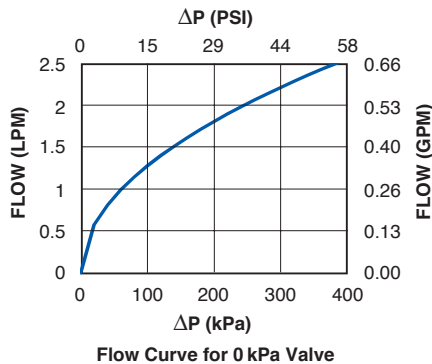# 558 Series 316L Check Valve With Ceramic Ball

The new 558 Series 316L Check Valve With Ceramic Ball is a miniature, threadless, cartridge-style check valve specifically designed for installation into manifolds. This new valve is constructed from medical grade 316L stainless steel and features a ceramic ball for significantly improved compatibility with aggressive fluids.

A high quality metal-to-metal seat provides low leakage and highly repeatable cracking pressures. A robust design and 100% performance testing ensures consistent long term performance. The valves are available in both forward flow and reverse flow versions to provide design flexibility.
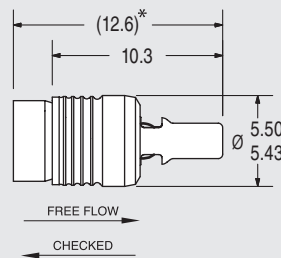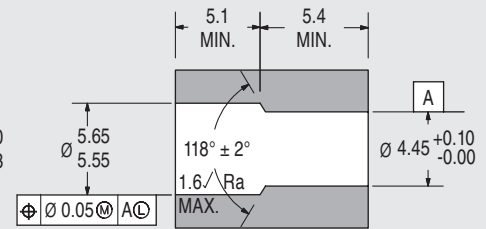
■ 316L Stainless Steel and Ceramic Configuration
  - Compatible with Aggressive Fluids
■ 100% Tested
  - Eliminates Rework
■ Forward and Reverse Flow Versions
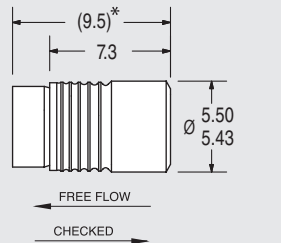 - Design Flexibility

ACTUAL SIZE

Forward   **Reverse**

(As Installed)   (As Installed)

ΔP vs. Flow on Water @80°F (27°C)

Flow Curve for 0 kPa Valve
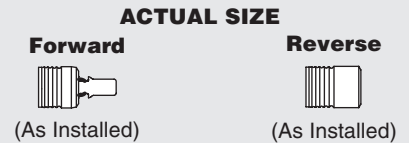
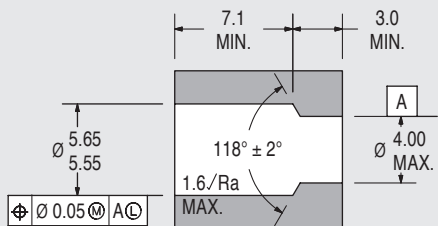### CHECK VALVE Forward Flow

INSTALLATION HOLE

CHECK VALVE Reverse Flow

INSTALLATION HOLE

*LOA before installation. All dimensions in millimeters, except where noted.

FLOW DIRECTION	PART NUMBER	CRACKING PRESSURE
REVERSE	CCRM2554800S	0 kPa (No Spring)
	CCRM2554807S	7 ± 5 kPa (1 ± 0.7 psid)
	CCRM2554814S	14 ± 5 kPa (2 ± 0.7 psid)
	CCRM2554840S	40 ± 15 kPa (6 ± 2.2 psid)
	PCRM2554810S	100 kPa ± 15 kPa (14.5 ± 2.2 psid)
	PCRM2554815S	150 kPa ± 22.5 kPa (21.8 ± 3.3 psid)
	PCRM2554820S	200 kPa ± 30 kPa (29 ± 4.4 psid)
FORWARD	CCFM2554800S	0 kPa (No Spring)
	CCFM2554807S	7 ± 5 kPa (1 ± 0.7 psid)
	CCFM2554814S	14 ± 5 kPa (2 ± 0.7 psid)
	CCFM2554840S	40 ± 15 kPa (6 ± 2.2 psid)
	PCFM2554810S	100 kPa ± 15 kPa (14.5 ± 2.2 psid)
	PCFM2554815S	150 kPa ± 22.5 kPa (21.8 ± 3.3 psid)
	PCFM2554820S	200 kPa ± 30 kPa (29 ± 4.4 psid)

PERFORMANCE

Lohm Rate: 250 Lohms*

Leakage: 10 SCCM (max.) @ 172 kPa (25 psid) on air
            1 Drop/min. (max.) on water

Maximum Working Pressure:
            28 MPa (4,060 psid) (Checked Direction)
            4 MPa (580 psid) (Flow Direction)

Materials: Body, Cage, Pin and Spring are 316L Stainless Steel.
            Ball is Ceramic.

* Lohm is a measure of flow resistance.
  See back page for more information.

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LEE

558 Series 316L Check Valve With Ceramic Ball

SIMPLE TO INSTALL

Insert the valve into a drilled installation hole. Drive the expander pin flush to within 0.25 mm (0.010") above flush of the check valve body. Use a maximum installation force of 625 KgF (1,380 lbs. force).
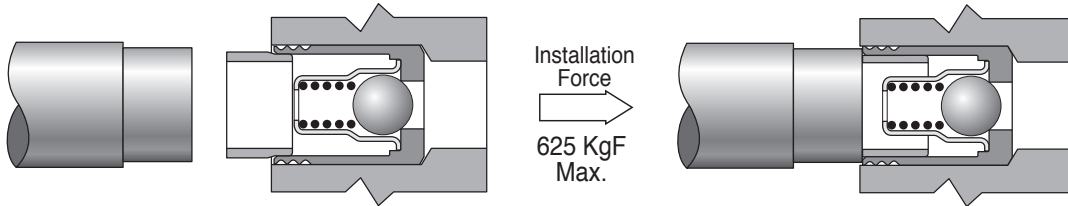
The installation tool can bottom on the insert body with no consequence. Lee Installation Tool part number CCRT0900120S is available.

Installation Force

625 KgF Max.

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 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)

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
in³/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

PDS 157 10/16

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