Innovation in Miniature

PRODUCT DATA SHEET

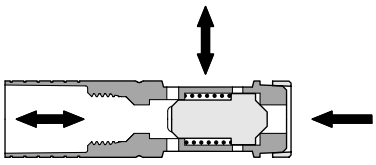
375 SPRING BIASED SHUTTLE VALVE

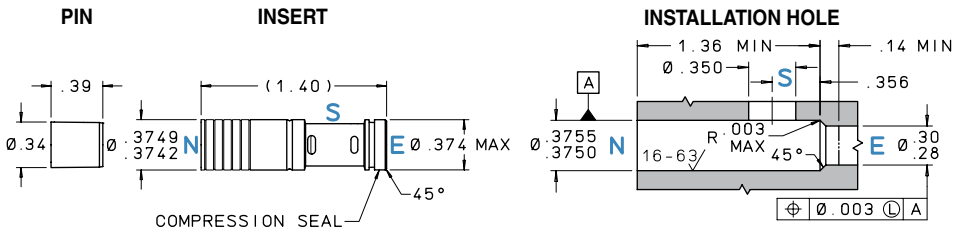
The Lee Company's new 375 Spring Biased Shuttle Valve is the latest addition to Lee's line of miniature spring biased shuttle valves. The poppet in this shuttle valve is biased so that the emergency port (E) is normally closed, and the normal (N) and service (S) ports are connected. This new shuttle valve is ideal for high pressure applications with system pressures up to 5000 psi.

For added installation flexibility, the 375 Spring Biased Shuttle Valve is available with the biased port (Port E) at either end of the valve. The metal components are constructed entirely of stainless steel for durability and long life. Each spring biased shuttle valve is 100% tested and inspected to ensure reliable, consistent performance.

- Designed for System Pressures up to 5000 psi
- Weighs only 12 grams
- All Metal Components Made from Stainless Steel
- 100% Tested and Inspected
- Endurance Tested to 250,000 Cycles
- Low Leakage

SHBA3750375L





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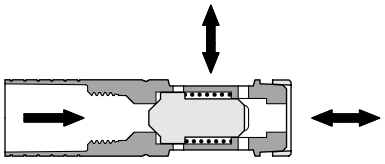

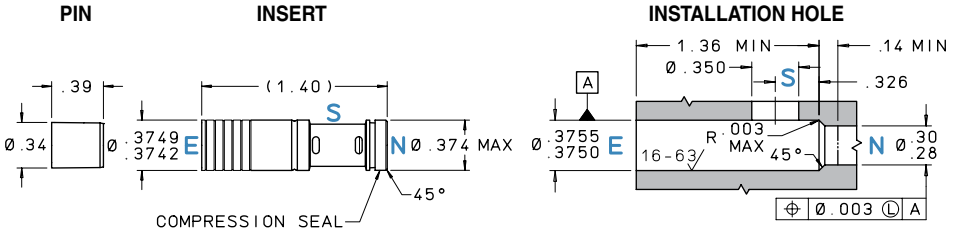

MATERIALS		
PART	MATERIAL	SPECIFICATION
Body	15-5PH CRES	AMS 5659
Poppet	440C CRES	AMS 5630
Spring	17-7PH CRES	AMS 5678
Compression Seal	Polyimide	–
Pin	17-4PH CRES	AMS 5643

PERFORMANCE

Flow Rate:
Normal (N to S or S to N).....2 GPM min. at 50 psid (75 Lohms max. restriction)
Emergency (E to S).....2 GPM min. at 50 psid (75 Lohms max. restriction)
Shuttling Pressure:.....15 psid (minimum) 40 psid (maximum)
Leakage: (N to E or E to N at 5000 psid) .... 5 drops/hour (maximum) after 2 minute wait
Nominal System Pressure: ..... up to 5000 psi
Nominal Weight: ..... 12 grams
Valve performance on MIL-PRF-83282 at 85°F. 1 drop = 50µL

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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			
	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 below)
*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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