



HYDROMINE™ LFC_3B Spring Acting Surge Relief Valves

Overview:

A surge relief valve is designed to open when a over pressure situation occurs and thereby prevent excessively high pressures from putting people and equipment at risk.

The HYDROMINE™ LFC_3B spring acting 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 spring acting 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 assembly together with a spring are designed to use inline fluid pressure to create specific conditions in the system without the use of an external controller or pilot.

A fixed opening force can be established by fixing the surface area ratio exposed to the upstream pressure and the spring combined. Upstream pressure would act to open the valve. As the upstream pressure increases, the opening force increases proportionally causing the spring to compress and the valve to open. If upstream pressure is reduced, the valve will close proportionally in an effort to maintain its hydraulic ratio and spring force combined.

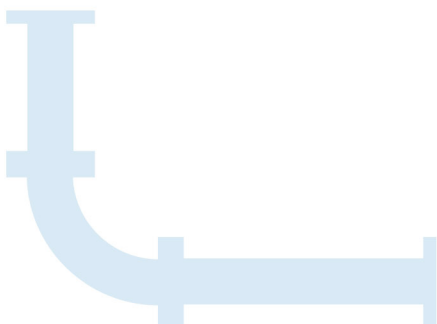
The HYDROMINE™ LFC_3B spring acting surge relief valve relief pressure can be adjusted within the spring range.



Materials Of Construction & Dimensions:

Part Name	Material Specification	Face To Face Dimensions (ANSI B16.10)		
		Valve size	Face To face #150	
		Unit	(mm)	(Inch)
Body	Casting - Ductile iron			
Body seat	431 / 304 S/ Steel		203	8
Plug	431 / 304 S/ Steel	DN50 / 2"	241	9 1/2
V-Port	431 / 304 S/ Steel	DN80 / 3"	292	11 1/2
Shaft	431 / 304 S/ Steel	DN150 / 6"	356	14
Piston	431 / 304 S/ Steel	DN200 / 8"	495	19 1/2
Plug seat	Polyurethane	DN250 / 10"	622	24 1/2
Sleeve	431 / 304 S/ Steel	DN300 / 12"	699	27 1/2
Body Cover	Ductile iron or Carbon steel	DN350 / 14"	787	31
Cylinder	Carbon steel	DN400 / 16"	914	36
Adjuster	Carbon steel			
Spring holder	Carbon steel			
Spring	Spring steel			
O-Rings	Nitrile (Buna)			

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





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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

Valve Sizing:

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

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.

Design & Manufacturing Standards:

The HYDROMINE™ LFC_3B 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 / 363 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.

