A44000, LINTRA-LITE® Rodless Cylinders
Non-magnetic and Magnetic Piston, double acting

> Ø 25 ... 40 mm
> New compact, space-saving design
> Proven sealing system
> Integral switch mounting

> Buffer or adjustable cushioning
> Standard foot mountings

Technical features

**Medium:**
Compressed air, filtered, lubricated or non-lubricated

**Operation:**
Double acting
Buffer or adjustable cushioning
Magnetic or non-magnetic piston

**Operating pressure:**
1 ... 8 bar

**Operating temperature:**
-30°C ... +80°C max.
Consult our Technical Service for use below +2°C.

**Cylinder Diameters:**
25, 32, 40 mm

**Strokes:**
6000 mm or 235 inches max.
longer strokes on request

**Materials:**
Barrel: Anodised aluminium alloy
End covers: Zinc plated steel / aluminium
Yoke: Anodised aluminium alloy
Cover and Pistons: Plastic
Sealing strip: Polyurethane
Cover strip: Polyamide
Seals: Nitrile rubber and polyurethane

Ordering Examples:
See page 1.6.005.02
Mountings and Switches:
See page 1.6.005.02

Option selector

<table>
<thead>
<tr>
<th>Cylinder Diameters (mm)</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>25, 32 or 40</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variants</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer cushioning, non-magnetic piston</td>
<td>A</td>
</tr>
<tr>
<td>Buffer cushioning, magnetic piston</td>
<td>B</td>
</tr>
<tr>
<td>Adjustable cushioning, non-magnetic piston</td>
<td>C</td>
</tr>
<tr>
<td>Adjustable cushioning, magnetic piston</td>
<td>D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Porting</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO G-thread</td>
<td>A</td>
</tr>
<tr>
<td>NPT-thread</td>
<td>N</td>
</tr>
</tbody>
</table>

Note: When specifying NPT ports the stroke should be given in inches.
Part number must retain the given number of digits e.g. A44025AACAA3800 (stroke 800 mm).
Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

Mountings

<table>
<thead>
<tr>
<th>Ø</th>
<th>Model</th>
<th>Page 5</th>
<th>Page 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Q44025AAAAAM337</td>
<td>Q44025AAAAAM332</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Q44032AAAAAM337</td>
<td>Q44032AAAAAM332</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Q44040AAAAAM337</td>
<td>Q44040AAAAAM332</td>
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</table>

Switches

<table>
<thead>
<tr>
<th>Model</th>
<th>Reed</th>
<th>Solid state</th>
<th>Voltage</th>
<th>Current</th>
<th>Temperature °C</th>
<th>LED</th>
<th>Features</th>
<th>Cable Length</th>
<th>Cable Type</th>
<th>Plug-in Cable</th>
<th>Catalogue Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>M/40/P</td>
<td>—</td>
<td>—</td>
<td>10 to 30</td>
<td>0.20 A</td>
<td>-20° to +70°</td>
<td>•</td>
<td>NPN</td>
<td>2 m PVC 3</td>
<td>0.25</td>
<td>M/P34614/5</td>
<td>M/42/P</td>
</tr>
<tr>
<td>M/40/2</td>
<td>—</td>
<td>—</td>
<td>10 to 240</td>
<td>0.18 A</td>
<td>-20° to +80°</td>
<td>•</td>
<td>Changeover</td>
<td>2 m PVC 2</td>
<td>0.25</td>
<td>M/P34614/5</td>
<td>M/42/P</td>
</tr>
</tbody>
</table>

Full information on switches (technical data, polyurethane cable, dimensions etc.) please refer to relevant catalogue pages.

Ordering Examples

Cylinders
To order a 25 mm bore cylinder with adjustable cushioning, magnetic piston and a 800 mm stroke quote:
A44025AADAA0800

Mountings
To order a centre support mounting style ‘V’ for 25 mm bore cylinder quote: Q44025AAAAAM332

Loading values for LINTRA-LITE® cylinders

The values given in the table below show the forces in the directions Fy and Fz and the maximum moments Mx, My and Mz. All values are applicable for speeds up to 0.2 m/s. A requirement for using these values is a smooth movement of the mass over the whole stroke length of the cylinder. The reference point from which the moments for all cylinders should be calculated is the centre line of the piston.

Total loads
When a LINTRA-LITE® cylinder has to take several loads and moments, an additional calculation is necessary using the following formula:

\[
\frac{M_x}{M_{x\ max}} + \frac{M_y}{M_{y\ max}} + \frac{M_z}{M_{z\ max}} + \frac{F_y}{F_{y\ max}} + \frac{F_z}{F_{z\ max}} \leq 1
\]

Thrust • Air consumption • Cushion length • Loading values

<table>
<thead>
<tr>
<th>Cylinder Ø</th>
<th>Theoretical forces at 6 bar (N)</th>
<th>Air consumption per stroke at 6 bar (l/cm)</th>
<th>Cushion length (mm)</th>
<th>Loading values</th>
<th>Fz (N)</th>
<th>Mx (Nm)</th>
<th>My (Nm)</th>
<th>Mz (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>250</td>
<td>0.035</td>
<td>18</td>
<td>90</td>
<td>280</td>
<td>1</td>
<td>13</td>
<td>4</td>
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<tr>
<td>32</td>
<td>410</td>
<td>0.056</td>
<td>23</td>
<td>120</td>
<td>370</td>
<td>2</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>40</td>
<td>640</td>
<td>0.088</td>
<td>35</td>
<td>240</td>
<td>720</td>
<td>4</td>
<td>56</td>
<td>16</td>
</tr>
</tbody>
</table>

Loading values applicable to a speed of ≤ 0.2 m/s. Maximum working life is normally reached below a speed of 1 m/s.
Cylinder Deflection

Cylinder Ø 32 mm, stroke length 3500 mm, external load 200 N
Maximum distance between supports = 1500 mm (see diagram). Therefore additional support is required.

