closed |
| 9308CX | Pump head only | | | | | | |
| 3430-0604 | Life Guard silicon carbide seal kit | | | | | | |

**9308C-PM15** **U.S. UNITS**

| Hyd. Flow GPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI |
|---|---|---|---|---|---|
| 8 | 430 | | | | |
| 12 | 656 | 656 | 416 | | |
| 16 | 900 | 900 | 900 | 778 | 607 |

**9308C-PM15** **METRIC UNITS**

| Hyd. Flow LPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.5 BAR |
|---|---|---|---|---|---|
| 30.3 | 1628 | | | | |
| 45.7 | 2483 | 2483 | 1575 | | |
| 60.6 | 3407 | 3407 | 3407 | 2945 | 2298 |

**9308C-GM25** **U.S. UNITS**

| Hyd. Flow GPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|
| 17 | 520 | | | | | |
| 23 | 828 | 828 | 667 | 296 | | |
| 28 | 1078 | 1078 | 965 | 845 | 667 | 380 |

**9308C-GM25** **METRIC UNITS**

| Hyd. Flow LPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.5 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|
| 64.3 | 1968 | | | | | |
| 87.1 | 3134 | 3134 | 2525 | 1120 | | |
| 106 | 4081 | 4081 | 3653 | 3199 | 2525 | 1438 |

# BELT-DRIVEN, CAST IRON, SELF-PRIMING

## Series 9400C-SP

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- Drive: 12-groove belt
- Spring-loaded belt tensioner
- Stainless steel wear ring
- Stainless steel pump shaft, standard
- Port sizes: 1-1/2" NPT inlet, 1-1/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Cast iron
- Impeller: Nylon
- Pump shaft rotation: Counter clockwise when looking at shaft end
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 57 lbs./25.9 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | PTO Output |
|---|---|---|---|---|---|---|
| 9403C-540-SP | 120 | 454 | 99 | 6.8 | 600 | 1-3/8" female, 6 spline shaft |
| 9403C-540Q-SP | 120 | 454 | 99 | 6.8 | 600 | 1-3/8" 6 spline quick coupler |
| 9403C-540S-SP | 120 | 454 | 99 | 6.8 | 600 | 1" (25.4 mm) solid shaft |
| 9403C-1000-SP | 120 | 454 | 99 | 6.8 | 1000 | 1-3/8" female, 21-spline shaft |
| 9403C-1000L-SP | 120 | 454 | 99 | 6.8 | 1000 | 1-3/4" female, 20-spline shaft |
| 3430-0332 | Seal kit standard | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |
| 3430-0480SP | Self priming chamber kit | | | | | |

Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9403C-540-SP-B)

**9403C-540-SP** — **U.S. UNITS**

| RPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 500 | 114 | 113 | 101 | 83 | 60 | 27 | | | |
| 540 | 120 | 119 | 116 | 102 | 85 | 62 | 32 | | |
| 600 | 120 | 120 | 120 | 119 | 110 | 97 | 78 | 54 | 24 |

**9403C-540-SP** — **METRIC UNITS**

| RPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 500 | 432 | 428 | 382 | 314 | 227 | 102 | | | |
| 540 | 454 | 450 | 439 | 386 | 322 | 235 | 121 | | |
| 600 | 454 | 454 | 454 | 450 | 416 | 367 | 295 | 204 | 91 |

**9403C-1000-SP** — **U.S. UNITS**

| RPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 800 | 111 | 109 | 94 | 74 | 47 | 21 | | | |
| 900 | 120 | 119 | 116 | 102 | 85 | 62 | 32 | | |
| 1000 | 120 | 120 | 120 | 119 | 110 | 97 | 78 | 54 | 24 |

**9403C-1000-SP** — **METRIC UNITS**

| RPM | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 800 | 420 | 413 | 356 | 280 | 178 | 79 | | | |
| 900 | 454 | 450 | 439 | 386 | 322 | 235 | 121 | | |
| 1000 | 454 | 454 | 454 | 450 | 416 | 367 | 295 | 204 | 91 |

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# BELT-DRIVEN, CAST IRON, POLYPROPYLENE & STAINLESS STEEL

## Series 9400 Belt Drive

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard
- Extend pump life with Stainless Steel
  - Fact: Chemical corrosion, pump cavitation, and abrasive wear are key factors in pump life
  - 316 Stainless Steel pumps provide superior chemical corrosion resistance, while maintaining material strength to prolong the life against abrasive wear
  - 316 Stainless Steel resists cavitation pitting of pumps, extending the wear life
  - Drop in replacements for cast iron pumps

### FEATURES:

- Available in cast iron, polypropylene and 316 stainless steel for extended pump life
- Drive: 12-groove belt
- Spring-loaded belt tensioner
- Stainless steel wear ring
- Stainless steel pump shaft, standard
- Port sizes: 9402 models – 1-1/4" NPT inlet, 1" NPT outlet; 9403 models – 1-1/2" NPT inlet, 1-1/4" NPT outlet
- 220 x 200 universal flange available (U)
- Max. fluid temperature: 140°F/60°C
- Impeller: Cast Iron models – Nylon; Poly & Stainless Steel models – Polypropylene
- Pump shaft rotation: Counter clockwise when looking at shaft end
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide (B) available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 40-45 lbs./18.2-20.5 kg

### FOR FLANGED CONNECTIONS YOU WILL ALSO NEED:

☐ Universal Flange Gasket ☐ Universal Flange Clamp

See 251 for details

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | PTO Output |
|---|---|---|---|---|---|---|
| 9402C-540 | 76 | 283 | 95 | 6.5 | 600 | 1-3/8" female, 6-spline shaft |
| 9402C-540Q | 76 | 283 | 95 | 6.5 | 600 | 1-3/8" 6-spline quick coupler |
| 9402C-540S | 76 | 283 | 95 | 6.5 | 600 | 1" (25.4 mm) solid shaft |
| 9402C-1000 | 76 | 283 | 95 | 6.5 | 1000 | 1-3/8" female, 21-spline shaft |
| 9402C-1000L | 76 | 283 | 95 | 6.5 | 1000 | 1-3/4" female, 20-spline shaft |
| 9402C-1000S | 76 | 283 | 95 | 6.5 | 1000 | 1" (25.4 mm) solid shaft |
| 9403C-540† | 140 | 530 | 104 | 7.2 | 600 | 1-3/8" female, 6-spline shaft |
| 9403C-540Q† | 140 | 530 | 104 | 7.2 | 600 | 1-3/8" 6-spline quick coupler |
| 9403C-540S† | 140 | 530 | 104 | 7.2 | 600 | 1" (25.4 mm) solid shaft |
| 9403C-1000† | 140 | 530 | 104 | 7.2 | 1000 | 1-3/8" female, 21-spline shaft |
| 9403C-1000L† | 140 | 530 | 104 | 7.2 | 1000 | 1-3/4" female, 20-spline shaft |
| 9403C-1000-MTZ* | 164 | 617 | 113 | 7.8 | 1000 | 38 mm female, 8-spline shaft |
| 9403C-1000-MTZ-KIT* | Includes pump, Anti-rotation Kit and Vent Line kit | | | | | |
| 9403C-1000S† | 140 | 530 | 104 | 7.2 | 1000 | 1" (25.4 mm) solid shaft |
| 9403P-540 | 91 | 344 | 83 | 5.7 | 600 | 1-3/8" female, 6-spline shaft |
| 9403P-540Q | 91 | 344 | 83 | 5.7 | 600 | 1-3/8" 6-spline quick coupler |
| 9403P-540S | 91 | 344 | 83 | 5.7 | 600 | 1" (25.4 mm) solid shaft |
| 9403P-1000 | 86 | 326 | 83 | 5.7 | 1000 | 1-3/8" female, 21-spline shaft |
| 9403P-1000L | 86 | 326 | 83 | 5.7 | 1000 | 1-3/4" female, 20-spline shaft |
| 9403P-1000S | 86 | 326 | 83 | 5.7 | 1000 | 1" (25.4 mm) solid shaft |
| 9403S-540 | 140 | 530 | 104 | 7.2 | 540 | 1-3/8" female, 6-spline shaft |
| 9403S-540Q | 140 | 530 | 104 | 7.2 | 540 | 1-3/8"" 6-spline quick coupler |
| 9403S-540S | 140 | 530 | 104 | 7.2 | 540 | 1" (25.4 mm) solid shaft |
| 9403S-1000 | 140 | 530 | 104 | 7.2 | 1000 | 1-3/8" female, 21-spline shaft |
| 9403S-1000L | 140 | 530 | 104 | 7.2 | 1000 | 1-3/4" female, 20-spline shaft |
| 9403S-1000S | 140 | 530 | 104 | 7.2 | 1000 | 1" (25.4 mm) solid shaft |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3430-0476 | Seal, o-ring, belt and gasket repair kit for 540 rpm drives | | | | | |
| 3430-0477 | Seal, o-ring, belt and gasket repair kit for 1000 rpm drives | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |
| 3430-0333 | Seal and o-ring repair kit (polypropylene) | | | | | |
| 3430-0478 | Seal, o-ring, belt and gasket repair kit for 540 rpm drives (polypropylene) | | | | | |
| 3430-0479 | Seal, o-ring, belt and gasket repair kit for 1000 rpm drives (polypropylene) | | | | | |
| 3430-0590 | Life Guard silicon carbide seal kit (polypropylene) | | | | | |
| 3430-0796* | Anti-Rotation Kit for MTZ pump | | | | | |

†Universal Flange (220 x 200) - Add Suffix "U" (i.e.: 9403C-1000S-U)
Life Guard silicon carbide seal - Add suffix "B" (i.e.: 9402C-540-B)
Available for order through Hypro-EU only (Cambridge, UK)

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.
* For tractors MTZ 80 and 82.

# BELT-DRIVEN, CAST IRON, POLYPROPYLENE & STAINLESS STEEL

## Series 9400 Belt Drive

### 9402C-540 — U.S. UNITS

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI |
|---|---|---|---|---|---|---|---|---|
| 450 | 61 | 58 | 50 | 36 | | | | |
| 500 | 67 | 66 | 62 | 56 | 42 | | | |
| 540 | 71 | 71 | 70 | 65 | 58 | 44 | | |
| 600 | 76 | 76 | 76 | 75 | 73 | 66 | 56 | 42 |

### 9402C-540 — METRIC UNITS

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR |
|---|---|---|---|---|---|---|---|---|
| 450 | 231 | 220 | 189 | 136 | | | | |
| 500 | 254 | 250 | 235 | 212 | 159 | | | |
| 540 | 269 | 269 | 265 | 246 | 220 | 167 | | |
| 600 | 288 | 288 | 288 | 284 | 276 | 250 | 212 | 159 |

### 9402C-1000 — U.S. UNITS

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 800 | 68 | 67 | 64 | 57 | 41 | | | | |
| 900 | 74 | 74 | 73 | 71 | 64 | 54 | 41 | | |
| 1000 | 76 | 76 | 76 | 76 | 76 | 72 | 65 | 56 | 43 |

### 9402C-1000 — METRIC UNITS

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.8 BAR | LPM at 6.9 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 800 | 257 | 254 | 242 | 216 | 155 | | | | |
| 900 | 280 | 280 | 276 | 269 | 242 | 204 | 155 | | |
| 1000 | 288 | 288 | 288 | 288 | 288 | 273 | 246 | 212 | 163 |

### 9403P-540 — U.S. UNITS

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI |
|---|---|---|---|---|---|---|---|
| 450 | 68 | 60 | 46 | 20 | | | |
| 500 | 74 | 70 | 60 | 48 | 22 | | |
| 540 | 82 | 78 | 70 | 60 | 46 | | |
| 600 | 91 | 88 | 79 | 72 | 64 | 58 | 38 |

### 9403P-540 — METRIC UNITS

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR |
|---|---|---|---|---|---|---|---|
| 450 | 257 | 227 | 174 | 76 | | | |
| 500 | 280 | 265 | 227 | 182 | 83 | | |
| 540 | 310 | 295 | 265 | 227 | 174 | | |
| 600 | 344 | 333 | 299 | 273 | 242 | 220 | 144 |

### 9403P-1000 — U.S. UNITS

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI |
|---|---|---|---|---|---|---|---|
| 800 | 73 | 66 | 58 | 42 | | | |
| 900 | 82 | 78 | 70 | 60 | 46 | | |
| 1000 | 86 | 86 | 79 | 72 | 64 | 58 | 38 |

### 9403P-1000 — METRIC UNITS

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR |
|---|---|---|---|---|---|---|---|
| 800 | 276 | 250 | 220 | 159 | | | |
| 900 | 310 | 295 | 265 | 227 | 174 | | |
| 1000 | 326 | 326 | 299 | 273 | 242 | 220 | 144 |

### 9403C-540, 9403S-540 — U.S. UNITS

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 450 | 107 | 99 | 86 | 50 | | | | | |
| 500 | 121 | 116 | 106 | 93 | 76 | 42 | | | |
| 540 | 129 | 127 | 120 | 111 | 98 | 80 | 50 | | |
| 600 | 140 | 138 | 135 | 130 | 121 | 112 | 94 | 73 | 40 |

### 9403C-540, 9403S-540 — METRIC UNITS

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 450 | 405 | 375 | 326 | 189 | | | | | |
| 500 | 458 | 439 | 401 | 352 | 288 | 159 | | | |
| 540 | 488 | 481 | 454 | 420 | 371 | 303 | 189 | | |
| 600 | 530 | 522 | 511 | 492 | 458 | 424 | 356 | 276 | 151 |

### 9403C-1000, 9403S-1000 — U.S. UNITS

| RPM | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 800 | 115 | 106 | 96 | 80 | 56 | | | | |
| 900 | 129 | 127 | 120 | 111 | 98 | 80 | 50 | | |
| 1000 | 140 | 139 | 137 | 133 | 128 | 119 | 100 | 76 | 46 |

### 9403C-1000, 9403S-1000 — METRIC UNITS

| RPM | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR | LPM at 5.5 BAR | LPM at 6.2 BAR | LPM at 6.9 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 800 | 435 | 401 | 363 | 303 | 212 | | | | |
| 900 | 488 | 481 | 454 | 420 | 371 | 303 | 189 | | |
| 1000 | 530 | 526 | 519 | 503 | 485 | 450 | 379 | 288 | 174 |

### 9403C-1000-MTZ — U.S. UNITS

| RPM | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI | GPM at 110 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 136 | 132 | 123 | 112 | 98 | 70 | 45 | | | | |
| 900 | 150 | 149 | 145 | 135 | 125 | 115 | 97 | 72 | 35 | | |
| 1000 | 163 | 162 | 160 | 155 | 150 | 140 | 130 | 115 | 95 | 75 | 45 |

### 9403C-1000-MTZ — METRIC UNITS

| RPM | LPM at 0.7 Bar | LPM at 1.4 Bar | LPM at 2.1 Bar | LPM at 2.8 Bar | LPM at 3.4 Bar | LPM at 4.1 Bar | LPM at 4.8 Bar | LPM at 5.5 Bar | LPM at 6.2 Bar | LPM at 6.9 Bar | LPM at 7.6 Bar |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 515 | 500 | 466 | 424 | 371 | 265 | 170 | | | | |
| 900 | 568 | 564 | 549 | 511 | 473 | 435 | 367 | 273 | 132 | | |
| 1000 | 617 | 613 | 606 | 587 | 568 | 530 | 492 | 435 | 360 | 284 | 170 |

# GAS ENGINE-DRIVEN POWERPRO, CAST IRON

## Models 1521C-65, 1521C-65M

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- PowerPro Engine (EPA & CARB certified)
- Closed coupled, gas engine-driven
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 65 lbs./29.4kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1521C-65 | 110 | 416 | 80 | 5.5 | 1-1/2" x 1-1/4" | PowerPro 6.5 hp |
| 1521C-65M | Same as 1521C-65 with mounting base | | | | | |
| 1538 | 1-1/2" x 1-1/4" centrifugal pump. DOES NOT include Engine. (must use 5/8" threaded shaft engine) | | | | | |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |

**1521C-65, 1521C-65M** — **U.S. UNITS**

| GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|
| 110 | 106 | 96 | 88 | 80 | 60 | 30 |

**1521C-65, 1521C-65M** — **METRIC UNITS**

| LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|
| 416 | 401 | 363 | 333 | 303 | 227 | 114 |

# GAS ENGINE-DRIVEN POWERPRO, CAST IRON

## Models 1552C-130, 1522C-130E

**FEATURES:**

- PowerPro Engine (EPA & CARB certified)
- Closed coupled, gas engine-driven
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard
- Weight: 110 lbs./50kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max (LPM) | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1552C-130 | 170 | 644 | 150 | 10.3 | 2" x 1-1/2" | PowerPro 13 hp |
| 1552C-130E | 170 | 644 | 150 | 10.3 | 2" x 1-1/2" | PowerPro 13 hp w/ electric start |
| 1551 | 2" x 1-1/2" centrifugal pump kit. DOES NOT include engine. (must use 1" threaded shaft engine) | | | | | |
| 3430-0464 | Seal and o-ring repair kit | | | | | |
| 3430-0779 | Silicon carbide seal kit | | | | | |

**1552C-130, 1552C-130E** — **U.S. UNITS**

| GPM at 20 PSI | GPM at 40 PSI | GPM at 60 PSI | GPM at 80 PSI | GPM at 100 PSI | GPM at 120 PSI | GPM at 140 PSI |
|---|---|---|---|---|---|---|
| 170 | 166 | 148 | 120 | 92 | 65 | 35 |

**1552C-130, 1552C-130E** — **METRIC UNITS**

| LPM at 1.4 BAR | LPM at 2.8 BAR | LPM at 4.1 BAR | LPM at 5.5 BAR | LPM at 6.9 BAR | LPM at 8.3 BAR | LPM at 9.7 BAR |
|---|---|---|---|---|---|---|
| 644 | 628 | 560 | 454 | 348 | 246 | 132 |

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# GAS ENGINE-DRIVEN POWERPRO, CAST IRON, SELF-PRIMING

## Models 1522C-65SP

**UPGRADE OPTIONS:**

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

**FEATURES:**

- PowerPro Engine (EPA & CARB certified)
- Closed coupled, gas engine-driven
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide available
- Life Guard seals are the industry standard on OEM equipment
- Fill Port 3/4" NPT

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1522C-65SP | 130 | 492 | 65 | 4.5 | 2" x 2" | PowerPro 6.5 hp |
| 1538-SP* | 2" x 2" centrifugal pump kit. does not include engine. (must use 5/8" threaded shaft engine) | | | | | |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |

* Must use 5/8" threaded shaft engine.

**1522C-65SP** **U.S. UNITS**

| GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 65 PSI |
|---|---|---|---|---|---|---|---|---|
| 130 | 121 | 108 | 93 | 85 | 76 | 56 | 34 | 0 |

**1522C-65SP** **METRIC UNITS**

| LPM at 0 BAR | LPM at 0.7. BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.5 BAR |
|---|---|---|---|---|---|---|---|---|
| 492 | 458 | 409 | 352 | 322 | 288 | 212 | 129 | 0 |

# GAS ENGINE-DRIVEN POWERPRO, CAST IRON, SELF-PRIMING

## Models 1552C-130SP, 1552C-130ESP

**FEATURES:**

- PowerPro Engine (EPA & CARB certified)
- Closed coupled, gas engine-driven
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard
- Fill Port 1" NPT

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfg. & HP |
|---|---|---|---|---|---|---|
| 1552C-130SP | 163 | 617 | 147 | 10.1 | 2" x 2" | PowerPro 13 hp |
| 1552C-130ESP | 163 | 617 | 147 | 10.1 | 2" x 2" | PowerPro 13 hp w/ electric start |
| 1551-SP* | 2" x 2" centrifugal pump kit. Does not include engine. (must use 1" threaded shaft engine) | | | | | |
| 1551-BSP* | 2" x 2" centrifugal pump kit. (BSP threads) Does not include engine. | | | | | |
| 3430-0464 | Seal and o-ring repair kit | | | | | |
| 3430-0779 | Silicon carbide seal kit | | | | | |

* Must use 1" threaded shaft engine.

**1552C-130SP, 1552C-130ESP** **U.S. UNITS**

| GPM at 0 PSI | GPM at 20 PSI | GPM at 40 PSI | GPM at 60 PSI | GPM at 80 PSI | GPM at 100 PSI | GPM at 120 PSI | GPM at 140 PSI | GPM at 147 PSI |
|---|---|---|---|---|---|---|---|---|
| 163 | 161 | 148 | 122 | 100 | 75 | 51 | 27 | 0 |

**1552C-130SP, 1552C-130ESP** **METRIC UNITS**

| LPM at 0 BAR | LPM at 1.4 BAR | LPM at 12.8 BAR | LPM at 4.1 BAR | LPM at 5.5 BAR | LPM at 6.9 BAR | LPM at 8.3 BAR | LPM at 9.7 BAR | LPM at 10.1 BAR |
|---|---|---|---|---|---|---|---|---|
| 617 | 609 | 560 | 462 | 379 | 284 | 193 | 102 | 0 |

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# GAS ENGINE-DRIVEN, CAST IRON

## Models 1536 and 1539

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

### FEATURES:

- Briggs & Stratton® engine (EPA & CARB certified)
- Close-coupled, gas engine-driven
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 53 lbs./24.1 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfg. & HP |
|---|---|---|---|---|---|---|
| 1536 | 110 | 416 | 75 | 5.2 | 1-1/2" x 1-1/4" | Briggs & Stratton® 5.5 hp |
| 1539 | Same as model 1536 without mounting base | | | | | |
| 1538* | 1-1/2" x 1-1/4 " centrifugal pump kit. DOES NOT include engine. (must use 5/8" threaded shaft engine) | | | | | |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |

* Must use 5/8" threaded shaft engine.

**1536, 1539** **U.S. UNITS**

| GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI |
|---|---|---|---|---|---|
| 110 | 106 | 96 | 87 | 73 | 50 |

**1536, 1539** **METRIC UNITS**

| LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR |
|---|---|---|---|---|---|
| 416 | 401 | 363 | 329 | 276 | 189 |

Briggs & Stratton® is a registered trademark of Briggs & Stratton Corporation.

# GAS ENGINE-DRIVEN, CAST IRON

## Models 1537 and 1540

### UPGRADE OPTIONS:

Increase dry-run and abrasive resistance with Life Guard Seals

- Life Guard seals are the OEM standard

### FEATURES:

- Honda® engine (EPA & CARB certified)
- Close-coupled, gas engine-driven
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide available
- Life Guard seals are the industry standard on OEM equipment
- Weight: 53 lbs./24.1 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfg. & HP |
|---|---|---|---|---|---|---|
| 1537 | 110 | 416 | 80 | 5.5 | 1-1/2" x 1-1/4" | Honda® 5.5 hp |
| 1540 | Same as model 1537 without mounting base | | | | | |
| 1538* | 1-1/2" x 1-1/4" centrifugal pump kit. DOES NOT include engine. (must use 5/8" threaded shaft engine) | | | | | |
| 3430-0332 | Seal and o-ring repair kit | | | | | |
| 3420-0589 | Life Guard silicon carbide seal kit | | | | | |

* Must use 5/8" threaded shaft engine.

**1537, 1540** **U.S. UNITS**

| GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI |
|---|---|---|---|---|---|---|
| 110 | 106 | 96 | 88 | 80 | 60 | 30 |

**1537, 1540** **METRIC UNITS**

| LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|
| 416 | 401 | 363 | 333 | 303 | 227 | 114 |

Viton® is a registered trademark of DuPont.

Honda® is a registered trademark of Honda Motor Co., Ltd.
Hypro is a registered trademark of Pentair Ltd.

# GAS ENGINE-DRIVEN, CAST IRON, SELF-PRIMING

## Models 1536-SP and 1539-SP

### UPGRADE OPTIONS:

- Increase dry-run and abrasive resistance with Life Guard Seals
  - Life Guard seals are the OEM standard

### FEATURES:

- Briggs & Stratton® engine (EPA & CARB certified)
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide available
- Life Guard seals are the industry standard on OEM equipment
- Fill Port 3/4" NPT
- Weight: 72 lbs./32.7 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1536-SP | 100 | 379 | 65 | 4.5 | 2" x 2" | Briggs & Stratton® 5.5 hp |
| 1539-SP | Same as model 1536-SP without mounting base | | | | | |
| 1538-SP* | 2" x 2" centrifugal pump kit. DOES NOT include engine. (must use 5/8" threaded shaft engine) | | | | | |
| 3430-0332 | Seal kit standard | | | | | |
| 3430-0482SP | Self-primer conversion kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |

* Must use 5/8" threaded shaft engine.

**1536-SP, 1539-SP** — **U.S. UNITS**

| GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI |
|---|---|---|---|---|---|
| 92 | 81 | 67 | 55 | 40 | 15 |

**1536-SP, 1539-SP** — **METRIC UNITS**

| LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR |
|---|---|---|---|---|---|
| 348 | 307 | 254 | 208 | 151 | 57 |

Briggs & Stratton® is a registered trademark of Briggs & Stratton Corporation.

# GAS ENGINE-DRIVEN, CAST IRON, SELF-PRIMING

## Models 1537-SP and 1540-SP

### UPGRADE OPTIONS:

Increase dry-run and abrasive resistance with Life Guard Seals

- Life Guard seals are the OEM standard

### FEATURES:

- Honda® engine (EPA & CARB certified)
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Impeller: Nylon
- Pump seals: Viton®/ceramic standard; Life Guard silicon carbide available
- Life Guard seals are the industry standard on OEM equipment
- Fill Port 3/4" NPT

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1537-SP | 106 | 401 | 75 | 5.2 | 2" x 2" | Honda® 5.5 hp |
| 1540-SP | Same as model 1537-SP without mounting base | | | | | |
| 1538-SP* | 2" x 2" centrifugal pump kit. DOES NOT include engine. (must use 5/8" threaded shaft engine) | | | | | |
| 3430-0332 | Seal kit standard | | | | | |
| 3430-0482SP | Self-primer conversion kit | | | | | |
| 3430-0589 | Life Guard silicon carbide seal kit | | | | | |

* Must use 5/8" threaded shaft engine.

**1537-SP, 1540-SP** — **U.S. UNITS**

| GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI |
|---|---|---|---|---|---|
| 98 | 87 | 73 | 60 | 44 | 21 |

Viton® is a registered trademark of DuPont.

**1537-SP, 1540-SP** — **METRIC UNITS**

| LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR |
|---|---|---|---|---|---|
| 371 | 329 | 276 | 227 | 167 | 79 |

Honda® is a registered trademark of Honda Motor Co., Ltd.
Hypro is a registered trademark of Pentair.

# GAS ENGINE-DRIVEN, CAST IRON

## Series 1550

**FEATURES:**

- Honda® engine (EPA & CARB certified)
- Close-coupled, gas engine-driven
- Max. fluid temperature: 140°F/60°C
- Housing: cast iron
- Pump seals: Viton®/ceramic
- Impeller: Nylon
- Weight: 105 lbs./47.7 kg; SP and BSP: 125 lbs./56.8 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP | Self Priming |
|---|---|---|---|---|---|---|---|
| 1550 | 150 | 568 | 140 | 9.7 | 2" x 1-1/2" | Honda® 9 hp | No |
| 1550-SP | 155 | 587 | 135 | 9.3 | 2" x 2" | Honda® 9 hp | Yes |
| 1550-BSP† | 155 | 587 | 135 | 9.3 | 2" x 2" | Honda® 9 hp | Yes |
| 1551* | 2" x 1-1/2"centrifugal pump kit. DOES NOT include engine. (must use 1" threaded shaft engine) | | | | | | |
| 1551-SP* | 2" x 2" centrifugal pump kit. DOES NOT include engine. (must use 1" threaded shaft engine) | | | | | | |
| 3430-0464 | Seal, o-ring, and gasket repair kit | | | | | | |
| 3430-0779 | Life Guard silicon carbide seal kit | | | | | | |

* Must use 1" threaded shaft engine. † BSP Threads

### 1550 — U.S. UNITS

| GPM at 20 PSI | GPM at 40 PSI | GPM at 60 PSI | GPM at 80 PSI | GPM at 100 PSI | GPM at 120 PSI | GPM at 140 PSI |
|---|---|---|---|---|---|---|
| 145 | 130 | 107 | 87 | 69 | 45 | 16 |

### 1550 — METRIC UNITS

| LPM at 1.4 BAR | LPM at 2.8 BAR | LPM at 4.1 BAR | LPM at 5.5 BAR | LPM at 6.9 BAR | LPM at 8.3 BAR | LPM at 9.7 BAR |
|---|---|---|---|---|---|---|
| 549 | 492 | 405 | 329 | 261 | 170 | 61 |

### 1550-SP, 1550-BSP — U.S. UNITS

| GPM at 10 PSI | GPM at 20 PSI | GPM at 40 PSI | GPM at 60 PSI | GPM at 80 PSI | GPM at 100 PSI | GPM at 120 PSI |
|---|---|---|---|---|---|---|
| 145 | 141 | 118 | 93 | 71 | 49 | 28 |

### 1550-SP, 1550-BSP — METRIC UNITS

| LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.8 BAR |
|---|---|---|---|---|---|---|
| 549 | 534 | 447 | 352 | 269 | 185 | 106 |

Viton® is a registered trademark of DuPont.
Honda® is a registered trademark of Honda Motor Co., Ltd.
Hypro is a registered trademark of Pentair.

# UNDERSTANDING MECHANICAL SEAL OPTIONS

## STANDARD
Industry tested and proven

**COMMON USES**
Less demanding applications; minimal dry run or abrasive solution

**HOW IT WORKS**
Mechanical seals depend on their seal face conditions of flatness and finish tomaintain their sealing function while allowing the shaft to rotate. A spring ensures the seal faces stay in contact to prevent leaking. Elastomers are mated with adjacent shaft and housing components to complete the sealing system.

**MATERIAL**
Carbon on Ceramic

**PRO**
- Dependable life when protected from dry run and abrasives
- Least expensive option

**CON**
- Minimal dry run resistance
- Limited service life in abrasive solutions
- Susceptible to chemical & fertilizer bonding failures

## LIFE GUARD
The OEM standard

**COMMON USES**
Suited for broad spraying applications including abrasive solutions

**ADVANTAGES OVER STANDARD**
The hardness of Silicon Carbide approaches that of diamond and allows the seal to have outstanding service life when pumping abrasive solutions. Carbon graphite flakes are embedded into the silicon carbide faces to increase lubricity and provide survivability against incidental dry run and thermal shock.

**MATERIAL**
Silcon Carbide

**PRO**
- Extended service life in abrasive solutions
- Enhanced dry run resistance
- Drop-in replacement for standard seal

**CON**
- Does not eliminate dry run failure
- Susceptible to chemical & fertilizer bonding failures
- Increased cost

## FORCEFIELD TECHNOLOGY
The premium choice

**COMMON USES**
Applications where downtime must be avoided.

**ADVANTAGES OVER LIFE GUARD**
ForceField wet seal technology protects seals by using a barrier fluid to keep them cool and lubricated, even while the pump is running dry. ForceField technology actively maintains a positive pressure differential between the chamber barrier fluid and the pumping solution,which prevents chemical bonding of the seal faces. The result is increased life and maintenance free operation.

**MATERIAL**
Carbon on Silicon

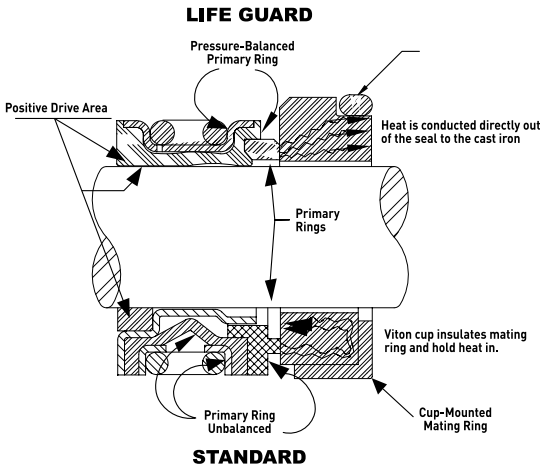
**PRO**
- Eliminates dry run failure
- Prevent chemical & fertilizer bonding failures
- Maintenance-free operation
- Warranted for one full year

**CON**
- Increased cost

# LIFE GUARD SILICON CARBIDE PUMP SEALS

Specially designed to prolong seal life

### SIDE BY SIDE COMPARISON




The drawing to the right represents a cross sectional view of a Life Guard Premium Silicon Carbide Seal (top) and a standard seal (bottom). There are three key differences shown in the drawing: material, mating rings and balance.

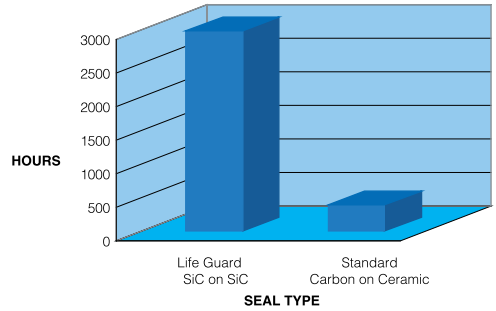
**MATERIAL:**
The Life Guard seal utilizes silicon carbide (SiC) for its seal surfaces (primary ring and mating ring). This is more abrasion resistant than the carbon graphite and ceramic used in standard seals. SiC also runs cooler if the pump is run dry, improving the life of the seal.

**MATING RINGS:**
The O-ring style of the Life Guard seal mating ring allows heat to dissipate into the pump casting. This keeps the seal at a lower temperature and dramatically improves the chances of the seal to survive a dry-run episode.

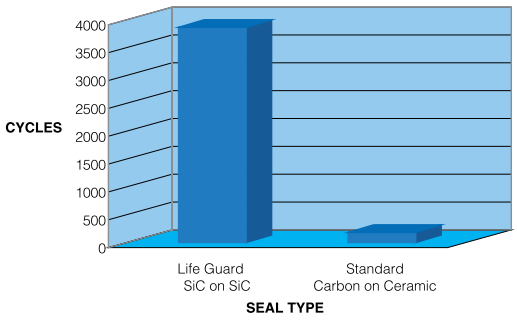
**BALANCE:**
The bellows and primary ring of the Life Guard seal are pressure balanced. This results in cooler operation at higher pressures.

Life Guard silicon carbide seals are available in the following models: Pedestal mount, Flange mount, Clutch-driven, Hydraulically-driven, Belt-driven, and Gas Engine-driven.

### LIFE TEST IN ABRASIVE SOLUTION




### DRY-RUN SURVIVABILITY (5 MINUTES/CYCLE)




### LIFE GUARD SILICON CARBIDE SEAL KITS

| Part Number | Pump Series/Model # | Size | | Description | Estimated Weight Ea. |
|---|---|---|---|---|---|
| | | US | Metric | | |
| 3430-0589 | 9200, 9300 and 9400 Cast and Stainless | 5/8" | 15.9 mm | Mechanical seal and o-ring | 4 oz./114 g |
| 3430-0593 | 9303P | 5/8" | 15.9 mm | Mechanical seal, o-ring, gasket and washer for under acorn nut | 4 oz./114 g |
| 3430-0601 | 9305C and 9305C-SP | 5/8" | 15.9 mm | Mechanical seal and o-ring | 4 oz./114 g |
| 3430-0590 | All Poly Models | 3/4" | 19 mm | Mechanical seal, o-ring, gasket and washer for under acorn nut | 4 oz./114 g |
| 3430-0604 | 9307 Series | 1-3/8" | 35 mm | Mechanical seal, o-ring and gasket | 4 oz/114 g |
| 3430-0646 | 9205 Models | 3/4" | 19 mm | Mechanical seal and o-ring | 4 oz./114 g |
| 3430-0591 | 9000C-O and 9000C-O-SP | 3/4" | 19 mm | Mechanical seal and o-ring | 4 oz./114 g |

# SELF-PRIMING ADAPTOR (SPA)

Provides Fast Self-Priming for Closed Impeller Centrifugal Pumps

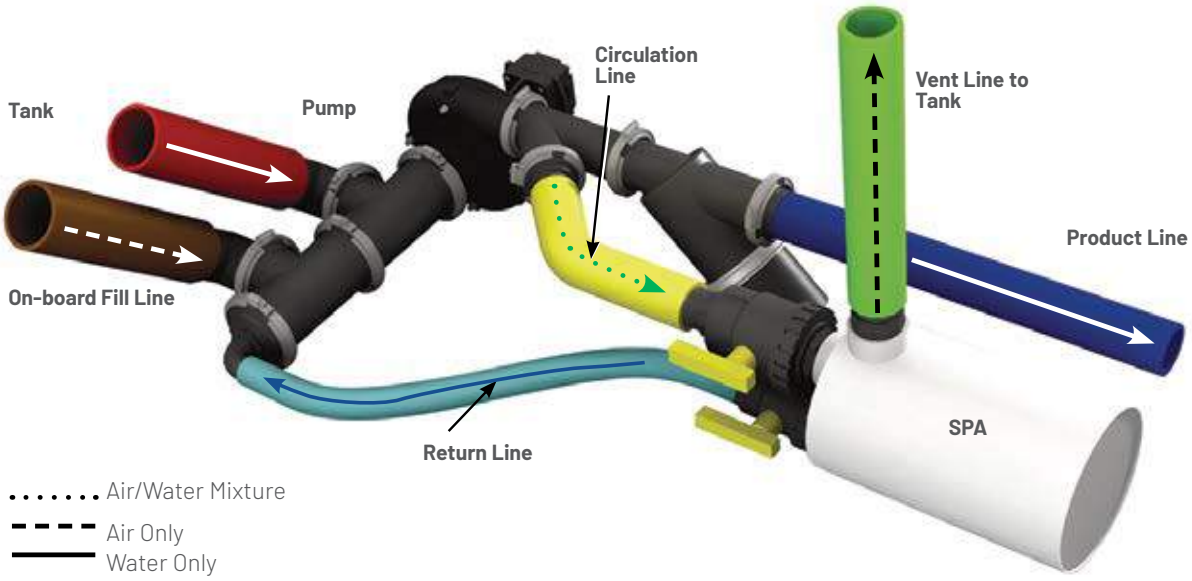
**FEATURES:**

- Creates self-priming capability for all standard centrifugal pump models
- Increases priming efficiency over open impeller transfer pumps and self-priming centrifugal pumps
- Allows the use of a single, high efficiency pump for both tank filling and spraying
- Constructed out of 304 stainless steel for corrosion resistance
- Protects the pump's mechanical seal from dry-run during priming operations for on-board loading
- Guards against unexpected dry-run conditions during spraying application, if system were to function automatically
- Allows centrifugal pumps to be mounted in tight-fitting configurations while maintaining priming and flow performance capabilities
- SPA can be mounted in nearby remote location up to 10 ft (3 m) from pump

**ORDER INFORMATION**

| Model Number | Description |
|---|---|
| 1530-0024S | 2" NPT Self-Priming Adaptor |
| 1530-0028S | 2" NPT High Volume Self-Priming Adaptor |
| 3430-0700 | Mounting Kit |

**SELF-PRIMING ADAPTOR CONFIGURATION**




**HOW THE SELF-PRIMING ADAPTOR WORKS**

To facilitate pump priming, liquid is circulated through the pump and eye of the impeller. The attached Self-Priming Adaptor (SPA) stores an initial amount of liquid for the priming operation. The SPA, when activated with two ball valves, separates the air from the liquid being circulated and releases it back to the atmosphere through the vent line. Only liquid returns back to the pump inlet, thereby eliminating the inlet suction line of air. Once the pump is primed, pump pressure and flow increases. Flow is directed to the tank. The operator then closes the two ball valves, shutting off the circulation path between the pump and SPA.

## FORCEFIELD REPLACEMENT FLUID

| Part Number | Description |
|---|---|
| 2160-0096 | Replacement fluid (pre-mixed) for ForceField seal chamber- 23oz. |

## HYDRAULIC PORT ADAPTERS

| Part Number | Description |
|---|---|
| 3360-0021A | 1/2" NPT Pressure Port Adapter |
| 3430-0187 | 1/2" NPT Pressure Port Adapter with metering orifices |
| 3320-0051A | 3/4" NPT Tank Port Adapter |
| 3320-0052A | SAE-10 (o-ring) Tank Port Adapter |
| 3360-0023A | SAE-10 (o-ring) Pressure Port Adapter |
| 3320-0077 | M30x2.0 Pressure Port Adapter |
| 3360-0027 | M30x2.0 Tank Port Adapter |

## 12 VOLT CLUTCH

| Part Number | Shaft Size | Pulley Type | Max. HP | Max. RPM | Max. AMPS @ 12V | Pump Model | Est. Weight Ea. |
|---|---|---|---|---|---|---|---|
| 2526-0011 | 7/8"(19 mm) | 5.25" (140 mm)-A | 30 | 5000 | 4.85 | 9203P-S, 9253P-C, 9205C, 9205C-SP | 8 lbs./3.6kg |
| 3430-0592 | 5/8" (15.9 mm) | 5.00" (125 mm) Double Groove-A | 30 | 5000 | 3.75 | 9202C, 9203C, 9206C, 9203C-R, 9262C-C, 9263C-C, 9263C-CR, 9203C-SP, 9262S-C, 9263S-C, 9263S-CR, 9263C-C-SP, 9263C-CR-SP | 9 lbs./4.1kg |

## VENT LINE KIT

| Part Number | Description | Est. Weight Ea. |
|---|---|---|
| 3430-0456 | Vent line kit with 25' (6.3 m) long, 1/4" ID vinyl hose, 1/8" NPT x 1/4" HB 90° nylon elbow fitting, 1/8" NPT x 1/4" HB straight polypropylene fitting, plastic hose clamp and plastic cable tie. Works with all Hypro centrifugals. | 14 oz./397g |
| 3430-0797 | Push-to-connect vent line kit with 25' (6.3 m) long, 1/4" polyethylene tubing, 1/8" MNPT x 1/4" push-to-connect straight, 1/8" MNPT x 1/4" push-to-connect 90° elbow, and plastic cable ties. Works with all Hypro centrifugal pumps. | 14 oz./397g |

## PTO MOUNTING CLIPS

| Part Number | Pump Series | Est. Weight Ea. |
|---|---|---|
| 1520-0034 | 9000C-0 (not for 9040 Series) | 4 lbs./1.8 kg |

## HYDRAULIC TEST KIT

| Part Number | Description | Est. Weight Ea. |
|---|---|---|
| 3430-0650 | Hydraulic test kit with pressure and tank fixtures with flow meter and digital pressure gauges. Works with all Hypro HM series motors. | 20 lbs./9.1 kg |

## CENTRIFUGAL PUMP REPAIR TOOLS

| Part Number | Pump Series | Description |
|---|---|---|
| 3010-0061 | 9000 | Main bearing suppport tool |
| 3010-0064 | 9000, 9200, 9300 | Support bar/sleeve extractor |
| 3010-0066 | 9200, 9300 | Wire brush |
| 3010-0067 | 9200, 9300 | Wire brush holder |
| 3010-0084 | 9000, 9200, 9300 | Internal/external retaining ring pliers |
| 3010-0167 | 9000, 9300 | Internal/external retaining ring pliers |
| 3010-0168 | 9000, 9200, 9300 | Tool box |
| 3020-0008 | 9300 | Allen wrench; 1/4" hex |
| 3020-0009 | 9200, 9300 | Allen wrench; 1/16" hex |
| 3430-0650 | 9300 | Hydraulic test kit |

# TRANSFER PUMP SELECTION

## MATERIAL OPTIONS

### ALUMINUM

**TYPICAL USE:**
Water Transfer

The aluminum construction does not lend itself well to chemical transfer.

**OPTIONS INCLUDE:**
2" and 3" semi-trash and 3" trash

### CAST IRON

**TYPICAL USE:**
Liquid Fertilizer Transfer

Cast iron transfer pumps have thicker castings and stand up well to high density liquid fertilizers.

**OPTIONS INCLUDE:**
2" and 3" models available

### POLYPROPYLENE

**TYPICAL USE:**
Chemical Transfer

Polypropylene has excellent corrosion resistance to virtually all Agricultural chemicals.

**OPTIONS INCLUDE:**
2" and 3" models available

## DRIVE OPTIONS

### GAS ENGINE

**TYPICAL USE:**
Outdoor applications in a mobile environment such as on a sprayer nurse/tender trailer.

### HYDRAULIC MOTOR

**TYPICAL USE:**
Applications where a smaller footprint is desired and hydraulic power is available.

### ELECTRIC MOTOR

**TYPICAL USE:**
Indoor and outdoor stationary applications where electrical power is available.

# POLYPROPYLENE, GAS ENGINE-DRIVEN, 2 IN. & 3 IN.

## 1542P and 1543P

1542P-65SP

1543P-130SP

**FEATURES:**

- Multiple gas engine options, including field proven Hypro PowerPro, Honda® and Hypro® PowerPro and Honda® engines (EPA & CARB certified – North America; EC/CE Listed - Europe)
- Housings: 2″ x 2″ Polypropylene or 3″ x 3″ polypropylene – highest performance available in a 3″ transfer pump with highest efficiency and horsepower on the market
- Pump Seals: EPDM standard, Viton optional - contact factory
- Suction Lift: 25 ft./7.62 m
- Poly impeller with stainless steel insert (3″); Nylon impeller (2″)
- 2″ versions available with or without frame

### ORDER INFORMATION 2" GAS ENGINE-DRIVEN

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Impeller Profile | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|---|
| 1542P-65SP | 200 | 757 | 58 | 4.0 | 2" x 2" NPT | 5 vane | PowerPro 6.5 hp |
| 1542P-65USP | 200 | 757 | 58 | 4.0 | 2" x 2" Flange | 5 vane | PowerPro 6.5 hp |
| 1542P-65SPM | 200 | 757 | 58 | 4.0 | 2" x 2" NPT | 5 vane | PowerPro 6.5 hp with frame |
| 1542P-65ESP | 200 | 757 | 58 | 4.0 | 2" x 2" NPT | 5 vane | PowerPro 6.5 hp w/ elec. start |
| 1542PV-65SP | 200 | 757 | 58 | 4.0 | 2" x 2" w. Viton | 5 vane | PowerPro 6.5 hp |
| 1442P-65SP | 200 | 757 | 58 | 4.0 | 2" x 2" NPT | 5 vane | 6.5 HP EC/CE listed |
| 1542P-160HSP | 200 | 757 | 58 | 4.0 | 2" x 2" NPT | 5 vane | Honda® GX160 |
| 1542P-160HUSP | 200 | 757 | 58 | 4.0 | 2" x 2" Flange | 5 vane | Honda® GX160 |
| 1542P-200HSP | 200 | 757 | 58 | 4.0 | 2" x 2" NPT | 5 vane | Honda® GX200 |
| 1542P-55SP | 150 | 568 | 58 | 4.0 | 2" x 2" NPT | 3 vane | PowerPro 6.5 hp |
| 3410-0041 | Cam lock kit | | | | | | |
| 3430-0690 | Pump head kit for 1542P-55SP with EPDM seal (3 vane impeller) | | | | | | |
| 3430-0691 | Pump head kit for 1542P-65SP with EPDM seal (5 vane impeller) | | | | | | |
| 3430-0839 | Pump head kit for 1542P-65SP with Viton seal (5 vane impeller) | | | | | | |
| 3430-0946 | Pump head kit for 1542P-65USP with 2" flanged ports. | | | | | | |
| 3430-0635 | EPDM seal kit | | | | | | |
| 3430-0659 | Viton seal kit | | | | | | |

**1542P-55SP** — **U.S. UNITS**

| GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 58 PSI |
|---|---|---|---|---|---|---|
| 150 | 147 | 131 | 108 | 80 | 48 | 0 |

**1542P-55SP** — **METRIC UNITS**

| LPM at 0 BAR | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.0 BAR |
|---|---|---|---|---|---|---|
| 568 | 556 | 496 | 409 | 303 | 182 | 0 |

**1542P-65SP, 1542P-200HSP, 1542P-160HSP, 1542P-160HUSP, 1542P-65USP** — **U.S. UNITS**

| GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 58 PSI |
|---|---|---|---|---|---|---|
| 200 | 182 | 162 | 136 | 106 | 65 | 0 |

**1542P-65SP, 1542P-200HSP, 1542P-160HSP, 1542P-160HUSP, 1542P-65USP** — **METRIC UNITS**

| LPM at 0 BAR | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.0 BAR |
|---|---|---|---|---|---|---|
| 757 | 689 | 613 | 515 | 401 | 246 | 0 |

### ORDER INFORMATION 3" GAS ENGINE-DRIVEN

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Impeller Profile | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|---|
| 1543P-130SP | 440 | 1666 | 54 | 3.7 | 3"x 3" NPT | 5 vane | PowerPro 13 HP |
| 1543P-130ESP | 440 | 1666 | 54 | 3.7 | 3"x 3" NPT | 5 vane | PowerPro 13 HP w/ elec. start |
| 1543P-130ESP-01 | 440 | 1666 | 54 | 3.7 | 3"x3"FLANGE | 5 vane | PowerPro 13 HP w/ elec. start |
| 1543P-390EHSP | 440 | 1666 | 54 | 3.7 | 3"x3"NPT | 5 vane | Honda® GX390 w/ elec. start |
| 1543P-390EHUSP | 440 | 1666 | 54 | 3.7 | 3"x3"FLANGE | 5 vane | Honda® GX390 w/ elec. start |
| 3410-0042 | Cam lock kit | | | | | | |
| 3430-0692 | Pump head kit with EPDM seal | | | | | | |
| 3430-0692-02 | Pump head kit with EPDM seal and 3" UF Fittings | | | | | | |
| 3430-0757 | EPDM seal kit | | | | | | |
| 3430-0838 | Viton seal kit | | | | | | |
| 3430-0943 | EPDM Seal kit O rings and mech. seal only | | | | | | |

**1543P-130SP, 1543P-130ESP, 1543P-390EHSP, 1543P-130ESP-01** — **U.S. UNITS**

| GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 58 PSI |
|---|---|---|---|---|---|---|
| 440 | 400 | 338 | 269 | 184 | 68 | 0 |

**1543P-130SP, 1543P-130ESP, 1543P-390EHSP, 1543P-130ESP-01** — **METRIC UNITS**

| LPM at 0 BAR | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.0 BAR |
|---|---|---|---|---|---|---|
| 1666 | 1514 | 1279 | 1018 | 697 | 257 | 0 |

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Hypro® is a registered trademark of Pentair.
Honda® is a registered trademark of Honda Motor Co., Ltd.
Briggs & Stratton® is a registered trademark of Briggs & Stratton Corporation.

# POLYPROPYLENE, HYDRAULICALLY-DRIVEN, 2 IN & 3 IN.

## Series 9342P and 9343P

9343P-GM6-SP

9342P-HM_C-5SP

### FEATURES:

- Housing: 2"x2" or 3" X 3" Polypropylene
- Pump Seals: EPDM Mechancial
- Suction lift: 25 ft./7.62 m
- Poly impeller with stainless steel insert

### ORDER INFORMATION 2" HYDRAULICALLY-DRIVEN

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Motor Capacity |
|---|---|---|---|---|---|---|
| 9342P-HM1C-5SP | 200 | 757 | 58 | 40 | 2" x 2" NPT | 10 gpm |
| 9342PV-HM1C-5SP | 200 | 757 | 58 | 40 | 2" x 2" NPT w. Viton | 10 gpm |
| 9342P-HM1C-5USP | 206 | 780 | 60 | 41 | 2" x 2" FLANGE | 11 gpm |
| 9342P-HM5C-5SP | 206 | 780 | 60 | 41 | 2" x 2" NPT | 11 gpm |
| 9342P-HM5C-5USP | 206 | 780 | 60 | 41 | 2" x 2" FLANGE | 11 gpm |
| 9342PV-HM5C-5SP | 206 | 780 | 60 | 41 | 2" x 2" NPT w. Viton | 11 gpm |
| 3430-0690 | Pump head kit for HM1C with EPDM seal | | | | | |
| 3430-0691 | Pump head kit for HM5C with EPDM seal | | | | | |
| 3430-0946 | Pump Head kit with 2" FLANGES EPDM seals | | | | | |
| 3430-0635 | EPDM seal kit | | | | | |
| 3430-0659 | Viton seal kit | | | | | |
| 3410-0041 | Cam lock kit | | | | | |

### ORDER INFORMATION 3" HYDRAULICALLY-DRIVEN

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfg. & HP |
|---|---|---|---|---|---|---|
| 9343P-GM6-SP | 450 | 1703 | 52 | 3.6 | 3"x 3" NPT | Hydraulic |
| 9343P-GM6Y-SP* | 450 | 1703 | 52 | 3.6 | 3"x 3" NPT | Hydraulic |
| 9343P-GM10-SP | 484 | 1832 | 58 | 4.0 | 3"x 3" NPT | Hydraulic |
| 9343P-GM10Y-SP* | 484 | 1832 | 58 | 4.0 | 3"x 3" NPT | Hydraulic |
| 9343P-GM6Y-SP-001 | 484 | 1832 | 58 | 4.0 | 3"x 3" FLANGE | Hydraulic |
| 3430-0692 | Pump head kit with EPDM seal | | | | | |
| 3430-0692-02 | Pump head kit with EPDM seal and 3" UF fittings | | | | | |
| 3430-0757 | EDPM seal kit | | | | | |
| 3430-0838 | Viton seal kit | | | | | |
| 3410-0042 | Cam lock kit | | | | | |

* Y= case drain motor

### 9342P-HM1C-5SP — U.S. UNITS

| Hyd. Flow GPM | GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 58 PSI |
|---|---|---|---|---|---|---|---|
| 8 | 165 | 145 | 122 | 95 | 57 | | |
| 9 | 185 | 166 | 144 | 119 | 86 | 0 | |
| 10 | 200 | 184 | 164 | 141 | 114 | 80 | 0 |

### 9342P-HM1C-5SP — METRIC UNITS

| Hyd.Flow LPM | LPM at 0 BAR | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.0 BAR |
|---|---|---|---|---|---|---|---|
| 30.3 | 625 | 549 | 463 | 358 | 215 | | |
| 34.1 | 700 | 630 | 547 | 449 | 325 | 0 | |
| 37.9 | 757 | 695 | 620 | 534 | 433 | 301 | 0 |

### 9342P-HM5C-5SP — U.S. UNITS

| Hyd. Flow GPM | GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI |
|---|---|---|---|---|---|---|---|
| 9 | 175 | 154 | 123 | 84 | 0 | | |
| 10 | 192 | 174 | 149 | 118 | 76 | 0 | |
| 11 | 206 | 189 | 169 | 145 | 117 | 79 | 0 |

### 9342P-HM5C-5SP — METRIC UNITS

| Hyd. Flow LPM | LPM at 0 BAR | LPM at 0.7 BAR | LPM at 1.4 BAR | LPM at 2.1 BAR | LPM at 2.8 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR |
|---|---|---|---|---|---|---|---|
| 34.1 | 662 | 582 | 467 | 316 | 0 | | |
| 37.9 | 727 | 658 | 562 | 446 | 288 | 0 | |
| 41.6 | 780 | 717 | 639 | 550 | 442 | 299 | 0 |

### 9343P-GM6-SP — US UNITS

| Performance | Feet | 0 | 12 | 23 | 35 | 46 | 58 | 69 | 81 | 92 | 104 | 116 | 127 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 |
| 8 gal/min | GPM | 342 | 316 | 284 | 240 | 176 | 67 | - | - | - | - | - | - |
| 9 gal/min | GPM | 378 | 355 | 327 | 294 | 252 | 194 | 103 | - | - | - | - | - |
| 10 gal/min | GPM | 414 | 394 | 371 | 345 | 314 | 276 | 227 | 155 | 52 | - | - | - |
| 11 gal/min | GPM | 450 | 433 | 414 | 392 | 368 | 340 | 307 | 265 | 210 | 128 | 28 | - |

### 9343P-GM6-SP — METRIC UNITS

| Performance | m | 5.1 | 10.2 | 12.8 | 15.3 | 17.9 | 20.4 | 23.0 | 25.5 | 28.1 | 30.6 | 33.2 | 35.7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BAR | 0.50 | 1.00 | 1.25 | 1.50 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.25 | 3.50 |
| 30 l/min | LPM | 1110 | 885 | 730 | 495 | 145 | 165 | - | - | - | - | - | - |
| 35 l/min | LPM | 1335 | 1180 | 1085 | 970 | 825 | 630 | 345 | 35 | - | - | - | - |
| 40 l/min | LPM | 1545 | 1425 | 1355 | 1270 | 1185 | 1080 | 960 | 805 | 600 | 325 | 45 | - |

### 9343P-GM10-SP — US UNITS

| Performance | Feet | 0 | 12 | 23 | 35 | 46 | 58 | 69 | 81 | 92 | 104 | 116 | 127 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 |
| 12 gal/min | GPM | 364 | 340 | 310 | 274 | 227 | 157 | 46 | - | - | - | - | - |
| 13 gal/min | GPM | 391 | 368 | 342 | 312 | 275 | 227 | 158 | 55 | - | - | - | - |
| 14 gal/min | GPM | 415 | 395 | 373 | 348 | 318 | 282 | 236 | 170 | 74 | - | - | - |
| 15 gal/min | GPM | 445 | 426 | 406 | 383 | 357 | 327 | 292 | 247 | 187 | 102 | 7 | - |
| 16 gal/min | GPM | 484 | 466 | 446 | 425 | 401 | 374 | 344 | 309 | 266 | 211 | 139 | 47 |

### 9343P-GM10-SP — METRIC UNITS

| Performance | m | 5.1 | 10.2 | 12.8 | 15.3 | 17.9 | 20.4 | 23.0 | 25.5 | 28.1 | 30.6 | 33.2 | 35.7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BAR | 0.50 | 1.00 | 1.25 | 1.50 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.25 | 3.50 |
| 45 l/min | LPM | 1225 | 1045 | 925 | 775 | 560 | 250 | 43 | - | - | - | - | - |
| 50 l/min | LPM | 1390 | 1240 | 1150 | 1045 | 920 | 760 | 540 | 255 | -24 | - | - | - |
| 55 l/min | LPM | 1535 | 1405 | 1335 | 1255 | 1165 | 1060 | 935 | 780 | 575 | 310 | 35 | - |
| 60 l/min | LPM | 1730 | 1610 | 1540 | 1470 | 1390 | 1305 | 1215 | 1105 | 985 | 840 | 665 | 445 |

# POLYPROPYLENE, PEDESTAL MOUNT, 3 IN.

## Series 9243P

### FEATURES:

- Housing: 3" X 3" Polypropylene
- Pump Seals: EPDM Mechancial
- Suction lift: 25 ft./7.62 m
- Poly impeller with stainless steel insert
- 1" keyed shaft

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size |
|---|---|---|---|---|---|
| 9243P-SP | 460 | 1741 | 54 | 3.7 | 3"x 3" NPT |
| 3430-0692 | Pump head kit with EPDM seal | | | | |
| 3430-0692-02 | Pump head kit with EPDM seal and 3" UF Fittings | | | | |
| 3430-0757 | EDPM seal kit | | | | |
| 3430-0838 | Viton seal kit | | | | |
| 3410-0042 | Cam lock kit | | | | |

### 9243P-SP — U.S. UNITS

| | Feet | 0 | 12 | 23 | 35 | 46 | 58 | 69 | 81 | 92 | 104 | 116 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| 2900 RPM | GPM | 380 | 358 | 342 | 312 | 275 | 224 | 160 | 50 | - | - | - |
| | HP | 7.1 | 6.8 | 6.5 | 6.3 | 6.0 | 5.6 | 5.0 | 4.2 | - | - | - |
| 3200 RPM | GPM | 424 | 405 | 384 | 359 | 331 | 297 | 251 | 193 | 103 | 0 | - |
| | HP | 9.1 | 8.9 | 8.7 | 8.5 | 8.3 | 8.0 | 7.5 | 7.0 | 6.2 | 5.3 | - |
| 3500 RPM | GPM | 460 | 445 | 425 | 404 | 379 | 353 | 321 | 280 | 227 | 159 | 70 |
| | HP | 12.2 | 11.8 | 11.4 | 11.1 | 10.9 | 10.6 | 10.2 | 9.8 | 9.2 | 8.5 | 7.5 |

### 9243P-SP — METRIC UNITS

| | m | 5.1 | 10.2 | 12.8 | 15.3 | 17.9 | 20.4 | 23.0 | 25.5 | 28.1 | 30.6 | 33.2 | 35.7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BAR | 0.50 | 1.00 | 1.25 | 1.50 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.25 | 3.50 |
| 2900 RPM | LPM | 1325 | 1193 | 1097 | 980 | 830 | 637 | 376 | 46 | - | - | - | - |
| | kW | 5.0 | 4.7 | 4.6 | 4.4 | 4.1 | 3.8 | 3.4 | 2.9 | - | - | - | - |
| 3200 RPM | LPM | 1497 | 1378 | 1301 | 1215 | 1118 | 996 | 853 | 660 | 403 | 154 | - | - |
| | kW | 6.6 | 6.4 | 6.3 | 6.1 | 6.0 | 5.7 | 5.5 | 5.2 | 4.7 | 4.3 | - | - |
| 3500 RPM | LPM | 1650 | 1537 | 1471 | 1403 | 1328 | 1242 | 1139 | 1016 | 866 | 685 | 467 | 208 |
| | kW | 8.7 | 8.3 | 8.2 | 8.0 | 7.9 | 7.7 | 7.5 | 7.2 | 6.9 | 6.5 | 6.0 | 5.5 |

# POLYPROPYLENE, ELECTRIC-DRIVEN, 2 IN.

## Series 9742P

### FEATURES:

- Available with either 5 hp or 7.5 hp 50/60 hz TEFC Baldor electric motor
  - Three phase 230/460 volt motors in both 5 hp & 7.5 hp
  - Single phase 230 volt motor available in 5 hp
- Housing: 2" x 2" Polypropylene
- Pump Seals: EPDM Mechanical
- Suction Lift: 25ft/7.62m
- Nylon impeller

### ORDER INFORMATION 50 HZ

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfg. & HP | Mounting Bolts |
|---|---|---|---|---|---|---|---|
| 9742P-050SPT | 120 | 454 | 32 | 2.2 | 2"x 2" NPT | Polypropylene | 5/16" or M8 |
| 9742P-050SPT3 | 120 | 454 | 32 | 2.2 | 2"x 2" NPT | Polypropylene | 5/16" or M8 |
| 9742P-075SPT3 | 160 | 606 | 37 | 2.6 | 2"x 2" NPT | Polypropylene | 5/16" or M8 |

### ORDER INFORMATION 60 HZ

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfg. & HP | Mounting Bolts |
|---|---|---|---|---|---|---|---|
| 9742P-050SPT | 150 | 568 | 47 | 3.2 | 2"x 2" NPT | Polypropylene | 5/16" or M8 |
| 9742P-050SPT3 | 150 | 568 | 47 | 3.2 | 2"x 2" NPT | Polypropylene | 5/16" or M8 |
| 9742P-075SPT3 | 188 | 712 | 54 | 3.7 | 2"x 2" NPT | Polypropylene | 5/16" or M8 |

### 9742P-050SPT & 9742P-050SPT3 — US UNITS

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 Hz | PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 47 |
| | GPM | 150 | 142 | 133 | 123 | 111 | 97 | 84 | 66 | 43 | 9 | 0 |
| 50 Hz | PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 32 | - | - | - |
| | GPM | 120 | 110 | 100 | 85 | 67 | 42 | 10 | 0 | - | - | - |

### 9742P-050SPT & 9742P-050SPT3 — METRIC UNITS

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 Hz | BAR | 0 | 0.3 | 0.7 | 1 | 1.4 | 1.7 | 2.1 | 2.4 | 2.8 | 3.1 | 3.2 |
| | LPM | 568 | 538 | 503 | 466 | 420 | 367 | 318 | 250 | 163 | 34 | 0 |
| 50 Hz | BAR | 0 | 0.3 | 0.7 | 1 | 1.4 | 1.7 | 2.1 | 2.2 | - | - | - |
| | LPM | 454 | 416 | 379 | 322 | 254 | 159 | 38 | 0 | - | - | - |

### 9742P-075SPT3 — US UNITS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 Hz | PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 54 |
| | GPM | 188 | 185 | 181 | 173 | 163 | 151 | 136 | 120 | 102 | 76 | 44 | 0 |
| 50 Hz | PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 37 | - | - | - |
| | GPM | 160 | 155 | 143 | 129 | 112 | 90 | 65 | 20 | 0 | - | - | - |

### 9742P-075SPT3 — METRIC UNITS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 Hz | BAR | 0 | 0.3 | 0.7 | 1 | 1.4 | 1.7 | 2.1 | 2.4 | 2.8 | 3.1 | 3.4 | 3.7 |
| | LPM | 712 | 700 | 685 | 655 | 617 | 572 | 515 | 454 | 386 | 288 | 167 | 0 |
| 50 Hz | BAR | 0 | 0.3 | 0.7 | 1 | 1.4 | 1.7 | 2.1 | 2.4 | 2.6 | - | - | - |
| | LPM | 606 | 587 | 541 | 488 | 424 | 341 | 246 | 76 | 0 | - | - | - |

# CAST IRON GAS, ENGINE-DRIVEN, 2 IN. & 3 IN.

## Series 1530

1532C-6SP
with PowerPro Engine

### FEATURES:

- Gas engine driven (EPA & CARB certified)
- Pump seals: fluoroelastomer (viton)
- Suction lift: 20 ft. (6 m)
- Flapper valve: EPDM
- Comes standard with silicon carbide mechanical seals, use optional carbon ceramic if pumping liquid fertilizer

### ORDER INFORMATION

| Mode Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1532C-6SP | 170 | 644 | 42 | 2.9 | 2" x 2" NPT | PowerPro 6.5 hp |
| 1532C-160HSP | 170 | 644 | 42 | 2.9 | 2" x 2" NPT | Honda GX160 |
| 1533C-13SP | 330 | 1249 | 60 | 4.1 | 3" x 3" NPT | PowerPro 13 hp |
| 1533C-13ESP | 330 | 1249 | 60 | 4.1 | 3" x 3" NPT | PowerPro 13 hp w/ electric start |
| 1533C-390EHSP | 330 | 1249 | 60 | 4.1 | 3" x 3" NPT | Honda GX390 w/ electric start |
| 3430-0673CSP | 170 | 644 | 42 | 2.9 | Pump head kit for 2" NPT self-priming cast iron transfer pump | |
| 3430-0674CSP | 330 | 1249 | 60 | 4.1 | Pump head kit for 3" NPT self-priming cast iron transfer pump | |
| 3430-0863 | 2" Viton seal kit | | | | | |
| 2120-0070 | 2" carbon ceramic mechanical seal | | | | | |
| 2120-0071 | 3" carbon ceramic mechanical seal | | | | | |

### 1532C-6SP, 1532C-160HSP — U.S. UNITS

| GPM at 0 PSI | GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 42 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 170 | 155 | 140 | 123 | 106 | 87 | 65 | 42 | 14 | 0 |

### 1532C-6SP, 1532-160HSP — METRIC UNITS

| LPM at 0.0 BAR | LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 2.9 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 644 | 587 | 530 | 466 | 401 | 329 | 246 | 159 | 53 | 0 |

### 1533C-13SP, 1533C-13ESP, 1533C-390EHSP — U.S. UNITS

| GPM at 0 PSI | GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 45 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 66 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 330 | 325 | 321 | 315 | 296 | 273 | 248 | 221 | 192 | 161 | 129 | 48 | 0 |

### 1533C-13SP, 1533C-13ESP, 1533C-390EHSP — METRIC UNITS

| LPM at 0.0 BAR | LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.1 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.6 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1249 | 1230 | 1215 | 1192 | 1120 | 1033 | 938 | 836 | 726 | 609 | 488 | 181 | 0 |

# CAST IRON, PEDESAL-MOUNT, 2 IN. & 3 IN.

3430-0674CSP

9232C-SP

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Description |
|---|---|---|---|---|---|
| 9232C-SP | 170 | 644 | 42 | 2.9 | 2" x 2" NPT self priming pedestal-mount cast iron transfer pump (3/4" keyed shaft) |
| 9233C-SP | 330 | 1249 | 60 | 4.1 | 3" x 3" NPT self priming pedestal-mount cast iron transfer pump (1" keyed shaft) |
| 3430-0673CSP | 170 | 644 | 42 | 2.9 | Pump head kit for 2" NPT self-priming cast iron transfer pump |
| 3430-0674CSP | 330 | 1249 | 60 | 4.1 | Pump head kit for 3" NPT self-priming cast iron transfer pump |
| 3430-0675 | Replacement pedestal for 2" NPT self-priming cast iron transfer pump | | | | |
| 3430-0676 | Replacement pedestal for 3" NPT self-priming cast iron transfer pump | | | | |

### 9232C-SP, 3430-0673CSP — U.S. UNITS

| GPM at 0 PSI | GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 42 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 170 | 155 | 140 | 123 | 106 | 87 | 65 | 42 | 14 | 0 |

### 9232C-SP, 3430-0673CSP — METRIC UNITS

| LPM at 0.0 BAR | LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 2.9 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 644 | 587 | 530 | 466 | 401 | 329 | 246 | 159 | 53 | 0 |

### 9233C-SP, 3430-0674CSP — U.S. UNITS

| GPM at 0 PSI | GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 45 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 66 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 330 | 325 | 321 | 315 | 296 | 273 | 248 | 221 | 192 | 161 | 129 | 48 | 0 |

### 9233C-SP, 3430-0674CSP — METRIC UNITS

| LPM at 0.0 BAR | LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.1 BAR | LPM at 3.4 BAR | LPM at 4.1 BAR | LPM at 4.6 BAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1249 | 1230 | 1215 | 1192 | 1120 | 1033 | 938 | 836 | 726 | 609 | 488 | 181 | 0 |

# ALUMINUM GAS ENGINE-DRIVEN, 2 IN. & 3 IN.

## Series 1540A

1541A-SP

1543A-65TSP

1543A-65SP

**FEATURES:**

- PowerPro Gas engine driven (EPA & CARB certified)
- Housing: Aluminum
- Pump seals: EPDM Mechanical
- Suction lift: 13 ft./4m (1541A) & 23 ft./7.01m (1542A & 1543A)
- Trash pumps will handle 1-1/8" (29 mm) solids
- Transfer pumps will handle 3/8" (9.5mm) solids
- Framed: 1542A &1543A versions only

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1541A-SP | 40 | 151 | 28 | 1.9 | 2" x 2" BSP | PowerPro 2.5 hp |
| 1542A-65SP | 147 | 556 | 50 | 3.4 | 2" x 2" NPT | PowerPro 6.5 hp |
| 1542A-160HSP | 147 | 556 | 50 | 3.4 | 2" x 2" NPT | Honda® GX160 |
| 1543A-65SP | 259 | 980 | 50 | 3.4 | 3" x 3" NPT | PowerPro 6.5 hp |
| 1543A-160HSP | 259 | 980 | 50 | 3.4 | 3" x 3" NPT | Honda® GX160 |
| 1543A-65TSP (Trash) | 272 | 1030 | 50 | 3.4 | 3" x 3" NPT | PowerPro 6.5 hp |
| 1543A-160HTSP | 272 | 1030 | 50 | 3.4 | 3" x 3" NPT | Honda® GX160 |
| 3430-0791 | 3" Trash Kit (NPT ports, SAE 3/4" keyed shaft mount) | | | | | |
| 3430-0792 | 2" Transfer Kit (NPT ports, SAE 3/4" keyed shaft mount) | | | | | |
| 3430-0793 | 3" Transfer Kit (NPT ports, SAE 3/4" keyed shaft mount) | | | | | |
| 3430-0802 | Seal kit for 2" Transfer pump | | | | | |

**1541A-SP** — **U.S. UNITS**

| GPM at 0 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 28 PSI |
|---|---|---|---|---|---|
| 40 | 28 | 21 | 14 | 7 | 0 |

**1541A-SP** — **METRIC UNITS**

| LPM at 0 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 1.9 BAR |
|---|---|---|---|---|---|
| 151.4 | 106.0 | 79.5 | 53.0 | 26.5 | 0 |

**1542A-65SP , 1542A-160HSP** — **U.S. UNITS**

| GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 45 PSI | GPM at 50 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 147 | 144 | 136.6 | 124.7 | 110.2 | 94.1 | 78.3 | 57.1 | 19.2 | 0 |

**1542A-65SP, 1542A-160HSP** — **METRIC UNITS**

| LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.1 BAR | LPM at 3.4 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 556.5 | 545.1 | 517.1 | 472 | 417.2 | 356.2 | 296.4 | 216.1 | 72.7 | 0 |

**1543A-65SP, 1543A-160HSP** — **U.S. UNITS**

| GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 45 PSI | GPM at 50 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 259 | 251.6 | 233.7 | 213.6 | 190.9 | 162.2 | 135.8 | 99.3 | 56.1 | 8.7 |

**1543A-65SP, 1543A-160HSP** — **METRIC UNITS**

| LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.1 BAR | LPM at 3.4 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 980.4 | 952.4 | 884.6 | 808.6 | 722.6 | 614 | 514.1 | 375.9 | 212.4 | 32.9 |

**1543A-65TSP, 1543A-160HTSP** — **U.S. UNITS**

| GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 45 PSI | GPM at 50 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 272 | 269.8 | 241 | 207.6 | 179.3 | 140.4 | 98.1 | 50.7 | 5.4 | 0 |

**1543A-65TSP, 1543A-160HTSP** — **METRIC UNITS**

| LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.1 BAR | LPM at 3.4 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 1029.6 | 1021.3 | 912.3 | 785.8 | 678.7 | 531.5 | 371.3 | 191.9 | 20.4 | 0 |

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# ALUMINUM, GAS ENGINE-DRIVEN, 2 IN. & 3 IN.

## Series 1570

**FEATURES:**

- Honda® engine (EPA & CARB certified)
- Close-coupled, gas engine driven
- Housing: Aluminum
- Pump seals: Buna-N/ceramic
- Inlet valve: Buna-N
- Suction lift: 28 ft./8.53m

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|
| 1572-SPX | 145 | 549 | 50 | 3.4 | 2" x 2" NPT | Honda® 4 hp |
| 1573-SPX | 280 | 1060 | 50 | 3.4 | 3" x 3" NPT | Honda® 5.5 hp |

**1572-SPX** — **U.S. UNITS**

| GPM at 0 PSI | GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 45 PSI | GPM at 50 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 145 | 141 | 133 | 125 | 114 | 102 | 87 | 70 | 51 | 24 | 0 |

**1572-SPX** — **METRIC UNITS**

| LPM at 0.0 BAR | LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.1 BAR | LPM at 3.4 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 549 | 534 | 503 | 473 | 432 | 386 | 329 | 265 | 193 | 91 | |

**1573-SPX** — **U.S. UNITS**

| GPM at 0 PSI | GPM at 5 PSI | GPM at 10 PSI | GPM at 15 PSI | GPM at 20 PSI | GPM at 25 PSI | GPM at 30 PSI | GPM at 35 PSI | GPM at 40 PSI | GPM at 45 PSI | GPM at 50 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 280 | 268 | 255 | 233 | 211 | 181 | 149 | 115 | 77 | 46 | 0 |

**1573-SPX** — **METRIC UNITS**

| LPM at 0.0 BAR | LPM at 0.3 BAR | LPM at 0.7 BAR | LPM at 1.0 BAR | LPM at 1.4 BAR | LPM at 1.7 BAR | LPM at 2.1 BAR | LPM at 2.4 BAR | LPM at 2.8 BAR | LPM at 3.1 BAR | LPM at 3.4 BAR |
|---|---|---|---|---|---|---|---|---|---|---|
| 1060 | 1014 | 965 | 882 | 799 | 685 | 564 | 435 | 291 | 174 | |

# TRANSFER PUMPS ACCESSORIES

## Transfer Pump Cam Lock Kit

**FEATURES:**

- Hypro cam lock kits easily add heavy-duty male cam lock connections to the NPT ports of 2" and 3" polypropylene pumps.
- Includes one male cam lock adapter for pump inlet
- Includes one heavy-duty 90° elbow and one male cam lock adapter for the pump outlet
- Prepares transfer pumps for the most common means of quick coupling a hose
- Interchangeable with other cam lock fittings made to MIL-C-27487 specifications

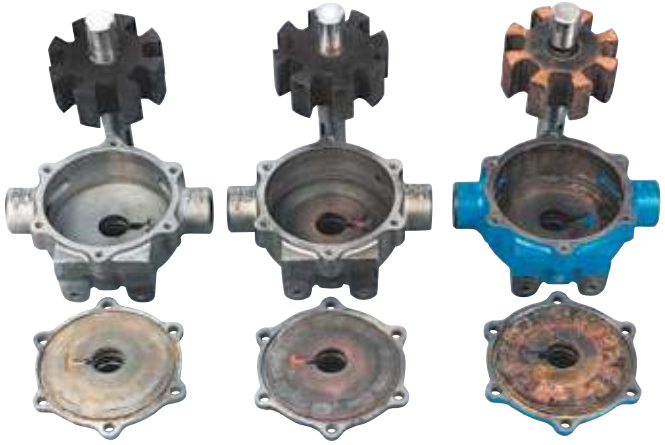
**ORDER INFORMATION**

| Size | Model Number |
|---|---|
| 2" NPT | 3410-0041 |
| 3" NPT | 3410-0042 |

Honda® is a registered trademark of Honda Motor Co., Ltd.
Hypro® is a registered trademark of Pentair.

# ROLLER PUMP COMPARISONS

**SILVER SERIES XL*** **NI-RESIST** **CAST IRON**



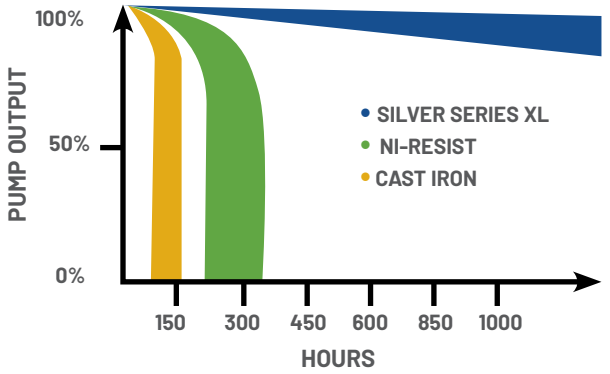
These three pump housings were photographed after being tested with a 30:1 mix of water and Roundup® herbicide.

The Ni-Resist and Cast Iron indicate damage from pitting and corrosion, but the Silver Series XL is in like-new condition after more than 1000 hours of use.

*Get up to 10 times longer pump life with Hypro Silver Series XL Roller pumps!

### HERBICIDE USERS: GET UP TO 10 TIMES LONGER PUMP LIFE!

- Cast Iron pumps lasted to 140 hours before failure.
- Ni-Resist pumps lasted to 332 hours before failure.
- Silver Series X pumps ran over 1000 hours and still met new pump specs!



Floating Design, PTFE Coating

Ni-Resist Pumps

### FLOATING PTFE COATED ROTORS

- Floating rotor design and black PTFE coating on metal rotors increases performance and extends pump life
- Standard production in 4001, 4101, 6500, & 7560 Silver Series XL and Ni-Resist pumps

### CLEAR COAT FINISH

- Offers increased protection from chemical attack and from the elements
- Included on all Ni-Resist roller pumps

Roundup® is a registered trademark of Monsanto Co.

# PUMP RECOMMENDATIONS FOR APPLICATIONS

## WHICH ROLLER PUMP, ROLLERS AND SEALS SHOULD YOU USE?

Material options for rollers and seals are listed in the order of recommendations for usage.
These recommendations are only a general guide. For suggestions on specific chemicals or applications, call Pentair's Technical/Applications Department at (800) 445-8360.

| Application | Specific Chemicals | Suggestions | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Housing Materials | | | Roller Materials | | | Seal Materials | |
| | | Silver Series XL | Ni-Resist | Cast Iron | Super Roller | Poly Rollers | Teflon® Rollers* | Viton® | Buna-N |
| WEED CONTROL CHEMICALS | Emulsions, soluble powders, sodium arsenate. | X | X | X | X | | | X | |
| | Chemicals containing glyphosate (such as Roundup®) or other acidics | X | | | X | X | X* | X | |
| INSECT CONTROL | Emulsions not containing aromatic solvents. | X | X | X | X | | | X | |
| BRUSH CONTROL | Heavy-duty sprays using diesel oil for carrier. | X | X | X | X | | | X | |
| PEST CONTROL CHEMICALS, FUMIGANTS, ETC. | This category or use includes mosquito sprays, termite control liquids, nematocides, soil and grain fumigants where any of the following chemicals with aromatic solvents are present: Pentachlorophenol, xylene, xylol, benzene, high sulphur fuel or diesel oil. Fumigants containing: ethylene dichloride, ethylene dibromide, carbon tetrachloride, perchlorethylene, trighlorethylene, methyl bromide, and other aromatic solvents. | X | X | X | X | | | X | |
| LIQUID FERTILIZERS | Up to 32% nitrogen content, or others if the liquid is atmospheric pressure and the temperature is handled. | X | X | | | X | | | X |
| POWDERED FERTILIZERS | Fertilizers dissolved in water (greenhouse plant food). | X | X | X | X | X | | X | X |
| PUMPING | Large quantities of plain water. | X | X | X | X | X | | X | X |
| SPRAYING | Wettable powder sprays. | X | X | X | X | X | | X | X |
| MATERIAL HANDLING | Heavy abrasive powders in suspension. | X | X | X | X | X | | X | X |
| ACIDS | Mild sulfuric acid for spraying. Mild muriatic acid, inhibited muriatic, etc. | X | | | | X | X* | X | |

*Note: Limit Pressure at 100 psi (6.9 bar) when using Teflon® Rollers.

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Hypro® is a registered trademark of Pentair.
Roundup® is a registered trademark of Monsanto Company.
Viton® is a registered trademark of DuPont.

# CAST IRON, NI-RESIST OR SILVER SERIES XL

## Series 4001 4 Roller

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| | @1100 RPM | | @1400 RPM | | @1800 RPM | |
| 0 PSI | 5.5 | .06 | 7.1 | .10 | 9.1 | .14 |
| 0 BAR | 20.8 | .06 | 26.9 | .10 | 34.4 | .14 |
| 25 PSI | 4.9 | .14 | 6.4 | .20 | 8.5 | .30 |
| 1.7 BAR | 18.5 | .14 | 24.2 | .20 | 32.2 | .30 |
| 50 PSI | 4.4 | .24 | 5.9 | .32 | 8.0 | .46 |
| 3.4 BAR | 16.6 | .24 | 22.3 | .32 | 30.3 | .46 |
| 75 PSI | 4.1 | .34 | 5.6 | .44 | 7.6 | .62 |
| 5.2 BAR | 15.5 | .34 | 21.2 | .44 | 28.7 | .62 |
| 100 PSI | 3.8 | .41 | 5.3 | .56 | 7.3 | .78 |
| 6.9 BAR | 14.4 | .41 | 20.1 | .56 | 27.6 | .78 |
| 125 PSI | 3.5 | .50 | 5.0 | .68 | 7.0 | .95 |
| 8.6 BAR | 13.2 | .50 | 18.9 | .68 | 26.5 | .95 |
| 150 PSI | 3.3 | .62 | 4.8 | .78 | 6.7 | 1.1 |
| 10.3 BAR | 12.5 | .62 | 18.2 | .78 | 25.4 | 1.1 |

### FEATURES:

- Port size: 3/4" NPT
- Max. fluid temperature: 140°F/60°C
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Pump shaft rotation: Clockwise when looking at the shaft end (counter clockwise available)
- Rollers: Super Rollers standard [Poly (T3) and Teflon® (T2)]
- Shaft Seals: Viton® standard
- Available shaft adapters: See page 76
- Special torque arm and base kit is available for gas engines
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Weight: 5 lbs./2.3 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 4001C | 9.1 | 34.4 | 150 | 10.3 | 1800 | 5/8" | 15.9 mm | solid |
| 4001C-H | 9.1 | 34.4 | 150 | 10.3 | 1800 | 1/2" | 12.7 mm | hollow |
| 4001 | 9.1 | 34.4 | 150 | 10.3 | 1800 | 5/8" | 15.9 mm | solid |
| 4001N-H | 9.1 | 34.4 | 150 | 10.3 | 1800 | 1/2" | 12.7 mm | hollow |
| 4001XL | 9.1 | 34.4 | 150 | 10.3 | 1800 | 5/8" | 15.9 mm | solid |
| 4001XL-H | 9.1 | 34.4 | 150 | 10.3 | 1800 | 1/2" | 12.7 mm | hollow |

Teflon® rollers - Add Suffix "T2" - (i.e.: 4001C-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 4001C-T3).
Reverse rotation* - Add Suffix "R" - (i.e.: 4001C-R).

# CAST IRON, NI-RESIST OR SILVER SERIES XL

## Series 4101 4 Roller

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| | @1800 RPM | | @2200 RPM | | @2600 RPM | |
| 0 PSI | 5.0 | .11 | 6.2 | .14 | 7.2 | .16 |
| 0 BAR | 18.9 | .11 | 23.5 | .14 | 27.3 | .16 |
| 25 PSI | 4.8 | .21 | 5.8 | .27 | 6.9 | .30 |
| 1.7 BAR | 18.1 | .21 | 21.9 | .27 | 26.1 | .30 |
| 50 PSI | 4.5 | .34 | 5.6 | .40 | 6.6 | .46 |
| 3.4 BAR | 17.0 | .34 | 21.2 | .40 | 25.0 | .46 |
| 75 PSI | 4.2 | .45 | 5.4 | .55 | 6.4 | .62 |
| 5.2 BAR | 15.9 | .45 | 20.4 | .55 | 24.2 | .62 |
| 100 PSI | 3.9 | .56 | 5.0 | .68 | 6.0 | .76 |
| 6.9 BAR | 14.8 | .56 | 18.9 | .68 | 22.7 | .76 |
| 125 PSI | 3.7 | .68 | 4.7 | .82 | 5.7 | .92 |
| 8.6 BAR | 14.0 | .68 | 17.8 | .82 | 21.6 | .92 |
| 150 PSI | 3.4 | .78 | 4.4 | .96 | 5.4 | 1.08 |
| 10.3 BAR | 12.9 | .78 | 16.6 | .96 | 20.4 | 1.08 |

Teflon® is a registered trademark of E.I. DuPont de Nemours and Co.
Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

### FEATURES:

- Port size: 3/4" NPT
- Max. fluid temperature: 140°F/60°C
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Pump shaft rotation: Clockwise when looking at the shaft end (counter clockwise available)
- Rollers: Super Rollers standard [Poly (T3) and Teflon® (T2)]
- Shaft Seals: Viton® standard
- Available shaft adapters: See page 76
- Special torque arm and base kit is available for gas engines
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Weight: 5 lbs./2.27 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 4101C | 7.2 | 27.3 | 150 | 10.3 | 2600 | 5/8" | 15.9 mm | solid |
| 4101C-H | 7.2 | 27.3 | 150 | 10.3 | 2600 | 1/2" | 12.7 mm | hollow |
| 4101N | 7.2 | 27.3 | 150 | 10.3 | 2600 | 5/8" | 15.9 mm | solid |
| 4101N-H | 7.2 | 27.3 | 150 | 10.3 | 2600 | 1/2" | 12.7 mm | hollow |
| 4101XL | 7.2 | 27.3 | 150 | 10.3 | 2600 | 5/8" | 15.9 mm | solid |
| 4101XL-H | 7.2 | 27.3 | 150 | 10.3 | 2600 | 1/2" | 12.7 mm | hollow |

Teflon® rollers - Add Suffix "T2" - (i.e.: 4101C-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 4101C-T3).
Reverse rotation* -Add Suffix "R" - (i.e.: 4101C-R).

# NI-RESIST OR SILVER SERIES XL

## Series 4001 and 4101 12 volt DC 4 Roller

### FEATURES:

- Super Rollers and Viton® seals standard
- Locking collar and torque arm come in each package
- Rotor: Ni-Resist (N) or Silvercast (XL)
- Weight: 16-18 lbs./7.3-8.2 kg

Note: All models come in either Ni-Resist or Silver Series XL housings.

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 4001N-EH | 10.4 | 39.4 | 30 | 2.1 | 1900 | 1/2" | 12.7 mm | hollow |
| 4001N-E2H | 9.9 | 37.5 | 50 | 3.4 | 1600 | 1/2" | 12.7 mm | hollow |
| 4001XL-EH | 10.4 | 39.4 | 30 | 2.1 | 1900 | 1/2" | 12.7 mm | hollow |
| 4001XL-E2H | 9.9 | 37.5 | 50 | 3.4 | 1600 | 1/2" | 12.7 mm | hollow |
| 4101N-EH | 7.5 | 28.4 | 50 | 3.4 | 1900 | 1/2" | 12.7 mm | hollow |
| 4101N-E2H | 5.9 | 22.3 | 90 | 6.2 | 1600 | 1/2" | 12.7 mm | hollow |
| 4101XL-EH | 7.5 | 28.4 | 50 | 3.4 | 1900 | 1/2" | 12.7 mm | hollow |
| 4101XL-E2H | 5.9 | 22.3 | 90 | 6.2 | 1600 | 1/2" | 12.7 mm | hollow |

Teflon® rollers - Add Suffix "T2" - (i.e.: 4001N-EHT2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 4001N-EHT3).

### U.S. UNITS

Series 4101-EH and 4101-E2H

| Model 4101N-EH & 4101XL-EH | | | | Model 4101N-E2H & 4101XL-E2H | | |
|---|---|---|---|---|---|---|
| Volts | PSI | AMPS | GPM | PSI | AMPS | GPM |
| **12.0** (Battery) Engine Off | 0 | 10.0 | 6.3 | 0 | --- | --- |
| | 5 | 11.3 | 6.0 | 10 | 8.4 | 5.3 |
| | 10 | 12.5 | 5.8 | 20 | 11.8 | 4.8 |
| | 15 | 13.7 | 5.6 | 30 | 13.7 | 4.65 |
| | 20 | 15.1 | 5.4 | 40 | 16.4 | 4.4 |
| | 25 | 16.7 | 5.2 | 50 | 19.6 | 4.05 |
| | 30 | 18.6 | 5.0 | 60 | 22.8 | 3.65 |
| | 35 | 20.3 | 4.8 | 70 | 25.8 | 3.20 |
| | 40 | 22.3 | 4.6 | 80 | 28.9 | 3.00 |
| | 45 | 24.1 | 4.4 | 90 | 31.5 | 2.75 |
| | 50 | 25.7 | 4.2 | 100 | 34.2 | 2.60 |
| **13.5** (Alternator) Engine Running | 0 | 10.4 | 7.5 | 0 | --- | --- |
| | 5 | 11.7 | 7.0 | 10 | 9.1 | 5.9 |
| | 10 | 13.0 | 6.6 | 20 | 11.2 | 5.6 |
| | 15 | 14.2 | 6.4 | 30 | 13.9 | 5.25 |
| | 20 | 15.8 | 6.2 | 40 | 16.9 | 5.0 |
| | 25 | 17.4 | 6.0 | 50 | 19.5 | 4.7 |
| | 30 | 19.6 | 5.8 | 60 | 22.7 | 4.35 |
| | 35 | 20.9 | 5.6 | 70 | 25.7 | 4.0 |
| | 40 | 22.5 | 5.4 | 80 | 29.2 | 3.6 |
| | 45 | 24.3 | 5.2 | 90 | 31.9 | 3.4 |
| | 50 | 26.1 | 5.0 | 100 | 34.8 | 3.2 |

### METRIC UNITS

| Model 4101N-EH & 4101XL-EH | | | | Model 4101N-E2H & 4101XL-E2H | | |
|---|---|---|---|---|---|---|
| Volts | BAR | AMPS | LPM | BAR | AMPS | LPM |
| **12.0** (Battery) Engine Off | 0 | 10.0 | 23.8 | 0 | --- | --- |
| | .3 | 11.3 | 22.7 | .7 | 8.4 | 20.0 |
| | .7 | 12.5 | 22.0 | 1.4 | 11.8 | 18.2 |
| | 1.0 | 13.7 | 21.2 | 2.1 | 13.7 | 17.6 |
| | 1.4 | 15.1 | 20.4 | 2.8 | 16.4 | 16.7 |
| | 1.7 | 16.7 | 19.7 | 3.4 | 19.6 | 15.3 |
| | 2.1 | 18.6 | 18.9 | 4.1 | 22.8 | 13.8 |
| | 2.4 | 20.3 | 18.2 | 4.8 | 25.8 | 12.1 |
| | 2.8 | 22.3 | 17.4 | 5.5 | 28.9 | 11.4 |
| | 3.1 | 24.1 | 16.7 | 6.2 | 31.5 | 10.4 |
| | 3.4 | 25.7 | 15.9 | 6.9 | 34.2 | 9.84 |
| **13.5** (Alternator) Engine Running | 0 | 10.4 | 28.4 | 0 | --- | --- |
| | .3 | 11.7 | 26.5 | .7 | 9.1 | 22.3 |
| | .7 | 13.0 | 25.0 | 1.4 | 11.2 | 21.2 |
| | 1.0 | 14.2 | 24.2 | 2.1 | 13.9 | 19.9 |
| | 1.4 | 15.8 | 23.5 | 2.8 | 16.9 | 18.9 |
| | 1.7 | 17.4 | 22.7 | 3.4 | 19.5 | 17.8 |
| | 2.1 | 19.6 | 22.0 | 4.1 | 22.7 | 16.5 |
| | 2.4 | 20.9 | 21.2 | 4.8 | 25.7 | 15.1 |
| | 2.8 | 22.5 | 20.4 | 5.5 | 29.2 | 13.6 |
| | 3.1 | 24.3 | 19.7 | 6.2 | 31.9 | 12.9 |
| | 3.4 | 26.1 | 18.9 | 6.9 | 34.8 | 12.1 |

Series 4001-EH and 4001-E2H

| Model 4001N-EH & 4001XL-EH | | | | Model 4001N-E2H & 4001XL-E2H | | |
|---|---|---|---|---|---|---|
| Volts | PSI | AMPS | GPM | PSI | AMPS | GPM |
| **12.0** (Battery) Engine Off | 0 | 12.6 | 9.0 | 10 | 13.9 | 8.4 |
| | 5 | 14.1 | 8.3 | 20 | 18.0 | 7.9 |
| | 10 | 15.2 | 8.1 | 30 | 22.2 | 7.2 |
| | 15 | 17.3 | 7.8 | 35 | 25.0 | 6.9 |
| | 20 | 19.7 | 7.2 | 40 | 27.0 | 6.5 |
| | 25 | 22.1 | 6.7 | 50 | 31.6 | 5.9 |
| | 30 | 24.8 | 6.2 | 60 | 36.2 | 5.4 |
| **13.5** (Alternator) Engine Running | 0 | 13.4 | 10.4 | 10 | 14.4 | 9.9 |
| | 5 | 14.8 | 9.9 | 20 | 18.3 | 9.1 |
| | 10 | 16.2 | 9.4 | 30 | 22.3 | 8.5 |
| | 15 | 18.2 | 8.9 | 35 | 24.5 | 8.3 |
| | 20 | 20.5 | 8.5 | 40 | 27.0 | 8.0 |
| | 25 | 22.5 | 8.2 | 50 | 31.0 | 7.3 |
| | 30 | 24.9 | 7.7 | 60 | 36.1 | 6.8 |

| Model 4001N-EH & 4001XL-EH | | | | Model 4001N-E2H & 4001XL-E2H | | |
|---|---|---|---|---|---|---|
| Volts | BAR | AMPS | LPM | BAR | AMPS | LPM |
| **12.0** (Battery) Engine Off | 0 | 12.6 | 34.1 | .7 | 13.9 | 31.8 |
| | .3 | 14.1 | 31.4 | 1.4 | 18.0 | 29.9 |
| | .7 | 15.2 | 30.7 | 2.1 | 22.2 | 27.3 |
| | 1.0 | 17.3 | 29.5 | 2.4 | 25.0 | 26.1 |
| | 1.4 | 19.7 | 27.3 | 2.8 | 27.0 | 24.6 |
| | 1.7 | 22.1 | 25.4 | 3.5 | 31.6 | 22.3 |
| | 2.1 | 24.8 | 23.5 | 4.1 | 36.2 | 20.4 |
| **13.5** (Alternator) Engine Running | 0 | 13.4 | 39.4 | .7 | 14.4 | 37.5 |
| | .3 | 14.8 | 37.5 | 1.4 | 18.3 | 34.4 |
| | .7 | 16.2 | 35.6 | 2.1 | 22.3 | 32.2 |
| | 1.0 | 18.2 | 33.7 | 2.4 | 24.5 | 31.4 |
| | 1.4 | 20.5 | 32.2 | 2.8 | 27.0 | 30.3 |
| | 1.7 | 22.5 | 31.0 | 3.5 | 31.0 | 27.6 |
| | 2.1 | 24.9 | 29.1 | 4.1 | 36.1 | 25.7 |

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Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# CAST IRON, NI-RESIST OR SILVER SERIES XL

## Series 6500 6-Roller

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| | @540 RPM | | @1000 RPM | | @1200 RPM | |
| 0 PSI | 9.7 | .08 | 18.2 | .20 | 21.8 | .30 |
| 0 BAR | 36.7 | .08 | 68.9 | .20 | 82.5 | .30 |
| 50 PSI | 8.0 | .38 | 16.5 | .71 | 20.1 | .90 |
| 3.4 BAR | 30.3 | .38 | 62.4 | .71 | 76.1 | .90 |
| 100 PSI | 7.2 | .68 | 15.4 | 1.26 | 19.1 | 1.51 |
| 6.9 BAR | 27.3 | .68 | 58.3 | 1.26 | 72.3 | 1.51 |
| 150 PSI | 6.6 | .97 | 14.7 | 1.80 | 18.2 | 2.14 |
| 10.3 BAR | 25 | .97 | 55.6 | 1.80 | 68.9 | 2.14 |
| 200 PSI | 5.6 | 1.29 | 14.0 | 2.34 | 17.3 | 2.84 |
| 13.8 BAR | 21.2 | 1.29 | 53 | 2.34 | 65.5 | 2.84 |
| 250 PSI | 4.9 | 1.65 | 13.4 | 2.91 | 16.5 | 3.48 |
| 17.2 BAR | 18.5 | 1.65 | 50.7 | 2.91 | 62.4 | 3.48 |
| 300 PSI | 4.3 | 1.91 | 12.7 | 3.47 | 15.7 | 4.17 |
| 20.7 BAR | 16.3 | 1.91 | 48.1 | 3.47 | 59.4 | 4.17 |

**FEATURES:**

- Port size: 3/4" NPT
- 1" hose barb inlet fitting for 1000 rpm operation
- Max. fluid temperature: 140°F/60°C
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Shaft rotation: Counter clockwise when lookng at the shaft end (clockwise available)
- Rollers: Super Rollers standard [Poly (T3) and Teflon® (T2)]
- Shaft Seals: Viton® standard
- Available PTO adapters: See page 76
- Recommended PTO torque arm kit 3430-0540
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Weight: 9 lbs./4.1 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 6500C | 21.8 | 82.5 | 300 | 20.7 | 1200 | 5/8" | 15.9 mm | solid |
| 6500N | 21.8 | 82.5 | 300 | 20.7 | 1200 | 5/8" | 15.9 mm | solid |
| 6500XL | 21.8 | 82.5 | 300 | 20.7 | 1200 | 5/8" | 15.9 mm | solid |

Teflon® rollers - Add Suffix "T2" - (i.e.: 6500C-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 6500C-T3).
Reverse rotation*- Add Suffix "R" - (i.e.: 6500C-R).

# CAST IRON, NI-RESIST OR SILVER SERIES XL

## Series 7560 8-Roller

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| | @540 RPM | | @800 RPM | | @1000 RPM | |
| 0 PSI | 12 | .33 | 18.3 | .89 | 22.5 | 1.56 |
| 0 BAR | 45.4 | .33 | 69.3 | .89 | 85.2 | 1.56 |
| 50 PSI | 11.1 | .74 | 17.5 | 1.26 | 22 | 1.78 |
| 3.4 BAR | 42 | .74 | 66.2 | 1.26 | 83.3 | 1.78 |
| 100 PSI | 10.3 | 1.25 | 16.9 | 1.95 | 21.3 | 2.53 |
| 6.9 BAR | 39 | 1.25 | 64 | 1.95 | 80.6 | 2.53 |
| 150 PSI | 9.5 | 1.77 | 16.1 | 2.65 | 20.6 | 3.5 |
| 10.3 BAR | 36 | 1.77 | 60.9 | 2.65 | 78 | 3.5 |
| 200 PSI | 8.6 | 2.26 | 15.5 | 3.4 | 20 | 4.2 |
| 13.8 BAR | 32.5 | 2.26 | 58.7 | 3.4 | 75.7 | 4.2 |
| 250 PSI | 7.0 | 2.78 | 14.5 | 4.2 | 18.9 | 5.3 |
| 17.2 BAR | 29.5 | 2.78 | 54.9 | 4.2 | 71.5 | 5.3 |
| 300 PSI | 7.1 | 3.3 | 18.9 | 5.3 | 18.0 | 6.1 |
| 20.7 BAR | 26.9 | 3.3 | 51.9 | 5.3 | 68.1 | 6.1 |

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Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port sizes: 3/4" NPT
- 1" hose barb inlet fitting for 1000 rpm operation
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Shaft rotation: Counter clockwise when looking at the shaft end (clockwise available)
- Rollers: Super Rollers standard [Poly (T3) and Teflon® (T2)]
- Shaft Seals: Viton® standard
- Available PTO adapters: See page 76
- Recommended PTO torque arm kit 3430-0540
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Weight: 13 lbs./5.89 kg

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 7560C | 22.5 | 85.2 | 300 | 26.7 | 1000 | 15/16" | 23.8 mm | solid |
| 7560N | 22.5 | 85.2 | 300 | 26.7 | 1000 | 15/16" | 23.8 mm | solid |
| 7560XL | 22.5 | 85.2 | 300 | 26.7 | 1000 | 15/16" | 23.8 mm | solid |

Teflon® rollers - Add Suffix "T2" - (i.e.: 7560C-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 7560C-T3).
Reverse rotation*- Add Suffix "R" - (i.e.: 7560C-R).

# HYDRAULICALLY-DRIVEN CAST IRON, NI-RESIST OR SILVER SERIES

## Series 7560-GM30, 7560-GM15 8-Roller

### FEATURES:

- Hydraulic motor drive (for open center, closed center and load-sensing systems)
- Max. fluid temperature: 140°F/60°C
- Pump port size: 3/4" NPT
- 1" hose barb inlet fitting for 1000 rpm operation
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Rollers: Super Rollers standard [Poly (T3) and Teflon® (T2)]
- Shaft Seals: Viton® standard
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Motor port size: -10 SAE (7/8"- 14" UNF)

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Motor Capacity Hydraulic Flow Max | |
|---|---|---|---|---|---|---|---|
| | | | | | | US | Metric |
| 7560C-GM30 | 20.8 | 78.7 | 300 | 20.7 | 1000 | 12 gpm | 45 lpm |
| 7560N-GM30 | 20.8 | 78.7 | 300 | 20.7 | 1000 | 12 gpm | 45 lpm |
| 7560XL-GM30 | 20.8 | 78.7 | 300 | 20.7 | 1000 | 12 gpm | 45 lpm |
| 7560C-GM15 | 20.1 | 76.1 | 300 | 20.7 | 1000 | 6 gpm | 23 lpm |
| 7560N-GM15 | 20.1 | 76.1 | 300 | 20.7 | 1000 | 6 gpm | 23 lpm |
| 7560XL-GM15 | 20.1 | 76.1 | 300 | 20.7 | 1000 | 6 gpm | 23 lpm |

Teflon® rollers - Add Suffix "T2" - (i.e.: 7560C-GM30-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 7560C-GM30-T3).

### 7560C,N,XL-GM15 — U.S. UNITS

| Hyd.GPM | GPM at | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 PSI | 25 PSI | 50 PSI | 75 PSI | 100 PSI | 125 PSI | 150 PSI | 200 PSI | 250 PSI | 300 PSI |
| 3 | 10.6 | 9.4 | 8.5 | 7.7 | 7.1 | 6.5 | 5.8 | 4.8 | 3.2 | 1.6 |
| 4 | 14.1 | 13.1 | 12.0 | 11.3 | 10.6 | 10.0 | 9.3 | 8.3 | 6.9 | 5.2 |
| 5 | 17.4 | 16.6 | 15.7 | 15.0 | 14.4 | 13.5 | 13.2 | 11.8 | 10.3 | 8.7 |
| 6 | 20.8 | 20.1 | 19.4 | 18.6 | 17.9 | 17.1 | 16.5 | 14.9 | 13.3 | 11.8 |

### 7560C,N,XL-GM15 — METRIC UNITS

| Hyd.LPM | LPM at | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 Bar | 1.7 Bar | 3.5 Bar | 5.2 Bar | 6.9 Bar | 8.6 Bar | 10.3 Bar | 13.8 Bar | 17.2 Bar | 20.7 Bar |
| 11.4 | 40.1 | 35.6 | 32.2 | 29.1 | 26.9 | 24.6 | 22.0 | 18.2 | 12.1 | 6.1 |
| 15.1 | 53.4 | 49.6 | 45.4 | 42.8 | 40.1 | 37.9 | 35.2 | 31.4 | 26.1 | 19.7 |
| 18.9 | 65.9 | 62.8 | 59.4 | 56.8 | 54.5 | 51.1 | 50.0 | 44.7 | 39.0 | 32.9 |
| 22.7 | 78.7 | 76.1 | 73.4 | 70.4 | 67.8 | 64.7 | 62.5 | 56.4 | 50.3 | 44.7 |

### 7560C,N,XL-GM30 — U.S. UNITS

| Hyd. GPM | GPM at | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 PSI | 25 PSI | 50 PSI | 77 PSI | 100 PSI | 125 PSI | 150 PSI | 200 PSI | 250 PSI | 300 PSI |
| 5 | 9.0 | 8.5 | 7.8 | 7.3 | 6.7 | 6.1 | 5.5 | 4.4 | 3.3 | 2.2 |
| 6 | 10.5 | 10.0 | 9.5 | 8.9 | 8.4 | 7.8 | 7.3 | 6.2 | 5.2 | 4.1 |
| 7 | 11.9 | 11.5 | 11.0 | 10.4 | 9.9 | 9.4 | 8.9 | 7.8 | 6.8 | 5.7 |
| 8 | 13.7 | 13.1 | 12.5 | 12.0 | 11.5 | 10.9 | 10.4 | 9.4 | 8.4 | 7.3 |
| 9 | 15.2 | 14.6 | 14.1 | 13.6 | 13.1 | 12.6 | 12.1 | 11.1 | 10.0 | 9.1 |
| 10 | 16.9 | 16.5 | 15.9 | 15.4 | 14.9 | 14.3 | 13.9 | 12.9 | 11.9 | 11.0 |
| 11 | 18.6 | 18.2 | 17.6 | 17.1 | 16.6 | 16.1 | 15.6 | 14.7 | 13.8 | 12.9 |
| 12 | 20.1 | 19.6 | 19.1 | 18.6 | 18.1 | 17.6 | 17.1 | 16.3 | 15.3 | 14.5 |

### 7560C,N,XL-GM30 — METRIC UNITS

| Hyd. LPM | LPM at | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 BAR | 2 BAR | 4 BAR | 6 BAR | 8 BAR | 10 BAR | 12 BAR | 14 BAR | 16 BAR | 18 BAR | 20 BAR |
| 20 | 35.8 | 33.2 | 30.5 | 28.1 | 25.6 | 23.4 | 20.9 | 18.5 | 15.8 | 12.6 | 10.0 |
| 25 | 42.8 | 39.5 | 36.8 | 34.0 | 31.8 | 29.2 | 26.2 | 23.7 | 21.6 | 18.9 | 16.4 |
| 30 | 51.8 | 49.0 | 45.8 | 43.0 | 40.3 | 37.9 | 35.3 | 33.3 | 31.1 | 28.9 | 26.2 |
| 35 | 58.1 | 55.8 | 52.7 | 50.1 | 47.7 | 45.5 | 43.1 | 40.9 | 38.8 | 36.3 | 33.5 |
| 40 | 67.6 | 64.8 | 62.4 | 60.0 | 57.7 | 55.8 | 53.4 | 51.3 | 48.8 | 46.6 | 44.1 |
| 45 | 75.3 | 72.7 | 70.4 | 68.1 | 66.0 | 63.8 | 61.8 | 59.8 | 57.8 | 55.7 | 53.3 |

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Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair Ltd.

# CAST IRON, NI-RESIST OR SILVER SERIES XL

## Series 7700 7-Roller

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port size: 3/4" NPT
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Shaft rotation: Counter clockwise when looking at the shaft end (Clockwise available)
- Rollers: Super Rollers standard [Poly (T3) and Teflon® (T2)]
- Shaft Seals: Viton® standard
- Available PTO adapters: See page 76
- Recommended PTO torque arm kit 3430-0540
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Weight: 14 lbs./6.36 kg

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| | @540 RPM | | @600 RPM | | @800 RPM | |
| 0 PSI | 14.2 | .23 | 15.3 | .28 | 22.1 | .37 |
| 0 BAR | 53.7 | .23 | 57.9 | .28 | 83.6 | .37 |
| 50 PSI | 12.9 | .56 | 14.0 | .62 | 20.7 | .86 |
| 3.4 BAR | 48.8 | .56 | 53 | .62 | 78.3 | .86 |
| 100 PSI | 11.9 | 1.10 | 13.0 | 1.20 | 19.5 | 1.66 |
| 6.9 BAR | 45 | 1.10 | 49.2 | 1.20 | 73.8 | 1.66 |
| 150 PSI | 11.2 | 1.64 | 12.3 | 1.80 | 18.6 | 2.40 |
| 10.3 BAR | 42.4 | 1.64 | 46.6 | 1.80 | 70.4 | 2.40 |
| 200 PSI | 10.3 | 2.22 | 11.6 | 2.44 | 17.8 | 3.26 |
| 13.8 BAR | 39 | 2.22 | 43.9 | 2.44 | 67.4 | 3.26 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 7700C | 22.1 | 83.7 | 200 | 13.8 | 800 | 15/16" | 23.8 mm | solid |
| 7700N | 22.1 | 83.7 | 200 | 13.8 | 800 | 15/16" | 23.8 mm | solid |
| 7700XL | 22.1 | 83.7 | 200 | 13.8 | 800 | 15/16" | 23.8 mm | solid |

Teflon® rollers - Add Suffix "T2" - (i.e.: 7700C-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 7700C-T3).
Reverse rotation* - Add Suffix "R" - (i.e.: 7700C-R).

# CAST IRON, NI-RESIST OR SILVER SERIES XL

## Series 1700 5-Roller

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port size: 1" NPT (BSP available on 1700C)
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Shaft rotation: Counter clockwise when looking at the shaft end (Clockwise available)
- Rollers: Super Rollers standard [Poly (T3) and Teflon® (T2) available]
- Shaft Seals: Viton® standard
- Available PTO adapters (forged steel recommended): See page 76
- Recommended PTO torque arm kit 3430-0540
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Weight: 19 lbs./8.6 kg

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| | @540 RPM | | @600 RPM | | @1000 RPM | |
| 0 PSI | 25.0 | 2.7 | 28.0 | .34 | 45.0 | 1.42 |
| 0 BAR | 94.6 | 2.7 | 106 | .34 | 170 | 1.42 |
| 50 PSI | 21.0 | 1.18 | 24.5 | 1.39 | 43.0 | 3.0 |
| 3.4 BAR | 79.5 | 1.18 | 92.7 | 1.39 | 163 | 3.0 |
| 100 PSI | 19.0 | 2.13 | 22.0 | 2.36 | 41.0 | 4.67 |
| 6.9 BAR | 71.9 | 2.13 | 83.3 | 2.36 | 155 | 4.67 |
| 150 PSI | 17.0 | 2.89 | 20.0 | 3.34 | 39.0 | 6.07 |
| 10.3 BAR | 64.3 | 2.89 | 75.7 | 3.34 | 148 | 6.07 |
| 200 PSI | 15.0 | 3.85 | 18.0 | 4.39 | ---- | ---- |
| 13.8 BAR | 56.8 | 3.85 | 681 | 4.39 | ---- | ---- |

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**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 1700C* | 45 | 170 | 200 | 13.8 | 1000 | 15/16" | 23.8 mm | solid |
| 1700N | 45 | 170 | 200 | 13.8 | 1000 | 15/16" | 23.8 mm | solid |
| 1700XL | 45 | 170 | 200 | 13.8 | 1000 | 15/16" | 23.8 mm | solid |

* BSP Version - 1700C-BT
Teflon® rollers - Add Suffix "T2" - (i.e.: 1700C-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 1700C-T3).
Reverse rotation*- Add Suffix "R" - (i.e.: 1700C-R).

# CAST IRON, NI-RESIST OR SILVER SERIES XL

## Series 1502 6-Roller

### FEATURES:

- Max. fluid temperature: 140°F/60°C
- Port size: 1-1/2" NPT (BSP available on 1502C)
- Housing: Cast Iron (C), Ni-Resist (N) or Silvercast (XL)
- Shaft rotation: Counter clockwise when looking at the shaft end (Clockwise available)
- Rollers: Super rollers standard [Poly (T3) available]
- Shaft Seals: Buna-N standard on Cast Iron and Ni-Resist [Viton (O) available]; Viton® standard on Silver Series XL
- Available PTO adapters (forged steel recommended): See page 76
- Recommended PTO Torque Arm Kit 3430-0540
- Rotor: Cast Iron, Ni-Resist or Silvercast
- Weight: 30 lbs./13.6 kg

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP |
| | @540 RPM | | @600 RPM | | @1000 RPM | |
| 0 PSI | 33.1 | .51 | 36.8 | .66 | 62.1 | 2.02 |
| 0 BAR | 125 | .51 | 139 | .66 | 235 | 2.02 |
| 25 PSI | 29.7 | 1.02 | 33.6 | 1.15 | 58.5 | 3.04 |
| 1.7 BAR | 112 | 1.02 | 127 | 1.15 | 221 | 3.04 |
| 50 PSI | 27.8 | 1.45 | 31.7 | 1.68 | 56.9 | 3.69 |
| 3.4 BAR | 105 | 1.45 | 120 | 1.68 | 215 | 3.69 |
| 100 PSI | 24.3 | 2.46 | 28.3 | 2.78 | 53.9 | 5.31 |
| 6.9 BAR | 92 | 2.46 | 107 | 2.78 | 204 | 5.31 |
| 150 PSI | 21.0 | 3.54 | 25.0 | 3.95 | 50.9 | 7.12 |
| 10.3 BAR | 79.5 | 3.54 | 94.6 | 3.95 | 193 | 7.12 |

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | U.S | Metric | Shaft |
| 1502C* | 62 | 235 | 200 | 13.8 | 1000 | 15/16" | 23.8 mm | solid |
| 1502N | 62 | 235 | 200 | 13.8 | 1000 | 15/16" | 23.8 mm | solid |
| 1502XL | 62 | 235 | 200 | 13.8 | 1000 | 15/16" | 23.8 mm | solid |

*BSP Version - 1502C-BT
Teflon® rollers - Add Suffix "T2" - (i.e.: 1502C-T2).
Polypropylene rollers - Add Suffix "T3" - (i.e.: 1502C-T3).
Reverse rotation* - Add Suffix "R" - (i.e.: 1502C-R).

# CAST IRON OR SILVER SERIES XL, GAS ENGINE DRIVEN

## Models: 4101C-25, 4101XL-25

### FEATURES:

- 2.5 HP PowerPro Engine (CARB/EPA approved)
- Port size: 3/4" NPT
- Housing: Cast Iron (C) or Silvercast (XL)
- Rollers: Super rollers standard [Poly (T3) and Teflon® (T2)]
- Shaft Seals: Viton® standard
- Rotor: Cast Iron (C) or Silvercast (XL)
- Weight: 29 lbs./13.1 kg

| Pressure in PSI and BAR | GPM |
|---|---|
| BAR | LPM |
| 0 PSI | 8.9 |
| 0 BAR | 34 |
| 50 PSI | 8.6 |
| 3.4 BAR | 33 |
| 100 PSI | 8.3 |
| 6.9 BAR | 31 |
| 150 PSI | 8.0 |
| 10.3 BAR | 30 |

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Engine Mfgr. & HP |
|---|---|---|---|---|---|
| 4101C-25 | 8.9 | 34.7 | 100 | 6.9 | PowerPro 2.5 hp |
| 4101XL-25 | 8.9 | 34.7 | 150 | 10.3 | PowerPro 2.5 hp |

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# ROLLER PUMP KITS & ACCESSORIES

## ROLLER PUMP ACCESSORY SELECTION GUIDE

| Description | Series 1500 | Series 1700 | Series 6500 | Series 7560 | Series 7700 | Series 4000 | Series 5200 |
|---|---|---|---|---|---|---|---|
| 1000 rpm 1-3/4" Forged Steel PTO Adapter | 1320-0080 | 1320-0080 | ------- | 1320-0080 | ------- | ------- | ------- |
| 540 rpm 1-3/8" Quick Coupler | 1323-0072 | 1323-0072 | ------- | 1323-0072 | 1323-0072 | ------- | ------- |
| 1000 rpm 1-3/8" Quick Coupler | 1323-0073 | 1323-0073 | ------- | 1323-0073 | ------- | ------- | ------- |
| Multi-Speed 1-3/8" Quick Coupler | 1323-0076 | 1323-0076 | 1321-0012 | 1321-0013 | 1321-0013 | 1321-0012 | ------- |
| Steel Shaft Adapter 3/4" x 5/8" | ------- | ------- | 1320-0015 | ------- | ------- | 1320-0015 | ------- |
| Steel Shaft Adapter 5/8" x 5/8" | ------- | ------- | 1320-0016 | ------- | ------- | 1320-0016 | ------- |
| Steel Shaft Adapter 540 rpm x 1" | ------- | ------- | ------- | ------- | ------- | ------- | 1320-0081 |
| Repair Kits | 3430-0387<br>3430-0386 | 3430-0437 | 3430-0380 | 3430-0381 | 3430-0384 | 3430-0390 | ------- |
| Torque Arm Kit | ------- | 3430-0540 | 3430-0540 | 3430-0540 | 3430-0540 | ------- | ------- |
| Base Kits | 3420-0004 | 3420-0010 | 3420-0023 | 3420-0003 | 3420-0010 | 3420-0024*<br>3420-0025** | ------- |
| Hydraulic Flange Kit | ------- | ------- | ------- | 3430-0636 | ------- | ------- | ------- |

* For electric motor drive 3 1/2" shaft centerline (4001, 4101).
** For gas engine drive 43/16" shaft centerline (4101 only).

## ROLLER REPAIR KITS

| Kit Number | Pump Series | Description | Estimated Weight Ea. | |
|---|---|---|---|---|
| | | | US Units | Metric Units |
| 3430-0387 | 1502C and 1502N | Roller kit includes: 6 Super Rollers, 1 o-ring gasket, and 2 Buna-N seals | 1 lb. 7 oz. | 652 g |
| 3430-0386 | 1502XL | Roller kit includes: 6 Super Rollers, 1 o-ring gasket, and 2 Viton® seals | 1 lb. 8 oz. | 680 g |
| 3430-0437 | 1700 | Roller kit includes: 5 Super Rollers, 1 o-ring gasket, and 2 Viton® seals | 1 lb. 5 oz. | 595 g |
| 3430-0380 | 6500 | Roller kit includes: 6 Super Rollers, 1 o-ring gasket, and 2 Viton® seals | 8 oz. | 227 g |
| 3430-0381 | 7560/7700 | Roller kit includes: 8 Super Rollers, 1 o-ring gasket, and 2 Viton® seals | 12 oz. | 340 g |
| 3430-0390 | 4001/4101 | Roller kit includes: 4 Super Rollers, 1 o-ring gasket, and 2 Viton® seals | 3 oz. | 85 g |

## BASE KITS

| Kit Number | Pump Series | Description | Estimated Weight Ea. | |
|---|---|---|---|---|
| | | | US Units | Metric Units |
| 3420-0025 | 4101 | Base kit for mounting to gas engine, 4-3/16" shaft centerline.<br>Base kit includes: 1 Base, 2 Bolts and 2 Lock washers | 12 oz. | 340 g |
| 3420-0024 | 4001/4101 | Base kit for mounting to an electric motor, 3-1/2" shaft centerline.<br>Base kit includes: 1 Base, 2 Bolts and 2 Lock washers | 7 oz. | 198 g |
| 3420-0023 | 6500 | Base kit includes: 1 Base, 2 Bolts and 2 Lock washers | 12 oz. | 340 g |
| 3420-0003 | 7560 | Base kit includes: 1 Base, 3 Bolts and 3 Lock washers | 1 lb. 10 oz. | 737 g |
| 3420-0010 | 7700/1700 | Base kit includes: 1 Base and 4 Bolts | 14 oz. | 397 g |
| 3420-0004 | 1500 | Base kit includes: 1 Base and 4 Bolts | 6 lbs. | 2.7 kg |

# ROLLER PUMP KITS & ACCESSORIES

## PTO AND SHAFT ADAPTERS (FEMALE TO FEMALE)

| Part Number | US | Metric | US | Metric | Material | RPM | Pump Model |
|---|---|---|---|---|---|---|---|
| | PTO (I.D.) | PTO (I.D.) | Pump End (I.D.) | Pump End (I.D.) | | | |
| 1320-0015 | 3/4" | 19 mm | 5/8" | 19 mm | steel | * | 4000, 6500 |
| 1320-0016 | 5/8" | 15.9 mm | 5/8" | 15.9 mm | steel | * | 4000, 6500 |
| 1320-0054 | 3/4" | 19 mm | 15/16" | 23.8 mm | die cast | * | 1500, 1700, 7560, 7700 |

* Refer to recommended pump rpm.

## QUICK COUPLERS (FEMALE TO FEMALE)

| Part Number | PTO (I.D.) | | Pump End (I.D.) | | Material | RPM | Pump Model |
|---|---|---|---|---|---|---|---|
| | US | Metric | US | Metric | | | |
| 1323-0072 | 1-3/8" (6 spline) | 34.9 mm (6 spline) | 15/16 | 23.8 mm | forged steel | 540 | 1500,1700, 7560, 7700 |
| 1323-0073 | 1-3/8" (21 spline) | 34.9 mm (21 spline) | 15/16" | 23.8 mm | forged steel | 1000 | 1500, 1700, 7560 |
| 1321-0012* | 1-3/8" multi-speed) | 34.9 mm (multi-speed) | 5/8" | 15.9 mm | Die cast | 540/1000 | 4000, 6500 |
| 1321-0013* | 1-3/8" (multi-speed) | 34.9 mm (multi-speed) | 15/16" | 23.8 mm | Die cast | 540/1000 | 7560, 7700 |
| 1323-0076* | 1-3/8" (multi-speed) | 34.9 mm (multi-speed) | 15/16" | 23.8 mm | forged steel | 540/1000 | 1500, 1700, 7560, 7700 |
| 1323-0078 | 1-1/2" (8 spline) | 38 mm (8 spline) | 5/8" | 15.9 mm | forged steel | 1000 | 4000, 6500 |
| 1323-0079 | 1-1/2" (8 spline) | 38 mm (8 spline) | 15/16" | 23.8 mm | forged steel | 1000 | 1500, 1700, 7560 |

* Multi-speed couplers are compatible with both 6 and 21 spline PTO shafts, refer to OIPM for recommend pump RPM.

## TORQUE ARM KIT (PUMP NOT INCLUDED)

| Part Number | Material | RPM | For Pump Series | Estimated Weight Each | |
|---|---|---|---|---|---|
| | | | | US Units | Metric |
| 3430-0540 | steel | 540/1000 | 1502, 1700, 6500, 7560, and 7700 | 2 lbs. 4 oz. | 1.02 kg |

# OTHER PUMP ACCESSORIES

| Inches | mm |
|---|---|
| 1/8" | 3.2 mm |
| 3/16" | 4.7 mm |
| 1/4" | 6.4 mm |
| 1/2" | 13 mm |
| 5/8" | 15.9 mm |
| 3/4" | 19 mm |
| 7/8" | 22.2 mm |
| 15/16" | 23.8 mm |
| 1" | 25.4 mm |
| 1-1/8" | 28.6 mm |

**Note:**
These couplers are designed for inch dimensional shafts and keys. Metric dimensions are for reference only (except for 2739-1009).

## COUPLERS

| Series | Part Number | Description | Estimated Weight Each | |
|---|---|---|---|---|
| | | | US Units | Metric |
| 2738 (2.0 hp limit)* | 2738-1001 | 1/2" coupling end, with 1/8" keyway | 6 oz. | 170 g |
| | 2738-1002 | 5/8" coupling end, with 3/16" keyway | 6 oz. | 170 g |
| | 2738-1003 | 3/4" coupling end, with 3/16" keyway | 6 oz. | 170 g |
| | 2738-1004 | 7/8" coupling end, with 3/16" keyway | 6 oz. | 170 g |
| Replaces L-075 | 2728-1001 | Center disc | 1 oz. | 28 g |
| 2739 (5.0 hp limit)* | 2739-1001 | 5/8" coupling end, with 3/16" keyway | 11 oz. | 312 g |
| | 2739-1002 | 3/4" coupling end, with 3/16" keyway | 11 oz. | 312 g |
| | 2739-1003 | 7/8" coupling end, with 3/16" keyway | 11 oz. | 312 g |
| | 2739-1004 | 15/16" coupling end, with 1/4" keyway | 11 oz. | 312 g |
| | 2739-1005 | 1" coupling end, with 1/4" keyway | 11 oz. | 312 g |
| | 2739-1006 | 1-1/8" coupling end, with 1/4" keyway | 11 oz. | 312 g |
| | 2739-1009 | 24 mm coupling end, with 8mm keyway | 11 oz. | 312 g |
| | 2729-1001 | Center disc | 1 oz. | 28 g |
| Replaces L-095 | 2729-1005 | Heavy-duty center disc, urethane material | 1 oz. | 28 g |
| 2741 (10.5 hp limit)* | 2741-1001 | 3/4" coupling end, with 3/16" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1004 | 15/16" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1002 | 1" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1005 | 1-1/4" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1007 | 1-3/8" coupling end, with 5/16" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1003 | 1-1/8" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2729-1002 | Center disc | 1 oz. | 28 g |
| Replaces L-100 | 2729-1006 | heavy-duty center disc, urethane material | 1 oz. | 28g |
| 2740 (18.0 hp limit)* | 2740-1001 | 3/4" coupling end, with 3/16" keyway | 3 lbs. 11 oz. | 1.67 kg |
| | 2740-1002 | 1" coupling end, with 1/4" keyway | 3 lbs. 8 oz. | 1.59 kg |
| | 2740-1005 | 1-3/8" coupling end, with 5/16" keyway | 3 lbs. | 1.4 kg |
| | 2740-1007 | 1-1/8" coupling end, with 1/4" keyway | 2 lbs. 15 oz. | 1.33 kg |
| Replaces L-110 | 2729-1003 | Center disc | 3 oz. | 85 g |

* HP limit is electric motor hp at 1725 rpm for driving a steady uniform load. For an uneven load, stop-start and moderate shock loads, divide hp by a 1.5 service factor.

## ORDERING INSTRUCTIONS:

To order one 1/2" x 3/4" Series 2738 coupling, specify the following:
Note: It is not necessary to order in complete sets, parts can be ordered individually.

| Quantity | Part Number | Description |
|---|---|---|
| 1 | 2738-1001 | 1/2" coupling end |
| 1 | 2738-1003 | 3/4" coupling end |
| 1 | 2728-1001 | Center disc |

## RELIEF VALVES

| Part Number | Ports-NPT Inlet (M) Oultet (F) | Max. PSI | Max. BAR | Body Material | Valve Material | Estimated Weight Each | |
|---|---|---|---|---|---|---|---|
| | | | | | | US Units | Metric |
| 3300-0002 | 1/2" M x 1/2" F | 200 | 14 | cast bronze | stainless steel ball | 10 oz. | 283 g |
| 3300-0001 | 3/4" M x 3/4" F | 400 | 28 | cast bronze | stainless steel ball | 1 lb. 1 oz. | 482 g |
| 3301-0001 | 3/4" M x 3/4" F | 400 | 28 | cast bronze | flat neoprene | 1 lb. 2 oz. | 510 g |
| 3300-0093 | 3/4" M x 3/4" F | 300 | 20 | cast bronze | stainless steel ball | 1 lb. 2 oz. | 510 g |
| 3300-0094 | 1" M x 3/4" F | 150 | 10 | cast bronze | stainless steel ball | 1 lb. 4 oz. | 567 g |
| 3316-0002 | 1-1/4" | 200 | 14 | cast iron | stainless steel cone | 2 lbs. 14 oz. | 1.3 kg |
| 3300-0015 | 3/4" M - 3/4" F | 150 | 10 | nylon | nylon | 6 oz. | 170 g |
| 3300-0016 | 3/4" M - 3/4" F | 250 | 17 | nylon | nylon | 6 oz. | 170 g |
| 3300-0098 | 3/4" M - 3/4" F | 400 | 28 | nylon | nylon | 6 oz. | 170 g |

# POLY DIAPHRAGM PUMP SERIES

## Series 9910-DP423, DP573, and DP763

### FEATURES:

- Glass-filled polypropylene construction of head, manifold and control components for the maximum in chemical resistance
- Flow rate up to 11.5 gpm (43.3 lpm), 15.6 gpm (59 lpm) and 20.2 gpm (76.5 lpm) pressure up to 290 psi (20 bar)
- 3 cylinder design eliminates the need for pulsation dampening devices and lengthens the life of the entire pumping system
- Kynar™ and 300 series stainless steel valve design for higher flow and better corrosion resistance
- The external inlet and outlet manifold design vs. an internal manifold design allows for easy valve replacement and lower cost repairs

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Description |
|---|---|---|---|---|---|---|
| 9910-DP423 | 11.5 | 43.3 | 290 | 20 | 1 1/4" Inlet 1" Outlet | Poly Diaphragm Pump (3/4" x 1 5/8" long keyed shaft) |
| 9910-DP423GRGI | 11.5 | 43.3 | 290 | 20 | | Poly Diaphragm Pump with Gearbox and Control Unit |
| 9910-DP573 | 15.6 | 59.1 | 290 | 20 | 1 1/2" Inlet 1" outlet | Poly Diaphragm Pump (3/4" x 1 5/8" long keyed shaft) |
| 9910-DP573GRGI | 15.6 | 59.1 | 290 | 20 | | Poly Diaphragm Pump with Gearbox and Control Unit |
| 9910-DP763 | 20.2 | 76.4 | 290 | 20 | 1 1/2" Inlet 1" outlet | Poly Diaphragm Pump (3/4" x 1 5/8" long keyed shaft) |
| 9910-DP763GRGI | 20.2 | 76.4 | 290 | 20 | | Poly Diaphragm Pump with Gearbox and Control Unit |
| 9910-GS25 | Control Unit (DP 423) | | | | | |
| 9910-GS35S | Control Unit (DP573 & DP763) | | | | | |

### DP423

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 7.5 | 0.18 | 8.5 | 0.20 | 9.4 | 0.29 | 10.5 | 0.35 | 11.5 | 0.42 |
| 0 BAR | 28.3 | 0.18 | 32.2 | 0.20 | 35.6 | 0.29 | 39.5 | 0.35 | 43.3 | 0.42 |
| 72 PSI | 7.3 | 0.46 | 8.3 | 0.53 | 9.2 | 0.61 | 10.2 | 0.68 | 11.0 | 0.77 |
| 5 BAR | 27.4 | 0.46 | 31.2 | 0.53 | 34.6 | 0.61 | 38.5 | 0.68 | 41.5 | 0.77 |
| 145 PSI | 7.2 | 0.77 | 8.2 | 0.87 | 9.1 | 0.98 | 10.1 | 1.11 | 11.0 | 1.21 |
| 10 BAR | 27.3 | 0.77 | 31.1 | 0.87 | 34.5 | 0.98 | 38.2 | 1.11 | 41.4 | 1.21 |
| 217 PSI | 7.0 | 1.06 | 8.1 | 1.21 | 9.1 | 1.37 | 10.0 | 1.51 | 10.8 | 1.68 |
| 15 BAR | 26.5 | 1.06 | 30.5 | 1.21 | 34.5 | 1.37 | 37.7 | 1.51 | 40.7 | 1.68 |
| 290 PSI | 6.9 | 1.33 | 7.8 | 1.53 | 9.1 | 1.74 | 9.8 | 1.93 | 10.6 | 2.14 |
| 20 BAR | 26.0 | 1.33 | 29.5 | 1.53 | 34.2 | 1.74 | 37.0 | 1.93 | 40.1 | 2.14 |

### DP573

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 10.4 | 0.14 | 11.7 | 0.17 | 13.0 | 0.24 | 14.3 | 0.32 | 15.6 | 0.43 |
| 0 BAR | 39.5 | 0.10 | 44.3 | 0.13 | 49.1 | 0.18 | 54.3 | 0.24 | 59.1 | 0.32 |
| 72 PSI | 10.3 | 0.54 | 11.6 | 0.62 | 12.6 | 0.67 | 14.2 | 0.77 | 15.5 | 0.83 |
| 5 BAR | 39.0 | 0.40 | 43.8 | 0.46 | 47.7 | 0.50 | 53.9 | 0.57 | 58.6 | 0.62 |
| 145 PSI | 10.1 | 0.95 | 11.4 | 1.09 | 12.6 | 1.22 | 14.1 | 1.28 | 15.2 | 1.41 |
| 10 BAR | 38.4 | 0.71 | 43.0 | 0.81 | 47.6 | 0.91 | 53.3 | 0.95 | 57.5 | 1.05 |
| 217 PSI | 9.9 | 1.33 | 11.1 | 1.50 | 12.5 | 1.71 | 13.9 | 1.89 | 14.9 | 2.07 |
| 15 BAR | 37.3 | 0.99 | 41.9 | 1.12 | 47.4 | 1.28 | 52.7 | 1.41 | 56.4 | 1.54 |
| 290 PSI | 9.7 | 1.60 | 10.8 | 1.88 | 12.5 | 2.14 | 13.8 | 2.43 | 14.8 | 2.64 |
| 20 BAR | 36.8 | 1.19 | 40.9 | 1.40 | 47.3 | 1.60 | 52.3 | 1.81 | 56.1 | 1.97 |

### DP763

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 13.7 | 0.20 | 15.3 | 0.29 | 17.1 | 0.39 | 18.8 | 0.51 | 20.2 | 0.63 |
| 0 BAR | 51.8 | 0.15 | 57.8 | 0.22 | 64.9 | 0.29 | 71.0 | 0.38 | 76.4 | 0.47 |
| 72 PSI | 13.4 | 0.71 | 15.2 | 0.77 | 16.8 | 0.90 | 18.4 | 0.98 | 20.1 | 1.11 |
| 5 BAR | 50.9 | 0.53 | 57.6 | 0.57 | 63.5 | 0.67 | 69.8 | 0.73 | 76.0 | 0.83 |
| 145 PSI | 13.3 | 1.21 | 15.0 | 1.39 | 16.7 | 1.58 | 18.4 | 1.76 | 19.9 | 1.93 |
| 10 BAR | 50.5 | 0.90 | 56.8 | 1.04 | 63.4 | 1.18 | 69.7 | 1.31 | 75.4 | 1.44 |
| 217 PSI | 12.8 | 1.76 | 14.9 | 2.02 | 16.7 | 2.25 | 18.1 | 2.50 | 19.5 | 2.75 |
| 15 BAR | 48.5 | 1.31 | 56.3 | 1.51 | 63.1 | 1.68 | 68.6 | 1.86 | 73.9 | 2.05 |
| 290 PSI | 12.7 | 2.12 | 14.6 | 2.49 | 16.5 | 2.77 | 18.0 | 3.12 | 19.4 | 3.45 |
| 20 BAR | 48.0 | 1.58 | 55.4 | 1.86 | 62.3 | 2.07 | 68.2 | 2.33 | 73.4 | 2.57 |

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# LOW PRESSURE, 2 DIAPHRAGM

## Model 9910-D70 and D70GR

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port sizes: 1-1/4" inlet, 1" outlet, hose barb
- Diaphragms: 2, semi-hydraulic, Desmopan® standard,Buna available
- Housing components for liquid handling: epoxy-coated
- Pump shaft rotation: CW and CCW
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 3300-0087 or 3300-0088, see page 93
- Weight: 22 lbs./10 kg (D70); 31 lbs./14 kg (D70GR)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 13.6 | 0.33 | 15.1 | 0.40 | 16.9 | 0.48 | 18.4 | 0.58 | 19.6 | 0.80 |
| 0 BAR | 51.2 | 0.33 | 57.1 | 0.40 | 63.7 | 0.48 | 69.4 | 0.58 | 74.1 | 0.80 |
| 72 PSI | 11.2 | 0.73 | 12.7 | 0.79 | 14.1 | 0.91 | 15.6 | 1.01 | 17.0 | 1.09 |
| 5 BAR | 42.3 | 0.73 | 47.9 | 0.79 | 53.2 | 0.91 | 58.8 | 1.01 | 64.3 | 1.09 |
| 145 PSI | 11.0 | 1.20 | 12.4 | 1.39 | 13.9 | 1.63 | 15.2 | 1.66 | 16.6 | 1.91 |
| 10 BAR | 41.4 | 1.20 | 46.9 | 1.39 | 52.6 | 1.63 | 57.3 | 1.66 | 62.7 | 1.91 |
| 217 PSI | 10.7 | 1.71 | 12.3 | 2.10 | 13.8 | 2.19 | 15.1 | 2.36 | 16.3 | 2.63 |
| 15 BAR | 40.4 | 1.71 | 46.3 | 2.10 | 52.2 | 2.19 | 57.1 | 2.36 | 61.6 | 2.63 |
| 290 PSI | 10.6 | 2.18 | 12.1 | 2.46 | 13.7 | 2.77 | 15.0 | 3.12 | 16.1 | 3.39 |
| 20 BAR | 40.0 | 2.18 | 45.7 | 2.46 | 51.8 | 2.77 | 56.7 | 3.12 | 60.6 | 3.39 |

All HP requirements listed in the table are electrical.
For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9910-D70 | 19.6 | 74.2 | 290 | 20 | 550 | Select shaft kit for desired drive |
| 9910-D70GR | 19.6 | 74.2 | 290 | 20 | 3600 | 3/4" hollow shaft w/ gear reduction for 5 hp gas engine |

# LOW PRESSURE, 3 DIAPHRAGM

## Model 9910-D115 and D115GR34

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port sizes: 1-1/2" inlet, 1" outlet, hose barb
- Diaphragms: 3, semi-hydraulic, Desmopan® standard,Buna available
- Housing components for liquid handling: epoxy-coated
- Pump shaft rotation: CW and CCW
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 3300-0087 or 3300-0088, see page 93
- Weight: 35 lbs./15.9 kg (D115); 44 lbs. /20 kg (D115GR34)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 18.9 | 0.33 | 21.4 | 0.40 | 23.9 | 0.45 | 26.4 | 0.69 | 28.6 | 0.91 |
| 0 BAR | 71.5 | 0.33 | 80.9 | 0.40 | 90.1 | 0.45 | 99.7 | 0.69 | 107.9 | 0.91 |
| 72 PSI | 18.6 | 1.13 | 20.7 | 1.18 | 23.4 | 1.40 | 25.5 | 1.62 | 27.9 | 1.83 |
| 5 BAR | 70.0 | 1.13 | 78.2 | 1.18 | 88.5 | 1.40 | 96.1 | 1.62 | 105.3 | 1.83 |
| 145 PSI | 18.3 | 1.89 | 20.5 | 2.13 | 23.2 | 2.47 | 25.3 | 2.82 | 27.7 | 2.99 |
| 10 BAR | 69.0 | 1.89 | 77.4 | 2.13 | 87.5 | 2.47 | 95.6 | 2.82 | 104.4 | 2.99 |
| 217 PSI | 18.2 | 2.72 | 20.4 | 3.11 | 23.1 | 3.51 | 25.1 | 3.88 | 27.6 | 4.33 |
| 15 BAR | 68.6 | 2.72 | 77.0 | 3.11 | 87.0 | 3.51 | 94.7 | 3.88 | 104.0 | 4.33 |
| 290 PSI | 18.0 | 3.45 | 20.3 | 3.98 | 22.9 | 4.54 | 25.0 | 5.09 | 27.5 | 5.51 |
| 20 BAR | 68.0 | 3.45 | 76.7 | 3.98 | 86.2 | 4.54 | 94.2 | 5.09 | 103.8 | 5.51 |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9910-D115 | 28.6 | 108.3 | 290 | 20 | 550 | Select shaft kit for desired drive |
| 9910-D115GR34 | 28.6 | 108.3 | 290 | 20 | 3600 | 3/4" hollow shaft w/ gear reduction for 5 hp gas engine |

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# LOW PRESSURE, 3 DIAPHRAGM

## Model 9910-D135

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port sizes: 1-1/2" inlet, 1" outlet, hose barb
- Diaphragms: 3, semi-hydraulic, Desmopan® standard, Buna available
- Housing components for liquid handling: epoxy-coated
- Pump shaft rotation: CW and CCW
- Recommended control unit: 3300-0087 or 3300-0088, see page 93
- Weight: 38 lbs./17.2 kg

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 22.6 | 0.51 | 25.8 | 0.69 | 28.8 | 0.92 | 31.5 | 1.22 | 33.9 | 1.45 |
| 0 BAR | 85.4 | 0.51 | 97.3 | 0.69 | 108.8 | 0.92 | 118.8 | 1.22 | 128.0 | 1.45 |
| 72 PSI | 22.2 | 1.31 | 25.3 | 1.64 | 28.3 | 1.84 | 31.2 | 2.09 | 33.3 | 2.44 |
| 5 BAR | 83.8 | 1.31 | 95.6 | 1.64 | 106.7 | 1.84 | 117.6 | 2.09 | 125.8 | 2.44 |
| 145 PSI | 22.1 | 2.29 | 25.2 | 2.65 | 28.2 | 2.97 | 31.1 | 3.45 | 33.2 | 3.88 |
| 10 BAR | 83.4 | 2.29 | 95.2 | 2.65 | 106.3 | 2.97 | 117.2 | 3.45 | 125.3 | 3.88 |
| 217 PSI | 22.0 | 3.21 | 25.1 | 3.80 | 28.0 | 4.31 | 30.8 | 4.80 | 33.1 | 5.32 |
| 15 BAR | 83.0 | 3.21 | 94.6 | 3.80 | 105.7 | 4.31 | 116.3 | 4.80 | 124.9 | 5.32 |
| 290 PSI | 21.7 | 4.23 | 24.8 | 4.88 | 27.9 | 5.45 | 30.7 | 6.21 | 33.0 | 6.84 |
| 20 BAR | 81.9 | 4.23 | 93.4 | 4.88 | 105.3 | 5.45 | 115.7 | 6.21 | 124.6 | 6.84 |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9910-D135 | 33.9 | 128.3 | 290 | 20 | 550 | 1-3/8"- 6 splined male shaft |

# LOW PRESSURE, 4 DIAPHRAGM

## Model 9910-D160

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port sizes: 2" inlet, 1-1/2" outlet, hose barb
- Diaphragms: 4, semi-hydraulic, Desmopan® standard, Buna available
- Housing components for liquid handling: epoxy-coated
- Pump shaft rotation: CW and CCW
- For hydraulic drive adaption, see page 92
- Recommended control unit: 3300-0087 or 3300-0088, see page 93
- Weight: 66 lbs./30 kg

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 27.9 | 0.61 | 32.1 | 0.80 | 35.1 | 1.03 | 38.9 | 1.33 | 41.9 | 1.68 |
| 0 BAR | 105.3 | 0.61 | 121.0 | 0.80 | 132.3 | 1.03 | 146.6 | 1.33 | 158.1 | 1.68 |
| 72 PSI | 26.4 | 1.51 | 30.0 | 1.73 | 33.6 | 2.01 | 37.1 | 2.18 | 40.9 | 2.50 |
| 5 BAR | 99.7 | 1.51 | 113.1 | 1.73 | 127.0 | 2.01 | 139.9 | 2.18 | 154.2 | 2.50 |
| 145 PSI | 25.4 | 2.48 | 28.7 | 2.91 | 32.6 | 3.28 | 35.7 | 3.74 | 38.9 | 4.13 |
| 10 BAR | 95.7 | 2.48 | 108.5 | 2.91 | 122.9 | 3.28 | 134.8 | 3.74 | 146.8 | 4.13 |
| 217 PSI | 24.3 | 3.45 | 27.7 | 4.06 | 31.0 | 4.58 | 34.4 | 5.13 | 37.6 | 5.73 |
| 15 BAR | 91.8 | 3.45 | 104.5 | 4.06 | 117.0 | 4.58 | 129.8 | 5.13 | 141.9 | 5.73 |
| 290 PSI | 23.6 | 4.50 | 26.9 | 5.18 | 30.2 | 5.86 | 33.7 | 6.45 | 36.8 | 7.26 |
| 20 BAR | 89.1 | 4.50 | 101.6 | 5.18 | 114.1 | 5.86 | 127.0 | 6.45 | 138.9 | 7.26 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9910-D160 | 41.9 | 155.1 | 290 | 20 | 550 | 1-3/8"- 6 splined male shaft |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.
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# LOW PRESSURE, 6 DIAPHRAGM

## Model 9910-D250

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Port sizes: 2" inlet, 1-1/2" outlet, hose barb
- Diaphragms: 6, semi-hydraulic, Desmopan® standard, Buna available
- Housing components for liquid handling: epoxy-coated
- Mounting base: included
- Pump shaft rotation: CW and CCW
- For hydraulic drive adaption, see page 92
- Recommended control unit: 3300-0082, see page 93
- Weight: 92 lbs./41.7 kg

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 42.7 | 0.71 | 48.3 | 0.90 | 54.3 | 1.22 | 59.8 | 1.60 | 65.7 | 2.01 |
| 0 BAR | 161.2 | 0.71 | 182.5 | 0.90 | 204.8 | 1.22 | 225.7 | 1.60 | 248.1 | 2.01 |
| 72 PSI | 41.4 | 2.33 | 47.2 | 2.73 | 52.7 | 3.10 | 58.1 | 3.45 | 63.3 | 3.88 |
| 5 BAR | 156.1 | 2.33 | 178.2 | 2.73 | 198.9 | 3.10 | 219.4 | 3.45 | 239.0 | 3.88 |
| 145 PSI | 40.1 | 4.09 | 45.9 | 4.73 | 52.1 | 5.27 | 56.6 | 6.02 | 61.3 | 6.45 |
| 10 BAR | 151.4 | 4.09 | 173.1 | 4.73 | 196.4 | 5.27 | 213.8 | 6.02 | 231.2 | 6.45 |
| 217 PSI | 39.3 | 5.70 | 45.1 | 6.58 | 50.7 | 7.45 | 55.5 | 8.32 | 60.2 | 9.22 |
| 15 BAR | 148.5 | 5.70 | 170.0 | 6.58 | 191.5 | 7.45 | 209.5 | 8.32 | 227.1 | 9.22 |
| 290 PSI | 38.8 | 7.52 | 44.5 | 8.45 | 50.1 | 9.66 | 54.8 | 10.89 | 59.2 | 11.54 |
| 20 BAR | 146.4 | 7.52 | 167.9 | 8.45 | 189.0 | 9.66 | 206.9 | 10.89 | 223.4 | 11.54 |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 9910-D250 | 65.7 | 248.7 | 290 | 20 | 550 | 1-3/8"- 6 splined male shaft |

# MEDIUM PRESSURE, 2 DIAPHRAGM

## Model 9910-D252, D252GRGI, D252GRGI58 and D252GRGIAP

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Diaphragms: 2, semi-hydraulic, Desmopan® standard, Buna available
- Housing: anodized aluminum
- Mounting base: included
- Recommended control unit: 9910-KIT1990, see page 93
- Weight: 14 lbs./6.4 kg (GRGI models); 12 lbs./5.4 kg (D252)
- Gas engine versions on page 88

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @450 RPM | | @500 RPM | | @550 RPM | | @600 RPM | | @650 RPM | |
| 0 PSI | 4.8 | 0.15 | 5.4 | 0.19 | 5.9 | 0.23 | 6.1 | 0.25 | 6.5 | 0.27 |
| 0 BAR | 18.0 | 0.15 | 20.5 | 0.19 | 22.4 | 0.23 | 23.1 | 0.25 | 24.6 | 0.27 |
| 72 PSI | 4.1 | 0.33 | 4.6 | 0.37 | 5.0 | 0.42 | 5.5 | 0.45 | 5.9 | 0.46 |
| 5 BAR | 15.3 | 0.33 | 17.3 | 0.37 | 18.7 | 0.42 | 20.8 | 0.45 | 22.2 | 0.46 |
| 145 PSI | 4.0 | 0.49 | 4.4 | 0.57 | 4.8 | 0.64 | 5.3 | 0.65 | 5.6 | 0.72 |
| 10 BAR | 14.9 | 0.49 | 16.6 | 0.57 | 18.1 | 0.64 | 19.8 | 0.65 | 21.3 | 0.72 |
| 217 PSI | 3.9 | 0.66 | 4.3 | 0.76 | 4.7 | 0.82 | 5.2 | 0.89 | 5.5 | 0.97 |
| 15 BAR | 14.7 | 0.66 | 16.4 | 0.76 | 17.9 | 0.82 | 19.6 | 0.89 | 20.9 | 0.97 |
| 290 PSI | 3.8 | 0.84 | 4.2 | 0.94 | 4.6 | 1.02 | 5.1 | 1.12 | 5.4 | 1.21 |
| 20 BAR | 14.5 | 0.84 | 16.0 | 0.94 | 17.4 | 1.02 | 19.4 | 1.12 | 20.5 | 1.21 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size | Shaft Output |
|---|---|---|---|---|---|---|---|
| 9910-D252 | 6.5 | 24.6 | 290 | 20 | 650 | 3/4" HB inlet, 1/2" HB outlet | 3/4" solid keyed shaft |
| 9910-D252GRGI | 6.5 | 24.6 | 290 | 20 | 3600 | 3/4" HB inlet, 3/8" HB outlet | 3/4" hollow shaft |
| 9910-D252GRGI58 | 5.5 | 20.8 | 290 | 20 | 3600 | 3/4" HB inlet, 3/8" HB outlet | 5/8" hollow shaft |
| 9910-D252GRGIAP | 6.5 | 24.6 | 290 | 20 | 3600 | 3/4" HB inlet, 3/8" HB outlet | 3/4" hollow input shaft with 5/8" output solid shaft |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.

