Innovation in Miniature

LEE

PRECISION MICROHYDRAULICS

PRODUCT DATA SHEET

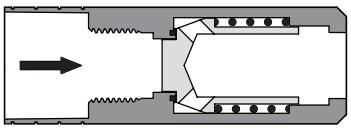
500 ZERO LEAK LEECHEK®

The Lee Company's new 500 Zero Leak Lee Chek Valve is the latest addition to our field proven, miniature zero leak check valve family. Weighing only 24 grams, the .500 inch diameter zero leak check valve is capable of flowing 3.5 GPM at 25 psid. The seat in this check valve incorporates an elastomeric seal to achieve zero leakage. The metal components are constructed entirely of stainless steel for durability and long life.

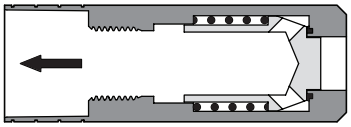
Available in forward and reverse flow configurations, this new check valve is ideal for high pressure applications with system pressures up to 5000 PSI. Each Zero Leak Lee Chek Valve is 100% tested and inspected to ensure reliable, consistent performance.

- Zero leakage from 5 to 5000 psid
- 25 Lohms max. full open restriction
- Weighs only 24 grams
- All metal components made from stainless steel
- 100% tested and inspected
- Endurance tested to 250,000 cycles

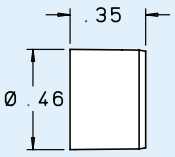
FORWARD FLOW DIRECTION



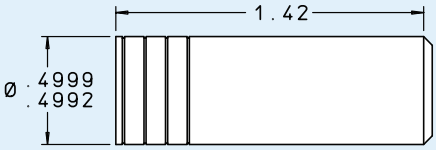
REVERSE FLOW DIRECTION



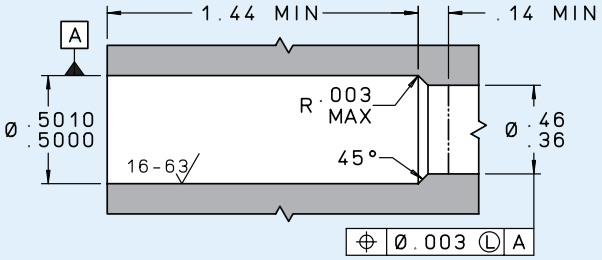
PIN



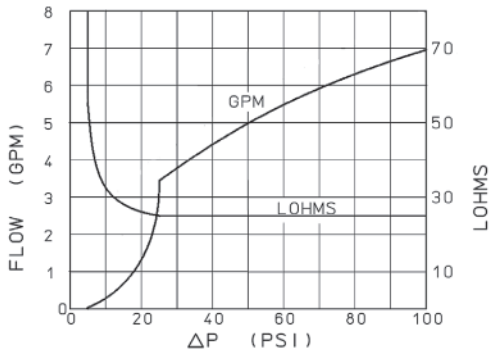
INSERT



INSTALLATION HOLE



Valve performance on MIL-PRF-83282 at 85°F.



MATERIALS		
PART	**MATERIAL**	**SPECIFICATION**
Body	15-5PH CRES	AMS 5659
Poppet	15-5PH CRES	AMS 5659
Seat	15-5PH CRES	AMS 5659
Spring	17-7PH CRES	AMS 5678
Pin	15-5PH CRES	AMS 5659
Elastomeric Seat Each valve contains one of the following elastomeric materials.	Fluorocarbon	AMS-R-83485 or AMS-R-83248
	EPDM	AMS-R-83285

LEE PART NUMBER	CRACKING PRESSURE (psid)	LOHM RATE (maximum)	SEAT MATERIAL	FLOW DIRECTION
CSFA5006008A	8 maximum	25	Fluorocarbon	Forward
CSRA5006008A	8 maximum	25	Fluorocarbon	Reverse
CSFA5006108A	8 maximum	25	EPDM	Forward
CSRA5006108A	8 maximum	25	EPDM	Reverse

Finish: All CRES Parts Passivated per AMS 2700. Pins are prewaxed. Do not degrease. Do not lubricate.

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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 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.

FREE LOHM SYSTEM SLIDE RULE

The Lee Company offers a specially designed Hydraulic and Pneumatic Flow Calculator to help in the transition to the Lohm System. This handy, free slide rule can be used to solve basic Lohm calculations.