

OPERATING AND MAINTENANCE MANUAL

- Tube Style Integrated Flowmeter -



Flowrate:		
200 CCM:		2C
1 LPM:		01
3.5 LPM:		03
8 LPM:		08
15 LPM:		15

Please note: Medical Air is only available in 0-15 LPM

Color Code:	
USA:	U
ISO:	I

Gas:	
Oxygen:	O
Med Air:	A

FI - T XX Y Z - WN - S

Line Fitting:	
DISS Male with demand check valve:	D
Ohmeda Coupler:	O
Chemetron Coupler:	C

Outlet Compatibility:	
Diamond 1*:	A
Diamond 2 & 3:	
Beacon Madaes Diamond Care ⁺ :	B
Ohio Medical™:	
Amico:	
Beacon Series B:	
Gentec:	
Oxequip/Medstar Series #7 or 5/8-24*:	E
Puritan Bennett Series 73*:	
Puritan Bennett Series "A"*:	
Puritan Bennett Litharge*:	
NCG/Chemetron Series 500, 560*:	
Oxequip/Medstar Smooth Bore or 5/8-27*:	F
NCG/Chemetron Series 148, 400, 460*:	G
Tri-Tech/Ohmeda:	T

* Requires a Retrofit Kit
⁺ For wall mount version only

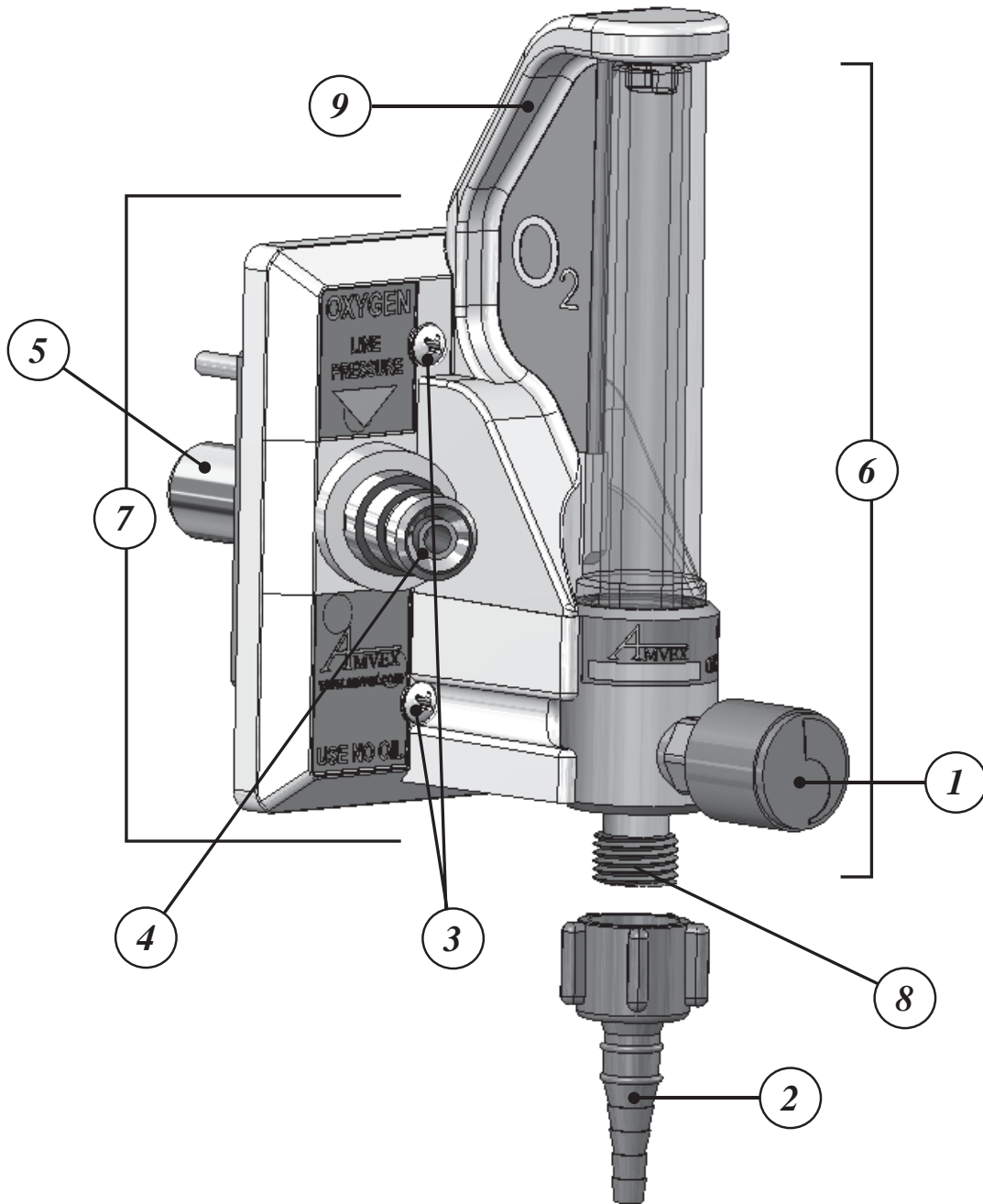
CAUTION: Federal (USA & Canadian) law restricts this device to sell by or on the order of a physician.



