Innovation in Miniature

PRODUCT DATA SHEET

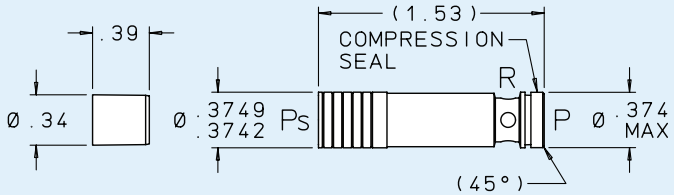
375 BYPASS VALVE

The Lee Company's 375 Bypass Valve is the latest addition to Lee's line of miniature fluid control components. Designed to shunt flow across an actuator piston when the system pressure is either shut off or lost, the 375 Bypass Valve is normally open, with a hydraulically-actuated pilot-to-close feature.

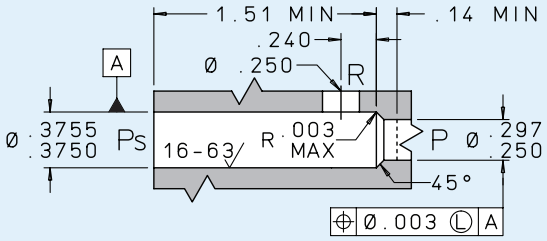
This miniature valve weighs only 16 grams, and the metal components are constructed entirely of stainless steel for durability and long life. Each Lee Bypass Valve is 100% tested and inspected to ensure reliable, consistent performance. Contact your local Lee Sales Engineer for additional information and technical assistance.

- Low Leakage: 1 Drop/Minute
- 70 Lohms* Maximum Restriction When Open
- Weighs only 16 grams
- All Metal Components Made from Stainless Steel
- 100% Tested and Inspected
- Endurance Tested to 250,000 Cycles Minimum
- Designed for System Pressures up to 4000 psi

PIN **INSERT**



INSTALLATION HOLE



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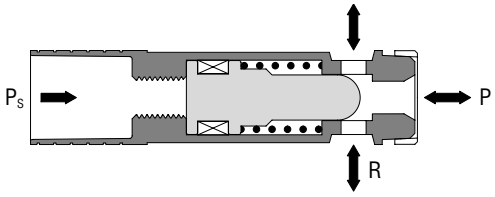

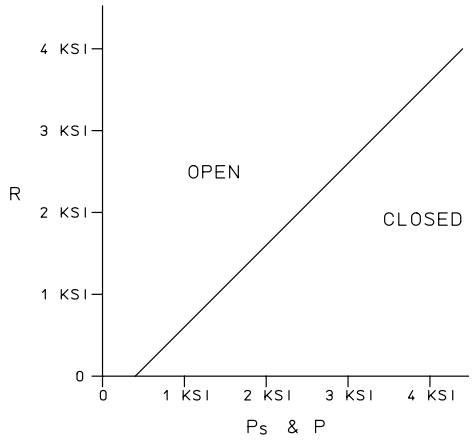

P = System Pressure
R = Return Pressure
PS = Pilot Port Pressure

PERFORMANCE

Normally Open:
Fully Open Lohm Rate (Ps ≤ 50 psid): 70 Lohms maximum

Piloted Closed:
Fully Closed When P_S - R ≥ 400 psi (Ps = P)
Combined Leakage from P_S and P to R: 1 drop/minute maximum

Nominal System Pressure: up to 4000 psi

Nominal Weight: 16 grams

Valve performance on MIL-PRF-83282 at 85°F ± 15°F. 1 drop = 50 µL

** The Lohm is a measure of flow resistance. Additional information can be found on the reverse side and at www.TheLeeCo.com.*

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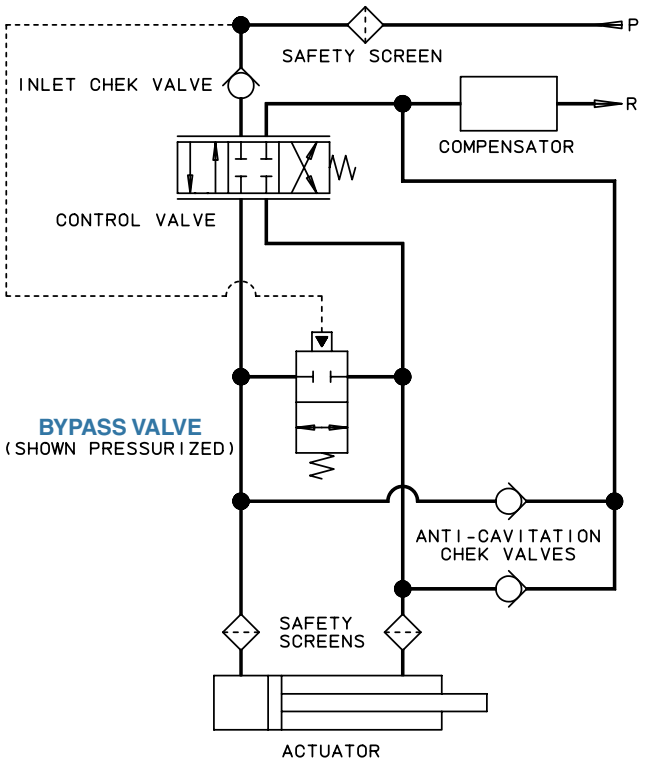
375 BYPASS VALVE

MATERIALS		
PART	MATERIAL	SPECIFICATION
Body	304 Cres	AMS 5639
Retainer	15-5PH Cres	AMS 5659
Poppet Seal	GFP with Hastelloy Spring	—
Poppet	15-5PH Cres	AMS 5659
Spring	17-7PH Cres	AMS 5678
Compression Seal	Polyimide	—
Pin	17-4PH Cres	AMS 5643

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

INSTALLATION AND EXTRACTION
Tool Set Part Number: CUTX0509150B
Replacement Pin Part Number: PHRA3750003A
Replacement Compression Seal Part Number: SVDA3750009A

TYPICAL HYDRAULIC CIRCUIT



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			
	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

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 above)
*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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