

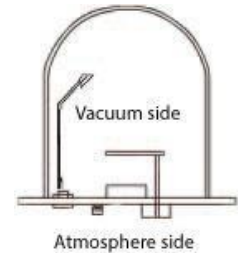


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Sensor Head to Feedthrough Connectors

Connecting your Sensor Head Water Cooling Tubes to the Feedthrough Water Cooling Tubes

Sensor head cooling tubes are typically 1/8" diameter and feedthrough cooling tubes typically 3/16" diameter. Connecting them requires a tube fitting called a reducing union that will reduce the size from 1/8" to 3/16". Fil-Tech offers three methods to make your connection that can be on the vacuum or atmosphere side of your chamber.



In Vacuum Fittings that Affix the Sensor Head in Vacuum

- 1) **QISLockAdaptor:** This semi-permanent method uses a metal sleeve called a ferrule that forms a leak-resistant seal in vacuum. We ship the ferrule to you and you crimp the ferrule into place after you have determined the length of your waterlines. Fittings are made of forged or bar stock Type 316 stainless steel and include a nut. The nut is loosened, the tube is slid into place and tightened down, and the ferrule is tightened around the tube.



\$100/set of 2

In Atmosphere Fittings that Allow for Repositioning the Sensor Head in Vacuum

- 2) **QISLockAdjustable:** This method involves factory brazing fittings to the feedthrough and the sensor head cooling tubes on the atmosphere side. Slock fittings are first brazed to the feedthrough cooling tubes. After these fittings are affixed, the sensor head cooling tubes are inserted completely through the feedthrough with the sensor head cooling tubes exiting to the atmosphere side. O-ring fittings are then affixed to the sensor head cooling tubes. The sensor head can now be positioned and repositioned as required. \$125/set of 2



- 3) **QISLockAdjustableFerrule:** Using the same affixing and assembly method as above, this method brazes a ferrule on the feedthrough cooling tubes and an O-ring seal on the sensor head cooling tubes. This allows repeated disconnecting of the tubes. This option has been helium leak tested to a maximum leak rate of 4×10^{-9} std cm³/s at room temperature. However, the leak rate may increase as temperature increases due to permeation through the O-ring. \$195/set of 2

