BILLUPS-ROTHENBERG, INC.

SINGLE FLOW METER INSTRUCTIONS

1. Attach an air filter (white) to inlet flow meter tubing (Bottom Tubing of Flow Meter).
2. Open regulator of gas tank to allow minimum gas flow
3. Attach the flow meter inlet tube (bottom tube to gas tank and adjust both the flow meter and regulator on the gas tank to allow (When Hot Filters are attached 7 liters per minute (LPM) of flow rate). For all other applications a flow rate of **25-50 liters/min (LPM) for 2-4 minutes** duration is recommended or a total gas volume of 100 liters. 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.
4. Connect gas outlet tube (top tube) of the flow meter to the Modular Incubator Chamber. Flush the system with 100 liters of gas. Pressure release valve (red) 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: However, excessive pressure and or flow rate will circumvent safety features of system and could result in damage to the system and personal injury.**
5. Disconnect the Incubator from the flow meter
6. Seal the Incubator by closing plastic clamps (white) of gas inlet and outlet ports on the Incubator. 4-5 clicks of plastic clamp are all that is necessary to seal tubing.

CAUTION: Do not completely unscrew valve stem unless flow meter is un-pressurized. 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.

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DUAL FLOW METER INSTRUCTIONS

7. Attach air filters (white) to inlet and outlet flow meter tubing (Tygon Tubing).
8. Open regulator of gas tank to allow minimum gas flow.
9. Attach the flow meter inlet tubes (bottom tubes to gas tanks and adjust both the flow meter and regulator on the gas tank to allow **25-50 liters per minute (LPM)** (When Hot Filters are attached **7 LPM** of flow rate is recommended). Flush MIC-101 for a **2-4 minutes** duration or 100 litters of gas (Adjust accordingly when flow rate is reduced, e.g. Hot Filters are attached). 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.
10. Connect gas outlet tube (top tube) of the flow meter to the Modular Incubator Chamber. Flush the system 2-4 minutes. 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: However, excessive pressure and/or flow rate will circumvent safety features of system and could result in damage to the system and personal injury.**
11. Disconnect the Incubator from the Flow Meter.
12. Seal the Incubator by closing plastic clamps (white) of gas inlet and outlet ports on the Incubator.

CAUTION: Do not completely unscrew valve stem unless flow meter is un-pressurized. 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.