THANK YOU FOR YOUR INTEREST IN OUR SPRAY PRODUCTS

WE'RE LOOKING FORWARD TO HELPING YOU OPTIMIZE YOUR OPERATIONS INVOLVING SPRAY TECHNOLOGY. HERE ARE JUST A FEW WAYS WE CAN ASSIST:

- You'll find the most extensive line of high-quality automatic and air atomizing nozzles, spray controllers and spray manifolds in this catalog. However, if you don't find exactly what you need, be sure to contact us. Our flexible manufacturing capabilities allow us to make products in additional sizes and materials quickly and efficiently. Special designs are also possible. Just tell us what you need
- Need a different type of spray solution? Or a spray product for a specific application? Visit spray.com to find additional information on these products:
  - Hydraulic spray products including FullJet®, VeeJet®, WhirlJet®, SpiralJet® nozzles and more
  - AutoJet® spray controllers and automated spray systems
  - Hand held GunJet® spray guns
  - WindJet® nozzles and air knife packages
  - TankJet® tank cleaning products
  - SprayDry® nozzles
  - Pulp and paper spray products
  - Steel industry spray products

- On-site evaluations, spray optimization programs, lunch and learn sessions and nozzle maintenance workshops are just a few of the many services we provide. It's easy to take advantage of these programs — just contact your local representative. You'll find a spray expert nearby — we have hundreds of technical sales and service people in more than 90 sales offices around the world
- Need a device to deliver fluid to your nozzles? Talk to us about spray manifolds, headers, lances, injectors and more

These are just a few of the ways we can help you get the results you need in your coating, cleaning, humidifying, lubricating, moisturizing and other operations using spray technology. You will learn about other ways we can assist in the pages that follow. Please be sure to visit spray.com or contact us whenever you need assistance — we're here to serve you.

Thank you — we value your business!
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You’ll find thousands of automatic and air atomizing nozzles, spray controllers, and spray manifolds in this catalog but you can also visit spray.com to see thousands of other spray products. Featured products include hydraulic spray nozzles, handheld spray guns, tank cleaning equipment, air nozzles and nozzles for specialized operations like descaling, trim squirt, spray drying, fire protection and more. We offer the widest range of spray products available, so you’re sure to find a solution that delivers the performance you need.

PRECISE, DEPENDABLE PRODUCT QUALITY

Your satisfaction is important to us. Our products are manufactured to exacting standards to deliver the promised performance each and every time you order. We are ISO 9001:2008 and 14001:2004 certified. Products ship only after undergoing our rigorous quality control and testing programs. If you have any concerns about the quality of any of our products, contact us immediately. We will address your issues and take corrective action as needed.

PRODUCTS WHEN YOU NEED THEM

Most of our spray nozzles are readily available and will be shipped within days of your order. If you need expedited service, let us know. Our ten manufacturing locations are strategically located around the world to help ensure quick and cost-effective product delivery.

SPECIAL REQUIREMENTS?
TELL US WHAT YOU NEED.

If one of our standard products isn’t quite right for your equipment, just let us know. Customization can range from simple changes in materials to specially-designed nozzles to meet exacting performance requirements.

We work with hundreds of OEMs and provide services like these:

• Special nozzle designs
• Private labeling with unique part numbers
• Special packaging
• Customized maintenance and operating instructions
OUR SOLE FOCUS ON SPRAY TECHNOLOGY ENSURES RESULTS IN YOUR OPERATIONS

Since spray technology is all we do, we have a level of expertise that can’t be matched. Our sales engineers are factory-trained and only sell our spray products. Need to increase throughput in a coating operation? Eliminate waste or lower scrap? Cool products more quickly? Suppress dust? Minimize water and chemical use in cleaning operations? Just give us a call. With sales offices on six continents and more than 90 sales offices, we are in your area and ready to help.

WHAT CUSTOMERS SAY ABOUT OUR SERVICE

“We are very pleased with Spraying Systems Co. Wish all vendors were as good.”

“Very pleased – awesome is the best way to describe Spraying Systems Co. service.”

“A+ on service. Sales engineer responded quickly and visited my facility to review various product options for my application.”

“Rep always provides prompt answers. Knows the full product line inside and out.”

“I get more technical support from Spraying Systems Co. than any other vendor.”

“The local rep came right out – didn’t even know the size of the project at the time.”

“Spraying Systems Co. provides solutions – not just parts.”

“More knowledgeable than any other equipment company we work with.”

“We get the products we need, when we need them. Each and every time we order.”
SPRAY CONTROL

Spray nozzles can only perform properly if the entire spray system is operating efficiently. That’s why we offer a wide range of AutoJet® spray controllers. Choose from basic automatic control, monitoring of spray variables or automatic adjustments of spray variables based on what is happening in your process. Adding a spray controller can help:

- Increase production through automation and enable operation at variable line speeds
- Reduce labor costs by eliminating manual operation, system monitoring and changeover of nozzles between batches
- Lower operating costs by eliminating overspray and waste through precision spraying
- Improve worker safety by minimizing exposure to harmful chemicals

Application-specific systems are also part of our offering for more demanding spray operations.

TURNKEY SYSTEM OPTIONS

- AccuCoat® Heated Spray Systems for viscous coatings
- AutoJet® Antimicrobial and Mold Inhibitor Spray Systems for food safety applications
- PanelSpray® System for engineered wood products
- AutoJet® Tissue and Web Lamination Spray System for tissue and other hygienic products
- AutoJet® Gas Cooling System for pollution control

Additional options include systems for dust suppression, NOx control and humidification. Check with your local sales office; system availability may vary by region.
SPRAY MANIFOLDS, HEADERS AND INJECTORS

The equipment that supplies fluid to spray nozzles can have a big impact on performance. If the fluid flow isn’t adequate or the fluid delivery device isn’t suitable for the operating environment, performance may be compromised. Unlike feed devices built by fabricators or in-house staff, our spray manifolds, headers, showers, injectors, lances and quills are designed to optimize the performance of our spray nozzles and streamline your operations.

You can specify the length, number of nozzles, nozzle spacing and connection type for most of our manifolds and headers. Spray injectors can also be customized. You can specify nozzle type, nozzle placement, materials, coatings and specialized testing services.

The next time you order spray nozzles, take a moment to consider your fluid delivery equipment. Talk to your local sales engineer about ways to maximize performance and service life and simplify maintenance.

PRODUCT OPTIONS INCLUDE:

• Basic spray nozzle manifolds with a C-channel to facilitate spray nozzle set-up and adjustment
• Pipe-in-pipe spray manifolds with nozzles mounted inside a slotted pipe for protection against build-up and damage
• Modular spray manifolds with easy-to-access tubing and fittings to simplify set-up and cleaning
• Heated spray manifolds for use with viscous solutions
• Sanitary spray manifolds to ensure food safety
• Built-to-order spray manifolds
• Automatic brush showers that keep nozzles clean without process interruption or maintenance downtime
• Built-to-order spray injectors for use in demanding environments such as refineries, power plants and chemical production
• Spray quills and lances for use in environments where spray performance is less critical
In new spray applications or applications where spray performance is critical, it is important to understand how factors like these affect performance:

- Operating conditions such as pressure, temperature and variable line speeds
- The liquid being sprayed
- The placement and position of nozzles in relation to the target

In many cases, experience and theoretical calculations can provide an indication of actual spray performance. However, testing in our spray labs determines actual performance and can eliminate costly specification mistakes or quality problems after installation. During testing, we can adjust operating conditions and/or test different nozzles until we find the exact spray performance required in your application.

**Common tests include:**
- Spray characterization
- Drop size distribution
- Spray impact
- Spray pattern
- Spray coverage
- Spray angle
- Evaporation rate
- Residence time
- Dwell time

**A LOOK INSIDE OUR LABS**

Evaluating sprays requires very specialized equipment. In fact, some of our equipment was designed by our spray engineers and is used only in our facilities. Our test equipment includes:

- Spray patternators to measure spray distribution
- Impact testers to determine impact throughout a spray
- Laser diffraction and Phase Doppler particle size analyzers to measure drop size and spray velocity
- Laser sheet imaging analyzers to evaluate spray shape and distribution
- Wind tunnel to determine the effects of air currents and gas flows on sprays
ADVANCED MODELING SERVICES AND MANUFACTURING CAPABILITIES FOR COMPLEX AND DEMANDING APPLICATIONS

It is not feasible to replicate operating conditions for every application. Gas cooling, chemical injection, spray drying and tablet coating are just a few applications where we cannot spray some liquids for safety reasons or procure comparable process equipment. Yet, in these applications, understanding spray performance is often critical to process efficiency, product quality, equipment longevity and even worker safety. That’s when we use sophisticated modeling tools to predict spray performance.

• Computational Fluid Dynamics (CFD) models illustrate flow patterns, velocity, temperature, gas/liquid distributions, droplet trajectories, internal system pressure and more in scrubbers, towers, ducts and dryers. Our models use data we’ve collected in our spray labs to reduce the error factor and precisely predict spray performance

• Fluid Structure Interaction (FSI) examines the interaction between fluid dynamics and structural integrity. This enables us to determine the materials required to withstand mechanical stresses such as load, pressure, turbulence, corrosion and more

Demanding applications often require the use of special materials and compliance with various manufacturing codes and testing standards. We can produce nozzles, quills, injectors and headers to exacting standards and conduct a wide range of tests to validate construction.

MANUFACTURING AND TESTING CAPABILITIES

Manufacturing:
• ASME® Boiler and Pressure Vessel Code
• ASME B31.1 Power Piping Code
• ASME B31.3 Process Piping Code
• Welding to ASME B&PV Code Section IX
• cGMP

Testing in accordance with ANSI®, ASTM® standards:
• Ultrasonic
• Radiographic
• Liquid penetrant
• Hardness
• Hydrostatic
• Magnetic particle examination
• Positive material identification

See Trademark Registration and Ownership, page i-1.

Learn more about our testing and modeling services at sprayanalysis.com
WAYS TO LEARN MORE

EXPERT ADVICE AT YOUR PLANT

No-charge spray system evaluation – Your local sales engineer will inspect your current spray operations and provide suggestions on how to improve efficiency. Evaluations can focus on a specific area such as reducing water or compressed air use, tank cleaning, automation opportunities and more.

Complimentary Lunch and Learn workshops – Select a topic, choose a date and invite your colleagues. We’ll provide lunch and an informative 60-minute session. Popular topics include Spray Nozzle Basics, Understanding Drop Size and How to Reduce Use of Costly Chemicals.

Spray demos and proof-of-concept trials at your facility – Your local sales engineer will conduct demos and tests on-site so you can see how a product will work in your environment. When operating conditions don’t allow an on-site demo or test, other arrangements can be made.

TESTS AND DEMONSTRATIONS AVAILABLE AT REGIONAL SPRAY TECHNOLOGY CENTERS

Throughout North America, we have several Spray Technology Centers. These facilities are equipped to conduct proof-of-concept tests and technology demonstrations. Seminars including live demonstrations on various topics are also conducted throughout the year. Schedules vary by region so contact your local sales engineer for information.

MULTI-DAY SEMINARS FOR ADVANCED LEARNING

An in-depth seminar on the atomization and spraying of liquids is conducted twice a year at our facility in Wheaton, IL. Attendees spend time in the classroom and our fully-equipped spray laboratories and participate in spray characterization tests. More information is available from your local sales engineer and at sprayanalysis.com.
EDUCATIONAL RESOURCES

Video demonstrations and tutorials on spray.com and YouTube.com/sprayingsystems
Explore our video library and learn about new spray products and techniques; best practices in maintenance procedures; what to look for in a spray pattern and more.

Technical guides and white papers on spray.com
• Optimizing Your Spray System, Technical Manual 410
• White papers address a wide range of topics. Here are a few examples:
  – Less Time & Lower Costs
  – Optimizing Spray Performance
  – Strategies to Reduce Your Water & Chemical Footprint
  – Optimizing the Efficacy of Antimicrobial Application on Meat & Poultry

Case studies on spray.com
More than 75 case studies demonstrate the benefits other processors have experienced through spray optimization. See spray.com/results.

Catalogs on spray.com
• Hydraulic Automatic Nozzles
• Automatic and Air Atomizing Nozzles, Spray Controllers and Spray Manifolds
• TankJet® Tank Cleaning Products
• WindJet® Air Products
• SprayDry® Nozzles
• Spray Technology for Steelmaking
• Spray Technology for Pulp and Papermaking
• Car Wash Products
• GunJet® Handheld Spray Guns
• Plus dozens of market- and product-specific technical bulletins
For assistance with product selection and ordering, please contact your local sales office. Sales engineers are available and will help you determine which products best meet your application requirements. Call 1.800.95.SPRAY in North America. If you are outside of North America, call 1.630.665.5000 or visit spray.com to find information for the sales office in your area. For your convenience, there are multiple ways to place an order: phone, fax and online.

In North America
Phone: 1.800.95.SPRAY  |  Fax: 1.888.95.SPRAY

Outside North America
Phone: 1.630.665.5000  |  Fax: 1.630.260.0842

Online ordering with a credit card is also available. Visit spray.com/ispray. You’ll find helpful selection tools and a Live Chat option for immediate assistance.

FINDING PRODUCTS

• Consult the Product Index on page i-3 if you know the name of the product
• Consult the Part Number Index on page i-5 if you have the part number. Part numbers are shown alphanumerically on page i-6
• Selection assistance is available by calling your local sales office
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Spray nozzles are precision components designed to yield very specific performance under specific conditions. To help you determine the best nozzle type for your application, the following chart summarizes the performance that each nozzle type is designed to deliver. Visit [youtube.com/sprayingystems](http://youtube.com/sprayingystems) for video demonstrations of spray patterns.

The spray pattern images on the right were acquired in our spray laboratories using Laser Sheet Imaging (LSI). LSI images are collected by passing a laser sheet through a cross-section of the spray plume and imaging with a light-filtered camera. The distributions are directly proportional to the surface area distribution of the sprayed material (red: high; blue: low; black: zero). Volume distributions typically are similar to surface area distributions for these nozzles, depending on the local drop size distributions.

### FULL CONE NOZZLES
- Uses a unique internal vane design to produce a solid cone-shaped spray pattern
- Spray pattern consists of medium- to large-sized drops

### FULL CONE (SQUARE SPRAY) NOZZLES
- Uses a unique internal vane to produce a solid cone-shaped spray with square impact area
- Spray pattern is uniform across entire spray area
- Spray pattern consists of medium- to large-sized drops

### FLAT SPRAY (TAPERED) NOZZLES
- Produces a tapered-edge flat spray pattern
- Used on spray headers to provide uniform coverage as a result of overlapping distributions

### SOLID STREAM NOZZLES
- Produces a solid stream spray with the highest impact per unit area

### AIR ATOMIZING AND AIR ASSISTED NOZZLES
- Produces a variety of cone and flat spray patterns through atomization of liquid by compressed air
- Internal mix impingement atomization forms very fine drops

### ATOMIZING (HYDRAULIC, FINE MIST) NOZZLES
- Produces a finely atomized, low capacity spray in a hollow cone pattern without use of compressed air

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<th>Nozzle Type</th>
<th>Typical applications</th>
<th>Spray Angle Range</th>
<th>Laser Sheet Image</th>
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<td>Full Cone Nozzles</td>
<td>- Chemical injection &lt;br&gt; - Dust suppression &lt;br&gt; - Fire protection &lt;br&gt; - Metal cooling &lt;br&gt; - Washing/rinsing</td>
<td></td>
<td>![Image]</td>
</tr>
<tr>
<td>Full Cone (Square Spray)</td>
<td>- Air/gas washing &lt;br&gt; - Cooling and quenching &lt;br&gt; - Dust control &lt;br&gt; - Fire suppression</td>
<td>52° to 105°</td>
<td>![Image]</td>
</tr>
<tr>
<td>Flat Spray (Tapered)</td>
<td>- Coating &lt;br&gt; - Lubricating &lt;br&gt; - Glazing</td>
<td>15° to 110°</td>
<td>![Image]</td>
</tr>
<tr>
<td>Solid Stream Nozzles</td>
<td>- Marking &lt;br&gt; - Laminar flow application</td>
<td>0°</td>
<td>![Image]</td>
</tr>
<tr>
<td>Air Atomizing and Air Assisted</td>
<td>- Coating &lt;br&gt; - Evaporative cooling &lt;br&gt; - Humidification &lt;br&gt; - Moisturizing</td>
<td>18° to 360°</td>
<td>![Image]</td>
</tr>
<tr>
<td>Atomizing (Hydraulic, Fine Mist)</td>
<td>- Dust suppression &lt;br&gt; - Evaporative cooling &lt;br&gt; - Moisturizing &lt;br&gt; - Spray drying</td>
<td>35° to 165°</td>
<td>![Image]</td>
</tr>
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</table>
CAPACITY – FLUID CAPACITY FOR HYDRAULIC NOZZLES VARIES WITH SPRAYING PRESSURE

The relationship of pressure and flow with a given orifice is:

\[
\frac{Q_1}{Q_2} = \left(\frac{P_1}{P_2}\right)^n
\]

Where:
- \(Q_1\) = Flow Rate (in gpm or lpm)
- \(P_1\) = Liquid pressure (in psi or bar)
- \(n\) = Flow exponent

To approximate any unknown flow or pressure, use this formula when the other variables are known. The “\(n\)” exponent is used to approximate the ratio of pressure to flow based on the type of spray pattern.

Example:
To determine the flow rate of water for a 1/4G-10 standard full cone nozzle at 150 psi (10 bar), consult the performance charts in this catalog.

You will find that:
- The spray angle is 65°
- Flow \((Q_1)\) at 40 psi = 1.9 gpm
- Pressure \((P_1)\) = 40 psi
- Pressure \((P_2)\) = 150 psi

Solving for \(Q_2\) = 3.5 gpm

\[
Q_2 = \frac{Q_1}{(P_1/P_2)^n}

Q_2 = \frac{1.9\text{ gpm}}{(40/150)^{.46}} = 3.5\text{ gpm}
\]

FLOW EXPONENT FOR SPECIFIC HYDRAULIC NOZZLE TYPES

<table>
<thead>
<tr>
<th>Nozzle Type</th>
<th>Exponent “(n)”</th>
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<tr>
<td>Flat Spray Nozzles – All</td>
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<td>Full cone Nozzles – Vaneless, 15° and 30° Series</td>
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</tr>
<tr>
<td>Hollow Cone Nozzles – All</td>
<td></td>
</tr>
<tr>
<td>Solid Stream Nozzles – All</td>
<td></td>
</tr>
<tr>
<td>Full Cone Nozzles – Standard and Square</td>
<td>.46</td>
</tr>
<tr>
<td>Full Cone Nozzles – Wide Spray and Wide Square Spray</td>
<td>.44</td>
</tr>
</tbody>
</table>

Visit spray.com/sprayware for online flow rate and spray coverage calculators.

SPECIFIC GRAVITY

All capacity tabulations in this catalog are based on water. Since the specific gravity of a liquid affects its flow rate, tabulated catalog capacities must be multiplied by the conversion factor that applies to the specific gravity of the liquid being sprayed as explained below.

Specific gravity is the ratio of the density of a fluid compared to the density of water. The specific gravity of water is defined as 1. When spraying fluids other than water, specific gravity must be considered in the flow calculations.

\[
Q_2 = Q_1(\text{water}) \times \frac{1}{\sqrt{SG}}
\]

Using the previous example:
- Fluid sprayed is heavier than water and has a specific gravity of 1.4
- Flow of water at 150 psi = 3.5 gpm
- Heavy fluid \((Q_2) = Q_1(\text{water})^{1/\sqrt{1.4}}\)

\[
Q_2 = \frac{3.5\text{ gpm} \times 1}{\sqrt{1.4}} = 2.95\text{ gpm}
\]

- Fluid sprayed is heavier than water and has a specific gravity of 1.4
- Flow of water at 10 bar = 13 lpm
- Heavy fluid \((Q_2) = Q_1(\text{water})^{1/\sqrt{1.4}}\)

\[
Q_2 = \frac{13\text{ lpm} \times 1}{\sqrt{1.4}} = 11\text{ lpm}
\]

SPECIFIC GRAVITY VERSUS CONVERSION FACTOR

KEY: Conversion factor multiplied by the capacity of the nozzle when spraying water gives the capacity of the nozzle when spraying a liquid with a specific gravity corresponding to the conversion factor. This conversion factor accounts only for the effect of specific gravity on capacity and does not account for other factors affecting capacity.
SPRAY ANGLE AND COVERAGE

Tabulated spray angles indicate approximate spray coverage based on spray or distribution of water. In actual spraying, the effective spray angle varies with spray distance. Liquids more viscous than water form relatively smaller spray angles (or even a solid stream), depending upon viscosity, nozzle capacity and spraying pressure. Liquids with surface tensions lower than water will produce relatively wider spray angles than those listed for water. This table lists the theoretical coverage of spray patterns as calculated from the included spray angle of the spray and the distance from the nozzle orifice. Values are based on the assumption that the spray angle remains the same throughout the entire spray distance. In actual practice, the tabulated spray angle does not hold for long spray distances. If the spray coverage requirement is critical, request data sheets for specific spray coverage data.

### THEORETICAL SPRAY COVERAGE AT VARIOUS DISTANCES IN INCHES (CM) FROM NOZZLE ORIFICE

| Spray Angle | 2 in. | 3 in. | 4 in. | 5 in. | 6 in. | 7 in. | 8 in. | 10 in. | 12 in. | 15 in. | 18 in. | 20 in. | 24 in. | 30 in. | 36 in. | 40 in. | 45 in. | 50 in. | 55 in. | 60 in. | 65 in. | 70 in. | 75 in. | 80 in. | 85 in. | 90 in. | 95 in. | 100 in. | 110 in. | 120 in. | 130 in. | 140 in. | 150 in. |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5°          | 2.0  | 1.7  | 1.3  | 1.0  | .7   | .5   | .4   | .3   | .2   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   | .1   |
| 10°         | 4.4  | 3.7  | 3.0  | 2.4  | 1.9  | 1.5  | 1.2  | 1.0  | .8   | .7   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   | .6   |
| 15°         | 5.8  | 4.8  | 3.9  | 3.1  | 2.5  | 2.0  | 1.6  | 1.3  | 1.0  | .9   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   | .8   |
| 20°         | 7.2  | 5.8  | 4.6  | 3.7  | 2.9  | 2.3  | 1.8  | 1.5  | 1.2  | 1.0  | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   |
| 25°         | 8.6  | 6.9  | 5.4  | 4.3  | 3.3  | 2.6  | 2.0  | 1.7  | 1.3  | 1.0  | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   | .9   |

Example: A spray nozzle with an angle of 65° spraying 15” (39 cm) from the target provides 19.2° (48.8 cm) of coverage

Visit spray.com/sprayware for online flow rate and spray coverage calculators.
PUMPS

Every operation using spray nozzles requires a method to provide fluid flow. Fluid flow can be provided by gravity, air pressure or mechanical pumps. It is important to understand that pumping systems provide flow, not pressure. Pressure is the result of restricting flow. The output of an unrestricted pump is 0 psi (bar). When a restriction is placed in the flow, line pressure will result.

The main types of pumps are positive displacement and centrifugal. There are others, but the operational principles are the same as for positive displacement and centrifugal pumps.

Positive displacement pumps

A fixed volume of fluid is delivered for every stroke of a piston, or plunger or rotation of a shaft. Examples include piston pumps, plunger pumps, peristaltic pumps and gear pumps. Positive displacement pumps provide high pressure, and regardless of the system characteristics, will deliver a fixed flow every rotation. These pumps must have an unrestricted bypass valve and a pressure relief valve.

Centrifugal pumps (velocity pumps)

These pumps typically consist of a large vane (impeller) which is turned by a shaft inside a cavity (casing). The geometry of the impeller and casing moves the fluid in a tangential motion. The fluid gets restricted to a smaller volume and is then discharged into the system piping. These types of pumps typically operate at low pressure and high volume. They may also consist of several stages to increase the number of pressures available. These pumps have the unique feature of being able to run while the outlet is blocked. Since the pumps are velocity based, the impeller will spin in the casing fluid without “dead heading” the system itself. It will produce heat and may cavitate the fluid, but it will not build pressure like positive displacement pumps. However, a system bypass and pressure safety valve is still installed in the system to protect components.

HOW PUMP TYPE AFFECTS NOZZLE SELECTION

The flow rates and pressures required by the system will determine the pump choice. There are many styles, sizes and types of pumps available but these general guidelines should prove helpful.

- High flows usually require a centrifugal style pump
- High pressures usually require a positive displacement pump
- Variable Frequency Drive (VFD) pumps may be an option. These pumps allow variable control of speed and flow rates
- Consider the fluid. Specific gravity will affect pump flow rates just as it affects nozzle flow rates
- Pump efficiencies, heat, available power, maintenance and plant conditions should also be considered
**SPRAY DROP SIZE (ATOMIZATION)**

Accurate drop size information is an important factor in optimizing spray nozzle performance, particularly in industrial applications such as gas cooling, gas conditioning, fire suppression and spray drying.

Drop size refers to the size of the individual spray drops that comprise a nozzle’s spray pattern. Each spray provides a range of drop sizes; this range is referred to as drop size distribution. Drop size distribution is dependent on the spray pattern type and varies significantly from one type to another. The smallest drop sizes are achieved by air atomizing nozzles while the largest drops are produced by full cone hydraulic spray nozzles.

Liquid properties, nozzle capacity, spraying pressure and spray angle also affect drop size. Lower spraying pressures provide larger drop sizes. Conversely, higher spraying pressures yield smaller drop sizes. Within each type of spray pattern the smallest capacities produce the smallest spray drops, and the largest capacities produce the largest spray drops.

**DROP SIZE TERMINOLOGY**

Terminology is often a major source of discrepancy and confusion in understanding drop size. To accurately compare drop sizes from one nozzle to another, the same diameters have to be used. Drop size is usually expressed in microns (micrometers). Following are the most popular characteristic diameters and their definitions.

- **D<sub>V0.5</sub>** : VOLUME MEDIAN DIAMETER (VMD)
  
  A means of expressing drop size in terms of the volume of liquid sprayed. The Volume Median Diameter drop size when measured in terms of volume is a value where 50% of the total volume of liquid sprayed is made up of drops with diameters larger than the median value and 50% with smaller diameters.

- **D<sub>V0.9</sub>**
  
  A value where 90% of the total volume of liquid sprayed is made up of drops with diameters smaller or equal to this value. This measurement is best suited when complete evaporation of the spray is required.

- **D<sub>32</sub>** : SAUTER MEAN DIAMETER (SMD)
  
  A means of expressing the fineness of a spray in terms of the surface area produced by the spray. The Sauter Mean Diameter, is the diameter of a drop having the same volume-to-surface area ratio as the total volume of all the drops to the total surface area of all the drops.

**OPERATING PRESSURE**

The values given in the tabulation sections of this catalog indicate the most commonly used pressure ranges for the associated spray nozzle or accessory.

**Contact your local Spraying Systems Co. sales engineer if your application requires pressure ranges beyond those stated in this catalog.**

**NOZZLE MATERIALS**

For each nozzle there is a selection of “standard” materials that have been determined to meet the usual requirements of the applications most commonly associated with that type of nozzle. Standard materials include brass, steel, various stainless steels, hardened stainless steels, many plastics and various carbides. Spray nozzles can also be supplied in other materials upon special request.

---

**ACTUAL DROP SIZES**

- 500 µm
- 1200 µm
- 5500 µm

One inch = 25,400 µm
One millimeter = 1,000 µm
µm = micrometers

**DROP SIZE BY SPRAY PATTERN TYPE AT VARIOUS PRESSURES AND CAPACITIES**

<table>
<thead>
<tr>
<th>Spray Pattern Type</th>
<th>10 psi (0.7 bar)</th>
<th>40 psi (2.8 bar)</th>
<th>100 psi (7 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity gpm</td>
<td>VMD microns</td>
<td>Capacity gpm</td>
</tr>
<tr>
<td>Air Atomizing</td>
<td>.005</td>
<td>.02</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>.02</td>
<td>.08</td>
<td>.10</td>
</tr>
<tr>
<td>Fine Spray</td>
<td>.05</td>
<td>.19</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>.12</td>
<td>.45</td>
<td>.10</td>
</tr>
<tr>
<td>Hollow Cone</td>
<td>.05</td>
<td>.18</td>
<td>.06</td>
</tr>
<tr>
<td></td>
<td>.12</td>
<td>.38</td>
<td>.10</td>
</tr>
<tr>
<td>Flat Fan</td>
<td>.05</td>
<td>.19</td>
<td>.26</td>
</tr>
<tr>
<td></td>
<td>.12</td>
<td>.38</td>
<td>.36</td>
</tr>
<tr>
<td>Full Cone</td>
<td>.05</td>
<td>.18</td>
<td>.114</td>
</tr>
<tr>
<td></td>
<td>.12</td>
<td>.38</td>
<td>.43</td>
</tr>
</tbody>
</table>

Based on a sampling of nozzles selected to show the wide range of possible drop sizes available.
NOZZLE WEAR

Nozzle wear is typically characterized by an increase in nozzle capacity, followed by a general deterioration of the spray pattern. Flat fan spray nozzles with elliptical orifices experience a narrowing of the spray pattern. In other spray pattern types, the distribution within the spray pattern deteriorates without substantially changing the coverage area. The increase in nozzle capacity can sometimes be recognized by a decrease in system operating pressure, particularly when using positive displacement pumps.

