Innovation in Miniature

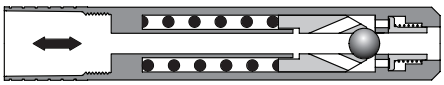
PRODUCT DATA SHEET

375 PRI®/CHEK® VALVE

The Lee Company's new 375 PRI/Chek Valve combines the function of a pressure relief valve in parallel with a check valve into one easy to install insert. The relief valve function features a rugged Tungsten Carbide ball and a 440C seat for durability and long life. The remaining components are constructed entirely of stainless steel.

The 375 PRI/Chek Valve is available in a range of relief flow cracking pressures for system pressures up to 5000 psi. Maximum restriction in the free flow direction is only 220 Lohms (see reverse page for an explanation of Lohms).

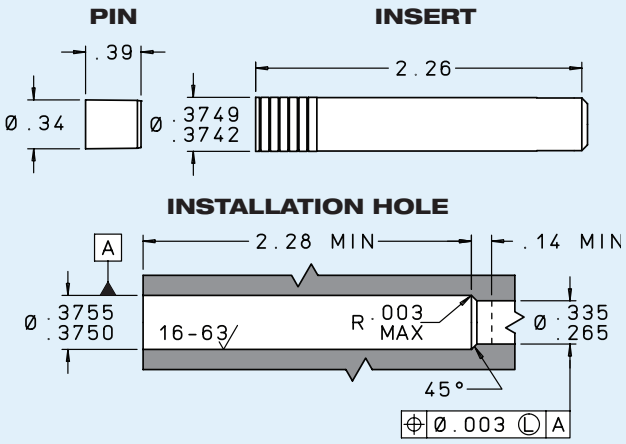
Each Lee PRI/Chek Valve is 100% tested and inspected in both flow directions to ensure reliable, consistent performance.



Relief Flow Direction

Free Flow Direction

- Combines the function of a pressure relief valve in parallel with a check valve.
- Durable tungsten carbide ball and a 440C Cres seat.
- Designed for system pressures up to 5,000 psi
- Weighs only 24 grams
- Endurance tested to 100,000 relief flow and 500,000 free flow cycles



MATERIALS		
PART	MATERIAL	SPECIFICATION
Shuttle Plate	304 CRES	AMS 5639
Seat	440C CRES	AMS 5630
Spring Seat	15-5PH CRES	AMS 5659
Springs	17-7PH CRES	AMS 5678
Retainer	15-5PH CRES	AMS 5659
Shim	17-7PH CRES	AMS 5529
Body	304 CRES	AMS 5639
Ball Follower	304 CRES	AMS 5639
Tube	13-8 MO CRES	AMS 5629
Ball	Tungsten Carbide	-
Orifice Plate	304 CRES	AMS 5639
Pin	17-4PH CRES	AMS 5643

Finish: All CRES Parts Passivated.
Pins are prewaxed. Do not degrease. Do not lubricate.

LEE PART NUMBER	RELIEF FLOW DIRECTION					FREE FLOW DIRECTION	
	MINIMUM CRACKING PRESSURE (psid)	FLOW POINT			MINIMUM SHUTOFF PRESSURE (psid)	CRACKING PRESSURE (psid)	LOHM RATE AT 25 PSID AND GREATER
		LOHM RATE	MIN. FLOW (gpm)	AT (psid)			
PFRA3750300D	3000	400	3.7	3850	2850	5 ± 3	220 max
PFRA3750320D	3200	400	3.8	4050	3000	5 ± 3	220 max
PFRA3750340D	3400	400	3.9	4250	3200	5 ± 3	220 max
PFRA3750420D	4200	400	4.0	5250	4000	5 ± 3	220 max
PFRA3750440D	4400	400	4.1	5400	4200	5 ± 3	220 max
PFRA3750520D	5200	400	4.9	6550	5000	5 ± 3	220 max
PFRA3750540D	5400	400	5.0	6750	5200	5 ± 3	220 max

PERFORMANCE	
Relief Flow Direction:	
Leakage at Minimum Cracking Pressure:	2 mL/min maximum
Leakage at Minimum Shutoff Pressure:	2 mL/min maximum
Restriction at Minimum Recommended Valve Lift:	1500 Lohms
Nominal System Pressure:	Up to 5000 psi
System Peak Pressure:	6750 psi maximum
Nominal Weight:	24 grams
Valve performance on MIL-PRF-83282 or MIL-PRF-5606 at 85°F±15°F.	

