

**PETE'S PLUG ® OPERATING INSTRUCTIONS
FOR HYDRONIC APPLICATIONS**

	Neoprene Valve Core	Nordel Valve Core
Pete's Plugs®:	Model 100 1/4" Brass Model 100XL 1/4" Brass Model 700 1/2" Brass Model 400 1/4" 316SS Model 700XL 1/2" Brass Model 12500 1/8" Brass	Model 110 1/4" Brass Model 110XL 1/4" Brass Model 710 1/2" Brass Model 410 1/4" 316SS Model 710XL 1/2" Brass
Specifications	Static With Cap On	During Operation With Cap Off
		Neoprene
Temperature Range - Continuous	-40°F to 150°F	45°F to 150°F
Maximum Intermittent	200°F	175°F
Pressure	500 psig	400 psig
		Nordel
Temperature Range - Continuous	30°F to 275°F	45°F to 275°F
Maximum Intermittent	275°F	275°F
Pressure	500 psig	400 psig

Application:

The Pete's Plug is intended for use as an aid in the taking of pressure or temperature readings. Proper care should be taken so as to make sure that the plug has been installed in an acceptable manner and that the plug will operate within the specifications described in these instructions.

The plug is suitable for gasses and liquids, which are compatible with the neoprene and nordel valve materials. Neoprene and nordel are unsuitable for use with some gasses and liquids. **Check with the manufacturer if you are not sure.**

Below 45°F the neoprene and nordel valves do not recover their original shape as rapidly as they would at temperatures above 45°F. Therefore, upon removal of the probe used for pressure or temperature readings, the valves may not close fully and immediately or the valves may remain slightly open until the operating temperature is above 45°F. Duration of probe insertion and pressure are also factors in the rate of valve closing. **For this reason, plugs should not be used in applications where discharging gas or liquids would create a hazard.**

The gasketed cap is supplied to eliminate the small amount of leakage that may occur at lower temperatures after probe insertion and removal. **The cap should be left on the plug at all times and tightened to deter unauthorized removal.**

Special care should be taken to assure that readings are taken in the shortest space of time and that a probe is **never** left in a plug for a period of hours or days. Severe deformation of the valves may occur if the probe is left in the plug for a long period of time; as would be the case if the operator forgot and left the probe in the plug for one or two days.

The plug should not be installed in the bottom of a vessel or pipe where dirt could collect. A large piece of debris may lodge in the plug as the probe is being removed, thus preventing the valves from closing fully. It is inadvisable to use the plug on gas or liquids that are dirty.

Since some leakage upon removal of the probe is normal, **the operator must wear protective goggles to avoid dirt or liquids being blown into the eyes.**

Operating Procedure- Pressure or Temperature Readings:

1. The operator must wear protective goggles to avoid dirt or liquids being blown into the eyes during removal of the probe. Some leakage after removal of the probe is normal.
2. Slowly remove the cap from the plug. If, while doing so, you feel or hear gas or liquids escaping, quickly retighten the cap. Determine at this time if the plug has been used improperly and if necessary replace the plug as soon as possible.

3. If you have determined that the plug is operating properly, remove the cap and put the cap in a safe place so that you can replace it when you are finished using the plug. **The operator should always carry spare caps.**

4. Select the appropriate probe for pressure or temperature. Clean and lubricate the probe with a small amount of petroleum jelly or silicone grease. Examine the probe for any sharp burrs, which could cut the neoprene or nardel valves. Sand or file any burrs before using. Do not try to use non-standard or damaged probes.

5. **Pressure Probe Insertion:** Use Only "Blow Out Proof" Gauges.

A. Determine if the plug is above 45°F. Below this temperature the plug may close slowly. The operator should be ready to replace the cap immediately after the reading is taken.

B. Examine the insertion hole in the plug and remove any loose debris. This step is important if the cap is missing. If the probe is inserted through loose debris, debris may be carried into the plug and prevent it from sealing when the probe is removed.

C. Very slowly, partially insert the lubricated pressure probe into the test plug. If you are not sure of the pressure behind the plug, be prepared to quickly withdraw the probe before rupturing or over pressuring the gauge. The plug, in its static, state and with out a cap, can easily withstand over 500 psig without leaking. Do not assume that, since the plug is not leaking, that it is safe to quickly and fully insert a low-range gauge. If you guess wrong, the pressure gauge could explode in your hand. **Be sure no personnel are in the blow-out area of the gauge.**

D. When the pressure gauge needle stops moving up-scale, then fully insert the probe and read the pressure.

E. Do not leave the probe in the plug any longer than necessary. The longer the probe is inserted, the longer time it will take for the plug to seal when the probe is removed. Also, the longer you leave the probe in the plug, the more likely you are to forget to remove it and replace the cap before leaving the site. Leaving the site with the probe still in the plug can create a dangerous situation. The danger is that the pressure and temperature can exceed the operating limits which can permit the pressure to eject the probe (which will be followed by leakage) unless, the union nut on the probe has been attached Also, the cap is more likely to be lost if the probe is left unattended. See item No. 7 for dealing with a probe that has been left unattended.

F. **When removing the probe, do not place your face near the plug.** The plug should not leak when you remove the probe, but always observe safe procedures.

G. As soon as the probe is removed, replace the cap. **Always carry a spare cap** in case you drop one in an inaccessible place or if you simply misplace the cap. Older plugs did not have cap-retaining straps.

6. **Temperature Probe Insertion:**

A. Temperature probe insertion is similar to pressure probe insertion with the exception that the operator should always first determine the pressure behind the plug before insertion of the temperature probe. This only establishes that the plug is operating within its specifications limits. After the pressure has been determined, follow the steps as outlined in items 5A thru 5G.

7. **Removing A Probe Which Has Been Left Unattended:**

Since the probe could be ejected at any time, restrain the probe or **keep face and body away from the axis of the plug.** Removal of the probe could result in leakage and if the pressure is above 300 psig it may be difficult to replace the cap. It is best to not remove the probe by simply to reduce the pressure behind the plug and replace the plug with a new plug. Discard the old plug.