Materials having harder surfaces generally provide longer wear life. The chart below provides standard abrasion resistance ratios for different materials to help you determine if you should consider a different material for your nozzles, orifice inserts and/or spray tips.

Materials that offer better corrosion resistance are also available. However, the rate of chemical corrosion on specific nozzle materials is dependent on the solution being sprayed. The corrosive properties of the liquid being sprayed, its percent concentration and temperature, as well as the corrosion resistance of the nozzle material to the chemical must all be considered.

APPROXIMATE ABRASION RESISTANCE RATIOS

<table>
<thead>
<tr>
<th>Spray Nozzle Material</th>
<th>Resistance Ratio</th>
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</thead>
<tbody>
<tr>
<td>Brass</td>
<td>1</td>
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<tr>
<td>Polypropylene</td>
<td>1–2</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>4–6</td>
</tr>
<tr>
<td>HASTELLOY</td>
<td>4–6</td>
</tr>
<tr>
<td>Hardened Stainless Steel</td>
<td>10–15</td>
</tr>
<tr>
<td>Stellite</td>
<td>10–15</td>
</tr>
<tr>
<td>Ceramics</td>
<td>90–200</td>
</tr>
<tr>
<td>Carbides</td>
<td>180–250</td>
</tr>
</tbody>
</table>

See Trademark Registration and Ownership, page i-1.

VISCOSITY

Absolute (dynamic) viscosity is the property of a liquid which resists change in the shape or arrangement of its elements during flow. Liquid viscosity is a primary factor affecting spray pattern formation and, to a lesser degree, capacity. High viscosity liquids – 100 cp or higher – require a higher minimum pressure to begin formation of a spray pattern and provide narrower spray angles as compared to those of water.

TEMPERATURE

The values given in this catalog are based on spraying water at 70°F (21°C). Although liquid temperature changes do not affect the spray performance of a nozzle, they often affect viscosity, surface tension and specific gravity which do influence spray nozzle performance.

SURFACE TENSION

The surface of a liquid tends to assume the smallest possible size; acting, in this respect, like a membrane under tension. Any portion of the liquid surface exerts a tension upon adjacent portions or upon other objects with which it is in contact. This force is in the plane of the surface and its amount per unit of length is surface tension. Its value for water is about 73 dynes per cm at 70°F (21°C). The main effects of surface tension are on minimum operating pressure, spray angle and drop size.

The property of surface tension is more apparent at low operating pressures. A higher surface tension reduces the spray angle, particularly on hollow cone and flat fan spray nozzles. Low surface tensions can allow a nozzle to be operated at a lower pressure.

SUMMARY OF SPRAY PERFORMANCE CONSIDERATIONS

The factors below can affect a spray nozzle’s performance, and the effects can vary based on nozzle type and size. In some applications, there are interrelated factors which may counteract certain effects. For instance, in the case of a hollow cone spray nozzle, increasing the temperature of the liquid decreases the specific gravity, thereby producing a greater flow rate while at the same time decreasing the viscosity which reduces the flow.

<table>
<thead>
<tr>
<th>Nozzle Characteristics</th>
<th>Increase in Operating Pressure</th>
<th>Increase in Specific Gravity</th>
<th>Increase in Viscosity</th>
<th>Increase in Fluid Temperature</th>
<th>Increase in Surface Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern Quality</td>
<td>Improves</td>
<td>Negligible</td>
<td>Deteriorates</td>
<td>Improves</td>
<td>Negligible</td>
</tr>
<tr>
<td>Drop Size</td>
<td>Decreases</td>
<td>Negligible</td>
<td>Increases</td>
<td>Decreases</td>
<td>Increases</td>
</tr>
<tr>
<td>Spray Angle</td>
<td>Increases then decreases</td>
<td>Negligible</td>
<td>Decreases</td>
<td>Increases</td>
<td>Decreases</td>
</tr>
<tr>
<td>Capacity</td>
<td>Increases</td>
<td>Decreases</td>
<td>Full/hollow cone – increases</td>
<td>Flat – decreases</td>
<td>Depends on fluid sprayed and nozzle used</td>
</tr>
<tr>
<td>Impact</td>
<td>Increases</td>
<td>Negligible</td>
<td>Decreases</td>
<td>Increases</td>
<td>Negligible</td>
</tr>
<tr>
<td>Velocity</td>
<td>Increases</td>
<td>Decreases</td>
<td>Decreases</td>
<td>Increases</td>
<td>Negligible</td>
</tr>
<tr>
<td>Wear</td>
<td>Increases</td>
<td>Negligible</td>
<td>Decreases</td>
<td>Depends on fluid sprayed and nozzle used</td>
<td>No effect</td>
</tr>
</tbody>
</table>
ESTIMATING PRESSURE DROPS THROUGH FLUIDLINE ACCESSORIES

The rated capacities listed in this catalog for valves, strainers and fittings typically correspond to pressure drops of approximately 5% of their maximum operating pressure.

Visit spray.com/sprayware for an online pressure drop calculator. Or contact your local sales engineer.

### APPROXIMATE FRICTION LOSS IN PIPE FITTINGS IN EQUIVALENT FEET (METERS) OF STRAIGHT PIPE

Use the chart below to determine the equivalent length of pipe through fittings to equate the friction loss.

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Standard Wt. (in.)</th>
<th>Actual Inside Dia. (in.</th>
<th>Gate Valve FULL OPEN ft. (m)</th>
<th>Globe Valve FULL OPEN ft. (m)</th>
<th>45° Elbow ft. (m)</th>
<th>Run of Standard Tee ft. (m)</th>
<th>Standard Elbow or Run of Tee Reduced 1/2 ft. (m)</th>
<th>Standard Tee Through Side Outlet ft. (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>.269 (6.8)</td>
<td>.15 (.05)</td>
<td>8.0 (2.4)</td>
<td>.35 (.11)</td>
<td>.40 (.12)</td>
<td>.75 (.23)</td>
<td>1.4 (.43)</td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td>.364 (9.2)</td>
<td>.20 (.06)</td>
<td>11.0 (3.4)</td>
<td>.50 (.15)</td>
<td>.65 (.20)</td>
<td>1.1 (.34)</td>
<td>2.2 (.67)</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>.622 (15.8)</td>
<td>.35 (.11)</td>
<td>18.6 (5.7)</td>
<td>.78 (.24)</td>
<td>1.1 (.34)</td>
<td>1.7 (.52)</td>
<td>3.3 (.10)</td>
<td></td>
</tr>
<tr>
<td>3/4</td>
<td>.824 (21)</td>
<td>.44 (.13)</td>
<td>23.1 (7.0)</td>
<td>.97 (.30)</td>
<td>1.4 (.43)</td>
<td>2.1 (.64)</td>
<td>4.2 (.13)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.049 (27)</td>
<td>.56 (.17)</td>
<td>29.4 (9.0)</td>
<td>1.2 (.37)</td>
<td>1.8 (.55)</td>
<td>2.6 (.79)</td>
<td>5.3 (.16)</td>
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</tr>
<tr>
<td>1-1/4</td>
<td>1.380 (35)</td>
<td>.74 (.23)</td>
<td>38.6 (11.8)</td>
<td>1.6 (.49)</td>
<td>2.3 (.70)</td>
<td>3.5 (.11)</td>
<td>7.0 (.21)</td>
<td></td>
</tr>
<tr>
<td>1-1/2</td>
<td>1.610 (41)</td>
<td>.86 (.26)</td>
<td>45.2 (13.8)</td>
<td>1.9 (.58)</td>
<td>2.7 (.82)</td>
<td>4.1 (1.2)</td>
<td>8.1 (.25)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.067 (53)</td>
<td>1.1 (.34)</td>
<td>58 (17.7)</td>
<td>2.4 (.73)</td>
<td>3.5 (.11)</td>
<td>5.2 (.16)</td>
<td>10.4 (.32)</td>
<td></td>
</tr>
<tr>
<td>2-1/2</td>
<td>2.469 (63)</td>
<td>1.3 (.40)</td>
<td>69 (21)</td>
<td>2.9 (.88)</td>
<td>4.2 (1.3)</td>
<td>6.2 (1.9)</td>
<td>12.4 (3.8)</td>
<td></td>
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<tr>
<td>3</td>
<td>3.088 (78)</td>
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<td>86 (26)</td>
<td>3.6 (1.1)</td>
<td>5.2 (1.6)</td>
<td>7.7 (2.3)</td>
<td>15.5 (4.7)</td>
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<tr>
<td>4</td>
<td>4.026 (102)</td>
<td>2.1 (.64)</td>
<td>113 (34)</td>
<td>4.7 (1.4)</td>
<td>6.6 (2.1)</td>
<td>10.2 (3.1)</td>
<td>20.3 (6.2)</td>
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<tr>
<td>5</td>
<td>5.047 (128)</td>
<td>2.7 (.82)</td>
<td>142 (43)</td>
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<td>8.5 (2.6)</td>
<td>12.7 (3.9)</td>
<td>25.4 (7.7)</td>
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<tr>
<td>6</td>
<td>6.065 (154)</td>
<td>3.2 (.98)</td>
<td>170 (52)</td>
<td>7.1 (2.2)</td>
<td>10.2 (3.1)</td>
<td>15.3 (4.7)</td>
<td>31 (9.4)</td>
<td></td>
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### AIR FLOW (SCFM AND NLPM) THROUGH SCHEDULE 40 STEEL PIPE

<table>
<thead>
<tr>
<th>Applied Pressure psig</th>
<th>1/8&quot;</th>
<th>1/4&quot;</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1-1/4&quot;</th>
<th>1-1/2&quot;</th>
<th>2&quot;</th>
<th>2-1/2&quot;</th>
<th>3&quot;</th>
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<tbody>
<tr>
<td>5</td>
<td>.5</td>
<td>1.2</td>
<td>2.7</td>
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<td>6.6</td>
<td>13.0</td>
<td>27</td>
<td>40</td>
<td>80</td>
<td>135</td>
<td>240</td>
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<tr>
<td>10</td>
<td>.8</td>
<td>1.7</td>
<td>3.9</td>
<td>7.7</td>
<td>11.0</td>
<td>21</td>
<td>44</td>
<td>64</td>
<td>125</td>
<td>200</td>
<td>370</td>
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<tr>
<td>20</td>
<td>1.3</td>
<td>.3</td>
<td>3.0</td>
<td>6.6</td>
<td>13.0</td>
<td>35</td>
<td>75</td>
<td>110</td>
<td>215</td>
<td>350</td>
<td>600</td>
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<td>23</td>
<td>34</td>
<td>62</td>
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<td>385</td>
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<td>1100</td>
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<td>60</td>
<td>3.5</td>
<td>8.0</td>
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<td>195</td>
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<td>560</td>
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<td>1600</td>
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<td>80</td>
<td>4.7</td>
<td>10.5</td>
<td>23</td>
<td>44</td>
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<td>2100</td>
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<td>315</td>
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<th>1/4&quot;</th>
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<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1-1/4&quot;</th>
<th>1-1/2&quot;</th>
<th>2&quot;</th>
<th>2-1/2&quot;</th>
<th>3&quot;</th>
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<td>218</td>
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<td>880</td>
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<td>2830</td>
<td>4760</td>
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<td>313</td>
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<td>838</td>
<td>1675</td>
<td>3130</td>
<td>6860</td>
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<td>304</td>
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<td>674</td>
<td>135</td>
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<td>5130</td>
<td>11260</td>
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<td>3/4</td>
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<td>594</td>
<td>1189</td>
<td>1589</td>
<td>317</td>
<td>6540</td>
<td>13780</td>
<td>29560</td>
<td>55120</td>
<td>100800</td>
</tr>
<tr>
<td>1-1/4</td>
<td>164</td>
<td>370</td>
<td>740</td>
<td>1480</td>
<td>1980</td>
<td>396</td>
<td>7970</td>
<td>15940</td>
<td>35880</td>
<td>67160</td>
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<tr>
<td>1-1/2</td>
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<td>920</td>
<td>1840</td>
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<td>488</td>
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<td>608</td>
<td>12120</td>
<td>25240</td>
<td>56480</td>
<td>112960</td>
<td>225920</td>
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<td>722</td>
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<td>2888</td>
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<td>770</td>
<td>15640</td>
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<td>3608</td>
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<td>926</td>
<td>19080</td>
<td>42160</td>
<td>84320</td>
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<td>337280</td>
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</table>

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### FLOW OF WATER THROUGH SCHEDULE 40 STEEL PIPE – PRESSURE DROP

<table>
<thead>
<tr>
<th>Flow (gpm)</th>
<th>Pressure Drop in psi for Various Pipe Diameters</th>
<th>Flow (lpm)</th>
<th>Pressure Drop in bar for Various Pipe Diameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 ft. Length Pipe</td>
<td></td>
<td>10 m Length Pipe</td>
</tr>
<tr>
<td></td>
<td>1/8&quot;</td>
<td>1/4&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>0.3</td>
<td>.42</td>
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<td>.12</td>
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<td>500</td>
<td>.57</td>
<td>.18</td>
<td>.07</td>
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<td>750</td>
<td>.39</td>
<td>.16</td>
<td>.04</td>
</tr>
<tr>
<td>1000</td>
<td>.68</td>
<td>.27</td>
<td>.07</td>
</tr>
<tr>
<td>2000</td>
<td>1.0</td>
<td>.26</td>
<td></td>
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</table>

Recommended capacity range for each size is shown in shaded areas. For pipe lengths greater than 10 ft. (3 m), the pressure loss is proportional to the length. For 50 ft. (15 m) of pipe, the pressure drop is approximately 5 times the value in the table.
MAINTENATING SPRAY NOZZLES

Like any precision component, spray nozzles wear over time. Spray nozzle wear can be hard to detect. Small changes in performance can result in quality problems and wasted water, chemicals and electricity. The cost of using worn nozzles can be very significant – tens of thousands of dollars or more per year. Detecting nozzle wear in the early stages can prevent a significant profit drain.

USING NOZZLES THAT ARE SPRAYING JUST 15% OVER THE RATED CAPACITY*

<table>
<thead>
<tr>
<th>WASTE</th>
<th>COST OF EXCESS</th>
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</thead>
<tbody>
<tr>
<td>WATER</td>
<td>US $4,680</td>
</tr>
<tr>
<td>CHEMICALS</td>
<td>US $170,164</td>
</tr>
<tr>
<td>WASTEWATER DISPOSAL</td>
<td>US $7,956</td>
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</tbody>
</table>

TOTAL COST OF USING WORN NOZZLES: US $182,800

*Based on total system flow of 100 gpm (379 lpm). Water cost of US $2.75/1000 gallons (3,785 liters). Chemical cost of US $1.00 per gallon (liter) and a dilution ratio of 10:1. System operates 2080 hours per year. Increased electricity cost, scrap and downtime due to quality problems are not included.

DETECTING WORN SPRAY NOZZLES

Visually inspecting nozzles is a start but unless wear is significant, it may not be detectable.

The graphic below illustrates this problem. The spray tip on the left is new and sprays properly. The spray tip on the right is worn and sprays 30% over capacity. The difference is undetectable by inspecting the nozzle, but spray collection data reveals the difference between the two tips.

WATCH FOR THESE SIGNS OF NOZZLE WEAR:

- **Quality control issues and increased scrap.** Check for uneven coating, cooling, drying or cleaning and changes in temperature, dust content and humidity
- **Flow rate change:**
  - For centrifugal pumps: monitor flow meter readings to detect increases or collect and measure the flow from the spray nozzle for a given period of time at a specific pressure and compare them to flow rate readings from new, unused spray nozzles
  - For positive displacement pumps: monitor the liquid line pressure for decreases; the flow rate will remain constant
- **Spray pressure in the nozzle manifold:**
  - For centrifugal pumps: monitor for increases in liquid volume sprayed. The spraying pressure is likely to remain the same
  - For positive displacement pumps: monitor pressure gauge for decreases in pressure and reduction in impact on sprayed surfaces. The liquid volume sprayed is likely to remain the same. Also, monitor for increases in pressure due to clogged spray nozzles
- **Deterioration of spray pattern quality.** Visually inspect the spray pattern for changes. Check the spray angle with a protractor. Measure the width of the spray pattern on the sprayed surface

REPLACING WORN NOZZLES

Inspecting and maintaining your nozzles on a regular basis will help identify wear and extend service life. However, wear will occur over time and the only solution is to replace your nozzles. Here are a few guidelines to help you determine the optimal replacement interval:

- Are worn nozzles affecting product or process quality? If so, replace nozzles as soon as any wear is evident
- Is water conservation a priority? If so, replace nozzles as soon as wear is evident
- How much are you spending by continuing to use worn nozzles? How do the additional costs for water, chemicals, electricity and wastewater disposal compare with the cost of replacement nozzles?
- Is precise spray performance important to your overall process? If so, you may want to set pre-determined dates for nozzle replacement such as annual or semi-annual maintenance shutdowns

For more information on nozzle maintenance and replacement, visit spray.com. Or, contact your local sales engineer for assistance developing a nozzle maintenance program.
TABLE OF EQUIVALENTS

VOLUMETRIC UNIT

<table>
<thead>
<tr>
<th>Volumetric Unit</th>
<th>Cubic Centimeter</th>
<th>Fluid Ounce</th>
<th>Pound of Water</th>
<th>Liter</th>
<th>US Gallon</th>
<th>Cubic Foot</th>
<th>Cubic Meter</th>
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</thead>
<tbody>
<tr>
<td>Cubic Centimeter</td>
<td>•</td>
<td>.034</td>
<td>2.2 x 10^3</td>
<td>.001</td>
<td>2.64 x 10^-4</td>
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<td>Fluid Ounce</td>
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<td>Pound of Water</td>
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<td>1000</td>
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<td>•</td>
<td>.264</td>
<td>.035</td>
<td>.001</td>
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<td>3.785</td>
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LIQUID PRESSURE

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<th>Kg/Cm²</th>
<th>Atmosphere</th>
<th>Bar</th>
<th>Inch Mercury</th>
<th>kPa (kilopascal)</th>
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<td>.088</td>
<td>.069</td>
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<td>.030</td>
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<td>Kg/Cm²</td>
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<td>305</td>
<td>30.5</td>
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<td>•</td>
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<td>Meter</td>
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<td>3.94 x 10^4</td>
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<td>3.28</td>
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MISCELLANEOUS EQUIVALENTS

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<th>Equivalent</th>
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<td>Pound</td>
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<td>Horsepower</td>
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<td>British Thermal Unit</td>
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<tr>
<td>Square Inch</td>
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<tr>
<td>Square Foot</td>
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MISCELLANEOUS FORMULAS

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<td>Fahrenheit (°F)</td>
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<tr>
<td>Celsius (°C)</td>
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<tr>
<td>Area of a Circle</td>
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<tr>
<td>Volume of a Sphere</td>
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<tr>
<td>Area of a Sphere</td>
<td>= 3.1416 x (Dia.²)</td>
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DIMENSIONS

The catalog tabulations show orifice dimensions as “Nom.” (nominal).
READ THE FOLLOWING INSTRUCTIONS:

**WARNING:**
All safety related and operating instructions should be read before the nozzle is operated. Follow all operating instructions. Failure to do so could result in serious or fatal injury.

**WARNING:**
It is important to recognize proper safety precautions when using a pressurized spray system. Fluids under pressure can penetrate skin and cause severe injury. Seek medical attention immediately.

**WARNING:**
When dealing with pressure applications, the system pressure should never exceed the lowest rated component. Always know your system and all component capabilities, maximum pressures and flow rates.

**WARNING:**
Before performing any maintenance, make sure all liquid supply lines to the machine are shut off and/or disconnected and chemicals/liquids are drained and not pressurized.

**WARNING:**
The use of any chemicals requires careful control of all worker hygiene. Follow all MSDS or safety precautions provided by the manufacturer.

**WARNING:**
Spraying Systems Co. does not manufacture or supply any of the chemicals used with our nozzles and is not responsible for their effects. Because of the large number of chemicals that could be used and their different chemical reactions, the buyer and user of this equipment should determine compatibility of the materials used and any of the potential hazards involved.

**WARNING:**
Spraying Systems Co. strongly recommends the use of appropriate safety equipment when working with potentially hazardous chemicals.

**This equipment includes but is not limited to:**
- Protective hat
- Safety glasses or face shield
- Chemical-resistant gloves and apron
- Long sleeve shirt and long pants

**WARNING:**
Before use, be sure appropriate connections are secure and made to withstand weight and reaction forces of the operating unit.

*NOTE:* Always remember to carefully read the chemical manufacturer’s label and follow all directions.

**WARNING:**
It is important to operate equipment within the temperature range of all components. Also, insure appropriate time lapse or proper safety equipment is used when handling components after they’re exposed to high temperatures.

**WARNING:**
Do not use any equipment outside the intended purposes of the product. Misuse can result in personal injury or product damage.
AUTOMATIC SPRAY NOZZLES

COATING • DISPENSING • GLAZING
LAMINATING • ROBOTIC APPLICATIONS
MARKING • FLAVORING • HUMIDIFYING
LUBRICATING • MOISTURIZING
INTRODUCTION

If your application requires precise control of intermittent spraying, you’ll find dozens of product options in this section. Both electrically-actuated and air-actuated nozzles are available. Models which atomize flow using liquid pressure only or using compressed air are both offered. More information about the spray performance of the hydraulic spray tips and air atomizing set-ups used in these nozzles is found in Section D. To optimize the performance of automatic spray nozzles, consider adding an AutoJet® Spray Controller.

THE BENEFITS OF SPRAY CONTROL

Controlling automatic nozzles with one of our AutoJet spray controllers maximizes nozzle performance and enables automation of spray system operation. Automated spray control can help improve accuracy, reduce waste and overspray, boost production time and allow workers to be deployed to other tasks.

More specifically, with AutoJet Spray Control you can:

• Adjust flow rate for line speed variations
• Fine-tune timing to accurately spray moving targets and prevent dripping on nozzle actuation or shut-off
• Precisely control liquid pressure, atomizing air pressure and fan air pressure to optimize spray performance
• Notify operators or shut down on specified faults
• Integrate control of your spray application with existing plant control

For more information on AutoJet Spray Controllers see pages B4 & B5
**PRECISION SPRAY CONTROL**

Overview

**ELECTRICALLY-ACTUATED SPRAY NOZZLES: HYDRAULIC**

Quick Reference Guide

PulsaJet® Series

**ELECTRICALLY-ACTUATED SPRAY NOZZLES: AIR ATOMIZING**

Quick Reference Guide

PulsaJet Series

AA28JJAU Nozzles

AA29JAUCO Nozzles

**AIR-ACTUATED SPRAY NOZZLES: HYDRAULIC**

- Quick Reference Guide: B12
- JAUH and JJAUH Series: B13
- D55500-JAUH Series: B13
- AA22AUH Series: B13
- AA24AUH Series: B14

**AIR-ACTUATED SPRAY NOZZLES: AIR ATOMIZING**

- Quick Reference Guide: B15
- JAU Series: B16
- JJAU Series: B17
- D55500-JAU Series: B18
- VAU/VMAU Variable Spray Series: B18
- 10530 Series: B18
- 72100 Nozzles: B18

**OPTIMIZE PERFORMANCE WITH:**

AutoJet® Spray Controllers provide control ranging from simple on/off to sophisticated closed-loop to optimize the performance of automatic nozzles. See page B4

A variety of spray manifolds are available to save installation time and ensure proper nozzle positioning. See page F1

Premium UniJet® tips are available for select automatic nozzles and provide even coverage and better spray distribution. See page D5
EXPERIENCE BETTER PRECISION & INCREASED AUTOMATION

AUTOJET® SPRAY CONTROLLERS

All of our automatic spray nozzles are compatible with our spray controllers. For operations like coating, lubricating, moisturizing and adding costly ingredients, spray control can dramatically improve product or process quality and help save tens of thousands of dollars annually.

If your operation requires any of the following, the spray control should be considered.

• Consistent, uniform coverage of the target
• Precise spray placement on the target
• Intermittent spraying
• The use of costly coatings or chemicals
• The ability to adjust spray performance based on line speed
• Monitoring and supervision to ensure proper spray performance

Our AutoJet Spray Controllers range from basic to advanced.

• AutoJet Model 1550+ Modular Spray System with basic on/off spray control for up to eight automatic nozzles

• AutoJet Model 2008+ Spray Control Panel provides timing and sensor control for up to 16 nozzles

• AutoJet Model 2250+ Spray Control Panel with sophisticated real-time monitoring and closed-loop control for up to 16 nozzles

Many systems include a spray manifold to ensure proper delivery of the fluid to the nozzle, maintain optimal nozzle positioning and organize tubing to simplify maintenance. We have a wide variety of styles available. Consult with your local sales engineer to determine which manifold is compatible with the nozzles in your spray system.

FOR A FULL LIST OF SPRAY MANIFOLDS SEE PAGE F4
PRECISION SPRAY CONTROL (PSC)

PulsaJet® automatic spray nozzles paired with an AutoJet® spray controller provide Precision Spray Control (PSC) to ensure coatings are applied uniformly and with minimal waste.

The benefits of PSC are many:

• Automatically maintains consistent coating weight even when line speed changes
• Reduces product scrap caused by over- or under-application of the sprayed solution
• Reduces the use of costly coatings by applying the proper coating volume directly on the target
• Eliminates maintenance time to clean overspray from equipment and/or floor due to over-application
• Improves worker safety by minimizing misting
• Eliminates the need for compressed air in some operations

HOW PRECISION SPRAY CONTROL WORKS

Electrically-actuated spray nozzles are turned on and off very quickly to control flow rate. This cycling is so fast that the flow often appears to be constant.

With traditional nozzles, flow rate adjustments require a change in pressure. Changing pressure also changes the nozzle’s spray angle/coverage and drop size. With PSC, pressure remains constant enabling flow rate changes without changes in spray performance.

