

Dual Flow Meter

DFM-3002

Instructions for Use



DESCRIPTION

The Dual Flow Meter is an affordable, simple to use device that integrates with the Modular Incubator Chamber (MIC-101) system allowing investigators to precisely gauge when they've achieved a full exchange of gases within their chamber, making experiments more accurate and reliable. In addition to controlling the gas flow rate, the Dual Flow Meter is ideal for mixing custom O₂ and CO₂ concentrations for hypoxic culture conditions or where special pre-mixed gases are expensive or unavailable.

OPERATION

1. Open both the inlet and outlet ports on the Modular Incubator Chamber by releasing the white clamps on the Tygon tubing.
2. Attach air filters to the flow meter inlet and outlet tubing.
3. Open the regulator of the gas tank to allow minimum gas flow.
4. Attach the flow meter inlet tubes (bottom tubes) to gas tanks.
5. Adjust both the control valve on the flow meter and the regulator on the gas tank (**2-4 psi**) to allow for a flow rate of **25-50 liters/min (LPM)**. (**Maximum flow rate is 50 LPM.**) (When Hot Filters are attached, use 7 LPM flow rate.) Rate of flow is read at the point of maximum horizontal width for spherical floats or at the top of the largest diameter for non-spherical floats. Control valves are turned clockwise to reduce flow, counter clockwise to increase flow. A nylon insert is provided in the threaded section of the valve stem to give a firm touch to the valve and to prevent change of setting due to vibration.
6. Connect the gas outlet tube (top tube with clear plastic connector at end) of the flow meter to the Modular Incubator Chamber inlet port.

Note: The pressure release valve in line with the flow meter will open if functional and safe flow rate is exceeded. The pressure release valve will automatically close when pressure is safe. **CAUTION: Excessive pressure and or flow rate will circumvent safety features of system and could result in damage to the system and personal injury.**

7. Flush for 2-4 minutes. It is recommended to flush 75-100 liters of gas through the MIC-101 to obtain a 100% exchange of gases.
8. Disconnect the incubator from the flow meter and shut off the regulator at the gas tank.
9. Finish sealing the incubator by closing white plastic clamps of gas inlet and outlet ports on the Incubator (4-5 clicks). ALWAYS CLOSE THE INLET CLAMP FIRST, then the outlet clamp.

CAUTION! Do not completely unscrew valve stem unless flow meter is unpressurized. Removal while in service will allow gas to flow out front of valve body and could result in serious personal injury.

MAINTENANCE

The only maintenance normally required is occasional cleaning to assure reliable operation and good float visibility.

DISASSEMBLY

The flow meter can be disassembled for cleaning by simply disconnecting the piping, dismounting the unit from the panel and removing the top plug-ball stop. Take out the ball or float by inverting the body and allowing the float to fall into your hand. (Note: It is best to cover the discharge port to avoid losing the float through that opening).

CLEANING

The flow tube and flow meter body can best be cleaned with a little pure soap and water. Use of a bottle brush or other soft brush will aid the cleaning. Avoid benzene, acetone, carbon tetrachloride, alkaline detergents, caustic soda, liquid soaps (which may contain chlorinated solvents), and avoid prolonged immersion.

RE-ASSEMBLY

Reinstall the float, remount, connect and place the unit back in service. A little stop cock grease or petroleum jelly on the “O” rings will help maintain a good seal as well as facilitate assembly.

GAS TANK VOLUME CONVERSION

80 cu. ft. gas tank = 2200 liters
200 cu. ft gas tank = 5700 liters

RELATED PRODUCTS

Air Filters

HFS-2021, Qty: 6/pkg



Tygon Tubing

TUB-516, Qty: 3 meters



Modular Incubator Chamber

MIC-101, Qty: 1



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