M/44000/M LINTRA® rodless cylinders
Double acting, magnetic piston

- Ø 25 ... 40 mm
- Compact, space-saving design
- Proven sealing system
- Adjustable cushioning

> Magnetic piston as standard

Technical features

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

Operation:
Double acting, magnetic piston

Operating pressure:
1 ... 8 bar (14 ... 116 psi)

Cylinder diameters:
25, 32, 40 mm

Operating temperature:
-30 ... +80°C (-22 ... +176°F) max.
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

Materials:
Barrel: Anodised aluminium alloy
End covers: Aluminium alloy
Yoke: Anodised aluminium alloy
Cover and Pistons: Plastic
Sealing strip: PU
Cover strip: PA
Seals: NBR & PU

Technical data

<table>
<thead>
<tr>
<th>Cylinder Ø (mm)</th>
<th>25</th>
<th>32</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port size</td>
<td>G1/8</td>
<td>G1/8</td>
<td>G1/4</td>
</tr>
<tr>
<td>Cushion length (mm)</td>
<td>18</td>
<td>23</td>
<td>35</td>
</tr>
<tr>
<td>Theoretical thrusts at 6 bar (N)</td>
<td>250</td>
<td>410</td>
<td>640</td>
</tr>
<tr>
<td>Air consumption (l/cm) per stroke at 6 bar</td>
<td>0,035</td>
<td>0,056</td>
<td>0,088</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.

Option selector

<table>
<thead>
<tr>
<th>Porting</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO G-thread (standard)</td>
<td>M</td>
</tr>
<tr>
<td>NPT-thread</td>
<td>C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cylinder Ø</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

Stoke

5000 max. in mm for ISO G-thread
196 max. in full inches for NPT-thread

Fractional increments of stroke (inches)

<table>
<thead>
<tr>
<th>Substitute</th>
<th>3/8</th>
<th>7/16</th>
<th>1/2</th>
<th>3/4</th>
<th>Special</th>
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<tbody>
<tr>
<td>0</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>1/16</td>
<td>F</td>
<td>G</td>
<td>H</td>
<td>I</td>
<td>J</td>
</tr>
<tr>
<td>1/8</td>
<td>K</td>
<td>L</td>
<td>M</td>
<td>N</td>
<td>O</td>
</tr>
<tr>
<td>3/16</td>
<td>P</td>
<td>Q</td>
<td>R</td>
<td>S</td>
<td>T</td>
</tr>
</tbody>
</table>

Note: When specifying NPT ports the stroke should be given in inches

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IMI Precision Engineering

en 1.6.007.01
Mountings

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | S    | Yoke: zinc plated steel  
       |      | Mounting support: anodised aluminium  
       |      | Screws: zinc plated steel  
       |      | Bolts: stainless steel |
| 2    | C    | Anodised aluminium  
       |      | Screws: zinc plated steel |
| 3    | V    | Zinc plated steel  
       |      | Screws: zinc plated steel |
| 7    |      | Bracket: Plastic |
| 20   |      | Fitting: PBT, O-Ring, NBR  
       |      | Grab ring: stainless steel  
       |      | Release button: POM  
       |      | Data sheet: en 9.1.001 |
Loading values for LINTRA® 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® Cylinder has to take several loads and moments, an additional calculation is necessary using the following formula:

\[
\frac{M_x + M_y + M_z + F_y + F_z}{\sqrt{M_x_{max} + M_y_{max} + M_z_{max} + F_y_{max} + F_z_{max}}}
\]

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 (1 mm/90 N) · 120 N
   \[1,3 \text{ mm}\]

2. Deflection due to cylinder weight (f2):
   See diagram +0,6 mm
   \[1,9 \text{ mm}\]

Maximum permitted deflection:
\[f_1 + f_2 \sqrt{1 \text{ mm per 1000 mm stroke}}\]

Result:
\[1,9 \text{ mm are below the max. permitted deflection of 2,5 mm}\]

