DH / DP Valve Block with Low Impact and Rapid Approach Control

Description
Pneumatic valve block for use with pneumatic weld gun cylinders. The block has an integrated low impact system and is provided with two solenoid operated “Namur” valves. One valve for the pre-stroke and one for the weld stroke. The valves can be of the single solenoid type or the double solenoid type. The block is available for different constructions of cylinders:

DH = Piston to Piston
DP = Two Cylinders Back-to-Back

The block can be supplied with single solenoid or double solenoid valves, depending on the type of control available.

Dimensions: See page 15

Applications
The Valve Block can be used with any Pneumatic Spot Weld Cylinder with Pre-stroke.

Mounting
Diameter of the cylinder from Ø 70 mm up to Ø 140 mm. Adapter plates are available to mount the valve block on your pneumatic cylinder.

Technical Data

<table>
<thead>
<tr>
<th>Medium</th>
<th>Compressed air, filtered to 40µ and dried to a dewpoint of 37°F (3°C), lubricated or non-lubricated. Once lubricated air is applied, this must be maintained.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubrication</td>
<td>The block is shipped with life time lubrication, silicone-free grease.</td>
</tr>
<tr>
<td>Working Pressure</td>
<td>21 to 145 PSIG (1.5 to 10 bar)</td>
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<tr>
<td>Ambient Temperature</td>
<td>41°F to 120°F (5°C to 49°C)</td>
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<tr>
<td>Weight</td>
<td>5.5 lbs (2.5 kgs)</td>
</tr>
</tbody>
</table>

Pneumatic Valve
24V DC
- Operating Voltage Solenoids: 24V DC ±10%
- Power Consumption: 4.8W
- Class of Protection: IP65 (with plug mounted)
- Connector: M12, 22mm, 30mm

120V AC
- Operating Voltage Solenoids: 120V AC ±10%
- Frequency: 50 / 60 Hz
- Power Consumption: 6.3VA / 7.8 VA
- Class of Protection: IP65 (with plug mounted)
- Connector: M12, 22mm, 30mm

Proximity Sensor
24V DC
- Supply Voltage: 10 to 30 VDC
- Rated Operational Current: 200mA
- Degree of Protection: IP67
- Ambient Temperature Range: -22°F to 185°F (-30°C to 85°C)
- Switching Indication: By LED (Orange)
- Output: PNP or NPN
- Connector: Conprox (H1141)

120V DC
- Supply Voltage: 20 to 250 VAC
- Frequency: 50 or 60 Hz
- Supply Voltage Indication: By LED (Green)
- Rated Operational Current: 400 mA
- Degree of Protection: IP67
- Ambient Temperature Range: -13°F to 158°F (-25°C - +70°C)
- Switching Indication: By LED (Orange)
- Output: PNP or NPN
- Connector: Minifast (B1331)

Service Kits: See page 15
### Materials

**Valve Block**
- Housing: Aluminum
- Spool: Aluminum
- Guiding Bushings: Brass
- Seals: Synthetic Rubber

**Pneumatic Valves**
- Housing: Aluminum
- Spool: Aluminum

**Proximity Sensor**
- Housing: Teflon Coated

**Other Parts**
- Brass, Stainless Steel, Aluminum

### ANSI (With Cylinder Option)

![Inductive Sensor / Connection: Turck](image)

**Rapid-Approach & Low-Impact**

![Connection Diagram Inductive Sensor](image)

**Low-Impact**

The Parker Sempress “Rapid-Approach” Effect

Another specific feature is the “Rapid-Approach” effect. This allows, especially at welding guns with a big opening between both electrodes, for high speed in the beginning of the movement. At a certain point this speed is reduced after which the normal movement follows with the “Low-Impact” feature as described above. Also the “Rapid-Approach” feature is stroke-independent.

This feature provides advantages when longer strokes are to be made, e.g. on C-type of welding guns with a stroke > 60 mm (2.36”).

**The Parker Sempress “Low-Impact” Effect**

A specific feature in Parker Sempress Pneumatic spot weld cylinder is the “Low-Impact” effect.

This is reached by means of an integrated pneumatic control which ensures that the electrodes are touching the sheet metal with low force and speed (kinetic energy) and that immediately after touch down of the electrodes the press-force is built-up instantly.

This gives following advantages:
- Less noise because the electrodes only touch the metal sheets softly.
- No bouncing of the electrodes on the metal sheets, hence the spot welding can start immediately after the first contact.
- Less wear on electrodes (measured lifetime improvement of 30%) and sensitive electrode-caps (measured lifetime improvement of 200%).
- No damaging of the metal sheets. Additional polishing can be avoided.
- Less shocking movements in the welding gun and between electrodes.
- On robot-guns: water-hoses and electric cabling show less wear.
- On manual guns: less physical stress for the operator.
- Less sparking because both metal sheets are pressed together properly and immediately after first contact.
- Less welding points required because the quality of the weld is improved.
- Lower welding current can be used.
- An electrical feedback signal is available when 75% of the clamping force has been reached.

One of the features of the Parker Sempress “Low-Impact” system is that it is stroke-independent. This means that the system works on every position of the cylinder. The nominal stroke of the cylinder should be longer than the maximum required stroke.

The closing speed and impact force can be regulated by turning the regulating screw in the valve block. The electric signal “Start Welding” can be taken from the M12-Pin connection on the valve block.
Kits & Accessories

Weld Pack Sensor Valve Kit ...................... 3087900
PNP Sensor Kit ................................... 3087800
NPN Sensor Kit .................................. 3527200
Weld Block Sleeve Kit (1 piece per kit) .... 3059600
Non-Return Check Valve ......................... 3059900
Quick Exhaust Valve DH ......................... 3099100

mm
(inches)