



Flowmeters

and Flowmeter Manifolds

Instructions for Use

ENGLISH



NOTE: The latest edition of this operating manual can be downloaded from our website at www.maxtec.com

This manual instructs a professional to install and operate the flowmeter. This is provided for your safety and to prevent damage to the flowmeter. If you do not understand this manual, **DO NOT USE** the flowmeter and contact your provider.

WARRANTY

Warranty does not cover breakage/abuse. Under normal operating conditions, Maxtec warrants the Acrylic Flowmeters to be free from defects of workmanship or materials for the following period:


- a) Flow Tube Housing.....Lifetime of the product
- b) Needle ValveFive (5) years from receipt
- c) Mounting Hardware..... Guaranteed to be free from manufacturing defects or issues related directly to the manufacturing process
- d) All Other Parts Not Listed.....Two (2) years from receipt

These warranties are from the date of receipt, provided that the product is properly operated and maintained in accordance with Maxtec's operating instructions. Based on Maxtec product evaluation, Maxtec's sole obligation under foregoing warranty is limited to making replacements, repairs, or issuing credit for equipment found to be defective. This warranty extends only to the buyer purchasing the equipment directly from Maxtec or through Maxtec's designated distributors and agents as new equipment. Routine maintenance items, such as o-rings, are excluded from warranty. Maxtec and any other subsidiaries shall not be liable to the purchaser or other persons for incidental or consequential damages or equipment that has been subject to abuse, misuse, mis-application, alteration, negligence or accident.

These warranties are exclusive and in lieu of all other warranties, expressed or implied, including warranty of merchantability and fitness for a particular purpose.

FOR PRODUCT WARRANTY RETURNS, PLEASE CONTACT MAXTEC CUSTOMER SERVICE FOR A RETURNED MATERIALS AUTHORIZATION (RMA).

WARNINGS

- ◆ Use flowmeters only for their "Intended Use" as described in this manual.
- ◆ This product should only be used under supervision from a healthcare professional
- ◆ If you do not understand this manual, **DO NOT USE** the flowmeter and contact your provider.
- ◆ ALWAYS confirm prescribed flow before administering to patient and monitor flow on a frequent basis.
- ◆ Not compatible with MRI systems 
- ◆ Read this user manual before installing or operating the flowmeter.
- ◆ Maxtec assumes no responsibility for any damage or injury caused by improper installation, assembly or use of this product.









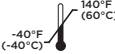







To Reduce the Risk of Fire or Explosion:

- ◆ ALWAYS follow ISO, ANSI, and CGA standards for Medical Gas Products and flowmeters and Oxygen Handling.
- DO NOT** use or store oils, greases, organic lubricants or any combustible materials on or near this Flowmeter.
- DO NOT** use with lubricants other than those recommended by the manufacturer.
- DO NOT** use near any type of flame or flammable/explosive substances, vapors or atmosphere.
- DO NOT** connect to source pressure greater than 100 psi.
- DO NOT** disassemble the flowmeter or remove connectors while under pressure.
- DO NOT** smoke in an area where oxygen is being administered.

CAUTION

- ◆ Use caution to avoid cross-threading fittings during installation
- ◆ Always use a backing wrench when installing or removing connectors.
- ◆ Flowmeters must be operated with the Flow Tube in a vertical, upright position.
- ◆ Only personnel instructed and trained in its use should operate this flowmeter.
- ◆ Ensure all connections are tight and leak free.
- ◆ Only use oxygen-safe leak detector.
- DO NOT** drop the flowmeter.
- DO NOT** autoclave.
- DO NOT** use substitute parts. If components are damaged or missing, contact your dealer immediately.
- DO NOT** gas sterilize with EtO (Ethylene Oxide).
- DO NOT** permit any cleaning solution to enter into the manifold or the flowmeter(s).
- DO NOT** clean with aromatic hydrocarbons.
- DO NOT** immerse flowmeter in any kind of liquid. This will void the warranty.
- DO NOT USE** if damaged. Inspect the flowmeter for visual damage before use.
- DO NOT** over-tighten knob when turning off. This will cause damage to the flowmeter.
- DO NOT** over-tighten any threaded connectors; body may crack and cause leaks.
- ◆ Inlet pressures other than those indicated on the flow tube or flowmeter body may affect the accuracy of the indicated flow.
- ◆ Gas Temperatures other than 70° F (21°C) may affect the accuracy of the indicated flow.
- ◆ Attaching accessories to the outlet (which may increase resistance to outlet flow) may change indicated flow but will not affect the accuracy of the flow.
- ◆ ONLY use appropriate gas specific indexed fittings to connect flowmeter to gas source. Use Oxygen connections for oxygen flowmeters; use air connections for air flowmeters.

SYMBOL GUIDE

	Federal law (USA) restricts this device to sale on or by the order of a physician		Follow instructions for use.
	Authorized Representative in the European Community		Do Not
	Manufacturer		Contains no Polyvinyl Chloride
	Date of Manufacture		Medical Device
	Storage Temperature Range		Use No Oil
	MR Unsafe		Warning
	Catalog Number		Lot Number
	Made in USA		Humidity

1.0 PRODUCT OVERVIEW

1.1 Description

The flowmeter is designed to accurately adjust and dispense a known flow rate of medical oxygen or air.

