Innovation in Miniature

LEE

PRECISION MICROHYDRAULICS

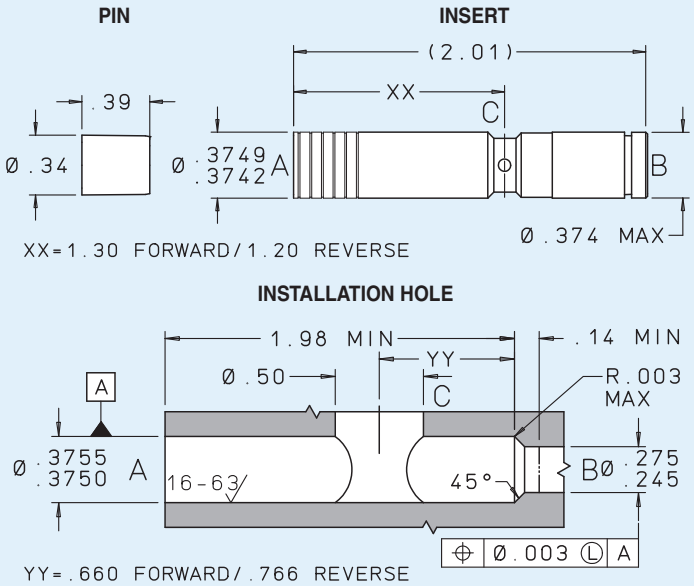
PRODUCT DATA SHEET

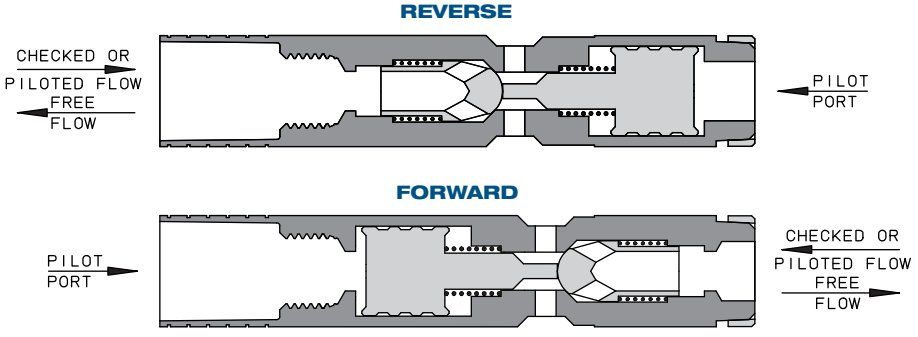
HIGH PRESSURE 375 PILOT OPERATED CHEK®

The Lee Company's new High Pressure 375 Pilot Operated Chek is the latest addition to Lee's line of miniature check valves. This valve acts like a normal check valve until pressure is applied to the pilot port, which then allows flow in the direction that would normally be blocked. This new valve is ideal for high pressure hydraulic applications with system pressures up to 5000 psi. The maximum restriction when piloted open is only 110 Lohms.

The High Pressure 375 Pilot Operated Chek is available in forward and reverse free flow configurations, and the metal components are constructed entirely of stainless steel for durability and long life. Nominal weight is just 20 grams. Each Chek is 100% tested and inspected to ensure reliable, consistent performance.

- Designed for System Pressures up to 5000 psi
- 110 Lohms Max. When Piloted Open
- Weighs Only 20 Grams
- 100% Tested and Inspected
- Endurance Tested to 500,000 Cycles
- No O-Rings





PERFORMANCE
Cracking Pressure: .....5 ± 3 psid
Minimum Pilot Ratio: 3:1
Piloted Flow Rate: ....110 Lohms Maximum
Leakage in Checked Direction:
.....1 drop/minute at 5 psid
.....1 drop/hour at 1000 - 5000 psid
Pilot Piston Leakage:
.....1 drop/minute maximum at 5000 psid
Nominal System Pressure: ... up to 5000 psi
Nominal Weight: .....20 grams
Valve performance on MIL-PRF-83282 at 85°F. 1 drop = 50 µL

MATERIALS		
PART	MATERIAL	SPECIFICATION
Body Front	304 Cres	AMS 5639
Body Center	15-5 PH Cres	AMS 5659
Body Rear	304 Cres	AMS 5639
Springs	17-7 PH Cres	AMS 5678
Poppet	15-5 PH Cres	AMS 5659
Pilot Piston	15-5 PH Cres	AMS 5659
Pin	17-4 PH Cres	AMS 5643
Compression Seal	Polyimide	———

LEE PART NUMBER	CRACKING PRESSURE (psid)	MINIMUM PILOT RATIO	PILOTED LOHM RATE	FLOW DIRECTION
CPRA3757105A	5+/-3	3:1	110 Lohms maximum	Reverse
CPFA3757105A	5+/-3	3:1	110 Lohms maximum	Forward

See reverse side for Liquid Lohm Laws.

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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 – UNITS CONSTANT K

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

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 $L = \frac{KV}{w}\sqrt{HS}$

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