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# MEDIUM PRESSURE, 2 DIAPHRAGM

## Model 9910-D30, D30AP-A, D30GRGI and D30-B-GRGI

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Shaft: flanged for shaft kit (D30); flanged w/ 3/4" shaft ext. (D30AP-A); 3/4" hollow shaft for gas engine mount (D30GRGI)
- Diaphragms: 2, semi-hydraulic, Desmopan® standard, Buna available
- Housing components for liquid handling: epoxy-coated
- Pump shaft rotation: CW and CCW
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 9910-GS40GI, see page 93
- Weight: 23 lbs./10.4 kg (D30); 33 lbs./15.0 kg (D30GRGI and D30-B-GRGI); 24 lbs./10.9 kg (D30AP-A)
- Gas engine versions on page 88

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 6.1 | 0.13 | 6.9 | 0.16 | 7.8 | 0.19 | 8.7 | 0.24 | 9.6 | 0.28 |
| 0 BAR | 23.0 | 0.13 | 26.1 | 0.16 | 29.5 | 0.19 | 32.8 | 0.24 | 36.2 | 0.28 |
| 145 PSI | 5.7 | 0.55 | 6.6 | 0.66 | 7.2 | 0.76 | 8.1 | 0.85 | 9.3 | 0.90 |
| 10 BAR | 21.4 | 0.55 | 24.9 | 0.66 | 27.3 | 0.76 | 30.6 | 0.85 | 34.9 | 0.90 |
| 290 PSI | 5.6 | 1.00 | 6.3 | 1.14 | 7.1 | 1.29 | 7.8 | 1.47 | 8.8 | 1.64 |
| 20 BAR | 21.0 | 1.00 | 23.7 | 1.14 | 26.7 | 1.29 | 29.5 | 1.47 | 33.4 | 1.64 |
| 465 PSI | 5.5 | 1.46 | 5.9 | 1.67 | 6.9 | 1.89 | 7.7 | 2.06 | 8.6 | 2.27 |
| 30 BAR | 20.6 | 1.46 | 22.4 | 1.67 | 26.0 | 1.89 | 29.0 | 2.06 | 32.5 | 2.27 |
| 580 PSI | 5.2 | 1.90 | 5.8 | 2.11 | 6.8 | 2.41 | 7.5 | 2.71 | 8.3 | 2.94 |
| 40 BAR | 19.5 | 1.90 | 22.1 | 2.11 | 25.8 | 2.41 | 28.2 | 2.71 | 31.4 | 2.94 |

All HP requirements listed in the table are electrical.
For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size |
|---|---|---|---|---|---|---|
| 9910-D30 | 9.6 | 36.3 | 580 | 40 | 550 | 1" HB inlet, 1/2" HB outlet |
| 9910-D30AP-A | Same pump as 9910-D30 with 3/4" solid thru shaft | | | | | |
| 9910-D30GRGI | 9.6 | 36.3 | 580 | 40 | 3600 | Assembled with gearbox 9910-KIT1640 and control 9910-GS40GI for mounting on 5 hp gas engine |
| 9910-D30-B-GRGI | Same pump as 9910-D30GRGI with Buna-N diaphragms | | | | | |
| D30HRGI | 9.6 | 36.3 | 580 | 40 | 3600 | Assembled with gearbox 8000-0056 and control 9910-GS40GI for mounting on 5 hp gas engine |

# MEDIUM PRESSURE, 3 DIAPHRAGM

## Model 9910-D403, and D403GRGI

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Shaft: flanged for kit attachment (D403); 3/4" hollow shaft for gas engine mount (D403GRGI)
- Diaphragms: 3, semi-hydraulic, Desmopan® standard, Buna available
- Housing: anodized aluminum
- Mounting base: included
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 9910-GR40, see page 93
- Weight: 23 lbs./10.4 kg (D403); 32 lbs./14.5 kg (D403GRGI)
- Gas engine versions on page 89

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 6.3 | 0.22 | 7.3 | 0.33 | 8.0 | 0.41 | 8.9 | 0.54 | 9.9 | 0.61 |
| 0 BAR | 23.9 | 0.22 | 27.6 | 0.33 | 30.3 | 0.41 | 33.6 | 0.54 | 37.5 | 0.61 |
| 145 PSI | 6.2 | 0.73 | 7.1 | 0.91 | 7.9 | 1.07 | 8.8 | 1.12 | 9.8 | 1.21 |
| 10 BAR | 23.2 | 0.73 | 26.7 | 0.91 | 29.9 | 1.07 | 33.4 | 1.12 | 37.1 | 1.21 |
| 290 PSI | 6.1 | 1.21 | 7.0 | 1.41 | 7.8 | 1.63 | 8.7 | 1.82 | 9.7 | 2.03 |
| 20 BAR | 23.0 | 1.21 | 26.4 | 1.41 | 29.5 | 1.63 | 32.8 | 1.82 | 36.7 | 2.03 |
| 465 PSI | 6.0 | 1.80 | 6.8 | 2.02 | 7.7 | 2.34 | 8.6 | 2.61 | 9.6 | 2.84 |
| 30 BAR | 22.7 | 1.80 | 25.8 | 2.02 | 29.2 | 2.34 | 32.3 | 2.61 | 36.4 | 2.84 |
| 580 PSI | 5.9 | 2.36 | 6.7 | 2.65 | 7.6 | 2.91 | 8.4 | 3.30 | 9.5 | 3.62 |
| 40 BAR | 22.3 | 2.36 | 25.5 | 2.65 | 28.9 | 2.91 | 31.7 | 3.30 | 35.9 | 3.62 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Drive and Control Unit |
|---|---|---|---|---|---|---|
| 9910-D403 | 9.9 | 37.5 | 580 | 40 | 550 | 1" HB inlet, 1/2" HB outlet |
| 9910-D403GRGI | 9.9 | 37.5 | 580 | 40 | 3600 | Assembled with gearbox 9910-KIT1640 and control 9910-GR40 for mounting on 5-6 hp gas engines |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.
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# MEDIUM PRESSURE, 2 DIAPHRAGM

## Model 9910-D50, D50AP-A and D50-B

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Shaft: flanged for shaft kit (D50); flange w/1" shaft ext. (D50AP-A)
- Diaphragms: 2, full-hydraulic, Desmopan® standard, Buna available (D50-B has Buna diaphragms)
- Housing components for liquid handling: epoxy coated
- Pump shaft rotation: CW and CCW
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 9910-GS40GI, see page 93
- Weight: 35 lbs./15.9 kg

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 9.7 | 0.36 | 11.9 | 0.49 | 12.3 | 0.64 | 13.2 | 0.77 | 14.8 | 0.94 |
| 0 BAR | 36.8 | 0.36 | 45.0 | 0.49 | 46.6 | 0.64 | 49.9 | 0.77 | 55.8 | 0.94 |
| 145 PSI | 9.3 | 1.08 | 11.5 | 1.25 | 11.9 | 1.49 | 12.9 | 1.59 | 14.6 | 1.76 |
| 10 BAR | 35.1 | 1.08 | 43.3 | 1.25 | 44.9 | 1.49 | 48.6 | 1.59 | 55.1 | 1.76 |
| 290 PSI | 9.1 | 1.85 | 11.0 | 2.09 | 11.7 | 2.40 | 12.6 | 2.72 | 14.5 | 2.97 |
| 20 BAR | 34.4 | 1.85 | 41.5 | 2.09 | 44.1 | 2.40 | 47.4 | 2.72 | 54.9 | 2.97 |
| 465 PSI | 8.8 | 2.61 | 10.8 | 3.00 | 11.6 | 3.41 | 12.0 | 3.80 | 14.4 | 4.03 |
| 30 BAR | 33.2 | 2.61 | 40.6 | 3.00 | 43.6 | 3.41 | 45.3 | 3.80 | 54.4 | 4.03 |
| 580 PSI | 8.6 | 3.44 | 10.3 | 3.77 | 11.4 | 4.38 | 11.9 | 4.92 | 14.1 | 5.17 |
| 40 BAR | 32.5 | 3.44 | 38.9 | 3.77 | 42.9 | 4.38 | 44.7 | 4.92 | 53.3 | 5.17 |

All HP requirements listed in the table are electrical.
For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BARI | Max RPM | Port Size |
|---|---|---|---|---|---|---|
| 9910-D50 | 14.8 | 56.0 | 580 | 40 | 550 | 1-1/4" HB inlet, 1/2" HB outlet |
| 9910-D50-B | Same pump as 9910-D50 w/Buna-N diaphragms | | | | | |
| 9910-D50AP-A | Same pump as 9910-D50 w/solid 1" thru shaft | | | | | |

# MEDIUM PRESSURE, 3 DIAPHRAGM

## Model 9910-D503, D503GRGI and D503GRGI34

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Shaft: flanged adapter (D503); 1" hollow shaft for gas engine mount (D503GRGI)
- Diaphragms: 3, semi-hydraulic, Desmopan® standard, Buna available
- Housing: anodized aluminum
- Mounting base: included
- Pump shaft rotation: CW and CCW
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 9910-RM40, see page 93
- Weight: 28 lbs./12.7 kg
- Gas engine versions on page 90

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 9.4 | 0.52 | 12.1 | 0.86 | 12.6 | 0.91 | 13.4 | 1.09 | 14.3 | 1.32 |
| 0 BAR | 35.4 | 0.52 | 45.5 | 0.86 | 47.6 | 0.91 | 50.5 | 1.09 | 54.1 | 1.32 |
| 145 PSI | 9.0 | 1.24 | 11.6 | 1.68 | 11.9 | 1.72 | 13.2 | 1.85 | 14.1 | 2.09 |
| 10 BAR | 34.1 | 1.24 | 44.0 | 1.68 | 44.9 | 1.72 | 49.7 | 1.85 | 53.3 | 2.09 |
| 290 PSI | 8.9 | 2.05 | 11.4 | 2.67 | 11.7 | 2.74 | 12.8 | 3.01 | 13.8 | 3.30 |
| 20 BAR | 33.6 | 2.05 | 43.2 | 2.67 | 44.1 | 2.74 | 48.4 | 3.01 | 51.9 | 3.30 |
| 465 PSI | 8.7 | 2.78 | 11.3 | 3.72 | 11.6 | 3.90 | 12.6 | 4.14 | 13.6 | 4.41 |
| 30 BAR | 33.0 | 2.78 | 42.5 | 3.72 | 43.6 | 3.90 | 47.4 | 4.14 | 51.4 | 4.41 |
| 580 PSI | 8.5 | 3.56 | 11.0 | 4.67 | 11.4 | 4.83 | 12.2 | 5.37 | 13.4 | 5.49 |
| 40 BAR | 32.2 | 3.56 | 41.7 | 4.67 | 42.9 | 4.83 | 46.0 | 5.37 | 50.5 | 5.49 |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Drive and Control Unit |
|---|---|---|---|---|---|---|
| 9910-D503 | 14.3 | 54.1 | 580 | 40 | 550 | – |
| 9910-D503GRGI | 14.3 | 54.1 | 580 | 40 | 3600 | Assembled with gearbox 9910-KIT1642 and control 9910-RM40 for mounting on 8 hp gas engine |
| 9910-D503GRGI34 | 14.3 | 54.1 | 290 | 20 | 3600 | Assembled with gearbox 9910-KIT1640 and control 9910-RM40 for mounting on 5-6.5 hp gas engines |

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# HIGH PRESSURE, 3 DIAPHRAGM

## Model 9910-D813 and D813GRGI

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Shaft: Flanged adapter and 1-3/8"- 6 splined male shaft ext. (D813); 1" hollow shaft for gas engine mount (D813GRGI)
- Diaphragms: 3, semi-hydraulic, Desmopan® standard Buna available
- Housing: anodized aluminum
- Mounting base: included
- Pump shaft rotation: CW and CCW
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 9910-VDR50 or 9910-GS50GI, see page 93.
- Weight: 50 lbs./22.7 kg (D813); 66 lbs./30 kg (D813GRGI)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 14.7 | 0.41 | 17.0 | 0.64 | 18.2 | 0.74 | 19.8 | 0.93 | 20.8 | 1.12 |
| 0 BAR | 55.6 | 0.41 | 64.3 | 0.64 | 68.7 | 0.74 | 74.7 | 0.93 | 78.6 | 1.12 |
| 217 PSI | 13.9 | 2.23 | 16.1 | 2.51 | 17.8 | 2.93 | 19.5 | 3.40 | 19.9 | 3.61 |
| 15 BAR | 52.3 | 2.23 | 60.8 | 2.51 | 67.1 | 2.93 | 73.7 | 3.40 | 75.0 | 3.61 |
| 435 PSI | 13.6 | 4.06 | 15.6 | 4.65 | 17.4 | 5.26 | 19.1 | 5.80 | 19.7 | 6.23 |
| 30 BAR | 51.2 | 4.06 | 58.7 | 4.65 | 65.5 | 5.26 | 71.9 | 5.80 | 74.3 | 6.23 |
| 580 PSI | 13.5 | 5.22 | 15.3 | 6.03 | 17.2 | 6.81 | 18.4 | 7.51 | 19.2 | 8.01 |
| 40 BAR | 50.8 | 5.22 | 57.7 | 6.03 | 64.8 | 6.81 | 69.4 | 7.51 | 72.6 | 8.01 |
| 725 PSI | 13.4 | 6.30 | 15.0 | 7.31 | 16.9 | 8.33 | 17.9 | 9.23 | 19.0 | 9.82 |
| 50 BAR | 50.4 | 6.30 | 56.5 | 7.31 | 63.9 | 8.33 | 67.5 | 9.23 | 71.8 | 9.82 |

All HP requirements listed in the table are electrical.
For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size | Shaft Output |
|---|---|---|---|---|---|---|---|
| 9910-D813 | 20.8 | 78.7 | 725 | 50 | 550 | 1-1/4" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male shaft extension |
| 9910-D813GRGI | 20.8 | 78.7 | 725 | 50 | 3600 | Assembled with gearbox 9910-KIT1642 and control 9910-VDR50 for mounting on 13 hp gas engine | |

# HIGH PRESSURE, 4 DIAPHRAGM

## Model 9910-D1064 and D1064GRGI

**FEATURES:**

- Max. fluid temperature: 140°F/60°C
- Shaft: Flanged adapter and 1-3/8"- 6 splined male shaft ext. (D1064); 1" hollow shaft for gas engine mount (D1064GRGI)
- Diaphragms: 4, semi-hydraulic, Desmopan® standard, Buna available
- Housing: anodized aluminum
- Mounting base: included
- Pump shaft rotation: CW and CCW
- For shaft kits and other drive options, see pages 91-92
- Recommended control unit: 9910-VDR50 or 9910-GS50GI, see page 93
- Weight: 54 lbs./24.5 kg (D1064); 76 lbs./34.5 kg (D1064GRGI)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 19.6 | 0.75 | 22.4 | 1.04 | 25.2 | 1.33 | 27.1 | 1.59 | 28.7 | 1.90 |
| 0 BAR | 74.0 | 0.75 | 84.6 | 1.04 | 95.1 | 1.33 | 102.4 | 1.59 | 108.5 | 1.90 |
| 217 PSI | 18.8 | 2.95 | 21.6 | 3.41 | 24.5 | 3.92 | 26.8 | 4.33 | 28.5 | 4.71 |
| 15 BAR | 70.8 | 2.95 | 81.6 | 3.41 | 92.3 | 3.92 | 101.1 | 4.33 | 107.6 | 4.71 |
| 435 PSI | 18.4 | 5.40 | 21.1 | 6.20 | 23.9 | 7.01 | 26.2 | 7.77 | 28.3 | 8.28 |
| 30 BAR | 69.4 | 5.40 | 79.5 | 6.20 | 90.3 | 7.01 | 98.8 | 7.77 | 106.7 | 8.28 |
| 580 PSI | 18.2 | 7.01 | 21.0 | 8.05 | 23.7 | 9.12 | 26.0 | 10.06 | 28.0 | 10.79 |
| 40 BAR | 68.8 | 7.01 | 79.2 | 8.05 | 89.3 | 9.12 | 98.1 | 10.06 | 105.8 | 10.79 |
| 725 PSI | 18.0 | 8.65 | 20.8 | 9.88 | 23.3 | 11.18 | 25.9 | 12.38 | 27.8 | 13.13 |
| 50 BAR | 67.9 | 8.65 | 78.4 | 9.88 | 87.9 | 11.18 | 97.6 | 12.38 | 104.7 | 13.13 |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size | Shaft Output |
|---|---|---|---|---|---|---|---|
| 9910-D1064 | 28.7 | 108.6 | 725 | 50 | 550 | 1-1/4" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male shaft extension |
| 9910-D1064GRGI | 28.7 | 108.6 | 725 | 50 | 3600 | Assembled with gearbox 9910-KIT1642 and control 9910-VDR50 for mounting on 18 hp gas engine | |

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# HIGH PRESSURE, 3 DIAPHRAGM

## Model 9910-DBS110 and DBA110

**FEATURES:**

- Max fluid temp: 140°F/60°C
- Diaphragms: 3, semi-hydraulic, Buna standard
- Housing components for liquid handling:
  - DBS – external bronze manifolds and brass heads
  - DBA – external manifolds and heads in anodized aluminum
- Pump shaft rotation: CW and CCW
- Recommended control unit: 9910-BMH50 or 9910-GH50, see page 93.
- Weight: 114 lbs./51.7 kg (DBS110); 88 lbs./40 kg (DBA110)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 19.2 | 0.53 | 21.9 | 0.60 | 24.6 | 0.78 | 27.3 | 0.89 | 30.0 | 1.12 |
| 0 BAR | 72.6 | 0.53 | 82.8 | 0.60 | 93.0 | 0.78 | 103.2 | 0.89 | 113.1 | 1.12 |
| 217 PSI | 18.7 | 2.91 | 21.5 | 3.18 | 24.2 | 3.74 | 27.1 | 4.02 | 29.3 | 4.50 |
| 15 BAR | 70.7 | 2.91 | 81.2 | 3.18 | 91.4 | 3.74 | 102.1 | 4.02 | 110.6 | 4.50 |
| 435 PSI | 18.5 | 5.19 | 21.2 | 5.91 | 24.0 | 6.51 | 26.9 | 7.51 | 29.0 | 8.29 |
| 30 BAR | 69.9 | 5.19 | 79.9 | 5.91 | 90.7 | 6.51 | 101.4 | 7.51 | 109.4 | 8.29 |
| 580 PSI | 18.4 | 6.87 | 20.9 | 7.66 | 23.7 | 8.69 | 26.4 | 9.67 | 28.7 | 10.71 |
| 40 BAR | 69.5 | 6.87 | 78.9 | 7.66 | 89.3 | 8.69 | 99.8 | 9.67 | 108.2 | 10.71 |
| 725 PSI | 18.2 | 8.43 | 20.8 | 9.60 | 23.5 | 10.73 | 25.9 | 11.90 | 28.6 | 13.11 |
| 50 BAR | 68.7 | 8.43 | 78.5 | 9.60 | 88.5 | 10.73 | 97.7 | 11.90 | 108.0 | 13.11 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size | Shaft Output |
|---|---|---|---|---|---|---|---|
| 9910-DBS110 | 30.0 | 113.6 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |
| 9910-DBA110 | 30.0 | 113.6 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.
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# HIGH PRESSURE, 3 DIAPHRAGM

## Model 9910-DBS140 and DBA140

**FEATURES:**

- Max fluid temp: 140°F/60°C
- Diaphragms: 3, semi-hydraulic, Buna standard
- Housing components for liquid handling:
  - DBS – external bronze manifolds and brass heads
  - DBA – external manifolds and heads in anodized aluminum
- Weight: 114 lbs./51.7 kg (DBS140); 88 lbs./40 kg (DBA140)
- Pump shaft rotation: CW and CCW
- Recommended control unit: 9910-BMH50 or 9910-GH50, see page 93 .
- Weight: 114 lbs./51.7 kg (DBS140); 88 lbs./40 kg (DBA140)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 25.1 | 0.82 | 28.5 | 1.11 | 31.5 | 1.50 | 34.8 | 2.02 | 37.8 | 2.58 |
| 0 BAR | 94.6 | 0.82 | 107.5 | 1.11 | 119.0 | 1.50 | 131.5 | 2.02 | 142.6 | 2.58 |
| 217 PSI | 24.1 | 3.47 | 27.5 | 4.01 | 30.7 | 4.51 | 33.2 | 5.01 | 37.3 | 5.61 |
| 15 BAR | 91.1 | 3.47 | 103.8 | 4.01 | 115.9 | 4.51 | 125.3 | 5.01 | 140.9 | 5.61 |
| 435 PSI | 23.8 | 6.53 | 27.2 | 7.69 | 30.2 | 8.39 | 32.6 | 9.28 | 36.7 | 10.34 |
| 30 BAR | 89.9 | 6.53 | 102.8 | 7.69 | 114.1 | 8.39 | 123.1 | 9.28 | 138.7 | 10.34 |
| 580 PSI | 23.6 | 8.53 | 26.8 | 9.73 | 29.8 | 10.82 | 32.2 | 12.02 | 36.5 | 13.33 |
| 40 BAR | 89.1 | 8.53 | 101.0 | 9.73 | 112.6 | 10.82 | 121.5 | 12.02 | 137.6 | 13.33 |
| 725 PSI | 23.3 | 10.47 | 26.5 | 11.88 | 29.7 | 13.28 | 31.9 | 14.67 | 36.3 | 16.28 |
| 50 BAR | 88.1 | 10.47 | 100.0 | 11.88 | 112.2 | 13.28 | 120.4 | 14.67 | 137.0 | 16.28 |

All HP requirements listed in the table are electrical.
For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size | Shaft Output |
|---|---|---|---|---|---|---|---|
| 9910-DBS140 | 37.8 | 143.1 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |
| 9910-DBA140 | 37.8 | 143.1 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |

# HIGH PRESSURE, 4 DIAPHRAGM

## Model 9910-DBS160 and DBA160

**FEATURES:**

- Max fluid temp: 140°F/60°C
- Diaphragms: 4, semi-hydraulic, Buna standard
- Housing components for liquid handling:
  - DBS – external bronze manifolds and brass heads
  - DBA – external manifolds and heads in anodized aluminum
- Pump shaft rotation: CW and CCW
- Recommended control unit: 9910-BMH50 or 9910-GH50, see page 93.
- Weight: 143 lbs./64.9 kg (DBS160); 112 lbs./50.9 kg (DBA160)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 25.5 | 1.12 | 29.3 | 1.52 | 32.6 | 1.83 | 36.1 | 2.23 | 39.6 | 2.62 |
| 0 BAR | 96.3 | 1.12 | 110.4 | 1.52 | 122.9 | 1.83 | 136.3 | 2.23 | 149.4 | 2.62 |
| 217 PSI | 24.9 | 3.72 | 28.7 | 4.39 | 32.1 | 4.83 | 35.7 | 5.27 | 39.1 | 5.91 |
| 15 BAR | 94.1 | 3.72 | 108.4 | 4.39 | 121.3 | 4.83 | 134.8 | 5.27 | 147.5 | 5.91 |
| 435 PSI | 24.6 | 6.90 | 28.3 | 8.01 | 31.9 | 8.89 | 35.3 | 9.80 | 38.5 | 10.75 |
| 30 BAR | 93.0 | 6.90 | 106.6 | 8.01 | 120.5 | 8.89 | 133.4 | 9.80 | 145.3 | 10.75 |
| 580 PSI | 24.5 | 8.88 | 28.1 | 10.22 | 31.5 | 11.49 | 35.0 | 12.77 | 38.4 | 14.12 |
| 40 BAR | 92.4 | 8.88 | 106.1 | 10.22 | 118.9 | 11.49 | 132.2 | 12.77 | 144.9 | 14.12 |
| 725 PSI | 24.2 | 10.91 | 27.9 | 12.46 | 31.3 | 14.01 | 34.8 | 15.64 | 38.2 | 17.28 |
| 50 BAR | 91.4 | 10.91 | 105.3 | 12.46 | 118.2 | 14.01 | 131.5 | 15.64 | 144.2 | 17.28 |

All HP requirements listed in the table are electrical. For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size | Shaft Output |
|---|---|---|---|---|---|---|---|
| 9910-DBS160 | 39.6 | 149.9 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |
| 9910-DBA160 | 39.6 | 149.9 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |

# HIGH PRESSURE, 4 DIAPHRAGM

## Model 9910-DBS200 and DBA200

**FEATURES:**

- Max fluid temp: 140°F/60°C
- Diaphragms: 4, semi-hydraulic, Buna standard
- Housing components for liquid handling:
  - DBS – external bronze manifolds and brass heads
  - DBA – external manifolds and heads in anodized aluminum
- Pump shaft rotation: CW and CCW
- Recommended control unit: 9910-GH50, see page 93.
- Weight: 143 lbs./64.9 kg (DBS200); 112 lbs./50.9 kg (DBA200)

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @350 RPM | | @400 RPM | | @450 RPM | | @500 RPM | | @550 RPM | |
| 0 PSI | 33.0 | 1.44 | 37.3 | 1.92 | 41.6 | 2.74 | 45.9 | 3.03 | 49.7 | 3.67 |
| 0 BAR | 124.5 | 1.44 | 140.7 | 1.92 | 156.9 | 2.74 | 173.1 | 3.03 | 187.6 | 3.67 |
| 217 PSI | 32.0 | 4.68 | 36.7 | 5.38 | 41.0 | 6.13 | 45.3 | 6.91 | 49.1 | 7.64 |
| 15 BAR | 120.8 | 4.68 | 138.5 | 5.38 | 154.8 | 6.13 | 170.8 | 6.91 | 185.4 | 7.64 |
| 435 PSI | 31.4 | 8.79 | 36.1 | 10.24 | 40.4 | 11.44 | 44.8 | 12.71 | 48.7 | 13.92 |
| 30 BAR | 118.4 | 8.79 | 136.2 | 10.24 | 152.6 | 11.44 | 169.0 | 12.71 | 183.9 | 13.92 |
| 580 PSI | 31.3 | 11.35 | 35.8 | 13.01 | 40.0 | 14.69 | 44.6 | 16.45 | 48.3 | 17.98 |
| 40 BAR | 118.2 | 11.35 | 135.0 | 13.01 | 151.1 | 14.69 | 168.3 | 16.45 | 182.5 | 17.98 |
| 725 PSI | 31.1 | 14.01 | 35.3 | 15.96 | 39.9 | 18.12 | 44.4 | 20.21 | 48.2 | 22.21 |
| 50 BAR | 117.2 | 14.01 | 133.1 | 15.96 | 150.5 | 18.12 | 167.5 | 20.21 | 182.1 | 22.21 |

All HP requirements listed in the table are electrical.
For approximate gasoline equivalent, multiply by 1.3.

**ORDER INFORMATION**

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Port Size | Shaft Output |
|---|---|---|---|---|---|---|---|
| 9910-DBS200 | 49.7 | 188.1 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |
| 9910-DBA200 | 49.7 | 188.1 | 725 | 50 | 550 | 1-1/2" HB inlet, 3/4" NPT outlet | 1-3/8"- 6 splined male double-ended shaft |

# GAS ENGINE-DRIVEN, MEDIUM PRESSURE, 2 DIAPHRAGM

## Models: D252GRGI-25, D252GRGI-55, 1534

### FEATURES:

- Closed-coupled, gas engine driven (EPA & CARB certified)
- Max. fluid temperature: 140°F/60°C
- Diaphragms: 2, semi-hydraulic, Desmopan® standard, Buna available
- Housing: anodized aluminum
- Mounting base: included

| Pressure in PSI and BAR | GPM |
|---|---|
| BAR | LPM |
| 0 PSI | 5.9 |
| 0 BAR | 22.3 |
| 50 PSI | 5.3 |
| 3.4 BAR | 20.0 |
| 100 PSI | 5.2 |
| 6.9 BAR | 19.5 |
| 150 PSI | 5.1 |
| 10.3 BAR | 19.3 |
| 200 PSI | 5.0 |
| 13.6 BAR | 18.9 |
| 250 PSI | 4.9 |
| 17.0 BAR | 18.5 |
| 290 PSI | 4.9 |
| 20 BAR | 18.5 |

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Control Unit and Gearbox | Engine Mfgr. and hp |
|---|---|---|---|---|---|---|---|
| D252GRGI-25 | 5.9 | 22.3 | 290 | 20 | 3600 | 9910-KIT1990 | PowerPro 2.5 hp |
| D252GRGI-55 | 5.9 | 22.3 | 290 | 20 | 2800 | 9910-KIT1990 | PowerPro 6.5 hp |
| D252GRGI-120H | 5.9 | 22.3 | 290 | 20 | 2800 | 9910-KIT1990 | Honda GX120 Engine |

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# GAS ENGINE-DRIVEN, MEDIUM PRESSURE, 2 DIAPHRAGM

## Model: D30HRGI-65, D30HRGI-65E, D30GRGI-65, D30HRGI-160H, 1535, D30HRGI

### FEATURES:

- Closed-coupled, gas engine driven (EPA & CARB certified)
- Max. fluid temperature: 140°F/60°C
- Diaphragms: 2, semi-hydraulic, Desmopan® standard, Buna available
- Housing components for liquid handling: epoxy-coated

| Pressure in PSI and BAR | D30HRGI-65,65E | D30GRGI-65,1535 |
|---|---|---|
| | GPM | GPM |
| | LPM | LPM |
| | @550 RPM | @550 RPM |
| 0 PSI | 9.6 | 9.3 |
| 0 BAR | 36 | 35 |
| 290 PSI | 8.8 | 9.3 |
| 20 BAR | 33 | 34 |
| 435 PSI | 8.6 | 8.7 |
| 30 BAR | 33 | 33 |
| 580 PSI | 8.3 | 8.2 |
| 40 BAR | 31 | 31 |

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Control Unit and Gearbox | Engine Mfgr. and hp |
|---|---|---|---|---|---|---|---|
| D30HRGI-65 | 9.6 | 36.3 | 580 | 40 | 3600 | GS40GI and 8000-0056 | PowerPro 6.5 HP |
| D30HRGI-65E | 9.6 | 36.3 | 580 | 40 | 3600 | GS40GI and 8000-0056 | PowerPro 6.5 HP w/ electric start |
| D30GRGI-65 | 9.6 | 36.3 | 580 | 40 | 3600 | GS40GI and KIT1640 (gearbox) | PowerPro 6.5 hp |
| D30GRGI-160H | 9.6 | 36.3 | 580 | 40 | 3600 | GS40GI and KIT1640 (gearbox) | Honda GX160 |
| D30GRGI-160EH | 9.6 | 36.3 | 580 | 40 | 3600 | GS40GI and KIT1640 (gearbox) | Honda GX160 w/electric start |
| D30HRGI-160H | 9.6 | 36.3 | 580 | 40 | 3600 | GS40GI and 8000-0056 | Honda GX160 |
| D30HRGI-160EH | 9.6 | 36.3 | 580 | 40 | 3600 | GS40GI and KIT1640 (gearbox) | Honda GX160 w/electric start |
| D30HRGI | 9.3 | 35.2 | 580 | 40 | 3600 | GS40GI and KIT1640 (gearbox) | Less engine |

# GAS ENGINE-DRIVEN, MEDIUM PRESSURE, 3 DIAPHRAGM

## Model: D403HRGI-65, D403HRGI-65E, D403GRGI-65, D403HRGI

**FEATURES:**

- Closed-coupled, gas engine driven (EPA & CARB certified)
- Max. fluid temperature: 140°F/60°C
- Diaphragms: 3, semi-hydraulic, Desmopan® standard, Buna available
- Housing: anodized aluminum
- Mounting base: included

| Pressure in PSI and BAR | D403HRGI-65,65E | D403GRGI-65 |
|---|---|---|
| | GPM | GPM |
| | LPM | LPM |
| | @550 RPM | @550 RPM |
| 0 PSI | 9.9 | 10.6 |
| 0 BAR | 38 | 40 |
| 290 PSI | 9.7 | 9.8 |
| 20 BAR | 37 | 37 |
| 435 PSI | 9.6 | 9.7 |
| 30 BAR | 36 | 37 |
| 580 PSI | 9.5 | 9.5 |
| 40 BAR | 36 | 36 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max IPM | Max PSI | Max BAR | Max RPM | Control Unit and Gearbox | Engine Mfgr. and hp |
|---|---|---|---|---|---|---|---|
| D403HRGI-65 | 9.9 | 37.5 | 580 | 40 | 3600 | GR40 and 8000-0056 | PowerPro 6.5 HP |
| D403HRGI-65E | 9.9 | 37.5 | 580 | 40 | 3600 | GR40 and 8000-0056 | PowerPro 6.5 HP w/ electric start |
| D403GRGI-65 | 10.6 | 40.1 | 580 | 40 | 3600 | GR40 and KIT1640 (gearbox) | PowerPro 6.5 hp |
| D403HRGI | 9.9 | 37.5 | 580 | 40 | 3600 | GR40 and 8000-0056 | Less engine |

# GAS ENGINE-DRIVEN, HEAVY-DUTY MEDIUM PRESSURE, 3 DIAPHRAGM

## Model: D50GRGI-160H, D50GRGI-160EH

**FEATURES:**

- Hypro quality diaphragm pumps powered by field-proven PowerPro certified engines (EPA & CARB certified)
- Oil-bath design and premium quality synthetic diaphragms provides longer life and greater reliability
- Oil-bath design also allows pump to be run dry
- Self-priming operation
- Corrosive, abrasive and general use chemical compatibility
- Visual oil-level sight glass
- Supported with a one-year Hypro warranty on both pump and PowerPro engine
- Diaphragms: 3, semi-hydraulic, Desmopan® standard, Buna available

| Pressure in PSI and BAR | GPM | HP |
|---|---|---|
| | LPM | HP |
| | @550 RPM | |
| 0 PSI | 14.8 | 0.94 |
| 0 BAR | 55.8 | 0.94 |
| 145 PSI | 14.6 | 1.76 |
| 10 BAR | 55.1 | 1.76 |
| 290 PSI | 14.5 | 2.97 |
| 20 BAR | 54.9 | 2.97 |
| 465 PSI | 14.4 | 4.03 |
| 30 BAR | 54.4 | 4.03 |
| 580 PSI | 14.1 | 5.17 |
| 40 BAR | 53.3 | 5.17 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max GPM | Max PSI | Max BAR | Max RPM | Control Unit & Gearbox | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|---|
| D50GRGI-160H | 14.1 | 53.3 | 580 | 40 | 3600 | 9910-GS40GI and 9910-Kit1640 | Honda GX160 |
| D50GRGI-160EH | 14.1 | 53.3 | 580 | 40 | 3600 | 9910-GS40GI and 9910-Kit1640 | Honda GX160 w./electric start |

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# GAS ENGINE-DRIVEN, HEAVY-DUTY MEDIUM PRESSURE, 3 DIAPHRAGM

Model: D503HRGI-65, D503HRGI

**FEATURES:**

- Hypro quality diaphragm pumps powered by field-proven PowerPro certified engines (EPA & CARB certified)
- Oil-bath design and premium quality synthetic diaphragms provides longer life and greater reliability
- Oil-bath design also allows pump to be run dry
- Self-priming operation
- Corrosive, abrasive and general use chemical compatibility
- Visual oil-level sight glass
- Supported with a one-year Hypro warranty on both pump and PowerPro engine
- Diaphragms: 3, semi-hydraulic, Desmopan® standard, Buna available

| Pressure in PSI and BAR | D503HRGI-65,65E |
|---|---|
| | GPM |
| | LPM |
| | @550 RPM |
| 0 PSI | 14.3 |
| 0 BAR | 54 |
| 145 PSI | 14.1 |
| 10 BAR | 53 |
| 290 PSI | 13.8 |
| 20 BAR | 52 |

**ORDER INFORMATION**

| Model Number | Max GPM | Max GPM | Max PSI | Max BAR | Max RPM | Control Unit & Gearbox | Engine Mfgr. & HP |
|---|---|---|---|---|---|---|---|
| D503HRGI-65 | 14.3 | 54.1 | 290 | 20 | 3600 | RM40 and 8000-0056 | PowerPro 6.5 HP |
| D503HRGI-65E | 14.3 | 54.1 | 290 | 20 | 3600 | RM40 and 8000-0056 | PowerPro 6.5 HP w/ electric start |
| D503HRGI | 14.3 | 54.1 | 290 | 20 | 3600 | RM40 and 8000-0056 | Less engine |

# DIAPHRAGM KITS AND APPLICATIONS

## HYPRO PUMP OIL

| Part Number | Description | Weight | |
|---|---|---|---|
| | | US Units | Metric |
| 2160-0038 | 1 quart of specially-formulated pump oil | 2 lbs. | 907 g |
| 2160-0047 | 1 gallon of specially-formulated pump oil | 9 lbs. | 4.1 kg |
| 2160-0048 | 2 ½ gallons of specially-formulated pump oil | 22 lbs. | 9.98 kg |

All Hypro Plunger Pumps are shipped with oil. To optimize pump life, Hypro recommends an oil change after 40 hours of break-in operation and every three months or 500 hour intervals thereafter. Use only Hypro oil.

## 1-3/8"-6 SPLINE FEMALE PTO SHAFT KITS

| Kit Number | Description | Weight | |
|---|---|---|---|
| | | US Units | Metric |
| 9910-KIT1704 | For Model 9910-D50, D30, D303 and D403 pumps | 7 lbs. | 3.2 kg |
| 9910-KIT1708 | For Model 9910-D70 and D115 pumps | 5.25 lbs. | 2.4 kg |
| 9910-KIT2204 | For Model 9910-D503, D813, D1064 and D1265 pumps | 7 lbs. | 3.2 kg |

Kit includes a female PTO coupler and retaining clamp, torque arm and mounting bracket, chains and necessary hardware.

## 1-3/8"-6 SPLINE MALE PTO SHAFT KITS

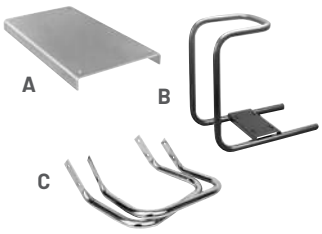
| Kit Number | Description | Weight | |
|---|---|---|---|
| | | US Units | Metric |
| 9910-KIT1702 | For Model 9910-D30 pump | 3 lbs. | 1.4 kg |
| 9910-KIT1706 | For Model 9910-D50 pump | 4.25 lbs. | 1.9 kg |
| *9910-KIT1710 | For Model 9910-D70 and D115 pumps | 5.5 lbs. | 2.5 kg |
| 9910-KIT2200 | For Model 9910-D503, D303 and D403 pumps | 4.25 lbs. | 1.9 kg |
| 9910-KIT2201 | For Model 9910-D813, D1064 and D1265 pumps | 4.25 lbs. | 1.9 kg |

*Kit includes a male PTO shaft adapter, mounting bracket and necessary hardware.

## 1" SOLID SHAFT KITS

| Kit Number | Description | Weight | |
|---|---|---|---|
| | | US Units | Metric |
| 9910-KIT1703 | For Model 9910-D30 pump | 2.5 lbs. | 1.7 kg |
| 9910-KIT1707 | For Model 9910-D50 pump | 3.75 lbs. | 1.7 kg |
| *9910-KIT1711 | For Model 9910-D70 and D115 pumps | 5 lbs. | 2.3 kg |
| 9910-KIT2202 | For Model 9910-D503, D303 and D403 pumps | 3.75 lbs. | 1.7 kg |
| 9910-KIT2203 | For Model 9910-D813, D1064 and D1265 pumps | 3.75 lbs. | 1.7 kg |

*Kit includes a male PTO shaft adapter, mounting bracket and necessary hardware.




## BASE PLATES AND CARRYING HANDLES

| Part Number | Description | Ref. | Est. Weight Ea. | |
|---|---|---|---|---|
| | | | US Units | Metric |
| 1510-0002 | 9 1/2" x 18" with 10 gauge | A | 8 lbs. | 3.6 kg |
| 1510-0001 | 12" x 21" with 7 gauge | A | 16 lbs. | 7.3 kg |
| 1510-0016 | 14" x 26" with 7 gauge | A | 21 lbs. | 9.5 kg |
| 1510-0075 | 9-1/2" x 4-1/2" with 14 gauge (for 3 and 5 hp Briggs® or Honda® and 56 frame electric) | B | 11 lbs. | 5 kg |
| 2801-0001 | Two handles, mounting bolts and nuts for #1510-0016 base | C | 3 lbs. 4 oz. | 1.5 kg |
| 2801-0002 | Two handles, mounting bolts and nuts for #1510-0001 base | C | 3 lbs. 3 oz. | 1.4 kg |

## DIAPHRAGM PUMP REPAIR KITS

| For Pump Model | Diaphragm Kit (Desmopan®) | Diaphragm Kit (Buna-N) | Valve Kit | O-ring Kit |
|---|---|---|---|---|
| 9910-D70 | 9910-KIT1720 | -------- | 9910-KIT2364 | 9910-KIT2365 |
| 9910-D115 and D135 | 9910-KIT1721 | -------- | 9910-KIT2370 | 9910-KIT2026 |
| 9910-D160 | 9910-KIT1730 | -------- | 9910-KIT2374 | 9910-KIT1908 |
| 9910-D250 | 9910-KIT1722 | -------- | 9910-KIT2114 | 9910-KIT1904 |
| 9910-D12GRGI | 9910-KIT1882 | -------- | 9910-KIT1992 | |
| 9910-D503 | 9910-KIT1881 | -------- | 9910-KIT1987 | 9910-KIT1984 |
| 9910-D252 (all versions) | 9910-KIT1723 | -------- | 9910-KIT2408 | 9910-KIT2409 |
| 9910-D30 (all versions) | 9910-KIT1724 | 9910-KIT2110 | 9910-KIT1917 | 9910-KIT1916 |
| 9910-D50 | 9910-KIT1725 | 9910-KIT2111 | 9910-KIT1920 | 9910-KIT1919 |
| 9910-DBS110, DBS140, DBA110 and DBA140 | -------- | 9910-KIT2444 | 9910-KIT2445 | 9910-KIT2446 |
| 9910-DBS160, DBS200, DBA160 and DBA200 | -------- | 9910-KIT2456 | 9910-KIT2374 | 9910-KIT2457 |
| 9910-D303 | 9910-KIT2423 | -------- | 9910-KIT2388 | 9910-KIT2389 |
| 9910-D403 | 9910-KIT2423 | -------- | 9910-KIT2388 | 9910-KIT2389 |
| 9910-D813 | 9910-KIT2479 | -------- | 9910-KIT1963 | 9910-KIT2376 |
| 9910-D1064 | 9910-KIT2480 | -------- | 9910-KIT1964 | 9910-KIT2378 |
| 9910-D1265 | 9910-KIT2100 | -------- | 9910-KIT2024 | 9910-KIT2347 |
| 9910-D1554 | 9910-KIT1734 | -------- | 9910-KIT1965 | 9910-KIT1972 |
| 9910-D1516 | 9910-KIT2113 | -------- | 9910-KIT2053 | 9910-KIT2349 |

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# PUMP AND GEAR REDUCTION KITS

**MODEL 9910-KIT1640**

- For Pump Models 9910-D30, D303 and D403
- 6:1 gear box
- For standard 5.5 hp gas engine with 3/4" shaft
- Can be used with 9910-D50, D503 and D813, providing that pumps are operated at lower pressures that do not exceed 5 hp gas engine compatibility.
- Weight: 6.5 lbs./2.9 kg

**MODEL 9910-KIT1642**

- For Pump Models 9910-D50, D503, D813, D1064 and D1265
- 6:1 gear box
- For standard 8-18 hp gas engine with 1" shaft
- Weight: 8.5 lbs./3.9 kg

**MODEL 8000-0056**

- For Pump Models 9910-D30, D403, D50, and D503
- New and improved bolt-through pinion gear to help prevent keyway fretting and seizing
- Engine mounting flange designed for ease of assembly with standard tools
- Robust 6:1 gear design for increases longevity
- Increased oil capacity
- Made for use on gas engines with 3/4" shaft
- Available pre-assembled on HRGI models

# HYDRAULIC FLANGE KITS

**MODEL 9910-HYD5312**

- Fits Diaphragm Pump Models 9910-D30, D50, D303, D403, D503, D813, D1064 and D1265
- Includes: one flange with SAE "A" 2 bolt, one 1" hollow shaft and two bolts

**MODEL 9910-HYD1570**

- Fits Diaphragm Pump Models 9910-D160 and D250
- Includes: one flange with SAE "A" 2 bolt, one 1" coupling and hardware for mounting

**MODEL 9910-HYD2495**

- Fits Diaphragm Pump Models 9910-D70, D115
- Includes: one flange with SAE "A" 2 bolt, one 1" coupling, two pins, spacer and hardware for mounting

**MODEL 9910-KIT55375**

- Fits Diaphragm Pump Models 9910-DP423, DP573 & DP763
- Includes: one flange with SAE "A" 2 bolt, one 1" coupling and hardware for mounting

# DIAPHRAGM CONTROL UNITS

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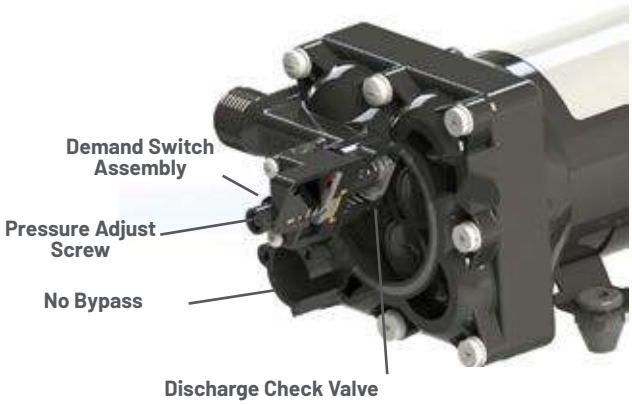
| Ref # | Model | For Pump Model | Includes | Max Flow | Max Pressure | Weight |
|---|---|---|---|---|---|---|
| 1 | 9910-GS25 | 9910-DP423 | Pressure gauge, adjustable high pressure relief valve, 1/2" HB outlet with ball valve shutoff, bypass lever, 3/4" HB bypass, 1" HB inlet | 11 gpm (42 lpm) | 290 psi (20 bar) | 2 lbs. (0.9 kg) |
| 2 | 9910-GS35S | 9910-DP573 & 9910-DP763 | Pressure gauge, adjustable high pressure relief valve, two 1/2" HB outlet with ball valve shutoff, bypass lever, 3/4" HB bypass, 1" HB inlet | 24 gpm (90.8 lpm) | 290 psi (20 bar) | 3 lbs. (1.4 kg) |
| 3 | 9910-KIT1990 | 9910-D252 | One adjustable relief valve, one pressure/bypass selector, 5/8" HB bypass port and 3/8" HB outlet | 6 gpm (22.7 lpm) | 290 psi (20 bar) | 1 lb. (0.5 kg) |
| 4 | 9910-GS40GI | 9910-D30 & 9910-D50 | Pressure gauge, one adjustable high pressure relief valve, one complete bypass lever, two 1/2"" HB outlets with individual shut-offs, and 3/4"" hose barb bypass; Remote mounting kit: 9910-KIT1741 | 21 gpm (79.5 lpm) | 580 psi (40 bar) | 3.5 lbs. (1.6 kg) |
| 5 | 9910-GR40 | 9910-D303 & 9910-D403 | Pressure gauge, adjustable high pressure relief valve, complete bypass lever, 2-1/2"" pressure gauge, two 1/2"" hose barb outlets with individual shut-offs, and 5/8"" hose barb bypass; Remote mounting kit: 9910-KIT1741 | 11 gpm (42 lpm) | 580 psi (40 bar) | 2 lbs. (0.9 kg) |
| 6 | 9910-RM40 | 9910-D503 | Pressure gauge, one adjustable high pressure relief valve, one complete bypass knob, two 1/2" HB outlets with individual shut-offs, and 1" hose barb bypass; Remote mounting kit: 9910-KIT1897 (Includes: mounting bracket, bolts, and hose barb) | 24 gpm (90.8 lpm) | 580 psi (40.0 bar) | 3.5 lbs. (1.6 kg) |
| 7 | 9910-GS50GI (Remote mounting only) | 9910-D813, 9910-D1064, 9910-D1265 & 9910-D1516 | Pressure gauge, one adjustable high pressure relief valve, one complete bypass lever, three 1/2" HB outlets with individual shut-offs, and 1" hose barb bypass; **Remote mounting kit: 9910-Kit1742 required.** (Includes: mounting bracket, bolts, and hose barb) | 48 gpm (181.7 lpm) | 725 psi (50 bar) | 8.5 lbs. (3.6 kg) |
| 8 | 9910-VDR50 | 9910-D813, 9910-D1064 & 9910-D1265 | Pressure gauge, one adjustable high pressure relief valve, one complete bypass lever, two 1/2" HB outlets with individual shut-offs, and 1" hose barb bypass; For additional ball valve, order Part Number 9910-130491 | 35 gpm (132.5 lpm) | 725 psi (50 bar) | 3.5 lbs. (1.6 kg) |
| 9 | 3300-0087 | 9910-D70, 9910-D115, 9910-D135 & 9910-D160 | One built-in relief valve, one 1" HB inlet, three 3/4", 1/2" and 3/8" HB outlets with individual shut-offs; Model-0088 includes a main bypass lever | 42.5 gpm (160.9 lpm) | 290 psi (20 bar) | 7 lbs. (3.2 kg) |
| | 3300-0088 | | | | | 7.75 lbs. (3.5 kg) |
| 10 | 9910-BMH50 | 9910-DBS110 9910-DBA110, 9910-DBS140 9910-DBA140, 9910-DBS160 9910-DBA160, 9910-DBS200, & 9910-DBA200 | Directional control unit with working pressure regulating valve, single lever for partial or total closure and discharge and glycerine-bath pressure gauge with colored dial | 41 gpm (155.2 lpm) | 725 psi (50 bar) | 6.6 lbs. (3.0 kg) |
| 11 | 9910-GH50 | | Working pressure regulating valve, bypass control lever and glycerine-bath pressure gauge with colored dial | 52.8 gpm (200 lpm) | 725 psi (50 bar) | 8.25 lbs. (3.7 kg) |

# DEMAND VS BYPASS PUMP

## DEMAND PUMP




**COMMON USES**
Applications with a set flow and pressure requirement. Example: Spray wands on spot sprayers.

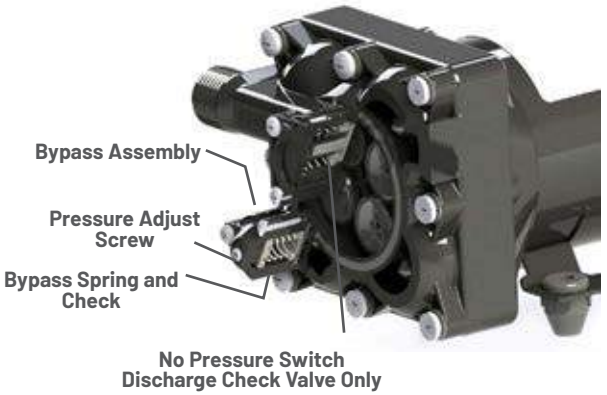
**HOW IT WORKS**
When the operator shuts off the wand, pressure in the line increases to a set point and the pressure switch shuts off the motor. A check valve inside the pump keeps trapped pressure in the line. When the wand is turned back on, pressure in the line decreases. The pressure falls below the set point then restarts the pump

**SIZING THE PUMP**
Select a pump with a pressure and flow point that is matched to the orifice size in the wand

**PRO**
- Saves wear and tear on the pump
- Extends the service life of the battery

**CON**
- Can be difficult to use with variable rate
- Hand operated spray wands and guns

## BYPASS PUMP




**COMMON USES**
Applications where a wide range of flows and pressures my be required. Examples: Spray bar with multiple nozzles, all controlled independently.

**HOW IT WORKS**
The pump continues to run regardless of pressure in the system. For the spray bar example, the flow rate is different when one nozzle is turned on as opposed to having two or more turned on. As nozzles are turned off, excess flow is bypassed within the pump.

**SIZING THE PUMP**
Size the pump for the maximum flow rate required with all nozzles spraying

**PRO**
- Prevents on/off cycling of pump which can lead to early failure

**CON**
- If discharge valve is closed for too long, overheating and damage can occur
- Constant amp draw can reduce battery power life

# SHURFLO® 5000 SERIES DIAPHRAGM PUMP

## 5 GPM Bypass and Automatic-Demand Pumps 12 VDC

Bypass

Demand

The field-proven Shurflo 5.3 gpm [20.1 L/min] pump delivers 3.8 gpm at 40 psi [14.4 L/min at 2.75 bar] with current draw of 14 amps. This pump is designed with a Santoprene® diaphragm for chemical resistance and maximum life, as well as Viton® valves for maximum chemical resistance. Also included is a built-in pressure switch, set at 60 PSI [4.14 bar], which protects the pump in the event of dead-heading. The pump is available in the same footprint as other Shurflo pumps, allowing users to upgrade to a higher performance on existing installations.

- Field-proven pump head design
- Driven by a 12-volt, sealed motor
- Self-priming up to 8 feet [2.4 m]
- Santoprene® diaphragm for chemical resistance and maximum life
- Viton® valves provide maximum chemical resistance
- Automatic demand versions with built-in pressure switch, set at 60 psi [4.14 bar], protects the pump in the event of dead-heading
- Bypass versions set at 90 psi (5.86 bar), protects the pump in the event of dead heading
- Available in the same footprint as other Shurflo pumps, allowing users to upgrade to a higher performance on existing installations

### ORDER INFORMATION - BYPASS 12VDC

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw |
|---|---|---|---|---|---|---|
| 5059-3611-D011 | 5.3 | 20.1 | 90 | 6.2 | 1/2" npsm* | 20.9 |
| 5059-3610-D011 | 5.3 | 20.1 | 90 | 6.2 | 1/2" NPTF | 20.9 |

* 1/2" -14 American National Standard Straight Pipe Thread
** For retail box: change "-D011" to "-D012"

### BYPASS 12VDC

| Model | PSI | GPM | BAR | L /min | Amps |
|---|---|---|---|---|---|
| 5059-3611-D011<br>5059-3610-D011 | 0 | 5.3 | 0 | 20.1 | 6.5 |
| | 10 | 4.7 | .7 | 17.8 | 9.0 |
| | 20 | 4.3 | 1.4 | 16.3 | 10.2 |
| | 30 | 4.1 | 2.1 | 15.5 | 12.0 |
| | 40 | 3.4 | 2.8 | 12.9 | 13.5 |
| | 50 | 2.6 | 3.4 | 9.8 | 15.2 |
| | 60 | 1.8 | 4.1 | 6.8 | 16.9 |
| | 70 | 1.1 | 4.8 | 4.2 | 18.5 |
| | 80 | 0.4 | 5.5 | 1.5 | 20.1 |
| | 90 | 0.0 | 6.2 | 0.0 | 20.9 |

### ORDER INFORMATION - DEMAND 12VDC

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw |
|---|---|---|---|---|---|---|
| 5059-1311-D011 | 5.3 | 20.1 | 60 | 3.4 | 1/2" npsm* | 17.0 |
| 5059-1310-D011 | 5.3 | 20.1 | 60 | 3.4 | 1/2" NPTF | 17.0 |

* 1/2" -14 American National Standard Straight Pipe Thread
** For retail box: change "-D011" to "-D012"

### DEMAND 12VDC

| Model | PSI | GPM | BAR | L /min | Amps |
|---|---|---|---|---|---|
| 5059-1311-D011<br>5059-1310-D011 | 0 | 5.3 | 0 | 20.1 | 6.5 |
| | 10 | 4.7 | .69 | 17.8 | 9.0 |
| | 20 | 4.3 | 1.38 | 16.3 | 11.8 |
| | 30 | 4.1 | 2.07 | 15.5 | 12.4 |
| | 40 | 3.8 | 2.75 | 14.4 | 14.0 |
| | 50 | 3.6 | 3.45 | 13.6 | 15.4 |
| | 60 | 3.4 | 4.14 | 12.9 | 17.0 |

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair Ltd.

# SHURFLO® 8000 SERIES DIAPHRAGM PUMP

## Automatic-Demand Pumps 12 VDC

8000-543-236

8000-543-936

The 8000 Series diaphragm pump is Shurflo's most widely used agriculture pump. Viton® valve material assures maximum chemical resistance. The unique conical valve design delivers high flow rates at maximum discharge pressures, making the 8000 Series the pump of choice for sprayers used on the farm or around the yard. These 12 VDC pumps deliver up to 1.8 GPM [6.8 L/min] providing maximum performance in a wide range of applications.

- Self-priming up to 8 vertical feet [2.4m]
- Chemical-resistant materials
- Designed for heavy-duty spraying and fluid transfer applications
- Can run dry without damage
- Built-in check valve

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8000-343-236 | 1.2 | 4.5 | 60 | 4.1 | 3/8" NPT-Female | 5.8 | All Viton® Pump: Viton® valves, Viton® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8000-541-236* | 1.0 | 3.8 | 60 | 4.1 | 3/8" NPT-Female | 3.8 | Lawn and Garden Pump: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8000-542-136 | 1.2 | 4.5 | 60 | 4.1 | 1/2" MSPT-Male | 6.0 | Low Flow Standard Pump: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8000-543-136 | 1.8 | 6.8 | 60 | 4.1 | 1/2" MSPT-Male | 7.3 | Standard Pump: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8000-543-236* | 1.8 | 6.8 | 50 | 3.4 | 3/8" NPT-Female | 6.4 | Standard Pump: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8000-543-238 | 1.8 | 6.8 | 100 | 6.9 | 3/8" NPT-Female | 8.7 | High Pressure Pump: Viton® valves, Santoprene® diaphragm, 100 PSI (6.9 bar) demand switch |
| 8000-543-138 | 1.8 | 6.8 | 100 | 6.9 | 1/2" MSPT-Male | 8.7 | High Pressure Pump: Viton® valves, Santoprene® diaphragm, 100 PSI (6.9 bar) demand switch |
| 8000-543-936* | 1.8 | 6.8 | 50 | 3.4 | 3/8" NPT-Female | 6.4 | Standard Pump w/Wire Harness: Viton® valves, Santoprene® diaphragm, prewired with two wire molded connectors, 60 PSI (4.1 bar) demand switch |
| 8000-547-189 | 1.8 | 6.8 | 107 | 7.4 | 1/2" MSPT Male | 7.0 | High Pressure Pump: Viton® valves, Santoprene® diaphragm, 100 PSI (6.9 bar) demand switch with internal bypass |
| 8000-643-236 | 1.8 | 6.8 | 60 | 4.1 | 3/8" NPT-Female | 6.8 | Transfer Pump: Buna valves, Geolast® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8030-813-239 | 1.6 | 6.1 | 150 | 9.5 | 3/8" NPT-Female | 12.0 | High Pressure Pump: Viton® valves, Santoprene® diaphragm, 150 PSI (10.3 bar) demand switch |

* Packaged in quantities of 6. For single packs, replace "8000-" with "8009."

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair Ltd.

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 8000-343-236 | 20 | 1.4 | 0.93 | 3.5 | 3.9 |
| | 40 | 2.8 | 0.84 | 3.2 | 4.9 |
| | 50 | 3.4 | 0.80 | 3.0 | 5.3 |
| | 60 | 4.1 | 0.76 | 2.9 | 5.8 |
| 8000-541-236 | 20 | 1.4 | 0.79 | 3.0 | 2.3 |
| | 30 | 2.1 | 0.75 | 2.8 | 2.8 |
| | 40 | 2.8 | 0.70 | 2.6 | 3.2 |
| | 60 | 4.1 | 0.62 | 2.3 | 3.8 |
| 8000-542-136 | 20 | 1.4 | 1.11 | 4.2 | 4.1 |
| | 40 | 2.8 | 0.98 | 3.7 | 5.1 |
| | 50 | 3.4 | 0.93 | 3.5 | 5.6 |
| | 60 | 4.1 | 0.90 | 3.4 | 6.0 |
| 8000-543-136 | 20 | 1.4 | 1.26 | 4.7 | 5.0 |
| | 40 | 2.8 | 1.14 | 4.3 | 6.2 |
| | 50 | 3.4 | 1.08 | 4.1 | 6.8 |
| | 60 | 4.1 | 1.02 | 3.9 | 7.3 |
| 8000-543-236 | 30 | 1.4 | 1.47 | 5.5 | 5.7 |
| | 40 | 2.8 | 1.41 | 5.3 | 5.8 |
| | 50 | 3.4 | 1.36 | 5.1 | 6.4 |
| 8000-543-238 | 20 | 1.4 | 1.45 | 5.5 | 4.2 |
| | 40 | 2.8 | 1.31 | 5.0 | 5.5 |
| | 60 | 4.1 | 1.22 | 4.6 | 6.5 |
| | 100 | 6.9 | 0.96 | 3.6 | 8.7 |
| 8000-543-138 | 20 | 1.4 | 1.45 | 5.5 | 4.2 |
| | 40 | 2.8 | 1.31 | 5.0 | 5.5 |
| | 60 | 4.1 | 1.22 | 4.6 | 6.5 |
| | 100 | 6.9 | 0.96 | 3.6 | 8.7 |
| 8000-543-936 | 30 | 1.4 | 1.47 | 5.5 | 5.7 |
| | 40 | 2.8 | 1.41 | 5.3 | 5.8 |
| | 50 | 3.4 | 1.36 | 5.1 | 6.4 |
| 8000-643-236 | 20 | 1.4 | 1.44 | 5.4 | 4.1 |
| | 40 | 2.8 | 1.33 | 5.0 | 5.4 |
| | 50 | 3.4 | 1.27 | 4.8 | 6.1 |
| | 60 | 4.1 | 1.22 | 4.6 | 6.8 |
| 8030-813-239 | 20 | 1.4 | 1.55 | 5.9 | 5.5 |
| | 30 | 2.1 | 1.49 | 5.6 | 6.2 |
| | 40 | 2.8 | 1.43 | 5.4 | 6.8 |
| | 80 | 5.4 | 1.20 | 4.5 | 9.1 |
| | 100 | 6.9 | 1.10 | 4.2 | 10.1 |
| | 150 | 9.5 | 0.83 | 3.1 | 12.0 |

# SHURFLO® 8000 SERIES DIAPHRAGM PUMPS

## Bypass Pumps 12 VDC

8000-543-250

8000 Series internal bypass pumps are ideal for applications where an automatic demand switch is not desired. Pumps with bypass will continue to run without damage once the bypass pressure is reached. They incorporate a triple chamber design with Viton® elastomers to withstand the toughest applications. Perfect for spot sprayers, foam markers and transfer applications where smooth, consistent flow is needed.

- Self-priming up to 8 vertical feet [2.4m]
- Chemical-resistant materials
- Internal bypass
- Can run dry without damage

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8000-543-250* | 1.8 | 6.8 | 50 | 3.4 | 3/8" NPT-Female | 5.5 | Standard Bypass Pump: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 BAR) internal bypass |
| 8000-543-210 | 1.3 | 4.9 | 40 | 2.8 | 3/8" NPT-Female | 5.5 | Standard Bypass Pump: Viton® valves, Santoprene® diaphragm, 35 PSI (2.4 BAR) internal bypass |
| 8000-543-220 | 1.5 | 5.7 | 60 | 4.1 | 3/8" NPT-Female | 7.1 | Standard Bypass Pump: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 BAR) internal bypass |
| 8006-543-250 | 1.4 | 5.3 | 50 | 3.4 | 3/8" NPT-Female | 5.5 | Bypass Pump with Reversed Pumphead: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 BAR) internal bypass |

* Packaged in quantities of 6. For single packs, replace "8000-" with "8009."

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 8000-543-250 | 20 | 1.4 | 1.30 | 4.9 | 4.0 |
| | 30 | 2.1 | 1.11 | 4.2 | 4.7 |
| | 40 | 2.8 | 0.69 | 2.6 | 5.2 |
| | 50 | 4.1 | 0.18 | 0.7 | 5.5 |
| 8000-543-210 | 10 | 0.7 | 1.28 | 4.8 | 3.8 |
| | 20 | 1.4 | 1.19 | 4.5 | 4.4 |
| | 30 | 2.1 | 1.07 | 4.0 | 5.0 |
| | 40 | 2.8 | 0.05 | 0.19 | 5.5 |
| 8000-543-220 | 10 | 0.7 | 1.52 | 5.7 | 3.8 |
| | 20 | 1.4 | 1.45 | 5.5 | 4.5 |
| | 30 | 2.1 | 1.39 | 5.3 | 5.2 |
| | 60 | 4.1 | 1.12 | 4.2 | 7.1 |
| 8006-543-250 | 10 | 0.7 | 1.40 | 5.3 | 3.4 |
| | 20 | 1.4 | 1.30 | 4.9 | 4.0 |
| | 40 | 2.8 | 0.69 | 2.6 | 5.2 |
| | 50 | 4.1 | 0.18 | 0.7 | 5.5 |

# SHURFLO® 8000 SERIES DIAPHRAGM PUMPS

## Bypass Pumps 12 VDC

8000-543-290

Designed to accommodate applications that have external pressure valves plumbed into the system.

- Self-priming up to 8 vertical feet [2.4m]
- Chemical-resistant materials
- 1/4" adapter for external bypass hook-up
- Can run dry without damage

### ORDER INFORMATION

| Part Number | Ma x GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8000-543-290 | 1.8 | 6.8 | 100 | 6.9 | 3/8" NPT-Female | 8.8 | Front Adapter Pump: Viton® valves, Santoprene® diaphragm, 1/4" FNPT adapter mounted on switch ports |

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 8000-543-290 | 20 | 1.4 | 1.26 | 4.7 | 5.0 |
| | 40 | 2.8 | 1.14 | 4.3 | 6.2 |
| | 60 | 4.1 | 1.02 | 3.9 | 7.3 |
| | 80 | 5.5 | 0.93 | 3.5 | 8.0 |
| | 100 | 6.9 | 0.84 | 3.2 | 8.8 |

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# SHURFLO® 8000, 8090 AND 8020 SERIES DIAPHRAGM PUMPS

## Bypass and Automatic-Demand Pumps 115 VAC and 230 VAC

8020-833-238

8000-533-250

These Shurflo 8000, 8090 and 8020 Series bypass and demand pumps provide the same reliability as the 12 VDC version, except in a 115 VAC or 230 VAC capacity. They are ideal in agricultural applications that require high pressure with flow rates up to 1.6 GPM [6.1 L/min] and low amp draw. They can be mounted in any position, are compact, and are designed for easy maintenance.

- Self-priming up to 8 vertical feet [2.4m]
- Built-in check valve
- Chemical-resistant materials
- Corded pump optional
- Can run dry without damage

### ORDER INFORMATION - BYPASS 115 VAC

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8000-533-250 | 1.4 | 5.3 | 50 | 3.4 | 3/8" NPT-Female | 0.54 | Bypass Pump: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) Internal Bypass |
| 8020-503-250 | 1.5 | 5.7 | 40 | 2.8 | 3/8" NPT-Female | 0.56 | Bypass Pump with 6' Power Cord: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) Internal Bypass |

### ORDER INFORMATION - DEMAND 115 VAC

| Part Numbers | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8000-533-236 | 1.4 | 5.3 | 60 | 4.1 | 3/8" NPT-Female | 0.64 | Standard Demand Pump: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8020-513-236 | 1.5 | 5.7 | 60 | 4.1 | 3/8" NPT-Female | 0.57 | Standard Demand Pump: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 bar) demand switch with 6 ft (1.8 m) power cord |
| 8020-833-238 | 1.6 | 6.1 | 100 | 6.9 | 3/8" NPT-Female | 0.95 | High Pressure Pump with 6 ft. Power Cord: Viton® valves, Santoprene® diaphragm, 100 PSI (6.9 bar) demand switch |
| 8030-863-239 | 1.5 | 5.7 | 150 | 9.7 | 3/8" NPT-Female | 1 | High Pressure Pump: Viton® valves, Santoprene® diaphragm, 150 PSI (10.3 bar) demand switch |

### ORDER INFORMATION - BYPASS 230 VAC

| Part Numbers | Max GPM | Max LPM | Max PSI | Max Bar | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8090-802-289 | 1.2 | 4.5 | 80 | 5.5 | 3/8" NPT Female | 0.56 | Bypass Pump: Viton® valves, Santoprene® diaphragm, 80 PSI (5.5 bar) Internal Bypass |
| 8095-902-260 | 1.5 | 5.7 | 100 | 6.9 | 3/8" NPT Female | 0.56 | Bypass Pump: EPDM valves, Santoprene® diaphragm, 100 PSI (6.9 bar) Internal Bypass |

### ORDER INFORMATION - DEMAND & DEMAND/BYPASS 230 VAC

| Part Numbers | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8090-212-246 | 1.2 | 4.5 | 60 | 4.1 | 3/8" NPT Female | 0.34 | Standard Demand Pump: EPDM valves, Santoprene® diaphragm, 60 PSI (4.1 bar) demand switch |
| 8090-801-278 | 1.3 | 4.9 | 100 | 6.9 | 3/8" NPT Female | 0.56 | Demand/Bypass Pump: Viton® valves, Santoprene® diaphragm, 80 PSI (5.5 bar) Internal Bypass, 100 PSI (6.9 bar) demand switch |
| 8090-902-278 | 1.4 | 5.3 | 100 | 5.5 | 3/8" NPT Female | 0.56 | Demand/Bypass Pump: EPDM valves, Santoprene® diaphragm, 80 PSI (5.5 bar) Internal Bypass, 100 PSI (6.9 bar) demand switch |

### BYPASS 115 VAC

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 8000-533-250 | 10 | 0.7 | 1.36 | 5.1 | 0.34 |
| | 30 | 2.1 | 1.05 | 4.0 | 0.46 |
| | 40 | 2.8 | 0.65 | 2.5 | 0.51 |
| | 50 | 3.4 | 0.19 | 0.7 | 0.54 |
| 8020-503-250 | 10 | 0.7 | 1.40 | 5.3 | 0.37 |
| | 20 | 1.4 | 1.30 | 4.9 | 0.44 |
| | 30 | 2.1 | 1.10 | 4.2 | 0.50 |
| | 40 | 2.8 | 0.80 | 3.0 | 0.56 |

### DEMAND 115 VAC

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 8000-533-236 | 20 | 1.4 | 1.15 | 4.3 | 0.46 |
| | 40 | 2.8 | 0.97 | 3.7 | 0.55 |
| | 50 | 3.4 | 0.91 | 3.4 | 0.60 |
| | 60 | 4.1 | 0.85 | 3.2 | 0.64 |
| 8020-513-236 | 20 | 1.4 | 1.15 | 4.8 | 0.40 |
| | 40 | 2.8 | 0.96 | 4.1 | 0.49 |
| | 50 | 3.4 | 0.90 | 3.6 | 0.54 |
| | 60 | 4.1 | 0.84 | 3.5 | 0.57 |
| 8020-833-238 | 20 | 1.4 | 1.32 | 5.0 | 0.45 |
| | 40 | 2.8 | 1.14 | 4.3 | 0.58 |
| | 60 | 4.1 | 1.07 | 4.0 | 0.70 |
| | 100 | 6.9 | 0.91 | 3.4 | 0.95 |
| 8030-863-239 | 20 | 1.4 | 1.24 | 4.7 | 0.45 |
| | 60 | 4.1 | 1.04 | 3.9 | 0.66 |
| | 120 | 8.3 | 0.77 | 2.9 | 0.92 |
| | 150 | 9.7 | 0.63 | 2.4 | 1.00 |

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# SHURFLO® 8007 SERIES DIAPHRAGM PUMPS

## Bypass and Automatic-Demand 12 VDC with Electrical Package

8007-543-850
(Front and Back Shown)

These models include an aesthetically-pleasing molded assembly, housing a rocker-type manual switch with international on/off switch symbols. Wiring is neatly routed into the molded assembly through form fitting entries and strain relieved inside the housing. Fused versions come with an automotive-type fuse housed under a snug fitting cap marked "fuse." Non-fused versions have a raised section.

- Self-priming up to 8 vertical feet [2.4m]
- Chemical-resistant materials
- Internal bypass option
- Can run dry without damage
- Built-in on/off switch included
- 2 pin connector on power leads
- Available with or without integral fuse
- Rocker switch protected from the elements by a clear boot

### ORDER INFORMATION -BYPASS

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8007-543-850 | 1.8 | 6.8 | 50 | 3.4 | 3/8" NPT-Female | 5.5 | Bypass Pump w/Electrical Package: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) bypass, Manual on/off switch 2 pin connector and fuse |

### BYPASS 12VDC

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 8007-543-850 | 10 | 0.7 | 1.40 | 5.3 | 3.4 |
| | 20 | 1.4 | 1.30 | 4.9 | 4.0 |
| | 30 | 2.1 | 1.11 | 4.2 | 4.7 |
| | 40 | 2.8 | 0.69 | 2.6 | 5.2 |
| | 50 | 3.4 | 0.18 | 0.7 | 5.5 |

### ORDER INFORMATION -DEMAND 12VDC

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 8007-591-236 | 1.0 | 3.8 | 50 | 3.4 | 3/8" NPT-Female | 3.7 | Demand Pump w/Electrical Package: Viton® valves, Santoprene® diaphragm, 60 PSI (4.1 bar) Demand Switch Manual on/off switch 2 pin connector (8007-543-836 includes fuse) |
| 8007-593-836 | 1.8 | 6.8 | 50 | 3.4 | 3/8" NPT-Female | 6.4 | |
| 8007-543-836 | 1.8 | 6.8 | 50 | 3.4 | 3/8" NPT-Female | 6.4 | |

### DEMAND 12VDC

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 8007-591-236 | 30 | 2.1 | 0.74 | 2.8 | 2.9 |
| | 40 | 2.8 | 0.69 | 2.6 | 3.2 |
| | 50 | 3.4 | 0.65 | 2.5 | 3.7 |
| 8007-593-836 | 30 | 2.1 | 1.47 | 5.5 | 5.3 |
| | 40 | 2.8 | 1.41 | 5.3 | 5.8 |
| | 50 | 3.4 | 1.36 | 5.1 | 6.4 |
| 8007-543-836 | 30 | 2.1 | 1.47 | 5.5 | 5.3 |
| | 40 | 2.8 | 1.41 | 5.3 | 5.8 |
| | 50 | 3.4 | 1.36 | 5.1 | 6.4 |

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# SHURFLO® 2087 SERIES DIAPHRAGM PUMPS

## Automatic-Demand Pump 12 VDC with Electrical Package

2087-593-135
(Front and Back Shown)

These models include an aesthetically-pleasing molded assembly, housing a rocker-type manual switch with international on/off switch symbols. Wiring is neatly routed into the molded assembly through form fitted entries and strain relieved inside the housing.

- Self-priming up to 12 vertical feet [3.7m]
- Chemical-resistant materials
- Can run dry without damage
- Rocker switch protected from the elements by a clear boot
- Built-in on/off switch included
- 2 pin connector on power lead

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 2087-593-135 † | 3 | 11.4 | 50 | 3.4 | 1/2" MSPT* Male | 8 | Standard Demand Pump: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) demand switch |

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 2087-593-135 | 10 | 0.7 | 2.80 | 10.6 | 5.3 |
| | 20 | 1.4 | 2.69 | 10.2 | 5.5 |
| | 30 | 2.1 | 2.36 | 8.9 | 6.7 |
| | 40 | 2.8 | 2.05 | 7.8 | 7.7 |
| | 50 | 3.4 | 1.42 | 5.4 | 8.0 |

* 1/2" - 14 National American Straight Pipe Thread
† Packaged in quantities of 6. For single pack, replace "135" with "435."

# SHURFLO® 2088 SERIES DIAPHRAGM PUMPS

## Automatic-Demand Pump 12 VDC

2088-343-135

Shurflo 2088 Series diaphragm pumps deliver reliable performance in high flow, moderate pressure applications. They are used in a variety of spot spraying, multi-nozzle spraying and fertilizer drip applications that require flows of up to 3.6 GPM [13.6 L/min]. They are available in a variety of chemical-resistant materials.

- Self-priming up to 12 vertical feet [3.7m]
- Chemical-resistant materials
- Can run dry without damage
- Automatic demand
- Built-in check valve (varies by model) prevents back flow of fluid into the solution tank
- Continuous duty motor on fin-cooled version

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 2088-313-145 | 3.6 | 13.6 | 40 | 2.8 | 1/2" MSPT* Male | 9.5 | Standard Pump: with fin cooled motor Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) demand switch |
| 2088-443-144 | 3.5 | 13.2 | 45 | 3.1 | 1/2" MSPT* Male | 9.1 | Standard Pump: Santoprene® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) demand switch |
| 2088-343-135† | 3 | 11.4 | 40 | 2.8 | 1/2" MSPT* Male | 7.7 | Standard Pump: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) demand switch |

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 2088-313-145 | 10 | 0.7 | 3.09 | 11.7 | 6.4 |
| | 20 | 1.4 | 2.82 | 10.7 | 7.6 |
| | 30 | 2.1 | 2.49 | 9.4 | 8.7 |
| | 40 | 2.8 | 2.15 | 8.1 | 9.5 |
| 2088-443-144 | 10 | 0.7 | 2.83 | 10.7 | 5.8 |
| | 20 | 1.4 | 2.56 | 9.7 | 7.0 |
| | 30 | 2.1 | 2.31 | 8.7 | 8.0 |
| | 40 | 2.8 | 2.02 | 7.6 | 9.1 |
| 2088-343-135 | 10 | 0.7 | 2.80 | 10.6 | 5.3 |
| | 20 | 1.4 | 2.69 | 10.2 | 5.5 |
| | 30 | 2.1 | 2.36 | 8.9 | 6.7 |
| | 40 | 2.8 | 2.05 | 7.8 | 7.7 |

* 1/2" - 14 National American Straight Pipe Thread
† Packaged in quantities of 6. For single pack, replace "135" with "435."
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# SHURFLO® 2088 SERIES DIAPHRAGM PUMPS

## No Control Pumps 12 VDC

2088-343-500

Shurflo 2088 Series diaphragm pumps deliver reliable performance in high flow, moderate pressure applications. They are used in a variety of spraying and transferring applications that require flows of up to 3.3 GPM [12.5 L/min]. They are available in a variety of chemical-resistant materials. They can be mounted in any position and are designed for easy maintenance.

- Self-priming up to 12 vertical feet [3.7m]
- Chemical-resistant materials
- Can run dry without damage
- Built-in check valve (may vary by models) prevents back flow of fluid through the pump
- Relief valve in the system required.

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 2088-343-170 | 3.3 | 12.5 | 50 | 3.4 | 1/2" MSPT* Male | 9.1 | Front Adapter Pump with Electrical Package: Viton® valves, Santoprene® diaphragm, 1/4" FPT adapter mounted on switch port, built-in on/off power switch, fuse holder pre-wired w/2-wire molded connector, no demand switch |
| 2088-343-500 | 3.3 | 12.5 | 50 | 3.4 | 1/2" MSPT* Male | 10.1 | Front Adapter Pump: Viton® valves, Santoprene® diaphragm, 1/4" FPT adapter mounted on switch port, no demand switch |

* 1/2" - 14 National American Straight Pipe Thread

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 2088-343-170 | 10 | 0.7 | 3.00 | 11.3 | 5.0 |
| | 30 | 2.1 | 2.38 | 9.0 | 7.5 |
| | 40 | 2.8 | 2.14 | 8.1 | 8.3 |
| | 50 | 3.4 | 1.86 | 7.0 | 9.1 |
| 2088-343-500 | 10 | 0.7 | 2.79 | 10.6 | 5.8 |
| | 30 | 2.1 | 2.26 | 8.6 | 8.3 |
| | 40 | 2.8 | 1.99 | 7.5 | 9.3 |
| | 50 | 3.4 | 1.69 | 6.4 | 10.1 |

# SHURFLO® 2088 SERIES DIAPHRAGM PUMPS

## Automatic-Demand Pumps 115 & 230 VAC

2088-394-144

These Shurflo 2088 Series pumps offer the same reliability as the 12 VDC version except in 115 or 230 VAC capacity. They are used in a variety of spot spraying, mini-bulk transfer and fertilizer applications that require flows of up to 3.2 GPM [12.1 L/min]. They are available in a variety of chemical-resistant materials.

- Self-priming up to 12 vertical feet [3.7m]
- Chemical-resistant materials
- Can run dry without damage
- Automatic demand
- Built-in check valve (may vary by model) prevents back flow of fluid into the solution tank

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 2088-394-144 | 3 | 11.4 | 40 | 2.8 | 1/2" MSPT* Male | 0.7 | 115 VACPump with 6' power cord: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) demand switch |
| 2088-394-154 | 3.2 | 12.1 | 40 | 2.8 | 1/2" MSPT* Male | 0.98 | 115 VAC Pump: Viton® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) demand switch |
| 2088-564-144 | 3.0 | 11.3 | 50 | 3.4 | 1/2" MSPT* Male | 0.6 | 230 VAC Pump: Santoprene® valves, Santoprene® diaphragm, 45 PSI (3.1 bar) demand switch |

* 1/2" - 14 National American Straight Pipe Thread

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| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 2088-394-144 | 10 | 0.7 | 2.40 | 9.1 | .55 |
| | 20 | 1.4 | 2.20 | 8.3 | .60 |
| | 30 | 2.1 | 1.90 | 7.2 | .65 |
| | 40 | 2.8 | 1.60 | 6.0 | .70 |
| 2088-394-154 | 10 | 0.7 | 2.71 | 10.2 | .65 |
| | 20 | 1.4 | 2.41 | 9.1 | .77 |
| | 30 | 2.1 | 2.10 | 8.0 | .89 |
| | 40 | 2.8 | 1.84 | 7.0 | .98 |
| 2088-564-144 | 10 | 0.7 | 2.80 | 10.6 | 0.35 |
| | 20 | 1.4 | 2.50 | 9.5 | 0.45 |
| | 30 | 2.1 | 2.20 | 8.3 | 0.50 |
| | 40 | 2.8 | 2.00 | 7.6 | 0.55 |
| | 50 | 3.4 | 1.70 | 6.4 | 0.60 |

# SHURFLO® 166 SERIES DIAPHRAGM PUMPS

## Air-Driven Pumps

166-200-36

The Shurflo 166 air-operated demand pumps employ a dual diaphragm design, with a patented fast action switching mechanism allowing for consistent flow and pressure. They are built for the toughest pumping applications and are available in a variety of elastomers that allow them to be compatible with most caustic or acidic fluids. Ideal for chemical transfer, liquid fertilizer injection and agricultural spraying. 2 chamber dual diaphragm.

- Positive displacement
- On-demand operation
- Chemical-resistant polypropylene body
- 30 to 60 PSI [2.1-4.1 bar]

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Description |
|---|---|---|---|---|---|
| 166-200-36 | 0.6 | 2.3 | 30-60 | 2.1-4.1 | Viton® valves and diaphragm |
| 166-200-46 | 0.6 | 2.3 | 30-60 | 2.1-4.1 | Buna valves and diaphragm |
| 166-200-56 | 0.6 | 2.3 | 30-60 | 2.1-4.1 | EPDM valves and diaphragm |
| 166-200-57 | 0.6 | 2.3 | 30-60 | 2.1-4.1 | Santoprene® valves and diaphragm |

# SHURFLO® POWER TWIN PUMP

## Demand Pumps 12VDC

4211-035

Take all the performance and features of the time-tested 2088 series, double it, and the result is the high-flow Power Twin. Delivers an open flow of 6.25 GPM [23.7 L/min] at a mere 8.7 amps. At 40 PSI [2.8 bar], it delivers 3.5 GPM [13.2 L/min] and draws only 17.2 amps. One of the most efficient high-flow self-priming pumps available today, the Power Twin is excellent for transferring, light-duty spraying, and use as a 1:1 proportioning pump.

- Up to 6.25 GPM [23.7 L/min]
- Thermally-protected motor with heat sink
- Self-priming up to 7 vertical feet (2.13 m)
- Quiet, balanced operation
- Long-life pressure switch
- Intake/Discharge manifold optional

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| 4111-035 | 6.25 | 23.7 | 40 | 2.8 | 1/2" MPT | 17.2 | Viton® valves, Santoprene® diaphragm, 45 PSI ( 3.1 bar) demand switch, manifold with 5/8" barb ports |
| 4211-035 | 6.25 | 23.7 | 40 | 2.8 | 1/2" MPT | 17.2 | Viton® valves, Santoprene® diaphragm, 45 PSI ( 3.1 bar) demand switch |
| 4311-035 | 6.25 | 23.7 | 40 | 2.8 | 1/2" MPT | 17.2 | 3/4" manifold kit included. |
| 94-389-00 | Manifold Kit 5/8" barb (2) per pump | | | | | | |
| 94-389-01 | Manifold Kit 3/4" barb (2) per pump | | | | | | |

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| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| 4111-035 | 0 | 0 | 6.25 | 23.5 | 8.7 |
| | 10 | 0.7 | 5.7 | 21.6 | 12.2 |
| | 20 | 1.4 | 5.0 | 19.0 | 14.5 |
| | 30 | 2.1 | 4.3 | 16.2 | 16.1 |
| | 40 | 2.8 | 3.5 | 13.2 | 17.2 |
| 4211-035 | 0 | 0 | 6.25 | 23.5 | 8.7 |
| | 10 | 0.7 | 5.7 | 21.6 | 12.2 |
| | 20 | 1.4 | 5.0 | 19.0 | 14.5 |
| | 30 | 2.1 | 4.3 | 16.2 | 16.1 |
| | 40 | 2.8 | 3.5 | 13.2 | 17.2 |

# SHURFLO® 9300 SERIES SUBMERSIBLE PUMPS

## 24 VDC

The Shurflo 9300 series pump offers a solution to your remote water pumping needs. It's rugged, durable and built to last. This pump delivers a steady 1.0 GPM [3.8 L/min] operating at 100 PSI [6.9 bar] maximum at 230 feet [70.1m]. It incorporates a unique, waterblocked cable connector that is impervious to water leakage and condensation problems preventing waterwicking. Great for applications in livestock watering, irrigation, ponds, islands, remote homes and cabins

- Fits wells 4 inches [10.2 cm] in diameter and larger
- Accepts a variety of jacketed cables from your power source
- Runs dry without damage
- Corrosion-proof housing with stainless steel fasteners
- Long-life, 24 VDC operation
- Quick disconnect for easy installation and service

### 902-100 CONTROLLER FEATURES:

Boost your DC solar pump's performance by up to 30%. Controller optimizes your solar water pumping system by translating the current and voltage available from your photovoltaic panels, into a combination that is better matched to that needed by the pump. With the optional float switch installed, the controller will automatically stop pumping when the reservoir is full.

- Operates on 24 VDC
- Increases daily water output up to 30%
- System starts pumping earlier in the morning
- System stops pumping later in the evening
- Protects pump from low or high volume conditions
- Terminals for float switch

### 902-200 CONTROLLER FEATURES:

Includes all 902-100 features plus:

- Switch selectable for 12 VDC or 24 VDC operation
- Manual Pump On / Off switch for easy pump maintentance
- Watertight enclosure and cable inlets
- Includes high/low water level monitor mode with probes and cable so the pump will not run when the well water is too low

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max Draw | Description |
|---|---|---|---|---|
| 9325-043-101 | 1.8 | 6.8 | 4.1 | EPDM valves, Santoprene® diaphragm |

| Model | Description | Max. Array Input Voltage | | Min. Startup Voltage | | Shut-down Voltage | Max. Output Current |
|---|---|---|---|---|---|---|---|
| | | 12V | 24V | 12V | 24V | | |
| 902-100 (LCB-GO) | 9300 DC Pump Controller | 45 V | N/A | 25 V | N/A | 28 V | 5 Amps |
| 902-200 (LCB-G) | 9300 DC Pump Controller | 45 V | N/A | 25 V | 12.5 V | 28 V | 7 Amps |

| Model | Vertical Lift | | | | Solar Array | Current |
|---|---|---|---|---|---|---|
| | Feet | Meters | GPH | LPH | Watts | Amps |
| 9325-043-101 | 20 | 6.1 | 117 | 443 | 58 | 1.5 |
| | 60 | 18.3 | 109 | 413 | 78 | 2.1 |
| | 100 | 30.5 | 103 | 390 | 99 | 2.6 |
| | 140 | 42.7 | 99 | 375 | 115 | 3.1 |
| | 180 | 54.9 | 93 | 352 | 135 | 3.6 |
| | 230 | 70.1 | 82 | 310 | 155 | 4.1 |

# SHURFLO® 3000 SERIES PUMPS

## 12 VDC

The 3000 Series is suitable for a variety of uses from pumping water to changing oil in cars, trucks and farm equipment. Pumps incorporate thermal overload protection.

Not intended for use with flammable liquids or in flammable environments.

- Self-priming to 7.5 feet [2.3m] vertical
- Maximum head of 28 feet [8.5m] (12 PSI [.83 bar])
- Liquid temps from 40° F to 185° F [4.4°C to 85°C]
- Thermal overload protection
- Stainless steel shaft
- BUNA-N impeller and lip seal
- Built-in reverse switch and 8 foot [2.4m] cable with battery clips
- Ports: 3/4" (M) GHT

### ORDER INFORMATION

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Draw |
|---|---|---|---|---|---|
| 3000-350 | 2.5 | 9.5 | 10 | 0.7 | 7.4 |
| 3000-100 (115 Volt) | 2.5 | 9.5 | 10 | 0.7 | 7.4 |

| Model | PSI | BAR | Dischg. Ft of Head | GPM | L/min | Amps |
|---|---|---|---|---|---|---|
| 3000-350 | 0 | 0.0 | 0.0 | 3.8 | 14.4 | 6.5 |
| | 5 | 0.3 | 11.5 | 3.4 | 12.9 | 7.1 |
| | 10 | 0.7 | 23.0 | 2.5 | 9.5 | 7.4 |

# SHURFLO® SLV SERIES DIAPHRAGM PUMPS

## 12 and 24 VDC Demand Pumps

SLV10-AA48
(Front and Back Shown)

The Shurflo SLV is ideal for low volume, intermittent-duty applications requiring a compact pump with low power consumption. Unique design has no metals in the fluid path for maximum chemical resistance. Pump features include automatic demand operation and elastomers that handle a wide variety of chemicals. Perfect for low volume spraying and transfer. Cost effective yet with high performance and reliability; the SLV offers tremendous value.

- Automatic demand; 25 PSI [1.72 bar] on/40 PSI [2.8 bar]
- Self-priming up to 2.5 vertical feet [.76 m]
- Long-life pressure switch
- Thermally-protected ball bearing motor with splash-proof housing
- Internal fan radiates heat; external heat sink not required
- Integral on/off switch optional

### ORDER INFORMATION - AUTOMATIC DEMAND PUMPS 12 VDC

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| SLV10-AA40 | 1 | 3.8 | 30 | 2.1 | 3/8" Barb | 2.5 | Viton® valves, Santoprene® diaphragm, 40 PSI ( 2.8 bar) demand switch, Integral on/off switch included |
| SLV10-AA41 | 1 | 3.8 | 30 | 2.1 | 3/8" Barb | 2.5 | Viton® valves, Santoprene® diaphragm, 40 PSI ( 2.8 bar) demand switch |
| SLV10-AA48* | 1 | 3.8 | 30 | 2.1 | 3/8" Barb | 2.5 | Viton® valves, Santoprene® diaphragm, 40 PSI ( 2.8 bar) demand switch, Manual switch and 2 pin connector 12VDC |

* Packaged in quantities of 6, for single pack, add suffix "AB" (i.e.: SLV10-AA48-AB).

### AUTOMATIC DEMAND PUMPS 12 VDC

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| SLV10-AA40 | 3 | 0.2 | 0.90 | 3.4 | 1.8 |
| | 10 | 0.7 | 0.73 | 2.8 | 2.1 |
| | 20 | 1.4 | 0.62 | 2.3 | 2.3 |
| | 30 | 2.1 | 0.49 | 1.9 | 2.5 |
| SLV10-AA41 | 3 | 0.2 | 0.90 | 3.4 | 1.8 |
| | 10 | 0.7 | 0.73 | 2.8 | 2.1 |
| | 20 | 1.4 | 0.62 | 2.3 | 2.3 |
| | 30 | 2.1 | 0.49 | 1.9 | 2.5 |
| SLV10-AA48 | 3 | 0.2 | 0.90 | 3.4 | 1.8 |
| | 10 | 0.7 | 0.73 | 2.8 | 2.1 |
| | 20 | 1.4 | 0.62 | 2.3 | 2.3 |
| | 30 | 2.1 | 0.49 | 1.9 | 2.5 |

### ORDER INFORMATION - AUTOMATIC DEMAND PUMP 24 VDC

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| SLV10-AB41 | 1 | 3.8 | 30 | 2.1 | 3/8" Barb | 1.23 | Viton® valves, Santoprene® diaphragm, 40 PSI ( 2.8 bar) demand switch |

### AUTOMATIC DEMAND PUMP 24 VDC

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| SLV10-AB41 | 3 | 0.2 | 0.90 | 3.4 | 0.89 |
| | 10 | 0.7 | 0.73 | 2.8 | 1.00 |
| | 20 | 1.4 | 0.62 | 2.3 | 1.15 |
| | 30 | 2.1 | 0.49 | 1.9 | 1.23 |

### ORDER INFORMATION - NO CONTROL TRANSFER PUMP 12 VDC

| Part # | Max GPM | Max LPM | Max PSI | Max BAR | Port Size | Max Draw | Description |
|---|---|---|---|---|---|---|---|
| SLV10-HA01 | 1 | 3.8 | 30 | 2.1 | 3/8" Barb | 2.5 | Viton® valves, Geolast® diaphragm, No demand switch |

### NO CONTROL TRANSFER PUMP 12 VDC

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| SLV10-HA01 | 3 | 0.2 | 0.90 | 3.4 | 1.8 |
| | 10 | 0.7 | 0.73 | 2.8 | 2.1 |
| | 20 | 1.4 | 0.62 | 2.3 | 2.3 |
| | 30 | 2.1 | 0.49 | 1.9 | 2.5 |

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# SHURFLO® ACCESSORIES

## DRILL PUMP

Attaches to any standard 1/4" [6.35 mm] drill motor. Ideal for pumping water from appliances, aquariums, water beds, sinks, toilets or drums. Includes a 1/4" [6.35 mm] oil probe that easily allows the transfer of oil from cars, trucks, lawn and garden equipment. Not intended for use with flammable liquids or in flammable environments.

- Self-priming to 8 feet [2.4m] vertical
- Pumps liquids 40° F to 120° F [4.4° C to 48.8° C]
- BUNA impeller and seals
- 1/4" [6.35 mm] shaft fits standard drills

### ORDER INFORMATION

| Part Number | Max GPH | Max LPH | Port Size | Shaft Size |
|---|---|---|---|---|
| 3010-000 | 200 | 757 | 3/4" (M) GHT | 1/4" |

## OIL CHANGE SYSTEM

Makes a messy job clean and easy. Simply install the oil probe in the engine oil dipstick tube, attach the battery clips, and flip the switch. Oil is safely removed and stored in the easy to carry container. Oil should be heated to 140°F for maximum pump efficiency.

- Complete with necessary tubing and oil storage container
- 8 foot cable with battery clips
- Thermal overload protection

### ORDER INFORMATION

| Model | Description |
|---|---|
| 8050-305-426 | Oil Change System |

## HEAT SINK

### ORDER INFORMATION

| Model | Description |
|---|---|
| 34-007 | 5" [12.7 cm] Heat Sink to assist cooling in Continuous-duty applications |
| 34-006 | 3" [7.6 cm] Heat Sink to assist cooling in Continuous-duty applications |

## BOWL-STYLE STRAINERS

| Model | Description |
|---|---|
| 255-223 | 50 Mesh screen, 1/2" Barb Inlet x 1/2 NPSM Female Outlet |
| 255-313 | 50 Mesh screen, 1/2" NPSM Male Inlet x 1/2 NPSM Female Outlet, EPDM O-ring |
| 255-323 | 50 Mesh screen, 1/2" Barb Inlet x 1/2 NPSM Female Outlet, EPDM O-ring |
| 255-646 | 50 Mesh screen, 3/8" x 3/8" MNPT Poly/Nylon, Viton® O-ring |
| 255-568 | 50 Mesh screen, 3/8" x 3/8" MNPT Poly/Nylon, EPDM O-ring |
| 255-613 | 50 Mesh screen, 1/2" NPSM Male Inlet x 1/2 NPSM Female Outlet, Viton® O-ring |
| 255-623 | 50 Mesh screen, 1/2" Barb Inlet x 1/2 NPSM Female Outlet, Viton® O-ring |
| 255-413 | 50 Mesh screen, 1/2" NPSM Male Inlet x 1/2 NPSM Female Outlet, Buna O-ring |

## BARB TEE

| Part Number | Description |
|---|---|
| 8-126-00 | 1/2" [12mm] Barb Tee - Polypro |

## BARB TEE X PIPE

| Part Number | Description |
|---|---|
| T3812T | 3/8" [10mm] MNPT-Male x 1/2" Barb Tee - Nylon |
| 3T3812T | 3/8" [10mm] MNPT-Male x 1/2" Barb Tee - Poly |

## SWIVEL HEX WINGNUT STRAIGHT (USE WITH 2088 SERIES)

| Part Number | Description |
|---|---|
| 234-2916 | 1/2" [12mm] NPT-Female x 3/8" [10 mm] Barb - Polypro |
| 234-2926 | 1/2" [12mm] NPT-Female x 1/2" [12 mm] Barb - Polypro |
| 234-2936 | 1/2" [12mm] NPT-Female x 5/8" [16 mm] Barb - Polypro |
| 234-2946 | 1/2" [12mm] NPT-Female x 3/4" [19 mm] Barb - Polypro |

## SWIVEL HEXNUT ELBOW (USE WITH 2088 SERIES)

| Part Number | Description |
|---|---|
| 234-3926 | 1/2" [12mm] NPT-Female x 1/2" [12 mm] Barb Swivel Hexnut Elbow - Polypro |
| 244-3366 | 1/2" [12mm] NPT-Female x 1/2" [12 mm] NPT Male Swivel Hexnut Elbow Adaptor - Nylon |
| 234-3916 | 1/2" [12mm] NPT-Female x 3/8" [10 mm] Barb Swivel Hexnut Elbow - Polypro |
| 234-3946 | 1/2" [12mm] NPT-Female x 3/4" [19 mm] Barb Swivel Elbow - Polypro |
| 234-3936 | 1/2" [12mm] NPT-Female x 5/8" [16 mm] Barb Swivel Elbow - Polypro |

*Fitting available only in nylon – CHECK COMPATIBILITY.

## BARBED X PIPE STRAIGHT

| Part Number | Description |
|---|---|
| 8-005-01 | 3/8" [10mm] NPT-Male x 3/8" [10 mm] Barb - Polypro |
| 8-007-01 | 3/8" [10mm] NPT-Male x 1/2" [12 mm] Barb - Polypro |
| 244-5126 | 1/2" [12mm] NPT-Male x 1/2" [12 mm] Barb - Nylon |

## BARBED X PIPE ELBOW

| Part Number | Description |
|---|---|
| 8-006-01 | 3/8" [10mm] NPT-Male x 3/8" [10 mm] Barb - Poly |
| 244-6128 | 3/8" [10mm] NPT-Male x 1/2" [12 mm] Barb - Poly |

8-145-00

8-150-01

8-205-00

## ADAPTERS

| Part Number | Description |
|---|---|
| 8-145-00 | 3/8" [10mm] NPT-Male x 1/2" [12 mm] NPT-Male - Polypro |
| 8-150-01* | 1/2" [12mm] NPT-Female x 3/4" [19 mm] GHT (M) - Nylon |
| 8-205-00 | 1/2" [12mm] NPT-Female x 1/2" [12 mm] NPT-Male - Aceryl |

*Fitting available only in nylon – CHECK COMPATIBILITY.

# SHURFLO® AG RUNNER

The Shurflo AG Runner Transfer Pump System is designed to safely and accurately transfer bulk chemicals to the point of use.

- Industry leading pump
- Portable
- Can be used with a variety of bulk containers
- Built for rugged service with a heavy-duty welded frame
- Simple and accurate flow indicator

## ORDER INFORMATION

| Part Number | Flow Meter Type | Description |
|---|---|---|
| SF-1100-PTS | Pump-mounted (FM-1100) | Chemical Transfer Pump with 12 VDC motor, 20 ft. (6 m) cable, alligator clips and in-line fuse (Part # SF-1100 - EPDM valves or SF-1105 - Viton® valves), electronic flow meter, 1-in. NPT x 12 ft. (3.7 m) EPDM discharge hose with ball valve/spout, and 1-in. NPT x 12 ft. (3.7 m) EPDM inlet hose with 1-in. elbow/ ball valve/fitting assembly with locking cam arms |
| SF-1100-PTSi | Inline (FM-1100i) | |
| SF-1100-PTSi-00 | No Flow Meter | |
| SF-1105-PTS | Pump-mounted (FM-1100) | |
| SF-1105-PTSi | Inline (FM-1100i) | |

See Mini-Bulk Pump (pg. 108) for performance information.

# SHURFLO MINI-BULK CHEMICAL TRANSFER SYSTEM

Shurflo Mini-Bulk Chemical Transfer Pumps and Systems are designed specifically for chemical company tanks where the pump is integral to the tank. The SF-1100-REC system is mounted to any tank with a 9-inch, threaded opening. This system allows the pump to recirculate the suspended chemical components prior to transferring to the point of use.

## ORDER INFORMATION

| Part Number | Description |
|---|---|
| SF-1100-REC-DT | Chemical Transfer Pump with 12 VDC motor, 20 ft. (6 m) cable, alligator clips & in-line fuse (Part # SF-1100 - EPDM valves or SF-1105 - Viton® valves), in-line electronic flow meter (Part # FM-1100i), 1-in. NPT x 12 ft. (3.7 m) EPDM discharge hose with ball valve/spout, 3-way valve, tubing and fittings to allow tank recirculation, and 28" ( 71 cm) dip tube. (SF-1100-REC-DT only) |
| SF-1105-REC* | |

See Mini-Bulk Pump (pg. 108) for performance information.
* Does not come with 28" dip tube. To order dip tube separately use part number 2407-0002

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# SHURFLO® MINI-BULK PUMPS

The SF-1100 Series Bulk Chemical Pumps are the industry leader. They are designed for efficiency and power to handle highly viscous fluids. Servicing the SF-1100 series pump is a rare event, but if needed, it can be serviced quickly and easily with only a few hand tools.

- Specialized EPDM elastics or Viton® option
- 12 volt DC or 110 volt AC motor option
- 20 foot (6 m) cord with alligator clips and in-line fuse (DC version), 6 foot (1.8) cord (AC version)
- Weather protected on/off switch
- Internal bypass to protect the pump at shut-off
- 2" MNPT inlet, 1" FNPT outlet
- Capable of priming up to 12 feet (3.7 m)
- Max Viscosity: 600-880 Centipoise

**ORDER INFORMATION**

| Part Number | Valves | Motor |
|---|---|---|
| SF-1100 | EPDM | 12 VDC |
| SF-1100-110V | EPDM | 110 VAC |
| SF-1105 | Viton® | 12 VDC |

| Model | PSI | BAR | GPM | L/min | Amps |
|---|---|---|---|---|---|
| SF-1100 and SF-1105 | 0 | 0.0 | 10.7 | 40 | 9.3 |
| | 5 | 0.3 | 10.1 | 38 | 10.3 |
| | 10 | 0.7 | 8.7 | 33 | 12.3 |
| | 15 | 1.0 | 7.6 | 29 | 13.9 |

# SHURFLO® MINI-BULK FLOW METERS

The FM-1100 Series Electronic Flow Meter is designed for accurate and easy measuring of transferred chemicals. The FM-1100 Series Flow Meter is an integral component for a complete bulk chemical transfer system.

- Max. flow of 20 gpm (76 lpm) (.5% accruacy after calibration)
- Max pressure of 120 psi (8.3 bar)
- Accurate nutating disk design
- Large LCD display makes meter reading easy from a distance
- Simple calibration steps and control button layout
- Long-life lithium battery
- Easy-to-service electronics and batteries
- Available in pump-mounted and hose-end configurations
- Max Viscosity: 600-880 Centipoise

**ORDER INFORMATION**

| Part Number | Max GPM | Max LPM | Max PSI | Max BAR | Description |
|---|---|---|---|---|---|
| FM-1100 | 20 | 76 | 120 | 8.3 | Pump-mounted meter kit- 1" MNPT inlet & outlet |
| FM-1100i | 20 | 76 | 120 | 8.3 | Inline meter kit -1" FNPT inlet & outlet |

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair Ltd.

# SHURFLO® MINI-BULK KITS, PARTS, & ACCESSORIES

Part# 94-718-00

Part# 94-719-00

Part# 94-720-00
& 94-720-05

Part# 94-721-00

## MINI-BULK PUMP KITS FOR SF-1100 SERIES

| Part Number | Description |
|---|---|
| 94-718-00 | Motor assembly kit used in any SF-1100 series pumps. Kit includes a 12 VDC motor with integrated pump lower housing, built-in on-off switch, 20 foot (6 m) cable, alligator clips and in-line fuse ( Support bracket part # 84-1038-08) |
| 94-719-00 | Santoprene® diaphragm/lower housing/drive assembly - ready for installation |
| 94-720-00 | EPDM valve housing kits include a complete fully-assembled valve housing with o-ring seal* - ready for installation |
| 94-720-05 | Viton® valve housing kits include a complete fully-assembled valve housing with o-ring seal* - ready for installation |
| 94-721-00 | Polypropylene upper housing - includes o-ring seal* and pump head screws |

* Manufacturer recommends replacing the O-ring seal whenever the pump has been dismantled.

Part# 94-732-00

Part# 94-733-00

Part# 94-734-00

Part# 94-735-00

Part# 94-736-00

## MINI-BULK FLOW METER KITS FOR FM-1100 SERIES

| Part Number | Description |
|---|---|
| 94-732-00 | Flow meter electronics kit includes the front cover assembly and the electronic display with o-ring and batteries. Kit fits both pump-mounted and in-line meters (O-ring part # 5-040-154) |
| 94-733-00 | Flow meter housing seal cover kit includes the seal cover, o-ring and screws. Kit fits both pump-mounted and in-line meters. (O-ring part # 5-040-154) |
| 94-734-00 | Nutating chamber assembly, including o-ring seal. Kit fits both pump-mounted and in-line meters |
| 94-735-00 | 90° meter housing with o-ring seal for pump-mounted flow meter. (O-ring part # 5-043-240) |
| 94-736-00 | Meter housing with o-ring seal for in-line flow meter. (O-ring part # 5-043-240) |

Part# 3320-0064

Part# 8-727-00

Part# 94-712-00

Part# 94-716-00

Part# 94-717-00

Part# 94-723-00

Part# 94-724-00

Part# 94-725-00

Part# 94-737-00

Part# 94-738-00

## OTHER MINI-BULK PARTS & ACCESSORIES

| Part Number | Description |
|---|---|
| 3320-0064 | Anti-flow back valve for EPA compliance |
| 8-727-00 | 2 inch FNPT by 1 Inch FNPT polypropylene reducer coupling |
| 94-712-00 | 2 inch male NPT by 2 inch female NPT street elbow fitting |
| 94-716-00 | 1 inch NPT ball valve with spout |
| 94-717-00 | 1 inch NPT x 12 foot EPDM discharge hose kit |
| 94-723-00 | Set of red and black alligator clips, including fuse holder |
| 94-724-00 | Replacement recirculation lid (Gasket part # 7-155-00) |
| 94-725-00 | Replacement recirculation cap |
| 94-737-00 | Recirculation system return hose kit - includes return hose and two hose clamps |
| 94-738-00 | Elbow, valve and coupling assembly - includes a 1 inch street elbow, 1 inch ball valve, and 1 inch bayonet tank coupling |

# STAINLESS STEEL, TRIPLEX PLUNGER PUMPS

## Model 2535S and 2545S

Shown with optional mounting kit (kit P/N 3430-0645)

### HEAD

- 100% 316 stainless steel head and two-piece manifold resists washout and corrosion
- Stainless steel fasteners provide additional
- protection against environmental elements
- Heavy-duty, high pressure seals and back-up washers are included to guard against corrosion and continuous duty fatigue
- Precision-machined, stainless steel valve and seats provide higher resistance to chemical attack
- Self-adjusting, spring-loaded, double V-packings maintain constant high pressure seal compression and extend seal and plunger life
- High density ceramic plungers increase the high pressure seal life
- Lifetime warranty on the stainless steel head

### BODY

- Oversized crankshaft, bearings and bronze
- connecting rod can handle the abuse of cold start-ups and intermittent operation
- Forged stainless steel plunger rod stepped between plunger guide and oil seal eliminates seal failure due to plunger rod wear
- Heavy-duty oil seals for longer life
- 5-year warranty on material & workmanship

### ORDER INFORMATION

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2535S | 38 | 1200 | 800 | 1-1/2" NPT | 1" NPT |
| 2545S | 47 | 1200 | 800 | 1-1/2" NPT | 1" NPT |
| 3430-0645 | Base Rail Kit | | | | |
| 3430-0699 | 2535S Mobile Repair Kit (See below for details) | | | | |

**2535S** **U.S. UNITS**

| PSI | 800 | | 1000 | | 1200 | |
|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP |
| 400 | 19.8 | 11.2 | 19.7 | 13.0 | 19.5 | 15.2 |
| 500 | 24.3 | 13.1 | 24.2 | 15.8 | 24.1 | 18.8 |
| 600 | 29.2 | 15.3 | 29.2 | 18.8 | 29.0 | 22.2 |
| 700 | 33.6 | 18.1 | 33.5 | 22.2 | 33.5 | 25.8 |
| 800 | 38.1 | 20.0 | 38.0 | 25.0 | 38.0 | 29.8 |

**2535S** **METRIC UNITS**

| BAR | 55 | | 69 | | 83 | |
|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw |
| 400 | 75.0 | 8.4 | 74.6 | 9.7 | 73.8 | 11.3 |
| 500 | 92.0 | 9.8 | 91.6 | 11.8 | 91.2 | 14.0 |
| 600 | 110.5 | 11.4 | 110.5 | 14.0 | 109.8 | 16.6 |
| 700 | 127.2 | 13.5 | 126.8 | 16.6 | 126.8 | 19.2 |
| 800 | 144.2 | 14.9 | 143.8 | 18.6 | 143.8 | 22.2 |

# STAINLESS STEEL, TRIPLEX PLUNGER PUMPS

## Model 2535S and 2545S

**2545S** **U.S. UNITS**

| PSI | 800 | | 1000 | | 1200 | |
|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP |
| 400 | 24.4 | 13.2 | 24.2 | 16.0 | 24.1 | 18.9 |
| 500 | 30.4 | 16.1 | 30.3 | 19.6 | 30.2 | 23.1 |
| 600 | 36.5 | 19.2 | 36.5 | 23.2 | 36.4 | 27.5 |
| 700 | 42.1 | 22.1 | 42.1 | 27.1 | 42.0 | 32.3 |
| 800 | 46.8 | 25.1 | 46.8 | 30.4 | 46.7 | 36.1 |

**2545S** **METRIC UNITS**

| BAR | 55 | | 69 | | 83 | |
|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw |
| 400 | 92.4 | 9.8 | 91.6 | 11.9 | 91.2 | 14.1 |
| 500 | 115.1 | 12.0 | 114.7 | 14.6 | 114.3 | 17.2 |
| 600 | 138.2 | 14.3 | 138.2 | 17.3 | 137.8 | 20.5 |
| 700 | 159.4 | 16.5 | 159.4 | 20.2 | 159.0 | 24.1 |
| 800 | 177.2 | 18.7 | 177.2 | 22.7 | 176.8 | 26.9 |

### 2535S MOBILE REPAIR KIT (MODEL NUMBER: 3430-0699)

**FEATURES**

- Complete kit to rebuild the wet-end of the 2535S plunger pump
- Replace individual parts as needed or the entire wet-end
- As parts are used, reorder to keep mobile kit fully stocked
- Save time and money by having all the parts at your finger tips in an easy-to-carry case

**CONTAINS**

- 3010-0168 Tool Box
- 3430-0640 Valve Kit
- 3430-0641 Packing Kit
- 3430-0643 Plunger Seal Kit
- 3430-0644 Rod Oil Seal Kit
- 9910-621010 Bolt to Remove Valves
- 2160-0061 Anti-Seize Tube
- 3010-0250 Tool for Installing Cups
- L-1500 Repair Manual

# FORGED BRASS HEAD, TRIPLEX PLUNGER PUMPS

## Series 2400B-P

### HEAD

- Single-piece forged brass heads
- Quick and easy pump packing replacement
- Precision-machined stainless steel valve and seats provide higher resistance to chemical attack
- 100% ceramic plungers
- Dual low pressure packing design for improved priming capabilities
- Lifetime warranty on single-piece forged brass heads

### BODY

- Hypro's state-of-the-art, patented cartridge technology allows the crankcase oil seals and all wet-end seals to be easily serviced by removing only the pump head
- Hardened stainless steel lower plungers offer superior corrosion and wear resistance
- Longer lasting drive system with heavy-duty ball bearings
- Bronze piston guides give you larger bearing surface for extended life on oil seals and plungers
- 1" OD Solid Shaft
- Heavy-duty oil seals
- O-ring sealed dipstick
- Includes rail mounting kit
- 5-year warranty on material & workmanship

### ORDER INFORMATION - 2410B-P SERIES

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2410B-P | 4.4 | 2500 | 1725 | 3/4" | 1/2" |
| 2411B-P | 5.3 | 2500 | 1725 | 3/4" | 1/2" |
| 2412B-P | 5.9/4.0 | 2500 | 1725/1100 | 3/4" | 1/2" |
| 2413B-P | 7.2 | 1800 | 1725 | 3/4" | 1/2" |
| 2414B-P | 8.0/4.0 | 1800 | 1725/1100 | 3/4" | 1/2" |

Left-hand shaft extension - add suffix "L" - (i.e. 2410B-LP)

### ORDER INFORMATION - 2430B-P SERIES

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2430B-P | 4.3 | 3600 | 1725 | 3/4" | 1/2" |
| 2431B-P | 5.1 | 3600 | 1725 | 3/4" | 1/2" |
| 2432B-P | 5.8 | 3600 | 1725 | 3/4" | 1/2" |
| 2433B-P | 7.1 | 2500 | 1725 | 3/4" | 1/2" |
| 2434B-P | 7.9 | 2500 | 1725 | 3/4" | 1/2" |

Left-hand shaft extension - add suffix "L" - (i.e. 2430B-LP)

### 2410B-P — U.S. UNITS

| PSI | 1000 | | 1500 | | 2000 | | 2500 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 2.7 | 1.9 | 2.7 | 2.7 | 2.6 | 3.4 | 2.6 | 4.1 |
| 1150 | 3.1 | 2.1 | 3.1 | 3.0 | 3.0 | 3.8 | 3.0 | 4.6 |
| 1450 | 3.9 | 2.6 | 3.9 | 3.7 | 3.8 | 4.8 | 3.7 | 5.8 |
| 1725 | 4.6 | 3.1 | 4.5 | 4.4 | 4.4 | 5.7 | 4.4 | 6.9 |

### 2411B-P

| PSI | 1000 | | 1500 | | 2000 | | 2500 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 3.2 | 2.4 | 3.2 | 3.3 | 3.1 | 4.2 | 3.1 | 5.1 |
| 1150 | 3.7 | 2.5 | 3.7 | 3.6 | 3.6 | 4.6 | 3.6 | 5.6 |
| 1450 | 4.6 | 3.1 | 4.6 | 4.4 | 4.5 | 5.7 | 4.5 | 7.0 |
| 1725 | 5.3 | 3.7 | 5.3 | 5.2 | 5.2 | 6.7 | 5.1 | 8.1 |

### 2412B-P

| PSI | 1000 | | 1500 | | 2000 | | 2500 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 3.6 | 2.7 | 3.5 | 3.6 | 3.5 | 4.6 | 3.5 | 5.6 |
| 1150 | 4.1 | 2.9 | 4.1 | 4.1 | 4.0 | 5.2 | 4.0 | 6.4 |
| 1450 | 5.1 | 3.7 | 5.1 | 5.1 | 5.0 | 6.6 | 5.0 | 8.0 |
| 1725 | 5.9 | 4.2 | 5.9 | 5.9 | 5.8 | 7.7 | 5.7 | 9.4 |

### 2410B-P — METRIC UNITS

| BAR | 69 | | 103 | | 138 | | 172 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 10.2 | 1.4 | 10.0 | 2.0 | 9.8 | 2.5 | 9.7 | 3.1 |
| 1150 | 11.7 | 1.6 | 11.5 | 2.2 | 11.4 | 2.8 | 11.2 | 3.4 |
| 1450 | 14.8 | 1.9 | 14.6 | 2.8 | 14.4 | 3.6 | 14.0 | 4.3 |
| 1725 | 17.4 | 2.3 | 17.0 | 3.3 | 16.7 | 4.3 | 16.5 | 5.1 |

### 2411B-P

| BAR | 69 | | 103 | | 138 | | 172 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 12.1 | 1.8 | 11.9 | 2.5 | 11.7 | 3.1 | 11.7 | 3.8 |
| 1150 | 14.0 | 1.9 | 13.8 | 2.6 | 13.6 | 3.4 | 13.4 | 4.2 |
| 1450 | 17.4 | 2.3 | 17.2 | 3.3 | 17.0 | 4.3 | 16.8 | 5.2 |
| 1725 | 20.1 | 2.8 | 19.9 | 3.9 | 19.7 | 5.0 | 19.3 | 6.0 |

### 2412B-P

| BAR | 69 | | 103 | | 138 | | 172 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 13.6 | 2.0 | 13.2 | 2.7 | 13.2 | 3.4 | 13.2 | 4.2 |
| 1150 | 15.5 | 2.2 | 15.5 | 3.1 | 15.1 | 3.9 | 15.1 | 4.8 |
| 1450 | 19.3 | 2.8 | 19.3 | 3.8 | 18.9 | 4.9 | 18.9 | 6.0 |
| 1725 | 22.3 | 3.1 | 22.3 | 4.4 | 22.0 | 5.7 | 21.6 | 7.0 |

# FORGED BRASS HEAD, TRIPLEX PLUNGER PUMPS

## Series 2400B-P

### 2413B-P — U.S. UNITS

| PSI | 500 | | 1000 | | 1500 | | 1800 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 4.4 | 1.8 | 4.4 | 3.0 | 4.3 | 4.2 | 4.3 | 5.0 |
| 1150 | 5.1 | 1.9 | 5.0 | 3.3 | 5.0 | 4.8 | 4.9 | 5.7 |
| 1450 | 6.3 | 2.5 | 6.2 | 4.2 | 6.1 | 5.9 | 6.1 | 7.0 |
| 1725 | 7.2 | 2.9 | 7.1 | 4.9 | 7.0 | 6.8 | 7.0 | 8.1 |

### 2414B-P

| PSI | 500 | | 1000 | | 1500 | | 1800 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 5.0 | 1.9 | 4.9 | 3.3 | 4.9 | 4.7 | 4.9 | 5.5 |
| 1150 | 5.7 | 2.0 | 5.6 | 3.7 | 5.6 | 5.3 | 5.6 | 6.3 |
| 1450 | 7.0 | 2.5 | 6.9 | 4.6 | 6.9 | 6.6 | 6.8 | 7.8 |
| 1725 | 7.9 | 3.0 | 7.8 | 5.3 | 7.7 | 7.6 | 7.7 | 8.8 |

### 2430B-P

| PSI | 1000 | | 2000 | | 3000 | | 3600 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 2.7 | 1.9 | 2.6 | 3.4 | 2.5 | 4.8 | 2.5 | 5.6 |
| 1150 | 3.1 | 2.1 | 3.0 | 3.8 | 2.9 | 5.4 | 2.8 | 6.4 |
| 1450 | 3.9 | 2.6 | 3.8 | 4.8 | 3.6 | 6.8 | 3.6 | 8.0 |
| 1725 | 4.6 | 3.1 | 4.4 | 5.7 | 4.3 | 8.1 | 4.2 | 9.5 |

### 2431B-P

| PSI | 1000 | | 2000 | | 3000 | | 3600 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 3.2 | 2.4 | 3.1 | 4.2 | 3.1 | 5.9 | 3.0 | 6.8 |
| 1150 | 3.7 | 2.5 | 3.6 | 4.6 | 3.5 | 6.6 | 3.5 | 7.7 |
| 1450 | 4.6 | 3.1 | 4.5 | 5.7 | 4.4 | 8.2 | 4.3 | 9.8 |
| 1725 | 5.3 | 3.7 | 5.2 | 6.7 | 5.0 | 9.5 | 5.0 | 11.2 |

### 2432B-P

| PSI | 1000 | | 1500 | | 3000 | | 3600 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 3.6 | 2.6 | 3.5 | 4.7 | 3.4 | 6.9 | 3.4 | 7.8 |
| 1150 | 4.1 | 2.9 | 4.0 | 5.3 | 4.0 | 7.5 | 3.9 | 8.8 |
| 1450 | 5.2 | 3.6 | 5.0 | 6.6 | 4.9 | 9.4 | 4.8 | 11.0 |
| 1725 | 6.0 | 4.2 | 5.8 | 7.6 | 5.7 | 10.9 | 5.6 | 12.8 |

### 2433B-P

| PSI | 1000 | | 1500 | | 2000 | | 2500 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 4.4 | 3.0 | 4.3 | 4.2 | 4.3 | 5.5 | 4.3 | 6.7 |
| 1150 | 5.0 | 3.3 | 5.0 | 4.8 | 4.9 | 6.2 | 4.9 | 7.6 |
| 1450 | 6.2 | 4.2 | 6.1 | 5.9 | 6.1 | 7.7 | 6.0 | 9.4 |
| 1725 | 7.1 | 4.9 | 7.0 | 6.8 | 7.0 | 8.9 | 6.9 | 10.8 |

### 2434B-P

| PSI | 1000 | | 1500 | | 2000 | | 2500 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 4.9 | 3.4 | 4.9 | 4.8 | 4.8 | 6.2 | 4.8 | 7.6 |
| 1150 | 5.6 | 3.8 | 5.6 | 5.4 | 5.5 | 7.1 | 5.5 | 8.5 |
| 1450 | 7.0 | 4.5 | 6.9 | 6.5 | 6.8 | 8.6 | 6.8 | 10.5 |
| 1725 | 7.9 | 5.3 | 7.8 | 7.7 | 7.8 | 10.0 | 7.7 | 12.1 |

### 2413B-P — METRIC UNITS

| BAR | 34 | | 69 | | 103 | | 124 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 16.7 | 1.3 | 16.7 | 2.2 | 16.3 | 3.1 | 16.4 | 3.7 |
| 1150 | 19.1 | 1.4 | 18.9 | 2.5 | 18.9 | 3.6 | 18.7 | 4.2 |
| 1450 | 23.7 | 1.8 | 23.5 | 3.1 | 23.1 | 4.4 | 23.2 | 5.2 |
| 1725 | 27.1 | 2.2 | 26.9 | 3.7 | 26.5 | 5.1 | 26.6 | 6.1 |

### 2414B-P

| BAR | 34 | | 69 | | 103 | | 124 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 18.9 | 1.4 | 18.5 | 2.5 | 18.5 | 3.5 | 18.5 | 4.1 |
| 1150 | 21.6 | 1.5 | 21.2 | 2.8 | 21.2 | 4.0 | 21.2 | 4.7 |
| 1450 | 26.5 | 1.9 | 26.1 | 3.4 | 26.1 | 4.9 | 25.7 | 5.8 |
| 1725 | 29.9 | 2.2 | 29.5 | 4.0 | 29.1 | 5.7 | 29.1 | 6.6 |

### 2430B-P

| BAR | 69 | | 138 | | 207 | | 248 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 10.2 | 1.4 | 9.8 | 2.5 | 9.5 | 3.6 | 9.5 | 4.2 |
| 1150 | 11.7 | 1.6 | 11.4 | 2.8 | 11.0 | 4.0 | 10.6 | 4.8 |
| 1450 | 14.8 | 1.9 | 14.4 | 3.6 | 13.6 | 5.1 | 13.6 | 6.0 |
| 1725 | 17.4 | 2.3 | 16.7 | 4.3 | 16.3 | 6.0 | 15.9 | 7.1 |

### 2431B-P

| BAR | 69 | | 138 | | 207 | | 248 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 12.1 | 1.8 | 11.7 | 3.1 | 11.7 | 4.4 | 11.4 | 5.1 |
| 1150 | 14.0 | 1.9 | 13.6 | 3.4 | 13.2 | 4.9 | 13.2 | 5.7 |
| 1450 | 17.4 | 2.3 | 17.0 | 4.3 | 16.7 | 6.1 | 16.3 | 7.3 |
| 1725 | 20.1 | 2.8 | 19.7 | 5.0 | 18.9 | 7.1 | 18.9 | 8.4 |

### 2432B-P

| BAR | 69 | | 138 | | 207 | | 248 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 13.6 | 1.9 | 13.2 | 3.5 | 12.9 | 5.1 | 12.9 | 5.8 |
| 1150 | 15.5 | 2.2 | 15.1 | 4.0 | 15.1 | 5.6 | 14.8 | 6.6 |
| 1450 | 19.7 | 2.7 | 18.9 | 4.9 | 18.5 | 7.0 | 18.2 | 8.2 |
| 1725 | 22.7 | 3.1 | 22.0 | 5.7 | 21.6 | 8.1 | 21.2 | 9.5 |

### 2433B-P

| BAR | 69 | | 103 | | 138 | | 172 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 16.7 | 2.2 | 16.3 | 3.1 | 16.3 | 4.1 | 16.3 | 5.0 |
| 1150 | 18.9 | 2.5 | 18.9 | 3.6 | 18.5 | 4.6 | 18.5 | 5.7 |
| 1450 | 23.5 | 3.1 | 23.1 | 4.4 | 23.1 | 5.7 | 22.7 | 7.0 |
| 1725 | 26.9 | 3.7 | 26.5 | 5.1 | 26.5 | 6.6 | 26.1 | 8.1 |

### 2434B-P

| BAR | 69 | | 103 | | 138 | | 172 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 18.5 | 2.5 | 18.5 | 3.6 | 18.2 | 4.6 | 18.2 | 5.7 |
| 1150 | 21.2 | 2.8 | 21.2 | 4.0 | 20.8 | 5.3 | 20.8 | 6.3 |
| 1450 | 26.5 | 3.4 | 26.1 | 4.8 | 25.7 | 6.4 | 25.7 | 7.8 |
| 1725 | 29.9 | 4.0 | 29.5 | 5.7 | 29.5 | 7.5 | 29.1 | 9.0 |

# FORGED BRASS HEAD, TRIPLEX PLUNGER PUMPS

## Series 2300B-P

### HEAD

- Single-piece forged brass heads
- Quick and easy pump packing replacement
- Precision-machined stainless steel valve and seats provide higher resistance to chemical attack
- 100% ceramic plungers
- Dual low pressure packing design for improved priming capabilities
- Lifetime warranty on single-piece forged brass heads

### BODY

- Hypro's state-of-the-art, patented cartridge technology allows the crankcase oil seals and all wet-end seals to be easily serviced by removing only the pump head
- Hardened stainless steel lower plungers offer superior corrosion and wear resistance
- Shafts Output:
  - ¾" OD Solid Shaft – 2303B-P, 2304B-P, 2314B-P, 2330B-P, 2351B-P & 2345B-P
  - ¾" OD Solid Shaft with M6 x 1" Tapped Thread for clutch installation – 2359B-P & 2340B-P
  - ¾" OD Solid Shaft with 6" electric clutch assembly – 2359B-PY
  - ¾" ID Hollow Shaft Flanged for direct couple to gasoline engines – 2354B-CP & 2331B-CP
- Heavy-duty oil seals
- O-ring sealed dipstick
- Includes rail mounting kit
- 5-year warranty on material & workmanship

### ORDER INFORMATION - 2304B-P, 2314B-P

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2304B-P | 4.2 | 1200 | 1725 | 1/2" | 3/8" |
| 2314B-P | 4.0/3.0 | 1200 | 1450/1100 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2303B-LP)

### ORDER INFORMATION - 2330B-P, 2359B-P, 2351B-P, 2340B-P, 2354B-P

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2330B-P | 3.1 | 2500 | 1725 | 1/2" | 3/8" |
| 2359B-P* | 3.5 | 3000 | 1725 | 1/2" | 3/8" |
| 2351B-P | 4.0 | 3000 | 1725 | 1/2" | 3/8" |
| 2340B-P* | 4.2 | 2500 | 1725 | 1/2" | 3/8" |
| 2345B-P | 4.8 | 2500 | 1725 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2330B-LP)
*With m6 x 1" threaded shaft for Clutch installation

### ORDER INFORMATION - 2354B-CP, 2331B-CP

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2354B-CP | 2.7 | 2000 | 3450 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2354B-CLP)

### ORDER INFORMATION - 2359B-PY

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2359B-PY | 3.5 | 3000 | 1725 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2359B-LPY)

### 2303B-P, 2304B-P, 2314B-P — U.S. UNITS

| PSI | 500 | | 700 | | 1000 | | 1200 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1100 | 3.1 | 1.3 | 3.1 | 1.6 | 3.1 | 2.1 | 3.1 | 2.4 |
| 1450* | 4.1 | 1.5 | 4.0 | 2.0 | 4.0 | 2.7 | 4.0 | 3.2 |
| 1725** | 3.1 | 1.2 | 3.1 | 1.7 | 3.1 | 2.2 | 3.1 | 2.6 |
| 1725*** | 4.3 | 1.6 | 4.3 | 2.0 | 4.2 | 2.9 | 4.2 | 3.4 |

* 2314 only, ** 2303 only, *** 2304 only

### 2303B-P, 2304B-P, 2314B-P — METRIC UNITS

| BAR | 34 | | 48 | | 69 | | 83 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1100 | 11.7 | 1.0 | 11.7 | 1.2 | 11.7 | 1.6 | 11.7 | 1.8 |
| 1450* | 15.5 | 1.1 | 15.1 | 1.5 | 15.1 | 2.0 | 15.1 | 2.4 |
| 1725** | 11.7 | 0.9 | 11.7 | 1.3 | 11.7 | 1.6 | 11.7 | 1.9 |
| 1725*** | 16.3 | 1.2 | 16.3 | 1.5 | 15.9 | 2.2 | 15.9 | 2.5 |

* 2314 only, ** 2303 only, *** 2304 only

# FORGED BRASS HEAD, TRIPLEX PLUNGER PUMPS

## Series 2300B-P

### 2330B-P — U.S. UNITS

| PSI | 500 | | 700 | | 1000 | | 1300 | | 1500 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 1.8 | 0.7 | 1.8 | 1.0 | 1.8 | 1.3 | 1.8 | 1.6 | 1.8 | 1.9 | 1.8 | 2.9 |
| 1450 | 2.7 | 1.0 | 2.7 | 1.4 | 2.6 | 1.9 | 2.6 | 2.3 | 2.6 | 2.7 | 2.5 | 4.2 |
| 1600 | 2.9 | 1.1 | 2.9 | 1.5 | 2.9 | 2.0 | 2.9 | 2.5 | 2.8 | 2.8 | 2.8 | 4.6 |
| 1725 | 3.1 | 1.2 | 3.1 | 1.7 | 3.1 | 2.2 | 3.1 | 2.8 | 3.1 | 3.2 | 3.0 | 5.0 |

### 2330B-P — METRIC UNITS

| BAR | 34 | | 48 | | 69 | | 90 | | 103 | | 172 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 6.8 | 0.5 | 6.8 | 0.7 | 6.8 | 1.0 | 6.8 | 1.2 | 6.8 | 1.4 | 6.8 | 2.2 |
| 1450 | 10.2 | 0.7 | 10.2 | 1.0 | 9.8 | 1.4 | 9.8 | 1.7 | 9.8 | 2.0 | 9.5 | 3.1 |
| 1600 | 11.0 | 0.8 | 11.0 | 1.1 | 11.0 | 1.5 | 11.0 | 1.9 | 10.6 | 2.1 | 10.6 | 3.4 |
| 1725 | 11.7 | 0.9 | 11.7 | 1.3 | 11.7 | 1.6 | 11.7 | 2.1 | 11.7 | 2.4 | 11.4 | 3.7 |

### 2340B-P

| PSI | 500 | | 700 | | 1000 | | 1300 | | 1500 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 2.5 | 1.0 | 2.5 | 1.3 | 2.5 | 1.8 | 2.5 | 2.2 | 2.5 | 2.5 | 2.4 | 4.0 |
| 1450 | 3.6 | 1.3 | 3.6 | 1.8 | 3.6 | 2.4 | 3.6 | 3.1 | 3.5 | 3.6 | 3.5 | 5.6 |
| 1600 | 4.0 | 1.5 | 4.0 | 1.9 | 3.9 | 2.7 | 3.9 | 3.3 | 3.9 | 3.8 | 3.8 | 6.2 |
| 1725 | 4.3 | 1.6 | 4.3 | 2.0 | 4.2 | 2.9 | 4.2 | 3.6 | 4.2 | 4.1 | 4.1 | 6.6 |

### 2340B-P

| BAR | 34 | | 48 | | 69 | | 90 | | 103 | | 172 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 9.5 | 0.7 | 9.5 | 1.0 | 9.5 | 1.3 | 9.5 | 1.6 | 9.5 | 1.9 | 9.1 | 3.0 |
| 1450 | 13.6 | 1.0 | 13.6 | 1.3 | 13.6 | 1.8 | 13.6 | 2.3 | 13.2 | 2.7 | 13.2 | 4.2 |
| 1600 | 15.1 | 1.1 | 15.1 | 1.4 | 14.8 | 2.0 | 14.8 | 2.5 | 14.8 | 2.8 | 14.4 | 4.6 |
| 1725 | 16.3 | 1.2 | 16.3 | 1.5 | 15.9 | 2.2 | 15.9 | 2.7 | 15.9 | 3.1 | 15.5 | 4.9 |

### 2345B-P

| PSI | 500 | | 700 | | 1000 | | 1300 | | 1500 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 2.8 | 1.2 | 2.8 | 1.5 | 2.8 | 2.0 | 2.8 | 2.5 | 2.8 | 2.8 | 2.7 | 4.5 |
| 1450 | 4.1 | 1.7 | 4.1 | 2.2 | 4.0 | 2.9 | 4.0 | 3.7 | 4.0 | 4.1 | 4.0 | 6.5 |
| 1600 | 4.5 | 1.8 | 4.4 | 2.4 | 4.4 | 3.2 | 4.4 | 4.1 | 4.4 | 4.6 | 4.3 | 7.2 |
| 1725 | 4.8 | 2.0 | 4.7 | 2.6 | 4.7 | 3.4 | 4.7 | 4.4 | 4.7 | 4.9 | 4.6 | 7.6 |

### 2345B-P

| BAR | 34 | | 48 | | 69 | | 90 | | 103 | | 172 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 10.6 | 0.9 | 10.6 | 1.1 | 10.6 | 1.5 | 10.6 | 1.9 | 10.6 | 2.1 | 10.2 | 3.4 |
| 1450 | 15.5 | 1.3 | 15.5 | 1.6 | 15.1 | 2.2 | 15.1 | 2.8 | 15.1 | 3.1 | 15.1 | 4.8 |
| 1600 | 17.0 | 1.3 | 16.7 | 1.8 | 16.7 | 2.4 | 16.7 | 3.1 | 16.7 | 3.4 | 16.3 | 5.4 |
| 1725 | 18.2 | 1.5 | 17.8 | 1.9 | 17.8 | 2.5 | 17.8 | 3.3 | 17.8 | 3.7 | 17.4 | 5.7 |

### 2359B-P, 2359B-PY

| PSI | 500 | | 700 | | 1000 | | 1300 | | 2000 | | 3000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 2.1 | 1.0 | 2.1 | 1.6 | 2.1 | 2.0 | 2.1 | 2.3 | 2.0 | 2.8 | 2.0 | 4.0 |
| 1450 | 3.0 | 1.4 | 3.0 | 2.3 | 3.0 | 2.8 | 2.9 | 3.2 | 2.9 | 4.1 | 2.9 | 5.6 |
| 1600 | 3.3 | 1.6 | 3.3 | 2.6 | 3.3 | 3.2 | 3.3 | 3.4 | 3.2 | 4.4 | 3.2 | 6.2 |
| 1725 | 3.6 | 1.6 | 3.6 | 2.7 | 3.5 | 3.3 | 3.5 | 3.8 | 3.5 | 4.8 | 3.4 | 6.8 |

### 2359B-P, 2359B-PY

| BAR | 34 | | 48 | | 69 | | 90 | | 138 | | 207 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 7.9 | 0.7 | 7.9 | 1.2 | 7.9 | 1.5 | 7.9 | 1.7 | 7.6 | 2.1 | 7.6 | 3.0 |
| 1450 | 11.4 | 1.0 | 11.4 | 1.7 | 11.4 | 2.1 | 11.0 | 2.4 | 11.0 | 3.1 | 11.0 | 4.2 |
| 1600 | 12.5 | 1.2 | 12.5 | 1.9 | 12.5 | 2.4 | 12.5 | 2.5 | 12.1 | 3.3 | 12.1 | 4.6 |
| 1725 | 13.6 | 1.2 | 13.6 | 2.0 | 13.2 | 2.5 | 13.2 | 2.8 | 13.2 | 3.6 | 12.9 | 5.1 |

### 2351B-P

| PSI | 500 | | 700 | | 1000 | | 1300 | | 2000 | | 3000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 2.4 | 0.9 | 2.3 | 1.7 | 2.3 | 2.1 | 2.3 | 2.4 | 2.3 | 3.1 | 2.3 | 4.3 |
| 1450 | 3.4 | 1.4 | 3.4 | 2.4 | 3.4 | 3.0 | 3.3 | 3.4 | 3.3 | 4.4 | 3.2 | 6.3 |
| 1600 | 3.8 | 1.6 | 3.7 | 2.7 | 3.7 | 3.3 | 3.7 | 3.7 | 3.6 | 4.8 | 3.6 | 7.0 |
| 1725 | 4.0 | 1.7 | 4.0 | 2.9 | 4.0 | 3.5 | 4.0 | 4.0 | 3.9 | 5.1 | 3.8 | 7.4 |

### 2351B-P

| BAR | 34 | | 48 | | 69 | | 90 | | 138 | | 207 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 9.1 | 0.7 | 8.7 | 1.3 | 8.7 | 1.6 | 8.7 | 1.8 | 8.7 | 2.3 | 8.7 | 3.2 |
| 1450 | 12.9 | 1.0 | 12.9 | 1.8 | 12.9 | 2.2 | 12.5 | 2.5 | 12.5 | 3.3 | 12.1 | 4.7 |
| 1600 | 14.4 | 1.2 | 14.0 | 2.0 | 14.0 | 2.5 | 14.0 | 2.8 | 13.6 | 3.6 | 13.6 | 5.2 |
| 1725 | 15.1 | 1.3 | 15.1 | 2.2 | 15.1 | 2.6 | 15.1 | 3.0 | 14.8 | 3.8 | 14.4 | 5.5 |

### 2354B-CP

| PSI | 500 | | 1000 | | 1500 | | 2000 | |
|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 2800 | 2.4 | 1.3 | 2.3 | 2.0 | 2.3 | 2.7 | 2.2 | 3.4 |
| 3000 | 2.6 | 1.4 | 2.5 | 2.2 | 2.4 | 2.9 | 2.3 | 3.7 |
| 3200 | 2.7 | 1.6 | 2.6 | 2.4 | 2.6 | 3.2 | 2.5 | 3.9 |
| 3400 | 2.9 | 1.6 | 2.8 | 2.4 | 2.7 | 3.3 | 2.6 | 4.0 |

### 2354B-CP

| BAR | 34 | | 69 | | 90 | | 103 | |
|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 2800 | 9.1 | 1.0 | 8.7 | 1.5 | 8.7 | 2.0 | 8.3 | 2.5 |
| 3000 | 9.8 | 1.0 | 9.5 | 1.6 | 9.1 | 2.2 | 8.7 | 2.8 |
| 3200 | 10.2 | 1.2 | 9.8 | 1.8 | 9.8 | 2.4 | 9.5 | 2.9 |
| 3400 | 11.0 | 1.2 | 10.6 | 1.8 | 10.2 | 2.5 | 9.8 | 3.0 |

# FORGED BRASS HEAD, DUPLEX PLUNGER PUMPS

## Series 2200B-P

### HEAD

- Single-piece forged brass heads
- Quick and easy pump packing replacement
- Precision-machined stainless steel valve and seats provide higher resistance to chemical attack
- 100% ceramic plungers
- Dual low pressure packing design for improved priming capabilities
- Lifetime warranty on single-piece forged brass heads

### BODY

- Hypro's state-of-the-art, patented cartridge technology allows the crankcase oil seals and all wet-end seals to be easily serviced by removing only the pump head
- Hardened stainless steel lower plungers offer superior corrosion and wear resistance
- Shafts Output:
  - ¾" OD Solid Shaft – 2220B-P, 2221B-P, 2230B-P, 2231B-P
  - ⅝" ID Hollow Shaft with Torque Arm – 2220B-HP, 2221B-HP, 2230B-HP, 2231B-HP
  - ⅝" ID Hollow Shaft for direct couple to electric motors (NEMA 56C) – 2220B-AP, 2221B-AP, 2230B-AP, 2231B-AP
  - ¾" ID Hollow Shaft Flanged for direct couple to gasoline engines – 2231B-CP
- Heavy-duty oil seals
- O-ring sealed dipstick
- Includes rail mounting kit
- 5-year warranty on material & workmanship

### ORDER INFORMATION
### 2220B-P, 2221B-P, 2230B-P, 2231B-P

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2220B-P | 2.1 | 2000 | 1725 | 1/2" | 3/8" |
| 2221B-P | 2.1 | 1500 | 3450 | 1/2" | 3/8" |
| 2230B-P | 3.0 | 2000 | 1725 | 1/2" | 3/8" |
| 2231B-P | 3.0 | 1500 | 3450 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2220B-LP)

### ORDER INFORMATION
### 2220B-HP, 2221B-HP, 2230B-HP, 2231B-HP

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2220B-HP | 2.1 | 2000 | 1725 | 1/2" | 3/8" |
| 2221B-HP | 2.1 | 1500 | 3450 | 1/2" | 3/8" |
| 2230B-HP | 3.0 | 2000 | 1725 | 1/2" | 3/8" |
| 2231B-HP | 3.0 | 1500 | 3450 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2220B-HLP)

### ORDER INFORMATION
### 2220B-AP, 2221B-AP, 2230B-AP,2231B-AP

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2220B-AP | 2.1 | 2000 | 1725 | 1/2" | 3/8" |
| 2221B-AP | 2.1 | 1500 | 3450 | 1/2" | 3/8" |
| 2230B-AP | 3.0 | 2000 | 1725 | 1/2" | 3/8" |
| 2231B-AP | 3.0 | 1500 | 3450 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2220B-ALP)

### ORDER INFORMATION 2231B-CP

| Model Number | Max. GPM | Max. PSI | Max. RPM | Inlet Port | Outlet Port |
|---|---|---|---|---|---|
| 2231B-CP | 3.0 | 1500 | 3450 | 1/2" | 3/8" |

Left-hand shaft extension - add suffix "L" - (i.e. 2231-CLP)

# FORGED BRASS HEAD, DUPLEX PLUNGER PUMPS

## Series 2200B-P

### 2220B-P, 2220B-AP, 2220B-HP — U.S. UNITS

| PSI | 500 | | 700 | | 1000 | | 1300 | | 1500 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 1.2 | 0.5 | 1.2 | 0.7 | 1.2 | 0.9 | 1.2 | 1.1 | 1.2 | 1.2 | 1.2 | 1.6 |
| 1450 | 1.7 | 0.8 | 1.7 | 1.0 | 1.7 | 1.4 | 1.7 | 1.6 | 1.7 | 1.8 | 1.7 | 2.3 |
| 1600 | 1.9 | 0.9 | 1.9 | 1.1 | 1.9 | 1.5 | 1.9 | 1.8 | 1.9 | 2.1 | 1.9 | 2.7 |
| 1725 | 2.1 | 0.8 | 2.1 | 1.1 | 2.1 | 1.5 | 2.0 | 1.9 | 2.0 | 2.1 | 2.0 | 2.9 |

### 2220B-P, 2220B-AP, 2220B-HP — METRIC UNITS

| BAR | 34 | | 48 | | 69 | | 90 | | 103 | | 138 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 4.5 | 0.4 | 4.5 | 0.5 | 4.5 | 0.7 | 4.5 | 0.8 | 4.5 | 0.9 | 4.5 | 1.2 |
| 1450 | 6.4 | 0.6 | 6.4 | 0.7 | 6.4 | 1.0 | 6.4 | 1.2 | 6.4 | 1.3 | 6.4 | 1.7 |
| 1600 | 7.2 | 0.7 | 7.2 | 0.8 | 7.2 | 1.1 | 7.2 | 1.3 | 7.2 | 1.6 | 7.2 | 2.0 |
| 1725 | 7.9 | 0.6 | 7.9 | 0.8 | 7.9 | 1.1 | 7.6 | 1.4 | 7.6 | 1.6 | 7.6 | 2.2 |

### 2221B-P, 2221B-AP, 2221B-HP

| PSI | 500 | | 700 | | 1000 | | 1300 | | 1500 | |
|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1800 | 1.2 | 0.8 | 1.2 | 0.9 | 1.1 | 1.1 | 1.1 | 1.3 | 1.1 | 1.5 |
| 2600 | 1.7 | 1.1 | 1.7 | 1.4 | 1.6 | 1.5 | 1.6 | 1.9 | 1.6 | 2.2 |
| 2875 | 1.8 | 1.3 | 1.8 | 1.5 | 1.8 | 1.8 | 1.8 | 2.3 | 1.7 | 2.5 |
| 3450 | 2.1 | 1.6 | 2.1 | 1.9 | 2.1 | 2.1 | 2.1 | 2.6 | 2.0 | 2.9 |

### 2221B-P, 2221B-AP, 2221B-HP

| BAR | 34 | | 48 | | 69 | | 90 | | 103 | |
|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1800 | 4.5 | 0.6 | 4.5 | 0.7 | 4.2 | 0.8 | 4.2 | 1.0 | 4.2 | 1.1 |
| 2600 | 6.4 | 0.8 | 6.4 | 1.0 | 6.1 | 1.1 | 6.1 | 1.4 | 6.1 | 1.6 |
| 2875 | 6.8 | 1.0 | 6.8 | 1.1 | 6.8 | 1.3 | 6.8 | 1.7 | 6.4 | 1.9 |
| 3450 | 7.9 | 1.2 | 7.9 | 1.4 | 7.9 | 1.6 | 7.9 | 1.9 | 7.6 | 2.2 |

### 2230B-P, 2230B-AP, 2230B-HP

| PSI | 500 | | 700 | | 1000 | | 1300 | | 1500 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1000 | 1.9 | 0.8 | 1.9 | 1.0 | 1.9 | 1.3 | 1.8 | 1.7 | 1.8 | 1.9 | 1.8 | 2.4 |
| 1450 | 2.7 | 1.1 | 2.7 | 1.4 | 2.7 | 2.0 | 2.7 | 2.4 | 2.7 | 2.8 | 2.7 | 3.6 |
| 1600 | 3.0 | 1.2 | 3.0 | 1.6 | 3.0 | 2.3 | 3.0 | 2.8 | 2.9 | 3.1 | 2.9 | 4.1 |
| 1725 | 3.2 | 1.4 | 3.2 | 1.9 | 3.2 | 2.4 | 3.1 | 3.0 | 3.1 | 3.4 | 3.1 | 4.4 |

### 2230B-P, 2230B-AP, 2230B-HP

| BAR | 34 | | 48 | | 69 | | 90 | | 103 | | 138 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1000 | 7.2 | 0.6 | 7.2 | 0.7 | 7.2 | 1.0 | 6.8 | 1.3 | 6.8 | 1.4 | 6.8 | 1.8 |
| 1450 | 10.2 | 0.8 | 10.2 | 1.0 | 10.2 | 1.5 | 10.2 | 1.8 | 10.2 | 2.1 | 10.2 | 2.7 |
| 1600 | 11.4 | 0.9 | 11.4 | 1.2 | 11.4 | 1.7 | 11.4 | 2.1 | 11.0 | 2.3 | 11.0 | 3.1 |
| 1725 | 12.1 | 1.0 | 12.1 | 1.4 | 12.1 | 1.8 | 11.7 | 2.2 | 11.7 | 2.5 | 11.7 | 3.3 |

### 2231B-P, 2231B-AP, 2231B-HP, 2231B-CP

| PSI | 500 | | 700 | | 1000 | | 1300 | | 1500 | |
|---|---|---|---|---|---|---|---|---|---|---|
| RPM | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 1800 | 1.8 | 0.8 | 1.8 | 1.0 | 1.8 | 1.4 | 1.7 | 1.7 | 1.7 | 1.9 |
| 2600 | 2.5 | 1.2 | 2.5 | 1.5 | 2.5 | 2.0 | 2.5 | 2.4 | 2.5 | 2.7 |
| 2875 | 2.8 | 1.2 | 2.8 | 1.6 | 2.7 | 2.1 | 2.7 | 2.7 | 2.7 | 2.9 |
| 3450 | 3.2 | 1.5 | 3.2 | 1.9 | 3.2 | 2.5 | 3.2 | 3.2 | 3.1 | 3.5 |

### 2231B-P, 2231B-AP, 2231B-HP, 2231B-CP

| BAR | 34 | | 48 | | 69 | | 90 | | 103 | |
|---|---|---|---|---|---|---|---|---|---|---|
| RPM | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw | L/m | Kw |
| 1800 | 6.8 | 0.6 | 6.8 | 0.7 | 6.8 | 1.0 | 6.4 | 1.3 | 6.4 | 1.4 |
| 2600 | 9.5 | 0.9 | 9.5 | 1.1 | 9.5 | 1.5 | 9.5 | 1.8 | 9.5 | 2.0 |
| 2875 | 10.6 | 0.9 | 10.6 | 1.2 | 10.2 | 1.6 | 10.2 | 2.0 | 10.2 | 2.2 |
| 3450 | 12.1 | 1.1 | 12.1 | 1.4 | 12.1 | 1.9 | 12.1 | 2.4 | 11.7 | 2.6 |

# BIG TWIN

## Models 5206C and 5206C-H

- Port sizes: 3/4" inlet, 3/4" outlet
- Max. fluid temperature: 140°F/60°C
- Pump shaft rotation: bi-rotational
- Cups: Leather standard [fabric-reinforced (F) and Buna-N (R) available]
- Recommended to be used with Pulsation Dampener 3375-0017-2
- Weight: 18 lbs./8.2 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 5206C | 8 | 30.3 | 400 | 27.6 | 800 | 1" solid shaft w/base |
| 5206C-H | 8 | 30.3 | 400 | 27.6 | 800 | 1-3/8" hollow shaft w/base |
| 3430-0037 | Leather cup kit | | | | | |

Fabric Cups - Add Suffix "F" - (ie.: 5206C-F).
Buna-N Cups - Add Suffix "R" - (ie.: 5206C-R).

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @400 RPM | | @500 RPM | | @540 RPM | | @600 RPM | | @700 RPM | | @800 RPM | |
| 25 PSI | 3.9 | .26 | 4.9 | .29 | 5.4 | .31 | 6.0 | .34 | 7.0 | .40 | 8.0 | .46 |
| 1.7 BAR | 14.8 | .26 | 18.5 | .29 | 20.4 | .31 | 22.7 | .34 | 26.5 | .40 | 30.3 | .46 |
| 100 PSI | 3.9 | .40 | 5.0 | .46 | 5.4 | .50 | 6.0 | .56 | 7.0 | .65 | 7.9 | .74 |
| 6.9 BAR | 14.8 | .40 | 189 | .46 | 20.4 | .50 | 22.7 | .56 | 26.5 | .65 | 29.9 | .74 |
| 200 PSI | 4.0 | .66 | 5.0 | .75 | 5.4 | .81 | 6.0 | .90 | 6.9 | 1.1 | 7.8 | 1.2 |
| 13.8 BAR | 15.1 | .66 | 18.9 | .75 | 20.4 | .81 | 22.7 | .90 | 26.1 | 1.1 | 29.5 | 1.2 |
| 300 PSI | 3.9 | .89 | 5.0 | 1.1 | 5.3 | 1.2 | 5.9 | 1.3 | 6.9 | 1.5 | 7.7 | 1.7 |
| 20.9 BAR | 14.8 | .89 | 18.9 | 1.1 | 20.1 | 1.2 | 22.3 | 1.3 | 26.1 | 1.5 | 29.1 | 1.7 |
| 400 PSI | 3.9 | 1.1 | 4.9 | 1.4 | 5.3 | 1.5 | 5.9 | 1.6 | 6.9 | 1.9 | 7.7 | 2.2 |
| 27.6 BAR | 14.8 | 1.1 | 18.5 | 1.4 | 20.1 | 1.5 | 22.3 | 1.6 | 26.1 | 1.9 | 29.1 | 2.2 |

# BIG TWIN

## Models 5210C and 5210C-H

- Port sizes: 3/4" inlet, 3/4" outlet
- Max. fluid temperature: 140°F/60°C
- Pump shaft rotation: bi-rotational
- Cups: Leather standard [fabric-reinforced (F) and Buna-N (R) available]
- Recommended to be used with Pulsation Dampener 3375-0015-2
- Weight: 18 lbs./8.2 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 5210C | 10 | 37.5 | 400 | 27.6 | 600 | 1" solid shaft w/base |
| 5210C-H | 10 | 37.5 | 400 | 27.6 | 600 | 1-3/8" hollow shaft w/base |
| 3430-0037 | Leather cup kit | | | | | |

Fabric Cups - Add Suffix "F" - (ie.: 5210C-F).
Buna-N Cups - Add Suffix "R" - (ie.: 5210C-R).