The Flowmeter Manifold with built-in IV Pole Mount is designed to receive an inlet gas and to deliver that gas to either one or two flowmeters mounted to the manifold. It has standard gas-specific fittings such as DISS or NIST in order to receive gas from a wall or cylinder source. The Manifold also incorporates a common pole clamp designed to permit a user to mount the Manifold directly to an IV Pole.

1.2 Intended Use

Flowmeters are intended for use by physicians, respiratory therapists and other authorized hospital personnel to administer selected doses of medical oxygen or air to a patient

The Flowmeter Manifold is intended for use where a flow of metered gas is required and to allow the gas to be delivered through one or two flowmeters that are connected to a standard IV Pole up to 1.5" outer diameter.

2.0 SPECIFICATIONS

2.1 General Specifications

Gas Inlet.....Regionally Standardized Gas Specific Fitting
 Max Pressure.....100 psi
 Manifold Application (when included)Fits poles up to 1.5" in diameter

2.2 Flow Range Accuracy

FLOWMETER RANGE	ACCURACY
0-200 cc/min	±10 cc/min for range 0-100 cc/min ±14 cc/min for range 101-200 cc/min
0-1 L/min	±0.05 L/min
0-3.5 L/min	±0.15 L/min
0-5 L/min	±0.20 L/min
All flowmeters with maximum flow greater than 5 L/min	±0.50 L/min for range 0-5 L/min ±10% of indicated flow for range >5 L/min

The above accuracy is guaranteed when the gas inlet pressure and gas type are the same as those indicated on the flowmeter body. Inlet pressures and gases other than those indicated may affect the accuracy of the indicated flow.

The flowmeter is calibrated at the inlet pressure specified on the flowmeter body, 70°F (21°C), and standard atmospheric pressure. Specifications are subject to change without prior notice.

2.3 Maximum Flush Flow

Flush Flow is the output of the flowmeter when the flow indicator is beyond the highest calibrated graduation. When the flowmeter valve is fully open the maximum flow (flush flow) is indicated in the table below

FLOWMETER RANGE	MAXIMUM FLOW (FLUSH FLOW)
0-200 cc/min	500 cc/min
0-1 L/min	5 L/min
0-3.5 L/min	40 L/min
0-5 L/min	60-80 L/min
0-8 L/min	40-60 L/min
0-15 L/min	60-80 L/min
0-30 L/min or 0-26 L/min	60-90 L/min for Thorpe Tube Style 101 L/min for Acrylic Block Style
0-70 L/min	70-90 L/min for Thorpe Tube Style 203 L/min for Acrylic Block Style
0-80 L/min	203 L/min

The above flush flows are based on 50 psi inlet pressure, 70°F (21°C), at standard atmospheric pressure. Specifications are subject to change without prior notice.

2.4 Transport/Storage Requirements

-40 °F (-40 °C) to 140 °F (60 °C)

NOTE: Storage/transport outside the specified range may cause damage to the flowmeter.

3.0 OPERATING INSTRUCTIONS

NOTE: Maxtec strongly recommends the use of kink proof cannula.

3.1 Flowmeter Manifold Instructions

1. Mount the device vertically and upright on a pole using the pole clamp and hand-screw.
2. Tighten the hand-screw to ensure the device is secure on the pole.
3. Attach an appropriate inlet gas source to the gas inlet on the manifold.
4. Adjust the flow using the flowmeter's flow control valve. Reference the instructions below for complete details associated with use of the flowmeter(s).

3.2 Flowmeter Instructions

1. Turn knob to the "OFF" position.
2. Connect the flowmeter vertically to the appropriate gas source. The appropriate gas and pressure are specified on the flowmeter body.
3. Verify that the float ball is at the very bottom of the flow tube. **NOTE:** If the float is not resting at the bottom of the flow tube, the product may be leaking; consult the "TROUBLESHOOTING" Section 4.0.
4. Adjust flow:
 - To increase - Turn knob counterclockwise
 - To decrease - Turn knob clockwise
5. Set flow by aligning center of float ball with indicator lines on the flow tube.
6. Adjusting flow beyond the last calibrated indicator line will result in an undetermined flow.
7. To obtain maximum flush flow, turn knob fully counterclockwise.

4.0 TROUBLESHOOTING

4.1 Troubleshooting Table

If the flowmeter fails to function, consult your provider or Maxtec.

PROBLEM	CAUSE	REMEDY
Will not shut off	Leak Defective valve	Replace seals and/or fittings Replace valve
Sticking float ball	Debris in flow tube	Clean flow tube & float ball
Unable to set desired flow	Blocked inlet	Replace filter
Knob will not turn	Valve seized	Replace valve

5.0 RECOMMENDED MAINTENANCE

5.1 Cleaning Instructions

Use caution when cleaning - do not permit any cleaning solution to enter into the manifold or flowmeter(s).

1. Depressurize and disconnect all connections before cleaning.
2. Clean exterior surfaces of the flowmeter and manifold with a cloth dampened with a mild detergent and water.
3. Wipe dry with a clean cloth.

CAUTION:  **DO NOT** Autoclave



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