INDUSTRIAL

PRECISION

SPRAY NOZZLES

& ACCESSORIES
COMPANY PROFILE

We are the manufactures and suppliers of the different type of precision industrial Spray Nozzles and Accessories with an experience of 7 years, Today ‘RAYYAN SPRAY SYSTEMS’ is a trusted name in the manufacturing different types of nozzles used in various fields our fields of specialization include manufacturing nozzles for surface treatment, chemical industry, Steel making industry, power engineering environmental technology, air conditioning, fire protection, paper industry, Food and beverages, Machine tools and agriculture. We also manufacture nozzles as per your Specification and sample. We attribute our success to our motivated and skilled work force. Who can accomplish job order of varying magnitudes and complexities. We are proud to have esteemed customers who have entrusted their faith in us over the years.

AIM OF ORGANIZATION

The aim of our organization is customer satisfaction which is achieved through following objectives:
- Prompt response.
- Commitment to quality.
- Technological solutions.
- In time delivery.
- After sales service.
- To meet the widely ranging delivery demands.

ABOUT QUALITY SYSTEM

The quality control measured are taken right from raw material stage to final product and that is readily reviewed through necessary documents. Internal inspection report is made for every lot and the same is given to the customer along with material TC report. All our measuring instruments are calibrated periodically.
SPRAY PERFORMANCE CONSIDERATIONS:
Basic spray nozzle characteristics: Spray nozzles are precision components which are designed for industrial products to very specific performance under specific conditions. This will help you to determine the perfect nozzle type. For your application general spray characteristics of nozzle are given with different types of spray pattern.

FULL CONE NOZZLE

Full cone utilizes an internal vane to provide a uniform round conical. Full spray pattern with medium to large sized drops.

FLAT JET NOZZLE

A Flat jet spray nozzle produce a flat liquid layer. They are non-clogging and one piece construction can operate through pressure fluctuation.

CONTINUOUS CASTING FULL CONE NOZZLE (JATO TYPE)

Supply of liquid takes polce aerially and form fine Uniform full cone spray pattern.

HOLLOW CONE NOZZLE

Hollow cone spray where most of the liquid is uniformly distributed at the outer edge of a conical pattern like ring type pattern.
Solid stream nozzles produce compact, solid stream jet of defined lengths. Solid stream nozzles provide the greatest impact per square inch of any other type of nozzle. They are 0° deg nozzle provides the greatest impacts.

This type of nozzle are used to clean the inside Diameter of tank and barrels, and they are clean upto 360° deg. Angle depends on inside diameter of tanks.

Atomization produced by a combination of air and liquid pressures. Air atomising spray nozzles mixes liquid and air to give fine mist like humidification. It is available in cone and flat spray patterns.

Capacity of nozzle varies with spraying pressure. It also depends on the specific gravity of the liquid. Thus for lower specific gravity, the flow rate is larger and for higher specific gravity, the flow rate is smaller at the same pressure.

Spray angle varies with the distance from where it is going to spray. Spray angle also depend on viscosity of liquid.

Viscosity is the property of a liquid which resists change in the shape during flow liquid viscosity is a primary factor affecting spray pattern formation and to lesser degree capacity. High viscosity liquids require a higher minimum pressure to the formation of a spray pattern and provide narrower spray angles as compared to those of water.
DROP SIZE SPRAY

Drop size refers to the size of individual spray drops that comprise a nozzle’s spray pattern each spray provides a range of drop size. Drop size distribution is depend on the spray pattern type and varies from one type to another. The smallest drop size is achieved by air atomizing nozzle which the largest drops are produced by full cone hydraulic spray nozzle. The drop size is also affect by liquid properties, nozzle capacity, spraying pressure and spray angle. Lower spraying pressures provide larger drop sizes. Higher spraying pressures yield smaller drop sizes. With each type of spray pattern the smallest capacity produced the smallest spray drops, and the largest capacities produced the largest spray drops.

