**Shutter Valve for the Difficult Applications**

**MH Valve**

**Application**
MH Koltek valve is a manually or pneumatically operated valve, designed for use in the food, chemical, pharmaceutical and other industries where valves of sanitary design are needed.

**Working principle**
A PTFE shutter is operated by means of a handle or an actuator. A spring system presses the shutter against the inside cylindrical surface of the valve body thus ensuring complete tightness.

The air actuated valve can be fitted with ThinkTop® or a laterally fitted indication unit for remote indication of the valve position. The manually operated valve can be fitted with laterally indication units (used for LKLA actuators). The actuator for the valve comes in two versions, single acting or double acting. The single acting actuator operates with one main piston whereas the double acting actuator operates with two main pistons.

**Standard Design**
The valve consists of a rigid body with an internal cylindrical bore and 2 or 3 ports for pipe connection. The two lids have guide rings or bearings for an internal shaft which supports and positions the shutter. The stainless steel handle or the actuator is fitted to turn the shaft.

The actuator consists of a system of cylinders and one or two main pistons interconnected with a toothed bar which interacts with a gear wheel on the valve shaft. The system is insensitive to pressure shocks in the valve.

The valve has welding ends as standard.

MH52 with handle.
MH53 with actuator, type KH631.
Actuator functions

Actuator type 630:
- for 25 mm to 76.1 mm valves only
- two positions
- spring/air
- turning angle 1x90°

Sizes 12.7-51mm/DN25-50:

Sizes 63.5-76.1mm/DN65:
Double acting actuator

Actuator type 631:
- two positions
- air/air
- turning angle 1x90°

Sizes 12.7-76.1mm/DN25-65:

Sizes 101.6mm/DN80-100:
Double acting actuator

Pneumatic connections
Actuator functions

Actuator type 632:
- two positions
- air/air
- turning angle 1x180°

Sizes 12.7-76.1mm/DN25-65:

Sizes 101.6mm/DN80-100:
Double acting actuator

Actuator type 633:
- three positions
- air/air
- turning angles 2x90°

Sizes 12.7-76.1mm/DN25-65:

Sizes 101.6mm/DN80-100:
Double acting actuator
Pressure drop/capacity diagrams

Note! For the diagram the following applies:
Medium: Water (20°C).
Measurement: In accordance with VDI 2173.
**MH valves:**

<table>
<thead>
<tr>
<th>Size</th>
<th>25 mm</th>
<th>38 mm</th>
<th>51 mm</th>
<th>63.5 mm</th>
<th>76.1 mm</th>
<th>101.6 mm</th>
<th>25 DN</th>
<th>40 DN</th>
<th>50 DN</th>
<th>65 DN</th>
<th>80 DN</th>
<th>100 DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>116</td>
<td>149</td>
<td>161</td>
<td>179</td>
<td>204</td>
<td>292</td>
<td>116</td>
<td>150</td>
<td>161</td>
<td>204</td>
<td>272</td>
<td>292</td>
</tr>
<tr>
<td>B</td>
<td>65</td>
<td>90</td>
<td>102</td>
<td>118</td>
<td>137</td>
<td>195</td>
<td>65</td>
<td>90</td>
<td>102</td>
<td>137</td>
<td>174</td>
<td>195</td>
</tr>
<tr>
<td>OD</td>
<td>25.4</td>
<td>38.1</td>
<td>50.8</td>
<td>63.5</td>
<td>76</td>
<td>101.6</td>
<td>29</td>
<td>41</td>
<td>53</td>
<td>70</td>
<td>85</td>
<td>104</td>
</tr>
<tr>
<td>ID</td>
<td>22.1</td>
<td>34.8</td>
<td>47.5</td>
<td>60.2</td>
<td>72</td>
<td>97.6</td>
<td>26</td>
<td>38</td>
<td>50</td>
<td>66</td>
<td>81</td>
<td>100</td>
</tr>
<tr>
<td>t</td>
<td>1.65</td>
<td>1.65</td>
<td>1.65</td>
<td>1.65</td>
<td>2</td>
<td>2</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>42</td>
<td>56</td>
<td>62</td>
<td>70</td>
<td>80</td>
<td>117</td>
<td>42</td>
<td>56</td>
<td>62</td>
<td>80</td>
<td>107</td>
<td>117</td>
</tr>
<tr>
<td>G</td>
<td>55</td>
<td>70</td>
<td>82</td>
<td>105</td>
<td>110</td>
<td>155</td>
<td>64.5</td>
<td>80</td>
<td>82.5</td>
<td>100.5</td>
<td>115.5</td>
<td>130.5</td>
</tr>
<tr>
<td>K</td>
<td>130</td>
<td>130</td>
<td>180</td>
<td>180</td>
<td>235</td>
<td>330</td>
<td>130</td>
<td>130</td>
<td>180</td>
<td>235</td>
<td>330</td>
<td>330</td>
</tr>
<tr>
<td>M/DIN male</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>24</td>
<td>24</td>
<td>35</td>
<td>22</td>
<td>22</td>
<td>23</td>
<td>25</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>M/SMS male</td>
<td>1.8</td>
<td>3.3</td>
<td>4.8</td>
<td>6.9</td>
<td>10.5</td>
<td>25.0</td>
<td>1.8</td>
<td>3.3</td>
<td>4.8</td>
<td>10.5</td>
<td>22.0</td>
<td>25.0</td>
</tr>
</tbody>
</table>