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.
## Basic dimensions

**M/44000/M LINTRA® rodless cylinders**  
**Double acting, magnetic piston**

---

### Basic dimensions

- **Ø**: Diameter
  - 25: 72.5
  - 32: 82.5
  - 40: 112.5

- **A**: Length
  - 25: 53.2
  - 32: 67.8
  - 40: 79.3

- **AE**: Effective Length
  - 25: 13.5
  - 32: 13.5
  - 40: 19

- **B**: Nose Diameter
  - 25: 7
  - 32: 7
  - 40: 9.5

- **C**: Piston Rod Diameter
  - 25: 1/8
  - 32: 1/8
  - 40: 1/4

- **D (Port threads)**
  - 25: G 1/8
  - 32: G 1/8
  - 40: G 1/4

- **E**: Stroke
  - 25: 100
  - 32: 120
  - 40: 165

- **E1**: Stroke (mm)
  - 25: 40
  - 32: 50
  - 40: 60

- **G**: Weight
  - 25: 4.5 kg
  - 32: 6 kg
  - 40: 8.75 kg

- **M**: Stroke (mm)
  - 25: 22
  - 32: 15
  - 40: 20

- **M1**: Weight per 100 mm (kg)
  - 25: 0.60
  - 32: 0.90
  - 40: 1.40

- **N**: Model
  - 25: M4-13.5
  - 32: M6-13.5
  - 40: M6-19

### Dimensions in mm

**Projection/First angle**

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* Insert stroke length
*1) Optional ISO G or NPT-thread
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<table>
<thead>
<tr>
<th>Ø</th>
<th>AA</th>
<th>AB</th>
<th>AC</th>
<th>AD</th>
<th>AE</th>
<th>R</th>
<th>Ø U</th>
<th>kg</th>
<th>Model (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>18,5</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>21,5</td>
<td>42</td>
<td>5,5</td>
<td>0,04</td>
<td>QM/44025/21</td>
</tr>
<tr>
<td>32</td>
<td>20</td>
<td>8</td>
<td>16</td>
<td>16</td>
<td>28,5</td>
<td>53</td>
<td>9</td>
<td>0,09</td>
<td>QM/44032/21</td>
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<tr>
<td>40</td>
<td>27</td>
<td>7,5</td>
<td>15</td>
<td>22</td>
<td>35</td>
<td>65,5</td>
<td>9</td>
<td>0,13</td>
<td>QM/44025/21</td>
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</table>

QM44000AAAAAM337 – Swinging bridge mounting type S

<table>
<thead>
<tr>
<th>Ø</th>
<th>BA</th>
<th>BB</th>
<th>BC</th>
<th>BD (Din74)</th>
<th>BE</th>
<th>BF</th>
<th>BG</th>
<th>BH</th>
<th>BJ</th>
<th>Fx</th>
<th>kg</th>
<th>Model (N)</th>
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<tbody>
<tr>
<td>25</td>
<td>40</td>
<td>40</td>
<td>28</td>
<td>BM 5</td>
<td>± 8</td>
<td>29</td>
<td>28</td>
<td>15 + 5</td>
<td>2</td>
<td>250 N</td>
<td>0,15</td>
<td>QM44025AAAAAM337</td>
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<tr>
<td>32</td>
<td>50</td>
<td>55</td>
<td>40</td>
<td>BM 6</td>
<td>± 8</td>
<td>31</td>
<td>30</td>
<td>17,5 + 5</td>
<td>2</td>
<td>410 N</td>
<td>0,20</td>
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<tr>
<td>40</td>
<td>60</td>
<td>55</td>
<td>40</td>
<td>BM 6</td>
<td>± 8</td>
<td>31</td>
<td>30</td>
<td>18 + 5</td>
<td>2</td>
<td>640 N</td>
<td>0,25</td>
<td>QM44040AAAAAM337</td>
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</table>

Dimensions in mm
Projection/First angle

Adjustable
### Technical data - Reed switches - additional informations see data sheet N/en 4.3.005