MATERIAL SELECTION

Following types of material are generally used:-
1) Brass 2) Stainless steel:- SS- 304, SS- 316, SS- 316L 3) Hardened SS
4) Plastic material:- PVC, Teflon, PP

SPRAY ANGLE AND COVERAGE

The table listed below gives the theoretical coverage of spray patterns as calculate from the included spray and the distance from the nozzle orifice.

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>5cm</th>
<th>10cm</th>
<th>15cm</th>
<th>20cm</th>
<th>25cm</th>
<th>30cm</th>
<th>40cm</th>
<th>50cm</th>
<th>60cm</th>
<th>70cm</th>
<th>80cm</th>
<th>100cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>5°</td>
<td>0.4</td>
<td>0.9</td>
<td>1.3</td>
<td>1.8</td>
<td>2.2</td>
<td>2.6</td>
<td>3.5</td>
<td>4.4</td>
<td>5.2</td>
<td>6.1</td>
<td>7.0</td>
<td>8.7</td>
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<tr>
<td>10°</td>
<td>0.9</td>
<td>1.8</td>
<td>2.6</td>
<td>3.5</td>
<td>4.4</td>
<td>5.3</td>
<td>7.0</td>
<td>8.8</td>
<td>10.5</td>
<td>12.3</td>
<td>14.0</td>
<td>17.5</td>
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<tr>
<td>15°</td>
<td>1.3</td>
<td>2.6</td>
<td>4.0</td>
<td>5.3</td>
<td>6.6</td>
<td>7.9</td>
<td>10.5</td>
<td>13.2</td>
<td>15.8</td>
<td>18.4</td>
<td>21.1</td>
<td>26.3</td>
</tr>
<tr>
<td>20°</td>
<td>1.8</td>
<td>3.5</td>
<td>5.3</td>
<td>7.1</td>
<td>8.8</td>
<td>10.6</td>
<td>14.1</td>
<td>17.6</td>
<td>21.2</td>
<td>24.7</td>
<td>28.2</td>
<td>35.3</td>
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<tr>
<td>25°</td>
<td>2.2</td>
<td>4.4</td>
<td>6.7</td>
<td>8.9</td>
<td>11.1</td>
<td>13.3</td>
<td>17.7</td>
<td>22.2</td>
<td>26.6</td>
<td>31.0</td>
<td>35.5</td>
<td>44.3</td>
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<tr>
<td>30°</td>
<td>2.7</td>
<td>5.4</td>
<td>8.0</td>
<td>10.7</td>
<td>13.4</td>
<td>16.1</td>
<td>21.4</td>
<td>26.8</td>
<td>32.2</td>
<td>37.5</td>
<td>42.9</td>
<td>53.6</td>
</tr>
<tr>
<td>35°</td>
<td>3.2</td>
<td>6.3</td>
<td>9.5</td>
<td>12.6</td>
<td>15.8</td>
<td>18.9</td>
<td>25.2</td>
<td>31.5</td>
<td>37.8</td>
<td>44.1</td>
<td>50.5</td>
<td>63.1</td>
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<td>40°</td>
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<td>37.3</td>
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<td>20.8</td>
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<td>5.8</td>
<td>11.6</td>
<td>17.3</td>
<td>23.1</td>
<td>28.9</td>
<td>34.6</td>
<td>46.2</td>
<td>57.7</td>
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<td>75°</td>
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<td>46.0</td>
<td>61.4</td>
<td>76.7</td>
<td>92.1</td>
<td>107</td>
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<td>80°</td>
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<td>101</td>
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<td>134</td>
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<td>9.2</td>
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<td>27.5</td>
<td>36.7</td>
<td>45.8</td>
<td>55.0</td>
<td>73.3</td>
<td>91.6</td>
<td>110</td>
<td>128</td>
<td>147</td>
<td>183</td>
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<td>90°</td>
<td>10.0</td>
<td>20.0</td>
<td>30.0</td>
<td>40.0</td>
<td>50.0</td>
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<td>80.0</td>
<td>100</td>
<td>120</td>
<td>140</td>
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<td>200</td>
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<td>32.7</td>
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<tr>
<td>100°</td>
<td>11.9</td>
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<td>35.8</td>
<td>47.7</td>
<td>59.6</td>
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<td>143</td>
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<td>238</td>
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<tr>
<td>110°</td>
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<td>42.9</td>
<td>57.1</td>
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<td>143</td>
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<td>200</td>
<td>229</td>
<td>286</td>
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<tr>
<td>120°</td>
<td>17.3</td>
<td>34.6</td>
<td>52.0</td>
<td>69.3</td>
<td>86.6</td>
<td>104</td>
<td>139</td>
<td>173</td>
<td>208</td>
<td>243</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
FULL CONE NOZZLES