NOZZLES SPRAYING 90% OF THE TIME

NOZZLES SPRAYING 50% OF THE TIME

NOZZLES SPRAYING 25% OF THE TIME

TYPICAL APPLICATIONS:

• Adhesives/glue
• Anti-foaming agents
• Ascorbic acid
• De-ionized water
• Detergents
• Dyes and inks
• Emulsions
• Enzymes
• Fire retardants
• Fragrances/aromas
• Gels
• Lotions
• Lubricants/release agents/silicone
• Oils
• Wax

LEARN MORE & SEE HOW PSC WORKS:

spray.com/psc
OVERVIEW: ELECTRICALLY-ACTUATED HYDRAULIC NOZZLES

- Hydraulic atomizing nozzles use only liquid pressure as the force for atomization
- Electrically-actuated nozzles provide the fastest cycling of any automatic nozzles – up to 25,000 cycles per minute
- When using a PulsaJet® series nozzle and an AutoJet® spray controller, Precision Spray Control (PSC) can provide:
  - Consistent application rates at varying line speeds
  - Low flow rates comparable to air atomizing nozzles eliminating the use of compressed air in some operations
- Options for the PulsaJet 10000 series nozzles include food-grade materials of construction, sanitary connections, liquid recirculation and temperature control for spraying viscous liquids
- Dozens of UniJet® spray tips are available for PulsaJet nozzles in a wide variety of flow rates. Auto-alignment of spray tips is offered on some models
- Other electrically-actuated hydraulic nozzles include versions with a removable fluid module for easy maintenance and compact versions with stainless steel and Ryton® construction for maximum chemical resistance

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
# QUICK REFERENCE GUIDE – ELECTRICALLY-ACTUATED HYDRAULIC PULSAJET® SERIES

<table>
<thead>
<tr>
<th>PulsaJet Series</th>
<th>Connection Size (in.)</th>
<th>Max Liquid Pressure</th>
<th>Power</th>
<th>Max Flow</th>
<th>Max Temp (liquid)</th>
<th>Max Speed</th>
<th>Spray Tips</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA10000AUH-03</td>
<td>1/8 NPT or BSPT</td>
<td>100 psi (7 bar)*</td>
<td>24 VDC, (0.36 Amp)</td>
<td>0.47 gpm (1.8 lpm)</td>
<td>200°F (93°C)</td>
<td>10,000 cpm (15,000 cpm with AutoJet 2008+ controller)</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>AA10000AUH-03-Z1</td>
<td>1/8 (F) NPT or BSPT</td>
<td>100 psi (7 bar)</td>
<td>24 VDC, (0.36 Amp)</td>
<td>0.47 gpm (1.8 lpm)</td>
<td>104°F (40°C)</td>
<td>10,000 cpm</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>AA10000AUH-10</td>
<td>1/8 (F) NPT or BSPT</td>
<td>100 psi (7 bar)</td>
<td>24 VDC, (1.05 Amp)</td>
<td>1.6 gpm (6.1 lpm)</td>
<td>150°F (66°C)</td>
<td>5,000 cpm</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>AA10000AUH-104210</td>
<td>1/8 (F) NPT or BSPT</td>
<td>100 psi (7 bar)</td>
<td>24 VDC, (0.36 Amp)</td>
<td>0.47 gpm (1.8 lpm)</td>
<td>200°F (93°C)</td>
<td>10,000 cpm (15,000 cpm with AutoJet 2008+ controller)</td>
<td>PWMD w/ auto spray pattern alignment (page D12)</td>
</tr>
<tr>
<td>AA10000AUH-104214</td>
<td>1/8 (F) NPT or BSPT</td>
<td>100 psi (7 bar)</td>
<td>24 VDC, (0.36 Amp)</td>
<td>0.47 gpm (1.8 lpm)</td>
<td>200°F (93°C)</td>
<td>10,000 cpm (15,000 cpm with AutoJet 2008+ controller)</td>
<td>PWMD w/ auto spray pattern alignment (page D12)</td>
</tr>
<tr>
<td>AA10000AUH-104215</td>
<td>1/8 (F) NPT or BSPT</td>
<td>100 psi (7 bar)</td>
<td>24 VDC, (0.36 Amp)</td>
<td>0.47 gpm (1.8 lpm)</td>
<td>200°F (93°C)</td>
<td>10,000 cpm (15,000 cpm with AutoJet 2008+ controller)</td>
<td>PWMD w/ auto spray pattern alignment (page D12)</td>
</tr>
<tr>
<td>AA10000AUH-72440-1/4</td>
<td>1/4 (F) NPT or BSPT</td>
<td>100 psi (7 bar)*</td>
<td>24 VDC, (0.36 Amp)</td>
<td>0.47 gpm (1.8 lpm)</td>
<td>150°F (66°C)</td>
<td>10,000 cpm (15,000 cpm with AutoJet 2008+ controller)</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>AA10000AUH-0050</td>
<td>5/32 (4mm) tube fittings</td>
<td>200 psi (14 bar)</td>
<td>48 VDC, (1.0 Amp)</td>
<td>0.08 gpm (0.30 lpm)</td>
<td>150°F (66°C)</td>
<td>25,000 cpm</td>
<td>PWMM w/ auto spray alignment pattern (page D12)</td>
</tr>
</tbody>
</table>

*Higher pressure possible with AutoJet 2008+ spray controller

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**ELECTRICALLY-ACTUATED HYDRAULIC PULSAJET® NOZZLE OPTIONS**

**AA10000AUH-03**
- Typical flow range: 0.0017 - 0.47 gpm (0.006 - 1.8 lpm)
- Construction: Stainless steel, Viton® or EPDM seals, PPS and PEEK

**AA10000AUH-03-Z1**
- For use in Zone 1 hazardous areas
- Typical flow range: 0.0017 - 0.47 gpm (0.006 - 1.8 lpm)
- Construction: Stainless steel, FFKM seals, PPS and PEEK
ELECTRICALLY-ACTUATED HYDRAULIC PULSAJET® NOZZLE OPTIONS

**AA10000AUH-10**
- Typical flow range: 0.02 - 1.6 gpm (0.075 - 6.1 lpm)
- Highest capacity PulsaJet nozzle
- Construction: Stainless steel, Viton® or EPDM seals, PPS and PEEK

**AA10000AUH-104210**
- Rear liquid inlet
- Typical flow range: 0.0017 - 0.47 gpm (0.006 - 1.8 lpm)
- Construction: Stainless steel, Viton or EPDM seals, PPS and PEEK

**AA10000AUH-104214**
- Side liquid inlet for low profile mounting
- Typical flow range: 0.0017 - 0.47 gpm (0.006 - 1.8 lpm)
- Construction: Stainless steel, Viton or EPDM seals, PPS and PEEK

**AA10000AUH-104215**
- Front port for liquid recirculation
- Typical flow range: 0.0017 - 0.47 gpm (0.006 - 1.8 lpm)
- Construction: Stainless steel, Viton or EPDM seals, PPS and PEEK

**AA10000AUH-72440-1/4**
- Jacketed design keeps nozzle and sprayed liquid at a consistent temperature
- Typical flow range: 0.0017 - 0.47 gpm (0.006 - 1.8 lpm)
- Construction: Electropolished or chromium nitride coated magnetic stainless steel, stainless steel, Viton or EPDM seals, PPS and PEEK

**AA10000AUH-0050**
- Miniature design for applications with limited space
- Typical flow range: 0.0009 - 0.08 gpm (0.003 - 0.30 lpm)
- Construction: Stainless steel, Viton or EPDM seals, PPS and PEEK
- Available only as a part of the PulsaJet® Mini Low Flow Spray System (with AutoJet® spray controller)
OTHER ELECTRICALLY-ACTUATED HYDRAULIC NOZZLE OPTIONS

### AA250AUH
- Flow rates up to 0.47 gpm (1.8 lpm)
- Accurate spray placement in high-speed or low-capacity operations
- Compact, lightweight design
- CE-certified
- Built-in mounting bracket accepts #8-32 UNC or M4 threaded screws
- Construction: Ryton® and stainless steel with Viton® seals for maximum corrosion resistance

### AA26AUH
- Flow rates up to 1.1 gpm (4.2 lpm)
- High-speed, high-pressure operation
- Fluid module with all fluid handling parts can be replaced without disturbing the mounting or electrical connections
- 24200 version provides 2-1/2” (63.5 mm) extension for coating interiors of products like cans
- Corrosion-resistant – wetted parts are stainless steel or tungsten carbide

### PLACING YOUR ORDER
Call 1.630.655.5000 for application assistance or to place an order.

### FOR DETAILED SPRAY TIP PERFORMANCE DATA SEE SECTION D
**OVERVIEW: ELECTRICALLY-ACTUATED AIR ATOMIZING NOZZLES**

- Electrically-actuated nozzles provide the fastest cycling of any automatic nozzles – up to 10,000 cycles per minute
- Compressed air is used as the force for atomization, producing the smallest drop sizes and lowest possible flow rates
- Hundreds of air atomizing set-ups are available for a wide variety of spray patterns and flow rates
- Precision Spray Control using an AutoJet® Spray Controller ensures consistent flow rates at varying line speeds
- Many options are available for convenient mounting, clean-out needles, food grade materials of construction and more

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**QUICK REFERENCE GUIDE**

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Connection Size (in.)</th>
<th>Max Liquid Pressure</th>
<th>Power</th>
<th>Max Air Pressure</th>
<th>Max Flow</th>
<th>Max Temp (liquid)</th>
<th>Max Speed</th>
<th>Spray Set-Ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA10000JJAU</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>100 psi (7 bar)</td>
<td>100 psi (7 bar)</td>
<td>0.16 gpm (0.61 lpm)</td>
<td>200°F (93°C)</td>
<td>10,000 cpm</td>
<td>JJ set-ups (page D33)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>250 psi (17 bar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(w/ AutoJet 2008+ spray controller)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA10000JJAU-10</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>100 psi (7 bar)</td>
<td>24 VDC (1.05 Amp)</td>
<td>100 psi (7 bar)</td>
<td>0.75 gpm (2.84 lpm)</td>
<td>200°F (93°C)</td>
<td>5000 cpm</td>
<td>Threadless 1/4J set-ups (page D22)</td>
</tr>
<tr>
<td>AA28JJAU-49815</td>
<td>1/8 NPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>24 VDC (0.50 Amp)</td>
<td>100 psi (7 bar)</td>
<td>0.42 gpm (1.62 lpm)</td>
<td>150°F (66°C)</td>
<td>2000 cpm</td>
<td>JJ set-ups (page D33)</td>
</tr>
<tr>
<td>AA29JAU00</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>60 psi (4.0 bar)</td>
<td>24 VDC (0.75 Amp)</td>
<td>100 psi (7 bar)</td>
<td>0.75 gpm (2.84 lpm)</td>
<td>150°F (66°C)</td>
<td>1000 cpm</td>
<td>Threadless 1/4J set-ups (page D22)</td>
</tr>
</tbody>
</table>

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**AA10000JJAU Nozzle**

The compact design and simple mounting options for PulsaJet® nozzles enable them to be easily integrated into most production areas. Wear parts for all PulsatJet nozzles are easily accessible to minimize routine maintenance time.

**AA28JJAU Nozzle**

AA28JJAU nozzles feature a removable fluid module which contains all fluid handling parts and can be replaced without disturbing the mounting or electrical connections.
**ELECTRICALLY-ACTUATED AIR ATOMIZING PULSAJET® NOZZLE OPTIONS**

<table>
<thead>
<tr>
<th>AA10000JJAU</th>
<th>AA10000JJAU-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear liquid inlet; side air inlet</td>
<td>Rear liquid inlet; side air inlet</td>
</tr>
<tr>
<td>Flow rates up to 0.16 gpm (0.61 lpm)</td>
<td>Flow rates up to 0.75 gpm (2.84 lpm)</td>
</tr>
<tr>
<td>Stainless steel, PPS and PEEK construction with Viton® or EPDM seals</td>
<td>Stainless steel, PPS and PEEK construction with Viton or EPDM seals</td>
</tr>
<tr>
<td>All wear parts accessible from the front of the nozzle without disturbing mounting and air/liquid/electrical connections</td>
<td>All wear parts accessible from the front of the nozzle without disturbing mounting and air/liquid/electrical connections</td>
</tr>
<tr>
<td>For use with standard 1/8JJ air caps and 1/8JJ fluid caps (maximum size 2850)</td>
<td>For use with standard 1/4J air caps and threadless 1/4J fluid caps (maximum size 80100)</td>
</tr>
</tbody>
</table>

**OTHER ELECTRICALLY-ACTUATED AIR ATOMIZING NOZZLE OPTIONS**

<table>
<thead>
<tr>
<th>AA28JJAU-49815</th>
<th>AA29JAUCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow rates up to 0.42 gpm (1.62 lpm)</td>
<td>Flow rates up to 0.75 gpm (2.84 lpm)</td>
</tr>
<tr>
<td>Compact design features rear air and liquid inlets to minimize nozzle profile</td>
<td>Rear air and liquid inlets to minimize nozzle profile</td>
</tr>
<tr>
<td>Fluid modules available for in-line, 45° or 75° spray direction</td>
<td>Additional side liquid inlet available for liquid recirculation</td>
</tr>
<tr>
<td>Stainless steel, carbide, nylon construction with Viton or EPDM seals</td>
<td>Stainless steel, PTFE and PPS construction with Viton seals</td>
</tr>
<tr>
<td>Fluid re-circulation possible</td>
<td>Clean-out needle standard for all fluid cap sizes</td>
</tr>
<tr>
<td>For use with standard 1/8JJ air caps and 1/8JJ fluid caps (maximum size 2850)</td>
<td>For use with standard 1/4J air caps and threadless 1/4J fluid caps (maximum size 80100)</td>
</tr>
</tbody>
</table>

---

**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.

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**FOR DETAILED SPRAY TIP PERFORMANCE DATA SEE SECTION D**
**OVERVIEW: AIR-ACTUATED HYDRAULIC NOZZLES**

- A compressed air inlet on the nozzle body is used to control air cylinder operation for accurate intermittent spraying up to 180 cycles per minute.
- Lightweight nozzles use only liquid pressure as the force for atomization.
- A variety of nozzle bodies are available for convenient mounting and positioning.
- Models are available with extensions and with a recirculating option to optimize performance.
- UniJet® spray tips provide a wide variety of spray patterns and flow rates at liquid pressures up to 4000 psi (275 bar).

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### QUICK REFERENCE GUIDE

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Inlet Connection Size (in.)</th>
<th>Max Liquid Pressure</th>
<th>Max Air Cylinder Pressure</th>
<th>Max Flow</th>
<th>Max Temp (liquid)</th>
<th>Max Speed</th>
<th>Spray Tips</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4JAUH</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>0.8 gpm (3 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>1/8JJAUH</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>0.3 gpm (1.1 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>D55500-JAUH0</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>43 psi (3 bar)</td>
<td>72 psi (5 bar)</td>
<td>0.42 gpm (1.6 lpm)</td>
<td>158°F (70°C)</td>
<td>600 cpm</td>
<td>TPU or PWMD (page D6 &amp; D12)</td>
</tr>
<tr>
<td>D55500-JAUH1</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>145 psi (10 bar)</td>
<td>72 psi (5 bar)</td>
<td>1.5 gpm (5.5 lpm)</td>
<td>158°F (70°C)</td>
<td>300 cpm</td>
<td>TPU or PWMD (page D6 &amp; D12)</td>
</tr>
<tr>
<td>AA22AUH</td>
<td>1/8 NPT or BSPT (air) 1/4 NPS or BSPP (liquid)</td>
<td>600 psi (40 bar)</td>
<td>45 psi (3.1 bar)</td>
<td>5 gpm (18.9 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>AA22AUH-7676</td>
<td>1/8 NPT or BSPT (air) 1/4 NPS or BSPP (liquid)</td>
<td>250 psi (17 bar)</td>
<td>45 psi (3.1 bar)</td>
<td>2 gpm (7.6 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>AA22AUH-SS-14799</td>
<td>1/8 NPT or BSPT (air) 1/4 NPS or BSPP (liquid)</td>
<td>800 psi (55 bar)</td>
<td>75 psi (5.2 bar)</td>
<td>2 gpm (7.6 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TPU (page D6)</td>
</tr>
<tr>
<td>AA24AUA</td>
<td>1/8 NPT or BPST (air) 1/4 NPS or BSPP (liquid)</td>
<td>4000 psi (275 bar)</td>
<td>75 psi (5.2 bar)</td>
<td>0.6 gpm (2.3 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TP-TC (page D13)</td>
</tr>
<tr>
<td>AA24AUA-20190</td>
<td>1/8 NPT or BPST (air) 1/4 NPS or BSPP (liquid)</td>
<td>3000 psi (206 bar)</td>
<td>42 psi (2.9 bar)</td>
<td>0.6 gpm (2.3 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TP-TC (page D13)</td>
</tr>
<tr>
<td>AA24AUA-8395</td>
<td>1/8 NPT or BPST (air) 1/4 NPS or BSPP (liquid)</td>
<td>4000 psi (275 bar)</td>
<td>75 psi (5.2 bar)</td>
<td>0.6 gpm (2.3 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TP-TC (page D13)</td>
</tr>
<tr>
<td>AA24AUA-8980</td>
<td>1/8 NPT or BPST (air) 1/4 NPS or BSPP (liquid)</td>
<td>4000 psi (275 bar)</td>
<td>75 psi (5.2 bar)</td>
<td>0.6 gpm (2.3 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>TP-TC (page D13)</td>
</tr>
</tbody>
</table>
AIR-ACTUATED HYDRAULIC NOZZLE OPTIONS

1/4JAUH
- Compact design – 4.5” (114 mm) total length, 1.25 lbs. (0.57 kg) weight (approx.)
- Flow rates up to 0.8 gpm (3.0 lpm)
- Stainless steel or nickel-plated brass construction

1/8JAUH
- Extra compact design – 2.75” (70 mm) total length, 6.5 oz. (184 g) weight (approx.)
- Flow rates up to 0.3 gpm (1.1 lpm)
- Construction: Stainless steel or nickel-plated brass

D55500-JAUH0
- Block design 30% smaller than standard 1/4JAUH
- Flow rates up to 0.42 gpm (1.6 lpm)
- Stainless steel construction with Viton® or EPDM seals
- Available with automatic spray tip alignment (15° or 30° offset angle)
- Available with plate mount and wall mount options

D55500-JAUH1
- Block design 30% smaller than standard 1/4JAUH
- Flow rates up to 1.5 gpm (5.5 lpm)
- Stainless steel construction with Viton or EPDM seals
- Available with automatic spray tip alignment (15° or 30° offset angle)
- Available with plate mount and wall mount options

AA22AUH
- Flow rates up to 5 gpm (18.9 lpm)
- Nickel-plated brass or stainless steel construction with PTFE packing material
- Mounting hole with locking screw for easy rod mounting

MORE OPTIONS
AA22AUH-7676 – Same as AA22AUH with flow rates up to 2 gpm (7.6 lpm) and available with extensions up to 36” (914 mm)

CALL 1.630.655.5000 FOR APPLICATION ASSISTANCE OR TO PLACE AN ORDER.

FOR DETAILED SPRAY TIP PERFORMANCE DATA SEE SECTION D
AIR-ACTUATED HYDRAULIC NOZZLE OPTIONS

**AA22AUH-SS-11024**
- Flow rates up to 5 gpm (18.9 lpm)
- Nickel-plated brass or stainless steel construction with PTFE packing material
- Mounting hole with locking screw for easy rod mounting
- Dual liquid inlets allow continuous liquid recirculation

**AA22AUH-SS-14799**
- Flow rates up to 2 gpm (7.6 lpm)
- Nickel-plated brass or stainless steel construction with PTFE packing material
- Mounting hole with locking screw for easy rod mounting
- Adjusting screw limits stroke length of shut-off needle for greater control of response time

**AA24AUA**
- Flow rates up to 0.6 gpm (2.3 lpm)
- Nickel-plated brass or stainless steel construction with PTFE packing material
- Mounting hole with locking screw for easy rod mounting
- Rear knob locks the shut-off needle in place to prevent accidental discharge while changing spray tips
- Liquid inlet available in the standard “down” position or one of seven other positions in 45° increments

**AA24AUA-20190**
- Flow rates up to 0.6 gpm (2.3 lpm)
- Nickel-plated brass or stainless steel construction with PTFE packing material
- Mounting hole with locking screw for easy rod mounting
- Rear knob locks the shut-off needle in place to prevent accidental discharge while changing spray tips
- Aluminum body reduces total weight to just 1.25 lbs. (0.57 kg)

**AA24AUA-8395**
- Flow rates up to 0.6 gpm (2.3 lpm)
- Nickel-plated brass or stainless steel construction with PTFE packing material
- Mounting hole with locking screw for easy rod mounting
- Rear knob locks the shut-off needle in place to prevent accidental discharge while changing spray tips
- Dual liquid inlets allow continuous liquid recirculation

**AA24AUA-8980**
- Flow rates up to 0.6 gpm (2.3 lpm)
- Nickel-plated brass or stainless steel construction with PTFE packing material
- Mounting hole with locking screw for easy rod mounting
- Rear knob locks the shut-off needle in place to prevent accidental discharge while changing spray tips
- Available with extensions up to 36” (914 mm) long

**FOR DETAILED SPRAY TIP PERFORMANCE DATA SEE SECTION D**

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**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.
OVERVIEW: AIR-ACTUATED AIR ATOMIZING NOZZLES

- Compressed air is used to control air cylinder operation for accurate intermittent spraying (up to 180 cycles per minute) and also for liquid atomization
- Wide variety of nozzle bodies is available for convenient mounting and positioning
- Models available with clean-out needles, shut-off needles, swivels and strainers to optimize performance
- Liquid lines can be pressure-fed, siphon-fed or gravity-fed
- Spray set-ups, consisting of an air cap and a fluid cap can mix the fluids either internally or externally to produce a fine spray pattern
- Dozens of Drip Free™ air atomizing spray set-ups available for a wide range of flow capacity and spray patterns

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Inlet Connection, Size (in.)</th>
<th>Max Liquid Pressure</th>
<th>Min Air Cylinder Pressure</th>
<th>Max Flow</th>
<th>Max Temp (liquid)</th>
<th>Max Speed</th>
<th>Spray Set-Ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4JAU</td>
<td>1/4 NPT or BSPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>1.2 gpm (4.5 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>1/4J set-ups (page D22)</td>
</tr>
<tr>
<td>1/8JJAU</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>0.55 gpm (2.1 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>1/8JJ set-ups (page D33)</td>
</tr>
<tr>
<td>D55500-JAU</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>43 psi (3 bar)</td>
<td>72 psi (5 bar)</td>
<td>0.42 gpm (1.8 lpm)</td>
<td>150°F (70°C)</td>
<td>600 cpm</td>
<td>1/4J or DSU set-ups (page D22 &amp; D32)</td>
</tr>
<tr>
<td>D55500-JAUCO</td>
<td>1/8 NPT or BSPT (air and liquid)</td>
<td>58 psi (4 bar)</td>
<td>72 psi (5 bar)</td>
<td>0.42 gpm (1.8 lpm)</td>
<td>150°F (70°C)</td>
<td>300 cpm</td>
<td>1/4J or DSU set-ups (page D22 &amp; D32)</td>
</tr>
<tr>
<td>1/8VAU</td>
<td>1/8 NPT or BSPT (atom. air, fan air and liquid)</td>
<td>90 psi (6.2 bar)</td>
<td>35 psi (2.4 bar)</td>
<td>0.83 gpm (3.15 lpm)</td>
<td>200°F (93°C)</td>
<td>180 cpm</td>
<td>SUV set-ups (page D58)</td>
</tr>
<tr>
<td>1/4VMAU</td>
<td>1/4 NPT or BSPT, or sanitary flange (atom. air, fan air and liquid)</td>
<td>90 psi (6.2 bar)</td>
<td>35 psi (2.4 bar)</td>
<td>1.22 gpm (4.62 lpm)</td>
<td>200°F (93°C)</td>
<td>180 cpm</td>
<td>SUV set-ups (page D58)</td>
</tr>
<tr>
<td>10535-1/4J</td>
<td>1/4 NPT or BSPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>1.2 gpm (4.5 lpm)</td>
<td>400°F (204°C) liquid</td>
<td>150°F (66°C) air</td>
<td>180 cpm</td>
</tr>
<tr>
<td>10536-1/2J</td>
<td>1/2 NPT or BSPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>5.1 gpm (19.3 lpm)</td>
<td>400°F (204°C) liquid</td>
<td>150°F (66°C) air</td>
<td>180 cpm</td>
</tr>
<tr>
<td>10537-1J</td>
<td>1 NPT or BSPT (air and liquid)</td>
<td>125 psi (8.6 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>29 gpm (110 lpm)</td>
<td>400°F (204°C) liquid</td>
<td>150°F (66°C) air</td>
<td>180 cpm</td>
</tr>
<tr>
<td>72100</td>
<td>Hose barbs for 1/8&quot; tubing</td>
<td>100 psi (7 bar)</td>
<td>50 psi (3.5 bar)</td>
<td>0.22 gpm (0.83 lpm)</td>
<td>400°F (204°C)</td>
<td>180 cpm</td>
<td>1/8JJ set-ups up to PF35100 (page D33)</td>
</tr>
</tbody>
</table>

JAU air atomizing nozzles mix compressed air and liquid to form a finely atomized spray. An air-actuated internal cylinder with return stroke spring cycles the nozzle up to 180 times per minute.
**1/4JAU SERIES NOZZLES**

- Flow rates up to 1.2 gpm (4.5 lpm)
- Drip Free™ set-ups provide complete shut-off
- Nickel-plated brass or stainless steel construction

**1/4JAU NOZZLE OPTIONS**

**1/4JAUCO** — Clean-out needle operates with every spray cycle to reduce clogging

**7310-1/4JAU** — Knurled head screw control permits manual nozzle shut-off without disturbing operation of other nozzles on a manifold

**6218-1/4JAU** — Single air inlet for cylinder and atomizing air

**6083-1/4JAU** — Single air inlet for cylinder and atomizing air. Includes manual shut-off assembly to temporarily block liquid flow

**1/4JAUPM** — Plate-mounted nozzle with all inlet connections at the rear of the mounting plate

**19330-1/4JAUPM** — Plate-mounted nozzle with all inlet connections at the rear of the mounting plate. Locking regulating screw allows precise adjustment of atomizing air

**1/4JAUMCO** — Metering knob provides precise adjustment of liquid flow in 5% increments from zero to 100%

**13242-1/4JAU** — Single air inlet for cylinder and atomizing air. Used specifically for large fluid caps (PF80 and PF100-

**MORE OPTIONS**

**1/4JAUPMCO** — Combines clean-out needle for reduced clogging with convenience of plate-mounting

**17366-1/4JAU** — Single air inlet for cylinder and atomizing air with regulating screw for atomizing air
1/8JJAU SERIES NOZZLES

- Compact design ideal where space is limited
- Flow rates up to 0.55 gpm (2.1 lpm)
- Drip Free™ set-ups provide complete shut-off
- Nickel-plated brass or stainless steel construction

1/8JJAU NOZZLE OPTIONS

14700-1/8JJAU – Knurled head screw control permits manual nozzle shut-off without disturbing operation of other nozzles on a manifold

14675-1/8JJAU – Single air inlet for cylinder and atomizing air

16860-1/8JJAU – Sprays at a 45° angle from nozzle inlet axis


17690-1/8JJAU – Available with extensions up to 18” (457 mm)

49660-1/8JJAU – Available with extensions and either 45° or 90° spray direction from nozzle body

MORE OPTIONS

1/8JJAUUMCO – Metering knob provides precise adjustment of liquid flow in 5% increments from zero to 100%

16883-1/8JJAU – Single air inlet for cylinder and atomizing air. Sprays at a 45° angle from nozzle inlet axis

FOR DETAILED SPRAY SET-UP PERFORMANCE DATA SEE SECTION D

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
AIR-ACTUATED AIR ATOMIZING NOZZLE OPTIONS

**D55500-JAU**
- Block design 30% smaller than standard 1/4JAU
- Flow rates up to 0.42 gpm (1.6 lpm)
- Available with plate mount and wall mount options
- Drip Free™ spray set-ups provide complete shut-off
- Stainless steel construction

**D55500-JAUCO**
- Block design 30% smaller than standard 1/4JAU
- Flow rates up to 0.42 gpm (1.6 lpm)
- Available with plate mount and wall mount options
- Clean-out needle reduces clogging
- Drip Free spray set-ups provide complete shut-off
- Stainless steel construction

**VAU/VMAU Variable Spray**
- Flow rates up to 1.22 gpm (4.62 lpm)
- Stainless steel construction
- Independent control of liquid, fan air and atomizing air provides maximum control of spray coverage
- Dual liquid inlets allow recirculating of sprayed fluid
- VMAU offers modular construction for reduced maintenance time

**10535-1/4J**
- Flow rates up to 1.2 gpm (4.5 lpm)
- Self-contained air cylinder provides controlled intermittent spraying
- Drip Free spray set-ups provide complete shut-off
- Nickel-plated brass or stainless steel construction

**10536-1/2J**
- Flow rates up to 5.1 gpm (19.3 lpm)
- Self-contained air cylinder provides controlled intermittent spraying
- Drip Free spray set-ups provide complete shut-off
- Nickel-plated brass or stainless steel construction

**10537-1J**
- Flow rates up to 29 gpm (110 lpm)
- Self-contained air cylinder provides controlled intermittent spraying
- Drip Free spray set-ups provide complete shut-off
- Nickel-plated brass or stainless steel construction

**72100**
- Smallest automatic air atomizing nozzle available
- Flow rates up to 0.22 gpm (0.83 lpm)
- Less than 1.5” (38 mm) in length; 1.2 oz. (34 g) net weight
- Optional clean-out needle reduces clogging
- Nickel-plated brass or stainless steel construction

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**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.

**FOR DETAILED SPRAY SET-UP PERFORMANCE DATA**

SEE SECTION D
INTRODUCTION

If your application requires air atomizing – or “two-fluid” – nozzles, you’ll find information on the largest selection available in the industry in this section. Choose from a wide variety of nozzle assemblies and spray set-ups to get the precise performance you require.

Fluid lines for air atomizing nozzles can be pressurized or supplied using a siphon- or gravity-fed configuration. Nozzles equipped with clean-out and/or shut-off needles may require an additional air line. All air and fluid lines should be equipped with the proper filters, regulators and valves.

Air atomizing nozzles require spray set-ups, which consist of an air cap and fluid cap. Hundreds of spray set-ups are available to provide the precise performance you require.

PRODUCT RANGE

J Series Nozzles
Available in many configurations with flow rates up to 29 gpm (110 lpm).

JJ Compact Series Nozzles
Available with clean-out needles and shut-off needles; flow rates range up to 33 gph (126 lph).

QMJ Series Nozzles
Quick-connect convenience for spray set-up installation and flow rates up to 26 gph (98 lph).

Variable Spray Nozzles
Independent control of liquid, atomizing air and fan air pressures enables fine tuning of spray performance.

High Efficiency, High Flow Spray Nozzles
Very small droplet size with low air consumption and flow rates up to 45 gpm (170 lpm).
OPTIMIZE PERFORMANCE WITH:

- Use air atomizing nozzles with clean-out needles to eliminate clogging and ensure optimum performance. See page C5.
- Use liquid strainers and air filters to reduce maintenance and extend nozzle life. See page G4.
- Pressure tanks provide a convenient liquid supply source for low volume spraying. See page G23.

AIR ATOMIZING NOZZLES

QUICKMIST® NOZZLE SERIES
- Quick Reference Guide: C11
- QMJ Series: C11

VARIABLE SPRAY NOZZLE SERIES
- Quick Reference Guide: C12
- VAA Series: C13

HIGH EFFICIENCY, HIGH FLOW SPRAY NOZZLE SERIES
- Quick Reference Guide: C14
- FloMax® Series: C14

J AND JJ NOZZLE SERIES
- Quick Reference Guide: C5
- 1/8J and 1/4J Series: C6
- 1/8JJ Series: C8
- 1/2J Series: C9
- 1J Series: C10
OVERVIEW: AIR ATOMIZING NOZZLE SET-UPS

Liquid can be supplied to the nozzle under pressure or it can be supplied through a liquid siphon or gravity-feed.

