

## 6 mm ZERO LEAK 316L CHECK VALVE

The new 6 mm Zero Leak 316L Check Valve is a miniature cartridge-style check valve specifically designed for installation into metal fittings and manifolds. This valve uses a soft seat that ensures efficient and leak-free operation in both hydraulic and pneumatic systems. It is constructed of medical grade 316L stainless steel and features a ceramic ball for improved compatibility with hydrogen and other aggressive fluids.

Engineered with a robust design, this check valve is 100% performance tested to guarantee long-term operation in a range of applications. The valve's locking end uses the field-proven Lee Controlled Expansion Principle to provide secure retention and eliminate the need for threads, O-rings, or secondary retainers. To install, simply insert the valve into a drilled installation hole and drive the expansion pin flush to seal and lock the valve in place.

Standard offerings are available with either FKM or EPDM seals for a range of fluid and temperature compatibility. If the standard seal materials are not suitable for your application, other seal materials are available upon request. Please contact your local Lee Sales Engineer for more information.

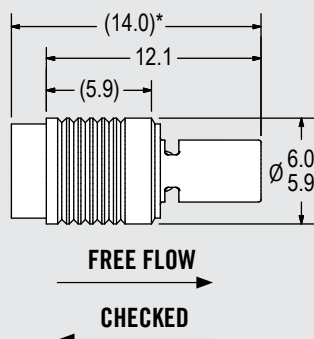
- Soft seat ensures efficient and leak-free operation in hydraulic and pneumatic systems
- 316L stainless steel and ceramic materials for improved compatibility with hydrogen and other aggressive fluids
- Simple installation provides secure retention and eliminates the potential for bypass leakage



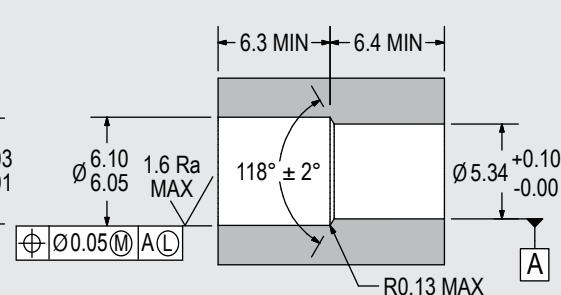
### ACTUAL SIZE



### FORWARD FLOW CHECK VALVE



### INSTALLATION HOLE



\*Overall length before installation.

All dimensions are in millimeters, except where noted.

SEAL MATERIAL	PART NUMBER	CRACKING PRESSURE
FKM	CZFM6041004S	4 ± 3 kPa (0.6 ± 0.4 psid)
	CZFM6041007S	7 ± 5 kPa (1 ± 0.7 psid)
	CZFM6041014S	14 ± 10 kPa (2 ± 1.4 psid)
	CZFM6041040S	40 ± 30 kPa (6 ± 4.4 psid)
	CZFM6041069S	69 ± 48 kPa (10 ± 7.0 psid)
EPDM	CZFM6042004S	4 ± 3 kPa (0.6 ± 0.4 psid)
	CZFM6042007S	7 ± 5 kPa (1 ± 0.7 psid)
	CZFM6042014S	14 ± 10 kPa (2 ± 1.4 psid)
	CZFM6042040S	40 ± 30 kPa (6 ± 4.4 psid)
	CZFM6042069S	69 ± 48 kPa (10 ± 7.0 psid)

PERFORMANCE	
Lohm Rate	250 Lohms*
Checked Direction Leakage	Zero drops/minute on hydraulic fluid; verified on air (0.05 SCCM maximum at 150 kPa)
Maximum Working Pressure in Checked Direction	40 MPa (5800 psid)
Maximum Working Pressure in Flow Direction	4 MPa (580 psid)
Materials	Body, cage, pin, and spring are 316L stainless steel. Ball is ceramic. Seal material is part number dependent. See table on left.
Approximate Weight	1.3 g