A wide choice of full cone nozzles is shown on the following pages, which are sufficient for the majority of standard industrial process. In order to assist your choice of nozzle, the table below lists the full cone nozzles type, and some general indications about the nozzle style special features, spray pattern and specific application where it might be used.

Full cone nozzles are normally delivered in brass or in stainless steel SS -304, SS -316, while a wild choice of offer material like PVC, PP, Teflon can be supplied on request.

FULL CONE NOZZLES

Full cone nozzle spray in a conical spray pattern within the inside area of the cone. They are available in axial or in tangential. Axial full cone spray pattern with uniform distribution of liquid spray over the whole circular impact area. It consists of vane. In most of these nozzles the vane are removable.

Application :
* Washing and cleaning process
* Cooling and quenching
* Dust suppression
* Surface spraying

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at Pressure (p) = 0.5 - 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>45°, 60°, 90°, 120°</td>
<td>1 - 750</td>
<td>1/8” to 2”, BSP/BSPT/NPT -(M)</td>
<td>Brass, SS-304, SS-316, PVC, PP</td>
</tr>
</tbody>
</table>

Special material and connections on request.
TANGENTIAL FULL CONE NOZZLES

Tangential full cone nozzles sprays at 90° angle. They are Vaneless. It consists of removable cap.

Application:
* Water coating / cooling of tanks
* Chemical process engineering
* Dust Suppression
* Fire Fighting

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate Lpm at pressure P = 2-10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°, 90°, 120°</td>
<td>2 to 161</td>
<td>1/4” to 3/4” BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316, PP, PVC, Teflon</td>
</tr>
</tbody>
</table>

Special material and connections on request.

CONTINUOUS CASTING COOLING FULL CONE NOZZLES

Supply of liquid takes place aerially and form fine. Uniform full cone spray pattern.

Application:
* Spray Drying.
* Brine Spraying.
* Metal Treating.
* Cooling & Cleaning of air and gas.
* Continuous Casting Cooling.

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate Lpm at pressure P = 2.8 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>45°, 65°,</td>
<td>2 to 16</td>
<td>3/8” BSP (F)</td>
<td>Brass, SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.

NARROW FULL CONE SPRAY NOZZLES

These nozzles produce a solid cone spray with round pattern. This nozzles are available in 15° or 30° spray angle.

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM, Pressure (p) =0.5 - 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>15°, 30°</td>
<td>1 to 750</td>
<td>1/4” to 2” BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316, PVC</td>
</tr>
</tbody>
</table>

Special material and connections on request.
FULL CONE SPRAY NOZZLES WITH SQUARE PATTERN

This type of nozzle gives square cone with uniform distribution throughout.

Application:
- Cooling and quenching
- Product washing
- Air and gas washers
- Scrubbers
- Liquid washer
- Dust control
- Fire protection

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at pressure (p) = 0.5 - 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°, 90°, 120°</td>
<td>2 to 94</td>
<td>3/8&quot; to 1&quot; BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316, PVC</td>
</tr>
</tbody>
</table>

Special material and connections on request.

