



# LFC™\_1B Pilot Operated Surge Relief Valve

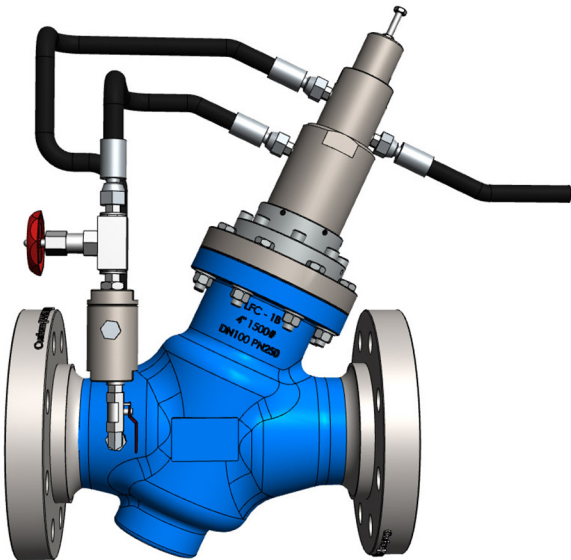
## Overview:

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™\_1B pilot operated surge relief valve has been developed to present a robust and simple and cost-effective solution to fluid handling issues in any industrial sector.

## Simplicity:

The LFC™\_1B 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 top of the plug assembly, to keep the valve in a closed position.



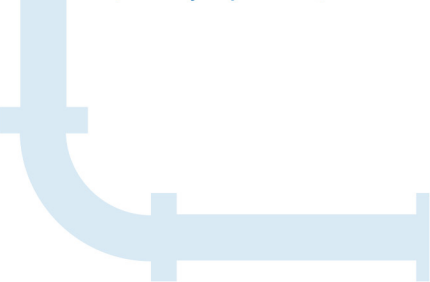
With the assistance of an external pilot the pressure on top of the plug assembly can be released and the valve will open up. Upstream pressure (Pu) would act to open the valve, the pilot releases pressure from the top of the plug assembly. As the Pu increases, the opening force increases proportionally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

## Materials of Construction:

Part Name	Material Specification
Body - DN50 to DN100	Casting - 431 S/Steel
Body - DN150 to DN400	Casting - BS3100 Grade A2
Body seat	431 S/Steel
Flanges	ASTM A105
Plug	431 S/Steel
V-Port	431 S/Steel
Shaft	431 S/Steel
Piston	431S/ Steel
Plug seat - 0 to 2,5 MPa	Polyurethane
Plug seat - above 2, 5 MPa	UHMWPE
Cylinder	431 S/Steel
Cylinder holder	Carbon steel or 431 S/Steel
Seals	Nitrile (Buna)
O-Rings	Nitrile (Buna)
Pilot	431 S/Steel
Hoses	Single braided
Ball valve	Carbon steel with zinc coating
Needle valve	316 S/Steel
Strainer	431 S/Steel

## Low Maintenance Requirement:

All the moving parts of LFC™\_1B surge relief valve are manufactured from stainless steel which increases reliability and durability. The LFC™\_1B requires minimal maintenance, the majority of which, can be conducted with the valve remaining in situ.





# LFC™\_1B Pilot Operated Surge Relief Valve

## Dimensions:

Unit	Face to face Dimensions:								Height	
	#300		#600		#900		#1500		Centre line to Top of valve	
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
DN50 / 2"	292	11.50	292	11.50	368	14.49	368	14.49		
DN80 / 3"	356	14.02	356	14.02	381	15.00	470	18.50		
DN100 / 4"	432	17.01	432	17.01	457	17.99	546	21.50		
DN150 / 6"	559	22.01	559	22.01	610	24.02	705	27.76		
DN200 / 8"	660	25.98	660	25.98	737	29.02	832	32.76		
DN250 / 10"	787	30.98	787	30.98	838	32.99	991	39.02		
DN300 / 12"	838	32.99	838	32.99	965	37.99	1130	44.49		
DN350 / 14"	889	35.00	889	35.00	1029	40.51	1257	49.49		
DN400 / 16"	991	39.02	991	39.02	1130	44.49	1384	54.49		

## Flow Rates:

Flow (ℓ/sec)		5	10	25	40	50	100	150	200	250	300
Pressure Drop (kPa)	DN50	17	81								
	DN80	5	35	90							
	DN100		1,5	30	45	98					
	DN150			2,5	6,5	15	57				
	DN200					2,5	14	42	76		
	DN250						7	17	27	46	65
	DN300										
Flow US gallon/ min		79.25	158.50	396.26	634.01	792.52	1585.03	2377.55	3170.06	3962.575	4755.09
Pressure Drop (psi)	2"	2.47	11.75								
	3"	0.73	5.08	13.05							
	4"		0.22	4.35	6.53	14.21					
	6"			0.36	0.94	2.18	8.27				
	8"					0.36	2. 03	6.09	11.02		
	10"						1.02	2.47	3.92	6.67	9.43
	12"										

## Valve Sizing:

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

## Design & Manufacturing Standards:

The LFC™\_1B 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 25MPa / 3 626 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, HMP™ Coupling, HMP™-TE tapered couplings and other as per clients requirement.