**Actuators**

<table>
<thead>
<tr>
<th>Size</th>
<th>25mm</th>
<th>38mm</th>
<th>51mm</th>
<th>63.5mm</th>
<th>76.1mm</th>
<th>89mm</th>
<th>101.6mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>172</td>
<td>178</td>
<td>194</td>
<td>194</td>
</tr>
<tr>
<td>A3</td>
<td>233</td>
<td>233</td>
<td>233</td>
<td>233</td>
<td>233</td>
<td>233</td>
<td>233</td>
</tr>
<tr>
<td>H1</td>
<td>KH630</td>
<td>KH631</td>
<td>KH632</td>
<td>KH633</td>
<td>KH630</td>
<td>326</td>
<td>326</td>
</tr>
<tr>
<td>H2</td>
<td>KH630</td>
<td>KH631</td>
<td>KH632</td>
<td>KH633</td>
<td>KH630</td>
<td>326</td>
<td>326</td>
</tr>
<tr>
<td>H3</td>
<td>243</td>
<td>243</td>
<td>243</td>
<td>243</td>
<td>243</td>
<td>243</td>
<td>243</td>
</tr>
</tbody>
</table>

**Caution, opening/closing time:**

Opening/closing time will be affected by the following:
- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

---

a. MH53 with handle.

Fig. 1. Dimensions.
Air Connections

Compressed air:
R 1/8” (BSP), internal thread.

Technical data
Max. temperature: ..................................... 110°C.
Max. pressure against shutter: ............................. 300 kPa (3 bar).
Max. pressure behind shutter: ..............................1000 kPa (10 bar).
Air pressure for actuator: ................................. Min. 500 kPa (5 bar).

Max. temperature: ..................................... 110°C.
Max. pressure against shutter: ............................. 300 kPa (3 bar).
Max. pressure behind shutter: ..............................1000 kPa (10 bar).
Air pressure for actuator: ................................. Min. 500 kPa (5 bar).

Materials
Product wetted steel parts: ................................ Acid-resistant steel 1.4404 (316L).
Finish: ............................................. Ra ≤0.8 µm.
Product wetted seals: ................................... Shutter in PTFE.
Actuator seals: ........................................ Nitrile (NBR).

Options
A. Male parts or clamp liners in accordance with required standard.
B. ThinkTop®.
C. Bottom lid for hot water or steam heating.
D. Bottom fitted indication unit.
E. Limit stop for MH 52/53.
F. Pilot valve, type L or T (for actuator type 633). Type L is used when two ThinkTop® units are used.
G. Rebuilding to double acting value for high viscosity product or quick operation.
H. Product wetted seals of Nitrile (NBR) or Fluorinated rubber (FPM).

Ordering
Please state the following when ordering:
- Koltek valve; manual or pneumatic.
- Size.
- Number of ports; 2 or 3.
- Connections, if not welding ends.
- Type of actuator (if applicable).
- Options.

Note! For further details, see also instruction IM 70735.

Bottom fitted indication units*
(together with bracket for indication unit)

<table>
<thead>
<tr>
<th>Actuator type</th>
<th>KH630</th>
<th>KH631</th>
<th>KH632</th>
<th>KH633</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication unit</td>
<td>LKLA</td>
<td>LKLA</td>
<td>LKLA</td>
<td>LKLA</td>
</tr>
<tr>
<td>Actuator type</td>
<td>1 pcs.</td>
<td>1 pcs.</td>
<td>2 pcs.**</td>
<td>2 pcs.**</td>
</tr>
</tbody>
</table>

*) Not possible in combination with heated lid.
**) Not suitable for micro switch.

Note! For all manually operated valves: Use LKLA indication units.