



# LFC™\_3B Spring Acting Surge Relief Valve

## 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.

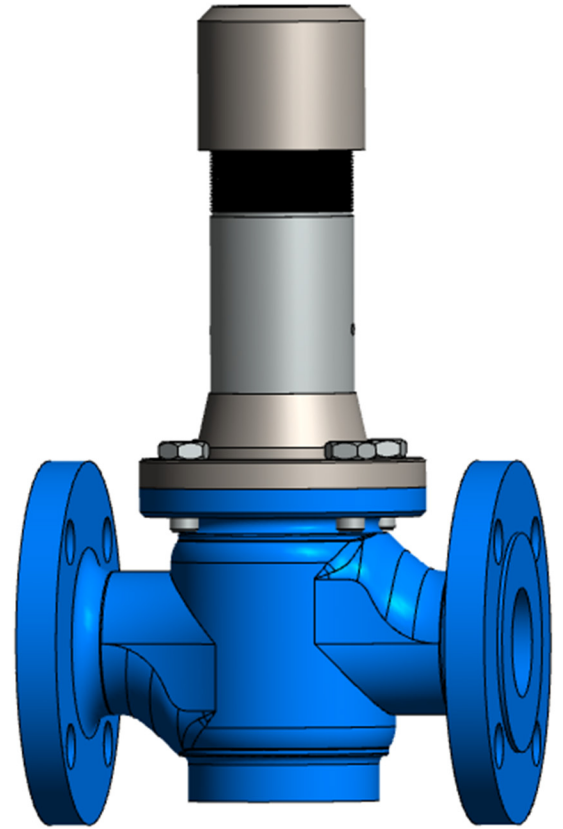
The LFC™\_3B spring acting surge relief valve has been developed to present a robust and simple and cost effective low pressure (up to 2.5 MPa / 363 Psi) solution to fluid handling issues in any industrial sector.

## Simplicity:

The 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.

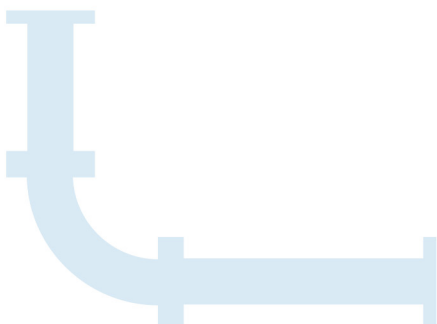
A fixed opening force can be established by fixing the surface area ratio exposed to the upstream pressure and the spring combined. Upstream pressure ( $P_u$ ) would act to open the valve. As the  $P_u$  increases, the opening force increases proportionally causing the spring to compress and the valve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

The 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		
		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	Carbon steel	DN350 / 14"	787	30.98
Cylinder holder	Ductile iron	DN400 / 16"	914	35.98
Adjuster	Carbon steel			
Spring holder	Carbon steel			
Spring	Spring steel			
O-Rings	Nitrile (Buna)			





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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.

## 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.

## Design & Manufacturing Standards:

The 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    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 / 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.