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @400 RPM | | @500 RPM | | @540 RPM | | @600 RPM | |
| 25 PSI | 7.3 | .39 | 8.9 | .57 | 9.4 | .66 | 10.0 | .73 |
| 1.7 BAR | 27.6 | .39 | 33.7 | .57 | 35.6 | .66 | 37.9 | .73 |
| 100 PSI | 7.3 | .69 | 8.9 | .87 | 9.4 | .94 | 9.9 | 1.10 |
| 6.9 BAR | 27.6 | .69 | 33.7 | .87 | 35.6 | .94 | 37.5 | 1.10 |
| 200 PSI | 7.2 | 1.2 | 8.8 | 1.5 | 9.3 | 1.6 | 9.9 | 1.7 |
| 13.8 BAR | 27.2 | 1.2 | 33.3 | 1.5 | 35.2 | 1.6 | 37.5 | 1.7 |
| 300 PSI | 7.2 | 1.7 | 8.8 | 2.0 | 9.3 | 2.2 | 9.8 | 2.3 |
| 20.7 BAR | 27.2 | 1.7 | 33.3 | 2.0 | 35.2 | 2.2 | 37.1 | 2.3 |
| 400 PSI | 7.2 | 2.1 | 8.7 | 2.6 | 9.2 | 2.7 | 9.8 | 3.0 |
| 27.6 BAR | 27.2 | 2.1 | 32.9 | 2.6 | 34.8 | 2.7 | 37.1 | 3.0 |

# SMALL TWIN

## Series 5315, 5320, 5325 and 5330

- Port sizes: 1/2" inlet, 1/2" outlet
- Max. fluid temperature: 140°F/60°C
- Pump shaft rotation: bi-rotational
- Cups: Leather (-X) standard for 5300 Series [Buna-N (-RX), Teflon (-CX) available]
- Models require a pulsation dampener (such as a 3375-0012 pulse hose) on the discharge side
- Injector head available (sold separately part number 3396-0014)
- Weight: 10 lbs./4.5 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 5315C-X | 1.5 | 5.7 | 500 | 34.5 | 1800 | 5/8" OD solid shaft |
| 5320C-X | 2.2 | 8.3 | 500 | 34.5 | 1800 | 5/8" OD solid shaft |
| 5325C-X | 2.5 | 9.5 | 500 | 34.5 | 1800 | 5/8" OD solid shaft |
| 5330C-X | 3 | 11.4 | 500 | 34.5 | 1800 | 5/8" OD solid shaft |
| 5315C-HX | 1.5 | 5.7 | 500 | 34.5 | 1800 | 5/8" ID hollow shaft |
| 5320C-HX | 2.2 | 8.3 | 500 | 34.5 | 1800 | 5/8" ID hollow shaft |
| 5325C-HX | 2.5 | 9.5 | 500 | 34.5 | 1800 | 5/8" ID hollow shaft |
| 5330C-HX | 3 | 11.4 | 500 | 34.5 | 1800 | 5/8" ID hollow shaft |

Buna-N - add suffix "R" - ( i.e :5320C-RX)
Teflon - add suffix "C" - ( i.e :5320C-CX)

| Model | 5315 | | 5320 | | 5325 | | 5330 | |
|---|---|---|---|---|---|---|---|---|
| Pressure in PSI and BAR | GPM / LPM | HP | GPM / LPM | HP | GPM / LPM | HP | GPM / LPM | HP |
| | @1725 RPM | | @1725 RPM | | @1725 RPM | | @1725 RPM | |
| 50 PSI | 1.56 | .12 | 2.22 | .21 | 2.56 | .25 | 3.02 | .37 |
| 3.4 BAR | 5.9 | .12 | 8.4 | .21 | 9.7 | .25 | 11.4 | .37 |
| 100 PSI | 1.52 | .15 | 2.18 | .28 | 2.54 | .37 | 3.01 | .49 |
| 6.9 BAR | 5.8 | .15 | 8.3 | .28 | 9.6 | .37 | 11.4 | .49 |
| 200 PSI | 1.50 | .28 | 2.16 | .43 | 2.52 | .52 | 3.00 | .74 |
| 13.8 BAR | 5.7 | .28 | 8.2 | .43 | 9.3 | .52 | 11.4 | .74 |
| 300 PSI | 1.47 | .35 | 2.12 | .57 | 2.50 | .68 | 2.98 | .92 |
| 20.7 BAR | 5.6 | .35 | 8.0 | .57 | 9.5 | .68 | 11.3 | .92 |
| 400 PSI | 1.45 | .43 | 2.11 | .71 | 2.10 | .82 | 2.96 | 1.11 |
| 27.6 BAR | 5.5 | .43 | 8.0 | .71 | 7.9 | .82 | 11.2 | 1.11 |
| 500 PSI | 1.44 | .56 | 2.10 | .83 | 2.44 | .96 | 2.94 | 1.23 |
| 34.5 BAR | 5.5 | .56 | 7.9 | .83 | 9.9 | .96 | 11.1 | 1.23 |

# SMALL TWIN

## Models 5324C and 5324C-H

- Port sizes: 1/2" inlet, 1/2" outlet
- Max. fluid temperature: 140°F/60°C
- Pump shaft rotation: bi-rotational
- Cups: Buna-N standard
- Model 5324 requires a pulsation dampener (such as a 3375-0012 pulse hose) on the discharge side
- Injector head available 3396-0006
- Weight: 11 lbs./5 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 5324C | 2.9 | 11.0 | 800 | 55.2 | 1800 | 5/8" OD solid shaft |
| 5324C-H | 2.9 | 11.0 | 800 | 55.2 | 1800 | 5/8" ID hollow shaft |

| Pressure in PSI and BAR | GPM / LPM | HP | GPM / LPM | HP | GPM / LPM | HP | GPM / LPM | HP | GPM / LPM | HP |
|---|---|---|---|---|---|---|---|---|---|---|
| | @600 RPM | | @900 RPM | | @1200 RPM | | @1450 RPM | | @1725 RPM | |
| 100 PSI | .96 | .12 | 1.51 | .19 | 2.00 | .28 | 2.42 | .34 | 2.90 | .40 |
| 6.9 BAR | 3.6 | .12 | 5.7 | .19 | 7.6 | .28 | 9.2 | .34 | 11.0 | .40 |
| 200 PSI | .94 | .19 | 1.49 | .30 | 1.98 | .41 | 2.40 | .50 | 2.89 | .59 |
| 13.8 BAR | 3.6 | .19 | 5.6 | .30 | 7.5 | .41 | 9.1 | .50 | 10.9 | .59 |
| 300 PSI | .94 | .26 | 1.48 | .41 | 1.97 | .55 | 2.38 | .67 | 2.87 | .80 |
| 20.7 BAR | 3.6 | .26 | 5.6 | .41 | 7.5 | .55 | 9.0 | .67 | 10.9 | .80 |
| 400 PSI | .95 | .33 | 1.47 | .50 | 1.96 | .67 | 2.37 | .83 | 2.85 | 1.00 |
| 27.6 BAR | 3.6 | .33 | 5.6 | .50 | 7.4 | .67 | 9.0 | .83 | 10.8 | 1.00 |
| 500 PSI | .94 | .39 | 1.47 | .60 | 1.96 | .81 | 2.36 | .97 | 2.83 | 1.19 |
| 34.5 BAR | 3.6 | .39 | 5.6 | .60 | 7.4 | .81 | 8.9 | .97 | 10.7 | 1.19 |
| 600 PSI | .93 | .45 | 1.46 | .69 | 1.95 | .93 | 2.35 | 1.13 | 2.81 | 1.38 |
| 41.4 BAR | 3.5 | .45 | 5.5 | .69 | 7.4 | .93 | 8.9 | 1.13 | 10.6 | 1.38 |
| 700 PSI | .93 | .52 | 1.46 | .78 | 1.94 | 1.06 | 2.33 | 1.27 | 2.80 | 1.54 |
| 48.3 BAR | 3.5 | .52 | 5.5 | .78 | 7.3 | 1.06 | 8.8 | 1.27 | 10.6 | 1.54 |
| 800 PSI | .93 | .58 | 1.45 | .87 | 1.93 | 1.16 | 2.32 | 1.42 | 2.79 | 1.69 |
| 55.2 BAR | 3.5 | .58 | 5.5 | .87 | 7.3 | 1.16 | 8.8 | 1.42 | 10.6 | 1.69 |

# SMALL TWIN

## Models 5321C, 5322C, 5321C-H and 5322C-H

- Port sizes: 1/2" inlet, 1/2" outlet
- Max. fluid temperature: 180°F/82°C
- Pump shaft rotation: bi-rotational
- Injector head available 3396-0006
- Models 5321 and 5322 require a pulsation dampener (such as a 3375-0012 pulse hose) on the discharge side
- Weight: 11 lbs./5 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output | Plunger Material |
|---|---|---|---|---|---|---|---|
| 5321C | 2.2 | 8.3 | 1000 | 68.9 | 1800 | 5/8" OD solid shaft | Stainless Steel |
| 5322C | 2.2 | 8.3 | 1000 | 68.9 | 1800 | 5/8" OD solid shaft | Ceramic |
| 5321C-H | 2.2 | 8.3 | 1000 | 68.9 | 1800 | 5/8" ID hollow shaft | Stainless Steel |
| 5322C-H | 2.2 | 8.3 | 1000 | 68.9 | 1800 | 5/8" ID hollow shaft | Ceramic |

| Pressure in PSI and BAR | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| | @900 RPM | | @1200 RPM | | @1450 RPM | | @1725 RPM | |
| 100 PSI | 1.1 | 0.2 | 1.5 | .3 | 1.8 | .4 | 2.2 | .4 |
| 6.9 BAR | 4.2 | 0.2 | 5.7 | .3 | 6.8 | .4 | 8.3 | .4 |
| 300 PSI | 1.1 | .4 | 1.5 | .5 | 1.8 | .6 | 2.1 | .7 |
| 20.7 BAR | 4.2 | .4 | 5.7 | .5 | 6.8 | .6 | 7.9 | .7 |
| 500 PSI | 1.1 | .5 | 1.5 | .6 | 1.8 | .7 | 2.1 | .8 |
| 34.5 BAR | 4.2 | .5 | 5.7 | .6 | 6.8 | .7 | 7.9 | .8 |
| 700 PSI | 1.1 | .6 | 1.5 | .8 | 1.8 | .9 | 2.1 | 1.1 |
| 48.3 BAR | 4.2 | .6 | 5.7 | .8 | 6.8 | .9 | 7.9 | 1.1 |
| 1000 PSI | 1.1 | .8 | 1.4 | 1.0 | 1.8 | 1.2 | 2.1 | 1.4 |
| 69.0 BAR | 4.2 | .8 | 5.3 | 1.0 | 6.8 | 1.2 | 7.9 | 1.4 |

# SMALL TWIN

## Model 53702

- Port sizes: 1/2" inlet, 1/2" outlet
- Max. fluid temperature: 180°F/82°C
- Pump shaft rotation: bi-rotational
- Plungers: polished ceramic
- Model 53702 requires a pulsation dampener (such as a 3375-0012 pulse hose) on the discharge side
- Inlet requirements: pressure feed 20-100 psi (1.4-6.9 bar)
- Weight: 11 lbs./5 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 53702 | 2.2 | 8.3 | 1000 | 68.9 | 3450 | 5/8" ID hollow shaft |

| Pressure in PSI and BAR | GPM | HP |
|---|---|---|
| | LPM | HP |
| | @3450 RPM | |
| 100 PSI | 2.3 | .4 |
| 6.9 BAR | 8.7 | .4 |
| 300 PSI | 2.2 | .7 |
| 20.7 BAR | 8.3 | .7 |
| 500 PSI | 2.1 | .9 |
| 34.5 BAR | 8.0 | .9 |
| 700 PSI | 2.1 | 1.2 |
| 48.3 BAR | 8.0 | 1.2 |
| 1000 PSI | 2.0 | 1.5 |
| 69 BAR | 7.6 | 1.5 |

# SMALL TWIN

## Model 53703

- Max. fluid temperature: 180°F/82°C
- Port sizes: 1/2" inlet, 1/2" outlet
- Pump shaft rotation: bi-rotational
- Plungers: polished ceramic
- Model 53703 requires a pulsation dampener (such as a 3375-0012 pulse hose) on the discharge side
- Inlet requirements: pressure feed 20-100 psi (1.3 - 6.9 bar)
- Weight: 11 lbs./5 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Shaft Output |
|---|---|---|---|---|---|---|
| 53703 | 2.3 | 8.7 | 1000 | 68.9 | 3100 | 5/8" ID hollow shaft |

Requires a Special Order Gas Engine With 5/8" Shaft

| Pressure in PSI and BAR | GPM / LPM @3100 RPM | HP / HP @3100 RPM |
|---|---|---|
| 100 PSI | 2.3 | 0.4 |
| 6.9 BAR | 8.7 | 0.4 |
| 300 PSI | 2.2 | .7 |
| 20.7 BAR | 8.3 | .7 |
| 500 PSI | 2.1 | .9 |
| 34.5 BAR | 7.9 | .9 |
| 700 PSI | 2.1 | 1.2 |
| 48.3 BAR | 7.9 | 1.2 |
| 1000 PSI | 2.0 | 1.5 |
| 69.0 BAR | 7.6 | 1.5 |

# HYDRAULICALLY-DRIVEN PRESSURE WASHERS

## Offering 3-4 gpm (11-15 lpm) Cleaning Power

- Anodized, die-cast aluminum crankcase
- Heavy-duty, corrosion-resistant brass manifold
- One-piece, forged-bronze connecting rods
- Stainless steel valves
- Hardened, stainless steel piston guides
- Solid ceramic plungers
- High pressure and low pressure packings of high-quality buna textile
- Heavy-duty, ball bearing supported crankshaft
- Sight glass and oil-level dipstick
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet

The hydraulically-driven pressure washers are ideally suited for remote and explosion-proof environments where electricity cannot be used. These models are equipped with a hydraulic motor-driven, triplex plunger pump; and include an unloader, gauge, and quick disconnect. Some models include a chemical injector, 50' (15 m) pressure wash hose, trigger gun and insulated wand with adjustable Hi-Lo and Variable-Angle cleaning nozzle. Certain models are also equipped with a chemical injector.

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Hydraulic Motor Requirements GPM | LPM | PSI | BAR | Description | Weight LBS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1802C* | 3 | 11.4 | 1000 | 68.9 | 5 | 18.9 | 1300 | 89.6 | Forged Brass Head Triplex Pumps with hydraulic motor, adjustable unloader, gauge, 1/2" NPT input, 3/8" quick disconnect output | 38 | 17.2 |
| 1803C | 3 | 11.4 | 1000 | 68.9 | 5 | 18.9 | 1300 | 89.6 | | 28 | 12.7 |
| 1804C* | 3 | 11.4 | 1500 | 103.4 | 8 | 30.3 | 1900 | 131 | Forged Brass Head Triplex Pumps with hydraulic motor, chemical injector, adjustable unloader, gauge, 3/4" GH input, 3/8" quick disconnect output | 41 | 18.6 |
| 1805C | 3 | 11.4 | 1500 | 103.4 | 8 | 30.3 | 1900 | 131 | | 26 | 11.8 |
| 1806C* | 3 | 11.4 | 2000 | 137.9 | 11 | 41.6 | 1300 | 89.6 | | 41 | 18.6 |
| 1807C | 3 | 11.4 | 2000 | 137.9 | 11 | 41.6 | 1300 | 89.6 | | 26 | 11.8 |
| 1824C* | 4 | 15.1 | 1500 | 103.4 | 8.5 | 32.2 | 2000 | 137.9 | | 49 | 22.2 |
| 1825C | 4 | 15.1 | 1500 | 103.4 | 8.5 | 32.2 | 2000 | 137.9 | | 33 | 14.9 |
| 1826C* | 4 | 15.1 | 2000 | 137.9 | 8.5 | 32.2 | 2000 | 137.9 | | 49 | 22.2 |
| 1827C | 4 | 15.1 | 2000 | 137.9 | 8.5 | 32.2 | 2000 | 137.9 | | 33 | 14.9 |

* Includes 50 ft (15 m) hose and gun assembly

# PISTON/PLUNGER ACCESSORIES

## PRESSURE-ACTIVATED 3 PORT UNLOADERS

| Model Number | Inlet/ Outlet | Bypass | Pressure Range | | Max GPM | Max LPM | Max Temp | Max Temp | Cup Material | Ref # |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | PSI | Bar | | | | | | |
| 3390-0062D* | 3/8" (M)NPT | 1/4" (F) NPT | 200-600 | 14-41 | 5 | 19 | 180° F | 82° C | Buna-N | 1 |
| 3390-0063D* | | | 400-1000 | 28-69 | | | | | | |
| 3390-0071D*T | | | 400-1000 | 28-69 | | | | | | |
| 3390-0067D* | | | 800-1500 | 55-103 | | | | | | |
| 3390-0072D*T | | | 800-1500 | 55-103 | | | | | | |
| 3390-0006 | 1/2" (F)NPT | 1/2" (F) NPT | 200-500 | 14-34 | 5 | 19 | 160° F | 71° C | Buna-N | 2 |
| 3390-0007 | | | 200-500 | 14-34 | 5 | 19 | | | Leather | |
| 3390-0037 | | | 300-1000 | 21-69 | 6 | 23 | | | Buna-N/Teflon | |

* Recommended for use with 5300 Series pumps
T For close-coupled bypass operation with Hypro 2200 and 2300 Series PowerLine Plus pumps, bypass not NPT. Use only with 8000-0007 and 80000-0008.

## PRESSURE-ACTIVATED 3 OR 5 PORT UNLOADERS WITH ADJUSTMENT KNOB

| Model Number | # of Ports | Inlet/ Outlet | Bypass | Max PSI | Max Bar | Max GPM | Max LPM | Max Temp | Max Temp | Cup Material | Ref # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3390-0079 | 3 | 3/8" (M)NPT | 3/8" (F) NPT | 2000 | 138 | 8 | 30 | 200° F | 93° C | Buna-N | 1 |
| 3390-0102 | 3 | 3/8" (M)NPT | 1/4" (F)NPT | 2600 | 179 | | | | | | 2 |
| 3390-0076 | 3 | 3/8" (F)NPT | 3/8" (F)NPT | 4500 | 248 | | | | | | 3 |
| 3390-0081 | 5 | (2) 3/8" (F)NPT x 3/8" (F)NPT | (2) 1/4" (F)NPT | 3600 | 248 | | | | | | 4 |

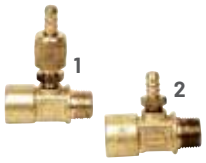
## PRESSURE-ACTIVATED UNLOADER/BYPASS KITS

| Model Number | Inlet/Outlet | Pressure Range | | Max GPM | Max LPM | Max Temp | Max Temp | Description |
|---|---|---|---|---|---|---|---|---|
| | | PSI | Bar | | | | | |
| 8000-0007 | 1/2" (F)NPT x 3/8" (M)NPT | 400-1000 | 28-69 | 5 | 19 | 200° F | 93° C | 3 port unloader/bypass system with adjustable knob for 2200 and 2300 series PowerLine Plus Pumps. |
| 8000-0008 | | 800-1500 | 55-103 | | | | | |

## CLOSED-COUPLED UNLOADERS

| Model Number | Inlet/Outlet | Max PSI | Max Bar | Max GPM | Max LPM | Injector Orifice Range | | Max Temp | Max Temp | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | GPM | LPM | | | |
| 3390-0104-3A | 1/2" (F)NPT x 3/8" (M)NPT | 2600 | 180 | 8 | 30 | 2.0-3.2 | 7.6-12.1 | 200° F | 93° C | 2 port unloader/bypass system with built-in chemical injector and adjustable knob. |

For 2200 & 2300 series PowerLine Plus pumps.




## ADJUSTABLE & FIXED CHEMICAL INJECTORS

| Model Number | Inlet/Outlet | Max PSI | Max Bar | GPM Range | LPM Range | Max Temp | Max Temp | Type | Materials | Ref # |
|---|---|---|---|---|---|---|---|---|---|---|
| 3396-0034/1.8 | 3/8" (F)NPT x 3/8" (M)NPT | 3200 | 220 | 0-2.9 | 0-11 | 200° F | 93° C | Fixed | Forged brass body; Stainless Steel Ball & Spring | 1 |
| 3396-0031/2.1 | | | | 3.0-4.0 | 11-15 | | | Adjustable | | 2 |
| 3396-0033/2.3 | | | | 4.0-5.0 | 15-19 | | | Fixed | | 1 |

# PISTON/PLUNGER ACCESSORIES

## POWER ADJUSTABLE INJECTOR FOR 2200/2300 PUMPS

| Model Number | Inlet | Max PSI | Max Bar | GPM Range | LPM Range | Max Temp | Max Temp | Materials | For Models | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 3396-0011 | 1/8" (F) NPT | 1500 | 103 | 2.0-4.8 | 7.5-18 | 140° F | 60° C | Brass & Stainless Steel | 2200 & 2300 | 9-step calibrated metering |
| 3396-0025 | | 3000 | 207 | | | 160° F | 71° C | | 2200B-P & 2300B-P | |

## POWER ADJUSTABLE INJECTOR FOR 5300 PUMP

| Model Number | Inlet | Max PSI | Max Bar | GPM Range | LPM Range | Max Temp | Max Temp | Description | Materials | For Models |
|---|---|---|---|---|---|---|---|---|---|---|
| 3396-0014 | 1/8" (F) NPT | 500 | 34 | 1.5-3.0 | 5.7-11 | 140° F | 60° C | 9-step adjustable, needle-type mettering assembly for precise metering of soaps and liquids | Cast iron cylinder head; brass and stainless steel internal components | 5300CX |
| 3396-0006 | | 1000 | 69 | 2 | 7.5 | | | | | 5321 & 5342C |

Replaces standard head on Series 5300 and 5321 pumps

## REGULATOR/RELIEF VALVE - PROVIDES SMOOTH, CONSTANT PRESSURE REGULATION

| Model Number | Inlet/Outlet | Max PSI | Max Bar | Balanced Pressure | | Max GPM | Max LPM | Max Temp | Max Temp | Materials |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PSI | Bar | | | | | |
| 3300-0084 | 3/8" (F)NPT | 2000 | 138 | 200-2000 | 14-138 | 7 | 26 | 160° F | 71° C | Brass Body; Stainless Steel plunger & seat |

## HIGH FLOW PRESSURE REGULATOR/RELIEF VALVE FOR 2535S & 2545S PUMPS

| Model Number | Inlet/Outlet | Max PSI | Max Bar | Balanced Pressure | | Max GPM | Max LPM |
|---|---|---|---|---|---|---|---|
| | | | | PSI | Bar | | |
| 3300-0102 | 3/4" x 1/2" | 2000 | 138 | 260-2000 | 18-138 | 53 | 200 |
| 3300-0103 | 1" x 1" | | | | | 55 | 208 |

## THERMAL RELIEF VALVE

Easy mount valve to safeguard pumps from damaging heat generaged within recirculating water systems. Easy to service without removing.

| Model Number | Inlet | Max PSI | Max Bar | Relief Temp | Relief Temp | Materials | Dimensions |
|---|---|---|---|---|---|---|---|
| 3312-0004 | 1/2" (M) NPT | 200 | 14 | 145° F | 63° C | Brass, Stainless Steel & Buna-N | 1-1/16" Hex x 1-11/16" |
| 3312-0005* | | | | | | | 1-1/16" Hex x 2-1/2" |

* 3/16" barb fittings

Screw Couplings

Connecting Nipples

## SCREW COUPLINGS & CONNECTING NIPPLES

| Model Number | | Inlet | Max PSI | Max Bar | Max GPM | Max LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|---|
| Screw Couplings | Connecting Nipples | | | | | | | |
| 3341-0001 | 3341-0005 | 3/8" (F)NPT | 3500 | 241 | 12 | 45 | 300° F | 149° C |
| 3341-0002 | 3341-0006 | 1/4" (F)NPT | | | | | | |
| 3341-0003 | 3341-0007 | 3/8" (M)NPT | | | | | | |
| 3341-0004 | 3341-0008 | 1/4" (M)NPT | | | | | | |

# PISTON/PLUNGER ACCESSORIES

## C-FLANGE KITS

| Model Number | Fits Motor | For Models |
|---|---|---|
| 8000-0003 | NEMA 56C, 143TC and 145TC | 2200, 2300, 2350 |
| 8000-0010 | NEMA 182TC and 184TC | 2200, 2300, 2350 |
| 8000-0043 | NEMA 213TC and 215TC | 2200B-P & 2300B-P |
| 8000-0017 | NEMA 213TC and 215TC | 2400 & 2430 |
| 8000-0018 | NEMA 182TC and 184TC | 2400 & 2430 |

## PULSATION DAMPENERS

These quality-built pulsation dampeners protect your system from damage due to pulsation and vibration. Choose the size and capacity that meets your system's needs. In most applications, the recommended dampener charge is 1/2 of the operating pressure with a 2-piston pump and 2/3 of the operating pressure with a 3-piston pump.

| Model Number | Inlet | Charge PSI | Charge Bar | Max GPM | Max LPM | For Models | Ref # |
|---|---|---|---|---|---|---|---|
| 3375-0015-x | 1" (F)NPT | 200-1000 | 14-69 | 35 | 132 | 2500 Series | 1 |
| 3375-0017-x | 1/2" (F)NPT | | | 6 | 23 | 2000 Series | 2 |

Note: Replace 'x' with maximum charge designation; Example: 3375-0015-8 = 800 psi, 3375-0017-7 = 700 psi
Available in 100 psi increments from 200 psi to 1000 psi.

## PULSATION DAMPENER CHECKER

For testing the charge pressure in pulsation dampeners. The proper charge will ensure maximum life and performance of pressure systems.

| Model Number | Connection | Max PSI | Max Bar |
|---|---|---|---|
| 2642-0001 | 5/16" 32 UNEF (F) Thread | 2000 | 138 |

## PULSE HOSES

Quality pulsation dampener hoses constructed of special Hi-Flex horizontally-braided hose.

| Model Number | Length | Max PSI | Max Bar | Connection |
|---|---|---|---|---|
| 3375-0008 | 24" (61 cm) | 1500 | 103 | 3/8" (F)NPT x 3/8" (M)NPT |
| 3375-0012 | 24" (61 cm) | | | 3/8" (F)NPT x plugged end |
| 3375-0021 | 25" (63.5 cm) | | | 1/4" (M)NPT x plugged end |

## GEAR BOXES

| Model Number | Inlet/Outlet | Max PSI | Max Bar | Max Temp | Max Temp | Description | Materials |
|---|---|---|---|---|---|---|---|
| 8000-0015 | 3/8" (F)NPT x 3/8" (M)NPT | 3200 | 220 | 200° F | 93° C | 1.8:1 gearbox kit for mounting 10 hp-18 hp gas engines with 1-1/8" solid shaft (Kohler engines) | Forged brass body; Stainless steel ball and spring |
| 8000-0021 | | | | | | 1.8:1 gearbox kit for mounting 8 hp-18 hp gas engines with 1" solid shaft (B&S and Honda engines) | |

# PISTON/PLUNGER ACCESSORIES

## ZINC-PLATED STEEL PORT ADAPTERS

| Model Number | Port Openings | | | |
|---|---|---|---|---|
| | 1 - End | 2 - Gauge Port | 3 - Side | 4 - End |
| 2404-0030 | 1/2" (M)NPT | 1/4" (F)NPT | 1/2" (F)NPT | 1/2" (F)NPT |
| 2404-0019 | 3/4" (M)NPT | 1/4" (F)NPT | 1/2" (F)NPT | 3/4" (F)NPT |

## FLOAT TANK STRAINER

| Model Number | Tank Outlet Filter | Outlet |
|---|---|---|
| 3800-0074 | 1/2" | 1/2" (M)NPT |

## VACUUM SWITCHES

| Model Number | Performance | Max Temp | Max Temp |
|---|---|---|---|
| 2510-0001 | VAC-ON: 1.5 Hg vac. | 140° F | 60° C |
| 2510-0007 | VAC-ON: 2.5 Hg vac. | | |
| 2510-0017 | VAC-ON: 4.5 Hg vac. | | |

### FEATURES

- Switches can be used with either AC or DC motors in the ratings shown
  - DC (32-115-230V): up to 1/2 hp
  - Single or 3 Phase at 110V: up to 2 hp 220V: up to 2 hp
- VAC-ON switch automatically shuts off motor when liquid is depleted or vacuum drops to a specific level

## PUMP OIL

| Model Number | Size | Descriptions |
|---|---|---|
| 2160-0038 | 1 qt. (12 per carton) | Specially-formulated pump oil |
| 2160-0047 | 1 gallon (bulk) | |
| 2160-0048 | 2-1/2 gallon (bulk) | |

### FEATURES:

- Reduces scuff and wear in piston and plunger pumps
- Inhibits moisture that causes damage
- Prevents oxidation that could lead to sludge formation
- Resists foaming and aeration that can cause equipment to operate erratically and oil to oxidize
- Provides smooth pump operation in a variety of temperatures

## PRESSURE SWITCH

| Model Number | Inlet | Max PSI | Max Bar | Max Temp | Max Temp | Voltage | Max Amp Vertical and Horizontal Mount |
|---|---|---|---|---|---|---|---|
| 2510-0029 | 3/8" (M)NPT | 3500 | 241 | 200° F | 93° C | 12-250V | 15A |

## FLOAT SWITCH

| Model Number | Inlet/Outlet | Max PSI | Max Bar | Max GPM | Max LPM | Max Temp | Max Temp | Voltage | Mount |
|---|---|---|---|---|---|---|---|---|---|
| 2510-0030 | 3/8" (F)NPT x 3/8" (F)NPT | 3500 | 241 | 7.8 | 30 | 180° F | 82° C | 12-250V | Vertical |
| 2510-0031 | 3/8" (M)NPT x 3/8" (M)NPT | | | | | | | | Horizontal |

## ALUMINUM LINE STRAINER

| Model Number | Inlet/Outlet | Max PSI | Max Bar | Max GPM | Max LPM | Housing Material | Screen Mesh | Bypass Hose Port |
|---|---|---|---|---|---|---|---|---|
| 3350-0134 | 1/2" (F)BPS x 1/2" (M)BPS | 100 | 7 | 8 | 30 | Aluminum | 50 | G 1/4" |

## SUCTION STRAINER

| Model Number | Size | Opening Size (ID) | Overall Diameter | Screen Mesh | Material |
|---|---|---|---|---|---|
| 3350-0021 | 1/4" (ID) plastic tubing | .330" | 1.25" | 50 | Stainless Steel Screen |
| 3350-0022 | | | 1" | | |
| 3350-0033 | 5/8" (ID) x 61/64" (OD) garden hose | .940" | 2.187" | | |
| 3800-0035 | (F) garden hose end | .57" | 1.016" | | |

## CHEMICAL INJECTOR STRAINER

| Model Number | Hose Barb | Material | Check Valve |
|---|---|---|---|
| 3350-0126 | 1/4" & 3/8" | Chemical-resistant plastic body and components | Yes |
| 3350-0127 | | | No |
| 3350-0128 | 1/4" | Corrosion-resistant stainless steel and brass construction | Yes |

# PISTON/PLUNGER ACCESSORIES

## COUPLERS

| Series | Part Number | Description | Estimated Weight Each | |
|---|---|---|---|---|
| | | | US Units | Metric |
| 2738 (2.0 hp limit)* | 2738-1001 | 1/2" coupling end, with 1/8" keyway | 6 oz. | 170 g |
| | 2738-1002 | 5/8" coupling end, with 3/16" keyway | 6 oz. | 170 g |
| | 2738-1003 | 3/4" coupling end, with 3/16" keyway | 6 oz. | 170 g |
| | 2738-1004 | 7/8" coupling end, with 3/16" keyway | 6 oz. | 170 g |
| Replaces L-075 | 2728-1001 | Center disc | 1 oz. | 28 g |
| 2739 (5.0 hp limit)* | 2739-1001 | 5/8" coupling end, with 3/16" keyway | 11 oz. | 312 g |
| | 2739-1002 | 3/4" coupling end, with 3/16" keyway | 11 oz. | 312 g |
| | 2739-1003 | 7/8" coupling end, with 3/16" keyway | 11 oz. | 312 g |
| | 2739-1004 | 15/16" coupling end, with 1/4" keyway | 11 oz. | 312 g |
| | 2739-1005 | 1" coupling end, with 1/4" keyway | 11 oz. | 312 g |
| | 2739-1006 | 1-1/8" coupling end, with 1/4" keyway | 11 oz. | 312 g |
| | 2739-1009 | 24 mm coupling end, with 8mm keyway | 11 oz. | 312 g |
| | 2729-1001 | Center disc | 1 oz. | 28 g |
| Replaces L-095 | 2729-1005 | Heavy-duty center disc, urethane material | 1 oz. | 28 g |
| 2741 (10.5 hp limit)* | 2741-1001 | 3/4" coupling end, with 3/16" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1004 | 15/16" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1002 | 1" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1005 | 1-1/4" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1007 | 1-3/8" coupling end, with 5/16" keyway | 1 lb. 5 oz. | 595 g |
| | 2741-1003 | 1-1/8" coupling end, with 1/4" keyway | 1 lb. 5 oz. | 595 g |
| | 2729-1002 | Center disc | 1 oz. | 28 g |
| Replaces L-100 | 2729-1006 | heavy-duty center disc, urethane material | 1 oz. | 28g |
| 2740 (18.0 hp limit)* | 2740-1001 | 3/4" coupling end, with 3/16" keyway | 3 lbs. 11 oz. | 1.67 kg |
| | 2740-1002 | 1" coupling end, with 1/4" keyway | 3 lbs. 8 oz. | 1.59 kg |
| | 2740-1005 | 1-3/8" coupling end, with 5/16" keyway | 3 lbs. | 1.4 kg |
| | 2740-1007 | 1-1/8" coupling end, with 1/4" keyway | 2 lbs. 15 oz. | 1.33 kg |
| Replaces L-110 | 2729-1003 | Center disc | 3 oz. | 85 g |

* HP limit is electric motor hp at 1725 rpm for driving a steady uniform load. For an uneven load, stop-start and moderate shock loads, divide hp by a 1.5 service factor.

| Inches | mm |
|---|---|
| 1/8" | 3.2 mm |
| 3/16" | 4.7 mm |
| 1/4" | 6.4 mm |
| 1/2" | 13 mm |
| 5/8" | 15.9 mm |
| 3/4" | 19 mm |
| 7/8" | 22.2 mm |
| 15/16" | 23.8 mm |
| 1" | 25.4 mm |
| 1-1/8" | 28.6 mm |

Note:
These couplers are designed for inch dimensional shafts and keys. Metric dimensions are for reference only (except for 2739-1009).

## ORDERING INSTRUCTIONS:

To order one 1/2" x 3/4" Series 2738 coupling, specify the following:
Note: It is not necessary to order in complete sets, parts can be ordered individually.

| Quantity | Part Number | Description |
|---|---|---|
| 1 | 2738-1001 | 1/2" coupling end |
| 1 | 2738-1003 | 3/4" coupling end |
| 1 | 2728-1001 | Center disc |

# VERSA-TWIN 2130 SERIES PLUNGER PUMPS

2130P-A055 2130P-D183 2130P-D355 2130P-D395

## FEATURES

- Molded from Noryl GTX for chemical resistance against fertilizers, insecticides, chlorides, acids, and bleach
- Robust motor, ceramic plunger, and crank drive provide market-leading long life without servicing
- 4-point 1" NPT flynut-ready connections allow for greater flexibility in plumbing, easy installation and servicing, draining and maintenance
- 1" ports allow for single-sided inlet plumbing
- Available in standard models up to 4.0 GPM (15.1 L/min) & 300 PSI (20.7 BAR)

## ORDER INFORMATION

| Model Number | Max GPM | Max L/min | Max PSI | Max BAR | Max RPM | Motor Type | Ports |
|---|---|---|---|---|---|---|---|
| 2130P-D183 | 2.5 | 9.5 | 150 | 10.3 | 2200 | ¼ HP 12V DC Motor, 20 amps | 1" MNPT |
| 2130P-D355 | 2.8 | 10.6 | 300 | 20.7 | 2000 | ½ HP 12V DC Motor, 35 amps | |
| 2130P-D359 | 3.9 | 14.8 | 200 | 13.8 | 2000 | ½ HP 12V DC Motor, 35 amps | |
| 2130P-D395 | 2.9 | 11.0 | 300 | 20.7 | 2000 | ½ HP 12V DC Motor, 56C, 39 amps | |
| 2130P-D399 | 4.0 | 15.1 | 200 | 13.8 | 2000 | ½ HP 12V DC Motor, 56C, 39 amps | |
| 2130P-A055 | 2.4 | 9.1 | 300 | 20.7 | 1750 | ½ HP 115-208/230V AC Motor, 1 PH 50/60 Hz | |
| 2130P-A079 | 3.9 | 14.8 | 300 | 20.7 | 1750 | ¾ HP 115-208/230V AC Motor, 1 PH 50/60 Hz | |
| 2130PX | Replacement pump head | | | | | | |

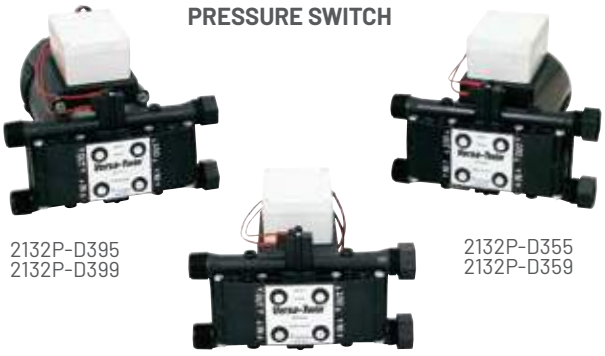
## PERFORMANCE

| Model Number | 0 PSI / 0 BAR | | 50 PSI / 3.5 BAR | | 100 PSI / 6.9 BAR | | 150 PSI / 10.3 BAR | | 200 PSI / 13.8 BAR | | 250 PSI / 17.2 BAR | | 300 PSI/ 20.7 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS |
| 2130P-D183 [1] | 2.5 | 5.2 | 2.2 | 9.8 | 2.0 | 14.6 * | 1.8 | 19.3 * | - | - | - | - | - | - |
| | 9.5 | | 8.3 | | 7.6 | | 6.8 | | | | | | | |
| 2130P-D355 [1] | 2.8 | 9.1 | 2.5 | 13.4 | 2.4 | 18.9 | 2.3 | 23.5 | 2.2 | 27.5 * | 2.1 | 30.9 * | 2.0 | 34.8 * |
| | 10.6 | | 9.5 | | 9.1 | | 8.7 | | 8.3 | | 7.9 | | 7.6 | |
| 2130P-D359 [1] | 3.9 | 11.6 | 3.2 | 17.2 | 3.1 | 21.5 * | 3.0 | 26.2 * | 2.8 | 31.8 * | - | - | - | - |
| | 14.8 | | 12.1 | | 11.7 | | 11.4 | | 10.6 | | | | | |
| 2130P-D395 [1] | 2.9 | 8.3 | 2.5 | 13.0 | 2.4 | 19.0 | 2.3 | 23.5 | 2.2 | 27.2 | 2.1 | 30.7 | 2.0 | 33.9 |
| | 11.0 | | 9.5 | | 9.1 | | 8.7 | | 8.3 | | 7.9 | | 7.6 | |
| 2130P-D399 [1] | 4.0 | 11.0 | 3.5 | 17.2 | 3.3 | 24.0 | 3.1 | 29.3 | 3.0 | 34.2 | - | - | - | - |
| | 15.1 | | 13.2 | | 12.5 | | 11.7 | | 11.4 | | | | | |
| 2130P-A055 [2] | 2.4 | 6.5 | 2.2 | 6.6 | 2.1 | 6.7 | 2.1 | 6.8 | 2.0 | 7.0 | 1.9 | 7.2 | 1.9 | 7.3 |
| | 9.1 | | 8.3 | | 7.9 | | 7.9 | | 7.6 | | 7.2 | | 7.2 | |
| 2130P-A079 [2] | 3.9 | 8.9 | 3.4 | 9.0 | 3.3 | 9.1 | 3.2 | 9.5 | 3.1 | 9.8 | 3.0 | 10.1 | 2.9 | 10.6 |
| | 14.8 | | 12.9 | | 12.5 | | 12.1 | | 11.7 | | 11.4 | | 11.0 | |

* indicates intermittent duty only [1] Tested at 13.5 VDC [2] Tested at 110 VAC

# VERSA-TWIN 2130 SERIES PLUNGER PUMPS WITH PRESSURE SWITCH

**THE INDUSTRY-FIRST INTEGRATED AUTOMATIC-DEMAND PRESSURE SWITCH**



2132P-D395
2132P-D399

2132P-D355
2132P-D359

2132P-D183

## FEATURES

- Integrated pressure switch designed for the pump to work as a demand pump
- Extends the life of the pump when the duty cycle is less than 100%, for example, a 50% duty cycle extends the life of the system two times and a 25% duty cycle extends the life four times
- Reduces end-user installation charges by allowing a system to be set up for overnight charging versus continuous charging through a custom, high-amp vehicle alternator and heavy-gage wiring system

## ORDER INFORMATION

| Model Number | Max GPM | Max L/min | Max PSI | Max BAR | Max RPM | Motor Type | Pressure Switch | Ports |
|---|---|---|---|---|---|---|---|---|
| 2132P-D183 | 2.5 | 9.5 | 150 | 10.3 | 2200 | 1/4 HP 12V DC Motor, 20 amps | 150-250 PSI (10.3-17.2 BAR) | 1" MNPT |
| 2132P-D355 | 2.8 | 10.6 | 250 | 17.2 | 2000 | 1/2 HP 12V DC Motor, 35 amps | 150-250 PSI (10.3-17.2 BAR) | |
| 2132P-D359 | 3.9 | 14.8 | 200 | 13.8 | 2000 | 1/2 HP 12V DC Motor, 35 amps | 150-250 PSI (10.3-17.2 BAR) | |
| 2132P-D395 | 2.9 | 11.0 | 250 | 17.2 | 2000 | 1/2 HP 12V DC Motor, 39 amps | 150-250 PSI (10.3-17.2 BAR) | |
| 2132P-D399 | 4.0 | 15.1 | 200 | 13.8 | 2000 | 1/2 HP 12V DC Motor, 39 amps | 150-250 PSI (10.3-17.2 BAR) | |
| 2133P-D355 | 2.8 | 10.6 | 300 | 20.7 | 2000 | 1/2 HP 12V DC Motor, 35 amps | 250-350 PSI (17.2-24.1 BAR) | |
| 2133P-D395 | 2.9 | 11.0 | 300 | 20.7 | 2000 | 1/2 HP 12V DC Motor, 56C, 39 amps | 250-350 PSI (17.2-24.1 BAR) | |
| 2132PX | Replacement pump head & switch | | | | | | 150-250 PSI (10.3-17.2 BAR) | |
| 2133PX | Replacement pump head & switch | | | | | | 250-350 PSI (17.2-24.1 BAR) | |

## PERFORMANCE

| Model Number | 0 PSI / 0 BAR | | 50 PSI / 3.5 BAR | | 100 PSI / 6.9 BAR | | 150 PSI / 10.3 BAR | | 200 PSI / 13.8 BAR | | 250 PSI / 17.2 BAR | | 300 PSI/ 20.7 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS | GPM L / min | AMPS |
| 2132P-D183 [1] | 2.5 | 5.2 | 2.2 | 9.8 | 2.0 | 14.6 * | 1.8 | 19.3 * | - | - | - | - | - | - |
| | 9.5 | | 8.3 | | 7.6 | | 6.8 | | | | | | | |
| 2132P-D355 [1] | 2.8 | 9.1 | 2.5 | 13.4 | 2.4 | 18.9 | 2.3 | 23.5 | 2.2 | 27.5 * | 2.1 | 30.9 * | 2.0 | 34.8 * |
| 2133P-D355 [1] | 10.6 | | 9.5 | | 9.1 | | 8.7 | | 8.3 | | 7.9 | | 7.6 | |
| 2132P-D359 [1] | 3.9 | 11.6 | 3.2 | 17.2 | 3.1 | 21.5 | 3.0 | 26.2 * | 2.8 | 31.8 * | - | - | - | - |
| | 14.8 | | 12.1 | | 11.7 | | 11.4 | | 10.6 | | | | | |
| 2132P-D395 [1] | 2.9 | 8.3 | 2.5 | 13.0 | 2.4 | 19.0 | 2.3 | 23.5 | 2.2 | 27.2 | 2.1 | 30.7 | 2.0 | 33.9 |
| 2133P-D395 [1] | 11.0 | | 9.5 | | 9.1 | | 8.7 | | 8.3 | | 7.9 | | 7.6 | |
| 2132P-D399 [1] | 4.0 | 11.0 | 3.5 | 17.2 | 3.3 | 24.0 | 3.1 | 29.3 | 3.0 | 34.2 | - | - | - | - |
| | 15.1 | | 13.2 | | 12.5 | | 11.7 | | 11.4 | | | | | |

* indicates intermittent duty only [1] Tested at 13.5 VDC [2] Tested at 110 VAC

# VERSA-TWIN 2150 SERIES DIAPHRAGM PUMPS

## ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM | Motor Type | Ports |
|---|---|---|---|---|---|---|---|
| 2150P-D35DC | 7 | 26.5 | 100 | 6.9 | 1800 | 1/2 HP 12V DC Motor, 35 amps | 3/4" MNPT |
| 2150P-D39DC | 8.3 | 31.4 | 100 | 6.9 | 1800 | 1/2 HP 12V DC Motor, 56C, 39 amps | |
| 2150P-D05AC | 6.7 | 25.4 | 100 | 6.9 | 1750 | 1/2 HP 115-208/230 VAC Motor,1 PH, 50/60 Hz | |
| 2150PX | Replacement pump head | | | | | | |
| 3430-0633 | Diaphragm repair kit | | | | | | |
| 3430-0634 | Diaphragm valve kit | | | | | | |

| Model | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS |
| | 0 PSI/0 BAR | | 20 PSI/1.4 BAR | | 40 PSI/2.8 BAR | | 60 PSI/4.1 BAR | | 80 PSI/5.5 BAR | | 100 PSI/6.9 BAR | |
| 2150P-D35DC[1] | 7.0 | 12.9 | 6.6 | 17.2 | 6.0 | 22.3 | 5.6 | 26.8* | 5.2 | 31.2* | 5.0 | 35.3* |
| | 26.5 | | 25.0 | | 22.7 | | 21.2 | | 19.7 | | 18.9 | |
| 2150P-D39DC[1] | 8.3 | 15.7 | 7.6 | 19.7 | 6.7 | 23.8 | 6.1 | 27.8 | 5.7 | 31.9 | 5.3 | 35.9 |
| | 31.4 | | 28.8 | | 25.4 | | 23.1 | | 21.6 | | 20.1 | |
| 2150P-D05AC[2] | 6.7 | 7.6 | 6.4 | 7.7 | 6.0 | 7.8 | 5.7 | 7.9 | 5.3 | 8.0 | 5.0 | 8.2 |
| | 25.4 | | 24.2 | | 22.7 | | 21.6 | | 20.1 | | 18.9 | |

* Indicates intermittent duty only [1] Tested at 13.5 VDC [2] Tested at 110 VAC

## VERSA-TWIN ACCESSORIES

### HOSEBARB FLY NUT FITTINGS

| O-ring Groove x Hose Barb | Fitting Part Number | Fly nut Part Number | O-ring Part Number |
|---|---|---|---|
| 1" x 1" straight | FNS-100100 | 3B100 | 1721-0010 |
| 1" x 3/4" straight | FNS-10034 | | |
| 1" x 1/2" straight | FNS-10012 | | |
| 1" x 1" elbow | FNE-100100 | | |
| 1" x 3/4" elbow | FNE-10034 | | |

### NPT FLY NUT FITTINGS

| Fly Nut connection X NPT | | | |
|---|---|---|---|
| O-ring Groove x NPT | Fitting Part Number | Fly nut Part Number | O-ring Part Number |
| 1" x ¾" MNPT * | 2404-0427 | 3B100 | 1721-0010 |
| 1" x ½" MNPT | 2404-0419 | | |

* Compatible with other fly-nut fittings in catalog

### FLY NUT CAP

| Description | Part Number |
|---|---|
| 1" NPT with gasket | FNCAP-100N |
| Replacement gasket | 01WSHR13 |

### UNLOADER VALVE

| Part Number | Operating PSI | Operating BAR | Use With | Material |
|---|---|---|---|---|
| 3390-0062D | 200-600 | 13.8-41.4 | 35 & 39 amp DC, and all AC motors | Brass, Buna-N Cup |

### PULSE HOSE

| Part Number | Max PSI | Max BAR | Description |
|---|---|---|---|
| 3375-0025* | 1500 | 183.4 | 9 ft Pulse Hose, 3/8"(M)NPT w/ one plugged end |

*Used with all pressure switch models when using rigid pipe, rigid or semi-rigid hose (working pressure greater than 600 psi) or any hose less than 150 ft.

### RELIEF VALVE

| Part Number | Operating PSI | Operating BAR | Material | Ports (Inlet x Outlet) | Use With |
|---|---|---|---|---|---|
| 3300-0001 | 400 | 27.6 | Bronze | 3/4" MNPT x 3/4" FNPT | 35 & 39 amp DC, and all AC motors |
| 3300-0002 | 200 | 13.8 | Bronze | 1/2" MNPT x 1/2" FNPT | 18 amp DC motors |
| 3300-0015 | 150 | 10.3 | Nylon | 3/4" MNPT x 3/4" FNPT | 18 amp DC motors |
| 3300-0016 | 250 | 17.2 | Nylon | 3/4" MNPT x 3/4" FNPT | 35 & 39 amp DC, and all AC motors |
| 3300-0098 | 400 | 27.6 | Nylon | 3/4" MNPT x 3/4" FNPT | 18 amp DC motors |
| 3301-0001 | 400 | 27.6 | Bronze | 3/4" MNPT x 3/4" FNPT | 35 & 39 amp DC, and all AC motors |

# ELECTRIC-DRIVEN CENTRIFUGAL PUMPS – NORYL®

## Model 9940-9750NRL, 9940-9751NRL, 9940-9753NRL

### MODEL 9940-9750NRL

- Noryl, pedestal mount, direct drive
- Port sizes: 1-1/2" NPT inlet
  1-1/2" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Noryl (chemical-resistant, coated, cast iron bearing housing)
- Impeller: Noryl
- Pump shaft rotation: CW*
- Shaft seals: Viton®/ceramic with polypropylene case
- Weight: 12 lbs./5.4 kg

### MODEL 9940-9751NRL

- Noryl, close-coupled, AC motor-driven (60 Hz), centrifugal pump
- Port sizes: 1-1/2" NPT inlet
  1-1/2" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Noryl
- Impeller: Noryl
- Motor: 3/4 hp, 115 / 208-230V AC
- Shaft seals: Viton®/ceramic with polypropylene case
- Weight: 34 lbs./15.4 kg

### MODEL 9940-9753NRL

- Noryl, close-coupled, AC motor-driven (60 Hz), centrifugal pump
- Port sizes: 1-1/2" NPT inlet,
  1-1/2" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: Noryl
- Impeller: Noryl
- Motor: 1-1/2 hp, 115 / 208-230V AC
- Shaft seals: Viton®/ceramic with polypropylene case
- Weight: 39 lbs./17.7 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max RPM |
|---|---|---|---|---|---|
| 9940-9750NRL | 140 | 530 | 39 | 2.7 | 3600 |
| 9940-9751NRL | 47 | 178 | 30 | 2.1 | 3450 |
| 9940-9753NRL | 91 | 344 | 35 | 2.4 | 3450 |

### 9940-9750NRL — U.S. UNITS

| RPM | 10 PSI | | 15 PSI | | 20 PSI | | 25 PSI | | 30 PSI | | 35 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP | GPM | HP |
| 3000 | 103 | 1.5 | 90 | 1.4 | 72 | 1.4 | 38 | 1.0 | | | | |
| 3450 | 126 | 2.4 | 114 | 2.4 | 101 | 2.2 | 86 | 2.2 | 64 | 1.9 | 14 | 1.4 |
| 3600 | 132 | 2.7 | 121 | 2.6 | 110 | 2.5 | 97 | 2.5 | 80 | 2.3 | 52 | 2.0 |

### 9940-9750NRL — METRIC UNITS

| RPM | 0.7 BAR | | 1.0 BAR | | 1.4 BAR | | 1.7 BAR | | 2.1 BAR | | 2.4 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP | LPM | HP |
| 3000 | 390 | 1.5 | 341 | 1.4 | 273 | 1.4 | 144 | 1.0 | | | | |
| 3450 | 477 | 2.4 | 432 | 2.4 | 382 | 2.2 | 326 | 2.2 | 242 | 1.9 | 53 | 1.4 |
| 3600 | 500 | 2.7 | 458 | 2.6 | 416 | 2.5 | 367 | 2.5 | 303 | 2.3 | 197 | 2.0 |

### 9940-9751NRL, 9940-9753NRL — U.S. UNITS

| MODEL | 5 PSI | | 10 PSI | | 15 PSI | | 20 PSI | | 25 PSI | | 30 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS |
| 9751 | 44 | 7.9 | 39 | 8.0 | 32 | 8.3 | 25 | 8.5 | 15 | 8.5 | 2 | 8.4 |
| 9753 | 88 | 14.1 | 82 | 14.0 | 74 | 14.0 | 66 | 14.4 | 55 | 14.4 | 37 | 13.6 |

### 9940-9751NRL, 9940-9753NRL — METRIC UNITS

| MODEL | 0.3 BAR | | 0.7 BAR | | 1.0 BAR | | 1.4 BAR | | 1.7 BAR | | 2.1 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS |
| 9751 | 167 | 7.9 | 148 | 8.0 | 121 | 8.3 | 95 | 8.5 | 57 | 8.5 | 8 | 8.4 |
| 9753 | 333 | 14.1 | 310 | 14.0 | 280 | 14.0 | 250 | 14.4 | 208 | 14.4 | 140 | 13.6 |

Noryl® is a registered trademark of of Sabic Innovative Plastics Holding BV. Hypro® is a registered trademark of Pentair.

# HYDRAULIC-DRIVEN GEAR PUMP

## Model 8304B-HM5C

This positive-displacement pump is ideal for de-icing/anti-icing (pre-wet). Combining the pump and motor as a single unit eliminates the need for shaft alignment or Love-Joy® coupling. The unit's compact size allows it to be used in a wide variety of locations and makes it especially attractive for quick, easy retrofit installations.

### PUMP

- Optional pressure relief valve safeguards against pressure buildup (8304BV models)
- Industry-proven gear pump design, minimal moving parts for longevity
- Brass material not corroded by salt solutions

### MOTOR

- State-of-the-art internal gear gerotor motor for superior service life
- Bypass adjustment allows fine tuning of flow control
- Hydraulic ports: 1/2" NPT inlet, 3/4" NPT outlet with check valve to safeguard against change in flow direction

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Hyd GPM | Max Hyd LPM |
|---|---|---|---|---|---|---|
| 8304B-HM5C | 10.4 | 39.4 | 100 | 6.9 | 4.5 | 17 |
| 8304BV-HM5C | 10.4 | 39.4 | 100 | 6.9 | 4.5 | 17 |
| 8304B | 10.4 | 39.4 | 100 | 6.9 | 4.5 | 17 |
| 8304BV | 10.4 | 39.4 | 100 | 6.9 | 4.5 | 17 |

### PERFORMANCE

| Hydraulic Flow (GPM) | GPM at 0 PSI | GPM at 10 PSI | GPM at 20 PSI | GPM at 30 PSI | GPM at 40 PSI | GPM at 50 PSI | GPM at 60 PSI | GPM at 70 PSI | GPM at 80 PSI | GPM at 90 PSI | GPM at 100 PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.0 | 6.9 | 6.5 | 6.1 | 5.7 | 5.3 | 4.9 | 4.5 | 4.1 | 3.7 | 3.3 | 2.9 |
| 3.5 | 8.1 | 7.7 | 7.3 | 6.9 | 6.6 | 6.2 | 5.8 | 5.4 | 5.0 | 4.6 | 4.2 |
| 4.0 | 9.2 | 8.9 | 8.5 | 8.1 | 7.8 | 7.4 | 7.0 | 6.7 | 6.2 | 5.9 | 5.5 |
| 4.5 | 10.4 | 10.1 | 9.7 | 9.3 | 9.0 | 8.6 | 8.2 | 7.9 | 7.5 | 7.1 | 6.8 |

This data was generated using water as the pumping media. Performance will vary with different viscosity fluids.
Hydraulic pressures vary from 200 to 850 PSI for the performance chart above.
* Product is to be run above 2.0 GPM hydraulic flow.

# AQUA-TIGER - 12-VOLT CENTRIFUGAL PUMP

## Model 9700B and 9700S

- 12-volt DC motor drive
- Port sizes: 3/4" NPT inlet, 3/4" NPT outlet
- Max. fluid temperature: 140°F/60°C
- Housing: bronze or stainless steel
- Impeller: bronze (9700B) or stainless steel (9700S)
- Seal: lip-type Viton (9700B); mechanical (9700S)
- Weight: 6 lbs./2.7 kg

### ORDER INFORMATION

| Model Number | Max GPM | Max LPM | Max PSI | Max BAR | Max Draw |
|---|---|---|---|---|---|
| 9700B | 19 | 72 | 7 | 0.48 | 11 Amps |
| 9700S | 19 | 72 | 7 | 0.48 | 11 Amps |

### 9700B, 9700S – 13.5 VDC (ALTERNATOR ENGINE RUNNING) — U.S. UNITS

| 2 PSI | | 3 PSI | | 4 PSI | | 5 PSI | | 6 PSI | | 7 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS | GPM | AMPS |
| 16.9 | 5.3 | 14.0 | 5.0 | 12.5 | 4.9 | 10 | 4.9 | 6.5 | 4.1 | 2.7 | 3.7 |

### 9700B, 9700S – 13.5 VDC (ALTERNATOR ENGINE RUNNING) — METRIC UNITS

| 0.14 BAR | | 0.21 BAR | | 0.28 BAR | | 0.34 BAR | | 0.41 BAR | | 0.48 BAR | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS | LPM | AMPS |
| 62 | 5.3 | 53 | 5.0 | 47 | 4.9 | 38 | 4.9 | 25 | 4.1 | 10 | 3.7 |

# POWERPRO GASOLINE ENGINES

## High Quality, Field-Proven Engine

6.5 HP

2.5 HP

13 HP Electric Start

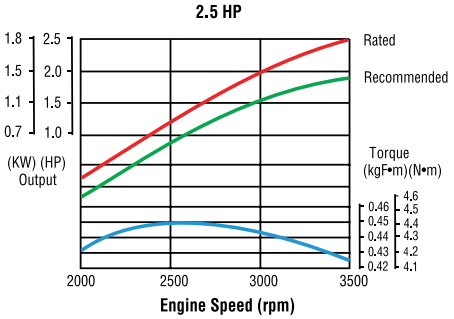
- Available in multiple horsepower options to suit a diverse range of agricultural, industrial, and lawn & garden applications
- Electric-start option available for quick start-up
- Dual-element air filter provides highest degree of filtering
- Cast iron cylinder sleeve for commercial use
- Overhead valve for cleaner operation on all models
- Equipped with a robust low-oil sensor to prevent engine damage
- CARB/EPA certified engines
- Engines can be configured to various Hypro pump models or purchased individually
- Supported with a one-year warranty from Hypro; repair parts available for easy servicing

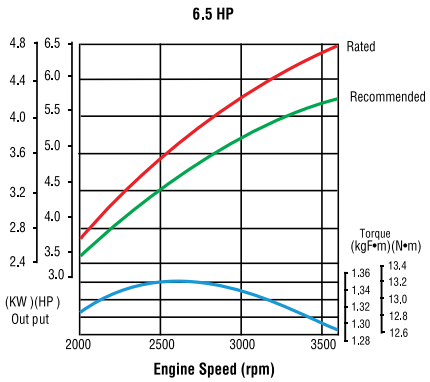
### POWERPRO GASOLINE ENGINES, RECOIL START

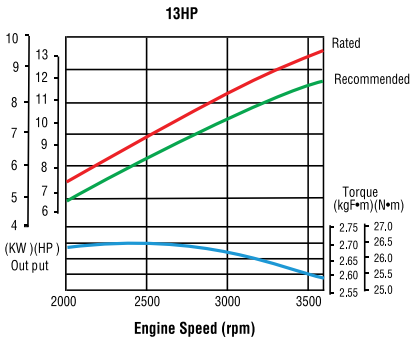
| CARB & EPA Part Number | EC Part Number | HP | Shaft Size |
|---|---|---|---|
| 2549-0043 | – | 2.5 | 5/8" Keyed |
| 2541-0045 | 2541-0065 | 6.5 | 3/4" Keyed |
| 2541-0046 | – | 6.5 | 5/8" Threaded |
| 2541-0048 | – | 13 | 1" Keyed |

### POWERPRO GASOLINE ENGINES, ELECTRIC START

| CARB & EPA Part Number | HP | Shaft Size |
|---|---|---|
| 2541-0053 | 6.5 | 3/4" Keyed |
| 2541-0054* | 6.5 | 2:1 reduced 3/4" Shaft |
| 2541-0055 | 6.5 | 5/8" Threaded |
| 2541-0049 | 13 | 1" Keyed |
| 2541-0051 | 13 | 1" Threaded |



# SPRAY NOZZLES


**BROADCAST SPRAY NOZZLES ..... PAGE 140**

Commonly used for herbicide, insecticide, and fungicides

- Most effective with a tapered fan, designed for spray overlap, ensuring uniformity

**BROADCAST WIDE-ANGLE SPRAY NOZZLES ..... PAGE 162**

Commonly used with fertilizers and specialty applications

- Wide spray pattern can overlap with adjacent patterns and improve uniformity

**STREAMING SPRAY NOZZLES ..... PAGE 166**

Commonly used for fertilizer applications

- Single streams are good for heavy crop residues and tilled fields.
- Multiple streams are good for crops like wheat, where minimal plant burn is required

**BANDING & DIRECTED SPRAY NOZZLES ..... PAGE 170**

Used for various applications including agricultural spraying and orchard/vineyard spraying

- Even spray nozzles are designed to eliminate spray pattern overlap; used for spraying between crop rows or specific targeted areas

**SPECIALTY SPRAY NOZZLES ..... PAGE 186**

Includes boomless nozzles, car wash/pressure cleaning nozzles, specialty crops, acid-resistant nozzles for harsh defoliants, misting nozzles, and more

# SELECTING THE RIGHT SPRAY NOZZLE

SPRAY IT

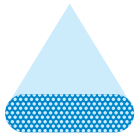
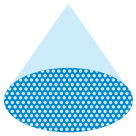
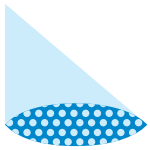
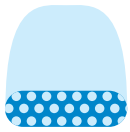
**VISIT SPRAYIT.HYPROPUMPS.COM FOR HYPRO'S ONLINE NOZZLE CALCULATOR OR DOWNLOAD THE FREE SPRAY IT APP FOR APPLE OR ANDROID DEVICES.**

**or**

**or**

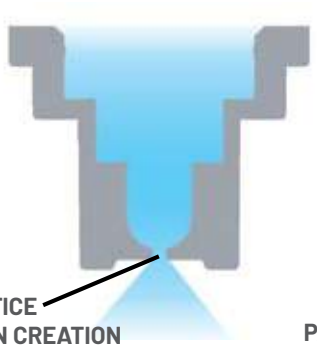
# SELECTING THE RIGHT SPRAY NOZZLE

**5) SPRAY PATTERN TYPE:**

| | | | |
|---|---|---|---|
| **FLAT FAN PATTERN** |  **EVEN** Single Nozzle Application (Fine Droplet Size) | **TAPERED** Multiple Nozzle Application (Fine Droplet Size) |  **FULL CONE** Multiple Nozzle Application, (Fine Droplet Size) |
| | **HOLLOW CONE** Ideal for air-assisted and directed sprays (Fine Droplet Size) |  **OFF-CENTER** Ideal for Boom End Application (Medium Droplet Size) | **STREAMING** Fertilizer applications (Stream) |
| **DEFLECT PATTERN** |  **FLOOD** Low Pressure 10-40 PSI/1-3 BAR, Course Droplet Size | | |

**NOZZLE TECHNOLOGY:**

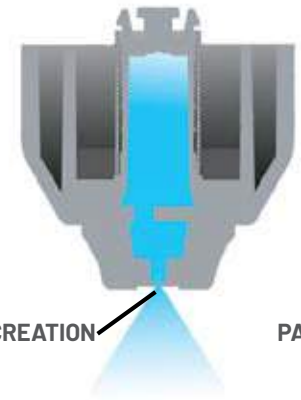
**STANDARD HYDRAULIC**
(Flat Fan - VP)




**EXIT ORIFICE FUNCTION:**

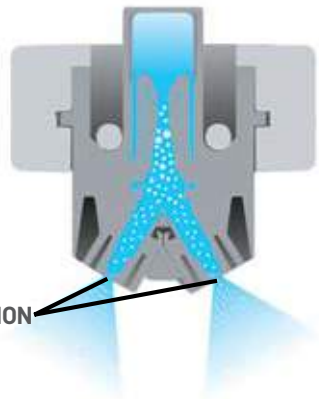
- Pro - Low Cost
- Con - Increased drift potential

**PRE-ORIFICE**
(Guardian-GRD)




- Pro - Reduced drift potential
- Con - Multiple pieces to clean

**AIR INDUCTION**
(GuardianAIR Twin-GAT)




- Pro - Increased coverage and Reduced Drift
- Con - Reduced performance with thick suspension based solutions

**6) NOZZLE SIZE AND PRESSURE:**

Use the flow rate tables provided throughout this guide to select the nozzle and pressure that provides the flow needed for the application.

# SELECTING THE RIGHT SPRAY NOZZLE

### 7) SPRAY QUALITY:

The size and the variation of droplets determine the spray quality that a nozzle produces. To apply a spray solution safely and with the most agronomic value, it must be delivered with the appropriate droplet size spectrum.

### ASABE S572.1 DROPLET SIZE CLASSIFICATION

The American Society of Agricultural and Biological Engineers (ASABE) developed the ASABE S572.1 standard to measure and interpret spray quality from nozzles.

| Spray Quality* | Size of Droplets | VMD Range (Microns**) | Color Code | Retention on Difficult to Wet Leaves | Drift Potential |
|---|---|---|---|---|---|
| Extremely Fine | Small | <60 | Purple | Excellent | High |
| Very Fine | | 61-105 | Red | Excellent | |
| Fine | | 106-235 | Orange | Very Good | |
| Medium | | 236-340 | Yellow | Good | |
| Coarse | | 341-403 | Blue | Moderate | |
| Very Coarse | | 404-502 | Green | Poor | |
| Extremely Coarse | | 503-665 | White | Very Poor | |
| Ultra Coarse | Large | >665 | Black | Very Poor | Low |

*Always read the pesticide label to determine which spray quality is required.
** Estimated from sample reference graph in ASABE/ANSI/ASAE Standard S572.1.

The ASABE S572.1 standard uses eight droplet classification categories, six of which are common for agriculture and horticulture: Very Fine, Fine, Medium, Coarse, Very Coarse and Extremely Coarse. Most agrochemical applications recommend a fine, medium, or coarse spray.

Fine sprays provide enhanced retention for directed spraying on the target including:

- Foliar-acting weed control
- Contact-acting fungicides and insecticides

Medium sprays are the most widely used spray type.

- Used by default by most applicators when spray quality is not defined by the label.
- Systemic-acting fungicides, insecticides and herbicides.

Coarse sprays are used with systemic, residual, and soil-applied herbicides.

### BCPC NOZZLE CLASSIFICATION

The British Crop Protection Council (BCPC) develop a standard for classifying nozzle droplet size. The standard is based on relative comparisons of droplet size using a set of agreed upon reference nozzles.

For conventional hydraulic nozzles, spray quality varies according to nozzle size (defined by nozzle flow in l/min) and with pressure, larger sizes and lower pressures produce larger droplets. Spray quality is defined by Volume Median Diameter (VMD) which is the mid-droplet size where half of the volume of spray is in larger and half in smaller droplets. The BCPC International Spray Classification System, groups nozzles into five categories: VERY FINE, FINE, MEDIUM, COARSE AND VERY COARSE, each category covering a range of VMDs.

Air Induction (AI) nozzles incorporate air as well as fluid in the droplets. As a result they are not classified by BCPC in the same way as standard hydraulic nozzles. AI nozzles tend to have a more uniform droplets size and less of the driftable fines. Those at the finer end of the spectrum can be successfully used in place of conventional 'medium' spray quality whilst at the same time reducing spray drift.

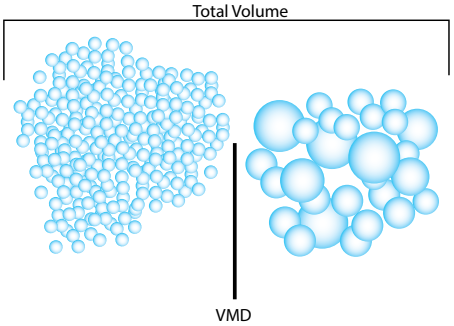
# SELECTING THE RIGHT SPRAY NOZZLE

The following chart has been designed to simplify selection of the correct spray nozzle type for the agrochemical to be applied. It is based on having good conditions for spraying and should be used in conjunction with the agrochemical manufacturer's label. Increased carrier rates may allow for coarser sprays to reduce risk of drift. Always follow the agrochemical label exactly.

| Section | Code | Spray Nozzle | Common Use | Pattern | Technology | Orifice Material | Nominal Spray Angle | Pressure Range | | ASABE Droplet Classificcation | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PSI | BAR | XF | VF | F | M | C | VC | XC | UC |
| Broadcast | ULD | Ultra Lo-Drift | Weeds | Tapered Flat Fan | Air Induction | Polyacetal | 120° | 20-115 | 1-8 | | | | | | | | |
| | 3D | 3D Nozzle | General | Tapered Flat Fan | Eliptical Orifice | Polyacetal | 100° | 10-90 | 0.7-6 | | | | | | | | |
| | GAT | GuardianAIR Twin | Plant Health | Tapered Flat Fan | Air Induction | Polyacetal | 110° | 30-115 | 2-8 | | | | | | | | |
| | ATW | Air Injected Twin Fan | Plant Health | Tapered Flat Fan | Air Induction | Ceramic | 110° | 40-100 | 3-7 | | | | | | | | |
| | GA | GuardianAIR | Plant Health | Tapered Flat Fan | Air Induction | Polyacetal | 110° | 20-115 | 1-8 | | | | | | | | |
| | AVI | Air Injected Anti-Drift | Weeds | Tapered Flat Fan | Air Induction | Ceramic | 80°, 110° | 30-100 | 2-7 | | | | | | | | |
| | GRD | Guardian | Plant Health | Tapered Flat Fan | Pre-Orifice | Polyacetal | 120° | 20-115 | 1-8 | | | | | | | | |
| | LD | Lo-Drift | Plant Health | Tapered Flat Fan | Pre-Orifice | Polyacetal | 80°, 110° | 20-70 | 1-5 | | | | | | | | |
| | ADI | Drift Reduction | Plant Health | Tapered Flat Fan | Air Induction | Ceramic | 110° | 30-70 | 2-5 | | | | | | | | |
| | VP | Variable Pressure | General | Tapered Flat Fan | Elliptical Orifice | Polyacetal | 80°, 110° | 20-70 | 1-5 | | | | | | | | |
| | AXI | Wide Range Fan | General | Tapered Flat Fan | Elliptical Orifice | Ceramic | 80°, 110° | 20-70 | 1-5 | | | | | | | | |
| | F | FanTip | General | Tapered Flat Fan | Elliptical Orifice | Polyacetal | 80°, 110° | 30-60 | 2-4 | | | | | | | | |
| Wide | HF | Hi-Flow | Fertilizer | Tapered Flat Fan | Pre-Orifice | Polyacetal | 140° | 20-80 | 1.5-6 | | | | | | | | |
| | DT | DeflecTip | Weeds & Fertilizer | Flood | Deflection | Polyacetal | 80°-160° | 10-60 | 1-4 | | | | | | | | |
| Stream | ESI | Six Stream | Fertilizer | Streams | Pre-Orifice | Ceramic or Polyacetal | 110° Equivalent | 15-60 | 1-4 | | | | | | | S | |
| | DC | Flow Regulating Disc | Fertilizer | Stream | Round Orifice | Polyacetal | 0° | 10-150 | 1-10 | | | | | | | S | |
| | AMT | Flow Regulating Disc | Fertilizer | Stream | Round Orifice | Ceramic | 0° | 10-725 | 1-50 | | | | | | | S | |
| Banding & Directed | DC/CR | SwirlTip Disc/Core | Plant Health | Hollow Cone | Swirl | Polyacetal | 25°-110° | 10-150 | 1-10 | | | | | | | | |
| | DCC/CRC | Disc and Core | Plant Health | Hollow Cone | Swirl | Ceramic | 13°-93° | 10-300 | 1-20 | | | | | | | | |
| | HCX | HollowTip Hollow Cone | Plant Health | Hollow Cone | Swirl | Polyacetal | 80° | 40-150 | 3-10 | | | | | | | | |
| | ATR | Hollow Cone | Plant Health | Hollow Cone | Swirl | Ceramic | 80° | 40-350 | 3-24 | | | | | | | | |
| | TVI | Hollow Cone | Plant Health | Hollow Cone | Air Induction | Ceramic | 80° | 70-360 | 5-25 | | | | | | | | |
| | AVI | Air Injected Anti-Drift | Plant Health | Tapered Flat Fan | Air Induction | Ceramic | 80° | 40-350 | 3-24 | | | | | | | | |
| | AXI | Wide Range Fan | Plant Health | Tapered Flat Fan | Elliptical Orifice | Ceramic | 80° | 40-350 | 3-24 | | | | | | | | |
| | DCC/CRC | Disc and Core | Plant Health | Full Cone | Swirl | Ceramic | 14°-71° | 10-300 | 1-20 | | | | | | | | |
| | FCX | Full Cone | Plant Health | Full Cone | Swirl | Polyacetal | 80° | 15-150 | 1-10 | | | | | | | | |
| | E | FanTip Even Flat | Weeds | Even Flat Fan | Elliptical Orifice | Polyacetal | 80° | 30-60 | 2-4 | | | | | | | | |
| | OC | Off-Center Flat | Unspecialized | Off-Center Fan | Elliptical Orifice | Brass | 80° | 30-60 | 2-4 | | | | | | | | |
| | OCI | Off-Center Ceramic | Unspecialized | Off-Center Fan | Elliptical Orifice | Ceramic | 80° | 30-60 | 2-4 | | | | | | | | |
| | AVI-OC | Air Injected Off-Center | Weeds | Off-Center Fan | Air Induction | Ceramic | 80° | 40-100 | 3-7 | | | | | | | | |
| Special | XT | Boom X Tender | Weeds | Boomless Fan | Pre-Orifice | Stainless or Polyacetal | 105° | 30-60 | 2-5 | | | | | | | | |
| | TUR | Sudden Impact | Car Wash | 0° Rotation | Turbo | Stainless or Brass | 24° or 30° | 800-3000 | 55-207 | | | | | | | | |
| | HP | High Pressure | Car Wash | Flat Fan | High Pressure | Hardened Stainless Steel | 0°, 5°, 15°, 25°, 40° | 300-4000 | 21-276 | | | | | | | | |
| | FP | FulcoJet | Car Wash | Full Cone | Swirl | PVDF | 45°-80° | 10-150 | .7-10 | | | | | | | | |
| | CM | FanJet | Car Wash | Flat Fan | Eliptical Orfice | PVDF | 0°-110° | 30-500 | 2-35 | | | | | | | | |
| | MISTING | F, HAF, PF, AFD, AF | Cooling & Humidification | Fan or Hollow Cone | Elliptical Orifice or Swirl | Polyacetal | 65°-110° | 40-150 | 3-10 | | | | | | | | |
| | E | Even | Knapsack | Even Flat Fan | Elliptical Orifice | Polyacetal | 80° | 15-45 | 1-3 | | | | | | | | |
| | DT/AN | Deflect Nozzle/PoliJet | Knapsack | Flood | Deflection | Polyacetal | 53.-127° | 15-45 | 1-3 | | | | | | | | |

S These nozzles produce streams to minimize atomization

## UNDERSTANDING DROPLET VMD




VMD is the droplet size at which 50% of the spray volume is in droplets larger than the VMD and 50% of the volume is in droplets smaller than the VMD (adapted from Matthews 1992).

## UNDERSTANDING MICRON SIZE

| Degree of Atomization | Droplet Size (Microns) | Relative Size Related to Common Objects |
|---|---|---|
| Fog | Up to 25 | Point of a Needle (25 Microns) |
| Fine Mist | 20-100 | Human Hair (100 Microns) |
| Fine Drizzle | 100-250 | Sewing Thread (150 Microns) |
| Heavy Drizzle | 250-500 | Toothbrush Bristle (300 Microns) |
| Light Rain | 500-800 | Staple (550 Microns) |
| Heavy Rain | 800-1000 | Paper Clip (850 Microns) |
| Thunderstorm Rain | 1000-4000 | #2 Pencil Lead (2000 Microns) |

- Droplet sizes are usually expressed in microns (micrometers).
- One micron equals one thousandth of a millimeter.
- Lower spraying pressures provide larger droplet sizes, while higher spraying pressures yield smaller droplet sizes.
- The smallest droplet sizes are achieved by air atomizing nozzles.
- Generally speaking, the largest spray droplets are produced by wide-angle, flat hydraulic spray nozzles.

# ULTRA LO-DRIFT 120°

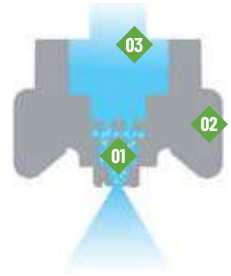
The ULD – Ultra Lo-Drift is the ideal spray nozzle for use where drift reduction is paramount. The nozzle produces large air-filled droplets, which cut drift dramatically compared with a standard fan and conventional low-drift spray nozzles.

- Creates air-filled droplets which significantly reduce spray drift
- Wide spray angle (120°) enables boom height to be lowered to further decrease drift
- Small, compact size reduces the chances of accidental breakage
- FastCap complete includes nozzle, cap, gasket and integrated strainers

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gallons per Acre | | | | | | | | | | | | | | | |
| | | | | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5 | 25 | 27.5 | 30 | 32.5 | 35 | 37.5 | 40 |
| 015 | UC | 20 | 0.11 | 12.6 | 6.3 | 4.2 | 3.2 | 2.5 | 2.1 | 1.8 | 1.6 | 1.4 | 1.3 | 1.1 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 |
| | XC | 30 | 0.13 | 15.4 | 7.7 | 5.1 | 3.9 | 3.1 | 2.6 | 2.2 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 |
| | VC | 40 | 0.15 | 17.8 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | VC | 50 | 0.17 | 19.9 | 10.0 | 6.6 | 5.0 | 4.0 | 3.3 | 2.8 | 2.5 | 2.2 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 |
| | C | 60 | 0.18 | 21.8 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| | C | 70 | 0.20 | 23.6 | 11.8 | 7.9 | 5.9 | 4.7 | 3.9 | 3.4 | 2.9 | 2.6 | 2.4 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | C | 80 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | M | 90 | 0.23 | 26.7 | 13.4 | 8.9 | 6.7 | 5.3 | 4.5 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 | 1.7 |
| | M | 100 | 0.24 | 28.2 | 14.1 | 9.4 | 7.0 | 5.6 | 4.7 | 4.0 | 3.5 | 3.1 | 2.8 | 2.6 | 2.3 | 2.2 | 2.0 | 1.9 | 1.8 |
| | M | 115 | 0.25 | - | 15.1 | 10.1 | 7.6 | 6.0 | 5.0 | 4.3 | 3.8 | 3.4 | 3.0 | 2.7 | 2.5 | 2.3 | 2.2 | 2.0 | 1.9 |
| 02 | UC | 20 | 0.14 | 16.8 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| | XC | 30 | 0.17 | 20.6 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | C | 40 | 0.20 | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | C | 50 | 0.22 | 26.6 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | C | 60 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | M | 70 | 0.26 | - | 15.7 | 10.5 | 7.9 | 6.3 | 5.2 | 4.5 | 3.9 | 3.5 | 3.1 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 2.0 |
| | M | 80 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | M | 90 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | M | 100 | 0.32 | - | 18.8 | 12.5 | 9.4 | 7.5 | 6.3 | 5.4 | 4.7 | 4.2 | 3.8 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 | 2.3 |
| | M | 115 | 0.34 | - | 20.1 | 13.4 | 10.1 | 8.1 | 6.7 | 5.8 | 5.0 | 4.5 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 |
| 025 | XC | 20 | 0.18 | 21.0 | 10.5 | 7.0 | 5.3 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 |
| | XC | 30 | 0.22 | 25.7 | 12.9 | 8.6 | 6.4 | 5.1 | 4.3 | 3.7 | 3.2 | 2.9 | 2.6 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 |
| | C | 40 | 0.25 | 29.7 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.9 |
| | C | 50 | 0.28 | - | 16.6 | 11.1 | 8.3 | 6.6 | 5.5 | 4.7 | 4.2 | 3.7 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | C | 60 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | M | 70 | 0.33 | - | 19.6 | 13.1 | 9.8 | 7.9 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.5 |
| | M | 80 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | M | 90 | 0.38 | - | 22.3 | 14.9 | 11.1 | 8.9 | 7.4 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | M | 100 | 0.40 | - | 23.5 | 15.7 | 11.7 | 9.4 | 7.8 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 115 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.1 |
| 03 | XC | 20 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | XC | 30 | 0.26 | - | 15.4 | 10.3 | 7.7 | 6.2 | 5.1 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 |
| | C | 40 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | C | 50 | 0.34 | - | 19.9 | 13.3 | 10.0 | 8.0 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 | 3.1 | 2.8 | 2.7 | 2.5 |
| | C | 60 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| | M | 70 | 0.40 | - | 23.6 | 15.7 | 11.8 | 9.4 | 7.9 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 80 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | M | 90 | 0.45 | - | 26.7 | 17.8 | 13.4 | 10.7 | 8.9 | 7.6 | 6.7 | 5.9 | 5.3 | 4.9 | 4.5 | 4.1 | 3.8 | 3.6 | 3.3 |
| | M | 100 | 0.47 | - | 28.2 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | 7.0 | 6.3 | 5.6 | 5.1 | 4.7 | 4.3 | 4.0 | 3.8 | 3.5 |
| | M | 115 | 0.51 | - | - | 20.1 | 15.1 | 12.1 | 10.1 | 8.6 | 7.6 | 6.7 | 6.0 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.8 |
| 04 | UC | 20 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | UC | 30 | 0.35 | - | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 | 3.2 | 2.9 | 2.7 | 2.6 |
| | UC | 40 | 0.40 | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | XC | 50 | 0.45 | - | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 |
| | XC | 60 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | XC | 70 | 0.53 | - | - | 21.0 | 15.7 | 12.6 | 10.5 | 9.0 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | VC | 80 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | VC | 90 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | C | 100 | 0.63 | - | - | 25.0 | 18.8 | 15.0 | 12.5 | 10.7 | 9.4 | 8.3 | 7.5 | 6.8 | 6.3 | 5.8 | 5.4 | 5.0 | 4.7 |
| | C | 115 | 0.68 | - | - | 26.9 | 20.1 | 16.1 | 13.4 | 11.5 | 10.1 | 9.0 | 8.1 | 7.3 | 6.7 | 6.2 | 5.8 | 5.4 | 5.0 |
| 05 | UC | 20 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | UC | 30 | 0.43 | - | 25.7 | 17.1 | 12.9 | 10.3 | 8.6 | 7.3 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 |
| | XC | 40 | 0.50 | - | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 | 4.6 | 4.2 | 4.0 | 3.7 |
| | XC | 50 | 0.56 | - | - | 22.1 | 16.6 | 13.3 | 11.1 | 9.5 | 8.3 | 7.4 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.2 |
| | XC | 60 | 0.61 | - | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| | VC | 70 | 0.66 | - | - | 26.2 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.9 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 |
| | VC | 80 | 0.71 | - | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.3 |
| | VC | 90 | 0.75 | - | - | 29.7 | 22.3 | 17.8 | 14.9 | 12.7 | 11.1 | 9.9 | 8.9 | 8.1 | 7.4 | 6.9 | 6.4 | 5.9 | 5.6 |
| | C | 100 | 0.79 | - | - | - | 23.5 | 18.8 | 15.7 | 13.4 | 11.7 | 10.4 | 9.4 | 8.5 | 7.8 | 7.2 | 6.7 | 6.3 | 5.9 |
| | C | 115 | 0.85 | - | - | - | 25.2 | 20.1 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.7 | 7.2 | 6.7 | 6.3 |
| 06 | UC | 20 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | UC | 30 | 0.52 | - | - | - | 15.4 | 12.3 | 10.3 | 8.8 | 7.7 | 6.9 | 6.2 | 5.6 | 5.1 | 4.7 | 4.4 | 4.1 | 3.9 |
| | XC | 40 | 0.60 | - | - | - | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | XC | 50 | 0.67 | - | - | - | 19.9 | 15.9 | 13.3 | 11.4 | 10.0 | 8.9 | 8.0 | 7.2 | 6.6 | 6.1 | 5.7 | 5.3 | 5.0 |
| | VC | 60 | 0.73 | - | - | - | 21.8 | 17.5 | 14.5 | 12.5 | 10.9 | 9.7 | 8.7 | 7.9 | 7.3 | 6.7 | 6.2 | 5.8 | 5.5 |
| | C | 70 | 0.79 | - | - | - | 23.6 | 18.9 | 15.7 | 13.5 | 11.8 | 10.5 | 9.4 | 8.6 | 7.9 | 7.3 | 6.7 | 6.3 | 5.9 |
| | C | 80 | 0.85 | - | - | - | 25.2 | 20.2 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.8 | 7.2 | 6.7 | 6.3 |
| | C | 90 | 0.90 | - | - | - | 26.7 | 21.4 | 17.8 | 15.3 | 13.4 | 11.9 | 10.7 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.7 |
| | C | 100 | 0.95 | - | - | - | 28.2 | 22.5 | 18.8 | 16.1 | 14.1 | 12.5 | 11.3 | 10.2 | 9.4 | 8.7 | 8.1 | 7.5 | 7.0 |
| | M | 115 | 1.02 | - | - | - | - | 24.2 | 20.1 | 17.3 | 15.1 | 13.4 | 12.1 | 11.0 | 10.1 | 9.3 | 8.6 | 8.1 | 7.6 |
| 08 | UC | 20 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | XC | 30 | 0.69 | - | - | 27.4 | 20.6 | 16.5 | 13.7 | 11.8 | 10.3 | 9.1 | 8.2 | 7.5 | 6.9 | 6.3 | 5.9 | 5.5 | 5.1 |
| | VC | 40 | 0.80 | - | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 5.9 |
| | VC | 50 | 0.89 | - | - | - | 26.6 | 21.3 | 17.7 | 15.2 | 13.3 | 11.8 | 10.6 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.6 |
| | C | 60 | 0.98 | - | - | - | 29.1 | 23.3 | 19.4 | 16.6 | 14.5 | 12.9 | 11.6 | 10.6 | 9.7 | 9.0 | 8.3 | 7.8 | 7.3 |
| | C | 70 | 1.06 | - | - | - | - | 25.2 | 21.0 | 18.0 | 15.7 | 14.0 | 12.6 | 11.4 | 10.5 | 9.7 | 9.0 | 8.4 | 7.9 |
| | C | 80 | 1.13 | - | - | - | - | 26.9 | 22.4 | 19.2 | 16.8 | 14.9 | 13.4 | 12.2 | 11.2 | 10.3 | 9.6 | 9.0 | 8.4 |
| | M | 90 | 1.20 | - | - | - | - | 28.5 | 23.8 | 20.4 | 17.8 | 15.8 | 14.3 | 13.0 | 11.9 | 11.0 | 10.2 | 9.5 | 8.9 |
| | M | 100 | 1.26 | - | - | - | - | - | 25.0 | 21.5 | 18.8 | 16.7 | 15.0 | 13.7 | 12.5 | 11.6 | 10.7 | 10.0 | 9.4 |
| | M | 115 | 1.36 | - | - | - | - | - | 26.9 | 23.0 | 20.1 | 17.9 | 16.1 | 14.6 | 13.4 | 12.4 | 11.5 | 10.7 | 10.1 |

Droplet size based on ASABE S572.1 standard




01. Twin inlet; Air Induction Technology
02. Available in a Fastcap option for easy installation
03. Configured with or without a filter

# ULTRA LO-DRIFT 120°

Maximum drift control in a 120° wide spray pattern for even coverage in broadcast applications

Unique 60° thick spray pattern for a wider coverage area. 120° wide by 60° thick pattern.

See http://pentair.com/certifications for the latest drift reduction standard information.

## METRIC UNITS

| Nozzle Size | Droplet Size | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - 50cm spacing KM/H 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | Drift Reduction Standards JKI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 015 | UC | 1 | 0,35 | 60 | 53 | 42 | 35 | 28 | 21 | 17 | 14 | |
| | UC | 1,5 | 0,42 | 72 | 63 | 50 | 42 | 34 | 25 | 20 | 17 | |
| | XC | 2 | 0,49 | 84 | 74 | 59 | 49 | 39 | 29 | 24 | 20 | |
| | VC | 3 | 0,60 | 103 | 90 | 72 | 60 | 48 | 36 | 29 | 24 | |
| | C | 4 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 | |
| | C | 5 | 0,77 | 132 | 116 | 92 | 77 | 62 | 46 | 37 | 31 | |
| | M | 6 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 | |
| | M | 7 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | |
| | M | 8 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 | |
| 02 | UC | 1 | 0,46 | 79 | 69 | 55 | 46 | 37 | 28 | 22 | 18 | |
| | UC | 1,5 | 0,57 | 98 | 86 | 68 | 57 | 46 | 34 | 27 | 23 | |
| | XC | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 | |
| | C | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 | |
| | C | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | |
| | M | 5 | 1,03 | 177 | 155 | 124 | 103 | 82 | 62 | 49 | 41 | |
| | M | 6 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 | |
| | M | 7 | 1,22 | 209 | 183 | 146 | 122 | 98 | 73 | 59 | 49 | |
| | M | 8 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 | |
| 025 | UC | 1 | 0,58 | 99 | 87 | 70 | 58 | 46 | 35 | 28 | 23 | |
| | XC | 1,5 | 0,71 | 122 | 107 | 85 | 71 | 57 | 43 | 34 | 28 | |
| | XC | 2 | 0,82 | 141 | 123 | 98 | 82 | 66 | 49 | 39 | 33 | |
| | C | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 | |
| | C | 4 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 | |
| | M | 5 | 1,29 | 221 | 194 | 155 | 129 | 103 | 77 | 62 | 52 | |
| | M | 6 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 | |
| | M | 7 | 1,53 | 262 | 230 | 184 | 153 | 122 | 92 | 73 | 61 | |
| | M | 8 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 | |
| 03 | UC | 1 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 | |
| | XC | 1,5 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 | |
| | XC | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 | 50% 2.5-8.0 BAR Ref # G-1778 |
| | C | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 | |
| | C | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 | |
| | M | 5 | 1,55 | 266 | 233 | 186 | 155 | 124 | 93 | 74 | 62 | |
| | M | 6 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 | |
| | M | 7 | 1,83 | 314 | 275 | 220 | 183 | 146 | 110 | 88 | 73 | |
| | M | 8 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 | |
| 04 | UC | 1 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | 90% 2.5-3.0 BAR |
| | UC | 1,5 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 | |
| | UC | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 | |
| | UC | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 | |
| | XC | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 | 75% 3.1-8.0 BAR |
| | XC | 5 | 2,07 | 355 | 311 | 248 | 207 | 166 | 124 | 99 | 83 | |
| | VC | 6 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 | |
| | C | 7 | 2,44 | 418 | 366 | 293 | 244 | 195 | 146 | 117 | 98 | Ref # G-1779 |
| | C | 8 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 | |
| 05 | UC | 1 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 | |
| | UC | 1,5 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 | |
| | UC | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 | |
| | XC | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 | 90% 2.5-8.0 BAR Ref # G-1780 |
| | XC | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 | |
| | VC | 5 | 2,58 | 442 | 387 | 310 | 258 | 206 | 155 | 124 | 103 | |
| | VC | 6 | 2,83 | 485 | 425 | 340 | 283 | 226 | 170 | 136 | 113 | |
| | C | 7 | 3,06 | 525 | 459 | 367 | 306 | 245 | 184 | 147 | 122 | |
| | C | 8 | 3,27 | 561 | 491 | 392 | 327 | 262 | 196 | 157 | 131 | |
| 06 | UC | 1 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 | |
| | UC | 1,5 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 | |
| | UC | 2 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 | |
| | XC | 3 | 2,40 | 411 | 360 | 288 | 240 | 192 | 144 | 115 | 96 | |
| | VC | 4 | 2,77 | 475 | 416 | 332 | 277 | 222 | 166 | 133 | 111 | |
| | C | 5 | 3,10 | 531 | 465 | 372 | 310 | 248 | 186 | 149 | 124 | |
| | C | 6 | 3,39 | 581 | 509 | 407 | 339 | 271 | 203 | 163 | 136 | |
| | C | 7 | 3,67 | 629 | 551 | 440 | 367 | 294 | 220 | 176 | 147 | |
| | M | 8 | 3,92 | 672 | 588 | 470 | 392 | 314 | 235 | 188 | 157 | |
| 08 | UC | 1 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 | |
| | UC | 1,5 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 | |
| | XC | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 | |
| | VC | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 | |
| | C | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 | |
| | C | 5 | 4,13 | 708 | 620 | 496 | 413 | 330 | 248 | 198 | 165 | |
| | M | 6 | 4,53 | 777 | 680 | 544 | 453 | 362 | 272 | 217 | 181 | |
| | M | 7 | 4,89 | 838 | 734 | 587 | 489 | 391 | 293 | 235 | 196 | |
| | M | 8 | 5,23 | 897 | 785 | 628 | 523 | 418 | 314 | 251 | 209 | |

Droplet size based on ASABE S572.1 standard

| Features | |
|---|---|
| Common Use | Weed and disease control with systemic agrochemicals. |
| Pattern | Tapered Flat Fan |
| Technology | Air Induction |
| Material | Polyacetal |
| Spray Angle | 120° |
| Pressure Range | 20-115 PSI (1-8 BAR) |
| Configuration | Nozzles, FastCap Complete |
| **Optimum Boom Height** | |
| 15" (35 cm) Spacing | 15" (35 cm) |
| 20" (50 cm) Spacing | 20" (50 cm) |
| **Part Numbers (Bags of 10)** | |
| **Nozzles 120°** | **FastCap 120°** |
| ULD120-015 | FC-ULD120-015* |
| ULD120-02 | FC-ULD120-02* |
| ULD120-025 | FC-ULD120-025* |
| ULD120-03 | FC-ULD120-03* |
| ULD120-04 | FC-ULD120-04* |
| ULD120-05 | FC-ULD120-05* |
| ULD120-06 | FC-ULD120-06* |
| ULD120-08 | FC-ULD120-08* |
| **Replacement Strainers** | |
| TS01-50 | 50 mesh strainer (Sizes 015-08) |
| **Replacement FastCap Gasket** | |
| 10BG-2270-0150 | |

* FastCap version contain nozzle filters

# 3D 100°

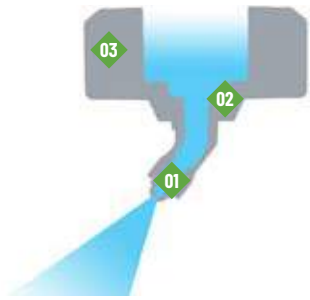
Designed in partnership with Syngenta using wind tunnel research and more than 10 years of agronomic field trials. Proven to deliver an increase in pre-emerge weed control compared to a conventional flat fan. Creates the optimum droplet size for coverage, fewer droplets bounce off or drift away.**

- 60-75% drift reduction compared to flat fan nozzles, achieving up to a 3 Star LERAP rating at specific nozzle size/pressure combinations
- Inclined spray is designed to be installed alternating forward and backward on boom to provide 3-dimensional coverage on vertical targets such as grass weeds, soil clods and broad leaved canopies

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gallons per Acre | | | | | | | | | | |
| | | | | 5.0 | 7.5 | 10.0 | 12.5 | 15.0 | 17.5 | 20.0 | 22.5 | 25.0 | 27.5 | 30.0 |
| 015 | C | 10* | 0.08 | 4.5 | 3.0 | 2.2 | 1.8 | 1.5 | 1.3 | 1.1 | 1.0 | 0.9 | 0.8 | 0.7 |
| | M | 15* | 0.09 | 5.5 | 3.6 | 2.7 | 2.2 | 1.8 | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 | 0.9 |
| | M | 20 | 0.11 | 6.3 | 4.2 | 3.2 | 2.5 | 2.1 | 1.8 | 1.6 | 1.4 | 1.3 | 1.1 | 1.1 |
| | F | 30 | 0.13 | 7.7 | 5.1 | 3.9 | 3.1 | 2.6 | 2.2 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 |
| | F | 40 | 0.15 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 |
| | F | 50 | 0.17 | 10.0 | 6.6 | 5.0 | 4.0 | 3.3 | 2.8 | 2.5 | 2.2 | 2.0 | 1.8 | 1.7 |
| | F | 60 | 0.18 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 |
| | F | 70 | 0.20 | 11.8 | 7.9 | 5.9 | 4.7 | 3.9 | 3.4 | 2.9 | 2.6 | 2.4 | 2.1 | 2.0 |
| | F | 80 | 0.21 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 |
| | F | 90 | 0.23 | 13.4 | 8.9 | 6.7 | 5.3 | 4.5 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 |
| 02 | M | 10* | 0.10 | 5.9 | 4.0 | 3.0 | 2.4 | 2.0 | 1.7 | 1.5 | 1.3 | 1.2 | 1.1 | 1.0 |
| | M | 15* | 0.12 | 7.3 | 4.8 | 3.6 | 2.9 | 2.4 | 2.1 | 1.8 | 1.6 | 1.5 | 1.3 | 1.2 |
| | M | 20 | 0.14 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 |
| | M | 30 | 0.17 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 |
| | F | 40 | 0.20 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 |
| | F | 50 | 0.22 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 |
| | F | 60 | 0.24 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 |
| | F | 70 | 0.26 | 15.7 | 10.5 | 7.9 | 6.3 | 5.2 | 4.5 | 3.9 | 3.5 | 3.1 | 2.9 | 2.6 |
| | F | 80 | 0.28 | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 |
| | F | 90 | 0.30 | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 |
| 025 | C | 10* | 0.13 | 7.4 | 5.0 | 3.7 | 3.0 | 2.5 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.2 |
| | M | 15* | 0.15 | 9.1 | 6.1 | 4.5 | 3.6 | 3.0 | 2.6 | 2.3 | 2.0 | 1.8 | 1.7 | 1.5 |
| | M | 20 | 0.18 | 10.5 | 7.0 | 5.3 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 |
| | M | 30 | 0.22 | 12.9 | 8.6 | 6.4 | 5.1 | 4.3 | 3.7 | 3.2 | 2.9 | 2.6 | 2.3 | 2.1 |
| | M | 40 | 0.25 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 |
| | F | 50 | 0.28 | 16.6 | 11.1 | 8.3 | 6.6 | 5.5 | 4.7 | 4.2 | 3.7 | 3.3 | 3.0 | 2.8 |
| | F | 60 | 0.31 | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 |
| | F | 70 | 0.33 | 19.6 | 13.1 | 9.8 | 7.9 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 |
| | F | 80 | 0.35 | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 |
| | F | 90 | 0.38 | 22.3 | 14.9 | 11.1 | 8.9 | 7.4 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 |
| 03 | VC | 10* | 0.15 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 |
| | C | 15* | 0.18 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 |
| | M | 20 | 0.21 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 |
| | M | 30 | 0.26 | 15.4 | 10.3 | 7.7 | 6.2 | 5.1 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 |
| | M | 40 | 0.30 | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 |
| | M | 50 | 0.34 | 19.9 | 13.3 | 10.0 | 8.0 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 |
| | F | 60 | 0.37 | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 |
| | F | 70 | 0.40 | 23.6 | 15.7 | 11.8 | 9.4 | 7.9 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 |
| | F | 80 | 0.42 | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 |
| | F | 90 | 0.45 | 26.7 | 17.8 | 13.4 | 10.7 | 8.9 | 7.6 | 6.7 | 5.9 | 5.3 | 4.9 | 4.5 |
| 35 | VC | 10* | 0.18 | 10.4 | 6.9 | 5.2 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 |
| | C | 15* | 0.21 | 12.7 | 8.5 | 6.4 | 5.1 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 |
| | C | 20 | 0.25 | 14.7 | 9.8 | 7.4 | 5.9 | 4.9 | 4.2 | 3.7 | 3.3 | 2.9 | 2.7 | 2.5 |
| | M | 30 | 0.30 | 18.0 | 12.0 | 9.0 | 7.2 | 6.0 | 5.1 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 |
| | M | 40 | 0.35 | 20.8 | 13.9 | 10.4 | 8.3 | 6.9 | 5.9 | 5.2 | 4.6 | 4.2 | 3.8 | 3.5 |
| | M | 50 | 0.39 | 23.2 | 15.5 | 11.6 | 9.3 | 7.7 | 6.6 | 5.8 | 5.2 | 4.6 | 4.2 | 3.9 |
| | M | 60 | 0.43 | 25.5 | 17.0 | 12.7 | 10.2 | 8.5 | 7.3 | 6.4 | 5.7 | 5.1 | 4.6 | 4.2 |
| | M | 70 | 0.46 | 27.5 | 18.3 | 13.8 | 11.0 | 9.2 | 7.9 | 6.9 | 6.1 | 5.5 | 5.0 | 4.6 |
| | F | 80 | 0.49 | 29.4 | 19.6 | 14.7 | 11.8 | 9.8 | 8.4 | 7.4 | 6.5 | 5.9 | 5.3 | 4.9 |
| | F | 90 | 0.53 | - | 20.8 | 15.6 | 12.5 | 10.4 | 8.9 | 7.8 | 6.9 | 6.2 | 5.7 | 5.2 |
| 04 | XC | 10* | 0.20 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 |
| | VC | 15* | 0.24 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 |
| | C | 20 | 0.28 | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 |
| | M | 30 | 0.35 | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 |
| | M | 40 | 0.40 | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 |
| | M | 50 | 0.45 | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 |
| | M | 60 | 0.49 | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 |
| | M | 70 | 0.53 | - | 21.0 | 15.7 | 12.6 | 10.5 | 9.0 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 |
| | M | 80 | 0.57 | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 |
| | F | 90 | 0.60 | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 |
| 05 | XC | 10* | 0.25 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 |
| | VC | 15* | 0.31 | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 |
| | C | 20 | 0.35 | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 |
| | C | 30 | 0.43 | 25.7 | 17.1 | 12.9 | 10.3 | 8.6 | 7.3 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 |
| | M | 40 | 0.50 | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 |
| | M | 50 | 0.56 | - | 22.1 | 16.6 | 13.3 | 11.1 | 9.5 | 8.3 | 7.4 | 6.6 | 6.0 | 5.5 |
| | M | 60 | 0.61 | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 |
| | M | 70 | 0.66 | - | 26.2 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.9 | 7.1 | 6.5 |
| | M | 80 | 0.71 | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 |
| | M | 90 | 0.75 | - | 29.7 | 22.3 | 17.8 | 14.9 | 12.7 | 11.1 | 9.9 | 8.9 | 8.1 | 7.4 |
| 06 | XC | 10* | 0.30 | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 |
| | VC | 15* | 0.37 | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 |
| | C | 20 | 0.42 | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 |
| | C | 30 | 0.52 | - | 20.6 | 15.4 | 12.3 | 10.3 | 8.8 | 7.7 | 6.9 | 6.2 | 5.6 | 5.1 |
| | C | 40 | 0.60 | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 |
| | M | 50 | 0.67 | - | 26.6 | 19.9 | 15.9 | 13.3 | 11.4 | 10.0 | 8.9 | 8.0 | 7.2 | 6.6 |
| | M | 60 | 0.73 | - | 29.1 | 21.8 | 17.5 | 14.5 | 12.5 | 10.9 | 9.7 | 8.7 | 7.9 | 7.3 |
| | M | 70 | 0.79 | - | - | 23.6 | 18.9 | 15.7 | 13.5 | 11.8 | 10.5 | 9.4 | 8.6 | 7.9 |
| | M | 80 | 0.85 | - | - | 25.2 | 20.2 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 |
| | M | 90 | 0.90 | - | - | 26.7 | 21.4 | 17.8 | 15.3 | 13.4 | 11.9 | 10.7 | 9.7 | 8.9 |
| 08 | XC | 10* | 0.40 | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 |
| | VC | 15* | 0.49 | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 |
| | VC | 20 | 0.57 | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 |
| | C | 30 | 0.69 | - | 27.4 | 20.6 | 16.5 | 13.7 | 11.8 | 10.3 | 9.1 | 8.2 | 7.5 | 6.9 |
| | C | 40 | 0.80 | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 |
| | M | 50 | 0.89 | - | - | 26.6 | 21.3 | 17.7 | 15.2 | 13.3 | 11.8 | 10.6 | 9.7 | 8.9 |
| | M | 60 | 0.98 | - | - | 29.1 | 23.3 | 19.4 | 16.6 | 14.5 | 12.9 | 11.6 | 10.6 | 9.7 |
| | M | 70 | 1.06 | - | - | - | 25.1 | 21.0 | 18.0 | 15.7 | 14.0 | 12.6 | 11.4 | 10.5 |
| | M | 80 | 1.13 | - | - | - | 26.9 | 22.4 | 19.2 | 16.8 | 14.9 | 13.4 | 12.2 | 11.2 |
| | M | 90 | 1.20 | - | - | - | 28.5 | 23.8 | 20.4 | 17.8 | 15.8 | 14.3 | 13.0 | 11.9 |

*For pressures lower than 15 PSI, nozzle spray angle may be reduced and will require a boom height of 30in to maintain spray distribution.
**Syngenta UK Trials - 0.6 l/ha Liberator (diflufenican+ flufenacet) + 4 l/ha Defy (Prosulfacarb) applied November 2015).




01. Highly engineered exit orifice for droplet uniformity, reduced drift and uniform spray across the boom
02. Angled bore for superior coverage and drift reduction
03. SnapLock cap for easy installation and removal

# 3D 100°

Engineered spray incline designed to provide the best coverage on hard to hit targets

Optimum droplet spectrum for spray coverage

## METRIC UNITS

| Size | Spray Quality | Pressure BAR | Flow (L/Min) | Application Rate L/Ha - 50cm spacing KM/H 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | Drift Reduction Standards LERAP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 015 | C | 0.7* | 0.29 | 58 | 43 | 35 | 29 | 25 | 22 | 19 | 17 | 16 | 14 | 13 | 12 | 12 | |
| | M | 1* | 0.35 | 69 | 52 | 42 | 35 | 30 | 26 | 23 | 21 | 19 | 17 | 16 | 15 | 14 | |
| | M | 1.5 | 0.42 | 85 | 64 | 51 | 42 | 36 | 32 | 28 | 25 | 23 | 21 | 20 | 18 | 17 | |
| | F | 2 | 0.49 | 98 | 73 | 59 | 49 | 42 | 37 | 33 | 29 | 27 | 24 | 23 | 21 | 20 | |
| | F | 2.5 | 0.55 | 110 | 82 | 66 | 55 | 47 | 41 | 37 | 33 | 30 | 27 | 25 | 23 | 22 | |
| | F | 3 | 0.60 | 120 | 90 | 72 | 60 | 51 | 45 | 40 | 36 | 33 | 30 | 28 | 26 | 24 | |
| | F | 4 | 0.69 | 139 | 104 | 83 | 69 | 59 | 52 | 46 | 42 | 38 | 35 | 32 | 30 | 28 | |
| | F | 5 | 0.77 | 155 | 116 | 93 | 77 | 66 | 58 | 52 | 46 | 42 | 39 | 36 | 33 | 31 | |
| | F | 6 | 0.85 | 170 | 127 | 102 | 85 | 73 | 64 | 57 | 51 | 46 | 42 | 39 | 36 | 34 | |
| 02 | M | 0.7* | 0.39 | 77 | 58 | 46 | 39 | 33 | 29 | 26 | 23 | 21 | 19 | 18 | 17 | 15 | |
| | M | 1* | 0.46 | 92 | 69 | 55 | 46 | 40 | 35 | 31 | 28 | 25 | 23 | 21 | 20 | 18 | |
| | M | 1.5 | 0.57 | 113 | 85 | 68 | 57 | 48 | 42 | 38 | 34 | 31 | 28 | 26 | 24 | 23 | |
| | M | 2 | 0.65 | 131 | 98 | 78 | 65 | 56 | 49 | 44 | 39 | 36 | 33 | 30 | 28 | 26 | |
| | F | 2.5 | 0.73 | 146 | 110 | 88 | 73 | 63 | 55 | 49 | 44 | 40 | 37 | 34 | 31 | 29 | |
| | F | 3 | 0.80 | 160 | 120 | 96 | 80 | 69 | 60 | 53 | 48 | 44 | 40 | 37 | 34 | 32 | |
| | F | 4 | 0.92 | 185 | 139 | 111 | 92 | 79 | 69 | 62 | 55 | 50 | 46 | 43 | 40 | 37 | |
| | F | 5 | 1.03 | 207 | 155 | 124 | 103 | 89 | 77 | 69 | 62 | 56 | 52 | 48 | 44 | 41 | |
| | F | 6 | 1.13 | 226 | 170 | 136 | 113 | 97 | 85 | 75 | 68 | 62 | 57 | 52 | 48 | 45 | |
| 025 | C | 0.7* | 0.48 | 97 | 72 | 58 | 48 | 41 | 36 | 32 | 29 | 26 | 24 | 22 | 21 | 19 | |
| | M | 1* | 0.58 | 115 | 87 | 69 | 58 | 49 | 43 | 38 | 35 | 31 | 29 | 27 | 25 | 23 | ★★ 50-75% 0.7 BAR ★ Up to 50% 0.71-1.0 BAR |
| | M | 1.5 | 0.71 | 141 | 106 | 85 | 71 | 61 | 53 | 47 | 42 | 39 | 35 | 33 | 30 | 28 | |
| | M | 2 | 0.82 | 163 | 122 | 98 | 82 | 70 | 61 | 54 | 49 | 45 | 41 | 38 | 35 | 33 | |
| | M | 2.5 | 0.91 | 183 | 137 | 110 | 91 | 78 | 68 | 61 | 55 | 50 | 46 | 42 | 39 | 37 | |
| | M | 3 | 1.00 | 200 | 150 | 120 | 100 | 86 | 75 | 67 | 60 | 55 | 50 | 46 | 43 | 40 | |
| | M | 4 | 1.15 | 231 | 173 | 139 | 115 | 99 | 87 | 77 | 69 | 63 | 58 | 53 | 49 | 46 | |
| | F | 5 | 1.29 | 258 | 194 | 155 | 129 | 111 | 97 | 86 | 77 | 70 | 65 | 60 | 55 | 52 | |
| | F | 6 | 1.41 | 283 | 212 | 170 | 141 | 121 | 106 | 94 | 85 | 77 | 71 | 65 | 61 | 57 | |
| 03 | VC | 0.7* | 0.580 | 116 | 87 | 70 | 58 | 50 | 43 | 39 | 35 | 32 | 29 | 27 | 25 | 23 | |
| | C | 1* | 0.693 | 139 | 104 | 83 | 69 | 59 | 52 | 46 | 42 | 38 | 35 | 32 | 30 | 28 | |
| | M | 1.5 | 0.849 | 170 | 127 | 102 | 85 | 73 | 64 | 57 | 51 | 46 | 42 | 39 | 36 | 34 | |
| | M | 2 | 0.980 | 196 | 147 | 118 | 98 | 84 | 73 | 65 | 59 | 53 | 49 | 45 | 42 | 39 | ★★ 50-75% 0.7-1.0 BAR |
| | M | 2.5 | 1.095 | 219 | 164 | 131 | 110 | 94 | 82 | 73 | 66 | 60 | 55 | 51 | 47 | 44 | |
| | M | 3 | 1.200 | 240 | 180 | 144 | 120 | 103 | 90 | 80 | 72 | 65 | 60 | 55 | 51 | 48 | |
| | F | 4 | 1.386 | 277 | 208 | 166 | 139 | 119 | 104 | 92 | 83 | 76 | 69 | 64 | 59 | 55 | |
| | F | 5 | 1.549 | 310 | 232 | 186 | 155 | 133 | 116 | 103 | 93 | 85 | 77 | 72 | 66 | 62 | |
| | F | 6 | 1.70 | 339 | 255 | 204 | 170 | 145 | 127 | 113 | 102 | 93 | 85 | 78 | 73 | 68 | |
| 35 | VC | 0.7* | 0.676 | 135 | 101 | 81 | 68 | 58 | 51 | 45 | 41 | 37 | 34 | 31 | 29 | 27 | |
| | C | 1* | 0.808 | 162 | 121 | 97 | 81 | 69 | 61 | 54 | 48 | 44 | 40 | 37 | 35 | 32 | |
| | M | 1.5 | 0.990 | 198 | 148 | 119 | 99 | 85 | 74 | 66 | 59 | 54 | 49 | 46 | 42 | 40 | |
| | M | 2 | 1.143 | 229 | 171 | 137 | 114 | 98 | 86 | 76 | 69 | 62 | 57 | 53 | 49 | 46 | ★★ 50-75% 0.7-1.0 BAR |
| | M | 2.5 | 1.278 | 256 | 192 | 153 | 128 | 110 | 96 | 85 | 77 | 70 | 64 | 59 | 55 | 51 | |
| | M | 3 | 1.400 | 280 | 210 | 168 | 140 | 120 | 105 | 93 | 84 | 76 | 70 | 65 | 60 | 56 | |
| | M | 4 | 1.617 | 323 | 242 | 194 | 162 | 139 | 121 | 108 | 97 | 88 | 81 | 75 | 69 | 65 | |
| | M | 5 | 1.807 | 361 | 271 | 217 | 181 | 155 | 136 | 120 | 108 | 99 | 90 | 83 | 77 | 72 | |
| | F | 6 | 1.98 | 396 | 297 | 238 | 198 | 170 | 148 | 132 | 119 | 108 | 99 | 91 | 85 | 79 | |
| 04 | XC | 0.7* | 0.773 | 155 | 116 | 93 | 77 | 66 | 58 | 52 | 46 | 42 | 39 | 36 | 33 | 31 | |
| | VC | 1* | 0.924 | 185 | 139 | 111 | 92 | 79 | 69 | 62 | 55 | 50 | 46 | 43 | 40 | 37 | |
| | C | 1.5 | 1.131 | 226 | 170 | 136 | 113 | 97 | 85 | 75 | 68 | 62 | 57 | 52 | 48 | 45 | |
| | M | 2 | 1.306 | 261 | 196 | 157 | 131 | 112 | 98 | 87 | 78 | 71 | 65 | 60 | 56 | 52 | |
| | M | 2.5 | 1.461 | 292 | 219 | 175 | 146 | 125 | 110 | 97 | 88 | 80 | 73 | 67 | 63 | 58 | ★★ 50-75% 0.7-1.0 BAR |
| | M | 3 | 1.600 | 320 | 240 | 192 | 160 | 137 | 120 | 107 | 96 | 87 | 80 | 74 | 69 | 64 | |
| | M | 4 | 1.848 | 370 | 277 | 222 | 185 | 158 | 139 | 123 | 111 | 101 | 92 | 85 | 79 | 74 | |
| | M | 5 | 2.066 | 413 | 310 | 248 | 207 | 177 | 155 | 138 | 124 | 113 | 103 | 95 | 89 | 83 | |
| | F | 6 | 2.26 | 453 | 339 | 272 | 226 | 194 | 170 | 151 | 136 | 123 | 113 | 104 | 97 | 91 | |
| 05 | XC | 0.7* | 0.966 | 193 | 145 | 116 | 97 | 83 | 72 | 64 | 58 | 53 | 48 | 45 | 41 | 39 | |
| | VC | 1* | 1.155 | 231 | 173 | 139 | 115 | 99 | 87 | 77 | 69 | 63 | 58 | 53 | 49 | 46 | |
| | C | 1.5 | 1.414 | 283 | 212 | 170 | 141 | 121 | 106 | 94 | 85 | 77 | 71 | 65 | 61 | 57 | |
| | C | 2 | 1.633 | 327 | 245 | 196 | 163 | 140 | 122 | 109 | 98 | 89 | 82 | 75 | 70 | 65 | ★★ 50-75% 0.7-1.0 BAR |
| | M | 2.5 | 1.826 | 365 | 274 | 219 | 183 | 156 | 137 | 122 | 110 | 100 | 91 | 84 | 78 | 73 | |
| | M | 3 | 2.000 | 400 | 300 | 240 | 200 | 171 | 150 | 133 | 120 | 109 | 100 | 92 | 86 | 80 | |
| | M | 4 | 2.309 | 462 | 346 | 277 | 231 | 198 | 173 | 154 | 139 | 126 | 115 | 107 | 99 | 92 | |
| | M | 5 | 2.582 | 516 | 387 | 310 | 258 | 221 | 194 | 172 | 155 | 141 | 129 | 119 | 111 | 103 | |
| | M | 6 | 2.83 | 566 | 424 | 339 | 283 | 242 | 212 | 189 | 170 | 154 | 141 | 131 | 121 | 113 | |
| 06 | XC | 0.7* | 1.159 | 232 | 174 | 139 | 116 | 99 | 87 | 77 | 70 | 63 | 58 | 54 | 50 | 46 | |
| | VC | 1* | 1.386 | 277 | 208 | 166 | 139 | 119 | 104 | 92 | 83 | 76 | 69 | 64 | 59 | 55 | ★★★ 75% 0.7 BAR ★★ 50-75% 0.71-1.5 BAR |
| | C | 1.5 | 1.697 | 339 | 255 | 204 | 170 | 145 | 127 | 113 | 102 | 93 | 85 | 78 | 73 | 68 | |
| | C | 2 | 1.960 | 392 | 294 | 235 | 196 | 168 | 147 | 131 | 118 | 107 | 98 | 90 | 84 | 78 | |
| | C | 2.5 | 2.191 | 438 | 329 | 263 | 219 | 188 | 164 | 146 | 13 1 | 120 | 110 | 101 | 94 | 88 | |
| | M | 3 | 2.400 | 480 | 360 | 288 | 240 | 206 | 180 | 160 | 144 | 131 | 120 | 111 | 103 | 96 | |
| | M | 4 | 2.771 | 554 | 416 | 333 | 277 | 238 | 208 | 185 | 166 | 151 | 139 | 128 | 119 | 111 | |
| | M | 5 | 3.098 | 620 | 465 | 372 | 310 | 266 | 232 | 207 | 186 | 169 | 155 | 143 | 133 | 124 | |
| | M | 6 | 3.39 | 679 | 509 | 407 | 339 | 291 | 255 | 226 | 204 | 185 | 170 | 157 | 145 | 136 | |
| 08 | XC | 0.7* | 1.55 | 309 | 232 | 185 | 155 | 132 | 116 | 103 | 93 | 84 | 77 | 71 | 66 | 62 | |
| | VC | 1* | 1.85 | 370 | 277 | 222 | 185 | 158 | 139 | 123 | 111 | 101 | 92 | 85 | 79 | 74 | ★★ >75% 0.7 BAR ★★ 50-75% 0.71-3.0 BAR |
| | VC | 1.5 | 2.26 | 453 | 339 | 272 | 226 | 194 | 170 | 151 | 136 | 123 | 113 | 104 | 97 | 91 | |
| | C | 2 | 2.61 | 523 | 392 | 314 | 261 | 224 | 196 | 174 | 157 | 143 | 131 | 121 | 112 | 105 | |
| | C | 2.5 | 2.92 | 584 | 438 | 351 | 292 | 250 | 219 | 195 | 175 | 159 | 146 | 135 | 125 | 117 | |
| | C | 3 | 3.20 | 640 | 480 | 384 | 320 | 274 | 240 | 213 | 192 | 175 | 160 | 148 | 137 | 128 | |
| | M | 4 | 3.70 | 739 | 554 | 443 | 370 | 317 | 277 | 246 | 222 | 202 | 185 | 171 | 158 | 148 | |
| | M | 5 | 4.13 | 826 | 620 | 496 | 413 | 354 | 310 | 275 | 248 | 225 | 207 | 191 | 177 | 165 | |
| | M | 6 | 4.53 | 905 | 679 | 543 | 453 | 388 | 339 | 302 | 272 | 247 | 226 | 209 | 194 | 181 | |

*For pressures lower than 1 BAR, nozzle spray angle may be reduced and will require a boom height of 75 cm to maintain spray distribution.

| Features | |
|---|---|
| Common Use | Weed control, plant health |
| Pattern | Alternating Tapered Flat Fans |
| Technology | Advanced Tapered Flat Fan |
| Material | Polyacetal |
| Spray Angle | 100° |
| Pressure Range | 10-90 PSI (0.7-6 BAR) |
| Configuration | Tips, SnapLock |
| **Optimum Boom Height** | |
| 15" (35cm) Spacing | 15-25" (35-60 cm) |
| 20" (50cm) Spacing | 20-30" (50-75 cm) |

| Part Numbers | |
|---|---|
| Tips | FastCaps |
| 3D100-015 | FC-3D100-015 |
| 3D100-02 | FC-3D100-02 |
| 3D100-025 | FC-3D100-025 |
| 3D100-03 | FC-3D100-03 |
| 3D100-035 | FC-3D100-035 |
| 3D100-04 | FC-3D100-04 |
| 3D100-05 | FC-3D100-05 |
| 3D100-06 | FC-3D100-06 |
| 3D100-08 | FC-3D100-08 |

| Replacement Tip Strainer | |
|---|---|
| TS01-50 | 50# strainer for all sizes |

# GUARDIANAIR TWIN 110°

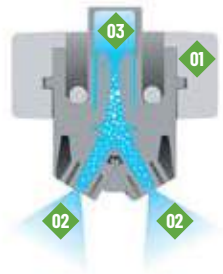
GuardianAIR Twin spray nozzles are the best choice for high coverage applications where on-target spray delivery is important. They are ideal for low crops with complex canopies, such as vegetables, where thorough coverage of the target and protection of the surroundings are of high importance.

- High-coverage forward and rear facing fans provide coverage on both sides of target.
- Engineered to provide better coverage with more drops per gallon or litre compared to other air-induced sprays
- Easy-to-install, patent-pending locking ring and o-ring seal design
- FastCap complete includes nozzle, cap, gasket and is available with or without a filter

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gallons per Acre | | | | | | | | | | | | | | | |
| | | | | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5 | 25 | 27.5 | 30 | 32.5 | 35 | 37.5 | 40 |
| 02 | C | 30 | 0.17 | 20.6 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | M | 40 | 0.20 | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | M | 50 | 0.22 | 26.6 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | M | 60 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | M | 70 | 0.26 | - | 15.7 | 10.5 | 7.9 | 6.3 | 5.2 | 4.5 | 3.9 | 3.5 | 3.1 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 2.0 |
| | M | 80 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | M | 90 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | F | 100 | 0.32 | - | 18.8 | 12.5 | 9.4 | 7.5 | 6.3 | 5.4 | 4.7 | 4.2 | 3.8 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 | 2.3 |
| | F | 115 | 0.34 | - | 20.1 | 13.4 | 10.1 | 8.1 | 6.7 | 5.8 | 5.0 | 4.5 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 |
| 025 | UC | 30 | 0.22 | 25.7 | 12.9 | 8.6 | 6.4 | 5.1 | 4.3 | 3.7 | 3.2 | 2.9 | 2.6 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 |
| | VC | 40 | 0.25 | 29.7 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.9 |
| | C | 50 | 0.28 | - | 16.6 | 11.1 | 8.3 | 6.6 | 5.5 | 4.7 | 4.2 | 3.7 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | M | 60 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | M | 70 | 0.33 | - | 19.6 | 13.1 | 9.8 | 7.9 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.5 |
| | M | 80 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | M | 90 | 0.38 | - | 22.3 | 14.9 | 11.1 | 8.9 | 7.4 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | M | 100 | 0.40 | - | 23.5 | 15.7 | 11.7 | 9.4 | 7.8 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 115 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.1 |
| 03 | VC | 30 | 0.26 | - | 15.4 | 10.3 | 7.7 | 6.2 | 5.1 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 |
| | C | 40 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | M | 50 | 0.34 | - | 19.9 | 13.3 | 10.0 | 8.0 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 | 3.1 | 2.8 | 2.7 | 2.5 |
| | M | 60 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| | M | 70 | 0.40 | - | 23.6 | 15.7 | 11.8 | 9.4 | 7.9 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 80 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | M | 90 | 0.45 | - | 26.7 | 17.8 | 13.4 | 10.7 | 8.9 | 7.6 | 6.7 | 5.9 | 5.3 | 4.9 | 4.5 | 4.1 | 3.8 | 3.6 | 3.3 |
| | M | 100 | 0.47 | - | 28.2 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | 7.0 | 6.3 | 5.6 | 5.1 | 4.7 | 4.3 | 4.0 | 3.8 | 3.5 |
| | M | 115 | 0.51 | - | - | 20.1 | 15.1 | 12.1 | 10.1 | 8.6 | 7.6 | 6.7 | 6.0 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.8 |
| 035 | XC | 30 | 0.30 | - | 18.0 | 12.0 | 9.0 | 7.2 | 6.0 | 5.1 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | C | 40 | 0.35 | - | 20.8 | 13.9 | 10.4 | 8.3 | 6.9 | 5.9 | 5.2 | 4.6 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | C | 50 | 0.39 | - | 23.2 | 15.5 | 11.6 | 9.3 | 7.7 | 6.6 | 5.8 | 5.2 | 4.6 | 4.2 | 3.9 | 3.6 | 3.3 | 3.1 | 2.9 |
| | M | 60 | 0.43 | - | 25.5 | 17.0 | 12.7 | 10.2 | 8.5 | 7.3 | 6.4 | 5.7 | 5.1 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | M | 70 | 0.46 | - | 27.5 | 18.3 | 13.8 | 11.0 | 9.2 | 7.9 | 6.9 | 6.1 | 5.5 | 5.0 | 4.6 | 4.2 | 3.9 | 3.7 | 3.4 |
| | M | 80 | 0.49 | - | 29.4 | 19.6 | 14.7 | 11.8 | 9.8 | 8.4 | 7.4 | 6.5 | 5.9 | 5.3 | 4.9 | 4.5 | 4.2 | 3.9 | 3.7 |
| | M | 90 | 0.53 | - | - | 20.8 | 15.6 | 12.5 | 10.4 | 8.9 | 7.8 | 6.9 | 6.2 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | M | 100 | 0.55 | - | - | 21.9 | 16.4 | 13.1 | 11.0 | 9.4 | 8.2 | 7.3 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.1 |
| | M | 115 | 0.59 | - | - | 23.5 | 17.6 | 14.1 | 11.8 | 10.1 | 8.8 | 7.8 | 7.1 | 6.4 | 5.9 | 5.4 | 5.0 | 4.7 | 4.4 |
| 04 | VC | 30 | 0.35 | - | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 | 3.2 | 2.9 | 2.7 | 2.6 |
| | C | 40 | 0.40 | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | C | 50 | 0.45 | - | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 |
| | M | 60 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | M | 70 | 0.53 | - | - | 21.0 | 15.7 | 12.6 | 10.5 | 9.0 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | M | 80 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | M | 90 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | M | 100 | 0.63 | - | - | 25.0 | 18.8 | 15.0 | 12.5 | 10.7 | 9.4 | 8.3 | 7.5 | 6.8 | 6.3 | 5.8 | 5.4 | 5.0 | 4.7 |
| | M | 115 | 0.68 | - | - | 26.9 | 20.1 | 16.1 | 13.4 | 11.5 | 10.1 | 9.0 | 8.1 | 7.3 | 6.7 | 6.2 | 5.8 | 5.4 | 5.0 |
| 05 | VC | 30 | 0.43 | - | 25.7 | 17.1 | 12.9 | 10.3 | 8.6 | 7.3 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 |
| | C | 40 | 0.50 | - | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 | 4.6 | 4.2 | 4.0 | 3.7 |
| | C | 50 | 0.56 | - | - | 22.1 | 16.6 | 13.3 | 11.1 | 9.5 | 8.3 | 7.4 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.2 |
| | M | 60 | 0.61 | - | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| | M | 70 | 0.66 | - | - | 26.2 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.9 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 |
| | M | 80 | 0.71 | - | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.3 |
| | M | 90 | 0.75 | - | - | 29.7 | 22.3 | 17.8 | 14.9 | 12.7 | 11.1 | 9.9 | 8.9 | 8.1 | 7.4 | 6.9 | 6.4 | 5.9 | 5.6 |
| | M | 100 | 0.79 | - | - | - | 23.5 | 18.8 | 15.7 | 13.4 | 11.7 | 10.4 | 9.4 | 8.5 | 7.8 | 7.2 | 6.7 | 6.3 | 5.9 |
| | M | 115 | 0.85 | - | - | - | 25.2 | 20.1 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.7 | 7.2 | 6.7 | 6.3 |
| 06 | XC | 30 | 0.52 | - | - | 20.6 | 15.4 | 12.3 | 10.3 | 8.8 | 7.7 | 6.9 | 6.2 | 5.6 | 5.1 | 4.7 | 4.4 | 4.1 | 3.9 |
| | C | 40 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | C | 50 | 0.67 | - | - | 26.6 | 19.9 | 15.9 | 13.3 | 11.4 | 10.0 | 8.9 | 8.0 | 7.2 | 6.6 | 6.1 | 5.7 | 5.3 | 5.0 |
| | C | 60 | 0.73 | - | - | 29.1 | 21.8 | 17.5 | 14.5 | 12.5 | 10.9 | 9.7 | 8.7 | 7.9 | 7.3 | 6.7 | 6.2 | 5.8 | 5.5 |
| | M | 70 | 0.79 | - | - | - | 23.6 | 18.9 | 15.7 | 13.5 | 11.8 | 10.5 | 9.4 | 8.6 | 7.9 | 7.3 | 6.7 | 6.3 | 5.9 |
| | M | 80 | 0.85 | - | - | - | 25.2 | 20.2 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.8 | 7.2 | 6.7 | 6.3 |
| | M | 90 | 0.90 | - | - | - | 26.7 | 21.4 | 17.8 | 15.3 | 13.4 | 11.9 | 10.7 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.7 |
| | M | 100 | 0.95 | - | - | - | 28.2 | 22.5 | 18.8 | 16.1 | 14.1 | 12.5 | 11.3 | 10.2 | 9.4 | 8.7 | 8.1 | 7.5 | 7.0 |
| | M | 115 | 1.02 | - | - | - | - | 24.2 | 20.1 | 17.3 | 15.1 | 13.4 | 12.1 | 11.0 | 10.1 | 9.3 | 8.6 | 8.1 | 7.6 |
| 08 | VC | 30 | 0.69 | - | - | 27.4 | 20.6 | 16.5 | 13.7 | 11.8 | 10.3 | 9.1 | 8.2 | 7.5 | 6.9 | 6.3 | 5.9 | 5.5 | 5.1 |
| | C | 40 | 0.80 | - | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 5.9 |
| | C | 50 | 0.89 | - | - | - | 26.6 | 21.3 | 17.7 | 15.2 | 13.3 | 11.8 | 10.6 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.6 |
| | C | 60 | 0.98 | - | - | - | 29.1 | 23.3 | 19.4 | 16.6 | 14.5 | 12.9 | 11.6 | 10.6 | 9.7 | 9.0 | 8.3 | 7.8 | 7.3 |
| | M | 70 | 1.06 | - | - | - | - | 25.2 | 21.0 | 18.0 | 15.7 | 14.0 | 12.6 | 11.4 | 10.5 | 9.7 | 9.0 | 8.4 | 7.9 |
| | M | 80 | 1.13 | - | - | - | - | 26.9 | 22.4 | 19.2 | 16.8 | 14.9 | 13.4 | 12.2 | 11.2 | 10.3 | 9.6 | 9.0 | 8.4 |
| | M | 90 | 1.20 | - | - | - | - | 28.5 | 23.8 | 20.4 | 17.8 | 15.8 | 14.3 | 13.0 | 11.9 | 11.0 | 10.2 | 9.5 | 8.9 |
| | M | 100 | 1.26 | - | - | - | - | - | 25.0 | 21.5 | 18.8 | 16.7 | 15.0 | 13.7 | 12.5 | 11.6 | 10.7 | 10.0 | 9.4 |
| | M | 115 | 1.36 | - | - | - | - | - | 26.9 | 23.0 | 20.1 | 17.9 | 16.1 | 14.6 | 13.4 | 12.4 | 11.5 | 10.7 | 10.1 |

Droplet size based on ASABE S572.1 standard.




01. Integrated Locking Collar allows for precise and easy installation
02. Twin Air Inducted spray patterns (30° offset) for superior coverage
03 Available with or without filter options

# GUARDIANAIR TWIN 110°

110° air inducted spray pattern for class leading coverage on a variety of targets.

Sturdy twin 30° incline/decline patterns provide superior canopy penetration through pattern integrity.

**Z.N.T.**

See http://pentair.com/certifications for the latest drift reduction standard information.

## METRIC UNITS

| Nozzle Size | Droplet Size | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - 50 cm Spacing KM/H 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | Drift Reduction Standards LERAP | JKI | Z.N.T. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 02 | C | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 | ★★ 50-75% 2.0-2.25 BAR ★ 25-50% 2.25-2.5 BAR | | 66% 2.0-2.5 BAR |
| | M | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 | | | |
| | M | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | | | |
| | M | 5 | 1,03 | 177 | 155 | 124 | 103 | 82 | 62 | 49 | 41 | | | |
| | M | 6 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 | | | |
| | F | 7 | 1,22 | 209 | 183 | 146 | 122 | 98 | 73 | 59 | 49 | | | |
| | F | 8 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 | | | |
| 025 | UC | 2 | 0,82 | 141 | 123 | 98 | 82 | 66 | 49 | 39 | 33 | ★★ 50-75% 2.0-2.25 BAR ★ 25-50% 2.25-2.5BAR | 50% 2.0-2.5 BAR Ref # G-1872 | 66% 2.0-2.5 BAR |
| | VC | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 | | | |
| | M | 4 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 | | | |
| | M | 5 | 1,29 | 221 | 194 | 155 | 129 | 103 | 77 | 62 | 52 | | | |
| | M | 6 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 | | | |
| | M | 7 | 1,53 | 262 | 230 | 184 | 153 | 122 | 92 | 73 | 61 | | | |
| | M | 8 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 | | | |
| 03 | VC | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 | ★★ 50-75% 2.0-3.0 BAR ★ 25-50% 3.0-4.0 BAR | 50% 2.0-3.0 BAR Ref # G-1874 | 66% 2.0-3.0 BAR |
| | C | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 | | | |
| | M | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 | | | |
| | M | 5 | 1,55 | 266 | 233 | 186 | 155 | 124 | 93 | 74 | 62 | | | |
| | M | 6 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 | | | |
| | M | 7 | 1,83 | 314 | 275 | 220 | 183 | 146 | 110 | 88 | 73 | | | |
| | M | 8 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 | | | |
| 035 | XC | 2 | 1,14 | 195 | 171 | 137 | 114 | 91 | 68 | 55 | 46 | ★★ 50-75% 2.0-2.5 BAR | 75% 1.5-2.0 BAR 50% 2.1-3.0 BAR Ref # G-1988 | |
| | C | 3 | 1,40 | 240 | 210 | 168 | 140 | 112 | 84 | 67 | 56 | | | |
| | M | 4 | 1,62 | 278 | 243 | 194 | 162 | 130 | 97 | 78 | 65 | | | |
| | M | 5 | 1,81 | 310 | 272 | 217 | 181 | 145 | 109 | 87 | 72 | | | |
| | M | 6 | 1,98 | 339 | 297 | 238 | 198 | 158 | 119 | 95 | 79 | | | |
| | M | 7 | 2,14 | 367 | 321 | 257 | 214 | 171 | 128 | 103 | 86 | | | |
| | M | 8 | 2,29 | 393 | 344 | 275 | 229 | 183 | 137 | 110 | 92 | | | |
| 04 | VC | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 | ★ 25-50% 2.0-3.0 BAR | 50% 2.0-2.5 BAR Ref # G-1875 | 66% 2.0-3.0 BAR |
| | C | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 | | | |
| | M | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 | | | |
| | M | 5 | 2,07 | 355 | 311 | 248 | 207 | 166 | 124 | 99 | 83 | | | |
| | M | 6 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 | | | |
| | M | 7 | 2,44 | 418 | 366 | 293 | 244 | 195 | 146 | 117 | 98 | | | |
| | M | 8 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 | | | |
| 05 | VC | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 | ★★ 50-75% 2.0-3.0 BAR ★ 25-50% 3.0-3.5 BAR | 50% 2.0-3.0 BAR Ref # G-1876 | 66% 2.0-3.0 BAR |
| | C | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 | | | |
| | M | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 | | | |
| | M | 5 | 2,58 | 442 | 387 | 310 | 258 | 206 | 155 | 124 | 103 | | | |
| | M | 6 | 2,83 | 485 | 425 | 340 | 283 | 226 | 170 | 136 | 113 | | | |
| | M | 7 | 3,06 | 525 | 459 | 367 | 306 | 245 | 184 | 147 | 122 | | | |
| | M | 8 | 3,27 | 561 | 491 | 392 | 327 | 262 | 196 | 157 | 131 | | | |
| 06 | | 2 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 | ★★ 50-75% 2.0-3.0 BAR ★ 25-50% 3.0-3.5 BAR | 50% 2.0-4.0 BAR Ref # G-1877 | 66% 2.0-3.0 BAR |
| | C | 3 | 2,40 | 411 | 360 | 288 | 240 | 192 | 144 | 115 | 96 | | | |
| | C | 4 | 2,77 | 475 | 416 | 332 | 277 | 222 | 166 | 133 | 111 | | | |
| | M | 5 | 3,10 | 531 | 465 | 372 | 310 | 248 | 186 | 149 | 124 | | | |
| | M | 6 | 3,39 | 581 | 509 | 407 | 339 | 271 | 203 | 163 | 136 | | | |
| | M | 7 | 3,67 | 629 | 551 | 440 | 367 | 294 | 220 | 176 | 147 | | | |
| | M | 8 | 3,92 | 672 | 588 | 470 | 392 | 314 | 235 | 188 | 157 | | | |
| 08 | VC | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 | ★★ 50-75% 2.0-3.0 BAR ★ 25-50% 3.0-4.0 BAR | 50% 2.0-6.0 BAR Ref # G-1878 | 66% 2.0-3.0 BAR |
| | C | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 | | | |
| | C | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 | | | |
| | M | 5 | 4,13 | 708 | 620 | 496 | 413 | 330 | 248 | 198 | 165 | | | |
| | M | 6 | 4,53 | 777 | 680 | 544 | 453 | 362 | 272 | 217 | 181 | | | |
| | M | 7 | 4,89 | 838 | 734 | 587 | 489 | 391 | 293 | 235 | 196 | | | |
| | M | 8 | 5,23 | 897 | 785 | 628 | 523 | 418 | 314 | 251 | 209 | | | |

Droplet size based on ASABE S572.1 standard.
Use at 3 bar for optimum coverage.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Air Induction |
| Material | Polyacetal |
| Spray Angle | 110° |
| Pressure Range | 30-115 PSI (2-8 BAR) |
| Configuration | FastCap Complete |
| **Optimum Boom Height** | |
| 15" (35 cm) Spacing | 15" (35 cm) |
| 20" (50 cm) Spacing | 20" (50 cm) |
| **Part Numbers (Bags of 10)** | |
| **FastCaps 110° with filter** | **FastCaps 110° without filter** |
| GAT110-02 | GAT110-02A |
| GAT110-025 | GAT110-025A |
| GAT110-03 | GAT110-03A |
| GAT110-035 | GAT110-035A |
| GAT110-04 | GAT110-04A |
| GAT110-05 | GAT110-05A |
| GAT110-06 | GAT110-06A |
| GAT110-08 | GAT110-08A |
| **Replacement Parts** | |
| TS02-50 | 50 mesh strainer for all sizes |
| 65-BS205 | O-Ring |
| 3003579A | Replaceable cage for non-filter versions |

Available for order through HYPRO -EU only (Cambridge, UK)

# GUARDIANAIR 110°

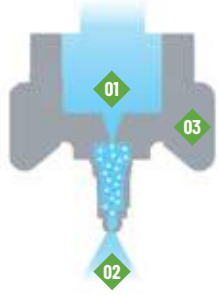
The Hypro GuardianAIR spray nozzle has a unique rearward spray incline provides more uniform coverage. Higher flow nozzles used at faster speeds have a greater spray incline.

- Air-induced sprays reduce drift while increasing droplet deposition and retention on foliage
- Provides better coverage with more drops per gallon or litre compared to other common air-induced spray nozzles
- Speed-optimized spray incline allows more uniform coverage
- Specifically engineered nozzle to maintain droplet spectrum regardless of orifice size
- FastCap includes nozzle, cap and gasket

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gallons per Acre | | | | | | | | | | | | | | |
| | | | | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5 | 25 | 27.5 | 30 | 32.5 | 35 | 37.5 | 40 |
| 015 | UC | 20 | 0.11 | 12.6 | 6.3 | 4.2 | 3.2 | 2.5 | 2.1 | 1.8 | 1.6 | 1.4 | 1.3 | 1.1 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 |
| | XC | 30 | 0.13 | 15.4 | 7.7 | 5.1 | 3.9 | 3.1 | 2.6 | 2.2 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 |
| | C | 40 | 0.15 | 17.8 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | C | 50 | 0.17 | 19.9 | 10.0 | 6.6 | 5.0 | 4.0 | 3.3 | 2.8 | 2.5 | 2.2 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 |
| | M | 60 | 0.18 | 21.8 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| | M | 70 | 0.20 | 23.6 | 11.8 | 7.9 | 5.9 | 4.7 | 3.9 | 3.4 | 2.9 | 2.6 | 2.4 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | M | 80 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | M | 90 | 0.23 | 26.7 | 13.4 | 8.9 | 6.7 | 5.3 | 4.5 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 | 1.7 |
| | M | 100 | 0.24 | 28.2 | 14.1 | 9.4 | 7.0 | 5.6 | 4.7 | 4.0 | 3.5 | 3.1 | 2.8 | 2.6 | 2.3 | 2.2 | 2.0 | 1.9 | 1.8 |
| | M | 115 | 0.25 | - | 15.1 | 10.1 | 7.6 | 6.0 | 5.0 | 4.3 | 3.8 | 3.4 | 3.0 | 2.7 | 2.5 | 2.3 | 2.2 | 2.0 | 1.9 |
| 02 | XC | 20 | 0.14 | 16.8 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| | VC | 30 | 0.17 | 20.6 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | M | 40 | 0.20 | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | M | 50 | 0.22 | 26.6 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | M | 60 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | M | 70 | 0.26 | - | 15.7 | 10.5 | 7.9 | 6.3 | 5.2 | 4.5 | 3.9 | 3.5 | 3.1 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 2.0 |
| | M | 80 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | M | 90 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | M | 100 | 0.32 | - | 18.8 | 12.5 | 9.4 | 7.5 | 6.3 | 5.4 | 4.7 | 4.2 | 3.8 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 | 2.3 |
| | M | 115 | 0.34 | - | 20.1 | 13.4 | 10.1 | 8.1 | 6.7 | 5.8 | 5.0 | 4.5 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 |
| 025 | XC | 20 | 0.18 | 21.0 | 10.5 | 7.0 | 5.3 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 |
| | VC | 30 | 0.22 | 25.7 | 12.9 | 8.6 | 6.4 | 5.1 | 4.3 | 3.7 | 3.2 | 2.9 | 2.6 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 |
| | C | 40 | 0.25 | 29.7 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.9 |
| | M | 50 | 0.28 | - | 16.6 | 11.1 | 8.3 | 6.6 | 5.5 | 4.7 | 4.2 | 3.7 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | M | 60 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | M | 70 | 0.33 | - | 19.6 | 13.1 | 9.8 | 7.9 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.5 |
| | M | 80 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | M | 90 | 0.38 | - | 22.3 | 14.9 | 11.1 | 8.9 | 7.4 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | M | 100 | 0.40 | - | 23.5 | 15.7 | 11.7 | 9.4 | 7.8 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 115 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.1 |
| 03 | UC | 20 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | XC | 30 | 0.26 | - | 15.4 | 10.3 | 7.7 | 6.2 | 5.1 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 |
| | VC | 40 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | C | 50 | 0.34 | - | 19.9 | 13.3 | 10.0 | 8.0 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 | 3.1 | 2.8 | 2.7 | 2.5 |
| | C | 60 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| | M | 70 | 0.40 | - | 23.6 | 15.7 | 11.8 | 9.4 | 7.9 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 80 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | M | 90 | 0.45 | - | 26.7 | 17.8 | 13.4 | 10.7 | 8.9 | 7.6 | 6.7 | 5.9 | 5.3 | 4.9 | 4.5 | 4.1 | 3.8 | 3.6 | 3.3 |
| | M | 100 | 0.47 | - | 28.2 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | 7.0 | 6.3 | 5.6 | 5.1 | 4.7 | 4.3 | 4.0 | 3.8 | 3.5 |
| | M | 115 | 0.51 | - | - | 20.1 | 15.1 | 12.1 | 10.1 | 8.6 | 7.6 | 6.7 | 6.0 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.8 |
| 04 | XC | 20 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | VC | 30 | 0.35 | - | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 | 3.2 | 2.9 | 2.7 | 2.6 |
| | C | 40 | 0.40 | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | C | 50 | 0.45 | - | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 |
| | M | 60 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | M | 70 | 0.53 | - | - | 21.0 | 15.7 | 12.6 | 10.5 | 9.0 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | M | 80 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | M | 90 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | M | 100 | 0.63 | - | - | 25.0 | 18.8 | 15.0 | 12.5 | 10.7 | 9.4 | 8.3 | 7.5 | 6.8 | 6.3 | 5.8 | 5.4 | 5.0 | 4.7 |
| | M | 115 | 0.68 | - | - | 26.9 | 20.1 | 16.1 | 13.4 | 11.5 | 10.1 | 9.0 | 8.1 | 7.3 | 6.7 | 6.2 | 5.8 | 5.4 | 5.0 |
| 05 | XC | 20 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | XC | 30 | 0.43 | - | 25.7 | 17.1 | 12.9 | 10.3 | 8.6 | 7.3 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 |
| | C | 40 | 0.50 | - | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 | 4.6 | 4.2 | 4.0 | 3.7 |
| | C | 50 | 0.56 | - | - | 22.1 | 16.6 | 13.3 | 11.1 | 9.5 | 8.3 | 7.4 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.2 |
| | C | 60 | 0.61 | - | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| | M | 70 | 0.66 | - | - | 26.2 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.9 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 |
| | M | 80 | 0.71 | - | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.3 |
| | M | 90 | 0.75 | - | - | 29.7 | 22.3 | 17.8 | 14.9 | 12.7 | 11.1 | 9.9 | 8.9 | 8.1 | 7.4 | 6.9 | 6.4 | 5.9 | 5.6 |
| | M | 100 | 0.79 | - | - | 31.3 | 23.5 | 18.8 | 15.7 | 13.4 | 11.7 | 10.4 | 9.4 | 8.5 | 7.8 | 7.2 | 6.7 | 6.3 | 5.9 |
| | M | 115 | 0.85 | - | - | 33.6 | 25.2 | 20.1 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.7 | 7.2 | 6.7 | 6.3 |

Droplet size based on ASABE S572.1 standard.




01. Single Inlet; Air Inducted Technology
02. Inclined spray pattern provides more uniform coverage
03. Available in a Fastcap option for easy installation

# GUARDIANAIR 110°

Flexible 110° air inducted spray pattern capable of meeting many spraying situations.

Unique angle of incline specifically engineered to maximize droplet deposition on vertical targets.

Z.N.T.

See http://pentair.com/certifications for the latest drift reduction standard information.

## METRIC UNITS

| Nozzle Size | Droplet Size | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha -50 cm Spacing KM/H 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | Drift Reduction Standards LERAP | JKI | Z.N.T. | TCT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 015 | UC | 1 | 0,35 | 60 | 53 | 42 | 35 | 28 | 21 | 17 | 14 | ★★★ 75% + 1.0-1.25 BAR ★★ 50-75% 1.3-2.0 BAR | | 66% 1.0-2.0 BAR | 50% 1.3-2.0 BAR |
| | UC | 1,5 | 0,42 | 72 | 63 | 50 | 42 | 34 | 25 | 20 | 17 | | | | |
| | XC | 2 | 0,49 | 84 | 74 | 59 | 49 | 39 | 29 | 24 | 20 | | | | |
| | C | 3 | 0,60 | 103 | 90 | 72 | 60 | 48 | 36 | 29 | 24 | | | | |
| | M | 4 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 | | | | |
| | M | 5 | 0,77 | 132 | 116 | 92 | 77 | 62 | 46 | 37 | 31 | | | | |
| | M | 6 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 | | | | |
| | M | 7 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | | | | |
| | M | 8 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 | | | | |
| 02 | UC | 1 | 0,46 | 79 | 69 | 55 | 46 | 37 | 28 | 22 | 18 | ★★★ 75% + 1.0-1.25 BAR ★★ 50-75% 1.3-2.0 BAR | 50% 1.0-2.0 BAR Ref # G-1812 | 66% 1.0-3.0 BAR | 50% 1.3-2.0 BAR |
| | XC | 1,5 | 0,57 | 98 | 86 | 68 | 57 | 46 | 34 | 27 | 23 | | | | |
| | VC | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 | | | | |
| | M | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 | | | | |
| | M | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | | | | |
| | M | 5 | 1,03 | 177 | 155 | 124 | 103 | 82 | 62 | 49 | 41 | | | | |
| | M | 6 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 | | | | |
| | M | 7 | 1,22 | 209 | 183 | 146 | 122 | 98 | 73 | 59 | 49 | | | | |
| | M | 8 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 | | | | |
| 025 | UC | 1 | 0,58 | 99 | 87 | 70 | 58 | 46 | 35 | 28 | 23 | ★★★ 75% + 1.0-1.5 BAR ★★ 50-75% 1.6-2.5 BAR | 50% 1.0-2.5 BAR Ref # G-1817 | 66% 1.0-3.0 BAR | 75% 1.0-1.5 BAR 50% 1.6-2.5 BAR |
| | XC | 1,5 | 0,71 | 122 | 107 | 85 | 71 | 57 | 43 | 34 | 28 | | | | |
| | VC | 2 | 0,82 | 141 | 123 | 98 | 82 | 66 | 49 | 39 | 33 | | | | |
| | C | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 | | | | |
| | M | 4 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 | | | | |
| | M | 5 | 1,29 | 221 | 194 | 155 | 129 | 103 | 77 | 62 | 52 | | | | |
| | M | 6 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 | | | | |
| | M | 7 | 1,53 | 262 | 230 | 184 | 153 | 122 | 92 | 73 | 61 | | | | |
| | M | 8 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 | | | | |
| 03 | UC | 1 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 | ★★★ 75% + 1.0-1.5 BAR ★★ 50-75% 1.6-2.5 BAR | 75% 1.5 BAR 50% 1.6-2.5 BAR Ref # G-1813 | 66% 1.0-4.0 BAR | 75% 1.0-1.5 BAR 50% 1.6-2.5 BAR |
| | UC | 1,5 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 | | | | |
| | XC | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 | | | | |
| | VC | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 | | | | |
| | C | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 | | | | |
| | M | 5 | 1,55 | 266 | 233 | 186 | 155 | 124 | 93 | 74 | 62 | | | | |
| | M | 6 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 | | | | |
| | M | 7 | 1,83 | 314 | 275 | 220 | 183 | 146 | 110 | 88 | 73 | | | | |
| | M | 8 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 | | | | |
| 04 | UC | 1 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | ★★★ 75% + 1.0-1.5 BAR ★★ 50-75% 1.6-4.0 BAR | 75% 1.0-1.5 BAR 50% 1.6-2.5 BAR Ref # G-1814 | 66% 1.0-4.0 BAR | 75% 1.0-1.5 BAR 50% 1.6-4.0 BAR |
| | XC | 1,5 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 | | | | |
| | VC | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 | | | | |
| | C | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 | | | | |
| | M | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 | | | | |
| | M | 5 | 2,07 | 355 | 311 | 248 | 207 | 166 | 124 | 99 | 83 | | | | |
| | M | 6 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 | | | | |
| | M | 7 | 2,44 | 418 | 366 | 293 | 244 | 195 | 146 | 117 | 98 | | | | |
| | M | 8 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 | | | | |
| 05 | UC | 1 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 | ★★★ 75% + 1.0-1.5 BAR ★★ 50-75% 1.6-4.0 BAR | 75% 1.0-1.5 BAR 50% 1.6-2.5 BAR Ref # G-1815 | 66% 1.0-4.0 BAR | 75% 1.0-1.5 BAR 50% 1.6-4.0 BAR |
| | XC | 1,5 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 | | | | |
| | XC | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 | | | | |
| | C | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 | | | | |
| | C | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 | | | | |
| | M | 5 | 2,58 | 442 | 387 | 310 | 258 | 206 | 155 | 124 | 103 | | | | |
| | M | 6 | 2,83 | 485 | 425 | 340 | 283 | 226 | 170 | 136 | 113 | | | | |
| | M | 7 | 3,06 | 525 | 459 | 367 | 306 | 245 | 184 | 147 | 122 | | | | |
| | M | 8 | 3,27 | 561 | 491 | 392 | 327 | 262 | 196 | 157 | 131 | | | | |

Droplet size based on ASABE S572.1 standard.
Use at 3 bar for optimum coverage.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Air Induction |
| Material | Polyacetal |
| Spray Angle | 110° |
| Pressure Range | 20-115 PSI (1-8 BAR) |
| Configuration | Nozzles, FastCap |

| Optimum Boom Height | |
|---|---|
| 15" (35 cm) Spacing | 15" (35 cm) |
| 20" (50 cm) Spacing | 20" (50 cm) |

| Part Numbers (Bags of 10) | |
|---|---|
| Nozzles 110° | FastCaps 110° |
| GA110-015 | FC-GA110-015 |
| GA110-02 | FC-GA110-02 |
| GA110-025 | FC-GA110-025 |
| GA110-03 | FC-GA110-03 |
| GA110-035 | FC-GA110-035 |
| GA110-04 | FC-GA110-04 |
| GA110-05 | FC-GA110-05 |

| Replacement Cap Gasket |
|---|
| 10BG-2270-0150 |

# GUARDIAN 120°

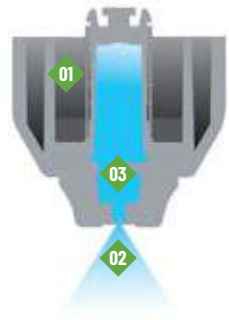
Guardian spray nozzles are ideal for insecticide and fungicide applications especially when used with suspension based adjuvants. The Guardian's unique 20° inclined spray pattern allows users to aim the spray rearward for general spraying, forward for vertical targets, or alternate nozzles to create a twin spray.