SPIRAL FULL CONE NOZZLES

The spiral full cone nozzles combine small sizes with wide flow rate and opening; they are non-clogging due to absence of internal parts.

Application:
- Fire fighting system
- Gas washing
- Cooling towers

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate lpm at pressure P = 2 to 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°, 90°, 150°, 120°, 180°</td>
<td>10 to 2700</td>
<td>1/4&quot; to 2&quot; BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316, PP, PVC, Teflon</td>
</tr>
</tbody>
</table>

Special material and connections on request.

FULL CONE ADJUSTABLE BALL-TYPE NOZZLES

This type of nozzles are used for adjusting of variable spray direction.

Application:
- Cleaning
- Cooling
- Washing
- Dust suppression

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate lpm at pressure P = 2-10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>45°, 60° to 120°</td>
<td>2 to 22</td>
<td>1/4&quot;, 3/8&quot; BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316, PVC</td>
</tr>
</tbody>
</table>

Special material and connections on request.
MULTIPLE FULL CONE SPRAY NOZZLES

Multiple full cone spray nozzles consist of seven individual hollow cone orifices which generate small droplets from a large capacity flow. The overlapping hollow cone orifices produce a full cone spray pattern of 130° & 75° angle of very fine droplets.

Application:
*Gas cooling
*Desuperheaters
*Fire protection
*Chlorine precipitation absorption
*Chemical process

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate lpm at pressure P = 2 to 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>130°,75°</td>
<td>Up to - 140</td>
<td>1/2&quot; to 3/4&quot; BSP [F]</td>
<td>SS-304, SS-316, SS-310</td>
</tr>
</tbody>
</table>

Special material and connections on request.

FLAT JET SPRAY NOZZLES

A wide choice of flat jet nozzles are shown on the following pages flat jet spray nozzles are having strong fluid impact. The energy of the jet is concentrated over a small surface area. Because of the flat jet shape and its relatively high impact values these nozzles are commonly used to wash objects moving on conveyors in a transverse direction to the pipe the nozzles are assembled to a flat jet spraying system involve large of relatively large number of nozzles on to one or more manifolds.

FLAT JET NOZZLES

Flat jet spray nozzles with uniform distribution of droplets.

Application:
*Material cleaning and processing
*Degreasing and rinsing
*Surface treatment
*Spray coating
*Filter cleaning
*Lubricating
*Roll cooling
*Sand and cool washing

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate lpm at pressure P = 2 to 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>30°,45°, 60°,90°,120°</td>
<td>2 to 170</td>
<td>1/8&quot; to 1/2&quot; BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.
FLAT JET TYPE DESCALER NOZZLE

Flat jet type Descaler nozzles highly uniform flat spray with knife-like cutting edge – a accurate jet alignment maximum impinging force with minimum loss of energy speedy nozzles change with the dovetail design.

Application:
* Descaling
* High pressure cleaning Etc.

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate lpm at</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>30°, 45°, 60°, 90°, 120°</td>
<td>2 to 950</td>
<td>1/4” to 2”, BSP/NPT-(M)</td>
<td>Brass, SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.

FLAT JET WITH DOVETAIL TYPE

This nozzle uniform flat spray with knife-like cutting edge and maximum impinging force with minimum loss of energy.

Application:
* Descaling
* High pressure cleaning

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>30°, 45°, 60°, 90°, 120°</td>
<td>1 to 150</td>
<td>Mounted with dovetail fixing</td>
<td>Brass, SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.

FLAT JET NOZZLES WITH HIGH IMPACT

Flat jet nozzles with high impact a powerful flat jet narrowly defined spray pattern provides clog resistance it is of deflector type spray pattern.

Application:
* Cleaning washing
* Decreasing and Phosphating
* Processing techniques

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>30° to 60°</td>
<td>1 to 150</td>
<td>1/4” to 1/2”, BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316, PVC</td>
</tr>
</tbody>
</table>

Special material and connections on request.
FLAT JET NOZZLES WITH FLOOD JET NOZZLES

These type of nozzles produce the wide angle flat spray pattern the deflection provide by this nozzle is of medium impact. It is clog resistant.

