PNEUMATIC ACTUATED
GLOBE VALVES
TORK LV 3000 SERIES
TORK LV 3000 SERIES
SO RELIABLE YOU COULD FORGET WHERE, WHEN, HOW IT WORKS.
TORK LV 3000 SERIES
A NEW CONTROL VALVE DESIGNED FOR LONG TERM RELIABILITY
TORK LV 3000 SERIES
DIFFERENT SOLUTIONS FOR DIFFERENT NEEDS
TORK LV 3000 SERIES

Start saving from the first day on.

Smaller valve size for a given application

- Highest possible seat diameter (DN = Seat Ø)
- High throttling rangeability
- Longest possible stroke

Better step Response

- Agile actuator
- Precise positioning accuracy
- Very low friction
Better control quality

- Excellent plug geometry
- Widest controllable range
- High technology positioner
- Fast response

Faster Set Up

- User friendly
- No special tool needed
- Auto tune, fieldbus functionality
- Self diagnostic function
- Supply air pressure up to 6 bar for feet movement.
Components

Actuator
- Reliable, powerful actuator system for accurate valve positioning.
- High actuation force generated by maximum 6 bar air.
- Compact dimensions due to multi spring.
- Fast, agile response due to minimized air volume.
- High ambient temperature (85˚C).
- Guided movement of stem for high stability.
- Membrane with kevlar fabric reinforcement for long life, high accuracy, linearity,
- Virtually maintenance free design
- Optional manual hand wheel system

Wide Range of Applications
- For accurate control of gas, vapour, liquid, pressure, flow and temperature
- Combined with the TORK Positioner TORK Valve offers precise control characteristic. Optional TORK positioners with HART, PROFIBUS, FOUNDATION, FIELDHUB communication protocols ensures trouble free integration so DCS / PLC / SCADA systems
- Having a modular design TORK valve offers various application possibilities.

Inherent Advantages
- Space efficient overall height and dimensions.

Prompt Delivery
- Almost all sizes of TORK Control Valves can be delivered within 48-72 hours.

Reliable
- Heavy duty construction with high quality materials and workmanship.

Quality
- Quality assurance system of production certificated acc. TÜV Management Service ISO 9001:2000

Yoke
- Extremely robust yoke
- Construction for reliability.

Bonnet
- Quality and Durability for the long run.
- Sturdy dual guided plug stem structure (thanks to the secondary guide) ensuring vibration free operation
- Maintenance free packing box with spring loading.
- Choice of bonnets for standard or high temperature
- Pressure up to 40 bar, Temperature up to 350˚C.
- Low friction.

Trim
- Multi application versatility.
- Mostly interchangeable trims
- All bellows types use the same/similar plug stem type.
- Easily replaceable trim.
- Simple maintenance as the valve body remains in the piping when trim is replaced, screwed seal easily replaceable.
- Large flow capacity. (max. seat Ø = DN)

Body
- Optimum flow characteristics due to smoothly engineered.
- Large kvs values
- Excellent flow dynamics and built in control quality.
### Coding System

<table>
<thead>
<tr>
<th>SIZE</th>
<th>ACT. DIAM.</th>
<th>PN25 (GG650 DUCTILE IRON)</th>
<th>PN40 (GG-C25 CARBON STEEL)</th>
<th>PN40 (1.4501 STAINLESS STEEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN100</td>
<td>700</td>
<td>TORK-LV3000.K 100</td>
<td>TORK-LV3000.K 100</td>
<td>TORK-LV3000,P 100</td>
</tr>
</tbody>
</table>

### Packing Box

<table>
<thead>
<tr>
<th>Type of Packing</th>
<th>Standard Bonnet</th>
<th>Below Metal Bonnet</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTFE V-Rings + Graftite</td>
<td>10 °C to +200°C, maintenance or free spring loaded</td>
<td></td>
</tr>
<tr>
<td>Pure Graftite-Rings</td>
<td>-10 °C to +350°C</td>
<td></td>
</tr>
</tbody>
</table>

