



# LFC™\_3B Water Hydraulic Actuated Isolation Valves

## Overview:

The LFC™\_3B Water hydraulic actuated isolation valves is based on the same design as the LFC™\_3B pressure regulating valve. Water hydraulic actuated valves are more cost effective than the LFC™\_3B electrical actuated valves. The upstream water hydraulic power are used to actuate the LFC™\_3B isolation valve. The speed of the valve can be adjusted to any desired speed fairly quickly and easily. The LFC™\_3B Water hydraulic actuated isolation valve are generally used for remote isolation, level control or pump discharge control valves. Using line fluids removes the need for any gearboxes, electrical actuators or handwheels which makes them ideal for applications where tampering is a problem.

The LFC™\_3B water hydraulic actuated valve has been developed to present a robust, simple and cost-effective low pressure (up to 2.5 MPa / 363Psi) solution to fluid handling issues in any industrial sector.

## Low Operating Torque:

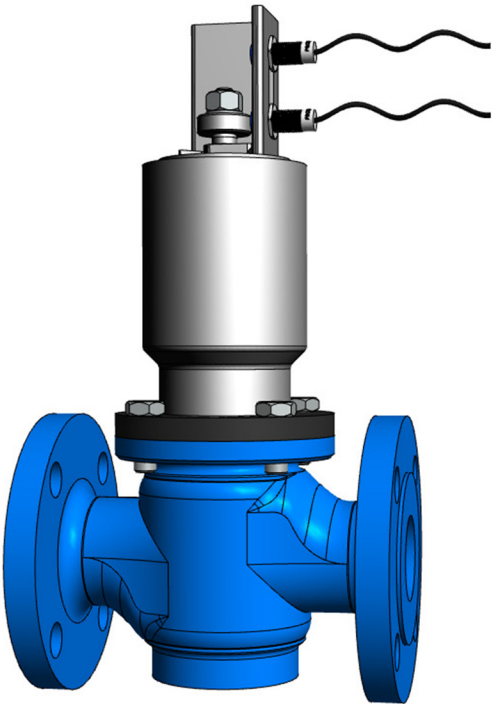
The LFC™\_3B Water hydraulic isolation valves are hydrostatically un-balanced to enable easy opening and closing at any pressure and differential conditions. It does not require the use of a gearbox or a by-pass valve to balance pressure between the inlet and outlet.

## 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 LFC™\_3B Water hydraulic valve is designed to minimize wearing parts and in effect only has one moving part called the plug assembly. The plug assembly is a piston that is engineered to be unbalanced. The unbalanced 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 body, seals and the cylinder plus the weight of the plug (depending on the installation configuration). This torque requirement is not affected by inline pressure variants and therefore makes these valves extremely good for actuation applications as well as for isolation valves where manual operation is required. Removal of gearboxes reduces maintenance requirements and improves troubleshooting times. The valve uses a water hydraulic control panels or solenoid valve to operate and it are simple in comparison with an electrical actuator. The LFC™\_3B Water hydraulic valve can easily be fitted with limit switches to give open and closed indication.



## Materials of Construction & Dimensions:

Part Name	Material Specification	Face To Face Dimensions		
		Valve size	Face To face #150	
Body	Casting - Ductile iron	Unit	(mm)	(Inch)
Body seat	431 / 304 S/ Steel	DN50 / 2"	203	7,99
Plug	431 / 304 S/ Steel	DN80 / 3"	241	9,49
V-Port or Seat holder	431 / 304 S/ Steel	DN100 / 4"	292	11,50
Shaft	431 / 304 S/ Steel	DN150 / 6"	356	14,02
Piston	431 / 304 S/ Steel	DN200 / 8"	495	19,49
Plug seat	Polyurethane	DN250 / 10"	622	24,49
Sleeve	431 / 304 S/ Steel	DN300 / 12"	699	27,52
Sleeve Holder	Ductile iron	DN350 / 14"	787	30,98
Cylinder	431 / 304 S/ Steel	DN400 / 16"	914	35,98
Cylinder holder	Ductile iron			
Cylinder cover	Ductile iron			
Limit switch rod	431 / 304 S/ Steel			
Limit switch bracket	Carbon steel			
Limit switch bracket	Nitrile (Buna)			
Hoses	Single braided			



# LFC<sup>TM</sup>\_3B Water Hydraulic Actuated Isolation Valves

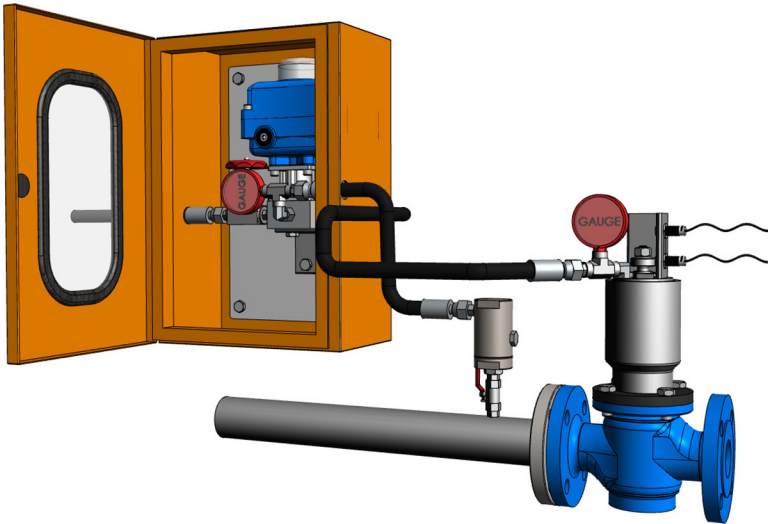
## Flow Rates:

Flow (ℓ/sec)		5	10	25	40	50	100	150	200	250	300	350	400
Pressure Drop (kPa)	DN50	47	94										
	DN80	17	34	86									
	DN100		23	57	79								
	DN150			26	36	51	102						
	DN200					28	56	84	112				
	DN250						37	55	73	91	112		
	DN300						26	37	50	63	75	90	103
Flow US gallon/ min		79.25	158.50	396.26	634.01	792.52	1585.03	2377.55	3170.06	3962.575	4755.09	5547.605	6340.12
Pressure Drop (psi)	2"	6.82	13.63										
	3"	2.47	4.93	12.47									
	4"		3.34	8.27	11.46								
	6"			3.77	5.22	7.4	14.79						
	8"					4.06	8.12	12.18	16.24				
	10"						5.37	7.98	10.59	13.2	16.24		
	12"						3.77	5.37	7.25	9.14	10.88	13.05	14.96

## Valve Sizing:

Please consult with Hydromine for clarification of correct sizing for your requirements.

## LFC\_3B Water Hydraulic Actuated Valve With Control Panel And Limit Switches:



## Low Maintenance Requirement:

All the moving parts of LFC<sup>TM</sup>\_3B water hydraulic actuated valve are manufactured from stainless steel which increases reliability and durability. The LFC<sup>TM</sup>\_3B requires minimal maintenance, the majority of which, can be conducted with the valve remaining in situ.

## Design & Manufacturing Standards:

The LFC<sup>TM</sup>\_3B water hydraulic actuated valve has been designed in accordance with various international standards as set out below:

- ASME Boilers and pressure vessels design code
- ANSI B16.10      ANSI B16.3
- 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 1.9 MPa / 275 psi

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.