Pressure Spray Set-Ups
- Liquid is supplied to the nozzle under pressure
- Air and liquid can be externally or internally mixed to produce a completely atomized spray

Siphon/Gravity-Fed Spray Set-Ups
- Liquid is supplied via liquid siphon or is gravity-fed
- These set-ups are designed to draw liquid through the feed line into the air flow where it is atomized

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
OVERVIEW: J AND JJ SERIES NOZZLES

- Liquid and compressed air enter the nozzle body and are mixed by the spray set-up to produce a finely atomized spray pattern
- Spray set-ups, consisting of an air cap and a fluid cap, can mix the fluids either internally or externally
- Hundreds of spray set-ups are available to produce cone and flat spray patterns
- A wide variety of nozzle bodies are available for convenient mounting and positioning
- JJ compact nozzle bodies are available for applications where space is limited
- Models available with clean-out needles, shut-off needles, swivels and strainers to optimize performance

QUICK REFERENCE GUIDE

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Inlet Connection Size (in.)</th>
<th>Max Flow</th>
<th>Max Temp (liquid)</th>
<th>Spray Set-Ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8J and 1/4J Series</td>
<td>1/8, 1/4 (F) NPT or BSPT</td>
<td>72 gph (273 lph)</td>
<td>400°F (204°C)</td>
<td>1/8J and 1/4J set-ups (page D30)</td>
</tr>
<tr>
<td>1/8JJ Series</td>
<td>1/8 (F) NPT or BSPT</td>
<td>33.2 gph (126 lph)</td>
<td>400°F (204°C)</td>
<td>1/8JJ set-ups (page D33)</td>
</tr>
<tr>
<td>1/2J Series</td>
<td>1/2 (F) NPT or BSPT</td>
<td>306 gph (1158 lph)</td>
<td>400°F (204°C)</td>
<td>1/2J set-ups (page D40)</td>
</tr>
<tr>
<td>1J Series</td>
<td>1 (F) NPT or BSPT</td>
<td>29 gpm (110 lpm)</td>
<td>400°F (204°C)</td>
<td>1J set-ups (page D44)</td>
</tr>
</tbody>
</table>
1/8J AND 1/4J SERIES NOZZLES

- J Series nozzles consist of a nozzle body and a spray set-up
- A wide variety of spray set-ups are available with flow rates up to 72 gph (273 lph) in various spray patterns.
- Basic 1/8J and 1/4J bodies have liquid and air inlets on opposing sides of the nozzle bodies. Nozzle bodies include a removable plug so needle assemblies can be added in the future
- Nickel-plated brass or stainless steel construction

1/8J AND 1/4J NOZZLE OPTIONS

- 1/8J
- 1/4J
- 1/8JN
- 1/4JN
- 1/8JCO
- 1/4JCO
- 11005-1/8J
- 11005-1/4J

1. Retainer ring CP3199
2. Air cap
3. Fluid cap
4. Nozzle cap gasket CP3612
5. Nozzle body CP1151
6. Back seal gasket CP10439

Plug CP1159

Shut-off needle assembly 12810

Clean-out needle assembly 11829

Shut-off/clean-out needle assembly 11140

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## 1/8J AND 1/4J NOZZLE OPTIONS

| 1/8JN and 1/4JN | Manual shut-off needle to stop liquid flow |
| 1/8JCO and 1/4JCO | Manual clean-out needle to clear obstructions from the fluid orifice |
| 11005-1/8J and 11005-1/4J | Combination shut-off/clean-out needle |
| 1/4JF | Built-in liquid strainer to reduce nozzle plugging |
| 1/8JBC and 1/4JBC | Air and liquid inlets at the back of the nozzle body, in line with the spray direction |
| 1/8-2JAC | 1/8” air and liquid inlets on the same side of the nozzle body with two opposing spray set-ups |
| 1/4-2J | 1/4” air and liquid inlet connections on opposing sides of the nozzle body with two opposing spray set-ups |
| 8650 | Cluster type assembly includes four or five spray set-ups |
| 6552-1/8JAC | Miniature design is only 1/2” thick with a 1-5/32” by 1-1/4” rectangular face. The air and liquid inlets on the same side of the nozzle body – 90° to the spray direction |
| 1/4JBCJ | Steam jacket around the nozzle body for spraying liquids too viscous to spray at room temperatures |
| 20470 | Handheld air atomizing spray gun with 1/4” air and liquid inlets. It features a lightweight aluminum construction and a comfortable, easy-to-operate design |
| 1/8JAC and 1/4JAC | Air and liquid inlets on the same side of the nozzle body – 90° to the spray direction |

### MORE OPTIONS

| 1/8JACN and 1/4JACN | Air and liquid inlets on the same side of the nozzle body – 90° to spray direction – with manual shut-off needle |

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**FOR DETAILED SPRAY SET-UP PERFORMANCE DATA**

SEE SECTION D

---

**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.
**1/8JJ SERIES NOZZLES**

- Compact JJ Series nozzles consist of a nozzle body and a spray set-up
- A wide variety of spray set-ups are available with flow rates up to 33 gph (126 lph) in various spray patterns
- 1/8JJ bodies have liquid and air inlets on opposing sides of the nozzle bodies. Nozzle bodies include a removable plug so needle assemblies can be added in the future
- Nickel-plated brass or stainless steel construction

**JJ SERIES SPRAY NOZZLE OPTIONS**

![Diagram of JJ Series nozzles and spray set-ups]

1. **1/8JJ**
   - Manual shut-off needle to stop liquid flow

2. **1/8JJCO**
   - Manual clean-out needle to clear obstructions from the fluid orifice

3. **1/8JJN**
   - Compact JJ Series nozzles consist of a nozzle body and a spray set-up

4. **Shut-off needle assembly 14486**
5. **Clean-out needle assembly 14471**
6. **Retainer ring CP12582**
7. **Air cap**
8. **Fluid cap**
9. **O-ring 7717-2-007**
10. **Nozzle body CP14486**
11. **Back seal gasket 7222-BUC**

**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.

**FOR DETAILED SPRAY SET-UP PERFORMANCE DATA SEE SECTION D**
1/2J SERIES NOZZLES

- J Series nozzles consist of a nozzle body and a spray set-up
- A wide variety of spray set-ups are available with flow rates up to 306 gph (1158 lph) in various spray patterns
- Basic 1/2J bodies have liquid and air inlets on opposing sides of the nozzle bodies. Nozzle bodies include a removable plug so needle assemblies can be added in the future
- Nickel-plated brass or stainless steel construction

1/2J NOZZLE OPTIONS

1/2J – Basic 1/2J bodies have liquid and air inlets on opposing sides of the nozzle bodies. Nozzle bodies include a removable plug so needle assemblies can be added in the future.

1/2JN – Manual shut-off needle to stop liquid flow

1/2JCO – Manual clean-out needle to clear obstructions from the fluid orifice

1/2JBC – Air and liquid inlets at the back of the nozzle body, in line with the spray direction

1/2JBCJ – Steam jacket around the nozzle body for spraying liquids too viscous to spray at room temperatures

1/2-2J – 1/2" air and liquid inlet connections on opposing sides of the nozzle body with two opposing spray set-ups

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1J SERIES NOZZLES

- J Series nozzles consist of a nozzle body and a spray set-up.
- A wide variety of spray set-ups are available with flow rates up to 29 gpm (110 lpm) in various spray patterns.
- Basic 1J bodies have liquid and air inlets on opposing sides of the nozzle bodies. Nozzle bodies include a removable plug so needle assemblies can be added in the future.
- Nickel-plated brass or stainless steel construction.

1J NOZZLE OPTIONS

1JN – Manual shut-off needle to stop liquid flow

1. Retainer ring CP5713
2. Air cap
3. Fluid cap
4. Nozzle body CP5710

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.

FOR DETAILED SPRAY SET-UP PERFORMANCE DATA SEE SECTION D
OVERVIEW: QUICKMIST® SERIES NOZZLES

- Liquid and compressed air enter the nozzle body and are mixed by the spray set-up to produce a very finely atomized spray pattern
- The efficient design of QuickMist nozzles uses less air than typical air atomizing nozzles
- No tools are required for cleaning or replacement of spray set-ups
- Lightweight fluoropolymer material provides excellent chemical resistance
- Wide variety of spray set-ups available

QUICK REFERENCE GUIDE

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Inlet Connection Size (in.)</th>
<th>Max Flow</th>
<th>Max Temp (liquid)</th>
<th>Spray Set-Ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>QMJ Series</td>
<td>1/4 (F) NPT or BSPT</td>
<td>26 gph (98 lph)</td>
<td>200°F (93°C)</td>
<td>SUQ set-ups (page D50)</td>
</tr>
</tbody>
</table>

QUICKMIST® SERIES NOZZLES – 1/4QMJ AND 1/4QMJML

- QuickMist Series nozzles consist of a nozzle body and a spray set-up
- A wide variety of spray set-ups are available with flow rates up to 26 gph (98 lph) and various spray patterns
- Nozzle bodies have liquid and air inlets on opposing sides
- Flat spray set-ups can be easily aligned in 45° increments
- QMJML nozzle bodies include mounting lugs for easy installation
- Kynar® construction with Viton® O-rings
OVERVIEW: VARIABLE SPRAY NOZZLE SERIES

- Variable spray nozzles provide uniform spray distribution, even when spraying viscous liquids.
- Independent control of liquid, atomizing air and fan air pressures make it possible to fine-tune flow rate, drop size, spray distribution and coverage.
- The air atomizing line can be adjusted to vary spray drop size without affecting liquid flow rates.
- Additional liquid inlet/outlet port allows for recirculation that effectively maintains the flow of viscous liquids.

QUICK REFERENCE GUIDE

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Inlet Connection Size (in.)</th>
<th>Max Flow</th>
<th>Max Temp (liquid)</th>
<th>Spray Set-Ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAA Series</td>
<td>1/8 (F) NPT or BSPT atomizing air, fan air and liquid</td>
<td>49.8 gph (189 lph)</td>
<td>200°F (93°C)</td>
<td>SUV set-ups (pages D55)</td>
</tr>
</tbody>
</table>

NOTE: Fan air and atomizing air inlets not visible.

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.

FOR DETAILED SPRAY SET-UP PERFORMANCE DATA SEE SECTION D
VARIABLE SPRAY NOZZLE OPTIONS

1/8VAA SERIES NOZZLES

- Flow rates up to 49.8 gph (189 lph)
- Stainless steel construction
- With fan air in operation, a flat spray pattern is produced; a round spray pattern is produced when fan air is off
- Atomizing air line can be adjusted to vary spray drop size without affecting flow rate
- Dual liquid inlets allow recirculating of sprayed fluid
- Anti-bearding spray set-ups are available

1/8VAA NOZZLE OPTIONS

1/8VAAN – Manual shut-off needle to stop liquid flow
1/8VAACO – Manual clean-out needle to clear obstructions from the fluid orifice
1/8VAANCO – Combination shut-off/clean-out needle direction
OVERVIEW: HIGH EFFICIENCY SPRAY NOZZLE SERIES

- A patented three-stage atomization process produces relatively high liquid flows with very small drops using low air consumption
- Tight droplet size control for critical spray applications
- Significantly higher turndown ratios than standard air atomizing nozzles for maximum operating flexibility
- Large free passages reduce the risk of clogging
- Available with threaded inlet connections or mounted on standard or made-to-order spray injectors
- Ideal for gas cooling and conditioning applications

QUICK REFERENCE GUIDE

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Max Flow</th>
<th>Materials</th>
</tr>
</thead>
</table>
| FloMax X Series| 1.5 gpm (5.67 lpm)| 310 and 316 stainless steel, Hastelloy®
                |                   | Other materials available upon request        |
| FloMax A Series| 45 gpm (171.3 lpm)| Nozzle materials include 310 and 316 stainless and Hastelloy
                |                   | Air cap materials include reaction-bonded silicon carbide,
                |                   | Stellite®, ceramic and tungsten carbide        |

HIGH EFFICIENCY SPRAY NOZZLE SERIES OPTIONS

- **FloMax X Series**
  - Flow rate up to 1.5 gpm (5.67 lpm)
  - Spray angles of 20°, 55° and 90°
  - Stainless steel or Hastelloy construction. Other materials available upon request

- **FloMax A Series**
  - Flow rate up to 45 gpm (171.3 lpm)
  - Spray angles of 20° and 55°
  - Stainless steel or Hastelloy construction. Other materials available upon request
  - Anti-bearding design available to reduce maintenance in high-particulate spraying applications

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
SPRAY PERFORMANCE DATA
The precise application of sprayed liquids is critical to many manufacturing and processing operations. Spray tips and spray set-ups that accurately control the flow rate, spray angle and spray pattern of automatic and air atomizing nozzles are found in this section. UniJet® spray tips are used with hydraulic automatic spray nozzles. An extensive range of air atomizing spray set-ups are also available, for use with both automatic and non-automatic spray nozzles. Spray tips and set-ups are available in a variety of materials. Each part is precision machined or molded for consistent performance.

OPTIMIZE PERFORMANCE WITH:

- Liquid strainers and air filters reduce maintenance and extend nozzle life. See page G4
- Use pressure regulators to maintain consistent air and liquid pressures for consistent results. See page G12
- Drip Free™ spray set-ups ensure positive shut-off for selected air atomizing nozzles with shut-off needles. See page D22-D40
UNIJET® HYDRAULIC SPRAY TIPS

Quick Reference Guide

For PulsaJet® Series, JAUH, JJAUH, AA22AUH, AA24AUA, AA26AUH, D55500-JAUH Series (except for 104210, 104214, 104215 and 0050)

UniJet® TPU Flat Spray Tips

For PulsaJet 104210, 104214, 104215

UniJet PWMD Premium Flat Spray Tips

For PulsaJet 0050

UniJet PWMM Premium Flat Spray Tips

For JAUH, JJAUH, AA22AUH, AA24AUA, AA26AUH, D55500-JAUH Series

UniJet TP-TC Flat Spray Tips

UniJet TG, TG-W Full Cone Tips

UniJet TX, TN Hollow Cone Tips

TN-SSTC Hollow Cone Tips

AIR ATOMIZING SPRAY SET-UPS

Quick Reference Guide

For Automatic Nozzles: 1/4JAU, PulsaJet (JAU), AA29JAUCO, 10535 & D55500-JAU Series Nozzles

For Non-Automatic Nozzles: 1/8J and 1/4J Series

Pressure Spray Set-Ups, Internal Mix

For Automatic Nozzles: 1/8JJAU Series

Pressure Spray Set-Ups, Internal Mix

For Automatic Nozzles: 1/8JJAU Series, PulsaJet (JJAU), AA28JJAU

Non-Automatic Nozzles: 1/8JJ Series

Pressure Spray Set-Ups, Internal Mix

For Automatic Nozzles: 10536 Series

Non-Automatic Nozzles: 1/2J Series

Pressure Spray Set-Ups, Internal Mix

For Automatic Nozzles: 10537 Series

Non-Automatic Nozzles: 1J Series

Pressure Spray Set-Ups, Internal Mix

For Non-Automatic Nozzles: QuickMist® Series

Pressure Spray Set-Ups, Internal Mix

For Automatic Nozzles: VMAU, VAU Variable Spray Series

Non-Automatic Nozzles: VAA Series Variable Spray Series

Pressure Spray Set-Ups, Internal Mix

Numbering System

Air Caps Set-Ups and Fluid Caps

Air Atomizing Set-Up Compatibility

Compatibility Charts
OVERVIEW: UNIJET® HYDRAULIC SPRAY TIPS

- These tips provide hydraulic liquid atomizing for automatic nozzles
- Standard UniJet TPU Series tips available for flat spray patterns
- Tungsten carbide TP UniJet Series tips are used for high pressure spraying
- Premium UniJet PWMD Series and PWMM Series tips provide auto-alignment of flat spray patterns for selected PulsaJet® nozzles
- UniJet TG and TG-W Series tips provide full cone and wide angle spray patterns
- TX and TN Series tips provide hollow cone spray patterns
- TN-SSTC Series tips provide hollow cone spray patterns with fine spray atomization

QUICK REFERENCE GUIDE

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<th>UniJet Tips</th>
<th>Nozzles</th>
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<th>Spray Angle</th>
<th>Max Pressure (liquid)</th>
<th>Max Flow</th>
<th>Page Number</th>
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</thead>
<tbody>
<tr>
<td>TPU tips</td>
<td>PulsaJet Series (except for 104210, 104214, 104215 and 0050) JAUH, JJAUH, AA22AUH, AA24AUHA, AA26AUH, D55500-JAUH Series</td>
<td>Flat Spray</td>
<td>0° to 110°</td>
<td>500 psi (35 bar)</td>
<td>25 gpm (94 lpm)</td>
<td>D6</td>
</tr>
<tr>
<td>PWMD tips</td>
<td>PulsaJet 104210, 104214, 104215</td>
<td>Flat Spray</td>
<td>65° to 110°</td>
<td>100 psi (7 bar)</td>
<td>.47 gpm (1.78 lpm)</td>
<td>D12</td>
</tr>
<tr>
<td>PWMM tips</td>
<td>PulsaJet 0050</td>
<td>Flat Spray</td>
<td>0° to 110°</td>
<td>200 psi (14 bar)</td>
<td>.050 gpm (.189 lpm)</td>
<td>D12</td>
</tr>
<tr>
<td>TP-TC tips</td>
<td>JAUH, JJAUH, AA22AUH, AA24AUHA, AA26AUH, D55500-JAUH Series</td>
<td>Flat Spray</td>
<td>5° to 110°</td>
<td>3000 psi (207 bar)</td>
<td>17.4 gpm (66 lpm)</td>
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<td>TG tips</td>
<td>JAUH, JJAUH, AA22AUH, AA24AUHA, AA26AUH, D55500-JAUH Series</td>
<td>Full Cone Wide Angle</td>
<td>50° to 67°</td>
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<td>Full Cone Wide Angle</td>
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As the liquid exits through the sharp V shape cut of the orifice, it forms into a flat spray pattern. The distribution is tapered from the center of the spray.
**UNIJET® HYDRAULIC SPRAY TIPS OPTIONS**

**UniJet® Flat Spray Series**
- Flat spray pattern with tapered edges provides uniform coverage when sprays overlap
- TPU Series for use with a variety of automatic spray nozzles
- TP-TC Series
  - High pressure capability provides higher impact
  - Erosion-resistant tungsten carbide orifice insert provides extended wear life
  - Excellent corrosion resistance
  - Tip orifice insert is recessed in a solid stainless steel tip body to protect against damage
  - For use with high pressure automatic spray nozzles

**Premium UniJet Flat Spray Series**
- Flat spray pattern with tapered edges provides uniform coverage when sprays overlap
- Automatic spray pattern alignment with 5° pattern offset
- PWMD Series for use with selected PulsaJet® automatic spray nozzles
- PWMM Series for use with PulsaJet 0050 automatic spray nozzles

**UniJet Full Cone Series**
- TG Series tips provide a full cone spray pattern
- TG-W Series tips provide wide angle full cone spray pattern
- For use with a variety of automatic spray nozzles

**UniJet Hollow Cone Series**
- TX Series and TN Series tips provide a hollow cone spray pattern
- For use with a variety of automatic spray nozzles
- TN-SSTC Series
  - High pressure capability for fine spray atomization
  - Erosion-resistant tungsten carbide orifice insert provides extended wear life
  - Excellent corrosion resistance
  - For use with high pressure automatic spray nozzles

**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.

---

spray.com  |  1.630.655.5000
### Performance Data: UNIJET® TPU Hydraulic Flat Spray Tips

**For Pulsajet® Series, JAUH, JJAUH, AA22AUH, AA24AUA, AA26AUH, D55500-JAUH Series**

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<th>Capacity Size</th>
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<th>Flow Rate Capacity (liters per minute)</th>
<th>Spray Angle (°)</th>
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### 95°

- **Other body types may be available. Contact your sales engineer for further information.**
- **Highlighted column shows the rated pressure of the nozzles.**
- *Pulsajet® Series (except for 104210, 104214, 104215 and 0050)
## PERFORMANCE DATA: UNIJET® TPU HYDRAULIC FLAT SPRAY TIPS

### Spray Angle at 3 bar

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<th>Capacity Size</th>
<th>Equiv. Orifice Dia. (mm)</th>
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### Other body types may be available. Contact your sales engineer for further information. Highlighted column shows the rated pressure of the nozzles.

### 80°

<table>
<thead>
<tr>
<th>Capacity Size</th>
<th>Equiv. Orifice Dia. (mm)</th>
<th>Flow Rate Capacity (liters per minute)</th>
<th>Spray Angle (°)</th>
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### 73°

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*PulsaJet® Series (except for 104210, 104214, 104215 and 0050)*
### Performance Data: UNIJET® TPU Hydraulic Flat Spray Tips

**Spray Angle at 3 bar**

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<th>Spray Angle</th>
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| 0017        | .28           | –                        | 0.047 .067 .095 .10 .15 .17 .23       | 44 65 77 86     |
| 0025        | .33           | –                        | 0.070 .099 .14 .15 .22 .25 .34         | 45 65 77 84     |
| 0033        | .38           | –                        | 0.092 .13 .18 .20 .29 .34 .45          | 47 65 75 83     |
| 0050        | .46           | –                        | 0.14 .20 .28 .30 .44 .51 .67           | 48 65 75 82     |
| 0067        | .53           | –                        | 0.19 .26 .37 .40 .59 .68 .88 .90 .98 .1 .3 .23 | 44 65 77 86 |
| 01          | .66           | –                        | 0.28 .39 .56 .60 .88 .98 1.0 .13 .23   | 45 65 77 84     |
| 015         | .81           | –                        | 0.42 .59 .84 .90 1.3 1.5 2.0           | 46 65 77 84     |
| 02          | .89           | .28 .36 .56 .79           | 1.1 1.2 1.8 2.0 2.7                     | 47 65 77 84     |
| 025         | .99           | .36 .48 .70 .99           | 1.4 1.5 2.2 2.5 3.4                     | 48 65 77 84     |
| 03          | 1.1           | .43 .57 .84              | 1.2 1.7 1.8 2.6 3.1 4.0                 | 49 65 76 62     |
| 035         | 1.2           | .50 .67 .98              | 1.4 2.0 2.1 3.1 3.6 4.7                 | 40 50 56 61     |

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Other bodies may be available. Contact your sales engineer for further information. Highlighted column shows the rated pressure of the nozzles.

*PulsaJet® Series (except for 104210, 104214, 104215 and 0050)
### PERFORMANCE DATA:
**UNIJET® TPU HYDRAULIC FLAT SPRAY TIPS**

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<th>Spray Angle (°)</th>
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*Highlighted column shows the rated pressure of the nozzles.*

*PulsaJet® Series (except for 104210, 104214, 104215 and 0050)*

Other body types may be available. Contact your sales engineer for further information.
### PERFORMANCE DATA:
**UNIJET® TPU HYDRAULIC FLAT SPRAY TIPS**

**Spray Angle at 3 bar**

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<th>Spray Angle</th>
<th>Capacity Size</th>
<th>Equiv. Orifice Dia. (mm)</th>
<th>Flow Rate Capacity (liters per minute)</th>
<th>Spray Angle (°)</th>
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## Spray Performance Data
### UNIJET® TPU Hydraulic Flat Spray Tips

**UNIJET® TPU HYDRAULIC FLAT SPRAY TIPS**

**SPRAY PERFORMANCE DATA**

**Spray Tips: UNIJET® TPU Hydraulic Flat Spray Tips**

**FOR PULSAJET® SERIES*, JAUH, JJAUH, AA22AUH, AA24AUHA, AA26AUH, D55500-JAUH SERIES**

<table>
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<tr>
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<th>Capacity Size</th>
<th>Equiv. Orifice Dia. (mm)</th>
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### Solid Stream

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**Highlighted column shows the rated pressure of the nozzles.**

---

**UNIJET® TPU HYDRAULIC FLAT SPRAY TIPS**

**Spray.com** | 1.630.655.5000

**Spraying Systems Co.** D11
### PERFORMANCE DATA:
**UNIJET PWMD PREMIUM HYDRAULIC FLAT SPRAY TIPS**

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*For PulsaJet 104210, 104214, 104215

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### PERFORMANCE DATA:
**UNIJET PWMM PREMIUM HYDRAULIC FLAT SPRAY TIPS**

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*For PulsaJet 0050 nozzles*
## Performance Data: Unijet TP-TC Hydraulic Flat Spray Tips

### Spray Angle at 3 bar

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<th>Spray Angle at 3 bar</th>
<th>Spray Tip Number</th>
<th>Equiv. Orifice Dia. (mm)</th>
<th>Flow Rate Capacity* (liters per minute)</th>
<th>Approx.** Spray Pattern Width (cm) (at 30 cm distance)</th>
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* Tabulated capacities based on water.

** Spray pattern width is based on liquid with viscosity of 20 seconds, #4 Zahn Cup spraying at 1600 psi (110 bar). Coverage will vary with viscosities and pressures.

### Spray Angle at 95°

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<th>Spray Tip Number</th>
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<th>Approx.** Spray Pattern Width (cm) (at 30 cm distance)</th>
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## PERFORMANCE DATA: UNIJET TP-TC HYDRAULIC FLAT SPRAY TIPS

**Spray Angle at 3 bar**

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<th>Spray Tip Number</th>
<th>Equiv. Orifice Dia. (mm)</th>
<th>Flow Rate Capacity* (liters per minute)</th>
<th>Approx. ** Spray Pattern Width (cm) (at 30 cm distance)</th>
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|                      | 500008-TC         | .18                      | .13 .18 .22 26 19                       |
|                      | 500011-TC         | .23                      | .18 .25 .31 35 20                       |
|                      | 500017-TC         | .28                      | .27 .39 .47 55 21                       |
|                      | 500025-TC         | .33                      | .40 .57 .70 81 22                       |
|                      | 500033-TC         | .38                      | .53 .75 .92 1.1 25                       |
|                      | 500039-TC         | .41                      | .63 .89 1.1 1.3 26                       |
|                      | 500044-TC         | .43                      | .71 1.0 1.2 1.4 26                       |
|                      | 500050-TC         | .46                      | .81 1.1 1.4 1.6 28                       |
|                      | 500055-TC         | .48                      | .88 1.3 1.5 1.8 28                       |
|                      | 500067-TC         | .53                      | 1.1 1.5 1.9 21 30                       |
|                      | 500080-TC         | .58                      | 1.3 1.8 2.2 2.6 33                       |
|                      | 5001-TC           | .66                      | 1.6 2.3 2.8 32 35                       |
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|                      | 5002-TC           | .91                      | 3.2 4.6 5.6 6.4 35                       |
|                      | 5003-TC           | 1.1                      | 4.8 6.8 8.4 9.7 35                       |
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|                      | 5005-TC           | 1.4                      | 8.1 11.4 14.0 16.1 35                      |
|                      | 5006-TC           | 1.6                      | 9.7 13.7 16.7 19.3 35                      |
|                      | 5007-TC           | 1.7                      | 11.3 16.0 19.5 23 35                       |
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|                      | 400004-TC         | .13                      | .06 91 .11 13 16                       |
|                      | 400006-TC         | .15                      | .10 .14 .17 19 16                       |
|                      | 400008-TC         | .18                      | .13 .18 .22 26 16                       |
|                      | 400011-TC         | .23                      | .18 .25 .31 35 17                       |
|                      | 400017-TC         | .28                      | .27 .39 .47 55 19                       |
|                      | 400025-TC         | .33                      | .40 .57 .70 81 20                       |
|                      | 400033-TC         | .38                      | .53 .75 .92 1.1 21                       |
|                      | 400039-TC         | .41                      | .63 .89 1.1 1.3 22                       |
|                      | 400044-TC         | .43                      | .71 1.0 1.2 1.4 24                       |
|                      | 400050-TC         | .46                      | .81 1.1 1.4 1.6 25                       |

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* Tabulated capacities based on water.

** Spray pattern width is based on liquid with viscosity of 20 seconds, #4 Zahn Cup spraying at 1600 psi (110 bar). Coverage will vary with viscosities and pressures.
## PERFORMANCE DATA: UNIJET® TP-TC HYDRAULIC FLAT SPRAY TIPS

<table>
<thead>
<tr>
<th>Spray Angle at 3 bar</th>
<th>Spray Tip Number</th>
<th>Equiv. Orifice Dia. (mm)</th>
<th>Flow Rate Capacity* 50 bar</th>
<th>Flow Rate Capacity* 100 bar</th>
<th>Flow Rate Capacity* 150 bar</th>
<th>Flow Rate Capacity* 200 bar</th>
<th>Approx.** Spray Pattern Width (cm) at 30 cm distance</th>
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** Tabulated capacities based on water.

** Spray pattern width is based on liquid with viscosity of 20 seconds, #4 Zahn Cup spraying at 1600 psi (110 bar). Coverage will vary with viscosities and pressures.
### Performance Data: UNIJET TP-TC Hydraulic Flat Spray Tips

*Tabulated capacities based on water.
**Spray pattern width is based on liquid with viscosity of 20 seconds, #4 Zahn Cup spraying at 1600 psi (110 bar). Coverage will vary with viscosities and pressures.

<table>
<thead>
<tr>
<th>Spray Angle at 3 bar</th>
<th>Spray Tip Number</th>
<th>Spray Angle at 3 bar</th>
<th>Spray Tip Number</th>
<th>Flow Rate Capacity* (liters per minute)</th>
<th>Spray Angle at 3 bar</th>
<th>Spray Tip Number</th>
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<td>Approx. ** Spray Pattern Width (cm) (at 30 cm distance)</td>
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**Placing Your Order**

Call 1.630.655.5000 for application assistance or to place an order.