Application :
* Dust Suppression
* Waste Water treatment Plants
* Light Washing
* Spray Cooling
* Degreasing and Phosphating

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Angle of Deflection</th>
<th>Flow rate LPM at Pressure (p) = 0.5 to 10 bar</th>
<th>Connection</th>
<th>Materials</th>
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</thead>
<tbody>
<tr>
<td>90°, 140°</td>
<td>75°, 40°</td>
<td>1 to 560</td>
<td>1/8” to 1” BSP/NPT-(M)</td>
<td>Brass, SS-304, SS-316, PP, PVC</td>
</tr>
</tbody>
</table>

Special material and connections on request.

FLAT JET ADJUSTABLE BALL-TYPE NOZZLES

BALL TYPE FLAT JET NOZZLES

This type of nozzles are used for adjusting of variable spray direction.

Application :
* Cleaning
* Cooling
* Lubrication

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at pressure (p) = 2 - 10 bar</th>
<th>Connection</th>
<th>Materials</th>
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</thead>
<tbody>
<tr>
<td>30°, 45°, 60°, 90° and 120°</td>
<td>2 to 22</td>
<td>1/4”, 3/8” BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316,</td>
</tr>
</tbody>
</table>

Special material and connections on request.

HOLLOW CONE NOZZLES

Hollow cone nozzle produces a conical spray pattern like a circular ring of where droplets are distributed on to the surface of the conical shape they are used in many different application like gas scrubbing, dust suppression cooling of large surface. Different types of hollow cone nozzle are shown below.
**TANGENTIAL HOLLOW CONE NOZZLES**

This type of nozzles are without swirl insert with uniform hollow cone spray.

**Application:**
* Humidification of air  
* Dust control  
* Foam control  
* Cooling

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate Lpm at pressure P = 2 to 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°, 90°, 120°</td>
<td>1 to 175</td>
<td>1/8” to 3/4” BSP/NPT-(M)</td>
<td>SS-304, SS-316, PVC</td>
</tr>
</tbody>
</table>

Special material and connections on request.

**HOLLOW CONE NOZZLE- INLINE**

In line entry (small capacity) supply of liquid takes place axially and form fine uniform hollow cone spray nozzle.

**Application:**
* Cooling and cleaning of air and gas  
* Spray drying  
* Desuperheating  
* Metal treating  
* Bride spraying

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at pressure (p) = 0.5 - 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°, 75°, 90°</td>
<td>1 - 180</td>
<td>1/4”, to 1 1/2”, BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.

**AXIAL HOLLOW CONE NOZZLE**

Hollow cone spray where most of the liquid is uniformly distributed of the outer edge of a conical pattern they available in axial or tangential type. Non clogging type.

**Application:**
* Air and gas washing  
* Gas washing  
* Dust control  
* Air humidification  
* Brine spraying  
* Fire protection  
* Flue gas desulfurization

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at pressure (p) = 0.5 - 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°, 75°, 90°</td>
<td>1 to 40</td>
<td>1/4” to 1/2” BSP/BSPT/NPT-(M)</td>
<td>Brass, SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.
SOLID JET NOZZLES

Solid jet nozzles produce compact solid stream jets of defined length. In solid jet nozzles flow condition are not affected by turbulence.

A concentrated stream jet with high impact force is achieved. A solid jet nozzle is of 0° angle as the square inch impact increases, the spray angle decreases.

Application:
* Cleaning processes
* Jet cutting
* Separating

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate Lpm at pressure P = 2 to 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>1 to 300</td>
<td>1/8” to 1” BSP / BSPT / NPT-(M)</td>
<td>Brass, SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.