Cylinder Ø 40 mm, external force 120 N, distance between supports 2500 mm
Required: Total deflection
1. Deflection due to external force (f1): See diagram > \( \frac{1 \text{ mm}}{90 \text{ N}} \cdot 120 \text{ N} \)
2. Deflection due to cylinder weight (f2): See diagram >

Total deflection: \( 1.3 \text{ mm} + 0.6 \text{ mm} = 1.9 \text{ mm} \)

Maximum permitted deflection:
\( f1 + f2 \leq 1 \text{ mm per 1000 mm stroke} \)
Result:
1.9 mm are below the max. permitted deflection of 2.5 mm
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Basic dimensions
A4400 . . . — Standard Cylinders

Cylinder Ø A B C D E F G H J K Ø L M N
25 77 100 12 12,5 5 12 M 5 40 36 18 7 18 40
32 83 120 18 15 7 15 M 6 50 46 26 9 20 49,5
40 117,5 165 18 20 7 17 M 6 60 54 30 9 20 57

Cushion screw for cylinders with adjustable cushioning

# stroke

*Cushion screw for cylinders with adjustable cushioning

en 1.6.005.04

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Mountings

Q44000AAAAAM332 — Centre Support Mounting Style ‘V’

Q44000AAAAAM337 — Swinging Bridge Mounting Style ‘S’

<table>
<thead>
<tr>
<th>Cylinder Ø</th>
<th>AB</th>
<th>AC</th>
<th>AD (A/F)</th>
<th>Ø AE</th>
<th>AF</th>
<th>AG</th>
<th>AH</th>
<th>AJ</th>
<th>AK</th>
<th>AL</th>
<th>BA</th>
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</thead>
<tbody>
<tr>
<td>25</td>
<td>25</td>
<td>40</td>
<td>10</td>
<td>6,8</td>
<td>58</td>
<td>70</td>
<td>21,3</td>
<td>3</td>
<td>31</td>
<td>53,5</td>
<td>40</td>
</tr>
<tr>
<td>32</td>
<td>30</td>
<td>50</td>
<td>10</td>
<td>9</td>
<td>70</td>
<td>83</td>
<td>28,5</td>
<td>3</td>
<td>43</td>
<td>70</td>
<td>50</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>60</td>
<td>10</td>
<td>9</td>
<td>79</td>
<td>92</td>
<td>35</td>
<td>3</td>
<td>55</td>
<td>81,5</td>
<td>60</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Cylinder Ø</th>
<th>BB</th>
<th>BC</th>
<th>BD (DIN 74)</th>
<th>BE</th>
<th>BF</th>
<th>BG</th>
<th>BH</th>
<th>BJ</th>
<th>Fx</th>
<th>Style ‘S’</th>
<th>Style ‘V’</th>
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<tbody>
<tr>
<td>25</td>
<td>25</td>
<td>40</td>
<td>BM 5</td>
<td>± 8</td>
<td>29</td>
<td>28</td>
<td>68,5+5</td>
<td>2</td>
<td>250 N</td>
<td>0,15 kg</td>
<td>0,07 kg</td>
</tr>
<tr>
<td>32</td>
<td>55</td>
<td>40</td>
<td>BM 6</td>
<td>± 8</td>
<td>31</td>
<td>30</td>
<td>87,5+5</td>
<td>2</td>
<td>410 N</td>
<td>0,20 kg</td>
<td>0,15 kg</td>
</tr>
<tr>
<td>40</td>
<td>55</td>
<td>40</td>
<td>BM 6</td>
<td>± 8</td>
<td>31</td>
<td>30</td>
<td>99,5+5</td>
<td>2</td>
<td>640 N</td>
<td>0,25 kg</td>
<td>0,25 kg</td>
</tr>
</tbody>
</table>
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**Spares**

**Cylinders with buffer cushioning**

![Diagram of cylinder with buffer cushioning]

<table>
<thead>
<tr>
<th>Cylinder Ø</th>
<th>Model</th>
<th>Spares kit</th>
<th>Comprising Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Seal strip Item 8</th>
<th>Cover strip Item 9</th>
<th>Barrel Item 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>A44025AA•AA</td>
<td>Q44025AAAAT788&quot;</td>
<td>3</td>
<td>Buffer</td>
<td>2</td>
<td>MP41628&quot;*</td>
<td>MP41631&quot;</td>
<td>MP41607&quot;</td>
</tr>
<tr>
<td>32</td>
<td>A44032AA•AA</td>
<td>Q44032AAAAT788&quot;</td>
<td>8/9, 12/15, 13/14</td>
<td>Seal/cover strip, Piston/cushion seal, O-Ring</td>
<td>1/1, 2/2, 2/2</td>
<td>MP41629&quot;*</td>
<td>MP41632&quot;</td>
<td>MP41613&quot;</td>
</tr>
<tr>
<td>40</td>
<td>A44040AA•AA</td>
<td>Q44040AAAAT788&quot;</td>
<td>37</td>
<td>Cover, Grease</td>
<td>1, 2</td>
<td>MP41630&quot;*</td>
<td>MP41633&quot;</td>
<td>MP41602&quot;</td>
</tr>
</tbody>
</table>

* Variants A, B, C or D
* Insert stroke length

Note: Spares kits are common for all cylinder types
Please quote the cylinder type number when ordering spare parts

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**Cylinders with adjustable cushioning**

![Diagram of cylinder with adjustable cushioning]

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**Warning**

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under **»Technical features/data«**.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult IMI Precision Engineering.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.