- Pre-orifice design for courser spray availability the flat fans
- PWM system compatible
- A bold arrow indicates incline direction for easy installation
- FastCap complete includes nozzle, cap, gasket and integrated strainers

## US UNITS

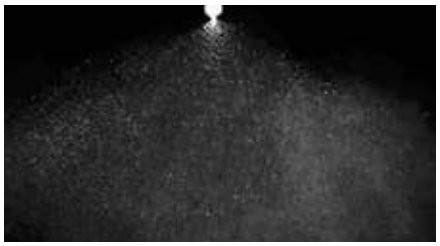
| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gallons per Acre | | | | | | | | | | | | | | |
| | | | | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5 | 25 | 27.5 | 30 | 32.5 | 35 | 37.5 | 40 |
| 015 | - | 20 | 0.11 | 12.6 | 6.3 | 4.2 | 3.2 | 2.5 | 2.1 | 1.8 | 1.6 | 1.4 | 1.3 | 1.1 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 |
| | M | 30 | 0.13 | 15.4 | 7.7 | 5.1 | 3.9 | 3.1 | 2.6 | 2.2 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 |
| | M | 40 | 0.15 | 17.8 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | M | 50 | 0.17 | 19.9 | 10.0 | 6.6 | 5.0 | 4.0 | 3.3 | 2.8 | 2.5 | 2.2 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 |
| | M | 60 | 0.18 | 21.8 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| | F | 70 | 0.20 | 23.6 | 11.8 | 7.9 | 5.9 | 4.7 | 3.9 | 3.4 | 2.9 | 2.6 | 2.4 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | F | 80 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | F | 90 | 0.23 | 26.7 | 13.4 | 8.9 | 6.7 | 5.3 | 4.5 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 | 1.7 |
| | F | 100 | 0.24 | 28.2 | 14.1 | 9.4 | 7.0 | 5.6 | 4.7 | 4.0 | 3.5 | 3.1 | 2.8 | 2.6 | 2.3 | 2.2 | 2.0 | 1.9 | 1.8 |
| | F | 115 | 0.25 | - | 15.1 | 10.1 | 7.6 | 6.0 | 5.0 | 4.3 | 3.8 | 3.4 | 3.0 | 2.7 | 2.5 | 2.3 | 2.2 | 2.0 | 1.9 |
| 02 | - | 20 | 0.14 | 16.8 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| | M | 30 | 0.17 | 20.6 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | M | 40 | 0.20 | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | M | 50 | 0.22 | 26.6 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | M | 60 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | M | 70 | 0.26 | - | 15.7 | 10.5 | 7.9 | 6.3 | 5.2 | 4.5 | 3.9 | 3.5 | 3.1 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 2.0 |
| | M | 80 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | M | 90 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | M | 100 | 0.32 | - | 18.8 | 12.5 | 9.4 | 7.5 | 6.3 | 5.4 | 4.7 | 4.2 | 3.8 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 | 2.3 |
| | F | 115 | 0.34 | - | 20.1 | 13.4 | 10.1 | 8.1 | 6.7 | 5.8 | 5.0 | 4.5 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 |
| 025 | - | 20 | 0.18 | 21.0 | 10.5 | 7.0 | 5.3 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 |
| | M | 30 | 0.22 | 25.7 | 12.9 | 8.6 | 6.4 | 5.1 | 4.3 | 3.7 | 3.2 | 2.9 | 2.6 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 |
| | M | 40 | 0.25 | 29.7 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.9 |
| | M | 50 | 0.28 | - | 16.6 | 11.1 | 8.3 | 6.6 | 5.5 | 4.7 | 4.2 | 3.7 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | M | 60 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | M | 70 | 0.33 | - | 19.6 | 13.1 | 9.8 | 7.9 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.5 |
| | M | 80 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | M | 90 | 0.38 | - | 22.3 | 14.9 | 11.1 | 8.9 | 7.4 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | M | 100 | 0.40 | - | 23.5 | 15.7 | 11.7 | 9.4 | 7.8 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 115 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.1 |
| 03 | C | 20 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | M | 30 | 0.26 | - | 15.4 | 10.3 | 7.7 | 6.2 | 5.1 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 |
| | M | 40 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | M | 50 | 0.34 | - | 19.9 | 13.3 | 10.0 | 8.0 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 | 3.1 | 2.8 | 2.7 | 2.5 |
| | M | 60 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| | M | 70 | 0.40 | - | 23.6 | 15.7 | 11.8 | 9.4 | 7.9 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | M | 80 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | M | 90 | 0.45 | - | 26.7 | 17.8 | 13.4 | 10.7 | 8.9 | 7.6 | 6.7 | 5.9 | 5.3 | 4.9 | 4.5 | 4.1 | 3.8 | 3.6 | 3.3 |
| | M | 100 | 0.47 | - | 28.2 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | 7.0 | 6.3 | 5.6 | 5.1 | 4.7 | 4.3 | 4.0 | 3.8 | 3.5 |
| | M | 115 | 0.51 | - | - | 20.1 | 15.1 | 12.1 | 10.1 | 8.6 | 7.6 | 6.7 | 6.0 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.8 |
| 04 | VC | 20 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | VC | 30 | 0.35 | - | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 | 3.2 | 2.9 | 2.7 | 2.6 |
| | C | 40 | 0.40 | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | C | 50 | 0.45 | - | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 |
| | C | 60 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | M | 70 | 0.53 | - | - | 21.0 | 15.7 | 12.6 | 10.5 | 9.0 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | M | 80 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | M | 90 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | M | 100 | 0.63 | - | - | 25.0 | 18.8 | 15.0 | 12.5 | 10.7 | 9.4 | 8.3 | 7.5 | 6.8 | 6.3 | 5.8 | 5.4 | 5.0 | 4.7 |
| | M | 115 | 0.68 | - | - | 26.9 | 20.1 | 16.1 | 13.4 | 11.5 | 10.1 | 9.0 | 8.1 | 7.3 | 6.7 | 6.2 | 5.8 | 5.4 | 5.0 |
| 05 | XC | 20 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | XC | 30 | 0.43 | - | 25.7 | 17.1 | 12.9 | 10.3 | 8.6 | 7.3 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 |
| | VC | 40 | 0.50 | - | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 | 4.6 | 4.2 | 4.0 | 3.7 |
| | VC | 50 | 0.56 | - | - | 22.1 | 16.6 | 13.3 | 11.1 | 9.5 | 8.3 | 7.4 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.2 |
| | C | 60 | 0.61 | - | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| | M | 70 | 0.66 | - | - | 26.2 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.9 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 |
| | M | 80 | 0.71 | - | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.3 |
| | M | 90 | 0.75 | - | - | 29.7 | 22.3 | 17.8 | 14.9 | 12.7 | 11.1 | 9.9 | 8.9 | 8.1 | 7.4 | 6.9 | 6.4 | 5.9 | 5.6 |
| | M | 100 | 0.79 | - | - | - | 23.5 | 18.8 | 15.7 | 13.4 | 11.7 | 10.4 | 9.4 | 8.5 | 7.8 | 7.2 | 6.7 | 6.3 | 5.9 |
| | F | 115 | 0.85 | - | - | - | 25.2 | 20.1 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.7 | 7.2 | 6.7 | 6.3 |
| 06 | XC | 20 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | XC | 30 | 0.52 | - | - | 20.6 | 15.4 | 12.3 | 10.3 | 8.8 | 7.7 | 6.9 | 6.2 | 5.6 | 5.1 | 4.7 | 4.4 | 4.1 | 3.9 |
| | VC | 40 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | VC | 50 | 0.67 | - | - | 26.6 | 19.9 | 15.9 | 13.3 | 11.4 | 10.0 | 8.9 | 8.0 | 7.2 | 6.6 | 6.1 | 5.7 | 5.3 | 5.0 |
| | C | 60 | 0.73 | - | - | 29.1 | 21.8 | 17.5 | 14.5 | 12.5 | 10.9 | 9.7 | 8.7 | 7.9 | 7.3 | 6.7 | 6.2 | 5.8 | 5.5 |
| | M | 70 | 0.79 | - | - | - | 23.6 | 18.9 | 15.7 | 13.5 | 11.8 | 10.5 | 9.4 | 8.6 | 7.9 | 7.3 | 6.7 | 6.3 | 5.9 |
| | M | 80 | 0.85 | - | - | - | 25.2 | 20.2 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.8 | 7.2 | 6.7 | 6.3 |
| | M | 90 | 0.90 | - | - | - | 26.7 | 21.4 | 17.8 | 15.3 | 13.4 | 11.9 | 10.7 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.7 |
| | M | 100 | 0.95 | - | - | - | 28.2 | 22.5 | 18.8 | 16.1 | 14.1 | 12.5 | 11.3 | 10.2 | 9.4 | 8.7 | 8.1 | 7.5 | 7.0 |
| | M | 115 | 1.02 | - | - | - | - | 24.2 | 20.1 | 17.3 | 15.1 | 13.4 | 12.1 | 11.0 | 10.1 | 9.3 | 8.6 | 8.1 | 7.6 |
| 08 | XC | 20 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | VC | 30 | 0.69 | - | - | 27.4 | 20.6 | 16.5 | 13.7 | 11.8 | 10.3 | 9.1 | 8.2 | 7.5 | 6.9 | 6.3 | 5.9 | 5.5 | 5.1 |
| | C | 40 | 0.80 | - | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 5.9 |
| | M | 50 | 0.89 | - | - | - | 26.6 | 21.3 | 17.7 | 15.2 | 13.3 | 11.8 | 10.6 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.6 |
| | M | 60 | 0.98 | - | - | - | 29.1 | 23.3 | 19.4 | 16.6 | 14.5 | 12.9 | 11.6 | 10.6 | 9.7 | 9.0 | 8.3 | 7.8 | 7.3 |
| | M | 70 | 1.06 | - | - | - | - | 25.1 | 21.0 | 18.0 | 15.7 | 14.0 | 12.6 | 11.4 | 10.5 | 9.7 | 9.0 | 8.4 | 7.9 |
| | M | 80 | 1.13 | - | - | - | - | 26.9 | 22.4 | 19.2 | 16.8 | 14.9 | 13.4 | 12.2 | 11.2 | 10.3 | 9.6 | 9.0 | 8.4 |
| | M | 90 | 1.20 | - | - | - | - | 28.5 | 23.8 | 20.4 | 17.8 | 15.8 | 14.3 | 13.0 | 11.9 | 11.0 | 10.2 | 9.5 | 8.9 |
| | F | 100 | 1.26 | - | - | - | - | - | 25.0 | 21.5 | 18.8 | 16.7 | 15.0 | 13.7 | 12.5 | 11.6 | 10.7 | 10.0 | 9.4 |
| | F | 115 | 1.36 | - | - | - | - | - | 26.9 | 23.0 | 20.1 | 17.9 | 16.1 | 14.6 | 13.4 | 12.4 | 11.5 | 10.7 | 10.1 |

Droplet size based on ASABE S572.1 standard.




01. Unitized spray nozzle design for easy single piece operation
02. 20° spray incline for canopy penetration
03. Non-Air Inducted; Pre-orifice design for excellent performance with suspension solutions

# GUARDIAN 120°



120° wide, non-air inducted spray pattern for superior coverage in many spraying applications.

20° pattern incline; alternate nozzles for a twin spray pattern, excellent for suspension based tank mixes.

## METRIC UNITS

| Nozzle Size | Droplet Size | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha -50 cm Spacing | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | KM/H | | | | | | | |
| | | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 015 | - | 1,5 | 0,42 | 72 | 63 | 50 | 42 | 34 | 25 | 20 | 17 |
| | M | 2 | 0,49 | 84 | 74 | 59 | 49 | 39 | 29 | 24 | 20 |
| | M | 3 | 0,60 | 103 | 90 | 72 | 60 | 48 | 36 | 29 | 24 |
| | M | 4 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 |
| | F | 5 | 0,77 | 132 | 116 | 92 | 77 | 62 | 46 | 37 | 31 |
| | F | 6 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 |
| | F | 7 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| | F | 8 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 |
| 02 | - | 1,5 | 0,57 | 98 | 86 | 68 | 57 | 46 | 34 | 27 | 23 |
| | M | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 |
| | M | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 |
| | M | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| | M | 5 | 1,03 | 177 | 155 | 124 | 103 | 82 | 62 | 49 | 41 |
| | M | 6 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 |
| | M | 7 | 1,22 | 209 | 183 | 146 | 122 | 98 | 73 | 59 | 49 |
| | F | 8 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 |
| 025 | - | 1,5 | 0,71 | 122 | 107 | 85 | 71 | 57 | 43 | 34 | 28 |
| | M | 2 | 0,82 | 141 | 123 | 98 | 82 | 66 | 49 | 39 | 33 |
| | M | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 |
| | M | 4 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 |
| | M | 5 | 1,29 | 221 | 194 | 155 | 129 | 103 | 77 | 62 | 52 |
| | M | 6 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 |
| | M | 7 | 1,53 | 262 | 230 | 184 | 153 | 122 | 92 | 73 | 61 |
| | M | 8 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 |
| 03 | C | 1,5 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 |
| | M | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 |
| | M | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 |
| | M | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 |
| | M | 5 | 1,55 | 266 | 233 | 186 | 155 | 124 | 93 | 74 | 62 |
| | M | 6 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 |
| | M | 7 | 1,83 | 314 | 275 | 220 | 183 | 146 | 110 | 88 | 73 |
| | M | 8 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 |
| 04 | VC | 1,5 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 |
| | VC | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 |
| | C | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 |
| | C | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 |
| | M | 5 | 2,07 | 355 | 311 | 248 | 207 | 166 | 124 | 99 | 83 |
| | M | 6 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 |
| | M | 7 | 2,44 | 418 | 366 | 293 | 244 | 195 | 146 | 117 | 98 |
| | M | 8 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 |
| 05 | XC | 1,5 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 |
| | XC | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 |
| | VC | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 |
| | C | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 |
| | M | 5 | 2,58 | 442 | 387 | 310 | 258 | 206 | 155 | 124 | 103 |
| | M | 6 | 2,83 | 485 | 425 | 340 | 283 | 226 | 170 | 136 | 113 |
| | M | 7 | 3,06 | 525 | 459 | 367 | 306 | 245 | 184 | 147 | 122 |
| | F | 8 | 3,27 | 561 | 491 | 392 | 327 | 262 | 196 | 157 | 131 |
| 06 | XC | 1,5 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 |
| | XC | 2 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 |
| | VC | 3 | 2,40 | 411 | 360 | 288 | 240 | 192 | 144 | 115 | 96 |
| | C | 4 | 2,77 | 475 | 416 | 332 | 277 | 222 | 166 | 133 | 111 |
| | M | 5 | 3,10 | 531 | 465 | 372 | 310 | 248 | 186 | 149 | 124 |
| | M | 6 | 3,39 | 581 | 509 | 407 | 339 | 271 | 203 | 163 | 136 |
| | M | 7 | 3,67 | 629 | 551 | 440 | 367 | 294 | 220 | 176 | 147 |
| | M | 8 | 3,92 | 672 | 588 | 470 | 392 | 314 | 235 | 188 | 157 |
| 08 | XC | 1,5 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 |
| | VC | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 |
| | C | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 |
| | M | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| | M | 5 | 4,13 | 708 | 620 | 496 | 413 | 330 | 248 | 198 | 165 |
| | M | 6 | 4,53 | 777 | 680 | 544 | 453 | 362 | 272 | 217 | 181 |
| | F | 7 | 4,89 | 838 | 734 | 587 | 489 | 391 | 293 | 235 | 196 |
| | F | 8 | 5,23 | 897 | 785 | 628 | 523 | 418 | 314 | 251 | 209 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Pre-Orifice |
| Material | Polyacetal |
| Spray Angle | 120° |
| Pressure Range | 20-115 PSI (1-8 BAR) |
| Configuration | FastCap Complete |

| Optimum Boom Height | |
|---|---|
| 15" (35 cm) Spacing | 15" (35 cm) |
| 20" (50 cm) Spacing | 20" (50 cm) |

| Part Numbers |
|---|
| FastCaps® 120° |
| GRD120-015 |
| GRD120-02 |
| GRD120-025 |
| GRD120-03 |
| GRD120-04 |
| GRD120-05 |
| GRD120-06 |
| GRD120-08 |

| Replacement Nozzle Strainer | |
|---|---|
| TS02-100 | 100 mesh strainer for size 015-03 |
| TS02-50 | 50 mesh strainer for size 04-08 |

| Replacement Cap Gasket |
|---|
| 10BG-2270-0150 |

# LO-DRIFT 80° & 110°

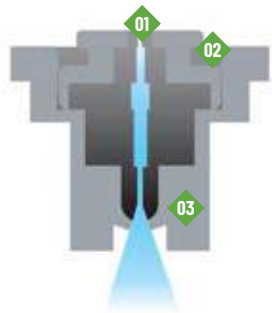
The Lo-Drift is the original drift-reducing nozzle. The special two-part construction includes a pre-orifice, which reduces the number of drift prone droplets.

- Significantly reduces spray drift, widening the operational window
- Balanced droplet size for effective, on-target spray
- PWM system compatible

## US UNITS

| Nozzle Size | Droplet Size | | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing | | | | | | | | GAL/1000 FT² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 80° | 110° | | | MPH | | | | | | | | | | | |
| | | | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 015 | M | M | 20 | 0.11 | 8.2 | 6.5 | 5.4 | 4.1 | 3.3 | 2.7 | 2.2 | 1.6 | 0.38 | 0.25 | 0.19 | 0.15 |
| | M | M | 30 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | M | M | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | M | F | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | M | F | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | M | F | 70 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| 02 | C | M | 20 | 0.14 | 10.4 | 8.3 | 6.9 | 5.2 | 4.2 | 3.5 | 2.8 | 2.1 | 0.48 | 0.32 | 0.24 | 0.19 |
| | C | M | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | M | F | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | M | F | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | M | F | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| | M | F | 70 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| 025 | - | M | 20 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | - | M | 30 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | - | M | 40 | 0.25 | 18.6 | 14.9 | 12.4 | 9.3 | 7.4 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 |
| | - | M | 50 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | - | M | 60 | 0.31 | 23.0 | 18.4 | 15.3 | 11.5 | 9.2 | 7.7 | 6.1 | 4.6 | 1.06 | 0.70 | 0.53 | 0.42 |
| | - | M | 70 | 0.33 | 24.5 | 19.6 | 16.3 | 12.3 | 9.8 | 8.2 | 6.5 | 4.9 | 1.13 | 0.75 | 0.56 | 0.45 |
| 03 | C | C | 20 | 0.21 | 15.6 | 12.5 | 10.4 | 7.8 | 6.2 | 5.2 | 4.2 | 3.1 | 0.72 | 0.48 | 0.36 | 0.29 |
| | C | M | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | C | M | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | M | M | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | M | M | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | M | M | 70 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| 04 | C | C | 20 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | C | M | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | C | M | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | M | M | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | M | M | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | M | M | 70 | 0.53 | 39.4 | 31.5 | 26.2 | 19.7 | 15.7 | 13.1 | 10.5 | 7.9 | 1.81 | 1.20 | 0.90 | 0.72 |
| 05 | C | C | 20 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | C | C | 30 | 0.43 | 31.9 | 25.5 | 21.3 | 16.0 | 12.8 | 10.6 | 8.5 | 6.4 | 1.47 | 0.98 | 0.73 | 0.59 |
| | C | M | 40 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.71 | 1.14 | 0.85 | 0.68 |
| | C | M | 50 | 0.56 | 41.6 | 33.3 | 27.7 | 20.8 | 16.6 | 13.9 | 11.1 | 8.3 | 1.91 | 1.27 | 0.95 | 0.76 |
| | C | M | 60 | 0.61 | 45.3 | 36.2 | 30.2 | 22.6 | 18.1 | 15.1 | 12.1 | 9.1 | 2.08 | 1.39 | 1.04 | 0.83 |
| | M | F | 70 | 0.66 | 49.0 | 39.2 | 32.7 | 24.5 | 19.6 | 16.3 | 13.1 | 9.8 | 2.25 | 1.50 | 1.13 | 0.90 |
| 06 | VC | VC | 20 | 0.42 | 31.2 | 24.9 | 20.8 | 15.6 | 12.5 | 10.4 | 8.3 | 6.2 | 1.43 | 0.95 | 0.72 | 0.57 |
| | VC | C | 30 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | C | M | 40 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | C | M | 50 | 0.67 | 49.7 | 39.8 | 33.2 | 24.9 | 19.9 | 16.6 | 13.3 | 9.9 | 2.28 | 1.52 | 1.14 | 0.91 |
| | C | M | 60 | 0.73 | 54.2 | 43.4 | 36.1 | 27.1 | 21.7 | 18.1 | 14.5 | 10.8 | 2.49 | 1.66 | 1.24 | 1.00 |
| | C | M | 70 | 0.79 | 58.7 | 46.9 | 39.1 | 29.3 | 23.5 | 19.6 | 15.6 | 11.7 | 2.69 | 1.80 | 1.35 | 1.08 |
| 08 | XC | VC | 20 | 0.57 | 42.3 | 33.9 | 28.2 | 21.2 | 16.9 | 14.1 | 11.3 | 8.5 | 1.94 | 1.30 | 0.97 | 0.78 |
| | VC | C | 30 | 0.69 | 51.2 | 41.0 | 34.2 | 25.6 | 20.5 | 17.1 | 13.7 | 10.2 | 2.35 | 1.57 | 1.18 | 0.94 |
| | VC | C | 40 | 0.80 | 59.4 | 47.5 | 39.6 | 29.7 | 23.8 | 19.8 | 15.8 | 11.9 | 2.73 | 1.82 | 1.36 | 1.09 |
| | C | M | 50 | 0.89 | 66.1 | 52.9 | 44.1 | 33.0 | 26.4 | 22.0 | 17.6 | 13.2 | 3.03 | 2.02 | 1.52 | 1.21 |
| | C | M | 60 | 0.98 | 72.8 | 58.2 | 48.5 | 36.4 | 29.1 | 24.3 | 19.4 | 14.6 | 3.34 | 2.23 | 1.67 | 1.34 |
| | C | M | 70 | 1.06 | 78.7 | 63.0 | 52.5 | 39.4 | 31.5 | 26.2 | 21.0 | 15.7 | 3.61 | 2.41 | 1.81 | 1.45 |

Droplet size based on ASABE S572.1 standard.




01. Non-Air Inducted; Pre-orifice design for excellent performance with suspension solutions

02. Dual component construction Material: Polyacetal

# LO-DRIFT 80° & 110°

110° wide, drift reducing design that is excellent for suspension based tank mixes.

Pre-orifice design limits the formation of small droplets; reducing drift potential with a medium droplet spectrum.

See http://pentair.com/certifications for the latest drift reduction standard information.

## METRIC UNITS

| Nozzle Size | ASABE Droplet Size | | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - 50 cm spacing KM/H | | | | | | | | Drift Reduction Standards |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 80° | 110° | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | LERAP |
| 015 | M | M | 2 | 0,49 | 84 | 74 | 59 | 49 | 39 | 29 | 24 | 20 | |
| | M | M | 3 | 0,60 | 103 | 90 | 72 | 60 | 48 | 36 | 29 | 24 | |
| | M | F | 4 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 | |
| 02 | C | M | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 | |
| | M | F | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 | |
| | M | F | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 | |
| 025 | - | M | 2 | 0,82 | 141 | 123 | 98 | 82 | 66 | 49 | 39 | 33 | |
| | - | M | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 | |
| | - | F | 4 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 | |
| 03 | C | M | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 | |
| | C | M | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 | |
| | M | M | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 | |
| 04 | C | M | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 | |
| | C | M | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 | |
| | M | M | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 | |
| 05 | C | C | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 | |
| | C | M | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 | |
| | C | M | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 | |
| 06 | VC | C | 2 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 | ★★★ 75% + 2.0-3.0 BAR |
| | C | M | 3 | 2,40 | 411 | 360 | 288 | 240 | 192 | 144 | 115 | 96 | |
| | C | M | 4 | 2,77 | 475 | 416 | 332 | 277 | 222 | 166 | 133 | 111 | |
| 08 | VC | C | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 | |
| | VC | C | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 | |
| | C | M | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 | |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Pre-Orifice |
| Material | Polyacetal |
| Spray Angle | 80° & 110° |
| Pressure Range | 20-70 PSI (1-5 BAR) |
| Configuration | Nozzles, FastCap |
| **Optimum Boom Height** | |
| 80° - 15" (35 cm) Spacing | 22" (56 cm) |
| 80° - 20" (50 cm) Spacing | 30" (76 cm) |
| 110° - 15" (35 cm) Spacing | 15" (35 cm) |
| 110° - 20" (50 cm) Spacing | 20" (50 cm) |

| Part Numbers | |
|---|---|
| **Nozzles 80°** | **Caps (25 Packs)** |
| LD80-015 | CAP00-015 |
| LD80-02 | CAP00-02 |
| LD80-03 | CAP00-03 |
| LD80-04 | CAP00-04 |
| LD80-05 | CAP00-05 |
| LD80-06 | CAP00-06 |
| LD80-08 | CAP00-08 |
| **Nozzles 110°** | **Caps (25 Packs)** |
| LD110-015 | CAP00-015 |
| LD110-02 | CAP00-02 |
| LD110-025* | CAP00-025 |
| LD110-03 | CAP00-03 |
| LD110-04* | CAP00-04 |
| LD110-05* | CAP00-05 |
| LD110-06* | CAP00-06 |
| LD110-08 | CAP00-08 |

*Approved by JKI

# VARIABLE PRESSURE 80° & 110°

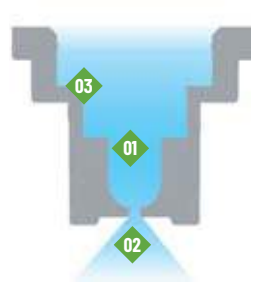
Variable Pressure nozzle maintain a consistent spray angle over a wide pressure range down to 20 PSI (1 BAR) and are available in 80° and 110° versions to work with different boom heights.

- Adjustable droplet size according to pressure
- Maintains good spray distribution and makes larger droplets at low pressures
- FastCap includes nozzle, cap and gasket
- Excellent nozzle for a wide variety of herbicide and insecticide applications
- PWM system compatible

## US UNITS

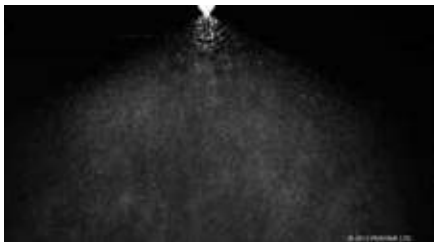
| Nozzle Size | Droplet Size | | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing | | | | | | | | GAL/1000Ft² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | MPH | | | | | | | | | | | |
| | 80° | 110° | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 015 | - | - | 20 | 0.11 | 8.2 | 6.5 | 5.4 | 4.1 | 3.3 | 2.7 | 2.2 | 1.6 | 0.38 | 0.25 | 0.19 | 0.15 |
| | F | F | 30 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | F | F | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | F | F | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | F | F | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | VF | VF | 70 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| 02 | - | - | 20 | 0.14 | 10.4 | 8.3 | 6.9 | 5.2 | 4.2 | 3.5 | 2.8 | 2.1 | 0.48 | 0.32 | 0.24 | 0.19 |
| | F | F | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | F | F | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | F | F | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | F | F | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| | F | F | 70 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| 025 | - | M | 20 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | - | F | 30 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | - | F | 40 | 0.25 | 18.6 | 14.9 | 12.4 | 9.3 | 7.4 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 |
| | - | F | 50 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | - | F | 60 | 0.31 | 23.0 | 18.4 | 15.3 | 11.5 | 9.2 | 7.7 | 6.1 | 4.6 | 1.06 | 0.70 | 0.53 | 0.42 |
| | - | F | 70 | 0.33 | 24.5 | 19.6 | 16.3 | 12.3 | 9.8 | 8.2 | 6.5 | 4.9 | 1.13 | 0.75 | 0.56 | 0.45 |
| 03 | M | M | 20 | 0.21 | 15.6 | 12.5 | 10.4 | 7.8 | 6.2 | 5.2 | 4.2 | 3.1 | 0.72 | 0.48 | 0.36 | 0.29 |
| | M | F | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | F | F | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | F | F | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | F | F | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | F | F | 70 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| 035 | - | M | 20 | 0.25 | 18.6 | 14.9 | 12.4 | 9.3 | 7.4 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 |
| | - | M | 30 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | - | F | 40 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | - | F | 50 | 0.39 | 29.0 | 23.2 | 19.3 | 14.5 | 11.6 | 9.7 | 7.7 | 5.8 | 1.33 | 0.89 | 0.66 | 0.53 |
| | - | F | 60 | 0.43 | 31.9 | 25.5 | 21.3 | 16.0 | 12.8 | 10.6 | 8.5 | 6.4 | 1.47 | 0.98 | 0.73 | 0.59 |
| | - | F | 70 | 0.46 | 34.2 | 27.3 | 22.8 | 17.1 | 13.7 | 11.4 | 9.1 | 6.8 | 1.57 | 1.05 | 0.78 | 0.63 |
| 04 | C | M | 20 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | M | M | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | M | F | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | F | F | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | F | F | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | F | F | 70 | 0.53 | 39.4 | 31.5 | 26.2 | 19.7 | 15.7 | 13.1 | 10.5 | 7.9 | 1.81 | 1.20 | 0.90 | 0.72 |
| 05 | C | M | 20 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | C | M | 30 | 0.43 | 31.9 | 25.5 | 21.3 | 16.0 | 12.8 | 10.6 | 8.5 | 6.4 | 1.47 | 0.98 | 0.73 | 0.59 |
| | M | F | 40 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.71 | 1.14 | 0.85 | 0.68 |
| | M | F | 50 | 0.56 | 41.6 | 33.3 | 27.7 | 20.8 | 16.6 | 13.9 | 11.1 | 8.3 | 1.91 | 1.27 | 0.95 | 0.76 |
| | M | F | 60 | 0.61 | 45.3 | 36.2 | 30.2 | 22.6 | 18.1 | 15.1 | 12.1 | 9.1 | 2.08 | 1.39 | 1.04 | 0.83 |
| | M | F | 70 | 0.66 | 49.0 | 39.2 | 32.7 | 24.5 | 19.6 | 16.3 | 13.1 | 9.8 | 2.25 | 1.50 | 1.13 | 0.90 |
| 06 | C | M | 20 | 0.42 | 31.2 | 24.9 | 20.8 | 15.6 | 12.5 | 10.4 | 8.3 | 6.2 | 1.43 | 0.95 | 0.72 | 0.57 |
| | C | M | 30 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | M | M | 40 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | M | F | 50 | 0.67 | 49.7 | 39.8 | 33.2 | 24.9 | 19.9 | 16.6 | 13.3 | 9.9 | 2.28 | 1.52 | 1.14 | 0.91 |
| | M | F | 60 | 0.73 | 54.2 | 43.4 | 36.1 | 27.1 | 21.7 | 18.1 | 14.5 | 10.8 | 2.49 | 1.66 | 1.24 | 1.00 |
| | M | F | 70 | 0.79 | 58.7 | 46.9 | 39.1 | 29.3 | 23.5 | 19.6 | 15.6 | 11.7 | 2.69 | 1.80 | 1.35 | 1.08 |
| 08 | - | C | 20 | 0.57 | 42.3 | 33.9 | 28.2 | 21.2 | 16.9 | 14.1 | 11.3 | 8.5 | 1.94 | 1.30 | 0.97 | 0.78 |
| | - | M | 30 | 0.69 | 51.2 | 41.0 | 34.2 | 25.6 | 20.5 | 17.1 | 13.7 | 10.2 | 2.35 | 1.57 | 1.18 | 0.94 |
| | - | M | 40 | 0.80 | 59.4 | 47.5 | 39.6 | 29.7 | 23.8 | 19.8 | 15.8 | 11.9 | 2.73 | 1.82 | 1.36 | 1.09 |
| | - | M | 50 | 0.89 | 66.1 | 52.9 | 44.1 | 33.0 | 26.4 | 22.0 | 17.6 | 13.2 | 3.03 | 2.02 | 1.52 | 1.21 |
| | - | M | 60 | 0.98 | 72.8 | 58.2 | 48.5 | 36.4 | 29.1 | 24.3 | 19.4 | 14.6 | 3.34 | 2.23 | 1.67 | 1.34 |
| | - | F | 70 | 1.06 | 78.7 | 63.0 | 52.5 | 39.4 | 31.5 | 26.2 | 21.0 | 15.7 | 3.61 | 2.41 | 1.81 | 1.45 |
| 10 | - | C | 20 | 0.71 | 52.7 | 42.2 | 35.1 | 26.4 | 21.1 | 17.6 | 14.1 | 10.5 | 2.42 | 1.61 | 1.21 | 0.97 |
| | - | M | 30 | 0.87 | 64.6 | 51.7 | 43.1 | 32.3 | 25.8 | 21.5 | 17.2 | 12.9 | 2.97 | 1.98 | 1.48 | 1.19 |
| | - | M | 40 | 1.00 | 74.3 | 59.4 | 49.5 | 37.1 | 29.7 | 24.8 | 19.8 | 14.9 | 3.41 | 2.27 | 1.71 | 1.36 |
| | - | M | 50 | 1.12 | 83.2 | 66.5 | 55.4 | 41.6 | 33.3 | 27.7 | 22.2 | 16.6 | 3.82 | 2.55 | 1.91 | 1.53 |
| | - | M | 60 | 1.22 | 90.6 | 72.5 | 60.4 | 45.3 | 36.2 | 30.2 | 24.2 | 18.1 | 4.16 | 2.77 | 2.08 | 1.66 |
| | - | F | 70 | 1.32 | 98.0 | 78.4 | 65.3 | 49.0 | 39.2 | 32.7 | 26.1 | 19.6 | 4.50 | 3.00 | 2.25 | 1.80 |
| 15 | - | C | 20 | 1.06 | 78.7 | 63.0 | 52.5 | 39.4 | 31.5 | 26.2 | 21.0 | 15.7 | 3.61 | 2.41 | 1.81 | 1.45 |
| | - | C | 30 | 1.30 | 96.5 | 77.2 | 64.4 | 48.3 | 38.6 | 32.2 | 25.7 | 19.3 | 4.43 | 2.96 | 2.22 | 1.77 |
| | - | M | 40 | 1.50 | 111 | 89.1 | 74.3 | 55.7 | 44.6 | 37.1 | 29.7 | 22.3 | 5.12 | 3.41 | 2.56 | 2.05 |
| | - | M | 50 | 1.68 | 125 | 99.8 | 83.2 | 62.4 | 49.9 | 41.6 | 33.3 | 24.9 | 5.73 | 3.82 | 2.86 | 2.29 |
| | - | M | 60 | 1.84 | 137 | 109 | 91.1 | 68.3 | 54.6 | 45.5 | 36.4 | 27.3 | 6.27 | 4.18 | 3.14 | 2.51 |
| | - | M | 70 | 1.98 | 147 | 118 | 98.0 | 73.5 | 58.8 | 49.0 | 39.2 | 29.4 | 6.75 | 4.50 | 3.38 | 2.70 |

Droplet size based on ASABE S572.1 standard.




01. Non-Air Inducted; single inlet/outlet design
02. Fully formed spray pattern at low pressures
03. Enhanced polyacetal for superior product life

# VARIABLE PRESSURE 80° & 110°



Low pressure performance allows for complete pattern formation and even coverage down to 15 psi (1 BAR).

Dense spray pattern of medium to fine droplets provides superior coverage.

## METRIC UNITS

| Nozzle Size | ASABE Droplet Size 80° | ASABE Droplet Size 110° | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha -50 cm spacing KM/H 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 015 | - | - | 1 | 0,35 | 60 | 53 | 42 | 35 | 28 | 21 | 17 | 14 |
| | - | - | 1,5 | 0,42 | 72 | 63 | 50 | 42 | 34 | 25 | 20 | 17 |
| | F | F | 2 | 0,49 | 84 | 74 | 59 | 49 | 39 | 29 | 24 | 20 |
| | F | F | 3 | 0,60 | 103 | 90 | 72 | 60 | 48 | 36 | 29 | 24 |
| | F | F | 4 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 |
| | VF | VF | 5 | 0,77 | 132 | 116 | 92 | 77 | 62 | 46 | 37 | 31 |
| 02 | - | - | 1 | 0,46 | 79 | 69 | 55 | 46 | 37 | 28 | 22 | 18 |
| | - | - | 1,5 | 0,57 | 98 | 86 | 68 | 57 | 46 | 34 | 27 | 23 |
| | F | F | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 |
| | F | F | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 |
| | F | F | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| | F | F | 5 | 1,03 | 177 | 155 | 124 | 103 | 82 | 62 | 49 | 41 |
| 025 | - | M | 1 | 0,58 | 99 | 87 | 70 | 58 | 46 | 35 | 28 | 23 |
| | - | M | 1,5 | 0,71 | 122 | 107 | 85 | 71 | 57 | 43 | 34 | 28 |
| | - | F | 2 | 0,82 | 141 | 123 | 98 | 82 | 66 | 49 | 39 | 33 |
| | - | F | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 |
| | - | F | 4 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 |
| | - | F | 5 | 1,29 | 221 | 194 | 155 | 129 | 103 | 77 | 62 | 52 |
| 03 | C | M | 1 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 |
| | M | M | 1,5 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 |
| | M | F | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 |
| | F | F | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 |
| | F | F | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 |
| | F | F | 5 | 1,55 | 266 | 233 | 186 | 155 | 124 | 93 | 74 | 62 |
| 035 | - | M | 1 | 0,81 | 139 | 122 | 97 | 81 | 65 | 49 | 39 | 32 |
| | - | M | 1,5 | 0,99 | 170 | 149 | 119 | 99 | 79 | 59 | 48 | 40 |
| | - | M | 2 | 1,14 | 195 | 171 | 137 | 114 | 91 | 68 | 55 | 46 |
| | - | F | 3 | 1,40 | 240 | 210 | 168 | 140 | 112 | 84 | 67 | 56 |
| | - | F | 4 | 1,62 | 278 | 243 | 194 | 162 | 130 | 97 | 78 | 65 |
| | - | F | 5 | 1,81 | 310 | 272 | 217 | 181 | 145 | 109 | 87 | 72 |
| 04 | C | M | 1 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| | C | M | 1,5 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 |
| | M | M | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 |
| | M | F | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 |
| | F | F | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 |
| | F | F | 5 | 2,07 | 355 | 311 | 248 | 207 | 166 | 124 | 99 | 83 |
| 05 | C | M | 1 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 |
| | C | M | 1,5 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 |
| | C | M | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 |
| | M | F | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 |
| | M | F | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 |
| | M | F | 5 | 2,58 | 442 | 387 | 310 | 258 | 206 | 155 | 124 | 103 |
| 06 | C | C | 1 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 |
| | C | M | 1,5 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 |
| | C | M | 2 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 |
| | M | M | 3 | 2,40 | 411 | 360 | 288 | 240 | 192 | 144 | 115 | 96 |
| | M | F | 4 | 2,77 | 475 | 416 | 332 | 277 | 222 | 166 | 133 | 111 |
| | M | F | 5 | 3,10 | 531 | 465 | 372 | 310 | 248 | 186 | 149 | 124 |
| 08 | - | C | 1 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 |
| | - | C | 1,5 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 |
| | - | M | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 |
| | - | M | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 |
| | - | M | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| | - | F | 5 | 4,13 | 708 | 620 | 496 | 413 | 330 | 248 | 198 | 165 |
| 10 | - | C | 1 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 |
| | - | C | 1,5 | 2,83 | 485 | 425 | 340 | 283 | 226 | 170 | 136 | 113 |
| | - | M | 2 | 3,27 | 561 | 491 | 392 | 327 | 262 | 196 | 157 | 131 |
| | - | M | 3 | 4,00 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 |
| | - | M | 4 | 4,62 | 792 | 693 | 554 | 462 | 370 | 277 | 222 | 185 |
| | - | F | 5 | 5,16 | 885 | 774 | 619 | 516 | 413 | 310 | 248 | 206 |
| 15 | - | VC | 1 | 3,46 | 593 | 519 | 415 | 346 | 277 | 208 | 166 | 138 |
| | - | C | 1,5 | 4,24 | 727 | 636 | 509 | 424 | 339 | 254 | 204 | 170 |
| | - | C | 2 | 4,90 | 840 | 735 | 588 | 490 | 392 | 294 | 235 | 196 |
| | - | M | 3 | 6,00 | 1029 | 900 | 720 | 600 | 480 | 360 | 288 | 240 |
| | - | M | 4 | 6,93 | 1188 | 1040 | 832 | 693 | 554 | 416 | 333 | 277 |
| | - | M | 5 | 7,75 | 1329 | 1163 | 930 | 775 | 620 | 465 | 372 | 310 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | General |
| Pattern | Tapered Flat Fan |
| Technology | Elliptical Orifice |
| Material | Polyacetal |
| Spray Angle | 80° & 110° |
| Pressure Range | 20-70 PSI (1-5 BAR) |
| Configuration | Nozzles, FastCap |

| Optimum Boom Height | |
|---|---|
| 80° - 15" (35 cm) Spacing | 22" (56 cm) |
| 80° - 20" (50 cm) Spacing | 30" (76 cm) |
| 110° - 15" (35 cm) Spacing | 15" (35 cm) |
| 110° - 20" (50 cm) Spacing | 20" (50 cm) |

| Part Numbers (Bags of 10) | |
|---|---|
| **Nozzles 80°** | **FastCaps 80°** |
| VP80-015 | FC-VP80-015 |
| VP80-02 | FC-VP80-02 |
| VP80-03 | FC-VP80-03 |
| VP80-04 | FC-VP80-04 |
| VP80-05 | FC-VP80-05 |
| VP80-06 | FC-VP80-06 |
| **Nozzles 110°** | **FastCaps 110°** |
| VP110-015 | FC-VP110-015 |
| VP110-02 | FC-VP110-02 |
| VP110-025 | FC-VP110-025 |
| VP110-03* | FC-VP110-03 |
| VP110-035 | FC-VP110-035 |
| VP110-04* | FC-VP110-04 |
| VP110-05* | FC-VP110-05 |
| VP110-06 | FC-VP110-06 |
| VP110-08 | FC-VP110-08 |
| VP110-10 | FC-VP110-10 |
| VP110-15 | FC-VP110-15 |

| Replacement Cap Gasket |
|---|
| 10BG-2270-0150 |

*Approved by JKI

# FANTIP 80° & 110°

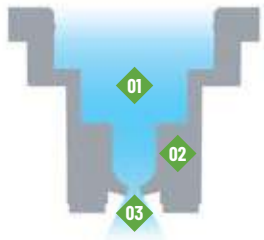
The FanTip is a general spray nozzle that produces a mixed droplet spectrum over the 30-60 psi (2-4 bar) operational pressure range. It is good for broadcast applications.

- Economical option for general spraying
- Simple one-piece design
- Polyacetal construction for superior product life compared to stainless steel or brass

## US UNITS

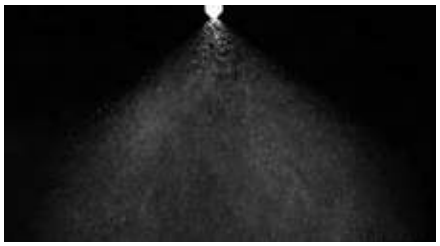
| Nozzle Size | Droplet Size | | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing | | | | | | | | GAL/1000 Ft² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | MPH | | | | | | | | | | | |
| | 80° | 110° | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 0067 | F | - | 30 | 0.058 | 4.3 | 3.4 | 2.9 | 2.2 | 1.7 | 1.4 | 1.1 | 0.9 | 0.20 | 0.13 | 0.10 | 0.08 |
| | VF | - | 40 | 0.067 | 5.0 | 4.0 | 3.3 | 2.5 | 2.0 | 1.7 | 1.3 | 1.0 | 0.23 | 0.15 | 0.11 | 0.09 |
| | VF | - | 50 | 0.075 | 5.6 | 4.5 | 3.7 | 2.8 | 2.2 | 1.9 | 1.5 | 1.1 | 0.26 | 0.17 | 0.13 | 0.10 |
| | VF | - | 60 | 0.082 | 6.1 | 4.9 | 4.1 | 3.0 | 2.4 | 2.0 | 1.6 | 1.2 | 0.28 | 0.19 | 0.14 | 0.11 |
| 01 | VF | F | 30 | 0.09 | 6.7 | 5.3 | 4.5 | 3.3 | 2.7 | 2.2 | 1.8 | 1.3 | 0.31 | 0.20 | 0.15 | 0.12 |
| | VF | F | 40 | 0.10 | 7.4 | 5.9 | 5.0 | 3.7 | 3.0 | 2.5 | 2.0 | 1.5 | 0.34 | 0.23 | 0.17 | 0.14 |
| | VF | F | 50 | 0.11 | 8.2 | 6.5 | 5.4 | 4.1 | 3.3 | 2.7 | 2.2 | 1.6 | 0.38 | 0.25 | 0.19 | 0.15 |
| | VF | VF | 60 | 0.12 | 8.9 | 7.1 | 5.9 | 4.5 | 3.6 | 3.0 | 2.4 | 1.8 | 0.41 | 0.27 | 0.20 | 0.16 |
| 015 | F | F | 30 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | F | F | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | F | F | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | VF | F | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| 02 | M | F | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | F | F | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | F | F | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | F | F | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| 025 | F | F | 30 | 0.22 | 16.2 | 13.0 | 10.5 | 8.1 | 6.2 | 5.6 | 4.3 | 3.1 | 0.75 | 0.50 | 0.38 | 0.30 |
| | F | F | 40 | 0.25 | 18.6 | 14.3 | 12.4 | 9.3 | 7.5 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 |
| | F | F | 50 | 0.28 | 19.8 | 16.2 | 13.0 | 9.9 | 8.0 | 6.8 | 5.6 | 3.7 | 0.95 | 0.64 | 0.48 | 0.38 |
| | F | F | 60 | 0.31 | 22.9 | 18.0 | 15.5 | 11.2 | 9.3 | 7.5 | 6.2 | 4.3 | 1.06 | 0.70 | 0.53 | 0.42 |
| 03 | C | F | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | M | F | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | M | F | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | F | F | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| 04 | C | M | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | M | F | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | M | F | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | M | F | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| 05 | C | M | 30 | 0.43 | 31.9 | 25.5 | 21.3 | 16.0 | 12.8 | 10.6 | 8.5 | 6.4 | 1.47 | 0.98 | 0.73 | 0.59 |
| | M | F | 40 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.71 | 1.14 | 0.85 | 0.68 |
| | M | F | 50 | 0.56 | 41.6 | 33.3 | 27.7 | 20.8 | 16.6 | 13.9 | 11.1 | 8.3 | 1.91 | 1.27 | 0.95 | 0.76 |
| | M | F | 60 | 0.61 | 45.3 | 36.2 | 30.2 | 22.6 | 18.1 | 15.1 | 12.1 | 9.1 | 2.08 | 1.39 | 1.04 | 0.83 |
| 06 | C | M | 30 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | C | M | 40 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | C | F | 50 | 0.67 | 49.7 | 39.8 | 33.2 | 24.9 | 19.9 | 16.6 | 13.3 | 9.9 | 2.28 | 1.52 | 1.14 | 0.91 |
| | C | F | 60 | 0.73 | 54.2 | 43.4 | 36.1 | 27.1 | 21.7 | 18.1 | 14.5 | 10.8 | 2.49 | 1.66 | 1.24 | 1.00 |
| 08 | VC | M | 30 | 0.69 | 51.2 | 41.0 | 34.2 | 25.6 | 20.5 | 17.1 | 13.7 | 10.2 | 2.35 | 1.57 | 1.18 | 0.94 |
| | C | M | 40 | 0.80 | 59.4 | 47.5 | 39.6 | 29.7 | 23.8 | 19.8 | 15.8 | 11.9 | 2.73 | 1.82 | 1.36 | 1.09 |
| | C | M | 50 | 0.89 | 66.1 | 52.9 | 44.1 | 33.0 | 26.4 | 22.0 | 17.6 | 13.2 | 3.03 | 2.02 | 1.52 | 1.21 |
| | C | M | 60 | 0.98 | 72.8 | 58.2 | 48.5 | 36.4 | 29.1 | 24.3 | 19.4 | 14.6 | 3.34 | 2.23 | 1.67 | 1.34 |
| 10 | VC | C | 30 | 0.87 | 64.6 | 51.7 | 43.1 | 32.3 | 25.8 | 21.5 | 17.2 | 12.9 | 2.97 | 1.98 | 1.48 | 1.19 |
| | C | C | 40 | 1.00 | 74.3 | 59.4 | 49.5 | 37.1 | 29.7 | 24.8 | 19.8 | 14.9 | 3.41 | 2.27 | 1.71 | 1.36 |
| | C | C | 50 | 1.12 | 83.2 | 66.5 | 55.4 | 41.6 | 33.3 | 27.7 | 22.2 | 16.6 | 3.82 | 2.55 | 1.91 | 1.53 |
| | C | C | 60 | 1.22 | 90.6 | 72.5 | 60.4 | 45.3 | 36.2 | 30.2 | 24.2 | 18.1 | 4.16 | 2.77 | 2.08 | 1.66 |
| 15 | VC | C | 30 | 1.30 | 96.5 | 77.2 | 64.4 | 48.3 | 38.6 | 32.2 | 25.7 | 19.3 | 4.43 | 2.96 | 2.22 | 1.77 |
| | VC | C | 40 | 1.50 | 111 | 89.1 | 74.3 | 55.7 | 44.6 | 37.1 | 29.7 | 22.3 | 5.12 | 3.41 | 2.56 | 2.05 |
| | C | C | 50 | 1.68 | 125 | 99.8 | 83.2 | 62.4 | 49.9 | 41.6 | 33.3 | 24.9 | 5.73 | 3.82 | 2.86 | 2.29 |
| | C | C | 60 | 1.84 | 137 | 109 | 91.1 | 68.3 | 54.6 | 45.5 | 36.4 | 27.3 | 6.27 | 4.18 | 3.14 | 2.51 |
| 20 | VC | C | 30 | 1.73 | 128 | 103 | 85.6 | 64.2 | 51.4 | 42.8 | 34.3 | 25.7 | 5.90 | 3.93 | 2.95 | 2.36 |
| | VC | C | 40 | 2.00 | 149 | 119 | 99.0 | 74.3 | 59.4 | 49.5 | 39.6 | 29.7 | 6.82 | 4.55 | 3.41 | 2.73 |
| | VC | C | 50 | 2.24 | 166 | 133 | 111 | 83.2 | 66.5 | 55.4 | 44.4 | 33.3 | 7.64 | 5.09 | 3.82 | 3.06 |
| | VC | C | 60 | 2.45 | 182 | 146 | 121 | 91.0 | 72.8 | 60.6 | 48.5 | 36.4 | 8.35 | 5.57 | 4.18 | 3.34 |

Droplet size based on ASABE S572.1 standard.




01. Simple; Non-Air Inducted technology
02. Polyacetal; single piece design
03. Available in many sizes to meet your flow rate needs

# FANTIP 80° & 110°



80° or 110° wide spray patterns; broad flow range and droplet spectrum to fit many spraying applications.

Polyacetal construction provides a wear resistant orifice to ensure pattern integrity.

## METRIC UNITS

| Nozzle Size | ASABE Droplet Size | | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha- 50 cm Spacing KM/H | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 80° | 110° | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 0067 | F | - | 2 | 0,22 | 38 | 33 | 26 | 22 | 18 | 13 | 11 | 9 |
| | VF | - | 2,5 | 0,25 | 43 | 38 | 30 | 25 | 20 | 15 | 12 | 10 |
| | VF | - | 3 | 0,27 | 46 | 41 | 32 | 27 | 22 | 16 | 13 | 11 |
| | VF | - | 4 | 0,31 | 53 | 47 | 37 | 31 | 25 | 19 | 15 | 12 |
| 01 | VF | F | 2 | 0,33 | 57 | 50 | 40 | 33 | 26 | 20 | 16 | 13 |
| | VF | F | 2,5 | 0,37 | 63 | 56 | 44 | 37 | 30 | 22 | 18 | 15 |
| | VF | F | 3 | 0,40 | 69 | 60 | 48 | 40 | 32 | 24 | 19 | 16 |
| | VF | VF | 4 | 0,46 | 79 | 69 | 55 | 46 | 37 | 28 | 22 | 18 |
| 015 | F | F | 2 | 0,49 | 84 | 74 | 59 | 49 | 39 | 29 | 24 | 20 |
| | F | F | 2,5 | 0,55 | 94 | 83 | 66 | 55 | 44 | 33 | 26 | 22 |
| | F | F | 3 | 0,60 | 103 | 90 | 72 | 60 | 48 | 36 | 29 | 24 |
| | VF | F | 4 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 |
| 02 | M | F | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 |
| | F | F | 2,5 | 0,73 | 125 | 110 | 88 | 73 | 58 | 44 | 35 | 29 |
| | F | F | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 |
| | F | F | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| 025 | F | F | 2 | 0,82 | 140 | 122 | 98 | 82 | 65 | 49 | 39 | 33 |
| | F | F | 2,5 | 0,91 | 156 | 137 | 110 | 91 | 73 | 55 | 44 | 37 |
| | F | F | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 |
| | F | F | 4 | 1,16 | 198 | 173 | 139 | 115 | 92 | 69 | 55 | 46 |
| 03 | C | F | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 |
| | M | F | 2,5 | 1,10 | 189 | 165 | 132 | 110 | 88 | 66 | 53 | 44 |
| | M | F | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 |
| | F | F | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 |
| 04 | C | M | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 |
| | M | F | 2,5 | 1,46 | 250 | 219 | 175 | 146 | 117 | 88 | 70 | 58 |
| | M | F | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 |
| | M | F | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 |
| 05 | C | M | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 |
| | M | M | 2,5 | 1,83 | 314 | 275 | 220 | 183 | 146 | 110 | 88 | 73 |
| | M | F | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 |
| | M | F | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 |
| 06 | C | M | 2 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 |
| | C | M | 2,5 | 2,19 | 375 | 329 | 263 | 219 | 175 | 131 | 105 | 88 |
| | C | M | 3 | 2,40 | 411 | 360 | 288 | 240 | 192 | 144 | 115 | 96 |
| | C | F | 4 | 2,77 | 475 | 416 | 332 | 277 | 222 | 166 | 133 | 111 |
| 08 | VC | M | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 |
| | C | M | 2,5 | 2,92 | 501 | 438 | 350 | 292 | 234 | 175 | 140 | 117 |
| | C | M | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 |
| | C | M | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| 10 | VC | C | 2 | 3,27 | 561 | 491 | 392 | 327 | 262 | 196 | 157 | 131 |
| | C | C | 2,5 | 3,65 | 626 | 548 | 438 | 365 | 292 | 219 | 175 | 146 |
| | C | C | 3 | 4,00 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 |
| | C | C | 4 | 4,62 | 792 | 693 | 554 | 462 | 370 | 277 | 222 | 185 |
| 15 | VC | C | 2 | 4,90 | 840 | 735 | 588 | 490 | 392 | 294 | 235 | 196 |
| | VC | C | 2,5 | 5,48 | 939 | 822 | 658 | 548 | 438 | 329 | 263 | 219 |
| | VC | C | 3 | 6,00 | 1029 | 900 | 720 | 600 | 480 | 360 | 288 | 240 |
| | C | C | 4 | 6,93 | 1188 | 1040 | 832 | 693 | 554 | 416 | 333 | 277 |
| 20 | VC | C | 2 | 6,53 | 1119 | 980 | 784 | 653 | 522 | 392 | 313 | 261 |
| | VC | C | 2,5 | 7,30 | 1251 | 1095 | 876 | 730 | 584 | 438 | 350 | 292 |
| | VC | C | 3 | 8,00 | 1371 | 1200 | 960 | 800 | 640 | 480 | 384 | 320 |
| | VC | C | 4 | 9,24 | 1584 | 1386 | 1109 | 924 | 739 | 554 | 444 | 370 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | General |
| Pattern | Tapered Flat Fan |
| Technology | Elliptical Orifice |
| Material | Polyacetal |
| Spray Angle | 80° & 110° |
| Pressure Range | 30-60 PSI (2-4 BAR) |
| Configuration | Nozzle |

| Optimum Boom Height | |
|---|---|
| 80° - 15" (35 cm) Spacing | 22" (56 cm) |
| 80° - 20" (50 cm) Spacing | 30" (76 cm) |
| 110° - 15" (35 cm) Spacing | 15" (35 cm) |
| 110° - 20" (50 cm) Spacing | 20" (50 cm) |

**Part Numbers (Bags of 10)**

| Nozzles 80° | Nozzles 110° | Caps (25 Pack) |
|---|---|---|
| F80-0067 | - | CAP00-20 |
| F80-01 | F110-01 | CAP00-01 |
| F80-015 | F110-015 | CAP00-015 |
| F80-02 | F110-02 | CAP00-02 |
| F80-03 | F110-03 | CAP00-03 |
| F80-04 | F110-04 | CAP00-04 |
| F80-05 | F110-05 | CAP00-05 |
| F80-06 | F110-06 | CAP00-06 |
| F80-08 | F110-08 | CAP00-08 |
| F80-10 | F110-10 | CAP00-10 |
| F80-15 | F110-15 | CAP00-15 |
| F80-20 | F110-20 | CAP00-20 |

# CERAMIC AVI TWIN 110°

The Albuz® AVI Twin (ATW) brings drift control and coverage together. Using proven AVI technology, the AVI Twin draws air into the nozzle, mixing it with the spray to create a twin spray of drift resistant air-filled droplets. Drift is greatly reduced, spraying the canopy with dual trajectories to improve coverage.

- Coverage-enhancing twin patterns from a single nozzle
- Drift-reducing AVI venturi technology
- 60-degrees of separation between fans
- Pressures from 40 to 100 psi (3-7 bar)
- Wear-resistant Albuz ceramic orifices

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | GAL/1000 Ft² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 01 | XC | 40 | 0.10 | 7.4 | 5.9 | 5.0 | 3.7 | 3.0 | 2.5 | 2.0 | 1.5 | 0.34 | 0.23 | 0.17 | 0.14 |
| | XC | 50 | 0.11 | 8.2 | 6.5 | 5.4 | 4.1 | 3.3 | 2.7 | 2.2 | 1.6 | 0.38 | 0.25 | 0.19 | 0.15 |
| | XC | 60 | 0.12 | 8.9 | 7.1 | 5.9 | 4.5 | 3.6 | 3.0 | 2.4 | 1.8 | 0.41 | 0.27 | 0.20 | 0.16 |
| | C | 70 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | C | 80 | 0.14 | 10.4 | 8.3 | 6.9 | 5.2 | 4.2 | 3.5 | 2.8 | 2.1 | 0.48 | 0.32 | 0.24 | 0.19 |
| | C | 90 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | C | 100 | 0.16 | 11.9 | 9.5 | 7.9 | 5.9 | 4.8 | 4.0 | 3.2 | 2.4 | 0.55 | 0.36 | 0.27 | 0.22 |
| 015 | XC | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | XC | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | XC | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | C | 70 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | C | 80 | 0.21 | 15.6 | 12.5 | 10.4 | 7.8 | 6.2 | 5.2 | 4.2 | 3.1 | 0.72 | 0.48 | 0.36 | 0.29 |
| | C | 90 | 0.23 | 17.1 | 13.7 | 11.4 | 8.5 | 6.8 | 5.7 | 4.6 | 3.4 | 0.78 | 0.52 | 0.39 | 0.31 |
| | C | 100 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| 02 | XC | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | XC | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | XC | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| | C | 70 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | C | 80 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | C | 90 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | C | 100 | 0.32 | 23.8 | 19.0 | 15.8 | 11.9 | 9.5 | 7.9 | 6.3 | 4.8 | 1.09 | 0.73 | 0.55 | 0.44 |
| 03 | XC | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | XC | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | XC | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | VC | 70 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | VC | 80 | 0.42 | 31.2 | 24.9 | 20.8 | 15.6 | 12.5 | 10.4 | 8.3 | 6.2 | 1.43 | 0.95 | 0.72 | 0.57 |
| | C | 90 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | C | 100 | 0.47 | 34.9 | 27.9 | 23.3 | 17.4 | 14.0 | 11.6 | 9.3 | 7.0 | 1.60 | 1.07 | 0.80 | 0.64 |
| 04 | XC | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | XC | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | XC | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | VC | 70 | 0.53 | 39.4 | 31.5 | 26.2 | 19.7 | 15.7 | 13.1 | 10.5 | 7.9 | 1.81 | 1.20 | 0.90 | 0.72 |
| | VC | 80 | 0.57 | 42.3 | 33.9 | 28.2 | 21.2 | 16.9 | 14.1 | 11.3 | 8.5 | 1.94 | 1.30 | 0.97 | 0.78 |
| | C | 90 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | C | 100 | 0.63 | 46.8 | 37.4 | 31.2 | 23.4 | 18.7 | 15.6 | 12.5 | 9.4 | 2.15 | 1.43 | 1.07 | 0.86 |
| 05 | XC | 40 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.71 | 1.14 | 0.85 | 0.68 |
| | XC | 50 | 0.56 | 41.6 | 33.3 | 27.7 | 20.8 | 16.6 | 13.9 | 11.1 | 8.3 | 1.91 | 1.27 | 0.95 | 0.76 |
| | XC | 60 | 0.61 | 45.3 | 36.2 | 30.2 | 22.6 | 18.1 | 15.1 | 12.1 | 9.1 | 2.08 | 1.39 | 1.04 | 0.83 |
| | VC | 70 | 0.66 | 49.0 | 39.2 | 32.7 | 24.5 | 19.6 | 16.3 | 13.1 | 9.8 | 2.25 | 1.50 | 1.13 | 0.90 |
| | VC | 80 | 0.71 | 52.7 | 42.2 | 35.1 | 26.4 | 21.1 | 17.6 | 14.1 | 10.5 | 2.42 | 1.61 | 1.21 | 0.97 |
| | C | 90 | 0.75 | 55.7 | 44.6 | 37.1 | 27.8 | 22.3 | 18.6 | 14.9 | 11.1 | 2.56 | 1.71 | 1.28 | 1.02 |
| | C | 100 | 0.79 | 58.7 | 46.9 | 39.1 | 29.3 | 23.5 | 19.6 | 15.6 | 11.7 | 2.69 | 1.80 | 1.35 | 1.08 |

Droplet size based on ASABE S572.1 standard.

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# CERAMIC AVI TWIN 110°

## METRIC UNITS

| Nozzle Size | Droplet Size 110° | Pressure (bar) | Flow (L/min) | Application Rate L/Ha- 50 cm Spacing KM/H | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 |
| 01 | XC | 3 | 0.40 | 105 | 79 | 63 | 53 | 45 | 39 | 35 | 32 | 25 | 21 |
| | XC | 4 | 0.46 | 121 | 91 | 73 | 61 | 52 | 45 | 40 | 36 | 29 | 24 |
| | C | 5 | 0.52 | 137 | 103 | 82 | 68 | 59 | 51 | 46 | 41 | 33 | 27 |
| | C | 6 | 0.57 | 150 | 113 | 90 | 75 | 64 | 56 | 50 | 45 | 36 | 30 |
| 015 | XC | 3 | 0.60 | 158 | 118 | 95 | 79 | 68 | 59 | 53 | 47 | 38 | 32 |
| | XC | 4 | 0.69 | 182 | 136 | 109 | 91 | 78 | 68 | 61 | 54 | 44 | 36 |
| | C | 5 | 0.77 | 203 | 152 | 122 | 101 | 87 | 76 | 68 | 61 | 49 | 41 |
| | C | 6 | 0.85 | 224 | 168 | 134 | 112 | 96 | 84 | 75 | 67 | 54 | 45 |
| 02 | XC | 3 | 0.80 | 211 | 158 | 126 | 105 | 90 | 79 | 70 | 63 | 51 | 42 |
| | XC | 4 | 0.92 | 242 | 182 | 145 | 121 | 104 | 91 | 81 | 73 | 58 | 48 |
| | C | 5 | 1.03 | 271 | 203 | 163 | 136 | 116 | 102 | 90 | 81 | 65 | 54 |
| | C | 6 | 1.13 | 297 | 223 | 178 | 149 | 127 | 112 | 99 | 89 | 71 | 59 |
| 03 | XC | 3 | 1.20 | 316 | 237 | 189 | 158 | 135 | 118 | 105 | 95 | 76 | 63 |
| | XC | 4 | 1.39 | 366 | 274 | 219 | 183 | 157 | 137 | 122 | 110 | 88 | 73 |
| | VC | 5 | 1.55 | 408 | 306 | 245 | 204 | 175 | 153 | 136 | 122 | 98 | 82 |
| | C | 6 | 1.70 | 447 | 336 | 268 | 224 | 192 | 168 | 149 | 134 | 107 | 89 |
| 04 | XC | 3 | 1.60 | 421 | 316 | 253 | 211 | 180 | 158 | 140 | 126 | 101 | 84 |
| | XC | 4 | 1.85 | 487 | 365 | 292 | 243 | 209 | 183 | 162 | 146 | 117 | 97 |
| | VC | 5 | 2.07 | 545 | 409 | 327 | 272 | 233 | 204 | 182 | 163 | 131 | 109 |
| | C | 6 | 2.26 | 595 | 446 | 357 | 297 | 255 | 223 | 198 | 178 | 143 | 119 |
| 05 | XC | 3 | 2.00 | 526 | 395 | 316 | 263 | 226 | 197 | 175 | 158 | 126 | 105 |
| | XC | 4 | 2.31 | 608 | 456 | 365 | 304 | 261 | 228 | 203 | 182 | 146 | 122 |
| | VC | 5 | 2.58 | 679 | 509 | 407 | 339 | 291 | 255 | 226 | 204 | 163 | 136 |
| | C | 6 | 2.83 | 745 | 559 | 447 | 372 | 319 | 279 | 248 | 223 | 179 | 149 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Air Induction |
| Material | Ceramic |
| Spray Angle | 110° |
| Pressure Range | 40-100 PSI (3-7 BAR) |
| Configuration | Nozzles |
| **Optimum Boom Height** | |
| 110° - 15" (35 cm) Spacing | 15" (35 cm) |
| 110° - 20" (50 cm) Spacing | 20" (50 cm) |
| **Part Numbers** | |
| **Nozzles 110°** | **Caps (25 Pack)** |
| ATW-11001 | CAP01-01 |
| ATW-110015 | CAP01-015 |
| ATW-11002 | CAP01-02 |
| ATW-11003 | CAP01-03 |
| ATW-11004 | CAP01-04 |
| ATW-11005 | CAP01-05 |

# CERAMIC AVI 110°

The Albuz® AVI draws air into the nozzle and mixes it with the spray to create very coarse droplets that minimize spray drift. The air-filled droplets have a larger footprint on the leaf than similar non-air droplets and hold to the leaf for better control. Durable Albuz ceramic orifice create the longest wearing spray nozzle of its kind.

- Excellent drift reduction with large air-filled droplets
- Large passages resist plugging
- Wear-resistant Albuz ceramic orifice
- 80° fan models ideal for use in directed spray applications (See page 177 for more information)
- FastCap includes nozzle, cap and gasket

## US UNITS

| Nozzle Size | Droplet Size 110° | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | GAL/1000 Ft² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 01 | VC | 30 | 0.09 | 6.7 | 5.3 | 4.5 | 3.3 | 2.7 | 2.2 | 1.8 | 1.3 | 0.31 | 0.20 | 0.15 | 0.12 |
| | VC | 40 | 0.10 | 7.4 | 5.9 | 5.0 | 3.7 | 3.0 | 2.5 | 2.0 | 1.5 | 0.34 | 0.23 | 0.17 | 0.14 |
| | VC | 50 | 0.11 | 8.2 | 6.5 | 5.4 | 4.1 | 3.3 | 2.7 | 2.2 | 1.6 | 0.38 | 0.25 | 0.19 | 0.15 |
| | C | 60 | 0.12 | 8.9 | 7.1 | 5.9 | 4.5 | 3.6 | 3.0 | 2.4 | 1.8 | 0.41 | 0.27 | 0.20 | 0.16 |
| | C | 70 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | C | 80 | 0.14 | 10.4 | 8.3 | 6.9 | 5.2 | 4.2 | 3.5 | 2.8 | 2.1 | 0.48 | 0.32 | 0.24 | 0.19 |
| | C | 90 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | C | 100 | 0.16 | 11.9 | 9.5 | 7.9 | 5.9 | 4.8 | 4.0 | 3.2 | 2.4 | 0.55 | 0.36 | 0.27 | 0.22 |
| 015 | VC | 30 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | VC | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | VC | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | C | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | C | 70 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | C | 80 | 0.21 | 15.6 | 12.5 | 10.4 | 7.8 | 6.2 | 5.2 | 4.2 | 3.1 | 0.72 | 0.48 | 0.36 | 0.29 |
| | C | 90 | 0.23 | 17.1 | 13.7 | 11.4 | 8.5 | 6.8 | 5.7 | 4.6 | 3.4 | 0.78 | 0.52 | 0.39 | 0.31 |
| | C | 100 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| 02 | VC | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | VC | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | VC | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | C | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| | C | 70 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | C | 80 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | C | 90 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | C | 100 | 0.32 | 23.8 | 19.0 | 15.8 | 11.9 | 9.5 | 7.9 | 6.3 | 4.8 | 1.09 | 0.73 | 0.55 | 0.44 |
| 025 | XC | 30 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | VC | 40 | 0.25 | 18.6 | 14.9 | 12.4 | 9.3 | 7.4 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 |
| | VC | 50 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | C | 60 | 0.31 | 23.0 | 18.4 | 15.3 | 11.5 | 9.2 | 7.7 | 6.1 | 4.6 | 1.06 | 0.70 | 0.53 | 0.42 |
| | C | 70 | 0.33 | 24.5 | 19.6 | 16.3 | 12.3 | 9.8 | 8.2 | 6.5 | 4.9 | 1.13 | 0.75 | 0.56 | 0.45 |
| | C | 80 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | C | 90 | 0.38 | 28.2 | 22.6 | 18.8 | 14.1 | 11.3 | 9.4 | 7.5 | 5.6 | 1.30 | 0.86 | 0.65 | 0.52 |
| | C | 100 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| 03 | XC | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | XC | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | VC | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | C | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | C | 70 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | C | 80 | 0.42 | 31.2 | 24.9 | 20.8 | 15.6 | 12.5 | 10.4 | 8.3 | 6.2 | 1.43 | 0.95 | 0.72 | 0.57 |
| | C | 90 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | C | 100 | 0.47 | 34.9 | 27.9 | 23.3 | 17.4 | 14.0 | 11.6 | 9.3 | 7.0 | 1.60 | 1.07 | 0.80 | 0.64 |
| 04 | XC | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | XC | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | XC | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | VC | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | VC | 70 | 0.53 | 39.4 | 31.5 | 26.2 | 19.7 | 15.7 | 13.1 | 10.5 | 7.9 | 1.81 | 1.20 | 0.90 | 0.72 |
| | VC | 80 | 0.57 | 42.3 | 33.9 | 28.2 | 21.2 | 16.9 | 14.1 | 11.3 | 8.5 | 1.94 | 1.30 | 0.97 | 0.78 |
| | VC | 90 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | VC | 100 | 0.63 | 46.8 | 37.4 | 31.2 | 23.4 | 18.7 | 15.6 | 12.5 | 9.4 | 2.15 | 1.43 | 1.07 | 0.86 |
| 05 | XC | 30 | 0.43 | 31.9 | 25.5 | 21.3 | 16.0 | 12.8 | 10.6 | 8.5 | 6.4 | 1.47 | 0.98 | 0.73 | 0.59 |
| | XC | 40 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.71 | 1.14 | 0.85 | 0.68 |
| | XC | 50 | 0.56 | 41.6 | 33.3 | 27.7 | 20.8 | 16.6 | 13.9 | 11.1 | 8.3 | 1.91 | 1.27 | 0.95 | 0.76 |
| | XC | 60 | 0.61 | 45.3 | 36.2 | 30.2 | 22.6 | 18.1 | 15.1 | 12.1 | 9.1 | 2.08 | 1.39 | 1.04 | 0.83 |
| | VC | 70 | 0.66 | 49.0 | 39.2 | 32.7 | 24.5 | 19.6 | 16.3 | 13.1 | 9.8 | 2.25 | 1.50 | 1.13 | 0.90 |
| | VC | 80 | 0.71 | 52.7 | 42.2 | 35.1 | 26.4 | 21.1 | 17.6 | 14.1 | 10.5 | 2.42 | 1.61 | 1.21 | 0.97 |
| | VC | 90 | 0.75 | 55.7 | 44.6 | 37.1 | 27.8 | 22.3 | 18.6 | 14.9 | 11.1 | 2.56 | 1.71 | 1.28 | 1.02 |
| | VC | 100 | 0.79 | 58.7 | 46.9 | 39.1 | 29.3 | 23.5 | 19.6 | 15.6 | 11.7 | 2.69 | 1.80 | 1.35 | 1.08 |
| 06 | XC | 30 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | XC | 40 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | XC | 50 | 0.67 | 49.7 | 39.8 | 33.2 | 24.9 | 19.9 | 16.6 | 13.3 | 9.9 | 2.28 | 1.52 | 1.14 | 0.91 |
| | XC | 60 | 0.73 | 54.2 | 43.4 | 36.1 | 27.1 | 21.7 | 18.1 | 14.5 | 10.8 | 2.49 | 1.66 | 1.24 | 1.00 |
| | XC | 70 | 0.79 | 58.7 | 46.9 | 39.1 | 29.3 | 23.5 | 19.6 | 15.6 | 11.7 | 2.69 | 1.80 | 1.35 | 1.08 |
| | VC | 80 | 0.85 | 63.1 | 50.5 | 42.1 | 31.6 | 25.2 | 21.0 | 16.8 | 12.6 | 2.90 | 1.93 | 1.45 | 1.16 |
| | VC | 90 | 0.90 | 66.8 | 53.5 | 44.6 | 33.4 | 26.7 | 22.3 | 17.8 | 13.4 | 3.07 | 2.05 | 1.53 | 1.23 |
| | VC | 100 | 0.95 | 70.5 | 56.4 | 47.0 | 35.3 | 28.2 | 23.5 | 18.8 | 14.1 | 3.24 | 2.16 | 1.62 | 1.30 |
| 08 | XC | 30 | 0.69 | 51.2 | 41.0 | 34.2 | 25.6 | 20.5 | 17.1 | 13.7 | 10.2 | 2.35 | 1.57 | 1.18 | 0.94 |
| | XC | 40 | 0.80 | 59.4 | 47.5 | 39.6 | 29.7 | 23.8 | 19.8 | 15.8 | 11.9 | 2.73 | 1.82 | 1.36 | 1.09 |
| | XC | 50 | 0.89 | 66.1 | 52.9 | 44.1 | 33.0 | 26.4 | 22.0 | 17.6 | 13.2 | 3.03 | 2.02 | 1.52 | 1.21 |
| | XC | 60 | 0.98 | 72.8 | 58.2 | 48.5 | 36.4 | 29.1 | 24.3 | 19.4 | 14.6 | 3.34 | 2.23 | 1.67 | 1.34 |
| | XC | 70 | 1.06 | 78.7 | 63.0 | 52.5 | 39.4 | 31.5 | 26.2 | 21.0 | 15.7 | 3.61 | 2.41 | 1.81 | 1.45 |
| | XC | 80 | 1.13 | 83.9 | 67.1 | 55.9 | 42.0 | 33.6 | 28.0 | 22.4 | 16.8 | 3.85 | 2.57 | 1.93 | 1.54 |
| | XC | 90 | 1.20 | 89.1 | 71.3 | 59.4 | 44.6 | 35.6 | 29.7 | 23.8 | 17.8 | 4.09 | 2.73 | 2.05 | 1.64 |
| | XC | 100 | 1.26 | 93.6 | 74.8 | 62.4 | 46.8 | 37.4 | 31.2 | 24.9 | 18.7 | 4.30 | 2.86 | 2.15 | 1.72 |
| 10 | XC | 30 | 0.87 | 64.6 | 51.7 | 43.1 | 32.3 | 25.8 | 21.5 | 17.2 | 12.9 | 2.97 | 1.98 | 1.48 | 1.19 |
| | XC | 40 | 1.00 | 74.3 | 59.4 | 49.5 | 37.1 | 29.7 | 24.8 | 19.8 | 14.9 | 3.41 | 2.27 | 1.71 | 1.36 |
| | XC | 50 | 1.12 | 83.2 | 66.5 | 55.4 | 41.6 | 33.3 | 27.7 | 22.2 | 16.6 | 3.82 | 2.55 | 1.91 | 1.53 |
| | XC | 60 | 1.22 | 90.6 | 72.5 | 60.4 | 45.3 | 36.2 | 30.2 | 24.2 | 18.1 | 4.16 | 2.77 | 2.08 | 1.66 |
| | XC | 70 | 1.32 | 98.0 | 78.4 | 65.3 | 49.0 | 39.2 | 32.7 | 26.1 | 19.6 | 4.50 | 3.00 | 2.25 | 1.80 |
| | XC | 80 | 1.41 | 105 | 83.8 | 69.8 | 52.3 | 41.9 | 34.9 | 27.9 | 20.9 | 4.81 | 3.21 | 2.40 | 1.92 |
| | XC | 90 | 1.50 | 111 | 89.1 | 74.3 | 55.7 | 44.6 | 37.1 | 29.7 | 22.3 | 5.12 | 3.41 | 2.56 | 2.05 |
| | XC | 100 | 1.58 | 117 | 93.9 | 78.2 | 58.7 | 46.9 | 39.1 | 31.3 | 23.5 | 5.39 | 3.59 | 2.69 | 2.16 |

Hypro® is a registered trademark of Pentair.
Droplet size based on ASABE S572.1 standard.

# CERAMIC AVI 110°

## METRIC UNITS

| Nozzle Size | Droplet Size 110° | Pressure (bar) | Flow (L/min) | Application Rate L/Ha- 50 cm Spacing KM/H | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 |
| 01 | VC | 2 | 0.33 | 87 | 65 | 52 | 43 | 37 | 33 | 29 | 26 | 21 | 17 |
| | VC | 3 | 0.40 | 105 | 79 | 63 | 53 | 45 | 39 | 35 | 32 | 25 | 21 |
| | VC | 4 | 0.46 | 121 | 91 | 73 | 61 | 52 | 45 | 40 | 36 | 29 | 24 |
| | C | 5 | 0.52 | 137 | 103 | 82 | 68 | 59 | 51 | 46 | 41 | 33 | 27 |
| | C | 6 | 0.57 | 150 | 113 | 90 | 75 | 64 | 56 | 50 | 45 | 36 | 30 |
| | C | 7 | 0.61 | 161 | 120 | 96 | 80 | 69 | 60 | 54 | 48 | 39 | 32 |
| 015 | VC | 2 | 0.49 | 129 | 97 | 77 | 64 | 55 | 48 | 43 | 39 | 31 | 26 |
| | VC | 3 | 0.60 | 158 | 118 | 95 | 79 | 68 | 59 | 53 | 47 | 38 | 32 |
| | VC | 4 | 0.69 | 182 | 136 | 109 | 91 | 78 | 68 | 61 | 54 | 44 | 36 |
| | VC | 5 | 0.77 | 203 | 152 | 122 | 101 | 87 | 76 | 68 | 61 | 49 | 41 |
| | C | 6 | 0.85 | 224 | 168 | 134 | 112 | 96 | 84 | 75 | 67 | 54 | 45 |
| | C | 7 | 0.92 | 242 | 182 | 145 | 121 | 104 | 91 | 81 | 73 | 58 | 48 |
| 02 | VC | 2 | 0.65 | 171 | 128 | 103 | 86 | 73 | 64 | 57 | 51 | 41 | 34 |
| | VC | 3 | 0.80 | 211 | 158 | 126 | 105 | 90 | 79 | 70 | 63 | 51 | 42 |
| | VC | 4 | 0.92 | 242 | 182 | 145 | 121 | 104 | 91 | 81 | 73 | 58 | 48 |
| | VC | 5 | 1.03 | 271 | 203 | 163 | 136 | 116 | 102 | 90 | 81 | 65 | 54 |
| | VC | 6 | 1.13 | 297 | 223 | 178 | 149 | 127 | 112 | 99 | 89 | 71 | 59 |
| | C | 7 | 1.22 | 321 | 241 | 193 | 161 | 138 | 120 | 107 | 96 | 77 | 64 |
| 025 | XC | 2 | 0.82 | 216 | 162 | 129 | 108 | 92 | 81 | 72 | 65 | 52 | 43 |
| | VC | 3 | 1.00 | 263 | 197 | 158 | 132 | 113 | 99 | 88 | 79 | 63 | 53 |
| | VC | 4 | 1.15 | 303 | 227 | 182 | 151 | 130 | 113 | 101 | 91 | 73 | 61 |
| | VC | 5 | 1.29 | 339 | 255 | 204 | 170 | 145 | 127 | 113 | 102 | 81 | 68 |
| | VC | 6 | 1.41 | 371 | 278 | 223 | 186 | 159 | 139 | 124 | 111 | 89 | 74 |
| | VC | 7 | 1.53 | 403 | 302 | 242 | 201 | 173 | 151 | 134 | 121 | 97 | 81 |
| 03 | XC | 2 | 0.98 | 258 | 193 | 155 | 129 | 111 | 97 | 86 | 77 | 62 | 52 |
| | XC | 3 | 1.20 | 316 | 237 | 189 | 158 | 135 | 118 | 105 | 95 | 76 | 63 |
| | VC | 4 | 1.39 | 366 | 274 | 219 | 183 | 157 | 137 | 122 | 110 | 88 | 73 |
| | VC | 5 | 1.55 | 408 | 306 | 245 | 204 | 175 | 153 | 136 | 122 | 98 | 82 |
| | VC | 6 | 1.70 | 447 | 336 | 268 | 224 | 192 | 168 | 149 | 134 | 107 | 89 |
| | VC | 7 | 1.83 | 482 | 361 | 289 | 241 | 206 | 181 | 161 | 144 | 116 | 96 |
| 04 | XC | 2 | 1.31 | 345 | 259 | 207 | 172 | 148 | 129 | 115 | 103 | 83 | 69 |
| | XC | 3 | 1.60 | 421 | 316 | 253 | 211 | 180 | 158 | 140 | 126 | 101 | 84 |
| | VC | 4 | 1.85 | 487 | 365 | 292 | 243 | 209 | 183 | 162 | 146 | 117 | 97 |
| | VC | 5 | 2.07 | 545 | 409 | 327 | 272 | 233 | 204 | 182 | 163 | 131 | 109 |
| | VC | 6 | 2.26 | 595 | 446 | 357 | 297 | 255 | 223 | 198 | 178 | 143 | 119 |
| | VC | 7 | 2.44 | 642 | 482 | 385 | 321 | 275 | 241 | 214 | 193 | 154 | 128 |
| 05 | XC | 2 | 1.63 | 429 | 322 | 257 | 214 | 184 | 161 | 143 | 129 | 103 | 86 |
| | XC | 3 | 2.00 | 526 | 395 | 316 | 263 | 226 | 197 | 175 | 158 | 126 | 105 |
| | XC | 4 | 2.31 | 608 | 456 | 365 | 304 | 261 | 228 | 203 | 182 | 146 | 122 |
| | VC | 5 | 2.58 | 679 | 509 | 407 | 339 | 291 | 255 | 226 | 204 | 163 | 136 |
| | VC | 6 | 2.83 | 745 | 559 | 447 | 372 | 319 | 279 | 248 | 223 | 179 | 149 |
| | VC | 7 | 3.06 | 805 | 604 | 483 | 403 | 345 | 302 | 268 | 242 | 193 | 161 |
| 06 | XC | 2 | 1.96 | 516 | 387 | 309 | 258 | 221 | 193 | 172 | 155 | 124 | 103 |
| | XC | 3 | 2.40 | 632 | 474 | 379 | 316 | 271 | 237 | 211 | 189 | 152 | 126 |
| | XC | 4 | 2.77 | 729 | 547 | 437 | 364 | 312 | 273 | 243 | 219 | 175 | 146 |
| | VC | 5 | 3.10 | 816 | 612 | 489 | 408 | 350 | 306 | 272 | 245 | 196 | 163 |
| | VC | 6 | 3.39 | 892 | 669 | 535 | 446 | 382 | 335 | 297 | 268 | 214 | 178 |
| | VC | 7 | 3.67 | 966 | 724 | 579 | 483 | 414 | 362 | 322 | 290 | 232 | 193 |
| 08 | XC | 2 | 2.61 | 687 | 515 | 412 | 343 | 294 | 258 | 229 | 206 | 165 | 137 |
| | XC | 3 | 3.20 | 842 | 632 | 505 | 421 | 361 | 316 | 281 | 253 | 202 | 168 |
| | XC | 4 | 3.70 | 974 | 730 | 584 | 487 | 417 | 365 | 325 | 292 | 234 | 195 |
| | XC | 5 | 4.13 | 1087 | 815 | 652 | 543 | 466 | 408 | 362 | 326 | 261 | 217 |
| | XC | 6 | 4.53 | 1192 | 894 | 715 | 596 | 511 | 447 | 397 | 358 | 286 | 238 |
| | XC | 7 | 4.89 | 1287 | 965 | 772 | 643 | 552 | 483 | 429 | 386 | 309 | 257 |
| 10 | XC | 2 | 3.27 | 861 | 645 | 516 | 430 | 369 | 323 | 287 | 258 | 207 | 172 |
| | XC | 3 | 4.00 | 1053 | 789 | 632 | 526 | 451 | 395 | 351 | 316 | 253 | 211 |
| | XC | 4 | 4.62 | 1216 | 912 | 729 | 608 | 521 | 456 | 405 | 365 | 292 | 243 |
| | XC | 5 | 5.16 | 1358 | 1018 | 815 | 679 | 582 | 509 | 453 | 407 | 326 | 272 |
| | XC | 6 | 5.66 | 1489 | 1117 | 894 | 745 | 638 | 559 | 496 | 447 | 357 | 298 |
| | XC | 7 | 6.11 | 1608 | 1206 | 965 | 804 | 689 | 603 | 536 | 482 | 386 | 322 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Weeds |
| Pattern | Tapered Flat Fan |
| Technology | Air Induction |
| Material | Ceramic |
| Spray Angle | 110° |
| Pressure Range | 30-100 PSI (2-7 BAR) |
| Configuration | Nozzles, FastCap Complete |
| **Optimum Boom Height** | |
| 110° - 15" (35 cm) Spacing | 15" (35 cm) |
| 110° - 20" (50 cm) Spacing | 20" (50 cm) |

| Nozzles | FastCaps |
|---|---|
| AVI-11001 | FC-AVI-11001 |
| AVI-110015 | FC-AVI-110015 |
| AVI-11002 | FC-AVI-11002 |
| AVI-110025 | FC-AVI-110025 |
| AVI-11003 | FC-AVI-11003 |
| AVI-11004 | FC-AVI-11004 |
| AVI-11005 | FC-AVI-11005 |
| AVI-11006 | FC-AVI-11006 |
| AVI-11008 | FC-AVI-11008 |
| AVI-11010 | FC-AVI-11010 |

| Replacement Cap Gasket |
|---|
| 10BG-2270-0150 |

# CERAMIC ADI 110°

The Albuz® ADI anti-drift spray nozzle provides a versatile balance of drift reduction and target coverage. The proven pre-orifice design creates droplets that are well suited for a wide range of spray applications. The ceramic orifice resists wear better than other materials and will provide acre after acre of service.

- Droplet size balances drift reduction and target coverage
- Simple and effective pre-orifice design
- Versatile and long-lasting nozzle
- PWM system compatible

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | GAL/1000 Ft² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 01 | M | 30 | 0.09 | 6.7 | 5.3 | 4.5 | 3.3 | 2.7 | 2.2 | 1.8 | 1.3 | 0.31 | 0.20 | 0.15 | 0.12 |
| | M | 40 | 0.10 | 7.4 | 5.9 | 5.0 | 3.7 | 3.0 | 2.5 | 2.0 | 1.5 | 0.34 | 0.23 | 0.17 | 0.14 |
| | F | 50 | 0.11 | 8.2 | 6.5 | 5.4 | 4.1 | 3.3 | 2.7 | 2.2 | 1.6 | 0.38 | 0.25 | 0.19 | 0.15 |
| | F | 60 | 0.12 | 8.9 | 7.1 | 5.9 | 4.5 | 3.6 | 3.0 | 2.4 | 1.8 | 0.41 | 0.27 | 0.20 | 0.16 |
| | F | 70 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| 015 | M | 30 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | M | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | M | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | M | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | M | 70 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| 02 | M | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | M | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | M | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | M | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| | M | 70 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| 03 | C | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | M | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | M | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | M | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | M | 70 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| 04 | VC | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | C | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | C | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | C | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | M | 70 | 0.53 | 39.4 | 31.5 | 26.2 | 19.7 | 15.7 | 13.1 | 10.5 | 7.9 | 1.81 | 1.20 | 0.90 | 0.72 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Air Induction |
| Material | Ceramic |
| Spray Angle | 110° |
| Pressure Range | 30-70 PSI (2-5 BAR) |
| Configuration | Nozzles |

| Part Numbers | |
|---|---|
| Nozzles 110° | Caps (25 Pack) |
| ADI-11001 | CAP00-01 |
| ADI-110015 | CAP00-015 |
| ADI-11002 | CAP00-02 |
| ADI-11003 | CAP00-03 |
| ADI-11004 | CAP00-04 |

## METRIC UNITS

| Nozzle Size | Droplet Size | Pressure (BAR) | Flow Rate (L/min) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 |
| 01 | F | 2 | 0.33 | 87 | 65 | 52 | 43 | 37 | 33 | 29 | 26 | 21 | 17 |
| | F | 3 | 0.40 | 105 | 79 | 63 | 53 | 45 | 39 | 35 | 32 | 25 | 21 |
| | F | 4 | 0.46 | 121 | 91 | 73 | 61 | 52 | 45 | 40 | 36 | 29 | 24 |
| | VF | 5 | 0.52 | 137 | 103 | 82 | 68 | 59 | 51 | 46 | 41 | 33 | 27 |
| 02 | F | 2 | 0.49 | 129 | 97 | 77 | 64 | 55 | 48 | 43 | 39 | 31 | 26 |
| | F | 3 | 0.60 | 158 | 118 | 95 | 79 | 68 | 59 | 53 | 47 | 38 | 32 |
| | F | 4 | 0.69 | 182 | 136 | 109 | 91 | 78 | 68 | 61 | 54 | 44 | 36 |
| | F | 5 | 0.77 | 203 | 152 | 122 | 101 | 87 | 76 | 68 | 61 | 49 | 41 |
| 03 | M | 2 | 0.65 | 171 | 128 | 103 | 86 | 73 | 64 | 57 | 51 | 41 | 34 |
| | M | 3 | 0.80 | 211 | 158 | 126 | 105 | 90 | 79 | 70 | 63 | 51 | 42 |
| | F | 4 | 0.92 | 242 | 182 | 145 | 121 | 104 | 91 | 81 | 73 | 58 | 48 |
| | F | 5 | 1.03 | 271 | 203 | 163 | 136 | 116 | 102 | 90 | 81 | 65 | 54 |
| 04 | M | 2 | 0.98 | 258 | 193 | 155 | 129 | 111 | 97 | 86 | 77 | 62 | 52 |
| | M | 3 | 1.20 | 316 | 237 | 189 | 158 | 135 | 118 | 105 | 95 | 76 | 63 |
| | M | 4 | 1.39 | 366 | 274 | 219 | 183 | 157 | 137 | 122 | 110 | 88 | 73 |
| | F | 5 | 1.55 | 408 | 306 | 245 | 204 | 175 | 153 | 136 | 122 | 98 | 82 |
| 05 | M | 2 | 1.31 | 345 | 259 | 207 | 172 | 148 | 129 | 115 | 103 | 83 | 69 |
| | M | 3 | 1.60 | 421 | 316 | 253 | 211 | 180 | 158 | 140 | 126 | 101 | 84 |
| | M | 4 | 1.85 | 487 | 365 | 292 | 243 | 209 | 183 | 162 | 146 | 117 | 97 |
| | M | 5 | 2.07 | 545 | 409 | 327 | 272 | 233 | 204 | 182 | 163 | 131 | 109 |
| 06 | M | 2 | 1.96 | 516 | 387 | 309 | 258 | 221 | 193 | 172 | 155 | 124 | 103 |
| | M | 3 | 2.40 | 632 | 474 | 379 | 316 | 271 | 237 | 211 | 189 | 152 | 126 |
| | M | 4 | 2.77 | 729 | 547 | 437 | 364 | 312 | 273 | 243 | 219 | 175 | 146 |
| | M | 5 | 3.10 | 816 | 612 | 489 | 408 | 350 | 306 | 272 | 245 | 196 | 163 |

Droplet size based on ASABE S572.1 standard.

Albuz® is a registered trademark of SAINT-GOBAIN SOLCERA, SAINT GOBAIN CERAMIQUES AVANCEES DESMARQUEST, CERAMIQUES TECHNIQUES DESMARQUEST, and SOCIETE DESMARQUEST ET CEC..
Hypro® is a registered trademark of Pentair.

# CERAMIC AXI 80° & 110°

The Albuz® AXI wide pressure range ceramic spray nozzles are suited for creating numerous fine to medium droplets. The ceramic orifice of the AXI will provide long service life even when spraying abrasive chemicals.

- Adjustable droplet size according to pressure
- Maintains good spray distribution and makes larger droplets at low pressures
- FastCap includes nozzle, cap and gasket
- 80° fan models ideal for use in directed spray applications (See page 178 for more information)

## US UNITS

| Nozzle Size | Droplet Size | | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | GAL/1000 Ft² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 80° | 110° | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 015 | F | F | 20 | 0.11 | 8.2 | 6.5 | 5.4 | 4.1 | 3.3 | 2.7 | 2.2 | 1.6 | 0.38 | 0.25 | 0.19 | 0.15 |
| | F | F | 30 | 0.13 | 9.7 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | F | F | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | F | F | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | VF | F | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | VF | F | 70 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| 02 | F | F | 20 | 0.14 | 10.4 | 8.3 | 6.9 | 5.2 | 4.2 | 3.5 | 2.8 | 2.1 | 0.48 | 0.32 | 0.24 | 0.19 |
| | F | F | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | F | F | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | F | F | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | F | F | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| | F | F | 70 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| 03 | M | M | 20 | 0.21 | 15.6 | 12.5 | 10.4 | 7.8 | 6.2 | 5.2 | 4.2 | 3.1 | 0.72 | 0.48 | 0.36 | 0.29 |
| | M | F | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | M | F | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | F | F | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | F | F | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | F | F | 70 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| 04 | M | M | 20 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | M | M | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | M | F | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | M | F | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | F | F | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | F | F | 70 | 0.53 | 39.4 | 31.5 | 26.2 | 19.7 | 15.7 | 13.1 | 10.5 | 7.9 | 1.81 | 1.20 | 0.90 | 0.72 |
| 05 | M | M | 20 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | M | M | 30 | 0.43 | 31.9 | 25.5 | 21.3 | 16.0 | 12.8 | 10.6 | 8.5 | 6.4 | 1.47 | 0.98 | 0.73 | 0.59 |
| | M | F | 40 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.71 | 1.14 | 0.85 | 0.68 |
| | M | F | 50 | 0.56 | 41.6 | 33.3 | 27.7 | 20.8 | 16.6 | 13.9 | 11.1 | 8.3 | 1.91 | 1.27 | 0.95 | 0.76 |
| | M | F | 60 | 0.61 | 45.3 | 36.2 | 30.2 | 22.6 | 18.1 | 15.1 | 12.1 | 9.1 | 2.08 | 1.39 | 1.04 | 0.83 |
| | M | F | 70 | 0.66 | 49.0 | 39.2 | 32.7 | 24.5 | 19.6 | 16.3 | 13.1 | 9.8 | 2.25 | 1.50 | 1.13 | 0.90 |
| 06 | M | M | 20 | 0.42 | 31.2 | 24.9 | 20.8 | 15.6 | 12.5 | 10.4 | 8.3 | 6.2 | 1.43 | 0.95 | 0.72 | 0.57 |
| | M | M | 30 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | M | M | 40 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | M | F | 50 | 0.67 | 49.7 | 39.8 | 33.2 | 24.9 | 19.9 | 16.6 | 13.3 | 9.9 | 2.28 | 1.52 | 1.14 | 0.91 |
| | M | F | 60 | 0.73 | 54.2 | 43.4 | 36.1 | 27.1 | 21.7 | 18.1 | 14.5 | 10.8 | 2.49 | 1.66 | 1.24 | 1.00 |
| | M | F | 70 | 0.79 | 58.7 | 46.9 | 39.1 | 29.3 | 23.5 | 19.6 | 15.6 | 11.7 | 2.69 | 1.80 | 1.35 | 1.08 |

Droplet size based on ASABE S572.1 standard.

## METRIC UNITS

| Nozzle Size | Droplet Size | | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - 50 cm spacing KM/H | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 80° | 110° | | | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 |
| 015 | F | F | 2 | 0.49 | 129 | 97 | 77 | 64 | 55 | 48 | 43 | 39 | 31 | 26 |
| | F | F | 3 | 0.60 | 158 | 118 | 95 | 79 | 68 | 59 | 53 | 47 | 38 | 32 |
| | F | F | 4 | 0.69 | 182 | 136 | 109 | 91 | 78 | 68 | 61 | 54 | 44 | 36 |
| | VF | F | 5 | 0.77 | 203 | 152 | 122 | 101 | 87 | 76 | 68 | 61 | 49 | 41 |
| 02 | M | F | 2 | 0.65 | 171 | 128 | 103 | 86 | 73 | 64 | 57 | 51 | 41 | 34 |
| | F | F | 3 | 0.80 | 211 | 158 | 126 | 105 | 90 | 79 | 70 | 63 | 51 | 42 |
| | F | F | 4 | 0.92 | 242 | 182 | 145 | 121 | 104 | 91 | 81 | 73 | 58 | 48 |
| | F | F | 5 | 1.03 | 271 | 203 | 163 | 136 | 116 | 102 | 90 | 81 | 65 | 54 |
| 03 | M | F | 2 | 0.98 | 258 | 193 | 155 | 129 | 111 | 97 | 86 | 77 | 62 | 52 |
| | M | F | 3 | 1.20 | 316 | 237 | 189 | 158 | 135 | 118 | 105 | 95 | 76 | 63 |
| | F | F | 4 | 1.39 | 366 | 274 | 219 | 183 | 157 | 137 | 122 | 110 | 88 | 73 |
| | F | F | 5 | 1.55 | 408 | 306 | 245 | 204 | 175 | 153 | 136 | 122 | 98 | 82 |
| 04 | M | M | 2 | 1.31 | 345 | 259 | 207 | 172 | 148 | 129 | 115 | 103 | 83 | 69 |
| | M | F | 3 | 1.60 | 421 | 316 | 253 | 211 | 180 | 158 | 140 | 126 | 101 | 84 |
| | M | F | 4 | 1.85 | 487 | 365 | 292 | 243 | 209 | 183 | 162 | 146 | 117 | 97 |
| | F | F | 5 | 2.07 | 545 | 409 | 327 | 272 | 233 | 204 | 182 | 163 | 131 | 109 |
| 05 | M | M | 2 | 1.63 | 429 | 322 | 257 | 214 | 184 | 161 | 143 | 129 | 103 | 86 |
| | M | F | 3 | 2.00 | 526 | 395 | 316 | 263 | 226 | 197 | 175 | 158 | 126 | 105 |
| | M | F | 4 | 2.31 | 608 | 456 | 365 | 304 | 261 | 228 | 203 | 182 | 146 | 122 |
| | M | F | 5 | 2.58 | 679 | 509 | 407 | 339 | 291 | 255 | 226 | 204 | 163 | 136 |
| 06 | M | M | 2 | 1.96 | 516 | 387 | 309 | 258 | 221 | 193 | 172 | 155 | 124 | 103 |
| | M | M | 3 | 2.40 | 632 | 474 | 379 | 316 | 271 | 237 | 211 | 189 | 152 | 126 |
| | M | F | 4 | 2.77 | 729 | 547 | 437 | 364 | 312 | 273 | 243 | 219 | 175 | 146 |
| | M | F | 5 | 3.10 | 816 | 612 | 489 | 408 | 350 | 306 | 272 | 245 | 196 | 163 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | General |
| Pattern | Tapered Flat Fan |
| Technology | Elliptical Orifice |
| Material | Ceramic |
| Spray Angle | 80° & 110° |
| Pressure Range | 20-70 PSI (1.5-5 BAR) |
| Configuration | Nozzles, FastCap |

| Optimum Boom Height | |
|---|---|
| 80° - 15" (35 cm) Spacing | 22" (56 cm) |
| 80° - 20" (50 cm) Spacing | 30" (76 cm) |
| 110° - 15" (35 cm) Spacing | 15" (35 cm) |
| 110° - 20" (50 cm) Spacing | 20" (50 cm) |

| Part Numbers | |
|---|---|
| **Nozzles 80°** | **FastCaps 80°** |
| AXI-80015 | FC-AXI-80015 |
| AXI-8002 | FC-AXI-8002 |
| AXI-8003 | FC-AXI-8003 |
| AXI-8004 | FC-AXI-8004 |
| AXI-8005 | FC-AXI-8005 |
| AXI-8006 | FC-AXI-8006 |
| **Nozzles 110°** | **FastCaps 110°** |
| AXI-110015 | FC-AXI-110015 |
| AXI-11002 | FC-AXI-11002 |
| AXI-110025 | - |
| AXI-11003 | FC-AXI-11003 |
| AXI-11004 | FC-AXI-11004 |
| AXI-11005 | FC-AXI-11005 |
| AXI-11006 | FC-AXI-11006 |
| **Replacement Cap Gasket** | |
| 10BG-2270-0150 | |

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Hypro® is a registered trademark of Pentair.

# HI-FLOW 140°

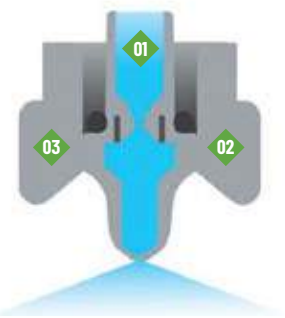
The Hypro® Hi-Flow nozzle is the best way to outfit a sprayer to achieve wide-angle coverage plus drift control. The 140° pattern ensures unmatched uniformity across the spray boom and allows lower spray heights to reduce the risk of drift during sensitive applications.

- Frequently used with fertilizer/herbicide mixtures for early season weed control
- Straight-through design to reduce clogging and drift
- Incredibly uniform application across the boom
- Lower spray heights and pre-orifice technology reduce drift
- PWM compatable

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | MPH - 20 Inch Spacing | | | | | | | MPH - 40 Inch Spacing | | | | | | | MPH - 60 Inch Spacing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gallons per Acre | | | | | | | Gallons per Acre | | | | | | | Gallons per Acre | | | | | | |
| | | | | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 15 | 30 | 45 | 60 | 75 | 90 | 105 |
| 08 | UC | 20 | 0.57 | 11 | 6 | 4 | 3 | 2 | 2 | 2 | 6 | 3 | 2 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 1 | 1 | 1 |
| | UC | 30 | 0.69 | 14 | 7 | 5 | 3 | 3 | 2 | 2 | 7 | 3 | 2 | 2 | 1 | 1 | 1 | 5 | 2 | 2 | 1 | 1 | 1 | 1 |
| | UC | 40 | 0.80 | 16 | 8 | 5 | 4 | 3 | 3 | 2 | 8 | 4 | 3 | 2 | 2 | 1 | 1 | 5 | 3 | 2 | 1 | 1 | 1 | 1 |
| | UC | 50 | 0.89 | 18 | 9 | 6 | 4 | 4 | 3 | 3 | 9 | 4 | 3 | 2 | 2 | 1 | 1 | 6 | 3 | 2 | 1 | 1 | 1 | 1 |
| | XC | 60 | 0.98 | 19 | 10 | 6 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 2 | 2 | 2 | 1 | 6 | 3 | 2 | 2 | 1 | 1 | 1 |
| | XC | 70 | 1.06 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 3 | 2 | 2 | 1 | 7 | 3 | 2 | 2 | 1 | 1 | 1 |
| | XC | 80 | 1.13 | 22 | 11 | 7 | 6 | 4 | 4 | 3 | 11 | 6 | 4 | 3 | 2 | 2 | 2 | 7 | 4 | 2 | 2 | 1 | 1 | 1 |
| 10 | UC | 20 | 0.71 | 14 | 7 | 5 | 4 | 3 | 2 | 2 | 7 | 4 | 2 | 2 | 1 | 1 | 1 | 5 | 2 | 2 | 1 | 1 | 1 | 1 |
| | UC | 30 | 0.87 | 17 | 9 | 6 | 4 | 3 | 3 | 2 | 9 | 4 | 3 | 2 | 2 | 1 | 1 | 6 | 3 | 2 | 1 | 1 | 1 | 1 |
| | UC | 40 | 1.00 | 20 | 10 | 7 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 2 | 2 | 2 | 1 | 7 | 3 | 2 | 2 | 1 | 1 | 1 |
| | UC | 50 | 1.12 | 22 | 11 | 7 | 6 | 4 | 4 | 3 | 11 | 6 | 4 | 3 | 2 | 2 | 2 | 7 | 4 | 2 | 2 | 1 | 1 | 1 |
| | XC | 60 | 1.22 | 24 | 12 | 8 | 6 | 5 | 4 | 3 | 12 | 6 | 4 | 3 | 2 | 2 | 2 | 8 | 4 | 3 | 2 | 2 | 1 | 1 |
| | XC | 70 | 1.32 | 26 | 13 | 9 | 7 | 5 | 4 | 4 | 13 | 7 | 4 | 3 | 3 | 2 | 2 | 9 | 4 | 3 | 2 | 2 | 1 | 1 |
| | XC | 80 | 1.41 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 14 | 7 | 5 | 3 | 3 | 2 | 2 | 9 | 5 | 3 | 2 | 2 | 2 | 1 |
| 15 | UC | 20 | 1.06 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 3 | 2 | 2 | 1 | 7 | 3 | 2 | 2 | 1 | 1 | 1 |
| | UC | 30 | 1.30 | 26 | 13 | 9 | 6 | 5 | 4 | 4 | 13 | 6 | 4 | 3 | 3 | 2 | 2 | 9 | 4 | 3 | 2 | 2 | 1 | 1 |
| | UC | 40 | 1.50 | - | 15 | 10 | 7 | 6 | 5 | 4 | 15 | 7 | 5 | 4 | 3 | 2 | 2 | 10 | 5 | 3 | 2 | 2 | 2 | 1 |
| | UC | 50 | 1.68 | - | 17 | 11 | 8 | 7 | 6 | 5 | 17 | 8 | 6 | 4 | 3 | 3 | 2 | 11 | 6 | 4 | 3 | 2 | 2 | 2 |
| | XC | 60 | 1.84 | - | 18 | 12 | 9 | 7 | 6 | 5 | 18 | 9 | 6 | 5 | 4 | 3 | 3 | 12 | 6 | 4 | 3 | 2 | 2 | 2 |
| | XC | 70 | 1.98 | - | 20 | 13 | 10 | 8 | 7 | 6 | 20 | 10 | 7 | 5 | 4 | 3 | 3 | 13 | 7 | 4 | 3 | 3 | 2 | 2 |
| | XC | 80 | 2.12 | - | 21 | 14 | 10 | 8 | 7 | 6 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 14 | 7 | 5 | 3 | 3 | 2 | 2 |
| 20 | UC | 20 | 1.41 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 14 | 7 | 5 | 3 | 3 | 2 | 2 | 9 | 5 | 3 | 2 | 2 | 2 | 1 |
| | UC | 30 | 1.73 | - | 17 | 11 | 9 | 7 | 6 | 5 | 17 | 9 | 6 | 4 | 3 | 3 | 2 | 11 | 6 | 4 | 3 | 2 | 2 | 2 |
| | UC | 40 | 2.00 | - | 20 | 13 | 10 | 8 | 7 | 6 | 20 | 10 | 7 | 5 | 4 | 3 | 3 | 13 | 7 | 4 | 3 | 3 | 2 | 2 |
| | UC | 50 | 2.24 | - | 22 | 15 | 11 | 9 | 7 | 6 | 22 | 11 | 7 | 5 | 4 | 4 | 3 | 15 | 7 | 5 | 4 | 3 | 2 | 2 |
| | XC | 60 | 2.45 | - | 24 | 16 | 12 | 10 | 8 | 7 | 24 | 12 | 8 | 6 | 5 | 4 | 3 | 16 | 8 | 5 | 4 | 3 | 3 | 2 |
| | XC | 70 | 2.65 | - | 26 | 17 | 13 | 10 | 9 | 7 | 26 | 13 | 9 | 6 | 5 | 4 | 4 | 17 | 9 | 6 | 4 | 3 | 3 | 2 |
| | XC | 80 | 2.83 | - | 28 | 18 | 14 | 11 | 9 | 8 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 18 | 9 | 6 | 5 | 4 | 3 | 3 |
| 30 | UC | 20 | 2.12 | - | 21 | 14 | 10 | 8 | 7 | 6 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 14 | 7 | 5 | 3 | 3 | 2 | 2 |
| | UC | 30 | 2.60 | - | 26 | 17 | 13 | 10 | 9 | 7 | 26 | 13 | 9 | 6 | 5 | 4 | 4 | 17 | 9 | 6 | 4 | 3 | 3 | 2 |
| | UC | 40 | 3.00 | - | 30 | 20 | 15 | 12 | 10 | 8 | 30 | 15 | 10 | 7 | 6 | 5 | 4 | 20 | 10 | 7 | 5 | 4 | 3 | 3 |
| | UC | 50 | 3.35 | - | - | 22 | 17 | 13 | 11 | 10 | - | 17 | 11 | 8 | 7 | 6 | 5 | 22 | 11 | 7 | 6 | 4 | 4 | 3 |
| | XC | 60 | 3.67 | - | - | 24 | 18 | 15 | 12 | 10 | - | 18 | 12 | 9 | 7 | 6 | 5 | 24 | 12 | 8 | 6 | 5 | 4 | 3 |
| | XC | 70 | 3.97 | - | - | 26 | 20 | 16 | 13 | 11 | - | 20 | 13 | 10 | 8 | 7 | 6 | 26 | 13 | 9 | 7 | 5 | 4 | 4 |
| | XC | 80 | 4.24 | - | - | 28 | 21 | 17 | 14 | 12 | - | 21 | 14 | 10 | 8 | 7 | 6 | 28 | 14 | 9 | 7 | 6 | 5 | 4 |
| 40 | UC | 20 | 2.83 | - | 28 | 18 | 14 | 11 | 9 | 8 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 18 | 9 | 6 | 5 | 4 | 3 | 3 |
| | UC | 30 | 3.46 | - | - | 23 | 17 | 14 | 12 | 10 | - | 17 | 12 | 9 | 7 | 6 | 5 | 23 | 12 | 8 | 6 | 5 | 4 | 3 |
| | UC | 40 | 4.00 | - | - | 26 | 20 | 16 | 13 | 11 | - | 20 | 13 | 10 | 8 | 7 | 6 | 26 | 13 | 9 | 7 | 5 | 4 | 4 |
| | UC | 50 | 4.47 | - | - | 30 | 22 | 18 | 15 | 13 | - | 22 | 15 | 11 | 9 | 7 | 6 | 30 | 15 | 10 | 7 | 6 | 5 | 4 |
| | XC | 60 | 4.90 | - | - | - | 24 | 19 | 16 | 14 | - | 24 | 16 | 12 | 10 | 8 | 7 | - | 16 | 11 | 8 | 6 | 5 | 5 |
| | XC | 70 | 5.29 | - | - | - | 26 | 21 | 17 | 15 | - | 26 | 17 | 13 | 10 | 9 | 7 | - | 17 | 12 | 9 | 7 | 6 | 5 |
| | XC | 80 | 5.66 | - | - | - | 28 | 23 | 19 | 16 | - | 28 | 19 | 14 | 11 | 9 | 8 | - | 19 | 13 | 9 | 8 | 6 | 5 |
| 50 | UC | 20 | 3.54 | - | - | 23 | 17 | 14 | 12 | 10 | - | 17 | 12 | 9 | 7 | 6 | 5 | 23 | 12 | 8 | 6 | 5 | 4 | 3 |
| | UC | 30 | 4.33 | - | - | 28 | 21 | 17 | 14 | 12 | - | 21 | 14 | 11 | 9 | 7 | 6 | 28 | 14 | 9 | 7 | 6 | 5 | 4 |
| | UC | 40 | 5.00 | - | - | - | 25 | 20 | 17 | 14 | - | 25 | 17 | 12 | 10 | 8 | 7 | - | 17 | 11 | 8 | 7 | 6 | 5 |
| | UC | 50 | 5.59 | - | - | - | 28 | 22 | 18 | 16 | - | 28 | 18 | 14 | 11 | 9 | 8 | - | 18 | 12 | 9 | 7 | 6 | 5 |
| | XC | 60 | 6.12 | - | - | - | 30 | 24 | 20 | 17 | - | 30 | 20 | 15 | 12 | 10 | 9 | - | 20 | 13 | 10 | 8 | 7 | 6 |
| | XC | 70 | 6.61 | - | - | - | - | 26 | 22 | 19 | - | - | 22 | 16 | 13 | 11 | 9 | - | 22 | 15 | 11 | 9 | 7 | 6 |
| | XC | 80 | 7.07 | - | - | - | - | 28 | 23 | 20 | - | - | 23 | 18 | 14 | 12 | 10 | - | 23 | 16 | 12 | 9 | 8 | 7 |
| 60 | UC | 20 | 4.24 | - | - | 28 | 21 | 17 | 14 | 12 | - | 21 | 14 | 10 | 8 | 7 | 6 | 28 | 14 | 9 | 7 | 6 | 5 | 4 |
| | UC | 30 | 5.20 | - | - | - | 26 | 21 | 17 | 15 | - | 26 | 17 | 13 | 10 | 9 | 7 | - | 17 | 11 | 9 | 7 | 6 | 5 |
| | UC | 40 | 6.00 | - | - | - | 30 | 24 | 20 | 17 | - | 30 | 20 | 15 | 12 | 10 | 8 | - | 20 | 13 | 10 | 8 | 7 | 6 |
| | UC | 50 | 6.71 | - | - | - | - | 27 | 22 | 19 | - | - | 22 | 17 | 13 | 11 | 9 | - | 22 | 15 | 11 | 9 | 7 | 6 |
| | XC | 60 | 7.35 | - | - | - | - | 29 | 24 | 21 | - | - | 24 | 18 | 14 | 12 | 10 | - | 24 | 16 | 12 | 10 | 8 | 7 |
| | XC | 70 | 7.94 | - | - | - | - | - | 26 | 22 | - | - | 26 | 20 | 16 | 13 | 11 | - | 26 | 17 | 13 | 10 | 9 | 7 |
| | XC | 80 | 8.49 | - | - | - | - | - | 28 | 24 | - | - | 28 | 21 | 17 | 14 | 12 | - | 28 | 19 | 14 | 11 | 9 | 8 |

Droplet size based on ASABE S572.1 standard.



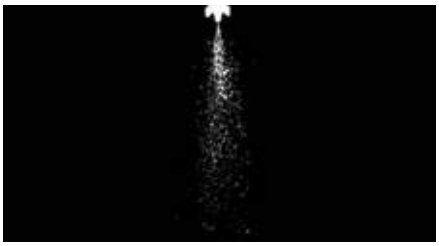

01. Straight flow design for superior resistance to plugging and creation of driftable droplets
02. Unitized spray nozzle design for easy single piece operation
03. Removable pre-orifice for easy cleaning

## FLOATER ADAPTER FOR HI-FLOW NOZZLES

| Part Number | Description |
|---|---|
| 9950-0001 | Floater Adapter Kit for Hi-Flow Nozzles (3/4" Cam Lock to Bayonet) |

# HI-FLOW 140°

140° wide, large droplet spray pattern for industry leading coverage of liquid fertilizers.



Straight through design squeezes fluid flow to create the spray pattern versus deflecting fluid flow and creating un-needed spray drift.

## METRIC UNITS

| Nozzle Size | Droplet Size | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - 50 cm Spacing KM/H | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 08 | UC | 1,5 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 |
| | UC | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 |
| | UC | 2,5 | 2,92 | 501 | 438 | 350 | 292 | 234 | 175 | 140 | 117 |
| | UC | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 |
| | XC | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| | XC | 5 | 4,13 | 708 | 620 | 496 | 413 | 330 | 248 | 198 | 165 |
| | XC | 6 | 4,53 | 777 | 680 | 544 | 453 | 362 | 272 | 217 | 181 |
| 10 | UC | 1,5 | 2,8 | 480 | 420 | 336 | 280 | 224 | 168 | 134 | 112 |
| | UC | 2 | 3,3 | 566 | 495 | 396 | 330 | 264 | 198 | 158 | 132 |
| | UC | 2,5 | 3,7 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| | UC | 3 | 4,0 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 |
| | XC | 4 | 4,6 | 789 | 690 | 552 | 460 | 368 | 276 | 221 | 184 |
| | XC | 5 | 5,2 | 891 | 780 | 624 | 520 | 416 | 312 | 250 | 208 |
| | XC | 6 | 5,7 | 977 | 855 | 684 | 570 | 456 | 342 | 274 | 228 |
| 15 | UC | 1,5 | 4,2 | 720 | 630 | 504 | 420 | 336 | 252 | 202 | 168 |
| | UC | 2 | 4,9 | 840 | 735 | 588 | 490 | 392 | 294 | 235 | 196 |
| | UC | 2,5 | 5,5 | 943 | 825 | 660 | 550 | 440 | 330 | 264 | 220 |
| | UC | 3 | 6,0 | 1029 | 900 | 720 | 600 | 480 | 360 | 288 | 240 |
| | XC | 4 | 6,9 | 1183 | 1035 | 828 | 690 | 552 | 414 | 331 | 276 |
| | XC | 5 | 7,7 | 1320 | 1155 | 924 | 770 | 616 | 462 | 370 | 308 |
| | XC | 6 | 8,5 | 1457 | 1275 | 1020 | 850 | 680 | 510 | 408 | 340 |
| 20 | UC | 1,5 | 5,7 | 977 | 855 | 684 | 570 | 456 | 342 | 274 | 228 |
| | UC | 2 | 6,5 | 1114 | 975 | 780 | 650 | 520 | 390 | 312 | 260 |
| | UC | 2,5 | 7,3 | 1251 | 1095 | 876 | 730 | 584 | 438 | 350 | 292 |
| | UC | 3 | 8,0 | 1371 | 1200 | 960 | 800 | 640 | 480 | 384 | 320 |
| | XC | 4 | 9,2 | 1577 | 1380 | 1104 | 920 | 736 | 552 | 442 | 368 |
| | XC | 5 | 10,3 | 1766 | 1545 | 1236 | 1030 | 824 | 618 | 494 | 412 |
| | XC | 6 | 11,3 | 1937 | 1695 | 1356 | 1130 | 904 | 678 | 542 | 452 |
| 30 | UC | 1,5 | 8,5 | 1457 | 1275 | 1020 | 850 | 680 | 510 | 408 | 340 |
| | UC | 2 | 9,8 | 1680 | 1470 | 1176 | 980 | 784 | 588 | 470 | 392 |
| | UC | 2,5 | 11,0 | 1886 | 1650 | 1320 | 1100 | 880 | 660 | 528 | 440 |
| | UC | 3 | 12,0 | 2057 | 1800 | 1440 | 1200 | 960 | 720 | 576 | 480 |
| | XC | 4 | 13,9 | 2383 | 2085 | 1668 | 1390 | 1112 | 834 | 667 | 556 |
| | XC | 5 | 15,5 | 2657 | 2325 | 1860 | 1550 | 1240 | 930 | 744 | 620 |
| | XC | 6 | 17,0 | 2914 | 2550 | 2040 | 1700 | 1360 | 1020 | 816 | 680 |
| 40 | UC | 1,5 | 11,3 | 1937 | 1695 | 1356 | 1130 | 904 | 678 | 542 | 452 |
| | UC | 2 | 13,1 | 2246 | 1965 | 1572 | 1310 | 1048 | 786 | 629 | 524 |
| | UC | 2,5 | 14,6 | 2503 | 2190 | 1752 | 1460 | 1168 | 876 | 701 | 584 |
| | UC | 3 | 16,0 | 2743 | 2400 | 1920 | 1600 | 1280 | 960 | 768 | 640 |
| | XC | 4 | 18,5 | 3171 | 2775 | 2220 | 1850 | 1480 | 1110 | 888 | 740 |
| | XC | 5 | 20,7 | 3549 | 3105 | 2484 | 2070 | 1656 | 1242 | 994 | 828 |
| | XC | 6 | 22,6 | 3874 | 3390 | 2712 | 2260 | 1808 | 1356 | 1085 | 904 |
| 50 | UC | 1,5 | 14,1 | 2417 | 2115 | 1692 | 1410 | 1128 | 846 | 677 | 564 |
| | UC | 2 | 16,3 | 2794 | 2445 | 1956 | 1630 | 1304 | 978 | 782 | 652 |
| | UC | 2,5 | 18,3 | 3137 | 2745 | 2196 | 1830 | 1464 | 1098 | 878 | 732 |
| | UC | 3 | 20,0 | 3429 | 3000 | 2400 | 2000 | 1600 | 1200 | 960 | 800 |
| | XC | 4 | 23,1 | 3960 | 3465 | 2772 | 2310 | 1848 | 1386 | 1109 | 924 |
| | XC | 5 | 25,8 | 4423 | 3870 | 3096 | 2580 | 2064 | 1548 | 1238 | 1032 |
| | XC | 6 | 28,3 | 4851 | 4245 | 3396 | 2830 | 2264 | 1698 | 1358 | 1132 |
| 60 | UC | 1,5 | 17,0 | 2914 | 2550 | 2040 | 1700 | 1360 | 1020 | 816 | 680 |
| | UC | 2 | 19,6 | 3360 | 2940 | 2352 | 1960 | 1568 | 1176 | 941 | 784 |
| | UC | 2,5 | 21,9 | 3754 | 3285 | 2628 | 2190 | 1752 | 1314 | 1051 | 876 |
| | UC | 3 | 24,0 | 4114 | 3600 | 2880 | 2400 | 1920 | 1440 | 1152 | 960 |
| | XC | 4 | 27,7 | 4749 | 4155 | 3324 | 2770 | 2216 | 1662 | 1330 | 1108 |
| | XC | 5 | 31,0 | 5314 | 4650 | 3720 | 3100 | 2480 | 1860 | 1488 | 1240 |
| | XC | 6 | 33,9 | 5811 | 5085 | 4068 | 3390 | 2712 | 2034 | 1627 | 1356 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Fertilizer |
| Pattern | Tapered Flat Fan |
| Technology | Pre-Orifice |
| Material | Polyacetal |
| Spray Angle | 140° |
| Pressure Range | 20-80 PSI (1.5-6 BAR) |
| Configuration | FastCap |
| **Minimum Boom Height** | |
| 15" (35 cm) Spacing | 10" (25 cm) |
| 20" (50 cm) Spacing | 12" (30 cm) |

| Part Numbers (Bags of 10) |
|---|
| **FastCaps 140°** |
| HF140-08 |
| HF140-10 |
| HF140-15 |
| HF140-20 |
| HF140-30 |
| HF140-40 |
| HF140-50 |
| HF140-60 |
| **Replacement Cap Gasket** |
| 10BG-2270-0150 |

# DEFLECTIP 80°-160°

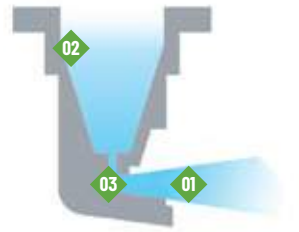
The DeflecTip wide-angle flood fan nozzle creates a wide pattern at very low pressures while creating mainly medium and coarse droplets. It is well suited for mounting on machinery where a wide angle or a low spray height is desired and on sprayers using very low pressures, including manual sprayers.

- Sprays at very low pressures
- Medium to coarse spray is suited for a variety of applications
- Larger sizes are suitable for liquid fertilizer applications
- Large circular orifice reduces the chances of blocking
- For use of single nozzles with knapsack/backpack sprayers (See page 196)

## US UNITS

| Nozzle Size | Droplet Size | Spray Angle @22 psi | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | GAL/1000Ft² 20 inch nozzle spacing 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.5 | VC | 80° | 10 | 0.05 | 3.7 | 3.0 | 2.5 | 1.9 | 1.5 | 1.2 | 1.0 | 0.7 | 0.17 | 0.11 | 0.09 | 0.07 |
| | M | | 20 | 0.07 | 5.3 | 4.2 | 3.5 | 2.6 | 2.1 | 1.8 | 1.4 | 1.1 | 0.24 | 0.16 | 0.12 | 0.10 |
| | F | | 30 | 0.09 | 6.4 | 5.1 | 4.3 | 3.2 | 2.6 | 2.1 | 1.7 | 1.3 | 0.30 | 0.20 | 0.15 | 0.12 |
| | F | | 40 | 0.10 | 7.4 | 5.9 | 5.0 | 3.7 | 3.0 | 2.5 | 2.0 | 1.5 | 0.34 | 0.23 | 0.17 | 0.14 |
| | F | | 50 | 0.11 | 8.3 | 6.6 | 5.5 | 4.2 | 3.3 | 2.8 | 2.2 | 1.7 | 0.38 | 0.25 | 0.19 | 0.15 |
| | F | | 60 | 0.12 | 9.1 | 7.3 | 6.1 | 4.5 | 3.6 | 3.0 | 2.4 | 1.8 | 0.42 | 0.28 | 0.21 | 0.17 |
| 0.75 | XC | 95° | 10 | 0.08 | 5.6 | 4.5 | 3.7 | 2.8 | 2.2 | 1.9 | 1.5 | 1.1 | 0.26 | 0.17 | 0.13 | 0.10 |
| | M | | 20 | 0.11 | 7.9 | 6.3 | 5.3 | 3.9 | 3.2 | 2.6 | 2.1 | 1.6 | 0.36 | 0.24 | 0.18 | 0.14 |
| | M | | 30 | 0.13 | 9.6 | 7.7 | 6.4 | 4.8 | 3.9 | 3.2 | 2.6 | 1.9 | 0.44 | 0.30 | 0.22 | 0.18 |
| | F | | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | F | | 50 | 0.17 | 12.5 | 10.0 | 8.3 | 6.2 | 5.0 | 4.2 | 3.3 | 2.5 | 0.57 | 0.38 | 0.29 | 0.23 |
| | F | | 60 | 0.18 | 13.6 | 10.9 | 9.1 | 6.8 | 5.5 | 4.5 | 3.6 | 2.7 | 0.63 | 0.42 | 0.31 | 0.25 |
| 1.0 | C | 105° | 10 | 0.10 | 7.4 | 5.9 | 5.0 | 3.7 | 3.0 | 2.5 | 2.0 | 1.5 | 0.34 | 0.23 | 0.17 | 0.14 |
| | M | | 20 | 0.14 | 10.5 | 8.4 | 7.0 | 5.3 | 4.2 | 3.5 | 2.8 | 2.1 | 0.48 | 0.32 | 0.24 | 0.19 |
| | F | | 30 | 0.17 | 12.9 | 10.3 | 8.6 | 6.4 | 5.1 | 4.3 | 3.4 | 2.6 | 0.59 | 0.39 | 0.30 | 0.24 |
| | F | | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | F | | 50 | 0.22 | 16.6 | 13.3 | 11.1 | 8.3 | 6.6 | 5.5 | 4.4 | 3.3 | 0.76 | 0.51 | 0.38 | 0.30 |
| | F | | 60 | 0.24 | 18.2 | 14.5 | 12.1 | 9.1 | 7.3 | 6.1 | 4.8 | 3.6 | 0.84 | 0.56 | 0.42 | 0.33 |
| 1.5 | VC | 105° | 10 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | M | | 20 | 0.21 | 15.8 | 12.6 | 10.5 | 7.9 | 6.3 | 5.3 | 4.2 | 3.2 | 0.72 | 0.48 | 0.36 | 0.29 |
| | M | | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.6 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | F | | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | F | | 50 | 0.34 | 24.9 | 19.9 | 16.6 | 12.5 | 10.0 | 8.3 | 6.6 | 5.0 | 1.14 | 0.76 | 0.57 | 0.46 |
| | F | | 60 | 0.37 | 27.3 | 21.8 | 18.2 | 13.6 | 10.9 | 9.1 | 7.3 | 5.5 | 1.25 | 0.84 | 0.63 | 0.50 |
| 2.0 | M | 105° | 10 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | M | | 20 | 0.28 | 21.0 | 16.8 | 14.0 | 10.5 | 8.4 | 7.0 | 5.6 | 4.2 | 0.96 | 0.64 | 0.48 | 0.39 |
| | M | | 30 | 0.35 | 25.7 | 20.6 | 17.1 | 12.9 | 10.3 | 8.6 | 6.9 | 5.1 | 1.18 | 0.79 | 0.59 | 0.47 |
| | F | | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | F | | 50 | 0.45 | 33.2 | 26.6 | 22.1 | 16.6 | 13.3 | 11.1 | 8.9 | 6.6 | 1.52 | 1.02 | 0.76 | 0.61 |
| | F | | 60 | 0.49 | 36.4 | 29.1 | 24.2 | 18.2 | 14.5 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| 2.5 | C | 110° | 10 | 0.25 | 18.6 | 14.9 | 12.4 | 9.3 | 7.4 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 |
| | M | | 20 | 0.35 | 26.3 | 21.0 | 17.5 | 13.1 | 10.5 | 8.8 | 7.0 | 5.3 | 1.21 | 0.80 | 0.60 | 0.48 |
| | M | | 30 | 0.43 | 32.2 | 25.7 | 21.4 | 16.1 | 12.9 | 10.7 | 8.6 | 6.4 | 1.48 | 0.98 | 0.74 | 0.59 |
| | M | | 40 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.70 | 1.14 | 0.85 | 0.68 |
| | F | | 50 | 0.56 | 41.5 | 33.2 | 27.7 | 20.8 | 16.6 | 13.8 | 11.1 | 8.3 | 1.91 | 1.27 | 0.95 | 0.76 |
| | F | | 60 | 0.61 | 45.5 | 36.4 | 30.3 | 22.7 | 18.2 | 15.2 | 12.1 | 9.1 | 2.09 | 1.39 | 1.04 | 0.84 |
| 3.0 | C | 110° | 10 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | M | | 20 | 0.42 | 31.5 | 25.2 | 21.0 | 15.8 | 12.6 | 10.5 | 8.4 | 6.3 | 1.45 | 0.96 | 0.72 | 0.58 |
| | M | | 30 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | M | | 40 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | M | | 50 | 0.67 | 49.8 | 39.8 | 33.2 | 24.9 | 19.9 | 16.6 | 13.3 | 10.0 | 2.29 | 1.52 | 1.14 | 0.91 |
| | M | | 60 | 0.73 | 54.6 | 43.6 | 36.4 | 27.3 | 21.8 | 18.2 | 14.5 | 10.9 | 2.51 | 1.67 | 1.25 | 1.00 |
| 4.0 | M | 120° | 10 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | M | | 20 | 0.57 | 42.0 | 33.6 | 28.0 | 21.0 | 16.8 | 14.0 | 11.2 | 8.4 | 1.93 | 1.29 | 0.96 | 0.77 |
| | M | | 30 | 0.69 | 51.4 | 41.2 | 34.3 | 25.7 | 20.6 | 17.1 | 13.7 | 10.3 | 2.36 | 1.57 | 1.18 | 0.94 |
| | M | | 40 | 0.80 | 59.4 | 47.5 | 39.6 | 29.7 | 23.8 | 19.8 | 15.8 | 11.9 | 2.73 | 1.82 | 1.36 | 1.09 |
| | M | | 50 | 0.89 | 66.4 | 53.1 | 44.3 | 33.2 | 26.6 | 22.1 | 17.7 | 13.3 | 3.05 | 2.03 | 1.52 | 1.22 |
| | F | | 60 | 0.98 | 72.7 | 58.2 | 48.5 | 36.4 | 29.1 | 24.2 | 19.4 | 14.5 | 3.34 | 2.23 | 1.67 | 1.34 |
| 5.0 | M | 125° | 10 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.70 | 1.14 | 0.85 | 0.68 |
| | M | | 20 | 0.71 | 52.5 | 42.0 | 35.0 | 26.3 | 21.0 | 17.5 | 14.0 | 10.5 | 2.41 | 1.61 | 1.21 | 0.96 |
| | M | | 30 | 0.87 | 64.3 | 51.4 | 42.9 | 32.2 | 25.7 | 21.4 | 17.1 | 12.9 | 2.95 | 1.97 | 1.48 | 1.18 |
| | M | | 40 | 1.00 | 74.3 | 59.4 | 49.5 | 37.1 | 29.7 | 24.8 | 19.8 | 14.9 | 3.41 | 2.27 | 1.70 | 1.36 |
| | F | | 50 | 1.12 | 83.0 | 66.4 | 55.3 | 41.5 | 33.2 | 27.7 | 22.1 | 16.6 | 3.81 | 2.54 | 1.91 | 1.52 |
| | F | | 60 | 1.22 | 90.9 | 72.7 | 60.6 | 45.5 | 36.4 | 30.3 | 24.2 | 18.2 | 4.18 | 2.78 | 2.09 | 1.67 |
| 7.5 | C | 145° | 10 | 0.75 | 55.7 | 44.6 | 37.1 | 27.8 | 22.3 | 18.6 | 14.9 | 11.1 | 2.56 | 1.70 | 1.28 | 1.02 |
| | C | | 20 | 1.06 | 78.8 | 63.0 | 52.5 | 39.4 | 31.5 | 26.3 | 21.0 | 15.8 | 3.62 | 2.41 | 1.81 | 1.45 |
| | C | | 30 | 1.30 | 96.5 | 77.2 | 64.3 | 48.2 | 38.6 | 32.2 | 25.7 | 19.3 | 4.43 | 2.95 | 2.21 | 1.77 |
| | C | | 40 | 1.50 | 111.4 | 89.1 | 74.3 | 55.7 | 44.6 | 37.1 | 29.7 | 22.3 | 5.11 | 3.41 | 2.56 | 2.05 |
| | C | | 50 | 1.68 | 124.5 | 99.6 | 83.0 | 62.3 | 49.8 | 41.5 | 33.2 | 24.9 | 5.72 | 3.81 | 2.86 | 2.29 |
| | M | | 60 | 1.84 | 136.4 | 109.1 | 90.9 | 68.2 | 54.6 | 45.5 | 36.4 | 27.3 | 6.26 | 4.18 | 3.13 | 2.51 |
| 10 | C | 160° | 10 | 1.00 | 74.3 | 59.4 | 49.5 | 37.1 | 29.7 | 24.8 | 19.8 | 14.9 | 3.41 | 2.27 | 1.70 | 1.36 |
| | M | | 20 | 1.41 | 105.0 | 84.0 | 70.0 | 52.5 | 42.0 | 35.0 | 28.0 | 21.0 | 4.82 | 3.21 | 2.41 | 1.93 |
| | M | | 30 | 1.73 | 128.6 | 102.9 | 85.7 | 64.3 | 51.4 | 42.9 | 34.3 | 25.7 | 5.90 | 3.94 | 2.95 | 2.36 |
| | M | | 40 | 2.00 | 148.5 | 118.8 | 99.0 | 74.3 | 59.4 | 49.5 | 39.6 | 29.7 | 6.82 | 4.55 | 3.41 | 2.73 |
| | M | | 50 | 2.24 | 166.0 | 132.8 | 110.7 | 83.0 | 66.4 | 55.3 | 44.3 | 33.2 | 7.62 | 5.08 | 3.81 | 3.05 |
| | M | | 60 | 2.45 | 181.9 | 145.5 | 121.2 | 90.9 | 72.7 | 60.6 | 48.5 | 36.4 | 8.35 | 5.57 | 4.18 | 3.34 |
| 15 | C | 145° | 10 | 1.50 | 111.4 | 89.1 | 74.3 | 55.7 | 44.6 | 37.1 | 29.7 | 22.3 | 5.11 | 3.41 | 2.56 | 2.05 |
| | C | | 20 | 2.12 | 157.5 | 126.0 | 105.0 | 78.8 | 63.0 | 52.5 | 42.0 | 31.5 | 7.23 | 4.82 | 3.62 | 2.89 |
| | C | | 30 | 2.60 | 192.9 | 154.3 | 128.6 | 96.5 | 77.2 | 64.3 | 51.4 | 38.6 | 8.86 | 5.90 | 4.43 | 3.54 |
| | C | | 40 | 3.00 | 222.8 | 178.2 | 148.5 | 111.4 | 89.1 | 74.3 | 59.4 | 44.6 | 10.23 | 6.82 | 5.11 | 4.09 |
| | C | | 50 | 3.35 | 249.0 | 199.2 | 166.0 | 124.5 | 99.6 | 83.0 | 66.4 | 49.8 | 11.43 | 7.62 | 5.72 | 4.57 |
| | M | | 60 | 3.67 | 272.8 | 218.2 | 181.9 | 136.4 | 109.1 | 90.9 | 72.7 | 54.6 | 12.53 | 8.35 | 6.26 | 5.01 |
| 20 | VC | 140° | 10 | 2.00 | 148.5 | 118.8 | 99.0 | 74.3 | 59.4 | 49.5 | 39.6 | 29.7 | 6.82 | 4.55 | 3.41 | 2.73 |
| | C | | 20 | 2.83 | 210.0 | 168.0 | 140.0 | 105.0 | 84.0 | 70.0 | 56.0 | 42.0 | 9.64 | 6.43 | 4.82 | 3.86 |
| | C | | 30 | 3.46 | 257.2 | 205.8 | 171.5 | 128.6 | 102.9 | 85.7 | 68.6 | 51.4 | 11.81 | 7.87 | 5.90 | 4.72 |
| | C | | 40 | 4.00 | 297.0 | 237.6 | 198.0 | 148.5 | 118.8 | 99.0 | 79.2 | 59.4 | 13.64 | 9.09 | 6.82 | 5.45 |
| | C | | 50 | 4.47 | 332.1 | 265.6 | 221.4 | 166.0 | 132.8 | 110.7 | 88.5 | 66.4 | 15.25 | 10.16 | 7.62 | 6.10 |
| | C | | 60 | 4.90 | 363.7 | 291.0 | 242.5 | 181.9 | 145.5 | 121.2 | 97.0 | 72.7 | 16.70 | 11.13 | 8.35 | 6.68 |

Droplet size based on ASABE S572.1 standard.




01. Simple; deflecting spray pattern
02. Polyacetal; single piece design
03. Available in many sizes to meet your flow rate needs

# DEFLECTIP 80°-160°

## METRIC UNITS

| Nozzle Size | Droplet Size | Spray Angle @ 1.5 bar | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - 50 cm Spacing KM/H | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 0.5 | VC | 80° | 1.0 | 0.23 | 39 | 34 | 27 | 23 | 18 | 14 | 11 | 9 |
| | M | | 1.5 | 0.28 | 48 | 42 | 34 | 28 | 22 | 17 | 13 | 11 |
| | F | | 2.0 | 0.32 | 55 | 48 | 39 | 32 | 26 | 19 | 15 | 13 |
| | F | | 2.5 | 0.36 | 62 | 54 | 43 | 36 | 29 | 22 | 17 | 14 |
| | F | | 3.0 | 0.39 | 68 | 59 | 47 | 39 | 32 | 24 | 19 | 16 |
| | F | | 4.0 | 0.46 | 78 | 68 | 55 | 46 | 36 | 27 | 22 | 18 |
| 0.75 | XC | 95° | 1.0 | 0.34 | 59 | 51 | 41 | 34 | 27 | 21 | 16 | 14 |
| | M | | 1.5 | 0.42 | 72 | 63 | 50 | 42 | 34 | 25 | 20 | 17 |
| | M | | 2.0 | 0.48 | 83 | 73 | 58 | 48 | 39 | 29 | 23 | 19 |
| | F | | 2.5 | 0.54 | 93 | 81 | 65 | 54 | 43 | 32 | 26 | 22 |
| | F | | 3.0 | 0.59 | 102 | 89 | 71 | 59 | 47 | 36 | 28 | 24 |
| | F | | 4.0 | 0.68 | 117 | 103 | 82 | 68 | 55 | 41 | 33 | 27 |
| 1.0 | C | 105° | 1.0 | 0.46 | 78 | 68 | 55 | 46 | 36 | 27 | 22 | 18 |
| | M | | 1.5 | 0.56 | 96 | 84 | 67 | 56 | 45 | 34 | 27 | 22 |
| | F | | 2.0 | 0.64 | 111 | 97 | 77 | 64 | 52 | 39 | 31 | 26 |
| | F | | 2.5 | 0.72 | 124 | 108 | 86 | 72 | 58 | 43 | 35 | 29 |
| | F | | 3.0 | 0.79 | 135 | 118 | 95 | 79 | 63 | 47 | 38 | 32 |
| | F | | 4.0 | 0.91 | 156 | 137 | 109 | 91 | 73 | 55 | 44 | 36 |
| 1.5 | VC | 105° | 1.0 | 0.68 | 117 | 103 | 82 | 68 | 55 | 41 | 33 | 27 |
| | M | | 1.5 | 0.84 | 144 | 126 | 101 | 84 | 67 | 50 | 40 | 34 |
| | M | | 2.0 | 0.97 | 166 | 145 | 116 | 97 | 77 | 58 | 46 | 39 |
| | F | | 2.5 | 1.08 | 185 | 162 | 130 | 108 | 86 | 65 | 52 | 43 |
| | F | | 3.0 | 1.18 | 203 | 178 | 142 | 118 | 95 | 71 | 57 | 47 |
| | F | | 4.0 | 1.37 | 234 | 205 | 164 | 137 | 109 | 82 | 66 | 55 |
| 2.0 | M | 105° | 1.0 | 0.91 | 156 | 137 | 109 | 91 | 73 | 55 | 44 | 36 |
| | M | | 1.5 | 1.12 | 191 | 168 | 134 | 112 | 89 | 67 | 54 | 45 |
| | M | | 2.0 | 1.29 | 221 | 193 | 155 | 129 | 103 | 77 | 62 | 52 |
| | F | | 2.5 | 1.44 | 247 | 216 | 173 | 144 | 115 | 86 | 69 | 58 |
| | F | | 3.0 | 1.58 | 271 | 237 | 190 | 158 | 126 | 95 | 76 | 63 |
| | F | | 4.0 | 1.82 | 313 | 274 | 219 | 182 | 146 | 109 | 88 | 73 |
| 2.5 | C | 110° | 1.0 | 1.14 | 195 | 171 | 137 | 114 | 91 | 68 | 55 | 46 |
| | M | | 1.5 | 1.40 | 239 | 209 | 168 | 140 | 112 | 84 | 67 | 56 |
| | M | | 2.0 | 1.61 | 276 | 242 | 193 | 161 | 129 | 97 | 77 | 64 |
| | M | | 2.5 | 1.80 | 309 | 270 | 216 | 180 | 144 | 108 | 86 | 72 |
| | F | | 3.0 | 1.97 | 338 | 296 | 237 | 197 | 158 | 118 | 95 | 79 |
| | F | | 4.0 | 2.28 | 391 | 342 | 274 | 228 | 182 | 137 | 109 | 91 |
| 3.0 | C | 110° | 1.0 | 1.37 | 234 | 205 | 164 | 137 | 109 | 82 | 66 | 55 |
| | M | | 1.5 | 1.68 | 287 | 251 | 201 | 168 | 134 | 101 | 80 | 67 |
| | M | | 2.0 | 1.93 | 332 | 290 | 232 | 193 | 155 | 116 | 93 | 77 |
| | M | | 2.5 | 2.16 | 371 | 324 | 259 | 216 | 173 | 130 | 104 | 86 |
| | M | | 3.0 | 2.37 | 406 | 355 | 284 | 237 | 190 | 142 | 114 | 95 |
| | M | | 4.0 | 2.74 | 469 | 410 | 328 | 274 | 219 | 164 | 131 | 109 |
| 4.0 | M | 120° | 1.0 | 1.82 | 313 | 274 | 219 | 182 | 146 | 109 | 88 | 73 |
| | M | | 1.5 | 2.23 | 383 | 335 | 268 | 223 | 179 | 134 | 107 | 89 |
| | M | | 2.0 | 2.58 | 442 | 387 | 309 | 258 | 206 | 155 | 124 | 103 |
| | M | | 2.5 | 2.88 | 494 | 432 | 346 | 288 | 231 | 173 | 138 | 115 |
| | M | | 3.0 | 3.16 | 541 | 474 | 379 | 316 | 253 | 190 | 152 | 126 |
| | F | | 4.0 | 3.65 | 625 | 547 | 438 | 365 | 292 | 219 | 175 | 146 |
| 5.0 | M | 125° | 1.0 | 2.3 | 391 | 342 | 274 | 228 | 182 | 137 | 109 | 91 |
| | M | | 1.5 | 2.8 | 479 | 419 | 335 | 279 | 223 | 168 | 134 | 112 |
| | M | | 2.0 | 3.2 | 553 | 484 | 387 | 322 | 258 | 193 | 155 | 129 |
| | M | | 2.5 | 3.6 | 618 | 541 | 432 | 360 | 288 | 216 | 173 | 144 |
| | F | | 3.0 | 3.9 | 677 | 592 | 474 | 395 | 316 | 237 | 190 | 158 |
| | F | | 4.0 | 4.6 | 782 | 684 | 547 | 456 | 365 | 274 | 219 | 182 |
| 7.5 | C | 145° | 1.0 | 3.4 | 586 | 513 | 410 | 342 | 274 | 205 | 164 | 137 |
| | C | | 1.5 | 4.2 | 718 | 628 | 503 | 419 | 335 | 251 | 201 | 168 |
| | C | | 2.0 | 4.8 | 829 | 725 | 580 | 484 | 387 | 290 | 232 | 193 |
| | C | | 2.5 | 5.4 | 927 | 811 | 649 | 541 | 432 | 324 | 259 | 216 |
| | C | | 3.0 | 5.9 | 1015 | 888 | 711 | 592 | 474 | 355 | 284 | 237 |
| | M | | 4.0 | 6.8 | 1172 | 1026 | 821 | 684 | 547 | 410 | 328 | 274 |
| 10 | C | 160° | 1.0 | 4.6 | 782 | 684 | 547 | 456 | 365 | 274 | 219 | 182 |
| | M | | 1.5 | 5.6 | 957 | 838 | 670 | 558 | 447 | 335 | 268 | 223 |
| | M | | 2.0 | 6.4 | 1105 | 967 | 774 | 645 | 516 | 387 | 309 | 258 |
| | M | | 2.5 | 7.2 | 1236 | 1081 | 865 | 721 | 577 | 432 | 346 | 288 |
| | M | | 3.0 | 7.9 | 1354 | 1184 | 948 | 790 | 632 | 474 | 379 | 316 |
| | M | | 4.0 | 9.1 | 1563 | 1368 | 1094 | 912 | 729 | 547 | 438 | 365 |
| 15 | C | 145° | 1.0 | 6.8 | 1172 | 1026 | 821 | 684 | 547 | 410 | 328 | 274 |
| | C | | 1.5 | 8.4 | 1436 | 1256 | 1005 | 838 | 670 | 503 | 402 | 335 |
| | C | | 2.0 | 9.7 | 1658 | 1451 | 1160 | 967 | 774 | 580 | 464 | 387 |
| | C | | 2.5 | 10.8 | 1854 | 1622 | 1297 | 1081 | 865 | 649 | 519 | 432 |
| | C | | 3.0 | 11.8 | 2030 | 1777 | 1421 | 1184 | 948 | 711 | 569 | 474 |
| | M | | 4.0 | 13.7 | 2345 | 2051 | 1641 | 1368 | 1094 | 821 | 656 | 547 |
| 20 | VC | 140° | 1.0 | 9.1 | 1563 | 1368 | 1094 | 912 | 729 | 547 | 438 | 365 |
| | C | | 1.5 | 11.2 | 1914 | 1675 | 1340 | 1117 | 893 | 670 | 536 | 447 |
| | C | | 2.0 | 12.9 | 2210 | 1934 | 1547 | 1289 | 1032 | 774 | 619 | 516 |
| | C | | 2.5 | 14.4 | 2471 | 2162 | 1730 | 1442 | 1153 | 865 | 692 | 577 |
| | C | | 3.0 | 15.8 | 2707 | 2369 | 1895 | 1579 | 1263 | 948 | 758 | 632 |
| | C | | 4.0 | 18.2 | 3126 | 2735 | 2188 | 1824 | 1459 | 1094 | 875 | 729 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Weeds & Fertilizer |
| Pattern | Flood |
| Technology | Deflection |
| Material | Polyacetal |
| Spray Angle | 80°-160° |
| Pressure Range | 10-60 PSI (1-3 BAR) |
| Configuration | Nozzle |

| Part Numbers (Bags of 10) | |
|---|---|
| **Nozzles** | **Caps (25 Pack)** |
| 30DT0.5 | CAP30-20 |
| 30DT0.75 | CAP30-20 |
| 30DT1.0 | CAP30-20 |
| 30DT1.5 | CAP30-20 |
| 30DT2.0 | CAP30-20 |
| 30DT2.5 | CAP30-20 |
| 30DT3.0 | CAP30-20 |
| 30DT4.0 | CAP30-20 |
| 30DT5.0 | CAP30-20 |
| 30DT7.5 | CAP30-20 |
| 30DT10 | CAP30-20 |
| 30DT15 | CAP30-20 |
| 30DT20 | CAP30-20 |

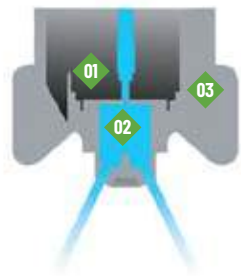
# ESI SIX STREAM

The ESI six stream nozzle is designed for applying liquid fertilizer. It creates six individual streams that distribute the fertilizer on the soil while getting less on the crop. The wear resistant metering orifice and unique low pressure distribution chamber keep the streams stable to reduce atomization and prevent leaf burn and scorching. Spacing and spray height is similar to 110° broadcast nozzles.