### Form of Connection, Nominal Pressure Range

<table>
<thead>
<tr>
<th>Form of Connection</th>
<th>PN 15</th>
<th>20</th>
<th>25</th>
<th>32</th>
<th>40</th>
<th>50</th>
<th>65</th>
<th>80</th>
<th>100</th>
<th>150</th>
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</table>

### Pressure - temperature Ratings

<table>
<thead>
<tr>
<th>PN (bar)</th>
<th>Body Material</th>
<th>Working Pressure in bar</th>
<th>Working Temperature in °C</th>
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<tbody>
<tr>
<td>16</td>
<td>GG-25</td>
<td>16 16 15 13 12 10</td>
<td>200 -100 -60 -30 0 120 200 250 300 350</td>
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<tr>
<td>25</td>
<td>GGG50</td>
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<td>40</td>
<td>GS-C25</td>
<td>40 40 35.5 30.5 29 26 24</td>
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</table>

### Leakage - Class

<table>
<thead>
<tr>
<th>Line Pressure Balancing</th>
<th>Plug Design</th>
<th>Leakage-class acc. DIN/IEC 534</th>
<th>Test Fluid</th>
<th>Test Pressure (bar)</th>
<th>Max. Seat Leakage % kvs</th>
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<tr>
<td>Unbalanced</td>
<td>Metal to metal sealing</td>
<td>IV Water</td>
<td>Working Pressure, max. 4</td>
<td>0.01</td>
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<td></td>
<td>Soft Sealing</td>
<td>VI Air</td>
<td>Working Pressure, max. 4</td>
<td>0.0 - Bubble-tight</td>
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### Contoured Plug Modified - equal percentage or linear

<table>
<thead>
<tr>
<th>kvs (m³/h)</th>
<th>Seat Ø</th>
<th>Standard</th>
<th>Valve Nominal Diameter</th>
<th>Stroke = 20 mm</th>
<th>40 mm</th>
<th>60 mm</th>
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</tbody>
</table>

| Only a modified-equal percentage |
## Actuator Selection

### Multi-Spring Actuator TORK LV 3000 (Spring to close)

**Typical ranges for Series 100 Valve**

<table>
<thead>
<tr>
<th>Effective area (cm²)</th>
<th>Air supply (bar)</th>
<th>Spring Range (bar)</th>
</tr>
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<tbody>
<tr>
<td>200</td>
<td>2.9</td>
<td>1.2 - 2.4</td>
</tr>
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<td>300</td>
<td>2.9</td>
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</tr>
<tr>
<td>700</td>
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</table>

### Actuator Selection for:

- **Operation:** Spring extracted stem, air retracted (Spring to close)
- **Flow:** Tends to open valve without pressure balancing
- **Packing Box:** PTFE with Graphite
- **Bonnet:** Standard Bonnet

### Maximum Pressure Difference for Actuator Selection (Bar)

<table>
<thead>
<tr>
<th>Size</th>
<th>DN</th>
<th>Effective Area (cm²)</th>
<th>Supply Air (bar)</th>
<th>Spring Range (bar)</th>
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<tbody>
<tr>
<td>6</td>
<td>15, 20, 25</td>
<td>0.2 - 1.0</td>
<td>0.5 - 1.9</td>
<td>5.5</td>
</tr>
<tr>
<td>8</td>
<td>15, 20, 25</td>
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<tr>
<td>20</td>
<td>25, 52, 50</td>
<td>0.2 - 1.0</td>
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</tr>
<tr>
<td>34</td>
<td>40, 50</td>
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<td>42</td>
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### Multi-Spring Actuator TORK LV 3000 (Spring to open)

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<td>65</td>
<td>0.2 - 1.0</td>
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<td>5.5</td>
</tr>
</tbody>
</table>
Positioners

General Features
- Easy calibration for optimum conditions
- Precise control performance and high dynamic response
- Easy operation with fork-key pads and full text graphical LCD
- Single and double acting
- Low air consumption due to piezo electric microvalve on SSL
- Problem-free characteristics on a small actuator
- High resistance against shock and vibration
- Mounting on linear actuators according to IEC 534

