



De-Airing Tank

Introduction:

The Humboldt HM-4187A De-Airing Tank is designed to remove dissolved gasses from ordinary tap water. The De-Airing tank requires a source for vacuum, tap water, and a 110 VAC electrical supply. The apparatus consists of a closed cylinder with a motor driven impeller. The rotation of the impeller causes the gasses to separate from the water while under a constant vacuum. The gasses are evacuated from the tank at the top. The HM-4187A can be used in conjunction with any of the distribution panels, as well as the Flex panels.

Installation:

Using 1/4 inch O/D tubing, attach a vacuum line to the connector at the top of the tank by pushing the line into the connector until it is fully seated. Using the same size tubing, connect a line from the "Tap Water Out" connector at the back of the distribution panel to one of the connectors at the back of the tank base. Connect another line from the "De-Aired Water In" line at the back of the distribution panel to the other tubing connector at the back of the tank base.

The HM-4187A De-Airing Tank requires an electrical connection to operate the motorized impeller. The tank is supplied with an AC to DC transformer which plugs into a standard 110 VAC outlet. The transformer also has a plug which connects to the jack at the back of the tank base under the power switch.

Operation:

After all of the connections are made, fill the tank to approximately $\frac{3}{4}$ full with tap water. Turn on the impeller using the switch at the back of the tank base. Turn on the vacuum by rotating the knob on the front of the distribution panel or Flex panel. On the distribution panel or the Flex panel, there are two valves for use with the de-airing tank. One valve controls the filling and draining of tap water into and out of the tank and the other controls the vacuum or pressure to the tank. The draining and pressurizing operation is for the purpose of cleaning the tank and not for test purposes. During a test, the de-aerated water from the tank would be controlled by another valve on the distribution panel where the water connection to the base of the triaxial cell is located. Do not fill the tank with tap water while de-aerated water is being used as this would allow tap water to mix with the de-aerated water in the sample. Also, do not fill the tank while using the vacuum as accidental overfilling of the tank would allow water to be drawn into the vacuum lines and possibly into the vacuum pump.

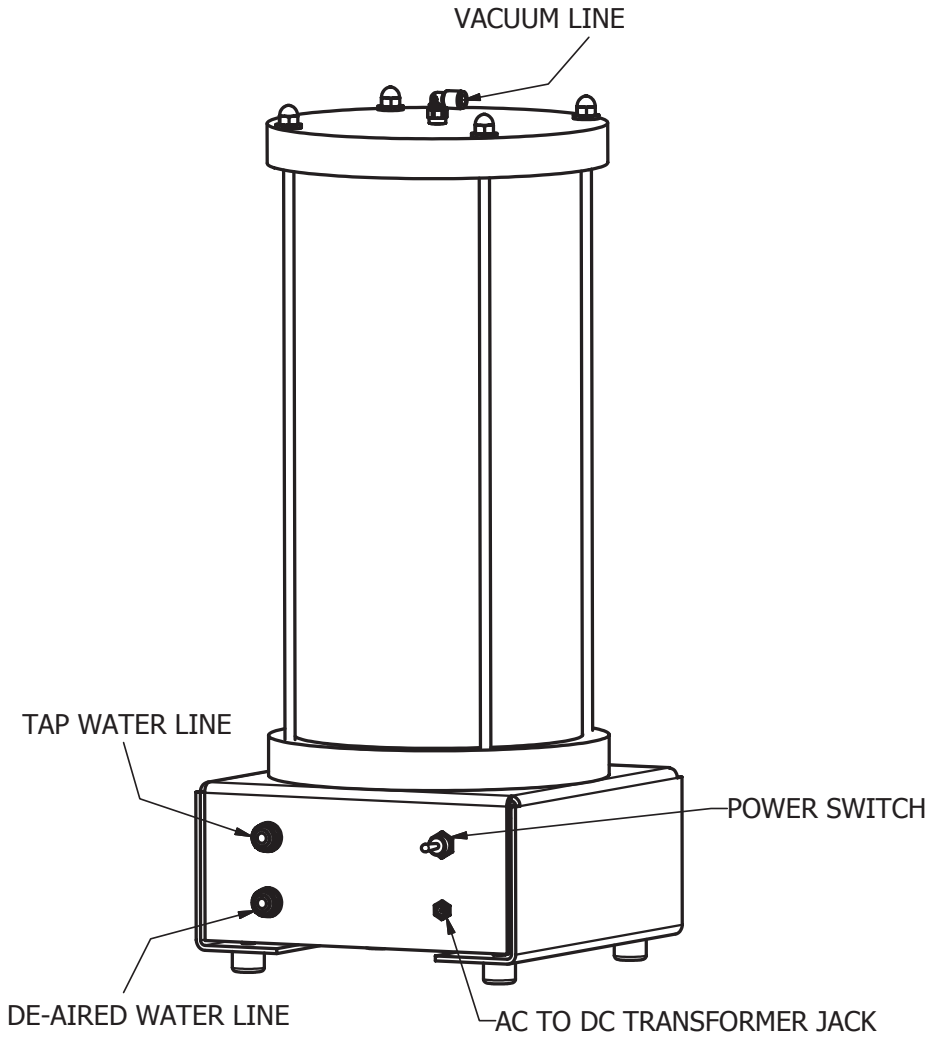


FIGURE 1
HM-4187A AIR, WATER, AND ELECTRIC CONNECTIONS

TURN KNOB LEFT
TO FILL DE-AIRING
TANK WITH TAP WATER
OR
TURN KNOB RIGHT TO
DRAIN DE-AIRING TANK

TURN KNOB LEFT TO
APPLY VACUUM TO
DE-AIRING TANK
OR
TURN KNOB RIGHT TO
APPLY PRESSURE TO
ASSIST DRAINING
OF DE-AIRING TANK