- Six streams distribute fertilizer more evenly than one single stream
- Wear-resistant orifice for long product life
- FastCap includes nozzle, cap and gasket

## US UNITS

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gallons per Acre | | | | | | | | | | | | | | |
| | | | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5 | 25 | 27.5 | 30 | 32.5 | 35 | 37.5 | 40 |
| 015 | 15 | 0.09 | 10.9 | 5.5 | 3.6 | 2.7 | 2.2 | 1.8 | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 | 0.7 | 0.7 |
| | 20 | 0.11 | 12.6 | 6.3 | 4.2 | 3.2 | 2.5 | 2.1 | 1.8 | 1.6 | 1.4 | 1.3 | 1.1 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 |
| | 30 | 0.13 | 15.4 | 7.7 | 5.1 | 3.9 | 3.1 | 2.6 | 2.2 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 |
| | 40 | 0.15 | 17.8 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | 50 | 0.17 | 19.9 | 10.0 | 6.6 | 5.0 | 4.0 | 3.3 | 2.8 | 2.5 | 2.2 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 |
| | 60 | 0.18 | 21.8 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| 02 | 15 | 0.12 | 14.5 | 7.3 | 4.8 | 3.6 | 2.9 | 2.4 | 2.1 | 1.8 | 1.6 | 1.5 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 | 0.9 |
| | 20 | 0.14 | 16.8 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| | 30 | 0.17 | 20.6 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | 40 | 0.20 | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | 50 | 0.22 | 26.6 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | 60 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| 025 | 15 | 0.15 | 18.2 | 9.1 | 6.1 | 4.5 | 3.6 | 3.0 | 2.6 | 2.3 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | 20 | 0.18 | 21.0 | 10.5 | 7.0 | 5.3 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 |
| | 30 | 0.22 | 25.7 | 12.9 | 8.6 | 6.4 | 5.1 | 4.3 | 3.7 | 3.2 | 2.9 | 2.6 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 |
| | 40 | 0.25 | 29.7 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.9 |
| | 50 | 0.28 | - | 16.6 | 11.1 | 8.3 | 6.6 | 5.5 | 4.7 | 4.2 | 3.7 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | 60 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| 03 | 15 | 0.18 | 21.8 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| | 20 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | 30 | 0.26 | - | 15.4 | 10.3 | 7.7 | 6.2 | 5.1 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 |
| | 40 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | 50 | 0.34 | - | 19.9 | 13.3 | 10.0 | 8.0 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 | 3.1 | 2.8 | 2.7 | 2.5 |
| | 60 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| 04 | 15 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | 20 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | 30 | 0.35 | - | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 | 3.2 | 2.9 | 2.7 | 2.6 |
| | 40 | 0.40 | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | 50 | 0.45 | - | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 |
| | 60 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| 05 | 15 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | 20 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | 30 | 0.43 | - | 25.7 | 17.1 | 12.9 | 10.3 | 8.6 | 7.3 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 |
| | 40 | 0.50 | - | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 | 4.6 | 4.2 | 4.0 | 3.7 |
| | 50 | 0.56 | - | - | 22.1 | 16.6 | 13.3 | 11.1 | 9.5 | 8.3 | 7.4 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.2 |
| | 60 | 0.61 | - | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| 06 | 15 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| | 20 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | 30 | 0.52 | - | - | 20.6 | 15.4 | 12.3 | 10.3 | 8.8 | 7.7 | 6.9 | 6.2 | 5.6 | 5.1 | 4.7 | 4.4 | 4.1 | 3.9 |
| | 40 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | 50 | 0.67 | - | - | 26.6 | 19.9 | 15.9 | 13.3 | 11.4 | 10.0 | 8.9 | 8.0 | 7.2 | 6.6 | 6.1 | 5.7 | 5.3 | 5.0 |
| | 60 | 0.73 | - | - | 29.1 | 21.8 | 17.5 | 14.5 | 12.5 | 10.9 | 9.7 | 8.7 | 7.9 | 7.3 | 6.7 | 6.2 | 5.8 | 5.5 |
| 08 | 15 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | 20 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | 30 | 0.69 | - | - | 27.4 | 20.6 | 16.5 | 13.7 | 11.8 | 10.3 | 9.1 | 8.2 | 7.5 | 6.9 | 6.3 | 5.9 | 5.5 | 5.1 |
| | 40 | 0.80 | - | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 5.9 |
| | 50 | 0.89 | - | - | - | 26.6 | 21.3 | 17.7 | 15.2 | 13.3 | 11.8 | 10.6 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.6 |
| | 60 | 0.98 | - | - | - | 29.1 | 23.3 | 19.4 | 16.6 | 14.5 | 12.9 | 11.6 | 10.6 | 9.7 | 9.0 | 8.3 | 7.8 | 7.3 |
| 10 | 15 | 0.61 | - | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| | 20 | 0.71 | - | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.3 |
| | 30 | 0.87 | - | - | - | 25.7 | 20.6 | 17.1 | 14.7 | 12.9 | 11.4 | 10.3 | 9.4 | 8.6 | 7.9 | 7.3 | 6.9 | 6.4 |
| | 40 | 1.00 | - | - | - | 29.7 | 23.8 | 19.8 | 17.0 | 14.9 | 13.2 | 11.9 | 10.8 | 9.9 | 9.1 | 8.5 | 7.9 | 7.4 |
| | 50 | 1.12 | - | - | - | - | 26.6 | 22.1 | 19.0 | 16.6 | 14.8 | 13.3 | 12.1 | 11.1 | 10.2 | 9.5 | 8.9 | 8.3 |
| | 60 | 1.22 | - | - | - | - | 29.1 | 24.2 | 20.8 | 18.2 | 16.2 | 14.5 | 13.2 | 12.1 | 11.2 | 10.4 | 9.7 | 9.1 |
| 15 | 15 | 0.92 | - | - | - | 27.3 | 21.8 | 18.2 | 15.6 | 13.6 | 12.1 | 10.9 | 9.9 | 9.1 | 8.4 | 7.8 | 7.3 | 6.8 |
| | 20 | 1.06 | - | - | - | - | 25.2 | 21.0 | 18.0 | 15.8 | 14.0 | 12.6 | 11.5 | 10.5 | 9.7 | 9.0 | 8.4 | 7.9 |
| | 30 | 1.30 | - | - | - | - | - | 25.7 | 22.0 | 19.3 | 17.1 | 15.4 | 14.0 | 12.9 | 11.9 | 11.0 | 10.3 | 9.6 |
| | 40 | 1.50 | - | - | - | - | - | 29.7 | 25.5 | 22.3 | 19.8 | 17.8 | 16.2 | 14.9 | 13.7 | 12.7 | 11.9 | 11.1 |
| | 50 | 1.68 | - | - | - | - | - | - | 28.5 | 24.9 | 22.1 | 19.9 | 18.1 | 16.6 | 15.3 | 14.2 | 13.3 | 12.5 |
| | 60 | 1.84 | - | - | - | - | - | - | - | 27.3 | 24.2 | 21.8 | 19.8 | 18.2 | 16.8 | 15.6 | 14.5 | 13.6 |
| 20 | 15 | 1.22 | - | - | - | - | 29.1 | 24.2 | 20.8 | 18.2 | 16.2 | 14.5 | 13.2 | 12.1 | 11.2 | 10.4 | 9.7 | 9.1 |
| | 20 | 1.41 | - | - | - | - | - | 28.0 | 24.0 | 21.0 | 18.7 | 16.8 | 15.3 | 14.0 | 12.9 | 12.0 | 11.2 | 10.5 |
| | 30 | 1.73 | - | - | - | - | - | - | 29.4 | 25.7 | 22.9 | 20.6 | 18.7 | 17.1 | 15.8 | 14.7 | 13.7 | 12.9 |
| | 40 | 2.00 | - | - | - | - | - | - | - | 29.7 | 26.4 | 23.8 | 21.6 | 19.8 | 18.3 | 17.0 | 15.8 | 14.9 |
| | 50 | 2.24 | - | - | - | - | - | - | - | - | 29.5 | 26.6 | 24.1 | 22.1 | 20.4 | 19.0 | 17.7 | 16.6 |
| | 60 | 2.45 | - | - | - | - | - | - | - | - | - | 29.1 | 26.5 | 24.2 | 22.4 | 20.8 | 19.4 | 18.2 |




01. Single inlet; Six outlet design for uniform application
02. Pre-orifice; superior product life
03. Available in a FastCap option for easy installation of a streaming nozzle

# ESI SIX STREAM

110° wide pattern consisting of 6 equally spaced streams providing uniform deposition of liquid fertilizers. Each individual stream was engineered to hold stream integrity and not break apart to avoid unwanted fertilizer burn on post emerge applications.

## METRIC UNITS

| Nozzle Size | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha -50 cm Spacing KM/H | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 015 | 1 | 0,35 | 60 | 53 | 42 | 35 | 28 | 21 | 17 | 14 |
| | 1,5 | 0,42 | 72 | 63 | 50 | 42 | 34 | 25 | 20 | 17 |
| | 2 | 0,49 | 84 | 74 | 59 | 49 | 39 | 29 | 24 | 20 |
| | 2,5 | 0,55 | 94 | 83 | 66 | 55 | 44 | 33 | 26 | 22 |
| | 3 | 0,60 | 103 | 90 | 72 | 60 | 48 | 36 | 29 | 24 |
| | 4 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 |
| 02 | 1 | 0,46 | 79 | 69 | 55 | 46 | 37 | 28 | 22 | 18 |
| | 1,5 | 0,57 | 98 | 86 | 68 | 57 | 46 | 34 | 27 | 23 |
| | 2 | 0,65 | 111 | 98 | 78 | 65 | 52 | 39 | 31 | 26 |
| | 2,5 | 0,73 | 125 | 110 | 88 | 73 | 58 | 44 | 35 | 29 |
| | 3 | 0,80 | 137 | 120 | 96 | 80 | 64 | 48 | 38 | 32 |
| | 4 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| 025 | 1 | 0,58 | 99 | 87 | 70 | 58 | 46 | 35 | 28 | 23 |
| | 1,5 | 0,71 | 122 | 107 | 85 | 71 | 57 | 43 | 34 | 28 |
| | 2 | 0,82 | 141 | 123 | 98 | 82 | 66 | 49 | 39 | 33 |
| | 2,5 | 0,91 | 156 | 137 | 109 | 91 | 73 | 55 | 44 | 36 |
| | 3 | 1,00 | 171 | 150 | 120 | 100 | 80 | 60 | 48 | 40 |
| | 4 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 |
| 03 | 1 | 0,69 | 118 | 104 | 83 | 69 | 55 | 41 | 33 | 28 |
| | 1,5 | 0,85 | 146 | 128 | 102 | 85 | 68 | 51 | 41 | 34 |
| | 2 | 0,98 | 168 | 147 | 118 | 98 | 78 | 59 | 47 | 39 |
| | 2,5 | 1,10 | 189 | 165 | 132 | 110 | 88 | 66 | 53 | 44 |
| | 3 | 1,20 | 206 | 180 | 144 | 120 | 96 | 72 | 58 | 48 |
| | 4 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 |
| 04 | 1 | 0,92 | 158 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| | 1,5 | 1,13 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 |
| | 2 | 1,31 | 225 | 197 | 157 | 131 | 105 | 79 | 63 | 52 |
| | 2,5 | 1,46 | 250 | 219 | 175 | 146 | 117 | 88 | 70 | 58 |
| | 3 | 1,60 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 |
| | 4 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 |
| 05 | 1 | 1,15 | 197 | 173 | 138 | 115 | 92 | 69 | 55 | 46 |
| | 1,5 | 1,41 | 242 | 212 | 169 | 141 | 113 | 85 | 68 | 56 |
| | 2 | 1,63 | 279 | 245 | 196 | 163 | 130 | 98 | 78 | 65 |
| | 2,5 | 1,83 | 314 | 275 | 220 | 183 | 146 | 110 | 88 | 73 |
| | 3 | 2,00 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 |
| | 4 | 2,31 | 396 | 347 | 277 | 231 | 185 | 139 | 111 | 92 |
| 06 | 1 | 1,39 | 238 | 209 | 167 | 139 | 111 | 83 | 67 | 56 |
| | 1,5 | 1,70 | 291 | 255 | 204 | 170 | 136 | 102 | 82 | 68 |
| | 2 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 |
| | 2,5 | 2,19 | 375 | 329 | 263 | 219 | 175 | 131 | 105 | 88 |
| | 3 | 2,40 | 411 | 360 | 288 | 240 | 192 | 144 | 115 | 96 |
| | 4 | 2,77 | 475 | 416 | 332 | 277 | 222 | 166 | 133 | 111 |
| 08 | 1 | 1,85 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 |
| | 1,5 | 2,26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 |
| | 2 | 2,61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 |
| | 2,5 | 2,92 | 501 | 438 | 350 | 292 | 234 | 175 | 140 | 117 |
| | 3 | 3,20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 |
| | 4 | 3,70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| 10 | 1 | 2,3 | 394 | 345 | 276 | 230 | 184 | 138 | 110 | 92 |
| | 1,5 | 2,8 | 480 | 420 | 336 | 280 | 224 | 168 | 134 | 112 |
| | 2 | 3,3 | 566 | 495 | 396 | 330 | 264 | 198 | 158 | 132 |
| | 2,5 | 3,7 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| | 3 | 4,0 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 |
| | 4 | 4,6 | 789 | 690 | 552 | 460 | 368 | 276 | 221 | 184 |
| 15 | 1 | 3,5 | 600 | 525 | 420 | 350 | 280 | 210 | 168 | 140 |
| | 1,5 | 4,2 | 720 | 630 | 504 | 420 | 336 | 252 | 202 | 168 |
| | 2 | 4,9 | 840 | 735 | 588 | 490 | 392 | 294 | 235 | 196 |
| | 2,5 | 5,5 | 943 | 825 | 660 | 550 | 440 | 330 | 264 | 220 |
| | 3 | 6,0 | 1029 | 900 | 720 | 600 | 480 | 360 | 288 | 240 |
| | 4 | 6,9 | 1183 | 1035 | 828 | 690 | 552 | 414 | 331 | 276 |
| 20 | 1 | 4,6 | 789 | 690 | 552 | 460 | 368 | 276 | 221 | 184 |
| | 1,5 | 5,7 | 977 | 855 | 684 | 570 | 456 | 342 | 274 | 228 |
| | 2 | 6,5 | 1114 | 975 | 780 | 650 | 520 | 390 | 312 | 260 |
| | 2,5 | 7,3 | 1251 | 1095 | 876 | 730 | 584 | 438 | 350 | 292 |
| | 3 | 8,0 | 1371 | 1200 | 960 | 800 | 640 | 480 | 384 | 320 |
| | 4 | 9,2 | 1577 | 1380 | 1104 | 920 | 736 | 552 | 442 | 368 |

| Features | |
|---|---|
| Common Use | Fertilizer |
| Pattern | Streams |
| Technology | Pre-Orifice |
| Material | Ceramic or Polyacetal |
| Spray Angle | 110° Equivalent |
| Pressure Range | 15-60 PSI (1-4 BAR) |
| Configuration | Nozzle, FastCap |

| Optimum Boom Height | |
|---|---|
| 15" (35 cm) Spacing | 15" (35 cm) |
| 20" (50 cm) Spacing | 20" (50 cm) |

**Part Numbers (Bags of 10)**

| Nozzles 110° | FastCaps 110° | FastCaps 110° |
|---|---|---|
| Ceramic Orifice | Ceramic Orifice | Polyacetal Orifice |
| ESI-110015 | FC-ESI-110015* | FC-ESI-110015P |
| ESI-11002 | FC-ESI-11002* | FC-ESI-11002P |
| ESI-110025 | FC-ESI-110025* | - |
| ESI-11003 | FC-ESI-11003* | FC-ESI-11003P |
| ESI-11004 | FC-ESI-11004* | FC-ESI-11004P |
| ESI-11005 | FC-ESI-11005* | FC-ESI-11005P |
| ESI-11006 | FC-ESI-11006* | FC-ESI-11006P |
| - | FC-ESI-11008 | - |
| - | FC-ESI-11010 | - |
| - | FC-ESI-11015 | - |
| - | - | FC-ESI-11020P |

| Replacement Cap Gasket | |
|---|---|
| 10BG-2270-0150 | Flat seal (sizes 015-06) |
| 65-BS205 | O-ring (sizes 08-15) |

* Uses flat sealing gasket.

# FLOW REGULATING DISC DC

The Hypro Flow Regulating Disc – DC is commonly paired with push-to-connect products in liquid fertilizer systems onboard planting equipment.

- Regulates flow and produces a straight stream pattern
- Precision-molded in polyacetal for reliable performance
- Conveniently packaged in a quantity of ten

## US UNITS

| Disc | US Gallon/Min Pressure (PSI) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 60 | 80 | 100 | 150 |
| 30-DC-00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-DC010 | 0.008 | 0.010 | 0.011 | 0.013 | 0.014 | 0.015 | 0.016 | 0.020 | 0.023 | 0.025 | 0.031 |
| 30-DC-018 | 0.030 | 0.037 | 0.042 | 0.047 | 0.052 | 0.056 | 0.060 | 0.073 | 0.085 | 0.095 | 0.116 |
| 30-DC-023 | 0.038 | 0.047 | 0.054 | 0.060 | 0.066 | 0.071 | 0.076 | 0.093 | 0.107 | 0.120 | 0.147 |
| 30-DC-01 | 0.057 | 0.070 | 0.081 | 0.090 | 0.099 | 0.107 | 0.114 | 0.140 | 0.161 | 0.180 | 0.221 |
| 30-DC-015 | 0.078 | 0.096 | 0.110 | 0.123 | 0.135 | 0.146 | 0.156 | 0.191 | 0.221 | 0.247 | 0.302 |
| 30-DC-02 | 0.105 | 0.129 | 0.148 | 0.166 | 0.182 | 0.196 | 0.210 | 0.257 | 0.297 | 0.332 | 0.407 |
| 30-DC-03 | 0.133 | 0.163 | 0.188 | 0.210 | 0.230 | 0.249 | 0.266 | 0.326 | 0.376 | 0.421 | 0.515 |
| 30-DC-035 | 0.175 | 0.214 | 0.247 | 0.277 | 0.303 | 0.327 | 0.350 | 0.429 | 0.495 | 0.553 | 0.678 |
| 30-DC-04 | 0.242 | 0.296 | 0.342 | 0.383 | 0.419 | 0.453 | 0.484 | 0.593 | 0.684 | 0.765 | 0.937 |
| 30-DC-05 | 0.392 | 0.480 | 0.554 | 0.620 | 0.679 | 0.733 | 0.784 | 0.960 | 1.11 | 1.24 | 1.52 |
| 30-DC-06 | 0.570 | 0.698 | 0.806 | 0.901 | 0.987 | 1.07 | 1.14 | 1.40 | 1.61 | 1.80 | 2.21 |
| 30-DC-07 | 0.760 | 0.931 | 1.07 | 1.20 | 1.32 | 1.42 | 1.52 | 1.86 | 2.15 | 2.40 | 2.94 |
| 30-DC-08 | 0.960 | 1.18 | 1.36 | 1.52 | 1.66 | 1.80 | 1.92 | 2.35 | 2.72 | 3.04 | 3.72 |
| 30-DC-10 | 1.55 | 1.90 | 2.19 | 2.45 | 2.68 | 2.90 | 3.10 | 3.80 | 4.38 | 4.90 | 6.00 |
| 30-DC-12 | 2.20 | 2.69 | 3.11 | 3.48 | 3.81 | 4.12 | 4.40 | 5.39 | 6.22 | 6.96 | 8.52 |

## METRIC UNITS

| Disc | Flow L/min Pressure (BAR) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 30-DC010 | 0,037 | 0,052 | 0,064 | 0,074 | 0,083 | 0,091 | 0,098 | 0,105 | 0,111 | 0,117 |
| 30-DC-018 | 0,14 | 0,20 | 0,24 | 0,28 | 0,31 | 0,34 | 0,37 | 0,39 | 0,42 | 0,44 |
| 30-DC-023 | 0,18 | 0,25 | 0,31 | 0,36 | 0,40 | 0,44 | 0,47 | 0,51 | 0,54 | 0,57 |
| 30-DC-01 | 0,26 | 0,37 | 0,45 | 0,52 | 0,58 | 0,64 | 0,69 | 0,73 | 0,78 | 0,82 |
| 30-DC-015 | 0,36 | 0,51 | 0,62 | 0,72 | 0,80 | 0,88 | 0,95 | 1,01 | 1,07 | 1,13 |
| 30-DC-02 | 0,48 | 0,68 | 0,83 | 0,96 | 1,07 | 1,17 | 1,27 | 1,36 | 1,44 | 1,52 |
| 30-DC-03 | 0,61 | 0,86 | 1,05 | 1,21 | 1,36 | 1,48 | 1,60 | 1,71 | 1,82 | 1,92 |
| 30-DC-04 | 1,10 | 1,56 | 1,91 | 2,21 | 2,47 | 2,70 | 2,92 | 3,12 | 3,31 | 3,49 |
| 30-DC-05 | 1,79 | 2,53 | 3,10 | 3,58 | 4,00 | 4,38 | 4,74 | 5,06 | 5,37 | 5,66 |
| 30-DC-06 | 2,61 | 3,69 | 4,52 | 5,22 | 5,84 | 6,39 | 6,90 | 7,38 | 7,83 | 8,25 |
| 30-DC-07 | 3,49 | 4,94 | 6,05 | 6,99 | 7,81 | 8,56 | 9,24 | 9,88 | 10,48 | 11,05 |
| 30-DC-08 | 4,39 | 6,21 | 7,60 | 8,78 | 9,81 | 10,75 | 11,61 | 12,41 | 13,16 | 13,88 |
| 30-DC-10 | 7,35 | 10,39 | 12,73 | 14,70 | 16,43 | 18,00 | 19,45 | 20,79 | 22,05 | 23,24 |
| 30-DC-12 | 9,93 | 14,04 | 17,20 | 19,86 | 22,21 | 24,32 | 26,27 | 28,09 | 29,79 | 31,40 |

| Features | |
|---|---|
| Common Use | Fertilizer |
| Pattern | Stream |
| Technology | Round Orifice |
| Material | Polyacetal |
| Spray Angle | 0° |
| Pressure Range | 10-150 PSI (1-10 BAR) |
| Configuration | Disc |

| Part Numbers | |
|---|---|
| **Nozzles** | **Nozzles (10 per bag)** |
| 30-DC-00 | 10BG-30-DC-00 |
| 30-DC010 | 10BG-30-DC010 |
| 30-D C018 | 10BG-30-DC018 |
| 30-DC023 | 10BG-30-DC023 |
| 30-DC-01 | 10BG-30-DC-01 |
| 30-DC-015 | 10BG-30-DC-015 |
| 30-DC-02 | 10BG-30-DC-02 |
| 30-DC-03 | 10BG-30-DC-03 |
| 30-DC-035 | 10BG-30-DC-035 |
| 30-DC-04 | 10BG-30-DC-04 |
| 30-DC-05 | 10BG-30-DC-05 |
| 30-DC-06 | 10BG-30-DC-06 |
| 30-DC-07 | 10BG-30-DC-07 |
| 30-DC-08 | 10BG-30-DC-08 |
| 30-DC-10 | 10BG-30-DC-10 |
| 30-DC-12 | 10BG-30-DC-12 |
| **Split Gasket (10 per bag)** | |
| 10BG-1700-0255 | |

# FLOW REGULATING DISC AMT 0°

"W" "N"

The Albuz® ceramic disc regulates flow and produces a straight stream pattern.

- Precision-molded in ceramic
- Flexibility of flow rate is achieved through changing disc orientation

## US UNITS

| Disc | US Gallon/Min PSI | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 60 | 80 | 100 | 150 | 200 | 300 | 725 |
| AMT-15007 (N) | 0.063 | 0.077 | 0.088 | 0.099 | 0.108 | 0.117 | 0.125 | 0.153 | 0.177 | 0.198 | 0.242 | 0.280 | 0.342 | 0.532 |
| AMT-15007 (W) | 0.064 | 0.078 | 0.091 | 0.101 | 0.111 | 0.120 | 0.128 | 0.157 | 0.181 | 0.202 | 0.248 | 0.286 | 0.351 | 0.545 |
| AMT-15008 (N) | 0.066 | 0.080 | 0.093 | 0.104 | 0.113 | 0.123 | 0.131 | 0.160 | 0.185 | 0.207 | 0.254 | 0.293 | 0.359 | 0.558 |
| AMT-15008 (W) | 0.083 | 0.101 | 0.117 | 0.130 | 0.143 | 0.154 | 0.165 | 0.202 | 0.233 | 0.261 | 0.320 | 0.369 | 0.452 | 0.702 |
| AMT-15010 (N) | 0.099 | 0.121 | 0.140 | 0.157 | 0.171 | 0.185 | 0.198 | 0.242 | 0.280 | 0.313 | 0.383 | 0.443 | 0.542 | 0.843 |
| AMT-15010 (W) | 0.139 | 0.170 | 0.197 | 0.220 | 0.241 | 0.260 | 0.278 | 0.340 | 0.393 | 0.440 | 0.538 | 0.622 | 0.761 | 1.18 |
| AMT-15012 (N) | 0.144 | 0.176 | 0.203 | 0.227 | 0.249 | 0.268 | 0.287 | 0.352 | 0.406 | 0.454 | 0.556 | 0.642 | 0.786 | 1.22 |
| AMT-15012 (W) | 0.174 | 0.213 | 0.246 | 0.275 | 0.301 | 0.326 | 0.348 | 0.426 | 0.492 | 0.550 | 0.674 | 0.778 | 0.953 | 1.48 |
| AMT-15015 (N) | 0.217 | 0.265 | 0.306 | 0.342 | 0.375 | 0.405 | 0.433 | 0.530 | 0.612 | 0.685 | 0.839 | 0.968 | 1.19 | 1.84 |
| AMT-15015 (W) | 0.287 | 0.351 | 0.405 | 0.453 | 0.496 | 0.536 | 0.573 | 0.702 | 0.810 | 0.906 | 1.11 | 1.28 | 1.57 | 2.44 |
| AMT-15018 (N) | 0.302 | 0.370 | 0.427 | 0.478 | 0.523 | 0.565 | 0.604 | 0.740 | 0.854 | 0.955 | 1.17 | 1.35 | 1.65 | 2.57 |
| AMT-15020 (N) | 0.375 | 0.459 | 0.530 | 0.593 | 0.650 | 0.702 | 0.750 | 0.919 | 1.06 | 1.19 | 1.45 | 1.68 | 2.05 | 3.19 |
| AMT-15018 (W) | 0.388 | 0.475 | 0.548 | 0.613 | 0.671 | 0.725 | 0.775 | 0.949 | 1.10 | 1.23 | 1.50 | 1.73 | 2.12 | 3.30 |
| AMT-15020 (W) | 0.472 | 0.577 | 0.667 | 0.746 | 0.817 | 0.882 | 0.943 | 1.15 | 1.33 | 1.49 | 1.83 | 2.11 | 2.58 | 4.01 |
| AMT-15023 (N) | 0.485 | 0.594 | 0.686 | 0.767 | 0.840 | 0.907 | 0.970 | 1.19 | 1.37 | 1.53 | 1.88 | 2.17 | 2.66 | 4.13 |
| AMT-15023 (W) | 0.605 | 0.741 | 0.856 | 0.957 | 1.05 | 1.13 | 1.21 | 1.48 | 1.71 | 1.91 | 2.34 | 2.71 | 3.31 | 5.15 |

## METRIC UNITS

| Disc | Liters/Min BAR | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.7 | 1.0 | 1.4 | 1.7 | 2.1 | 2.4 | 2.8 | 4.1 | 5.5 | 6.9 | 10.3 | 13.8 | 20.7 | 50.0 |
| AMT-15007 (N) | 0.238 | 0.291 | 0.333 | 0.375 | 0.409 | 0.443 | 0.473 | 0.579 | 0.670 | 0.750 | 0.916 | 1.060 | 1.295 | 2.014 |
| AMT-15007 (W) | 0.242 | 0.295 | 0.344 | 0.382 | 0.420 | 0.454 | 0.485 | 0.594 | 0.685 | 0.765 | 0.939 | 1.083 | 1.329 | 2.063 |
| AMT-15008 (N) | 0.250 | 0.303 | 0.352 | 0.394 | 0.428 | 0.466 | 0.496 | 0.606 | 0.700 | 0.784 | 0.961 | 1.109 | 1.359 | 2.112 |
| AMT-15008 (W) | 0.314 | 0.382 | 0.443 | 0.492 | 0.541 | 0.583 | 0.625 | 0.765 | 0.882 | 0.988 | 1.211 | 1.397 | 1.711 | 2.657 |
| AMT-15010 (N) | 0.375 | 0.458 | 0.530 | 0.594 | 0.647 | 0.700 | 0.750 | 0.916 | 1.060 | 1.185 | 1.450 | 1.677 | 2.052 | 3.191 |
| AMT-15010 (W) | 0.526 | 0.644 | 0.746 | 0.833 | 0.912 | 0.984 | 1.052 | 1.287 | 1.488 | 1.666 | 2.037 | 2.355 | 2.881 | 4.467 |
| AMT-15012 (N) | 0.545 | 0.666 | 0.768 | 0.859 | 0.943 | 1.014 | 1.086 | 1.332 | 1.537 | 1.719 | 2.105 | 2.430 | 2.975 | 4.618 |
| AMT-15012 (W) | 0.659 | 0.806 | 0.931 | 1.041 | 1.139 | 1.234 | 1.317 | 1.613 | 1.862 | 2.082 | 2.551 | 2.945 | 3.607 | 5.602 |
| AMT-15015 (N) | 0.821 | 1.003 | 1.158 | 1.295 | 1.420 | 1.533 | 1.639 | 2.006 | 2.317 | 2.593 | 3.176 | 3.664 | 4.505 | 6.965 |
| AMT-15015 (W) | 1.086 | 1.329 | 1.533 | 1.715 | 1.878 | 2.029 | 2.169 | 2.657 | 3.066 | 3.430 | 4.202 | 4.845 | 5.943 | 9.236 |
| AMT-15018 (N) | 1.143 | 1.401 | 1.616 | 1.809 | 1.980 | 2.139 | 2.286 | 2.801 | 3.233 | 3.615 | 4.429 | 5.110 | 6.246 | 9.729 |
| AMT-15020 (N) | 1.420 | 1.738 | 2.006 | 2.245 | 2.461 | 2.657 | 2.839 | 3.479 | 4.013 | 4.505 | 5.489 | 6.359 | 7.760 | 12.075 |
| AMT-15018 (W) | 1.469 | 1.798 | 2.074 | 2.320 | 2.540 | 2.744 | 2.934 | 3.592 | 4.164 | 4.656 | 5.678 | 6.549 | 8.025 | 12.492 |
| AMT-15020 (W) | 1.787 | 2.184 | 2.525 | 2.824 | 3.093 | 3.339 | 3.570 | 4.353 | 5.035 | 5.640 | 6.927 | 7.987 | 9.766 | 15.180 |
| AMT-15023 (N) | 1.836 | 2.249 | 2.597 | 2.903 | 3.180 | 3.433 | 3.672 | 4.505 | 5.186 | 5.792 | 7.117 | 8.214 | 10.069 | 15.634 |
| AMT-15023 (W) | 2.290 | 2.805 | 3.240 | 3.623 | 3.975 | 4.278 | 4.580 | 5.602 | 6.473 | 7.230 | 8.858 | 10.258 | 12.530 | 19.495 |

| Features | |
|---|---|
| Common Use | Fertilizer |
| Pattern | Stream |
| Technology | Round Orifice |
| Material | Ceramic |
| Spray Angle | 0° |
| Pressure Range | 10-725 PSI (1-50 BAR) |
| Configuration | Disc |

| Part Numbers |
|---|
| Nozzles |
| AMT-15007 |
| AMT-15008 |
| AMT-15010 |
| AMT-15012 |
| AMT-15015 |
| AMT-15018 |
| AMT-15020 |
| AMT-15023 |

W - Numbers can be read on face of disc when installed in cap

N - Numbers on disc cannot be read when installed in cap

Photos above show the disc exit side.

Albuz® is a registered trademark of SAINT-GOBAIN SOLCERA, SAINT GOBAIN CERAMIQUES AVANCEES DESMARQUEST, CERAMIQUES TECHNIQUES DESMARQUEST, and SOCIETE DESMARQUEST ET CEC..
Hypro® is a registered trademark of Pentair.

# HOLLOW CONE - SWIRLTIP DISC & CORES 25°-110°

DISC

CORE

The Hypro SwirlTip disc and core hollow-cone spray nozzles produce finely atomized droplets.

- Hollow cone pattern in a variety of spray pattern widths
- Discs conveniently packaged in a quantity of ten

## US UNITS

| Disc | Core | Spray Angle at 40 PSI | Color Disc/Core | US Gallon/Min PSI | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 | 20 | 30 | 40 | 60 | 80 | 100 | 150 |
| 30-DC-01 | 30-CR-13 | 50 | Gray/Red | - | - | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.13 |
| 30-DC-015 | 30-CR-13 | 55 | Black/Red | - | - | 0.06 | 0.07 | 0.09 | 0.10 | 0.11 | 0.14 |
| 30-DC-02 | 30-CR-13 | 65 | Brown/Red | - | 0.06 | 0.07 | 0.08 | 0.10 | 0.12 | 0.13 | 0.16 |
| 30-DC-03 | 30-CR-13 | 70 | Orange/Red | - | 0.06 | 0.08 | 0.09 | 0.11 | 0.12 | 0.14 | 0.17 |
| 30-DC-04 | 30-CR-13 | 80 | Red/Red | 0.06 | 0.08 | 0.10 | 0.12 | 0.14 | 0.17 | 0.19 | 0.23 |
| 30-DC-01 | 30-CR-23 | 45 | Gray/LightBlue | - | - | 0.06 | 0.07 | 0.09 | 0.10 | 0.11 | 0.14 |
| 30-DC-015 | 30-CR-23 | 50 | Black/LightBlue | - | - | 0.07 | 0.09 | 0.10 | 0.12 | 0.13 | 0.16 |
| 30-DC-02 | 30-CR-23 | 70 | Brown/LightBlue | - | 0.08 | 0.09 | 0.11 | 0.13 | 0.15 | 0.17 | 0.21 |
| 30-DC-03 | 30-CR-23 | 70 | Orange/LightBlue | 0.06 | 0.08 | 0.10 | 0.12 | 0.14 | 0.16 | 0.18 | 0.22 |
| 30-DC-04 | 30-CR-23 | 80 | Red/LightBlue | 0.08 | 0.11 | 0.13 | 0.15 | 0.19 | 0.22 | 0.24 | 0.30 |
| 30-DC-05 | 30-CR-23 | 90 | Blue/LightBlue | 0.09 | 0.13 | 0.16 | 0.18 | 0.22 | 0.25 | 0.28 | 0.35 |
| 30-DC-06 | 30-CR-23 | 90 | Yellow/LightBlue | 0.10 | 0.15 | 0.18 | 0.21 | 0.25 | 0.29 | 0.33 | 0.40 |
| 30-DC-01 | 30-CR-25 | 25 | Gray/Yellow | - | - | 0.09 | 0.10 | 0.12 | 0.14 | 0.16 | 0.19 |
| 30-DC-015 | 30-CR-25 | 40 | Black/Yellow | - | - | 0.11 | 0.13 | 0.16 | 0.19 | 0.21 | 0.26 |
| 30-DC-02 | 30-CR-25 | 50 | Brown/Yellow | - | 0.11 | 0.13 | 0.16 | 0.19 | 0.22 | 0.25 | 0.30 |
| 30-DC-03 | 30-CR-25 | 60 | Orange/Yellow | 0.09 | 0.13 | 0.16 | 0.19 | 0.23 | 0.27 | 0.30 | 0.36 |
| 30-DC-04 | 30-CR-25 | 75 | Red/Yellow | 0.14 | 0.19 | 0.24 | 0.28 | 0.34 | 0.39 | 0.43 | 0.53 |
| 30-DC-05 | 30-CR-25 | 80 | Blue/Yellow | 0.18 | 0.25 | 0.30 | 0.35 | 0.43 | 0.49 | 0.55 | 0.68 |
| 30-DC-06 | 30-CR-25 | 85 | Yellow/Yellow | 0.23 | 0.32 | 0.39 | 0.45 | 0.55 | 0.64 | 0.71 | 0.87 |
| 30-DC-07 | 30-CR-25 | 90 | Green/Yellow | 0.25 | 0.35 | 0.43 | 0.50 | 0.61 | 0.71 | 0.79 | 0.97 |
| 30-DC-08 | 30-CR-25 | 95 | White/Yellow | 0.30 | 0.42 | 0.52 | 0.60 | 0.73 | 0.85 | 0.95 | 1.16 |
| 30-DC-10 | 30-CR-25 | 100 | LimeGreen/Yellow | 0.38 | 0.53 | 0.65 | 0.75 | 0.92 | 1.06 | 1.19 | 1.45 |
| 30-DC-12 | 30-CR-25 | 110 | RoyalBlue/Yellow | 0.46 | 0.65 | 0.80 | 0.93 | 1.13 | 1.31 | 1.46 | 1.79 |
| 30-DC-01 | 30-CR-45 | 25 | Gray/Green | - | - | - | 0.12 | 0.15 | 0.17 | 0.19 | 0.23 |
| 30-DC-015 | 30-CR-45 | 35 | Black/Green | - | - | 0.14 | 0.16 | 0.20 | 0.23 | 0.25 | 0.31 |
| 30-DC-02 | 30-CR-45 | 45 | Brown/Green | - | 0.14 | 0.17 | 0.20 | 0.24 | 0.28 | 0.32 | 0.39 |
| 30-DC-03 | 30-CR-45 | 55 | Orange/Green | - | 0.16 | 0.20 | 0.23 | 0.28 | 0.32 | 0.36 | 0.44 |
| 30-DC-04 | 30-CR-45 | 70 | Red/Green | 0.18 | 0.25 | 0.30 | 0.35 | 0.43 | 0.49 | 0.55 | 0.68 |
| 30-DC-05 | 30-CR-45 | 75 | Blue/Green | 0.23 | 0.32 | 0.39 | 0.45 | 0.55 | 0.64 | 0.71 | 0.87 |
| 30-DC-06 | 30-CR-45 | 80 | Yellow/Green | 0.29 | 0.41 | 0.50 | 0.58 | 0.70 | 0.81 | 0.91 | 1.11 |
| 30-DC-07 | 30-CR-45 | 85 | Green/Green | 0.34 | 0.48 | 0.58 | 0.68 | 0.83 | 0.95 | 1.07 | 1.31 |
| 30-DC-08 | 30-CR-45 | 90 | White/Green | 0.41 | 0.58 | 0.71 | 0.83 | 1.01 | 1.17 | 1.30 | 1.60 |
| 30-DC-10 | 30-CR-45 | 95 | LimeGreen/Green | 0.55 | 0.78 | 0.95 | 1.10 | 1.35 | 1.56 | 1.74 | 2.13 |
| 30-DC-12 | 30-CR-45 | 100 | RoyalBlue/Green | 0.67 | 0.95 | 1.16 | 1.34 | 1.64 | 1.90 | 2.12 | 2.60 |

## DC/CR DISC CORE

| | 40 PSI | 50 PSI | 60 PSI | 70 PSI | 80 PSI | 90 PSI | 100 PSI | 125 PSI | 150 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 30-DC-01/30-CR-23 | F | F | VF | VF | VF | VF | VF | VF | VF |
| 30-DC-015/30-CR-23 | F | F | VF | VF | VF | VF | VF | VF | VF |
| 30-DC-02/30-CR-23 | F | F | F | VF | VF | VF | VF | VF | VF |
| 30-DC-03/30-CR-23 | F | F | F | F | VF | VF | VF | VF | VF |
| 30-DC-04/30-CR-23 | F | F | F | F | F | F | VF | VF | VF |
| 30-DC-05/30-CR-23 | F | F | F | F | F | F | F | VF | VF |
| 30-DC-06/30-CR-23 | M | F | F | F | F | F | F | F | VF |
| 30-DC-01/30-CR-25 | F | F | F | VF | VF | VF | VF | VF | VF |
| 30-DC-015/30-CR-25 | F | F | F | F | VF | VF | VF | VF | VF |
| 30-DC-02/30-CR-25 | F | F | F | F | VF | VF | VF | VF | VF |
| 30-DC-03/30-CR-25 | F | F | F | F | F | VF | VF | VF | VF |
| 30-DC-04/30-CR-25 | M | F | F | F | F | F | F | VF | VF |
| 30-DC-05/30-CR-25 | M | M | M | F | F | F | F | VF | VF |
| 30-DC-06/30-CR-25 | M | M | M | M | M | M | F | F | F |
| 30-DC-07/30-CR-25 | M | M | M | M | M | M | M | F | F |
| 30-DC-08/30-CR-25 | C | C | C | C | M | M | M | M | M |
| 30-DC-10/30-CR-25 | C | C | C | C | C | M | M | M | M |
| 30-DC-01/30-CR-45 | F | F | F | VF | VF | VF | VF | VF | VF |
| 30-DC-015/30-CR-45 | M | F | F | F | VF | VF | VF | VF | VF |
| 30-DC-02/30-CR-45 | M | M | F | F | F | VF | VF | VF | VF |
| 30-DC-03/30-CR-45 | M | M | M | F | F | F | VF | VF | VF |
| 30-DC-04/30-CR-45 | M | M | M | M | F | F | F | VF | VF |
| 30-DC-05/30-CR-45 | M | M | M | M | M | F | F | F | VF |
| 30-DC-06/30-CR-45 | C | M | M | M | M | M | M | F | F |
| 30-DC-07/30-CR-45 | C | C | M | M | M | M | M | M | F |
| 30-DC-081/30-CR-45 | C | C | C | M | M | M | M | M | M |

Droplet size based on ASABE S572.1 standard.

# HOLLOW CONE - SWIRLTIP DISC & CORES 25°-110°

## METRIC UNITS

| Disc | Core | Spray Angle at 2,75 BAR | Color Disc/Core | Flow L/min Pressure BAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 |
| 30-DC-01 | 30-CR-13 | 50 | Gray/Red | 0,16 | 0,22 | 0,27 | 0,31 | 0,35 | 0,38 | 0,44 | 0,49 |
| 30-DC-015 | 30-CR-13 | 55 | Black/Red | 0,17 | 0,24 | 0,29 | 0,33 | 0,37 | 0,41 | 0,47 | 0,53 |
| 30-DC-02 | 30-CR-13 | 65 | Brown/Red | 0,18 | 0,26 | 0,32 | 0,37 | 0,41 | 0,45 | 0,52 | 0,58 |
| 30-DC-03 | 30-CR-13 | 70 | Orange/Red | 0,21 | 0,29 | 0,36 | 0,42 | 0,46 | 0,51 | 0,59 | 0,66 |
| 30-DC-04 | 30-CR-13 | 80 | Red/Red | 0,27 | 0,38 | 0,47 | 0,54 | 0,61 | 0,66 | 0,77 | 0,86 |
| 30-DC-01 | 30-CR-23 | 45 | Gray/LightBlue | 0,16 | 0,23 | 0,28 | 0,32 | 0,36 | 0,40 | 0,46 | 0,51 |
| 30-DC-015 | 30-CR-23 | 50 | Black/LightBlue | 0,21 | 0,29 | 0,36 | 0,42 | 0,46 | 0,51 | 0,59 | 0,66 |
| 30-DC-02 | 30-CR-23 | 70 | Brown/LightBlue | 0,23 | 0,32 | 0,39 | 0,45 | 0,50 | 0,55 | 0,64 | 0,71 |
| 30-DC-03 | 30-CR-23 | 70 | Orange/LightBlue | 0,27 | 0,38 | 0,47 | 0,54 | 0,61 | 0,66 | 0,77 | 0,86 |
| 30-DC-04 | 30-CR-23 | 80 | Red/LightBlue | 0,34 | 0,48 | 0,59 | 0,68 | 0,76 | 0,83 | 0,96 | 1,08 |
| 30-DC-05 | 30-CR-23 | 90 | Blue/LightBlue | 0,41 | 0,58 | 0,71 | 0,82 | 0,92 | 1,00 | 1,16 | 1,30 |
| 30-DC-06 | 30-CR-23 | 90 | Yellow/LightBlue | 0,48 | 0,68 | 0,83 | 0,96 | 1,07 | 1,17 | 1,36 | 1,52 |
| 30-DC-01 | 30-CR-25 | 25 | Gray/Yellow | 0,23 | 0,33 | 0,40 | 0,46 | 0,52 | 0,57 | 0,65 | 0,73 |
| 30-DC-015 | 30-CR-25 | 40 | Black/Yellow | 0,30 | 0,42 | 0,52 | 0,60 | 0,67 | 0,74 | 0,85 | 0,95 |
| 30-DC-02 | 30-CR-25 | 50 | Brown/Yellow | 0,36 | 0,51 | 0,63 | 0,73 | 0,81 | 0,89 | 1,03 | 1,15 |
| 30-DC-03 | 30-CR-25 | 60 | Orange/Yellow | 0,43 | 0,61 | 0,75 | 0,87 | 0,97 | 1,06 | 1,22 | 1,37 |
| 30-DC-04 | 30-CR-25 | 75 | Red/Yellow | 0,66 | 0,93 | 1,14 | 1,32 | 1,47 | 1,61 | 1,86 | 2,08 |
| 30-DC-05 | 30-CR-25 | 80 | Blue/Yellow | 0,80 | 1,13 | 1,38 | 1,59 | 1,78 | 1,95 | 2,25 | 2,52 |
| 30-DC-06 | 30-CR-25 | 85 | Yellow/Yellow | 1,00 | 1,42 | 1,74 | 2,01 | 2,25 | 2,46 | 2,84 | 3,18 |
| 30-DC-07 | 30-CR-25 | 90 | Green/Yellow | 1,18 | 1,67 | 2,05 | 2,37 | 2,65 | 2,90 | 3,35 | 3,74 |
| 30-DC-08 | 30-CR-25 | 95 | White/Yellow | 1,39 | 1,97 | 2,41 | 2,78 | 3,11 | 3,41 | 3,94 | 4,40 |
| 30-DC-10 | 30-CR-25 | 100 | LimeGreen/Yellow | 1,73 | 2,45 | 3,00 | 3,46 | 3,87 | 4,24 | 4,90 | 5,48 |
| 30-DC-12 | 30-CR-25 | 110 | RoyalBlue/Yellow | 2,12 | 3,00 | 3,67 | 4,24 | 4,74 | 5,19 | 5,99 | 6,70 |
| 30-DC-01 | 30-CR-45 | 25 | Gray/Green | 0,28 | 0,39 | 0,48 | 0,55 | 0,62 | 0,68 | 0,78 | 0,88 |
| 30-DC-015 | 30-CR-45 | 35 | Black/Green | 0,37 | 0,52 | 0,64 | 0,74 | 0,83 | 0,91 | 1,05 | 1,17 |
| 30-DC-02 | 30-CR-45 | 45 | Brown/Green | 0,46 | 0,65 | 0,80 | 0,92 | 1,03 | 1,13 | 1,31 | 1,46 |
| 30-DC-03 | 30-CR-45 | 55 | Orange/Green | 0,53 | 0,74 | 0,91 | 1,05 | 1,17 | 1,29 | 1,49 | 1,66 |
| 30-DC-04 | 30-CR-45 | 70 | Red/Green | 0,82 | 1,16 | 1,42 | 1,64 | 1,83 | 2,01 | 2,32 | 2,59 |
| 30-DC-05 | 30-CR-45 | 75 | Blue/Green | 1,03 | 1,45 | 1,78 | 2,06 | 2,30 | 2,52 | 2,91 | 3,25 |
| 30-DC-06 | 30-CR-45 | 80 | Yellow/Green | 1,32 | 1,87 | 2,29 | 2,64 | 2,96 | 3,24 | 3,74 | 4,18 |
| 30-DC-07 | 30-CR-45 | 85 | Green/Green | 1,55 | 2,19 | 2,68 | 3,09 | 3,46 | 3,79 | 4,38 | 4,89 |
| 30-DC-08 | 30-CR-45 | 90 | White/Green | 1,92 | 2,71 | 3,32 | 3,83 | 4,29 | 4,70 | 5,42 | 6,06 |
| 30-DC-10 | 30-CR-45 | 95 | LimeGreen/Green | 2,54 | 3,59 | 4,40 | 5,08 | 5,68 | 6,22 | 7,19 | 8,03 |
| 30-DC-12 | 30-CR-45 | 100 | RoyalBlue/Green | 3,10 | 4,38 | 5,37 | 6,20 | 6,93 | 7,59 | 8,77 | 9,80 |

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Hollow Cone |
| Technology | Swirl |
| Material | Polyacetal |
| Spray Angle | 25° - 110° |
| Pressure Range | 10-150 PSI (1-10 BAR) |
| Configuration | Nozzle |

**Part Numbers**

| Discs | Discs (10 per Bag) | Cores |
|---|---|---|
| 30-DC-01 | 10BG-30-DC-01 | 30-CR-13 |
| 30-DC-015 | 10BG-30-DC-015 | 30-CR-23 |
| 30-DC-02 | 10BG-30-DC-02 | 30-CR-25 |
| 30-DC-03 | 10BG-30-DC-03 | 30-CR-45 |
| 30-DC-04 | 10BG-30-DC-04 | - |
| 30-DC-05 | 10BG-30-DC-05 | - |
| 30-DC-06 | 10BG- 30-DC-06 | - |
| 30-DC-07 | 10BG-30-DC-07 | - |
| 30-DC-08 | 10BG-30-DC-08 | - |
| 30-DC-10 | 10BG-30-DC-10 | - |
| 30-DC-12 | 10BG-30-DC-12 | - |

## DC/CR DISC CORE

| DC/CR DISC CORE | 2.5 BAR | 3 BAR | 3.5 BAR | 4 BAR | 4.5 BAR | 5 BAR | 5.5 BAR | 6 BAR |
|---|---|---|---|---|---|---|---|---|
| 30-DC-01/30-CR-23 | F | F | F | VF | VF | VF | VF | VF |
| 30-DC-02/30-CR-23 | F | F | F | F | VF | VF | VF | VF |
| 30-DC-03/30-CR-23 | F | F | F | F | F | F | VF | VF |
| 30-DC-04/30-CR-23 | F | F | F | F | F | F | F | F |
| 30-DC-05/30-CR-23 | M | F | F | F | F | F | F | F |
| 30-DC-06/30-CR-23 | M | M | F | F | F | F | F | F |
| 30-DC-01/30-CR-25 | F | F | F | F | VF | VF | VF | VF |
| 30-DC-015/30-CR-25 | F | F | F | F | F | VF | VF | VF |
| 30-DC-02/30-CR-25 | F | F | F | F | F | F | VF | VF |
| 30-DC-03/30-CR-25 | M | F | F | F | F | F | F | VF |
| 30-DC-04/30-CR-25 | M | M | F | F | F | F | F | F |
| 30-DC-05/30-CR-25 | M | M | M | M | M | M | F | F |
| 30-DC-06/30-CR-25 | M | M | M | M | M | M | M | M |
| 30-DC-07/30-CR-25 | M | M | M | M | M | M | M | M |
| 30-DC-08/30-CR-25 | C | C | C | C | C | C | M | M |
| 30-DC-10/30-CR-25 | C | C | C | C | C | C | C | M |
| 30-DC-01/30-CR-45 | M | F | F | F | F | VF | VF | VF |
| 30-DC-015/30-CR-45 | M | M | F | F | F | F | VF | VF |
| 30-DC-02/30-CR-45 | M | M | M | F | F | F | F | VF |
| 30-DC-03/30-CR-45 | M | M | M | M | F | F | F | F |
| 30-DC-04/30-CR-45 | M | M | M | M | M | M | M | F |
| 30-DC-05/30-CR-45 | M | M | M | M | M | M | M | M |
| 30-DC-06/30-CR-45 | C | M | M | M | M | M | M | F |
| 30-DC-07/30-CR-45 | C | C | C | M | M | M | M | M |
| 30-DC-081/30-CR-45 | C | C | C | C | C | M | M | M |

Droplet size based on ASABE S572.1 standard.

# HOLLOW CONE - CERAMIC DISC & CORES 13° - 93°

Albuz® ceramic discs and cores are the longest lasting disc-core nozzles, making them ideal for abrasive agricultural and horticultural sprays. DCC/CRC nozzles will outlast stainless steel disc-core nozzles by up to 10 times and perform superbly at high pressures, common on many air-blast and directed sprayers.

## US UNITS

| DISC | Hollow Cone CORE | Flow Rate GPM | | | | | | | | | | Spray Angle Degrees | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pressure (PSI) | | | | | | | | | | Pressure (PSI) | | |
| | | 10 | 20 | 30 | 40 | 60 | 80 | 100 | 150 | 200 | 300 | 20 | 40 | 80 |
| DCC-01 | CRC-13 | - | - | 0.059 | 0.066 | 0.078 | 0.088 | 0.097 | 0.115 | 0.128 | 0.152 | - | 51 | 62 |
| DCC-02 | CRC-13 | - | 0.064 | 0.075 | 0.08 | 0.10 | 0.11 | 0.12 | 0.14 | 0.16 | 0.18 | 49 | 67 | 72 |
| DCC-03 | CRC-13 | - | 0.071 | 0.08 | 0.09 | 0.11 | 0.12 | 0.13 | 0.16 | 0.18 | 0.20 | 53 | 70 | 75 |
| DCC-04 | CRC-13 | 0.07 | 0.09 | 0.11 | 0.12 | 0.14 | 0.16 | 0.17 | 0.20 | 0.23 | 0.27 | 69 | 79 | 83 |
| DCC-01 | CRC-23 | - | - | 0.064 | 0.072 | 0.080 | 0.096 | 0.107 | 0.124 | 0.139 | 0.164 | - | 47 | 58 |
| DCC-02 | CRC-23 | - | 0.078 | 0.092 | 0.10 | 0.13 | 0.14 | 0.16 | 0.19 | 0.21 | 0.25 | 51 | 63 | 70 |
| DCC-03 | CRC-23 | 0.065 | 0.087 | 0.10 | 0.12 | 0.14 | 0.16 | 0.18 | 0.21 | 0.24 | 0.28 | 58 | 69 | 75 |
| DCC-04 | CRC-23 | 0.082 | 0.113 | 0.14 | 0.15 | 0.19 | 0.21 | 0.23 | 0.28 | 0.32 | 0.38 | 68 | 82 | 87 |
| DCC-05 | CRC-23 | 0.095 | 0.13 | 0.16 | 0.18 | 0.22 | 0.25 | 0.28 | 0.34 | 0.38 | 0.46 | 79 | 89 | 94 |
| DCC-06 | CRC-23 | 0.112 | 0.15 | 0.19 | 0.21 | 0.26 | 0.29 | 0.32 | 0.39 | 0.45 | 0.54 | 84 | 93 | 98 |
| DCC-01 | CRC-25 | - | - | 0.088 | 0.101 | 0.122 | 0.138 | 0.156 | 0.185 | 0.210 | 0.255 | - | 27 | 43 |
| DCC-02 | CRC-25 | - | 0.12 | 0.14 | 0.16 | 0.19 | 0.22 | 0.25 | 0.29 | 0.34 | 0.41 | 39 | 51 | 58 |
| DCC-03 | CRC-25 | 0.10 | 0.14 | 0.17 | 0.19 | 0.23 | 0.26 | 0.29 | 0.35 | 0.40 | 0.48 | 52 | 61 | 67 |
| DCC-04 | CRC-25 | 0.15 | 0.21 | 0.25 | 0.29 | 0.35 | 0.40 | 0.45 | 0.54 | 0.62 | 0.75 | 67 | 74 | 80 |
| DCC-05 | CRC-25 | 0.18 | 0.25 | 0.30 | 0.35 | 0.42 | 0.48 | 0.54 | 0.65 | 0.75 | 0.90 | 73 | 79 | 84 |
| DCC-06 | CRC-25 | 0.23 | 0.32 | 0.39 | 0.44 | 0.54 | 0.62 | 0.70 | 0.85 | 0.97 | 1.19 | 79 | 85 | 89 |
| DCC-07 | CRC-25 | 0.26 | 0.37 | 0.45 | 0.52 | 0.63 | 0.73 | 0.81 | 0.98 | 1.18 | 1.37 | 85 | 91 | 93 |
| DCC-01 | CRC-45 | - | - | - | 0.125 | 0.148 | 0.170 | 0.190 | 0.225 | 0.257 | 0.310 | - | 22 | 34 |
| DCC-02 | CRC-45 | - | 0.14 | 0.18 | 0.20 | 0.25 | 0.28 | 0.32 | 0.38 | 0.44 | 0.53 | 32 | 46 | 55 |
| DCC-03 | CRC-45 | - | 0.17 | 0.20 | 0.23 | 0.28 | 0.33 | 0.36 | 0.44 | 0.51 | 0.62 | 40 | 53 | 60 |
| DCC-04 | CRC-45 | 0.18 | 0.25 | 0.31 | 0.36 | 0.43 | 0.50 | 0.56 | 0.68 | 0.78 | 0.95 | 62 | 69 | 72 |
| DCC-05 | CRC-45 | 0.23 | 0.32 | 0.39 | 0.45 | 0.55 | 0.64 | 0.71 | 0.86 | 0.99 | 1.22 | 67 | 73 | 76 |
| DCC-06 | CRC-45 | 0.29 | 0.41 | 0.50 | 0.58 | 0.72 | 0.83 | 0.93 | 1.15 | 1.33 | 1.64 | 73 | 79 | 81 |
| DCC-07 | CRC-45 | 0.33 | 0.48 | 0.59 | 0.68 | 0.84 | 0.97 | 1.11 | 0.14 | 1.57 | 1.94 | 81 | 86 | 87 |
| DCC-01 | CRC-46 | - | - | - | 0.145 | 0.178 | 0.205 | 0.23 | 0.28 | 0.32 | 0.39 | - | 13 | 15 |
| DCC-02 | CRC-46 | - | - | 0.24 | 0.27 | 0.33 | 0.37 | 0.42 | 0.50 | 0.57 | 0.68 | - | 18 | 21 |
| DCC-03 | CRC-46 | - | 0.23 | 0.28 | 0.32 | 0.39 | 0.45 | 0.51 | 0.61 | 0.70 | 0.86 | 14 | 20 | 24 |
| DCC-04 | CRC-46 | 0.28 | 0.39 | 0.48 | 0.56 | 0.68 | 0.78 | 0.88 | 1.07 | 1.23 | 1.52 | 23 | 29 | 33 |
| DCC-05 | CRC-46 | 0.38 | 0.54 | 0.66 | 0.77 | 0.94 | 1.10 | 1.25 | 1.50 | 1.73 | 2.13 | 33 | 39 | 42 |
| DCC-06 | CRC-46 | 0.55 | 0.78 | 0.95 | 1.10 | 1.35 | 1.58 | 1.73 | 2.16 | 2.50 | 3.06 | 42 | 48 | 50 |
| DCC-07 | CRC-46 | - | 0.98 | 1.22 | 1.39 | 1.72 | 1.97 | 2.22 | 2.73 | 3.15 | 3.85 | 48 | 53 | 56 |

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# HOLLOW CONE - CERAMIC DISC & CORES 13° - 93°

## METRIC UNITS

| DISC | Hollow Cone CORE | Flow Rate, LPM | | | | | | | Spray Angle Degrees | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Pressure (BAR) | | | | | | | Pressure (BAR) | |
| | | 3 | 4 | 5 | 6 | 10 | 15 | 20 | 10 | 20 |
| DCC-01 | CRC-13 | 0.280 | 0.290 | 0.320 | 0.340 | 0.430 | 0.510 | 0.570 | 66 | 68 |
| DCC-02 | CRC-13 | 0.320 | 0.370 | 0.400 | 0.42 | 0.52 | 0.63 | 0.67 | 74 | 75 |
| DCC-03 | CRC-13 | 0.360 | 0.410 | 0.43 | 0.48 | 0.60 | 0.71 | 0.74 | 77 | 78 |
| DCC-04 | CRC-13 | 0.47 | 0.52 | 0.58 | 0.60 | 0.74 | 0.91 | 1.00 | 84 | 85 |
| DCC-01 | CRC-23 | 0.280 | 0.300 | 0.350 | 0.380 | 0.480 | 0.550 | 0.610 | 63 | 65 |
| DCC-02 | CRC-23 | 0.390 | 0.480 | 0.500 | 0.56 | 0.71 | 0.83 | 0.93 | 72 | 72 |
| DCC-03 | CRC-23 | 0.470 | 0.520 | 0.58 | 0.64 | 0.78 | 0.95 | 1.04 | 77 | 77 |
| DCC-04 | CRC-23 | 0.590 | 0.710 | 0.76 | 0.81 | 1.04 | 1.26 | 1.41 | 88 | 87 |
| DCC-05 | CRC-23 | 0.710 | 0.82 | 0.90 | 0.99 | 1.27 | 1.50 | 1.71 | 96 | 95 |
| DCC-06 | CRC-23 | 0.830 | 0.97 | 1.04 | 1.13 | 1.45 | 1.78 | 2.01 | 100 | 99 |
| DCC-01 | CRC-25 | 0.400 | 0.420 | 0.500 | 0.550 | 0.690 | 0.830 | 0.950 | 49 | 51 |
| DCC-02 | CRC-25 | 0.63 | 0.71 | 0.79 | 0.88 | 1.08 | 1.34 | 1.53 | 61 | 61 |
| DCC-03 | CRC-25 | 0.75 | 0.86 | 0.94 | 1.02 | 1.30 | 1.58 | 1.79 | 69 | 69 |
| DCC-04 | CRC-25 | 1.14 | 1.30 | 1.44 | 1.59 | 2.01 | 2.45 | 2.79 | 82 | 82 |
| DCC-05 | CRC-25 | 1.36 | 1.56 | 1.73 | 1.91 | 2.42 | 2.96 | 3.35 | 85 | 84 |
| DCC-06 | CRC-25 | 1.74 | 2.01 | 2.23 | 2.47 | 3.16 | 3.83 | 4.43 | 89 | 88 |
| DCC-07 | CRC-25 | 2.05 | 2.34 | 2.63 | 2.86 | 3.85 | 4.66 | 5.10 | 92 | 91 |
| DCC-01 | CRC-45 | 0.490 | 0.550 | 0.610 | 0.670 | 0.840 | 1.010 | 1.150 | 39 | 40 |
| DCC-02 | CRC-45 | 0.79 | 0.93 | 1.01 | 1.13 | 1.41 | 1.74 | 1.97 | 58 | 58 |
| DCC-03 | CRC-45 | 0.91 | 1.04 | 1.19 | 1.27 | 1.84 | 2.01 | 2.31 | 62 | 62 |
| DCC-04 | CRC-45 | 1.42 | 1.60 | 1.80 | 1.98 | 2.53 | 3.08 | 3.54 | 73 | 72 |
| DCC-05 | CRC-45 | 1.78 | 2.05 | 2.31 | 2.51 | 3.20 | 3.91 | 4.54 | 76 | 75 |
| DCC-06 | CRC-45 | 2.29 | 2.68 | 2.99 | 3.28 | 4.28 | 5.25 | 6.10 | 80 | 79 |
| DCC-07 | CRC-45 | 2.68 | 3.13 | 3.50 | 3.92 | 5.02 | 6.20 | 7.22 | 86 | 85 |
| DCC-01 | CRC-46 | 0.570 | 0.660 | 0.740 | 0.810 | 1.040 | 1.260 | 1.45 | 17 | 17 |
| DCC-02 | CRC-46 | 1.07 | 1.23 | 1.33 | 1.48 | 1.86 | 2.25 | 2.53 | 20 | 18 |
| DCC-03 | CRC-46 | 1.26 | 1.45 | 1.62 | 1.80 | 2.27 | 2.76 | 3.20 | 23 | 21 |
| DCC-04 | CRC-46 | 2.21 | 2.53 | 2.81 | 3.11 | 3.98 | 4.85 | 5.86 | 32 | 31 |
| DCC-05 | CRC-46 | 3.04 | 3.50 | 3.96 | 4.41 | 5.58 | 6.83 | 7.93 | 41 | 40 |
| DCC-06 | CRC-46 | 4.34 | 5.02 | 5.69 | 6.11 | 8.04 | 9.87 | 11.39 | 49 | 47 |
| DCC-07 | CRC-46 | 5.49 | 6.40 | 7.10 | 7.84 | 10.16 | 12.43 | 14.33 | 55 | 53 |

| Features | |
|---|---|
| Common Use | Plant Heath |
| Pattern | Hollow Cone |
| Technology | Swirl |
| Material | Ceramic |
| Spray Angle | 13°-93° |
| Pressure Range | 10-300 PSI (1-20 BAR) |
| Configuration | Nozzle |

| Part Numbers | | |
|---|---|---|
| Discs | Cores | Caps (25 Pack) |
| DCC-01 | CRC-13 | CAP05-20 |
| DCC-02 | CRC-23 | CAP05-20 |
| DCC-03 | CRC-45 | CAP05-20 |
| DCC-04 | CRC-46 | CAP05-20 |
| DCC-05 | - | CAP05-20 |
| DCC-06 | - | CAP05-20 |
| DCC-07 | - | CAP05-20 |

# HOLLOW CONE - HCX 80°

The Hypro Hollow-Cone spray nozzles are excellent for fungicide and insecticide application. The HCX produces finely atomized droplets in a hollow-cone, 80-degree pattern.

- Precision-molded in polyacetal for durable product life
- Wide operating pressure

## US UNITS

| Spray Nozzle | Flow Rate GPM Pressure (PSI) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 |
| 30HCX2 | 0.030 | 0.034 | 0.037 | 0.040 | 0.042 | 0.045 | 0.047 | 0.050 | 0.052 | 0.054 | 0.056 | 0.058 |
| 30HCX3 | 0.050 | 0.056 | 0.061 | 0.066 | 0.071 | 0.075 | 0.079 | 0.083 | 0.087 | 0.090 | 0.094 | 0.097 |
| 30HCX4 | 0.070 | 0.078 | 0.086 | 0.093 | 0.099 | 0.105 | 0.111 | 0.116 | 0.121 | 0.126 | 0.131 | 0.136 |
| 30HCX6 | 0.102 | 0.114 | 0.125 | 0.135 | 0.144 | 0.153 | 0.161 | 0.169 | 0.177 | 0.184 | 0.191 | 0.198 |
| 30HCX8 | 0.133 | 0.149 | 0.163 | 0.176 | 0.188 | 0.200 | 0.210 | 0.221 | 0.230 | 0.240 | 0.249 | 0.258 |
| 30HCX9 | 0.148 | 0.165 | 0.181 | 0.196 | 0.209 | 0.222 | 0.234 | 0.245 | 0.256 | 0.267 | 0.277 | 0.287 |
| 30HCX10 | 0.164 | 0.183 | 0.201 | 0.217 | 0.232 | 0.246 | 0.259 | 0.272 | 0.284 | 0.296 | 0.307 | 0.318 |
| 30HCX12 | 0.203 | 0.227 | 0.249 | 0.269 | 0.287 | 0.305 | 0.321 | 0.337 | 0.352 | 0.366 | 0.380 | 0.393 |
| 30HCX18 | 0.300 | 0.335 | 0.367 | 0.397 | 0.424 | 0.450 | 0.474 | 0.497 | 0.520 | 0.541 | 0.561 | 0.581 |

## HCX80° - HOLLOW CONE

| | 40 PSI | 50 PSI | 60 PSI | 70 PSI | 80 PSI | 90 PSI | 100 PSI | 125 PSI | 150 PSI |
|---|---|---|---|---|---|---|---|---|---|
| 30HCX2 | F | F | F | F | VF | VF | VF | VF | VF |
| 30HCX3 | F | F | F | F | F | F | F | VF | VF |
| 30HCX4 | F | F | F | F | F | F | F | F | VF |
| 30HCX6 | M | F | F | F | F | F | F | F | F |
| 30HCX8 | F | VF | VF | VF | VF | VF | VF | VF | VF |
| 30HCX9 | F | F | F | VF | VF | VF | VF | VF | VF |
| 30HCX10 | F | F | VF | VF | VF | VF | VF | VF | VF |
| 30HCX12 | F | F | F | VF | VF | VF | VF | VF | VF |
| 30HCX18 | F | F | F | F | F | F | F | VF | VF |

Droplet size based on ASABE S572.1 standard.

## METRIC UNITS

| Spray Nozzle | Flow Rate L/min Pressure (BAR) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | 3,5 | 4 | 4,5 | 5 | 5,5 | 6 | 6,5 | 7 | 8 | 9 | 10 |
| 30HCX2 | 0,132 | 0,143 | 0,152 | 0,162 | 0,170 | 0,179 | 0,187 | 0,194 | 0,202 | 0,216 | 0,229 | 0,241 |
| 30HCX3 | 0,199 | 0,215 | 0,230 | 0,244 | 0,257 | 0,269 | 0,281 | 0,293 | 0,304 | 0,325 | 0,345 | 0,363 |
| 30HCX4 | 0,265 | 0,286 | 0,306 | 0,325 | 0,342 | 0,359 | 0,375 | 0,390 | 0,405 | 0,433 | 0,459 | 0,484 |
| 30HCX6 | 0,397 | 0,429 | 0,458 | 0,486 | 0,513 | 0,538 | 0,561 | 0,584 | 0,606 | 0,648 | 0,688 | 0,725 |
| 30HCX8 | 0,530 | 0,572 | 0,612 | 0,649 | 0,684 | 0,718 | 0,750 | 0,780 | 0,810 | 0,865 | 0,918 | 0,968 |
| 30HCX9 | 0,596 | 0,644 | 0,688 | 0,730 | 0,769 | 0,807 | 0,843 | 0,877 | 0,910 | 0,973 | 1,032 | 1,088 |
| 30HCX10 | 0,662 | 0,715 | 0,764 | 0,811 | 0,855 | 0,896 | 0,936 | 0,974 | 1,011 | 1,081 | 1,147 | 1,209 |
| 30HCX12 | 0,750 | 0,810 | 0,866 | 0,919 | 0,968 | 1,016 | 1,061 | 1,104 | 1,146 | 1,225 | 1,299 | 1,369 |
| 30HCX18 | 1,180 | 1,275 | 1,363 | 1,445 | 1,523 | 1,598 | 1,669 | 1,737 | 1,802 | 1,927 | 2,044 | 2,154 |

## HCX80° - HOLLOW CONE

| | 3 BAR | 4 BAR | 5 BAR | 6 BAR | 7 BAR | 8 BAR | 9 BAR | 10 BAR | 11 BAR |
|---|---|---|---|---|---|---|---|---|---|
| 30HCX2 | F | F | F | VF | VF | VF | VF | VF | VF |
| 30HCX3 | F | F | F | F | F | VF | VF | VF | VF |
| 30HCX4 | F | F | F | F | F | F | VF | VF | VF |
| 30HCX6 | M | F | F | F | F | F | F | F | F |
| 30HCX8 | F | F | VF | VF | VF | VF | VF | VF | VF |
| 30HCX9 | F | F | VF | VF | VF | VF | VF | VF | VF |
| 30HCX10 | F | VF | VF | VF | VF | VF | VF | VF | VF |
| 30HCX12 | F | F | VF | VF | VF | VF | VF | VF | VF |
| 30HCX18 | F | F | F | F | F | VF | VF | VF | VF |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Hollow Cone |
| Technology | Swirl |
| Material | Polyacetal |
| Spray Angle | 80° |
| Pressure Range | 40-150 PSI (3-10 BAR) |
| Configuration | Nozzle |

| Part Numbers (Bags of 10) | |
|---|---|
| **Nozzles 80°** | **Caps (25 Pack)** |
| 30HCX2 | CAP04-20 |
| 30HCX3 | CAP04-20 |
| 30HCX4 | CAP04-20 |
| 30HCX6 | CAP04-20 |
| 30HCX8 | CAP04-20 |
| 30HCX9 | CAP04-20 |
| 30HCX10 | CAP04-20 |
| 30HCX12 | CAP04-20 |
| 30HCX18 | CAP04-20 |

# HOLLOW CONE - CERAMIC ATR 80°

The Albuz® hollow-cone ceramic spray nozzles produce finely atomized droplets in a hollow-cone, 80-degree pattern.

- Easily separated, two-piece construction for simple cleaning
- Wide operating pressure range suitable for many applications
- Commonly used in airblast and other high pressure spraying applications

## US UNITS

| Spray Nozzle | Flow Rate GPM | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pressure (PSI) | | | | | | | | | | | | |
| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 120 | 150 | 200 | 250 | 300 | 350 |
| ATR-WHITE | 0.053 | 0.060 | 0.065 | 0.070 | 0.075 | 0.079 | 0.083 | 0.091 | 0.101 | 0.116 | 0.129 | 0.141 | 0.152 |
| ATR-LILAC | 0.071 | 0.079 | 0.087 | 0.093 | 0.099 | 0.105 | 0.111 | 0.121 | 0.134 | 0.154 | 0.171 | 0.187 | 0.201 |
| ATR-BROWN | 0.095 | 0.106 | 0.116 | 0.125 | 0.133 | 0.141 | 0.148 | 0.161 | 0.180 | 0.206 | 0.230 | 0.250 | 0.270 |
| ATR-YELLOW | 0.144 | 0.161 | 0.176 | 0.189 | 0.202 | 0.214 | 0.226 | 0.247 | 0.275 | 0.317 | 0.354 | 0.387 | 0.417 |
| ATR-ORANGE | 0.196 | 0.218 | 0.239 | 0.257 | 0.274 | 0.290 | 0.306 | 0.334 | 0.372 | 0.428 | 0.477 | 0.521 | 0.561 |
| ATR-RED | 0.275 | 0.306 | 0.333 | 0.359 | 0.382 | 0.404 | 0.425 | 0.463 | 0.515 | 0.591 | 0.657 | 0.716 | 0.771 |
| ATR-GRAY | 0.299 | 0.333 | 0.362 | 0.390 | 0.415 | 0.439 | 0.461 | 0.502 | 0.558 | 0.638 | 0.709 | 0.773 | 0.831 |
| ATR-GREEN | 0.356 | 0.395 | 0.430 | 0.463 | 0.493 | 0.521 | 0.547 | 0.596 | 0.662 | 0.758 | 0.842 | 0.918 | 0.987 |
| ATR-BLACK | 0.399 | 0.443 | 0.483 | 0.520 | 0.554 | 0.585 | 0.615 | 0.671 | 0.745 | 0.854 | 0.949 | 1.034 | 1.113 |
| ATR-BLUE | 0.488 | 0.542 | 0.591 | 0.636 | 0.678 | 0.716 | 0.753 | 0.821 | 0.913 | 1.046 | 1.163 | 1.268 | 1.364 |

## ATR 80° - HOLLOW CONE

| | 40 PSI | 50 PSI | 60 PSI | 70 PSI | 80 PSI | 90 PSI | 100 PSI | 125 PSI | 150 PSI | 350 PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| ATR- White | VF | VF | VF | VF | VF | VF | VF | VF | VF | VF |
| ATR- Lilac | VF | VF | VF | VF | VF | VF | VF | VF | VF | VF |
| ATR- Brown | VF | VF | VF | VF | VF | VF | VF | VF | VF | VF |
| ATR- Yellow | F | VF | VF | VF | VF | VF | VF | VF | VF | VF |
| ATR- Orange | F | F | VF | VF | VF | VF | VF | VF | VF | VF |
| ATR- Red | F | F | F | F | VF | VF | VF | VF | VF | VF |
| ATR- Gray | F | F | F | F | F | VF | VF | VF | VF | VF |
| ATR- Green | F | F | F | F | F | VF | VF | VF | VF | VF |
| ATR-Black | F | F | F | F | F | F | F | F | F | VF |
| ATR- Blue | M | M | M | M | F | F | F | F | F | F |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Hollow Cone |
| Technology | Swirl |
| Material | Ceramic |
| Spray Angle | 80° |
| Pressure Range | 40-350 PSI (3-24 BAR) |
| Configuration | Nozzle |

| Part Numbers | |
|---|---|
| ATR 80° | Caps (25 Pack) |
| ATR-WHITE | CAP05-20 |
| ATR-LILAC | CAP05-20 |
| ATR-BROWN | CAP05-20 |
| ATR-YELLOW | CAP05-20 |
| ATR-ORANGE | CAP05-20 |
| ATR-RED | CAP05-20 |
| ATR-GRAY | CAP05-20 |
| ATR-GREEN | CAP05-20 |
| ATR-BLACK | CAP05-20 |
| ATR-BLUE | CAP05-20 |

## METRIC UNITS

| Spray Nozzle | Flow Rate LPM | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pressure (BAR) | | | | | | | | | | | | | | | | | | | | |
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| ATR-WHITE | 0.27 | 0.29 | 0.32 | 0.34 | 0.36 | 0.38 | 0.39 | 0.41 | 0.43 | 0.44 | 0.46 | 0.47 | 0.48 | 0.50 | 0.51 | 0.52 | 0.54 | 0.55 | 0.56 | 0.57 | 0.58 |
| ATR-LILAC | 0.36 | 0.39 | 0.42 | 0.45 | 0.48 | 0.50 | 0.52 | 0.55 | 0.57 | 0.59 | 0.61 | 0.63 | 0.64 | 0.66 | 0.68 | 0.70 | 0.71 | 0.73 | 0.74 | 0.76 | 0.77 |
| ATR-BROWN | 0.48 | 0.52 | 0.56 | 0.60 | 0.64 | 0.67 | 0.70 | 0.73 | 0.76 | 0.79 | 0.81 | 0.84 | 0.86 | 0.89 | 0.91 | 0.93 | 0.95 | 0.98 | 1.00 | 1.02 | 1.04 |
| ATR-YELLOW | 0.73 | 0.80 | 0.86 | 0.92 | 0.97 | 1.03 | 1.07 | 1.12 | 1.17 | 1.21 | 1.25 | 1.29 | 1.33 | 1.37 | 1.40 | 1.44 | 1.48 | 1.51 | 1.54 | 1.58 | 1.61 |
| ATR-ORANGE | 0.99 | 1.08 | 1.17 | 1.24 | 1.32 | 1.39 | 1.45 | 1.51 | 2.57 | 1.63 | 1.69 | 1.74 | 1.79 | 1.84 | 1.89 | 1.94 | 1.99 | 2.03 | 2.07 | 2.12 | 2.16 |
| ATR-RED | 1.38 | 1.51 | 1.62 | 1.73 | 1.83 | 1.92 | 2.01 | 2.09 | 2.17 | 2.25 | 2.33 | 2.40 | 2.47 | 2.54 | 2.60 | 2.67 | 2.73 | 2.79 | 2.85 | 2.91 | 2.97 |
| ATR-GRAY | 1.50 | 1.63 | 1.76 | 1.87 | 1.98 | 2.08 | 2.17 | 2.26 | 2.35 | 2.43 | 2.51 | 2.59 | 2.67 | 2.74 | 2.81 | 2.88 | 2.95 | 3.01 | 3.07 | 3.14 | 3.20 |
| ATR-GREEN | 1.78 | 1.94 | 2.09 | 2.22 | 2.35 | 2.47 | 2.58 | 2.69 | 2.79 | 2.89 | 2.99 | 3.08 | 3.17 | 3.25 | 3.34 | 3.42 | 3.50 | 3.57 | 3.65 | 3.72 | 3.80 |
| ATR-BLACK | 2.00 | 2.18 | 2.35 | 2.50 | 2.64 | 2.80 | 2.90 | 3.03 | 3.14 | 3.26 | 3.36 | 3.47 | 3.57 | 3.67 | 3.76 | 3.85 | 3.94 | 4.03 | 4.12 | 4.20 | 4.28 |
| ATR-BLUE | 2.45 | 2.67 | 1.87 | 3.06 | 3.24 | 3.40 | 3.56 | 3.71 | 3.85 | 3.99 | 4.12 | 4.25 | 4.37 | 4.49 | 4.61 | 4.72 | 4.84 | 4.94 | 5.05 | 5.15 | 5.25 |

## ATR 80° - HOLLOW CONE

| | 3 Bar | 5 Bar | 7 Bar | 10 Bar | 15 Bar | 20 Bar |
|---|---|---|---|---|---|---|
| ATR- White | VF | VF | VF | VF | VF | VF |
| ATR- Lilac | VF | VF | VF | VF | VF | VF |
| ATR- Brown | VF | VF | VF | VF | VF | VF |
| ATR- Yellow | F | VF | VF | VF | VF | VF |
| ATR- Orange | F | VF | VF | VF | VF | VF |
| ATR- Red | F | F | VF | VF | VF | VF |
| ATR- Gray | F | F | F | VF | VF | VF |
| ATR- Green | F | F | F | VF | VF | VF |
| ATR-Black | F | F | F | F | VF | VF |
| ATR- Blue | M | M | F | F | F | F |

Droplet size based on ASABE S572.1 standard.

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# HOLLOW CONE - CERAMIC TVI 80°

The Albuz® TVI drastically reduces the potential for spray drift in broadcast, directed, and air-blast applications. The air-induced hollow-cone pattern stays on target, saving chemical and reducing environmental impact.

- All ceramic orifice creates extremely long life
- Air-filled droplets control drift and reduce chemical waste

## US UNITS

| Spray Nozzle | Flow Rate GPM<br>Pressure (PSI) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 70 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | 340 | 360 |
| TVI-80005 | 0.066 | 0.071 | 0.079 | 0.087 | 0.094 | 0.100 | 0.106 | 0.112 | 0.117 | 0.122 | 0.127 | 0.132 | 0.137 | 0.141 | 0.146 | 0.150 |
| TVI-800075 | 0.099 | 0.106 | 0.119 | 0.130 | 0.140 | 0.150 | 0.159 | 0.168 | 0.176 | 0.184 | 0.191 | 0.198 | 0.205 | 0.212 | 0.219 | 0.225 |
| TVI-80015 | 0.198 | 0.212 | 0.237 | 0.260 | 0.281 | 0.300 | 0.318 | 0.335 | 0.352 | 0.367 | 0.382 | 0.397 | 0.411 | 0.424 | 0.437 | 0.450 |
| TVI-8002 | 0.265 | 0.283 | 0.316 | 0.346 | 0.374 | 0.400 | 0.424 | 0.447 | 0.469 | 0.490 | 0.510 | 0.529 | 0.548 | 0.566 | 0.583 | 0.600 |
| TVI-80025 | 0.331 | 0.354 | 0.395 | 0.433 | 0.468 | 0.500 | 0.530 | 0.559 | 0.586 | 0.612 | 0.637 | 0.661 | 0.685 | 0.707 | 0.729 | 0.750 |
| TVI-8003 | 0.397 | 0.424 | 0.474 | 0.520 | 0.561 | 0.600 | 0.636 | 0.671 | 0.704 | 0.735 | 0.765 | 0.794 | 0.822 | 0.849 | 0.875 | 0.900 |

## TVI 80° - HOLLOW CONE

| | 70 PSI | 150 PSI | 200 PSI |
|---|---|---|---|
| TVI-80005 | XC | C | C |
| TVI-800075 | XC | C | C |
| TVI-80015 | XC | C | C |
| TVI-8002 | XC | XC | VC |
| TVI-80025 | XC | XC | VC |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Hollow Cone |
| Technology | Air Induction |
| Material | Ceramic |
| Spray Angle | 80° |
| Pressure Range | 70-360 PSI (5-25 BAR) |
| Configuration | Nozzle |

| Part Numbers | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| TVI-80005 | CAP05-20 |
| TVI-800075 | CAP05-20 |
| TVI-80015 | CAP05-20 |
| TVI-8002 | CAP05-20 |
| TVI-80025 | CAP05-20 |
| TVI-8003 | CAP05-20 |

## METRIC UNITS

| Spray Nozzle | Flow Rate, LPM<br>Pressure (BAR) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| TVI-80005 | | | 0.31 | 0.33 | 0.35 | 0.37 | 0.38 | 0.40 | 0.42 | 0.43 | 0.45 | 0.46 | 0.48 | 0.49 | 0.50 | 0.52 | 0.53 | 0.54 | 0.55 | 0.57 | 0.58 |
| TVI-800075 | 0.39 | 0.42 | 0.46 | 0.49 | 0.52 | 0.55 | 0.57 | 0.60 | 0.62 | 0.65 | 0.67 | 0.69 | 0.71 | 0.73 | 0.75 | 1.03 | 0.79 | 0.81 | 0.83 | 0.85 | 0.87 |
| TVI-80015 | 0.77 | 0.85 | 0.92 | 0.98 | 1.04 | 1.10 | 1.15 | 1.20 | 1.25 | 1.30 | 1.34 | 1.39 | 1.43 | 1.47 | 1.51 | 1.55 | 1.59 | 1.62 | 1.66 | 1.70 | 1.73 |
| TVI-8002 | 1.03 | 1.13 | 1.22 | 1.31 | 1.39 | 1.46 | 1.53 | 1.60 | 1.67 | 1.73 | 1.79 | 1.85 | 1.90 | 1.96 | 2.01 | 2.07 | 2.12 | 2.17 | 2.22 | 2.26 | 2.31 |
| TVI-80025 | 1.03 | 1.41 | 1.53 | 1.63 | 1.73 | 1.83 | 1.91 | 2.00 | 2.08 | 2.16 | 2.24 | 2.31 | 2.38 | 2.45 | 2.52 | 2.58 | 2.65 | 2.71 | 2.77 | 2.83 | 2.89 |
| TVI-8003 | 1.55 | 1.70 | 1.83 | 1.96 | 2.03 | 2.19 | 2.30 | 2.40 | 2.50 | 2.59 | 2.68 | 2.77 | 2.86 | 2.94 | 3.02 | 3.10 | 3.17 | 3.25 | 3.32 | 3.39 | 3.46 |

## TVI 80° - HOLLOW CONE

| | 5 Bar | 10 Bar | 15 Bar |
|---|---|---|---|
| TVI-80005 | XC | C | C |
| TVI-800075 | XC | C | C |
| TVI-80015 | XC | C | C |
| TVI-8002 | XC | XC | VC |
| TVI-80025 | XC | XC | VC |

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Hypro® is a registered trademark of Pentair..

# FLAT FANS - CERAMIC AVI 80°

The AVI 80° air-inducing fan pattern spray nozzle is ideal for use in directed spray applications and on air-blast sprayers. Research shows AVI spray nozzles can be used to deliver more spray on target with less loss to airborne drift and to the ground than conventional applications.

- Ceramic orifice for extra long life and accuracy
- Venturi design delivers more spray on-target
- Color coded for simple selection
- 110° fan model ideal for broadcast spraying (See page 158 for more info.)

## US UNITS

| Spray Nozzle | Flow Rate, GPM | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pressure (PSI) | | | | | | | | | | | | |
| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 120 | 150 | 200 | 250 | 300 | 350 |
| 01 | 0.100 | 0.112 | 0.122 | 0.132 | 0.141 | 0.150 | 0.158 | 0.173 | 0.194 | 0.224 | 0.250 | 0.274 | 0.296 |
| 015 | 0.150 | 0.168 | 0.184 | 0.198 | 0.212 | 0.225 | 0.237 | 0.260 | 0.290 | 0.335 | 0.375 | 0.411 | 0.444 |
| 02 | 0.200 | 0.224 | 0.245 | 0.265 | 0.283 | 0.300 | 0.316 | 0.346 | 0.387 | 0.447 | 0.500 | 0.548 | 0.592 |
| 025 | 0.250 | 0.280 | 0.306 | 0.331 | 0.354 | 0.375 | 0.395 | 0.433 | 0.484 | 0.559 | 0.625 | 0.685 | 0.740 |
| 03 | 0.300 | 0.335 | 0.367 | 0.397 | 0.424 | 0.450 | 0.474 | 0.520 | 0.581 | 0.671 | 0.750 | 0.822 | 0.887 |
| 04 | 0.400 | 0.447 | 0.490 | 0.529 | 0.566 | 0.600 | 0.632 | 0.693 | 0.775 | 0.894 | 1.000 | 1.095 | 1.183 |

## METRIC UNITS

| Spray Nozzle | Flow Rate, LPM | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pressure (BAR) | | | | | | | | | | | | |
| | 2.1 | 2.8 | 3.4 | 4.1 | 4.8 | 5.5 | 6.9 | 8.3 | 10.3 | 13.8 | 17.2 | 20.7 | 24.1 |
| 01 | 0.329 | 0.379 | 0.424 | 0.462 | 0.500 | 0.534 | 0.598 | 0.655 | 0.734 | 0.848 | 0.946 | 1.037 | 1.120 |
| 015 | 0.492 | 0.568 | 0.636 | 0.697 | 0.750 | 0.803 | 0.897 | 0.984 | 1.098 | 1.268 | 1.420 | 1.556 | 1.681 |
| 02 | 0.655 | 0.757 | 0.848 | 0.927 | 1.003 | 1.071 | 1.196 | 1.310 | 1.465 | 1.692 | 1.893 | 2.074 | 2.241 |
| 025 | 0.821 | 0.946 | 1.060 | 1.158 | 1.253 | 1.340 | 1.495 | 1.639 | 1.832 | 2.116 | 2.366 | 2.593 | 2.801 |
| 03 | 0.984 | 1.136 | 1.268 | 1.389 | 1.503 | 1.605 | 1.794 | 1.968 | 2.199 | 2.540 | 2.839 | 3.112 | 3.358 |
| 04 | 1.310 | 1.514 | 1.692 | 1.855 | 2.002 | 2.143 | 2.392 | 2.623 | 2.934 | 3.384 | 3.785 | 4.145 | 4.478 |

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Air Induction |
| Material | Ceramic |
| Spray Angle | 80° |
| Pressure Range | 40-350 PSI (3-24 BAR) |
| Configuration | Nozzle |

| Part Numbers | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| AVI-8001 | CAP01-01 |
| AVI-80015 | CAP01-015 |
| AVI-8002 | CAP01-02 |
| AVI-80025 | CAP01-025 |
| AVI-8003 | CAP01-03 |
| AVI-8004 | CAP01-04 |

# FLAT FAN - CERAMIC AXI 80°

The AXI 80° extended range fan pattern nozzle can be used for directed applications of a variety of chemistries and products. They are well suited to applications where smaller droplets are favored. They are equipped with a ceramic orifice to provide long-lasting performance.

- Ceramic orifice for extra long life
- Simple, reliable design
- Color coded for simple selection
- FastCap includes nozzle, cap and gasket
- 110° fan model ideal for broadcast spraying (See page 161 for more info.)

## US UNITS

| Spray Nozzle | Flow Rate (GPM) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pressure (PSI) | | | | | | | | | | | | |
| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 120 | 150 | 200 | 250 | 300 | 350 |
| 015 | 0.150 | 0.168 | 0.184 | 0.198 | 0.212 | 0.225 | 0.237 | 0.260 | 0.290 | 0.335 | 0.375 | 0.411 | 0.444 |
| 02 | 0.200 | 0.224 | 0.245 | 0.265 | 0.283 | 0.300 | 0.316 | 0.346 | 0.387 | 0.447 | 0.500 | 0.548 | 0.592 |
| 025 | 0.250 | 0.280 | 0.306 | 0.331 | 0.354 | 0.375 | 0.395 | 0.433 | 0.484 | 0.559 | 0.625 | 0.685 | 0.740 |
| 03 | 0.300 | 0.335 | 0.367 | 0.397 | 0.424 | 0.450 | 0.474 | 0.520 | 0.581 | 0.671 | 0.750 | 0.822 | 0.887 |
| 04 | 0.400 | 0.447 | 0.490 | 0.529 | 0.566 | 0.600 | 0.632 | 0.693 | 0.775 | 0.894 | 1.000 | 1.095 | 1.183 |
| 05 | 0.500 | 0.559 | 0.612 | 0.661 | 0.707 | 0.750 | 0.791 | 0.866 | 0.968 | 1.118 | 1.250 | 1.369 | 1.479 |
| 06 | 0.600 | 0.671 | 0.735 | 0.794 | 0.849 | 0.900 | 0.949 | 1.039 | 1.162 | 1.342 | 1.500 | 1.643 | 1.775 |

## METRIC UNITS

| Spray Nozzle | Flow Rate (LPM) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pressure (BAR) | | | | | | | | | | | | |
| | 1.4 | 2.8 | 3.4 | 4.1 | 4.8 | 5.5 | 6.9 | 8.3 | 10.3 | 13.8 | 17.2 | 20.7 | 24.1 |
| 015 | 0.401 | 0.568 | 0.636 | 0.697 | 0.750 | 0.803 | 0.897 | 0.984 | 1.098 | 1.268 | 1.420 | 1.556 | 1.681 |
| 02 | 0.534 | 0.757 | 0.848 | 0.927 | 1.003 | 1.071 | 1.196 | 1.310 | 1.465 | 1.692 | 1.893 | 2.074 | 2.241 |
| 025 | 0.670 | 0.946 | 1.060 | 1.158 | 1.253 | 1.340 | 1.495 | 1.639 | 1.832 | 2.116 | 2.366 | 2.593 | 2.801 |
| 03 | 0.803 | 1.136 | 1.268 | 1.389 | 1.503 | 1.605 | 1.794 | 1.968 | 2.199 | 2.540 | 2.839 | 3.112 | 3.358 |
| 04 | 1.071 | 1.514 | 1.692 | 1.855 | 2.002 | 2.143 | 2.392 | 2.623 | 2.934 | 3.384 | 3.785 | 4.145 | 4.478 |
| 05 | 1.340 | 1.893 | 2.116 | 2.317 | 2.502 | 2.676 | 2.994 | 3.278 | 3.664 | 4.232 | 4.732 | 5.182 | 5.599 |
| 06 | 1.605 | 2.271 | 2.540 | 2.782 | 3.006 | 3.214 | 3.592 | 3.933 | 4.399 | 5.080 | 5.678 | 6.219 | 6.719 |

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Tapered Flat Fan |
| Technology | Elliptical Orifice |
| Material | Ceramic |
| Spray Angle | 80° |
| Pressure Range | 40-350 PSI (3-24 BAR) |
| Configuration | Nozzle, Fast Cap |

| Part Numbers | |
|---|---|
| Nozzles 80° | FastCaps 80° |
| AXI-80015 | FC-AXI-80015 |
| AXI-8002 | FC-AXI-8002 |
| AXI-8003 | FC-AXI-8003 |
| AXI-8004 | FC-AXI-8004 |
| AXI-8005 | FC-AXI-8005 |
| AXI-8006 | FC-AXI-8006 |

# FULL CONE - CERAMIC DISCS & CORES 14°-71°

Albuz® Ceramic discs and cores are the longest lasting disc-core nozzles, making them ideal for abrasive agricultural and horticultural sprays.
DCC/CRC nozzles will outlast stainless steel disc-core nozzles by up to 10 times and perform superbly at high pressures common on many air-blast and directed sprayers.

## US UNITS

| DISC | Full Cone CORE | Flow Rate GPM | | | | | | | | | | Spray Angle Degrees | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pressure (PSI) | | | | | | | | | | Pressure (PSI) | | |
| | | 10 | 20 | 30 | 40 | 60 | 80 | 100 | 150 | 200 | 300 | 20 | 40 | 80 |
| DCC-01 | CRC-31 | 0.08 | 0.11 | 0.13 | 0.15 | 0.18 | 0.20 | 0.23 | 0.27 | 0.31 | 0.37 | 49 | 47 | 43 |
| DCC-02 | CRC-31 | 0.12 | 0.16 | 0.19 | 0.22 | 0.26 | 0.30 | 0.33 | 0.40 | 0.45 | 0.55 | 62 | 63 | 61 |
| DCC-03 | CRC-31 | 0.13 | 0.18 | 0.21 | 0.24 | 0.29 | 0.33 | 0.37 | 0.44 | 0.50 | 0.6 | 63 | 65 | 63 |
| DCC-01 | CRC-35 | 0.08 | 0.11 | 0.13 | 0.14 | 0.17 | 0.2 | 0.22 | 0.26 | 0.29 | 0.35 | 19 | 23 | 26 |
| DCC-02 | CRC-35 | 0.14 | 0.18 | 0.24 | 0.25 | 0.3 | 0.34 | 0.37 | 0.45 | 0.51 | 0.60 | 40 | 44 | 47 |
| DCC-03 | CRC-35 | 0.16 | 0.22 | 0.26 | 0.30 | 0.36 | 0.41 | 0.45 | 0.55 | 0.62 | 0.74 | 45 | 50 | 52 |
| DCC-04 | CRC-35 | 0.27 | 0.37 | 0.44 | 0.50 | 0.60 | 0.70 | 0.79 | 0.93 | 1.10 | 1.30 | 68 | 70 | 71 |
| DCC-05 | CRC-35 | 0.34 | 0.48 | 0.58 | 0.66 | 0.8 | 0.92 | 1.00 | 1.20 | 1.40 | 1.70 | 67 | 69 | 71 |
| DCC-02 | CRC-56 | - | - | 0.21 | 0.25 | 0.3 | 0.35 | 0.39 | 0.47 | 5.50 | 0.67 | - | 14 | 17 |
| DCC-03 | CRC-56 | - | - | 0.29 | 0.34 | 0.41 | 0.48 | 0.53 | 0.65 | 7.50 | 0.92 | - | 20 | 23 |
| DCC-04 | CRC-56 | - | 0.39 | 0.48 | 0.55 | 0.67 | 0.78 | 0.87 | 1.10 | 1.20 | 1.50 | 20 | 26 | 29 |
| DCC-05 | CRC-56 | 0.38 | 0.54 | 0.66 | 0.76 | 0.93 | 1.10 | 1.20 | 1.50 | 1.70 | 2.10 | 26 | 32 | 34 |
| DCC-06 | CRC-56 | 0.55 | 0.78 | 0.95 | 1.10 | 1.40 | 1.60 | 1.70 | 2.10 | 2.50 | 3.00 | 34 | 39 | 41 |
| DCC-07 | CRC-56 | 0.76 | 1.10 | 1.30 | 1.50 | 1.90 | 2.20 | 2.40 | 2.90 | 3.40 | 4.20 | 45 | 52 | 54 |

## METRIC UNITS

| DISC | Full Cone CORE | Flow Rate GPM | | | | | | | Spray Angle Degrees | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Pressure (BAR) | | | | | | | Pressure (BAR) | |
| | | 3 | 4 | 5 | 6 | 10 | 15 | 20 | 10 | 20 |
| DCC-01 | CRC-31 | - | - | - | - | 1.0 | 1.2 | 1.4 | 38 | 40 |
| DCC-02 | CRC-31 | - | - | - | - | 1.5 | 1.8 | 2.0 | 49 | 54 |
| DCC-03 | CRC-31 | - | - | - | - | 1.6 | 1.9 | 2.2 | 58 | 67 |
| DCC-01 | CRC-35 | - | - | - | - | 1.0 | 1.2 | 1.3 | 27 | 27 |
| DCC-02 | CRC-35 | - | - | - | - | 1.7 | 2.0 | 2.2 | 40 | 45 |
| DCC-03 | CRC-35 | - | - | - | - | 2.0 | 2.4 | 2.8 | 42 | 48 |
| DCC-04 | CRC-35 | - | - | - | - | 3.5 | 4.2 | 4.8 | 60 | 68 |
| DCC-05 | CRC-35 | 2.6 | 3.0 | 3.3 | 3.6 | 4.5 | 5.5 | 6.3 | 62 | 69 |
| DCC-02 | CRC-56 | 1.0 | 1.1 | 1.2 | 1.4 | 1.8 | 2.2 | 2.5 | 16 | 18 |
| DCC-03 | CRC-56 | 1.3 | 1.6 | 1.7 | 1.9 | 2.4 | 3.0 | 3.4 | 22 | 24 |
| DCC-04 | CRC-56 | 2.2 | 2.5 | 2.8 | 3.1 | 4.0 | 4.8 | 5.6 | 28 | 30 |
| DCC-05 | CRC-56 | 3.0 | 3.5 | 3.9 | 4.3 | 5.5 | 6.7 | 7.8 | 33 | 35 |
| DCC-06 | CRC-56 | 4.5 | 5.3 | 5.9 | 6.5 | 8.5 | 10.2 | 11.9 | 38 | 40 |
| DCC-07 | CRC-56 | 6.0 | 6.9 | 7.7 | 8.5 | 11.0 | 13.5 | 15.6 | 51 | 53 |

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Full Cone |
| Technology | Swirl |
| Material | Ceramic |
| Spray Angle | 14°-71° |
| Pressure Range | 10-300 PSI (1-20 BAR) |
| Configuration | Nozzle |

| Part Numbers | | |
|---|---|---|
| Discs | Cores | Caps (25 Pack) |
| DCC-01 | CRC-31 | CAP05-20 |
| DCC-02 | CRC-35 | CAP05-20 |
| DCC-03 | CRC-56 | CAP05-20 |
| DCC-04 | - | CAP05-20 |
| DCC-05 | - | CAP05-20 |
| DCC-06 | - | CAP05-20 |
| DCC-07 | - | CAP05-20 |

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# FULL CONE DIRECTED - FCX 80°

The FCX full-cone spray nozzle is especially suited for coverage sensitive applications of insecticide/fungicides.

- Full cone pattern to give superior coverage with non-air inducted droplets
- 80° spray angle makes the product easy to direct for spot applications
- Broad operating range for application flexibility

## US UNITS

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | GAL/1000Ft² 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 02 | 15 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | 20 | 0.23 | 17.1 | 13.7 | 11.4 | 8.5 | 6.8 | 5.7 | 4.6 | 3.4 | 0.78 | 0.52 | 0.39 | 0.31 |
| | 30 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | 40 | 0.33 | 24.5 | 19.6 | 16.3 | 12.3 | 9.8 | 8.2 | 6.5 | 4.9 | 1.13 | 0.75 | 0.56 | 0.45 |
| | 50 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | 60 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | 70 | 0.43 | 31.9 | 25.5 | 21.3 | 16.0 | 12.8 | 10.6 | 8.5 | 6.4 | 1.47 | 0.98 | 0.73 | 0.59 |
| | 80 | 0.46 | 34.2 | 27.3 | 22.8 | 17.1 | 13.7 | 11.4 | 9.1 | 6.8 | 1.57 | 1.05 | 0.78 | 0.63 |
| | 100 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | 125 | 0.58 | 43.1 | 34.5 | 28.7 | 21.5 | 17.2 | 14.4 | 11.5 | 8.6 | 1.98 | 1.32 | 0.99 | 0.79 |
| | 150 | 0.63 | 46.8 | 37.4 | 31.2 | 23.4 | 18.7 | 15.6 | 12.5 | 9.4 | 2.15 | 1.43 | 1.07 | 0.86 |
| 03 | 15 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | 20 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | 30 | 0.42 | 31.2 | 24.9 | 20.8 | 15.6 | 12.5 | 10.4 | 8.3 | 6.2 | 1.43 | 0.95 | 0.72 | 0.57 |
| | 40 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | 50 | 0.55 | 40.8 | 32.7 | 27.2 | 20.4 | 16.3 | 13.6 | 10.9 | 8.2 | 1.88 | 1.25 | 0.94 | 0.75 |
| | 60 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | 70 | 0.65 | 48.3 | 38.6 | 32.2 | 24.1 | 19.3 | 16.1 | 12.9 | 9.7 | 2.22 | 1.48 | 1.11 | 0.89 |
| | 80 | 0.69 | 51.2 | 41.0 | 34.2 | 25.6 | 20.5 | 17.1 | 13.7 | 10.2 | 2.35 | 1.57 | 1.18 | 0.94 |
| | 100 | 0.77 | 57.2 | 45.7 | 38.1 | 28.6 | 22.9 | 19.1 | 15.2 | 11.4 | 2.63 | 1.75 | 1.31 | 1.05 |
| | 125 | 0.87 | 64.6 | 51.7 | 43.1 | 32.3 | 25.8 | 21.5 | 17.2 | 12.9 | 2.97 | 1.98 | 1.48 | 1.19 |
| | 150 | 0.95 | 70.5 | 56.4 | 47.0 | 35.3 | 28.2 | 23.5 | 18.8 | 14.1 | 3.24 | 2.16 | 1.62 | 1.30 |
| 04 | 15 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | 20 | 0.46 | 34.2 | 27.3 | 22.8 | 17.1 | 13.7 | 11.4 | 9.1 | 6.8 | 1.57 | 1.05 | 0.78 | 0.63 |
| | 30 | 0.57 | 42.3 | 33.9 | 28.2 | 21.2 | 16.9 | 14.1 | 11.3 | 8.5 | 1.94 | 1.30 | 0.97 | 0.78 |
| | 40 | 0.65 | 48.3 | 38.6 | 32.2 | 24.1 | 19.3 | 16.1 | 12.9 | 9.7 | 2.22 | 1.48 | 1.11 | 0.89 |
| | 50 | 0.73 | 54.2 | 43.4 | 36.1 | 27.1 | 21.7 | 18.1 | 14.5 | 10.8 | 2.49 | 1.66 | 1.24 | 1.00 |
| | 60 | 0.80 | 59.4 | 47.5 | 39.6 | 29.7 | 23.8 | 19.8 | 15.8 | 11.9 | 2.73 | 1.82 | 1.36 | 1.09 |
| | 70 | 0.86 | 63.9 | 51.1 | 42.6 | 31.9 | 25.5 | 21.3 | 17.0 | 12.8 | 2.93 | 1.96 | 1.47 | 1.17 |
| | 80 | 0.92 | 68.3 | 54.6 | 45.5 | 34.2 | 27.3 | 22.8 | 18.2 | 13.7 | 3.14 | 2.09 | 1.57 | 1.25 |
| | 100 | 1.03 | 76.5 | 61.2 | 51.0 | 38.2 | 30.6 | 25.5 | 20.4 | 15.3 | 3.51 | 2.34 | 1.76 | 1.40 |
| | 125 | 1.15 | 85.4 | 68.3 | 56.9 | 42.7 | 34.2 | 28.5 | 22.8 | 17.1 | 3.92 | 2.61 | 1.96 | 1.57 |
| | 150 | 1.26 | 93.6 | 74.8 | 62.4 | 46.8 | 37.4 | 31.2 | 24.9 | 18.7 | 4.30 | 2.86 | 2.15 | 1.72 |
| 05 | 15 | 0.50 | 37.1 | 29.7 | 24.8 | 18.6 | 14.9 | 12.4 | 9.9 | 7.4 | 1.71 | 1.14 | 0.85 | 0.68 |
| | 20 | 0.58 | 43.1 | 34.5 | 28.7 | 21.5 | 17.2 | 14.4 | 11.5 | 8.6 | 1.98 | 1.32 | 0.99 | 0.79 |
| | 30 | 0.71 | 52.7 | 42.2 | 35.1 | 26.4 | 21.1 | 17.6 | 14.1 | 10.5 | 2.42 | 1.61 | 1.21 | 0.97 |
| | 40 | 0.82 | 60.9 | 48.7 | 40.6 | 30.4 | 24.4 | 20.3 | 16.2 | 12.2 | 2.80 | 1.86 | 1.40 | 1.12 |
| | 50 | 0.91 | 67.6 | 54.1 | 45.0 | 33.8 | 27.0 | 22.5 | 18.0 | 13.5 | 3.10 | 2.07 | 1.55 | 1.24 |
| | 60 | 1.00 | 74.3 | 59.4 | 49.5 | 37.1 | 29.7 | 24.8 | 19.8 | 14.9 | 3.41 | 2.27 | 1.71 | 1.36 |
| | 70 | 1.08 | 80.2 | 64.2 | 53.5 | 40.1 | 32.1 | 26.7 | 21.4 | 16.0 | 3.68 | 2.46 | 1.84 | 1.47 |
| | 80 | 1.15 | 85.4 | 68.3 | 56.9 | 42.7 | 34.2 | 28.5 | 22.8 | 17.1 | 3.92 | 2.61 | 1.96 | 1.57 |
| | 100 | 1.29 | 95.8 | 76.6 | 63.9 | 47.9 | 38.3 | 31.9 | 25.5 | 19.2 | 4.40 | 2.93 | 2.20 | 1.76 |
| | 125 | 1.44 | 107 | 85.5 | 71.3 | 53.5 | 42.8 | 35.6 | 28.5 | 21.4 | 4.91 | 3.27 | 2.46 | 1.96 |
| | 150 | 1.58 | 117 | 93.9 | 78.2 | 58.7 | 46.9 | 39.1 | 31.3 | 23.5 | 5.39 | 3.59 | 2.69 | 2.16 |
| 06 | 15 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | 20 | 0.69 | 51.2 | 41.0 | 34.2 | 25.6 | 20.5 | 17.1 | 13.7 | 10.2 | 2.35 | 1.57 | 1.18 | 0.94 |
| | 30 | 0.85 | 63.1 | 50.5 | 42.1 | 31.6 | 25.2 | 21.0 | 16.8 | 12.6 | 2.90 | 1.93 | 1.45 | 1.16 |
| | 40 | 0.98 | 72.8 | 58.2 | 48.5 | 36.4 | 29.1 | 24.3 | 19.4 | 14.6 | 3.34 | 2.23 | 1.67 | 1.34 |
| | 50 | 1.10 | 81.7 | 65.3 | 54.5 | 40.8 | 32.7 | 27.2 | 21.8 | 16.3 | 3.75 | 2.50 | 1.88 | 1.50 |
| | 60 | 1.20 | 89.1 | 71.3 | 59.4 | 44.6 | 35.6 | 29.7 | 23.8 | 17.8 | 4.09 | 2.73 | 2.05 | 1.64 |
| | 70 | 1.30 | 96.5 | 77.2 | 64.4 | 48.3 | 38.6 | 32.2 | 25.7 | 19.3 | 4.43 | 2.96 | 2.22 | 1.77 |
| | 80 | 1.39 | 103 | 82.6 | 68.8 | 51.6 | 41.3 | 34.4 | 27.5 | 20.6 | 4.74 | 3.16 | 2.37 | 1.90 |
| | 100 | 1.55 | 115 | 92.1 | 76.7 | 57.5 | 46.0 | 38.4 | 30.7 | 23.0 | 5.29 | 3.52 | 2.64 | 2.11 |
| | 125 | 1.73 | 128 | 103 | 85.6 | 64.2 | 51.4 | 42.8 | 34.3 | 25.7 | 5.90 | 3.93 | 2.95 | 2.36 |
| | 150 | 1.90 | 141 | 113 | 94.1 | 70.5 | 56.4 | 47.0 | 37.6 | 28.2 | 6.48 | 4.32 | 3.24 | 2.59 |

# FULL CONE DIRECTED - FCX 80°

## METRIC UNITS

| Nozzle Size | Pressure (BAR) | Flow Rate (LPM) | Flow L/min- 50 cm Spacing KMH | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 02 | 1 | 0,74 | 127 | 111 | 89 | 74 | 59 | 44 | 36 | 30 |
| | 2 | 1,05 | 180 | 158 | 126 | 105 | 84 | 63 | 50 | 42 |
| | 3 | 1,28 | 219 | 192 | 154 | 128 | 102 | 77 | 61 | 51 |
| | 4 | 1,48 | 254 | 222 | 178 | 148 | 118 | 89 | 71 | 59 |
| | 5 | 1,65 | 283 | 248 | 198 | 165 | 132 | 99 | 79 | 66 |
| | 6 | 1,81 | 310 | 272 | 217 | 181 | 145 | 109 | 87 | 72 |
| | 7 | 1,96 | 336 | 294 | 235 | 196 | 157 | 118 | 94 | 78 |
| | 8 | 2,09 | 358 | 314 | 251 | 209 | 167 | 125 | 100 | 84 |
| | 9 | 2,22 | 381 | 333 | 266 | 222 | 178 | 133 | 107 | 89 |
| | 10 | 2,34 | 401 | 351 | 281 | 234 | 187 | 140 | 112 | 94 |
| 03 | 1 | 1,12 | 192 | 168 | 134 | 112 | 90 | 67 | 54 | 45 |
| | 2 | 1,58 | 271 | 237 | 190 | 158 | 126 | 95 | 76 | 63 |
| | 3 | 1,94 | 333 | 291 | 233 | 194 | 155 | 116 | 93 | 78 |
| | 4 | 2,23 | 382 | 335 | 268 | 223 | 178 | 134 | 107 | 89 |
| | 5 | 2,50 | 429 | 375 | 300 | 250 | 200 | 150 | 120 | 100 |
| | 6 | 2,73 | 468 | 410 | 328 | 273 | 218 | 164 | 131 | 109 |
| | 7 | 2,96 | 507 | 444 | 355 | 296 | 237 | 178 | 142 | 118 |
| | 8 | 3,17 | 543 | 476 | 380 | 317 | 254 | 190 | 152 | 127 |
| | 9 | 3,36 | 576 | 504 | 403 | 336 | 269 | 202 | 161 | 134 |
| | 10 | 3,54 | 607 | 531 | 425 | 354 | 283 | 212 | 170 | 142 |
| 04 | 1 | 1,49 | 255 | 224 | 179 | 149 | 119 | 89 | 72 | 60 |
| | 2 | 2,11 | 362 | 317 | 253 | 211 | 169 | 127 | 101 | 84 |
| | 3 | 2,58 | 442 | 387 | 310 | 258 | 206 | 155 | 124 | 103 |
| | 4 | 2,98 | 511 | 447 | 358 | 298 | 238 | 179 | 143 | 119 |
| | 5 | 3,33 | 571 | 500 | 400 | 333 | 266 | 200 | 160 | 133 |
| | 6 | 3,65 | 626 | 548 | 438 | 365 | 292 | 219 | 175 | 146 |
| | 7 | 3,94 | 675 | 591 | 473 | 394 | 315 | 236 | 189 | 158 |
| | 8 | 4,21 | 722 | 632 | 505 | 421 | 337 | 253 | 202 | 168 |
| | 9 | 4,47 | 766 | 671 | 536 | 447 | 358 | 268 | 215 | 179 |
| | 10 | 4,71 | 807 | 707 | 565 | 471 | 377 | 283 | 226 | 188 |
| 05 | 1 | 1,86 | 319 | 279 | 223 | 186 | 149 | 112 | 89 | 74 |
| | 2 | 2,63 | 451 | 395 | 316 | 263 | 210 | 158 | 126 | 105 |
| | 3 | 3,22 | 552 | 483 | 386 | 322 | 258 | 193 | 155 | 129 |
| | 4 | 3,72 | 638 | 558 | 446 | 372 | 298 | 223 | 179 | 149 |
| | 5 | 4,16 | 713 | 624 | 499 | 416 | 333 | 250 | 200 | 166 |
| | 6 | 4,56 | 782 | 684 | 547 | 456 | 365 | 274 | 219 | 182 |
| | 7 | 4,92 | 843 | 738 | 590 | 492 | 394 | 295 | 236 | 197 |
| | 8 | 5,26 | 902 | 789 | 631 | 526 | 421 | 316 | 252 | 210 |
| | 9 | 5,58 | 957 | 837 | 670 | 558 | 446 | 335 | 268 | 223 |
| | 10 | 5,88 | 1008 | 882 | 706 | 588 | 470 | 353 | 282 | 235 |
| 06 | 1 | 2,23 | 382 | 335 | 268 | 223 | 178 | 134 | 107 | 89 |
| | 2 | 3,15 | 540 | 473 | 378 | 315 | 252 | 189 | 151 | 126 |
| | 3 | 3,86 | 662 | 579 | 463 | 386 | 309 | 232 | 185 | 154 |
| | 4 | 4,45 | 763 | 668 | 534 | 445 | 356 | 267 | 214 | 178 |
| | 5 | 4,98 | 854 | 747 | 598 | 498 | 398 | 299 | 239 | 199 |
| | 6 | 5,45 | 934 | 818 | 654 | 545 | 436 | 327 | 262 | 218 |
| | 7 | 5,89 | 1010 | 884 | 707 | 589 | 471 | 353 | 283 | 236 |
| | 8 | 6,29 | 1078 | 944 | 755 | 629 | 503 | 377 | 302 | 252 |
| | 9 | 6,69 | 1147 | 1004 | 803 | 669 | 535 | 401 | 321 | 268 |
| | 10 | 7,05 | 1209 | 1058 | 846 | 705 | 564 | 423 | 338 | 282 |

| Features | |
|---|---|
| Common Use | Plant Health |
| Pattern | Full Cone |
| Technology | Swirl |
| Material | Polyacetal |
| Spray Angle | 80° |
| Pressure Range | 15-150 PSI (1-10 BAR) |
| Configuration | Nozzle |

| Part Numbers (Bags of 10) | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| 30FCX02 | CAP04-02 |
| 30FCX03 | CAP04-03 |
| 30FCX04 | CAP04-04 |
| 30FCX05 | CAP04-05 |
| 30FCX06 | CAP04-06 |

# EVEN 80°

The Hypro® Even Flat Fan spray nozzle is an excellent choice for banding and directed post application. An even spray pattern should be used when banding chemicals.

- Commonly used in hand-held applications
- Even spray pattern provides a precise application rate where no spray overlap is desired
- Large range of flow rates available to meet your application requirements

## US UNITS

| Nozzle Size | Droplet Size | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 10 inch band MPH | | | | Gallons per Acre 12 inch band MPH | | | | Gallons per Acre 15 inch band MPH | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 7 |
| 01 | F | 30 | 0.09 | 13.4 | 10.7 | 8.9 | 7.6 | 11.1 | 8.9 | 7.4 | 6.4 | 8.9 | 7.1 | 5.9 | 5.1 |
| | F | 40 | 0.10 | 14.9 | 11.9 | 9.9 | 8.5 | 12.4 | 9.9 | 8.3 | 7.1 | 9.9 | 7.9 | 6.6 | 5.7 |
| | VF | 50 | 0.11 | 16.3 | 13.1 | 10.9 | 9.3 | 13.6 | 10.9 | 9.1 | 7.8 | 10.9 | 8.7 | 7.3 | 6.2 |
| | VF | 60 | 0.12 | 17.8 | 14.3 | 11.9 | 10.2 | 14.9 | 11.9 | 9.9 | 8.5 | 11.9 | 9.5 | 7.9 | 6.8 |
| 015 | F | 30 | 0.13 | 19.3 | 15.4 | 12.9 | 11.0 | 16.1 | 12.9 | 10.7 | 9.2 | 12.9 | 10.3 | 8.6 | 7.4 |
| | F | 40 | 0.15 | 22.3 | 17.8 | 14.9 | 12.7 | 18.6 | 14.9 | 12.4 | 10.6 | 14.9 | 11.9 | 9.9 | 8.5 |
| | F | 50 | 0.17 | 25.2 | 20.2 | 16.8 | 14.4 | 21.0 | 16.8 | 14.0 | 12.0 | 16.8 | 13.5 | 11.2 | 9.6 |
| | VF | 60 | 0.18 | 26.7 | 21.4 | 17.8 | 15.3 | 22.3 | 17.8 | 14.9 | 12.7 | 17.8 | 14.3 | 11.9 | 10.2 |
| 02 | M | 30 | 0.17 | 25.2 | 20.2 | 16.8 | 14.4 | 21.0 | 16.8 | 14.0 | 12.0 | 16.8 | 13.5 | 11.2 | 9.6 |
| | F | 40 | 0.20 | 29.7 | 23.8 | 19.8 | 17.0 | 24.8 | 19.8 | 16.5 | 14.1 | 19.8 | 15.8 | 13.2 | 11.3 |
| | F | 50 | 0.22 | 32.7 | 26.1 | 21.8 | 18.7 | 27.2 | 21.8 | 18.2 | 15.6 | 21.8 | 17.4 | 14.5 | 12.4 |
| | F | 60 | 0.24 | 35.6 | 28.5 | 23.8 | 20.4 | 29.7 | 23.8 | 19.8 | 17.0 | 23.8 | 19.0 | 15.8 | 13.6 |
| 03 | M | 30 | 0.26 | 38.6 | 30.9 | 25.7 | 22.1 | 32.2 | 25.7 | 21.5 | 18.4 | 25.7 | 20.6 | 17.2 | 14.7 |
| | F | 40 | 0.30 | 44.6 | 35.6 | 29.7 | 25.5 | 37.1 | 29.7 | 24.8 | 21.2 | 29.7 | 23.8 | 19.8 | 17.0 |
| | F | 50 | 0.34 | 50.5 | 40.4 | 33.7 | 28.9 | 42.1 | 33.7 | 28.1 | 24.0 | 33.7 | 26.9 | 22.4 | 19.2 |
| | F | 60 | 0.37 | 54.9 | 44.0 | 36.6 | 31.4 | 45.8 | 36.6 | 30.5 | 26.2 | 36.6 | 29.3 | 24.4 | 20.9 |
| 04 | M | 30 | 0.35 | 52.0 | 41.6 | 34.7 | 29.7 | 43.3 | 34.7 | 28.9 | 24.8 | 34.7 | 27.7 | 23.1 | 19.8 |
| | M | 40 | 0.40 | 59.4 | 47.5 | 39.6 | 33.9 | 49.5 | 39.6 | 33.0 | 28.3 | 39.6 | 31.7 | 26.4 | 22.6 |
| | F | 50 | 0.45 | 66.8 | 53.5 | 44.6 | 38.2 | 55.7 | 44.6 | 37.1 | 31.8 | 44.6 | 35.6 | 29.7 | 25.5 |
| | F | 60 | 0.49 | 72.8 | 58.2 | 48.5 | 41.6 | 60.6 | 48.5 | 40.4 | 34.7 | 48.5 | 38.8 | 32.3 | 27.7 |
| 05 | M | 30 | 0.43 | 63.9 | 51.1 | 42.6 | 36.5 | 53.2 | 42.6 | 35.5 | 30.4 | 42.6 | 34.1 | 28.4 | 24.3 |
| | M | 40 | 0.50 | 74.3 | 59.4 | 49.5 | 42.4 | 61.9 | 49.5 | 41.3 | 35.4 | 49.5 | 39.6 | 33.0 | 28.3 |
| | M | 50 | 0.56 | 83.2 | 66.5 | 55.4 | 47.5 | 69.3 | 55.4 | 46.2 | 39.6 | 55.4 | 44.4 | 37.0 | 31.7 |
| | F | 60 | 0.61 | 90.6 | 72.5 | 60.4 | 51.8 | 75.5 | 60.4 | 50.3 | 43.1 | 60.4 | 48.3 | 40.3 | 34.5 |
| 06 | C | 30 | 0.52 | 77.2 | 61.8 | 51.5 | 44.1 | 64.4 | 51.5 | 42.9 | 36.8 | 51.5 | 41.2 | 34.3 | 29.4 |
| | C | 40 | 0.60 | 89.1 | 71.3 | 59.4 | 50.9 | 74.3 | 59.4 | 49.5 | 42.4 | 59.4 | 47.5 | 39.6 | 33.9 |
| | C | 50 | 0.67 | 99.5 | 79.6 | 66.3 | 56.9 | 82.9 | 66.3 | 55.3 | 47.4 | 66.3 | 53.1 | 44.2 | 37.9 |
| | C | 60 | 0.73 | 108 | 86.7 | 72.3 | 61.9 | 90.3 | 72.3 | 60.2 | 51.6 | 72.3 | 57.8 | 48.2 | 41.3 |
| 08 | VC | 30 | 0.69 | 102 | 82.0 | 68.3 | 58.6 | 85.4 | 68.3 | 56.9 | 48.8 | 68.3 | 54.6 | 45.5 | 39.0 |
| | C | 40 | 0.80 | 119 | 95.0 | 79.2 | 67.9 | 99.0 | 79.2 | 66.0 | 56.6 | 79.2 | 63.4 | 52.8 | 45.3 |
| | C | 50 | 0.89 | 132 | 106 | 88.1 | 75.5 | 110 | 88.1 | 73.4 | 62.9 | 88.1 | 70.5 | 58.7 | 50.3 |
| | C | 60 | 0.98 | 146 | 116 | 97.0 | 83.2 | 121 | 97.0 | 80.9 | 69.3 | 97.0 | 77.6 | 64.7 | 55.4 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Weeds |
| Pattern | Even Flat Fan |
| Technology | Elliptical Orifice |
| Material | Polyacetal |
| Spray Angle | 80° |
| Pressure Range | 30-60 PSI (2-4 BAR) |
| Configuration | Nozzle |

| Part Numbers (Bags of 10) | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| E80-01 | CAP00-01 |
| E80-015 | CAP00-015 |
| E80-02 | CAP00-02 |
| E80-03 | CAP00-03 |
| E80-04 | CAP00-04 |
| E80-05 | CAP00-05 |
| E80-06 | CAP00-06 |
| E80-08 | CAP00-08 |

## METRIC UNITS

| Nozzle Size | Droplet Size | Pressure (BAR) | Flow Rate (LPM) | In-Band Application Rate (L/Ha) 25 cm (km/h) | | | | In-Band Application Rate (L/Ha) 30 cm (km/h) | | | | In-Band Application Rate (L/Ha) 40 cm (km/h) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 6 | 8 | 10 | 12 | 6 | 8 | 10 | 12 | 6 | 8 | 10 | 12 |
| 01 | F | 2 | 0,33 | 132 | 99 | 79 | 66 | 110 | 83 | 66 | 55 | 83 | 62 | 50 | 41 |
| | F | 2,5 | 0,37 | 148 | 111 | 89 | 74 | 123 | 93 | 74 | 62 | 93 | 69 | 56 | 46 |
| | F | 3 | 0,40 | 160 | 120 | 96 | 80 | 133 | 100 | 80 | 67 | 100 | 75 | 60 | 50 |
| | VF | 4 | 0,46 | 184 | 138 | 110 | 92 | 153 | 115 | 92 | 77 | 115 | 86 | 69 | 58 |
| 015 | F | 2 | 0,49 | 196 | 147 | 118 | 98 | 163 | 123 | 98 | 82 | 123 | 92 | 74 | 61 |
| | F | 2,5 | 0,55 | 220 | 165 | 132 | 110 | 183 | 138 | 110 | 92 | 138 | 103 | 83 | 69 |
| | F | 3 | 0,60 | 240 | 180 | 144 | 120 | 200 | 150 | 120 | 100 | 150 | 113 | 90 | 75 |
| | VF | 4 | 0,69 | 276 | 207 | 166 | 138 | 230 | 173 | 138 | 115 | 173 | 129 | 104 | 86 |
| 02 | M | 2 | 0,65 | 260 | 195 | 156 | 130 | 217 | 163 | 130 | 108 | 163 | 122 | 98 | 81 |
| | F | 2,5 | 0,73 | 292 | 219 | 175 | 146 | 243 | 183 | 146 | 122 | 183 | 137 | 110 | 91 |
| | F | 3 | 0,80 | 320 | 240 | 192 | 160 | 267 | 200 | 160 | 133 | 200 | 150 | 120 | 100 |
| | F | 4 | 0,92 | 368 | 276 | 221 | 184 | 307 | 230 | 184 | 153 | 230 | 173 | 138 | 115 |
| 03 | M | 2 | 0,98 | 392 | 294 | 235 | 196 | 327 | 245 | 196 | 163 | 245 | 184 | 147 | 123 |
| | M | 2,5 | 1,10 | 440 | 330 | 264 | 220 | 367 | 275 | 220 | 183 | 275 | 206 | 165 | 138 |
| | F | 3 | 1,20 | 480 | 360 | 288 | 240 | 400 | 300 | 240 | 200 | 300 | 225 | 180 | 150 |
| | F | 4 | 1,39 | 556 | 417 | 334 | 278 | 463 | 348 | 278 | 232 | 348 | 261 | 209 | 174 |
| 04 | M | 2 | 1,31 | 524 | 393 | 314 | 262 | 437 | 328 | 262 | 218 | 328 | 246 | 197 | 164 |
| | M | 2,5 | 1,46 | 584 | 438 | 350 | 292 | 487 | 365 | 292 | 243 | 365 | 274 | 219 | 183 |
| | M | 3 | 1,60 | 640 | 480 | 384 | 320 | 533 | 400 | 320 | 267 | 400 | 300 | 240 | 200 |
| | F | 4 | 1,85 | 740 | 555 | 444 | 370 | 617 | 463 | 370 | 308 | 463 | 347 | 278 | 231 |
| 05 | M | 2 | 1,63 | 652 | 489 | 391 | 326 | 543 | 408 | 326 | 272 | 408 | 306 | 245 | 204 |
| | M | 2,5 | 1,83 | 732 | 549 | 439 | 366 | 610 | 458 | 366 | 305 | 458 | 343 | 275 | 229 |
| | M | 3 | 2,00 | 800 | 600 | 480 | 400 | 667 | 500 | 400 | 333 | 500 | 375 | 300 | 250 |
| | F | 4 | 2,31 | 924 | 693 | 554 | 462 | 770 | 578 | 462 | 385 | 578 | 433 | 347 | 289 |
| 06 | C | 2 | 1,96 | 784 | 588 | 470 | 392 | 653 | 490 | 392 | 327 | 490 | 368 | 294 | 245 |
| | C | 2,5 | 2,19 | 876 | 657 | 526 | 438 | 730 | 548 | 438 | 365 | 548 | 411 | 329 | 274 |
| | C | 3 | 2,40 | 960 | 720 | 576 | 480 | 800 | 600 | 480 | 400 | 600 | 450 | 360 | 300 |
| | C | 4 | 2,77 | 1108 | 831 | 665 | 554 | 923 | 693 | 554 | 462 | 693 | 519 | 416 | 346 |
| 08 | VC | 2 | 2,61 | 1044 | 783 | 626 | 522 | 870 | 653 | 522 | 435 | 653 | 489 | 392 | 326 |
| | C | 2,5 | 2,92 | 1168 | 876 | 701 | 584 | 973 | 730 | 584 | 487 | 730 | 548 | 438 | 365 |
| | C | 3 | 3,20 | 1280 | 960 | 768 | 640 | 1067 | 800 | 640 | 533 | 800 | 600 | 480 | 400 |
| | C | 4 | 3,70 | 1480 | 1110 | 888 | 740 | 1233 | 925 | 740 | 617 | 925 | 694 | 555 | 463 |

Droplet size based on ASABE S572.1 standard.

# BRASS OFF-CENTER OC 80°

The Hypro® OC flat fan off-center brass spray nozzle is an economical nozzle for spraying around obstacles or defining the edge of a spray swath.

- Creates half of a broadcast pattern
- Generally positioned at the end of a boom
- Designed for use with overlapping broadcast patterns to provide precise width control

## US UNITS

| Nozzle Size | Droplet Size 80° | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | GAL/1000Ft 2 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 02 | M | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | F | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | F | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | F | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| 03 | M | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | F | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | F | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | F | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| 04 | M | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | M | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | M | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | F | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| 06 | C | 30 | 0.52 | 38.6 | 30.9 | 25.7 | 19.3 | 15.4 | 12.9 | 10.3 | 7.7 | 1.77 | 1.18 | 0.89 | 0.71 |
| | M | 40 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | M | 50 | 0.67 | 49.7 | 39.8 | 33.2 | 24.9 | 19.9 | 16.6 | 13.3 | 9.9 | 2.28 | 1.52 | 1.14 | 0.91 |
| | M | 60 | 0.73 | 54.2 | 43.4 | 36.1 | 27.1 | 21.7 | 18.1 | 14.5 | 10.8 | 2.49 | 1.66 | 1.24 | 1.00 |
| 08 | C | 30 | 0.69 | 51.2 | 41.0 | 34.2 | 25.6 | 20.5 | 17.1 | 13.7 | 10.2 | 2.35 | 1.57 | 1.18 | 0.94 |
| | M | 40 | 0.80 | 59.4 | 47.5 | 39.6 | 29.7 | 23.8 | 19.8 | 15.8 | 11.9 | 2.73 | 1.82 | 1.36 | 1.09 |
| | M | 50 | 0.89 | 66.1 | 52.9 | 44.1 | 33.0 | 26.4 | 22.0 | 17.6 | 13.2 | 3.03 | 2.02 | 1.52 | 1.21 |
| | M | 60 | 0.98 | 72.8 | 58.2 | 48.5 | 36.4 | 29.1 | 24.3 | 19.4 | 14.6 | 3.34 | 2.23 | 1.67 | 1.34 |
| 12 | C | 30 | 1.04 | 77.2 | 61.8 | 51.5 | 38.6 | 30.9 | 25.7 | 20.6 | 15.4 | 3.55 | 2.36 | 1.77 | 1.42 |
| | C | 40 | 1.20 | 89.1 | 71.3 | 59.4 | 44.6 | 35.6 | 29.7 | 23.8 | 17.8 | 4.09 | 2.73 | 2.05 | 1.64 |
| | C | 50 | 1.34 | 99.5 | 79.6 | 66.3 | 49.7 | 39.8 | 33.2 | 26.5 | 19.9 | 4.57 | 3.05 | 2.28 | 1.83 |
| | M | 60 | 1.47 | 109 | 87.3 | 72.8 | 54.6 | 43.7 | 36.4 | 29.1 | 21.8 | 5.01 | 3.34 | 2.51 | 2.01 |
| 16 | C | 30 | 1.39 | 103 | 82.6 | 68.8 | 51.6 | 41.3 | 34.4 | 27.5 | 20.6 | 4.74 | 3.16 | 2.37 | 1.90 |
| | C | 40 | 1.60 | 119 | 95.0 | 79.2 | 59.4 | 47.5 | 39.6 | 31.7 | 23.8 | 5.46 | 3.64 | 2.73 | 2.18 |
| | C | 50 | 1.79 | 133 | 106 | 88.6 | 66.5 | 53.2 | 44.3 | 35.4 | 26.6 | 6.10 | 4.07 | 3.05 | 2.44 |
| | C | 60 | 1.96 | 146 | 116 | 97.0 | 72.8 | 58.2 | 48.5 | 38.8 | 29.1 | 6.68 | 4.46 | 3.34 | 2.67 |

Droplet size based on ASABE S572.1 standard.

| Features | |
|---|---|
| Common Use | Unspecialized |
| Pattern | Off-Center Fan |
| Technology | Elliptical Orifice |
| Material | Brass |
| Spray Angle | 80° |
| Pressure Range | 30-60 PSI (2-4 BAR) |
| Configuration | Nozzle |

| Part Numbers | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| 280C02 | CAP00-20 |
| 280C03 | CAP00-20 |
| 280C04 | CAP00-20 |
| 280C06 | CAP00-20 |
| 280C08 | CAP00-20 |
| 280C12 | CAP00-20 |
| 280C16 | CAP00-20 |

## METRIC UNITS

| Nozzle Size | Droplet Size 80° | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - 50 cm Spacing KM/H | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 02 | M | 2 | 0,65 | 130 | 98 | 78 | 65 | 52 | 39 | 31 | 26 |
| | F | 2,5 | 0,73 | 146 | 110 | 88 | 73 | 58 | 44 | 35 | 29 |
| | F | 3 | 0,80 | 160 | 120 | 96 | 80 | 64 | 48 | 38 | 32 |
| | F | 4 | 0,92 | 184 | 138 | 110 | 92 | 74 | 55 | 44 | 37 |
| 03 | M | 2 | 0,98 | 196 | 147 | 118 | 98 | 78 | 59 | 47 | 39 |
| | M | 2,5 | 1,10 | 220 | 165 | 132 | 110 | 88 | 66 | 53 | 44 |
| | F | 3 | 1,20 | 240 | 180 | 144 | 120 | 96 | 72 | 58 | 48 |
| | F | 4 | 1,39 | 278 | 209 | 167 | 139 | 111 | 83 | 67 | 56 |
| 04 | M | 2 | 1,31 | 262 | 197 | 157 | 131 | 105 | 79 | 63 | 52 |
| | M | 2,5 | 1,46 | 292 | 219 | 175 | 146 | 117 | 88 | 70 | 58 |
| | M | 3 | 1,60 | 320 | 240 | 192 | 160 | 128 | 96 | 77 | 64 |
| | F | 4 | 1,85 | 370 | 278 | 222 | 185 | 148 | 111 | 89 | 74 |
| 06 | C | 2 | 1,96 | 392 | 294 | 235 | 196 | 157 | 118 | 94 | 78 |
| | M | 2,5 | 2,19 | 438 | 329 | 263 | 219 | 175 | 131 | 105 | 88 |
| | M | 3 | 2,40 | 480 | 360 | 288 | 240 | 192 | 144 | 115 | 96 |
| | M | 4 | 2,77 | 554 | 416 | 332 | 277 | 222 | 166 | 133 | 111 |
| 08 | C | 2 | 2,61 | 522 | 392 | 313 | 261 | 209 | 157 | 125 | 104 |
| | C | 2,5 | 2,92 | 584 | 438 | 350 | 292 | 234 | 175 | 140 | 117 |
| | M | 3 | 3,20 | 640 | 480 | 384 | 320 | 256 | 192 | 154 | 128 |
| | M | 4 | 3,70 | 740 | 555 | 444 | 370 | 296 | 222 | 178 | 148 |
| 12 | C | 2 | 3,92 | 784 | 588 | 470 | 392 | 314 | 235 | 188 | 157 |
| | C | 2,5 | 4,38 | 876 | 657 | 526 | 438 | 350 | 263 | 210 | 175 |
| | C | 3 | 4,80 | 960 | 720 | 576 | 480 | 384 | 288 | 230 | 192 |
| | M | 4 | 5,54 | 1108 | 831 | 665 | 554 | 443 | 332 | 266 | 222 |
| 16 | C | 2 | 5,23 | 1046 | 785 | 628 | 523 | 418 | 314 | 251 | 209 |
| | C | 2,5 | 5,84 | 1168 | 876 | 701 | 584 | 467 | 350 | 280 | 234 |
| | C | 3 | 6,40 | 1280 | 960 | 768 | 640 | 512 | 384 | 307 | 256 |
| | C | 4 | 7,39 | 1478 | 1109 | 887 | 739 | 591 | 443 | 355 | 296 |

Droplet size based on ASABE S572.1 standard.

# CERAMIC OFF-CENTER OCI 80°

The Albuz® OCI off-center flat fan ceramic spray nozzle provides excellent wear life for spraying around obstacles or defining the edge of a spraying swath.

## US UNITS

| Nozzle Size | Droplet Size 80° | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH | | | | | | | | GAL/1000Ft 2 20 inch nozzle spacing | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 2 | 3 | 4 | 5 |
| 02 | M | 30 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | M | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | M | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | F | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| 03 | M | 30 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | M | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | M | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | M | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| 04 | M | 30 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | M | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | M | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | M | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |

| Features | |
|---|---|
| Common Use | Unspecialized |
| Pattern | Off-Centered Fan |
| Technology | Elliptical Orifice |
| Material | Ceramic |
| Spray Angle | 80° |
| Pressure Range | 30-60 PSI (2-4 BAR) |
| Configuration | Nozzle |

| Part Numbers | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| OCI-8002 | CAP00-02 |
| OCI-8003 | CAP00-03 |
| OCI-8004 | CAP00-04 |

## METRIC UNITS

| Nozzle Size | Droplet Size 80° | Pressure (Bar) | Flow Rate (LPM) | Liters/Hectare KM/H | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 |
| 02 | M | 2 | 0.65 | 195 | 156 | 130 | 111 | 98 | 87 | 78 | 65 | 56 | 49 | 43 | 39 |
| | M | 3 | 0.80 | 240 | 192 | 160 | 137 | 120 | 107 | 96 | 80 | 69 | 60 | 53 | 48 |
| | F | 4 | 0.91 | 273 | 218 | 182 | 156 | 137 | 121 | 109 | 91 | 78 | 68 | 61 | 55 |
| 03 | M | 2 | 0.98 | 294 | 235 | 196 | 168 | 147 | 131 | 118 | 98 | 84 | 74 | 65 | 59 |
| | M | 3 | 1.20 | 360 | 288 | 240 | 206 | 180 | 160 | 144 | 120 | 103 | 90 | 80 | 72 |
| | M | 4 | 1.39 | 417 | 334 | 278 | 238 | 209 | 185 | 167 | 139 | 119 | 104 | 93 | 83 |
| 04 | M | 2 | 1.31 | 393 | 314 | 262 | 225 | 197 | 175 | 157 | 131 | 112 | 98 | 87 | 79 |
| | M | 3 | 1.60 | 480 | 384 | 320 | 274 | 240 | 213 | 192 | 160 | 137 | 120 | 107 | 96 |
| | M | 4 | 1.85 | 555 | 444 | 370 | 317 | 278 | 247 | 222 | 185 | 159 | 139 | 123 | 111 |

Albuz® is a registered trademark of SAINT-GOBAIN SOLCERA, SAINT GOBAIN CERAMIQUES AVANCEES DESMARQUEST, CERAMIQUES TECHNIQUES DESMARQUEST, and SOCIETE DESMARQUEST ET CEC.

# FLAT FAN - CERAMIC AVI-OC 80°

The Albuz® AVI-OC air-inducing Venturi off-center ceramic spray nozzle with air suction provides large, air-filled droplets that burst on impact with target.

## US UNITS

| Nozzle Size | Droplet Size 80° | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre 20 inch nozzle spacing MPH 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | GAL/1000 FT² 20 inch nozzle spacing 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 015 | VC | 40 | 0.15 | 11.1 | 8.9 | 7.4 | 5.6 | 4.5 | 3.7 | 3.0 | 2.2 | 0.51 | 0.34 | 0.26 | 0.20 |
| | VC | 50 | 0.17 | 12.6 | 10.1 | 8.4 | 6.3 | 5.0 | 4.2 | 3.4 | 2.5 | 0.58 | 0.39 | 0.29 | 0.23 |
| | VC | 60 | 0.18 | 13.4 | 10.7 | 8.9 | 6.7 | 5.3 | 4.5 | 3.6 | 2.7 | 0.61 | 0.41 | 0.31 | 0.25 |
| | VC | 70 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | VC | 80 | 0.21 | 15.6 | 12.5 | 10.4 | 7.8 | 6.2 | 5.2 | 4.2 | 3.1 | 0.72 | 0.48 | 0.36 | 0.29 |
| | C | 90 | 0.23 | 17.1 | 13.7 | 11.4 | 8.5 | 6.8 | 5.7 | 4.6 | 3.4 | 0.78 | 0.52 | 0.39 | 0.31 |
| | C | 100 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| 02 | XC | 40 | 0.20 | 14.9 | 11.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.0 | 3.0 | 0.68 | 0.45 | 0.34 | 0.27 |
| | VC | 50 | 0.22 | 16.3 | 13.1 | 10.9 | 8.2 | 6.5 | 5.4 | 4.4 | 3.3 | 0.75 | 0.50 | 0.38 | 0.30 |
| | VC | 60 | 0.24 | 17.8 | 14.3 | 11.9 | 8.9 | 7.1 | 5.9 | 4.8 | 3.6 | 0.82 | 0.55 | 0.41 | 0.33 |
| | VC | 70 | 0.26 | 19.3 | 15.4 | 12.9 | 9.7 | 7.7 | 6.4 | 5.1 | 3.9 | 0.89 | 0.59 | 0.44 | 0.35 |
| | VC | 80 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | VC | 90 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | VC | 100 | 0.32 | 23.8 | 19.0 | 15.8 | 11.9 | 9.5 | 7.9 | 6.3 | 4.8 | 1.09 | 0.73 | 0.55 | 0.44 |
| 025 | XC | 40 | 0.25 | 18.6 | 14.9 | 12.4 | 9.3 | 7.4 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 |
| | XC | 50 | 0.28 | 20.8 | 16.6 | 13.9 | 10.4 | 8.3 | 6.9 | 5.5 | 4.2 | 0.95 | 0.64 | 0.48 | 0.38 |
| | VC | 60 | 0.31 | 23.0 | 18.4 | 15.3 | 11.5 | 9.2 | 7.7 | 6.1 | 4.6 | 1.06 | 0.70 | 0.53 | 0.42 |
| | VC | 70 | 0.33 | 24.5 | 19.6 | 16.3 | 12.3 | 9.8 | 8.2 | 6.5 | 4.9 | 1.13 | 0.75 | 0.56 | 0.45 |
| | VC | 80 | 0.35 | 26.0 | 20.8 | 17.3 | 13.0 | 10.4 | 8.7 | 6.9 | 5.2 | 1.19 | 0.80 | 0.60 | 0.48 |
| | VC | 90 | 0.38 | 28.2 | 22.6 | 18.8 | 14.1 | 11.3 | 9.4 | 7.5 | 5.6 | 1.30 | 0.86 | 0.65 | 0.52 |
| | VC | 100 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| 03 | XC | 40 | 0.30 | 22.3 | 17.8 | 14.9 | 11.1 | 8.9 | 7.4 | 5.9 | 4.5 | 1.02 | 0.68 | 0.51 | 0.41 |
| | XC | 50 | 0.34 | 25.2 | 20.2 | 16.8 | 12.6 | 10.1 | 8.4 | 6.7 | 5.0 | 1.16 | 0.77 | 0.58 | 0.46 |
| | XC | 60 | 0.37 | 27.5 | 22.0 | 18.3 | 13.7 | 11.0 | 9.2 | 7.3 | 5.5 | 1.26 | 0.84 | 0.63 | 0.50 |
| | VC | 70 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | VC | 80 | 0.42 | 31.2 | 24.9 | 20.8 | 15.6 | 12.5 | 10.4 | 8.3 | 6.2 | 1.43 | 0.95 | 0.72 | 0.57 |
| | VC | 90 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | VC | 100 | 0.47 | 34.9 | 27.9 | 23.3 | 17.4 | 14.0 | 11.6 | 9.3 | 7.0 | 1.60 | 1.07 | 0.80 | 0.64 |
| 04 | XC | 40 | 0.40 | 29.7 | 23.8 | 19.8 | 14.9 | 11.9 | 9.9 | 7.9 | 5.9 | 1.36 | 0.91 | 0.68 | 0.55 |
| | XC | 50 | 0.45 | 33.4 | 26.7 | 22.3 | 16.7 | 13.4 | 11.1 | 8.9 | 6.7 | 1.53 | 1.02 | 0.77 | 0.61 |
| | XC | 60 | 0.49 | 36.4 | 29.1 | 24.3 | 18.2 | 14.6 | 12.1 | 9.7 | 7.3 | 1.67 | 1.11 | 0.84 | 0.67 |
| | XC | 70 | 0.53 | 39.4 | 31.5 | 26.2 | 19.7 | 15.7 | 13.1 | 10.5 | 7.9 | 1.81 | 1.20 | 0.90 | 0.72 |
| | VC | 80 | 0.57 | 42.3 | 33.9 | 28.2 | 21.2 | 16.9 | 14.1 | 11.3 | 8.5 | 1.94 | 1.30 | 0.97 | 0.78 |
| | VC | 90 | 0.60 | 44.6 | 35.6 | 29.7 | 22.3 | 17.8 | 14.9 | 11.9 | 8.9 | 2.05 | 1.36 | 1.02 | 0.82 |
| | VC | 100 | 0.63 | 46.8 | 37.4 | 31.2 | 23.4 | 18.7 | 15.6 | 12.5 | 9.4 | 2.15 | 1.43 | 1.07 | 0.86 |

| Features | |
|---|---|
| Common Use | Weeds |
| Pattern | Off-Center Fan |
| Technology | Air Induction |
| Material | Ceramic |
| Spray Angle | 80° |
| Pressure Range | 40-100 PSI (3-7 BAR) |
| Configuration | Nozzle |

| Part Numbers | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| AVI-OC-80015 | CAP01-015 |
| AVI-OC-8002 | CAP01-02 |
| AVI-OC-80025 | CAP01-025 |
| AVI-OC-8003 | CAP01-03 |
| AVI-OC-8004 | CAP01-04 |

## METRIC UNITS

| Nozzle Size | Droplet Size 80° | Pressure (Bar) | Flow Rate (LPM) | Liters/Hectare 50cm Spacing KM/H 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 015 | VC | 3 | 0.15 | 180 | 144 | 120 | 103 | 90 | 80 | 72 | 60 | 51 | 45 | 40 | 36 |
| | VC | 4 | 0.05 | 207 | 166 | 138 | 118 | 104 | 92 | 83 | 69 | 59 | 52 | 46 | 41 |
| | VC | 5 | 0.05 | 231 | 185 | 154 | 132 | 116 | 103 | 92 | 77 | 66 | 58 | 51 | 46 |
| 02 | XC | 3 | 0.20 | 240 | 192 | 160 | 137 | 120 | 107 | 96 | 80 | 69 | 60 | 53 | 48 |
| | VC | 4 | 0.06 | 273 | 218 | 182 | 156 | 137 | 121 | 109 | 91 | 78 | 68 | 61 | 55 |
| | VC | 5 | 0.07 | 309 | 247 | 206 | 177 | 155 | 137 | 124 | 103 | 88 | 77 | 9 | 62 |
| 025 | XC | 3 | 0.25 | 300 | 240 | 200 | 171 | 150 | 133 | 120 | 100 | 86 | 75 | 67 | 60 |
| | VC | 4 | 0.08 | 345 | 276 | 230 | 197 | 173 | 153 | 138 | 115 | 99 | 86 | 77 | 69 |
| | VC | 5 | 0.09 | 387 | 310 | 258 | 221 | 194 | 172 | 155 | 129 | 111 | 97 | 86 | 77 |
| 03 | XC | 3 | 0.30 | 360 | 288 | 240 | 206 | 180 | 160 | 144 | 120 | 103 | 90 | 80 | 92 |
| | XC | 4 | 0.09 | 417 | 334 | 278 | 238 | 209 | 185 | 167 | 139 | 119 | 104 | 93 | 83 |
| | VC | 5 | 0.11 | 465 | 372 | 310 | 266 | 233 | 207 | 186 | 155 | 133 | 116 | 103 | 93 |
| 04 | XC | 3 | 0.40 | 480 | 384 | 320 | 274 | 240 | 213 | 192 | 160 | 137 | 120 | 107 | 96 |
| | XC | 4 | 0.13 | 555 | 444 | 370 | 317 | 278 | 247 | 222 | 185 | 159 | 139 | 123 | 111 |
| | XC | 5 | 0.14 | 621 | 497 | 414 | 355 | 311 | 276 | 248 | 207 | 177 | 155 | 138 | 124 |

Albuz® is a registered trademark of SAINT-GOBAIN SOLCERA, SAINT GOBAIN CERAMIQUES AVANCEES DESMARQUEST, CERAMIQUES TECHNIQUES DESMARQUEST, and SOCIETE DESMARQUEST ET CEC.
Hypro® is a registered trademark of Pentair..

# BOOMLESS FLAT FAN NOZZLES - XT-BOOM X TENDER

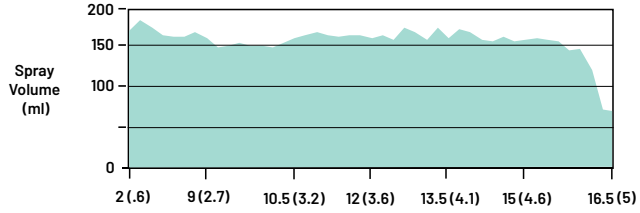
The XT introduces boomless spray technology, enabling spray to be targeted into places that conventional booms and other nozzles cannot reach. XT delivers a uniform spray pattern over a distance of up to 16 feet (4.9 m). Ideal for weed control in forests and pastureland.

