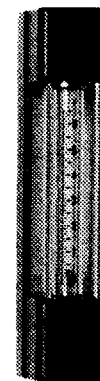


FL-77 & FL-78 Series

Rotameter

INSTRUCTION
SHEET

M3557/0100



INSTALLATION INSTRUCTIONS

1. Carefully inspect the meter for damage that may have occurred during shipping. Immediately report any damage to the shipping agent.
2. Make certain your pressure, temperature, and other requirements are compatible with the meter.*
3. Select a suitable location for installation to prevent excessive stress on the meter which may result from:
 - a. Misaligned pipe
 - b. The weight of related plumbing
 - c. "Water Hammer", which is most likely to occur when flow is suddenly stopped, as with quick closing and solenoid operated valves. If necessary, a surge chamber should be installed. This will also be useful in high pressure start-up situations.
 - d. Thermal expansion of liquid in a stagnated or valve isolated system. If necessary, install valving which will allow the meter to be drained when it is not in use.

NOTE: In closed thermal transfer or cooling systems, install the meter in the cool side of the line to minimize meter material expansion and contraction and possible related fluid leaks.

4. Handle the meter carefully during installation. Use an open end or adjustable wrench on meters with hexagonal fittings, and a leather, plastic or fabric strap wrench on meters with round fittings.
 - a. Do not use pliers or wrenches to hold the metering tube.
 - b. **DO NOT OVERTIGHTEN PLUMBING CONNECTIONS INTO FITTINGS.** Overtightening will cause the fitting to fracture
 - c. Use an appropriate amount of Teflon tape on external pipe threads before making connections.
 - d. Do not expose the meter to solvents or solvent fumes (eg., PVC cement).
5. If the meter has a metering valve, it is not recommended for use as a shut-off valve if the system's operating pressure is above 15 PSIG.
6. Install the meter vertically with the inlet port at the bottom.
7. It is recommended that meters used in pressure gas and chemical service (other than 14.7 PSIA) be sufficiently shielded to protect individuals and property from flying debris in the event of meter failure.

RECOMMENDED INSTALLATION PRACTICES

Water hammer and surges can be damaging to any flowmeter and must always be avoided.

Water hammer occurs when a liquid flow is suddenly stopped, as with quick closing and solenoid -operated valves. Surges occur when flow is suddenly begun, as when a pump is turned on at full power or a valve is quickly opened.

Liquid surges are particularly damaging to flowmeters; if the pipe is originally empty. To avoid damaging surges, fluid lines should remain full (if possible) and pumps should be brought up to power slowly and valves opened slowly. In addition, to avoid both water hammer and surges, a surge chamber should be installed.

SPECIFICATIONS

Metering Tube: Borosilicate glass **End Fitting:** PVC
Compression Seals: Viton® std.; Kalrez® opt.
Float: Glass **Float Stops:** Teflon **Valve Assembly:** PVC
Max. Temp./Pressure: 21°C (70°F) @130 psig, 38°C (100°F) @ 0 psig

*Pressure and temperature guidelines are based on a study of the engineering data for particular materials used in construction and on the design of individual models. This information is supplemented by independent laboratory test results. Meter failure would most often occur at a significantly higher pressure than the suggested maximum at 72°F, and at a higher temperature than the maximum suggested at zero (0) PSI. However, meters exposed to difficult environments such as those created by certain chemicals, excessive vibration or other stress inducing factors could fail at or below the suggested maximums.



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The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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