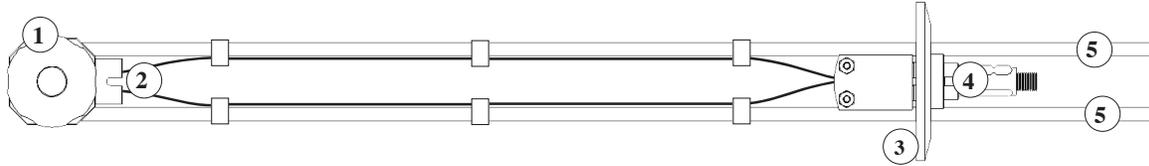


# PHOENIX™

## QUICK REFERENCE GUIDE

### A. Components



**1. Sensor Head**  
Houses quartz crystal

**2. Crystal Control Cables**  
Transmits control and monitoring data between sensor head and controller

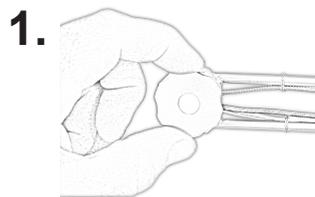
**3. Flange**  
Acts as nearly air-tight barrier sealing sensor head in chamber

**4. Thermocouple Connector**  
Measures temperature around sensor head

**5. Cooling Tubes**  
For cooling sensor head

### B. Removing Mock Crystal

Note: Mock crystal acts as placeholder to protect sensor components during shipping.



**1.** Turn cap COUNTER CLOCKWISE to loosen and remove.



**2.** Flip cap over to access crystal retainer ring. Turn retainer ring COUNTER CLOCKWISE until loose.

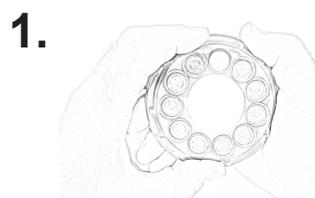


**3.** Remove retainer ring to access mock crystal.



**4.** Remove mock crystal from sensor head cap (use a non-metallic tool).

### C. Adding New Crystal



**1.** Rotate crystal carousel until the round opening appears above an available crystal.



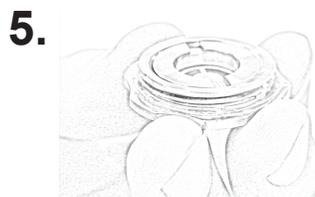
**2.** Place rear of sensor head against the opening.



**3.** Flip crystal carousel and allow crystal to drop into sensor cap housing.



**4.** Use a nonmetallic prod to adjust crystal position until crystal rests snugly in the crystal seat.



**5.** Place the threaded side of the retainer ring onto the corresponding threads of the sensor cap. Tighten the retainer ring by turning the ring COUNTER CLOCKWISE.



**6.** Place cap onto corresponding threads of crystal compartment. Turn COUNTER CLOCKWISE until secure.

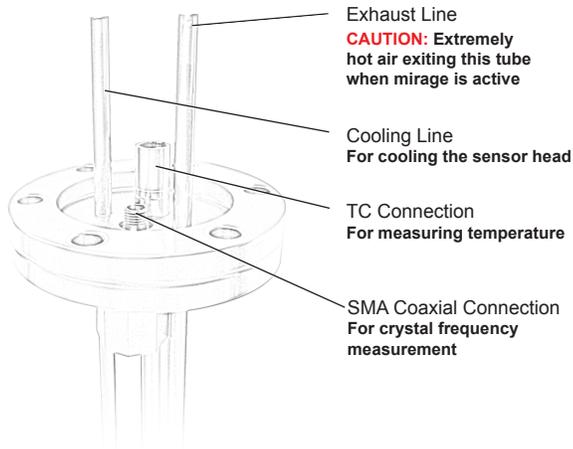
### ADVISORY



#### INSPECT PRODUCT CONDITION ON ARRIVAL

Please examine your new Phoenix™ for any signs of physical damage that may have occurred during shipping. Make sure that the tamper-evident labels are intact. Before shipping, your Phoenix™ was tested by Colnatec to meet the highest quality standards. It is important that you take a few minutes to inspect the product to ensure that your equipment was not damaged or otherwise tampered with during transit.