- Ideal for applications where a conventional boom cannot be used due to obstacles
- Common uses include orchard, vineyard, forestry, pasture, turf and golf course spraying, as well as maintaining rights-of-way and fence rows
- Excellent low-drift option while extending spray reach
- Large droplet size reduces spray drift and promotes spray penetration
- Maintains a consistent spray swath over a pressure range of 30-60 psi (2-5 bar)
- Standard models with precision-molded polyacetal nozzle and threaded stainless steel body provide excellent durability and low maintenance

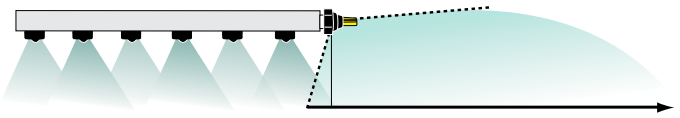
## US UNITS

| Nozzle Size (MNPT) | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre at swath shown MPH 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | GAL/1000Ft² 2 | 3 | 4 | 5 | Swath (Ft) at 40 PSI 48 in high |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 (1/4") | 30 | 0.9 | 8.9 | 7.1 | 5.9 | 4.5 | 3.6 | 3.0 | 2.4 | 1.8 | 0.41 | 0.27 | 0.20 | 0.16 | 13 |
| | 40 | 1.0 | 9.9 | 7.9 | 6.6 | 5.0 | 4.0 | 3.3 | 2.6 | 2.0 | 0.45 | 0.30 | 0.23 | 0.18 | |
| | 50 | 1.1 | 10.9 | 8.7 | 7.3 | 5.4 | 4.4 | 3.6 | 2.9 | 2.2 | 0.50 | 0.33 | 0.25 | 0.20 | |
| | 60 | 1.2 | 11.9 | 9.5 | 7.9 | 5.9 | 4.8 | 4.0 | 3.2 | 2.4 | 0.55 | 0.36 | 0.27 | 0.22 | |
| 20 (1/4") | 30 | 1.7 | 13.6 | 10.9 | 9.0 | 6.8 | 5.4 | 4.5 | 3.6 | 2.7 | 0.62 | 0.42 | 0.31 | 0.25 | 15 |
| | 40 | 2.0 | 16.0 | 12.8 | 10.6 | 8.0 | 6.4 | 5.3 | 4.3 | 3.2 | 0.73 | 0.49 | 0.37 | 0.29 | |
| | 50 | 2.2 | 17.6 | 14.1 | 11.7 | 8.8 | 7.0 | 5.9 | 4.7 | 3.5 | 0.81 | 0.54 | 0.40 | 0.32 | |
| | 60 | 2.4 | 19.2 | 15.3 | 12.8 | 9.6 | 7.7 | 6.4 | 5.1 | 3.8 | 0.88 | 0.59 | 0.44 | 0.35 | |
| 24 (1/4") | 30 | 2.1 | 16.2 | 13.0 | 10.8 | 8.1 | 6.5 | 5.4 | 4.3 | 3.2 | 0.75 | 0.50 | 0.37 | 0.30 | 16 |
| | 40 | 2.4 | 18.6 | 14.9 | 12.4 | 9.3 | 7.4 | 6.2 | 5.0 | 3.7 | 0.85 | 0.57 | 0.43 | 0.34 | |
| | 50 | 2.7 | 20.9 | 16.7 | 13.9 | 10.4 | 8.4 | 7.0 | 5.6 | 4.2 | 0.96 | 0.64 | 0.48 | 0.38 | |
| | 60 | 2.9 | 22.4 | 17.9 | 15.0 | 11.2 | 9.0 | 7.5 | 6.0 | 4.5 | 1.03 | 0.69 | 0.51 | 0.41 | |
| 43 (3/8") | 30 | 3.7 | 31.6 | 25.3 | 21.1 | 15.8 | 12.6 | 10.5 | 8.4 | 6.3 | 1.45 | 0.97 | 0.72 | 0.58 | 14 |
| | 40 | 4.3 | 36.7 | 29.4 | 24.5 | 18.3 | 14.7 | 12.2 | 9.8 | 7.3 | 1.68 | 1.12 | 0.84 | 0.67 | |
| | 50 | 4.8 | 41.0 | 32.8 | 27.3 | 20.5 | 16.4 | 13.7 | 10.9 | 8.2 | 1.88 | 1.25 | 0.94 | 0.75 | |
| | 60 | 5.3 | 45.2 | 36.2 | 30.2 | 22.6 | 18.1 | 15.1 | 12.1 | 9.0 | 2.08 | 1.38 | 1.04 | 0.83 | |
| 80 (1/2") | 30 | 6.9 | 68.3 | 54.6 | 45.5 | 34.2 | 27.3 | 22.8 | 18.2 | 13.7 | 3.14 | 2.09 | 1.57 | 1.25 | 13 |
| | 40 | 8.0 | 79.2 | 63.4 | 52.8 | 39.6 | 31.7 | 26.4 | 21.1 | 15.8 | 3.64 | 2.42 | 1.82 | 1.45 | |
| | 50 | 8.9 | 88.1 | 70.5 | 58.7 | 44.1 | 35.2 | 29.4 | 23.5 | 17.6 | 4.04 | 2.70 | 2.02 | 1.62 | |
| | 60 | 9.8 | 97.0 | 77.6 | 64.7 | 48.5 | 38.8 | 32.3 | 25.9 | 19.4 | 4.45 | 2.97 | 2.23 | 1.78 | |
| 167 (3/4") | 30 | 14.5 | 128 | 103 | 85.4 | 64.1 | 51.3 | 42.7 | 34.2 | 25.6 | 5.88 | 3.92 | 2.94 | 2.35 | 15 |
| | 40 | 16.7 | 148 | 118 | 98.4 | 73.8 | 59.0 | 49.2 | 39.4 | 29.5 | 6.78 | 4.52 | 3.39 | 2.71 | |
| | 50 | 18.7 | 165 | 132 | 110 | 82.6 | 66.1 | 55.1 | 44.1 | 33.1 | 7.59 | 5.06 | 3.79 | 3.03 | |
| | 60 | 20.5 | 181 | 145 | 121 | 90.6 | 72.5 | 60.4 | 48.3 | 36.2 | 8.32 | 5.54 | 4.16 | 3.33 | |
| 215 (3/4") | 30 | 18.6 | 144 | 115 | 95.9 | 71.9 | 57.5 | 48.0 | 38.4 | 28.8 | 6.60 | 4.40 | 3.30 | 2.64 | 16 |
| | 40 | 21.5 | 166 | 133 | 111 | 83.1 | 66.5 | 55.4 | 44.3 | 33.3 | 7.63 | 5.09 | 3.82 | 3.05 | |
| | 50 | 24.0 | 186 | 149 | 124 | 92.8 | 74.3 | 61.9 | 49.5 | 37.1 | 8.52 | 5.68 | 4.26 | 3.41 | |
| | 60 | 26.3 | 203 | 163 | 136 | 102 | 81.4 | 67.8 | 54.2 | 40.7 | 9.34 | 6.22 | 4.67 | 3.73 | |

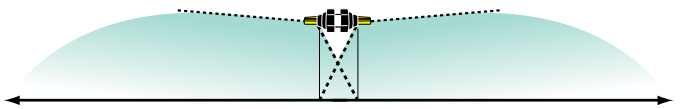
## TYPICAL SPRAY PATTERN PRODUCED BY XT SERIES



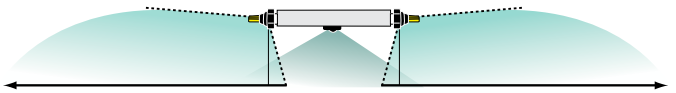

## COMMON USES OF THE BOOM X TENDER SPRAY NOZZLES



Boom X Tender Spraying
(last nozzle on the boom)



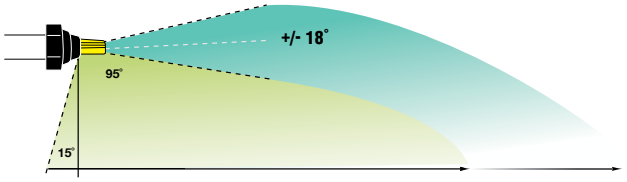
Boomless Spraying



Boomless Spraying with Center Nozzle

## ADJUSTABLE SWATH WIDTH

Swath width can be increased or decreased by adjusting the angle of the nozzle +/- 18˚.



# BOOMLESS FLAT FAN NOZZLES - XT-BOOM X TENDER

Boom X Tender nozzles are ideal for boomless spraying or as the last nozzle on a boom.

Hypro's Boom X Tender nozzles provide excellent coverage throughout the swath width for superior results.

Gasket, insert and o-ring kits available to rebuild MNPT versions.

## METRIC UNITS

| Nozzle Size (MNPT) | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/Ha - at swath shown KM/H 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | Swath Width (M) @ 2.76 BAR 1.22 meters high |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 (1/4 inch) | 2 | 3.2 | 124 | 99 | 83 | 71 | 62 | 50 | 41 | 35 | 31 | 28 | 25 | |
| | 3 | 3.9 | 152 | 121 | 101 | 87 | 76 | 61 | 51 | 43 | 38 | 34 | 30 | 3.9 |
| | 4 | 4.6 | 175 | 140 | 117 | 100 | 88 | 70 | 58 | 50 | 44 | 39 | 35 | |
| 20 (1/4 inch) | 2 | 6.4 | 201 | 161 | 134 | 115 | 101 | 81 | 67 | 58 | 50 | 45 | 40 | |
| | 3 | 7.9 | 247 | 197 | 165 | 141 | 123 | 99 | 82 | 71 | 62 | 55 | 49 | 4.8 |
| | 4 | 9.1 | 285 | 228 | 190 | 163 | 142 | 114 | 95 | 81 | 71 | 63 | 57 | |
| 24 (1/4 inch) | 2 | 7.7 | 237 | 189 | 158 | 135 | 118 | 95 | 79 | 68 | 59 | 53 | 47 | |
| | 3 | 9.5 | 290 | 232 | 193 | 166 | 145 | 116 | 97 | 83 | 73 | 64 | 58 | 4.9 |
| | 4 | 10.9 | 335 | 268 | 223 | 191 | 167 | 134 | 112 | 96 | 84 | 74 | 67 | |
| 43 (3/8 inch) | 2 | 13.9 | 473 | 378 | 315 | 270 | 236 | 189 | 158 | 135 | 118 | 105 | 95 | |
| | 3 | 17 | 579 | 463 | 386 | 331 | 289 | 232 | 193 | 165 | 145 | 129 | 116 | 4.4 |
| | 4 | 19.6 | 668 | 535 | 446 | 382 | 334 | 267 | 223 | 191 | 167 | 149 | 134 | |
| 80 (1/2 inch) | 2 | 25.8 | 992 | 793 | 661 | 567 | 496 | 397 | 331 | 283 | 248 | 220 | 198 | |
| | 3 | 31.6 | 1215 | 972 | 810 | 694 | 607 | 486 | 405 | 347 | 304 | 270 | 243 | 3.9 |
| | 4 | 36.5 | 1403 | 1122 | 935 | 802 | 701 | 561 | 468 | 401 | 351 | 312 | 281 | |
| 167 (3/4 inch) | 2 | 53.8 | 1878 | 1502 | 1252 | 1073 | 939 | 751 | 626 | 537 | 469 | 417 | 376 | |
| | 3 | 65.9 | 2300 | 1840 | 1533 | 1314 | 1150 | 920 | 767 | 657 | 575 | 511 | 460 | 4.3 |
| | 4 | 76.1 | 2656 | 2125 | 1771 | 1518 | 1328 | 1062 | 885 | 759 | 664 | 590 | 531 | |
| 215 (3/4 inch) | 2 | 69.3 | 2122 | 1697 | 1414 | 1212 | 1061 | 849 | 707 | 606 | 530 | 471 | 424 | |
| | 3 | 84.9 | 2598 | 2079 | 1732 | 1485 | 1299 | 1039 | 866 | 742 | 650 | 577 | 520 | 4.9 |
| | 4 | 98 | 3000 | 2400 | 2000 | 1715 | 1500 | 1200 | 1000 | 857 | 750 | 667 | 600 | |

Swath widths and application rates in charts are based on height of 48 inches (1.2 metres), a different height will give different swath widths

| Features | |
|---|---|
| Common Use | Weeds |
| Pattern | Boomless Fan |
| Technology | Pre-Orifice |
| Material | Stainless or Polyacetal |
| Spray Angle | 105° |
| Pressure Range | 30-60 PSI (2-5 BAR) |
| Configuration | MNPT & FastCap |

| Part Numbers | | |
|---|---|---|
| FastCaps | MNPT (Thread) | Parts Kits for MNPT version |
| FC-XT010 | XT010 (1/4") | XT010-GIOKIT |
| FC-XT020 | XT020 (1/4") | XT020-GIOKIT |
| FC-XT024 | XT024 (1/4") | XT024-GIOKIT |
| FC-XT043 | XT043 (3/8") | XT043-GIOKIT |
| - | XT080 (1/2") | XT080-GIOKIT |
| - | XT167 (3/4") | XT167-GIOKIT |
| - | XT215 (3/4") | XT215-GIOKIT |

| Replacement FastCap Seal |
|---|
| 10BG-2270-0150 |

| Model | Description |
|---|---|
| 9950-0033 | Boom X Tender Tee/Swivel Kit for use with 1/4" NPT or Fastcap XT Nozzles |

$$GPM = \frac{GPA \times MPH \times swath\ width\ (in)}{5{,}940}$$

$$GPM = \frac{GPA \times 5{,}940}{MPH \times swath\ width\ (in)}$$

$$LPM = \frac{L/ha \times Kmph \times swath\ width\ (m)}{600}$$

$$L/ha = \frac{LPM \times 600}{Kmph \times swath\ width\ (m)}$$

# SUDDEN IMPACT

## High Impact Car Wash Nozzle

- Provides a high impact, controlled rotation 0° water stream with much greater impact and cleaning efficiency than other nozzles which reduces wash time & increases thru-put
- Lasts up to five times longer than other rotating nozzles on the market, reducing operating costs over the life of the car wash
- Improved cleaning efficiency over other rotating nozzles reduces water consumption by up to 25%
- Tungsten carbide seat and nozzle provide unmatched wear and shatter resistance over ceramic material commonly utilized in other nozzles
- High strength, forged housing available in economical brass or corrosion-resistant 304 stainless steel
- Elastomer cover protects vehicles and nozzles
- Precision-machined bearing in rotor offers very high wear resistance and optimal impact
- Available with 24° pattern for maximum impact or 30° pattern for extra coverage
- BSP-style connection available in 24° brass (sizes 2.0, 3.5, 4.5) for use in Mark VII® washes

**Sample Part Number: TUR324B-2.0**

Breakdown:

| TUR | 324 | B | - | 2.0 |
|---|---|---|---|---|
| series | | material brass | | size 2.0 |

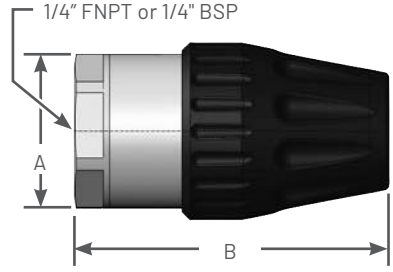
### NOZZLE SPECIFICATIONS

| Series | Pressure* | Ideal Impact Distance | Material | Angle | Temperature |
|---|---|---|---|---|---|
| TUR324B-x.x | 1750 PSI (120 bar) | 20"-30" (51-76cm) | Brass | 24° | 180° F (82° C) |
| TUR324B-x.x-BSP | 1750 PSI (120 bar) | 20"-30" (51-76cm) | Brass | 24° | 180° F (82° C) |
| TUR324S-x.x | 3000 PSI (207 bar) | 20"-30" (51-76cm) | Stainless | 24° | 180° F (82° C) |
| TUR330B-x.x | 1300 PSI (90 bar) | 15"-25" (38-63cm) | Brass | 30° | 180° F (82° C) |
| TUR330S-x.x | 3000 PSI (207 bar) | 15"-25" (38-63cm) | Stainless | 30° | 180° F (82° C) |

*See rate chart below for specific information

### DIMENSIONAL CHART

| Series | A (in) | A (mm) | B (in) | B (mm) |
|---|---|---|---|---|
| 324 | 3.05 | 77.5 | 1.49 | 37.8 |
| 330 | 2.96 | 75.6 | 1.69 | 42.9 |




| Spray Nozzle Size | Flow Rate (US GPM) Pressure (PSI) | | | | | | | | | | | Flow Rate (L/min) Pressure (BAR) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 800 | 900 | 1000 | 1100 | 1200 | 1500 | 2000 | 2250 | 2500 | 2750 | 3000 | 50 | 60 | 70 | 80 | 90 | 100 | 120 | 140 | 160 | 180 | 200 |
| 2.0 | 0.89 | 0.95 | 1.00 | 1.05 | 1.10 | 1.22 | 1.41 | 1.50 | 1.58 | 1.66 | 1.73 | 3.21 | 3.51 | 3.80 | 4.06 | 4.30 | 4.54 | 4.97 | 5.37 | 5.74 | 6.09 | 6.42 |
| 3.0 | 1.34 | 1.42 | 1.50 | 1.57 | 1.64 | 1.84 | 2.12 | 2.25 | 2.37 | 2.49 | 2.60 | 4.83 | 5.29 | 5.71 | 6.11 | 6.48 | 6.83 | 7.48 | 8.08 | 8.64 | 9.16 | 9.66 |
| 3.5 | 1.57 | 1.66 | 1.75 | 1.84 | 1.92 | 2.14 | 2.47 | 2.63 | 2.77 | 2.90 | 3.03 | 5.66 | 6.20 | 6.70 | 7.16 | 7.59 | 8.00 | 8.77 | 9.47 | 10.10 | 10.70 | 11.30 |
| 4.0 | 1.79 | 1.90 | 2.00 | 2.10 | 2.19 | 2.45 | 2.83 | 3.00 | 3.16 | 3.32 | 3.46 | 6.45 | 7.07 | 7.63 | 8.16 | 8.66 | 9.12 | 9.99 | 10.80 | 11.50 | 12.20 | 12.90 |
| 4.5 | 2.01 | 2.13 | 2.25 | 2.36 | 2.46 | 2.76 | 3.18 | 3.38 | 3.56 | 3.73 | 3.90 | 7.24 | 7.94 | 8.57 | 9.16 | 9.72 | 10.20 | 11.20 | 12.10 | 12.90 | 13.70 | 14.40 |
| 5.0 | 2.24 | 2.37 | 2.50 | 2.62 | 2.74 | 3.06 | 3.54 | 3.75 | 3.95 | 4.15 | 4.33 | 8.07 | 8.84 | 9.55 | 10.20 | 10.80 | 11.40 | 12.50 | 13.50 | 14.40 | 15.30 | 16.10 |
| 5.5 | 2.46 | 2.61 | 2.75 | 2.88 | 3.01 | 3.37 | 3.89 | 4.13 | 4.35 | 4.56 | 4.76 | 8.87 | 9.71 | 10.40 | 11.20 | 11.80 | 12.50 | 13.70 | 14.80 | 15.80 | 16.80 | 17.70 |
| 6.0 | 2.68 | 2.85 | 3.00 | 3.15 | 3.29 | 3.67 | 4.24 | 4.50 | 4.74 | 4.97 | 5.20 | 9.66 | 10.50 | 11.40 | 12.20 | 12.90 | 13.60 | 14.90 | 16.10 | 17.20 | 18.30 | 19.30 |

### SAMPLE PART NUMBER

| TUR | 3 | 24 | B | - | 2.0 |
|---|---|---|---|---|---|
| Model | Size | Angle | Material | Dash | Nozzle Number |
| Turbo (NPT) | 3 | 24° or 30° | "B" Brass or "S" Stainless | - | 2.0, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0 |
| Turbo (BSP) for Mark VII® Washes* | 3 | 24° | "B" Brass | - | 2.0, 3.5, 4.5 |

Note: BSP Models: Add suffix "BSP" -example TUR324B-2.0BSP

# SPRAY IT MOBILE APP

## SELECT THE RIGHT NOZZLE SIZED FOR YOUR APPLICATION

- Choose 'Select by Application' for a full list of nozzles that fit your application requirements
- Choose 'Select by Chemical' (US only) for a recommended nozzle family based on the chemical you are using
- Search for a specific nozzle or chemical directly from the home screen
- Integrated Where to Buy tool makes purchasing easy
- Available in US and Metric Units and multiple languages

Search 'Spray It' on the Apple Store or Android Market

### PRESSURE TRANSDUCER

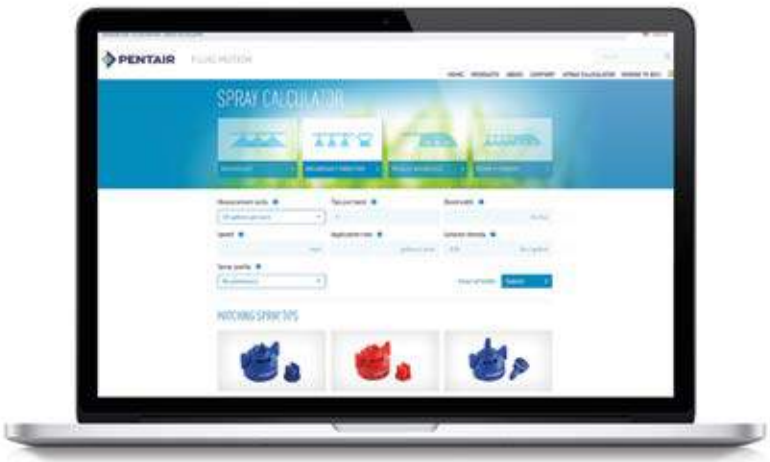
| Reference Number | Part Number | Description |
|---|---|---|
| 2520-0239 | 2530-0207 | 1/4" NPT thread, 0 - 100 psi, 1% accuracy, bluetooth connectivity to SprayIT App enables real time droplet size monitoring. |
| 2520-0240 | 4201N-B104 | Single outlet nozzle body |
| 2520-0241 | CAP10-20 | 1/4" npt threaded spray cap |

# SPRAY IT ONLINE CALCULATOR

The Spray It Calculator is an easy-to-use tool that will help you find the right spray nozzle for your desired application. Simply answer a few questions about your specific application and we'll supply you the best nozzles for that application.

This tool is available on the Hypro website or as a mobile app available for both Apple and Android devices.

**SPRAYIT.HYPROSPRAYTIPS.COM**



# HP-HIGH PRESSURE NOZZLE

## Hardened Stainless Steel

- Achieves up to 16%* greater impact than competitive high pressure nozzles, making them the best value on the market today
- Hardened 416 stainless steel, the industry standard for long-life
- Reliable performance in high pressure applications up to 4000 psi (276 BAR)
- High impact spray in a tightly formed fan pattern
- Consistent, even distribution provides uniform cleaning without overlapping
- Protected outlet design guards the orifice during installation and use
- Versatile 1/4" and 1/8" NPT connections suit a variety of applications
- Comes in spray angles of 0˚, 5˚, 15˚, 25˚, 40˚
- Improved marking for easy identification and replacement

*Commissioned with an independent tester

### AVAILABLE SPRAY ANGLES**

[X] In Stock [X] Available [ ] Contact Factory

| Degree | | Size | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 02 | 03 | 035 | 04 | 045 | 05 | 055 | 06 | 065 | 07 | 075 | 08 | 085 | 09 |
| 1/8" NPT | 0˚ | X | X | X | X | X | X | X | X | X | X | X | X | | |
| | 5˚ | X | | | X | | X | | X | | | | | | |
| | 15˚ | X | X | X | X | X | X | X | X | X | X | X | X | X | |
| | 25˚ | X | X | X | X | X | X | X | X | X | X | X | X | | |
| | 40˚ | X | X | X | X | X | X | X | X | X | X | X | X | | |
| 1/4" NPT | 0˚ | X | X | X | X | X | X | X | X | X | X | X | X | | |
| | 5˚ | | | | X | | | X | | | | | X | | X |
| | 15˚ | X | X | X | X | X | X | X | X | X | X | X | X | | |
| | 25˚ | X | X | X | X | X | X | X | X | X | X | X | X | | |
| | 40˚ | X | X | X | X | X | X | X | X | X | X | X | X | | |

**For additional sizes, please contact Technical/Applications at 1-800-445-8360

**Sample Part Number: HP 1/4-2504**

Breakdown:

| HP | 1/4 | - | 25 | 04 |
|---|---|---|---|---|
| model HP | connection 1/4" NPT | | spray angle 25˚ | size 04 |

### US UNITS

| Spray Nozzle Size | 1/8" NPT | 1/4" NPT | Flow Rate (US GPM) Pressure (PSI) 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1250 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 02 | X | X | 0.55 | 0.63 | 0.71 | 0.77 | 0.84 | 0.89 | 1.00 | 1.12 | 1.22 | 1.41 | 1.58 | 1.73 | 1.87 | 2.00 |
| 03 | X | X | 0.82 | 0.95 | 1.60 | 1.16 | 1.25 | 1.34 | 1.50 | 1.68 | 1.84 | 2.12 | 2.37 | 2.06 | 2.81 | 3.00 |
| 035 | X | X | 0.96 | 1.11 | 1.24 | 1.36 | 1.46 | 1.57 | 1.75 | 1.96 | 2.14 | 2.47 | 2.77 | 3.03 | 3.27 | 3.50 |
| 04 | X | X | 1.10 | 1.26 | 1.41 | 1.55 | 1.67 | 1.79 | 2.00 | 2.24 | 2.45 | 2.83 | 3.16 | 3.46 | 3.74 | 4.00 |
| 045 | X | X | 1.23 | 1.42 | 1.59 | 1.74 | 1.88 | 2.01 | 2.25 | 2.52 | 2.76 | 3.18 | 3.56 | 3.90 | 4.21 | 4.50 |
| 05 | X | X | 1.37 | 1.58 | 1.77 | 1.94 | 2.09 | 2.24 | 2.50 | 2.80 | 3.06 | 3.54 | 3.95 | 4.33 | 4.68 | 5.00 |
| 055 | X | X | 1.51 | 1.74 | 1.94 | 2.13 | 2.30 | 2.46 | 2.75 | 3.07 | 3.37 | 3.89 | 4.35 | 4.76 | 5.14 | 5.50 |
| 06 | X | X | 1.64 | 1.90 | 2.12 | 2.32 | 2.51 | 2.68 | 3.00 | 3.35 | 3.67 | 4.24 | 4.74 | 5.20 | 5.61 | 6.00 |
| 065 | X | X | 1.78 | 2.06 | 2.30 | 2.52 | 2.72 | 2.91 | 3.25 | 3.68 | 3.98 | 4.60 | 5.14 | 5.63 | 6.08 | 6.50 |
| 07 | X | X | 1.92 | 2.21 | 2.47 | 2.71 | 2.93 | 3.13 | 3.50 | 3.91 | 4.29 | 4.95 | 5.53 | 6.06 | 6.55 | 7.00 |
| 075 | X | X | 2.05 | 2.37 | 2.65 | 2.90 | 3.14 | 3.35 | 3.75 | 4.19 | 4.59 | 5.30 | 5.93 | 6.50 | 7.02 | 7.50 |
| 08 | X | X | 2.19 | 2.53 | 2.83 | 3.10 | 3.35 | 3.58 | 4.00 | 4.47 | 4.90 | 5.66 | 6.32 | 6.93 | 7.48 | 8.00 |
| 085 | X | | 2.33 | 2.69 | 3.01 | 3.29 | 3.56 | 3.80 | 4.25 | 4.75 | 5.21 | 6.01 | 6.72 | 7.36 | 7.95 | 8.50 |
| 09 | | X | 2.46 | 2.85 | 3.18 | 3.49 | 3.76 | 4.02 | 4.50 | 5.03 | 5.51 | 6.36 | 7.12 | 7.79 | 8.42 | 9.00 |

### METRIC UNITS

| Spray Nozzle Size | 1/8" NPT | 1/4" NPT | Flow Rate (L/min) Pressure (BAR) 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 100 | 150 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 02 | X | X | 1.77 | 2.04 | 2.50 | 2.88 | 3.22 | 3.53 | 3.81 | 4.08 | 4.56 | 5.58 | 6.45 |
| 03 | X | X | 2.65 | 3.06 | 3.75 | 4.32 | 4.84 | 5.30 | 5.72 | 6.12 | 6.84 | 8.38 | 9.67 |
| 035 | X | X | 3.09 | 3.57 | 4.37 | 5.05 | 5.64 | 6.18 | 6.67 | 7.14 | 7.98 | 9.77 | 11.20 |
| 04 | X | X | 3.53 | 4.08 | 4.99 | 5.77 | 6.45 | 7.06 | 7.63 | 8.16 | 9.12 | 11.10 | 12.80 |
| 045 | X | X | 3.97 | 4.59 | 5.62 | 6.49 | 7.25 | 7.95 | 8.58 | 9.17 | 10.20 | 12.50 | 14.50 |
| 05 | X | X | 4.41 | 5.10 | 6.24 | 7.21 | 8.06 | 8.83 | 9.54 | 10.10 | 11.40 | 13.90 | 16.10 |
| 055 | X | X | 4.86 | 5.61 | 6.87 | 7.93 | 8.86 | 9.71 | 10.40 | 11.20 | 12.50 | 15.30 | 17.70 |
| 06 | X | X | 5.30 | 6.12 | 7.49 | 8.65 | 9.67 | 10.50 | 11.40 | 12.20 | 13.60 | 16.70 | 19.30 |
| 065 | X | X | 5.74 | 6.63 | 8.12 | 9.37 | 10.40 | 11.40 | 12.40 | 13.20 | 14.80 | 18.10 | 20.90 |
| 07 | X | X | 6.18 | 7.14 | 8.74 | 10.00 | 11.20 | 12.30 | 13.30 | 14.20 | 15.90 | 19.50 | 22.50 |
| 075 | X | X | 6.62 | 7.65 | 9.36 | 10.80 | 12.00 | 13.20 | 14.30 | 15.20 | 17.10 | 20.90 | 24.10 |
| 08 | X | X | 7.06 | 8.16 | 9.99 | 11.50 | 12.80 | 14.10 | 15.20 | 16.30 | 18.20 | 22.30 | 25.70 |
| 085 | X | | 7.50 | 8.66 | 10.60 | 12.20 | 13.70 | 15.00 | 16.20 | 17.30 | 19.30 | 23.70 | 27.40 |
| 09 | | X | 7.95 | 9.17 | 11.20 | 12.90 | 14.50 | 15.80 | 17.10 | 18.30 | 20.50 | 25.10 | 29.00 |

# FP-FULCOJET™ FULL CONE NOZZLE

- Precision-molded orifice provides accurate and consistent full cone spray pattern
- Widely used 1/8" and 1/4" NPT or 1/8" and 1/4" BSP connections
- Available in a variety of standard flow and cone angle options to fit application requirements
- Color coded by flow rate to simplify nozzle installation and replacement
- Excellent wear and chemically-resistant Solef® Polyvinylidene Fluoride (PVDF) polymer
- Ideal for low pressure rinsing, washing, coating, cooling, and additive application

## US UNITS

| Nozzle | Thread | Color | Cone Angle @ 15 PSI | Flow Rate (Gallons per Minute) of Water at 68°F | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pressure (PSI) | | | | | | | | | | | |
| | | | | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 125 | 150 |
| 90A1FP1.0 | 1/8" NPT | Orange | 45° | 0.10 | 0.14 | 0.16 | 0.19 | 0.21 | 0.22 | 0.24 | 0.25 | 0.27 | 0.28 | 0.31 | 0.34 |
| 90A1FP1.5 | 1/8" NPT | Red | 55° | 0.15 | 0.20 | 0.25 | 0.28 | 0.31 | 0.34 | 0.36 | 0.38 | 0.40 | 0.42 | 0.47 | 0.51 |
| 90A1FP2.0 | 1/8" NPT | Light Blue | 60° | 0.20 | 0.27 | 0.33 | 0.37 | 0.41 | 0.45 | 0.48 | 0.51 | 0.54 | 0.56 | 0.62 | 0.68 |
| 90A1FP3.0 | 1/8" NPT | Lime Green | 50° | 0.30 | 0 .41 | 0.49 | 0.56 | 0.62 | 0.67 | 0.72 | 0.76 | 0.81 | 0.85 | 0.93 | 1.01 |
| 90A1FP3.5 | 1/8" NPT | Terracotta | 60° | 0.35 | 0.48 | 0.57 | 0.65 | 0.72 | 0.78 | 0.84 | 0.89 | 0.94 | 0.99 | 1.09 | 1.18 |
| 90A1FP5.0 | 1/8" NPT | Blue | 80° | 0.50 | 0.68 | 0.82 | 0.93 | 1.03 | 1.12 | 1.20 | 1.27 | 1.34 | 1.41 | 1.56 | 1.69 |
| 90A2FP6.5 | 1/4" NPT | Purple | 50° | 0.65 | 0.89 | 1.07 | 1.21 | 1.34 | 1.46 | 1.56 | 1.66 | 1.75 | 1.83 | 2.03 | 2.20 |
| 90A2FP10 | 1/4" NPT | Olive Green | 70° | 1.00 | 1.37 | 1.64 | 1.87 | 2.06 | 2.24 | 2.40 | 2.55 | 2.69 | 2.82 | 3.12 | 3.38 |

**Sample Part Number: 90A1FP2.0**

Breakdown:

| material | thread | family | nozzle size |
|---|---|---|---|
| 90 = PVDF | A1 = 1/8" NPT<br>A2 = 1/4" NPT<br>B1 = 1/8" BSP<br>B2 = 1/4" BSP | FP | see table |

## METRIC UNITS

| Nozzle | Thread | Color | Cone Angle @ 1 Bar | Flow Rate (L/min) of Water at 20°C | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pressure (BAR) | | | | | | | |
| | | | | 0.5 | 1 | 2 | 3 | 4 | 5 | 7 | 10 |
| 90B1FP1 | 1/8" BSP | Orange | 45° | 0.32 | 0.46 | 0.64 | 0.79 | 0.91 | 1.02 | 1.21 | 1.44 |
| 90B1FP1.3W | 1/8" BSP | Natural | 90° | 0.42 | 0.59 | 0.84 | 1.03 | 1.19 | 1.33 | 1.57 | 1.87 |
| 90B1FP1.5 | 1/8" BSP | Red | 55° | 0.48 | 0.68 | 0.97 | 1.18 | 1.37 | 1.53 | 1.81 | 2.16 |
| 90B1FP2 | 1/8" BSP | Light Blue | 60° | 0.64 | 0.91 | 1.29 | 1.58 | 1.82 | 2.04 | 2.41 | 2.88 |
| 90B1FP2W | 1/8" BSP | Light Blue | 90° | 0.64 | 0.91 | 1.29 | 1.58 | 1.82 | 2.04 | 2.41 | 2.88 |
| 90B1FP3 | 1/8" BSP | Lime Green | 50° | 0.97 | 1.37 | 1.93 | 2.37 | 2.74 | 3.06 | 3.62 | 4.32 |
| 90B1FP3.5 | 1/8" BSP | Terracotta | 60° | 1.13 | 1.60 | 2.26 | 2.76 | 3.19 | 3.57 | 4.22 | 5.05 |
| 90B1FP3.7W | 1/8" BSP | Gray | 120° | 1.19 | 1.69 | 2.39 | 2.92 | 3.37 | 3.77 | 4.46 | 5.33 |
| 90B1FP5 | 1/8" BSP | Blue | 80° | 1.61 | 2.28 | 3.22 | 3.95 | 4.56 | 5.10 | 6.03 | 7.21 |
| 90B2FP6.5 | 1/4" BSP | Purple | 50° | 2.10 | 2.96 | 4.19 | 5.13 | 5.93 | 6.63 | 7.84 | 9.37 |
| 90B2FP10 | 1/4" BSP | Olive Green | 70° | 3.22 | 4.56 | 6.45 | 7.90 | 9.12 | 10.1 | 12.0 | 14.4 |

# FANJET™ - FLAT FAN PVDF NOZZLE

- Most popular selling nozzle for lower pressure car wash applications
- Chemically-resistant Polyvinylidene Fluoride (PVDF) polymer
- Pressures up to 500 PSI
- Available spray angles: 0˚, 15˚, 25˚, 40˚, 65˚, 80˚, 110˚
- One-piece male 1/4" NPT and 1/4" or 1/8" BSP
- Hex body prevents distortion of the orifice and provides quick and easy installation
- Part number is molded into front of nozzle

## AVAILABLE SPRAY ANGLES*

[X] Available [ ] Contact Factory

| Degree | | Size | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 01 | 015 | 02 | 025 | 03 | 04 | 05 | 06 | 07 | 08 | 10 | 15 | 20 | 30 | 40 | 50 |
| 1/4" NPT | 0˚ | | | X | | X | X | X | X | X | | X | X | X | X | | |
| | 25˚ | X | X | X | | X | X | X | X | X | X | X | X | X | X | | |
| | 40˚ | X | X | X | | X | X | X | X | X | X | X | X | X | X | X | |
| | 65˚ | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | 80˚ | X | X | X | | X | X | X | X | | X | X | X | X | X | X | |

*For additional sizes, please contact Technical/Applications at 1-800-445-8360

**Sample Part Number: 90A2CM04E80**

Breakdown:

| 90 | A2 | CM | 04 | E | 80 |
|---|---|---|---|---|---|
| material | thread | model | nozzle size | pattern | fan angle degrees |
| 90 = PVDF | A1 = 1/8" NPT<br>A1 = 1/8" NPT<br>B1 = 1/8" BSP<br>B2 = 1/4" BSP | NPT | | even fan | |

| Spray Nozzle Size | Color | Flow Rate, (US GPM) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pressure (PSI) | | | | | | | | | | | |
| | | 30 | 40 | 50 | 60 | 70 | 80 | 100 | 150 | 200 | 300 | 400 | 500 |
| 01 | Gray | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 | 0.16 | 0.19 | 0.22 | 0.27 | 0.32 | 0.35 |
| 015 | Gray | 0.13 | 0.15 | 0.17 | 0.18 | 0.20 | 0.21 | 0.24 | 0.29 | 0.34 | 0.41 | 0.47 | 0.53 |
| 02 | Gray | 0.17 | 0.20 | 0.22 | 0.24 | 0.26 | 0.28 | 0.32 | 0.39 | 0.45 | 0.55 | 0.63 | 0.71 |
| 025 | Gray | 0.22 | 0.25 | 0.28 | 0.31 | 0.33 | 0.35 | 0.40 | 0.48 | 0.56 | 0.68 | 0.79 | 0.88 |
| 03 | Gray | 0.26 | 0.30 | 0.34 | 0.37 | 0.40 | 0.42 | 0.47 | 0.58 | 0.67 | 0.82 | 0.95 | 1.06 |
| 04 | Gray | 0.35 | 0.40 | 0.45 | 0.49 | 0.53 | 0.57 | 0.63 | 0.77 | 0.89 | 1.10 | 1.26 | 1.41 |
| 05 | Gray | 0.43 | 0.50 | 0.56 | 0.61 | 0.66 | 0.71 | 0.79 | 0.97 | 1.12 | 1.37 | 1.58 | 1.77 |
| 06 | Gray | 0.52 | 0.60 | 0.67 | 0.73 | 0.79 | 0.85 | 0.95 | 1.16 | 1.34 | 1.64 | 1.90 | 2.12 |
| 07 | Gray | 0.61 | 0.70 | 0.78 | 0.86 | 0.93 | 0.99 | 1.11 | 1.36 | 1.57 | 1.92 | 2.21 | 2.47 |
| 08 | Gray | 0.69 | 0.80 | 0.89 | 0.98 | 1.06 | 1.13 | 1.26 | 1.55 | 1.79 | 2.19 | 2.53 | 2.83 |
| 10 | Gray | 0.87 | 1.00 | 1.12 | 1.22 | 1.32 | 1.41 | 1.58 | 1.94 | 2.24 | 2.74 | 3.16 | 3.54 |
| 15 | Gray | 1.30 | 1.50 | 1.68 | 1.84 | 1.98 | 2.12 | 2.37 | 2.90 | 3.35 | 4.11 | 4.74 | 5.30 |
| 20 | Gray | 1.73 | 2.00 | 2.24 | 2.45 | 2.65 | 2.83 | 3.16 | 3.87 | 4.47 | 5.48 | 6.32 | 7.07 |
| 30 | Gray | 2.60 | 3.00 | 3.35 | 3.67 | 3.97 | 4.24 | 4.74 | 5.81 | 6.71 | 8.22 | 9.49 | 10.61 |
| 40 | Gray | 3.46 | 4.00 | 4.47 | 4.90 | 5.29 | 5.66 | 6.32 | 7.75 | 8.94 | 10.95 | 12.65 | 14.14 |
| 50 | Gray | 4.33 | 5.00 | 5.59 | 6.12 | 6.61 | 7.07 | 7.91 | 9.68 | 11.18 | 13.69 | 15.81 | 17.68 |

| Spray Nozzle Size | Color | Flow rate, (L/min) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Pressure (BAR) | | | | | | |
| | | 0.5 | 1 | 2 | 3 | 4 | 5 | 7 |
| 02 | Gray | 0.33 | 0.46 | 0.65 | 0.80 | 0.92 | 1.03 | 1.22 |
| 03 | Gray | 0.49 | 0.69 | 0.98 | 1.20 | 1.39 | 1.55 | 1.83 |
| 04 | Gray | 0.65 | 0.92 | 1.31 | 1.60 | 1.85 | 2.07 | 2.44 |
| 05 | Gray | 0.82 | 1.15 | 1.63 | 2.00 | 2.31 | 2.58 | 3.06 |
| 06 | Gray | 0.98 | 1.39 | 1.96 | 2.40 | 2.77 | 3.10 | 3.67 |
| 08 | Gray | 1.31 | 1.85 | 2.61 | 3.20 | 3.70 | 4.13 | 4.89 |
| 10 | Gray | 1.63 | 2.31 | 3.27 | 4.00 | 4.62 | 5.16 | 6.11 |
| 15 | Gray | 2.45 | 3.46 | 4.90 | 6.00 | 6.93 | 7.75 | 9.17 |
| 20 | Gray | 3.27 | 4.62 | 6.53 | 8.00 | 9.24 | 10.3 | 12.2 |
| 30 | Gray | 4.90 | 6.93 | 9.80 | 12.0 | 13.8 | 15.4 | 18.3 |
| 40 | Gray | 6.53 | 9.24 | 13.0 | 16.0 | 18.4 | 20.6 | 24.4 |
| 50 | Gray | 8.16 | 11.5 | 16.3 | 20.0 | 23.0 | 25.8 | 30.5 |

PVDF CM nozzles can also be ordered in colours. Minimum order quantity is 1000 nozzles.

# MISTING NOZZLES - F, PF, AFD, AF, HAF

The Hypro® range of misting nozzles produce a high percentage of droplets smaller than 50 microns making the sprays suitable for humidification and evaporative cooling. They are chemically resistant to also allow use with pesticides, disinfectants, and odor control agents as well as dust suppression.

- A variety of connection options match most applications
- Corrosion-resistant construction
- Strainers are included on many models to extend service life
- Anti-drip checks are standard in PF and AFD models

## FLANGED NOZZLES: F-FLAT FAN

| Part Number (Nozzle Only) | Color | Spray Angle | US gal/hr @ pressure (PSI) | | | | | L/hr@ pressure (bar) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 40 | 60 | 75 | 100 | 150 | 3 | 4 | 6 | 8 | 10 |
| F65-005 | White | 65 | 2.89 | 3.54 | 3.96 | 4.57 | 5.60 | 11,59 | 13,38 | 16,39 | 18,93 | 21,16 |
| F80-0067 | Olive Green | 80 | 4.00 | 4.90 | 5.48 | 6.32 | 7.75 | 16,04 | 18,52 | 22,68 | 26,19 | 29,28 |

| Features | |
|---|---|
| Common Use | Cooling & Humidification |
| Pattern | Fan or Hollow Cone |
| Technology | Elliptical Orifice or Swirl |
| Material | Polyacetal |
| Spray Angle | 65-110° |
| Pressure Range | 40-150 PSI (3-10 BAR) |
| Configuration | Nozzles, Push-fit, or MNPT |

## RETAINING NUTS FOR FLANGED TIPS

| Part Number | Description |
|---|---|
| 251032WH | 3/8 inch BSP Retaining Nut White Polypropylene |
| 251032GY | 3/8 inch BSP Retaining Nut Gray Polypropylene |
| 251032BL | 3/8 inch BSP Retaining Nut Black Polypropylene |

## PUSH-FIT ANTI-DRIP NOZZLE: PF-HOLLOW CONE 3/8"

| Part Number w/ Cup Strainer | Color | Spray Angle | US gal/hr @ pressure (PSI) | | | | | L/hr@ pressure (bar) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 40 | 60 | 75 | 100 | 150 | 3 | 4 | 6 | 8 | 10 |
| 30PFAF013-105 | White | 105 | 1.27 | 1.56 | 1.74 | 2.01 | 2.46 | 5,09 | 5,88 | 7,20 | 8,31 | 9,29 |
| 30PFAF013-105BL | Black | 105 | 1.27 | 1.56 | 1.74 | 2.01 | 2.46 | 5,09 | 5,88 | 7,20 | 8,31 | 9,29 |

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## MISTING NOZZLE ACCESSORIES FOR PUSH-FIT ANTI-DRIP NOZZLES

| Reference Number | Part Number | Description |
|---|---|---|
| 1 | 3219Q03269 | Push-in Porous Plastic 250 Mesh Post Filter |
| 2 | 141418 | Barbed Tee 1/8 inch FNPT x 1/4 inch Barbs Black (6 mm) |
| 2 | 383818 | Barbed Tee 1/8 inch FNPT x 3/8 inch Barbs Black (6 mm) |
| 3 | 1212S18 | Push-in Tee 1/2 inch SLIP x 1/2 inch SLIP x 1/8 inch (F) |

## 1/8"MNPT ANTI-DRIP NOZZLE: AFD-HOLLOW CONE

| Color | Spray Angle | US gal/hr @ pressure (PSI) | | | | | L/hr@ pressure (bar) | | | | | Part Number Nozzle Only | Part Number with Cup Strainer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 40 | 60 | 75 | 100 | 150 | 3 | 4 | 6 | 8 | 10 | | |
| Gray | 80 | 0.72 | 0.88 | 0.99 | 1.14 | 1.39 | 2,76 | 3,19 | 3,91 | 4,51 | 5,05 | 301AFD0.7-80 | CS301AFD0.7-80 |
| Cream | 105 | 1.20 | 1.47 | 1.64 | 1.90 | 2.32 | 4,74 | 5,47 | 6,70 | 7,74 | 8,65 | 301AFD1.2-105 | CS301AFD1.2-105 |
| Blue | 100 | 1.68 | 2.06 | 2.30 | 2.66 | 3.25 | 6,32 | 7,29 | 8,93 | 10,32 | 11,53 | 301AFD1.6-100 | - |

## 1/8" MNPT NOZZLE: AF-HOLLOW CONE

| Color | Spray Angle | US gal/hr @ pressure (PSI) | | | | | L/hr@ pressure (bar) | | | | | Part Number Nozzle Only | Part Number with SS Cup Strainer | Part Number with SS Post Strainer | Part Number with Plastic Filter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 40 | 60 | 75 | 100 | 150 | 3 | 4 | 6 | 8 | 10 | | | | |
| White | 65 | 0.48 | 0.59 | 0.66 | 0.76 | 0.93 | 1,58 | 1,82 | 2,23 | 2,58 | 2,88 | 301AF0.4-65 | CS301AF0.4-65 | 301AFUSA0.5 | PP301AF0.4-65 |
| Gray | 80 | 0.72 | 0.88 | 0.99 | 1.14 | 1.39 | 2,76 | 3,19 | 3,91 | 4,51 | 5,05 | 301AF0.7-80 | CS301AF0.7-80 | 301AFUSA1.0 | PP301AF0.7-80 |
| White | 80 | 0.72 | 0.88 | 0.99 | 1.14 | 1.39 | 2,76 | 3,19 | 3,91 | 4,51 | 5,05 | 301AF0.7-80W | CS301MNF-W | 301MNF-W | PP301AF0.7-80W |
| Cream | 105 | 1.20 | 1.47 | 1.64 | 1.90 | 2.32 | 4,74 | 5,47 | 6,70 | 7,74 | 8,65 | 301AF1.2-105C | CS301AF1.2-105C | 301AFUSA2.0 | PP301AF1.2-105C |
| Blue | 100 | 1.68 | 2.06 | 2.30 | 2.66 | 3.25 | 6,32 | 7,29 | 8,93 | 10,32 | 11,53 | 301AF1.6-100 | CS301AF1.6-100 | 301AFUSA3.0 | PP301AF1.6-100 |
| Yellow | 70 | 5.00 | 6.12 | 6.85 | 7.91 | 9.68 | 10,26 | 11,85 | 14,51 | 16,76 | 18,74 | 301AF5.0-70 | - | - | - |

## FLANGED NOZZLES: HAF-HOLLOW CONE

| Part Number Nozzle Only | Color | Spray Angle | US gal/hr @ pressure (PSI) | | | | | L/hr@ pressure (bar) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 40 | 60 | 75 | 100 | 150 | 3 | 4 | 6 | 8 | 10 |
| 30HAF01110 | White | 110 | 1.00 | 1.22 | 1.37 | 1.58 | 1.94 | 4,01 | 4,63 | 5,67 | 6,55 | 7,32 |
| 30HAF01-65 | Cream | 65 | 1.00 | 1.22 | 1.37 | 1.58 | 1.94 | 4,01 | 4,63 | 5,67 | 6,55 | 7,32 |
| 30HAF01480 | Mint Green | 80 | 1.43 | 1.75 | 1.96 | 2.26 | 2.77 | 5,73 | 6,62 | 8,10 | 9,36 | 10,46 |
| 30HAF01570 | White | 70 | 1.51 | 1.85 | 2.07 | 2.39 | 2.92 | 6,05 | 6,99 | 8,56 | 9,88 | 11,05 |

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## MISTING NOZZLE ACCESSORIES FOR 1/8" MNPT NOZZLE

| Reference Number | Part Number | Description |
|---|---|---|
| **1** | 32100200 | Cup Strainer 200 Mesh (Fits Rear of Threaded Misting Nozzles) |
| **2** | 32PIFA250 | Push-in 200 Mesh Post Strainer |
| **3** | 27101612 | 3/8 inch BSP x 1/2 inch Wet Boom Body |

# FLAT FAN SPRAY NOZZLES - EVEN 80°

## For Knapsack/Backpack Sprayers

The Hypro Even Flat Fan spray nozzle creates a consistent pattern that is ideal for single nozzle applications.

- Commonly used with knapsack sprayers for precise control
- 80° angle distributes a medium fine spray evenly across the swath
- Mixed droplet spectrum is ideal for all targets
- One piece design

| Nozzle Size | Droplet Size | Spray Angle | Spray Width 20 in height (in) | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre (Single Nozzle Applications) MPH 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|
| 01 | F | 80 | 34 | 20.0 | 0.086 | 15.3 | 7.6 | 5.1 | 3.8 |
| | F | | | 30.0 | 0.098 | 17.3 | 8.7 | 5.8 | 4.3 |
| | F | | | 40.0 | 0.106 | 18.7 | 9.4 | 6.2 | 4.7 |
| 015 | F | 80 | 34 | 20.0 | 0.129 | 22.9 | 11.5 | 7.6 | 5.7 |
| | F | | | 30.0 | 0.145 | 25.7 | 12.9 | 8.6 | 6.4 |
| | F | | | 40.0 | 0.159 | 28.1 | 14.0 | 9.4 | 7.0 |
| 02 | M | 80 | 34 | 20.0 | 0.173 | 30.5 | 15.3 | 10.2 | 7.6 |
| | F | | | 30.0 | 0.193 | 34.1 | 17.1 | 11.4 | 8.5 |
| | F | | | 40.0 | 0.211 | 37.4 | 18.7 | 12.5 | 9.4 |
| 03 | M | 80 | 34 | 20.0 | 0.259 | 45.8 | 22.9 | 15.3 | 11.5 |
| | M | | | 30.0 | 0.291 | 51.4 | 25.7 | 17.1 | 12.9 |
| | F | | | 40.0 | 0.317 | 56.1 | 28.1 | 18.7 | 14.0 |

Droplet size based on ASABE S572.1 standard.
Application rates shown reflect single nozzle applications at walking speeds.

| Features | |
|---|---|
| Common Use | Knapsack |
| Pattern | Even Flat Fan |
| Technology | Elliptical Orifice |
| Material | Polyacetal |
| Spray Angle | 80° |
| Pressure Range | 20-40 PSI (2-3 BAR) |
| Configuration | Nozzle |

| Part Numbers (Bags of 10) | |
|---|---|
| Nozzles 80° | Caps (25 Pack) |
| E80-01 | CAP00-01 |
| E80-015 | CAP00-015 |
| E80-02 | CAP00-02 |
| E80-03 | CAP00-03 |

| Nozzle Size | Droplet Size | Spray Angle | Spray Width 50 cm height (m) | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/ha (Single Nozzle Applications) KM/H 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|
| 01 | F | 80 | 0.8 | 2 | 0.327 | 117 | 78 | 58 | 47 |
| | F | | | 2.5 | 0.370 | 132 | 88 | 66 | 53 |
| | F | | | 3 | 0.400 | 143 | 95 | 72 | 57 |
| 015 | F | 80 | 0.8 | 2 | 0.490 | 175 | 117 | 88 | 70 |
| | F | | | 2.5 | 0.550 | 197 | 131 | 98 | 79 |
| | F | | | 3 | 0.600 | 215 | 143 | 107 | 86 |
| 02 | M | 80 | 0.8 | 2 | 0.653 | 234 | 156 | 117 | 93 |
| | F | | | 2.5 | 0.730 | 261 | 174 | 130 | 104 |
| | F | | | 3 | 0.800 | 286 | 191 | 143 | 114 |
| 03 | M | 80 | 0.8 | 2 | 0.980 | 350 | 234 | 175 | 140 |
| | M | | | 2.5 | 1.100 | 393 | 262 | 197 | 157 |
| | F | | | 3 | 1.200 | 429 | 286 | 215 | 172 |

Droplet size based on ASABE S572.1 standard.
Application rates shown reflect single nozzle applications at walking speeds.

# DEFLECTIP AND POLIJET 53°-127°

## For Knapsack/Backpack Sprayers

The DeflecTip and PoliJet wide-angle flood fan nozzle creates a wide pattern at very low pressures while creating mainly medium and coarse droplets. It is well suited for sprayers using very low pressures, including manual sprayers.

- Different spray angles offer a choice of swath widths
- PoliJet nozzles are designed for knapsack applications, giving a low drift, course, even spray
- Circular orifice reduces the chances of blocking

### US UNITS: DEFLECTIP

| Nozzle Size | Droplet Size | Spray Angle | Spray Width 15 in height (in) | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre (Single Nozzle Application) MPH 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|
| DT0.5 | C | 72° | 23 | 15 | 0.05 | 73.3 | 48.5 | 36.7 | 29.2 |
| | M | 82° | 27 | 22 | 0.06 | 74.6 | 49.7 | 37.3 | 29.8 |
| | F | 89° | 31 | 30 | 0.07 | 76.4 | 51.0 | 38.5 | 30.4 |
| DT0.75 | VC | 85° | 28 | 15 | 0.07 | 87.0 | 57.8 | 43.5 | 34.8 |
| | M | 93° | 33 | 22 | 0.09 | 92.6 | 61.5 | 46.6 | 37.3 |
| | M | 100° | 37 | 30 | 0.11 | 94.4 | 62.8 | 47.2 | 37.9 |
| DT1.0 | M | 100° | 37 | 15 | 0.10 | 88.9 | 59.7 | 44.7 | 35.4 |
| | M | 108° | 43 | 22 | 0.12 | 94.4 | 62.8 | 47.2 | 37.9 |
| | M | 112° | 47 | 30 | 0.14 | 101.3 | 67.7 | 51.0 | 40.4 |
| DT1.5 | M | 105° | 41 | 1 | 0.15 | 122.4 | 81.4 | 60.9 | 49.1 |
| | M | 111° | 46 | 1.5 | 0.18 | 134.2 | 89.5 | 67.1 | 53.4 |
| | M | 114° | 48 | 2 | 0.21 | 146.6 | 97.6 | 73.3 | 58.4 |

Droplet size is based on ASABE S572.1 standard.

### METRIC UNITS: DEFLECTIP

| Nozzle Size | Droplet Size | Spray Angle | Spray Width 40 cm height (m) | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/ha (Single Nozzle Application) KM/H 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|
| DT0.5 | C | 72° | 0.58 | 1 | 0.23 | 118 | 78 | 59 | 47 |
| | M | 82° | 0.70 | 1.5 | 0.28 | 120 | 80 | 60 | 48 |
| | F | 89° | 0.79 | 2 | 0.32 | 123 | 82 | 62 | 49 |
| DT0.75 | VC | 85° | 0.73 | 1 | 0.34 | 140 | 93 | 70 | 56 |
| | M | 93° | 0.84 | 1.5 | 0.42 | 149 | 99 | 75 | 60 |
| | M | 100° | 0.95 | 2 | 0.48 | 152 | 101 | 76 | 61 |
| DT1.0 | M | 100° | 0.95 | 1 | 0.46 | 143 | 96 | 72 | 57 |
| | M | 108° | 1.10 | 1.5 | 0.56 | 152 | 101 | 76 | 61 |
| | M | 112° | 1.19 | 2 | 0.64 | 163 | 109 | 82 | 65 |
| DT1.5 | M | 105° | 1.04 | 1 | 0.68 | 197 | 131 | 98 | 79 |
| | M | 111° | 1.16 | 1.5 | 0.84 | 216 | 144 | 108 | 86 |
| | M | 114° | 1.23 | 2 | 0.97 | 236 | 157 | 118 | 94 |

Droplet size is based on ASABE S572.1 standard.

### US UNITS: POLIJET

| Nozzle Size | ASABE Droplet Size | Spray Angle | Spray Width 20 in height (in) | Pressure (PSI) | Flow Rate (GPM) | Gallons per Acre (Single Nozzle Application) MPH 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|
| AN0.6 | C | 53° | 20 @ 40 PSI | 10.0 | 0.16 | 47.2 | 23.6 | 15.7 | 11.8 |
| | M | | | 20.0 | 0.22 | 66.7 | 33.4 | 22.2 | 16.7 |
| | M | | | 40.0 | 0.27 | 81.7 | 40.9 | 27.2 | 20.4 |
| AN1.2 | C | 90° | 40 @ 40 PSI | 10.0 | 0.32 | 47.0 | 23.5 | 15.7 | 11.8 |
| | M | | | 20.0 | 0.45 | 66.5 | 33.3 | 22.2 | 16.6 |
| | M | | | 40.0 | 0.55 | 81.5 | 40.7 | 27.2 | 20.4 |
| AN1.8 | C | 113° | 60 @ 40 PSI | 10.0 | 0.48 | 47.2 | 23.6 | 15.7 | 11.8 |
| | C | | | 20.0 | 0.67 | 66.7 | 33.3 | 22.2 | 16.7 |
| | C | | | 40.0 | 0.82 | 81.7 | 40.8 | 27.2 | 20.4 |
| AN2.4 | C | 127° | 80 @ 40 PSI | 10.0 | 0.63 | 46.9 | 23.5 | 15.6 | 11.7 |
| | C | | | 20.0 | 0.90 | 66.3 | 33.2 | 22.1 | 16.6 |
| | C | | | 40.0 | 1.10 | 81.3 | 40.6 | 27.1 | 20.3 |

Droplet size is based on ASABE S572.1 standard.

### METRIC UNITS: POLIJET

| Nozzle Size | BCPC Droplet Size | Spray Angle | Spray Width 50 cm height (m) | Pressure (BAR) | Flow Rate (LPM) | Application Rate L/ha (Single Nozzle Application) KM/H 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|
| AN0.6 | C | 53° | 0.5 @ 3 BAR | 1 | 0.60 | 361 | 241 | 181 | 144 |
| | M | | | 2 | 0.85 | 511 | 340 | 255 | 204 |
| | M | | | 3 | 1.04 | 625 | 417 | 313 | 250 |
| AN1.2 | C | 90° | 1.0 @ 3 BAR | 1 | 1.20 | 360 | 240 | 180 | 144 |
| | M | | | 2 | 1.70 | 509 | 339 | 255 | 204 |
| | M | | | 3 | 2.08 | 624 | 416 | 312 | 249 |
| AN1.8 | C | 113° | 1.5 @ 3 BAR | 1 | 1.80 | 361 | 241 | 180 | 144 |
| | C | | | 2 | 2.55 | 510 | 340 | 255 | 204 |
| | C | | | 3 | 3.12 | 625 | 417 | 312 | 250 |
| AN2.4 | C | 127° | 2.0 @ 3 BAR | 1 | 2.40 | 359 | 239 | 179 | 144 |
| | C | | | 2 | 3.39 | 508 | 338 | 254 | 203 |
| | C | | | 3 | 4.16 | 622 | 415 | 312 | 249 |

**BCPC CODING** FINE MEDIUM COARSE

BCPC droplet size based on BCPC standard.
Application rates shown reflect single nozzle applications at walking speeds.

| Features | |
|---|---|
| Common Use | Knapsack |
| Pattern | Flood |
| Technology | Deflection |
| Material | Polyacetal |
| Spray Angle | 53°-142° |
| Pressure Range | 15-45 PSI (1-2 BAR) |
| Configuration | Nozzle |

| DT Part Numbers (Bags of 10) | |
|---|---|
| **Nozzles** | **Caps (25 Pack)** |
| 30DT0.5 | CAP30-20 |
| 30DT0.75 | CAP30-20 |
| 30DT1.0 | CAP30-20 |
| 30DT1.5 | CAP30-20 |

| AN Part Numbers | |
|---|---|
| **Nozzles** | **Caps (25 Pack)** |
| 30AN0.6 | CAP30-20 |
| 30AN01.2 | CAP30-20 |
| 30AN01.8 | CAP30-20 |
| 30AN02.4 | CAP30-20 |

# SPRAY NOZZLE CAPS AND ADAPTERS

Hypro® caps provide trouble-free spray nozzle installation and sealing on Hypro ProFlo nozzle bodies and several other common makes.

- Color-coded to ISO standards for nozzle flow to simplify nozzle selection and identification in the field
- Available in configurations optimized to fit a variety of spray nozzle geometries
- Caps for fan pattern nozzles automatically align nozzles for enhanced spray uniformity

| | ISO Standard Fan | SnapLock ISO Standard Fan | Hardi® | Deflect Nozzle No-offset | European Fan (Thick body) | Standard Round (Non-aligning) | Albuz® Round (Thick flange) | Shut-off | Threaded | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fits:** | ULD, 3D,GA, LD, VP, TR, OC, F, E, AXI, ADI, OCI | ULD, 3D,GA, LD, VP, TR, OC, F, E, AXI, ADI, OCI | ULD, GA, LD, VP, TR, OC, F, E, AXI, ADI, OCI | DT, PoliJet | AVI, AVI-TWIN, ESI, APG, APE | HCX, FCX DC/CR, HAF, APM flanged hose barbs | Ceramic Disc, ATR, HCA, TVI | Blank | 1/4"FNPT | Std. Pack |
| **Black** | CAP00-20 | CAP11-20 | 16842490 | CAP30-20 | CAP01-20 | CAP04-20 | CAP05-20<br>30Q2603-20 | CAP09-20 | CAP10-20 | 10 |
| **Orange** | CAP00-01 | CAP11-01 | - | - | CAP01-01 | CAP04-01 | CAP05-01 | - | - | 10 |
| **Green** | CAP00-015 | CAP11-015 | - | - | CAP01-015 | CAP04-015 | CAP05-015 | - | - | 10 |
| **Yellow** | CAP00-02 | CAP11-02 | - | - | CAP01-02 | CAP04-02 | CAP05-02 | - | - | 10 |
| **Lilac** | CAP00-025 | CAP11-025 | - | - | CAP01-025 | CAP04-025 | CAP05-025 | - | - | 10 |
| **Blue** | CAP00-03 | CAP11-03 | - | - | CAP01-03 | CAP04-03 | CAP05-03 | - | - | 10 |
| **Brown Red** | CAP00-035 | CAP11-035 | - | - | - | - | - | - | - | 10 |
| **Red** | CAP00-04 | CAP11-04 | - | - | CAP01-04 | CAP04-04 | CAP05-04 | - | - | 10 |
| **Brown** | CAP00-05 | CAP11-05 | - | - | CAP01-05 | CAP04-05 | CAP05-05 | - | - | 10 |
| **Gray** | CAP00-06 | CAP11-06 | - | - | CAP01-06 | CAP04-06 | CAP05-06 | - | - | 10 |
| **White** | CAP00-08 | CAP11-08 | - | - | CAP01-08 | CAP04-08 | CAP05-08 | - | - | 10 |
| **Light Blue** | CAP00-10 | CAP11-10 | - | - | CAP01-10 | CAP04-10 | - | - | - | 10 |
| **Lime Green** | CAP00-15 | CAP11-15 | - | - | CAP01-15 | CAP04-15 | - | - | - | 10 |
| **Included EPDM seal** | 10BG-2270-0150 | 10BG-2270-0150 | 16842491 | 10BG-2270-0150 | - | - | - | - | - | - |
| **Included EPDM o-ring** | - | - | - | - | - | - | 402105-030 | - | - | - |
| **Included Nitrile seal** | - | - | - | - | - | - | - | 65-BS205 | - | - |

Available for order through HYPRO-EU only (Cambridge,UK)

## PUSH-TO-CONNECT SPRAY CAPS

| Push-to-Connect (PTC) Cap Part Numbers | | | Gasket Type | Gasket part Number |
|---|---|---|---|---|
| Size | 25 Std. Pack | 1 Per Bag | | |
| 5/16" | 4200-0082 | BG-4200-0082 | Std | 10BG-2270-0150 |
| 5/16" | 4200-0083 | BG-4200-0083 | Split | 10BG-1700-0255 |
| 1/4" | 4200-0060 | BG-4200-0060 | Std | 10BG-2270-0150 |
| 3/8" | 4200-0061 | BG-4200-0061 | Std | 10BG-2270-0150 |
| 1/4" | 4200-0062 | BG-4200-0062 | Split | 10BG-1700-0255 |
| 3/8" | 4200-0063 | BG-4200-0063 | Split | 10BG-1700-0255 |

## ELBOW AND DOUBLE ADAPTERS FOR SPRAY NOZZLE CAP

| Part number | Description |
|---|---|
| 4200N-0017 | 45 Double w/ Gasket |
| 4200N-0018 | 90 Elbow w/ Gasket |
| 2270-0136 | Cap Filler Disk |
| CAP-EXT-BAG10 | Spacer Cap (Bag of 10) |

## HARDI® AND JACTO® ADAPTERS

| Part Number | Adapters For | Description |
|---|---|---|
| 9950-0024 | Hardi | 10 pack of adapters for converting nozzle body to accept Hypro cap |
| 9950-0027 | Jacto | |

Hardi is a registered trademark of Hardi International A/S. Jacto is a registered trademark of Jacto Inc. All other brand or product names are trademarks or registered trademarks of Pentair Ltd. Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# SPRAY NOZZLE CAP – TWINCAP

The Hypro® TwinCap is a simple, compact way of accommodating two spray nozzles back to back. This design allows you to apply the volume per acre you want, at the speed you want, without compromising spray quality.

- Improve control of plant diseases, insects, and difficult weeds
- Twin 30° angles improve canopy penetration
- Combined forward and backward angles enhance coverage on stems and leaves
- Holds any two standard dimension nozzles, including Hypro ULD, GA, LD, ADI, VP, TR, AXI, Flat, and Even nozzles
- User can select nozzles for the most effective spray
- Available in standard Polyacetal or in Gray PVDF for acid sprays

| Part Numbers | |
|---|---|
| **TwinCaps, less nozzles** | |
| 152607TC | Standard TwinCap for agrochemicals |
| 15Q2530TC | Gray Acid-resistant Twin cap for defoliants |
| 16Q2530TC | Hardi TwinCap |
| **Replacement Parts** | |
| 10BG-2270-0150 | Standard cap seal (A) |
| 65MN011X1.3 | Standard nozzle o-ring seal (B) |
| 65VBS0113-13 | Viton nozzle o-ring seal for Acid (B) |
| 3003834 | Replacement VPTCAP plug |

# NOZZLE STRAINERS

1

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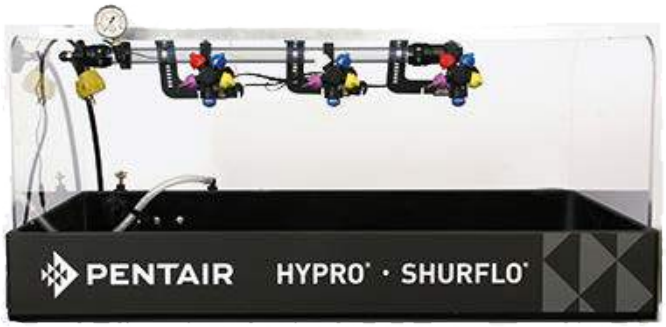
| Ref # | Part Number | ISO Color | Mesh | Material | Description |
|---|---|---|---|---|---|
| 1 | TS01-50*<br>TS01-100* | Blue<br>Green | 50<br>100 | Polypropylene | Premium flow nozzle strainer |
| 2 | TS02-50*<br>TS02-100* | Blue<br>Green | 50<br>100 | | Premium flow nozzle strainer for Guardian & GuardianAIR Twin |
| 3 | TS03-25 | Black | 25 | Nylon | Slotted nozzle strainer |
| 4 | 32100530<br>32100550<br>32100510 | White<br>Blue<br>Green | 30<br>50<br>100 | Stainless Steel | Nozzle filter with check |
| | 32100050<br>32100010 | Blue<br>Green | 50<br>100 | | Nozzle filter without check |

*Order rounding QTY 10 (bags of 10)

## GENERAL STRAINER RECOMMENDATIONS

| Nozzle Flow Rate at 40 PSI (2.8 BAR) | Strainer Mesh | Example Fan Nozzle Size |
|---|---|---|
| Less than 0.10 | 200 | 005-0067 |
| 0.10-0.39 | 100 | 01-035 |
| 0.40-0.79 | 50 | 04-06 |
| 0.80-2.00 | 25 | 08-20 |

# SPRAY DEMONSTRATION TABLES




- Plastic molded portable demonstration table with open see-through design.
- Clear 1" boom featuring three 5-way ProFlo nozzle bodies and Express End Caps and Express Tee.
- Lightweight design for easy transportation and storage.
- Powered by 115 VAC or 230 VAC Shurflo pump with filter.
- Standard Boom Addition - Clear 1" boom featuring three 5-way ProFlo nozzle bodies with standard boom ends.
- Use with Express End Cap boom (provided with table) & standard boom (3430-0017) for visual demonstration of Express End Cap benefits.

| Part Number | Description |
|---|---|
| 3040-0015 | Standard spray table 115VAC, comes with express fittings boom and spray nozzle kit. |
| 3040-0016 | Standard Spray table 230VAC, comes with express fittings boom and spray nozzle kit. |
| 3040-0017 | Addition boom with dead end – to allow demonstration of that along with express end cap boom. |
| 3040-0018 | ProStop-E Boom Addition |
| 3040-0019 | DuoReact Boom Addition |
| 3040-0020 | Carrying Case |
| 3040-0021 | 5059 pump upgrade with DC motor controller |

# SPRAY NOZZLE CALIBRATION TOOLS

| Reference Number | Part Number | Description |
|---|---|---|
| 1 | 9950-0022 | 32 oz. Calibration Jug |
| 1 | 9950-0023 | 128 oz. Calibration Jug |
| 2 | 9950-0031 | Spray Nozzle Calibration pressure gauge |
| 3 | 9950-0028 | Water Sensitive paper (50 pack) 76x26mm (instructions included) |
| 4 | 3000-0310 | Nozzle Installation Tool |

1

2

3

4

## PRESSURE TRANSDUCER

| Reference Number | Part Number | Description |
|---|---|---|
| 2520-0239 | 2530-0207 | 1/4" NPT thread, 0 - 100 psi, 1% accuracy, bluetooth connectivity to SprayIT App enables real time droplet size monitoring. |
| 2520-0240 | 4201N-B104 | Single outlet nozzle body |
| 2520-0241 | CAP10-20 | 1/4" npt threaded spray cap |

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# BROADCAST APPLICATION CHART-20" SPACING

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gallons per Acre | | | | | | | | | | | | | | |
| | | | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5 | 25 | 27.5 | 30 | 32.5 | 35 | 37.5 | 40 |
| 01 | 15 | 0.06 | 7.3 | 3.6 | 2.4 | 1.8 | 1.5 | 1.2 | 1.0 | 0.9 | 0.8 | 0.7 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 |
| | 20 | 0.07 | 8.4 | 4.2 | 2.8 | 2.1 | 1.7 | 1.4 | 1.2 | 1.1 | 0.9 | 0.8 | 0.8 | 0.7 | 0.6 | 0.6 | 0.6 | 0.5 |
| | 30 | 0.09 | 10.3 | 5.1 | 3.4 | 2.6 | 2.1 | 1.7 | 1.5 | 1.3 | 1.1 | 1.0 | 0.9 | 0.9 | 0.8 | 0.7 | 0.7 | 0.6 |
| | **40** | **0.10** | 11.9 | 5.9 | 4.0 | 3.0 | 2.4 | 2.0 | 1.7 | 1.5 | 1.3 | 1.2 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 | 0.7 |
| | 50 | 0.11 | 13.3 | 6.6 | 4.4 | 3.3 | 2.7 | 2.2 | 1.9 | 1.7 | 1.5 | 1.3 | 1.2 | 1.1 | 1.0 | 0.9 | 0.9 | 0.8 |
| | 60 | 0.12 | 14.5 | 7.3 | 4.8 | 3.6 | 2.9 | 2.4 | 2.1 | 1.8 | 1.6 | 1.5 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 | 0.9 |
| | 70 | 0.13 | 15.7 | 7.9 | 5.2 | 3.9 | 3.1 | 2.6 | 2.2 | 2.0 | 1.7 | 1.6 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 |
| | 80 | 0.14 | 16.8 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| | 90 | 0.15 | 17.8 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | 100 | 0.16 | 18.8 | 9.4 | 6.3 | 4.7 | 3.8 | 3.1 | 2.7 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.4 | 1.3 | 1.3 | 1.2 |
| | 115 | 0.17 | 20.1 | 10.1 | 6.7 | 5.0 | 4.0 | 3.4 | 2.9 | 2.5 | 2.2 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.3 |
| 015 | 15 | 0.09 | 10.9 | 5.5 | 3.6 | 2.7 | 2.2 | 1.8 | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 | 0.7 | 0.7 |
| | 20 | 0.11 | 12.6 | 6.3 | 4.2 | 3.2 | 2.5 | 2.1 | 1.8 | 1.6 | 1.4 | 1.3 | 1.1 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 |
| | 30 | 0.13 | 15.4 | 7.7 | 5.1 | 3.9 | 3.1 | 2.6 | 2.2 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 |
| | **40** | **0.15** | 17.8 | 8.9 | 5.9 | 4.5 | 3.6 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | 50 | 0.17 | 19.9 | 10.0 | 6.6 | 5.0 | 4.0 | 3.3 | 2.8 | 2.5 | 2.2 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 |
| | 60 | 0.18 | 21.8 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| | 70 | 0.20 | 23.6 | 11.8 | 7.9 | 5.9 | 4.7 | 3.9 | 3.4 | 2.9 | 2.6 | 2.4 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | 80 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | 90 | 0.23 | 26.7 | 13.4 | 8.9 | 6.7 | 5.3 | 4.5 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 | 1.7 |
| | 100 | 0.24 | 28.2 | 14.1 | 9.4 | 7.0 | 5.6 | 4.7 | 4.0 | 3.5 | 3.1 | 2.8 | 2.6 | 2.3 | 2.2 | 2.0 | 1.9 | 1.8 |
| | 115 | 0.25 | - | 15.1 | 10.1 | 7.6 | 6.0 | 5.0 | 4.3 | 3.8 | 3.4 | 3.0 | 2.7 | 2.5 | 2.3 | 2.2 | 2.0 | 1.9 |
| 02 | 15 | 0.12 | 14.5 | 7.3 | 4.8 | 3.6 | 2.9 | 2.4 | 2.1 | 1.8 | 1.6 | 1.5 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 | 0.9 |
| | 20 | 0.14 | 16.8 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| | 30 | 0.17 | 20.6 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | **40** | **0.20** | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | 50 | 0.22 | 26.6 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | 60 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | 70 | 0.26 | - | 15.7 | 10.5 | 7.9 | 6.3 | 5.2 | 4.5 | 3.9 | 3.5 | 3.1 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 2.0 |
| | 80 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | 90 | 0.30 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | 100 | 0.32 | - | 18.8 | 12.5 | 9.4 | 7.5 | 6.3 | 5.4 | 4.7 | 4.2 | 3.8 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 | 2.3 |
| | 115 | 0.34 | - | 20.1 | 13.4 | 10.1 | 8.1 | 6.7 | 5.8 | 5.0 | 4.5 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 |
| 025 | 15 | 0.15 | 18.2 | 9.1 | 6.1 | 4.5 | 3.6 | 3.0 | 2.6 | 2.3 | 2.0 | 1.8 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | 20 | 0.18 | 21.0 | 10.5 | 7.0 | 5.3 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 |
| | 30 | 0.22 | 25.7 | 12.9 | 8.6 | 6.4 | 5.1 | 4.3 | 3.7 | 3.2 | 2.9 | 2.6 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 |
| | **40** | **0.25** | 29.7 | 14.9 | 9.9 | 7.4 | 5.9 | 5.0 | 4.2 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.9 |
| | 50 | 0.28 | - | 16.6 | 11.1 | 8.3 | 6.6 | 5.5 | 4.7 | 4.2 | 3.7 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | 60 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | 70 | 0.33 | - | 19.6 | 13.1 | 9.8 | 7.9 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.5 |
| | 80 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | 90 | 0.38 | - | 22.3 | 14.9 | 11.1 | 8.9 | 7.4 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | 100 | 0.40 | - | 23.5 | 15.7 | 11.7 | 9.4 | 7.8 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | 115 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.1 |
| 03 | 15 | 0.18 | 21.8 | 10.9 | 7.3 | 5.5 | 4.4 | 3.6 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| | 20 | 0.21 | 25.2 | 12.6 | 8.4 | 6.3 | 5.0 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | 30 | 0.26 | - | 15.4 | 10.3 | 7.7 | 6.2 | 5.1 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 |
| | **40** | **0.30** | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | 50 | 0.34 | - | 19.9 | 13.3 | 10.0 | 8.0 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 | 3.1 | 2.8 | 2.7 | 2.5 |
| | 60 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| | 70 | 0.40 | - | 23.6 | 15.7 | 11.8 | 9.4 | 7.9 | 6.7 | 5.9 | 5.2 | 4.7 | 4.3 | 3.9 | 3.6 | 3.4 | 3.1 | 2.9 |
| | 80 | 0.42 | - | 25.2 | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | 90 | 0.45 | - | 26.7 | 17.8 | 13.4 | 10.7 | 8.9 | 7.6 | 6.7 | 5.9 | 5.3 | 4.9 | 4.5 | 4.1 | 3.8 | 3.6 | 3.3 |
| | 100 | 0.47 | - | 28.2 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | 7.0 | 6.3 | 5.6 | 5.1 | 4.7 | 4.3 | 4.0 | 3.8 | 3.5 |
| | 115 | 0.51 | - | - | 20.1 | 15.1 | 12.1 | 10.1 | 8.6 | 7.6 | 6.7 | 6.0 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.8 |
| 04 | 15 | 0.24 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | 20 | 0.28 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | 30 | 0.35 | - | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 | 3.2 | 2.9 | 2.7 | 2.6 |
| | **40** | **0.40** | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | 50 | 0.45 | - | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 |
| | 60 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | 70 | 0.53 | - | - | 21.0 | 15.7 | 12.6 | 10.5 | 9.0 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | 80 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | 90 | 0.60 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | 100 | 0.63 | - | - | 25.0 | 18.8 | 15.0 | 12.5 | 10.7 | 9.4 | 8.3 | 7.5 | 6.8 | 6.3 | 5.8 | 5.4 | 5.0 | 4.7 |
| | 115 | 0.68 | - | - | 26.9 | 20.1 | 16.1 | 13.4 | 11.5 | 10.1 | 9.0 | 8.1 | 7.3 | 6.7 | 6.2 | 5.8 | 5.4 | 5.0 |
| 05 | 15 | 0.31 | - | 18.2 | 12.1 | 9.1 | 7.3 | 6.1 | 5.2 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 |
| | 20 | 0.35 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.3 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | 30 | 0.43 | - | 25.7 | 17.1 | 12.9 | 10.3 | 8.6 | 7.3 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 |
| | **40** | **0.50** | - | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 | 4.6 | 4.2 | 4.0 | 3.7 |
| | 50 | 0.56 | - | - | 22.1 | 16.6 | 13.3 | 11.1 | 9.5 | 8.3 | 7.4 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.2 |
| | 60 | 0.61 | - | - | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| | 70 | 0.66 | - | - | 26.2 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.9 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 |
| | 80 | 0.71 | - | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.3 |
| | 90 | 0.75 | - | - | 29.7 | 22.3 | 17.8 | 14.9 | 12.7 | 11.1 | 9.9 | 8.9 | 8.1 | 7.4 | 6.9 | 6.4 | 5.9 | 5.6 |
| | 100 | 0.79 | - | - | - | 23.5 | 18.8 | 15.7 | 13.4 | 11.7 | 10.4 | 9.4 | 8.5 | 7.8 | 7.2 | 6.7 | 6.3 | 5.9 |
| | 115 | 0.85 | - | - | - | 25.2 | 20.1 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.7 | 7.2 | 6.7 | 6.3 |
| 06 | 15 | 0.37 | - | 21.8 | 14.5 | 10.9 | 8.7 | 7.3 | 6.2 | 5.5 | 4.8 | 4.4 | 4.0 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 |
| | 20 | 0.42 | - | - | 16.8 | 12.6 | 10.1 | 8.4 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 |
| | 30 | 0.52 | - | - | 20.6 | 15.4 | 12.3 | 10.3 | 8.8 | 7.7 | 6.9 | 6.2 | 5.6 | 5.1 | 4.7 | 4.4 | 4.1 | 3.9 |
| | **40** | **0.60** | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | 50 | 0.67 | - | - | 26.6 | 19.9 | 15.9 | 13.3 | 11.4 | 10.0 | 8.9 | 8.0 | 7.2 | 6.6 | 6.1 | 5.7 | 5.3 | 5.0 |
| | 60 | 0.73 | - | - | 29.1 | 21.8 | 17.5 | 14.5 | 12.5 | 10.9 | 9.7 | 8.7 | 7.9 | 7.3 | 6.7 | 6.2 | 5.8 | 5.5 |
| | 70 | 0.79 | - | - | - | 23.6 | 18.9 | 15.7 | 13.5 | 11.8 | 10.5 | 9.4 | 8.6 | 7.9 | 7.3 | 6.7 | 6.3 | 5.9 |
| | 80 | 0.85 | - | - | - | 25.2 | 20.2 | 16.8 | 14.4 | 12.6 | 11.2 | 10.1 | 9.2 | 8.4 | 7.8 | 7.2 | 6.7 | 6.3 |
| | 90 | 0.90 | - | - | - | 26.7 | 21.4 | 17.8 | 15.3 | 13.4 | 11.9 | 10.7 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.7 |
| | 100 | 0.95 | - | - | - | 28.2 | 22.5 | 18.8 | 16.1 | 14.1 | 12.5 | 11.3 | 10.2 | 9.4 | 8.7 | 8.1 | 7.5 | 7.0 |
| | 115 | 1.02 | - | - | - | - | 24.2 | 20.1 | 17.3 | 15.1 | 13.4 | 12.1 | 11.0 | 10.1 | 9.3 | 8.6 | 8.1 | 7.6 |
| 08 | 15 | 0.49 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | 20 | 0.57 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | 30 | 0.69 | - | - | 27.4 | 20.6 | 16.5 | 13.7 | 11.8 | 10.3 | 9.1 | 8.2 | 7.5 | 6.9 | 6.3 | 5.9 | 5.5 | 5.1 |
| | **40** | **0.80** | - | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 5.9 |
| | 50 | 0.89 | - | - | - | 26.6 | 21.3 | 17.7 | 15.2 | 13.3 | 11.8 | 10.6 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.6 |
| | 60 | 0.98 | - | - | - | 29.1 | 23.3 | 19.4 | 16.6 | 14.5 | 12.9 | 11.6 | 10.6 | 9.7 | 9.0 | 8.3 | 7.8 | 7.3 |
| | 70 | 1.06 | - | - | - | - | 25.1 | 21.0 | 18.0 | 15.7 | 14.0 | 12.6 | 11.4 | 10.5 | 9.7 | 9.0 | 8.4 | 7.9 |
| | 80 | 1.13 | - | - | - | - | 26.9 | 22.4 | 19.2 | 16.8 | 14.9 | 13.4 | 12.2 | 11.2 | 10.3 | 9.6 | 9.0 | 8.4 |
| | 90 | 1.20 | - | - | - | - | 28.5 | 23.8 | 20.4 | 17.8 | 15.8 | 14.3 | 13.0 | 11.9 | 11.0 | 10.2 | 9.5 | 8.9 |
| | 100 | 1.26 | - | - | - | - | - | 25.0 | 21.5 | 18.8 | 16.7 | 15.0 | 13.7 | 12.5 | 11.6 | 10.7 | 10.0 | 9.4 |
| | 115 | 1.36 | - | - | - | - | - | 26.9 | 23.0 | 20.1 | 17.9 | 16.1 | 14.6 | 13.4 | 12.4 | 11.5 | 10.7 | 10.1 |
| 10 | 15 | 0.61 | - | 36.4 | 24.2 | 18.2 | 14.5 | 12.1 | 10.4 | 9.1 | 8.1 | 7.3 | 6.6 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 |
| | 20 | 0.71 | - | - | 28.0 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.3 |
| | 30 | 0.87 | - | - | - | 25.7 | 20.6 | 17.1 | 14.7 | 12.9 | 11.4 | 10.3 | 9.4 | 8.6 | 7.9 | 7.3 | 6.9 | 6.4 |
| | **40** | **1.00** | - | - | - | 29.7 | 23.8 | 19.8 | 17.0 | 14.9 | 13.2 | 11.9 | 10.8 | 9.9 | 9.1 | 8.5 | 7.9 | 7.4 |
| | 50 | 1.12 | - | - | - | - | 26.6 | 22.1 | 19.0 | 16.6 | 14.8 | 13.3 | 12.1 | 11.1 | 10.2 | 9.5 | 8.9 | 8.3 |
| | 60 | 1.22 | - | - | - | - | 29.1 | 24.2 | 20.8 | 18.2 | 16.2 | 14.5 | 13.2 | 12.1 | 11.2 | 10.4 | 9.7 | 9.1 |
| | 70 | 1.32 | - | - | - | - | - | 26.2 | 22.5 | 19.6 | 17.5 | 15.7 | 14.3 | 13.1 | 12.1 | 11.2 | 10.5 | 9.8 |
| | 80 | 1.41 | - | - | - | - | - | 28.0 | 24.0 | 21.0 | 18.7 | 16.8 | 15.3 | 14.0 | 12.9 | 12.0 | 11.2 | 10.5 |
| | 90 | 1.50 | - | - | - | - | - | 29.7 | 25.5 | 22.3 | 19.8 | 17.8 | 16.2 | 14.9 | 13.7 | 12.7 | 11.9 | 11.1 |
| | 100 | 1.58 | - | - | - | - | - | - | 26.8 | 23.5 | 20.9 | 18.8 | 17.1 | 15.7 | 14.4 | 13.4 | 12.5 | 11.7 |
| | 115 | 1.70 | - | - | - | - | - | - | 28.8 | 25.2 | 22.4 | 20.1 | 18.3 | 16.8 | 15.5 | 14.4 | 13.4 | 12.6 |
| 15 | 15 | 0.92 | - | 54.6 | 36.4 | 27.3 | 21.8 | 18.2 | 15.6 | 13.6 | 12.1 | 10.9 | 9.9 | 9.1 | 8.4 | 7.8 | 7.3 | 6.8 |
| | 20 | 1.06 | - | - | - | - | 25.2 | 21.0 | 18.0 | 15.8 | 14.0 | 12.6 | 11.5 | 10.5 | 9.7 | 9.0 | 8.4 | 7.9 |
| | 30 | 1.30 | - | - | - | - | - | 25.7 | 22.0 | 19.3 | 17.1 | 15.4 | 14.0 | 12.9 | 11.9 | 11.0 | 10.3 | 9.6 |
| | **40** | **1.50** | - | - | - | - | - | 29.7 | 25.5 | 22.3 | 19.8 | 17.8 | 16.2 | 14.9 | 13.7 | 12.7 | 11.9 | 11.1 |
| | 50 | 1.68 | - | - | - | - | - | - | 28.5 | 24.9 | 22.1 | 19.9 | 18.1 | 16.6 | 15.3 | 14.2 | 13.3 | 12.5 |
| | 60 | 1.84 | - | - | - | - | - | - | - | 27.3 | 24.2 | 21.8 | 19.8 | 18.2 | 16.8 | 15.6 | 14.5 | 13.6 |
| | 70 | 1.98 | - | - | - | - | - | - | - | 29.5 | 26.2 | 23.6 | 21.4 | 19.6 | 18.1 | 16.8 | 15.7 | 14.7 |
| | 80 | 2.12 | - | - | - | - | - | - | - | - | 28.0 | 25.2 | 22.9 | 21.0 | 19.4 | 18.0 | 16.8 | 15.8 |
| | 90 | 2.25 | - | - | - | - | - | - | - | - | 29.7 | 26.7 | 24.3 | 22.3 | 20.6 | 19.1 | 17.8 | 16.7 |
| | 100 | 2.37 | - | - | - | - | - | - | - | - | - | 28.2 | 25.6 | 23.5 | 21.7 | 20.1 | 18.8 | 17.6 |
| | 115 | 2.54 | - | - | - | - | - | - | - | - | - | - | 27.5 | 25.2 | 23.2 | 21.6 | 20.1 | 18.9 |

# HI-FLOW APPLICATION CHART - 20", 40" & 60" SPACING

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 20 inch nozzle spacing | | | | | | | Speed (MPH) - 40 inch nozzle spacing | | | | | | | Speed (MPH) - 60 inch nozzle spacing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gallons per Acre | | | | | | | Gallons per Acre | | | | | | | Gallons per Acre | | | | | | |
| | | | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 15 | 30 | 45 | 60 | 75 | 90 | 105 |
| 08 | 20 | 0.57 | 11 | 6 | 4 | 3 | 2 | 2 | 2 | 6 | 3 | 2 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 1 | 1 | 1 |
| | 30 | 0.69 | 14 | 7 | 5 | 3 | 3 | 2 | 2 | 7 | 3 | 2 | 2 | 1 | 1 | 1 | 5 | 2 | 2 | 1 | 1 | 1 | 1 |
| | 40 | 0.80 | 16 | 8 | 5 | 4 | 3 | 3 | 2 | 8 | 4 | 3 | 2 | 2 | 1 | 1 | 5 | 3 | 2 | 1 | 1 | 1 | 1 |
| | 50 | 0.89 | 18 | 9 | 6 | 4 | 4 | 3 | 3 | 9 | 4 | 3 | 2 | 2 | 1 | 1 | 6 | 3 | 2 | 1 | 1 | 1 | 1 |
| | 60 | 0.98 | 19 | 10 | 6 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 2 | 2 | 2 | 1 | 6 | 3 | 2 | 2 | 1 | 1 | 1 |
| | 70 | 1.06 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 3 | 2 | 2 | 1 | 7 | 3 | 2 | 2 | 1 | 1 | 1 |
| | 80 | 1.13 | 22 | 11 | 7 | 6 | 4 | 4 | 3 | 11 | 6 | 4 | 3 | 2 | 2 | 2 | 7 | 4 | 2 | 2 | 1 | 1 | 1 |
| 10 | 20 | 0.71 | 14 | 7 | 5 | 4 | 3 | 2 | 2 | 7 | 4 | 2 | 2 | 1 | 1 | 1 | 5 | 2 | 2 | 1 | 1 | 1 | 1 |
| | 30 | 0.87 | 17 | 9 | 6 | 4 | 3 | 3 | 2 | 9 | 4 | 3 | 2 | 2 | 1 | 1 | 6 | 3 | 2 | 1 | 1 | 1 | 1 |
| | 40 | 1.00 | 20 | 10 | 7 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 2 | 2 | 2 | 1 | 7 | 3 | 2 | 2 | 1 | 1 | 1 |
| | 50 | 1.12 | 22 | 11 | 7 | 6 | 4 | 4 | 3 | 11 | 6 | 4 | 3 | 2 | 2 | 2 | 7 | 4 | 2 | 2 | 1 | 1 | 1 |
| | 60 | 1.22 | 24 | 12 | 8 | 6 | 5 | 4 | 3 | 12 | 6 | 4 | 3 | 2 | 2 | 2 | 8 | 4 | 3 | 2 | 2 | 1 | 1 |
| | 70 | 1.32 | 26 | 13 | 9 | 7 | 5 | 4 | 4 | 13 | 7 | 4 | 3 | 3 | 2 | 2 | 9 | 4 | 3 | 2 | 2 | 1 | 1 |
| | 80 | 1.41 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 14 | 7 | 5 | 3 | 3 | 2 | 2 | 9 | 5 | 3 | 2 | 2 | 2 | 1 |
| 15 | 20 | 1.06 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 10 | 5 | 3 | 3 | 2 | 2 | 1 | 7 | 3 | 2 | 2 | 1 | 1 | 1 |
| | 30 | 1.30 | 26 | 13 | 9 | 6 | 5 | 4 | 4 | 13 | 6 | 4 | 3 | 3 | 2 | 2 | 9 | 4 | 3 | 2 | 2 | 1 | 1 |
| | 40 | 1.50 | 30 | 15 | 10 | 7 | 6 | 5 | 4 | 15 | 7 | 5 | 4 | 3 | 2 | 2 | 10 | 5 | 3 | 2 | 2 | 2 | 1 |
| | 50 | 1.68 | 33 | 17 | 11 | 8 | 7 | 6 | 5 | 17 | 8 | 6 | 4 | 3 | 3 | 2 | 11 | 6 | 4 | 3 | 2 | 2 | 2 |
| | 60 | 1.84 | 36 | 18 | 12 | 9 | 7 | 6 | 5 | 18 | 9 | 6 | 5 | 4 | 3 | 3 | 12 | 6 | 4 | 3 | 2 | 2 | 2 |
| | 70 | 2.0 | 40 | 20 | 13 | 10 | 8 | 7 | 6 | 20 | 10 | 7 | 5 | 4 | 3 | 3 | 13 | 7 | 4 | 3 | 3 | 2 | 2 |
| | 80 | 2.1 | 42 | 21 | 14 | 10 | 8 | 7 | 6 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 14 | 7 | 5 | 3 | 3 | 2 | 2 |
| 20 | 20 | 1.41 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 14 | 7 | 5 | 3 | 3 | 2 | 2 | 9 | 5 | 3 | 2 | 2 | 2 | 1 |
| | 30 | 1.73 | 34 | 17 | 11 | 9 | 7 | 6 | 5 | 17 | 9 | 6 | 4 | 3 | 3 | 2 | 11 | 6 | 4 | 3 | 2 | 2 | 2 |
| | 40 | 2.0 | 40 | 20 | 13 | 10 | 8 | 7 | 6 | 20 | 10 | 7 | 5 | 4 | 3 | 3 | 13 | 7 | 4 | 3 | 3 | 2 | 2 |
| | 50 | 2.2 | 44 | 22 | 15 | 11 | 9 | 7 | 6 | 22 | 11 | 7 | 5 | 4 | 4 | 3 | 15 | 7 | 5 | 4 | 3 | 2 | 2 |
| | 60 | 2.4 | 48 | 24 | 16 | 12 | 10 | 8 | 7 | 24 | 12 | 8 | 6 | 5 | 4 | 3 | 16 | 8 | 5 | 4 | 3 | 3 | 2 |
| | 70 | 2.6 | 51 | 26 | 17 | 13 | 10 | 9 | 7 | 26 | 13 | 9 | 6 | 5 | 4 | 4 | 17 | 9 | 6 | 4 | 3 | 3 | 2 |
| | 80 | 2.8 | 55 | 28 | 18 | 14 | 11 | 9 | 8 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 18 | 9 | 6 | 5 | 4 | 3 | 3 |
| 30 | 20 | 2.1 | 42 | 21 | 14 | 10 | 8 | 7 | 6 | 21 | 10 | 7 | 5 | 4 | 3 | 3 | 14 | 7 | 5 | 3 | 3 | 2 | 2 |
| | 30 | 2.6 | 51 | 26 | 17 | 13 | 10 | 9 | 7 | 26 | 13 | 9 | 6 | 5 | 4 | 4 | 17 | 9 | 6 | 4 | 3 | 3 | 2 |
| | 40 | 3.0 | 59 | 30 | 20 | 15 | 12 | 10 | 8 | 30 | 15 | 10 | 7 | 6 | 5 | 4 | 20 | 10 | 7 | 5 | 4 | 3 | 3 |
| | 50 | 3.4 | 67 | 34 | 22 | 17 | 13 | 11 | 10 | 34 | 17 | 11 | 8 | 7 | 6 | 5 | 22 | 11 | 7 | 6 | 4 | 4 | 3 |
| | 60 | 3.7 | 73 | 37 | 24 | 18 | 15 | 12 | 10 | 37 | 18 | 12 | 9 | 7 | 6 | 5 | 24 | 12 | 8 | 6 | 5 | 4 | 3 |
| | 70 | 4.0 | 79 | 40 | 26 | 20 | 16 | 13 | 11 | 40 | 20 | 13 | 10 | 8 | 7 | 6 | 26 | 13 | 9 | 7 | 5 | 4 | 4 |
| | 80 | 4.2 | 83 | 42 | 28 | 21 | 17 | 14 | 12 | 42 | 21 | 14 | 10 | 8 | 7 | 6 | 28 | 14 | 9 | 7 | 6 | 5 | 4 |
| 40 | 20 | 2.8 | 55 | 28 | 18 | 14 | 11 | 9 | 8 | 28 | 14 | 9 | 7 | 6 | 5 | 4 | 18 | 9 | 6 | 5 | 4 | 3 | 3 |
| | 30 | 3.5 | 69 | 35 | 23 | 17 | 14 | 12 | 10 | 35 | 17 | 12 | 9 | 7 | 6 | 5 | 23 | 12 | 8 | 6 | 5 | 4 | 3 |
| | 40 | 4.0 | 79 | 40 | 26 | 20 | 16 | 13 | 11 | 40 | 20 | 13 | 10 | 8 | 7 | 6 | 26 | 13 | 9 | 7 | 5 | 4 | 4 |
| | 50 | 4.5 | 89 | 45 | 30 | 22 | 18 | 15 | 13 | 45 | 22 | 15 | 11 | 9 | 7 | 6 | 30 | 15 | 10 | 7 | 6 | 5 | 4 |
| | 60 | 4.9 | 97 | 49 | 32 | 24 | 19 | 16 | 14 | 49 | 24 | 16 | 12 | 10 | 8 | 7 | 32 | 16 | 11 | 8 | 6 | 5 | 5 |
| | 70 | 5.3 | 105 | 52 | 35 | 26 | 21 | 17 | 15 | 52 | 26 | 17 | 13 | 10 | 9 | 7 | 35 | 17 | 12 | 9 | 7 | 6 | 5 |
| | 80 | 5.7 | 113 | 56 | 38 | 28 | 23 | 19 | 16 | 56 | 28 | 19 | 14 | 11 | 9 | 8 | 38 | 19 | 13 | 9 | 8 | 6 | 5 |
| 50 | 20 | 3.5 | 69 | 35 | 23 | 17 | 14 | 12 | 10 | 35 | 17 | 12 | 9 | 7 | 6 | 5 | 23 | 12 | 8 | 6 | 5 | 4 | 3 |
| | 30 | 4.3 | 85 | 43 | 28 | 21 | 17 | 14 | 12 | 43 | 21 | 14 | 11 | 9 | 7 | 6 | 28 | 14 | 9 | 7 | 6 | 5 | 4 |
| | 40 | 5.0 | 99 | 50 | 33 | 25 | 20 | 17 | 14 | 50 | 25 | 17 | 12 | 10 | 8 | 7 | 33 | 17 | 11 | 8 | 7 | 6 | 5 |
| | 50 | 5.6 | 111 | 55 | 37 | 28 | 22 | 18 | 16 | 55 | 28 | 18 | 14 | 11 | 9 | 8 | 37 | 18 | 12 | 9 | 7 | 6 | 5 |
| | 60 | 6.1 | 121 | 60 | 40 | 30 | 24 | 20 | 17 | 60 | 30 | 20 | 15 | 12 | 10 | 9 | 40 | 20 | 13 | 10 | 8 | 7 | 6 |
| | 70 | 6.6 | 131 | 65 | 44 | 33 | 26 | 22 | 19 | 65 | 33 | 22 | 16 | 13 | 11 | 9 | 44 | 22 | 15 | 11 | 9 | 7 | 6 |
| | 80 | 7.1 | 141 | 70 | 47 | 35 | 28 | 23 | 20 | 70 | 35 | 23 | 18 | 14 | 12 | 10 | 47 | 23 | 16 | 12 | 9 | 8 | 7 |
| 60 | 20 | 4.2 | 83 | 42 | 28 | 21 | 17 | 14 | 12 | 42 | 21 | 14 | 10 | 8 | 7 | 6 | 28 | 14 | 9 | 7 | 6 | 5 | 4 |
| | 30 | 5.2 | 103 | 51 | 34 | 26 | 21 | 17 | 15 | 51 | 26 | 17 | 13 | 10 | 9 | 7 | 34 | 17 | 11 | 9 | 7 | 6 | 5 |
| | 40 | 6.0 | 119 | 59 | 40 | 30 | 24 | 20 | 17 | 59 | 30 | 20 | 15 | 12 | 10 | 8 | 40 | 20 | 13 | 10 | 8 | 7 | 6 |
| | 50 | 6.7 | 133 | 66 | 44 | 33 | 27 | 22 | 19 | 66 | 33 | 22 | 17 | 13 | 11 | 9 | 44 | 22 | 15 | 11 | 9 | 7 | 6 |
| | 60 | 7.3 | 145 | 72 | 48 | 36 | 29 | 24 | 21 | 72 | 36 | 24 | 18 | 14 | 12 | 10 | 48 | 24 | 16 | 12 | 10 | 8 | 7 |
| | 70 | 7.9 | 156 | 78 | 52 | 39 | 31 | 26 | 22 | 78 | 39 | 26 | 20 | 16 | 13 | 11 | 52 | 26 | 17 | 13 | 10 | 9 | 7 |
| | 80 | 8.5 | 168 | 84 | 56 | 42 | 34 | 28 | 24 | 84 | 42 | 28 | 21 | 17 | 14 | 12 | 56 | 28 | 19 | 14 | 11 | 9 | 8 |

# BROADCAST APPLICATION CHART-15" SPACING

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 15 inch nozzle spacing | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gallons per Acre | | | | | | | | | | | | | | | |
| | | | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5 | 25 | 27.5 | 30 | 32.5 | 35 | 37.5 | 40 |
| 01 | 15 | 0.06 | 9.7 | 4.8 | 3.2 | 2.4 | 1.9 | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 | 0.9 | 0.8 | 0.7 | 0.7 | 0.6 | 0.6 |
| | 20 | 0.07 | 11.2 | 5.6 | 3.7 | 2.8 | 2.2 | 1.9 | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 | 0.9 | 0.9 | 0.8 | 0.7 | 0.7 |
| | 30 | 0.09 | 13.7 | 6.9 | 4.6 | 3.4 | 2.7 | 2.3 | 2.0 | 1.7 | 1.5 | 1.4 | 1.2 | 1.1 | 1.1 | 1.0 | 0.9 | 0.9 |
| | **40** | **0.10** | 15.8 | 7.9 | 5.3 | 4.0 | 3.2 | 2.6 | 2.3 | 2.0 | 1.8 | 1.6 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 | 1.0 |
| | 50 | 0.11 | 17.7 | 8.9 | 5.9 | 4.4 | 3.5 | 3.0 | 2.5 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| | 60 | 0.12 | 19.4 | 9.7 | 6.5 | 4.8 | 3.9 | 3.2 | 2.8 | 2.4 | 2.2 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 |
| | 70 | 0.13 | 21.0 | 10.5 | 7.0 | 5.2 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | 80 | 0.14 | 22.4 | 11.2 | 7.5 | 5.6 | 4.5 | 3.7 | 3.2 | 2.8 | 2.5 | 2.2 | 2.0 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 |
| | 90 | 0.15 | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | 100 | 0.16 | 25.0 | 12.5 | 8.3 | 6.3 | 5.0 | 4.2 | 3.6 | 3.1 | 2.8 | 2.5 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | 115 | 0.17 | 26.9 | 13.4 | 9.0 | 6.7 | 5.4 | 4.5 | 3.8 | 3.4 | 3.0 | 2.7 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 | 1.7 |
| 015 | 15 | 0.09 | 14.5 | 7.3 | 4.8 | 3.6 | 2.9 | 2.4 | 2.1 | 1.8 | 1.6 | 1.5 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 | 0.9 |
| | 20 | 0.11 | 16.8 | 8.4 | 5.6 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| | 30 | 0.13 | 20.6 | 10.3 | 6.9 | 5.1 | 4.1 | 3.4 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| | **40** | **0.15** | 23.8 | 11.9 | 7.9 | 5.9 | 4.8 | 4.0 | 3.4 | 3.0 | 2.6 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 |
| | 50 | 0.17 | 26.6 | 13.3 | 8.9 | 6.6 | 5.3 | 4.4 | 3.8 | 3.3 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | 60 | 0.18 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | 70 | 0.20 | - | 15.7 | 10.5 | 7.9 | 6.3 | 5.2 | 4.5 | 3.9 | 3.5 | 3.1 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 2.0 |
| | 80 | 0.21 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | 90 | 0.23 | - | 17.8 | 11.9 | 8.9 | 7.1 | 5.9 | 5.1 | 4.5 | 4.0 | 3.6 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | 100 | 0.24 | - | 18.8 | 12.5 | 9.4 | 7.5 | 6.3 | 5.4 | 4.7 | 4.2 | 3.8 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 | 2.3 |
| | 115 | 0.25 | - | 20.1 | 13.4 | 10.1 | 8.1 | 6.7 | 5.8 | 5.0 | 4.5 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 |
| 02 | 15 | 0.12 | 19.4 | 9.7 | 6.5 | 4.8 | 3.9 | 3.2 | 2.8 | 2.4 | 2.2 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 |
| | 20 | 0.14 | 22.4 | 11.2 | 7.5 | 5.6 | 4.5 | 3.7 | 3.2 | 2.8 | 2.5 | 2.2 | 2.0 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 |
| | 30 | 0.17 | 27.4 | 13.7 | 9.1 | 6.9 | 5.5 | 4.6 | 3.9 | 3.4 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 |
| | **40** | **0.20** | - | 15.8 | 10.6 | 7.9 | 6.3 | 5.3 | 4.5 | 4.0 | 3.5 | 3.2 | 2.9 | 2.6 | 2.4 | 2.3 | 2.1 | 2.0 |
| | 50 | 0.22 | - | 17.7 | 11.8 | 8.9 | 7.1 | 5.9 | 5.1 | 4.4 | 3.9 | 3.5 | 3.2 | 3.0 | 2.7 | 2.5 | 2.4 | 2.2 |
| | 60 | 0.24 | - | 19.4 | 12.9 | 9.7 | 7.8 | 6.5 | 5.5 | 4.8 | 4.3 | 3.9 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 | 2.4 |
| | 70 | 0.26 | - | 21.0 | 14.0 | 10.5 | 8.4 | 7.0 | 6.0 | 5.2 | 4.7 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 |
| | 80 | 0.28 | - | 22.4 | 14.9 | 11.2 | 9.0 | 7.5 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | 90 | 0.30 | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | 100 | 0.32 | - | 25.0 | 16.7 | 12.5 | 10.0 | 8.3 | 7.2 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.3 | 3.1 |
| | 115 | 0.34 | - | 26.9 | 17.9 | 13.4 | 10.7 | 9.0 | 7.7 | 6.7 | 6.0 | 5.4 | 4.9 | 4.5 | 4.1 | 3.8 | 3.6 | 3.4 |
| 025 | 15 | 0.15 | 24.2 | 12.1 | 8.1 | 6.1 | 4.8 | 4.0 | 3.5 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.9 | 1.7 | 1.6 | 1.5 |
| | 20 | 0.18 | 28.0 | 14.0 | 9.3 | 7.0 | 5.6 | 4.7 | 4.0 | 3.5 | 3.1 | 2.8 | 2.5 | 2.3 | 2.2 | 2.0 | 1.9 | 1.8 |
| | 30 | 0.22 | - | 17.1 | 11.4 | 8.6 | 6.9 | 5.7 | 4.9 | 4.3 | 3.8 | 3.4 | 3.1 | 2.9 | 2.6 | 2.4 | 2.3 | 2.1 |
| | **40** | **0.25** | - | 19.8 | 13.2 | 9.9 | 7.9 | 6.6 | 5.7 | 5.0 | 4.4 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.5 |
| | 50 | 0.28 | - | 22.1 | 14.8 | 11.1 | 8.9 | 7.4 | 6.3 | 5.5 | 4.9 | 4.4 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | 60 | 0.31 | - | 24.2 | 16.2 | 12.1 | 9.7 | 8.1 | 6.9 | 6.1 | 5.4 | 4.8 | 4.4 | 4.0 | 3.7 | 3.5 | 3.2 | 3.0 |
| | 70 | 0.33 | - | 26.2 | 17.5 | 13.1 | 10.5 | 8.7 | 7.5 | 6.5 | 5.8 | 5.2 | 4.8 | 4.4 | 4.0 | 3.7 | 3.5 | 3.3 |
| | 80 | 0.35 | - | 28.0 | 18.7 | 14.0 | 11.2 | 9.3 | 8.0 | 7.0 | 6.2 | 5.6 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.5 |
| | 90 | 0.38 | - | 29.7 | 19.8 | 14.9 | 11.9 | 9.9 | 8.5 | 7.4 | 6.6 | 5.9 | 5.4 | 5.0 | 4.6 | 4.2 | 4.0 | 3.7 |
| | 100 | 0.40 | - | - | 20.9 | 15.7 | 12.5 | 10.4 | 8.9 | 7.8 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | 115 | 0.42 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| 03 | 15 | 0.18 | 29.1 | 14.5 | 9.7 | 7.3 | 5.8 | 4.8 | 4.2 | 3.6 | 3.2 | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 |
| | 20 | 0.21 | - | 16.8 | 11.2 | 8.4 | 6.7 | 5.6 | 4.8 | 4.2 | 3.7 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 |
| | 30 | 0.26 | - | 20.6 | 13.7 | 10.3 | 8.2 | 6.9 | 5.9 | 5.1 | 4.6 | 4.1 | 3.7 | 3.4 | 3.2 | 2.9 | 2.7 | 2.6 |
| | **40** | **0.30** | - | 23.8 | 15.8 | 11.9 | 9.5 | 7.9 | 6.8 | 5.9 | 5.3 | 4.8 | 4.3 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 |
| | 50 | 0.34 | - | 26.6 | 17.7 | 13.3 | 10.6 | 8.9 | 7.6 | 6.6 | 5.9 | 5.3 | 4.8 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 |
| | 60 | 0.37 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | 70 | 0.40 | - | - | 21.0 | 15.7 | 12.6 | 10.5 | 9.0 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 3.9 |
| | 80 | 0.42 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | 90 | 0.45 | - | - | 23.8 | 17.8 | 14.3 | 11.9 | 10.2 | 8.9 | 7.9 | 7.1 | 6.5 | 5.9 | 5.5 | 5.1 | 4.8 | 4.5 |
| | 100 | 0.47 | - | - | 25.0 | 18.8 | 15.0 | 12.5 | 10.7 | 9.4 | 8.3 | 7.5 | 6.8 | 6.3 | 5.8 | 5.4 | 5.0 | 4.7 |
| | 115 | 0.51 | - | - | 26.9 | 20.1 | 16.1 | 13.4 | 11.5 | 10.1 | 9.0 | 8.1 | 7.3 | 6.7 | 6.2 | 5.8 | 5.4 | 5.0 |
| 04 | 15 | 0.24 | - | 19.4 | 12.9 | 9.7 | 7.8 | 6.5 | 5.5 | 4.8 | 4.3 | 3.9 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 | 2.4 |
| | 20 | 0.28 | - | 22.4 | 14.9 | 11.2 | 9.0 | 7.5 | 6.4 | 5.6 | 5.0 | 4.5 | 4.1 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 |
| | 30 | 0.35 | - | 27.4 | 18.3 | 13.7 | 11.0 | 9.1 | 7.8 | 6.9 | 6.1 | 5.5 | 5.0 | 4.6 | 4.2 | 3.9 | 3.7 | 3.4 |
| | **40** | **0.40** | - | - | 21.1 | 15.8 | 12.7 | 10.6 | 9.1 | 7.9 | 7.0 | 6.3 | 5.8 | 5.3 | 4.9 | 4.5 | 4.2 | 4.0 |
| | 50 | 0.45 | - | - | 23.6 | 17.7 | 14.2 | 11.8 | 10.1 | 8.9 | 7.9 | 7.1 | 6.4 | 5.9 | 5.4 | 5.1 | 4.7 | 4.4 |
| | 60 | 0.49 | - | - | 25.9 | 19.4 | 15.5 | 12.9 | 11.1 | 9.7 | 8.6 | 7.8 | 7.1 | 6.5 | 6.0 | 5.5 | 5.2 | 4.8 |
| | 70 | 0.53 | - | - | 27.9 | 21.0 | 16.8 | 14.0 | 12.0 | 10.5 | 9.3 | 8.4 | 7.6 | 7.0 | 6.4 | 6.0 | 5.6 | 5.2 |
| | 80 | 0.57 | - | - | 29.9 | 22.4 | 17.9 | 14.9 | 12.8 | 11.2 | 10.0 | 9.0 | 8.1 | 7.5 | 6.9 | 6.4 | 6.0 | 5.6 |
| | 90 | 0.60 | - | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 5.9 |
| | 100 | 0.63 | - | - | - | 25.0 | 20.0 | 16.7 | 14.3 | 12.5 | 11.1 | 10.0 | 9.1 | 8.3 | 7.7 | 7.2 | 6.7 | 6.3 |
| | 115 | 0.68 | - | - | - | 26.9 | 21.5 | 17.9 | 15.3 | 13.4 | 11.9 | 10.7 | 9.8 | 9.0 | 8.3 | 7.7 | 7.2 | 6.7 |
| 05 | 15 | 0.31 | - | 24.2 | 16.2 | 12.1 | 9.7 | 8.1 | 6.9 | 6.1 | 5.4 | 4.8 | 4.4 | 4.0 | 3.7 | 3.5 | 3.2 | 3.0 |
| | 20 | 0.35 | - | 28.0 | 18.7 | 14.0 | 11.2 | 9.3 | 8.0 | 7.0 | 6.2 | 5.6 | 5.1 | 4.7 | 4.3 | 4.0 | 3.7 | 3.5 |
| | 30 | 0.43 | - | - | 22.9 | 17.1 | 13.7 | 11.4 | 9.8 | 8.6 | 7.6 | 6.9 | 6.2 | 5.7 | 5.3 | 4.9 | 4.6 | 4.3 |
| | **40** | **0.50** | - | - | 26.4 | 19.8 | 15.8 | 13.2 | 11.3 | 9.9 | 8.8 | 7.9 | 7.2 | 6.6 | 6.1 | 5.7 | 5.3 | 5.0 |
| | 50 | 0.56 | - | - | 29.5 | 22.1 | 17.7 | 14.8 | 12.6 | 11.1 | 9.8 | 8.9 | 8.0 | 7.4 | 6.8 | 6.3 | 5.9 | 5.5 |
| | 60 | 0.61 | - | - | - | 24.2 | 19.4 | 16.2 | 13.9 | 12.1 | 10.8 | 9.7 | 8.8 | 8.1 | 7.5 | 6.9 | 6.5 | 6.1 |
| | 70 | 0.66 | - | - | - | 26.2 | 21.0 | 17.5 | 15.0 | 13.1 | 11.6 | 10.5 | 9.5 | 8.7 | 8.1 | 7.5 | 7.0 | 6.5 |
| | 80 | 0.71 | - | - | - | 28.0 | 22.4 | 18.7 | 16.0 | 14.0 | 12.4 | 11.2 | 10.2 | 9.3 | 8.6 | 8.0 | 7.5 | 7.0 |
| | 90 | 0.75 | - | - | - | 29.7 | 23.8 | 19.8 | 17.0 | 14.9 | 13.2 | 11.9 | 10.8 | 9.9 | 9.1 | 8.5 | 7.9 | 7.4 |
| | 100 | 0.79 | - | - | - | - | 25.0 | 20.9 | 17.9 | 15.7 | 13.9 | 12.5 | 11.4 | 10.4 | 9.6 | 8.9 | 8.3 | 7.8 |
| | 115 | 0.85 | - | - | - | - | 26.9 | 22.4 | 19.2 | 16.8 | 14.9 | 13.4 | 12.2 | 11.2 | 10.3 | 9.6 | 9.0 | 8.4 |
| 06 | 15 | 0.37 | - | 29.1 | 19.4 | 14.5 | 11.6 | 9.7 | 8.3 | 7.3 | 6.5 | 5.8 | 5.3 | 4.8 | 4.5 | 4.2 | 3.9 | 3.6 |
| | 20 | 0.42 | - | - | 22.4 | 16.8 | 13.4 | 11.2 | 9.6 | 8.4 | 7.5 | 6.7 | 6.1 | 5.6 | 5.2 | 4.8 | 4.5 | 4.2 |
| | 30 | 0.52 | - | - | 27.4 | 20.6 | 16.5 | 13.7 | 11.8 | 10.3 | 9.1 | 8.2 | 7.5 | 6.9 | 6.3 | 5.9 | 5.5 | 5.1 |
| | **40** | **0.60** | - | - | - | 23.8 | 19.0 | 15.8 | 13.6 | 11.9 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 5.9 |
| | 50 | 0.67 | - | - | - | 26.6 | 21.3 | 17.7 | 15.2 | 13.3 | 11.8 | 10.6 | 9.7 | 8.9 | 8.2 | 7.6 | 7.1 | 6.6 |
| | 60 | 0.73 | - | - | - | 29.1 | 23.3 | 19.4 | 16.6 | 14.5 | 12.9 | 11.6 | 10.6 | 9.7 | 9.0 | 8.3 | 7.8 | 7.3 |
| | 70 | 0.79 | - | - | - | - | 25.1 | 21.0 | 18.0 | 15.7 | 14.0 | 12.6 | 11.4 | 10.5 | 9.7 | 9.0 | 8.4 | 7.9 |
| | 80 | 0.85 | - | - | - | - | 26.9 | 22.4 | 19.2 | 16.8 | 14.9 | 13.4 | 12.2 | 11.2 | 10.3 | 9.6 | 9.0 | 8.4 |
| | 90 | 0.90 | - | - | - | - | 28.5 | 23.8 | 20.4 | 17.8 | 15.8 | 14.3 | 13.0 | 11.9 | 11.0 | 10.2 | 9.5 | 8.9 |
| | 100 | 0.95 | - | - | - | - | 30.1 | 25.0 | 21.5 | 18.8 | 16.7 | 15.0 | 13.7 | 12.5 | 11.6 | 10.7 | 10.0 | 9.4 |
| | 115 | 1.02 | - | - | - | - | - | 26.9 | 23.0 | 20.1 | 17.9 | 16.1 | 14.6 | 13.4 | 12.4 | 11.5 | 10.7 | 10.1 |
| 08 | 15 | 0.49 | - | 38.8 | 25.9 | 19.4 | 15.5 | 12.9 | 11.1 | 9.7 | 8.6 | 7.8 | 7.1 | 6.5 | 6.0 | 5.5 | 5.2 | 4.8 |
| | 20 | 0.57 | - | - | 29.9 | 22.4 | 17.9 | 14.9 | 12.8 | 11.2 | 10.0 | 9.0 | 8.1 | 7.5 | 6.9 | 6.4 | 6.0 | 5.6 |
| | 30 | 0.69 | - | - | - | 27.4 | 21.9 | 18.3 | 15.7 | 13.7 | 12.2 | 11.0 | 10.0 | 9.1 | 8.4 | 7.8 | 7.3 | 6.9 |
| | **40** | **0.80** | - | - | - | - | 25.3 | 21.1 | 18.1 | 15.8 | 14.1 | 12.7 | 11.5 | 10.6 | 9.7 | 9.1 | 8.4 | 7.9 |
| | 50 | 0.89 | - | - | - | - | 28.3 | 23.6 | 20.2 | 17.7 | 15.7 | 14.2 | 12.9 | 11.8 | 10.9 | 10.1 | 9.4 | 8.9 |
| | 60 | 0.98 | - | - | - | - | - | 25.9 | 22.2 | 19.4 | 17.2 | 15.5 | 14.1 | 12.9 | 11.9 | 11.1 | 10.3 | 9.7 |
| | 70 | 1.06 | - | - | - | - | - | 27.9 | 23.9 | 21.0 | 18.6 | 16.8 | 15.2 | 14.0 | 12.9 | 12.0 | 11.2 | 10.5 |
| | 80 | 1.13 | - | - | - | - | - | 29.9 | 25.6 | 22.4 | 19.9 | 17.9 | 16.3 | 14.9 | 13.8 | 12.8 | 11.9 | 11.2 |
| | 90 | 1.20 | - | - | - | - | - | - | 27.2 | 23.8 | 21.1 | 19.0 | 17.3 | 15.8 | 14.6 | 13.6 | 12.7 | 11.9 |
| | 100 | 1.26 | - | - | - | - | - | - | 28.6 | 25.0 | 22.3 | 20.0 | 18.2 | 16.7 | 15.4 | 14.3 | 13.4 | 12.5 |
| | 115 | 1.36 | - | - | - | - | - | - | - | 26.9 | 23.9 | 21.5 | 19.5 | 17.9 | 16.5 | 15.3 | 14.3 | 13.4 |
| 10 | 15 | 0.61 | - | 48.5 | 32.3 | 24.2 | 19.4 | 16.2 | 13.9 | 12.1 | 10.8 | 9.7 | 8.8 | 8.1 | 7.5 | 6.9 | 6.5 | 6.1 |
| | 20 | 0.71 | - | - | - | 28.0 | 22.4 | 18.7 | 16.0 | 14.0 | 12.4 | 11.2 | 10.2 | 9.3 | 8.6 | 8.0 | 7.5 | 7.0 |
| | 30 | 0.87 | - | - | - | - | 27.4 | 22.9 | 19.6 | 17.1 | 15.2 | 13.7 | 12.5 | 11.4 | 10.6 | 9.8 | 9.1 | 8.6 |
| | **40** | **1.00** | - | - | - | - | - | 26.4 | 22.6 | 19.8 | 17.6 | 15.8 | 14.4 | 13.2 | 12.2 | 11.3 | 10.6 | 9.9 |
| | 50 | 1.12 | - | - | - | - | - | 29.5 | 25.3 | 22.1 | 19.7 | 17.7 | 16.1 | 14.8 | 13.6 | 12.6 | 11.8 | 11.1 |
| | 60 | 1.22 | - | - | - | - | - | - | 27.7 | 24.2 | 21.6 | 19.4 | 17.6 | 16.2 | 14.9 | 13.9 | 12.9 | 12.1 |
| | 70 | 1.32 | - | - | - | - | - | - | 29.9 | 26.2 | 23.3 | 21.0 | 19.0 | 17.5 | 16.1 | 15.0 | 14.0 | 13.1 |
| | 80 | 1.41 | - | - | - | - | - | - | - | 28.0 | 24.9 | 22.4 | 20.4 | 18.7 | 17.2 | 16.0 | 14.9 | 14.0 |
| | 90 | 1.50 | - | - | - | - | - | - | - | 29.7 | 26.4 | 23.8 | 21.6 | 19.8 | 18.3 | 17.0 | 15.8 | 14.9 |
| | 100 | 1.58 | - | - | - | - | - | - | - | - | 27.8 | 25.0 | 22.8 | 20.9 | 19.3 | 17.9 | 16.7 | 15.7 |
| | 115 | 1.70 | - | - | - | - | - | - | - | - | 29.8 | 26.9 | 24.4 | 22.4 | 20.7 | 19.2 | 17.9 | 16.8 |
| 15 | 15 | 0.92 | - | 72.7 | 48.5 | 36.4 | 29.1 | 24.2 | 20.8 | 18.2 | 16.2 | 14.5 | 13.2 | 12.1 | 11.2 | 10.4 | 9.7 | 9.1 |
| | 20 | 1.06 | - | - | - | - | - | 28.0 | 24.0 | 21.0 | 18.7 | 16.8 | 15.3 | 14.0 | 12.9 | 12.0 | 11.2 | 10.5 |
| | 30 | 1.30 | - | - | - | - | - | - | 29.4 | 25.7 | 22.9 | 20.6 | 18.7 | 17.1 | 15.8 | 14.7 | 13.7 | 12.9 |
| | **40** | **1.50** | - | - | - | - | - | - | - | 29.7 | 26.4 | 23.8 | 21.6 | 19.8 | 18.3 | 17.0 | 15.8 | 14.9 |
| | 50 | 1.68 | - | - | - | - | - | - | - | - | 29.5 | 26.6 | 24.1 | 22.1 | 20.4 | 19.0 | 17.7 | 16.6 |
| | 60 | 1.84 | - | - | - | - | - | - | - | - | - | 29.1 | 26.5 | 24.2 | 22.4 | 20.8 | 19.4 | 18.2 |
| | 70 | 1.98 | - | - | - | - | - | - | - | - | - | - | 28.6 | 26.2 | 24.2 | 22.5 | 21.0 | 19.6 |
| | 80 | 2.12 | - | - | - | - | - | - | - | - | - | - | - | 28.0 | 25.8 | 24.0 | 22.4 | 21.0 |
| | 90 | 2.25 | - | - | - | - | - | - | - | - | - | - | - | 29.7 | 27.4 | 25.5 | 23.8 | 22.3 |
| | 100 | 2.37 | - | - | - | - | - | - | - | - | - | - | - | - | 28.9 | 26.8 | 25.0 | 23.5 |
| | 115 | 2.54 | - | - | - | - | - | - | - | - | - | - | - | - | - | 28.8 | 26.9 | 25.2 |

# HI-FLOW APPLICATION CHART - 15", 30" & 45" SPACING

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | Speed (MPH) - 15 inch nozzle spacing | | | | | | | Speed (MPH) - 30 inch nozzle spacing | | | | | | | Speed (MPH) - 45 inch nozzle spacing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gallons per Acre | | | | | | | Gallons per Acre | | | | | | | Gallons per Acre | | | | | | |
| | | | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 5 | 6 | 8 | 10 | 12 | 14 | 16 |
| 08 | 20 | 0.57 | - | - | 28 | 23 | 18.8 | 16.1 | 14.1 | 23 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | 7.1 | 15.0 | 12.5 | 9.4 | 7.5 | 6.3 | 5.4 | 4.7 |
| | 30 | 0.69 | - | - | - | 27 | 23 | 19.5 | 17.1 | 27 | 23 | 17.1 | 13.7 | 11.4 | 9.8 | 8.5 | 18.2 | 15.2 | 11.4 | 9.1 | 7.6 | 6.5 | 5.7 |
| | 40 | 0.80 | - | - | - | - | 26 | 23 | 19.8 | - | 26 | 19.8 | 15.8 | 13.2 | 11.3 | 9.9 | 21 | 17.6 | 13.2 | 10.6 | 8.8 | 7.5 | 6.6 |
| | 50 | 0.89 | - | - | - | - | 29 | 25 | 22 | - | 29 | 22 | 17.6 | 14.7 | 12.6 | 11.0 | 23 | 19.6 | 14.7 | 11.7 | 9.8 | 8.4 | 7.3 |
| | 60 | 0.98 | - | - | - | - | - | 28 | 24 | - | - | 24 | 19.4 | 16.2 | 13.9 | 12.1 | 26 | 22 | 16.2 | 12.9 | 10.8 | 9.2 | 8.1 |
| | 70 | 1.06 | - | - | - | - | - | 30 | 26 | - | - | 26 | 21 | 17.5 | 15.0 | 13.1 | 28 | 23 | 17.5 | 14.0 | 11.7 | 10.0 | 8.7 |
| | 80 | 1.13 | - | - | - | - | - | - | 28 | - | - | 28 | 22 | 18.6 | 16.0 | 14.0 | 30 | 25 | 18.6 | 14.9 | 12.4 | 10.7 | 9.3 |
| 10 | 20 | 0.71 | - | - | - | 28 | 23 | 20 | 17.6 | 28 | 23 | 17.6 | 14.1 | 11.7 | 10.0 | 8.8 | 18.7 | 15.6 | 11.7 | 9.4 | 7.8 | 6.7 | 5.9 |
| | 30 | 0.87 | - | - | - | - | 29 | 25 | 22 | - | 29 | 22 | 17.2 | 14.4 | 12.3 | 10.8 | 23 | 19.1 | 14.4 | 11.5 | 9.6 | 8.2 | 7.2 |
| | 40 | 1.00 | - | - | - | - | - | 28 | 25 | - | - | 25 | 19.8 | 16.5 | 14.1 | 12.4 | 26 | 22 | 16.5 | 13.2 | 11.0 | 9.4 | 8.3 |
| | 50 | 1.12 | - | - | - | - | - | - | 28 | - | - | 28 | 22 | 18.5 | 15.8 | 13.9 | 30 | 25 | 18.5 | 14.8 | 12.3 | 10.6 | 9.2 |
| | 60 | 1.22 | - | - | - | - | - | - | 30 | - | - | - | 24 | 20 | 17.3 | 15.1 | - | 27 | 20 | 16.1 | 13.4 | 11.5 | 10.1 |
| | 70 | 1.32 | - | - | - | - | - | - | - | - | - | - | 26 | 22 | 18.7 | 16.3 | - | 29 | 22 | 17.4 | 14.5 | 12.4 | 10.9 |
| | 80 | 1.41 | - | - | - | - | - | - | - | - | - | - | 28 | 23 | 19.9 | 17.4 | - | - | 23 | 18.6 | 15.5 | 13.3 | 11.6 |
| 15 | 20 | 1.06 | - | - | - | - | - | 30 | 26 | - | 35 | 26 | 21 | 17.5 | 15.0 | 13.1 | 28 | 23 | 17.5 | 14.0 | 11.7 | 10.0 | 8.7 |
| | 30 | 1.30 | - | - | - | - | - | - | - | - | - | - | 26 | 21 | 18.4 | 16.1 | - | 29 | 21 | 17.2 | 14.3 | 12.3 | 10.7 |
| | 40 | 1.50 | - | - | - | - | - | - | - | - | - | - | 30 | 25 | 21 | 18.6 | - | - | 25 | 19.8 | 16.5 | 14.1 | 12.4 |
| | 50 | 1.68 | - | - | - | - | - | - | - | - | - | - | - | 28 | 24 | 21 | - | - | 28 | 22 | 18.5 | 15.8 | 13.9 |
| | 60 | 1.84 | - | - | - | - | - | - | - | - | - | - | - | 30 | 26 | 23 | - | - | - | 24 | 20 | 17.3 | 15.2 |
| | 70 | 2.0 | - | - | - | - | - | - | - | - | - | - | - | 33 | 28 | 25 | - | - | - | 26 | 22 | 18.9 | 16.5 |
| | 80 | 2.1 | - | - | - | - | - | - | - | - | - | - | - | - | 30 | 26 | - | - | - | 28 | 23 | 19.8 | 17.3 |
| 20 | 20 | 1.41 | - | - | - | - | - | - | - | - | 46 | 35 | 28 | 23 | 19.8 | 17.3 | - | - | 23 | 18.5 | 15.4 | 13.2 | 11.6 |
| | 30 | 1.73 | - | - | - | - | - | - | - | - | - | - | - | 28 | 24 | 21 | - | - | 28 | 22 | 18.7 | 16.0 | 14.0 |
| | 40 | 2.0 | - | - | - | - | - | - | - | - | - | - | - | - | 28 | 25 | - | - | - | 26 | 22 | 18.9 | 16.5 |
| | 50 | 2.2 | - | - | - | - | - | - | - | - | - | - | - | - | - | 27 | - | - | - | 29 | 24 | 21 | 18.2 |
| | 60 | 2.4 | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 | - | - | - | - | 26 | 23 | 19.8 |
| | 70 | 2.6 | - | - | - | - | - | - | - | - | - | - | - | - | - | 32 | - | - | - | - | 29 | 25 | 21 |
| | 80 | 2.8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 26 | 23 |
| 30 | 20 | 2.1 | - | - | - | - | - | - | - | - | - | - | - | - | 30 | 26 | - | 46 | 35 | 28 | 23 | 19.8 | 17.3 |
| | 30 | 2.6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 29 | 25 | 21 |
| | 40 | 3.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 28 | 25 |
| | 50 | 3.4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 28 |
| | 60 | 3.7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 70 | 4.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 80 | 4.2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 40 | 20 | 2.8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 26 | 23 |
| | 30 | 3.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 29 |
| | 40 | 4.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 50 | 4.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 60 | 4.9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 70 | 5.3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 80 | 5.7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 50 | 20 | 3.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 29 |
| | 30 | 4.3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 40 | 5.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 50 | 5.6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 60 | 6.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 70 | 6.6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 80 | 7.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 60 | 20 | 4.2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 30 | 5.2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 40 | 6.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 50 | 6.7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 60 | 7.3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 70 | 7.9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 80 | 8.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

# BROADCAST APPLICATION CHART - 50 CM SPACING

| Nozzle Size | Pressure (BAR) | Flow Rate (GPM) | KM/H | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Liters per Hectacre | | | | | | | | | | | | | | | | | |
| | | | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | 340 | 360 | 380 | 400 |
| 01 | 0.7 | 0.19 | 5.8 | 3.9 | 2.9 | 2.3 | 1.9 | 1.7 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 0.9 | 0.8 | 0.8 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 |
| | 1 | 0.23 | 6.9 | 4.6 | 3.5 | 2.8 | 2.3 | 2.0 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 | 0.7 |
| | 1.5 | 0.28 | 8.5 | 5.7 | 4.2 | 3.4 | 2.8 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 | 1.0 | 0.9 | 0.9 | 0.8 |
| | 2 | 0.33 | 9.8 | 6.5 | 4.9 | 3.9 | 3.3 | 2.8 | 2.4 | 2.2 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| | 2.5 | 0.37 | 11.0 | 7.3 | 5.5 | 4.4 | 3.7 | 3.1 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.2 | 1.1 |
| | 3 | **0.40** | 12.0 | 8.0 | 6.0 | 4.8 | 4.0 | 3.4 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 | 1.3 | 1.2 |
| | 4 | 0.46 | 13.9 | 9.2 | 6.9 | 5.5 | 4.6 | 4.0 | 3.5 | 3.1 | 2.8 | 2.5 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.5 | 1.4 |
| | 5 | 0.52 | 15.5 | 10.3 | 7.7 | 6.2 | 5.2 | 4.4 | 3.9 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 | 1.5 |
| | 6 | 0.57 | 17.0 | 11.3 | 8.5 | 6.8 | 5.7 | 4.8 | 4.2 | 3.8 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.3 | 2.1 | 2.0 | 1.9 | 1.8 | 1.7 |
| | 7 | 0.61 | 18.3 | 12.2 | 9.2 | 7.3 | 6.1 | 5.2 | 4.6 | 4.1 | 3.7 | 3.3 | 3.1 | 2.8 | 2.6 | 2.4 | 2.3 | 2.2 | 2.0 | 1.9 | 1.8 |
| | 8 | 0.65 | 19.6 | 13.1 | 9.8 | 7.8 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 | 2.2 | 2.1 | 2.0 |
| 015 | 0.7 | 0.29 | 8.7 | 5.8 | 4.3 | 3.5 | 2.9 | 2.5 | 2.2 | 1.9 | 1.7 | 1.6 | 1.4 | 1.3 | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 | 0.9 | 0.9 |
| | 1 | 0.35 | 10.4 | 6.9 | 5.2 | 4.2 | 3.5 | 3.0 | 2.6 | 2.3 | 2.1 | 1.9 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 | 1.2 | 1.1 | 1.0 |
| | 1.5 | 0.42 | 12.7 | 8.5 | 6.4 | 5.1 | 4.2 | 3.6 | 3.2 | 2.8 | 2.5 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 | 1.3 |
| | 2 | 0.49 | 14.7 | 9.8 | 7.3 | 5.9 | 4.9 | 4.2 | 3.7 | 3.3 | 2.9 | 2.7 | 2.4 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.5 |
| | 2.5 | 0.55 | 16.4 | 11.0 | 8.2 | 6.6 | 5.5 | 4.7 | 4.1 | 3.7 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.2 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| | 3 | **0.60** | 18.0 | 12.0 | 9.0 | 7.2 | 6.0 | 5.1 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 | 2.1 | 2.0 | 1.9 | 1.8 |
| | 4 | 0.69 | 20.8 | 13.9 | 10.4 | 8.3 | 6.9 | 5.9 | 5.2 | 4.6 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 | 2.2 | 2.1 |
| | 5 | 0.77 | 23.2 | 15.5 | 11.6 | 9.3 | 7.7 | 6.6 | 5.8 | 5.2 | 4.6 | 4.2 | 3.9 | 3.6 | 3.3 | 3.1 | 2.9 | 2.7 | 2.6 | 2.4 | 2.3 |
| | 6 | 0.85 | 25.5 | 17.0 | 12.7 | 10.2 | 8.5 | 7.3 | 6.4 | 5.7 | 5.1 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 | 3.0 | 2.8 | 2.7 | 2.5 |
| | 7 | 0.92 | 27.5 | 18.3 | 13.7 | 11.0 | 9.2 | 7.9 | 6.9 | 6.1 | 5.5 | 5.0 | 4.6 | 4.2 | 3.9 | 3.7 | 3.4 | 3.2 | 3.1 | 2.9 | 2.7 |
| | 8 | 0.98 | 29.4 | 19.6 | 14.7 | 11.8 | 9.8 | 8.4 | 7.3 | 6.5 | 5.9 | 5.3 | 4.9 | 4.5 | 4.2 | 3.9 | 3.7 | 3.5 | 3.3 | 3.1 | 2.9 |
| 02 | 0.7 | 0.39 | 11.6 | 7.7 | 5.8 | 4.6 | 3.9 | 3.3 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.5 | 1.4 | 1.4 | 1.3 | 1.2 | 1.2 |
| | 1 | 0.46 | 13.9 | 9.2 | 6.9 | 5.5 | 4.6 | 4.0 | 3.5 | 3.1 | 2.8 | 2.5 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.5 | 1.4 |
| | 1.5 | 0.57 | 17.0 | 11.3 | 8.5 | 6.8 | 5.7 | 4.8 | 4.2 | 3.8 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.3 | 2.1 | 2.0 | 1.9 | 1.8 | 1.7 |
| | 2 | 0.65 | 19.6 | 13.1 | 9.8 | 7.8 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 | 2.2 | 2.1 | 2.0 |
| | 2.5 | 0.73 | 21.9 | 14.6 | 11.0 | 8.8 | 7.3 | 6.3 | 5.5 | 4.9 | 4.4 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.6 | 2.4 | 2.3 | 2.2 |
| | 3 | **0.80** | 24.0 | 16.0 | 12.0 | 9.6 | 8.0 | 6.9 | 6.0 | 5.3 | 4.8 | 4.4 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 | 2.7 | 2.5 | 2.4 |
| | 4 | 0.92 | 27.7 | 18.5 | 13.9 | 11.1 | 9.2 | 7.9 | 6.9 | 6.2 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.7 | 3.5 | 3.3 | 3.1 | 2.9 | 2.8 |
| | 5 | 1.03 | 31.0 | 20.7 | 15.5 | 12.4 | 10.3 | 8.9 | 7.7 | 6.9 | 6.2 | 5.6 | 5.2 | 4.8 | 4.4 | 4.1 | 3.9 | 3.6 | 3.4 | 3.3 | 3.1 |
| | 6 | 1.13 | 33.9 | 22.6 | 17.0 | 13.6 | 11.3 | 9.7 | 8.5 | 7.5 | 6.8 | 6.2 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 4.0 | 3.8 | 3.6 | 3.4 |
| | 7 | 1.22 | 36.7 | 24.4 | 18.3 | 14.7 | 12.2 | 10.5 | 9.2 | 8.1 | 7.3 | 6.7 | 6.1 | 5.6 | 5.2 | 4.9 | 4.6 | 4.3 | 4.1 | 3.9 | 3.7 |
| | 8 | 1.31 | 39.2 | 26.1 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.8 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 | 4.6 | 4.4 | 4.1 | 3.9 |
| 025 | 0.7 | 0.39 | 11.6 | 7.7 | 5.8 | 4.6 | 3.9 | 3.3 | 2.9 | 2.6 | 2.3 | 2.1 | 1.9 | 1.8 | 1.7 | 1.5 | 1.4 | 1.4 | 1.3 | 1.2 | 1.2 |
| | 1 | 0.46 | 13.9 | 9.2 | 6.9 | 5.5 | 4.6 | 4.0 | 3.5 | 3.1 | 2.8 | 2.5 | 2.3 | 2.1 | 2.0 | 1.8 | 1.7 | 1.6 | 1.5 | 1.5 | 1.4 |
| | 1.5 | 0.57 | 17.0 | 11.3 | 8.5 | 6.8 | 5.7 | 4.8 | 4.2 | 3.8 | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.3 | 2.1 | 2.0 | 1.9 | 1.8 | 1.7 |
| | 2 | 0.65 | 19.6 | 13.1 | 9.8 | 7.8 | 6.5 | 5.6 | 4.9 | 4.4 | 3.9 | 3.6 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 | 2.2 | 2.1 | 2.0 |
| | 2.5 | 0.73 | 21.9 | 14.6 | 11.0 | 8.8 | 7.3 | 6.3 | 5.5 | 4.9 | 4.4 | 4.0 | 3.7 | 3.4 | 3.1 | 2.9 | 2.7 | 2.6 | 2.4 | 2.3 | 2.2 |
| | 3 | **0.80** | 24.0 | 16.0 | 12.0 | 9.6 | 8.0 | 6.9 | 6.0 | 5.3 | 4.8 | 4.4 | 4.0 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 | 2.7 | 2.5 | 2.4 |
| | 4 | 0.92 | 27.7 | 18.5 | 13.9 | 11.1 | 9.2 | 7.9 | 6.9 | 6.2 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.7 | 3.5 | 3.3 | 3.1 | 2.9 | 2.8 |
| | 5 | 1.03 | 31.0 | 20.7 | 15.5 | 12.4 | 10.3 | 8.9 | 7.7 | 6.9 | 6.2 | 5.6 | 5.2 | 4.8 | 4.4 | 4.1 | 3.9 | 3.6 | 3.4 | 3.3 | 3.1 |
| | 6 | 1.13 | 33.9 | 22.6 | 17.0 | 13.6 | 11.3 | 9.7 | 8.5 | 7.5 | 6.8 | 6.2 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 4.0 | 3.8 | 3.6 | 3.4 |
| | 7 | 1.22 | 36.7 | 24.4 | 18.3 | 14.7 | 12.2 | 10.5 | 9.2 | 8.1 | 7.3 | 6.7 | 6.1 | 5.6 | 5.2 | 4.9 | 4.6 | 4.3 | 4.1 | 3.9 | 3.7 |
| | 8 | 1.31 | 39.2 | 26.1 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.8 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 | 4.6 | 4.4 | 4.1 | 3.9 |
| 03 | 0.7 | 0.58 | 17.4 | 11.6 | 8.7 | 7.0 | 5.8 | 5.0 | 4.3 | 3.9 | 3.5 | 3.2 | 2.9 | 2.7 | 2.5 | 2.3 | 2.2 | 2.0 | 1.9 | 1.8 | 1.7 |
| | 1 | 0.69 | 20.8 | 13.9 | 10.4 | 8.3 | 6.9 | 5.9 | 5.2 | 4.6 | 4.2 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 | 2.2 | 2.1 |
| | 1.5 | 0.85 | 25.5 | 17.0 | 12.7 | 10.2 | 8.5 | 7.3 | 6.4 | 5.7 | 5.1 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.2 | 3.0 | 2.8 | 2.7 | 2.5 |
| | 2 | 0.98 | 29.4 | 19.6 | 14.7 | 11.8 | 9.8 | 8.4 | 7.3 | 6.5 | 5.9 | 5.3 | 4.9 | 4.5 | 4.2 | 3.9 | 3.7 | 3.5 | 3.3 | 3.1 | 2.9 |
| | 2.5 | 1.10 | 32.9 | 21.9 | 16.4 | 13.1 | 11.0 | 9.4 | 8.2 | 7.3 | 6.6 | 6.0 | 5.5 | 5.1 | 4.7 | 4.4 | 4.1 | 3.9 | 3.7 | 3.5 | 3.3 |
| | 3 | **1.20** | 36.0 | 24.0 | 18.0 | 14.4 | 12.0 | 10.3 | 9.0 | 8.0 | 7.2 | 6.5 | 6.0 | 5.5 | 5.1 | 4.8 | 4.5 | 4.2 | 4.0 | 3.8 | 3.6 |
| | 4 | 1.39 | 41.6 | 27.7 | 20.8 | 16.6 | 13.9 | 11.9 | 10.4 | 9.2 | 8.3 | 7.6 | 6.9 | 6.4 | 5.9 | 5.5 | 5.2 | 4.9 | 4.6 | 4.4 | 4.2 |
| | 5 | 1.55 | 46.5 | 31.0 | 23.2 | 18.6 | 15.5 | 13.3 | 11.6 | 10.3 | 9.3 | 8.5 | 7.7 | 7.2 | 6.6 | 6.2 | 5.8 | 5.5 | 5.2 | 4.9 | 4.6 |
| | 6 | 1.70 | 50.9 | 33.9 | 25.5 | 20.4 | 17.0 | 14.5 | 12.7 | 11.3 | 10.2 | 9.3 | 8.5 | 7.8 | 7.3 | 6.8 | 6.4 | 6.0 | 5.7 | 5.4 | 5.1 |
| | 7 | 1.83 | 55.0 | 36.7 | 27.5 | 22.0 | 18.3 | 15.7 | 13.7 | 12.2 | 11.0 | 10.0 | 9.2 | 8.5 | 7.9 | 7.3 | 6.9 | 6.5 | 6.1 | 5.8 | 5.5 |
| | 8 | 1.96 | 58.8 | 39.2 | 29.4 | 23.5 | 19.6 | 16.8 | 14.7 | 13.1 | 11.8 | 10.7 | 9.8 | 9.0 | 8.4 | 7.8 | 7.3 | 6.9 | 6.5 | 6.2 | 5.9 |
| 04 | 0.7 | 0.77 | 23.2 | 15.5 | 11.6 | 9.3 | 7.7 | 6.6 | 5.8 | 5.2 | 4.6 | 4.2 | 3.9 | 3.6 | 3.3 | 3.1 | 2.9 | 2.7 | 2.6 | 2.4 | 2.3 |
| | 1 | 0.92 | 27.7 | 18.5 | 13.9 | 11.1 | 9.2 | 7.9 | 6.9 | 6.2 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.7 | 3.5 | 3.3 | 3.1 | 2.9 | 2.8 |
| | 1.5 | 1.13 | 33.9 | 22.6 | 17.0 | 13.6 | 11.3 | 9.7 | 8.5 | 7.5 | 6.8 | 6.2 | 5.7 | 5.2 | 4.8 | 4.5 | 4.2 | 4.0 | 3.8 | 3.6 | 3.4 |
| | 2 | 1.31 | 39.2 | 26.1 | 19.6 | 15.7 | 13.1 | 11.2 | 9.8 | 8.7 | 7.8 | 7.1 | 6.5 | 6.0 | 5.6 | 5.2 | 4.9 | 4.6 | 4.4 | 4.1 | 3.9 |
| | 2.5 | 1.46 | 43.8 | 29.2 | 21.9 | 17.5 | 14.6 | 12.5 | 11.0 | 9.7 | 8.8 | 8.0 | 7.3 | 6.7 | 6.3 | 5.8 | 5.5 | 5.2 | 4.9 | 4.6 | 4.4 |
| | 3 | **1.60** | 48.0 | 32.0 | 24.0 | 19.2 | 16.0 | 13.7 | 12.0 | 10.7 | 9.6 | 8.7 | 8.0 | 7.4 | 6.9 | 6.4 | 6.0 | 5.6 | 5.3 | 5.1 | 4.8 |
| | 4 | 1.85 | 55.4 | 37.0 | 27.7 | 22.2 | 18.5 | 15.8 | 13.9 | 12.3 | 11.1 | 10.1 | 9.2 | 8.5 | 7.9 | 7.4 | 6.9 | 6.5 | 6.2 | 5.8 | 5.5 |
| | 5 | 2.07 | 62.0 | 41.3 | 31.0 | 24.8 | 20.7 | 17.7 | 15.5 | 13.8 | 12.4 | 11.3 | 10.3 | 9.5 | 8.9 | 8.3 | 7.7 | 7.3 | 6.9 | 6.5 | 6.2 |
| | 6 | 2.26 | 67.9 | 45.3 | 33.9 | 27.2 | 22.6 | 19.4 | 17.0 | 15.1 | 13.6 | 12.3 | 11.3 | 10.4 | 9.7 | 9.1 | 8.5 | 8.0 | 7.5 | 7.1 | 6.8 |
| | 7 | 2.44 | 73.3 | 48.9 | 36.7 | 29.3 | 24.4 | 20.9 | 18.3 | 16.3 | 14.7 | 13.3 | 12.2 | 11.3 | 10.5 | 9.8 | 9.2 | 8.6 | 8.1 | 7.7 | 7.3 |
| | 8 | 2.61 | 78.4 | 52.3 | 39.2 | 31.4 | 26.1 | 22.4 | 19.6 | 17.4 | 15.7 | 14.3 | 13.1 | 12.1 | 11.2 | 10.5 | 9.8 | 9.2 | 8.7 | 8.3 | 7.8 |
| 05 | 0.7 | 0.97 | 29.0 | 19.3 | 14.5 | 11.6 | 9.7 | 8.3 | 7.2 | 6.4 | 5.8 | 5.3 | 4.8 | 4.5 | 4.1 | 3.9 | 3.6 | 3.4 | 3.2 | 3.1 | 2.9 |
| | 1 | 1.15 | 34.6 | 23.1 | 17.3 | 13.9 | 11.5 | 9.9 | 8.7 | 7.7 | 6.9 | 6.3 | 5.8 | 5.3 | 4.9 | 4.6 | 4.3 | 4.1 | 3.8 | 3.6 | 3.5 |
| | 1.5 | 1.41 | 42.4 | 28.3 | 21.2 | 17.0 | 14.1 | 12.1 | 10.6 | 9.4 | 8.5 | 7.7 | 7.1 | 6.5 | 6.1 | 5.7 | 5.3 | 5.0 | 4.7 | 4.5 | 4.2 |
| | 2 | 1.63 | 49.0 | 32.7 | 24.5 | 19.6 | 16.3 | 14.0 | 12.2 | 10.9 | 9.8 | 8.9 | 8.2 | 7.5 | 7.0 | 6.5 | 6.1 | 5.8 | 5.4 | 5.2 | 4.9 |
| | 2.5 | 1.83 | 54.8 | 36.5 | 27.4 | 21.9 | 18.3 | 15.6 | 13.7 | 12.2 | 11.0 | 10.0 | 9.1 | 8.4 | 7.8 | 7.3 | 6.8 | 6.4 | 6.1 | 5.8 | 5.5 |
| | 3 | **2.00** | 60.0 | 40.0 | 30.0 | 24.0 | 20.0 | 17.1 | 15.0 | 13.3 | 12.0 | 10.9 | 10.0 | 9.2 | 8.6 | 8.0 | 7.5 | 7.1 | 6.7 | 6.3 | 6.0 |
| | 4 | 2.31 | 69.3 | 46.2 | 34.6 | 27.7 | 23.1 | 19.8 | 17.3 | 15.4 | 13.9 | 12.6 | 11.5 | 10.7 | 9.9 | 9.2 | 8.7 | 8.2 | 7.7 | 7.3 | 6.9 |
| | 5 | 2.58 | 77.5 | 51.6 | 38.7 | 31.0 | 25.8 | 22.1 | 19.4 | 17.2 | 15.5 | 14.1 | 12.9 | 11.9 | 11.1 | 10.3 | 9.7 | 9.1 | 8.6 | 8.2 | 7.7 |
| | 6 | 2.83 | 84.9 | 56.6 | 42.4 | 33.9 | 28.3 | 24.2 | 21.2 | 18.9 | 17.0 | 15.4 | 14.1 | 13.1 | 12.1 | 11.3 | 10.6 | 10.0 | 9.4 | 8.9 | 8.5 |
| | 7 | 3.06 | 91.7 | 61.1 | 45.8 | 36.7 | 30.6 | 26.2 | 22.9 | 20.4 | 18.3 | 16.7 | 15.3 | 14.1 | 13.1 | 12.2 | 11.5 | 10.8 | 10.2 | 9.6 | 9.2 |
| | 8 | 3.27 | 98.0 | 65.3 | 49.0 | 39.2 | 32.7 | 28.0 | 24.5 | 21.8 | 19.6 | 17.8 | 16.3 | 15.1 | 14.0 | 13.1 | 12.2 | 11.5 | 10.9 | 10.3 | 9.8 |
| 06 | 0.7 | 1.16 | 34.8 | 23.2 | 17.4 | 13.9 | 11.6 | 9.9 | 8.7 | 7.7 | 7.0 | 6.3 | 5.8 | 5.4 | 5.0 | 4.6 | 4.3 | 4.1 | 3.9 | 3.7 | 3.5 |
| | 1 | 1.39 | 41.6 | 27.7 | 20.8 | 16.6 | 13.9 | 11.9 | 10.4 | 9.2 | 8.3 | 7.6 | 6.9 | 6.4 | 5.9 | 5.5 | 5.2 | 4.9 | 4.6 | 4.4 | 4.2 |
| | 1.5 | 1.70 | 50.9 | 33.9 | 25.5 | 20.4 | 17.0 | 14.5 | 12.7 | 11.3 | 10.2 | 9.3 | 8.5 | 7.8 | 7.3 | 6.8 | 6.4 | 6.0 | 5.7 | 5.4 | 5.1 |
| | 2 | 1.96 | 58.8 | 39.2 | 29.4 | 23.5 | 19.6 | 16.8 | 14.7 | 13.1 | 11.8 | 10.7 | 9.8 | 9.0 | 8.4 | 7.8 | 7.3 | 6.9 | 6.5 | 6.2 | 5.9 |
| | 2.5 | 2.19 | 65.7 | 43.8 | 32.9 | 26.3 | 21.9 | 18.8 | 16.4 | 14.6 | 13.1 | 12.0 | 11.0 | 10.1 | 9.4 | 8.8 | 8.2 | 7.7 | 7.3 | 6.9 | 6.6 |
| | 3 | **2.40** | 72.0 | 48.0 | 36.0 | 28.8 | 24.0 | 20.6 | 18.0 | 16.0 | 14.4 | 13.1 | 12.0 | 11.1 | 10.3 | 9.6 | 9.0 | 8.5 | 8.0 | 7.6 | 7.2 |
| | 4 | 2.77 | 83.1 | 55.4 | 41.6 | 33.3 | 27.7 | 23.8 | 20.8 | 18.5 | 16.6 | 15.1 | 13.9 | 12.8 | 11.9 | 11.1 | 10.4 | 9.8 | 9.2 | 8.8 | 8.3 |
| | 5 | 3.10 | 93.0 | 62.0 | 46.5 | 37.2 | 31.0 | 26.6 | 23.2 | 20.7 | 18.6 | 16.9 | 15.5 | 14.3 | 13.3 | 12.4 | 11.6 | 10.9 | 10.3 | 9.8 | 9.3 |
| | 6 | 3.39 | 101.8 | 67.9 | 50.9 | 40.7 | 33.9 | 29.1 | 25.5 | 22.6 | 20.4 | 18.5 | 17.0 | 15.7 | 14.5 | 13.6 | 12.7 | 12.0 | 11.3 | 10.7 | 10.2 |
| | 7 | 3.67 | 110.0 | 73.3 | 55.0 | 44.0 | 36.7 | 31.4 | 27.5 | 24.4 | 22.0 | 20.0 | 18.3 | 16.9 | 15.7 | 14.7 | 13.7 | 12.9 | 12.2 | 11.6 | 11.0 |
| | 8 | 3.92 | 117.6 | 78.4 | 58.8 | 47.0 | 39.2 | 33.6 | 29.4 | 26.1 | 23.5 | 21.4 | 19.6 | 18.1 | 16.8 | 15.7 | 14.7 | 13.8 | 13.1 | 12.4 | 11.8 |
| 08 | 0.7 | 1.55 | 46.4 | 30.9 | 23.2 | 18.5 | 15.5 | 13.2 | 11.6 | 10.3 | 9.3 | 8.4 | 7.7 | 7.1 | 6.6 | 6.2 | 5.8 | 5.5 | 5.2 | 4.9 | 4.6 |
| | 1 | 1.85 | 55.4 | 37.0 | 27.7 | 22.2 | 18.5 | 15.8 | 13.9 | 12.3 | 11.1 | 10.1 | 9.2 | 8.5 | 7.9 | 7.4 | 6.9 | 6.5 | 6.2 | 5.8 | 5.5 |
| | 1.5 | 2.26 | 67.9 | 45.3 | 33.9 | 27.2 | 22.6 | 19.4 | 17.0 | 15.1 | 13.6 | 12.3 | 11.3 | 10.4 | 9.7 | 9.1 | 8.5 | 8.0 | 7.5 | 7.1 | 6.8 |
| | 2 | 2.61 | 78.4 | 52.3 | 39.2 | 31.4 | 26.1 | 22.4 | 19.6 | 17.4 | 15.7 | 14.3 | 13.1 | 12.1 | 11.2 | 10.5 | 9.8 | 9.2 | 8.7 | 8.3 | 7.8 |
| | 2.5 | 2.92 | 87.6 | 58.4 | 43.8 | 35.1 | 29.2 | 25.0 | 21.9 | 19.5 | 17.5 | 15.9 | 14.6 | 13.5 | 12.5 | 11.7 | 11.0 | 10.3 | 9.7 | 9.2 | 8.8 |
| | 3 | **3.20** | 96.0 | 64.0 | 48.0 | 38.4 | 32.0 | 27.4 | 24.0 | 21.3 | 19.2 | 17.5 | 16.0 | 14.8 | 13.7 | 12.8 | 12.0 | 11.3 | 10.7 | 10.1 | 9.6 |
| | 4 | 3.70 | 110.9 | 73.9 | 55.4 | 44.3 | 37.0 | 31.7 | 27.7 | 24.6 | 22.2 | 20.2 | 18.5 | 17.1 | 15.8 | 14.8 | 13.9 | 13.0 | 12.3 | 11.7 | 11.1 |
| | 5 | 4.13 | 123.9 | 82.6 | 62.0 | 49.6 | 41.3 | 35.4 | 31.0 | 27.5 | 24.8 | 22.5 | 20.7 | 19.1 | 17.7 | 16.5 | 15.5 | 14.6 | 13.8 | 13.0 | 12.4 |
| | 6 | 4.53 | 135.8 | 90.5 | 67.9 | 54.3 | 45.3 | 38.8 | 33.9 | 30.2 | 27.2 | 24.7 | 22.6 | 20.9 | 19.4 | 18.1 | 17.0 | 16.0 | 15.1 | 14.3 | 13.6 |
| | 7 | 4.89 | 146.6 | 97.8 | 73.3 | 58.7 | 48.9 | 41.9 | 36.7 | 32.6 | 29.3 | 26.7 | 24.4 | 22.6 | 20.9 | 19.6 | 18.3 | 17.3 | 16.3 | 15.4 | 14.7 |
| | 8 | 5.23 | 156.8 | 104.5 | 78.4 | 62.7 | 52.3 | 44.8 | 39.2 | 34.8 | 31.4 | 28.5 | 26.1 | 24.1 | 22.4 | 20.9 | 19.6 | 18.4 | 17.4 | 16.5 | 15.7 |
| 10 | 0.7 | 1.93 | 58.0 | 38.6 | 29.0 | 23.2 | 19.3 | 16.6 | 14.5 | 12.9 | 11.6 | 10.5 | 9.7 | 8.9 | 8.3 | 7.7 | 7.2 | 6.8 | 6.4 | 6.1 | 5.8 |
| | 1 | 2.31 | 69.3 | 46.2 | 34.6 | 27.7 | 23.1 | 19.8 | 17.3 | 15.4 | 13.9 | 12.6 | 11.5 | 10.7 | 9.9 | 9.2 | 8.7 | 8.2 | 7.7 | 7.3 | 6.9 |
| | 1.5 | 2.83 | 84.9 | 56.6 | 42.4 | 33.9 | 28.3 | 24.2 | 21.2 | 18.9 | 17.0 | 15.4 | 14.1 | 13.1 | 12.1 | 11.3 | 10.6 | 10.0 | 9.4 | 8.9 | 8.5 |
| | 2 | 3.27 | 98.0 | 65.3 | 49.0 | 39.2 | 32.7 | 28.0 | 24.5 | 21.8 | 19.6 | 17.8 | 16.3 | 15.1 | 14.0 | 13.1 | 12.2 | 11.5 | 10.9 | 10.3 | 9.8 |
| | 2.5 | 3.65 | 109.5 | 73.0 | 54.8 | 43.8 | 36.5 | 31.3 | 27.4 | 24.3 | 21.9 | 19.9 | 18.3 | 16.9 | 15.6 | 14.6 | 13.7 | 12.9 | 12.2 | 11.5 | 11.0 |
| | 3 | **4.00** | 120.0 | 80.0 | 60.0 | 48.0 | 40.0 | 34.3 | 30.0 | 26.7 | 24.0 | 21.8 | 20.0 | 18.5 | 17.1 | 16.0 | 15.0 | 14.1 | 13.3 | 12.6 | 12.0 |
| | 4 | 4.62 | 138.6 | 92.4 | 69.3 | 55.4 | 46.2 | 39.6 | 34.6 | 30.8 | 27.7 | 25.2 | 23.1 | 21.3 | 19.8 | 18.5 | 17.3 | 16.3 | 15.4 | 14.6 | 13.9 |
| | 5 | 5.16 | 154.9 | 103.3 | 77.5 | 62.0 | 51.6 | 44.3 | 38.7 | 34.4 | 31.0 | 28.2 | 25.8 | 23.8 | 22.1 | 20.7 | 19.4 | 18.2 | 17.2 | 16.3 | 15.5 |
| | 6 | 5.66 | 169.7 | 113.1 | 84.9 | 67.9 | 56.6 | 48.5 | 42.4 | 37.7 | 33.9 | 30.9 | 28.3 | 26.1 | 24.2 | 22.6 | 21.2 | 20.0 | 18.9 | 17.9 | 17.0 |
| | 7 | 6.11 | 183.3 | 122.2 | 91.7 | 73.3 | 61.1 | 52.4 | 45.8 | 40.7 | 36.7 | 33.3 | 30.6 | 28.2 | 26.2 | 24.4 | 22.9 | 21.6 | 20.4 | 19.3 | 18.3 |
| | 8 | 6.53 | 196.0 | 130.6 | 98.0 | 78.4 | 65.3 | 56.0 | 49.0 | 43.5 | 39.2 | 35.6 | 32.7 | 30.1 | 28.0 | 26.1 | 24.5 | 23.1 | 21.8 | 20.6 | 19.6 |
| 15 | 0.7 | 2.90 | 86.9 | 58.0 | 43.5 | 34.8 | 29.0 | 24.8 | 21.7 | 19.3 | 17.4 | 15.8 | 14.5 | 13.4 | 12.4 | 11.6 | 10.9 | 10.2 | 9.7 | 9.2 | 8.7 |
| | 1 | 3.46 | 103.9 | 69.3 | 52.0 | 41.6 | 34.6 | 29.7 | 26.0 | 23.1 | 20.8 | 18.9 | 17.3 | 16.0 | 14.8 | 13.9 | 13.0 | 12.2 | 11.5 | 10.9 | 10.4 |
| | 1.5 | 4.24 | 127.3 | 84.9 | 63.6 | 50.9 | 42.4 | 36.4 | 31.8 | 28.3 | 25.5 | 23.1 | 21.2 | 19.6 | 18.2 | 17.0 | 15.9 | 15.0 | 14.1 | 13.4 | 12.7 |
| | 2 | 4.90 | 147.0 | 98.0 | 73.5 | 58.8 | 49.0 | 42.0 | 36.7 | 32.7 | 29.4 | 26.7 | 24.5 | 22.6 | 21.0 | 19.6 | 18.4 | 17.3 | 16.3 | 15.5 | 14.7 |
| | 2.5 | 5.48 | 164.3 | 109.5 | 82.2 | 65.7 | 54.8 | 46.9 | 41.1 | 36.5 | 32.9 | 29.9 | 27.4 | 25.3 | 23.5 | 21.9 | 20.5 | 19.3 | 18.3 | 17.3 | 16.4 |
| | 3 | **6.00** | 180.0 | 120.0 | 90.0 | 72.0 | 60.0 | 51.4 | 45.0 | 40.0 | 36.0 | 32.7 | 30.0 | 27.7 | 25.7 | 24.0 | 22.5 | 21.2 | 20.0 | 18.9 | 18.0 |
| | 4 | 6.93 | 207.8 | 138.6 | 103.9 | 83.1 | 69.3 | 59.4 | 52.0 | 46.2 | 41.6 | 37.8 | 34.6 | 32.0 | 29.7 | 27.7 | 26.0 | 24.5 | 23.1 | 21.9 | 20.8 |
| | 5 | 7.75 | 232.4 | 154.9 | 116.2 | 93.0 | 77.5 | 66.4 | 58.1 | 51.6 | 46.5 | 42.3 | 38.7 | 35.8 | 33.2 | 31.0 | 29.0 | 27.3 | 25.8 | 24.5 | 23.2 |
| | 6 | 8.49 | 254.6 | 169.7 | 127.3 | 101.8 | 84.9 | 72.7 | 63.6 | 56.6 | 50.9 | 46.3 | 42.4 | 39.2 | 36.4 | 33.9 | 31.8 | 29.9 | 28.3 | 26.8 | 25.5 |
| | 7 | 9.17 | 275.0 | 183.3 | 137.5 | 110.0 | 91.7 | 78.6 | 68.7 | 61.1 | 55.0 | 50.0 | 45.8 | 42.3 | 39.3 | 36.7 | 34.4 | 32.3 | 30.6 | 28.9 | 27.5 |
| | 8 | 9.80 | 293.9 | 196.0 | 147.0 | 117.6 | 98.0 | 84.0 | 73.5 | 65.3 | 58.8 | 53.4 | 49.0 | 45.2 | 42.0 | 39.2 | 36.7 | 34.6 | 32.7 | 30.9 | 29.4 |