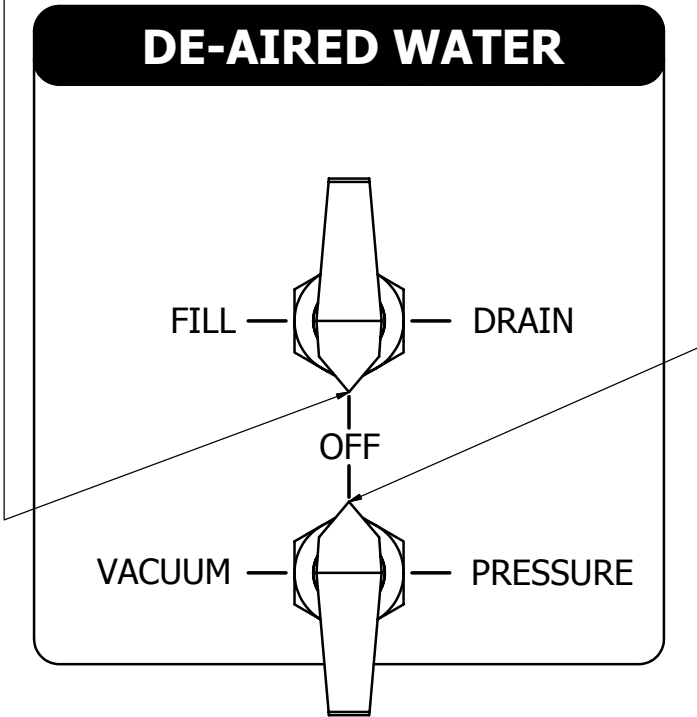
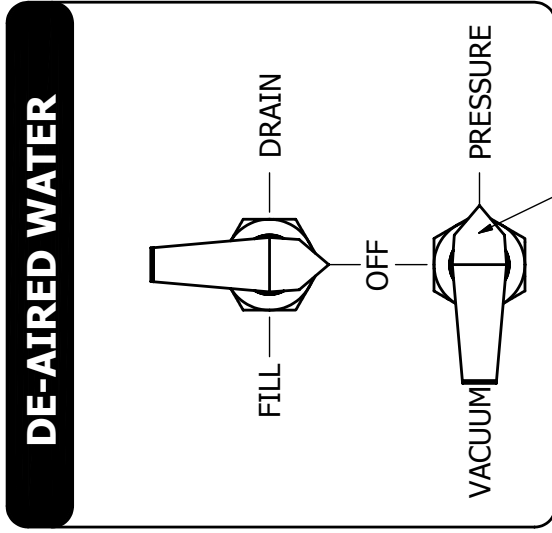
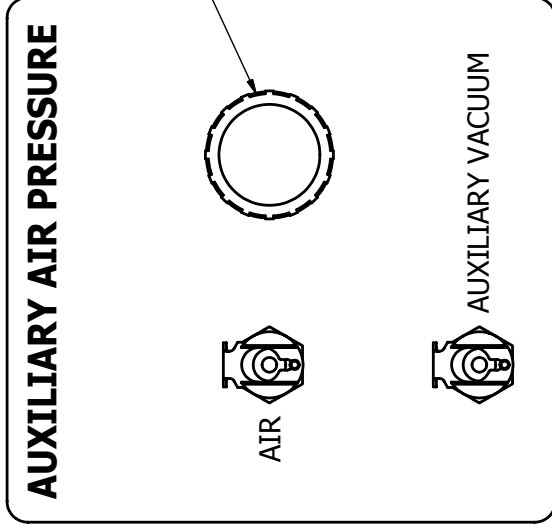


FIGURE 2
DE-AIRING TANK CONTROL VALVES



POINT THE KNOB TO THE RIGHT TO APPLY PRESSURE TO THE DE-AIRING TANK



ROTATE THE KNOB CLOCKWISE TO INCREASE PRESSURE TO THE DE-AIRING TANK & TO THE AUXILIARY AIR CONNECTOR

FIGURE 3
REGULATING AUXILIARY AIR PRESSURE

Warranty

Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.

Humboldt Mfg. Co.

875 Tollgate Road
Elgin, Illinois 60123 U.S.A.

U.S.A. Toll Free: 1.800.544.7220

Voice: 1.708.456.6300

Fax: 1.708.456.0137

Email: hmc@humboldtmfg.com

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www.humboldtmfg.com