THE LEE COMPANY, 2 PETTIPAUG RD., P.O. BOX 424, WESTBROOK, CT 06498-0424

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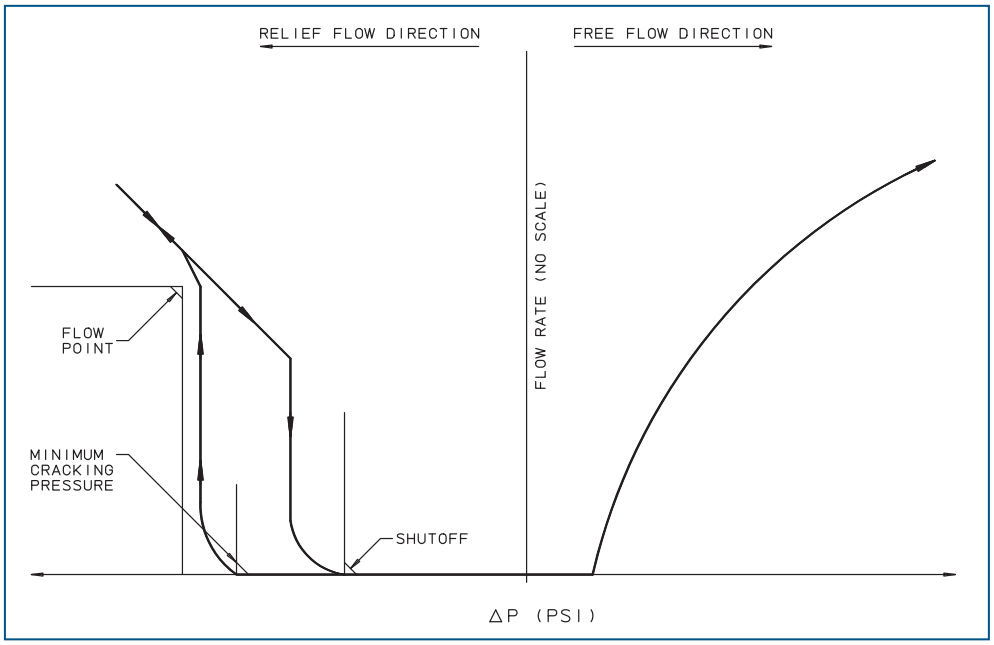
0.375 PRI/CHEK FLOW CURVE



LEE LOHM LAWS

LOHMS LAWS (liquids)

Every engineer will be interested in our simple system of defining the fluid resistance of Lee hydraulic components.

Just as the OHM is used in the electrical industry, we find that we can use a liquid OHM or "Lohm" to good advantage on all hydraulic computations.

When using the Lohm system, you can forget about coefficients of discharge and dimensional tolerances on drilled holes. These factors are automatically compensated for in the Lohm calculations, and confirmed by testing each component to establish flow tolerances. The resistance to flow of any fluid control component can be expressed in Lohms.

The Lohm has been selected so that a 1 Lohm restriction will permit a flow of 100 gallons per minute of water with a pressure drop of 25 psi at a temperature of 80°F.

LIQUID FLOW FORMULA

The following formulas are presented to extend the use of the Lohm laws to many different liquids, operating over a wide range of pressure conditions.

These formulas introduce compensation factors for liquid density and viscosity. They are applicable to any liquid of known properties, with minimum restrictions on pressure levels or temperature.

The units constant (K) eliminates the need to convert pressure and flow parameters to special units.

Volumetric Flow Units $L = \frac{KV}{I}\sqrt{\frac{H}{S}}$

Gravimetric Flow Units $L = \frac{KV}{w}\sqrt{HS}$

LIQUID FLOW – UNITS CONSTANT K

VOLUMETRIC FLOW UNITS			
	Pressure Units		
Flow Units	psi	bar	kPa
GPM	20	76.2	7.62
L/min	75.7	288	28.8
ml/min	75 700	288 000	28 800
in^3/min	4 620	17 600	1 760

GRAVIMETRIC FLOW UNITS			
	Pressure Units		
Flow Units	psi	bar	kPa
PPH	10 000	38 100	3810
gm/min	75 700	288 000	28 800

NOMENCLATURE

L = Lohms
S = Specific gravity*
H = Differential pressure
V = Viscosity compensation factor**
I = Liquid flow rate: Volumetric
w = Liquid flow rate: Gravimetric
K = Units Constant – Liquid (see chart)
*S = 1.0 for water at 80°F.
**V = 1.0 for water at 80°F.

For other fluids and temperatures, contact your Lee Sales Engineer or visit us at www.TheLeeCo.com

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