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Labeled Assembly



- 1. Flowmeter Control Knob**
- 2. Tubing Nipple**
- 3. Fastening Screws**
- 4. Outlet Port**
- 5. Brass Barrel**
- 6. Flowmeter**
- 7. Main Housing**
- 8. Flowmeter Port**
- 9. Shroud**

IMPORTANT: SAFETY INSTRUCTIONS

This manual provides you with important information about the Tube Style Integrated Flowmeter and should be read carefully to ensure the safe and proper use of this product.

Read and understand all the safety and operating instructions contained in this booklet before using this product.

If you do not understand these instructions, or have any questions, contact your supervisor, dealer or the manufacturer before attempting to use the apparatus.

⚠WARNING: Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.

ATTENTION: Indicates a potentially hazardous situation, which if not avoided, could result in minor or moderate injury.

CAUTION: Indicates a potentially hazardous situation, which if not avoided, could result in property damage.

Receiving Inspection

Remove product from package and inspect for damage. Verify that the model received is in working order. If product is damaged or incorrect, do not use. Contact your dealer, equipment provider or manufacturer.

ATTENTION: It is very important to allow product to remain in original packaging for 24 hours to acclimatize to room temperature before use.

ATTENTION: Store the product in a sealed package to avoid environmental damage. The operating and storage temperature for the Tube Style Integrated Flowmeter should reflect typical environmental conditions of a medical facility environment.

User Responsibility

⚠WARNING: Service of this device should only be performed by properly trained individuals.

This product performs as explained in this manual. This holds true as long as the assembly, use, repair and maintenance are properly followed according to our instructions. Periodic review of this device is recommended. If any damage or defects are present, the product should not be used. This includes parts that may have been altered, contaminated, worn or missing. If any of the above are noted, immediate repair/replacement is required. If this device is subject to improper maintenance, repair, use and / or abuse leading to malfunction of the device, replacement is the sole responsibility of the user.

⚠WARNING: Operation of this device is not to be done if flammable anesthetics are present due to the possibility of explosion caused by static charge.

TO MINIMIZE THE RISK OF EXPLOSION OR FIRE:

- Only use lubricants recommended by Amvex Corporation.
- Never use grease, oil, organic lubricants or any flammable materials on or near the Integrated Flowmeter.
- Never smoke in an area where oxygen is being used.
- Never use any type of flame or flammable or explosive material near the Integrated Flowmeter.

⚠WARNING: Never change the pin indexing, labeling, or any other gas specific component of the Integrated Flowmeter.

⚠WARNING: The accuracy may be affected if the temperature of the gas is different than 70°F (21°C) and the supply pressure is different than that indicated on the flowmeter.

ATTENTION: Do not disassemble the Integrated Flowmeter while the device is under pressure.

ATTENTION: Keep the Integrated Flowmeter in a clean area when not being used.

ATTENTION: Ensure that all connections are tightened and free of leaks prior to use.
Use only an oxygen-safe leak detector when testing for leaks.

Intended Use

The Integrated Flowmeter has two ports, the Outlet port and the Flowmeter port. The Outlet port is intended to be used as a standard wall Outlet, delivering a high flow of gas to secondary equipment.

The Flowmeter port is intended to deliver a fixed flow of gas to patient or equipment. The flow of gas is selectable via the flow control knob.

⚠WARNING: DO NOT change, alter or modify intended use of the product.

Installation Instructions

1. Remove Integrated Flowmeter from packaging.
2. Remove all plugs from port fittings and brass barrel.
3. Make sure the zone valve for the outlet receptacle is closed and line depressurized.
4. Insert brass barrel of the Integrated Flowmeter into the rough-in.
5. Secure the Integrated Flowmeter into place by screwing in both fastening screws located on the main housing.