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



## 6 mm ZERO LEAK 316L CHECK VALVE

### INSTALLATION

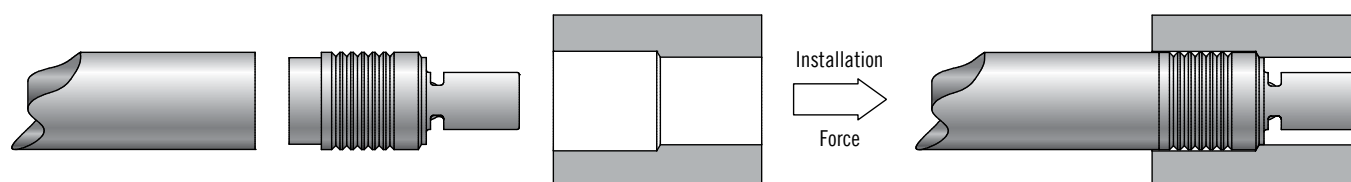
After placing the valve into a drilled installation hole, use the installation tool to drive the expansion pin to within 0.25 mm above flush of the check valve body. Installation force and tool travel should be monitored to verify proper installation.

The required installation force is a function of boss material, installation hole dimensions, and boss geometry. A boss constructed of thick or robust materials necessitates a greater installation force compared to one crafted from softer material or possessing thinner walls. It is important to establish the correct force to achieve the necessary pin flushness with your unique housing material, geometry, and installation press.

Typical installation forces for common boss materials are listed below.

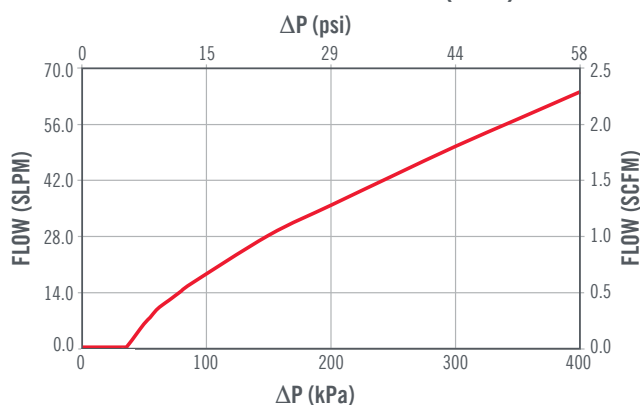
BOSS MATERIAL	HARDNESS	TYPICAL INSTALLATION FORCE
6061 Aluminum	40 HRA	5.8 kN (1300 lbf)
316L Stainless Steel	90 HRB	7 kN (1575 lbf)
303 Stainless Steel	23 HRC	7.2 kN (1620 lbf)
4140 Steel	43 HRC	9 kN (2000 lbf)
A2 Steel	57 HRC	9.2 kN (2050 lbf)

Please contact your local Lee Sales Engineer for installation support or review installation procedure "IP CZFM 6.0" for more information.

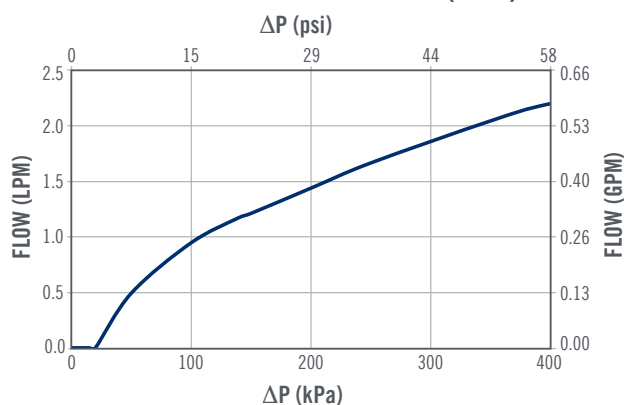


### FLOW PERFORMANCE

$\Delta P$  vs. FLOW ON AIR AT 27°C (80°F)



$\Delta P$  vs. FLOW ON WATER AT 27°C (80°F)



TYPICAL FLOW CURVE FOR 40 kPa VALVE

## LEE LOHM LAWS

### WORKING WITH LIQUIDS AND GASES

Engineers will be interested in our simple method of defining and measuring the resistance to fluid flow for hydraulic and pneumatic components. Just as the Ohm is used in electrical engineering, a liquid Ohm or "Lohm" can be used to good advantage on all hydraulic and pneumatic computations.

When using the Lohm, 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 our testing of each component to establish flow tolerances. The resistance to flow of any fluid component can be expressed in Lohms.

Due to the differences in fluid properties between gases and liquids, the equations for calculating the relationship between flow restriction, pressure differential, and flow rate are different.

For more information on Lohms, contact your local Lee Sales Engineer or visit [theleeco.com/Lohm](http://theleeco.com/Lohm).

