## Anti-Hammering Slow Closing Solenoid Valves STC 2DS500-2000 Series

<table>
<thead>
<tr>
<th>Valve Model</th>
<th>2DS400F</th>
<th>2DS500F</th>
<th>2DS650F</th>
<th>2DS800F</th>
<th>2DS1000F</th>
<th>2DS1250F</th>
<th>2DS1500F</th>
<th>2DS2000F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve Type</td>
<td>2 Way, Normally Closed (NC)</td>
<td></td>
<td></td>
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<tr>
<td>Action</td>
<td>Pilot Diaphragm, Slow Closing, Uni-Directional</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Orifice (mm)</td>
<td>40</td>
<td>50</td>
<td>65</td>
<td>80</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>Cv</td>
<td>21</td>
<td>30</td>
<td>53</td>
<td>82</td>
<td>128</td>
<td>222</td>
<td>292</td>
<td>514</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>6 to 175 PSI</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Operating Temperature</td>
<td>Media: -5 to 80°C (NBR Seal), -5 to 120°C (Viton Seal); Ambient: -5 to 45°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Port Size (Flange)</td>
<td>1 1/2”</td>
<td>2”</td>
<td>2 1/2”</td>
<td>3”</td>
<td>4”</td>
<td>5”</td>
<td>6”</td>
<td>8”</td>
</tr>
<tr>
<td>Body Materials</td>
<td>Stainless Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Seal Materials</td>
<td>NBR (Buna N), Options: Viton, EPDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Coil Duty</td>
<td>Class H, IP65, 100% ED (Continuous Duty)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>Voltage Options: 12, 24VDC; 24, 110/120, 220/240 VAC, 50/60Hz</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Voltage Tolerance</td>
<td>10% of Specified Voltage</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Coil Power</td>
<td>13W (100 PSI); 20W (175PSI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Electrical Connections</td>
<td>DIN 43650, Form A</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Installation</td>
<td>No Orientation Requirement (Optimum Position: Flow Horizontal and Solenoid Vertical)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Service</td>
<td>Air, Inert Gas, Water, Liquid</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Installation and Operation:

To connect the valve Inlet and Outlet:
Connect the inlet and outlet in the direction of the arrow marked on the valve.

To install coil:
Put the coil onto the armature tube of the valve. Put the lock-washer and nut onto the armature tube. Hand tighten the nut, then use a wrench to tighten the nut to a quarter turn; do not over-tighten the nut, it may cause the armature tube to fail prematurely.

To connect DIN coil:

1. Remove the Philip screw from the plastic housing and unplug it from the DIN coil.
2. From the screw opening, push the terminal block out from the plastic housing.
3. Note the 1, 2 and ground markings on underside of DIN enclosure.
4. For DC DIN Coil, Connect 1 to Positive, 2 to Negative.
5. For AC DIN Coil, connect 1 to HOT wire, 2 to Neutral wire, and if required connect.
6. Do not energize the coil without installing it onto the valve, it will burn the coil and create fire hazards.

Safety Note: Standard valves are supplied with continuous duty coils. The proper class of insulation for the service is indicated on the coil. The coil temperature may become hot after being energized for extended periods, but it is normal. Do not energize the coil without installing it onto the valve or connect the coil to a wrong voltage, as it may over-heat and damage the coil; although the coil is made of flame retarded material, misuse of the coil in this manner could create fire hazards and generate smoke or burning odor which indicates excessive coil temperature and should disconnect the power to the coil immediately.

Operation: 2DS series valve is a 2/2 Pilot Diaphragm, Normally Closed Solenoid Valve.
When the valve receives an electrical signal, a magnetic field is formed which attracts the plunger covering the pilot orifice to lift off and allow the media to escape into the outlet port, which causes pressure on the top of the diaphragm to drop. As the pressure is reduced, the full system pressure on the other side of the diaphragm acts to lift the diaphragm away from the main orifice and allows the media to flow through the valve. Since the bleed orifice in the diaphragm is dimensionally smaller than the pilot orifice, the system pressure cannot rebuild on the top of the diaphragm as long as the pilot orifice remains open. When the valve is de-energized, it releases its hold on the plunger. Then the plunger forced by the spring to drop and cover the pilot orifice. As the media enters through the diaphragm bleed orifice into the top side of the diaphragm, it causes the pressure to build up and forces the diaphragm down until it covers the main orifice and stops media flow through the valve. The 2DS series valve is to be used with clean media. If the pilot holes are blocked the valve will not operate properly, the pilot holes need to be cleaned and unblock.
ELECTRICAL CONNECTION PROCEDURE

