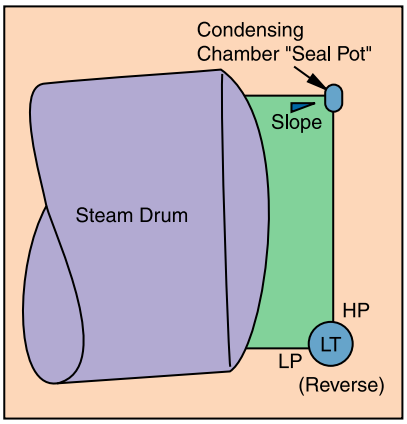
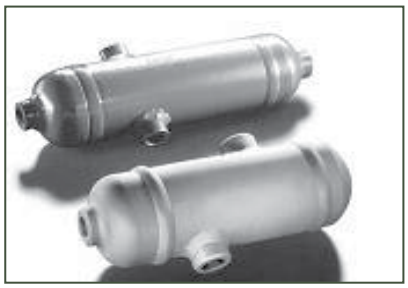
PRODUCT / APPLICATION INFORMATION

Do Seal and Condensate Pots Need to be Heat Traced?

The answer depends on how these devices are used. An agreement on terminology will lead us to the answers.

There are two terms we need to deal with as they relate to instrumentation... "condensate pots" and "seal pots". Both devices are similar in appearance but have slightly different functions. These terms have other meanings as they relate to steam handling systems.





Condensate Pots

Condensate pots are used to catch and hold condensate and foreign material. This helps keep manifold orifices clean and free of foreign material. They are located upstream of the instrument and have a bottom drain so that they may be cleaned. We do not often see condensate pots used in this manner for instrumentation. If a condensate pot is used in this manner it will usually require heat tracing.

Seal Pots

Seal pots (sometime called condensate pots) are used to allow a liquid seal between the instrument and flowing gases such as steam. Their function is to keep the liquid level constant in the impulse tubes. For example, in boiler liquid level applications the high pressure (HP) side of a differential pressure transmitter is connected to the vapor space on top of the steam drum. Steam condenses in the chamber or seal pot and fills the impulse line with condensate. The seal pot is located to allow the condensate to drain back to the source thus keeping the liquid level constant.

Insulating the seal pot would inhibit its function. The seal pot, unlike the impulse tubes, is not generally vulnerable to freezing during normal plant operation because it is in constant contact with a heat source, steam. The only time that the seal pot is vulnerable to freezing is if the plant is shut down during freezing ambient temperatures. In this case the seal pot would need to be drained.

Root Valves

While addressing the subject, another question often asked is, "Does the root valve need to be heat traced?" The root valve is a safety device. It is used to shut off the system in case of a downstream leak. In this application the root valve is normally open. As previously discussed, the seal pot is located to drain back through the root valve to the source. If installed and operated correctly there is no situation where the root valve would be filled with water. The water would always drain back into the pipe or vessel and therefore should not require heat tracing.

