DH Series
Pneumatic Spot Welding Cylinder

Description
DH-Series pneumatic spot weld cylinder comes with a pre-stroke and weld stroke. Construction type of cylinder is double stroke, piston to piston. The cylinder is designed with built-in cushions for the pre-stroke return and weld stroke return.

DH-Series pneumatic spot weld cylinders are used with a built-in pneumatically controlled exhaust valve for rapid controlled speed during pre-stroke extension. DH-Series pneumatic spot weld cylinders are used in combination with a valve block with integrated low-impact system.

This valve block is built on a DH-welding cylinder. The Low-Impact system controls the closing speed of the welding gun and the impact of the electrodes which contact the sheet metal.

Application
Robot Welding Guns Type C and Type X.
Cylinder Type: 3-Ported

Mounting
Cylinder can have the following mounting options:
- Front Nose Mounting Standard
- Alternate Mountings Consult Factory

Dimensions: See page 24.

Materials
Covers ......................................................... Aluminum
Tube ........................................................... Aluminum
Piston Rod .................................................... Stainless Steel
Seals ........................................... PTFE Glide-ring, Synthetic Rubber
Others ............ Stainless Steel, Aluminum, Steel, POM

Technical Data
Valve Block: See pages 10-11.
Medium ......................... Compressed air, filtered to 5µ and dried to a dewpoint of 37°F (3°C), lubricated or non-lubricated. Once lubricated air is applied, this must be maintained.

Lubrication ................. Both cylinder and valve block are shipped with life time lubrication, silicone-free grease.

Working Pressure ....... 21 to 145 PSIG (1.5 to 10 bar)
Ambient Temperature ...... 41°F to 120°F (5°C to 49°C)

Service Kits: See page 24.

ANSI

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.

### Model Number Index

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<th>Valve Block</th>
<th>Valve Block Operators</th>
<th>Valve Block Operators</th>
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<th>Voltage</th>
<th>Port Type</th>
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<tr>
<td>DH</td>
<td>125</td>
<td>080</td>
<td>30</td>
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</table>

**Note:** NAMUR valves mounted on valve block have BSPP porting.

### Cylinder Technical Data

<table>
<thead>
<tr>
<th></th>
<th>DH 070</th>
<th>DH 090</th>
<th>DH 125</th>
<th>DH 140</th>
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</thead>
<tbody>
<tr>
<td>Cylinder Bore</td>
<td>70 (3.14)</td>
<td>90 (3.54)</td>
<td>125 (4.92)</td>
<td>140 (5.51)</td>
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<tr>
<td>Pre-Stroke</td>
<td>100 (3.93)</td>
<td>100 (3.93)</td>
<td>100 (3.93)</td>
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<tr>
<td>Welding Stroke</td>
<td>40 (1.57)</td>
<td>40 (1.57)</td>
<td>40 (1.57)</td>
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<tr>
<td>Pushing Force at 5 bar</td>
<td>1923 (432)</td>
<td>3179 (714)</td>
<td>6132 (1378)</td>
<td>7690 (1728)</td>
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<tr>
<td>Pulling Force at 5 bar</td>
<td>1521 (341)</td>
<td>2777 (624)</td>
<td>5710 (1283)</td>
<td>7268 (1633)</td>
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<tr>
<td>Weight Approx. (Cylinder only)</td>
<td>5.5 (12.12)</td>
<td>6.5 (14.33)</td>
<td>7.5 (16.53)</td>
<td>8.5 (18.73)</td>
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</tbody>
</table>

### Model Selection Examples

- Cylinder Only: DH125080300XXXN
- Cylinder with Valve Block: DH1250803011SSDN
- Valve Block Only: DH21SSDN
DH Cylinder Seal Kits

<table>
<thead>
<tr>
<th>Bore</th>
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<tr>
<td>070mm</td>
<td>3526200</td>
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<td>090mm</td>
<td>3099300</td>
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<td>3526300</td>
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<tr>
<td>140mm</td>
<td>3527400</td>
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</table>

**Dimensions**

- 24 (0.944) mm
- 26 (1.023) mm
- 48 (1.889) mm
- 110 (4.330) mm
- 301.6 (12.263) mm
- 40 (1.575) mm
- 60 (2.362) mm
- 60 (2.362) mm
- 100 (3.937) mm

**Annotation**

- G 3/8 Air Supply
- Cushion Screw
- M12 25 (0.984) Deep
- SLW 26 (1.023) Dia.
- E D 100%
- E D 100%
- 01 01 01 01

**Seal Kits**

- 070mm Bore: 3526200
- 090mm Bore: 3099300
- 125mm Bore: 3526300
- 140mm Bore: 3527400