### Base Connections



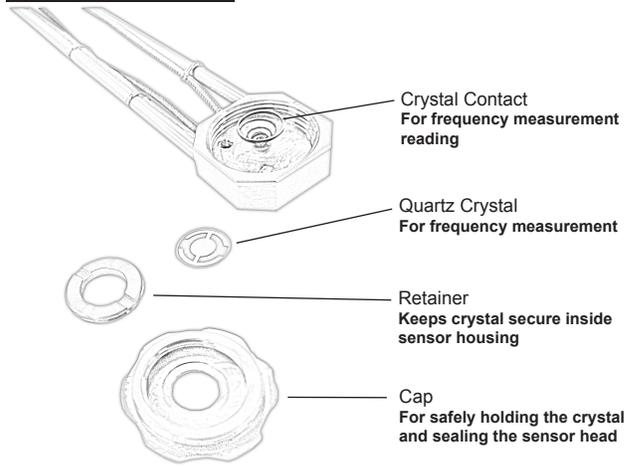
Exhaust Line  
**CAUTION: Extremely hot air exiting this tube when mirage is active**

Cooling Line  
For cooling the sensor head

TC Connection  
For measuring temperature

SMA Coaxial Connection  
For crystal frequency measurement

### Internal Components



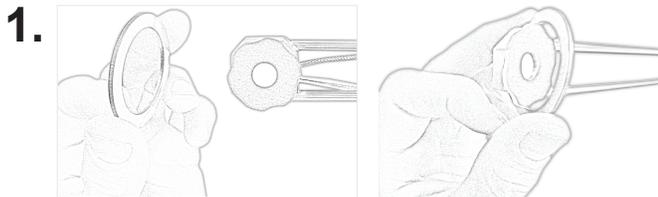
Crystal Contact  
For frequency measurement reading

Quartz Crystal  
For frequency measurement

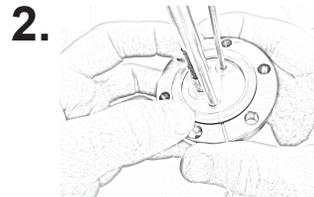
Retainer  
Keeps crystal secure inside sensor housing

Cap  
For safely holding the crystal and sealing the sensor head

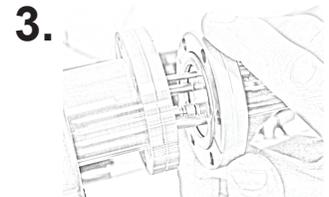
## D. Chamber Installation



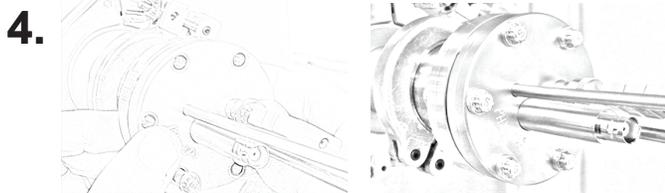
1. Remove copper gasket from packaging and thread onto sensor head.



2. Fit gasket into circular groove on Conflat.



3. Hold copper gasket in place while inserting sensor head into chamber feedthrough.



4. Press sensor head and feedthrough flanges together. Align bolt holes. Apply bolts and plate-nuts. Tightening bolts compresses copper gasket between a sharp edge and a tapered groove, creating a near-perfect seal.

### WARNING

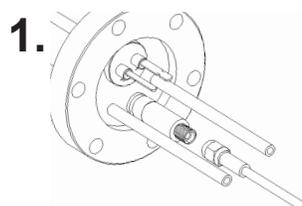


Microfractures may develop in copper gasket if flange bolts are over-tightened. Seal may become weakened, resulting in chamber leakage.

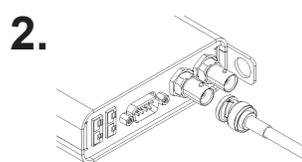


Hand-tighten flange bolts before using wrench, alternating among bolts and using a sequential torque pattern.

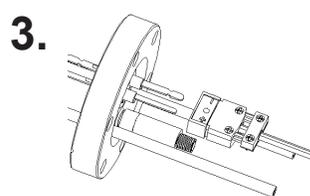
## E. Connecting Phoenix™ to System



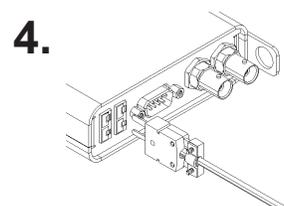
1. **Connect SMA Coaxial Cable to Phoenix™**  
Spin cable in place using cable shaft until resistance is felt. (Twisting cable shaft past point of resistance may damage cable). Roll fingertip over connector to tighten. Length between the Phoenix™ crystal housing and sensor should NOT exceed 30 inches (76 cm)



2. **Connect Phoenix™ to Monitoring Device**  
Connect BNC extension cable to SMA, which then connects to the BNC adapter cable using the provided BNC union. Then, connect the other end of the BNC extension cable to the monitoring device coaxial input.



3. **Plug Phoenix™ TC Connector into Socket of TC Extension Cable (If using TC-equipped Monitor)**  
Connect Phoenix™ thermocouple cable to thermocouple extension cable. Wide blade (-) fits into wide slot on female thermocouple socket. Narrow blade (+) fits into narrow socket.



4. **Plug TC Adapter into TC Female Socket of Monitor (If using TC-equipped Monitor)**  
Plug thermocouple extension cable connector into the thermocouple socket with the wide blade (-) corresponding to the upper slot and narrow blade (+) fitting into lower slot.