Flowmeter Operating Instructions

1. Inspect the Integrated Flowmeter for damage; if any is found do not use the unit.
2. See page 2 for flowmeter location.
3. Turn the Flow Control Knob counter clockwise to increase flow or clockwise to decrease flow, Flow rates are indicated in LPM (liters per minute) or CCM (cubic centimeters per minute).
4. To set the flow, align the center of the float ball to the indicator line on the flow tube.

⚠WARNING: The accuracy may be affected if the temperature of the gas is different than 70° F (21° C) and the supply pressure is different than that indicated on the Flow Tube.

4. The Flowmeter is in the “Off” position when the Flow Control Knob is turned fully clockwise (until it will not turn anymore).

CAUTION: Over tightening the knob when turning the Flowmeter off will cause damage.

ATTENTION: The Flowmeter must be used with the Flow Tube in an upright position.

NOTE: Ensure that the Float Ball is at the very bottom of the Flow Tube when turned off.

NOTE: When the unit is turned off, if the float ball is not at the bottom of the tube, the flowmeter may be leaking. Please contact your dealer or Amvex Corporation.

5. The Flowmeter Port can be fitted with accessories with a mating DISS connection such as a tubing nipple or humidifier.

NOTE: The accuracy of the flow will not be affected by the attachment of accessories, however, the indicated flow may change (If this occurs, readjust the flowrate to the prescribed setting.)

NOTE: The flow rate may be affected by a change in downstream resistance of the Flowmeter Port.

⚠WARNING: To avoid injury always confirm flow requirement for patient prior to dispensing. Check flow frequently while being administered to patient.

6. Turn knob completely counter clockwise to achieve Max. Flood/Flush flowrate.

7. When the Flowmeter is not in use turn the flow control knob fully clockwise (until it will not turn anymore).

Flowmeter Port Specifications

Gas	Scale	Increments	Accuracy Averages	Flood/ Flush	Transport / Storage Requirements
O ₂	0 -200 CCM	25 CCM (starts at 25 CCM)	+/- 20 CCM	Max. 500 CCM	-40°F to 140°F (-40°C to 60°C)
O ₂	0 - 1 LPM	0.1 LPM (starts at 0.1 LPM)	+/- 0.1 LPM	Max. 2.5 LPM	-40°F to 140°F (-40°C to 60°C)
O ₂	0 -3.5 LPM	0.125 LPM from 0.125 -1 LPM	+/- 0.125 LPM or +/- 10% of reading (whichever is greater)	Max. 45 LPM	-40°F to 140°F (-40°C to 60°C)
		0.25 LPM from 1 - 3.5 LPM			
O ₂	0 - 8 LPM	0.5 LPM (starts at 0.5 LPM)	+/- 0.5 LPM or +/- 10% of reading (whichever is greater)	Min. 50 LPM	-40°F to 140°F (-40°C to 60°C)
O ₂ /Air	0 -15 LPM	0.5 LPM from 1 - 5 LPM	+/- 0.5 LPM or +/- 10% of reading (whichever is greater)	Min. 50 LPM	-40°F to 140°F (-40°C to 60°C)
		1 LPM from 5 - 15 LPM			

Cleaning Instructions

Wipe outside of product with a clean dampened cloth with a mild cleaning solution. DO NOT gas sterilize with ETO. DO NOT clean with pungent hydrocarbons, these may cause damage to the materials.

CAUTION: DO NOT submerge Integrated Flowmeter in any form of liquid. This will cause damage and void product warranty.

Troubleshooting

Contact your dealer or the technical support department at Amvex Corporation for assistance if the Integrated Flowmeter malfunctions.

Maintenance Prevention

Inspect the product before and after use for any damage and ease of operation.

Flowmeter Replacement Instructions

1. Remove fastening screws to remove the Integrated Flowmeter from the rough-in
2. Using a Phillips Screwdriver remove Shroud Screw and the Flowmeter Screws (see Figure 2) (see Figure 1 for Screw locations)
3. Pull the Shroud and Flowmeter to remove it from the Main Body (see Figure 3)
4. To install the replacement Flowmeter, position the Flowmeter into the Shroud (see Figure 4)
5. Slide the Shroud and Flowmeter unit onto the Main Body (see figure 5)
6. Using a Phillips Screwdriver, reinstall the Shroud and Flowmeter Screws (see figure 6)
7. Reinstall the Integrated Flowmeter Assembly into the rough-in.
8. Tighten fastening screws.