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### PERFORMANCE DATA: UNIJET TG HYDRAULIC FULL CONE SPRAY TIPS

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<th>Orifice Dia. Nom. (mm)</th>
<th>Max. Free Passage Dia. (mm)</th>
<th>Flow Rate Capacity (liters per minute)</th>
<th>Spray Angle (°)</th>
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Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.
Other body sizes may be available. Contact your sales engineer for further information.
Highlighted column shows the rated pressure of the nozzles.

### PERFORMANCE DATA: UNIJET TG-W HYDRAULIC FULL CONE SPRAY TIPS

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<th>Max. Free Passage Dia. (mm)</th>
<th>Flow Rate Capacity (liters per minute)</th>
<th>Spray Angle (°)</th>
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Highlighted column shows the rated pressure of the nozzles.
### PERFORMANCE DATA:
**UNIJET® TX HYDRAULIC HOLLOW CONE SPRAY TIPS**

For JAUH, JJAUH, AA22AUH, AA24AUH, AA26AUH, D55500-JAUH Nozzles

#### Body

<table>
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<tr>
<th>Body Inlet Conn. (mm)</th>
<th>Capacity Size</th>
<th>Orifice Dia. Nom. (mm)</th>
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<th>Flow Rate Capacity (liters per hour)</th>
<th>Spray Angle (°)</th>
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Spray angle of all above tips is 80° at 100 psi (7 bar). Other body types may be available. Contact your sales engineer for more information. Highlighted column shows the rated pressure of the nozzles.

### PERFORMANCE DATA:
**UNIJET® TN HYDRAULIC HOLLOW CONE SPRAY TIPS**

#### Body

<table>
<thead>
<tr>
<th>Body Inlet Conn. (mm)</th>
<th>Capacity Size</th>
<th>Orifice Dia. Nom. (mm)</th>
<th>Core No.</th>
<th>Flow Rate Capacity (liters per hour)</th>
<th>Spray Angle (°)</th>
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Spray angle of all above tips is 80° at 100 psi (7 bar). Other body types may be available. Contact your sales engineer for more information. Highlighted column shows the rated pressure of the nozzles.
## PERFORMANCE DATA:
### UNIJET® TN-SSTC HYDRAULIC HOLLOW CONE SPRAY TIPS

For JAUH, JJAUH, AA22AUH, AA24AUH, AA26AUH, D55500-JAUH nozzles.

### Spray.com | 1.630.655.5000

#### SPRAY PERFORMANCE DATA

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<th>Body Inlet Conn. (mm)</th>
<th>Capacity Size</th>
<th>Orifice Dia. Nom. (mm)</th>
<th>Flow Rate Capacity (liters per hour)</th>
<th>Approximate Spray Pattern Dia. (at 30 cm distance) (cm)</th>
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</table>

Spray pattern diameter is based on liquid with viscosity of 20 seconds #3 Zahn Cup spraying at 1600 psi (110 bar). Coverage will vary with viscosities and pressures. Tabulated capacities are based on water.

Other body types may be available. Contact your sales engineer for more information.

Calibration pressure = 40 psi (3 bar).

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### PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
**OVERVIEW: AIR ATOMIZING SPRAY NOZZLE SET-UPS**

- Each spray set-up – consisting of an air cap and a fluid cap – provides a specific spray pattern, flow rate and spray coverage.
- Within each nozzle series, spray set-ups are interchangeable, for versatile performance.
- Air and liquid can be externally or internally mixed to produce a completely atomized spray.
- Drip Free™ spray set-ups are used for all nozzle assemblies containing shut-off or clean-out needles to ensure positive liquid shut-off.

**Quick Reference Guide**

<table>
<thead>
<tr>
<th>Spray Set-Up</th>
<th>Liquid Supply</th>
<th>Internal / External Mix</th>
<th>Spray Patterns</th>
<th>Max Flow</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8J and 1/4J Series</td>
<td>Pressure Feed Siphon/Gravity Feed</td>
<td>Both</td>
<td>Flat Spray, Deflected Flat Spray, Round Spray, Wide Angle Round Spray, 360° Circular Spray</td>
<td>72 gph (272.5 lph)</td>
<td>D22</td>
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<td>Pressure Feed Siphon/Gravity Feed</td>
<td>Both</td>
<td>Flat Spray, Round Spray, Wide Angle Round Spray, 360° Circular Spray</td>
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<td>Pressure Feed Siphon/Gravity Feed</td>
<td>Both</td>
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<td>Pressure Feed Siphon/Gravity Feed</td>
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<td>Pressure Feed Siphon/Gravity Feed</td>
<td>Internal Mix Only</td>
<td>Flat Spray, Round Spray, Wide Angle Round Spray</td>
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<td>External Mix Only</td>
<td>Variable</td>
<td>49.8 gph (188.5 lph)</td>
<td>D55</td>
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OVERVIEW: AIR ATOMIZING SPRAY FEED SET-UPS

- Liquid can be supplied to the nozzle under pressure or it can be supplied through a liquid siphon or gravity feed
- Filtration and pressure regulation are recommended on both the liquid and air line

Pressure Spray Set-Ups
- Liquid is supplied to the nozzle under pressure
- Air and liquid can be externally or internally mixed to produce a completely atomized spray

Siphon/Gravity-Fed Spray Set-Ups
- Liquid is supplied via liquid siphon or is gravity-fed
- These set-ups are designed to draw liquid through the feed line into the air flow where it is atomized
For a round spray pattern, angle “A” is maintained throughout distance “B”. Beyond “B”, the spray becomes turbulent and projects out to distance “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

### Performance Data: Pressure Spray Set-ups | Internal Mix | Round Spray

<table>
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<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid Cap and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
## PERFORMANCE DATA:
### PRESSURE SPRAY SET-UPS | INTERNAL MIX | ROUND SPRAY

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<th>Fluid Cap</th>
<th>Air Cap</th>
<th>Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Liquid Pressure</th>
<th>Spray Dimensions</th>
<th>Spray Angle A (°)</th>
<th>B (cm)</th>
<th>C (m)</th>
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</table>

*At the stated pressure in bar.

**Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.

---

**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.
For a wide angle round spray, dimensions “A” and “B” are the pattern widths at distances from the nozzle. The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

### PERFORMANCE DATA: PRESSURE SPRAY SET-UPS | INTERNAL MIX | WIDE ANGLE ROUND SPRAY

For 1/8J, 1/4J, 1/4JAU, PULSAJET® (JAU), AA29JAU/CO, 10535 & D55500-JAU SERIES NOZZLES

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
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</table>

*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
PERFORMANCE DATA:
PRESSURE SPRAY SET-UPS | INTERNAL MIX | 360° CIRCULAR SPRAY

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

**PERFORMANCE DATA:**
PRESSURE SPRAY SET-UPS | INTERNAL MIX | WIDE ANGLE ROUND SPRAY

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<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
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<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Liquid Pressure</th>
<th>Spray Dimensions</th>
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<td>Air Press. &amp; l/min</td>
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*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
PERFORMANCE DATA:
PRESSURE SPRAY SET-UPS  |  INTERNAL MIX  |  FLAT SPRAY

For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
PERFORMANCE DATA:
PRESSURE SPRAY SET-UPS | INTERNAL MIX | DEFLECTED FLAT SPRAY

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

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PERFORMANCE DATA:
PRESSURE SPRAY SET-UPS | INTERNAL MIX | FLAT SPRAY

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<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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**SU43**

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**SU240E**

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<tr>
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<tr>
<td>.60</td>
<td>9.5</td>
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<tr>
<td>.70</td>
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<td>5.7</td>
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<tr>
<td>–</td>
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</tr>
</tbody>
</table>

*At the stated pressure in bar.

---

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

The liquid and compressed air or gas are mixed externally to produce a completely atomized spray.

For external mix spray set-ups, atomization can be controlled by varying the air pressure without changing liquid flow rate.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.
### Pressure Spray Set-ups | External Mix | Flat Spray

**Spray Performance Data:**

#### Performance Data:

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Liquid Pressure</th>
<th>Spray Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.2 bar</td>
<td>0.3 bar</td>
<td>0.7 bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Air Press.</td>
<td>l/h</td>
<td>Air Press.</td>
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<tr>
<td>SUE1B</td>
<td>Fluid Cap 2850 + Air Cap 62240.60</td>
<td>.40</td>
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</tr>
<tr>
<td>SUE2B</td>
<td>Fluid Cap 35100 + Air Cap 134255.45</td>
<td>.70</td>
<td>13.4</td>
<td>.85</td>
</tr>
<tr>
<td>SUE25A</td>
<td>Fluid Cap 35100 + Air Cap 122281.60</td>
<td>.70</td>
<td>13.4</td>
<td>.85</td>
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<tr>
<td>SUE28B</td>
<td>Fluid Cap 35100 + Air Cap 122281.60</td>
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<td>13.4</td>
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<tr>
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<tr>
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<tr>
<td>SUE45B</td>
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<td>SUE45A</td>
<td>Fluid Cap 80150 + Air Cap 200278.45</td>
<td>.70</td>
<td>13.4</td>
<td>.85</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.

**Anti-bearding set-ups are available to reduce nozzle build-up and maintenance time for select external mix air atomizing nozzles.**

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle.

For more information, call 1.630.655.5000.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle. The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed.

Liquid is drawn through the feed line into the air flow where it is atomized.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

### PERFORMANCE DATA:

**SIPHON/GRAVITY SPRAY SET-UPS | EXTERNAL MIX | FLAT SPRAY**

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Atomizing Air</th>
<th>Liquid Capacity (liters per hour)*</th>
<th>Siphon Height (cm)</th>
<th>Spray Dimensions at 20 cm Siphon Height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Air Press.</td>
<td>Air Capacity l/min</td>
<td>Gravity Head (cm)</td>
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<td>SUF1</td>
<td>Fluid Cap 2850 + Air Cap 73420</td>
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<td>110</td>
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<td>1.8</td>
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<td>SUF2C</td>
<td>Fluid Cap 35100 + Air Cap 120432</td>
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<td>2.8</td>
<td>2.7</td>
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<td>4.0</td>
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<td>1.8</td>
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<tr>
<td>SUF3B</td>
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<td>SUF4B</td>
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<td>3.5</td>
<td>110</td>
<td>4.2</td>
<td>3.7</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.

Anti-bearding set-ups are available to reduce nozzle build-up and maintenance time for select external mix air atomizing nozzles. Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
For a round spray pattern, angle “A” is maintained throughout distance “B”. Beyond “B”, the spray becomes turbulent and projects out to distance “C”.

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed.

Liquid is drawn through the feed line into the air flow where it is atomized.

When ordering only a spray set-up, 1158 retainer ring and 3612 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

---

### PERFORMANCE DATA: SIPHON/GRAVITY SPRAY SET-UPS | EXTERNAL MIX | ROUND SPRAY

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Atomizing Air</th>
<th>Liquid Capacity (liters per hour)*</th>
<th>Siphon Height (cm)</th>
<th>Spray Dimensions at 20 cm Siphon Height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Air Press.</td>
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<td>30</td>
<td>15</td>
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<tr>
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<td>2.1</td>
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<td>24</td>
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<tr>
<td></td>
<td></td>
<td>5.6</td>
<td>315</td>
<td>44</td>
<td>42</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.

---

Anti-bearding set-ups are available to reduce nozzle build-up and maintenance time for select external mix air atomizing nozzles. Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle.

For more information, call 1.630.655.5000.
For this wide angle round spray pattern, angle “A” is maintained throughout distance “B”. Beyond “B”, the spray becomes turbulent and projects out to distance “C”.

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed.

Liquid is drawn through the feed line into the air flow where it is atomized.

Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Atomizing Air</th>
<th>Liquid Capacity (liters per hour)*</th>
<th>Spray Dimensions at 20 cm Siphon Height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Air Press.</td>
<td>Gravity Head (cm)</td>
<td>Siphon Height (cm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45 30 15 10 20 30 60</td>
<td>Air Capacity (l/min)</td>
</tr>
<tr>
<td>D-SU1A-W</td>
<td>0.5</td>
<td>32</td>
<td>1.6 1.5 1.4 1.3 1.2 1.1</td>
</tr>
<tr>
<td>D-SU1A-W-CO</td>
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<td>40</td>
<td>1.9 1.8 1.6 1.5 1.4 1.3</td>
</tr>
<tr>
<td>D-SU1A-W</td>
<td>1.0</td>
<td>60</td>
<td>2.2 2.0 2.0 1.9 1.8 1.8</td>
</tr>
<tr>
<td>D-SU1A-W-CO</td>
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<td>69</td>
<td>2.5 2.5 2.4 2.3 2.3 2.3</td>
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<tr>
<td>D-SU2A-W</td>
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<td>2.6 2.4 2.3 2.0 1.9 1.7</td>
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<td>D-SU2A-W-CO</td>
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<td>2.9 2.7 2.6 2.4 2.3 2.1</td>
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<tr>
<td>D-SU2A-W</td>
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<td>69</td>
<td>3.3 3.2 3.1 2.9 2.8 2.7</td>
</tr>
<tr>
<td>D-SU2A-W-CO</td>
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<td>D-SU2-W</td>
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</tr>
<tr>
<td>D-SU2-W-CO</td>
<td>0.7</td>
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<td>5.7 5.3 4.8 4.2 3.9 3.6</td>
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<td>D-SU2-W</td>
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<td>3.3 3.2 3.1 2.9 2.8 2.7</td>
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<td>D-SU2-W-CO</td>
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<td>D-SU5-W-CO</td>
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<td>108</td>
<td>_ _ _ _ _ _</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.

*CO* set-ups are used for nozzles with clean-out needles.
For a round spray pattern, angle “A” is maintained throughout distance “B”. Beyond “B”, the spray becomes turbulent and projects out to distance “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 12582 retainer ring and 7717-2/007 O-ring must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Liquid Pressure</th>
<th>Spray Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>SUJ11</td>
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<td>0.7 bar: 0.70, 2.5, 15.6, 1.1, 6.4, 11.9, 1.4, 6.4, 13.9, 2.7, 6.2, 23, 3.5, 7.8, 28</td>
<td>13.5 - 15</td>
<td>30 - 44, 27 - 44</td>
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<td>1.5 bar: 1.0, 1.4, 22, 1.7, 4.1, 18.7, 2.0, 4.5, 19.8, 3.0, 5.2, 27, 3.9, 6.4, 33</td>
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<td>12.5 - 15</td>
<td>43 - 56, 3.7 - 5.2</td>
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<td>Fluid Cap J2050 + Air Cap J72160</td>
<td>0.7 bar: 0.85, 2.0, 22, 1.5, 5.2, 29, 1.8, 6.4, 31, 2.5, 8.2, 39, 3.1, 11.0, 43</td>
<td>12.5 - 15</td>
<td>48 - 60, 4.0 - 5.3</td>
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<tr>
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<td>Fluid Cap J40100 + Air Cap J1401110</td>
<td>1.1 bar: 1.0, 13.0, 76, 2.2, 17.8, 116, 2.8, 20, 136, 3.4, 32, 149, 4.6, 37, 190</td>
<td>18.2 - 21</td>
<td>66 - 97, 4.9 - 9.1</td>
</tr>
<tr>
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<td></td>
<td>1.4 bar: 1.4, 8.9, 91, 2.5, 13.1, 130, 3.1, 16.3, 149, 3.9, 25, 170, 5.3, 29, 220</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5 bar: 1.5, 7.2, 98, 2.8, 9.5, 143, 3.4, 11.9, 163, 4.6, 15.9, 205, 5.6, 25, 235</td>
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<td></td>
<td></td>
<td>1.8 bar: 1.8, 4.7, 112, 3.4, 4.9, 171, 4.2, 4.7, 205, 5.6, 6.8, 255, 6.3, 17.4, 270</td>
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<tr>
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<td></td>
<td>2.1 bar: 2.1, 2.7, 127, 3.5, 4.2, 178, 4.6, 3.0, 220, 6.3, 3.6, 290, 7.0, 11.0, 305</td>
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</tbody>
</table>

*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
**PERFORMANCE DATA:**

**PRESSURE SPRAY SET-UPS | INTERNAL MIX | 360° CIRCULAR SPRAY**

<table>
<thead>
<tr>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Press.</td>
<td>l/h</td>
</tr>
<tr>
<td>0.7 bar</td>
<td>1.5 bar</td>
</tr>
<tr>
<td>85</td>
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**Spray Set-up No.:** SUJ340C  
**Spray Set-up Consists of Fluid and Air Cap Combination:**  
Fluid Cap J60100  
Air Cap J150-6-62-180HC

<table>
<thead>
<tr>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Pressure</th>
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</table>

*Use only with 1/8JJAU automatic air atomizing nozzles.

**360° circular spray pattern**

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
For a wide angle round spray, dimensions "A" and "B" are the pattern widths at distances from the nozzle. The total distance of spray projection from the nozzle to the maximum dispersal point is represented by "C".

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 125B2 retainer ring and 7717-2/007 O-ring must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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</table>

*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 12582 retainer ring and 7717-2/007 O-ring must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

<table>
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<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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<td>Fluid Cap J60100 + Air Cap J125328</td>
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</tbody>
</table>

*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
SUJE external mix spray set-ups offer increased ability to atomize viscous fluids and allow for greater flow capacity of finely atomized sprays.

Atomization can be controlled by varying the air pressure without changing liquid flow rate.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed externally to produce a completely atomized spray.

SUJE Series set-ups produce lower spray velocity for improved transfer and reduced misting.

Low profile design is ideal for applications where space is limited.

Very efficient use of air results in reduced air consumption costs and noise levels.

When ordering only a spray set-up, retainer ring and O-ring must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Adapters must be used with all 1/8JJ nozzle bodies and all automatic spray nozzle with extensions except the 1/8JJAU.

Please contact your sales engineer for more information.

### Performance Data: Pressure Spray Set-ups | External Mix | Flat Spray

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Liquid Pressure</th>
<th>Spray Angle A (°)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.7 bar</td>
<td>2 bar</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>Air Press. l/h</td>
<td>Air Press. l/min</td>
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<td>0.7 7.4 65.1</td>
<td>0.7 8.4 65.1</td>
</tr>
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<td>3.4 4.9 209.5</td>
<td>3.4 7.4 209.5</td>
</tr>
<tr>
<td>SUJE417-50</td>
<td>Fluid Cap PFJ2050 + Air Cap PAJ105-50</td>
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<td>0.7 10.8 65.1</td>
<td>0.7 12.3 65.1</td>
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<td>2.1 7.2 175.6</td>
<td>2.1 10.8 175.6</td>
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<td>3.4 7.2 209.5</td>
<td>3.4 10.8 209.5</td>
</tr>
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<td>SUJE418-50</td>
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</tr>
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<td>3.4 11.0 209.5</td>
<td>3.4 23.4 209.5</td>
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<td>3.4 44.3 206.7</td>
<td>3.4 47.7 206.7</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
### PRESSURE SPRAY SET-UPS | EXTERNAL MIX | FLAT SPRAY

| Spray Set-up No. | Spray Set-up Consists of Fluid and Air Cap Combination | Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)* | Liquid Pressure | Spray Angle A (°)
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<thead>
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<tr>
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<td>0.7 bar</td>
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<tr>
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</tr>
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</tbody>
</table>

*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
For a round spray pattern, angle "A" is maintained throughout distance "B". Beyond "B", the spray becomes turbulent and projects out to distance "C".

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed.

Liquid is drawn through the feed line into the air flow where it is atomized.

When ordering only a spray set-up, 12582 retainer ring and 7717-2/007 O-ring must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Atomizing Air</th>
<th>Liquid Capacity (liters per hour)*</th>
<th>Spray Dimensions at 20 cm Siphon Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUJ1A</td>
<td>Fluid Cap J1650 + Air Cap J64</td>
<td>.70</td>
<td>11.3</td>
<td>18 - 19</td>
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<tr>
<td></td>
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<td>4.0</td>
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<td>22 - 24</td>
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<td>SUJ1B</td>
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<td>18 - 19</td>
</tr>
<tr>
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<td>1.5</td>
<td>20.1</td>
<td>19 - 20</td>
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<td>30 - 32</td>
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<td>4.0</td>
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<td>35 - 40</td>
</tr>
<tr>
<td>SUJ3</td>
<td>Fluid Cap J2850 + Air Cap J64</td>
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<td>18 - 19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5</td>
<td>31.4</td>
<td>19 - 20</td>
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<td></td>
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</tr>
<tr>
<td></td>
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<td>4.0</td>
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<td>35 - 40</td>
</tr>
<tr>
<td>SUJ4</td>
<td>Fluid Cap J40100 + Air Cap J120</td>
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<td>11.6</td>
<td>17 - 19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5</td>
<td>59.4</td>
<td>19 - 20</td>
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<td></td>
<td>4.0</td>
<td>116.4</td>
<td>35 - 40</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.

Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed.

When ordering only a spray set-up, 12582 retainer ring and 7717-2/007 O-ring must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

### Performance Data: Siphon/Gravity Spray Set-ups

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Atomizing Air</th>
<th>Liquid Capacity (liters per hour)*</th>
<th>Spray Dimensions at 20 cm Siphon Height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Air Press.</td>
<td>Gravity Head (cm)</td>
<td>Siphon Height (cm)</td>
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<td></td>
<td></td>
<td>Air Capacity l/min</td>
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<td>30</td>
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<tr>
<td>SUJF1</td>
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<td>1.3</td>
<td>1.2</td>
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<td>1.1</td>
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<td>.82</td>
<td>.76</td>
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<tr>
<td>SUJF2C</td>
<td>Fluid Cap J35100 + Air Cap J120432</td>
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<td>3.5</td>
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<td>3.4</td>
<td>3.3</td>
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<tr>
<td></td>
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<td>2.7</td>
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<tr>
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<td>1.8</td>
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<tr>
<td>SUJF3B</td>
<td>Fluid Cap J40100 + Air Cap J122435</td>
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<td>5.1</td>
<td>4.8</td>
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<td></td>
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<td>2.2</td>
<td>2.0</td>
</tr>
<tr>
<td>SUJF4B</td>
<td>Fluid Cap J40100 + Air Cap J122440</td>
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<td>7.6</td>
<td>7.2</td>
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<tr>
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<td>7.6</td>
<td>7.3</td>
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<td>6.4</td>
<td>6.1</td>
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<td></td>
<td></td>
<td>3.5</td>
<td>4.2</td>
<td>3.7</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar. Drip Free™ spray set-ups ensure positive shut-off and are provided for air atomizing assemblies containing a shut-off needle. For more information, call 1.630.655.5000.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1705 retainer ring and 8491 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

PERFORMANCE DATA:
PRESSURE SPRAY SET-UPS | INTERNAL MIX | FLAT SPRAY

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Liquid Capacity</td>
<td>Spray Dimensions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A (cm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liquid Pressure</td>
<td>0.35 bar</td>
</tr>
<tr>
<td>SU75</td>
<td>Fluid Cap 250375 + Air Cap 4533102</td>
<td>0.35 bar</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 bar</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 bar</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 bar</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 bar</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>46 - 51</td>
<td>91 - 97</td>
</tr>
<tr>
<td>SU85</td>
<td>Fluid Cap 251376 + Air Cap 4693102</td>
<td>0.35 bar</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 bar</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 bar</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 bar</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 bar</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 - 91</td>
<td>119 - 226</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.
For a wide angle round spray, dimensions “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1705 retainer ring and 8491 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

---

### Spray Performance Data

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Liquid Pressure</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>0.35 bar 1 bar 2 bar 3 bar 4 bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Air Press. l/h Air l/min Air Press. l/h Air l/min Air Press. l/h Air l/min Air Press. l/h Air l/min</td>
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<td></td>
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<td></td>
<td>A (cm)</td>
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<tr>
<td>SU77</td>
<td>Fluid Cap 250375 + Air Cap 422-8-79-70</td>
<td>.60 102 184 1.1 215 153 2.5 185 355 3.7 192 560 5.0 230 830</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>.70 57 230 1.3 124 230 2.7 146 410 3.9 150 620 5.3 158 940</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>.85 32 280 1.4 84 290 2.8 112 465 4.0 119 680 5.6 108 1080</td>
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</tr>
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<td></td>
<td>.90 45 415</td>
<td>33 - 36</td>
</tr>
<tr>
<td>SU89</td>
<td>Fluid Cap 251376 + Air Cap 469-6-125-70</td>
<td>.70 134 315 1.3 320 440 2.1 575 570 3.0 740 710 3.9 840 860</td>
<td>28 - 33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.85 100 380 1.4 255 520 2.2 505 640 3.1 690 770 4.1 790 930</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.90 150 590 2.4 440 720 3.2 630 840 4.2 740 990</td>
<td></td>
</tr>
<tr>
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<td></td>
<td>.90 1.7 154 670 2.5 380 790 3.4 570 910 4.4 690 1070</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>.80 2.7 330 860 3.5 520 980 4.5 650 1140</td>
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<td>.75 2.8 275 930 3.7 470 1050 4.6 600 1210</td>
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</tr>
<tr>
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<td>.70 3.0 235 1010 3.8 420 1120 4.8 550 1280</td>
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<td>.70 3.1 195 1080 3.9 345 1190 4.9 510 1350</td>
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<tr>
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<td></td>
<td>.65 4.1 325 1260 5.1 465 1430</td>
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<td></td>
<td></td>
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<td></td>
<td>.70 5.3 390 1560</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>.70 5.5 350 1640</td>
<td></td>
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</tbody>
</table>

---

*At the stated pressure in bar.
For a round spray, dimensions “A” and “B” are the pattern widths at distances from the nozzle. The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”. Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 1705 retainer ring and 8491 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

### PERFORMANCE DATA:
**PRESSURE SPRAY SET-UPS | INTERNAL MIX | ROUND SPRAY**

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Liquid Pressure</td>
<td>A (cm)</td>
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<td></td>
<td></td>
<td>0.35 bar</td>
<td>1 bar</td>
</tr>
<tr>
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<td>1.3 34</td>
<td>350</td>
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<tr>
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<td>390</td>
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</tr>
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<td>1.7 15.5</td>
<td>445</td>
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<tr>
<td></td>
<td></td>
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<td>2.3 72</td>
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<td></td>
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<td>– – –</td>
<td>2.4 60</td>
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<tr>
<td>SU82</td>
<td>Fluid Cap 251376 + Air Cap 4691312</td>
<td>.70 134</td>
<td>315</td>
</tr>
<tr>
<td></td>
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<td>1.5 200</td>
</tr>
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<td></td>
<td>– – –</td>
<td>1.7 154</td>
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<td></td>
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<td>– – –</td>
<td>– – –</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

The liquid and compressed air or gas are mixed externally to produce a completely atomized spray.

For external mix spray set-ups, atomization can be controlled by varying the air pressure without changing liquid flow rate.

When ordering only a spray set-up, 1705 retainer ring and 8491 gasket must be ordered separately. These components are included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

**PERFORMANCE DATA:**

### PRESSURE SPRAY SET-UPS | EXTERNAL MIX | FLAT SPRAY

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Liquid Pressure (bar)</td>
<td>A (cm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 bar</td>
<td>0.35 bar</td>
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<td></td>
<td></td>
<td>Air Press.</td>
<td>l/h</td>
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<tr>
<td>SUE75</td>
<td>Fluid Cap 250375 + Air Cap 14356</td>
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<td></td>
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<td>522</td>
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<td>2.8</td>
<td>522</td>
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</tr>
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<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

*At the stated pressure in bar.
For a wide angle round spray, dimensions “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 5713 retainer ring must be ordered separately. This component is included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

### PERFORMANCE DATA:

For 1J & 10537 SERIES NOZZLES

**PRESSURE SPRAY SET-UPS  |  INTERNAL MIX  |  WIDE ANGLE ROUND SPRAY**

---

**Liquid Capacity (liters per minute)* and Air Capacity (liters per minute)**

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Pressure</th>
<th>Spray Dimensions</th>
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<tbody>
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<td></td>
<td></td>
<td>0.7 bar</td>
<td>1.5 bar</td>
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<td>Fluid Cap 43/1000 + Air Cap 1109-6-224-70°</td>
<td>Air Press. l/min</td>
<td>Air Press. l/min</td>
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<td></td>
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<td>.85</td>
<td>12.1</td>
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</tr>
</tbody>
</table>

*At the stated pressure in bar.
For a round spray, dimensions “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 5713 retainer ring must be ordered separately. This component is included in a complete air atomizing nozzle assembly. Please contact your sales engineer for more information.

### Table: Spray Performance Data

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap</th>
<th>Liquid Capacity (liters per minute)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Liquid Pressure</td>
<td>A (cm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.7 bar</td>
<td>1.5 bar</td>
</tr>
<tr>
<td>SU152</td>
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<td>A (cm)</td>
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<td>SU172</td>
<td>Fluid Cap 6251000 + Air Cap 11251625</td>
<td>A (cm)</td>
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</tr>
<tr>
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<td></td>
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</table>

*At the stated pressure in bar.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

When ordering only a spray set-up, 5713 retainer ring must be ordered separately. This component is included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

---

**Spray Set-up No.** | **Spray Set-up Consists of Fluid and Air Cap Combination** | **Liquid Capacity (liters per minute)* and Air Capacity (liters per minute)** | **Spray Dimensions**
--- | --- | --- | ---
**SU155** | Fluid Cap 4371000 + Air Cap 11093187 | | |
| | | **Liquid Pressure** | **A (cm)** | **B (cm)** | **C (m)** |
| | 0.7 bar | 1.5 bar | 2 bar | 3 bar | 4 bar | 74 - 124 | 178 - 320 | 6.4 - 10.3 |
| | | | | | | | | |
| | 0.7 bar | 1.5 bar | 2 bar | 3 bar | 4 bar | 74 - 124 | 178 - 320 | 6.4 - 10.3 |

*At the stated pressure in bar.
For a flat spray pattern, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

The liquid and compressed air or gas are mixed externally to produce a completely atomized spray.