AIR ATOMIZING NOZZLES (FLATJET / FULL CONE)

Atomization produced by a combination of air and liquid pressures. Air atomising spray nozzles mixes liquid and air to give fine mist like humidification. It is available in cone and flat spray patterns.

This type of nozzle utilizes a collision of air and liquid to provide an atomized spray. Various types of nozzle designs are available to comply with customers’ special applications.

Application:
* Atomization of viscous liquids
* Cooling
* Humidification of air
* Humidification of goods
* Lubrication

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate Lpm at pressure P = 0.7 - 4 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>15°, 20°, 25°, 30°, 45°, 60°, 90°, 120°</td>
<td>0.05 to 3</td>
<td>1/8” to 1/4” BSP (F)</td>
<td>SS-316, SS-304</td>
</tr>
</tbody>
</table>

Special material and connections on request.
FOG JET NOZZLES

Fog jet type of nozzles throws a fogging spray of small-sizes drops. They produce full cone type pattern with large flow rates with the aid of several flat jets spraying into one another.

Application:
- Dust Control
- Chemical Processing
- Fire protection

<table>
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<th>Flow rate Lpm at pressure P = 2 - 10 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>70°, 90°</td>
<td>16 to 255</td>
<td>3/4&quot; to 1 1/4&quot; BSP / BSPT (F)</td>
<td>Brass, SS-304, SS-316, PVC</td>
</tr>
</tbody>
</table>

Special material and connections on request.

TANK CLEANING / WASHING NOZZLES

This type of nozzle are used to clean the inside Diameter of tank and barrels, and they are clean upto 360° deg. Angle depends on inside diameter of tanks.

SELF ROTATING TANK CLEANING NOZZLES

Tank cleaning nozzle are more efficient way to clean tanks and barrales in your plant

Application:
- Beverage industry
- Bioengineering
- Chemical industry
- Food industry
- Cosmetic industry
- Pharmaceutical industry

Self rotating tank cleaning :-
This type of nozzles are used for cleaning of small tanks up to 1.5 m in diameter

<table>
<thead>
<tr>
<th>Spray Angle</th>
<th>Flow rate LPM at pressure (p)= 2 bar</th>
<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>270° up 270° down 360°</td>
<td>30 -100</td>
<td>3/8&quot;, 1/2&quot;, 3/4&quot; BSP, BSPT(F)</td>
<td>SS-304, SS-316</td>
</tr>
</tbody>
</table>

Special material and connections on request.
TANK WASHER NOZZLES

STATIC SPRAY BALLS
This type of nozzle is a very compact static spray ball and it produces sharp solid jets which are excellent for rinsing small drums.

Application:
*For small kegs
*Drums
*Barrels
*Totes

<table>
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<th>Connection</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>240°</td>
<td>18 to 108</td>
<td>1/2&quot; 3/4&quot;</td>
<td>SS- 304, SS- 316,</td>
</tr>
<tr>
<td>360°</td>
<td></td>
<td>BSP (F)</td>
<td></td>
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TANK CLEANING NOZZLES
This type of nozzle are used to clean the inside Diameter of tank and barrels, and they are clean upto 360° deg. Angle depends on inside diameter of tanks.

Application:
*Beverage industry
*Bioengineering
*Chemical industry
*Food industry
*Cosmetic industry
*Pharmaceutical industry

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<th>Flow rate lpm at pressure P = 2 bar</th>
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<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>270° UP / down 360°</td>
<td>60 - 225</td>
<td>3/4&quot; &amp; 1&quot; BSP (F)</td>
<td>Teflon</td>
</tr>
</tbody>
</table>

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ACCESSORIES

Coupling  Nipple  Socekets  Retaining Lock Nuts  Dovetail Nipple  Ball Joint
ACCESSORIES

We can also provide following type of accessories.
1. Connector Bodies - Tip Holder
2. Welding Nipples, Threaded Nipples (Dove-tail)
3. Fittings - sockets, Nuts, Nipple.
4. Ball Joints with threaded connections.