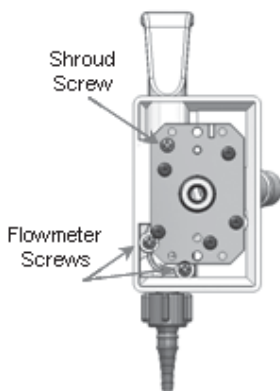


Figure 1

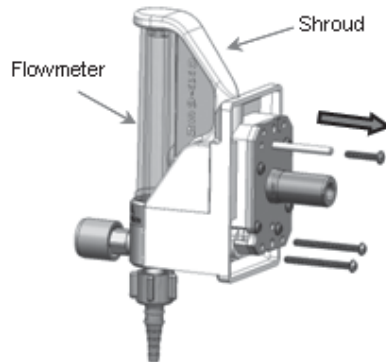


Figure 2

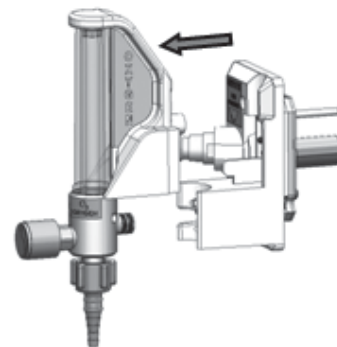


Figure 3



Figure 4

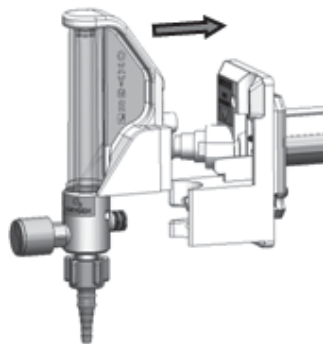


Figure 5

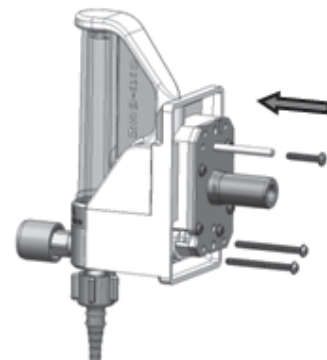


Figure 6

Replacement Kits

Replacement Flowmeters		
	USA	ISO
0-15 LPM OXY	FM-15UO-FT	FM-15IO-FT
0-8 LPM OXY	FM-08UO-FT	FM-08IO-FT
0-3.5 LPM OXY	FM-03UO-FT	FM-03IO-FT
0-1 LPM OXY	FM-01UO-FT	FM-01IO-FT
0-200 CCM OXY	FM-200UO-FT	FM-200IO-FT
0-15 LPM MedAir	FM-15UA-FT	FM-15IA-FT

Tubing Nipple – Green	FM-SWIVEL-G
Tubing Nipple – Yellow	FM-SWIVEL-Y
Tubing Nipple – White	FM-SWIVEL-W
Tubing Nipple – Black	FM-SWIVEL-B

WARRANTY

Amvex warrants its Integrated Flowmeter to be free from defects in material and workmanship for a period of (5) five years from the date of shipment with the exception of the models which include a 0-1 LPM or 0-200 CCM flowmeter. Amvex will warrant the main housing of the 0-1 LPM and 0-200 CCM models to be free from defects in materials and workmanship for a period of (5) five years and the flowmeter for (1) one year. Within the first (12) twelve months from the date of shipment Amvex will repair or replace any part which is proven to be defective at Amvex cost. After the first twelve months, where warranty coverage exceeds (1) one year, Amvex will send the parts to the customer free of charge, but the shipping and installation (by a qualified individual) will be borne by the customer. This warranty is valid only when the product has been properly installed according to Amvex specifications, used in a normal manner and serviced according to factory recommendations. It does not cover failures due to damage which occurs in shipments or failures which resulted from accidents, misuse, abuse, neglect, mishandling, alteration, misapplication or damage that may be attributable to acts of God.

AMVEX CORPORATION DOES NOT HONOR VERBAL STATEMENTS CONCERNING THE WARRANTY.

The distributor and/or dealer is not sanctioned to create verbal warranties about the product described in this agreement. Any statements will not be honored or be made part of the agreement of sale. This document is the final, complete and exclusive terms of the agreement.

THIS WARRANTY IS INCLUSIVE AND REPLACES ALL OTHER WARRANTIES.

Amvex Corporation shall not, under any circumstances, be liable for incidental or consequential damages including, but not limited to, profit loss, loss of sales or injuries to person(s) or property. Correction of non-compliances as noted above will result in completion of all liabilities of Amvex Corporation whether based on agreement, neglect or otherwise. Amvex Corporation reserves the right to stop manufacturing any product or change materials, designs or specifications without notice.

All claims for warranty must first be approved by Amvex's Repair Department: (support@amvex.com or 905-764-7736 Toll Free: 1-866-462-6839). A valid Return Goods Authorization (RGA) number must be obtained from Amvex prior to commencement of any warranty claim.