# HI-FLOW APPLICATION CHART - 50CM, 100CM & 150CM SPACING

| Nozzle Size | BAR | LPM | Application Rate (L/ha) 50 cm spacing | | | | | | | | Application Rate (L/ha) 100 cm spacing | | | | | | | | Application Rate (L/ha) 150 cm spacing | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | KPH | | | | | | | | KPH | | | | | | | | KPH | | | | | | | |
| | | | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 7 | 8 | 10 | 12 | 15 | 20 | 25 | 30 |
| 08 | 1.5 | 2.26 | 387 | 339 | 271 | 226 | 181 | 136 | 108 | 90 | 194 | 170 | 136 | 113 | 90 | 68 | 54 | 45 | 129 | 113 | 90 | 75 | 60 | 45 | 36 | 30 |
| | 2.0 | 2.61 | 447 | 392 | 313 | 261 | 209 | 157 | 125 | 104 | 224 | 196 | 157 | 131 | 104 | 78 | 63 | 52 | 149 | 131 | 104 | 87 | 70 | 52 | 42 | 35 |
| | 2.5 | 2.92 | 501 | 438 | 350 | 292 | 234 | 175 | 140 | 117 | 250 | 219 | 175 | 146 | 117 | 88 | 70 | 58 | 167 | 146 | 117 | 97 | 78 | 58 | 47 | 39 |
| | 3.0 | 3.20 | 549 | 480 | 384 | 320 | 256 | 192 | 154 | 128 | 274 | 240 | 192 | 160 | 128 | 96 | 77 | 64 | 183 | 160 | 128 | 107 | 85 | 64 | 51 | 43 |
| | 4.0 | 3.70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 | 211 | 185 | 148 | 123 | 99 | 74 | 59 | 49 |
| | 5.0 | 4.00 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 | 229 | 200 | 160 | 133 | 107 | 80 | 64 | 53 |
| | 6.0 | 4.53 | 777 | 680 | 544 | 453 | 362 | 272 | 217 | 181 | 388 | 340 | 272 | 227 | 181 | 136 | 109 | 91 | 259 | 227 | 181 | 151 | 121 | 91 | 72 | 60 |
| 10 | 1.5 | 2.80 | 480 | 420 | 336 | 280 | 224 | 168 | 134 | 112 | 240 | 210 | 168 | 140 | 112 | 84 | 67 | 56 | 160 | 140 | 112 | 93 | 75 | 56 | 45 | 37 |
| | 2.0 | 3.30 | 566 | 495 | 396 | 330 | 264 | 198 | 158 | 132 | 283 | 248 | 198 | 165 | 132 | 99 | 79 | 66 | 189 | 165 | 132 | 110 | 88 | 66 | 53 | 44 |
| | 2.5 | 3.70 | 634 | 555 | 444 | 370 | 296 | 222 | 178 | 148 | 317 | 278 | 222 | 185 | 148 | 111 | 89 | 74 | 211 | 185 | 148 | 123 | 99 | 74 | 59 | 49 |
| | 3.0 | 4.00 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 | 229 | 200 | 160 | 133 | 107 | 80 | 64 | 53 |
| | 4.0 | 4.60 | 789 | 690 | 552 | 460 | 368 | 276 | 221 | 184 | 394 | 345 | 276 | 230 | 184 | 138 | 110 | 92 | 263 | 230 | 184 | 153 | 123 | 92 | 74 | 61 |
| | 5.0 | 5.20 | 891 | 780 | 624 | 520 | 416 | 312 | 250 | 208 | 446 | 390 | 312 | 260 | 208 | 156 | 125 | 104 | 297 | 260 | 208 | 173 | 139 | 104 | 83 | 69 |
| | 6.0 | 5.70 | 977 | 855 | 684 | 570 | 456 | 342 | 274 | 228 | 489 | 428 | 342 | 285 | 228 | 171 | 137 | 114 | 326 | 285 | 228 | 190 | 152 | 114 | 91 | 76 |
| 15 | 1.5 | 4.20 | 720 | 630 | 504 | 420 | 336 | 252 | 202 | 168 | 360 | 315 | 252 | 210 | 168 | 126 | 101 | 84 | 240 | 210 | 168 | 140 | 112 | 84 | 67 | 56 |
| | 2.0 | 4.90 | 840 | 735 | 588 | 490 | 392 | 294 | 235 | 196 | 420 | 368 | 294 | 245 | 196 | 147 | 118 | 98 | 280 | 245 | 196 | 163 | 131 | 98 | 78 | 65 |
| | 2.5 | 5.50 | 943 | 825 | 660 | 550 | 440 | 330 | 264 | 220 | 471 | 413 | 330 | 275 | 220 | 165 | 132 | 110 | 314 | 275 | 220 | 183 | 147 | 110 | 88 | 73 |
| | 3.0 | 6.00 | 1029 | 900 | 720 | 600 | 480 | 360 | 288 | 240 | 514 | 450 | 360 | 300 | 240 | 180 | 144 | 120 | 343 | 300 | 240 | 200 | 160 | 120 | 96 | 80 |
| | 4.0 | 6.90 | 1183 | 1035 | 828 | 690 | 552 | 414 | 331 | 276 | 591 | 518 | 414 | 345 | 276 | 207 | 166 | 138 | 394 | 345 | 276 | 230 | 184 | 138 | 110 | 92 |
| | 5.0 | 7.7 | 1320 | 1155 | 924 | 770 | 616 | 462 | 370 | 308 | 660 | 578 | 462 | 385 | 308 | 231 | 185 | 154 | 440 | 385 | 308 | 257 | 205 | 154 | 123 | 103 |
| | 6.0 | 8.5 | 1457 | 1275 | 1020 | 850 | 680 | 510 | 408 | 340 | 729 | 638 | 510 | 425 | 340 | 255 | 204 | 170 | 486 | 425 | 340 | 283 | 227 | 170 | 136 | 113 |
| 20 | 1.5 | 5.70 | 977 | 855 | 684 | 570 | 456 | 342 | 274 | 228 | 489 | 428 | 342 | 285 | 228 | 171 | 137 | 114 | 326 | 285 | 228 | 190 | 152 | 114 | 91 | 76 |
| | 2.0 | 6.50 | 1114 | 975 | 780 | 650 | 520 | 390 | 312 | 260 | 557 | 488 | 390 | 325 | 260 | 195 | 156 | 130 | 371 | 325 | 260 | 217 | 173 | 130 | 104 | 87 |
| | 2.5 | 7.3 | 1251 | 1095 | 876 | 730 | 584 | 438 | 350 | 292 | 626 | 548 | 438 | 365 | 292 | 219 | 175 | 146 | 417 | 365 | 292 | 243 | 195 | 146 | 117 | 97 |
| | 3.0 | 8.0 | 1371 | 1200 | 960 | 800 | 640 | 480 | 384 | 320 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 | 457 | 400 | 320 | 267 | 213 | 160 | 128 | 107 |
| | 4.0 | 9.2 | 1577 | 1380 | 1104 | 920 | 736 | 552 | 442 | 368 | 789 | 690 | 552 | 460 | 368 | 276 | 221 | 184 | 526 | 460 | 368 | 307 | 245 | 184 | 147 | 123 |
| | 5.0 | 10.3 | 1766 | 1545 | 1236 | 1030 | 824 | 618 | 494 | 412 | 883 | 773 | 618 | 515 | 412 | 309 | 247 | 206 | 589 | 515 | 412 | 343 | 275 | 206 | 165 | 137 |
| | 6.0 | 11.3 | 1937 | 1695 | 1356 | 1130 | 904 | 678 | 542 | 452 | 969 | 848 | 678 | 565 | 452 | 339 | 271 | 226 | 646 | 565 | 452 | 377 | 301 | 226 | 181 | 151 |
| 30 | 1.5 | 8.5 | 1457 | 1275 | 1020 | 850 | 680 | 510 | 408 | 340 | 729 | 638 | 510 | 425 | 340 | 255 | 204 | 170 | 486 | 425 | 340 | 283 | 227 | 170 | 136 | 113 |
| | 2.0 | 9.8 | 1680 | 1470 | 1176 | 980 | 784 | 588 | 470 | 392 | 840 | 735 | 588 | 490 | 392 | 294 | 235 | 196 | 560 | 490 | 392 | 327 | 261 | 196 | 157 | 131 |
| | 2.5 | 11.0 | 1886 | 1650 | 1320 | 1100 | 880 | 660 | 528 | 440 | 943 | 825 | 660 | 550 | 440 | 330 | 264 | 220 | 629 | 550 | 440 | 367 | 293 | 220 | 176 | 147 |
| | 3.0 | 12.0 | 2057 | 1800 | 1440 | 1200 | 960 | 720 | 576 | 480 | 1029 | 900 | 720 | 600 | 480 | 360 | 288 | 240 | 686 | 600 | 480 | 400 | 320 | 240 | 192 | 160 |
| | 4.0 | 13.9 | 2383 | 2085 | 1668 | 1390 | 1112 | 834 | 667 | 556 | 1191 | 1043 | 834 | 695 | 556 | 417 | 334 | 278 | 794 | 695 | 556 | 463 | 371 | 278 | 222 | 185 |
| | 5.0 | 15.5 | 2657 | 2325 | 1860 | 1550 | 1240 | 930 | 744 | 620 | 1329 | 1163 | 930 | 775 | 620 | 465 | 372 | 310 | 886 | 775 | 620 | 517 | 413 | 310 | 248 | 207 |
| | 6.0 | 17.0 | 2914 | 2550 | 2040 | 1700 | 1360 | 1020 | 816 | 680 | 1457 | 1275 | 1020 | 850 | 680 | 510 | 408 | 340 | 971 | 850 | 680 | 567 | 453 | 340 | 272 | 227 |
| 40 | 1.5 | 11.3 | 1937 | 1695 | 1356 | 1130 | 904 | 678 | 542 | 452 | 969 | 848 | 678 | 565 | 452 | 339 | 271 | 226 | 646 | 565 | 452 | 377 | 301 | 226 | 181 | 151 |
| | 2.0 | 13.1 | 2246 | 1965 | 1572 | 1310 | 1048 | 786 | 629 | 524 | 1123 | 983 | 786 | 655 | 524 | 393 | 314 | 262 | 749 | 655 | 524 | 437 | 349 | 262 | 210 | 175 |
| | 2.5 | 14.6 | 2503 | 2190 | 1752 | 1460 | 1168 | 876 | 701 | 584 | 1251 | 1095 | 876 | 730 | 584 | 438 | 350 | 292 | 834 | 730 | 584 | 487 | 389 | 292 | 234 | 195 |
| | 3.0 | 16.0 | 2743 | 2400 | 1920 | 1600 | 1280 | 960 | 768 | 640 | 1371 | 1200 | 960 | 800 | 640 | 480 | 384 | 320 | 914 | 800 | 640 | 533 | 427 | 320 | 256 | 213 |
| | 4.0 | 18.5 | 3171 | 2775 | 2220 | 1850 | 1480 | 1110 | 888 | 740 | 1586 | 1388 | 1110 | 925 | 740 | 555 | 444 | 370 | 1057 | 925 | 740 | 617 | 493 | 370 | 296 | 247 |
| | 5.0 | 20.7 | 3549 | 3105 | 2484 | 2070 | 1656 | 1242 | 994 | 828 | 1774 | 1553 | 1242 | 1035 | 828 | 621 | 497 | 414 | 1183 | 1035 | 828 | 690 | 552 | 414 | 331 | 276 |
| | 6.0 | 22.6 | 3874 | 3390 | 2712 | 2260 | 1808 | 1356 | 1085 | 904 | 1937 | 1695 | 1356 | 1130 | 904 | 678 | 542 | 452 | 1291 | 1130 | 904 | 753 | 603 | 452 | 362 | 301 |
| 50 | 1.5 | 14.1 | 2417 | 2115 | 1692 | 1410 | 1128 | 846 | 677 | 564 | 1209 | 1058 | 846 | 705 | 564 | 423 | 338 | 282 | 806 | 705 | 564 | 470 | 376 | 282 | 226 | 188 |
| | 2.0 | 16.3 | 2794 | 2445 | 1956 | 1630 | 1304 | 978 | 782 | 652 | 1397 | 1223 | 978 | 815 | 652 | 489 | 391 | 326 | 931 | 815 | 652 | 543 | 435 | 326 | 261 | 217 |
| | 2.5 | 18.3 | 3137 | 2745 | 2196 | 1830 | 1464 | 1098 | 878 | 732 | 1569 | 1373 | 1098 | 915 | 732 | 549 | 439 | 366 | 1046 | 915 | 732 | 610 | 488 | 366 | 293 | 244 |
| | 3.0 | 20.0 | 3429 | 3000 | 2400 | 2000 | 1600 | 1200 | 960 | 800 | 1714 | 1500 | 1200 | 1000 | 800 | 600 | 480 | 400 | 1143 | 1000 | 800 | 667 | 533 | 400 | 320 | 267 |
| | 4.0 | 23.1 | 3960 | 3465 | 2772 | 2310 | 1848 | 1386 | 1109 | 924 | 1980 | 1733 | 1386 | 1155 | 924 | 693 | 554 | 462 | 1320 | 1155 | 924 | 770 | 616 | 462 | 370 | 308 |
| | 5.0 | 25.8 | 4423 | 3870 | 3096 | 2580 | 2064 | 1548 | 1238 | 1032 | 2211 | 1935 | 1548 | 1290 | 1032 | 774 | 619 | 516 | 1474 | 1290 | 1032 | 860 | 688 | 516 | 413 | 344 |
| | 6.0 | 28.3 | 4851 | 4245 | 3396 | 2830 | 2264 | 1698 | 1358 | 1132 | 2426 | 2123 | 1698 | 1415 | 1132 | 849 | 679 | 566 | 1617 | 1415 | 1132 | 943 | 755 | 566 | 453 | 377 |
| 60 | 1.5 | 17.0 | 2914 | 2550 | 2040 | 1700 | 1360 | 1020 | 816 | 680 | 1457 | 1275 | 1020 | 850 | 680 | 510 | 408 | 340 | 971 | 850 | 680 | 567 | 453 | 340 | 272 | 227 |
| | 2.0 | 19.6 | 3360 | 2940 | 2352 | 1960 | 1568 | 1176 | 941 | 784 | 1680 | 1470 | 1176 | 980 | 784 | 588 | 470 | 392 | 1120 | 980 | 784 | 653 | 523 | 392 | 314 | 261 |
| | 2.5 | 21.9 | 3754 | 3285 | 2628 | 2190 | 1752 | 1314 | 1051 | 876 | 1877 | 1643 | 1314 | 1095 | 876 | 657 | 526 | 438 | 1251 | 1095 | 876 | 730 | 584 | 438 | 350 | 292 |
| | 3.0 | 24.0 | 4114 | 3600 | 2880 | 2400 | 1920 | 1440 | 1152 | 960 | 2057 | 1800 | 1440 | 1200 | 960 | 720 | 576 | 480 | 1371 | 1200 | 960 | 800 | 640 | 480 | 384 | 320 |
| | 4.0 | 27.7 | 4749 | 4155 | 3324 | 2770 | 2216 | 1662 | 1330 | 1108 | 2374 | 2078 | 1662 | 1385 | 1108 | 831 | 665 | 554 | 1583 | 1385 | 1108 | 923 | 739 | 554 | 443 | 369 |
| | 5.0 | 31.0 | 5314 | 4650 | 3720 | 3100 | 2480 | 1860 | 1488 | 1240 | 2657 | 2325 | 1860 | 1550 | 1240 | 930 | 744 | 620 | 1771 | 1550 | 1240 | 1033 | 827 | 620 | 496 | 413 |
| | 6.0 | 33.9 | 5811 | 5085 | 4068 | 3390 | 2712 | 2034 | 1627 | 1356 | 2906 | 2543 | 2034 | 1695 | 1356 | 1017 | 814 | 678 | 1937 | 1695 | 1356 | 1130 | 904 | 678 | 542 | 452 |

# TURF APPLICATION CHART - 20" SPACING

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | GAL/1000 Ft² 20 inch nozzle | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | MPH | | | | | | |
| | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 01 | 15 | 0.06 | 0.21 | 0.14 | 0.10 | 0.08 | 0.07 | 0.06 | 0.05 |
| | 30 | 0.09 | 0.30 | 0.20 | 0.15 | 0.12 | 0.10 | 0.08 | 0.07 |
| | 40 | 0.10 | 0.34 | 0.23 | 0.17 | 0.14 | 0.11 | 0.10 | 0.09 |
| | 60 | 0.12 | 0.42 | 0.28 | 0.21 | 0.17 | 0.14 | 0.12 | 0.10 |
| | 80 | 0.14 | 0.48 | 0.32 | 0.24 | 0.19 | 0.16 | 0.14 | 0.12 |
| | 100 | 0.16 | 0.54 | 0.36 | 0.27 | 0.22 | 0.18 | 0.15 | 0.13 |
| | 115 | 0.17 | 0.58 | 0.39 | 0.29 | 0.23 | 0.19 | 0.17 | 0.14 |
| 015 | 15 | 0.09 | 0.31 | 0.21 | 0.16 | 0.13 | 0.10 | 0.09 | 0.08 |
| | 30 | 0.13 | 0.44 | 0.30 | 0.22 | 0.18 | 0.15 | 0.13 | 0.11 |
| | 40 | 0.15 | 0.51 | 0.34 | 0.26 | 0.20 | 0.17 | 0.15 | 0.13 |
| | 60 | 0.18 | 0.63 | 0.42 | 0.31 | 0.25 | 0.21 | 0.18 | 0.16 |
| | 80 | 0.21 | 0.72 | 0.48 | 0.36 | 0.29 | 0.24 | 0.21 | 0.18 |
| | 100 | 0.24 | 0.81 | 0.54 | 0.40 | 0.32 | 0.27 | 0.23 | 0.20 |
| | 115 | 0.25 | 0.87 | 0.58 | 0.43 | 0.35 | 0.29 | 0.25 | 0.22 |
| 02 | 15 | 0.12 | 0.42 | 0.28 | 0.21 | 0.17 | 0.14 | 0.12 | 0.10 |
| | 30 | 0.17 | 0.59 | 0.39 | 0.30 | 0.24 | 0.20 | 0.17 | 0.15 |
| | 40 | 0.20 | 0.68 | 0.45 | 0.34 | 0.27 | 0.23 | 0.19 | 0.17 |
| | 60 | 0.24 | 0.84 | 0.56 | 0.42 | 0.33 | 0.28 | 0.24 | 0.21 |
| | 80 | 0.28 | 0.96 | 0.64 | 0.48 | 0.39 | 0.32 | 0.28 | 0.24 |
| | 100 | 0.32 | 1.08 | 0.72 | 0.54 | 0.43 | 0.36 | 0.31 | 0.27 |
| | 115 | 0.34 | 1.16 | 0.77 | 0.58 | 0.46 | 0.39 | 0.33 | 0.29 |
| 025 | 15 | 0.15 | 0.52 | 0.35 | 0.26 | 0.21 | 0.17 | 0.15 | 0.13 |
| | 30 | 0.22 | 0.74 | 0.49 | 0.37 | 0.30 | 0.25 | 0.21 | 0.18 |
| | 40 | 0.25 | 0.85 | 0.57 | 0.43 | 0.34 | 0.28 | 0.24 | 0.21 |
| | 60 | 0.31 | 1.04 | 0.70 | 0.52 | 0.42 | 0.35 | 0.30 | 0.26 |
| | 80 | 0.35 | 1.21 | 0.80 | 0.60 | 0.48 | 0.40 | 0.34 | 0.30 |
| | 100 | 0.40 | 1.35 | 0.90 | 0.67 | 0.54 | 0.45 | 0.39 | 0.34 |
| | 115 | 0.42 | 1.45 | 0.96 | 0.72 | 0.58 | 0.48 | 0.41 | 0.36 |
| 03 | 15 | 0.18 | 0.63 | 0.42 | 0.31 | 0.25 | 0.21 | 0.18 | 0.16 |
| | 30 | 0.26 | 0.89 | 0.59 | 0.44 | 0.35 | 0.30 | 0.25 | 0.22 |
| | 40 | 0.30 | 1.02 | 0.68 | 0.51 | 0.41 | 0.34 | 0.29 | 0.26 |
| | 60 | 0.37 | 1.25 | 0.84 | 0.63 | 0.50 | 0.42 | 0.36 | 0.31 |
| | 80 | 0.42 | 1.45 | 0.96 | 0.72 | 0.58 | 0.48 | 0.41 | 0.36 |
| | 100 | 0.47 | 1.62 | 1.08 | 0.81 | 0.65 | 0.54 | 0.46 | 0.40 |
| | 115 | 0.51 | 1.73 | 1.16 | 0.87 | 0.69 | 0.58 | 0.50 | 0.43 |
| 035 | 15 | 0.21 | 0.73 | 0.49 | 0.37 | 0.29 | 0.24 | 0.21 | 0.18 |
| | 30 | 0.30 | 1.03 | 0.69 | 0.52 | 0.41 | 0.34 | 0.30 | 0.26 |
| | 40 | 0.35 | 1.19 | 0.80 | 0.60 | 0.48 | 0.40 | 0.34 | 0.30 |
| | 60 | 0.43 | 1.46 | 0.97 | 0.73 | 0.58 | 0.49 | 0.42 | 0.37 |
| | 80 | 0.49 | 1.69 | 1.13 | 0.84 | 0.68 | 0.56 | 0.48 | 0.42 |
| | 100 | 0.55 | 1.89 | 1.26 | 0.94 | 0.75 | 0.63 | 0.54 | 0.47 |
| | 115 | 0.59 | 2.02 | 1.35 | 1.01 | 0.81 | 0.67 | 0.58 | 0.51 |
| 04 | 15 | 0.24 | 0.84 | 0.56 | 0.42 | 0.33 | 0.28 | 0.24 | 0.21 |
| | 30 | 0.35 | 1.18 | 0.79 | 0.59 | 0.47 | 0.39 | 0.34 | 0.30 |
| | 40 | 0.40 | 1.36 | 0.91 | 0.68 | 0.55 | 0.45 | 0.39 | 0.34 |
| | 60 | 0.49 | 1.67 | 1.11 | 0.84 | 0.67 | 0.56 | 0.48 | 0.42 |
| | 80 | 0.57 | 1.93 | 1.29 | 0.96 | 0.77 | 0.64 | 0.55 | 0.48 |
| | 100 | 0.63 | 2.16 | 1.44 | 1.08 | 0.86 | 0.72 | 0.62 | 0.54 |
| | 115 | 0.68 | 2.31 | 1.54 | 1.16 | 0.93 | 0.77 | 0.66 | 0.58 |
| 05 | 15 | 0.31 | 1.04 | 0.70 | 0.52 | 0.42 | 0.35 | 0.30 | 0.26 |
| | 30 | 0.43 | 1.48 | 0.98 | 0.74 | 0.59 | 0.49 | 0.42 | 0.37 |
| | 40 | 0.50 | 1.71 | 1.14 | 0.85 | 0.68 | 0.57 | 0.49 | 0.43 |
| | 60 | 0.61 | 2.09 | 1.39 | 1.04 | 0.84 | 0.70 | 0.60 | 0.52 |
| | 80 | 0.71 | 2.41 | 1.61 | 1.21 | 0.96 | 0.80 | 0.69 | 0.60 |
| | 100 | 0.79 | 2.70 | 1.80 | 1.35 | 1.08 | 0.90 | 0.77 | 0.67 |
| | 115 | 0.85 | 2.89 | 1.93 | 1.45 | 1.16 | 0.96 | 0.83 | 0.72 |
| 06 | 15 | 0.37 | 1.25 | 0.84 | 0.63 | 0.50 | 0.42 | 0.36 | 0.31 |
| | 30 | 0.52 | 1.77 | 1.18 | 0.89 | 0.71 | 0.59 | 0.51 | 0.44 |
| | 40 | 0.60 | 2.05 | 1.36 | 1.02 | 0.82 | 0.68 | 0.58 | 0.51 |
| | 60 | 0.73 | 2.51 | 1.67 | 1.25 | 1.00 | 0.84 | 0.72 | 0.63 |
| | 80 | 0.85 | 2.89 | 1.93 | 1.45 | 1.16 | 0.96 | 0.83 | 0.72 |
| | 100 | 0.95 | 3.24 | 2.16 | 1.62 | 1.29 | 1.08 | 0.92 | 0.81 |
| | 115 | 1.02 | 3.47 | 2.31 | 1.73 | 1.39 | 1.16 | 0.99 | 0.87 |
| 08 | 15 | 0.49 | 1.67 | 1.11 | 0.84 | 0.67 | 0.56 | 0.48 | 0.42 |
| | 30 | 0.69 | 2.36 | 1.58 | 1.18 | 0.95 | 0.79 | 0.68 | 0.59 |
| | 40 | 0.80 | 2.73 | 1.82 | 1.36 | 1.09 | 0.91 | 0.78 | 0.68 |
| | 60 | 0.98 | 3.34 | 2.23 | 1.67 | 1.34 | 1.11 | 0.95 | 0.84 |
| | 80 | 1.13 | 3.86 | 2.57 | 1.93 | 1.54 | 1.29 | 1.10 | 0.96 |
| | 100 | 1.26 | 4.31 | 2.88 | 2.16 | 1.73 | 1.44 | 1.23 | 1.08 |
| | 115 | 1.36 | 4.63 | 3.08 | 2.31 | 1.85 | 1.54 | 1.32 | 1.16 |
| 10 | 15 | 0.61 | 2.09 | 1.39 | 1.04 | 0.84 | 0.70 | 0.60 | 0.52 |
| | 30 | 0.87 | 2.95 | 1.97 | 1.48 | 1.18 | 0.98 | 0.84 | 0.74 |
| | 40 | 1.00 | 3.41 | 2.27 | 1.71 | 1.36 | 1.14 | 0.97 | 0.85 |
| | 60 | 1.22 | 4.18 | 2.78 | 2.09 | 1.67 | 1.39 | 1.19 | 1.04 |
| | 80 | 1.41 | 4.82 | 3.21 | 2.41 | 1.93 | 1.61 | 1.38 | 1.21 |
| | 100 | 1.58 | 5.39 | 3.59 | 2.70 | 2.16 | 1.80 | 1.54 | 1.35 |
| | 115 | 1.70 | 5.78 | 3.85 | 2.89 | 2.31 | 1.93 | 1.65 | 1.45 |
| 15 | 15 | 0.92 | 3.13 | 2.09 | 1.57 | 1.25 | 1.04 | 0.89 | 0.78 |
| | 30 | 1.30 | 4.43 | 2.95 | 2.21 | 1.77 | 1.48 | 1.27 | 1.11 |
| | 40 | 1.50 | 5.12 | 3.41 | 2.56 | 2.05 | 1.71 | 1.46 | 1.28 |
| | 60 | 1.84 | 6.26 | 4.18 | 3.13 | 2.51 | 2.09 | 1.79 | 1.57 |
| | 80 | 2.12 | 7.23 | 4.82 | 3.62 | 2.89 | 2.41 | 2.07 | 1.81 |
| | 100 | 2.37 | 8.09 | 5.39 | 4.04 | 3.24 | 2.70 | 2.31 | 2.02 |
| | 115 | 2.54 | 8.67 | 5.78 | 4.34 | 3.47 | 2.89 | 2.48 | 2.17 |
| 20 | 20 | 1.41 | 4.82 | 3.21 | 2.41 | 1.93 | 1.61 | 1.38 | 1.21 |
| | 30 | 1.73 | 5.91 | 3.94 | 2.95 | 2.36 | 1.97 | 1.69 | 1.48 |
| | 40 | 2.00 | 6.82 | 4.55 | 3.41 | 2.73 | 2.27 | 1.95 | 1.71 |
| | 50 | 2.24 | 7.62 | 5.08 | 3.81 | 3.05 | 2.54 | 2.18 | 1.91 |
| | 60 | 2.45 | 8.35 | 5.57 | 4.18 | 3.34 | 2.78 | 2.39 | 2.09 |
| | 70 | 2.65 | 9.02 | 6.01 | 4.51 | 3.61 | 3.01 | 2.58 | 2.26 |
| | 80 | 2.83 | 9.64 | 6.43 | 4.82 | 3.86 | 3.21 | 2.76 | 2.41 |
| 30 | 20 | 2.12 | 7.23 | 4.82 | 3.62 | 2.89 | 2.41 | 2.07 | 1.81 |
| | 30 | 2.60 | 8.86 | 5.91 | 4.43 | 3.54 | 2.95 | 2.53 | 2.21 |
| | 40 | 3.00 | 10.23 | 6.82 | 5.12 | 4.09 | 3.41 | 2.92 | 2.56 |
| | 50 | 3.35 | 11.44 | 7.62 | 5.72 | 4.57 | 3.81 | 3.27 | 2.86 |
| | 60 | 3.67 | 12.53 | 8.35 | 6.26 | 5.01 | 4.18 | 3.58 | 3.13 |
| | 70 | 3.97 | 13.53 | 9.02 | 6.77 | 5.41 | 4.51 | 3.87 | 3.38 |
| | 80 | 4.24 | 14.47 | 9.64 | 7.23 | 5.79 | 4.82 | 4.13 | 3.62 |
| 40 | 20 | 2.83 | 9.64 | 6.43 | 4.82 | 3.86 | 3.21 | 2.76 | 2.41 |
| | 30 | 3.46 | 11.81 | 7.88 | 5.91 | 4.73 | 3.94 | 3.38 | 2.95 |
| | 40 | 4.00 | 13.64 | 9.09 | 6.82 | 5.46 | 4.55 | 3.90 | 3.41 |
| | 50 | 4.47 | 15.25 | 10.17 | 7.62 | 6.10 | 5.08 | 4.36 | 3.81 |
| | 60 | 4.90 | 16.71 | 11.14 | 8.35 | 6.68 | 5.57 | 4.77 | 4.18 |
| | 70 | 5.29 | 18.04 | 12.03 | 9.02 | 7.22 | 6.01 | 5.16 | 4.51 |
| | 80 | 5.66 | 19.29 | 12.86 | 9.64 | 7.72 | 6.43 | 5.51 | 4.82 |
| 50 | 20 | 3.54 | 12.06 | 8.04 | 6.03 | 4.82 | 4.02 | 3.44 | 3.01 |
| | 30 | 4.33 | 14.77 | 9.84 | 7.38 | 5.91 | 4.92 | 4.22 | 3.69 |
| | 40 | 5.00 | 17.05 | 11.37 | 8.53 | 6.82 | 5.68 | 4.87 | 4.26 |
| | 50 | 5.59 | 19.06 | 12.71 | 9.53 | 7.62 | 6.35 | 5.45 | 4.77 |
| | 60 | 6.12 | 20.88 | 13.92 | 10.44 | 8.35 | 6.96 | 5.97 | 5.22 |
| | 70 | 6.61 | 22.56 | 15.04 | 11.28 | 9.02 | 7.52 | 6.44 | 5.64 |
| | 80 | 7.07 | 24.11 | 16.07 | 12.06 | 9.64 | 8.04 | 6.89 | 6.03 |
| 60 | 20 | 4.24 | 14.47 | 9.64 | 7.23 | 5.79 | 4.82 | 4.13 | 3.62 |
| | 30 | 5.20 | 17.72 | 11.81 | 8.86 | 7.09 | 5.91 | 5.06 | 4.43 |
| | 40 | 6.00 | 20.46 | 13.64 | 10.23 | 8.18 | 6.82 | 5.85 | 5.12 |
| | 50 | 6.71 | 22.87 | 15.25 | 11.44 | 9.15 | 7.62 | 6.54 | 5.72 |
| | 60 | 7.35 | 25.06 | 16.71 | 12.53 | 10.02 | 8.35 | 7.16 | 6.26 |
| | 70 | 7.94 | 27.07 | 18.04 | 13.53 | 10.83 | 9.02 | 7.73 | 6.77 |
| | 80 | 8.49 | 28.93 | 19.29 | 14.47 | 11.57 | 9.64 | 8.27 | 7.23 |

# TURF APPLICATION CHART-15" SPACING

| Nozzle Size | Pressure (PSI) | Flow Rate (GPM) | GAL/1000 Ft² 15 inch nozzle MPH | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 01 | 15 | 0.06 | 0.28 | 0.19 | 0.14 | 0.11 | 0.09 | 0.08 | 0.07 |
| | 30 | 0.09 | 0.39 | 0.26 | 0.20 | 0.16 | 0.13 | 0.11 | 0.10 |
| | 40 | 0.10 | 0.45 | 0.30 | 0.23 | 0.18 | 0.15 | 0.13 | 0.11 |
| | 60 | 0.12 | 0.56 | 0.37 | 0.28 | 0.22 | 0.19 | 0.16 | 0.14 |
| | 80 | 0.14 | 0.64 | 0.43 | 0.32 | 0.26 | 0.21 | 0.18 | 0.16 |
| | 100 | 0.16 | 0.72 | 0.48 | 0.36 | 0.29 | 0.24 | 0.21 | 0.18 |
| | 115 | 0.17 | 0.77 | 0.51 | 0.39 | 0.31 | 0.26 | 0.22 | 0.19 |
| 015 | 15 | 0.09 | 0.42 | 0.28 | 0.21 | 0.17 | 0.14 | 0.12 | 0.10 |
| | 30 | 0.13 | 0.59 | 0.39 | 0.30 | 0.24 | 0.20 | 0.17 | 0.15 |
| | 40 | 0.15 | 0.68 | 0.45 | 0.34 | 0.27 | 0.23 | 0.19 | 0.17 |
| | 60 | 0.18 | 0.84 | 0.56 | 0.42 | 0.33 | 0.28 | 0.24 | 0.21 |
| | 80 | 0.21 | 0.96 | 0.64 | 0.48 | 0.39 | 0.32 | 0.28 | 0.24 |
| | 100 | 0.24 | 1.08 | 0.72 | 0.54 | 0.43 | 0.36 | 0.31 | 0.27 |
| | 115 | 0.25 | 1.16 | 0.77 | 0.58 | 0.46 | 0.39 | 0.33 | 0.29 |
| 02 | 15 | 0.12 | 0.56 | 0.37 | 0.28 | 0.22 | 0.19 | 0.16 | 0.14 |
| | 30 | 0.17 | 0.79 | 0.53 | 0.39 | 0.32 | 0.26 | 0.23 | 0.20 |
| | 40 | 0.20 | 0.91 | 0.61 | 0.45 | 0.36 | 0.30 | 0.26 | 0.23 |
| | 60 | 0.24 | 1.11 | 0.74 | 0.56 | 0.45 | 0.37 | 0.32 | 0.28 |
| | 80 | 0.28 | 1.29 | 0.86 | 0.64 | 0.51 | 0.43 | 0.37 | 0.32 |
| | 100 | 0.32 | 1.44 | 0.96 | 0.72 | 0.58 | 0.48 | 0.41 | 0.36 |
| | 115 | 0.34 | 1.54 | 1.03 | 0.77 | 0.62 | 0.51 | 0.44 | 0.39 |
| 025 | 15 | 0.15 | 0.70 | 0.46 | 0.35 | 0.28 | 0.23 | 0.20 | 0.17 |
| | 30 | 0.22 | 0.98 | 0.66 | 0.49 | 0.39 | 0.33 | 0.28 | 0.25 |
| | 40 | 0.25 | 1.14 | 0.76 | 0.57 | 0.45 | 0.38 | 0.32 | 0.28 |
| | 60 | 0.31 | 1.39 | 0.93 | 0.70 | 0.56 | 0.46 | 0.40 | 0.35 |
| | 80 | 0.35 | 1.61 | 1.07 | 0.80 | 0.64 | 0.54 | 0.46 | 0.40 |
| | 100 | 0.40 | 1.80 | 1.20 | 0.90 | 0.72 | 0.60 | 0.51 | 0.45 |
| | 115 | 0.42 | 1.93 | 1.28 | 0.96 | 0.77 | 0.64 | 0.55 | 0.48 |
| 03 | 15 | 0.18 | 0.84 | 0.56 | 0.42 | 0.33 | 0.28 | 0.24 | 0.21 |
| | 30 | 0.26 | 1.18 | 0.79 | 0.59 | 0.47 | 0.39 | 0.34 | 0.30 |
| | 40 | 0.30 | 1.36 | 0.91 | 0.68 | 0.55 | 0.45 | 0.39 | 0.34 |
| | 60 | 0.37 | 1.67 | 1.11 | 0.84 | 0.67 | 0.56 | 0.48 | 0.42 |
| | 80 | 0.42 | 1.93 | 1.29 | 0.96 | 0.77 | 0.64 | 0.55 | 0.48 |
| | 100 | 0.47 | 2.16 | 1.44 | 1.08 | 0.86 | 0.72 | 0.62 | 0.54 |
| | 115 | 0.51 | 2.31 | 1.54 | 1.16 | 0.93 | 0.77 | 0.66 | 0.58 |
| 035 | 15 | 0.21 | 0.97 | 0.65 | 0.49 | 0.39 | 0.32 | 0.28 | 0.24 |
| | 30 | 0.30 | 1.38 | 0.92 | 0.69 | 0.55 | 0.46 | 0.39 | 0.34 |
| | 40 | 0.35 | 1.59 | 1.06 | 0.80 | 0.64 | 0.53 | 0.45 | 0.40 |
| | 60 | 0.43 | 1.95 | 1.30 | 0.97 | 0.78 | 0.65 | 0.56 | 0.49 |
| | 80 | 0.49 | 2.25 | 1.50 | 1.13 | 0.90 | 0.75 | 0.64 | 0.56 |
| | 100 | 0.55 | 2.52 | 1.68 | 1.26 | 1.01 | 0.84 | 0.72 | 0.63 |
| | 115 | 0.59 | 2.70 | 1.80 | 1.35 | 1.08 | 0.90 | 0.77 | 0.67 |
| 04 | 15 | 0.24 | 1.11 | 0.74 | 0.56 | 0.45 | 0.37 | 0.32 | 0.28 |
| | 30 | 0.35 | 1.58 | 1.05 | 0.79 | 0.63 | 0.53 | 0.45 | 0.39 |
| | 40 | 0.40 | 1.82 | 1.21 | 0.91 | 0.73 | 0.61 | 0.52 | 0.45 |
| | 60 | 0.49 | 2.23 | 1.48 | 1.11 | 0.89 | 0.74 | 0.64 | 0.56 |
| | 80 | 0.57 | 2.57 | 1.71 | 1.29 | 1.03 | 0.86 | 0.73 | 0.64 |
| | 100 | 0.63 | 2.88 | 1.92 | 1.44 | 1.15 | 0.96 | 0.82 | 0.72 |
| | 115 | 0.68 | 3.08 | 2.06 | 1.54 | 1.23 | 1.03 | 0.88 | 0.77 |
| 05 | 15 | 0.31 | 1.39 | 0.93 | 0.70 | 0.56 | 0.46 | 0.40 | 0.35 |
| | 30 | 0.43 | 1.97 | 1.31 | 0.98 | 0.79 | 0.66 | 0.56 | 0.49 |
| | 40 | 0.50 | 2.27 | 1.52 | 1.14 | 0.91 | 0.76 | 0.65 | 0.57 |
| | 60 | 0.61 | 2.78 | 1.86 | 1.39 | 1.11 | 0.93 | 0.80 | 0.70 |
| | 80 | 0.71 | 3.21 | 2.14 | 1.61 | 1.29 | 1.07 | 0.92 | 0.80 |
| | 100 | 0.79 | 3.59 | 2.40 | 1.80 | 1.44 | 1.20 | 1.03 | 0.90 |
| | 115 | 0.85 | 3.85 | 2.57 | 1.93 | 1.54 | 1.28 | 1.10 | 0.96 |
| 06 | 15 | 0.37 | 1.67 | 1.11 | 0.84 | 0.67 | 0.56 | 0.48 | 0.42 |
| | 30 | 0.52 | 2.36 | 1.58 | 1.18 | 0.95 | 0.79 | 0.68 | 0.59 |
| | 40 | 0.60 | 2.73 | 1.82 | 1.36 | 1.09 | 0.91 | 0.78 | 0.68 |
| | 60 | 0.73 | 3.34 | 2.23 | 1.67 | 1.34 | 1.11 | 0.95 | 0.84 |
| | 80 | 0.85 | 3.86 | 2.57 | 1.93 | 1.54 | 1.29 | 1.10 | 0.96 |
| | 100 | 0.95 | 4.31 | 2.88 | 2.16 | 1.73 | 1.44 | 1.23 | 1.08 |
| | 115 | 1.02 | 4.63 | 3.08 | 2.31 | 1.85 | 1.54 | 1.32 | 1.16 |
| 08 | 15 | 0.49 | 2.23 | 1.48 | 1.11 | 0.89 | 0.74 | 0.64 | 0.56 |
| | 30 | 0.69 | 3.15 | 2.10 | 1.58 | 1.26 | 1.05 | 0.90 | 0.79 |
| | 40 | 0.80 | 3.64 | 2.42 | 1.82 | 1.45 | 1.21 | 1.04 | 0.91 |
| | 60 | 0.98 | 4.45 | 2.97 | 2.23 | 1.78 | 1.48 | 1.27 | 1.11 |
| | 80 | 1.13 | 5.14 | 3.43 | 2.57 | 2.06 | 1.71 | 1.47 | 1.29 |
| | 100 | 1.26 | 5.75 | 3.83 | 2.88 | 2.30 | 1.92 | 1.64 | 1.44 |
| | 115 | 1.36 | 6.17 | 4.11 | 3.08 | 2.47 | 2.06 | 1.76 | 1.54 |
| 10 | 15 | 0.61 | 2.78 | 1.86 | 1.39 | 1.11 | 0.93 | 0.80 | 0.70 |
| | 30 | 0.87 | 3.94 | 2.63 | 1.97 | 1.58 | 1.31 | 1.13 | 0.98 |
| | 40 | 1.00 | 4.55 | 3.03 | 2.27 | 1.82 | 1.52 | 1.30 | 1.14 |
| | 60 | 1.22 | 5.57 | 3.71 | 2.78 | 2.23 | 1.86 | 1.59 | 1.39 |
| | 80 | 1.41 | 6.43 | 4.29 | 3.21 | 2.57 | 2.14 | 1.84 | 1.61 |
| | 100 | 1.58 | 7.19 | 4.79 | 3.59 | 2.88 | 2.40 | 2.05 | 1.80 |
| | 115 | 1.70 | 7.71 | 5.14 | 3.85 | 3.08 | 2.57 | 2.20 | 1.93 |
| 15 | 15 | 0.92 | 4.18 | 2.78 | 2.09 | 1.67 | 1.39 | 1.19 | 1.04 |
| | 30 | 1.30 | 5.91 | 3.94 | 2.95 | 2.36 | 1.97 | 1.69 | 1.48 |
| | 40 | 1.50 | 6.82 | 4.55 | 3.41 | 2.73 | 2.27 | 1.95 | 1.71 |
| | 60 | 1.84 | 8.35 | 5.57 | 4.18 | 3.34 | 2.78 | 2.39 | 2.09 |
| | 80 | 2.12 | 9.64 | 6.43 | 4.82 | 3.86 | 3.21 | 2.76 | 2.41 |
| | 100 | 2.37 | 10.78 | 7.19 | 5.39 | 4.31 | 3.59 | 3.08 | 2.70 |
| | 115 | 2.54 | 11.56 | 7.71 | 5.78 | 4.63 | 3.85 | 3.30 | 2.89 |
| 20 | 20 | 1.41 | 6.43 | 4.29 | 3.21 | 2.57 | 2.14 | 1.84 | 1.61 |
| | 30 | 1.73 | 7.88 | 5.25 | 3.94 | 3.15 | 2.63 | 2.25 | 1.97 |
| | 40 | 2.00 | 9.09 | 6.06 | 4.55 | 3.64 | 3.03 | 2.60 | 2.27 |
| | 50 | 2.24 | 10.17 | 6.78 | 5.08 | 4.07 | 3.39 | 2.90 | 2.54 |
| | 60 | 2.45 | 11.14 | 7.42 | 5.57 | 4.45 | 3.71 | 3.18 | 2.78 |
| | 70 | 2.65 | 12.03 | 8.02 | 6.01 | 4.81 | 4.01 | 3.44 | 3.01 |
| | 80 | 2.83 | 12.86 | 8.57 | 6.43 | 5.14 | 4.29 | 3.67 | 3.21 |
| 30 | 20 | 2.12 | 9.64 | 6.43 | 4.82 | 3.86 | 3.21 | 2.76 | 2.41 |
| | 30 | 2.60 | 11.81 | 7.88 | 5.91 | 4.73 | 3.94 | 3.38 | 2.95 |
| | 40 | 3.00 | 13.64 | 9.09 | 6.82 | 5.46 | 4.55 | 3.90 | 3.41 |
| | 50 | 3.35 | 15.25 | 10.17 | 7.62 | 6.10 | 5.08 | 4.36 | 3.81 |
| | 60 | 3.67 | 16.71 | 11.14 | 8.35 | 6.68 | 5.57 | 4.77 | 4.18 |
| | 70 | 3.97 | 18.04 | 12.03 | 9.02 | 7.22 | 6.01 | 5.16 | 4.51 |
| | 80 | 4.24 | 19.29 | 12.86 | 9.64 | 7.72 | 6.43 | 5.51 | 4.82 |
| 40 | 20 | 2.83 | 12.86 | 8.57 | 6.43 | 5.14 | 4.29 | 3.67 | 3.21 |
| | 30 | 3.46 | 15.75 | 10.50 | 7.88 | 6.30 | 5.25 | 4.50 | 3.94 |
| | 40 | 4.00 | 18.19 | 12.12 | 9.09 | 7.27 | 6.06 | 5.20 | 4.55 |
| | 50 | 4.47 | 20.33 | 13.56 | 10.17 | 8.13 | 6.78 | 5.81 | 5.08 |
| | 60 | 4.90 | 22.27 | 14.85 | 11.14 | 8.91 | 7.42 | 6.36 | 5.57 |
| | 70 | 5.29 | 24.06 | 16.04 | 12.03 | 9.62 | 8.02 | 6.87 | 6.01 |
| | 80 | 5.66 | 25.72 | 17.15 | 12.86 | 10.29 | 8.57 | 7.35 | 6.43 |
| 50 | 20 | 3.54 | 16.07 | 10.72 | 8.04 | 6.43 | 5.36 | 4.59 | 4.02 |
| | 30 | 4.33 | 19.69 | 13.13 | 9.84 | 7.88 | 6.56 | 5.63 | 4.92 |
| | 40 | 5.00 | 22.73 | 15.16 | 11.37 | 9.09 | 7.58 | 6.50 | 5.68 |
| | 50 | 5.59 | 25.42 | 16.94 | 12.71 | 10.17 | 8.47 | 7.26 | 6.35 |
| | 60 | 6.12 | 27.84 | 18.56 | 13.92 | 11.14 | 9.28 | 7.96 | 6.96 |
| | 70 | 6.61 | 30.07 | 20.05 | 15.04 | 12.03 | 10.02 | 8.59 | 7.52 |
| | 80 | 7.07 | 32.15 | 21.43 | 16.07 | 12.86 | 10.72 | 9.19 | 8.04 |
| 60 | 20 | 4.24 | 19.29 | 12.86 | 9.64 | 7.72 | 6.43 | 5.51 | 4.82 |
| | 30 | 5.20 | 23.63 | 15.75 | 11.81 | 9.45 | 7.88 | 6.75 | 5.91 |
| | 40 | 6.00 | 27.28 | 18.19 | 13.64 | 10.91 | 9.09 | 7.79 | 6.82 |
| | 50 | 6.71 | 30.50 | 20.33 | 15.25 | 12.20 | 10.17 | 8.71 | 7.62 |
| | 60 | 7.35 | 33.41 | 22.27 | 16.71 | 13.36 | 11.14 | 9.55 | 8.35 |
| | 70 | 7.94 | 36.09 | 24.06 | 18.04 | 14.44 | 12.03 | 10.31 | 9.02 |
| | 80 | 8.49 | 38.58 | 25.72 | 19.29 | 15.43 | 12.86 | 11.02 | 9.64 |

# SPACING, HEIGHT, & CONVERSION TABLES

### SUGGESTED MINIMUM BROADCAST SPRAY HEIGHTS (FLAT FAN SPARY NOZZLES)

| Spray Angle | | 15" (40 cm) Spacing | 20" (50 cm) Spacing | 30" (75 cm) Spacing | 40" (100 cm) Spacing |
|---|---|---|---|---|---|
| 80° | Standard | 13" - 14" | 17" - 19" | 26" - 28" | NR* |
| | Metric | 33 - 36 cm | 43 - 48 cm | 66- 71 cm | NR* |
| 110° | Standard | 10" - 11" | 15" - 18" | 20" - 22" | NR* |
| | Metric | 25 - 28 cm | 38 - 46 cm | 51 - 56 cm | NR* |
| 120° | Standard | 8" - 10" | 12" - 15" | 16" - 20" | 24" - 30" |
| | Metric | 20 - 25 cm | 30 - 38 cm | 41 - 52 cm | 61 - 76 cm |
| 140° | Standard | 5" - 7" | 7" -9" | 10" -14" | 24" - 30" |
| | Metric | 20 - 25 cm | 30 - 38 cm | 41 - 52 cm | 61 - 76 cm |

* Not Recommended
** 40" nozzle spacing is prone to off-target trespass under certain conditions that affect drift.

### OPTIMUM BROADCAST SPRAY HEIGHTS (FLAT FAN SPRAY NOZZLES)

| Spray Angle | | 15" (40 cm) Spacing | 20" (50 cm) Spacing | 30" (75 cm) Spacing | 40" (100 cm) Spacing |
|---|---|---|---|---|---|
| 80° | Standard | 22" | 30" | 43" | NR* |
| | Metric | 56 cm | 76 cm | 109 cm | NR* |
| 110° | Standard | 15" | 20" | 30" | NR* |
| | Metric | 38 cm | 51 cm | 76 cm | NR* |
| 120° | Standard | 13" | 18" | 28" | 38" |
| | Metric | 33 cm | 46 cm | 71 cm | 97 cm |
| 140° | Standard | 10" | 12" | 16" | 22" |
| | Metric | 25 cm | 30 cm | 40 cm | 55 cm |

### NOZZLE SPACING

If your nozzle spacing differs from the spacing used in spray nozzle application rate tables, multiply the tabulated GPA by the conversion factor to find your actual application rate.

Example: If your nozzle spacing is actually 36-inches (90cm), your application rate will be 0.56 times what is shown in tables for nozzles spaced 20-inches (50cm).

To calculate a conversion factor for spacing not listed below, use the following formula:

$$\text{Standard Conversion Factor} = \frac{\text{Nozzle Spacing in Table (inches)}}{\text{Your Nozzle Spacing (inches)}}$$

$$\text{Metric Conversion Factor} = \frac{\text{Nozzle Spacing in Table (cm)}}{\text{Your Nozzle Spacing (cm)}}$$

### US UNITS

| Your Spacing | Conversion from Charts | | |
|---|---|---|---|
| | 20 in | 30 in | 40 in |
| 8 in | 2.50 | 3.75 | 5.00 |
| 10 in | 2.00 | 3.00 | 4.00 |
| 12 in | 1.67 | 2.50 | 3.33 |
| 14 in | 1.43 | 2.14 | 2.86 |
| 16 in | 1.33 | 2.00 | 2.67 |
| 18 in | 1.25 | 1.88 | 2.50 |
| 20 in | 1.11 | 1.67 | 2.22 |
| 22 in | 1.00 | 1.50 | 2.00 |
| 24 in | 0.83 | 1.25 | 1.67 |
| 26 in | 0.77 | 1.15 | 1.54 |
| 28 in | 0.71 | 1.07 | 1.43 |
| 30 in | 0.67 | 1.00 | 1.33 |
| 32 in | 0.63 | 0.94 | 1.25 |
| 34 in | 0.59 | 0.88 | 1.18 |
| 36 in | 0.56 | 0.83 | 1.11 |
| 38 in | 0.53 | 0.79 | 1.05 |
| 40 in | 0.50 | 0.75 | 1.00 |
| 42 in | 0.48 | 0.71 | 0.91 |
| 44 in | 0.45 | 0.68 | 0.91 |
| 48 in | 0.42 | 0.63 | 0.83 |

### METRIC UNITS

| Your Spacing | Conversion from Charts | | |
|---|---|---|---|
| | 50 cm | 75 cm | 100 cm |
| 10 cm | 5.00 | 7.50 | 10.00 |
| 15 cm | 3.33 | 5.00 | 6.67 |
| 20 cm | 2.50 | 3.75 | 5.00 |
| 25 cm | 2.00 | 3.00 | 4.00 |
| 30 cm | 1.67 | 2.50 | 3.33 |
| 33 cm | 1.52 | 2.27 | 3.03 |
| 40 cm | 1.25 | 1.88 | 2.50 |
| 45 cm | 1.11 | 1.67 | 2.22 |
| 50 cm | 1.00 | 1.50 | 2.00 |
| 55 cm | 0.91 | 1.36 | 1.82 |
| 60 cm | 0.83 | 1.25 | 1.67 |
| 65 cm | 0.77 | 1.15 | 1.54 |
| 70 cm | 0.71 | 1.07 | 1.43 |
| 75 cm | 0.67 | 1.00 | 1.33 |
| 80 cm | 0.63 | 0.94 | 1.25 |
| 85 cm | 0.59 | 0.88 | 1.18 |
| 90 cm | 0.56 | 0.83 | 1.11 |
| 95 cm | 0.53 | 0.79 | 1.05 |
| 100 cm | 0.50 | 0.75 | 1.00 |
| 110 cm | 0.45 | 0.68 | 0.91 |
| 120 cm | 0.42 | 0.63 | 0.83 |

# SPRAYING SOLUTIONS OTHER THAN WATER

Liquids that are more dense than water will flow through a spray nozzle more slowly than water. Solutions that are less dense than water will flow through a spray nozzle more quickly than water. Unless otherwise indicated, the performance tables in the spray nozzle section of this catalog show flow and application rates for water-based sprays. To use those tables when selecting nozzles to apply non-water sprays you must calculate an intermediate "look-up" application rate. To do this you will multiply your actual desired application rate by a conversion factor and then use the resulting "look-up" figure to select a nozzle from the water-based performance tables. The conversion factors listed on this page are based on typical values for common fertilizer solutions. For other spray solutions, you can calculate the conversion factor by taking the square root of the solution's specific gravity.

For easier nozzle selection using water and non-water sprays, use the Spray It calculator online at: pentair.com

### U.S. UNITS

| Density (lb/us gal) | Material | Specific Gravity | Conversion Factor |
|---|---|---|---|
| 7.00 | | 0.84 | 0.92 |
| 8.00 | | 0.96 | 0.98 |
| 8.34 | water | 1.00 | 1.00 |
| 9.00 | | 1.08 | 1.04 |
| 10.00 | | 1.20 | 1.10 |
| 10.30 | 4-10-10 | 1.24 | 1.11 |
| 10.65 | 28-0-0 | 1.28 | 1.13 |
| 11.00 | | 1.32 | 1.15 |
| 11.05 | 32-0-0 | 1.32 | 1.15 |
| 11.20 | 7-21-7 | 1.34 | 1.16 |
| 11.65 | 10-34-0 | 1.40 | 1.18 |
| 12.00 | | 1.44 | 1.20 |

### METRIC

| Density (kg/L) | Material | Conversion Factor |
|---|---|---|
| 0.80 | | 0.89 |
| 0.90 | | 0.95 |
| 1.00 | water | 1.00 |
| 1.10 | | 1.05 |
| 1.20 | | 1.10 |
| 1.24 | 4-10-10 | 1.11 |
| 1.28 | 28-0-0 | 1.13 |
| 1.30 | | 1.14 |
| 1.32 | 32-0-0 | 1.15 |
| 1.34 | 7-21-7 | 1.16 |
| 1.40 | 10-34-0 | 1.18 |
| 1.50 | | 1.22 |

**EXAMPLE:**
Your desired application rate of 28% Nitrogen fertilizer (28-0-0) is 30 US GPA.

Multiply 30 GPA by Conversion Factor 1.13 to find the converted look-up application rate of 33.9 GPA.

Select a spray nozzle that will apply 33.9 GPA of water-based spray. A spray nozzle that will apply 33.9 GPA of water will apply 30 GPA of 28-0-0 fertilizer solution.

**EXAMPLE:**
Your desired application rate of 28% Nitrogen fertilizer (28-0-0) is 300 L/ha.

Multiply 300 L/ha X Conversion Factor 1.13 to find the converted look-up application rate of 339 L/ha.

Select a spray nozzle that will apply 339 L/ha of water-based spray. A spray nozzle that will apply 339 L/ha of water will apply 300 L/ha of 28-0-0 fertilizer solution.

# BROADCAST APPLICATION FORMULAS

### US STANDARD

Application Formulas – US Standard
GPM – Gallons per minute (per spray nozzle)
GPA – Gallons per acre
GAL/1000FT$^2$ – Gallons per 1000 square feet
MPH – Miles per hour
W - Nozzle spacing (inches) for broadcast spraying
- Spray width (inches) for single-nozzle band spraying or boomless spraying
- Row spacing (inches) divided by the number of nozzles per row for directed spraying

### METRIC

Application Formulas – Metric
LPM – Litres per minute (per spray nozzle)
L/ha – Litres per hectare
Kmph – Kilometres per hour
W - Nozzle spacing (m) for broadcast spraying
- Spray width (m) for single-nozzle band spraying or boomless spraying
- Row spacing (m) divided by the number of nozzles per row for directed spraying

# BAND SPRAYING APPLICATION FORMULAS

## US STANDARD

$$\text{Volume of Chemical Solution Required in Gallons} = \frac{\text{Band Width (inches)}}{[\text{Band Width (inches)} + \text{Spacing between Bands (inches)}]} \times \text{Label Rate of Carrier (GPA)} \times \text{Field Area (Acres)}$$

### HEIGHT REQUIREMENT – BAND SPRAYING

| Band Width | Height over Target 80° | Height over Target 110° |
|---|---|---|
| 8" | 5" | 3" |
| 10" | 6" | 4" |
| 12" | 7" | 4" |
| 15" | 9" | 5" |
| 18" | 11" | 6" |
| 20" | 12" | 7" |
| 30" | 18" | 11" |

To find GPA in the band, use the following equation:

$$\text{Band GPA} = \frac{5940 \times \text{GPM} \times \text{N}}{\text{MPH} \times \text{W}}$$

GPM needed per Nozzle:

$$\text{GPM} = \frac{\text{GPA} \times \text{MPH} \times \text{W}}{5940 \times \text{N}}$$

### TREATED AREA PER FIELD FOR BANDING APPLICATIONS

| Row Spacing in Inches | Band Width | | | | | | |
|---|---|---|---|---|---|---|---|
| | 7" | 8" | 10" | 12" | 15" | 20" | 24" |
| 20" | 0.350 | 0.400 | 0.500 | 0.600 | 0.75 | 1.000 | |
| 22" | 0.318 | 0.363 | 0.454 | 0.545 | 0.681 | 0.909 | |
| 30" | 0.233 | 0.266 | 0.333 | 0.400 | 0.500 | 0.666 | 0.800 |
| 36" | 0.194 | 0.222 | 0.278 | 0.333 | 0.416 | 0.555 | 0.666 |
| 40" | 0.175 | 0.200 | 0.250 | 0.300 | 0.375 | 0.500 | 0.600 |
| 48" | 0.145 | 0.166 | 0.208 | 0.250 | 0.321 | 0.417 | 0.500 |

GPA = Gallons per acre
GPM = Gallons per minute
MPH = Speed in miles per hour
W = Band width in inches
N = Number of nozzles spraying each band

## METRIC

$$\text{Volume of Chemical Solution Required in Litres} = \frac{\text{Band Width (m)}}{[\text{Band Width (m)} + \text{Spacing between Bands (m)}]} \times \text{Label Rate of Carrier (L/ha)} \times \text{Field Area (ha)}$$

### HEIGHT REQUIREMENT – BAND SPRAYING

| Band Width | Height over Target 80° | Height over Target 110° |
|---|---|---|
| 20 cm | 12 cm | 7 cm |
| 25 cm | 15 cm | 9 cm |
| 30 cm | 18 cm | 11 cm |
| 40 cm | 24 cm | 14 cm |
| 45 cm | 27 cm | 16 cm |
| 50 cm | 30 cm | 18 cm |
| 75 cm | 45 cm | 26 cm |

To find the L/ha in the band, use the following equation:

$$\text{Band L/ha} = \frac{600 \times \text{LPM} \times \text{N}}{\text{Kmph} \times \text{W}}$$

LPM needed per Nozzle:

$$\text{LPM} = \frac{\text{L/ha} \times \text{Kmph} \times \text{W}}{600 \times \text{N}}$$

### TREATED AREA PER FIELD FOR BANDING APPLICATIONS

| Row Spacing in cm | Band Width | | | | | | |
|---|---|---|---|---|---|---|---|
| | 18 cm | 20 cm | 25 cm | 30 cm | 38 cm | 50 cm | 60 cm |
| 50 cm | 0.360 | 0.400 | 0.500 | 0.600 | 0.760 | 1.000 | |
| 60 cm | 0.300 | 0.333 | 0.417 | 0.500 | 0.633 | 0.833 | 1.000 |
| 75 cm | 0.240 | 0.267 | 0.333 | 0.400 | 0.507 | 0.667 | 0.800 |
| 90 cm | 0.200 | 0.222 | 0.278 | 0.333 | 0.422 | 0.556 | 0.667 |
| 100 cm | 0.180 | 0.200 | 0.250 | 0.300 | 0.380 | 0.500 | 0.600 |
| 120 cm | 0.150 | 0.167 | 0.208 | 0.250 | 0.317 | 0.417 | 0.500 |

L/ha = Litres per hectare
LPM = Litres per minute
Kmph = Speed in kilometres per hour
W = Band width in metres
N = Number of nozzles spraying each band

# WEAR AND CHEMICAL COMPATIBILITY

**Ceramic** – Highly resistant to abrasive and corrosive chemistry and provides superior wear resistance in abrasive applications and high pressures. Albuz nozzle orifices are made of pink inserted ceramic, reinforced by special oxides, and specially designed by Saint-Gobain for spraying applications.

**Polyacetal** – Provides good resistance to most chemicals and superior wear resistance to most agricultural chemistry. Susceptible to strong mineral acids and a few organic solvents. Resistance to most alkalis is excellent. Organic solvents usually cause slight swelling without any other harmful effect.*

**Polyvinylidene Fluoride (PVDF)** – Should be used with acid-based agricultural defoliation chemistry. Good resistance to wear.* Resists many reagents and high temperatures (up to 300˚F). Susceptible to high temperatures above water boiling (210˚F) in combination with concentrated sulfuric and nitric acids. Preferred in industrial spraying applications.

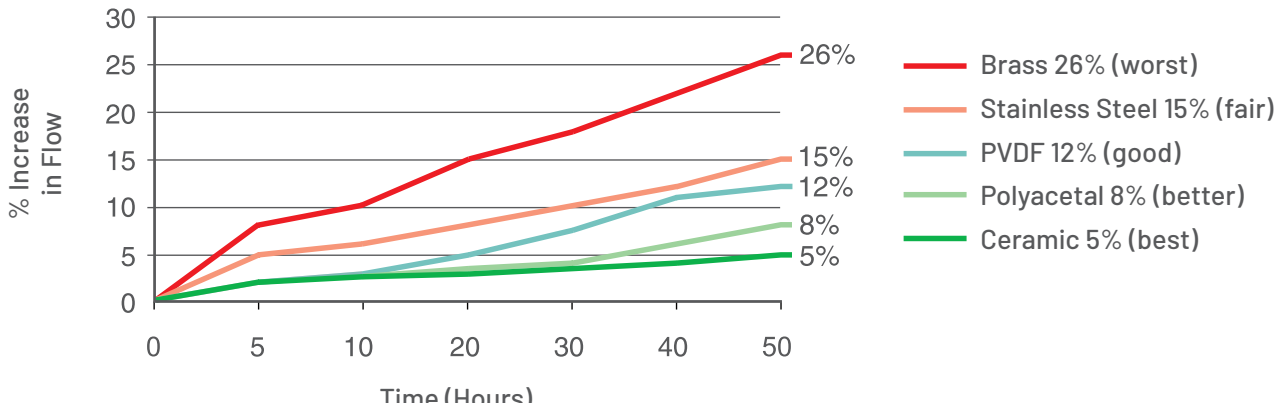
**Stainless Steel** – Good resistance to chemicals and provides average wear resistance.

**Brass** – Average resistance to most chemistry and poor wear resistance. Susceptible to corrosion, especially with fertilizers.

Hypro's Technical/Application Department is available to answer chemical compatibility issues and assist in choosing the correct spray nozzle for your application. Call 1-800-445-8360 (US) or +44 1954 260097 (Europe).

* A list of resistant reagents, acids and alkaline is available from the Hypro Technical/Application Department.

## COMPARATIVE ACCELERATED WEAR TEST




Source: SGS UK LTD. Saint-Gobain AC France
Test Medium: 2.5% Kaolin in water
Test Pressure: 40 psi

# TEMPERATURE TOLERANCE

| Nozzle Material | Maximum Temperature | |
|---|---|---|
| PVC | 58˚ C | 136˚ F |
| Polyacetal | 85˚ C | 185˚ F |
| PVDF | 150˚ C | 302˚ F |
| Brass | 234˚ C | 453˚ F |
| Stainless Steel | 430˚ C | 806˚ F |

# SPRAY NOZZLE MAINTENANCE AND INFORMATION GUIDE

Spraying with a worn nozzle will have consequences for precision. Firstly, droplet size will be larger risking compromised spray coverage and uneven spray across the boom. If the sprayer is not fitted with a rate controller it will also mean uneven over application, this can be costly.

**Examples:**

Just 10% increase in flow from worn nozzles represent a loss of $2,000 to $10,000 on a twice-sprayed 1,000 acre farm (based on $10-$50/acre chemical cost).

or

A 10% increase in flow rate would cost as much as €15/ha in on the average high yielding wheat crop, a loss of over €6,000 on a 400 hectare farm.

The good news is, monitoring and maintaining nozzle performance is one of the easiest ways to help keep a sprayer operating accurately and efficiently.

1. As a rule, replace nozzles worn (10% or more) or damaged at the beginning of each spraying season.
2. Only use the nozzle type that is recommended for your particular spraying application.
3. Calibrate your sprayer regularly to compensate for normal nozzle wear.
4. Monitor spray performance to catch worn, damaged, or plugged nozzles.

Hypro spray nozzles are precision-engineered components that should be regularly maintained to ensure that they give trouble-free service. To clear blocked nozzles, soak in water and clean with a brush and airline. For stubborn deposits, soak in warm water and detergent, agitating occasionally. Never blow through a nozzle or poke with wires or pins – damage to the orifice will alter flow rate, spray angle, and spray distribution.

# FACTORS AFFECTING SPRAY NOZZLE PERFORMANCE

The information in the chart below applies to most spray applications. However, because there are so many different types and sizes of spray nozzles, the effects may vary in a specific application. Hypro is glad to assist you with any specific application questions.

| Increase In | Operating Pressure | Specific Gravity | Viscosity | Fluid Temperature | Surface Tension |
|---|---|---|---|---|---|
| Capacity (Flow Rate) | Increases | Decreases | • | •• | No Effect |
| Spray Angle | Increases then Decreases | Negligible | Decreases | Increases | Decreases |
| Droplet Size | Decreases | Negligible | Increases | Decreases | Increases |
| Pattern Quality | Improves | Negligible | Deteriorates | Improves | Negligible |
| Wear | Increases | Negligible | Decreases | Increases | -- |
| Impact | Increases | Decreases | Decreases | Increases | Negligible |
| Velocity | Increases | Decreases | Decreases | Increases | Negligible |

• Full cone and hollow cone increases, flat fan spray decreases
•• Depends on fluid being sprayed and spray nozzle used

# ACCESSORIES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# PROSTOP-E AND CANNODE

## High Performance Individual Nozzle Control

3305-0011

CN32-0001

- Control spray activation directly on Hypro ProFlo nozzle bodies
- Instantaneous on-off control with 12 volt actuation eliminates misapplication and waste
- Eliminates the need for centralized valve banks allowing on/off control at the nozzle body for individual or small section control
- Two actuation mode options:
  - Simple, 3-wire, 12 volt on/off actuation
  - Operate as an individually addressed valve on a CAN bus/ISO bus system
- Innovative locking collar mechanism allows for easy adjustments to valve orientation on the nozzle body
- The CanNode provides a CAN bus interface for up to 32 valves

### PROSTOP-E VALVE AND NOZZLE BODIES

| Part Number | Description |
|---|---|
| PK-4223N-B323VPSE* | 3 way nozzle body, 3/4" clamp, with ProStop-E |
| PK-4223N-B324VPSE* | 3 way nozzle body, 1" clamp, with ProStop-E |
| PK-4223N-B324VLPSE* | 3 way nozzle body, 1" clamp, with left side mount ProStop-E |
| PK 4223N-B523VPSE* | 5 way nozzle body, 3/4" clamp, with ProStop-E |
| PK-4223N-B524VPSE* | 5 way nozzle body, 1" clamp, with ProStop-E |
| PK-4223N-B524VLPSE* | 5 way nozzle body, 1" clamp, with left side mount ProStop-E |
| PK-4223N-B527PSE* | 5 way nozzle body, 20 mm clamp, with ProStop-E |
| PK-4223N-B528PSE* | 5 way nozzle body, 25 mm clamp, with Prostop-E |
| 3305-0011 | ProStop-E valve only - for user supplied Hypro nozzle body |

* For bulk packaged remove the PK- from the part number or contact factory
ProStop-E Valve easily adapts directly to ProFlo single drop, 3-way/5-way and push-to-connect nozzle bodies in place of the traditional check valve.
Valve and nozzle body must be ordered separately, for configurations not listed above.

### CAN BUS INTERFACE MODULE

| Part Number | Number of Segments | Number of Valves |
|---|---|---|
| CN32-0001 | 2 | 32 |

CAN bus/ISOBUS node is required for CAN bus communication. The node auto addresses each valve on the segment up to 16 valves per segment.

### PROSTOP-E CORDSETS

| Part Number | Description | Connector Styles | Length |
|---|---|---|---|
| 2520-0239 | 635 mm ultra lock | right angle A code - right angle D code | 25" |
| 2520-0240 | 635 mm threaded right angle connectors - right side | right angle A code - right angle D code | 25" |
| 2520-0241 | 635 mm threaded right angle connectors - left side | right angle A code - right angle D code | 25" |
| 2520-0242 | 1 meter threaded right angle connectors | right angle A code - right angle D code | 1 meter |
| 2520-0243 | 2 meter threaded right angle connectors | right angle A code - right angle D code | 2 meter |
| 2520-0244 | 3 meter threaded right angle connectors | right angle A code - right angle D code | 3 meter |
| 2520-0245 | 7 meter threaded straight extension | straight male A code - straight female A code | 7 meter |
| 2520-0259 | 12.5 meter right angle connectors | right angle A code - right angle D code | 12.5 meter |

Black-in; Grey-out, Other custom length cord sets available upon request.

2520-0239

2520-0240
Right of CanNode

2520-0241
Left of CanNode

2300-0067

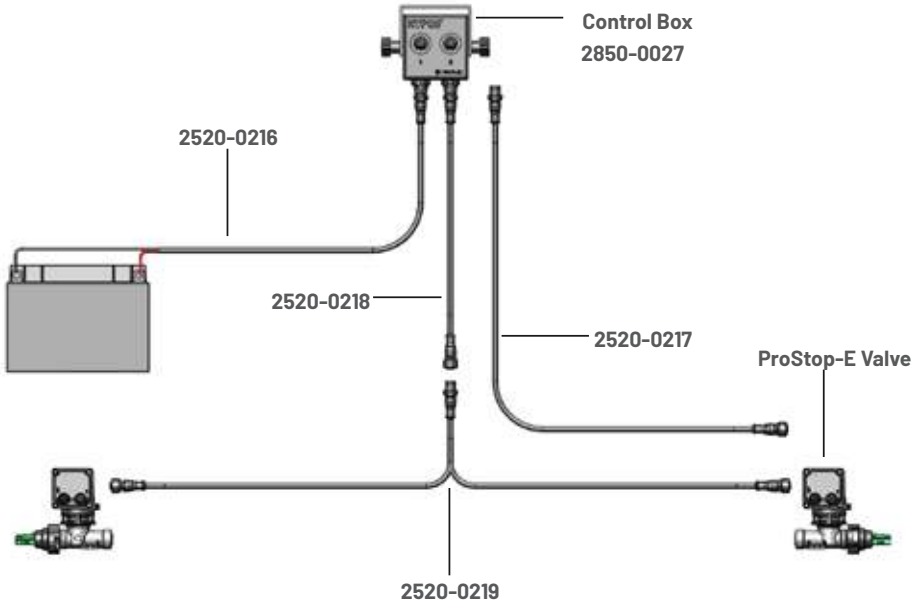
# FENCE ROW CONTROL BOX

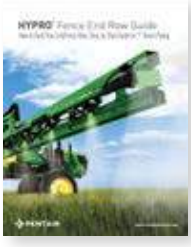
**FEATURES & BENEFITS OF CONTROL BOX:**

- Control one or two Hypro ProStop-E valves with easy on-off switch
- Allows for retrofit of sprayers for adding fence/end row control
- Simple M12 wiring to battery and valves for plug and play
- Easy to mount bracket provided
- Cable options for up to 120" boom length
- LED light indicator on each switch

| Control Box | Description | Connection | Amp Rating |
|---|---|---|---|
| 2850-0027 | End Row Switch Box | Male 3-pin for Battery, Female 4-pin for Control | 4A |

| Cable Part Numbers: | Description | Connection | Amp Rating |
|---|---|---|---|
| 2520-0218 | 7M (23 ft) backbone cable | Threaded, M12 A-code by M12 A-Code | 4A |
| 2520-0217 | Single end row control 27M (88.5 ft) cable | Threaded, Male 4-pin M12 by female 4-pin M12 | 4A |
| 2520-0219 | Y-cable with two 20M (65 ft) segments | Threaded, Male 4-pin by two Female 3-pin M12 A-Code | 4A |
| 2520-0216 | 7M (23 ft) battery cable | Threaded, Female 3-pin A-Code by flying leads | 4A |



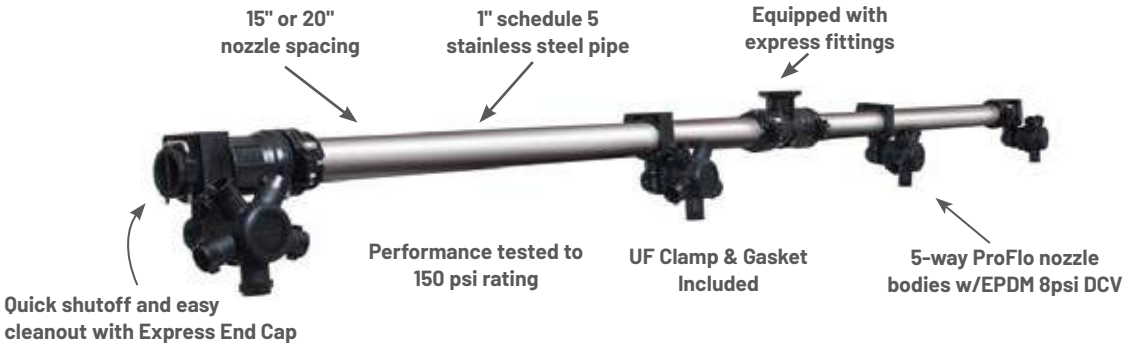



**STEP-BY-STEP GUIDE:**

See Hypro's Step-by-Step Guide to build your End/Fence Row Kit.
www.hyprospraytips.com/stepbystep

# EXPRESS BOOM ASSEMBLY

## Modular Boom Sections




### EXPRESS END CAP BENEFITS

- Eliminates trapped air from the boom by allowing air to escape through the nozzle body, reducing nozzle turn-off time by 85%
- Eliminates "dead-ends" of pipe where chemical residue can build-up
- Cleanout port for easy boom flushing
- Creates a cleaner looking plumbing system by eliminating the need for an extra fitting at the end of the boom

### EXPRESS BOOM ASSEMBLY BENEFITS

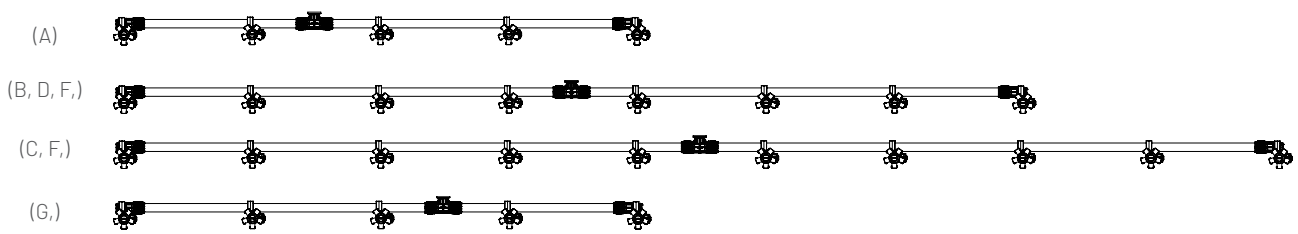
- Convert 20" nozzle spacing to 15" or 15" to 20"
- Easily convert your boom from polypropylene to stainless steel
- Greatly reduces assembly time
- Tested as a complete assembly to eliminate any potential assembly defects
- Single and bulk pack options that allow for standard shipping methods (i.e. FedEx®, UPS®, etc.)
- Improve sprayer performance with Express fittings and optimized design

| | |
|---|---|
| 1 | Complete boom assembly configuration sheet (visit www.hypropumps.com/express for configuration worksheet). Note sprayer model, number of sections, desired spacing's and boom length. Walk boom from left breakaway to right* (Note all feeds, section controls, breakaways, etc.). If you run into configurations larger than 6 nozzles bodies with 15" spacing or 5 nozzles bodies with 20" spacing, break section into two to fit express boom system. If you have any questions, please contact your local Hypro representative or Hypro technical team. |
| 2 | Review 'Quote' tab on configuration worksheet. Re-evaluate boom configuration to insure proper assembly. Look specifically at where the tee fitting will be plumbed to the feed line. If there are interference issues with the boom structure look at alternative horizontal fittings that allow feed lines to mate up to express boom. |
| 3 | Print 'Quote' sheet and submit to your local Hypro sales representative or email to hypro.sales@pentair.com for pricing and availability. |

**Hypro Quote Review:** Hypro will review boom assembly quote sheet submitted. If local dealer is not listed on sheet, Hypro will contact you for final ordering procedures.

### EXAMPLE CONFIGURATION W/15" SPACING:

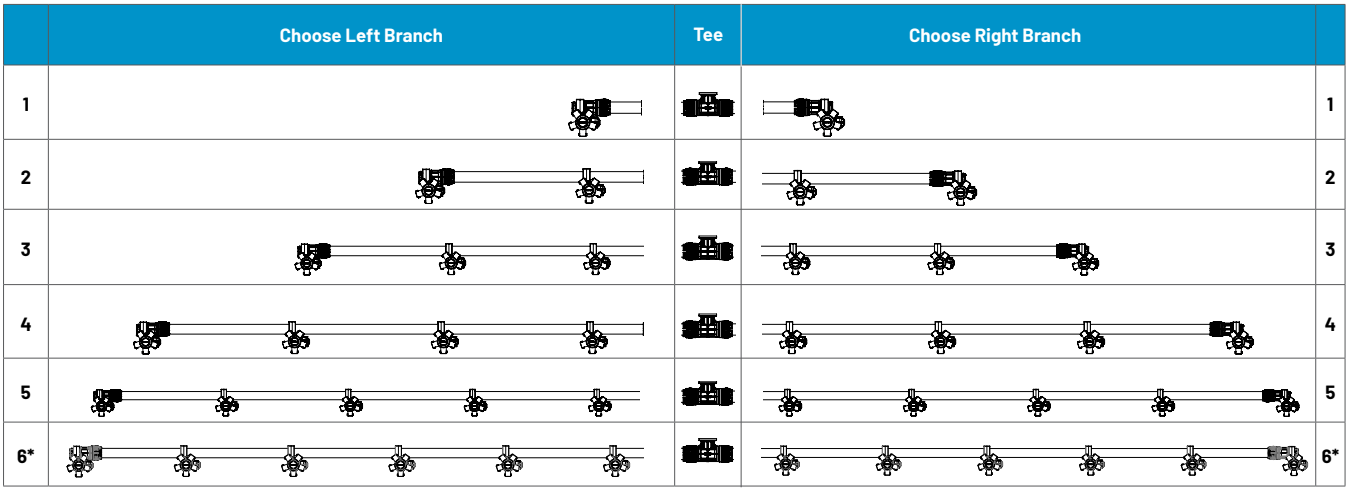
| Section | Section 1 | | Section 2 | Section 3 | Section 4 | Section 5 | |
|---|---|---|---|---|---|---|---|
| Sequence | A | B | C | D | E | F | G |
| Boom Pipe Part Number | 2410-0055 | 2410-0068 | 2410-0075 | 2410-0068 | 2410-0075 | 2410-0068 | 2410-0060 |
| Configuration | 2X3 | 4X4 | 5X5 | 4X4 | 5X5 | 4X4 | 3X2 |



# EXPRESS BOOM ASSEMBLY

## Modular Boom Sections

Hypro's Express Boom Assembly allows you to **CUSTOMIZE** each boom section by choosing the quantity of nozzle bodies either left or right of the tee for each section. Express Boom Assembly has the **FLEXIBILITY** to meet any boom design. These single section **CUSTOM** configurations can range from one nozzle body on the left and/or right branch, to six (15" spacing's) nozzle bodies on each branch. Review the chart below for all configuration options.




* Only available in 15" spacings.

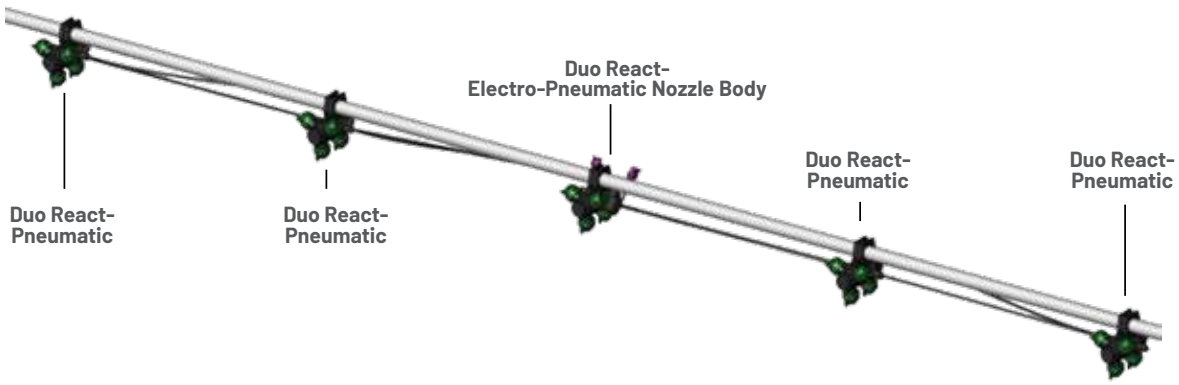
### PRODUCT CONFIGURATIONS

| Configuration | 15" Spacing Part Number | 20" Spacing Part Number |
|---|---|---|
| 1X1 | 2410-0047 | 2410-0021 |
| 1X2 | 2410-0048 | 2410-0022 |
| 1X3 | 2410-0049 | 2410-0023 |
| 1X4 | 2410-0050 | 2410-0024 |
| 1X5 | 2410-0051 | 2410-0025 |
| 1X6 | 2410-0052 | - |
| 2X1 | 2410-0053 | 2410-0026 |
| 2X2 | 2410-0054 | 2410-0027 |
| 2X3 | 2410-0055 | 2410-0028 |
| 2X4 | 2410-0056 | 2410-0029 |
| 2X5 | 2410-0057 | 2410-0030 |
| 2X6 | 2410-0058 | - |
| 3X1 | 2410-0059 | 2410-0031 |
| 3X2 | 2410-0060 | 2410-0032 |
| 3X3 | 2410-0061 | 2410-0033 |
| 3X4 | 2410-0062 | 2410-0034 |
| 3X5 | 2410-0063 | 2410-0035 |
| 3X6 | 2410-0064 | - |
| 4X1 | 2410-0065 | 2410-0036 |
| 4X2 | 2410-0066 | 2410-0037 |
| 4X3 | 2410-0067 | 2410-0038 |
| 4X4 | 2410-0068 | 2410-0039 |
| 4X5 | 2410-0069 | 2410-0040 |
| 4X6 | 2410-0070 | - |

| Configuration | 15" Spacing Part Number | 20" Spacing Part Number |
|---|---|---|
| 5X1 | 2410-0071 | 2410-0041 |
| 5X2 | 2410-0072 | 2410-0042 |
| 5X3 | 2410-0073 | 2410-0043 |
| 5X4 | 2410-0074 | 2410-0044 |
| 5X5 | 2410-0075 | 2410-0045 |
| 5X6 | 2410-0076 | - |
| 6X1 | 2410-0077 | - |
| 6X2 | 2410-0078 | - |
| 6X3 | 2410-0079 | - |
| 6X4 | 2410-0080 | - |
| 6X5 | 2410-0081 | - |
| 6X6 | 2410-0082 | - |
| 1XHB | 2410-0086 | 2410-0086 |
| 2XHB | 2410-0087 | 2410-0091 |
| 3XHB | 2410-0088 | 2410-0092 |
| 4XHB | 2410-0097 | 2410-0093 |
| 5XHB | 2410-0098 | 2410-0094 |
| HBX1 | 2410-0083 | 2410-0083 |
| HBX2 | 2410-0084 | 2410-0089 |
| HBX3 | 2410-0085 | 2410-0090 |
| HBX4 | 2410-0099 | 2410-0095 |
| HBX5 | 2410-0100 | 2410-0096 |

# DUO REACT NOZZLE BODIES

## Compact and Economical Twin Valve Nozzle Body




- A single and 4-way nozzle body incorporated into one compact unit
  - Eliminates the need for twin lines or "back to back" configurations
  - Simple operation, twin valves allow either or both nozzles to spray
- Allows the operator to select different nozzle combinations from the cab with a controller
- Compact design allows for easy integration into many boom designs
- Pneumatic only or electro-pneumatic actuated valve options
  - Electro-pneumatic body can be used in place of a section control valve to control up to 7 pneumatic Duo React nozzle bodies
- Available with hinged clamps 1/2", 3/4", 1", 20mm and 25m

### DUO REACT ELECTRO-PNEUMATIC TWIN VALVE NOZZLE BODIES FOR WET BOOM

| Seal Options/ Housing Reference | (to clamp on) Pipe Size | | | | |
|---|---|---|---|---|---|
| | 1/2" | 3/4" | 1" | 20 mm | 25 mm |
| Viton®/Green | 4214-2502V | 4214-2503V | 4214-2504V | 4214-2507V | 4214-2508V |

### DUO REACT PNEUMATIC TWIN VALVE NOZZLE BODIES FOR WET BOOM

| Seal Options/ Housing Reference | (to clamp on) Pipe Size | | | | |
|---|---|---|---|---|---|
| | 1/2" | 3/4" | 1" | 20 mm | 25 mm |
| Viton®/Green | 4214-1502V | 4214-1503V | 4214-1504V | 4214-1507V | 4214-1508V |

### DUO REACT SPARE PARTS AND TOOL

| Part Number | Description |
|---|---|
| 3430-0840V | O-ring, piston and filter sub-assembly kit |
| 3021-0006 | Cap removal service wrench |

# PROFLO NOZZLE BODIES

## Nozzle Bodies with the Highest Flow Rates in the Industry

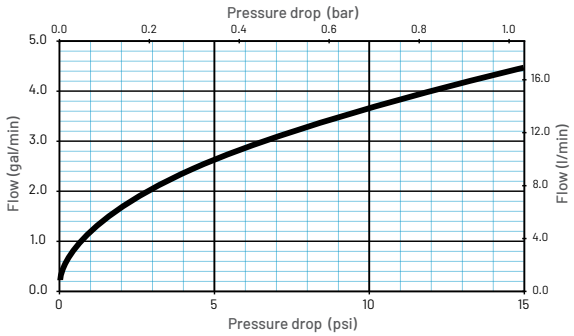
### BENEFITS:

- Designed to deliver the highest flow rates across the spraying pressure range
  - Unique DCV (diaphragm check valve) design reduces restrictions in the flow path, enabling 2.6 gpm (9.8 lpm) with a 5 psi (0.34 bar) pressure drop through the nozzle
  - Supports faster field speeds with the same coverage and supports direct fertilizer application through the nozzle body DCV flow path
- Turret-indexing design provides improved consistency and reliability throughout the life of the nozzle body – eliminating free spinning and seizing problems seen on competitive nozzle bodies
- Bayonet style attachment allows for automatic spray alignment using flat fan spray nozzles
- Compact design makes mounting easier with less potential interference with the spray boom structure
- ProFlo nozzle bodies come standard with an 8 psi (.55 bar) diaphragm check valve. 4 psi (.27 bar), 12 psi (.82 bar), 20 psi (1.37 bar), and 25 psi (1.72 bar) checks are available as options
- Maximum working pressures for all nozzle bodies

### FEATURES:

- Three turret styles for an easy change of spray nozzles: single, 3-way, and 5-way
- Provides lowest pressure drop at any given flow in the industry
- 2.6 gpm (9.84 LPM) with a 5 psi (.345 BAR) pressure drop
- Available in wet or dry boom versions
- Positive shutoff between each spray position
- Custom logos available upon request (minimum quantities apply)

**PROFLO NOZZLE BODY PERFORMANCE CURVE**



### 3 AND 5-WAY NOZZLE BODIES FOR WET BOOM (NO TAB FOR BOOM CLAMP)

| Seal Option/ Housing Reference | Turret Options | (to clamp on) Pipe Size | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1/2" | 3/4" | 1" | 1" (Left Handed DCV) | 20mm | 25mm |
| EPDM/Red | 3 | 4223N-B322 | 4223N-B323 | 4223N-B324 | BG-4223N-B324L | 4223N-B327 | 4223N-B328 |
| | 5 | 4223N-B522 | 4223N-B523 | 4223N-B524 | BG-4223N-B524L | 4223N-B527 | 4223N-B528 |
| Viton®/Green | 3 | 4223N-B322V | 4223N-B323V | 4223N-B324V | BG-4223N-B324VL | 4223N-B327V | 4223N-B328V |
| | 5 | 4223N-B522V | 4223N-B523V | 4223N-B524V | BG-4223N-B524VL | 4223N-B527V | 4223N-B528V |

Sold in Quantities of 100; Sold as single units through HYPRO-EU only (Cambridge,UK)
For Individual Bags, Add Suffix -00 (i.e.: 4223N-B322-00)
ProStop Valve in place of DCV - Add sufix "PS" (ie. 4223N-B322PS)
Left hand DCV versions are sold as individual units in a bag.

### TRIPLE NOZZLE BODIES FOR WET BOOM

| Seal Option / Housing Reference | Part Number | Description |
|---|---|---|
| EPDM/Red | 4222N-B322 | 1/2" split clamp |
| | 4222N-B323 | 3/4" split clamp |
| | 4222N-B324 | 1" split clamp |

### SINGLE DROP NOZZLE BODY FOR WET BOOM

| Seal Option/ Housing Reference | (to clamp on) Pipe Size | | | | |
|---|---|---|---|---|---|
| | 1/2" | 3/4" | 1" | 20mm | 25mm |
| EPDM/Red | 4221N-B122 | 4221N-B123 | 4221N-B124 | 4221N-B127 | 4221N-B128 |
| Viton®/Green | 4221N-B122V | 4221N-B123V | 4221N-B124V | 4221N-B127V | 4221N-B128V |

Acid resistant polypropylene available with 1" clamp and EPDM Seal. part number: 402265P
1/4" FNPT Outlet- Substitute B with F (i.e.: 4221N-F122)
Sold in Quantities of 100; Sold as single units through HYPRO-EU only (Cambridge,UK)
For Individual Bags, Add Suffix -00 (i.e.: 4221N-B122-00)
ProStop Valve in place of DCV - Add sufix "PS" (ie. 4221N-B122PS

# PROFLO NOZZLE BODIES

## 3 & 5-WAY NOZZLE BODIES WITH TAB FOR BOOM CLAMP

| Seal Option/ Housing Reference | Turret Options | (to clamp on) Pipe Size | | | | |
|---|---|---|---|---|---|---|
| | | 1/2" | 3/4" | 1" | 20mm | 25mm |
| EPDM/Red | 3 | 4243N-B322 | 4243N-B323 | 4243N-B324 | 4243N-B327 | 4243N-B328 |
| | 5 | 4243N-B522 | 4243N-B523 | 4243N-B524 | 4243N-B527 | 4243N-B528 |
| Viton®/Green | 3 | 4243N-B322V | 4243N-B323V | 4243N-B324V | 4243N-B327V | 4243N-B328V |
| | 5 | 4243N-B522V | 4243N-B523V | 4243N-B524V | 4243N-B527V | 4243N-B528V |

Sold in Quantities of 100; Sold as single units through HYPRO-EU only (Cambridge,UK)
For Individual Bags, Add Suffix -00 (i.e.: 4243N-B322-00).
ProStop Valve in place of DCV - Add sufix "PS" (ie. 4243N-B322PS)

## 3 & 5-WAY NOZZLE BODIES WITH TAB FOR BOOM CLAMP AND HOSE BARB FOR DRY BOOM

| Seal Option/ Housing Reference | Turret Options | 3/4 " (19 mm) Single Ended HB | 3/4 " (19 mm) Double Ended HB | 1" (25 mm) Single Ended HB | 1" (25 mm) Double Ended HB |
|---|---|---|---|---|---|
| EPDM/Red | 3 | 4263N-B323S | 4263N-B323D | 4263N-B324S | 4263N-B324D |
| | 5 | 4263N-B523S | 4263N-B523D | 4263N-B524S | 4263N-B524D |
| Viton®/Green | 3 | 4263N-B323SV | 4263N-B323DV | 4263N-B324SV | 4263N-B324DV |
| | 5 | 4263N-B523SV | 4263N-B523DV | 4263N-B524SV | 4263N-B524DV |

Sold in Quantities of 100.
For Individual Bags, Add Suffix -00 (i.e.: 4263N-B323S-00).

## DRY BOOM ADAPTERS FOR WET BOOM NOZZLE BODIES

| Part Number | Type | Clamp Size | Hose Barb | |
|---|---|---|---|---|
| | | | US Units | Metric Units |
| 4200-0111N | Single | 1/2" Pipe | 1/2" | 13 mm |
| 4200-0112N | Single | 3/4" Pipe | 3/4" | 19 mm |
| 4200-0113N | Single | 3/4" Pipe | 1" | 25 mm |
| 4200-0114N | Single | 1" Pipe | 3/4" | 19 mm |
| 4200-0115N | Single | 1" Pipe | 1" | 25 mm |
| 4200-0211N | Double | 1/2" Pipe | 1/2" | 13 mm |
| 4200-0212N | Double | 3/4" Pipe | 3/4" | 19 mm |
| 4200-0213N | Double | 3/4" Pipe | 1" | 25 mm |
| 4200-0214N | Double | 1" Pipe | 3/4" | 19 mm |
| 4200-0215N | Double | 1" Pipe | 1" | 25 mm |

## HOSE BARB TRIPLE NOZZLE BODIES-WITH DCV

| Seal Options/ Housing Reference | Single hose barb P/N | Double hose barb P/N | Hose ID | |
|---|---|---|---|---|
| | | | US Units | Metric Units |
| EPDM/Red | 4242N-B322S | 4242N-B322D | 1/2" | 13 mm |
| | 4242N-B323S | 4242N-B323D | 3/4" | 19 mm |

4242N-B300-Provides 1/4" MNPT Inlet

## HOSE BARB DRY BOOM NOZZLE BODIES-WITH DCV

| Seal Options/ Housing Reference | Single hose barb P/N | Double hose barb P/N | Triple hose barb P/N | Hose ID | |
|---|---|---|---|---|---|
| | | | | US Units | Metric Units |
| EPDM/Red | 4241N-B121S | 4241N-B121D | 4241N-B121T | 3/8" | 10 mm |
| | 4241N-B122S | 4241N-B122D | 4241N-B122T | 1/2" | 13 mm |
| | 4241N-B123S | 4241N-B123D | 4241N-B123T | 3/4" | 19 mm |

Add Prefix "BG-" for 1 part per retail bag.

# NOZZLE BODIES

## HOSE BARB DRY BOOM NOZZLE BODIES-WITH TOP-MOUNTED DCV

| Seal Options/ Housing Reference | Single hose barb P/N | Double hose barb P/N | Hose ID | |
|---|---|---|---|---|
| | | | US Units | Metric Units |
| EPDM/Red | 4240N-B121S | 4240N-B121D | 3/8" | 10 mm |
| | 4240N-B122S | 4240N-B122D | 1/2" | 13 mm |
| | 4240N-B123S | 4240N-B123D | 3/4" | 19 mm |

Add Prefix "BG-" for 1 part per retail bag.

## SINGLE NOZZLE BODIES WITH DCV

| Seal Options/ Housing Reference | 1/4" MNPT x 1/4" FNPT | | | 1/4" MNPT x Bayonet | | 11/16" UNF x Bayonet | 3/8" (10 mm) HB x Bayonet |
|---|---|---|---|---|---|---|---|
| | 4 PSI (.28 BAR) | 8 PSI (.55 BAR) | 25 PSI (1.72 BAR) | 4 PSI (.28 BAR) | 8 PSI (.55 BAR) | 8 PSI (.55 BAR) | 8 PSI (.55 BAR) |
| EPDM/Red | 4240N-F110 | 4240N-F120 | 4240N-F150 | 4240N-B010 | 4240N-B020 | 4241N-B120U | QT14-1-NDC |
| Viton®/Green | 4240N-F110V | 4240N-F120V | 4240N-F150V | 4240N-B010V | 4240N-B020V | - | - |

## PUSH-TO-CONNECT NOZZLE BODIES

| Push-to-Connect (PTC) Nozzle Body Part Numbers | | | | | |
|---|---|---|---|---|---|
| Type | DCV | 4 PSI (.28 BAR) | | 8PSI (.55 BAR) | |
| | Size | 25 Std. Pack | 1 Per Bag | 25 Std. Pack | 1 Per Bag |
| PTC to Bayonet | 1/4" | 4247N-B119 | BG-4247N-B119 | 4247N-B129 | BG-4247N-B129 |
| | 3/8" | 4247N-B111 | BG-4247N-B111 | 4247N-B121 | BG-4247N-B121 |
| PTC to PTC | 1/4" | 4247N-C119 | BG-4247N-C119 | 4247N-C129 | BG-4247N-C129 |
| | 3/8" | 4247N-C111 | BG-4247N-C111 | 4247N-C121 | BG-4247N-C121 |

To order without a DCV remove 9th digit and replace with an "X". Example: 4247N-B1X9

## HOSE BARB DRY BOOM NOZZLE BODIES-NO DCV

| Single hose barb P/N | Double hose barb P/N | Triple hose barb P/N | Hose ID | |
|---|---|---|---|---|
| | | | US Units | Metric Units |
| 4231N-B101S | 4231N-B101D | 4231N-B101T | 3/8" | 10 mm |
| 4231N-B102S | 4231N-B102D | 4231N-B102T | 1/2" | 13 mm |
| 4231N-B103S | 4231N-B103D | 4231N-B103T | 3/4" | 19 mm |

## WET BOOM SINGLE NOZZLE BODIES-NO DCV

| Single hose barb P/N | Hose ID |
|---|---|
| 4201N-B102 | 1/2" clamp |
| 4201N-B103 | 3/4" clamp |
| 4201N-B104 | 1" clamp |

Add Suffix "-00" for 1 part per retail bag.

## REPLACEMENT NOZZLE BODY STEM SEALS

| Part Number | Description/Material |
|---|---|
| 1723-0142 | 10 mm Wet Boom Stem Seal-EPDM |
| 1721-0220 | 10 mm Wet Boom Stem Seal-Viton |

## SCREW, NUT & STEM O-RING KIT

| Part Number | Description/Material |
|---|---|
| 3430-0755 | Contains replacement screw, nut and stem o-ring/EPDM |
| 3430-0755V | Contains replacement screw, nut and stem o-ring/Viton |

## REPLACEMENT SEAL/O-RING KIT PROFLO BODY

| Part Number | Description/Material |
|---|---|
| 3430-0754 | Contains all internal seals/EPDM |
| 3430-0754V | Contains all internal seals/Viton® |

# EXPRESS NOZZLE BODY END CAPS AND FITTINGS

## EXPRESS NOZZLE BODY END CAP

| Part Number (Carton Qty: 100) | Part Number (1 per Bag) | Description | Nozzle Body Type |
|---|---|---|---|
| 7433-3316 | BG-7433-3316 | 1" Express™ fitting with nozzle body end cap allows trapped air to escape through the nozzle body and includes removable plug for boom cleanout. | 10 mm Stem |
| 7433-3314 | BG-7433-3314 | | 17 mm Stem |

7433-2600 repair kit 10mm stem and 7433-2514 repair kit for 17mm stem Kit includes: plug, O-ring and clip.

## EXPRESS NOZZLE BODY END CAP RETROFIT KIT

| Part Number | Description | Cutting Jig Material | Nozzle Body Type |
|---|---|---|---|
| 3410-0044 | Kit includes machinist-quality drill bit, drilling and cutting jig for 1" pipe, Emery cloth, and instructions to retrofit conventional wet boom spray pipe for Express nozzle body end caps. | Aluminum | 10 mm Stem |
| 3410-0043 | | Aluminum | 17 mm Stem |

**WE RECOMEND USING A RIDGID PIPE CUTTER. AVAILABLE AT ANY HARDWARE STORE.**

## EXPRESS WET BOOM FITTINGS

| Part Number (Carton Qty: 50) | Part Number (1 per Bag) | Description | Ref # |
|---|---|---|---|
| 7433-2502 | BG-7433-2502 | Express Fitting X 1" Universal Flange Straight | 1 |
| 7433-2503 | BG-7433-2503 | 2 Express Fitting X 1" Universal Flange Tee (Vertical) | 2 |
| 7433-2525 | BG-7433-2525 | 2 Expresss Fitting X 1" Universal Flange Tee (10° offset from vertical) | |
| 7433-2535 | BG-7433-2535 | 2 Expresss Fitting X 1" Universal Flange Tee (45° offset from vertical) | |
| 7433-2545 | BG-7433-2545 | 2 Expresss Fitting X 1" Universal Flange Tee (30° offset from vertical) | |
| 7433-2515 | BG-7433-2515 | 2 Express Fitting X 1" Universal Flange Tee (Horizontal) | 3 |
| 7433-2608 | BG-7433-2608 | Express Fitting X 1" Hose Barb Straight | 4 |
| 7433-2610 | BG-7433-2610 | Express Fitting X 1" Hose Barb Elbow Vertical | 5 |
| 7433-2601 | BG-7433-2601 | Express Fitting X 1" Hose Barb Elbow Horizontal | 6 |
| 7433-2613 | BG-7433-2613 | Express Fitting X 1" Male Cam Lock Straight | 7 |
| — | UFG0100E-A | 1" EPDM Universal Flange Gasket provides high quality sealing for flanged fittings | 8 |
| 2910-0026 | BG-2910-0026 | Express Clamps & Hardware Kit | 9 |
| 3430-0790 | BG-3430-0790 | Express Clamps & Hardware Kit with Pipe O-rings | 10 |

For high quality sealing to flange fitting, use Hypro's Universal Flange Gasket.

1

3

5

7

9

2

4

6

8

10

# NOZZLE BODY SHUT-OFF CONTROLS

## PROSTOP-E (SEE PAGE 214 FOR MORE DETAILS ON PROSTOP-E)

- Control spray activation directly on Hypro ProFlo nozzle bodies
- Instantaneous on-off control with 12 volt actuation eliminates misapplication and waste
- Eliminates the need for centralized valve banks allowing on/off control at the nozzle body for individual or small section control
- Two actuation mode options:
  - Simple, 3-wire, 12 volt on/off actuation
  - Operate as an individually addressed valve on a CAN bus/ISO bus system
- Innovative locking collar mechanism allows for easy adjustments to valve orientation on the nozzle body
- The CanNode provides a CAN bus interface for up to 32 valves

## PROSTOP-E - 12 VOLT ACTUATED ON/OFF NOZZLE CONTROL

| Part Number | Description |
|---|---|
| 3305-0011 | ProStop-E valve assembly fits all Hypro ProFlow nozzle bodies in place of the check valve |

## CAN BUS INTERFACE MODULE

| Part Number | Number of Segments | Number of Valves |
|---|---|---|
| CN32-0001 | 2 | 32 |

## PROSTOP

- Rapidly and accurately start and stop nozzle flow
- Compatible with convenient push-connect air fittings and tube
- Connect one air circuit per boom section
- Air pressure activates spray, spring closure provides positive shut-off for transport and storage
- Durable and chemically-resistant polypropylene, PVDF, and EPDM components
- A 40 psi (3 bar) pneumatic signal controls a maximum spray pressure of 150 psi (10 bar)
- Operational temperature range: 41°F to 113°F (5°C to 45°C)
- ProStop can be specified in place of the diaphragm check valve (DCV) on select ProFlo nozzle bodies. Add suffix "PS" to nozzle body part number shown.

## PROSTOP-AIR-ACTUATED ON/OFF NOZZLE CONTROL CONTROL

| Part Number | Description |
|---|---|
| PS3/4F-PN | ProStop valve assembly |
| 65VBS0182-17 | O Ring Viton® |
| 7002738 | Prostop™ valve banjo 6mm |
| 4302741 | Prostop™ replacement piston sub-assembly |
| 3010-WR0008 | Chuck wrench (8mm sq capacity) |
| 3010-EX0004 | Screw extractor no. 4 |

## REPLACEMENT CHECK VALVE (DCV) INCLUDES FLYNUT, HOUSING AND SPRING

| Housing Reference | Spring Pressure Plunger Reference Color | | | | |
|---|---|---|---|---|---|
| | 4 PSI (.28 BAR) Orange | 8 PSI (.55 BAR) Black | 12 PSI (.83 BAR) Yellow | 20 PSI (1.38 BAR) Gray | 25 PSI (1.72 BAR) Blue |
| Red | 4200-0010 | 4200-0020 | 4200-0030 | 4200-0040 | 4200-0050 |
| Green | 4200-0010V | 4200-0020V | 4200-0030V | 4200-0040V | 4200-0050V |

Red housing indicates for use with EPDM Seals. Green housing indicates for use with Viton Seals.
Note: Diaphragms are sold separately.

## REPLACEMENT DIAPHRAGM SEAL OPTIONS FOR CHECK VALVES

| Option | Part Number | Color Reference |
|---|---|---|
| EPDM | 4200-0004E | Black |
| Viton® | 4200-0004V | Green |

## POSITIVE SHUT-OFF

| Part Number | Description |
|---|---|
| 4200-0025 | 8 PSI (.55 bar) DCV with positive shut-off |

Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# NOZZLE BODY ACCESSORIES

## WET BOOM BLANKS

| Part Number | Material | Description |
|---|---|---|
| 400059 | Nylon | 3/4" Pipe |
| 400069 | Nylon | 1" Pipe |
| 400059P* | Polypropylene | 3/4" Pipe |
| 400069P* | Polypropylene | 1" Pipe |

*Comes standard with Viton® o-ring.

## SERIES 404 SWIVEL AND THREADED-SWIVEL NOZZLE BODIES

| Part Number | Description |
|---|---|
| 4200N-0020 | Single Swivel 1/4" FNPT X Quick Attach |
| 4200N-0021 | Double Swivel 1/4" FNPT X 2 Quick Attach |
| 4200N-0023 | Single 1/4" FNPT X 11/16" - 16UN(M) |
| 4200N-0024 | Double 1/4" FNPT X 11/16" - 16UN(M) |
| 4200N-0025 | Red Retaining Cap 11/16" - 16UN(F) |
| 4200N-0026 | Black Retaining Cap 11/16" - 16UN(F) |

## HOSE DROPS

| Part Number | Length | | Description Outlet, Inlet |
|---|---|---|---|
| | US Units | Metric Units | |
| 430001 | 15" | 38.1 cm | 1/4" NPT, 11/16" - 16UN(M) |
| 430002 | 24" | 60.9 cm | 1/4" NPT, 11/16" - 16UN(M) |
| 430201 | 15" | 38.1 cm | 1/4" NPT, Quick Attach Fitting |
| 430202 | 24" | 60.9 cm | 1/4" NPT, Quick Attach Fitting |
| 430201V | 15" | 38.1 cm | 1/4" NPT, Quick Attach Fitting with Viton |
| 430202V | 24" | 60.9 cm | 1/4" NPT, Quick Attach Fitting with Viton |

## BALL NOZZLE HOLDERS

| Part Number | Ball Thread | Attach Method |
|---|---|---|
| 40867BN | 1/4" FNPT | Handlock Clamp 1" pipe |
| 4081B0N | 1/4" FNPT | Threaded 1/4" MNPT |

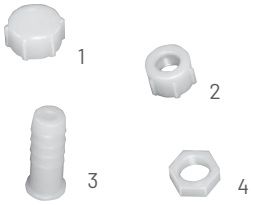
Viton® is a registered trademark of DuPont. Hypro® is a registered trademark of Pentair.

# NOZZLE BODY ACCESSORIES

## 11/16" UN NOZZLE BODIES

| Reference Number | Standard Pack | Description US Units | Nylon Part Number | Poly Part Number |
|---|---|---|---|---|
| 1 | 25 | 11/16" - 16UN(M) X 1/4" (6 mm) HB Elbows | NTL14 | 3NTL14 |
| 1 | 25 | 11/16" - 16UN(M) X 3/8" (10 mm) HB Elbows | NTL38 | 3NTL38 |
| 1 | 25 | 11/16" - 16UN(M) X 1/2" (13 mm) HB Elbows | NTL12 | 3NTL12 |
| 1 | 25 | 11/16" - 16UN(M) X 5/8" (16 mm) HB Elbows | NTL58 | 3NTL58 |
| 1 | 25 | 11/16" - 16UN(M) X 3/4" (19 mm) HB Elbows | NTL34 | 3NTL34 |
| 2 | 25 | 11/16" - 16UN(M) X 3/8" (10 mm) HB Tees | NTT38 | 3NTT38 |
| 2 | 25 | 11/16" - 16UN(M) X 1/2" (13 mm) HB Tees | NTT12 | 3NTT12 |
| 2 | 25 | 11/16" - 16UN(M) X 5/8" (16 mm) HB Tees | NTT58 | 3NTT58 |
| 2 | 25 | 11/16" - 16UN(M) X 3/4" (19 mm) HB Tees | NTT34 | 3NTT34 |
| 3 | 25 | 11/16" - 16UN(M) X 3/8" (10 mm) HB Crosses | T38C | 3T38C |
| 3 | 25 | 11/16" - 16UN(M) X 1/2" (13 mm) HB Crosses | T12C | 3T12C |
| 3 | 25 | 11/16" - 16UN(M) X 3/4" (19 mm) HB Crosses | T34C | 3T34C |
| 4 | 25 | 11/16" - 16UN(M) X 3/8" (10 mm) HB Nozzle Shanks Straight | 38D | 338D |
| 4 | 25 | 11/16" - 16UN(M) X 1/2" (13 mm) HB Nozzle Shanks Straight | 3812D | 33812D |
| 5 | 25 | 11/16" - 16UN(F) X 1/4" (6 mm) FNPT Female Spray Nozzle Adapter | NF1614 | 3NF1614 |
| 6 | 25 | 11/16" - 16UN(M) X 1/4" (6 mm) MNPT Nipples | NB1614 | 3NB1614 |
| 6 | 25 | 11/16" - 16UN(M) X 1/2" (16 mm) MNPT Nipples | NB1612 | 3NB1612 |
| 7 | 25 | 3/8" FNPT X 11/16" - 16UN(M) Ball Check Valve for nozzle fittings (10 PSI/ .69 BAR) | NBC10 | ------- |

Includes B12/3B12 nut.
Add Prefix "BG-" for 1 part per retail bag.
Add Prefix "5BG-" for 5 parts per retail bag.




## 11/16" UN NOZZLE BODY CAP AND NUT

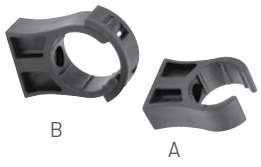
| Reference Number | Standard Pack | Description | Nylon Part Number | Poly Part Number |
|---|---|---|---|---|
| 1 | 25 | 11/16" - 16UN(F) Nozzle blank cap | 3942* | 33942* |
| 2 | 25 | 11/16" - 16UN(F) Nozzle cap for nozzle/barb | 8027* | 38027* |
| 3 | 25 | 1/4" (6 mm) HB for 8027/38027 cap | K8414 | 3K8414 |
| 3 | 25 | 3/8" (10 mm) HB for 8027/38027 cap | K8438 | 3K8438 |
| 3 | 25 | 1/2" (13 mm) HB for 8027/38027 cap | K8412 | 3K8412 |
| 4 | 25 | 11/16" - 16UN jamb nut | B12* | 3B12* |

*Fits all nozzle fittings with 11/16" male straight thread.

## 1" BOOM CLAMP

| Part Number | Standard Pack | Material | Description |
|---|---|---|---|
| 2910-0037 | 25 sets | Polypropylene | 1" Boom Clamp to hold 1" pipe on a boom structure |

1/4" fasteners are not included.




## COBRA CLIP BOOM PIPE MOUNTS

| Part Number | Ref. | Description |
|---|---|---|
| 0113434307 | A | 3/4" or 25mm nominal boom pipe mount |
| 0113434308 | B | 1" or 32mm nominal boom pipe mount w/ keep strap |
| 01134343010 | B | 1-1/2" or 40mm nominal boom pipe mount w/ keep strap |

## BLACK POLYPROPYLENE BOOM PIPE (UNDRILLED) - SCHEDULE 80 - 20 FT SECTIONS

| Part Number | Nominal Pipe Size | Pipe Length | | Wall Thickness | Wall Tolerance | Outside Diameter | | Max. Operating Pressure @ 73° F/22.8° C | |
|---|---|---|---|---|---|---|---|---|---|
| | | US Units | Metric Units | | | US Units | Metric Units | PSI | BAR |
| 8034-F-00PP | 3/4" | 20 ft | 6.1 m | 0.154 | +0.020 | 1.050 | 26.7 mm | 270 | 18.6 |
| 801-F-00PP | 1" | 20 ft | 6.1 m | 0.179 | +0.021 | 1.315 | 33.4 mm | 250 | 17.2 |
| 80112-F-00PP | 1-1/2" | 20 ft | 6.1 m | 0.220 | +0.021 | 1.905 | 48.4 mm | 200 | 13.8 |

# NOZZLE BODY ACCESSORIES & FOAM MARKER

## QUICK FITTING ADAPTERS

| Reference # | Part # | Description | Packaging |
|---|---|---|---|
| - | 4200-0015N | 1/4" BSP x Quick Attach | None |
| 1 | 4200-0016N | 1/4" MNPT x Quick Attach | None |
| 2 | 4200N-0017 | 45° Double Elbow w/Gasket | 10/ Bag, Priced Individually |
| 3 | 4200N-0018 | 90° Elbow x Quick Attach | 10/ Bag, Priced Individually |
| 4 | 4200-0019 | 1/4" FNPT x Quick Attach | None |
| 5 | 9950-0024 | Hardi* Adapter | 10/ Bag, Priced Per Bag |
| 6 | 9950-0027 | Jacto** Adapter | 10/ Bag, Priced Per Bag |
| 7 | CPV007 | 3/8" HB x 1/4" FNPT w/ Boom clamp | None |
| 8 | BG-400275N | 1/4" FNPT x Quick Attach | 1/Bag |

* Hardi is a registered trademark of Hardi International A/S
** Jacto is a registered trademark of Jacto, Inc.

## VARI-SPACING CLAMPS

| Part Number | Material | Piping/Tubing O.D. |
|---|---|---|
| 413003* | Steel | 3/4" (26.7 mm) Round Pipe (1.050") |
| 413004* | Steel | 1" (33.5 mm) Round Pipe (1.315") |
| 413005* | Steel | 1-1/4" (42 mm) Round Pipe (1.660") |
| 413013 | Steel | 3/4" (19 mm) Square Tubing |
| 413014 | Steel | 1" (25 mm) Square Tubing |
| 413015 | Steel | 1-1/4" (32 mm) Square Tubing |
| 413016 | Steel | 1-1/2" (38 mm) Square Tubing |

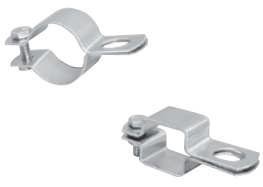
Add Prefix "BG-" for 1 part per retail bag
* By pipe, dimensions refer to I.D. (inner diameter).

## PROFLO DRY BOOM CLAMPS WITH SLOT FOR EASY ASSEMBLY- BOXES OF 100

| Part Number | Material | Piping/Tubing O.D. |
|---|---|---|
| 1520-1075 | zinc plated steel | 3/4" (14 mm) square tubing |
| 1520-1100 | zinc plated steel | 1" (25 mm) square tubing |
| 1520-1125 | zinc plated steel | 1-1/4" (32 mm) square tubing |
| 1520-1150 | zinc plated steel | 1-1/2" (38 mm) square tubing |
| 1520-1075SS | 304 stainless steel | 3/4" (19 mm) square tubing |
| 1520-1100SS | 304 stainless steel | 1" (25 mm) square tubing |
| 1520-1125SS | 304 stainless steel | 1-1/4" (32 mm) square tubing |
| 1520-1150SS | 304 stainless steel | 1-1/2"(38 mm) square tubing |

Add Prefix "BG-" for 1 part per retail bag

## STEEL BOOM CLAMPS FOR USE WITH 11/16" NOZZLE BODIES



| Part Number | Description |
|---|---|
| BC34R* | 3/4"(26.7 mm) Round Pipe |
| BC100R* | 1" (33.4 mm) Round Pipe |
| BC100 | 1" (25 mm) Square |
| BC114 | 1-1/4" (32 mm) Square |

* Dimensions refer to I.D. (inner diameter).

## FOAM MARKER

| Part Number | Part Number | Description |
|---|---|---|
| 520005 | 52520005 | Foam Marker System |

Available for order through HYPRO -EU only (Cambridge, UK)

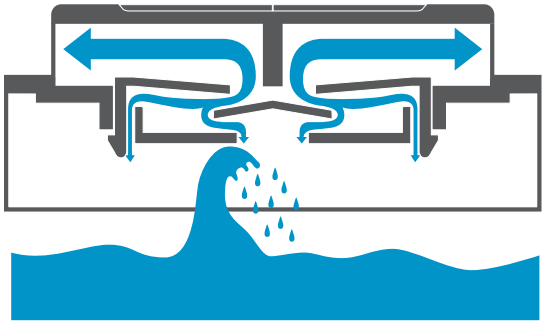
- Save money and increase efficiency by avoiding costly misses and overlaps while spraying
- Covers up to 500 acres (200 hectares) with only a 5-gallon (19 litre) tank
- No pre-mixing required - foam is made in the drop assembly at the end of the boom
- Fits any crop sprayer, turf sprayer or seeding machine
  (extra hose required for booms longer than 60 feet (18 m)– part # 520000-751)
- Electro-pneumatically operated, requiring a 12-volt DC 6 Amp power supply
- 108' (33 m) dual liquid/air hose with thermoformed polystyrene covering for UV protection

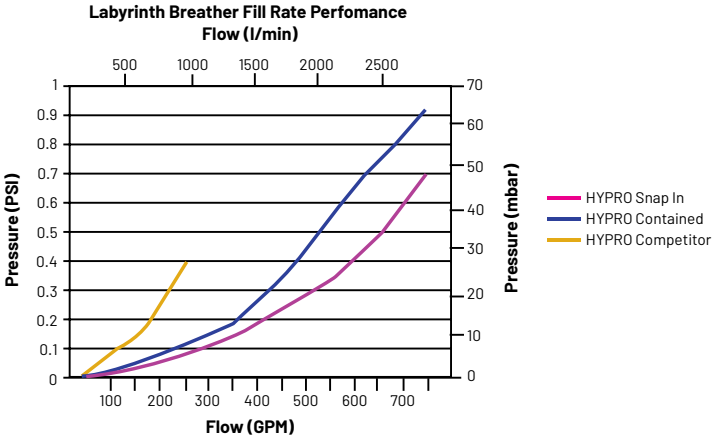
# PROCAP TANK LIDS

ProCap tank lids feature a rugged design that is easy to use and provides a safe and secure cover for a variety of tanks. All lids are made from sturdy polypropylene material to withstand harsh chemicals and ultraviolet rays.

## INCREASED LABYRINTH BREATHER CAPACITY SUPPORTS HIGHER TANK FILLING RATES

### LABYRINTH BREATHER



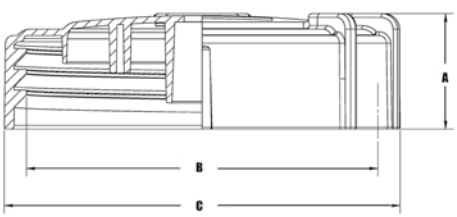



As depicted in the graph above, the Hypro Labyrinth Breather consistently performs at a higher fill rate and lower pressure than the typical competitor.

- Easily replaces an old or lost lid
- Available as a solid lid or with a breather
- Universal thread has larger diameter to fit any tank thread

### FEMALE-THREADED LIDS WITH GASKET

| Part Number | Description |
|---|---|
| 354230 | 4" lid - female threads w. breather |
| 3542010 | 6" lid - female threaded, labyrinth breather, flat gasket |
| 3542110 | 6" lid - female threaded, closed, flat gasket |
| 354142 | 7" lid - female with locking flange for DOT |
| 354120 | 8" lid - female threaded, closed |
| 354320 | 8" lid - female threaded with hole for breather valve |

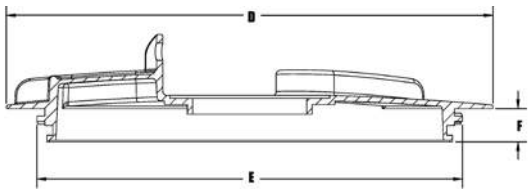


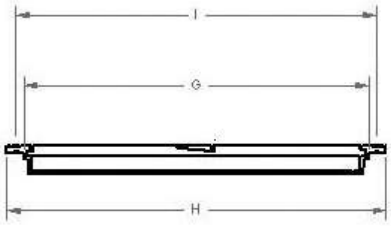

### FEMALE-THREADED TANK LID DIMENSIONS

| Part Number | A IN(MM) | B IN(MM) | C IN(MM) |
|---|---|---|---|
| 354230 | 1.44 (36.5) | 4.17 (106) | 4.8 (122) |
| TL06-0003 | 1.85 (47) | 5.66 (144) | 6.35 (161) |
| TL06-0004 | 1.85 (47) | 5.66 (144) | 6.35 (161) |

# PROCAP TANK LIDS

- Easily mounted on a flat surface, the ProCap tank lids are available as a solid lid, with a labyrinth breather, or a bullet breather
- ProCap lid and ring assembly features DuraLok technology, a unique twist and lock closing system
- DuraLok gasket included.




G = Inside diameter for leak content
H = Outside diameter
I = Screw hole diameter

## TANK LIDS AND RING ASSEMBLIES WITH DURALOK™ TECHNOLOGY

| Breather Type | 8" | 12" | 16" |
|---|---|---|---|
| Solid Lid/Ring | TL08-0001 | TL12-0001 | TL16-0001 |
| Labyrinth Lid/Ring | TL08-0002 | TL12-0002 | TL16-0002 |
| Bullet Breather Lid/Ring | TL08-0003 | TL12-0003 | TL16-0003 |
| Solid Lid | TL08-0011 | TL12-0011 | TL16-0011 |
| Labyrinth Lid Only | TL08-0012 | TL12-0012 | TL16-0012 |
| Bullet Breather Lid | TL08-0013 | TL12-0013 | TL16-0013 |
| Ring Only | TL08-0014 | TL12-0014 | TL16-0014 |
| Gasket | TLP-0007 | TLP-0018 | TLP-0023 |

## DURALOK LID DIMENSIONS

| Lid Size | D IN(MM) | E IN(MM) | F IN(MM) |
|---|---|---|---|
| 8" | 10(254) | 8.3(210) | .96(24) |
| 16" | 18.1(460) | 16.2(411) | .96(24) |

## DURALOK RING DIMENSIONS

| Lid Size | I IN (mm) | G IN (mm) | H IN (mm) |
|---|---|---|---|
| 8" | 9.2 (284) | 8.25 (210) | 10.1 (257) |
| 16" | 17.4 (442) | 16.3 (414) | 18.3 (465) |

## 180˚ HINGED TANK LIDS WITH DURALOK TECHNOLOGY

- Easily mounted on a flat surface, the ProCap tank lids are available with a labyrinth breather or a bullet breather
- ProCap hinged tank lids feature DuraLok technology, a unique twist and lock closing system
- Lids come standard with a locking hasp for added security
- The 180° hinged design allows the lid to open completely for easy tank access
- EPDM lid gasket is included

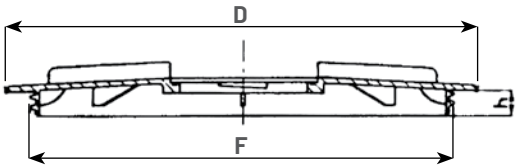
| Breather Type | Lid Size | |
|---|---|---|
| | 12" | 16" |
| Labyrinth | TL12-0006 | TL16-0006 |
| Bullet | TL12-0007 | TL16-0007 |
| Gasket | TLP-0018 | TLP-0023 |

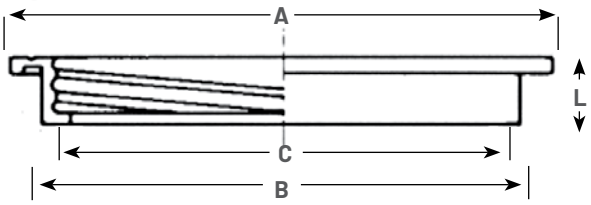
# TANK LIDS

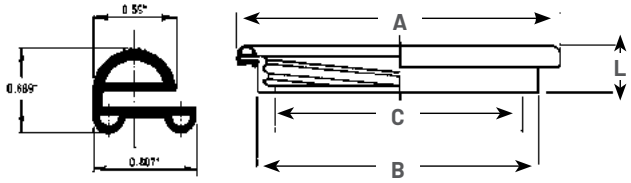
Available as a solid lid or with a labyrinth breather

## ARAG® MALE-THREADED TANK LIDS AND RING ASSEMBLIES (GASKETS NOT INCLUDED)

| Breather Type | 6" | 8" | 12" | 16" | 22" |
|---|---|---|---|---|---|
| Solid Lid/Ring | 3522100-1 | - | 3522140-1 | 3522160-1 | 352180-1 |
| Labyrinth Lid/Ring | – | 3522221-1 | 3522040-1 | 3522060-1 | 352080-1 |
| Solid Lid | 3522100 | 3522120 | 3522140 | 3522160 | 352180 |
| Lid with Labyrinth | 3522000 | 3522221 | 3522040 | 3522060 | 352080 |
| Ring - Standard | 350401 | 3502420 | 3502440 | 3502460 | 350480 |
| Ring with C Gasket | – | TLP-0046 | 350640 | 350660 | 350680 |
| Sealing Gasket Between Tank & Ring | – | 350420-020 | 350440-020 | 350460-020 | 350480-020 |
| Wiper Gasket Between Lid & Ring | 352000-020 | 3522120-020 | 3522140-020 | 3522160-020 | – |
| C Gasket | – | 350620-020 | 350640-020 | TLP-0050 | - |




## MALE-THREADED TANK LID DIMENSIONS

| Lid Size | D IN/MM | F IN/MM | H IN/MM |
|---|---|---|---|
| 6" | 5.5/140 | 4.3/110 | - |
| 8" | 9.8/250 | 8.3/210 | 1.2/31 |
| 12" | 14.0/355 | 12.3/313 | 1.2/31 |
| 16" | 17.9/454 | 16.1/410 | 1.0/25 |
| 22" | 24.4/620 | 22.3/567 | 1.2/30 |

## STANDARD RING DIMENSIONS

| Lid Size | A IN/MM | B IN/MM | C IN/MM | L IN/MM |
|---|---|---|---|---|
| 6" | 6.3/159 | 4.9/125 | 4.4/112 | 0.7/17 |
| 8" | 10.0/255 | 8.5/215 | 7.6/192 | 1.5/38 |
| 12" | 14.2/360 | 12.6/320 | 11.4/290 | 1.5/38 |
| 16" | 18.2/462 | 16.3/415 | 15.0/382 | 1.4/35 |
| 22" | 24.4/620 | 22.6/575 | 21.3/540 | 1.6/41 |

## RING WITH "C" GASKET DIMENSIONS

| Lid Size | A IN/MM | B IN/MM | C IN/MM | L IN/MM |
|---|---|---|---|---|
| 8" | 10.0/255 | 8.5/215 | 7.6/192 | 1.5/38 |
| 12" | 14.0/355 | 12.6/320 | 11.4/290 | 1.5/38 |
| 16" | 18.1/460 | 16.3/415 | 15.0/382 | 1.4/35 |
| 22" | 24.4/620 | 22.6/575 | 21.3/540 | 1.6/41 |

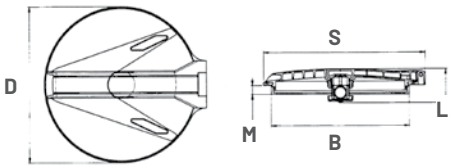
## HINGED TANK LIDS (WIPER GASKET INCLUDED)

| Part Number | Part Number | Size | Description |
|---|---|---|---|
| 356040 | Y01356040 | 12" | Hinged Lid/Ring with Bullet Breather |
| 356041 | - | 12" | Hinged Lid/Ring with Bullet Breather and Locking Lid |
| 356240 | - | 12" | Hinged Lid/Ring with Labyrinth Breather |
| 356241 | - | 12" | Hinged Lid/Ring with Labyrinth Breather and Locking Lid |
| 356060 | 0135606H | 16" | Hinged Lid/Ring with Bullet Breather |
| 356061 | Y01356061 | 16" | Hinged Lid/Ring with Bullet Breather and Locking Lid |
| 356260 | - | 16" | Hinged Lid/Ring with Labyrinth Breather |
| 356261 | - | 16" | Hinged Lid/Ring with Labyrinth Breather |

Available for order through HYPRO-EU only (Cambridge, UK)

## GASKETS FOR HINGED TANK LIDS

| Part Number | Description |
|---|---|
| 356640-020NB | 12" Wiper gasket for lid |
| 3562060-090 | Replacement wiper gasket for lid |



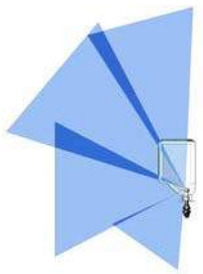

## ARAG HINGED DIMENSIONS

| Lid Size | D-IN (mm) | B-IN (mm) | L-IN (mm) | M-IN (mm) | S-IN (mm) |
|---|---|---|---|---|---|
| 12" | 14.45 (367) | 12.60 (320) | 3.98 (101) | 1.04 (26) | 15.35 (390) |
| 16" | 18.19 (462) | 16.34 (415) | 3.98 (101) | 1.04 (26) | 19.13 (486) |

ARAG® is a registered trademark of ARAG.
Hypro® is a registered trademark of Pentair.

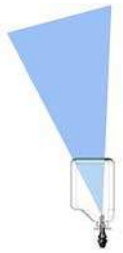
## PROCLEAN HIGH PERFORMANCE TANK AND CONTAINER WASH NOZZLES

| Part Number | Photo Reference | Description |
|---|---|---|
| PC1/2F-36075 | A | ProClean container nozzle |
| 30B4SNF70E35 | B | ProClean Plus nozzle |
| PC1/2F-235120 | C | ProClean tank nozzle |
| PV1/2F1/2M-MA | D | ProClean push-valve assembly |
| PC1/2F-36075-PV | A & D | ProClean container nozzle and valve |
| 3400-0174 | E | ProClean™ II Valve Assembly |
| BG-3400-0175 | A & E | ProClean™ II Valve and Nozzle |
| 3400-0176 | F | ProClean™ II Valve Assembly with HF Nozzle |



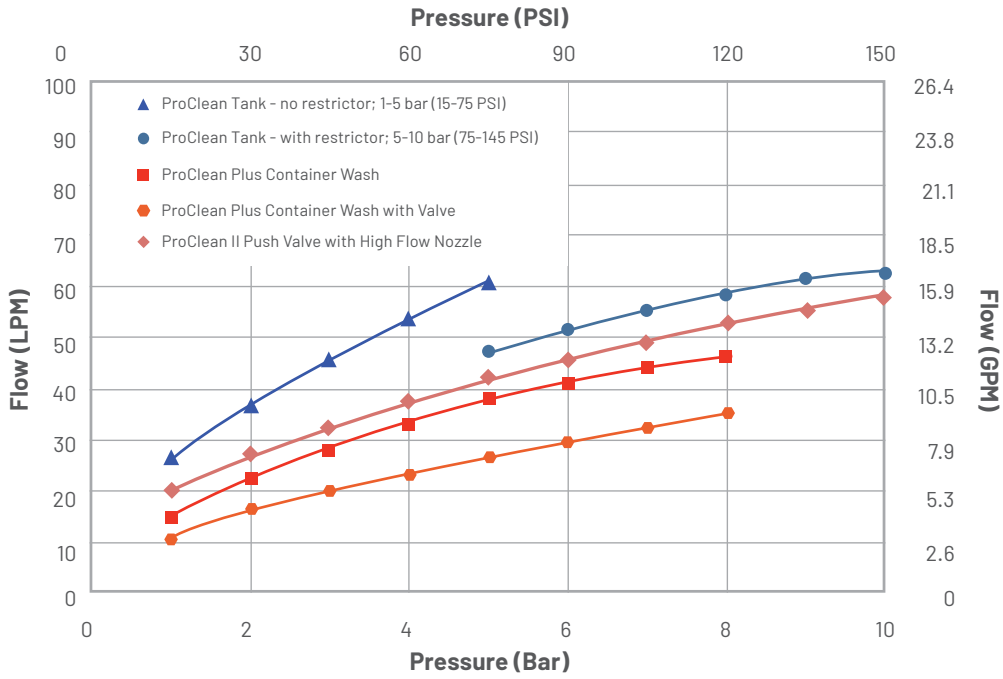
ProClean Container Nozzle

- ProClean tank and container nozzles are designed for better and faster cleaning of empty agrochemical containers and the inside of sprayer tanks
- Chemically-resistant and durable PVDF polymer construction
- ProClean Rotating Container Nozzle utilizes four fluid-driven rotating jets that target all corners of the container
- ProClean Plus Static Blade Container Nozzle has a powerful single blade jet that is directed upwards at 35°; Cuts through residues at the base of containers
- ProClean Rotating Tank Nozzle utilizes eight fluid-driven rotating jets that cover upper tank surfaces for complete rinsing
- Easy operation push-valve is activated with the same force regardless of liquid pressure



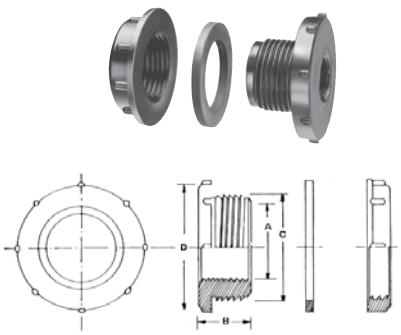
ProClean Plus Nozzle

ProClean Tank Nozzle




## BASKET FILTERS

| Part Number | Size | Basket Height mm(in) | Mesh |
|---|---|---|---|
| 9950-55203 | 5.5" | 203 (8") | 18 |
| 9950-08050 | 8" | 50 (2.0") | 18 |
| 9950-08120 | 8" | 120 (4.7") | 18 |
| 9950-08240 | 8" | 240 (9.4") | 18 |
| 9950-12060 | 12" | 60 (2.4") | 18 |
| 9950-12240 | 12" | 240 (9.4") | 18 |
| 9950-16180 | 16" | 180 (7.1") | 18 |
| 9950-16280 | 16" | 280 (11.0") | 18 |
| 9950-16320 | 16" | 320 (12.6") | 18 |



## BULKHEAD FITTING

| Part Number | A | B | C | D | Material | Gasket Part Number | Gasket Material |
|---|---|---|---|---|---|---|---|
| WBH12 | 1/2" NPT | 1-3/16" (30 mm) | 1-5/8" (41 mm) | 2-3/4" (70 mm) | Polypropylene | WBH12/34GAS | Santoprene |
| WBH34 | 3/4" NPT | 1-3/16" (30 mm) | 1-5/8" (41 mm) | 2-3/4" (70 mm) | Polypropylene | WBH12/34GAS | Santoprene |
| WBH100 | 1" NPT | 1-7/8" (48 mm) | 2-1/16" (52 mm) | 2-7/8" (73 mm) | Polypropylene | WBH100GAS | Santoprene |
| WBH114 | 1-1/4" NPT | 1-7/16" (37 mm) | 2-1/2" (64 mm) | 3-3/8" (86 mm) | Polypropylene | WBH114/112GAS | Santoprene |
| WBH112 | 1-1/2" NPT | 1-7/16" (37 mm) | 2-1/2" (64 mm) | 3-3/8" (86 mm) | Polypropylene | WBH114/112GAS | Santoprene |
| WBH200 | 2" NPT | 1-5/8" (41 mm) | 3-1/8" (79 mm) | 4-1/4" (108 mm) | Polypropylene | WBH200GAS | Santoprene |
| WBH300 | 3" NPT | 1-3/4" (44 mm) | 4-1/4" (108 mm) | 5-1/2" (140 mm) | Polypropylene | - | - |
| WBH400 | 4" NPT | 4-3/16" (106 mm) | 5-1/2" (140 mm) | 7" (178 mm) | Polypropylene | - | - |

Add Prefix "BG-" for 1 part per retail bag.

