



LFC™_3B Pilot Operated Surge Relief Valve

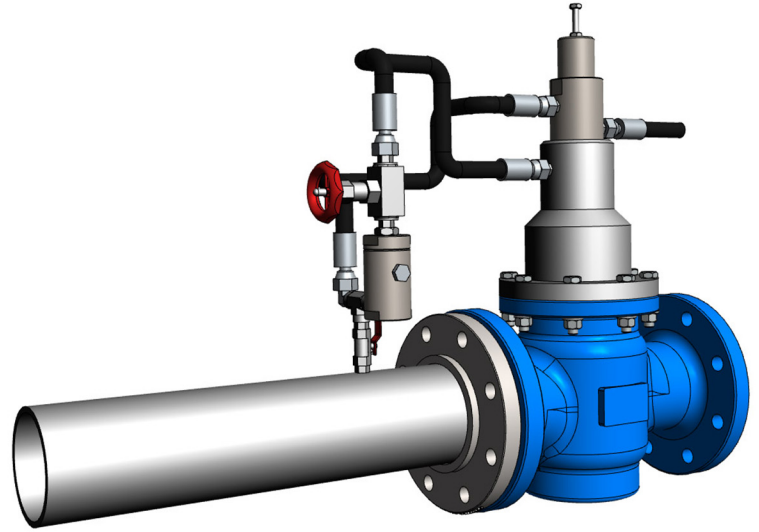
Overview:

A pilot operated surge relief valve is designed to open when an over pressure situation occurs and has an easily adjustable set pressure.

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

Simplicity:

The LFC™_3B pilot operated surge relief 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 is designed to use inline fluid pressure in side the valve, as well as top of the plug assembly, to keep the valve in a closed position.



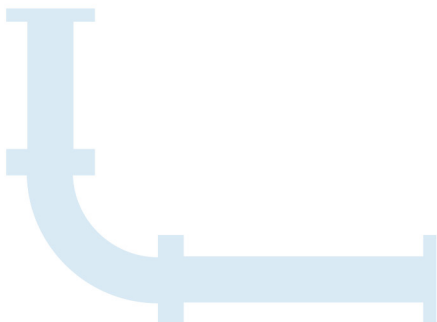
With the assistance of an external pilot the pressure on top of the plug assembly can be released and the valve will open up. Upstream pressure (P_u) would act to open the valve, the pilot releases pressure from the top of the plug assembly. As the P_u increases, the opening force increases proportionally and the pilot will release more pressure. Due to this a greater volume of water being released from the top of the plug assembly, the valve is forced to move proportionally to a greater open position. This in turn causes the valve to release more upstream pressure. If P_u is reduced, the valve will close proportionally in an effort to maintain the set pilot pressure, until normal conditions are restored.

Materials of Construction & Dimensions:

Part Name	Material Specification	Face To Face Dimensions		
		Valve size	Face to face #150	
		Unit	(mm)	(Inch)
Body	Casting - Ductile iron			
Body seat	431 / 304 S/Steel			
Plug	431 / 304 S/Steel	DN50 / 2"	203	7.99
V-Port	431 / 304 S/Steel	DN80 / 3"	241	9.49
Shaft	431 / 304 S/Steel	DN100 / 4"	292	11.50
Piston	431 / 304 S/Steel	DN150 / 6"	356	14.02
Plug seat	Polyurethane	DN200 / 8"	495	19.49
Sleeve	431 / 304 S/Steel	DN250 / 10"	622	24.49
Sleeve holder	Ductile iron	DN300 / 12"	699	27.52
Cylinder	431 / 304 S/Steel	DN350 / 14"	787	30.98
Pilot	431 / 304 S/Steel	DN400 / 16"	914	35.98
Strainer	431 / 304 S/Steel			
Needle valve	316 S/Steel			
Hoses	Single braided wire hose			
O-Rings	Nitrile (Buna)			

Low Maintenance Requirement:

All the moving parts of LFC™_3B surge relief valve are manufactured from stainless steel which increases reliability and durability. The LFC™_3B requires minimal maintenance, the majority of which, can be conducted with the valve remaining in situ.





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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.

Design & Manufacturing Standards:

The LFC™_3B pilot operated surge relief 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 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.

