LEE IMH 5.5 mm INSERT ORIFICE (for gases*)

The Lee IMH 5.5 mm Insert Orifice for gases is an economical, reliable, highly accurate miniature restrictor. This orifice is 100% flow tested on nitrogen to ensure that every part is within ±5% of its nominal flow rate, providing more consistent system performance and reducing the need for system rework. Flow tolerances as tight as this are only possible if entrance and exit conditions of the orifice are closely controlled. This provides far more accuracy than an orifice specified by hole tolerance. An ordinary hole held to a very tight tolerance will not result in a tight flow tolerance.

Constructed entirely of stainless steel, the 5.5 mm Insert Orifice is available in a range of Lohm** rates and certain models are offered with an integral safety screen.

Installation is simple using Lee's field-proven controlled expansion principle which provides retention and creates a leak tight seal that prevents bypass leakage. To install, simply insert the orifice into a drilled hole and drive the expansion pin into the orifice body to seal and lock the orifice in place.

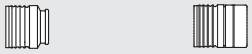
MORE ACCURATE
THAN ORIFICES SPECIFIED BY HOLE TOLERANCE.

** For liquid applications, bidirectional flow requirements, other Lohm rates, or tighter flow tolerances, contact your local Lee Sales Engineer for more information.*

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

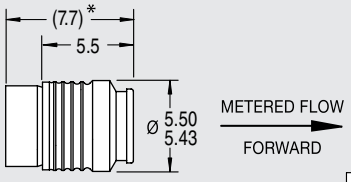
- 100% flow tested
- Consistent part-to-part performance
- All stainless steel construction
- Simple installation
- Screened models available

ACTUAL SIZE (As Installed)

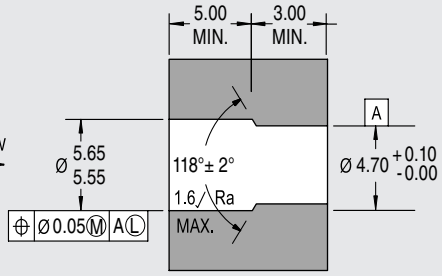


Forward and Unscreened Reverse — Screened Reverse

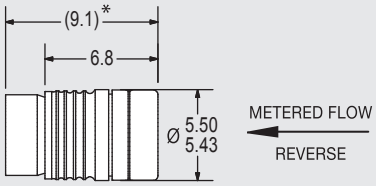
IMH ORIFICE SCREENED FORWARD FLOW



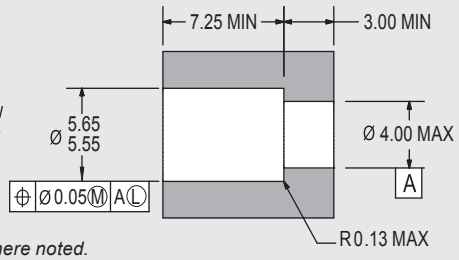
INSTALLATION HOLE SCREENED FORWARD FLOW



IMH ORIFICE SCREENED REVERSE FLOW



INSTALLATION HOLE SCREENED REVERSE FLOW



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

SCREENED ORIFICE PART NUMBER		LOHM RATE ± 5%	SCREEN MICRON RATING
FORWARD METERED FLOW DIRECTION	REVERSE METERED FLOW DIRECTION		
RIGF5553020S	RIGR5557020S	2000	125 micron
RIGF5553025S	RIGR5557025S	2500	125 micron
RIGF5553030S	RIGR5557030S	3000	125 micron
RIGF5553040S	RIGR5557040S	4000	125 micron
RIGF5553050S	RIGR5557050S	5000	125 micron
RIGF5553060S	RIGR5557060S	6000	75 micron
RIGF5553080S	RIGR5557080S	8000	75 micron
RIGF5553100S	RIGR5557100S	10,000	75 micron
RIGF5553120S	RIGR5557120S	12,000	75 micron
RIGF5553150S	RIGR5557150S	15,000	75 micron
RIGF5553200S	RIGR5557200S	20,000	40 micron
RIGF5553250S	RIGR5557250S	25,000	40 micron
RIGF5553300S	RIGR5557300S	30,000	40 micron
RIGF5553400S	RIGR5557400S	40,000	40 micron
RIGF5553450S	RIGR5557450S	45,000	40 micron

The Lee Company – IMH Group, 82 Pequot Park, Westbrook, CT 06498
Tel: 860-399-6281 • Technical Info.: 860-399-7037
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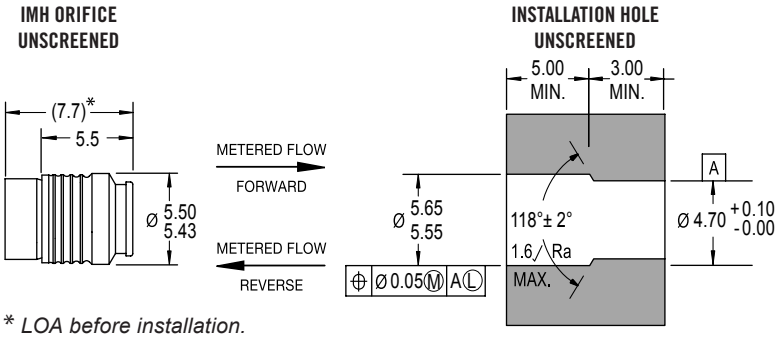
LEE IMH 5.5 mm INSERT ORIFICE (for gases)