For external mix spray set-ups, atomization can be controlled by varying the air pressure without changing liquid flow rate.

When ordering only a spray set-up, 12415 retainer ring must be ordered separately. This component is included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Fluid Cap 625780 + Air Cap 12116</th>
<th>Liquid Capacity (liters per minute)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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<td>Liquid Pressure</td>
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<td></td>
<td></td>
<td>0.2 bar</td>
<td>0.3 bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Air Press. l/min</td>
<td>Air Press. l/min</td>
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<td>SUE175B</td>
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<tr>
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<td>2.1</td>
<td>49</td>
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<td></td>
<td></td>
<td>2.8</td>
<td>49</td>
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<td>4.2</td>
<td>49</td>
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</table>

* At the stated pressure in bar.
For a round spray pattern, “A” and “B” are the pattern widths at distances from the nozzle. The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed. The liquid drawn through the feed line into the air flow where it is atomized.

When ordering only a spray set-up 5713 retainer ring must be ordered separately. This component is included in a complete air atomizing nozzle assembly.

Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Atomizing Air</th>
<th>Liquid Capacity (liters per minute)*</th>
<th>Spray Dimensions at 20 cm Siphon Height</th>
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<tbody>
<tr>
<td>SU170</td>
<td>Fluid Cap 6251000 + Air Cap 1125</td>
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<td>7.0</td>
<td>9764</td>
<td>21.6</td>
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</tbody>
</table>

*At the stated pressure in bar.
For this QuickMist round spray set-up, angle “A” is maintained throughout distance “B”. Beyond “B”, the spray becomes turbulent and projects out to distance “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

Please contact your sales engineer for more information.

### Performance Data: Pressure Spray Set-ups | Internal | Round Spray

**Spray Set-up No.** | **Spray Set-up Consists of Fluid and Air Cap Combination** | **Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)** | **Spray Dimensions**
---|---|---|---
| | | | **Spray Angle A (°)** | **B (cm)** | **C (m)**
SUQR220B | Fluid Cap PFQ40 + Air Cap PAQR95 | | | 12 - 15 | 25 - 56 | 4.2 - 7.3
| | | | | | | |
| | | | | | | |

| | | | | | | |

**Note:** *At the stated pressure in bar.*
For these QuickMist wide angle round spray set-ups, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure.

Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

Please contact your sales engineer for more information.

### Table: Performance Data

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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<tbody>
<tr>
<td>SUQW260B</td>
<td>Fluid Cap PFQ30 + Air Cap PAQW37-60</td>
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<tr>
<td></td>
<td>1</td>
<td>16.0 39</td>
<td>A (cm)</td>
</tr>
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<td></td>
<td>1.9 19.9 60</td>
<td>B (cm)</td>
</tr>
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<td></td>
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<td>C (m)</td>
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<td>3.4 6.9 101</td>
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<td>4 15.1 112</td>
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</tr>
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<td>5 7.5 138</td>
<td>18 - 23</td>
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<td>31 39</td>
<td>18 - 33</td>
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<tr>
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<td>1.9 37 60</td>
<td>3.7 - 5.8</td>
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<td>3 34 93</td>
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<td>3.4 12.2 146</td>
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<td>3.7 - 5.8</td>
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<td></td>
<td>3.4 9.4 214</td>
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<td></td>
<td>4 33 216</td>
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<td></td>
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<td>5 45 242</td>
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</table>

*At the stated pressure in bar.
For these QuickMist flat spray set-ups, “A” and “B” are the pattern widths at distances from the nozzle.

The total distance of spray projection from the nozzle to the maximum dispersal point is represented by “C”.

Liquid is supplied to this spray set-up under pressure. Liquid and compressed air or gas are mixed internally to produce a completely atomized spray.

Please contact your sales engineer for more information.

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions</th>
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<td>Liquid Pressure</td>
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<td></td>
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<td>2 bar</td>
</tr>
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<td></td>
<td>Air Press. l/h</td>
<td>l/min</td>
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<td>16.9</td>
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<td></td>
<td>Fluid Cap PFQ40 + Air Cap PAQF40</td>
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<td>22.1</td>
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<td>5</td>
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</table>

*At the stated pressure in bar.
For a round spray pattern, angle "A" is maintained throughout distance "B". Beyond "B", the spray becomes turbulent and projects out to distance "C".

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed.

Liquid is drawn through the feed line into the air flow where it is atomized.

Please contact your sales engineer for more information.

### PERFORMANCE DATA:

**SIPHON/GRAVITY SPRAY SET-UPS | INTERNAL MIX | ROUND SPRAY**

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Spray Dimensions 20 cm siphon height</th>
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<td>Atomizing Air</td>
<td>Liquid Capacity</td>
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<td>Air Press.</td>
<td>Gravity Head (cm.)</td>
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<td>SUQR300</td>
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</table>

*At the stated pressure in bar.
For these QuickMist flat spray set-ups, “A” is the spray pattern width at 6” (15 cm). Beyond distance “B” the spray becomes turbulent and projects out to distance “C”.

Liquid is supplied to this spray set-up by either a liquid siphon or a gravity-feed.

Liquid is drawn through the feed line into the air flow where it is atomized.

Please contact your sales engineer for more information.

### PERFORMANCE DATA:

**SIPHON/GRAVITY SPRAY SET-UPS | INTERNAL MIX | FLAT SPRAY**

<table>
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<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Liquid Capacity (liters per hour)* and Air Capacity (liters per minute)*</th>
<th>Atomizing Air</th>
<th>Liquid Capacity</th>
<th>Spray Dimensions at 20 cm siphon height</th>
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<td>Liquid Capacity</td>
<td>Gravity Head (cm)</td>
<td>Siphon Heights (cm)</td>
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<td>5.9</td>
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<td>37</td>
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<td>6.7</td>
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<td>4.1</td>
<td>122</td>
<td>5.1</td>
<td>4.8</td>
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</tbody>
</table>

*At the stated pressure in bar.
PERFORMANCE DATA:
PRESSURE SPRAY SET-UPS  |  EXTERNAL MIX  |  VARIABLE SPRAY

SUVM spray set-ups provide uniform spray distribution even when spraying viscous liquids.

Liquid is supplied to this spray set-up under pressure.

The liquid and compressed air or gas are mixed externally to produce a completely atomized spray.

For external mix spray set-ups, atomization can be controlled by varying the air pressure without changing liquid flow rate.

Independent control of fan air provides the ability to adjust the spray pattern without changing liquid flow rate.

Spray coverage dimensions are provided in the table below at various distances from the nozzle.

Please contact your sales engineer for more information.

### Spray Performance Data

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Air Capacity* Press.</th>
<th>Liquid Capacity* Press.</th>
<th>Atomizing Press.</th>
<th>Water Press.</th>
<th>Spray Coverage (cm) at Indicated Distance from Nozzle</th>
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*At the stated pressure in bar.

**Anti-bearding set-ups are available to reduce nozzle build-up and maintenance time for select external mix air atomizing nozzles. For more information, call 1.630.655.5000.**
| Spray Set-up No. | Spray Set-up Consists of Fluid and Air Cap Combination | Liquid Capacity* | Atomizing Air Press. (psi) | Air Pressure (psi) | Fan Air Pressure (cfm) | Press. Cap. (l/min) | Water Press. (psi) | Set-up  
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*At the stated pressure in bar.

**Performance Data:**

Spray Coverage (cm) at Indicated Distance from Nozzle

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**Spray Systems Co.**

spray.com | 1.630.655.5000

External mix air atomizing nozzles. For more information, call 1.630.655.5000.
### PERFORMANCE DATA:

#### VMAU PRESSURE SPRAY SET-UPS | EXTERNAL MIX | VARIABLE SPRAY

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<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
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<th>Liquid Capacity*</th>
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### Spray Coverage (cm) at Indicated Distance from Nozzle

**Fan Air Pressure**

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**Anti-clogging set-ups are available to reduce nozzle build-up and maintenance time for select external mix air atomizing nozzles. For more information, call 1.630.655.5000.**
SUV spray set-ups provide uniform spray distribution even when spraying viscous liquids.

Liquid is supplied to this spray set-up under pressure.

The liquid and compressed air or gas are mixed externally to produce a completely atomized spray.

For external mix spray set-ups, atomization can be controlled by varying the air pressure without changing liquid flow rate.

Independent control of fan air provides the ability to adjust the spray pattern without changing liquid flow rate.

Spray coverage dimensions are provided in the table below at various distances from the nozzle.

---

### Spray Performance Data

#### PERFORMANCE DATA:

**PRESSURE SPRAY SET-UPS | EXTERNAL MIX | VARIABLE SPRAY**

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Spray coverage dimensions are provided in the table below at various distances from the nozzle.

### Performance Table

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<th>Spray</th>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
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*At the stated pressure in bar

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### Spray Coverage (cm) at Indicated Distance from Nozzle

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<th>Water Press.</th>
<th>Spray Coverage (cm) at Indicated Distance from Nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>0.6</td>
<td>2.0</td>
</tr>
<tr>
<td>1.63</td>
<td>2.0</td>
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<td>1.63</td>
<td>2.0</td>
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<tr>
<td>1.63</td>
<td>2.0</td>
</tr>
<tr>
<td>1.63</td>
<td>2.0</td>
</tr>
</tbody>
</table>

---

Anti-bearding set-ups are available to reduce nozzle build-up and maintenance time for select external mix air atomizing nozzles. For more information, call 1.630.655.5000.
### PERFORMANCE DATA:

#### PRESSURE SPRAY SET-UPS | EXTERNAL MIX | VARIABLE SPRAY

<table>
<thead>
<tr>
<th>Spray Set-up No.</th>
<th>Spray Set-up Consists of Fluid and Air Cap Combination</th>
<th>Air Capacity**</th>
<th>Liquid Capacity**</th>
<th>Atomizing Air l/min</th>
<th>Fan Air l/min</th>
<th>Cap. l/h</th>
<th>Press. Gauge</th>
<th>Press. l/min</th>
<th>Water Press.</th>
<th>Fan Air Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUV113</strong></td>
<td>Fluid Cap VF3578 + Air Cap VA113239-60</td>
<td>.69 1.0 1.4 2.1</td>
<td>2.8 3.4 4.1 4.8</td>
<td>5.5 6.2</td>
<td>100 55 67 90 113</td>
<td>213 253 348</td>
<td>396 439 487</td>
<td>21 34 69 1.0</td>
<td>14 35 100 55</td>
<td>.20 6.8 7.6 12.7 8.9 11.4 15.2 15.2 17.8 23 25 33 41</td>
</tr>
<tr>
<td></td>
<td><strong>PERFORMANCE DATA:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>combination of these air and liquid pressures can be used. The total air capacity is the sum of the atomizing air l/min and the fan air l/min. For instance, for atomizing air at 1 bar and fan air at 2 bar, the total is equal to 15 l/min + 25 l/min for a total of 40 l/min.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>At 0 bar fan air pressure the spray forms a round spray pattern. Request Data Sheets 37459M-V113A, 37459M-V113, 37459M-V128 and 37459M-V152.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anti-pinning set-ups are available to reduce nozzle build-up and maintenance time for select external mix air atomizing nozzles. For more information, call 1.630.655.5000.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**At the stated pressure in bar**

† Since the pressures of the air and liquid lines are independently controlled, any combination of these air and liquid pressures can be used. The total air capacity is the sum of the atomizing air l/min and the fan air l/min. For instance, for atomizing air at 1 bar and fan air at 2 bar, the total is equal to 15 l/min + 25 l/min for a total of 40 l/min.

‡ At 0 bar fan air pressure the spray forms a round spray pattern. Request Data Sheets 37459M-V113A, 37459M-V113, 37459M-V128 and 37459M-V152.

Spray set-ups are interchangeable, but each set-up uses a different needle size.
NUMBERING SYSTEM FOR AIR CAPS AND FLUID CAPS

The drawings below illustrate the measurements used in the Spray Performance Data charts.

AIR CAPS
PRESSURE SET-UPS (INTERNAL MIX)

Round Spray Pattern
Example: Air Cap No. PA67147

Cap number for round spray pressure set-up

.067" Inlet dia. .047" Orifice dia.
67 1 47

Flat Spray Pattern
Example: Air Cap No. PA73320

Cap number for flat spray pressure set-up

.073" Inlet dia. .020" Slot width
73 3 20

Wide Angle Round Spray Pattern
Example: Air Cap No. PA67-6-20-70

.067" Inlet dia. .020" Orifice dia.
67 6 20 70

Number of orifices
Included angle between orifices

Dimensions shown are nominal and subject to manufacturing tolerances.

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
AIR CAPS
SIPHON/GRAVITY FEED SET-UPS (EXTERNAL MIX)

**Round Spray Pattern**
Example: Air Cap No. PA64

**Flat Round Spray Pattern**
Example: Air Cap No. PA73420

- .073" Inlet dia.
- .020" Slot width

Cap number for flat spray siphon set-up

AIR CAPS
PRESSURE SET-UPS (EXTERNAL MIX)

**Flat Spray Pattern**
Example: Air Cap No. PA200278-45

- .064" Orifice Dia.
- 200° Center orifice dia.
- 78° Side orifice dia.
- 45° Number of side orifices

**Fluid Cap**
Example: Fluid Cap No. PF2850

- .028" Orifice dia.
- .050" Shoulder dia.

Dimensions shown are nominal and subject to manufacturing tolerances.
AIR ATOMIZING SET-UP COMPATIBILITY

Use the chart that follows to determine which spray set-ups can be used with our atomizing nozzles. The chart also includes the part number for the air cap and fluid cap that are required for each spray set-up.

<table>
<thead>
<tr>
<th>Set-up No.</th>
<th>Spray Pattern</th>
<th>Use With</th>
<th>Fluid Cap No.</th>
<th>Air Cap No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SU11</td>
<td>Round</td>
<td>1/8J,1/4J</td>
<td>PF2050</td>
<td>PA67147</td>
</tr>
<tr>
<td>SU12A</td>
<td>Round</td>
<td>1/8J,1/4J</td>
<td>PF2050</td>
<td>PA73160</td>
</tr>
<tr>
<td>SU12</td>
<td>Round</td>
<td>1/8J,1/4J</td>
<td>PF2850</td>
<td>PA73160</td>
</tr>
<tr>
<td>SU22B</td>
<td>Round</td>
<td>1/8J,1/4J</td>
<td>PF40100</td>
<td>PA1401110</td>
</tr>
<tr>
<td>SU22</td>
<td>Round</td>
<td>1/8J,1/4J</td>
<td>PF60100</td>
<td>PA1401110</td>
</tr>
<tr>
<td>SU42</td>
<td>Round</td>
<td>1/8J,1/4J</td>
<td>PF100150</td>
<td>PA1891125</td>
</tr>
<tr>
<td>SU16</td>
<td>Wide Angle Round</td>
<td>1/8J,1/4J</td>
<td>PF2050</td>
<td>PA67-6-20-70</td>
</tr>
<tr>
<td>SU26B</td>
<td>Wide Angle Round</td>
<td>1/8J,1/4J</td>
<td>PF40100</td>
<td>PA140-6-37-70</td>
</tr>
<tr>
<td>SU26</td>
<td>Wide Angle Round</td>
<td>1/8J,1/4J</td>
<td>PF60100</td>
<td>PA140-6-37-70</td>
</tr>
<tr>
<td>SU29</td>
<td>Wide Angle Round</td>
<td>1/8J,1/4J</td>
<td>PF60100</td>
<td>PA140-6-52-70</td>
</tr>
<tr>
<td>SU30</td>
<td>Wide Angle Round</td>
<td>1/8J,1/4J</td>
<td>PF40100</td>
<td>PA120-6-35-60</td>
</tr>
<tr>
<td>SU46</td>
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<td>PF100150</td>
<td>PA189-6-62-70</td>
</tr>
<tr>
<td>SU340C</td>
<td>360° Circular</td>
<td>1/8J,1/4J</td>
<td>PF60150</td>
<td>PA189-6-62-160HC</td>
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<tr>
<td>SU13A</td>
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<td>1/8J,1/4J</td>
<td>PF2050</td>
<td>PA73328</td>
</tr>
<tr>
<td>SU13</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF2850</td>
<td>PA73328</td>
</tr>
<tr>
<td>SUN13</td>
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<td>PA73320</td>
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<tr>
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<tr>
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<td>Flat</td>
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<td>PF40100</td>
<td>PA125328</td>
</tr>
<tr>
<td>SU23</td>
<td>Flat</td>
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</tr>
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<td>PF100150</td>
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<td>SU240E</td>
<td>Deflected Flat</td>
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<td>PF28150</td>
<td>PA189110-75</td>
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<tr>
<td>SUE15B</td>
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<td>1/8J,1/4J</td>
<td>PF1650</td>
<td>PA67228-45</td>
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<tr>
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<td>1/8J,1/4J</td>
<td>PF1650</td>
<td>PA62240-60</td>
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<td>SUE15A</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF2050</td>
<td>PA67228-45</td>
</tr>
<tr>
<td>SUE18A</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF2050</td>
<td>PA62240-60</td>
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<tr>
<td>SUE15</td>
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<td>PF2850</td>
<td>PA67228-45</td>
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<td>SUE18</td>
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<td>PF2850</td>
<td>PA67228-45</td>
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<td>SUE25B</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF35100</td>
<td>PA134255-45</td>
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<tr>
<td>SUE28B</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF35100</td>
<td>PA122281-60</td>
</tr>
<tr>
<td>SUE25</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF40100</td>
<td>PA134255-45</td>
</tr>
<tr>
<td>SUE28A</td>
<td>Flat</td>
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<td>PF40100</td>
<td>PA122281-60</td>
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<td>SUE25</td>
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<tr>
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<td>PA200278-45</td>
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<td>SUF1</td>
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<td>1/8J,1/4J</td>
<td>PF2850</td>
<td>PA73420</td>
</tr>
<tr>
<td>SUF2C</td>
<td>Flat</td>
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<td>PF35100</td>
<td>PA120432</td>
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<tr>
<td>SUF3B</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF40100</td>
<td>PA122435</td>
</tr>
<tr>
<td>SUF4B</td>
<td>Flat</td>
<td>1/8J,1/4J</td>
<td>PF40100</td>
<td>PA122440</td>
</tr>
<tr>
<td>SU1A</td>
<td>Round</td>
<td>1/8J,1/4J</td>
<td>PF1650</td>
<td>PA64</td>
</tr>
</tbody>
</table>
### Air Atomizing Set-Up Compatibility

**SU1**
- **Spray Pattern**: Round
- **Use With**: 1/8J, 1/4J
- **Fluid Cap No.**: PF10050
- **Air Cap No.**: PA64

**SU2A**
- **Spray Pattern**: Round
- **Use With**: 1/8J, 1/4J
- **Fluid Cap No.**: PF10250
- **Air Cap No.**: PA120

**SU2**
- **Spray Pattern**: Round
- **Use With**: 1/8J, 1/4J
- **Fluid Cap No.**: PF10250
- **Air Cap No.**: PA120

**SU4**
- **Spray Pattern**: Round
- **Use With**: 1/8J, 1/4J
- **Fluid Cap No.**: PF100150
- **Air Cap No.**: PA180

**SU5**
- **Spray Pattern**: Round
- **Use With**: 1/8J, 1/4J
- **Fluid Cap No.**: D-SU4-W
- **Air Cap No.**: D-SU5-W

**SUJ11**
- **Spray Pattern**: Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ73147

**SUJ12**
- **Spray Pattern**: Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ73160

**SUJ22B**
- **Spray Pattern**: Wide Angle Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102045
- **Air Cap No.**: PAJ1401110

**SUJ22**
- **Spray Pattern**: Wide Angle Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102045
- **Air Cap No.**: PAJ1401110

**SUJ340C**
- **Spray Pattern**: Wide Angle Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102045
- **Air Cap No.**: PAJ1401110

**SUJ16**
- **Spray Pattern**: Wide Angle Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102045
- **Air Cap No.**: PAJ1401110

**SUJ26**
- **Spray Pattern**: Wide Angle Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102045
- **Air Cap No.**: PAJ1401110

**SUJ29**
- **Spray Pattern**: Wide Angle Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102045
- **Air Cap No.**: PAJ1401110

**SUJ30**
- **Spray Pattern**: Wide Angle Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102045
- **Air Cap No.**: PAJ1401110

**SUJ13A**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ73328

**SUJ14**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ73328

**SUJ23B**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ125328

**SUJ23**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ125328

**SUJE416-50**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ105-50

**SUJE417-50**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ105-50

**SUJE418-50**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ105-50

**SUJE420-50**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ105-50

**SUJE416-65**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ080-65

**SUJE417-65**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ080-65

**SUJE418-65**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ080-65

**SUJE420-65**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ080-65

**SUJE421-65**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ080-65

**SUJE416-90**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ075-90

**SUJE417-90**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ075-90

**SUJE418-90**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ075-90

**SUJE420-90**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ075-90

**SUJE421-90**
- **Spray Pattern**: Flat
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ075-90

**SUJ1A**
- **Spray Pattern**: Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ64

**SUJ1**
- **Spray Pattern**: Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ64

**SUJ2A**
- **Spray Pattern**: Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ64

**SUJ2**
- **Spray Pattern**: Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ64

**SUJ3**
- **Spray Pattern**: Round
- **Use With**: 1/8J
- **Fluid Cap No.**: PF102050
- **Air Cap No.**: PAJ64-5

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**Fluid caps and air caps not sold separately.**
<table>
<thead>
<tr>
<th>Set-up No.</th>
<th>Spray Pattern</th>
<th>Use With</th>
<th>Fluid Cap No.</th>
<th>Air Cap No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUJ4B</td>
<td>Round</td>
<td>1/8JJ</td>
<td>PFJ40100</td>
<td>PAJ120</td>
</tr>
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<td>SUJ4</td>
<td>Round</td>
<td>1/8JJ</td>
<td>PFJ60100</td>
<td>PAJ120</td>
</tr>
<tr>
<td>SUJF1</td>
<td>Flat</td>
<td>1/8JJ</td>
<td>PFJ2850</td>
<td>PAJ73420</td>
</tr>
<tr>
<td>SUJF2C</td>
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<td>1/8JJ</td>
<td>PFJ35100</td>
<td>PAJ120432</td>
</tr>
<tr>
<td>SUJF3B</td>
<td>Flat</td>
<td>1/8JJ</td>
<td>PFJ40100</td>
<td>PAJ122435</td>
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<td>SUJF4B</td>
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<td>PF251376</td>
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<td>Wide Angle Round</td>
<td>1/2J</td>
<td>PF250375</td>
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<td>PF250375</td>
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<td>PF250375</td>
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FOGGING & HUMIDIFICATION

PAPER STORAGE • TEXTILE MILLS
LIQUID STORAGE TANKS • AIR DUCTS
PRODUCE STORAGE ROOMS • HATCHERIES
CONCRETE PIPE CURING
For reliable, cost-effective humidification, we offer a wide selection of air atomizing nozzles for adding humidity to air, adding moisture to paint tanks to reduce sparking, moisturizing small spaces plus more. Complete humidification packages can be assembled to connect to existing air and fluid lines. We can provide everything you need except piping and wiring.

**PRODUCT RANGE**

- **AirJet® Fogger Nozzles**: for high-quality fog in large open spaces, you’ll find these nozzles offer operating flexibility, easy maintenance and dependable clog-free performance

- **MiniFogger® III**: in small and hard-to-reach spaces, the MiniFogger is ideal. Compact and lightweight, it fits in corners and installs easily on walls and ceilings to provide economical, efficient humidification

- **Air Atomizing Nozzles**: choose from siphon-fed or pressure-fed nozzles that provide efficient humidity and low-cost installation and operation

- **Wall-Mounted Humidification Units**: Self-contained unit includes multiple air atomizing nozzles and is ready to connect to existing air and liquid lines

- **Accessories**: a wide choice of accessories, including humidistats, switching relays, float boxes, float valves and pipe hangers are available
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<tr>
<th>Product Description</th>
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<td>45265 DripSafe™ AirJet® Fogger</td>
<td>E5</td>
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<tr>
<td>45269 DripSafe AirJet Fogger</td>
<td>E5</td>
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<tr>
<td>23412 AirJet Fogger</td>
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<td>QJ25655 AirJet Fogger</td>
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<td>YMF MiniFogger® III</td>
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<td>1/4JH Nozzle (Siphon/Gravity fed spray set-ups)</td>
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<td>45400 Humidification Unit</td>
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<tr>
<td>55089 Humidistat</td>
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NOTE: The products listed above are designed specifically for fogging and humidification applications. Other atomizing nozzles found elsewhere in this catalog can also be used for these applications. Contact your local representative for additional applications assistance.
OVERVIEW: FOGGING & HUMIDIFICATION

- Liquid and compressed air are mixed to produce a finely atomized spray for rapid evaporation and efficient humidification.
- Drop size may be controlled by adjusting air and water pressure to create a wet or a dry fog, depending on application requirements.
- Several configurations are available to produce flow rates up to 72 gph (272 lph).
- Nozzles are available that operate using normal municipal water pressure – without the use of high-pressure pumps.
- A variety of nozzle bodies are available for convenient mounting and positioning.

QUICK REFERENCE GUIDE

<table>
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<tr>
<th>Product Number</th>
<th>Connection Type</th>
<th>Max Flow</th>
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<td>.290” (7.4 mm) hose shank for 1/4” air hose or tubing (atomizing air) 1/4” NPT or BSPT (shut-off valve air) 1/4” NPT or BSPT (liquid)</td>
<td>4.5 gph (17.0 lph)</td>
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<td>45269 DripSafe AirJet Fogger</td>
<td>.290” (7.4 mm) hose shank for 1/4” air hose or tubing (atomizing air) 1/4” NPT or BSPT (shut-off valve air) Split-eyelet connection for 1/2”, 3/4” or 1” liquid supply pipe</td>
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<td>YMF MiniFogger® III</td>
<td>1/4” NPT or BSPT (air) 1/8” NPT or BSPT (liquid)</td>
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<td>1/4JT</td>
<td>1/4” NPT or BSPT (air and liquid)</td>
<td>11.6 gph (43.9 lph)</td>
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DRIPSAFE™ AIRJET® FOGGER NOZZLES

• High quality, cost-efficient dry fog with average drop size of fifteen microns or less
• Drop size can be adjusted by changing the ratio of compressed air to water
• High-volume/high-efficiency air atomization is ideal for large/open structures and areas with high air exchange rates
• Drip safe air-actuated shut-off valve prevents liquid flow until air pressure at the nozzle is sufficient for fine atomization
• Flat spray tip has a large orifice that reduces clogging
• Spray set-up and built-in strainer are quickly removed by hand if cleaning is required
• Can use PVC pipe and low-pressure air tubing
• Operates using normal pressures found in municipal water systems, eliminates the need for expensive, high-pressure hydraulic pumps
• Spray tip is brass; valve and body are polymer
• Minimum air pressure range of 25 to 35 psi (1.7 to 2.5 bar)

In each line, figures in plain face indicate water atomized in gph at psi water pressure. Figures in boldface indicate atomizing air in scfm at psi air pressure.

1. Values in red show optimum evaporation under normal room conditions, when center line of spray is 5’ (1.5 m) from the lower surface.
2. Values in blue can require up to 10’ (3 m) for evaporation. Other values may be used where extended heat or higher air velocity exist or where slight surface wetting is permitted.
3. AirJet Fogger has a horizontal throwing distance of 15’ (4.5 m) and will expand to approximately 8’ (2.4 m) wide and 3’ (.9 m) thick.

PERFORMANCE DATA:

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<tr>
<th>Water Pressure*</th>
<th>Fluid Orifice No. 16 (0.41 mm Dia.)</th>
<th>Fluid Orifice No. 20 (0.51 mm Dia.)</th>
<th>Fluid Orifice No. 26 (0.66 mm Dia.)</th>
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*At the stated pressure in bar.

Call 1.630.655.5000 for applications assistance or to place an order.
**AIRJET® FOGGER NOZZLES**

- High quality, cost-efficient dry fog with average drop size of fifteen microns or less
- Drop size can be adjusted by changing air and water pressures
- High-volume/high-efficiency air atomization is ideal for large/open structures and areas with high air exchange rates
- Built-in check valve, spray tip and internal strainer can be quickly serviced without tools
- Flat spray tip has a large orifice that reduces clogging
- Can use PVC pipe and low-pressure air tubing
- Operates using normal pressures found in municipal water systems, eliminates the need for expensive, high-pressure hydraulic pumps
- Spray tip is brass; valve and body are polymer
- Minimum water pressure of 30 psi (2 bar) required for check valve

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**PERFORMANCE DATA:**  
**23412 AND QJ25655 AIRJET FOGGER NOZZLES**

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*At the stated pressure in bar.

*For applications with liquid pressures below 30 psi (2 bar), request end cap sub-assembly 21950-20-NYB.