A: DIN Connector:
[1] Remove the Philip screw from the plastic housing.
[2] Unplug the plastic housing from the DIN coil.
[3] From the screw opening, use the screw to push the terminal block out of the plastic housing.
[4] Note the 1, 2, and ground markings on underside of DIN enclosure.
[5] For DC DIN coil, connect 1 to positive, 2 to negative.
[6] For AC DIN coil, connect 1 to HOT wire, 2 to neutral wire, and if required connect ground to ground wire.

B: Grommet/Lead Wire Connector:
DC: Red=Positive, Black=Negative
AC: Black=Hot, White=Neutral/Common

To download detail procedure: please visit www.StcValve.com

StcValve.com; Tel: 650-856 8833
## Anti-Hammering Slow Closing Solenoid Valves
### 2DS500-1000 Series Installation Dimensions

<table>
<thead>
<tr>
<th>Stainless Steel</th>
<th>Port Size</th>
<th>Orifice</th>
<th>Cv</th>
<th>D (OD)</th>
<th>D1 (OC)</th>
<th>D2 (Thread Hole Dia)</th>
<th>L</th>
<th>H</th>
<th>H1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2DS400F-1 1/2</td>
<td>1 1/2</td>
<td>40</td>
<td>21</td>
<td>150</td>
<td>110</td>
<td>18 (4x)</td>
<td>182</td>
<td>196</td>
<td>125</td>
</tr>
<tr>
<td>2DS500F-2</td>
<td>2</td>
<td>50</td>
<td>30</td>
<td>165</td>
<td>125</td>
<td>18 (4x)</td>
<td>215</td>
<td>200</td>
<td>120</td>
</tr>
<tr>
<td>2DS650F-2 1/2</td>
<td>2 1/2</td>
<td>65</td>
<td>52.5</td>
<td>185</td>
<td>145</td>
<td>18 (4x)</td>
<td>256</td>
<td>280</td>
<td>185</td>
</tr>
<tr>
<td>2DS800F-3</td>
<td>3</td>
<td>800</td>
<td>81.7</td>
<td>200</td>
<td>160</td>
<td>18 (8x)</td>
<td>277</td>
<td>287</td>
<td>190</td>
</tr>
<tr>
<td>2DS1000F-4</td>
<td>4</td>
<td>100</td>
<td>128.4</td>
<td>220</td>
<td>180</td>
<td>18 (8x)</td>
<td>350</td>
<td>330</td>
<td>230</td>
</tr>
<tr>
<td>2DS1250F-4</td>
<td>5</td>
<td>125</td>
<td>221.7</td>
<td>250</td>
<td>210</td>
<td>18 (8x)</td>
<td>425</td>
<td>437</td>
<td>310</td>
</tr>
<tr>
<td>2DS1500F-4</td>
<td>6</td>
<td>150</td>
<td>291.7</td>
<td>285</td>
<td>240</td>
<td>22 (8x)</td>
<td>450</td>
<td>460</td>
<td>318</td>
</tr>
<tr>
<td>2DS2000F-4</td>
<td>8</td>
<td>200</td>
<td>513.5</td>
<td>340</td>
<td>295</td>
<td>22 (12x)</td>
<td>560</td>
<td>547</td>
<td>380</td>
</tr>
</tbody>
</table>
2DS400-800 SERIES VALVE
WATER FLOW RATE VS PRESSURE

WATER FLOW RATE (GPM)
PRESSURE (PSI)

2DS400
2DS500
2DS650
2DS800
2DS1000-2000 SERIES VALVE
WATER FLOW RATE VS PRESSURE

WATER FLOW RATE (GPM)
PRESSURE (PSI)
2DS1000
2DS1250
2DS1500
2DS2000
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No merchandise is accepted for return 30 days after delivery date. No credit allowed on merchandise shipped as ordered and returned without obtaining an authorization number IN ADVANCE. A 20% restocking charge applies to all returns, and transportation charges must be fully prepaid. We will pay ground transportation charges on re-sent or returned merchandise due to STC’s error.

Shortages & Mis-Shipment: Any shortages or mis-shipment must be reported within 15 days.

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Credit Application: To establish a net 30 day account, please mail or fax three trade references with complete mailing addresses and account numbers.

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