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Voltage (V a.c.)</th>
<th>Current maximum (mA)</th>
<th>Function</th>
<th>Operating temperature (°C)</th>
<th>LED</th>
<th>Protection class</th>
<th>Plug</th>
<th>Cable length (m)</th>
<th>Cable type</th>
<th>Weight (g)</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>BU</td>
<td>10 ... 240</td>
<td>10 ... 170</td>
<td>Closer</td>
<td>-25 ... +80</td>
<td>IP66</td>
<td>—</td>
<td>2, 5 or 10</td>
<td>PVC 2 x 0,25</td>
<td>37</td>
<td>M/50/LSU/V</td>
<td></td>
</tr>
<tr>
<td>BN</td>
<td>10 ... 240</td>
<td>10 ... 170</td>
<td>Closer</td>
<td>-25 ... +80</td>
<td>IP66</td>
<td>—</td>
<td>5</td>
<td>PUR 2 x 0,25</td>
<td>37</td>
<td>M/50/LSU/S5</td>
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<tr>
<td>BN</td>
<td>10 ... 240</td>
<td>10 ... 170</td>
<td>Closer</td>
<td>-25 ... +150</td>
<td>IP66</td>
<td>—</td>
<td>2</td>
<td>Silicone 2 x 0,25</td>
<td>37</td>
<td>TM/50/RAU/25</td>
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<td>10 ... 240</td>
<td>10 ... 170</td>
<td>Changeover</td>
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<td>IP66</td>
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<td>5</td>
<td>PVC 3 x 0,25</td>
<td>37</td>
<td>M/50/RAC/5V</td>
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<tr>
<td>BN</td>
<td>10 ... 240</td>
<td>10 ... 170</td>
<td>Closer</td>
<td>-25 ... +80</td>
<td>IP66</td>
<td>M8 x 1</td>
<td>0,3</td>
<td>PVC 3 x 0,25</td>
<td>16</td>
<td>M/50/LSU/CP *1</td>
<td></td>
</tr>
</tbody>
</table>

* Insert cable length; *1) Plug-in connector see page 11; Color code: BK = black, BN = brown, BU = blue

### Drawings

- M/50/LSU/V, M/50/LSU/S5, TM/50/RAU/2S
  
  Cable length L = 2, 5 or 10 m

- M/50/RAC/5V
  
  Cable length L = 5 m

- M/50/LSU/CP

### Accessories

**Plug-in connector cable with nut**

<table>
<thead>
<tr>
<th>Outer cover</th>
<th>Cable length (m)</th>
<th>Weight (kg)</th>
<th>Connector</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVC 3 x 0,25</td>
<td>5 m</td>
<td>0,18</td>
<td>M8 x 1</td>
<td>MP33001/5</td>
</tr>
<tr>
<td>PUR 3 x 0,25</td>
<td>5 m</td>
<td>0,18</td>
<td>M8 x 1</td>
<td>MP33002/5</td>
</tr>
<tr>
<td>PUR 3 x 0,34</td>
<td>5 m</td>
<td>0,21</td>
<td>M12 x 1</td>
<td>MP34594/5</td>
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</tbody>
</table>
Technical data - Solid state - additional informations see data sheet N/en 4.3.007

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Voltage (V d.c.)</th>
<th>Current maximum (mA)</th>
<th>Function</th>
<th>Operating temperature (°C)</th>
<th>LED</th>
<th>Protection class</th>
<th>Plug</th>
<th>Cable length (m)</th>
<th>Cable type</th>
<th>Weight (g)</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>10 ... 30</td>
<td>150</td>
<td>PNP</td>
<td>-40 ... +80</td>
<td>IP67</td>
<td>—</td>
<td>2, 5 or 10</td>
<td>PVC 3 x 0,12</td>
<td>M/50/EAP/V</td>
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<td>M8 x 1</td>
<td>0,3</td>
<td>PVC 3 x 0,14</td>
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<td>10 ... 30</td>
<td>150</td>
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<td>-40 ... +80</td>
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<td>M12 x 1</td>
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<td>PVC 3 x 0,14</td>
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<tr>
<td></td>
<td>10 ... 30</td>
<td>150</td>
<td>NPN</td>
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<td>IP67</td>
<td>—</td>
<td>2, 5 or 10</td>
<td>PVC 3 x 0,12</td>
<td>37</td>
<td>M/50/EAN/V</td>
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<tr>
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<td>10 ... 30</td>
<td>150</td>
<td>NPN</td>
<td>-40 ... +80</td>
<td>IP67</td>
<td>M8 x 1</td>
<td>0,3</td>
<td>PVC 3 x 0,14</td>
<td>16</td>
<td>M/50/EAN/CP/1</td>
<td></td>
</tr>
</tbody>
</table>

* Insert cable length; *1) Plug-in connector below; Color code: BK = black; BN = brown; BU = blue

Drawings

M/50/EAP/*V, M/50/EAN/*V

Cable length L = 2, 5 or 10 m

Dimensions in mm

Projection/First angle

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 NORGREN. 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.