In each line, figures in plain face indicate water atomized in gph (l/h) at psi (bar) water pressure.

Figures in boldface indicate atomizing air in scfm (Nl/min) at psi (bar) air pressure.

1. Values in red show optimum evaporation under normal room conditions, when center line of spray is 5' (1.5 m) from the lower surface.
2. Values in blue can require up to 10' (3 m) for evaporation. Other values may be used where extended heat or higher air velocity exist or where slight surface wetting is permitted.
3. AirJet Fogger has a horizontal throwing distance of 15' (4.5 m) and will expand to approximately 8' (2.4 m) wide and 3' (0.9 m) thick.

---

**PLACING YOUR ORDER**

Call 1.630.655.5000 for applications assistance or to place an order.
YMF MINIFOGGER® III

• High quality, cost-efficient dry fog with drop sizes seven to ten microns
• Compact design of 4.5" (115 mm) tall ideal for humidification applications with limited space
• Can be easily installed on a header, on a wall or on a ceiling
• Available with up to four stainless steel spray nozzle set-ups, each with automatic spray pattern alignment
• Choice of spray set-ups provide flow rates ranging from 0.24 to 1.22 gph (0.9 to 4.6 l/hr)
• 0.46 lbs. (210 g) for single spray set-up type; 0.55 lbs. (250 g) for multiple four set-up types
• Body, retainer cap and tank constructed of corrosion-resistant polypropylene with stainless steel air and water inlet connections
• Materials compatible with deionized water
• Easy to maintain – no tools required

PERFORMANCE DATA:
YMF MINIFOGGER III

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<th>Spray Set-up No.</th>
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<th>Flow Rate Capacity* (liters per hour)</th>
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*At the stated pressure in bar.

The standard MiniFogger III has four spray set-ups. Single spray set-ups are available. Contact your local representative for more information.

Call 1.630.655.5000 for applications assistance or to place an order.
OTHER FOGGING AND HUMIDIFICATION OPTIONS

1/4JH Nozzle
- Provides automatic, efficient humidity control with low installation and operating costs
- Produces a fine atomized spray for rapid evaporation and efficient humidification
- Nozzles operate either with compressed air drawing water from the float box, by siphon action, or with water delivered to the nozzle under pressure

For information on air atomizing siphon set-ups, see Section D

1/4JT Nozzle
- Provide automatic, efficient humidity control with low installation and operating costs
- Produces a fine atomized spray for rapid evaporation and efficient humidification
- Suitable for use in systems where water is under pressure
- Built-in strainer for air and water plus a ball check valve in the water line

For information on air atomizing pressure set-ups, see Section D

45400 Humidification Unit
- A self-contained humidifier suitable for use with deionized water
- Easy to install on a wall or for use in non-ducted applications
- Air regulator and gauge, 24VDC air control solenoid and air line filter are included
- Wall-mounting bracket is also provided
- For each spray set-up, water capacity ranges from 2.7 lbs/hr at 10 psi (0.7 bar) air to 6.5 lbs/hr at 60 psi (4 bar) air
- 9.7 lbs. (4.4 kg)

55089 Humidistat
- Quick relative humidity LCD readouts from 1% to 99% with repeatability of +/-5%
- Operating temperature range 32°F to 160°F (0°C to 71°C)
- 24V (DC or AC)

PLACING YOUR ORDER
Call 1.630.655.5000 for applications assistance or to place an order.
SPRAY MANIFOLDS

INTRODUCTION

SIMPLE INSTALLATION & PEAK SPRAY PERFORMANCE

Proper positioning and mounting are critical to ensure optimum spray performance of your spray nozzles. Standard spray manifolds are available in a variety of configurations to meet your exact requirements. Save time and eliminate integration problems using our single source solutions.
### SPRAY MANIFOLDS

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<td>46440 Block Style Spray Manifold</td>
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<tr>
<td>54000 Modular Air Atomizing Spray Manifold</td>
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<td>63600 Sanitary Spray Manifold</td>
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<td>72070 Heated Air Atomizing Spray Manifold</td>
<td>F6</td>
</tr>
<tr>
<td>98250 Spray Manifold</td>
<td>F6</td>
</tr>
</tbody>
</table>
OVERVIEW: SPRAY MANIFOLDS

- Spray manifolds are available for a wide variety of spray applications
- Threaded or sanitary inlet connections
- Hydraulic or atomizing nozzles can be used
- Nozzle spacing as narrow as 2’ (51 mm)
- Manifold lengths up to 20’ (6 m)
- A variety of materials of construction
- Heated manifolds available

QUICK REFERENCE GUIDE

<table>
<thead>
<tr>
<th>Product</th>
<th>Connection Type</th>
<th>Nozzle Spacing</th>
<th>Max Manifold Length</th>
<th>Materials of Construction</th>
<th>Hydraulic or Air Atomizing</th>
<th>Spray Nozzle Series</th>
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<tbody>
<tr>
<td>46440 Block Manifold</td>
<td>Threaded</td>
<td>Min – 2” (51 mm)</td>
<td>12’ (3.7 m)</td>
<td>303 or 316 stainless steel</td>
<td>Both Available</td>
<td>J, JAU</td>
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<tr>
<td>53500 Modular Manifold</td>
<td>Threaded</td>
<td>Min – 2” (51 mm)</td>
<td>11’ (3.4 m)</td>
<td>316 stainless, polypropylene</td>
<td>Air Atomizing</td>
<td>JAU, VMAU</td>
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<tr>
<td>54000 Modular Manifold</td>
<td>Threaded</td>
<td>Min – 2” (51 mm)</td>
<td>5’ (1.5 m)</td>
<td>316L, PTFE</td>
<td>Air Atomizing</td>
<td>JAU, VMAU</td>
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<tr>
<td>54500 Modular Manifold</td>
<td>Sanitary Flange</td>
<td>6” or 9” (152 mm or 229 mm)</td>
<td>5’ (1.5 m)</td>
<td>Stainless steel</td>
<td>Air Atomizing</td>
<td>VMAU</td>
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<tr>
<td>58400/58800 Compact Air Atomizing Manifolds</td>
<td>Threaded</td>
<td>Min – 2” (51 mm)</td>
<td>36” (914 mm)</td>
<td>Stainless steel, Aluminum</td>
<td>Air Atomizing</td>
<td>JJAU, JAU</td>
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<tr>
<td>63600 Sanitary Manifold</td>
<td>Sanitary Flange</td>
<td>Min 2” (51 mm) with J, JAU Min 3” (76 mm) with PulsaJet, VMAU</td>
<td>–</td>
<td>Sanitary 316L tubing</td>
<td>Both Available</td>
<td>J, JAU, VMAU, PulsaJet®, JAUCO, JAUMCO</td>
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<tr>
<td>72070 Heated Air Atomizing Manifold</td>
<td>Sanitary Flange</td>
<td>Min – 2” (51 mm)</td>
<td>36” (914 mm)</td>
<td>316 Stainless Steel</td>
<td>Air Atomizing</td>
<td>JAU</td>
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<tr>
<td>98250 Manifold</td>
<td>Threaded</td>
<td>Adjustable</td>
<td>20’ (6.1 m)</td>
<td>Aluminum</td>
<td>Both Available</td>
<td>PulsaJet</td>
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</table>
SPRAY MANIFOLD OPTIONS

46440 Block Manifold
- Threaded or sanitary connections
- Available for hydraulic or air atomizing nozzles (automatic or non-automatic)
- Can be used with steam
- Heated and non-heated versions are available

53500, 54000, 54500 Modular Air Atomizing Manifolds
- Lightweight design for fast, easy set-up and maintenance
- Streamlines tubing and fittings; simplifies cleaning
- Easy disassembly and reassembly to minimize downtime
- Designs available for industrial, food processing and pharmaceutical applications
- 54500 manifold is heated for use with viscous liquids

58400 and 58800 Compact Air Atomizing Manifolds
- Lightweight, compact design for easy installation
- Allows spray nozzles to be serviced while keeping piping in place
- Recirculating design

PLACING YOUR ORDER

Call 1.630.655.5000 for applications assistance or to place an order.
SPRAY MANIFOLD OPTIONS

63600 Sanitary Manifolds
- Lightweight for easy installation and removal
- Sanitary 316L tubing with polished outside surfaces
- Large diameter liquid passages with minimal pressure drop to help ensure consistent flow
- Available for hydraulic or air atomizing nozzles
- Optional hot water jacket to improve flow of viscous coatings

72070 Heated Air Atomizing Manifolds
- Sanitary connections
- For use with air atomizing nozzles (automatic or non-automatic)
- For use with viscous liquids

98250 Manifold
- Compact design with rigid aluminum structure also functions as fluid passage
- Can be configured with flexible lengths, number of nozzles and nozzle spacing
- Dual inlet ports can be used for liquid recirculation
- Standard wetted components constructed of aluminum, rubber, Buna, nickel-plated brass and nylon tubing

PLACING YOUR ORDER
Call 1.630.655.5000 for applications assistance or to place an order.
OPTIMIZE PERFORMANCE AND SIMPLIFY INSTALLATION

Clog Prevention
- Liquid strainers
- Filtration assemblies
- Air line filters

Ensure Proper Flow Control and Regulation
- Solenoid valves, pressure relief valves and more
- Air pressure regulators
- Liquid pressure regulators

Simplify Nozzle Mounting and Positioning
- Split-eyelet connectors
- Swivels
- Fittings

Prevent particles and debris from obstructing flow with nozzle and fluid line strainers. Choose from a wide range of inlet connections, materials, mesh size and more. See page G4

Regulate liquid pressure from 5 to 125 psi (0.3 to 8.5 bar) with our durable diaphragm-type non-relieving liquid regulators. Choose from a wide range of materials. See page G12

Connect nozzles to pipes in minutes with leak-proof split-eyelet connectors. Connectors clamp on 1/4" to 4" pipes. See page G19
## ACCESSORIES

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<td></td>
<td>Adjustable Siphon Injector</td>
<td>G25</td>
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</tbody>
</table>
OVERVIEW: LIQUID STRAINERS

- Liquid strainers protect nozzles, valves and pumps from damaging debris and minimize clogging
- Wire mesh options ensure screening of particulate as small as 63 microns

T-Style Strainer

T-strainers feature a removable bottom cap or plug for complete withdrawal of the screen assembly during cleaning. On some models, the bottom pipe plug can be replaced with a drain cock for quick-flush cleaning. Models with a clear nylon bowl allow easy visual inspection of the internal screen. Self-clean designs allow filtered liquid to pass through, while liquid particles are returned back to the liquid supply through a return outlet.

STRAINER OPTIONS

**TWD**
- Removable bottom plug for easy screen cleaning
- Bottom plug can be replaced with drain cock for flush cleaning
- Max. pressure: 300 psi (20 bar)
- Materials: Aluminum, brass, stainless steel
- Mesh: 16, 30, 50, 80, 100, 40 x 200 Dutch weave

**16106**
- 1-1/2", 2", 2-1/2" female conn.
- Removable bottom plug for easy screen cleaning
- Bottom plug can be replaced with drain cock for flush cleaning
- Max. pressure: 200 psi (14 bar)
- Materials: Brass, stainless steel
- Mesh: 16, 50, 80, 100

**9830**
- 3/4", 1" female conn.
- Hand removable ribbed bottom cap for easy cleaning of screen
- Max. pressure: 300 psi (20 bar)
- Materials: Aluminum, brass, ductile iron
- Mesh: 16, 50, 100

**AA122**
- 1/2", 3/4" female conn.
- Hand removable outer bowl for easy screen cleaning
- Max. pressure: 150 psi at 100°F (10 bar at 38°C)
- Materials: Polypropylene, polypropylene head with clear nylon bowl
- Mesh: 15, 30, 50, 80, 100, 200, 40 x 200 Dutch weave
### STRAINER OPTIONS

**AA124/AA430**

- Larger size screen area requires less frequent cleaning
- Self-cleaning styles and versions with mounting lugs available
- AA124 and AA430 versions are the same except for materials and inlet connections

### MESH SELECTION GUIDE

<table>
<thead>
<tr>
<th>Mesh Size</th>
<th>Wire Dia. (mm)</th>
<th>Mesh Opening (mm)</th>
<th>Mesh Opening (microns)</th>
<th>Percentage Open Area</th>
<th>Orifice Dia. (mm)</th>
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</thead>
<tbody>
<tr>
<td>16</td>
<td>0.41</td>
<td>1.15</td>
<td>1143</td>
<td>55.4</td>
<td>0.80 and larger</td>
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<tr>
<td>20</td>
<td>0.41</td>
<td>0.87</td>
<td>864</td>
<td>46.2</td>
<td>0.80 and larger</td>
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<tr>
<td>30</td>
<td>0.31</td>
<td>0.55</td>
<td>541</td>
<td>40.8</td>
<td>0.80 and larger</td>
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<tr>
<td>50</td>
<td>0.23</td>
<td>0.28</td>
<td>279</td>
<td>30.3</td>
<td>0.80 and larger</td>
</tr>
<tr>
<td>60</td>
<td>0.19</td>
<td>0.24</td>
<td>234</td>
<td>30.5</td>
<td>0.47 through 0.79</td>
</tr>
<tr>
<td>80</td>
<td>0.14</td>
<td>0.18</td>
<td>177</td>
<td>31.4</td>
<td>0.47 through 0.79</td>
</tr>
<tr>
<td>100</td>
<td>0.12</td>
<td>0.14</td>
<td>140</td>
<td>30.3</td>
<td>0.47 through 0.79</td>
</tr>
<tr>
<td>120</td>
<td>0.09</td>
<td>0.12</td>
<td>118</td>
<td>30.1</td>
<td>0.47 through 0.79</td>
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<tr>
<td>200</td>
<td>0.05</td>
<td>0.07</td>
<td>74</td>
<td>33.6</td>
<td>Up through 0.46</td>
</tr>
<tr>
<td>40 x 200 Dutch Weave</td>
<td>0.18 x 0.13</td>
<td>0.08</td>
<td>63</td>
<td>–</td>
<td>Up through 0.46</td>
</tr>
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</table>

### MATERIAL OPTIONS

<table>
<thead>
<tr>
<th>Material</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>AL</td>
</tr>
<tr>
<td>Brass</td>
<td>B</td>
</tr>
<tr>
<td>Ductile Iron</td>
<td>No code</td>
</tr>
<tr>
<td>Nylon</td>
<td>NYB</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>PP</td>
</tr>
<tr>
<td>Polypropylene head/clear nylon bowl</td>
<td>NYC</td>
</tr>
<tr>
<td>303 stainless steel</td>
<td>SS</td>
</tr>
<tr>
<td>316 stainless steel</td>
<td>316SS</td>
</tr>
</tbody>
</table>

---

### PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
**ORDERING INFORMATION**

### TWD STRAINER

<table>
<thead>
<tr>
<th>Inlet Conn.</th>
<th>Strainer Type</th>
<th>Material Code</th>
<th>Mesh Size</th>
</tr>
</thead>
</table>

**EXAMPLE**

\[
\frac{1}{4} \quad \text{TWD} \quad \text{SS} \quad 100
\]

BSPT connections require the addition of a “B” prior to the inlet connection.

### 16106 STRAINER

<table>
<thead>
<tr>
<th>Strainer Prefix No.</th>
<th>Inlet Conn.</th>
<th>Strainer Type</th>
<th>Material Code</th>
<th>Mesh Size</th>
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</thead>
</table>

**EXAMPLE**

\[
16106 \quad 2 \quad \text{TW} \quad B \quad 100
\]

BSPT connections require the addition of a “B” prior to the inlet connection.

### 9830 STRAINER

<table>
<thead>
<tr>
<th>Strainer Type</th>
<th>Inlet Conn.</th>
<th>Material Code</th>
<th>Mesh Size</th>
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**EXAMPLE**

\[
9830 \quad 1 \quad \text{TW} \quad 50
\]

BSPT connections require the addition of a “B” prior to the inlet connection.

### AA122 STRAINER

<table>
<thead>
<tr>
<th>Strainer Type</th>
<th>Inlet Conn.</th>
<th>Self Cleaning</th>
<th>Material Code</th>
<th>Mesh Size</th>
</tr>
</thead>
</table>

**EXAMPLE**

\[
\frac{1}{2} \quad \text{AA122} \quad \text{SC} \quad \text{PP} \quad 80
\]

BSPT connections require the addition of a “B” prior to the inlet connection.

### AA124/AA430 SELF-CLEANING STRAINER

<table>
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<tr>
<th>Strainer Type</th>
<th>Inlet Conn.</th>
<th>Self Cleaning</th>
<th>Material Code</th>
<th>Mesh Size</th>
</tr>
</thead>
</table>

**EXAMPLE**

\[
\frac{1}{4} \quad \text{NYB} \quad \text{SC} \quad 50
\]

BSPT connections require the addition of a “B” prior to the inlet connection.

---

**PLACING YOUR ORDER**

Call 1.630.655.5000 for application assistance or to place an order.
### LIQUID STRAINERS

#### ACCESSORIES

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<th>Accessory Type</th>
<th>Inlet Conn. (in.)</th>
<th>L (mm)</th>
<th>W (mm)</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>Net Weight (kg)</th>
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<td>124.6</td>
<td>82.6</td>
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<tr>
<td></td>
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<td>1/2</td>
<td>124.6</td>
<td>82.6</td>
<td>–</td>
<td>100.7</td>
<td>–</td>
<td>0.80</td>
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<td>3/4</td>
<td>191.4</td>
<td>114.3</td>
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<td>158.1</td>
<td>–</td>
<td>2.28</td>
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<tr>
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<td></td>
<td>1</td>
<td>191.4</td>
<td>114.3</td>
<td>–</td>
<td>158.1</td>
<td>–</td>
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<tr>
<td></td>
<td></td>
<td>1-1/4</td>
<td>262.1</td>
<td>152.4</td>
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<td>212.9</td>
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<td>1-1/2</td>
<td>262.1</td>
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<td>2</td>
<td>314.1</td>
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<td>249</td>
<td>–</td>
<td>10.14</td>
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<td>2-1/2</td>
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<td>–</td>
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<td>2-1/2</td>
<td>287.3</td>
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<tr>
<td>9830</td>
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<td>AA122</td>
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<td>77.8</td>
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<td>AA124</td>
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<td>238.8</td>
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<td>203.7</td>
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<td>1-1/2</td>
<td>238.8</td>
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<tr>
<td></td>
<td></td>
<td>2-1/2</td>
<td>304.8</td>
<td>188.9</td>
<td>–</td>
<td>254</td>
<td>–</td>
<td>5.81</td>
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</table>

Based on the largest/heaviest version of each type.

Spraying Systems Co. | 1.630.655.5000
## DIMENSIONS AND WEIGHTS

<table>
<thead>
<tr>
<th>Strainer</th>
<th>Accessory Type</th>
<th>Inlet Conn. (in.)</th>
<th>L (mm)</th>
<th>W (mm)</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>Net Weight (kg)</th>
</tr>
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<tbody>
<tr>
<td>AA124SC</td>
<td>1-1/4</td>
<td>222.3</td>
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<tr>
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<td>1-1/2</td>
<td>222.3</td>
<td>135.7</td>
<td>–</td>
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<td>–</td>
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<td>–</td>
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<td>–</td>
<td>–</td>
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<td>–</td>
<td>–</td>
<td>0.40</td>
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<td>1-1/4</td>
<td>299.5</td>
<td>142.2</td>
<td>39</td>
<td>267.6</td>
<td>–</td>
<td>–</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>1-1/2</td>
<td>299.5</td>
<td>142.2</td>
<td>39</td>
<td>267.6</td>
<td>–</td>
<td>–</td>
<td>0.94</td>
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<tr>
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<td>3/4</td>
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<td>114.6</td>
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<td>199.1</td>
<td>–</td>
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<td>114.6</td>
<td>40</td>
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<td>–</td>
<td>–</td>
<td>0.60</td>
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<td>1-1/4</td>
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<td>268.2</td>
<td>–</td>
<td>–</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Based on the largest/heaviest version of each type.
AIR LINE FILTERS

- Air line filters protect equipment from corrosion and excessive wear by removing liquid and contaminants from air lines.
- Manual drain air line filter – simple petcock at the bottom of the bowl enables manual drainage; filter is easily accessible.
- Automatic drain air line filter – for use in inaccessible locations; a float-operated mechanism automatically expels liquid when over a critical level.
- 50 micron filter element.
- Max. pressure: 150 psi (10 bar).
- Max. temperature: 125°F (50°C).

AIR LINE FILTER SELECTION GUIDE

<table>
<thead>
<tr>
<th>Air Line Filter No.</th>
<th>Air Line Filter Type</th>
<th>Inlet Conn. (in.)</th>
<th>Approx. Flow at 7 bar* scfm</th>
<th>Approx. Flow at 7 bar* lpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11438-1</td>
<td>•</td>
<td>1/4</td>
<td>50</td>
<td>1415</td>
</tr>
<tr>
<td>11438-2</td>
<td>•</td>
<td>3/8</td>
<td>50</td>
<td>1415</td>
</tr>
<tr>
<td>11438-3</td>
<td>•</td>
<td>1/2</td>
<td>150</td>
<td>4250</td>
</tr>
<tr>
<td>11438-4</td>
<td>•</td>
<td>3/4</td>
<td>345</td>
<td>9770</td>
</tr>
<tr>
<td>11438-5</td>
<td>•</td>
<td>1</td>
<td>445</td>
<td>12600</td>
</tr>
<tr>
<td>11438-16</td>
<td>•</td>
<td>1/4</td>
<td>50</td>
<td>1415</td>
</tr>
<tr>
<td>11438-17</td>
<td>•</td>
<td>1/2</td>
<td>150</td>
<td>4250</td>
</tr>
<tr>
<td>11438-19</td>
<td>•</td>
<td>1</td>
<td>445</td>
<td>12600</td>
</tr>
</tbody>
</table>

*With 0.35 bar pressure drop through filter.

11438-1, -2, -3, -16 and -17 have screw-on transparent polycarbonate bowls with bowl guards to prevent breakage.
Not suitable for use in systems with air compressors lubricated with fire-resistant synthetics.

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
DIMENSIONS AND WEIGHTS

<table>
<thead>
<tr>
<th>Air Line Filter</th>
<th>Accessory Type</th>
<th>Inlet Conn. (in.)</th>
<th>L (mm)</th>
<th>W (mm)</th>
<th>A (mm)</th>
<th>Net Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11438-1</td>
<td>1/4</td>
<td>168.3</td>
<td>69.9</td>
<td>150.8</td>
<td></td>
<td>0.60</td>
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<tr>
<td>11438-2</td>
<td>3/8</td>
<td>168.3</td>
<td>69.9</td>
<td>150.8</td>
<td></td>
<td>0.50</td>
</tr>
<tr>
<td>11438-3</td>
<td>1/2</td>
<td>187.3</td>
<td>99.2</td>
<td>169.9</td>
<td></td>
<td>0.82</td>
</tr>
<tr>
<td>11438-4</td>
<td>3/4</td>
<td>292.1</td>
<td>120.7</td>
<td>265.1</td>
<td></td>
<td>0.52</td>
</tr>
<tr>
<td>11438-5</td>
<td>1</td>
<td>292.1</td>
<td>120.7</td>
<td>265.1</td>
<td></td>
<td>2.09</td>
</tr>
<tr>
<td>11438-6</td>
<td>1-1/2</td>
<td>446.0</td>
<td>209.0</td>
<td>399.0</td>
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<td>6.80</td>
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<tr>
<td>11438-16</td>
<td>1/4</td>
<td>177.8</td>
<td>92.1</td>
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<td>0.60</td>
</tr>
<tr>
<td>11438-17</td>
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<td>177.8</td>
<td>87.7</td>
<td>160.3</td>
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<td>0.83</td>
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<td>11438-19</td>
<td>1</td>
<td>282.6</td>
<td>120.7</td>
<td>255.6</td>
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<td>2.08</td>
</tr>
</tbody>
</table>

Based on the largest/heaviest version of each type.

EXAMPLE

11438-1

BSPT connections require the addition of a "B" prior to the inlet connection.

ORDERING INFORMATION

11438 AIR LINE FILTER

Air Line Filter No.

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
LIQUID PRESSURE GAUGES

- Easy-to-read gauges with bottom inlet connection or center back connection
- Patented spring-suspended movement protected by a corrosion- and impact-resistant ABS housing with polycarbonate window
- Dual scales: psi and bar
- Grade B accuracy within ±2% in the middle 50% of the scale, with 3% accuracy in the high and low ends of the scale
- 0 psi to a maximum of 300 psi (0 bar to a maximum of 20 bar)
- Materials: All wetted parts are brass; combination brass/bronze connection and bourdon tube

ORDERING INFORMATION

PRESSURE GAUGE 26383

```
<table>
<thead>
<tr>
<th>Gauge Type</th>
<th>Inlet Conn. (in.)</th>
<th>Pressure Rating psi (bar)</th>
<th>Pressure Range psi (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26383</td>
<td>1/8, 1/4</td>
<td>60 (4)</td>
<td>0 – 60 (0 – 4)</td>
</tr>
<tr>
<td></td>
<td>1/8, 1/4</td>
<td>100 (7)</td>
<td>0 – 100 (0 – 7)</td>
</tr>
<tr>
<td></td>
<td>1/8, 1/4</td>
<td>160 (11)</td>
<td>0 – 160 (0 – 11)</td>
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</tbody>
</table>
```

PRESSURE GAUGE 26385

```
<table>
<thead>
<tr>
<th>Gauge Type</th>
<th>Inlet Conn. (in.)</th>
<th>Pressure Rating psi (bar)</th>
<th>Pressure Range psi (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26385</td>
<td>1/4</td>
<td>60 (4)</td>
<td>15 – 45 (1.0 – 3.1)</td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td>100 (7)</td>
<td>25 – 75 (1.7 – 5.2)</td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td>160 (11)</td>
<td>40 – 120 (2.8 – 8.3)</td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td>300 (21)</td>
<td>75 – 225 (5.2 – 15.5)</td>
</tr>
</tbody>
</table>
```

