Model 610 Pressure Chamber Quick Reference Guide

GETTING STARTED

1. This instrument has an internal 22 cubic foot aluminum cylinder. The tank is rated for a maximum pressure of 2210 PSI/ 153 Bar. The tank is permanently fixed inside the instrument and cannot be filled at a Gas Supply Store. Instead, the internal tank must be "trans-filled". This instrument requires a source of Nitrogen (N2) – Welding Grade Nitrogen is sufficient. Maximum pressure of Supply Tank should not exceed 2600 PSI/ 180 BAR. A Pressure Regulator is required for Supply Tank pressures greater than 2600 PSI/ 180 BAR.
2. Your instrument is supplied with a 6 Foot Filling Hose. Screw the threaded end into the Supply Tank.
3. Connect the nipple end of the 6 Foot Filling Hose to the "Filling Hose" connection located above the Inlet/Shut-Off Valve. Tug on hose to ensure properly connected.
4. Ensure the Inlet/Shut-Off Valve is closed.
5. Ensure the Tank Valve on the side of the instrument is closed.
6. Ensure the Control Valve is in the "OFF" position.
7. Ensure the Pressure Relief Valve on 6 Foot Filling Hose is closed.
8. Open the Supply Tank Valve – SLOWLY.
9. Open the Inlet/Shut-Off Valve – SLOWLY. **At this point the "Tank Pressure" gauge will read the amount of pressure in the Supply Tank, however the internal tank has not yet been filled.**
10. Open the internal Tank Valve <u>just a little</u> – enough to hear gas flowing through the valve. Allow pressure to equalize and then open the valve a little bit more. It is important to do this slowly so that the valve does not over heat. Continue this process until valve is completely open. The Trans-fill should take about 3-5 minutes.
11. Next, close the Inlet/Shut-Off Valve. Close the Supply Tank valve completely.
12. Open the Pressure Relief Valve on the 6 Foot Filling Hose to relieve pressure from hose.
13. Disconnect instrument from 6 Foot Filling Hose.
14. Instrument is now ready to take measurements.

TAKING A MEASUREMENT

1. Select sample from the plant to be measured. Cut sample from plant with a sharp blade or razor.
2. Rotate lid 1/8 turn (counter clock-wise) and lift lid to remove from chamber.
3. Turn lid upside down and insert stem through the hole in center of lid. Twist Compression Gland Screw clockwise to tighten gasket around stem.
4. Lower sample into chamber. Push down lid and rotate 1/8 turn clockwise to the stop.
5. Turn Control Valve to CHAMBER position. Adjust Rate Valve so chamber pressure increases at no more than ½ Bar per second. **(Closing Rate Valve completely can damage valve)**
6. Observe cut surface of stem. When a film of water appears, immediately turn Control Valve to OFF position. The Plant Moisture Stress Measurement (PMS) can be read on the gauge of the instrument.
7. Turn Control Valve to EXHAUST position. Remove lid and discard sample. Instrument is ready for another measurement.

** Different methods for preparing the sample for measurement exist depending upon the species or crop. Consult the "Guidelines Booklet" or our website for more information. (I.E. – Stem Water Potential vs Leaf Water Potential)

MAINTENANCE

Instrument should be kept clean of dirt and debris. Lubricate O-Ring on lid daily with Petroleum Jelly. Check Safety Valve for proper function. Consult "Guidelines" Booklet or website for more maintenance information.

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