



# ACRYLIC FLOW METERS

0-30, 0-70 & 0-120 LPM

ASSEMBLY INSTRUCTIONS &  
INSTRUCTIONS FOR USE

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R219P86 (0-120LPM)

R219P87 (0-70LPM)

R219P88 (0-30 LPM)

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## ⚙️ 1.0 PRODUCT OVERVIEW

### 1.1 Description

The flow meter is intended for use by physicians, respiratory therapists and other authorized hospital personnel to administer selected doses of medical gases to a patient.

### 1.2 Indications for use

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

### 1.3 Warnings

- Use flow meters only for their “Intended Use” as described in this manual.
- ALWAYS confirm prescribed flow before administering to patient and monitor flow on a frequent basis.
- Flow meters may contain magnetic, ferrous material that may affect the results of an MRI.
- Read this User Manual before installing or operating the flow meter.

#### **To Reduce the Risk of Fire or Explosion:**

- ALWAYS follow ANSI and CGA standards for Medical Gas Products and flow meters and Oxygen Handling.
- ⊘ **DO NOT** use or store oils, greases, organic lubricants or any combustible materials on or near this Flow meter.
- ⊘ **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** smoke in an area where oxygen is being administered.

### 1.4 Cautions

- Use caution to avoid cross-threading fittings during installation.
- Always use a backing wrench when installing or removing connectors.

- Flow meters must be operated with the Flow Tube in a vertical, upright position.
- Only personnel instructed and trained in its use should operate this flow meter.
- Ensure all connections are tight and leak free.
- Only use oxygen-safe leak detector.
- Only trained medical professionals should operate the flow meter.
- ⊘ **DO NOT** drop the flow meter.
- ⊘ **DO NOT** autoclave.
- ⊘ **DO NOT** gas sterilize with EtO (Ethylene Oxide).
- ⊘ **DO NOT** clean with aromatic hydrocarbons.
- ⊘ **DO NOT** immerse flow meter in any kind of liquid. This will void the warranty.
- ⊘ **DO NOT USE** if damaged. Inspect the flow meter for visual damage before use.
- ⊘ **DO NOT** over-tighten knob when turning off. This will cause damage to the flow meter.
- ⊘ **DO NOT** over-tighten any threaded connectors; body may crack and cause leaks.
- Pressures other than those indicated on the flow tube or flow meter 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 flow meter to gas source. Use Oxygen connections for oxygen flow meters; use air connections for air flow meters.

## ∴ 2.0 SPECIFICATIONS

### 2.1 Flow Range Accuracy Chart

FLOW RANGE	GRADUATIONS	ACCURACY
0-30 LPM	1 (0-30) LPM	2-4: $\pm .50$ l/min, 5-30: $\pm 10\%$ of indicated value
0-70 LPM	5 (0-70) LPM	$\pm 10\%$ of indicated value
0-120 LPM	10 (0-120) LPM	$\pm 10\%$ of indicated value

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[www.maxtec.com](http://www.maxtec.com)

Flush Flow is the output of the flow meter when the flow indicator is beyond the highest calibrated graduation. The Flush Flow range is as indicated on the flow meter labeling.

### 2.2 Transport/Storage Requirements

-40 °F (-40 °C) to 140 °F (60 °C)

The gas and inlet pressures are indicated on the flow tube or flow meter body.

**NOTE:** Storage/transport outside the specified range may cause damage to the flow meter.

The above flow meter models are calibrated at specified inlet pressure, 70°F (21°C), standard atmospheric pressure. Specifications are subject to change without prior notice.

## ∴ 3.0 OPERATING INSTRUCTIONS

### 3.1 General Operation

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

1. Turn knob to the “OFF” position.
2. Connect the flow meter vertically to the appropriate gas source. The appropriate gas and pressure are specified on the flow meter 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 is 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.

**NOTE:** Flush flow is any flow above the last calibrated line on the flow tube with an unrestricted flow, as indicated on flow meter labeling.

## ✳ 4.0 TROUBLESHOOTING

### 4.1 Troubleshooting Table

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

PROBLEM	CAUSE	REMEDY
Will not shut off	<ul style="list-style-type: none"><li>Leak</li><li>Defective valve</li></ul>	<ul style="list-style-type: none"><li>Replace seals and/or fittings</li><li>Replace valve</li></ul>
Sticking float ball	<ul style="list-style-type: none"><li>Debris in flow tube</li></ul>	<ul style="list-style-type: none"><li>Clean flow tube &amp; float ball</li></ul>
Unable to set desired flow	<ul style="list-style-type: none"><li>Blocked inlet</li></ul>	<ul style="list-style-type: none"><li>Replace filter</li></ul>
Knob will not turn	<ul style="list-style-type: none"><li>Valve seized</li></ul>	<ul style="list-style-type: none"><li>Replace valve</li></ul>

## ✳ 5.0 RECOMMENDED MAINTENANCE

### 5.1 Cleaning Instructions

1. Disconnect all connections before cleaning.
2. Clean exterior surfaces of the flow meter with a cloth dampened with a mild detergent and water.
3. Wipe dry with a clean cloth.

**Caution: Do Not Autoclave**

## ⚡ 6.0 WARRANTY

Under normal operating conditions, Maxtec warrants the Acrylic Flow Meters to be free from defects of workmanship or materials for the following period:

- a) Acrylic Housing ..... Lifetime of the product
- b) Needle Valve ..... Five (5) years from receipt
- c) All other parts not listed ..... Two (2) years from receipt

Warranty does not cover breakage/abuse.

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).**

## 7.0 SYMBOL GUIDE

Federal law (USA)  
restricts this device to  
sale on or by the order  
of a physician

**Rx ONLY**

Not Manufactured with  
Natural Rubber Latex



Warning



Storage  
Temperature



Consult instructions  
for use



Non-sterile



Manufacturer



Authorized  
Representative



Made in USA



Contains no Polyvinyl  
Chloride



Do Not



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