



HYDROMINE™ LFC_3B Electrically Actuated Valves

Overview:

The HYDROMINE™ LFC_3B Electrically actuated Isolating valves were designed to be simple and easy to operate. Due to the hydraulically balanced design and low torque requirements the valve requires a relatively small electrical actuator with no external gearbox. This feature saves capital and long-term maintenance costs. Any make of electrical actuator can be fitted on the HYDROMINE™ LFC_3B electrically actuated isolation valve. The HYDROMINE™ LFC_3B electrically actuated isolation valves are generally used in pump discharge control, PLC regulated control or any other automated applications.

The HYDROMINE™ LFC_3B electrically actuated isolation valve has been developed to present a robust, simple and cost-effective low pressure (up to 2.5 MPa / 363 Psi) solution to fluid handling issues in any industrial sector.

Low Operating Torque:

The HYDROMINE™ LFC_3B Electrically isolation valve is hydrostatically balanced to enable easy opening and closing at any pressure and differential conditions. It does not require the use of a gearbox or a by-pass valve to balance pressure between the inlet and outlet. The differential pressures do not affect the operating torque which results in a relatively flat torque curve allowing for the fitment of smaller actuators.

Operating Conditions:

These valves are designed to operate in systems with relatively clean media like water or other liquids with a low percentage of suspended solids and chlorides. The valve's operating pH range is 2 - 14 pH.

Simplicity:

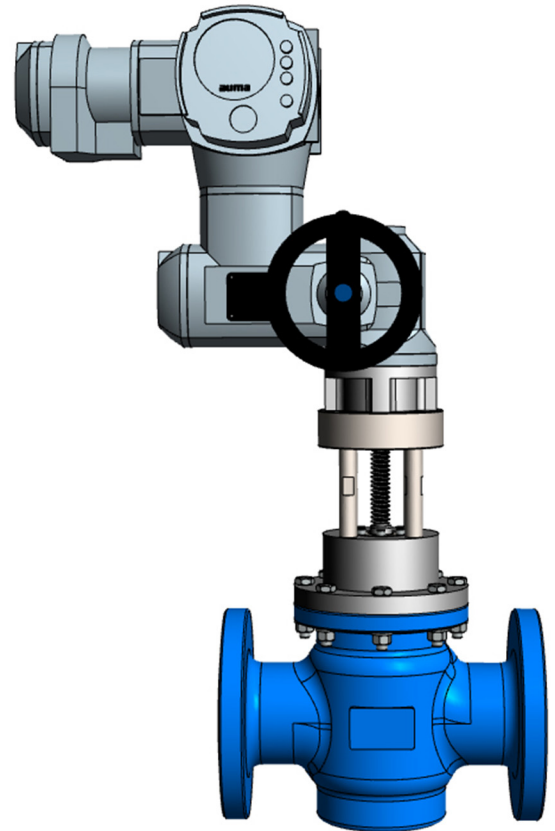
The HYDROMINE™ LFC_3B valve is designed to minimize wearing parts and in effect only has one moving part called the plug. The plug is a piston that is engineered to be balanced. The balanced plug uses the inline fluid pressure to remove the influence of differential pressure on operating torque. As such, the valve operating torque is the torque required to overcome the sum of the friction forces generated between the valve seals and the sleeve plus the weight of the plug (depending on the installation configuration). This torque requirement is not affected by inline pressure variants and as such makes the balanced valves extremely good for actuation applications. Removal of gearboxes reduces maintenance requirements and improves troubleshooting times.

Low Maintenance Requirement:

All the moving parts of the HYDROMINE™ LFC_3B Electrically isolation valves are manufactured from stainless steel which increases reliability and durability. The HYDROMINE™ LFC_3B requires minimal maintenance, the majority of which, can be conducted with the valve remaining in situ.

Materials Of Construction & Dimensions:

