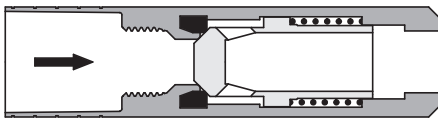


## EXTREME ENVIRONMENT ZERO LEAK CHEK™

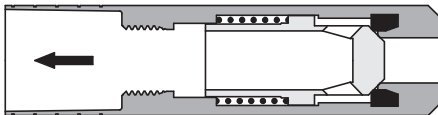
The Lee Company introduces a new capability for zero leak check valves specifically designed for extreme environment applications found in the oil tool and aerospace industries. These capabilities include working pressures up to 15,000 psi and operating temperatures up to 400°F. These Extreme Environment Zero Leak Check Valves are constructed of corrosion-resistant stainless steels with NACE compliant materials available. A compliant polymeric seat material is used to achieve zero leakage in the checked direction.

The valves are available in free flow forward and free flow reverse directions, with maximum cracking pressures of 2 and 8 psid. Sizes range from .187" to .500" in diameter, with free flow Lohm rates from 500 to 45 Lohms. Each Lee check valve is 100% tested and inspected to ensure reliable, consistent performance, eliminating the need for additional in-house testing.

### FREE FLOW FORWARD



### FREE FLOW REVERSE

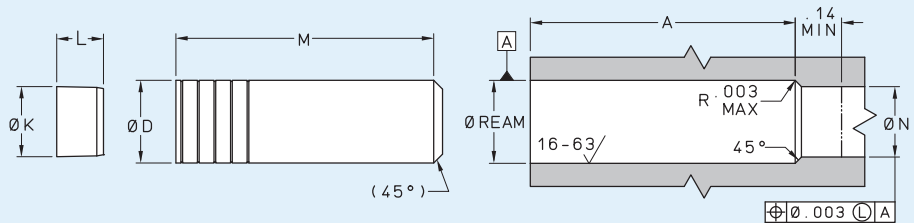


### COMMONLY USED SEAT MATERIALS\*

PTFE
FEP
PEEK

\* Other materials possible upon request.

- Zero leakage from 500 psi and greater
- Maximum working pressure of 15,000 psi
- Maximum operating temperature of 400°F
- 4 sizes available, as small as .187" diameter
- Free flow Lohm rates from 500 down to 45 Lohms
- Materials selected per application requirements



	.187" DIAMETER (inches)	.250" DIAMETER (inches)	.375" DIAMETER (inches)	.500" DIAMETER (inches)
Ø D	0.1867 - 0.1874	0.2492 - 0.2499	0.3742 - 0.3749	0.4992 - 0.4999
M	0.90	1.20	1.50	2.00
Ø K	0.16	0.21	0.34	0.46
L	0.25	0.32	0.39	0.49
A*	0.92 Min.	1.22 Min.	1.52 Min.	2.02 Min.
Ø N	0.141-0.159	0.205 - 0.221	0.280 - 0.320	0.378 - 0.445
Ø Ream	0.1875-0.1880	0.2500 - 0.2505	0.3750 - 0.3755	0.5000 - 0.5010

\* Approximate dimensions

SIZE	CRACKING PRESSURE (psid max.)	APPROXIMATE LOHM* RATE	MAXIMUM LEAKAGE CHECKED DIRECTION	MAX. WORKING PRESSURE (psid)
Ø .187"	2	500	0 bubbles/min at 500-15,000 psid	15,000**
	8			
Ø .250"	2	230		
	8			
Ø .375"	2	125		
	8			
Ø .500"	2	45		
	8			

\* The Lohm is a measure of flow resistance. Additional information can be found on the reverse side, or by visiting [www.theleeco.com](http://www.theleeco.com)

\*\* Potential for higher pressures

# LEE LOHM LAWS

## LOHM 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.

$$\text{Volumetric Flow Units } L = \frac{KV}{I} \sqrt{\frac{H}{S}} \quad \text{Gravimetric Flow Units } L = \frac{KV}{w} \sqrt{HS}$$

## 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](http://www.theleeco.com).

### 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 <sup>3</sup> /min	4 620	17 600	1 760

GRAVIMETRIC FLOW UNITS			
Flow Units	Pressure Units		
	psi	bar	kPa
PPH	10 000	38 100	3 810
gm/min	75 700	288 000	28 800