GUAGE OPTIONS

26383
- 1/8", 1/4" center back male conn.
- 2" (51 mm) dia. housing

26385
- 1/4" bottom male conn.
- 2-1/2" (64 mm) dia. housing

EXAMPLE

```
PRESSURE GAUGE 26383

EXAMPLE

G26383 – 1/8 – 60

Pressure rating is ordered in psi.

PRESSURE GAUGE 26385

EXAMPLE

G26385 – 1/4 – 60

Pressure rating is ordered in psi.

ACCESSORIES

spray.com | 1.630.655.5000
LIQUID AND AIR PRESSURE REGULATORS

- Diaphragm-type non-relieving liquid pressure regulators
  - Operating temperature range: 35°F to 200°F (2°C to 93°C)
  - Gauges supplied separately

- Diaphragm-type, relieving and non-relieving style air pressure regulators
  - Relieving style automatically relieves excessive air pressure in a regulated line; non-relieving types also available
  - Regulated line pressure can be reduced with adjusting knob even when line is dead ended
  - Operating temperature range: 0°F to 175°F (-15°C to +80°C) with dew point less than air temperatures below 35°F (2°C)
  - Gauges supplied separately

REGULATOR OPTIONS

11438 Air Pressure Regulator
- Diaphragm, relieving and non-relieving types
- Regulated pressures from 5 to 125 psi (0.3 to 8.5 bar) with supply line pressures up to 300 psi (20 bar)
- Materials: Die cast aluminum, stainless steel, zinc

11438 Liquid Pressure Regulator
- Non-relieving type
- Regulated pressures from 5 to 125 psi (0.3 to 8.5 bar) with primary supply line pressures
- Max. pressure: 400 psi (28 bar)
- Materials: Brass, brass-plated zinc or stainless steel

ORDERING INFORMATION

AIR PRESSURE REGULATOR

Regulator No.

EXAMPLE

11438-45

LIQUID PRESSURE REGULATOR

Regulator No.

EXAMPLE

11438-250

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Regulator Type</th>
<th>Regulator Style</th>
<th>Regulator Number</th>
<th>Max. Pressure (bar)</th>
<th>Main Ports (in.)</th>
<th>Gauge Ports (in.)</th>
<th>Material</th>
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<tr>
<td>Air</td>
<td>Non-relieving</td>
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<td>1/4</td>
<td>Zinc</td>
</tr>
<tr>
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<td>11438-36</td>
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<td>3/8</td>
<td>1/4</td>
<td>Zinc</td>
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<tr>
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<td>11438-37</td>
<td>20</td>
<td>1/2</td>
<td>1/4</td>
<td>Zinc</td>
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<tr>
<td></td>
<td></td>
<td>11438-38</td>
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<td>1/4</td>
<td>Aluminum</td>
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<tr>
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<td>11438-39</td>
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<td>1</td>
<td>1/4</td>
<td>Aluminum</td>
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<td>Relieving</td>
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<td>20</td>
<td>1/4</td>
<td>1/4</td>
<td>Zinc</td>
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<td>1/4</td>
<td>1/4</td>
<td>316 stainless steel</td>
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<td>1/4</td>
<td>Zinc</td>
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<td>1/2</td>
<td>1/4</td>
<td>Zinc</td>
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<td></td>
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<td>1/2</td>
<td>1/4</td>
<td>316 stainless steel</td>
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<tr>
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<td>Diaphragm</td>
<td>11438-250</td>
<td>28</td>
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<td>1/4</td>
<td>Brass</td>
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<td></td>
<td>11438-251</td>
<td>28</td>
<td>3/8</td>
<td>1/4</td>
<td>Brass</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11438-252</td>
<td>28</td>
<td>1/2</td>
<td>1/4</td>
<td>Brass</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11438-253</td>
<td>28</td>
<td>3/4</td>
<td>1/4</td>
<td>Brass</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11438-254</td>
<td>28</td>
<td>1</td>
<td>1/4</td>
<td>Brass</td>
</tr>
</tbody>
</table>

Stainless steel versions meet NACE standard MR-01-75 for corrosion resistance.

### DIMENSIONS AND WEIGHTS

<table>
<thead>
<tr>
<th>Regulator</th>
<th>Accessory Type</th>
<th>B (mm)</th>
<th>L (mm)</th>
<th>W (mm)</th>
<th>Net Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11438-35</td>
<td>38</td>
<td>146</td>
<td>70</td>
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<td>84</td>
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<td>1.35</td>
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<tr>
<td>253, 254</td>
<td>41</td>
<td>241</td>
<td>127</td>
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<td>3.66</td>
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<tr>
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<td>130</td>
<td>70</td>
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</tr>
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<td>37, 47</td>
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<td>89</td>
<td></td>
<td>0.87</td>
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<tr>
<td>38, 39, 48, 49</td>
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<td>174</td>
<td>108</td>
<td>1.54</td>
<td></td>
</tr>
<tr>
<td>45S</td>
<td>10</td>
<td>70</td>
<td>38</td>
<td></td>
<td>0.16</td>
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<td>47S</td>
<td>41</td>
<td>196</td>
<td>89</td>
<td></td>
<td>0.20</td>
</tr>
</tbody>
</table>

Based on the largest/heaviest version of each type.
SOLENOID VALVES

- On/off flow control in automatically operated systems
- Dependable performance in air and liquid lines with temperatures from 40° to 165°F (5° to 75°C)
- Ten watt, class “F” coils are for continuous duty; UL and CSA approved; suitable for international use
- Encapsulated coil resists high humidity and fungus growth
- 360° rotation available with durable electrostatically powder-coated enclosure
- Stainless steel pilot orifice helps eliminate premature leaking and increases service life in high flow velocity situations
- Floating plungers automatically compensate for vibration, shock, wear and deformation while providing a bubble-tight seal
- Versatile mounting in any position; direct pipe mounting

ORDERING INFORMATION

COMPLETE SOLENOID VALVE*

<table>
<thead>
<tr>
<th>Model No.</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>11438-20</td>
<td></td>
</tr>
</tbody>
</table>

BSPT connections require the addition of a “B” prior to the inlet connection.

*110 or 120 V, 50/60 Hz coil is standard. If other coil assemblies are desired, add the appropriate letter code to the end of the part number. For example: 11438-20A.

A = 220 or 240 V, 50/60 Hz  B = 24 V, 60 Hz  C = 12 VDC  D = 24 VDC

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Port Conn. (in.)</th>
<th>Valve Action</th>
<th>Valve Type</th>
<th>Model Number</th>
<th>Max. Pressure (bar)</th>
<th>Orifice Size (mm)</th>
<th>Cv Factor**</th>
<th>Body Material</th>
<th>Seal Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>Direct-Acting Poppet</td>
<td>2-way</td>
<td>11438-20</td>
<td>4*</td>
<td>4.8</td>
<td>.50</td>
<td>Stainless steel</td>
<td>Viton®</td>
</tr>
<tr>
<td>1/4</td>
<td>Direct-Acting Poppet</td>
<td>2-way</td>
<td>11438-21</td>
<td>14*</td>
<td>3.2</td>
<td>.28</td>
<td>Stainless steel</td>
<td>Kel-F®</td>
</tr>
<tr>
<td>3/8</td>
<td>Pilot-Operated Diaph.</td>
<td>2-way</td>
<td>11438-22</td>
<td>10*</td>
<td>11</td>
<td>2.5</td>
<td>Forged or cast brass</td>
<td>Buna-N</td>
</tr>
<tr>
<td>1/2</td>
<td>Pilot-Operated Diaph.</td>
<td>2-way</td>
<td>11438-23</td>
<td>10*</td>
<td>16</td>
<td>4.0</td>
<td>Forged or cast brass</td>
<td>Buna-N</td>
</tr>
<tr>
<td>3/4</td>
<td>Pilot-Operated Diaph.</td>
<td>2-way</td>
<td>11438-24</td>
<td>16</td>
<td>19</td>
<td>7.8</td>
<td>Forged or cast brass</td>
<td>Buna-N</td>
</tr>
<tr>
<td>1</td>
<td>Pilot-Operated Diaph.</td>
<td>2-way</td>
<td>11438-25</td>
<td>16</td>
<td>25.4</td>
<td>13.0</td>
<td>Forged or cast brass</td>
<td>Buna-N</td>
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<tr>
<td>1/4</td>
<td>Poppet</td>
<td>3-way</td>
<td>11438-30</td>
<td>7</td>
<td>2.4</td>
<td>.25/.38</td>
<td>Forged or cast brass</td>
<td>Viton</td>
</tr>
<tr>
<td>1/2</td>
<td>Diaph.</td>
<td>3-way</td>
<td>11438-32</td>
<td>10</td>
<td>11.1</td>
<td>1.6/2.5</td>
<td>Aluminum</td>
<td>Buna-N</td>
</tr>
<tr>
<td>3/8</td>
<td>Diaph.</td>
<td>3-way</td>
<td>11438-31</td>
<td>10</td>
<td>12.7</td>
<td>3.6</td>
<td>Forged or cast brass</td>
<td>Buna-N</td>
</tr>
</tbody>
</table>

*For maximum pressures of coils “C” and “D”, request Data Sheet 11438 – Solenoid (1).

**For use of Cv Factor, request Data Sheet 11438 – Solenoid (2). See Trademark Registration and Ownership, page i1.

### DIMENSIONS AND WEIGHTS

<table>
<thead>
<tr>
<th>Solenoid Valve</th>
<th>Accessory Type</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>D (Dia.) (mm)</th>
<th>L (mm)</th>
<th>W (mm)</th>
<th>Net Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11438-20</td>
<td></td>
<td>8.7</td>
<td>49.2</td>
<td>41.3</td>
<td>73.8</td>
<td>67.8</td>
<td>0.58</td>
</tr>
<tr>
<td>11438-21</td>
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<td>8.7</td>
<td>49.2</td>
<td>41.3</td>
<td>73.8</td>
<td>67.8</td>
<td>0.58</td>
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<tr>
<td>11438-22</td>
<td></td>
<td>13.5</td>
<td>65.9</td>
<td>50</td>
<td>111.9</td>
<td>67.8</td>
<td>1.02</td>
</tr>
<tr>
<td>11438-23</td>
<td></td>
<td>22.2</td>
<td>94.5</td>
<td>100</td>
<td>120.7</td>
<td>67.8</td>
<td>1.73</td>
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<tr>
<td>11438-24</td>
<td></td>
<td>22.2</td>
<td>94.5</td>
<td>100</td>
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<td>0.98</td>
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<td>11438-30</td>
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<td>28.6</td>
<td>69.9</td>
<td>39.7</td>
<td>95.3</td>
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<td>34.9</td>
<td>111.1</td>
<td>67.8</td>
<td>0.35</td>
</tr>
</tbody>
</table>

Based on the largest/heaviest version of each type.

*Based on the largest/heaviest version of each type.
BALL VALVES

- 2-way versions provide on-off control with a simple quarter turn of the handle
- 3-way versions divert flow to either outlet; no shut-off
- Inlet connections range from 3/8” to 1-1/2” (NPT or BSPT)
- Maximum pressure up to 300 psi (20 bar)
- Constructed of nylon glass-reinforced polypropylene

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Valve Number</th>
<th>Maximum Pressure (bar)</th>
<th>Number of Outlets</th>
<th>Connection Size (in.)</th>
<th>Materials of Wetted Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA(B)344M-2-3/4</td>
<td>20</td>
<td>1</td>
<td>3/4</td>
<td>Nylon, PTFE, polypropylene and Viton®</td>
</tr>
<tr>
<td>AA(B)344M-2-1</td>
<td>10</td>
<td>1</td>
<td>3/8</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)343M-2-3/8-PP</td>
<td>9</td>
<td>1</td>
<td>1/2</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)343M-2-1/2-PP</td>
<td>9</td>
<td>1</td>
<td>3/4</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
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<tr>
<td>AA(B)344M-2-3/4-PP</td>
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<td>1/4</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)344M-2-1-PP</td>
<td></td>
<td>2</td>
<td>1-1/2</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)344M-3-3/4</td>
<td>20</td>
<td>2</td>
<td>3/4</td>
<td>Nylon, PTFE, polypropylene and Viton®</td>
</tr>
<tr>
<td>AA(B)344M-3-1</td>
<td>10</td>
<td>2</td>
<td>3/8</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)343M-3-3/8-PP</td>
<td>9</td>
<td>2</td>
<td>1/2</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)343M-3-1/2-PP</td>
<td></td>
<td>2</td>
<td>3/4</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)344M-3-3/4-PP</td>
<td></td>
<td>2</td>
<td>1/4</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)344M-3-1-PP</td>
<td></td>
<td>2</td>
<td>1-1/2</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)346M-2-1-1/4-PP</td>
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<td>2</td>
<td>1-1/4</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)346M-2-1-1/2-PP</td>
<td></td>
<td>2</td>
<td>1-1/2</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)344M-3-1-1/4-PP</td>
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<td>1-1/4</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
<tr>
<td>AA(B)346M-3-1-1/2-PP</td>
<td></td>
<td>2</td>
<td>1-1/2</td>
<td>Glass-reinforced polypropylene, PTFE and Viton</td>
</tr>
</tbody>
</table>

ORDERING INFORMATION

Valve No. | EXAMPLE
---------|---------
AA(B)344M-2-3/4 |
PLUG VALVES

• Easy in-line shut-off
• Manual operation
• Ball valve provides more robust operation than plug valves
• Max. pressure: 400 psi (27 bar)

23220 Plug Valve, Female x Male

• 1/4" female inlet and 1/4" male outlet conn.
• Materials: Brass body with Celcon® plug handle

23220 Plug Valve, Female x Female

• Available in:
  – 1/8" female inlet and 1/8" female outlet conn.
  – 1/4" female inlet and 1/4" female outlet conn.
  – 1/4" female inlet and 1/4" female outlet conn.
• Materials: Brass body with Celcon® plug handle

23220 Plug Valve, Male x Female

• 1/4" male inlet and 1/4" female outlet conn.
• Materials: Brass body with Celcon plug handle

PLUG VALVES

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Valve</th>
<th>Accessory Type</th>
<th>Inlet Conn. (in.)</th>
<th>Outlet Conn. (in.)</th>
<th>L (mm)</th>
<th>H (mm)</th>
<th>Net Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23220</td>
<td></td>
<td>1/4 (F)</td>
<td>1/8 (F)</td>
<td>44.5</td>
<td>29.4</td>
<td>.059</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4 (F)</td>
<td>1/4 (F)</td>
<td>44.5</td>
<td>29.4</td>
<td>.059</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/8 (F)</td>
<td>1/8 (F)</td>
<td>44.5</td>
<td>29.4</td>
<td>.089</td>
</tr>
<tr>
<td>23220</td>
<td></td>
<td>1/4 (M)</td>
<td>1/4 (F)</td>
<td>44.5</td>
<td>29.4</td>
<td>.059</td>
</tr>
<tr>
<td>23220</td>
<td></td>
<td>1/4 (F)</td>
<td>1/4 (M)</td>
<td>44.5</td>
<td>29.4</td>
<td>.056</td>
</tr>
</tbody>
</table>

Based on the largest/heaviest version of each type.

VALVE OPTIONS

23220 Plug Valve, Female x Female

• Available in:
  – 1/8" female inlet and 1/8" female outlet conn.
  – 1/4" female inlet and 1/4" female outlet conn.
  – 1/4" female inlet and 1/4" female outlet conn.
• Materials: Brass body with Celcon® plug handle

23220 Plug Valve, Male x Female

• 1/4" male inlet and 1/4" female outlet conn.
• Materials: Brass body with Celcon plug handle

EXAMPLE

23220 — 1/4F — 1/4F

BSPT connections require the addition of “B” prior to the inlet connection.
EXTENSIONS
Are available to help position the spray tip or set-up precisely where it needs to be.

EXTENSION OPTIONS

17180
- 3", 6", 9", 12" pipe sizes
- For use with 1/8JJ Series nozzles
- Materials: Brass or 303 stainless steel (SS)

18096
- 3", 6", 9", 12" pipe sizes
- For use with 1/4J Series nozzles
- Materials: Brass or 303 stainless steel (SS)

17185
- 3", 6", 9", 12" pipe sizes
- For use with 1/8JJAU Series automatic nozzles
- Materials: Brass or 303 stainless steel (SS)

6123
- 3", 6", 9", 12" pipe sizes
- For use with 1/4JAU Series automatic nozzles
- Materials: Brass or 303 stainless steel (SS)

ORDERING INFORMATION

EXTENSIONS 17180, 18096, 17185

<table>
<thead>
<tr>
<th>Extension</th>
<th>Length</th>
<th>Material Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE</td>
<td>17180</td>
<td>6</td>
</tr>
</tbody>
</table>

There is no material code for brass. Leave material code blank when ordering.

EXTENSION 6123

<table>
<thead>
<tr>
<th>Extension</th>
<th>Material Code</th>
<th>Length</th>
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</thead>
<tbody>
<tr>
<td>EXAMPLE</td>
<td>6123</td>
<td>SS</td>
</tr>
</tbody>
</table>

There is no material code for brass. Leave material code blank when ordering.
SPLIT-EYELET CONNECTORS

Split-eyelet connectors provide a quick and easy way to connect spray nozzles to piping systems

- Simply drill a hole in side of pipe
- Place inlet of split eyelet into the hole; seal eliminates leaking
- Assemble the clamp component to secure the assembly to the pipe

CONNECTOR OPTIONS

8370
- 1-1/4", 1-1/2", 2" pipe size
- 1/8", 1/4", 3/8", 1/2" female outlet connection
- Materials: Zinc-plated steel clamps/bolts with brass body (A), all stainless steel (B) or zinc-plated steel clamps/bolts with stainless connector body (C)

15475
- 2-1/2", 3", 4" pipe size
- 1/4", 3/8", 1/2", 3/4", 1" female outlet connection
- Materials: Zinc-plated steel clamps/bolts with brass body (A), all stainless steel (B) or zinc-plated steel clamps/bolts with stainless connector body (C)

38180 Split Eyelet Swivel Union
- 1/2", 3/4", 1" pipe sizes
- 1/4" male outlet connection
- Swivel union allows easier product positioning
- Materials: Brass or 303 stainless steel (SS)

ORDERING INFORMATION

CONNECTORS 15475 AND 8370

<table>
<thead>
<tr>
<th>Split-Eyelet Connector Type</th>
<th>Material Code</th>
<th>Pipe Size</th>
<th>Outlet Conn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8370</td>
<td>A</td>
<td>1-1/4</td>
<td>1/4</td>
</tr>
</tbody>
</table>

EXAMPLE

15475
- 2-1/2", 3", 4" pipe size
- 1/4", 3/8", 1/2", 3/4", 1" female outlet connection
- Materials: Zinc-plated steel clamps/bolts with brass body (A), all stainless steel (B) or zinc-plated steel clamps/bolts with stainless connector body (C)

SWIVEL CONNECTOR 38180

<table>
<thead>
<tr>
<th>Split-Eyelet Swivel Union</th>
<th>Pipe Size</th>
<th>Material Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>38180</td>
<td>1/2</td>
<td>SS</td>
</tr>
</tbody>
</table>

EXAMPLE

38180
- 1/2
- SS

*There is no material code for brass 38180 connectors. Leave material code blank when ordering.
## SPECIFICATIONS

### MOUNTING & POSITIONING ACCESSORIES

**CAPACITIES OF 8370 AND 15475 VARY WITH OUTLET CONNECTION.**

<table>
<thead>
<tr>
<th>Split-Eyelet</th>
<th>Pipe Size (in.)</th>
<th>To Clamp On</th>
<th>Outside Dia. Tubing (mm)</th>
<th>Capacity at Maximum Pressure bar</th>
<th>Material Code</th>
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</thead>
<tbody>
<tr>
<td><strong>8370</strong></td>
<td>1-1/4</td>
<td>39-43</td>
<td>• • • • • • • •</td>
<td>9</td>
<td>21-76*</td>
</tr>
<tr>
<td></td>
<td>1-1/2</td>
<td>44-51</td>
<td>• • • • • •</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>54-60</td>
<td>• • • • • •</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-1/2</td>
<td>63-73</td>
<td>• • • • • •</td>
<td>9</td>
<td>38-204*</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76-89</td>
<td>• • • • • • • • • • • •</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102-114</td>
<td>• • • • • • • • • • •</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **15475**    | 1-1/4          | 39-43       | • • • • • • • •         | 9                               | 21-76*        |
|              | 1-1/2          | 44-51       | • • • • • •             |                                 |               |
|              | 2              | 54-60       | • • • • • •             |                                 |               |
|              | 2-1/2          | 63-73       | • • • • • •             | 9                               | 38-204*       |
|              | 3              | 76-89       | • • • • • • • • • • • • |                                 |               |
|              | 4              | 102-114     | • • • • • • • • • • • |                                 |               |

*Capacities of 8370 and 15475 vary with outlet connection.

### MATERIALS

<table>
<thead>
<tr>
<th>Pipe Size (in.)</th>
<th>Outside Dia. Tubing (mm)</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/4</td>
<td>39-43</td>
<td>Nickel-plated brass with zinc-plated pipe clamps, 303 stainless steel (SS)</td>
</tr>
<tr>
<td>1-1/2</td>
<td>44-51</td>
<td>Nickel-plated brass with zinc-plated pipe clamps, 303 stainless steel (SS)</td>
</tr>
<tr>
<td>2</td>
<td>54-60</td>
<td>Nickel-plated brass with zinc-plated pipe clamps, 303 stainless steel (SS)</td>
</tr>
<tr>
<td>2-1/2</td>
<td>63-73</td>
<td>Nickel-plated brass with zinc-plated pipe clamps, 303 stainless steel (SS)</td>
</tr>
<tr>
<td>3</td>
<td>76-89</td>
<td>Nickel-plated brass with zinc-plated pipe clamps, 303 stainless steel (SS)</td>
</tr>
<tr>
<td>4</td>
<td>102-114</td>
<td>Nickel-plated brass with zinc-plated pipe clamps, 303 stainless steel (SS)</td>
</tr>
</tbody>
</table>

### DIMENSIONS AND WEIGHTS

**BASED ON THE LARGEST/HEAVIEST VERSION OF EACH TYPE.**

<table>
<thead>
<tr>
<th>Split-Eyelet</th>
<th>Accessory Type</th>
<th>Pipe Size (in.)</th>
<th>W (mm)</th>
<th>D (Dia.) (mm)</th>
<th>L (mm)</th>
<th>Net Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8370</strong></td>
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<td>1-1/4</td>
<td>44</td>
<td>17.5</td>
<td>40.9</td>
<td>0.18</td>
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<tr>
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<td>1-1/2</td>
<td>81</td>
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<td>0.20</td>
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<td>88</td>
<td>17.5</td>
<td>50</td>
<td>0.21</td>
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<tr>
<td><strong>15475</strong></td>
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<td>2-1/2</td>
<td>118.3</td>
<td>31.8</td>
<td>62.7</td>
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<td>3</td>
<td>136.5</td>
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<td>47.6</td>
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<td>3/4</td>
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<td>0.1</td>
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<tr>
<td></td>
<td></td>
<td>1</td>
<td>57.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

spray.com | 1.630.655.5000

G20
MOUNTING KITS

28945-001-316SS
• Clamp mounting kit.
• Mounting bolt has 3/8-24 UNF thread for VAA, VAU and VMAU nozzles

28945-002-SS
• Mounting kit for 1/2” rod
• Mounting bolt has 3/8-24 UNF thread for VAA, VAU and VMAU nozzles

28945-003-316SS
• Mounting kit for 1/2” rod
• Mounting bolt has 1/8” NPT thread for JAU nozzle series

ORDERING INFORMATION

Mounting Kit Number

EXAMPLE

28945-001-316SS

2335-SE SPRAY PIPE ASSEMBLY

• 1/4” globe valve
• 1/4” piping (1-1/2” and 8” lengths)
• 1/4” copper tubing
• Union nut and connectors (2)
• Materials of construction: galvanized iron, brass (material code - B)

ORDERING INFORMATION

Spray Pipe Assembly — Material Code

EXAMPLE

2335-SE — B

There is no material code for galvanized iron. Leave material code blank when ordering.
2202 PIPE HANGER
• Used for proper spacing between air and liquid lines. Sizes fit 1/2" piping
• Hanger is held by threaded rod and nuts (not included) for vertical adjustment
• Made of cast aluminum. 4" (10 cm) spacing
• Use with 2335-SE spray pipe assembly

ORDERING INFORMATION

WALL MOUNT ADAPTERS
1/8J and 1/4J Nozzles
• For thick walls adapter CP3376
• For thin walls adapter CP3376, gasket CP2804-3 and locknut CP6378
• Materials of construction:
  - Adapter and locknut, nickel-plated brass (NP), 303 stainless steel (SS) or 316 stainless steel (316SS)
  - Gasket, Buna-N (BU) or PTFE (TEF)

VAA, VAU, VMAU Nozzles
• Thick Wall Adapter - CP31158-003-SS
• Thin Wall Adapter - CP31158-002-SS

ORDERING INFORMATION

ADAPTER FOR 1/8J AND 1/4J NOZZLES

ADAPTER FOR VAA, VAU, VMAU NOZZLES

EXAMPLE

2202-AL

EXAMPLE

CP31158-003-SS

EXAMPLE

CP31158-002-SS

EXAMPLE

CP31158-003-SS
22140 PRESSURE TANK ASSEMBLY

- 22140 Pressure Tank Assembly
- Meets ASME® Boiler and Pressure Vessel Code requirements and OSHA safety regulations
- Constructed of 304 stainless steel (SS)
- Assembly includes a pressure regulator with gauge, ASME coded pressure relief valve, air bleed valve and plug valves for air inlet and liquid outlet
- Tanks are available in 1, 2, 5, 10 and 16 gallon (3.8, 7.6, 18.9, 38 and 61 liter) capacities
- The air inlet and liquid outlet have 1/4” NPT (F) connections
- The maximum working pressure is 140 psi at 100°F (9.5 bar at 38°C)
- The 22140 features brass fittings and an EPR lid seal

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Pressure Tank</th>
<th>Capacity Size (in gallons)</th>
<th>Material Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>22140</td>
<td>5</td>
<td>304SS</td>
</tr>
</tbody>
</table>

FLOAT BOX AND VALVE

- 45600 Float Box
  Stainless float box with a polypropylene float valve and float ball
- 45604 Float Valve
  Brass float valve and polypropylene float ball

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Float Box or Float Valve Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>45600</td>
</tr>
</tbody>
</table>
39273 AND 39275 LEVEL SWITCHES

- Indicates a low liquid level condition inside the pressure tank
- Use with pressure tank assemblies with external 1/4" NPT (F) threads
- Features a U.L. listed float switch, quick disconnect and 12’ (3.6 m) PVC jacketed cable
- Available in brass with Buna-N float or all stainless steel

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Level Switch Part Number</th>
<th>Matching Tank Size</th>
<th>Minimum Specific Gravity</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tube &amp; Fittings</td>
</tr>
<tr>
<td>39275-1</td>
<td>1 gal (3.8 liter)</td>
<td>0.65</td>
<td>Brass</td>
</tr>
<tr>
<td>39275-1-SS</td>
<td></td>
<td>0.7</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>39275-2</td>
<td>2 gallon (7.6 liter)</td>
<td>0.65</td>
<td>Brass</td>
</tr>
<tr>
<td>39275-2-SS</td>
<td></td>
<td>0.7</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>39273</td>
<td>5, 10 gallon (18.9, 38 liter)</td>
<td>0.65</td>
<td>Brass</td>
</tr>
<tr>
<td>39273-SS</td>
<td></td>
<td>0.7</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>39273-1</td>
<td>16 gallon (61 liter)</td>
<td>0.65</td>
<td>Brass</td>
</tr>
<tr>
<td>39273-1-SS</td>
<td></td>
<td>0.7</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Level Switch Part Number</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>39275-1-SS</td>
<td>39275-1-SS</td>
</tr>
</tbody>
</table>
50580 ADJUSTABLE SIPHON INJECTORS

- Provide a convenient method for adding chemicals to liquid flow before spraying
- Siphon rate is controlled with a metering screw
- Max pressure – 3000 psi (207 bar)
- Capacity sizes available up to 6.0 gpm (22.7 lpm)
- Liquid inlet and outlet connections 3/8” or 1/2” NPT or BSPT
- Standard hose barb connection injection inlet; optional 1/4” NPT or BSPT
- Materials: Brass or 303 stainless steel (SS)

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Inlet &amp; Outlet Connection Size</th>
<th>Matching Capacity</th>
<th>Siphon Thread Connection Size</th>
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</thead>
<tbody>
<tr>
<td>50580</td>
<td>3/8 or 1/2</td>
<td></td>
<td>1/4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>05 (0.5 gpm; 1.9 lpm)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>10 (1.0 gpm; 3.8 lpm)</td>
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<tr>
<td></td>
<td></td>
<td>15 (1.5 gpm; 5.7 lpm)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 (2.0 gpm; 7.6 lpm)</td>
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<tr>
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<td></td>
<td>30 (3.0 gpm; 11.4 lpm)</td>
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<td>40 (4.0 gpm; 15.1 lpm)</td>
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<tr>
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<td></td>
<td>50 (5.0 gpm; 18.9 lpm)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 (6.0 gpm; 22.7 lpm)</td>
<td></td>
</tr>
</tbody>
</table>

ORDERING INFORMATION

There is no material code for brass. Leave material code blank when ordering.
Leave threaded siphon connection size blank for hose barb connection siphon inlet.

EXAMPLE

BSPT connections require the addition of a “B” prior to the model number.

PLACING YOUR ORDER

Call 1.630.655.5000 for application assistance or to place an order.
SPRAYING SYSTEMS CO.'S TRADEMARK USAGE

The following is a current list of Spraying Systems Co.'s trademarks registered in the United States. Some marks are registered in other countries as well.

AccuCoat® QuickMist®
AirJet® SpiralJet®
AutoJet® SprayDry®
FloMax® TankJet®
FullJet® UniJet®
GunJet® VeeJet®
MiniFogger® WhirlJet®
PanelSpray® WindJet®
PulsaJet®

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ASME® Monel®
ASTM® NEMA®
Carpenter® Peek™
Celcon® Refrax®
Cupro® Ryton®
Hastelloy® Stellite®
Inconel®
Kel-F®
Viton®

Spraying Systems Co. reserves the right to make changes in specifications or design of the products shown in the catalog or to add improvements at anytime without notice or obligation.

HOW TO ORDER

For your convenience, there are multiple ways to place an order: phone, fax and online

**In North America**
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Phone: 1.630.665.5000 | Fax: 1.630.260.0842

Online ordering with a credit card is also available. Visit spray.com/ispray. You’ll find helpful selection tools and a Live Chat option for immediate assistance.
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Because of the difficulty of ascertaining and measuring damages hereunder, it is agreed that, except for claims for bodily injury, Seller’s liability to the Buyer or any third party, for any losses or damages, whether direct or otherwise, arising out of the purchase of product from Seller by Buyer shall not exceed the total amount billed and payable to the Buyer for the product hereunder. IN NO EVENT WILL SELLER BE LIABLE FOR ANY LOSS OF PROFITS OR OTHER SPECIAL OR CONSEQUENTIAL DAMAGES, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

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Unless otherwise expressly stated by Seller: (a) any technical advice provided by Seller with respect to the use of goods furnished to Buyer shall be without charge; (b) Seller assumes no obligation or liability for any such advice, or for any results occurring as a result of the application of such advice; and (c) Buyer shall have sole responsibility for selection and specification of the goods appropriate for the end use of such goods.

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The terms and conditions set forth herein, together with any other documents incorporated herein by reference constitute the sole and entire agreement between Buyer and Seller with respect to any order superseding completely any oral or written communications. No additions to or variations from such terms and conditions whether contained in Buyer’s purchase order, any shipping release or elsewhere shall be binding upon Seller unless expressly agreed to in writing by Seller.

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All orders are accepted by Seller at its mailing address in Wheaton, Illinois, and shall be governed by and interpreted in accordance with the laws of the State of Illinois.

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We recognize that at times it is necessary for our customers to return products for a variety of reasons...that returns are a normal part of an on-going business relationship. To make the process as straightforward and fair as possible, our policy is based upon the following:

- An error on our part: We’ll credit you for the product and shipping costs, up to one year from ship date.
- An error on your part: Standard products can be returned for full credit, freight prepaid, also up to one year from date of shipment. There is the normal restocking charge of 20%.

Returns are subject to inspection.

For quick handling and authorization of returns, contact your local sales office.

Spraying Systems Co. reserves the right to make changes in specifications or design of the products shown in the catalog or to add improvements at anytime without notice or obligation.
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