623 Series Delivery System

The 623 Series is an Ultra High Flow gas delivery system for laser purity gases. Typically these gases are supplied from low pressure (less than 600 PSIG/42 BAR) cryogenic supply systems. The 623 is designed for direct installation to the external vaporizer. The dome-loaded, balanced stem seat design allows for full flow capacity that may be required for the assist or process gases, and ensures constant delivery flow and pressure regardless of supply source inlet pressure fluctuations.

Advanced Features
- **Up to 4,500 PSIG Inlet Available**
  Liquid or high pressure use
- **High Flow Delivery Regulator**
  ISOFLOW™ seat design
- **40-Micron Internal Filter**
  Limits possibility of gas contamination
- **Variable Line Pressure**
  Line pressure adjustable on site
- **Wall Mounting Bracket**
  Easy installation
- **Right and Left Hand Inlets Available**
  Flexible installation options
- **0-500 PSIG Model**
  Lower static loss yields better performance for cryogenic applications

Applications

**Assist Gases from Cryogenic Supply**
- Nitrogen and Oxygen
  (Use low inlet models for MVE Laser-Cyl™*, TW™ VHP liquid cylinder*, MVE Trifecta™, CTR Laser Maid™, and TW™ Laser Pak Systems)

  *Requires optional external ambient air vaporizers for maximum flow capacity.

**Assist Gases from High Pressure Supply**
- Nitrogen and Oxygen
  (Use high inlet models with "Gas Paks", cradles, and tube trailers)

Materials

**Delivery Regulator**
- Brass barstock body and bonnet
- PTFE seat* or PCTFE seat†
- PTFE and Viton® (internal)

**Pilot Regulator**
- Brass barstock body and bonnet
- PTFE seat* or PCTFE seat†
- PTFE and Viton® (internal)

**Tubing and Tube Fittings**
- 316L stainless steel

**Pressure Gauges (PSIG/BAR Dual Scale)**
- Brass (Socket)
- Bronze (Bourdon tube)
- Brass (Case)

*3,000 PSIG (208 BAR) inlet
†4,500 PSIG (310 BAR) inlet

Specifications

**Maximum Inlet Pressure**
- 600 PSIG (42 BAR)
- 3,000 PSIG (210 BAR)
- 4,500 PSIG (310 BAR)

**Temperature Range**
- -40 to 140°F (-40 to 60°C)

**Maximum Flow (Nitrogen)**
- 10,000 SCFH (4700 lpm)

**Inlet Connection**
- ½" FPT

**Outlet Connection**
- ½" FPT

**Weight**
- 12.6 lbs. (5.7 kg)
Flow Curves and Installation Dimensions

<table>
<thead>
<tr>
<th>Series</th>
<th>Outlet Pressure</th>
<th>Inlet Connection</th>
<th>Outlet Connection</th>
<th>Assembly Orientation/Maximum Inlet Pressure</th>
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<tr>
<td>623-2xx</td>
<td>0-2,000 PSIG (0-136 BAR)</td>
<td>0.5” FPT Port</td>
<td>0.5” FPT Port</td>
<td>Right Hand Inlet 600 PSIG (42 BAR)</td>
</tr>
<tr>
<td>623-5xx</td>
<td>0-500 PSIG (0-35 BAR)</td>
<td>1.5” Stainless Steel Compression Tube</td>
<td>1.5” Stainless Steel Compression Tube</td>
<td>Left Hand Inlet 600 PSIG (42 BAR)</td>
</tr>
<tr>
<td>623-7xx</td>
<td>0-725 PSIG (0-50 BAR)</td>
<td>Diaphragm Valve ½” FPT</td>
<td>Diaphragm Valve ½” FPT</td>
<td>Right Hand Inlet 3,000 PSIG (210 BAR)</td>
</tr>
<tr>
<td>623-72</td>
<td>0-725 PSIG (0-50 BAR)</td>
<td>Diaphragm Valve ½” Tube</td>
<td>Diaphragm Valve ½” Tube</td>
<td>Left Hand Inlet 3,000 PSIG (210 BAR)</td>
</tr>
<tr>
<td>623-436</td>
<td>0-725 PSIG (0-50 BAR)</td>
<td>4.36” Pigtail</td>
<td>4.36”-37° JIC Male Flare</td>
<td>Right Hand Inlet 4,500 PSIG (310 BAR)</td>
</tr>
<tr>
<td>623-572</td>
<td>0-725 PSIG (0-50 BAR)</td>
<td>Diaphragm Valve with 36” Pigtail</td>
<td>4.36”-37° JIC Male Flare</td>
<td>Left Hand Inlet 4,500 PSIG (310 BAR) Neoprene Seat</td>
</tr>
<tr>
<td>623-772</td>
<td>0-725 PSIG (0-50 BAR)</td>
<td>72” Pigtail</td>
<td>72” Pigtail</td>
<td>Right Hand Inlet 3,000 PSIG (210 BAR) Neoprene Seat</td>
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<tr>
<td>623-8</td>
<td>0-725 PSIG (0-50 BAR)</td>
<td>Manifold Connector*</td>
<td>72” Pigtail</td>
<td>Left Hand Inlet 3,000 PSIG (210 BAR) Neoprene Seat</td>
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<tr>
<td>623-9</td>
<td>0-725 PSIG (0-50 BAR)</td>
<td>Manifold Connector with Master Valve*</td>
<td>72” Pigtail</td>
<td>Left Hand Inlet 3,000 PSIG (210 BAR) Neoprene Seat</td>
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**Related Options**

<table>
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<th>Options</th>
<th>Description</th>
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<td>See page 57: Supply liquid gas to vaporizers</td>
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<tr>
<td>Tube trailer hoses</td>
<td>See page 56: Connection from high pressure tube trailer to gas delivery systems</td>
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<tr>
<td>Vaporizer</td>
<td>See page 59: Vaporizer specifically designed for use with the 623 gas delivery system</td>
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