| Part Name | Material Specification | Face To Face Dimensions (ANSI B16.10) | | |
|-----------------|-----------------------------|---------------------------------------|------|--------|
| | | Valve size | #150 | |
| | | Unit | (mm) | (inch) |
| Body | Casting - Ductile iron | | | |
| Body seat | 431 / 304 S/ Steel | | | |
| Plug | 431 / 304 S/ Steel | DN50 / 2" | 303 | 8 |
| V-Port | 431 / 304 S/ Steel | DN80 / 3" | 241 | 9 1/2 |
| Spindle / Shaft | 431 / 304 S/ Steel | DN100 / 4" | 292 | 11 1/2 |
| Plug seat | Polyurethane | DN150 / 6" | 356 | 14 |
| Sleeve | 431 / 304 S/ Steel | DN200 / 8" | 495 | 19 1/2 |
| Body Cover | Carbon steel | DN250 / 10" | 622 | 24 1/2 |
| Sleeve Cover | Carbon steel | DN300 / 12" | 699 | 27 1/2 |
| O-Rings | Nitrile (Buna) | DN350 / 14" | 787 | 31 |
| Tripod rods | Carbon steel | DN400 / 16" | 914 | 36 |
| Bush holder | Ductile iron / Carbon steel | | | |
| Seals / O-Rings | Nitrile (Buna) | | | |
| Shaft seal | Polyurethane | | | |
| Wiper seal | Polyurethane | | | |





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Flow Rates:

| Flow (ℓ/sec) | | 5 | 10 | 25 | 40 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|----------------------|-------|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Pressure drop (kPa) | DN50 | 46 | 93 | | | | | | | | | | | | |
| | DN80 | 17 | 34 | 86 | | | | | | | | | | | |
| | DN100 | | 22 | 56 | 89 | | | | | | | | | | |
| | DN150 | | | 25 | 40 | 51 | 101 | | | | | | | | |
| | DN200 | | | | 22 | 28 | 56 | 83 | 111 | | | | | | |
| | DN250 | | | | | 18 | 36 | 54 | 72 | 90 | 108 | | | | |
| | DN300 | | | | | | 25 | 37 | 50 | 62 | 75 | 87 | 100 | | |
| | DN350 | | | | | | | 27 | 37 | 46 | 55 | 64 | 73 | 82 | |
| | DN400 | | | | | | | | 26 | 33 | 39 | 46 | 52 | 59 | 65 |
| Flow US gallon / min | | 79,25 | 158,50 | 396,26 | 634,01 | 792,52 | 1585,03 | 2377,55 | 3170,06 | 3962,58 | 4755,09 | 5547,61 | 6340,12 | 7132,64 | 7925,15 |
| Pressure drop (psi) | 2" | 6,74 | 13,47 | | | | | | | | | | | | |
| | 3" | 2,48 | 4,97 | 12,42 | | | | | | | | | | | |
| | 4" | | 3,24 | 8,11 | 12,97 | | | | | | | | | | |
| | 6" | | | 3,67 | 5,87 | 7,34 | 14,68 | | | | | | | | |
| | 8" | | | | 3,22 | 4,03 | 8,06 | 12,09 | 16,12 | | | | | | |
| | 10" | | | | | 2,62 | 5,24 | 7,85 | 10,47 | 13,09 | | | | | |
| | 12" | | | | | | 3,62 | 5,43 | 7,24 | 9,05 | 10,86 | 12,67 | 14,48 | | |
| | 14" | | | | | | | 3,98 | 5,31 | 6,64 | 7,97 | 9,29 | 10,62 | 11,95 | |
| | 16" | | | | | | | | 3,79 | 4,74 | 5,69 | 6,64 | 7,58 | 8,53 | 9,48 |

| Kv / Cv Values | | |
|----------------|------|------|
| Unit | Kv | Cv |
| DN50 / 2" | 39 | 45 |
| DN80 / 3" | 104 | 122 |
| DN100 / 4" | 160 | 187 |
| DN150 / 6" | 354 | 413 |
| DN200 / 8" | 644 | 752 |
| DN250 / 10" | 992 | 1158 |
| DN300 / 12" | 1435 | 1675 |
| DN350 / 14" | 1955 | 2283 |
| DN400 / 16" | 2739 | 3198 |

Robust, Reliable & Efficient:

Due to the minimal number of moving parts to effect the fluid control, the number of potential failures are minimized.

Valve Sizing:

Please consult with HYDROMINE™ for clarification of correct sizing for your requirements.

Design & Manufacturing Standards:

The HYDROMINE™ LFC_3B electrically actuated isolation valve has been designed in accordance with various international standards as set out below:

- ASME Boilers and pressure vessels design code
- ANSI B16.10 API598
- ANSI B16.34 ANSI B16.37
- ANSI B16.5 ANSI N278.1

- Available sizes: DN50 / 2" to DN400 / 16"
- Face to face dimensions to ANSI B16.10
- Pressure rating: up to 2.5 MPa / 363psi

Available end connections: ANSI B16.5, BS4504, BS10, AS/NZS 4331.1 (ISO 7005-1) DIN, All makes of grooved or ring joint couplings and other as per client's requirement.