## JET AGITATORS

| Part Number | Ref. Number | Thread | Max. Input: Output Ration | Material |
|---|---|---|---|---|
| 3371-0019 | 1 | 3/4" NPT (M) x 3/4" NPT (M) | 3:9 | Polypropylene |
| 3371 | 2 | 1/2" NPT (F) in, 3/4" NPT (M) out | 3:4 | Polypropylene |
| 3371-0028 | 3 | 3/4" NPT (M) (high volume) | 5:1 | Polypropylene |
| 502069 | 5 | 1/2" NPT 9 mm Nozzle with Swivel | — | Polypropylene |
| 52169 | 5 | 1/2" NPT 9 mm Nozzle | — | Polypropylene |

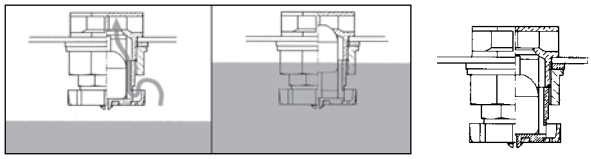
## LABYRINTH AIR VALVE

| Part Number | Description |
|---|---|
| 504203-HYP | Polypropylene Labyrinth Air Valve with 1" male connection |
| G40004 | Gasket for installation in tank |

## FLOATING BALL VENT VALVE

| Part Number | Description |
|---|---|
| 504210* | Polypropylene Floating Ball Vent Valve |

*2.35" tank hole dimension required for installation.



# CLEANLOAD CHEMICAL EDUCTOR

## For Safe Loading of Chemicals into Spray Tanks

3376 Series
Right hand flow shown.

- The Cleanload is a self-contained eduction system which allows the operator to mix liquid and dry chemicals safely and quickly
- All crop protection chemistry is mixed at ground level, ensuring the safety of both the operator and the environment
- Equipped with tank rinse, designed to completely wash the Cleanload hopper
- The ProClean II Push Valve is designed to self flush to help prevent sticking open or closed even with heavy particulates. Compatible with all ProClean series nozzles
- Optional suction lance allows the operator to educt bulk liquid and dry chemicals (wettable powders, dry flowables and water-dispersible granules) from large containers without secondary handling
- See page 233 for performance information on all Cleanload models and Eductors

**ORDER INFORMATION**

| Part Number | Tank Size | Eductor | Flow | Tank Rinse Style | Inlet/Outlet Connection Size | Bottle Rinse Assy | ISO Outlet Screen | Suction Lance |
|---|---|---|---|---|---|---|---|---|
| 3376-0870 | 7 Gallon (26 Litre) | Turf/Diaphragm Poly - (08mm) High Pressure/Low Flow | Right Hand | Premium Sidewall Rinse System | 220 Universal Flange | Yes | Yes | Optional Accessory |
| 3376-0871 | 7 Gallon (26 Litre) | Turf/Diaphragm Poly - (08mm) High Pressure/Low Flow | Left Hand | Premium Sidewall Rinse System | 220 Universal Flange | Yes | Yes | Optional Accessory |
| 3376-1170 | 7 Gallon (26 Litre) | On-Board Sprayer Poly - (11mm) High Pressure/High Flow | Right Hand | Premium Sidewall Rinse System | 220 Universal Flange | Yes | Yes | Optional Accessory |
| 3376-1171 | 7 Gallon (26 Litre) | On-Board Sprayer Poly - (11mm) High Pressure/High Flow | Left Hand | Premium Sidewall Rinse System | 220 Universal Flange | Yes | Yes | Optional Accessory |
| 3376-1670 | 7 Gallon (26 Litre) | Transfer Pump Poly - (16mm) Low Pressure/High Flow | Right Hand | Premium Sidewall Rinse System | 220 Universal Flange | Yes | Yes | Optional Accessory |
| 3376-1671 | 7 Gallon (26 Litre) | Transfer Pump Poly - (16mm) Low Pressure/High Flow | Left Hand | Premium Sidewall Rinse System | 220 Universal Flange | Yes | Yes | Optional Accessory |
| 3430-0823 | Suction Lance snaps into tank outlet for remote loading of bulk chemical containers | | | | | | | |
| 3430-0807 | 16" Replacement tank lid | | | | | | | |

Base for flat surface mounting. 1510-0135

# CLOSED SYSTEM CLEANLOAD

## Safe, Fast, & Simple Chemical Loading System

- Chemical loading system that is compliant with Closed System Regulation
- Enclosure accommodates many container sizes and fits up to two 2.5 gallon containers at one time
- Allows operator to re-seal partially used containers with the original chemical container cap
- Easily measure both large and small volumes of chemicals inside enclosure

**ORDER INFORMATION:**

| Part Number | Application: | Nozzle | Frame |
|---|---|---|---|
| 3377-1170 | Sprayer Pump High Pressure/High Flow | 11 mm | Yes |
| 3377-1171 | | | No |
| 3377-1670 | Transfer Pump Low Pressure/High Flow | 16 mm | Yes |
| 3377-1671 | | | No |

# CLEANLOAD POLY OR STAINLESS STEEL EDUCTOR

## POLY EDUCTOR:

- Market leading eduction rates designed for real world applications
- Optimizes system plumbing costs with an integrated ½" push-to-connect port for tank rinse
- One-piece polypropylene educator assembly with mounting bosses and 220 Universal Flange ports
- Choose from three nozzle sizes along with right or left-hand push-to-connect orientation to fit your specific application
- Rinse port shown in right-hand configuration. Left-hand configuration is 180° from shown.

## 316 STAINLESS STEEL EDUCTOR:

- Inlet and outlet ports are flynut-ready, offering a wrench-free connection of hoses for easy installation and servicing
- Dual-ported to accommodate rinse port for either left-hand or right-hand flow orientation

## ORDER INFORMATION

| Part Number | Application | Nozzle | Rinse Port Orientation | Description |
|---|---|---|---|---|
| 3371-0036 | Turf & Diaphragm: High Pressure/Low Flow | 8mm | Right Hand | Includes three 220 Universal Flange Gaskets and a 1/2" Push-to-Connect plug |
| 3371-0036R | | | Right Hand | Eductor Only |
| 3371-0037R | | | Left Hand | Eductor Only |
| 3371-0038 | On-Board Sprayer: High Pressure/High Flow | 11mm | Right Hand | Includes three 220 Universal Flange Gaskets and a 1/2" Push-to-Connect plug |
| 3371-0038R | | | Right Hand | Eductor Only |
| 3371-0039R | | | Left Hand | Eductor Only |
| 3371-0040 | Transfer Pump: Low Pressure/High Flow | 16mm | Right Hand | Includes three 220 Universal Flange Gaskets and a 1/2" Push-to-Connect plug |
| 3371-0040R | | | Right Hand | Eductor Only |
| 3371-0041R | | | Left Hand | Eductor Only |
| 3371-0034S | On-Board Sprayer: High Pressure/High Flow | 12mm | Dual Ported | 316 Stainless Steel Eductor |

## PERFORMANCE FOR ALL CLEANLOAD MODELS AND EDUCTORS:

| Eductor Material: | | Poly | | | | | | | | | | | | | | | | | | Stainless Steel | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Application: | | Turf / Diaphragm Pump: High Pressure - Low Flow | | | | | | On-Board Sprayer Pump: High Pressure - High Flow | | | | | | Transfer Pump: Low Pressure - High Flow | | | | | | On-Board Sprayer Pump: High Pressure - High Flow | | | | | |
| Cleanload Part #: | | 3376-0870 & 3376-0871 | | | | | | 3376-1170 & 3376-1171 | | | | | | 3376-1670 & 3376-1671 | | | | | | 3375 Models | | | | | |
| Eductor Part #: | | 3371-0036, -0036R & -0037R | | | | | | 3371-0038, -0038R & -0039R | | | | | | 3371-0040, -0040R & -0041R | | | | | | 3371-0034S | | | | | |
| Inlet Pressure | | Req. Flow | | Eduction Rate | | Max Outlet Press | | Req. Flow | | Eduction Rate | | Max Outlet Press | | Req. Flow | | Eduction Rate | | Max Outlet Press | | Req. Flow | | Eduction Rate | | Max Outlet Press | |
| PSI | BAR | GPM | LPM | GPM | LPM | PSI | BAR | GPM | LPM | GPM | LPM | PSI | BAR | GPM | LPM | GPM | LPM | PSI | BAR | GPM | LPM | GPM | LPM | PSI | BAR |
| 10 | 0.7 | - | - | - | - | - | - | - | - | - | - | - | - | 46.0 | 174 | 24.6 | 93 | 5.9 | 0.4 | - | - | - | - | - | - |
| 20 | 1.4 | - | - | - | - | - | - | 26.9 | 102 | 35.0 | 133 | 6.1 | 0.4 | 61.4 | 233 | 47.8 | 181 | 11.5 | 0.8 | 29.5 | 112 | 16.5 | 62 | 4.9 | 0.3 |
| 30 | 2.1 | 16.1 | 61 | 31.5 | 119 | 5.2 | 0.4 | 33.5 | 127 | 52.2 | 198 | 9.2 | 0.6 | 73.5 | 278 | 61.2 | 231 | 16.9 | 1.2 | 35.2 | 133 | 26.0 | 98 | 7.0 | 0.5 |
| 40 | 2.8 | 19.1 | 72 | 47.0 | 178 | 6.6 | 0.5 | 38.0 | 144 | 64.4 | 244 | 12.3 | 0.8 | 82.9 | 314 | 67.2 | 254 | 22.4 | 1.5 | 40.4 | 153 | 32.9 | 125 | 9.0 | 0.6 |
| 50 | 3.4 | 21.4 | 81 | 54.5 | 206 | 8.1 | 0.6 | 41.3 | 157 | 72.6 | 275 | 15.3 | 1.1 | 90.3 | 342 | 68.3 | 258 | 27.8 | 1.9 | 45.3 | 171 | 39.1 | 148 | 11.0 | 0.8 |
| 60 | 4.1 | 23.3 | 88 | 61.5 | 233 | 9.7 | 0.7 | 44.4 | 168 | 77.7 | 294 | 18.2 | 1.3 | 96.2 | 364 | 66.8 | 253 | 33.1 | 2.3 | 49.8 | 189 | 45.9 | 174 | 13.3 | 0.9 |
| 70 | 4.8 | 24.9 | 94 | 68.0 | 258 | 11.2 | 0.8 | 47.5 | 180 | 80.5 | 305 | 21.1 | 1.5 | 101.3 | 384 | 65.1 | 247 | 38.4 | 2.6 | 53.8 | 204 | 52.4 | 198 | 15.5 | 1.1 |
| 80 | 5.5 | 26.4 | 100 | 74.1 | 280 | 12.7 | 0.9 | 50.9 | 193 | 82.1 | 311 | 23.9 | 1.6 | - | - | - | - | - | - | 57.5 | 218 | 58.0 | 220 | 17.8 | 1.2 |
| 90 | 6.2 | 28.0 | 106 | 79.7 | 302 | 14.2 | 1.0 | 53.9 | 204 | 83.3 | 315 | 26.6 | 1.8 | - | - | - | - | - | - | 60.7 | 230 | 62.0 | 235 | 20.0 | 1.4 |
| 100 | 6.9 | 29.7 | 112 | 84.8 | 321 | 15.8 | 1.1 | 56.6 | 214 | 85.0 | 322 | 29.3 | 2.0 | - | - | - | - | - | - | 63.6 | 241 | 65.0 | 246 | 22.3 | 1.5 |

# CLEANLOAD MAX

## Safe, Fast, Batch Mixing and Loading System

- Large capacity eduction system with a low ergonomic working height for safe and fast batch mixing and loading of liquid and dry chemicals
- Modular design allows flexibility in building an eduction system using multiple Cleanload Max, standard Cleanloads and auxiliary components for bulk transfer
- 40 or 60 gallon, full draining, cone-bottomed tank for a 20:1 ratio with 800 or 1200 gallon sprayers
- Translucent tank with molded in graduations allows user to easily see fluid levels
- Market leading eduction rates allow operator to spend less time loading and more time spraying
- 2" or 3" bypass educator plumbing system allows for direct filling of sprayer tank when not educting chemicals
- CycloRinse and ProClean bottle rinse prevent cross contamination of chemicals
- Extends the life of transfer pumps by educting abrasive and corrosive chemicals downstream of the pump

### CLEANLOAD MAX CHEMICAL EDUCTION SYSTEMS

| Part Number | Tank Size | Eductor Size | Bypass Size |
|---|---|---|---|
| 3378-1140 | 40 Gallon | 11mm - Onboard Sprayer High Pressure/High Flow | None |
| 3378-1140-2BYP | | | 2" |
| 3378-1140-3BYP | | | 3" |
| 3378-1640 | | 16mm - Transfer Pump Low Pressure/High Flow | None |
| 3378-1640-2BYP | | | 2" |
| 3378-1640-3BYP | | | 3" |
| 3378-1160 | 60 Gallon | 11mm - Onboard Sprayer High Pressure/High Flow | None |
| 3378-1160-2BYP | | | 2" |
| 3378-1160-3BYP | | | 3" |
| 3378-1660 | | 16mm - Transfer Pump Low Pressure/High Flow | None |
| 3378-1660-2BYP | | | 2" |
| 3378-1660-3BYP | | | 3" |

All eductors are set-up for right hand flow operation.

### CLEANLOAD MAX BYPASS ASSEMBLIES

| Part Number | Description | Bypass |
|---|---|---|
| 3371-0044 | 11mm - Onboard Sprayer High Pressure/High Flow | 2" |
| 3371-0047 | | 3" |
| 3371-0045 | 16mm - Transfer Pump Low Pressure/High Flow | 2" |
| 3371-0046 | | 3" |

All eductors are set-up for right hand flow operation

### CLEANLOAD MAX KITS

| Part Number | Description |
|---|---|
| 1510-0135 | 3376 Series Cleanload floor mount bracket |
| 3430-0944 | Tubing Repair Kit - 40 Gallon |
| 3430-0945 | Tubing Repair Kit - 60 Gallon |

# POLYPROPYLENE LINE STRAINERS

## Rated for 80 psi at 70°F / 5.5 bar at 21°C

| Part Number | NPT Threads | Replacement Parts for Polypropylene Line Strainers | | | | |
|---|---|---|---|---|---|---|
| | | Cap | Bowl | Screen | Mesh | O-ring |
| 3350-0085A | 1/4" I.D. (F) & 1/2" O.D. (M) | 3351-0035 | 3351-0036 | 3800-0048 | 20 s.s. | 1700-0090 EPDM |
| 3350-0079A | | 3351-0035 | 3351-0036 | 3800-0046 | 50 s.s. | |
| 3350-0082A | | 3351-0035 | 3351-0036 | 3800-0047 | 80 s.s. | |
| 3350-0056A | 1/2" | 3351-0037 | 3351-0039 | 3800-0029 | 20 s.s. | 1700-0091 EPDM |
| 3350-0046A | | 3351-0037 | 3351-0039 | 3800-0025 | 50 s.s. | |
| 3350-0043A | | 3351-0037 | 3351-0039 | 3800-0026 | 80 on 20 s.s | |
| 3350-0040A | 3/4" | 3351-0038 | 3351-0039 | 3800-0029 | 20 s.s. | 1700-0091 EPDM |
| 3350-0034A | | 3351-0038 | 3351-0039 | 3800-0025 | 50 s.s. | |
| 3350-0035A | | 3351-0038 | 3351-0039 | 3800-0026 | 80 on 20 s.s | |
| 3350-0057A | 1" | 3351-0040 | 3351-0043 | 3800-0040 | 20 s.s. | 1700-0092 EPDM |
| 3350-0058A | | 3351-0040 | 3351-0043 | 3800-0041 | 50 s.s. | |
| 3350-0059A | | 3351-0040 | 3351-0043 | 3800-0042 | 80 on 20 s.s | |
| 3350-0071A | 1-1/4" | 3351-0041 | 3351-0043 | 3800-0043 | 20 s.s. | 1700-0092 EPDM |
| 3350-0072A | | 3351-0041 | 3351-0043 | 3800-0044 | 50 s.s. | |
| 3350-0073A | | 3351-0041 | 3351-0043 | 3800-0045 | 80 on 20 s.s | |
| 3350-0112A | 1-1/2" | 3351-0042 | 3351-0043 | 3800-0065 | 20 s.s. | 1700-0092 EPDM |
| 3350-0113A | | 3351-0042 | 3351-0043 | 3800-0066 | 50 s.s. | |
| 3350-0114A | | 3351-0042 | 3351-0043 | 3800-0067 | 80 on 20 s.s. | |

All 1/2", 3/4", 1-1/4" and 1-1/2" have internal (NPT) female ports, polypropylene cap and bowl.

# POLYPROPYLENE LINE STRAINERS

## Rated for 200 psi at 70°F / 14 bar at 21°C

| NPT Part Number | BSP Part Number* | Max. PSI | Max. BAR | Threads | Previous Color | Screen Size/ Ref. Color | New ISO Color | Screen |
|---|---|---|---|---|---|---|---|---|
| 3350-0142N | 20N62230 | 290 | 20 | 1/2" FNPT | White | 32 Mesh/White | Red | 3800-0086 |
| 3350-0143N | 20N62250 | | | | Blue | 50 Mesh/Blue | Blue | 3800-0087 |
| 3350-0144N | 20N62280 | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0088 |
| 3350-0145N | – | | | | Red | 100 Mesh/Red | Green | 3800-0089 |
| 3350-0146N | 20N62330 | 290 | 20 | 3/4" FNPT | White | 32 Mesh/White | Red | 3800-0086 |
| 3350-0147N | 20N62350 | | | | Blue | 50 Mesh/Blue | Blue | 3800-0087 |
| 3350-0148N | 20N62380 | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0088 |
| 3350-0149N | – | | | | Red | 100 Mesh/Red | Green | 3800-0089 |
| 3350-0150N | 20N62430 | 290 | 20 | 1" FNPT | White | 32 Mesh/White | Red | 3800-0090 |
| 3350-0151N | 20N62450 | | | | Blue | 50 Mesh/Blue | Blue | 3800-0091 |
| 3350-0152N | 20N62480 | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0092 |
| 3350-0153N | – | | | | Red | 100 Mesh/Red | Green | 3800-0093 |
| 3350-0162N** | – | 290 | 20 | 1" FNPT | White | 32 Mesh/White | Red | 3800-0090 |
| 3350-0163N** | – | | | | Blue | 50 Mesh/Blue | Blue | 3800-0091 |
| 3350-0164N** | – | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0092 |
| 3350-0165N** | – | | | | Red | 100 Mesh/Red | Green | 3800-0093 |
| 3350-0154N | 20N62530 | 250 | 17 | 1-1/4" FNPT | White | 32 Mesh/White | Red | 3800-0094 |
| 3350-0155N | 20N62550 | | | | Blue | 50 Mesh/Blue | Blue | 3800-0095 |
| 3350-0156N | 20N62580 | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0096 |
| 3350-0157N | – | | | | Red | 100 Mesh/Red | Green | 3800-0097 |
| 3350-0166N** | 203282152** | 250 | 17 | 1-1/4" FNPT | White | 32 Mesh/White | Red | 3800-0094 |
| 3350-0167N** | 203282153** | | | | Blue | 50 Mesh/Blue | Blue | 3800-0095 |
| 3350-0168N** | 2032821535** | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0096 |
| 3350-0169N** | – | | | | Red | 100 Mesh/Red | Green | 3800-0097 |
| 3350-0158N | 20N62630 | 250 | 17 | 1-1/2" FNPT | White | 32 Mesh/White | Red | 3800-0094 |
| 3350-0159N | 20N62650 | | | | Blue | 50 Mesh/Blue | Blue | 3800-0095 |
| 3350-0160N | 20N62680 | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0096 |
| 3350-0161N | – | | | | Red | 100 Mesh/Red | Green | 3800-0097 |
| 3350-0170N** | 203282162** | 250 | 17 | 1-1/2" FNPT | White | 32 Mesh/White | Red | 3800-0094 |
| 3350-0171N** | 203282163** | | | | Blue | 50 Mesh/Blue | Blue | 3800-0095 |
| 3350-0172N** | 2032821635** | | | | Gray | 80 Mesh/Gray | Yellow | 3800-0096 |
| 3350-0173N** | – | | | | Red | 100 Mesh/Red | Green | 3800-0097 |

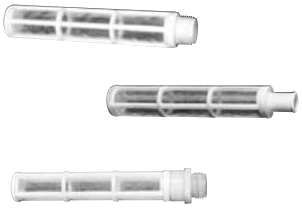
*Available for order through HYPRO-EU only (Cambridge, UK)
**Self-cleaning model.

# NYLON LINE STRAINERS

Rated for 150 psi at 70˚F / 10.34 bar at 21˚C
Rated for 100 psi at 125˚F / 6.9 bar at 51.6˚C
140˚F max./ 60˚C max.

| Part Number | NPT Threads | Replacement Parts for Nylon Line Strainers | | | | |
|---|---|---|---|---|---|---|
| | | Cap | Bowl | Screen | Mesh | O-ring |
| 3350-0085 | 1/4" I.D. (F) & 1/2" O.D. (M) | 3351-0022 | 3351-0020 (Clear) | 3800-0048 | 20 s.s. | 1700-0064 Buna-N |
| 3350-0085F | | 3351-0022 | | 3800-0048 | 20 s.s. | 1700-0065 Viton |
| 3350-0079 | | 3351-0022 | | 3800-0046 | 50 s.s. | 1700-0064 Buna-N |
| 3350-0079F | | 3351-0022 | | 3800-0046 | 50 s.s. | 1700-0065 Viton |
| 3350-0082 | | 3351-0022 | | 3800-0047 | 80 s.s. | 1700-0064 Buna-N |
| 3350-0082F | | 3351-0022 | | 3800-0047 | 80 s.s. | 1700-0065 Viton |
| 3350-0056 | 1/2" (F) | 3351-0007 | 3351-0005 (White) or 3351-0015* (Clear) | 3800-0029 | 20 s.s. | 1700-0044 Buna-N |
| 3350-0131 | | 3351-0007 | | 3800-0029 | 20 s.s. | 1700-0045 Viton |
| 3350-0046 | | 3351-0007 | | 3800-0025 | 50 s.s. | 1700-0044 Buna-N |
| 3350-0042 | | 3351-0007 | | 3800-0025 | 50 s.s. | 1700-0045 Viton |
| 3350-0043 | | 3351-0007 | | 3800-0026 | 80 on 20 s.s. | 1700-0044 Buna-N |
| 3350-0068 | | 3351-0007 | | 3800-0026 | 80 on 20 s.s. | 1700-0045 Viton |
| 3350-0040 | 3/4" (F) | 3351-0006 | 3351-0005 (White) or 3351-0015* (Clear) | 3800-0029 | 20 s.s. | 1700-0044 Buna-N |
| 3350-0132 | | 3351-0006 | | 3800-0029 | 20 s.s. | 1700-0045 Viton |
| 3350-0034 | | 3351-0006 | | 3800-0025 | 50 s.s. | 1700-0044 Buna-N |
| 3350-0044 | | 3351-0006 | | 3800-0025 | 50 s.s. | 1700-0045 Viton |
| 3350-0035 | | 3351-0006 | | 3800-0026 | 80 on 20 s.s. | 1700-0044 Buna-N |
| 3350-0045 | | 3351-0006 | | 3800-0026 | 80 on 20 s.s. | 1700-0045 Viton |
| 3350-0057 | 1" (F) | 3351-0014 | 3351-0013 (White) or 3351-0024* (Clear) | 3800-0040 | 20 s.s. | 1700-0057 Buna-N |
| 3350-0060 | | 3351-0014 | | 3800-0040 | 20 s.s. | 1700-0058 Viton |
| 3350-0058 | | 3351-0014 | | 3800-0041 | 50 s.s. | 1700-0057 Buna-N |
| 3350-0061 | | 3351-0014 | | 3800-0041 | 50 s.s. | 1700-0058 Viton |
| 3350-0059 | | 3351-0014 | | 3800-0042 | 80 on 20 s.s. | 1700-0057 Buna-N |
| 3350-0062 | | 3351-0014 | | 3800-0042 | 80 on 20 s.s. | 1700-0058 Viton |
| 3350-0071 | 1-1/4" (F) | 3351-0016 | 3351-0013 (White) or 3351-0024* (Clear) | 3800-0043 | 20 s.s. | 1700-0057 Buna-N |
| 3350-0074 | | 3351-0016 | | 3800-0043 | 20 s.s. | 1700-0058 Viton |
| 3350-0072 | | 3351-0016 | | 3800-0044 | 50 s.s. | 1700-0057 Buna-N |
| 3350-0075 | | 3351-0016 | | 3800-0044 | 50 s.s. | 1700-0058 Viton |
| 3350-0073 | | 3351-0016 | | 3800-0045 | 80 on 20 s.s. | 1700-0057 Buna-N |
| 3350-0076 | | 3351-0016 | | 3800-0045 | 80 on 20 s.s. | 1700-0058 Viton |
| 3350-0112 | 1-1/2" (F) | 3351-0026 | 3351-0013 (White) or 3351-0024* (Clear) | 3800-0065 | 20 s.s. | 1700-0057 Buna-N |
| 3350-0115 | | 3351-0026 | | 3800-0065 | 20 s.s. | 1700-0058 Viton |
| 3350-0113 | | 3351-0026 | | 3800-0066 | 50 s.s. | 1700-0057 Buna-N |
| 3350-0116 | | 3351-0026 | | 3800-0066 | 50 s.s. | 1700-0058 Viton |
| 3350-0114 | | 3351-0026 | | 3800-0067 | 80 on 20 s.s. | 1700-0057 Buna-N |
| 3350-0117 | | 3351-0026 | | 3800-0067 | 80 on 20 s.s. | 1700-0058 Viton |

* Clear Polyimide Bowl - Add Suffix "P" - (ie.: 3350-0057P) - 1/2", 3/4", 1", 1-1/4" and 1-1/2".
1/2", 3/4",1",1-1/4" and 1-1/2" have internal (NPT) Female Ports, Type 6 nylon cap bowl.



## NYLON SUCTION STRAINERS

| Part Number | Thread | Screen | Estimated Weight Ea. | |
|---|---|---|---|---|
| | | | US Units | Metric Units |
| 3350-0069 | 3/4" NPT (M) | 50-mesh nylon | 4 oz. | 114 g |
| 3350-0032 | 3/4" (19 mm) hose barb (all nylon) | 50-mesh nylon | 4 oz. | 114 g |
| 3350-0077 | garden hose (M) | 50-mesh nylon | 4 oz. | 114 g |

# ADJUSTABLE PATTERN SPRAY GUNS

### 3381-0016

- Adjustable pattern spray gun
- 15" (38 cm) barrel
- 3mm nozzle
- 3/8" (10 mm) MNPT inlet
- Sized for spot spraying

**ORDER INFORMATION**

| Part Number | Max PSI | Max BAR | Max GPM | Max LPM |
|---|---|---|---|---|
| 3381-0016 | 120 | 8 | 1 | 4 |

### 3381-0021

- Adjustable pattern spray gun
- 21" (53 cm) barrel
- 3mm nozzle
- 3/8" (10 mm) and 1/2" (13 mm) hose barb
- Sized for spot spraying

**ORDER INFORMATION**

| Part Number | Max PSI | Max BAR | Max GPM | Max LPM |
|---|---|---|---|---|
| 3381-0021 | 60 | 4 | 1 | 4 |

### 3381-0036

- Adjustable pattern spray gun
- 19" (48 cm) barrel
- 3mm nozzle
- 3/8" (10 mm) hose barb

**ORDER INFORMATION**

| Part Number | Max PSI | Max BAR | Max GPM | Max LPM |
|---|---|---|---|---|
| 3381-0036 | 120 | 8 | 2.5 | 10 |

### 3381-0043 & 3381-0043L

- Adjustable pattern spray gun
- 7-1/4" (18 cm) or 18" (45 cm) barrel
- 2.3mm nozzle
- 3/8" (10 mm) and 1/2" (13 mm) hose barb

**ORDER INFORMATION**

| Part Number | Barrel Length | | Max PSI | Max BAR | Max GPM | Max LPM |
|---|---|---|---|---|---|---|
| | US Units | Metric Units | | | | |
| 3381-0043 | 7-1/4" | 18 cm | 600 | 40 | 11 | 18 |
| 3381-0043L | 18" | 45 cm | 600 | 40 | 11 | 18 |
| 9920-261703-69 | Replacement Barrel for 3381-0043 | | | | | |
| 9920-35.1703.67 | Replacement Barrel for 3381-0043L | | | | | |
| 3430-0768 | Replacement nozzle kit | | | | | |

## SPRAY GUN NOZZLES FOR 3381-0043 AND 3381-0043L GUNS

| Part Number | Orifice | Performance | 45 PSI | | 100 PSI | | 150 PSI | | 200 PSI | | 300 PSI | | 450 PSI | | 600 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight |
| AMT-15010 replaces 9920-61.1802.45 | 1.0 mm | GPM | 0.24 | 0.24 | 0.35 | 0.37 | 0.40 | 0.45 | 0.53 | 0.60 | 0.57 | 0.60 | 0.70 | 0.75 | 0.83 | 0.90 |
| | | spray angle | 30° | - | 30° | - | 40° | - | 40° | - | 40° | - | 40° | - | 38° | - |
| | | throw, ft | 3.2 | 8.2 | 4.9 | 13.0 | 6.5 | 18.0 | 6.5 | 18.5 | 6.5 | 19.5 | 7.2 | 21.0 | 8.2 | 23.0 |
| AMT-15012 replaces 9920-61.1802.46 | 1.2 mm | GPM | 0.35 | 0.38 | 0.55 | 0.55 | 0.60 | 0.65 | 0.80 | 0.93 | 0.88 | 0.90 | 1.10 | 1.20 | 1.30 | 1.40 |
| | | spray angle | 32° | - | 35° | - | 45° | - | 42° | - | 42° | - | 40° | - | 40° | - |
| | | throw, ft | 3.9 | 9.8 | 5.5 | 14.5 | 7.2 | 20.0 | 7.2 | 21.0 | 7.2 | 22.0 | 8.2 | 23.5 | 8.2 | 25.5 |
| AMT-15015 replaces 9920-61.1802.47 | 1.5 mm | GPM | 0.40 | 0.50 | 0.62 | 0.80 | 0.62 | 0.93 | 0.95 | 1.25 | 1.00 | 1.30 | 1.30 | 1.70 | 1.50 | 1.95 |
| | | spray angle | 32° | - | 35° | - | 45° | - | 45° | - | 42° | - | 42° | - | 42° | - |
| | | throw, ft | 3.9 | 11.5 | 6.5 | 14.5 | 8.2 | 23.0 | 8.2 | 24.0 | 8.2 | 24.5 | 8.2 | 26.0 | 10.0 | 28.0 |
| AMT-15018 replaces 9920-61.1802.48 | 1.8 mm | GPM | 0.50 | 0.75 | 0.73 | 1.20 | 0.85 | 1.35 | 1.15 | 1.75 | 1.20 | 1.90 | 1.60 | 2.30 | 1.75 | 2.80 |
| | | spray angle | 40° | - | 42° | - | 50° | - | 45° | - | 50° | - | 48° | - | 48° | - |
| | | throw, ft | 4.9 | 13.0 | 6.5 | 16.5 | 8.2 | 26.0 | 8.2 | 27.0 | 8.2 | 28.0 | 9.8 | 31.0 | 10.0 | 33.0 |
| AMT-15020 replaces 9920-61.1802.55 | 2.0 mm | GPM | 0.73 | 1.10 | 1.05 | 1.60 | 1.30 | 1.90 | 1.50 | 2.40 | 1.60 | 2.50 | 1.90 | 3.00 | 2.20 | 3.50 |
| | | spray angle | 40° | - | 42° | - | 55° | - | 55° | - | 55° | - | 53° | - | 50° | - |
| | | throw, ft | 3.9 | 14.5 | 6.0 | 19.5 | 8.2 | 29.5 | 8.2 | 30.5 | 8.2 | 31.0 | 9.8 | 34.0 | 10.0 | 36.0 |
| AMT-15023 replaces 9920-61.1802.68 | 2.3 mm | GPM | 0.90 | 1.40 | 1.30 | 1.90 | 1.50 | 2.30 | 2.00 | 3.20 | 2.10 | 3.30 | 2.70 | 4.10 | 3.10 | 4.80 |
| | | spray angle | 40° | - | 42° | - | 55° | - | 55° | - | 55° | - | 53° | - | 51° | - |
| | | throw, ft | 4.9 | 16.5 | 6.5 | 24.5 | 10.0 | 32.0 | 10.0 | 35.0 | 10.0 | 36.0 | 9.8 | 38.0 | 10.5 | 39.0 |
| 9920-61.1802.45 | 4.0 mm | GPM throw, ft | - | - | - | - | 1.9 10 | 3.4 36 | - | - | 4.6 10 | 8.0 38 | 5.5 10 | 9.5 40 | 6.3 12 | 11.0 40 |

# ADJUSTABLE PATTERN SPRAY GUNS

### 3381-0010 AND 3381-0011

- Adjustable pattern spray gun
- 17" (43 cm) or 21" (53 cm) barrel
- 3mm or 4mm nozzle
- 1/2" (13 mm) MNPT inlet

### 3381-0013

- Adjustable pattern spray gun
- 7" (18 cm) barrel
- 3mm nozzle
- 1/2" (13 mm) MNPT inlet

### ORDER INFORMATION

| Part Number | Barrel Length | | Nozzle | Max PSI | Max BAR | Max GPM | Max LPM |
|---|---|---|---|---|---|---|---|
| | US Units | Metric Units | | | | | |
| 3381-0010 | 17" | 43 cm | 3mm | 1200 | 83 | 25 | 95 |
| 3381-0011 | 21" | 53 cm | 4mm | 1200 | 83 | 30 | 114 |
| 9920-KIT10/11 | Repair Kit | | | | | | |
| 9920-248 | Swivel Kit (1/2" FNPT x 1/2" MBSP) | | | | | | |

### ORDER INFORMATION

| Part Number | Max PSI | Max BAR | Max GPM | Max LPM |
|---|---|---|---|---|
| 3381-0013 | 700 | 40 | 19 | 72 |
| 9920-248 | Swivel Kit (1/2" FNPT x 1/2" MBSP) | | | |

### TREE SPRAYING GUIDE HYPRO DIAPHRAGM PUMP GAS ENGINE APPLICATIONS

| Spray Height | Pump/Engine Model | Engine | Shaft | Spray Gun | Nozzle |
|---|---|---|---|---|---|
| 30-35 ft. | 9910-D252GRGI58 (w/o engine)<br>9910-D252GRGI (w/o engine)<br>D252GRGI-25 (w/2.5 hp PowerPro™)<br>D252GRGI-55 (w/5.5 hp PowerPro™)<br>6 GPM; 290 PSI | Min. 2.5 hp SAE j609a flange mount | 5/8"<br>3/4"<br>5/8"<br>3/4" | 3381-0010 or<br>3381-0013 | 3385-3000 |
| 35-40 ft. | 9910-D30GRGI (w/o engine)<br>D30GRGI-65 (w/6.5 hp PowerPro™)<br>D30HRGI-65 (w/6.5 hp PowerPro™)<br>D30HRGI-65E (w/6.5 hp PowerPro™)<br>9.5 GPM; 580 PSI | Min. 5.0 hp SAE j609a flange mount | 3/4"<br>3/4"<br>3/4"<br>3/4" | 3381-0010 or<br>3381-0013 | 3385-3000 |
| 45-50 ft. | 9910-D50 (w/o engine, controller or gearbox)<br>14 gpm; 580 psi | Min 8.0 hp SAE j609a flange mount | 1" | 3381-0011 | 3385-4000 |
| 45-50 ft. | 9910-D503GRGI (w/o engine)<br>15 gpm; 580 psi | Min 8.0 hp SAE j609a flange mount | 1" | 3381-0011 | 3385-4000 |
| 50-57 ft. | 9910-D813GRGI (w/o engine)<br>21 gpm; 725 psi | Min 14.0 hp SAE j609a flange mount | 1" | 3381-0011 | 3385-4500 |
| 60-68 ft. | 9910-D1064GRGI (w/o engine)<br>28 gpm; 725 psi | Min 18.0 hp SAE j609a flange mount | 1" | 3381-0011 | 3385-6000 |

All GRGI pump models come complete with gear reduction and control valve.

### PERFORMANCE CHART FOR MODELS 3381-0010, 3381-0011 AND 3381-0013 SPRAY GUNS

| Hypro Model Number | Orifice Diameter In MM | Pressure In PSI** Performance | 200 PSI Setting | | 350 PSI Setting | | 500 PSI Setting | | 600 PSI Setting | | 650 PSI Setting | | 700 PSI Setting | | 850 PSI Setting | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight |
| 3385-1500 | 1.5 | capacity in gpm<br>max throw (ft)* | 1.14<br>9.2 | 1.26<br>21.5 | 1.48<br>10.3 | 1.7<br>25.2 | 1.8<br>11.2 | 2<br>28 | 1.9<br>12.1 | 2.2<br>31.8 | 2<br>12.1 | 2.3<br>32 | 2.1<br>12.3 | 2.4<br>32.3 | 2.2<br>13.1 | 2.5<br>34.3 |
| 3385-2300 | 2.3 | capacity in gpm<br>max throw (ft)* | 2.1<br>11.4 | 2.7<br>29 | 2.7<br>12.9 | 3.7<br>33.9 | 3.4<br>14.8 | 4.5<br>37.9 | 3.8<br>16.6 | 4.9<br>41.5 | 3.8<br>17 | 5<br>41.7 | 3.9<br>17.7 | 5.1<br>42 | 4.2<br>19 | 5.8<br>45.7 |
| 3385-3000 | 3 | capacity in gpm<br>max throw (ft)* | 2.9<br>11.7 | 4.6<br>29.2 | 3.7<br>12.9 | 6.3<br>33.9 | 4.8<br>13.8 | 7.5<br>36.2 | 5.2<br>15.6 | 8.4<br>40.8 | 5.3<br>16 | 8.5<br>40.7 | 5.4<br>16.2 | 8.6<br>42 | 6<br>17 | 9.6<br>44.1 |
| 3385-3500 | 3.5 | capacity in gpm<br>max throw (ft)* | 5.8<br>13.6 | 6<br>36.2 | 7.9<br>19 | 8.2<br>41.2 | 9.6<br>22.6 | 9.9<br>45.3 | 10.7<br>25.5 | 11.1<br>50 | 11<br>25.5 | 11.3<br>51 | 11.2<br>27 | 11.6<br>51.5 | 12.4<br>28.8 | 12.8<br>54 |
| 3385-4000 | 4 | capacity in gpm<br>max throw (ft)* | 7<br>15.1 | 7.3<br>37.7 | 9.6<br>20.6 | 9.9<br>42.8 | 11.6<br>24.3 | 12<br>47 | 12.9<br>27.2 | 13.5<br>53 | 13.2<br>27.2 | 13.8<br>54 | 13.6<br>28.5 | 14.1<br>55 | 15<br>29 | 15.6<br>59 |
| 3385-4500 | 4.5 | capacity in gpm<br>max throw (ft)* | 8.2<br>18.1 | 8.9<br>39.2 | 11.1<br>22.2 | 12<br>44.3 | 13.4<br>26 | 14.5<br>50.1 | 15<br>30.6 | 16.3<br>54 | 15.4<br>30.6 | 16.6<br>56 | 15.7<br>31 | 17<br>57 | 17.4<br>31.5 | 18.9<br>62 |
| 3385-5000 | 5 | capacity in gpm<br>max throw (ft)* | 9.8<br>19.6 | 10.2<br>40.7 | 13.3<br>23.8 | 13.8<br>47 | 16<br>27.5 | 16.7<br>53.3 | 18<br>32.3 | 18.7<br>59 | 18.4<br>32.3 | 19.1<br>61 | 18.9<br>32.8 | 19.5<br>62 | 20.8<br>32.8 | 21.6<br>67 |
| 3385-5500 | 5.5 | capacity in gpm<br>max throw (ft)* | 10.7<br>19.6 | 11.5<br>42.2 | 14.4<br>23.8 | 15.6<br>50.7 | 17.4<br>29 | 18.8<br>57 | 19.6<br>34 | 21<br>63 | 20<br>34 | 21.5<br>64 | 20.4<br>34.5 | 22<br>65 | 22.6<br>34.5 | 24.4<br>70 |
| 3385-6000 | 6 | capacity in gpm<br>max throw (ft)* | 11.5<br>21.1 | 12.6<br>43.7 | 15.6<br>25.3 | 17.1<br>54 | 18.8<br>30.7 | 20.6<br>60 | 21<br>35.6 | 23.2<br>66 | 21.5<br>35.6 | 23.7<br>67 | 22<br>36 | 24.2<br>68 | 24.4<br>36 | 26.<br>9 74 |
| 3385-7000 | 7 | capacity in gpm<br>max throw (ft)* | 11.5<br>21.1 | 13.5<br>46.8 | 15.6<br>25.3 | 18.4<br>57 | 18.8<br>30.7 | 22.2<br>63 | 21<br>37.4 | 25<br>70 | 21.5<br>37.4 | 25.4<br>71 | 22<br>38 | 26<br>72 | 24.4<br>38 | 29<br>77 |

* Figures shown are guidelines for vertical throw.
** Pressures based on relief valve settings at straight throw.

# ADJUSTABLE PATTERN SPRAY GUNS

## LONG RANGE HIGH PRESSURE SPRAY GUN

- Brass body
- Stainless steel pipe
- Handle and nozzle protection in high-resistance polymer
- Ergonomic handgrip
- Quick-release trigger lock
- Swivel inlet port
- Adjustable spray pattern from hollow cone to solid stream

## TOP GUN

| Part Number | Max.PSI | Max.BAR | Max.GPM | Max.LPM | Nozzle Size | Nozzle Number | Connection | | Estimated Weight Ea. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | US Units | Metric Units | US Units | Metric Units |
| 002201-3430 | 850 | 60 | 35.0 | 130 | 3.0 mm | 003430 | 1/2" HB | 13 mm | 3 lbs. 8 oz. | 13 kg |
| 002201-3440 | 850 | 60 | 35.0 | 130 | 4.0 mm | 003440 | 1/2" HB | 13 mm | 3 lbs. 8 oz. | 13 kg |
| 002201-3460 | 850 | 60 | 35.0 | 130 | 6.0 mm | 003460 | 1/2" HB | 13 mm | 3 lbs. 8 oz. | 13 kg |
| 002201-3470 | 850 | 60 | 35.0 | 130 | 7.0 mm | 003470 | 1/2" HB | 13 mm | 3 lbs. 8 oz. | 13 kg |

Hose barb and nut kit (sold separately): 3/8" - 006320; 1/2" - 006330.

## PRESSURE (PSI)

| Nozzle Size | | 200 PSI | | 350 PSI | | 500 PSI | | 600 PSI | | 720 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight | Cone | Straight |
| 3.0 mm | Flow GPM | 3.8 | 5.2 | 5.6 | 6.8 | 6.6 | 8.5 | 7 | 9.2 | 7.3 | 10 |
| | Max. throw ft. | 12 | 36 | 13 | 37 | 15 | 41 | 16 | 44 | 21 | 46 |
| 4.0 mm | Flow GPM | 6 | 8.2 | 7.3 | 12.7 | 8.6 | 13.2 | 10.2 | 14.5 | 11.4 | 15.9 |
| | Max. throw ft. | 14 | 42 | 15 | 44 | 16 | 49 | 19 | 52 | 23 | 57 |
| 6.0 mm | Flow GPM | 9 | 16 | 11.5 | 22.2 | 14 | 25.8 | 15.5 | 26.7 | 16.2 | 27.5 |
| | Max. throw ft. | 19 | 59 | 21 | 62 | 25 | 66 | 26 | 68 | 31 | 72 |
| 7.0 mm | Flow GPM | 10.5 | 17.5 | 13.8 | 25.7 | 16.8 | 30.6 | 18.2 | 33.2 | 20.3 | 34.3 |
| | Max. throw ft. | 21 | 60 | 23 | 67 | 26 | 72 | 27 | 77 | 31 | 82 |

## ECONO GUN

| Part Number | Max.PSI | Max.BAR | Max.GPM | Max.LPM | Connection | |
|---|---|---|---|---|---|---|
| | | | | | US Units | Metric Units |
| 506532V | 150 | 10 | 40.0 | 150 | 1/2" HB | 13 mm |
| 506530V | 150 | 10 | 40.0 | 150 | 3/4" HB | 19 mm |
| 506531V | 150 | 10 | 40.0 | 150 | 1" HB | 25 mm |

# SPRAY GUNS & LANCES

3381-0018W

## 18 GUN

- Fast, easy servicing
- Stainless steel ball, seat, spring and glands
- Durable insulated handle; Rear entry
- Reduced trigger pressure; Less operator fatigue
- Consistent weep control at 1/4 gpm (+/-15%) on "W" version

| Part Number | Inlet/Outlet | Max. PSI | Max. BAR | Max. GPM | Max. LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|
| 3381-0018<br>3381-0018W* | 3/8" (F)NPT x 1/4" (F)NPT | 4000 | 280 | 9.0 | 34 | 300° F | 150° C |

* Weep Version

3381-0032W

## 32 GUN

- Stainless steel ball, seat, spring and glands
- Durable insulated handle; Rear entry
- Reduced trigger pressure; Less operator fatigue
- Consistent weep control at 1/4 gpm (+/-15%) on "W" version

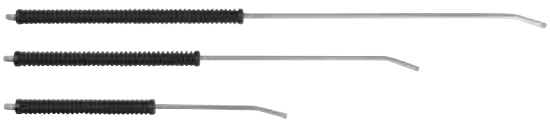
## DUAL LANCE

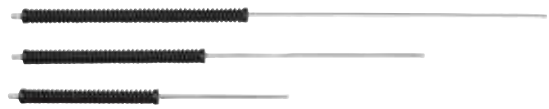
- Insulated lance; insulated selector handle
- Dual-molded nozzle protectors
- 40" length, rotating handle for proper hi/lo nozzle control "W" version
- Chrome plated

| Part Number | Inlet/Outlet | Max. PSI | Max. BAR | Max. GPM | Max. LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|
| 3381-0032<br>3381-0032W* | 3/8" (F)NPT x1/4" (F)NPT | 4000 | 280 | 7.0 | 27 | 300° F | 150° C |

* Weep Version

| Part Number | Inlet/Outlet | Max. PSI | Max. BAR | Max. GPM | Max. LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|
| 3365-0002 | 1/4" (M)NPT x Dual 1/4" (M) | 3000 | 210 | 10.5 | 40 | 300° F | 150° C |





## ZINC-PLATED BENT SINGLE LANCES W/ INSULATED HANDLE

| Length | | Part Number | Inlet/ Outlet | Max. PSI | Max. BAR | Max. GPM | Max. LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|---|---|
| 24" | 61 cm | 3365-0004/24 | 1/4" (M) NPT | 3600 | 250 | 10.5 | 40 | 300° F | 150° C |
| 36" | 91 cm | 3365-0004/36 | | | | | | | |
| 47" | 119 cm | 3365-0004/47 | | | | | | | |

## ZINC-PLATED STRAIGHT SINGLE LANCES W/ INSULATED HANDLE

| Length | | Part Number | Inlet/ Outlet | Max. PSI | Max. BAR | Max. GPM | Max. LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|---|---|
| 24" | 61 cm | 3365-0005/24 | 3/8" (M) NPTx 1/4" (F) NPT | 3600 | 250 | 10.5 | 40 | 300° F | 150° C |
| 36" | 91 cm | 3365-0005/36 | | | | | | | |
| 47" | 119 cm | 3365-0005/47 | | | | | | | |

- Stainless steel ball, seat, spring and glands
- Durable insulated handle
- Reduce trigger pressure; Less operator fatigue
- 16" Insulated lance length w/screw coupling

## REAR ENTRY SPRAY GUN WITH BLACK LANCES & COUPLER

| Part Number | Inlet/Outlet | Max. PSI | Max. BAR | Max. GPM | Max. LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|
| 3381-0034 | 3/8" (F) NPT x Quick Coupling (screw type) | 3500 | 240 | 7.0 | 27 | 300° F | 150° C |

## ZINC-PLATED LANCE EXTENSIONS FOR 3381 - 0034 GUN

| Length | | Part Number | Inlet/ Outlet | Max. PSI | Max. BAR | Max. GPM | Max. LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|---|---|
| 14" | 36 cm | 3365-0007/14 | Quick Coupling x 1/4" (M) NPT | 3500 | 240 | 10.5 | 40 | 300° F | 150° C |
| 24" | 61 cm | 3365-0007/24 | | | | | | | |
| 36" | 91 cm | 3365-0007/36 | | | | | | | |

# NOZZLES

- Variable fan pattern, 0˚ to 80˚
- Push/Pull for pressure adjustment to draw soap
- Twist for fan adjustment

## HI-LO VARIABLE NOZZLE

| Part Number | | Nozzle No. | Inlet (NPT) | Max PSI | Max Bar | Max GPM | Max LPM | Max Temp | Max Temp |
|---|---|---|---|---|---|---|---|---|---|
| Variable | Hi-Lo Variable | | | | | | | | |
| - | 3324-2000.85 | 2.0 | 1/4" (F) | 3000 | 210 | 8.0 | 30 | 300° F | 150° C |
| 3324-1001.05 | 3324-2001.05 | 3.0 | | | | | | | |
| 3324-1001.1 | 3324-2001.1 | 3.5 | | | | | | | |
| 3324-1001.15 | 3324-2001.15 | 3.7 | | | | | | | |
| 3324-1001.2 | 3324-2001.2 | 4.0 | | | | | | | |
| 3324-1001.25 | 3324-2001.25 | 4.3 | | | | | | | |
| 3324-1001.3 | 3324-2001.3 | 4.6 | | | | | | | |
| 3324-1001.35 | 3324-2001.35 | 5.0 | | | | | | | |
| 3324-1001.4 | 3324-2001.4 | 5.3 | | | | | | | |
| 3324-1001.45 | 3324-2001.45 | 5.6 | | | | | | | |
| 3324-1001.5 | 3324-2001.5 | 6.0 | | | | | | | |

| Hypro Part Number | | Nozzle Capacity (GPM) at Pump Pressure (PSI) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Hi-Lo Variable | Nozzle No. | Orifice Diameter | | PSI | | | | | | | | | | | | |
| | | | mm | inches | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 | 1800 | 2000 | 2500 | 3000 | | |
| 3324-1000.85 | 3324-2000.85 | 2.0 | .085 | .033 | .077 | 0.80 | .089 | .095 | 1.00 | 1.10 | 1.20 | 1.35 | 1.40 | 1.40 | .033 | | |
| 3324-1001.05 | 3324-2001.05 | 3.0 | 1.05 | .041 | 1.22 | 1.30 | 1.37 | 1.45 | 1.52 | 1.66 | 1.86 | 2.04 | 2.16 | 2.42 | 2.64 | | |
| 3324-1001.1 | 3324-2001.1 | 3.5 | 1.10 | .043 | 1.35 | 1.43 | 1.52 | 1.60 | 1.68 | 1.84 | 2.06 | 2.26 | 2.39 | 2.67 | 2.91 | | |
| 3324-1001.2 | 3324-2001.2 | 4.0 | 1.20 | .047 | 1.60 | 1.70 | 1.80 | 1.90 | 2.00 | 2.19 | 2.45 | 2.69 | 2.84 | 3.17 | 3.44 | | |
| 3324-1001.25 | 3324-2001.25 | 4.3 | 1.25 | .049 | 1.72 | 1.83 | 1.94 | 2.05 | 2.16 | 2.36 | 2.64 | 2.90 | 3.06 | 3.41 | 3.70 | | |
| 3324-1001.3 | 3324-2001.3 | 4.6 | 1.30 | .051 | 1.85 | 1.97 | 2..09 | 2.21 | 2.32 | 2.54 | 2.84 | 3.12 | 3.29 | 3.66 | 3.96 | | |
| 3324-1001.35 | 3324-2001.35 | 5.0 | 1.35 | .053 | 1.97 | 2.10 | 2.23 | 2.36 | 2.48 | 2.71 | 3.04 | 3.34 | 3.52 | 3.92 | 4.23 | | |
| 3324-1001.4 | 3324-2001.4 | 5.3 | 1.40 | .055 | 2.09 | 2.23 | 2.37 | 2.50 | 2.63 | 2.89 | 3.23 | 3.55 | 3.74 | 4.16 | 4.49 | | |
| 3324-1001.45 | 3324-2001.45 | 5.6 | 1.45 | .057 | 2.22 | 2.37 | 2.52 | 2.66 | 2.80 | 3.06 | 3.43 | 3.77 | 3.97 | 4.41 | 4.79 | | |
| 3324-1001.5 | 3324-2001.5 | 6.0 | 1.50 | .059 | 2.34 | 2.50 | 2.66 | 2.81 | 2.96 | 3.24 | 3.63 | 3.99 | 4.20 | 4.66 | 5.02 | | |

GPM

Note: Capacity figures shown are with water at 70°F. There may be variations due to power supply, temperature, viscosity, additives, etc.

# MEASUREMENT COMPONENTS

## Orion® Flowmeters

New digital technology converts fluid ion flow into gpm/lpm, virtually making mechanical flowmeters obsolete.These precise flowmeters work by utilizing sensors to relay pulse signals and converting them into gpm/lpm readings.The Visual-Flow flowmeter, with touch pad, displays instant flow reading for quantity of fluid filled.

- No mechanical moving parts
- Advanced technology at an affordable price
- Performance independent from fluid density and viscosity
- Low sensitivity to turbulence
- Wide variety of flows for use in diverse applications
- High precision, typical error is 0.5%
- Pulse output is 0-12 volts, max. consumption of 300 mA (milliamps)
- Accuracy and precision saves chemical throughout the life of the system
- Working pressure up to 580 psi (40 bar)
- Integrates with existing rate controllers
- AMP® Super Seal™ connection

### 1-VISUAL-FLOW FLOWMETER WITH MALE THREAD ADAPTERS

| Part Number | Part Number | Flow (GPM) | Flow (L/min) | Size | Max PSI | Max BAR |
|---|---|---|---|---|---|---|
| 4621BA01313 | - | 0.13 -2.6 | .5-10 | 3/4" | 290 | 20 |
| 4621BA11313 | - | 0.3 - 5 | 1-20 | 3/4" | 290 | 20 |
| 4622BA51616 | 464622BA51616 | 5 - 106 | 20-400 | 1-1/2" | 290 | 20 |
| 4622BA61717 | 464622BA61717 | 8 - 158 | 30-600 | 2" | 290 | 20 |

Available for order through HYPRO-EU only (Cambridge, UK)

### 2-ORION FLOWMETER WITH MALE THREAD ADAPTERS

| Part Number | Part Number | Flow (GPM) | Flow (L/min) | Size | Max PSI | Max BAR |
|---|---|---|---|---|---|---|
| 4621AA11313 | - | .3 - 5 | 1-20 | 3/4" | 290 | 20 |
| 4621AA31414 | - | 1.4 - 26 | 5-100 | 1" | 290 | 20 |
| 4621AA41414 | - | 2.6 - 53 | 10-200 | 1" | 290 | 20 |
| 4621AA41515 | - | 2.6 - 53 | 10-200 | 1-1/4" | 290 | 20 |
| 4622AA51616 | 464622AA51616 | 5 - 106 | 20-400 | 1-1/2" | 290 | 20 |
| 4622AA61717 | 464622AA61717 | 8 - 158 | 30-600 | 2" | 290 | 20 |

Available for order through HYPRO-EU only (Cambridge, UK)

### 3-ORION FLOWMETER ONLY

| Part Number | Part Number | Flow (GPM) | Flow (L/min) | Max PSI | Max BAR | Adapter Series |
|---|---|---|---|---|---|---|
| 4621AA30000 | 464621AA30000 | 1.3 - 26 | 5-100 | 580 | 40 | 463 |
| 4622AA40000 | - | 2.6 - 53 | 10-200 | 580 | 40 | 473 |

Bolt Kit, V1M258-FM, includes stainless steel bolts, washers and lock nuts.

Available for order through HYPRO-EU only (Cambridge, UK)

### ADAPTER CABLES

| Part Number | Reference Number | Description |
|---|---|---|
| AE2650 | **A** | Orion to Raven® (Conxall®) |
| AE2652 | **B** | Orion to John Deere (Packard®) |
| AE2654 | **C** | Orion to MidTech (Packard Weather Pack®) |
| 4622BA50000-100 | * | 4 pin, 10' extension cable (Visual-Flow)* |
| 4622BA50000-200 | * | 4 pin cable w/pump stop unit (Visual-Flow)* |

*Not shown.

Orion® is a registered trademark of ARAG.
Raven® is a registered trademark of Raven Industry
Conxall® is a registered trademark of Conxall Corp.
TeeJet® is a registered trademark of Spraying Systems Co.
Packard® is a registered trademark of Delphi
Packard Weather Pack® is a registered trademark of Delphi

# ARAG® SPRAYER CONTROL VALVES

## ELECTRIC PROPORTIONAL SPRAY CONTROL VALVES

| Part Number | Part Number | Series | Max.GPM* | Max.PSI* | Open to Close | Outlet Size |
|---|---|---|---|---|---|---|
| 463020 | 46463020 | 863 | 12 | 580 | 14 seconds | ¾" HB |
| 8630020S | - | 863 | 12 | 580 | 7 seconds | ¾" HB |
| 8630024S | 46463024 | 863 | 12 | 580 | 14 seconds | ¾" HB |
| 8630D24S | - | 863 | 12 | 580 | 14 seconds | ¾" HB |

* Max GPM per valve section.
Available for order through HYPRO-EU only (Cambridge, UK)

## ELECTRIC 3-WIRE BOOM SECTION VALVE

| Part Number | Series | Max.GPM* | Max.PSI* | Open to Close | Outlet Size |
|---|---|---|---|---|---|
| 8630001 | 463/863 | 12 | 290 | 0.6 seconds | 1/2" HB |
| 8630011** | 463/863 | 12 | 290 | 0.6 seconds | ¾" HB |

* Max GPM per valve section. **Includes bypass port.

## MANUAL PROPORTIONAL SPRAY CONTROL VALVES

| Part Number | Part Number | Series | Max.GPM* | Max.PSI* | Outlet Size |
|---|---|---|---|---|---|
| 473070 | 46473070 | 473 | 31 | 580 | 1¼" HB |

* Max GPM per valve section.
Available for order through HYPRO-EU only (Cambridge, UK)

## MANUAL PRESSURE REGULATING VALVES

| Part Number | Series | Max.GPM* | Max.PSI* | Outlet Size |
|---|---|---|---|---|
| 463080N | 463 | 12 | 290 | ¾" HB |

* Max GPM per valve section.

## MANUAL BOOM SECTION VALVES

| Part Number | Part Number | Series | Max.GPM* | Max.PSI* | Metered Bypass | Outlet Size |
|---|---|---|---|---|---|---|
| 463051 | 46463051 | 463 | 12 | 290 | No | ¾" HB |
| 463061 | 46463061 | 463 | 12 | 290 | Yes | ¾" HB |

* Max GPM per valve section.
Available for order through HYPRO-EU only (Cambridge, UK)

## SERIES 461 - ECONOMIC MANUAL VALVE ASSEMBLIES

| Part Number | Valves* | Max.GPM* | Max.PSI* | Inlet Size | Outlet Size | Regulator |
|---|---|---|---|---|---|---|
| 461031-1 | 3 | 12 | 290 | 1" HB | 1/2" HB | No |
| 461031-2 | 3 | 12 | 290 | 1" HB | 3/4" HB | No |
| 461031-3 | 3 | 12 | 290 | 1/2" HB | 1/2" HB | No |
| 461021-1 | 2 | 12 | 290 | 1" HB | 1/2" HB | No |

*Includes flynut inlet and hose barb outlets in sizes indicated.
**Supplied with 3/4" elbow HB, 3/4" straight HB and 1/2" straight HB inlets and 3/4" FNPT, 3/4" HB, 1/2" HB and 3/8" HB outlets.

Arag® is a registered trademark of ARAG.
Hypro® is a registered trademark of Pentair.

## ELECTRIC PROPORTIONAL SPRAY CONTROL VALVE

| Part Number | Max.GPM | Max.PSI | Open to Close | Outlet Size |
|---|---|---|---|---|
| 3470-0104 | 26 | 580 | 7 seconds | Outlet port sold separately (See below) |

## ELECTRIC 3-WIRE BOOM SECTION VALVES

| Part Number | Max.GPM | Max.PSI | Open to Close | Metered Bypass | Outlet Size |
|---|---|---|---|---|---|
| 3470-0106 | 12 | 290 | 0.2 seconds | Yes | Outlet port sold separately (See below) |
| 3470-0101 | 12 | 290 | 0.2 seconds | No | Outlet port sold separately (See below) |

## MANUAL PROPORTIONAL SPRAY CONTROL

| Part Number | Max.GPM | Max.PSI | Outlet Size |
|---|---|---|---|
| 3470-0103 | 26 | 580 | 3/4" HB |

## MANUAL PRESSURE REGULATING VALVE

| Part Number | Max.GPM | Max.PSI | Outlet Size |
|---|---|---|---|
| 3470-0102 | 26 | 290 | Outlet port sold separately (See below) |

## MANUAL BOOM SECTION VALVE

| Part Number | Max.GPM | Max.PSI | Outlet Size |
|---|---|---|---|
| 3470-0107 | 12 | 290 | Outlet port sold separately (See below) |

# HYPRO® SPRAYER CONTROL VALVES

## OUTLET PORTS FOR VALVES

| Part Number | Max.GPM | Max.PSI | Outlet Size |
|---|---|---|---|
| 3470-0206 | 12 | 290 | 3/8" HB |
| 3470-0201 | 12 | 290 | 1/2" HB |
| 3470-0202 | 12 | 290 | 3/4" HB |
| 3470-0204 | 12 | 290 | 1" HB |
| 3470-0203 | 12 | 290 | 3/4" FNPT |
| 3470-0207 | 12 | 290 | 1/2" HB-90° Elbow |

3470-0208 O ring sold separately.

## REPLACEMENT CLIPS & O-RINGS

| Part Number | Description |
|---|---|
| 3470-0208 | Replacement O-ring |
| 3470-0209 | Replacement clip |

## VALVE INLET MALE ADAPTERS

| Part Number | Description | Ref # |
|---|---|---|
| 3470-0305 | Adapter Female Side Male 3/4" BSP | - |
| 3470-0306 | Adapter Female Side Male 1" BSP | - |
| 3470-0307 | Adapter Male Side Male 3/4" BSP | - |
| 3470-0308 | Adapter Male Side Male 1" BSP | - |
| 3470-0301 | Adapter Female Side Female 3/4" NPT | 1 |
| 3470-0302 | Adapter Female Side Female 1" NPT | 1 |
| 3470-0401 | Adapter Male Side Female 3/4" NPT | 2 |
| 3470-0402 | Adapter Male Side Female 1" NPT | 2 |
| 3470-0403 | Male End Cap | 3 |
| 3470-0303 | Female End Cap | 3 |

## BOLTS, KITS AND MOUNTING BRACKETS

| Part Number | Description |
|---|---|
| 3470-0601 | 1 Section stainless steel |
| 3470-0605 | 2 Section stainless steel |
| 3470-0603 | 3 Section stainless steel |
| 3470-0602 | 4 Section stainless steel |
| 3470-0604 | 5 Section stainless steel |

## FLANGED LINE STRAINER

| Part Number | Description |
|---|---|
| 3470-0800 | Self Cleaning, 50 Mesh |

## REPLACEMENT SCREENS FOR FLANGED LINE STRAINER

| Part Number | Description |
|---|---|
| 3470-0801 | 50 Mesh |

## CABLES

| Part Number | Description |
|---|---|
| 3470-0700 | 2 wire- 4' cable w/ gasket and screw |
| 3470-0702 | Din connector w/ gasket and screw |

# BALL VALVES

- Fiberglass-reinforced polypropylene body for strength and chemical resistance
- Teflon seats for smooth operation and proper sealing characteristics
- EPDM O-rings to handle most fertilizers and chemicals
- Max. operating pressure for sizes up to 1-1/4" – 232 PSI (16 bar). For 1-1/2" and 2" – 145 PSI (10 bar).

## SINGLE UNION BALL VALVES - 2 WAY

| NPT Part Number | BSP Part Number | Part Number | Size | Mounting Inserts | Max PSI | Max BAR |
|---|---|---|---|---|---|---|
| 9951-2050N | 9951-2050B | 56454132 | 1/2" | None | 232 | 16 |
| 9951-2075N | 9951-2075B | 56454133 | 3/4" | None | 232 | 16 |
| 9951-2100N | 9951-2100B | 56454134 | 1" | None | 232 | 16 |
| 9951-2125N | 9951-2125B | 56454135 | 1-1/4" | 8 mm | 145 | 10 |
| 9951-2150N | 9951-2150B | 56454136 | 1-1/2" | 8 mm | 145 | 10 |
| 9951-2200N | 9951-2200B | 56454137 | 2" | 8 mm | 145 | 10 |

Available for order through HYPRO-EU only (Cambridge, UK)

## SINGLE UNION BALL VALVES - 3 WAY

| NPT Part Number | BSP Part Number | Part Number | Size | Mounting Inserts | Max PSI | Max BAR |
|---|---|---|---|---|---|---|
| 9951-3050N | 9951-3050B | 56454232 | 1/2" | None | 232 | 16 |
| 9951-3075N | 9951-3075B | 56454233 | 3/4" | None | 232 | 16 |
| 9951-3100N | 9951-3100B | 56454234 | 1" | None | 232 | 16 |
| 9951-3125N | 9951-3125B | 56454235 | 1-1/4" | 8 mm | 145 | 10 |
| 9951-3150N | 9951-3150B | 56454236 | 1-1/2" | 8 mm | 145 | 10 |
| 9951-3200N | 9951-3200B | 56454237 | 2" | 8 mm | 145 | 10 |

Available for order through HYPRO-EU only (Cambridge, UK)

## ANTI-BACKFLOW VALVES

| Part Number | MBSP x MBSP | Length |
|---|---|---|
| 5042015 | 1-1/4" x 1-1/4" | 4.13" / 105 mm |
| 5042016 | 1-1/2" x 1-1/2" | 4.37" / 111 mm |
| 5042017 | 2" x 2" | 4.96" / 126 mm |
| 5042019 | 3" x 3" | 6.02" / 153 mm |

## CHECK VALVES

| Part Number | MNPT x MNPT | Material | Cracking Pressure PSI | Cracking Pressure BAR |
|---|---|---|---|---|
| 3320-0065 | 1/2" X 1/2"" | Polypropylene | 3 | .20 |

## SHUT-OFF VALVES

| Part Number | MGHT (inlet) x MGHT | Material |
|---|---|---|
| 3305-0112 | 1/2" X 1/2"" | Polypropylene |

## GARDEN HOSE SHUT-OFF VALVE

| Part Number | FGHT (inlet) x MGHT | Type | Description | Max. PSI | Max BAR |
|---|---|---|---|---|---|
| LA5 | 3/4" X 3/4" | 1-Way | Cycolac body and ball with Buna-N seals suitable for outdoor use | 75 | 5 |
| LA24 | 3/4" X (2) 3/4" | 2-Way | | 75 | 5 |

## POLYPROPYLENE BALL VALVE

| Part Number | Size | Max. PSI* | Max. BAR | Material | O-ring Material |
|---|---|---|---|---|---|
| 15-14 | 1/4" X 1/4" | 25 | 3.4 | Polypropylene | EPDM |

*Max psi for liquids compatible with polypropylene and EPDM.

# BALL VALVES

### SERIES 90 – PLATED BRASS BALL VALVE

| Part Number | Size | Handle Type | Max PSI | Max BAR | Max. Temp | |
|---|---|---|---|---|---|---|
| | | | | | US Units | Metric Units |
| 90FFB18 | 1/8" FNPT X 1/8" FNPT | Butterfly | 300 | 20 | 212° F | 100° C |
| 90FFB14 | 1/4" FNPT X 1/4" FNPT | Butterfly | 300 | 20 | 212° F | 100° C |
| 90FMB14 | 1/4" FNPT X 1/4" MNPT | Butterfly | 300 | 20 | 212° F | 100° C |
| 90FFB38 | 3/8" FNPT X 3/8" FNPT | Butterfly | 300 | 20 | 212° F | 100° C |
| 90FMB38 | 3/8" FNPT X 3/8" MNPT | Butterfly | 300 | 20 | 212° F | 100° C |
| 90FFB12 | 1/2" FNPT X 1/2" FNPT | Butterfly | 300 | 20 | 212° F | 100° C |
| 90FMB12 | 1/2" FNPT X 1/2" MNPT | Butterfly | 300 | 20 | 212° F | 100° C |
| 90FFL18 | 1/8" FNPT X 1/8" FNPT | Lever | 300 | 20 | 212° F | 100° C |
| 90FFL14 | 1/4" FNPT X 1/4" FNPT | Lever | 300 | 20 | 212° F | 100° C |
| 90FML14 | 1/4" FNPT X 1/4" MNPT | Lever | 300 | 20 | 212° F | 100° C |
| 90FFL38 | 3/8" FNPT X 3/8" FNPT | Lever | 300 | 20 | 212° F | 100° C |
| 90FML38 | 3/8" FNPT X 3/8" MNPT | Lever | 300 | 20 | 212° F | 100° C |
| 90FFL12 | 1/2" FNPT X 1/2" FNPT | Lever | 300 | 20 | 212° F | 100° C |
| 90FML12 | 1/2" FNPT X 1/2" MNPT | Lever | 300 | 20 | 212° F | 100° C |
| 90-HBF | Replacement nylon butterfly handle | | | | | |
| RI167 | Replacement nylon lever handle | | | | | |

### FULL PORT BRASS AND 316 STAINLESS STEEL BALL VALVES

| Part Number | Material | Size | Max PSI | Max Bar | Max. Temp. | |
|---|---|---|---|---|---|---|
| | | | | | US Units | Metric Units |
| 171N-14 | Brass | 1/4" FNPT | 600 | 41 | 320° F | 160° C |
| 171N-38 | Brass | 3/8" FNPT | 600 | 41 | 320° F | 160° C |
| 171N-12 | Brass | 1/2" FNPT | 600 | 41 | 320° F | 160° C |
| 171N-34 | Brass | 3/4" FNPT | 600 | 41 | 320° F | 160° C |
| 171N-100 | Brass | 1" FNPT | 600 | 41 | 320° F | 160° C |
| 171N-114 | Brass | 11/4" FNPT | 600 | 41 | 320° F | 160° C |
| 171N-112 | Brass | 11/2" FNPT | 600 | 41 | 320° F | 160° C |
| 171N-200 | Brass | 2" FNPT | 600 | 41 | 320° F | 160° C |
| 78-14 | 316 Stainless Steel | 1/4" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-38 | 316 Stainless Steel | 3/8" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-12 | 316 Stainless Steel | 1/2" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-34 | 316 Stainless Steel | 3/4" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-100 | 316 Stainless Steel | 1" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-114 | 316 Stainless Steel | 11/4" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-112 | 316 Stainless Steel | 11/2" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-200 | 316 Stainless Steel | 2" FNPT | 1000 | 69 | 320° F | 160° C |
| 78-300 | 316 Stainless Steel | 3" FNPT | 1000 | 69 | 320° F | 160° C |

10-32 threaded mounting holes.
Teflon seals and o-rings.

# GAUGES

## Dual-Scale Glycerin-Filled 2-1/2" Gauges (Stainless Steel Case)

This series is designed for use with air, gas, oil, and water or any medium not corrosive to brass or bronze. Liquid-filled gauges are recommended for reducing shock waves caused by pressure or vibration fluctuations.

- Movement: Brass
- Bourdon Tube: Phosphor bronze
- Pointer: Black-enameled aluminum
- Dial: White background
- Window: Acrylic
- Liquid Fill: 99.5% pure virgin Glycerin
- Connection: 1/4" NPT Brass connection
- Accuracy: ASME/ANSI B40.1 Grade B (3-2-3%)

### ORDER INFORMATION

| Part Number | Pressure Reading Range | Face Size | | Stem Size | Estimated Weight Ea. | |
|---|---|---|---|---|---|---|
| | | US Units | Metric Units | | US Units | Metric Units |
| 2640-0009 | 0-60 psi/4 BAR | 2-1/2" | 65 mm | 1/4" NPT (M) | 7.5 oz. | 213 g |
| 2640-0010 | 0-100 psi/7 BAR | | | | | |
| 2640-0011 | 0-200 psi/14 BAR | | | | | |
| 2640-0007 | 0-300 psi/21 BAR | | | | | |
| 2640-0008 | 0-600 psi/42 BAR | | | | | |
| 2640-0001 | 0-1000 psi/70 BAR | | | | | |
| 2640-0002 | 0-1500 psi/105 BAR | | | | | |
| 2640-0003 | 0-2000 psi/140 BAR | | | | | |
| 2640-0004 | 0-3000 psi/210 BAR | | | | | |
| 2640-0005 | 0-5000 psi/350 BAR | | | | | |
| 2640-0014 | 0-10000 psi/700 BAR | | | | | |

# GAUGES

## SG SERIES DRY 1-1/2", 2", 2-1/2" AND 4" GAUGES

PSI only Plastic case

This series is designed for use with air, gas, oil, and water or any medium not corrosive to brass or bronze.

- Movement: Brass
- Bourdon Tube: C Shaped in copper alloy up to 600 psi and Helical in phosphor bronze over 600 psi
- Pointer: Black-enameled aluminum
- Dial: White aluminum
- Window: Acrylic
- Connection: 1/8" NPT male standard on 1-1/2" size
  1/4" NPT standard on 2", 2-1/2", & 4" sizes
- Accuracy: ASME/ANSI B40.1 Grade B (3-2-3%)

### ORDER INFORMATION

| Part Number | PSI Range | Dial Size | Stem Size |
|---|---|---|---|
| SG601.58C<br>SG1001.58C<br>SG1601.58C<br>SG2001.58C | 0-60<br>0-100<br>0-160<br>0-200 | 1-1/2" | 1/8" CBM |
| SG602C<br>SG1002C<br>SG1602C<br>SG2002C<br>SG3002C | 0-60<br>0-100<br>0-160<br>0-200<br>0-300 | 2" | 1/4" CBM |
| SG152<br>SG302<br>SG602<br>SG1002<br>SG1602<br>SG2002<br>SG3002 | 0-15<br>0-30<br>0-60<br>0-100<br>0-160<br>0-200<br>0-300 | 2" | 1/4" LM |
| SG15<br>SG30<br>SG60<br>SG100<br>SG160<br>SG200<br>SG300<br>SG400<br>SG600<br>SG1000<br>SG2000<br>SG3000<br>SG5000 | 0-15<br>0-30<br>0-60<br>0-100<br>0-160<br>0-200<br>0-300<br>0-400<br>0-600<br>0-1000<br>0-2000<br>0-3000<br>0-5000 | 2-1/2" | 1/4" LM |
| SG604<br>SG1004<br>SG2004 | 0-60<br>0-100<br>0-200 | 4" | 1/4" LM |

## GG SERIES GLYCERIN-FILLED 2-1/2" AND 4" GAUGES

PSI only
304 Stainless Steel Case

This series is designed for use with air, gas, oil, and water or any medium not corrosive to brass or bronze. Liquid-filled gauges are recommended for reducing shock waves caused by pressure or vibration fluctuations.

- Movement: Brass
- Bourdon Tube: Phosphor bronze
- Pointer: Black-enameled aluminum
- Dial: White background
- Window: Acrylic
- Liquid Fill: 99.5% pure virgin Glycerin
- Connection: 1/4" NPT Brass connection
- Accuracy: ASME/ANSI B40.1 Grade B (3-2-3%)

### ORDER INFORMATION

| Part Number | PSI Range | Dial Size | Stem Size |
|---|---|---|---|
| WGG60C<br>WGG100C<br>WGG160C<br>WGG200C<br>WGG300C<br>WGG400C<br>WGG600C<br>WGG1000C<br>WGG1500C<br>WGG2000C<br>WGG3000C<br>WGG5000C<br>WGG6000C | 0-60<br>0-100<br>0-160<br>0-200<br>0-300<br>0-400<br>0-600<br>0-1000<br>0-1500<br>0-2000<br>0-3000<br>0-5000<br>0-6000 | 2-1/2" | 1/4" CBM<br>& U-clamp |
| GG30<br>GG60<br>GG100<br>GG160<br>GG200<br>GG300<br>GG400<br>GG600<br>GG1000<br>GG1500<br>GG2000<br>GG3000<br>GG4000<br>GG5000<br>GG6000 | 0-30<br>0-60<br>0-100<br>0-160<br>0-200<br>0-300<br>0-400<br>0-600<br>0-1000<br>0-1500<br>0-2000<br>0-3000<br>0-4000<br>0-5000<br>0-6000 | 2-1/2" | 1/4" LM |
| GG10000<br>GG15000 | 0-10000<br>0-15000 | 2-1/2" | 1/4" LM |
| VGG30<br>VGG3030<br>VGG3060<br>VGG30160 | VAC / 30 Hg<br>0-30 psi / 30 Hg<br>0-60 psi / 30 Hg<br>0-160 psi / 30 Hg | 2-1/2" | 1/4" LM |
| GG604<br>GG1004 | 0-60<br>0-100 | 4" | 1/4" LM |

## ASG SERIES DRY 2-1/2" AND 4" GAUGES FOR AMMONIA

2-1/2" and 4" Gauges
Single Scale - PSI only
Enameled steel case

This series is designed especially for use with ammonia.

- Movement: Stainless Steel tube
- Bourdon Tube: 316 Stainless Steel
- Pointer: Black-enameled aluminum
- Dial: White background
- Window: Polycarbonate
- Connection: 1/4" NPT Standard
- Accuracy: ASME/ANSI B40.1 Grade B (3-2-3 %)

### ORDER INFORMATION

| Part Number | PSI Range | Dial Size | Stem Size |
|---|---|---|---|
| ASG60 | 0-60 | 2-1/2" | 1/4" LM |
| ASG160 | 0-160 | 2-1/2" | 1/4" LM |
| ASG400 | 0-400 | 2-1/2" | 1/4" LM |
| ASG604 | 0-60 | 4" | 1/4" LM |
| ASG1604 | 0-160 | 4" | 1/4" LM |
| ASG4004 | 0-400 | 4" | 1/4" LM |

Replacement lens AF available.

## WGGSS SERIES GLYCERIN-FILLED 2-1/2" GAUGES

PSI only

This series is designed for use with air, gas, oil, and water or any medium not corrosive to stainless steel. Liquid-filled gauges are recommended for reducing shock waves caused by pressure or vibration fluctuations.

- Movement: Stainless Steel
- Bourdon Tube: 316 Stainless Steel
- Pointer: Black-enameled aluminum
- Dial: White background
- Window: Polycarbonate
- Liquid Fill: 99.5% pure virgin Glycerin
- Connection: 1/4" NPT Stainless Steel connection
  2-1/2" gauges
- Accuracy: 2-1/2" - ASME/ANSI B40.1 Grade A (2-1-2 %)

### ORDER INFORMATION

| Part Number | PSI Range | Dial Size | Stem Size |
|---|---|---|---|
| WGGSS100C<br>WGGSS400C | 0-100<br>0-400 | 2-1/2" | 1/4" CBM |
| WGGSS60<br>WGGSS100<br>WGGSS160<br>WGGSS400<br>WGGSS600<br>WGGSS1000<br>WGGSS3000<br>WGGSS5000 | 0-60<br>0-100<br>0-160<br>0-400<br>0-600<br>0-1000<br>0-3000<br>0-5000 | 2-1/2" | 1/4" LM |

## ACCESSORIES

1

2

3

### ORDER INFORMATION

| Reference Number | Part Number | Description |
|---|---|---|
| 1 | MF1814B | Reducing Coupler 1/4" FNPT x 1/8" MNPT |
| 2 | B301AB | 1/4" Gauge Dampener |
| 3 | 3470-0205 | Universal Isolator Kit |

# UNIVERSAL FLANGED CLAMPS

- Clamshell designed delivers superior durability and sealing capability through an even clamping pressure around Universal Flange joints
- GTX polymer delivers superior chemical resistance and strength
- Captured bolt and nut design allows for ease of assembly and maintenance, with 10mm socket or nut driver
- Servicable design eliminates areas prone to collecting debris and excessive corrosion

| Size | | Fits Series | Max. Operating Pressure | | Packaging | UF Clamps w/ Stainless Steel Hardware |
|---|---|---|---|---|---|---|
| US Units | Metric Units | | at 70˚F | at 21˚C | | Part Number |
| 1" | 25 mm | 100 | 150 PSI | 10 BAR | 1 Clamp & 1 Gasket | BG-UFC0100E-A-S |
| | | | | | Clamp only | UFC0100-S |
| 1.5" | 38 mm | 200 | 150 PSI | 10 BAR | 1 Clamp & 1 Gasket | BG-UFC0150E-A-S |
| | | | | | Clamp only | UFC0150-S |
| 2" | 51 mm | 220 | 150 PSI | 10 BAR | 1 Clamp & 1 Gasket | BG-UFC0200E-A-S |
| | | | | | Clamp only | UFC0200-S |
| 3" | 76 mm | 300 | 125 PSI | 8.6 BAR | 1 Clamp & 1 Gasket | BG-UFC0300E-A-S |
| | | | | | Clamp only | UFC0300-S |

# UNIVERSAL FLANGED GASKETS

- The gasket wraparound feature provides positive alignment of the adjoining fittings and allows visual inspection to be conducted during assembly
- Provides sealing areas between fitting faces and outside diameter of flanged surfaces which increases the maximum pressure the joint can manage without leaks
- Flow can be increased by as much as 16% as the new universal flanged gasket reduces protrusion into the joint

| Part Number | Size | | Fits Series | Gasket Type |
|---|---|---|---|---|
| | US Units | Metric Units | | |
| UFG0100E-A | 1" | 25 mm | 100 | EPDM |
| UFG0150E-A | 1.5" | 38 mm | 200 | EPDM |
| UFG0200E-A | 2" | 51 mm | 220 | EPDM |
| UFG0300E-A | 3" | 76 mm | 300 | EPDM |

# UNIVERSAL FLANGE FITTINGS AND VALVES

## UNIVERSAL FLANGE SIZE REFERENCE

| Hypro Part Number Series | UF100 | Not Available | UF200 | UF300 |
|---|---|---|---|---|
| UF Series | 100 | 200 | 220 | 300 |
| US Units | 1" | 1.5" | 2" | 3" |
| Metric Units | 25 mm | 38 mm | 51 mm | 76 mm |
| Maximum Operating Pressure @ 70˚ F (21˚ C) | 150 PSI (10 BAR) | N/A | 150 PSI (10 BAR) | 125 PSI (8.5 BAR) |

## UNIVERSAL FLANGE COUPLINGS

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100 | 1" | 100 | Coupling, Flange | 150 PSI | 10 BAR |
| UF200 | 2" | 220 | Coupling, Flange | 150 PSI | 10 BAR |
| UF300 | 3" | 300 | Coupling, Flange | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE ELBOWS

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100L | 1" | 100 | Elbow, Flange | 150 PSI | 10 BAR |
| UF200L | 2" | 220 | Elbow, Flange | 150 PSI | 10 BAR |
| UF300L | 3" | 300 | Elbow, Flange | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE TEES

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100T | 1" | 100 | Tee, Flange | 150 PSI | 10 BAR |
| UF200T | 2" | 220 | Tee, Flange | 150 PSI | 10 BAR |
| UF300T | 3" | 300 | Tee, Flange | 125 PSI | 8.6 BAR |

# UNIVERSAL FLANGE FITTINGS AND VALVES

## UNIVERSAL FLANGE CROSSES

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100X | 1" | 100 | Cross, Flange | 150 PSI | 10 BAR |
| UF200X | 2" | 220 | Cross, Flange | 150 PSI | 10 BAR |
| UF300X | 3" | 300 | Cross, Flange | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE REDUCING COUPLINGS

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF200-RC100 | 2" x 1" | 220 x100 | Reducing Coupling Flange x Flange | 150 PSI | 10 BAR |
| UF300-RC200 | 3" x 2" | 300 x220 | Reducing Coupling Flange x Flange | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE X HOSE BARBS

| Part Number | Size (UF X HB) | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100-HB075 | 1" x 3/4" | 100 | Flange x HB | 150 PSI | 10 BAR |
| UF100-HB100 | 1" x 1" | 100 | Flange x HB | 150 PSI | 10 BAR |
| UF100-HB125 | 1" x 1-1/4" | 100 | Flange x HB | 150 PSI | 10 BAR |
| UF200-HB150 | 2" x 1-1/2" | 220 | Flange x HB | 150 PSI | 10 BAR |
| UF200-HB200 | 2" x 2" | 220 | Flange x HB | 150 PSI | 10 BAR |
| UF300-HB200 | 3" x 2" | 300 | Flange x HB | 125 PSI | 8.6 BAR |
| UF300-HB300 | 3" x 3" | 300 | Flange x HB | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE ELBOW X HOSE BARBS

| Part Number | Size (UF X HB) | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100L-HB075 | 1" x 3/4" | 100 | Elbow, Flange x HB | 150 PSI | 10 BAR |
| UF100L-HB100 | 1" x 1" | 100 | Elbow, Flange x HB | 150 PSI | 10 BAR |
| UF100L-HB125 | 1" x 1-1/4" | 100 | Elbow, Flange x HB | 150 PSI | 10 BAR |
| UF150L-HB125 | 1" x 1.25" | 150 | Elbow, Flange x HB | 150 PSI | 10 BAR |
| UF200L-HB150 | 2" x 1-1/2" | 220 | Elbow, Flange x HB | 150 PSI | 10 BAR |
| UF200L-HB200 | 2" x 2" | 220 | Elbow, Flange x HB | 150 PSI | 10 BAR |
| UF300L-HB200 | 3" x 2" | 300 | Elbow, Flange x HB | 125 PSI | 8.6 BAR |
| UF300L-HB300 | 3" x 3" | 300 | Elbow, Flange x HB | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE X HOSE BARB TEE

| Part Number | Size (UF x FNPT) | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100-HBT100 | 1" x 1" | 100 | Flange x HBT | 150 PSI | 10 BAR |

## UNIVERSAL FLANGE X MALE PIPE THREAD

| Part Number | Size (UF X MNPT) | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100-MN075 | 1" x 3/4" | 100 | Flange x MNPT | 150 PSI | 10 BAR |
| UF100-MN100 | 1" x 1" | 100 | Flange x MNPT | 150 PSI | 10 BAR |
| UF100-MN125 | 1" x 1-1/4" | 100 | Flange x MNPT | 150 PSI | 10 BAR |
| UF200-MN200 | 2" x 2" | 220 | Flange x MNPT | 150 PSI | 10 BAR |
| UF300-MN300 | 3" x 3" | 300 | Flange x MNPT | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE X FEMALE PIPE THREAD

| Part Number | Size (UF x FNPT) | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100-FN100 | 1" x 1" | 100 | Flange x FNPT | 150 PSI | 10 BAR |
| UF200-FN200 | 2" x 2" | 220 | Flange x FNPT | 150 PSI | 10 BAR |

## UNIVERSAL FLANGE X MALE CAMLOCK ADAPTER

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF200-MA200 | 2" x 2" | 220 | Flange x Male Coupler Camlock | 150 PSI | 10 BAR |
| UF300-MA300 | 3" x 3" | 300 | Flange x Male Coupler Camlock | 125 PSI | 8.6 BAR |

## UNIVERSAL FLANGE PLUG X FLANGE

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| UF100P | 1" x 1" | 100 | Plug, Flange | 150 PSI | 10 BAR |
| UF200P | 2" x 2" | 220 | Plug, Flange | 150 PSI | 10 BAR |
| UF300P | 3" x 3" | 300 | Plug, Flange | 125 PSI | 8.6 BAR |
| UF100-FN025P | 1" w/ 1/4" FPT | 100 | Plug, Flange w/FPT | 150 PSI | 10 BAR |

## UNIVERSAL FLANGE BOLTED BALL VALVES

| Part Number | Size | Fit Series | Description | Max. Operating Pressure | |
|---|---|---|---|---|---|
| | | | | at 70˚F | at 21˚C |
| 9951-2100UF | 1" | 100 | Bolted Ball Valve with flange connections | 150 PSI | 10 BAR |
| 9951-2200UF | 2" | 220 | Bolted Ball Valve with flange connections | 150 PSI | 10 BAR |
| 9951-2300UF | 3" | 300 | Bolted Ball Valve with flange connections | 125 PSI | 8.6 BAR |

# HOSE BARB WITH FLY NUT & O-RING

## STRAIGHT HOSE BARB WITH FLY NUT AND O-RING

| Part Number | O-Ring Groove x Hose Barb | |
|---|---|---|
| | US Units | Metric Units |
| FNAS-1212 | 1/2 inch x 1/2 inch | 13 mm x 13 mm |
| FNAS-3412 | 3/4 inch x 1/2 inch | 19 mm x 13 mm |
| FNAS-3458 | 3/4 inch x 5/8 inch | 19 mm x 16 mm |
| FNAS-3434 | 3/4 inch x 3/4 inch | 19 mm x 19 mm |
| FNAS-10012 | 1 inch x 1/2 inch | 25 mm x 13 mm |
| FNAS-10034 | 1 inch x 3/4 inch | 25 mm x 19 mm |
| FNAS-100100 | 1 inch x 1 inch | 25 mm x 25 mm |
| FNAS-114100 | 1-1/4 inch x 1 inch | 32 mm x 25 mm |
| FNAS-114114 | 1-1/4 inch x 1-1/4 inch | 32 mm x 32 mm |
| FNAS-112100 | 1-1/2 inch x 1 inch | 38 mm x 25 mm |
| FNAS-112114 | 1-1/2 inch x 1- 1/4 inch | 38 mm x 32 mm |
| FNAS-112112 | 1-1/2 inch x 1-1/2 inch | 38 mm x 38 mm |
| FNAS-200200 | 2 inch x 2 inch | 50 mm x 50 mm |

## ELBOW HOSE BARB WITH FLY NUT AND O-RING

| Part Number | O-Ring Groove x Hose Barb | |
|---|---|---|
| | US Units | Metric Units |
| FNAE-3412 | 3/4 inch x 1/2 inch | 19 mm x 13 mm |
| FNAE-3458 | 3/4 inch x 5/8 inch | 19 mm x 16 mm |
| FNAE-3434 | 3/4 inch x 3/4 inch | 19 mm x 19 mm |
| FNAE-10034 | 1 inch x 3/4 inch | 25 mm x 19 mm |
| FNAE-100100 | 1 inch x 1 inch | 25 mm x 25 mm |
| FNAE-114100 | 1-1/4 inch x 1 inch | 32 mm x 25 mm |
| FNAE-114114 | 1-1/4 inch x 1-1/4 inch | 32 mm x 32 mm |
| FNAE-112100 | 1-1/2 inch x 1 inch | 38 mm x 25 mm |
| FNAE-112114 | 1-1/2 inch x 1-1/4 inch | 38 mm x 32 mm |
| FNAE-112112 | 1-1/2 inch x 1-1/2 inch | 38 mm x 38 mm |
| FNAE-200200 | 2 inch x 2 inch | 50 mm x 50 mm |

All assemblies include same size fly nut and o-ring.

## BLANKING CAPS

| Part Number | CAP-BPS Threads |
|---|---|
| 2102030 | 3/4" |
| FNCAP-100 | 1" |

# FITTINGS - CAM LOCKS

## Stainless Steel and Polypropylene Cam Lock Couplings

A

## A. MALE ADAPTER / FEMALE THREAD

| Stainless Steel | Coupling Size | Thread Size | NPT Poly | BSP Poly | BSP Poly |
|---|---|---|---|---|---|
| A-750SS | 3/4 inch | 3/4 inch | 9950-075NA | 9950-075BA | 02075A34 |
| A-100SS | 1 inch | 1 inch | 9950-100NA | 9950-100BA | 02100A10 |
| - | 1-1/4 inch | 1-1/4 inch | 9950-125NA | 9950-125BA | 02125A54 |
| A-150SS | 1-1/2 inch | 1-1/2 inch | 9950-150NA | 9950-150BA | 02150A64 |
| A-200SS | 2 inch | 2 inch | 9950-200NA | 9950-200BA | 02200A20 |
| A-300SS | 3 inch | 3 inch | 9950-300NA | 9950-300BA | 02300A30 |

Available for order through HYPRO-EU only (Cambridge, UK)

A

B

## B. FEMALE COUPLER / MALE THREAD

| Stainless Steel | Coupling Size | Thread Size | NPT Poly | BSP Poly | BSP Poly |
|---|---|---|---|---|---|
| B-750SS | 3/4 inch | 3/4 inch | 9950-075NB | 9950-075BB | 02075B34 |
| B-100SS | 1 inch | 1 inch | 9950-100NB | 9950-100BB | 02100B10 |
| - | 1-1/4 inch | 1-1/4 inch | 9950-125NB | 9950-125BB | 02125B54 |
| B-150SS | 1-1/2 inch | 1-1/2 inch | 9950-150NB | 9950-150BB | 02150B64 |
| B-200SS | 2 inch | 2 inch | 9950-200NB | 9950-200BB | 02200B20 |
| B-300SS | 3 inch | 3 inch | 9950-300NB | 9950-300BB | 02300B30 |

Available for order through HYPRO-EU only (Cambridge, UK)

B

C

## C. FEMALE COUPLER / HOSE FITTING

| Stainless Steel | Coupling Size | Barb Size | Poly | Poly |
|---|---|---|---|---|
| C-750SS | 3/4 inch | 3/4 inch | 9950-075C | 02075C34 |
| C-100SS | 1 inch | 1 inch | 9950-100C | 02100C10 |
| - | 1-1/4 inch | 1-1/4 inch | 9950-125C | 02125C54 |
| C-150SS | 1-1/2 inch | 1-1/2 inch | 9950-150C | 02150C64 |
| C-200SS | 2 inch | 2 inch | 9950-200C | 02200C20 |
| C-300SS | 3 inch | 3 inch | 9950-300C | 02300C30 |

Available for order through HYPRO-EU only (Cambridge, UK)

C

# FITTINGS - CAM LOCKS

## Stainless Steel and Polypropylene Cam Lock Couplings

### D. FEMALE COUPLER / FEMALE THREAD

D

| Stainless Steel | Coupling Size | Thread Size | Poly | BSP Poly | BSP Poly |
|---|---|---|---|---|---|
| - | 3/4 inch | 1/2 inch | 18103D2N | ------- | 02050D12 |
| D-750SS | 3/4 inch | 3/4 inch | 9950-075ND | 9950-075BD | 02075D34 |
| D-100SS | 1 inch | 1 inch | 9950-100ND | 9950-100BD | 02100D10 |
| - | 1-1/4 inch | 1-1/4 inch | 9950-125ND | 9950-125BD | 02125D54 |
| D-150SS | 1-1/2 inch | 1-1/2 inch | 9950-150ND | 9950-150BD | 02150D64 |
| D-200SS | 2 inch | 2 inch | 9950-200ND | 9950-200BD | 02200D20 |
| D-300SS | 3 inch | 3 inch | 9950-300ND | 9950-300BD | 02300D30 |

Available for order through HYPRO-EU only (Cambridge, UK)

D

### E. MALE ADAPTER / HOSE FITTING

E

| Stainless Steel | Coupling Size | Hose Size | Poly | Poly |
|---|---|---|---|---|
| - | 3/4 inch | 1/2 inch | 18103E2 | 02050E12 |
| E-750SS | 3/4 inch | 3/4 inch | 9950-075E | 02075E34 |
| E-100SS | 1 inch | 1 inch | 9950-100E | 02100E10 |
| - | 1-1/4 inch | 1-1/4 inch | 9950-125E | 02125E54 |
| E-150SS | 1-1/2 inch | 1-1/2 inch | 9950-150E | 02150E64 |
| E-200SS | 2 inch | 2 inch | 9950-200E | 02200E20 |
| E-300SS | 3 inch | 3 inch | 9950-300E | 02300E30 |

Available for order through HYPRO-EU only (Cambridge, UK)

E

### F. MALE ADAPTER / MALE THREAD

F

| Stainless Steel | Coupling Size | Thread Size | Poly | BSP Poly | BSP Poly |
|---|---|---|---|---|---|
| - | 3/4 inch | 1/2 inch | 18103F2N | ------- | 02050F12 |
| F-750SS | 3/4 inch | 3/4 inch | 9950-075NF | 9950-075BF | 02075F34 |
| F-100SS | 1 inch | 1 inch | 9950-100NF | 9950-100BF | 02100F10 |
| - | 1-1/4 inch | 1-1/4 inch | 9950-125NF | 9950-125BF | 02125F54 |
| F-150SS | 1-1/2 inch | 1-1/2 inch | 9950-150NF | 9950-150BF | 02150F64 |
| F-200SS | 2 inch | 2 inch | 9950-200NF | 9950-200BF | 02200F20 |
| F-300SS | 3 inch | 3 inch | 9950-300NF | 9950-300BF | 02300F30 |

Available for order through HYPRO-EU only (Cambridge, UK)

F

### G. PLUG

G

| Stainless Steel | Coupling Size | Poly | Poly |
|---|---|---|---|
| DP-750SS | 3/4 inch | 9950-075G | 02075G34 |
| DP-100SS | 1 inch | 9950-100G | 02100G10 |
| - | 1-1/4 inch | 9950-125G | - |
| DP-150SS | 1-1/2 inch | 9950-150G | 02150G64 |
| DP-200SS | 2 inch | 9950-200G | 02200G20 |
| DP-300SS | 3 inch | 9950-300G | 02300G30 |

Available for order through HYPRO-EU only (Cambridge, UK)

G

### H. CAP

H

| Stainless Steel | Coupling Size | Poly | Poly |
|---|---|---|---|
| DC-750SS | 3/4 inch | 9950-075H | 02075P34 |
| DC-100SS | 1 inch | 9950-100H | 02100P10 |
| - | 1-1/4 inch | 9950-125H | - |
| DC-150SS | 1-1/2 inch | 9950-150H | 02150P64 |
| DC-200SS | 2 inch | 9950-200H | 02200P20 |
| DC-300SS | 3 inch | 9950-300H | 02300P30 |

Available for order through HYPRO-EU only (Cambridge, UK)

H

### CAM LOCK REPLACEMENT GASKET

| Size | EPDM Part Number | EPDM Part Number | Viton Part Number |
|---|---|---|---|
| 3/4 inch | 18103B-050 | 02—050G | 18123B-050 |
| 1 inch | 18104B-050 | 02—100G | 18124B-050 |
| 1-1/4 inch | 18105B-050 | - | 18125B-050 |
| 1-1/2 inch | 18106B-050 | 02—150G | 18126B-050 |
| 2 inch | 18107B-050 | 02—200G | 18127B-050 |
| 3 inch | 18109B-050 | 02—300G | 18129B-050 |

Available for order through HYPRO-EU only (Cambridge, UK)

# NYLON® AND POLYPROPYLENE FITTINGS

Supplemental Technical Information on Nylon and Polypropylene Fittings

## NYLON FITTINGS

### WORKING PRESSURE:

up to 150 psi (10 bar) at ambient temperatures.

At very low pressures, temperatures can approach 175˚F (80˚ C) with no degradation in the performance of the nylon fitting.

### RECOMMENDED:

- For physical or structural strength
- For broad temperature range
- With PTFE tape

### NOT RECOMMENDED:

- Acid-based fertilizers/defoliants
- Prolonged sunlight/UV exposure

## POLYPROPYLENE FITTINGS

### WORKING PRESSURE:

up to 150 psi (10 bar) at ambient temperatures

As with all thermoplastics, an increase in working temperature is accompanied by a decrease in acceptable operating pressure. At 140˚F (60˚C), the working pressure limit is 90 psi (6 bar).

### RECOMMENDED:

- Hand tight, plus 1 turn
- For normal ag growing season conditions
- For acid resistance
- For Sunlight/UV resistance
- For cosmetic appearance

### NOT RECOMMENDED:

- Impact wrench, other over tightening
- For temperature extremes
- With PTFE tape
- For toluene or xylene-based compounds

### CHEMICAL RESISTANCE

| Chemical | Nylon | Polypropylene |
|---|---|---|
| Most Agricultural Chemicals | | |
| Acidic Fertilizers | | |
| Ammonium Compounds | | |
| Aromatic Hydrocarbons | | |
| Bromine | | |
| Calcium Carbonate | | |
| Carbon Tetrachloride | | |
| Chlorine | | |
| Detergents | | |
| Diesel Fuel | | |
| Ethanol | | |
| Fluorine | | |
| Gasoline | | |
| Hexane | | |
| Hydrochloric Acid | | |
| Iodine | | |
| Kerosene | | |

| Chemical | Nylon | Polypropylene |
|---|---|---|
| Magnesium Sulfate | | |
| Nitric Acid | | |
| Oxalic Acid | | |
| Phosphoric Acid | | |
| Propionic Acid | | |
| Most Sodium Compounds | | |
| Sodium Hypochlorite | | |
| Sulfuric Acid | | |
| Toluene | | |
| Trichloroethylene | | |
| Xylene | | |
| Zinc Sulfate | | |

| Key | |
|---|---|
| Chemical Resistance: | |
| Consult Factory: | |
| Not Recomended: | |

Nylon® is a registered trademark of Dupont Co. Hypro® is a registered trademark of Pentair.

## MALE MNPT PIPE THREAD BY HOSE BARB

| Std Pack | MPT X HB | Nylon | Poly |
|---|---|---|---|
| 25 | 1/8 inch X 3/16 inch (4,7 mm) | A18316 | 3A18316 |
| 25 | 1/8 inch X 1/4 inch (6,4 mm) | A1814 | 3A1814 |
| 25 | 1/8 inch X 5/16 inch (8 mm) | A18516 | – |
| 25 | 1/8 inch X 3/8 inch (10 mm) | A1838 | 3A1838 |
| 25 | 1/4 inch X 3/16 inch (4,7 mm) | A14316 | – |
| 25 | 1/4 inch X 1/4 inch (6,4 mm) | A14 | 3A14 |
| 25 | 1/4 inch X 5/16 inch (8 mm) | A14516 | – |
| 25 | 1/4 inch X 3/8 inch (8 mm) | A1438 | 3A1438 |
| 25 | 1/4 inch X 1/2 inch (13 mm) | A1412 | 3A1412 |
| 25 | 3/8 inch X 1/4 inch (6,4 mm) | A3814 | 3A3814 |
| 25 | 3/8 inch X 5/16 inch (8 mm) | A38516 | 3A38516 |
| 25 | 3/8 inch X 3/8 inch (10 mm) | A38 | 3A38 |
| 25 | 3/8 inch X 1/2 inch (13 mm) | A3812 | 3A3812 |
| 25 | 3/8 inch X 5/8 inch (16 mm) | A3858 | 3A3858 |
| 25 | 1/2 inch X 3/16 inch (4,7 mm) | A12316 | – |
| 25 | 1/2 inch X 1/4 inch (6,4 mm) | A1214 | 3A1214 |
| 25 | 1/2 inch X 3/8 inch (10 mm) | A1238 | 3A1238 |
| 25 | 1/2 inch X 1/2 inch (13 mm) | A12 | 3A12 |
| 25 | 1/2 inch X 5/8 inch (16 mm) | A1258 | 3A1258 |
| 25 | 1/2 inch X 3/4 inch (19 mm) | A1234 | 3A1234 |
| 25 | 1/2 inch X 1 inch (25 mm) | A12100 | – |
| 25 | 3/4 inch X 1/4 inch (6,4 mm) | A3414 | 3A3414 |
| 25 | 3/4 inch X 3/8 inch (10 mm) | A3438 | 3A3438 |
| 25 | 3/4 inch X 1/2 inch (13 mm) | A3412 | 3A3412 |
| 25 | 3/4 inch X 5/8 inch (16 mm) | A3458 | 3A3458 |
| 25 | 3/4 inch X 3/4 inch (19 mm) | A34 | 3A34 |
| 25 | 3/4 inch X 1 inch (25 mm) | A34100 | 3A34100 |
| 25 | 1 inch X 3/4 inch (19 mm) | A10034 | 3A10034 |
| 25 | 1 inch X 1 inch (25 mm) | A100 | 3A100 |
| 25 | 1 inch X 11/4 inch (32 mm) | A100114 | 3A100114 |
| 1 | 1-1/4 inch X 3/4 inch (19 mm) | A11434 | 3A11434 |
| 1 | 1-1/4 inch X 1 inch (25 mm) | A114100 | 3A114100 |
| 1 | 1-1/4 inch X 1-1/4 inch (32 mm) | A114 | 3A114 |
| 1 | 1-1/4 inch X 1-1/2 inch (38 mm) | A114112 | 3A114112 |
| 1 | 1-1/2 inch X 1-1/4 inch (32 mm) | A112114 | 3A112114 |
| 1 | 1-1/2 inch X 1-1/2 inch (38 mm) | A112 | 3A112 |
| 1 | 2 inch X 2 inch (50 mm) | A200 | 3A200 |
| 1 | 3 inch X 3 inch (76mm) | — | 3A300 |

Add Prefix "BG" for 1 part per retail bag.

## FEMALE PIPE THREAD BY HOSE BARB

| Std Pack | FPT X HB | Nylon | Poly |
|---|---|---|---|
| 25 | 1/4 inch X 1/4 inch (6,4 mm) | AF14 | 3AF14 |
| 25 | 1/4 inch X 3/8 inch (10 mm) | AF1438 | 3AF1438 |
| 25 | 3/8 inch X 1/4 inch (6,4 mm) | AF3814 | 3AF3814 |
| 25 | 3/8 inch X 3/8 inch (10 mm) | AF38 | 3AF38 |
| 25 | 3/8 inch X 1/2 inch (13 mm) | AF3812 | 3AF3812 |
| 25 | 1/2 inch X 1/4 inch (6,4 mm) | AF1214 | 3AF1214 |
| 25 | 1/2 inch X 3/8 inch (10 mm) | AF1238 | 3AF1238 |
| 25 | 1/2 inch X 1/2 inch (13 mm) | AF12 | 3AF12 |
| 25 | 1/2 inch X 5/8 inch (16 mm) | AF1258 | 3AF1258 |
| 25 | 1/2 inch X 3/4 inch (19 mm) | AF1234 | 3AF1234 |
| 25 | 3/4 inch X 3/8 inch (10 mm) | AF3438 | 3AF3438 |
| 25 | 3/4 inch X 1/2 inch (13 mm) | AF3412 | 3AF3412 |
| 25 | 3/4 inch X 5/8 inch (16 mm) | – | 3AF3458 |
| 25 | 3/4 inch X 3/4 inch (19 mm) | AF34 | 3AF34 |

## ELBOWS: MALE PIPE THREAD BY HOSE BARB

| Std Pack | MPT X HB | Nylon | Poly |
|---|---|---|---|
| 25 | 1/8 inch X 3/16 inch (4,7 mm) | EL18316 | – |
| 25 | 1/8 inch X 1/4 inch (6,4 mm) | EL1814 | 3EL1814 |
| 25 | 1/8 inch X 5/16 inch (8 mm) | EL18516 | – |
| 25 | 1/8 inch X 3/8 inch (10 mm) | EL1838 | 3EL1838 |
| 25 | 1/4 inch X 3/16 inch (4,7 mm) | – | 3EL14316 |
| 25 | 1/4 inch X 1/4 inch (6,4 mm) | EL14 | 3EL14 |
| 25 | 1/4 inch X 5/16 inch (8 mm) | EL14516 | – |
| 25 | 1/4 inch X 3/8 inch (10 mm) | EL1438 | 3EL1438 |
| 25 | 1/4 inch X 1/2 inch (13 mm) | EL1412 | 3EL1412 |
| 25 | 1/4 inch X 5/8 inch (8 mm) | EL1458 | – |
| 25 | 3/8 inch X 1/4 inch (6,4 mm) | EL3814 | 3EL3814 |
| 25 | 3/8 inch X 5/16 inch (8 mm) | EL38516 | – |
| 25 | 3/8 inch X 3/8 inch (10 mm) | EL38 | 3EL38 |
| 25 | 3/8 inch X 1/2 inch (13 mm) | EL3812 | 3EL3812 |
| 25 | 3/8 inch X 5/8 inch (16 mm) | EL3858 | 3EL3858 |
| 25 | 1/2 inch X 1/4 inch (6,4 mm) | EL1214 | 3EL1214 |
| 25 | 1/2 inch X 3/8 inch (10 mm) | EL1238 | 3EL1238 |
| 25 | 1/2 inch X 1/2 inch)(13 mm) | EL12 | 3EL12 |
| 25 | 1/2 inch X 5/8 inch (16 mm) | EL1258 | 3EL1258 |
| 25 | 1/2 inch X 3/4 inch (19 mm) | EL1234 | 3EL1234 |
| 25 | 1/2 inch X 1 inch (25 mm) | EL12100 | – |
| 25 | 3/4 inch X 1/4 inch (6,4 mm) | EL3414 | 3EL3414 |
| 25 | 3/4 inch X 3/8 inch (10 mm) | EL3438 | 3EL3438 |
| 25 | 3/4 inch X 1/2 inch (13 mm) | EL3412 | 3EL3412 |
| 25 | 3/4 inch X 5/8 inch (16 mm) | EL3458 | 3EL3458 |
| 25 | 3/4 inch X 3/4 inch (19 mm) | EL34 | 3EL34 |
| 25 | 3/4 inch X 1 inch (25 mm) | EL34100 | 3EL34100 |
| 25 | 1 inch X 1/2 inch (13 mm) | EL10012 | 3EL10012 |
| 25 | 1 inch X 3/4 inch (19 mm) | EL10034 | 3EL10034 |
| 25 | 1 inch X 1 inch (25 mm) | EL100 | 3EL100 |
| 1 | 1 inch X 1 1/4 inch (32 mm) | — | 3EL100114 |
| 1 | 1-1/4 inch X 3/4 inch (19 mm) | EL11434 | 3EL11434 |
| 1 | 1-1/4 inch X 1 inch (25 mm) | EL114100 | 3EL114100 |
| 1 | 1-1/4 inch X 1 1/4 inch (32 mm) | EL114 | 3EL114 |
| 1 | 1-1/4 inch X 1 1/2 inch (38 mm) | EL114112 | 3EL114112 |
| 1 | 1-1/2 inch X 1 1/2 inch (38 mm) | EL112 | 3EL112 |
| 1 | 2 inch X 2 inch (50 mm) | EL200 | 3EL200 |
| 1 | 3 inch X 3 inch (76mm) | — | 3EL300 |

Add Prefix "BG" for 1 part per retail bag.

## ELBOWS: FEMALE PIPE THREAD BY HOSE BARB

| Std Pack | FPT X HB | Nylon | Poly |
|---|---|---|---|
| 25 | 1/4 inch X 3/16 inch (4,7 mm) | - | 3EL14316F |
| 25 | 1/4 inch X 1/4 inch (6,4 mm) | EL14F | 3EL14F |
| 25 | 1/4 inch X 3/8 inch (10 mm) | EL1438F | 3EL1438F |
| 25 | 3/8 inch X 1/4 inch (6,4 mm) | EL3814F | 3EL3814F |
| 25 | 3/8 inch X 3/8 inch (10 mm) | EL38F | 3EL38F |
| 25 | 3/8 inch X 1/2 inch (13 mm) | EL3812F | 3EL3812F |
| 25 | 1/2"inch X 1/2 inch (13mm) | — | 3EL12F |
| 25 | 1/2 inch X 5/8 inch (16 mm) | EL1258F | 3EL1258F |
| 25 | 1/2 inch X 3/4 inch (19 mm) | EL1234F | 3EL1234F |
| 25 | 3/4 inch X 1/2 inch (13 mm) | EL3412F | 3EL3412F |
| 25 | 3/4 inch X 5/8 inch (16 mm) | EL3458F | 3EL3458F |
| 25 | 3/4 inch X 3/4 inch (19 mm) | EL34F | 3EL34F |

## STREET ELBOWS: FEMALE PIPE THREAD BY MALE PIPE THREAD

| Std Pack | FPT X MPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/4 inch X 1/4 inch | SE14 | 3SE14 |
| 25 | 3/8 inch X 3/8 inch | SE38 | 3SE38 |
| 25 | 1/2 inch X 1/2 inch | SE12 | 3SE12 |
| 25 | 3/4 inch X 3/4 inch | SE34 | 3SE34 |
| 10 | 1 inch X 1 inch | SE100 | 3SE100 |
| 1 | 1-1/4 inch X 11/4 inch | SE114 | 3SE114 |
| 1 | 1-1/2 inch X 11/2 inch | SE112 | 3SE112 |
| 1 | 2 inch X 2 inch | SE200 | 3SE200 |

Add Prefix "BG" for 1 part per retail bag.
Add Prefix "5BG" for 5 parts per retail bag.

## STREET ELBOWS – 45°

| Std Pack | MPT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4 inch X 3/4 inch | SE3445 | 3SE3445 |
| 10 | 1/4 inch X 1/4 inch | SE1445 | – |

## ELBOWS: FEMALE PIPE THREAD – 90°

| Std Pack | FPT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/2 inch X 1/2 inch | LL12 | 3LL12 |
| 10 | 3/4 inch X 3/4 inch | LL34 | 3LL34 |
| 1 | 1 inch X 1 inch | LL100 | 3LL100 |
| 1 | 1-1/4 inch X 11/4 inch | LL114 | 3LL114 |
| 1 | 1-1/2 inch X 11/2 inch | LL112 | 3LL112 |
| 1 | 2 inch X 2 inch | LL200 | 3LL200 |

## TEES: FEMALE PIPE THREAD

| Std Pack | FPT X FPT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/4 inch | TT14 | 3TT14 |
| 10 | 1/2 inch | TT12 | 3TT12 |
| 10 | 3/4 inch | TT34 | 3TT34 |
| 1 | 1 inch | TT100 | 3TT100 |
| 1 | 1-1/4 inch | TT114 | 3TT114 |
| 1 | 1-1/2 inch | TT112 | 3TT112 |
| 1 | 2 inch | TT200 | 3TT200 |

## TEES: FEMALE PIPE THREAD WITH 1/4 INCH GAUGE PORT

| Std Pack | FPT X FPT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/2 inch | GTT1214 | 3GTT1214 |
| 1 | 3/4 inch | GTT3414 | 3GTT3414 |

Add Prefix "BG" for 1 part per retail bag.

## REDUCER BUSHINGS

| Std Pack | MPT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/4 inch X 1/8 inch | – | 3RB1418 |
| 25 | 3/8 inch X 1/8 inch | RB3818 | 3RB3818 |
| 25 | 3/8 inch X 1/4 inch | RB3814 | 3RB3814 |
| 25 | 1/2 inch X 1/8 inch | RB1218 | 3RB1218 |
| 25 | 1/2 inch X 1/4 inch | RB1214 | 3RB1214 |
| 25 | 1/2 inch X 3/8 inch | RB1238 | 3RB1238 |
| 25 | 3/4 inch X 1/8 inch | RB3418 | 3RB3418 |
| 25 | 3/4 inch X 1/4 inch | RB3414 | 3RB3414 |
| 25 | 3/4 inch X 3/8 inch | RB3438 | 3RB3438 |
| 25 | 3/4 inch X 1/2 inch | RB3412 | 3RB3412 |
| 25 | 1 inch X 1/2 inch | RB10012 | 3RB10012 |
| 25 | 1 inch X 3/4 inch | RB10034 | 3RB10034 |
| 1 | 1-1/4 inch X 3/4 inch | RB11434 | 3RB11434 |
| 1 | 1-1/4 inch X 1 inch | RB114100 | 3RB114100 |
| 1 | 1-1/2 inch X 3/4 inch | RB11234 | 3RB11234 |
| 1 | 1-1/2 inch X 1 inch | RB112100 | 3RB112100 |
| 1 | 1-1/2 inch X 1-1/4 inch | RB112114 | 3RB112114 |
| 1 | 2 inch X 3/4 inch | RB20034 | 3RB20034 |
| 1 | 2 inch X 1 inch | RB200100 | 3RB200100 |
| 1 | 2 inch X 1-1/4 inch | RB200114 | 3RB200114 |
| 1 | 2 inch X 1-1/2 inch | RB200112 | 3RB200114 |
| 1 | 3 inch X 2 inch | RB300200 | 3RB300200 |

Add Prefix "BG" for 1 part per retail bag.
Add Prefix "5BG" for 5 parts per retail bag.

## NIPPLES: MALE PIPE THREAD BY MALE PIPE THREAD

| Std Pack | MPT X MPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/8" X 1/8" | M18 | 3M18 |
| 25 | 1/4" X 1/4" | M14 | 3M14 |
| 25 | 3/8" X 3/8" | M38 | 3M38 |
| 25 | 1/2" X 1/2" | M12 | 3M12 |
| 25 | 3/4" X 3/4" | M34 | 3M34 |
| 25 | 1" X 1" | M100 | 3M100 |
| 1 | 1-1/4" X 1-1/4" | M114 | 3M114 |
| 1 | 1-1/2" X 1-1/2" | M112 | 3M112 |
| 1 | 2" X 2" | M200 | 3M200 |
| 25 | 1/4" X 1/8" | M1418 | 3M1418 |
| 25 | 3/8" X 1/8" | M3818 | 3M3818 |
| 25 | 3/8" X 1/4" | M3814 | 3M3814 |
| 25 | 1/2" X 1/8" | M1218 | – |
| 25 | 1/2" X 1/4" | M1214 | 3M1214 |
| 25 | 1/2" X 3/8" | M1238 | 3M1238 |
| 25 | 3/4" X 3/8" | M3438 | 3M3438 |
| 25 | 3/4" X 1/2" | M3412 | 3M3412 |
| 1 | 1" X 3/4" | – | 3M10034 |

## FEMALE COUPLER

| Std Pack | FPT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/2" X 1/2" | FC12 | 3FC12 |
| 25 | 3/4" X 3/4" | FC34 | 3FC34 |
| 25 | 1" X 1" | FC100 | 3FC100 |
| 1 | 1-1/4" X 1-1/4" | FC114 | 3FC114 |
| 1 | 1-1/2" X 1-1/2" | FC112 | 3FC112 |
| 1 | 2" X 2" | FC200 | 3FC200 |

## HEX PLUG WITH MALE PIPE THREAD

| Std Pack | MPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/8" | F18 | 3F18 |
| 25 | 1/4" | F14 | 3F14 |
| 25 | 3/8" | F38 | 3F38 |
| 25 | 1/2" | F12 | 3F12 |
| 25 | 3/4" | F34 | 3F34 |
| 25 | 1" | F100 | 3F100 |
| 1 | 1-1/4" | F114 | 3F114 |
| 1 | 1-1/2" | F112 | 3F112 |
| 1 | 2" | F200 | 3F200 |

## ELBOW: HOSE BARB FITTINGS

| Std Pack | HB X HB | | Nylon | Poly |
|---|---|---|---|---|
| | US Units | Metric Units | | |
| 25 | 1/4"X 1/4" | 6,4 x 6,4 mm | EL14HB | 3EL14HB |
| 25 | 3/8"X 1/4" | 10 x 6,4 mm | EL3814HB | 3EL3814HB |
| 25 | 3/8"X 3/8" | 10 x 10 mm | EL38HB | 3EL38HB |
| 25 | 1/2"X 1/4" | 13 x 6,4 mm | EL1214HB | 3EL1214HB |
| 25 | 1/2" X 3/8" | 13 x 10 mm | EL1238HB | 3EL1238HB |
| 25 | 1/2"X 1/2" | 13 x 13 mm | EL12HB | 3EL12HB |
| 25 | 5/8"X 5/8" | 16 x 16 mm | EL58HB | 3EL58HB |
| 25 | 3/4"X 5/8" | 19 x 16 mm | EL3458HB | 3EL3458HB |
| 25 | 3/4"X 3/4" | 19 x 19 mm | EL34HB | 3EL34HB |
| 25 | 1" X 1" | 25 x 25 mm | EL100HB | – |
| 1 | 1-1/4" X 1-1/4" | 32 x 32 mm | EL114HB | 3EL114HB |
| 1 | 1-1/2" X 1-1/2" | 38 x 38 mm | EL112HB | 3EL112HB |
| 1 | 2" X 2" | 50 x 50 mm | EL200HB | 3EL200HB |

## HOSE MENDER

| Std Pack | HB X HB | | Nylon | Poly |
|---|---|---|---|---|
| | US Units | Metric Units | | |
| 25 | 1/8" x 1/8" | 3,2 x 3,2 mm | HM18* | – |
| 25 | 1/4" x 3/16" | 6,4 x 4,7 mm | HM14316* | – |
| 25 | 1/4" x 1/4" | 6,4 x 6,4 mm | SHM14 | 3SHM14 |
| 25 | 1/4" x 1/4" | 6,4 x 6,4 mm | HM14* | 3HM14* |
| 25 | 5/16" x 5/16" | 8 x 8 mm | HM516* | 3HM516* |
| 25 | 3/8" x 1/4" | 10 x 6,4 mm | HM3814* | 3HM3814* |
| 25 | 3/8" x 3/8" | 10 x 10 mm | SHM38 | 3SHM38 |
| 25 | 1/2" x 1/4" | 13 x 6,4 mm | HM1214* | 3HM1214* |
| 25 | 1/2" x 3/8" | 13 x 10 mm | SHM1238 | 3SHM1238 |
| 25 | 1/2" x 3/8" | 13 x 10 mm | HM1238* | 3HM1238* |
| 25 | 1/2" x 1/2" | 13 x 13 mm | SHM12 | 3SHM12 |
| 25 | 1/2" x 5/8" | 13 x 16 mm | SHM1258 | 3SHM1258 |
| 25 | 5/8" x 3/8" | 16 x 10 mm | HM5838* | 3HM5838* |
| 25 | 5/8" x 5/8" | 16 x 16 mm | SHM58 | 3SHM58 |
| 25 | 5/8" x 5/8" | 16 x 16 mm | HM58* | – |
| 25 | 3/4" x 3/4" | 19 x 19 mm | SHM34 | 3SHM34 |
| 25 | 1"x 1" | 25 x 25 mm | SHM100 | 3SHM100 |
| 1 | 1-1/4" x 1-1/4" | 32 x 32 mm | SHM114 | 3SHM114 |
| 1 | 1-1/2" x 1-1/2" | 38 x 38 mm | SHM112 | 3SHM112 |
| 1 | 2" x 2" | 50 x 50 mm | SHM200 | 3SHM200 |

*No centre stop as pictured,

## TEES: HOSE BARBS

| Std Pack | HB X HB (1 X 2,3) | | Nylon | Poly |
|---|---|---|---|---|
| | US Units | Metric Units | | |
| 25 | 1/8" X 1/8" | 3,2 x 3,2 mm | T18 | – |
| 25 | 1/4" X 1/4" | 6,4 x 6,4 mm | T14 | 3T14 |
| 25 | 1/4" X 3/8" | 6,4 x 10 mm | T1438 | 3T1438 |
| 25 | 3/8" X 3/8" | 10 x 10 mm | T38 | 3T38 |
| 25 | 3/8" X 1/2" | 10 x 13 mm | T3812 | 3T3812 |
| 25 | 3/8" X 5/8" | 10 x 16 mm | T3858 | – |
| 25 | 1/2" X 3/8" | 13 x 10 mm | T1238 | 3T1238 |
| 25 | 1/2" X 1/2" | 13 x 13 mm | T12 | 3T12 |
| 25 | 5/8" X 5/8" | 16 x 16 mm | T58 | 3T58 |
| 25 | 3/4" X 1/2" | 19 x 13 mm | T3412 | 3T3412 |
| 25 | 3/4" X 3/4" | 19 x 19 mm | T34 | 3T34 |
| 25 | 1" X 1" | 25 x 25 mm | T100 | 3T100 |
| 1 | 1-1/4" X 1-1/4" | 32 x 32 mm | T114 | 3T114 |
| 1 | 1-1/2" X 1-1/2" | 38 x 38 mm | T112 | 3T112 |
| 1 | 2 " X 2" | 50 x 50 mm | T200 | 3T200 |

## TEES: MALE PIPE THREAD BY HOSE BARBS

| Std Pack | MPT X HB (1 X 2,3) | Nylon | Poly |
|---|---|---|---|
| 25 | 1/8 " X 1/4 " (6.4 mm) | T1814T | – |
| 25 | 1/4 " X 1/4 " (6.4 mm) | T14T | 3T14T |
| 25 | 1/4" X 3/8" (16 mm) | T1438T | 3T1438T |
| 25 | 1/4" X 1/2" (13 mm) | T1412T | – |
| 25 | 3/8" X 1/4" (6.4 mm) | T3814T | – |
| 25 | 3/8" X 3/8 " (10 mm) | T38T | 3T38T |
| 25 | 3/8" X 1/2" (13 mm) | T3812T | 3T3812T |
| 25 | 1/2" X 3/8" (10 mm) | T1238T | 3T1238T |
| 25 | 1/2" X 1/2" (13 mm) | T12T | 3T12T |
| 25 | 1/2" X 5/8" (16 mm) | T1258T | – |
| 25 | 1/2" X 3/8 " (19 mm) | T1234T | 3T1234T |
| 25 | 3/4" X 3/8 " (10 mm) | – | 3T3438T |
| 25 | 3/4" X 1/2" (13 mm) | T3412T | 3T3412T |
| 25 | 3/4" X 5/8" (16 mm) | – | 3T3458T |
| 25 | 3/4" X 3/4" (19 mm) | T34T | 3T34T |
| 25 | 3/4" X 1" (25 mm) | T34100T | – |

## TEES: HOSE BARB BY FEMALE PIPE THREAD

| Std Pack | FPT X HB (1 x 2 & 3) | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 3/4" (19 mm) | T34F | 3T34F |

## MALE GARDEN HOSE THREAD BY HOSE BARB

| Std Pack | MGHT X HB | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 1/4" (6.4 mm) | D3414 | – |
| 25 | 3/4" X 3/8" (10 mm) | D3438 | 3D3438 |
| 25 | 3/4" X 1/2" (13 mm) | D3412 | 3D3412 |
| 25 | 3/4" X 5/8" (16 mm) | D3458 | 3D3458 |
| 25 | 3/4" X 3/4" (19 mm) | D34 | 3D34 |
| 25 | 3/4" X 1" (25 mm) | D34100 | – |

Add Prefix "BG-" for 1 part per retail bag

## ELBOWS: MALE GARDEN HOSE THREAD BY HOSE BARB

| Std Pack | MGHT X HB | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 1/4" (6.4 mm) | ELD3414 | 3ELD3414 |
| 25 | 3/4" X 3/8" (10 mm) | ELD3438 | 3ELD3438 |
| 25 | 3/4" X 1/2" (13 mm) | ELD3412 | 3ELD3412 |
| 25 | 3/4" X 5/8" (16 mm) | ELD3458 | – |
| 25 | 3/4" X 3/4" (19 mm) | ELD34 | 3ELD34 |

## ADAPTERS: MALE GARDEN HOSE THREAD BY MALE PIPE THREAD

| Std Pack | MGHT X MPT | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 3/8" | E3438 | 3E3438 |
| 25 | 3/4" X 1/2" | E3412 | 3E3412 |
| 25 | 3/4" X 3/4" | E34 | 3E34 |

## ADAPTER COUPLINGS: FEMALE GARDEN HOSE THREAD BY FEMALE PIPE THREAD

| Std Pack | FGHT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 1/2" | J3412 | 3J3412 |

## ADAPTERS: FEMALE GARDEN HOSE THREAD BY MALE PIPE THREAD

| Std Pack | FGHT X MPT | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 3/4" | H34 | 3H34 |

## ADAPTERS: MALE GARDEN HOSE THREAD BY FEMALE PIPE THREAD

| Std Pack | MGHT X FPT | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 1/2" | G3412 | 3G3412 |
| 25 | 3/4" X 1/4" | G3414 | 3G3414 |
| 25 | 3/4" X 3/4" | G34 | 3G34 |

## ADAPTERS: FLAT SEAT BY MALE PIPE THREAD

| Std Pack | MPT | Nylon | Poly |
|---|---|---|---|
| 25 | 1/2" | C12NPT | 3C12NPT |

## ADAPTERS: FEMALE GARDEN HOSE THREAD BY MALE GARDEN HOSE THREAD

| Std Pack | FGHT X MGHT | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" X 3/4" | I34 | 3I34 |

## FEMALE GARDEN HOSE CAP KNURLED

| Std Pack | FGHT | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" | N34 | 3N34 |

## FEMALE PIPE THREAD BY HOSE BARB FITTING

| Std Pack | FPT X HB | Nylon | Poly |
|---|---|---|---|
| 25 | 1/2" X 1/2" (13 mm) | Q12 | 3Q12 |
| 50 | 1/4" X 1/4" (6,4 mm) | Q14 | 3Q14 |

## FEMALE PIPE STRAIGHT SWIVEL NUT–HEX

| Std Pack | FPS | Nylon | Poly |
|---|---|---|---|
| 25 | 1" | B100 | 3B100 |

## FEMALE GARDEN HOSE AND FEMALE PIPE STRAIGHT SWIVEL NUT–KNURLED

| Std Pack | FGHT | FPS | Nylon | Poly |
|---|---|---|---|---|
| 25 | 3/4" | - | B34 | 3B34 |
| 25 | - | 3/4" | B35 | 3B35 |

## FLAT SEAT HOSE BARB

| Std Pack | HB | | Nylon | Poly |
|---|---|---|---|---|
| | US Units | Metric Units | | |
| 25 | 1/4" | 6.4 mm | C14 | 3C14 |
| 25 | 3/8" | 10 mm | C38 | 3C38 |
| 25 | 1/2" | 13 mm | C12 | 3C12 |
| 25 | 5/8" | 16 mm | C58 | 3C58 |
| 25 | 3/4" | 19 mm | C34 | 3C34 |
| 25 | 1" | 25 mm | C100 | 3C100 |

## FEMALE THREAD SWIVEL HEX NUT, BARB INSERT WITH BALL SEAT

| Std Pack | Size | | Nylon |
|---|---|---|---|
| | US Units | Metric Units | |
| **BARB ONLY** | | | |
| 50 | 1/4" HB | 6.4 mm | NC14 |
| 50 | 3/8" HB | 10 mm | NC38 |
| 50 | 1/2" HB | 13 mm | NC12 |
| **NUT ONLY** | | | |
| 50 | 1/4" | 13 mm | NC14N |
| 50 | 3/8" | 10 mm | NC38N |
| 50 | 1/2" | 13 mm | NC12N |
| 50 | 1/2" with 1/4" HB | 13 mm with 6.4 mm HB | NC1214 |

## WASHERS

| Reference # | Std Pack | OD X ID | Description | Part Number |
|---|---|---|---|---|
| 1 | 100 | 1" X 3/4" | Black Vinyl | W406V |
| 2 | 100 | 1" X 5/8" | S.S. Filter 50/60 Mesh | W160M |
| 3 | 100 | 1" X 1/2" | Natural Polypropylene | W405P |

## ROPE WICK PARTS UNASSEMBLED

| Std Pack | Description | Nylon | Poly |
|---|---|---|---|
| 25 | 3/4" MGHT X 3/4" MPT (A) | E34 | 3E34 |
| 25 | 3/4" FGHT Nut with 1/2" hole (B) | B3412 | 3B3412 |
| 25 | 3/4" MGHT X 1/2" MPT (C) | E3412 | 3E3412 |

## ROPE WICK PARTS UNASSEMBLED

| Ref. Letter | Std Pack | Description | Nylon | Poly |
|---|---|---|---|---|
| A | 100 | Nylon Washer | RW1116A | 3RW1116A |
| B | 50 | Main Body | RW1116B | - |
| C | 100 | O-ring Black EPDM | RW1116C | RW1116C |
| D | 100 | Grommet Black EPDM | RW1116D | RW1116D |
| E | 25 | 1-1/16" - 16 UN (Lock) Nut | B12 | 3B12 |
| F | 25 | 1-1/16" - 16 UN Swivel Nut | 8027 | 38027 |

## HOSE-SAVER STRAIGHT ASSEMBLY – NYLON

| MPT X HB | Part Number | Cap Part Number |
|---|---|---|
| 3/4" X 3/4" (19 mm) | 626320N | 626012 |
| 3/4" X 1" (25 mm) | 626325N | 626014 |
| 1" X 1" (25 mm) | 626425N | 626014 |
| 1-1/4" X 1" (25 mm) | 626525N | 626014 |
| 1-1/4" X 1-1/4" (32 mm) | 626532N | 626014 |
| 1-1/2" X 1-1/4" (32 mm) | 626632N | 626014 |
| 1-1/2" X 1-1/2" (38 mm) | 626638N | - |
| 1-1/2" X 2" (50 mm) | 626651N | - |
| 2" X 2" (50 mm) | 626751N | - |

## HOSE-SAVER ELBOW ASSEMBLY – NYLON

| MPT X HB | Part Number | Cap Part Number |
|---|---|---|
| 3/4" X 3/4" (19 mm) | 627320N | 626012 |
| 3/4" X 1" (19 mm) | 627325N | 626014 |
| 1" X 3/4" (19 mm) | 627420N | 626012 |
| 1" X 1" (19 mm) | 627425N | 626014 |
| 1" X 1-1/4" (19 mm) | 627432N | 626014 |
| 1-1/4" X 1" (19 mm) | 627525N | 626014 |
| 1-1/4" X 1-1/4" (19 mm) | 627532N | 626014 |
| 1-1/2" X 1-1/4" (19 mm) | 627632N | 626014 |
| 1-1/2" X 1-1/2" (19 mm) | 627638N | - |
| 2" X 2" (19 mm) | 627751N | - |

## MALE PIPE THREAD BY HOSE BARB

| MPT x HB | 316 Stainless Steel |
|---|---|
| 1/4" X 1/4" (6.4 mm) | 9A14 |
| 1/4" X 3/8" (10 mm) | 9A1438 |
| 1/4" X 1/2" (13 mm) | 9A1412 |
| 3/8" X 3/8" (10 mm) | 9A38 |
| 3/8" X 1/2" (13 mm) | 9A3812 |
| 1/2" X 1/2" (13 mm) | 9A12 |
| 3/4" X 3/4" (19 mm) | 9A34 |
| 1" X 1" (25 mm) | 9A100 |
| 1-1/4" X 1-1/4" (32 mm) | 9A114 |
| 1-1/2" X 1-1/2" (38 mm) | 9A112 |
| 2" X 2" (50 mm) | 9A200 |
| 3" X 3" (75 mm) | 9A300 |

## STREET ELBOW: FEMALE PIPE THREAD BY MALE PIPE THREAD

| MPT X FPT | 304 Stainless Steel |
|---|---|
| 1/4" X 1/4" | 7SE14 |
| 3/8" X 3/8" | 7SE38 |
| 1/2" X 1/2" | 7SE12 |
| 3/4" X 3/4" | 7SE34 |
| 1" X 1" | 7SE100 |
| 1-1/2" X 1-1/2" | 7SE112 |
| 1-1/4" X 1-1/4" | 7SE114 |
| 2" X 2" | 7SE200 |
| 3" X 3" | 7SE300 |

## COUPLING: FEMALE PIPE THREAD

| FPT X FPT | 304 Stainless Steel |
|---|---|
| 1/4" X 1/4" | 7FC14 |
| 1/2" X 1/2" | 7FC12 |
| 3/4" X 3/4" | 7FC34 |
| 1" X 1" | 7FC100 |
| 1-1/2" X 1-1/2" | 7FC112 |
| 2" X 2" | 7FC200 |
| 3" X 3" | 7FC300 |

## TEE: FEMALE PIPE THREAD

| FPT X FPT X FPT | 304 Stainless Steel |
|---|---|
| 1/4" | 7TT14 |
| 1/2" | 7TT12 |
| 3/4" | 7TT34 |
| 1" | 7TT100 |
| 1-1/4" | 7TT114 |
| 1-1/2" | 7TT112 |
| 2" | 7TT200 |

## ELBOW: FEMALE PIPE THREAD – 90°

| FPT X FPT | 304 Stainless Steel |
|---|---|
| 1/4" X 1/4" | 7LL14 |
| 1/2" X 1/2" | 7LL12 |
| 1" X 1" | 7LL100 |
| 1-1/2" X 1-1/2" | 7LL112 |
| 1-1/4" X 1-1/4" | 7LL114 |
| 2" X 2" | 7LL200 |
| 3" X 3" | 7LL300 |

## NIPPLE

| MPT X Length | 304 Stainless Steel |
|---|---|
| 1/4" X 1-1/2" | 714112 |
| 1/4" X 3" | 714300 |
| 1/4" X 4" | 714400 |
| 1/4" X 6" | 714600 |
| 1/4 X 12" | 7141200 |
| 3/8" X 1" | 738100 |
| 3/8" X 1-1/2" | 738112 |
| 1/2" X 1-1/8" | 712118 |
| 1/2" X 1-1/2" | 712112 |
| 1/2" X 2" | 712200 |
| 3/4" X 1-3/8" | 734138 |
| 3/4" X 4" | 734400 |
| 1" X 1-1/2" | 7100112 |
| 1" X 4" | 7100400 |
| 1-1/4" X 1-5/8" | 7114158 |
| 1-1/2" X 1-3/4" | 7112134 |
| 2" X 2" | 7200200 |
| 2" X 2-1/2" | 7200212 |
| 2" X 4" | 7200400 |
| 2" X 6" | 7200600 |
| 2" X 3" | 7200300 |
| 2" X 3-1/2" | 7200312 |
| 2" X 5" | 7200500 |

## REDUCER BUSHING

| MPT X FPT | 304 Stainless Steel |
|---|---|
| 1/4" X 3/8" | 7RB1418 |
| 3/8" X 1/4" | 7RB3814 |
| 1/2" X 1/4" | 7RB1214 |
| 1/2" X 3/8" | 7RB1238 |
| 3/4" X 1/4" | 7RB3414 |
| 3/4" X 1/2" | 7RB3412 |
| 1" X 1/2" | 7RB10012 |
| 1" X 3/4" | 7RB10034 |
| 2" X 1-1/2" | 7RB200112 |

## HEX PLUGS

| Part Number | Size |
|---|---|
| 7F18 | 1/8" |
| 7F14 | 1/4" |
| 7F38 | 3/8" |
| 7F12 | 1/2" |
| 7F34 | 3/4" |
| 7F100 | 1" |
| 7F200 | 2" |

# FITTINGS - STEEL

## MALE PIPE THREAD BY HOSE BARB

| MPT X HB | Steel |
|---|---|
| 1/8" X 1/4" (6.4 mm) | A1814S |
| 1/8" X 3/8" (10 mm) | A1838S |
| 1/4" X 1/4" (6.4 mm) | A14S |
| 1/4" X 3/8" (10 mm) | A1438S |
| 1/4" X 1/2" (13 mm) | A1412S |
| 3/8" X 1/4" (6.4 mm) | A3814S |
| 3/8" X 3/8" (10 mm) | A38S |
| 3/8" X 1/2" (13 mm) | A3812S |
| 1/2" X 1/4" (6.4 mm) | A1214S |
| 1/2" X 3/8" (10 mm) | A1238S |
| 1/2" X 1/2" (13 mm) | A12S |
| 1/2" X 5/8" (16 mm) | A1258S |
| 1/2" X 3/4" (19 mm) | A1234S |
| 3/4" X 3/8" (10 mm) | A3438S |
| 3/4" X 1/2" (13 mm) | A3412S |
| 3/4" X 5/8" (16 mm) | A3458S |
| 3/4" X 3/4" (19 mm) | A34S |
| 3/4" X 1" (25 mm) | A34100S |
| 1" X 1" (25 mm) | A100S |

Add Prefix "BG-" for 1 part per retail bag.

## KING NIPPLE

| MPT X HB | Plated Steel |
|---|---|
| 3/4" (19 mm) | AA34P |
| 1" X 3/4" (19 mm) | AA10034P |
| 1" (25 mm) | AA100P |
| 1-1/4" (32 mm) | AA114P |
| 1-1/2" (38 mm) | AA112P |
| 2" (50 mm) | AA200P |

Add Prefix "BG-" for 1 part per retail bag.

## FEMALE PIPE STRAIGHT SWIVEL NUT – HEX

| FPS | Steel |
|---|---|
| 3/4" | B35S |

NOTE: For use with steel flat hose barbs 1/4" to 3/4".

## FLAT SEAT HOSE BARB

| HB | Steel |
|---|---|
| 1/2" (12 mm) | C12S |
| 3/4" (19 mm) | C34S |

# FITTINGS - BRASS

## MALE PIPE THREAD BY HOSE BARB

| MPT X HB | Brass |
|---|---|
| 1/8" X 1/4" (6.4 mm) | A1814B |
| 1/8" X 3/8" (10 mm) | A1838B |
| 1/4" X 1/4" (6.4 mm) | A14B |
| 1/4" X 3/8" (10 mm) | A1438B |
| 1/4" X 1/2" (13 mm) | A1412B |
| 3/8" X 1/4" (6.4 mm) | A3814B |
| 3/8" X 3/8" (10 mm) | A38B |
| 3/8" X 1/2" (13 mm) | A3812B |
| 1/2" X 1/4" (6.4 mm) | A1214B |
| 1/2" X 3/8" (10 mm) | A1238B |
| 1/2" X 1/2" (13 mm) | A12B |
| 1/2" X 5/8" (16 mm) | A1258B |
| 1/2" X 3/4" (19 mm) | A1234B |
| 3/4" X 3/8" (10 mm) | A3438B |
| 3/4" X 1/2" (13 mm) | A3412B |
| 3/4" X 5/8" (16 mm) | A3458B |
| 3/4" X 3/4" (19 mm) | A34B |
| 3/4" X 1" (25 mm) | A34100B |
| 1" X 1" (25 mm) | A100B |

## FEMALE PIPE THREAD BY HOSE BARB

| FPT X HB | Brass |
|---|---|
| 1/4" X 3/8" (10 mm) | AF1438B |

## STREET ELBOWS: FEMALE PIPE THREAD BY MALE PIPE THREAD

| MPT X FPT | Brass |
|---|---|
| 1/4" X 1/4" | SE14B |
| 3/8" X 3/8" | SE38B |
| 1/2" X 1/2" | SE12B |

## HOSE MENDER

| HB | Brass |
|---|---|
| 1/4" (6.4 mm) X 1/4" (6.4 mm) | SHM14B |
| 3/8" (10 mm) X 3/8" (10 mm) | SHM38B |
| 1/2" (12 mm) X 1/2" (12 mm) | SHM12B |
| 5/8" (16 mm) X 5/8" (16 mm) | SHM58B |
| 3/4" (19 mm) X 3/4" (19 mm) | SHM34B |

## FLAT SEAT HOSE BARB

| HB | Brass |
|---|---|
| 3/8" (10 mm) | C38B |
| 1/2"(13 mm) | C12B |
| 5/8" (16 mm) | C58B |
| 3/4" (19 mm) | C34B |

## SWIVEL NUT
## HEX FEMALE GARDEN HOSE THREAD

| FGHT | Brass |
|---|---|
| 3/4" | B33B |

## COUPLINGS:
## FEMALE PIPE THREAD

| FPT X FPT | Brass |
|---|---|
| 1/4" X 1/4" | FC14B |
| 1/2" X 1/2" | FC12B |

## MALE GARDEN HOSE THREAD BY HOSE BARB

| MGHT X HB | Brass |
|---|---|
| 3/4" X 3/8" (10 mm) | D3438B |
| 3/4" X 1/2" (13 mm) | D3412B |
| 3/4" X 5/8" (16 mm) | D3458B |
| 3/4" X 3/4" (19 mm) | D34B |

## SWIVEL ADAPTER

| MPT | Brass |
|---|---|
| 3/8" | SA38B |
| 1/2" | SA12B |

## ADAPTERS:
## MALE GARDEN HOSE THREAD BY MALE PIPE THREAD

| MGHT X MPT | Brass |
|---|---|
| 3/4" X 1/2" | E3412B |
| 3/4" X 3/4" | E34B |

## ELBOWS:
## FEMALE PIPE THREAD – 90°

| FPT X FPT | Brass |
|---|---|
| 1/4" X 1/4" | LL14B |
| 1/8" X 1/8" | LL18B |

## HEX PLUG WITH MALE PIPE THREAD

| MPT | Brass |
|---|---|
| 1/4" | F14B |
| 3/8" | F38B |
| 1/2" | F12B |

## REDUCER BUSHINGS

| MPT X FPT | Brass |
|---|---|
| 1/4" X 1/8" | RB1418B |
| 1/2" X 1/4" | RB1214B |
| 1/2" X 3/8" | RB1238B |
| 3/4" X 1/2" | RB3412B |

## FEMALE GARDEN HOSE SWIVEL NUT – KNURLED

| FGHT | Brass |
|---|---|
| 3/4" | B34B |

NOTE: For use with flat seat hose barbs 1/4" to 3/4".

# CABLE TIES AND CLAMPS

## CABLE TIES

| Standard Pack | Length | | Part Number White Nylon | Part Number Black UV Nylon |
|---|---|---|---|---|
| | US Units | Metric Units | | |
| 100 | 4 inch | 102 mm | NS4 | 3NS4 |
| 100 | 6-1/8 inch | 156 mm | NS7 | 3NS7 |
| 100 | 7-1/2 inch | 170 mm | NS8 | 3NS8 |
| 100 | 11-1/2 inch | 292 mm | NS12 | 3NS12 |
| 100 | 17-3/4 inch | 450 mm | NS17 | 3NS17 |
| 100 | 21-3/4 inch | 552 mm | NS21 | 3NS21 |
| 100 | 28-3/8 inch | 720 mm | NS28 | 3NS28 |
| 100 | 37-1/4 inch | 946 mm | NS32 | 3NS32 |

**NOTE:** 10 per box – order in box multiples

## HOSE CLAMPS

| Part Number | Fits Hose Min | | Fits Hose Max | | Normal Hose Size* | |
|---|---|---|---|---|---|---|
| **5/16 inch BAND** | | | | | | |
| 4JM | 7/32 inch | 5,6 mm | 5/8 inch | 16 mm | 1/4 inch | 6,4 mm |
| 6JM | 5/16 inch | 8 mm | 7/8 inch | 22 mm | 3/8 inch | 10 mm |
| 8JM | 7/16 inch | 11 mm | 1 inch | 25 mm | 1/2 inch | 13 mm |
| 10JM | 1/2 inch | 13 mm | 11/16 inch | 27 mm | 5/8 inch | 16 mm |
| 12JM | 9/16 inch | 14 mm | 11/4 inch | 32 mm | 3/4 inch | 19 mm |
| 16JM | 11/16 inch | 18 mm | 11/2 inch | 38 mm | 1 inch | 25 mm |
| **1/2 inch BAND** | | | | | | |
| 6J | 3/8 inch | 10 mm | 7/8 inch | 22 mm | 3/8 inch | 10 mm |
| 8J | 7/16 inch | 11 mm | 1 inch | 25 mm | 1/2 inch | 13 mm |
| 10J | 9/16 inch | 14 mm | 1-1/16 inch | 27 mm | 5/8 inch | 16 mm |
| 12J | 9/16 inch | 14 mm | 1-1/4 inch | 32 mm | 3/4 inch | 19 mm |
| 16J | 11/16 inch | 18 mm | 1-1/2 inch | 38 mm | 1 inch | 25 mm |
| 20J | 3/4 inch | 19 mm | 1-3/4 inch | 44 mm | 1-1/4 inch | 32 mm |
| 24J | 1-1/16 inch | 27 mm | 2 inch | 50 mm | 1-1/2 inch | 38 mm |
| 28J | 1-5/16 inch | 33 mm | 2-1/4 inch | 57 mm | 1-3/4 inch | 44 mm |
| 32J | 1-9/16 inch | 40 mm | 2-1/2 inch | 64 mm | 2 inch | 50 mm |
| 36J | 1-13/16 inch | 46 mm | 2-3/4 inch | 70 mm | 2-1/4 inch | 57 mm |
| 40J | 2-1/16 inch | 52 mm | 3 inch | 76 mm | 2-1/2 inch | 64 mm |
| 44J | 2-5/16 inch | 59 mm | 3-1/4 inch | 83 mm | 2-3/4 inch | 70 mm |
| 48J | 2-9/16 inch | 65 mm | 3-1/2 inch | 89 mm | 3 inch | 76 mm |
| 52J | 2-13/16 inch | 71 mm | 3-3/4 inch | 95 mm | 3-1/4 inch | 83 mm |
| 56J | 3-1/16 inch | 78 mm | 4 inch | 102 mm | 3-1/2 inch | 89 mm |
| 64J | 3-1/2 inch | 89 mm | 4-1/2 inch | 114 mm | 4 inch | 102 mm |

* Hose sizes are based on inside I.D.

# SEALANT

## RECTOR SEAL

| Part Number | Type | Container | |
|---|---|---|---|
| | | US Units | Metric Units |
| 28651 | 21 Black Jack | 1/2 Pint Can | .24 Litre |
| 28541 | 21 Black Jack | 1 Pint Can | .47 Litre |

## LIQUID TEFLON SEALANT

| Part Number | Size | | Container |
|---|---|---|---|
| | US Units | Metric Units | |
| LT2 | 2 oz. | 59 mL | Tube |
| LT4 | 4 oz. | 118 mL | Can |
| LT8 | 8 oz. | 237 mL | Can |

## TEFLON TAPE

| Part Number | Size | | Container |
|---|---|---|---|
| | US Units | Metric Units | |
| 1252 | 1/2" | 13 mm | 520" |

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# LIMITED WARRANTY ON HYPRO/SHURFLO AGRICULTURAL PUMPS & ACCESSORIES

Hypro/Shurflo (hereafter, "Hypro") agricultural products are warranted to be free of defects in material and workmanship under normal use for the time periods listed below, with proof of purchase.

- Pumps: one (1) year from the date of manufacture, or one (1) year of use. This limited warranty will not exceed two (2) years, in any event.
- Accessories: ninety (90) days of use.

This limited warranty will not apply to products that were improperly installed, misapplied, damaged, altered, or incompatible with fluids or components not manufactured by Hypro. All warranty considerations are governed by Hypro's written return policy.

Hypro's obligation under this limited warranty policy is limited to the repair or replacement of the product. All returns will be tested per Hypro's factory criteria. Products found not defective (under the terms of this limited warranty) are subject to charges paid by the returnee for the testing and packaging of "tested good" non-warranty returns.

No credit or labor allowances will be given for products returned as defective. Warranty replacement will be shipped on a freight allowed basis. Hypro reserves the right to choose the method of transportation.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on Hypro's behalf. Hypro shall not be liable for any labor, damage or other expense, nor shall Hypro be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product.

**RETURN PROCEDURES**

All products must be flushed of any chemical (ref. OSHA section 1910.1200 (d)(e)(f)(g)(h)) and hazardous chemicals must be labeled/tagged before being shipped* to Hypro for service or warranty consideration. Hypro reserves the right to request a Material Safety Data Sheet from the returnee for any pump/product it deems necessary. Hypro reserves the right to "disposition as scrap" products returned which contain unknown fluids. Hypro reserves the right to charge the returnee for any and all costs incurred for chemical testing, and proper disposal of components containing unknown fluids. Hypro requests this in order to protect the environment and personnel from the hazards of handling unknown fluids.

Be prepared to give Hypro full details of the problem, including the model number, date of purchase, and from whom you purchased your product. Hypro may request additional information, and may require a sketch to illustrate the problem.

Contact the appropriate Hypro Service Department to receive a Return Merchandise Authorization number (RMA#).
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hypro.technicalpentair.com

**EUROPE**
HYPRO EU Ltd.
Station Road
Longstanton
Cambridge CB24 3DS UK
Service/Technical:
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Fax: +44 1954 260245
euagorders@pentair.com

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*Carriers, including U.S.P.S., airlines, UPS, ground freight, etc., require specific identification of any hazardous material being shipped. Failure to do so may result in a substantial fine and/or prison term. Check with your shipping company for specific instructions.

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Order: 800-424-9776 | Fax Order: 800-323-6496
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**HYPRO® EU LTD.**
Station Road, Longstanton,
Cambridge CB24 3DS, UK
+44 1954 260097 Fax: +44 1954 260245
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Order: euagorders@pentair.com

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+55 (11) 3317-5085
vendas.pwdb@pentair.com



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