Pneumatic rotary actuator RA

The RA is a double-acting rotary actuator of very compact design. It has a high torque and small installation dimensions. The actuator has double pistons, which transmit the turning moment to the output shaft. The toothed piston rods act on the output shaft in a rack-and-pinion type arrangement. Each piston and toothed rod is of integral construction. The rack-and-pinion type arrangement gives an even turning moment throughout the rotation movement.

The drive shaft is robustly supported in bushings of self-lubricating plastic. There are key-ways on the output end of the shaft, while the opposite end of the shaft has a stub that can be used to accommodate end-position indication, or to facilitate hand operation of the actuator.

The turning limits of the rotary actuator should be determined by external stop lugs, in order to protect the unit from the effects of excessive load inertia.

Compressed air is fed into the piston chambers via a connection plate and drilled galleries in the central part and end covers. The connection plate is fitted to a standardized connection arrangement on one of the long sides of the unit. This means that the end covers are completely smooth, without any protruding parts.

The RA rotary actuator has a cylinder block of natural anodized aluminium, with end covers of black anodized aluminium. The unit is available in 5 different sizes, covering a turning-moment range of 20 to 200 Nm. As standard, all sizes are available with a turning angle of either 90° or 180°.

Technical data

- Working medium: dry, filtered compressed air
- Working pressure: max. 10 bar
- Working temperature: -20 °C to +80 °C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it has to be continued.

Ordering information for RA

<table>
<thead>
<tr>
<th>Angle</th>
<th>Order code</th>
</tr>
</thead>
<tbody>
<tr>
<td>90°</td>
<td>RA2-90</td>
</tr>
<tr>
<td>180°</td>
<td>RA2-180</td>
</tr>
<tr>
<td>90°</td>
<td>RA4-90</td>
</tr>
<tr>
<td>180°</td>
<td>RA4-180</td>
</tr>
<tr>
<td>90°</td>
<td>RA8-90</td>
</tr>
<tr>
<td>180°</td>
<td>RA8-180</td>
</tr>
<tr>
<td>90°</td>
<td>RA12-90</td>
</tr>
<tr>
<td>180°</td>
<td>RA12-180</td>
</tr>
<tr>
<td>90°</td>
<td>RA20-90</td>
</tr>
<tr>
<td>180°</td>
<td>RA20-180</td>
</tr>
</tbody>
</table>

Material specification

- Cylinder block/end covers: Anodized aluminium, natural/black
- Pistons: Aluminium
- Relief surface bars: Stainless steel
- Shaft: Zinc-plated steel
- End cover screws: Zinc-plated steel
- Seals: Nitrile rubber, NR
- Piston bearings: POM
- Shaft bearings: Polyethylene MOS2

Important

Before attempting any external or internal work on the rotary actuator or any connected components, make sure the rotary actuator is vented and disconnect the air supply in order to ensure isolation of the air supply.

Note

Air quality is essential for maximum cylinder service life (see ISO 8573).
### Table of moments at 6 bar

<table>
<thead>
<tr>
<th>Designation</th>
<th>Moment in Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA2</td>
<td>22.8</td>
</tr>
<tr>
<td>RA4</td>
<td>45.0</td>
</tr>
<tr>
<td>RA8</td>
<td>81.7</td>
</tr>
<tr>
<td>RA12</td>
<td>134.0</td>
</tr>
<tr>
<td>RA20</td>
<td>224.0</td>
</tr>
</tbody>
</table>

### Air consumption

Free air consumption in Nl per double stroke at 600 kPa (6 bar).

<table>
<thead>
<tr>
<th>Rotary actuator/type/ Turning angle</th>
<th>RA2</th>
<th>RA4</th>
<th>RA8</th>
<th>RA12</th>
<th>RA20</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA/90°</td>
<td>1.8</td>
<td>3.2</td>
<td>5.9</td>
<td>7.8</td>
<td>14.9</td>
</tr>
<tr>
<td>RA/180°</td>
<td>3.6</td>
<td>6.4</td>
<td>11.8</td>
<td>15.6</td>
<td>30</td>
</tr>
</tbody>
</table>

### Spare parts

<table>
<thead>
<tr>
<th>Designation</th>
<th>Order code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting plate for VGD15</td>
<td>9127 3864-01</td>
</tr>
<tr>
<td>seal kits/spare kits:</td>
<td></td>
</tr>
<tr>
<td>RA-2-SS</td>
<td>9121 6799-20</td>
</tr>
<tr>
<td>RA-4-SS</td>
<td>9121 6799-21</td>
</tr>
<tr>
<td>RA-8-SS</td>
<td>9121 6799-22</td>
</tr>
<tr>
<td>RA-12-SS</td>
<td>9121 6799-23</td>
</tr>
<tr>
<td>RA-20-SS</td>
<td>9121 6799-24</td>
</tr>
</tbody>
</table>

### Variants available on request:

- Single-acting rotary actuator with spring return for 90°
- Non-standard turning angle
- Other surface treatments
European Product Information Centre
Free phone: 00 800 27 27 5374
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