



HYDROMINE™ LFC_3B Pilot Operated Surge Relief Valves

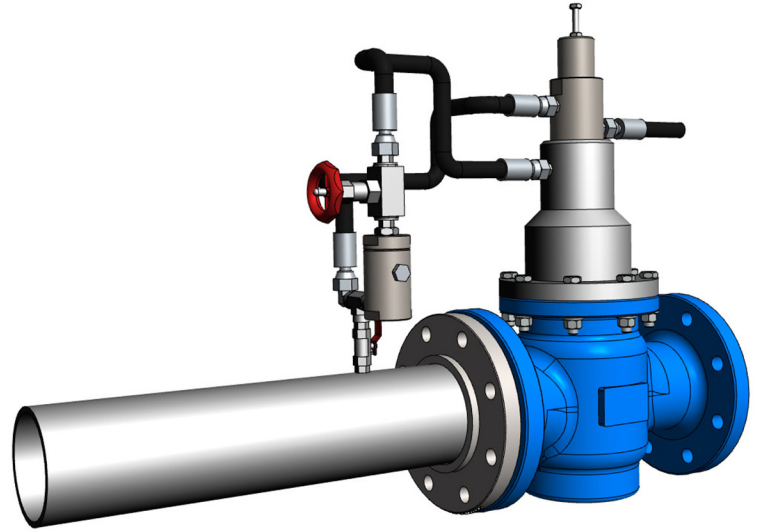
Overview:

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

The HYDROMINE™ 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 HYDROMINE™ 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 inside the valve, as well as on the top of the plug assembly, to keep the valve in a closed position.



With the assistance of an external pilot the pressure on the top of the plug assembly can be released and the valve will open. Upstream pressure (P_u) would act to open the valve, the pilot releases pressure from the top of the plug assembly. As the upstream pressure 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 upstream pressure is reduced, the valve will close proportionally in an effort to maintain the set pilot pressure, until normal conditions are restored.

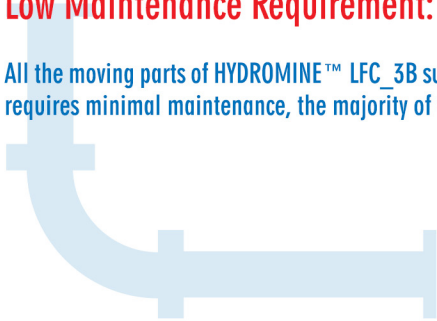
Materials of Construction & Dimensions:

Part Name	Material Specification	Face To Face Dimensions (ANSI B16.10)		
		Valve size	#150	
Body	Casting - Ductile iron	Unit	(mm)	(inch)
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
Shaft	431 / 304 S/Steel	DN100 / 4"	292	11 1/2
Piston	431 / 304 S/Steel	DN150 / 6"	356	14
Plug seat	Polyurethane	DN200 / 8"	495	19 1/2
Sleeve	431 / 304 S/Steel	DN250 / 10"	622	24 1/2
Body Cover	Ductile iron or Carbon steel	DN300 / 12"	699	27 1/2
Cylinder	431 / 304 S/Steel	DN350 / 14"	787	31
Pilot	431 / 304 S/Steel	DN400 / 16"	914	36
Strainer	431 / 304 S/Steel			
Cylinder Top Cover	Ductile iron or Carbon steel			
Needle valve	316 S/Steel			
Hoses	Single braided wire hose			
O-Rings	Nitrile (Buna)			

All face to face dimensions are in accordance with ANSI B16.10 Class 150.

Low Maintenance Requirement:

All the moving parts of HYDROMINE™ LFC_3B surge relief valve 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.





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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

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

Valve Sizing:

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

Design & Manufacturing Standards:

The HYDROMINE™ 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 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.