TORK- SSL Series Smart Linear Positioner
- Input Signal: 4-20 mA DC
- Input Resistance: 235 Ω
- Max. Air Pressure: 7 bar
- Protection Class: Ex d mb IIB + H2 T6 / Ex d mb IIC, IEC T6 / IP66
- Temperature Value: -20 °C, +70 °C
- Body Material: Stainless steel
- Pressure Indicator Material: Stainless
- Weight: 3.3 kg

TORK- EPL Series Electro Pneumatic Linear Positioner
- Input Signal: 4-20 mA DC
- Input Resistance: 235 Ω
- Max. Air Pressure: 7 bar
- Protection Class: Ex md IIB T6, Ex md IIC (H2) T6, IP66, Ex ia IIB T6, Ex ia IIB T5 for ATEX
- Temperature Value: -20 °C, +70 °C
- Body Material: Stainless steel
- Pressure Indicator Material: Stainless
- Weight: 3.3 kg

TORK- PPL Series Pneumatic-Pneumatic Linear Positioner
- Input Signal: 0.2 - 1 bar (3 - 15 psi)
- Max. Air Pressure: 7 bar
- Temperature Value: -20 °C, +70 °C
- Body Material: Stainless steel
- Pressure Indicator Material: Stainless
- Weight: 2.1 kg

T-1000 Series I/P Converters
- Input Signal: 4-20 mA
- Output Signal: 3 - 15 psi
- Max. Air Pressure: 7 bar
- Sensitivity: < 1.0%
- Weight: 0.75 kg

TORK- FR 10 Filter and Regulators
- Connection Size: 1/4"BSP or 1/4"NPT
- Output Scale: 0 ... 8 bar (120 psi)
- Max. Working Pressure: 15 bar (255 psi)
- Fluid Ambient Temperature: Max. 70 C der... (no freezing)
- Manometer: 1/8"BSP (stainless steel)
- Filter Diameter: 5 micron
- Regulator Body: Aluminium injection
- Weight (kg): 0.4 kg (with manometer)

S1015 Series Solenoid Valve (For On-Off Control)
- Application: TORK - LV SERIES, Linear valves for on-off control.
- Size: 1/8" ........ 1/4" BSP (on request NPT)
- Pressure: 0 bar .... 8 bar
- Tube Core: Stainless Steel
- Body: Brass
- Diaphragm: NBR (on request EPDM or Viton)
- Temperature: -10°C .... 80 °C
- Position: Normally Closed
- Coil Voltage: 1230V, 110V, 48V, 24V, 12 V AC / 110V, 48V, 24V, 12 V DC
- Protection Class: IP65, IP68 ve Exproof models
### Technical Details

<table>
<thead>
<tr>
<th>Actuator Size (cm²)</th>
<th>Stroke (mm)</th>
<th>Spring Range (bar)</th>
<th>Normally Closed</th>
<th>Normally Open</th>
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<tbody>
<tr>
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<td>Minimum Air Supply (bar)</td>
<td>Spring Close (N)</td>
<td>Maximum Air Supply (bar)</td>
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**Actuator Technical Data**

- **Actuator Size (cm²):** 0.2 - 1.0, 0.5 - 1.9, 1.0 - 2.0, 1.2 - 2.4, 1.5 - 3.0, 2.4 - 4.8
- **Stroke (mm):** 20 - 40, 300
- **Spring Range (bar):** 0.2 - 1.0, 0.5 - 1.9, 1.0 - 2.0, 1.2 - 2.4, 1.5 - 3.0, 2.4 - 4.8
- **Minimum Air Supply (bar):** 1.2, 2.1, 2.2, 2.6, 3.2, 5.0
- **Spring Close (N):** 300, 600, 1000, 2400, 4800, 7200
- **Maximum Air Supply (bar):** 20, 40, 60, 120, 240, 480
- **Spring Force (N):** 6, 6, 6, 6, 6, 6
- **Air Supply Maximum Force (N):** 10000, 15000, 22500, 36000, 48000, 72000

**Notes:**
- Normally Closed Spring Range (bar) and Maximum Force (N)
- Normally Open Spring Range (bar) and Maximum Force (N)
# Actuator Part List

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<td>LV 3000 / 700</td>
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Flanges Drilled and Dimensioned acc. to DIN 2501, Form C, D, R, N.