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

UNSCREENED ORIFICE PART NUMBER		LOHM RATE ± 5%
FORWARD METERED FLOW DIRECTION	REVERSE METERED FLOW DIRECTION	
RIGF5551005S	RIGR5551005S	500
RIGF5551006S	RIGR5551006S	600
RIGF5551008S	RIGR5551008S	800
RIGF5551010S	RIGR5551010S	1000
RIGF5551012S	RIGR5551012S	1200
RIGF5551015S	RIGR5551015S	1500

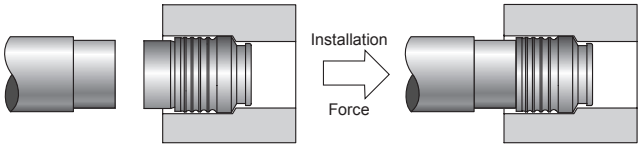
Lohm is a measure of flow resistance.
See below for more information.

SIMPLE TO INSTALL

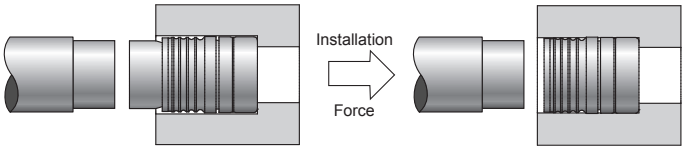
To install, simply insert the orifice into a drilled installation hole. Drive the expander pin flush to within 0.25 mm (0.010") above flush of the orifice body. Use a maximum installation force of 625 KgF (1380 lbs. force).

The installation tool can bottom on the insert body with no consequence. Lee Installation Tool Part Number CCRT0900120S is available.

FORWARD AND UNSCREENED REVERSE INSTALLATION



SCREENED REVERSE INSTALLATION



LOHM LAWS (Gases)

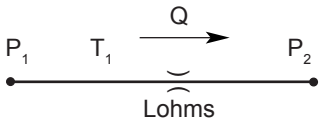
Every engineer will be interested in our simple system of defining the fluid resistance of Lee hydraulic components. Just as the OHM is used in the electrical industry, we find that we can use a liquid OHM or "Lohm" to good advantage on all hydraulic computations.

The Lohm Laws extend the definition of Lohms for gas flow at any pressure and temperature, and with any gas. The formulas work well for all gases because they are corrected for the specific gas, and for the flow region and incompressibility of low pressure gases.

The Lohm has been selected so that a 100 Lohm restriction will permit a flow of 250 standard liters per minute of nitrogen at a temperature of 59°F, and an upsteam pressure of 90 psia discharging to atmosphere.

$$L = \frac{K f_T P_1}{Q} \quad \text{(Sonic region) i.e. } P_1/P_2 \geq 1.9$$

$$L = \frac{2 K f_T \sqrt{\Delta P P_2}}{Q} \quad \text{(Subsonic region) i.e. } P_1/P_2 < 1.9$$



GAS FLOW – UNITS CONSTANT K

To eliminate the need to convert pressure and flow parameters into specific units such as "psia" and "std L/min.", the table below lists values of the Units Constant "K", which is used in the Gas Flow Lohm Formulas:

VOLUMETRIC FLOW UNITS							
Abs. Pres	psia			bar		kPa	mm.Hg
Flow	SLPM	SCFM	in^3/min	SLPM	SCFM	SLPM	mL/min
He	771	27.2	47,100	11,200	395	112	14,900
N_2	276	9.73	16,800	4000	141	40.0	5330
Air	271	9.56	16,500	3930	139	39.3	5230
O_2	257	9.08	15,700	3730	132	37.3	4970
CO_2	213	7.52	13,000	3090	109	30.9	4110

For more information on Lohms, contact your local Lee Sales Engineer or visit us at www.leeimh.com.

NOMENCLATURE

L = Lohms
K = Units constant – gas (see chart on left)
f_T = Temperature correction factor
P_1 = Upstream absolute pressure
P_2 = Downstream absolute pressure
Q = Gas flow rate
$\Delta P = P_1 - P_2$

1. Compute the P_1/P_2 pressure ratio.
2. Select the correct formula for the flow region.
3. Look up the value of "K" for the gas.
4. Determine the temperature correction factor, " f_T".
   f_T = 1.0 at room temperature (70°F)

$$f_T = \sqrt{\frac{530}{T\,(°F) + 460}}$$

5. Use the formula to solve for the unknown.

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