**Servo Cylinder**

**Types:** PAED, PBED & PFED

**Application:**
Opening and closing of valves, slides, flappers, engine speed governors and injection pumps, louvers etc.

**Function:**
The cylinder is single acting. The pressure acts against the force of the spring 5 via the piston 4. Diagram 1 shows the cylinder stroke over servo pressure for standard springs. The contact surfaces are protected from incoming dirt by a filter plug.

An inlet nozzle 14 protects the piston against the pressure shocks. The Piston is sealed by an air-zet seal & guided by a strip-seal. The piston rod 3 is made of polished stainless steel and guided by Teflon treated sliding bearings.

**Installation**
The signal pressure inlet ‘E’ of the servo cylinder is connected to the control system (see Fig. 2).

**Fastening of the servo cylinder:**
Types PAED and PBED are fastened via the bearing at the top of the cylinder cover 2.
- PAED (Fig. 3): Standard design with bronze bearing (fastening to Fig. 6, fastening kit to Fig. 8)
- PBED (Fig. 4): Shock dampening design with non metallic bearings (fastening to Fig. 7, fastening kit to Fig. 9)
- Cylinders PFED (Fig. 5) are flange types.

Construction units which are actuated by the servo cylinder have to be connected to the cylinder rod, either directly (PFED) or via ball joint & lever (PAED, PBED). Butterfly valves & louvers can be positioned within an angle of 90° by using standard equipment to Fig. 10, 11, 12. Standard cylinder stroke is 40 mm (maximum stroke). Shorter strokes can be made available on request. Free movement of the positioning and fastening equipment across the whole cylinder stroke ensures low friction and precise positioning. The cylinder rod might be turned around its axis for assembling and adjustment purposes.

Installation with inlet ‘E’ facing downwards is recommended with humid air for drain of condensate.

**Portable screw compressor with PAED**

**Application:**
Opening and closing of valves, slides, flappers, engine speed governors and injection pumps, louvers etc.

**Function:**
The cylinder is single acting. The pressure acts against the force of the spring 5 via the piston 4. Diagram 1 shows the cylinder stroke over servo pressure for standard springs. The contact surfaces are protected from incoming dirt by a filter plug.
## Servo Cylinder

**Types:** PAED, PBED & PFED

### Details:

<table>
<thead>
<tr>
<th>Types</th>
<th>PAED</th>
<th>PBED</th>
<th>PFED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Diameter (mm)</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. working pressure (PS bar (g))</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation dimensions (mm)</td>
<td>Fig. 3</td>
<td>Fig. 4</td>
<td>Fig. 5</td>
</tr>
<tr>
<td>Cylinder stroke (mm)</td>
<td>up to 40, standard strokes 30, 40 others on request.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active piston area (mm²)</td>
<td>About 1964</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke characteristic</td>
<td>According to steel spring; see diagram 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>Oil or pressurized air, filtered. Recommended compressed air quality according to DIN ISO 8573-1, class 5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal pressure connection</td>
<td>E:G 1/8, female thread</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature range (°C)</td>
<td>–20 to +90, dried air for temperature below zero degree</td>
<td>High temperature version available on request</td>
<td></td>
</tr>
<tr>
<td>Installation attitude</td>
<td>Optional, in case of arising condensate with “E” downwards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>Housing, cover, piston: Aluminium</td>
<td>Cylinder rod: Stainless steel</td>
<td>Control spring: Spring steel, greased</td>
</tr>
<tr>
<td></td>
<td>Cover bearing: Bronze (PAED), Delrin (PBED)</td>
<td>Cylinder rod bearing: Copper-Teflon compound, in brass bushing</td>
<td>Filter plug: Bronze</td>
</tr>
</tbody>
</table>

### Maintenance:

For service intervals and instructions see service manual SCC003BE.

### Special fastening components:

- **Fig. 8:** For type PAED
- **Fig. 9:** For type PBED

Bushing and shims-fixing screw is included (8 mm diameter).

### Levers:

32 mm-Fig. 10 and 11, fixing screw is included

### Ball joint:

AS16-Fig. 12-connects the lever to the cylinder rod.

### Cylinder stroke depending on pressure at inlet E:

- **Diagram 1**

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### Overall Dimensions:

- **Fig. 3:** Servo cylinder type PAED (dimensions in mm)
- **Fig. 4:** Servo cylinder type PPED (dimensions in mm)
- **Fig. 5:** Servo cylinder type PFED (dimensions in mm)
Fastening:

**Fig. 6: Fastening of types PAED**

![Image of fastening components of types PAED](image)

**Fig. 7: Fastening of types PBED**

![Image of fastening components of types PBED](image)

**Fig. 8: Fastening components of types PAED**

![Image of fastening components of types PAED](image)

**Fig. 9: Fastening components of types PBED**

![Image of fastening components of types PBED](image)

**Fig. 10: Lever DIA 12 for butterfly valves**

![Image of Lever DIA 12 for butterfly valves](image)

**Fig. 11: Lever DIA 16 for butterfly valves**

![Image of Lever DIA 16 for butterfly valves](image)

**Fig. 12: Balljoint CS 16**

![Image of Balljoint CS 16](image)