

PMS PUC Pump-Up Chamber

The Pump-Up Pressure Chamber is different from the conventional gas chamber in that it does not require a source of compressed gas. The instrument produces pressure in the chamber required to take water potential readings by pumping it as shown below. The relatively small chamber allows the user to achieve about one half Bar (7.25 PSI) pressure per stroke. The instrument is limited to 20 Bar and is designed primarily for irrigation scheduling / monitoring, particularly for managing deficit irrigation.

How it works

Simply put, the pressure chamber is just a device for applying air pressure to a leaf (or small shoot), where most of the leaf is inside the chamber but a small part of the leaf stem (the petiole) is exposed to the outside of the chamber through a seal. The amount of pressure that it takes to cause water to appear at the cut surface of the petiole tells you how much tension the leaf is experiencing on its water. A high value of pressure means a high value of tension and a high degree of water stress. The unit of pressure most commonly used is Bar. (1 Bar = 14.5 PSI).

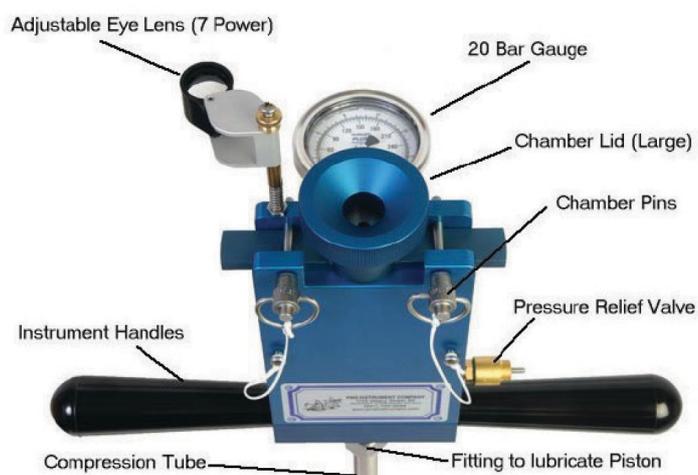


There are three different sealing lids available. When you order your instrument you must choose one with the instrument and can order another one as an accessory. The small system (left) accepts samples up to 1/4 inch or just slightly larger than 1/8 inch in diameter.

The stem must be at least 3/4 inch in length to pass through the lid. This system was designed for use with orchard tree leaves like prunes.

The samples are sealed into a compression gland mounted in the chamber lid, which uses various sizes of O-rings. The large system (middle) accepts samples up to 1/4 inch. The stem must be at least 1 1/8 inch in length to pass through the lid. This system was designed to fit larger diameter stems. The samples are sealed

into a compression gland mounted in the chamber lid. This system uses Compression Gland Gaskets to seal the sample. The last lid on the right is fitted to use our "Bladed Grass Compression Gland" gasket and insert.



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