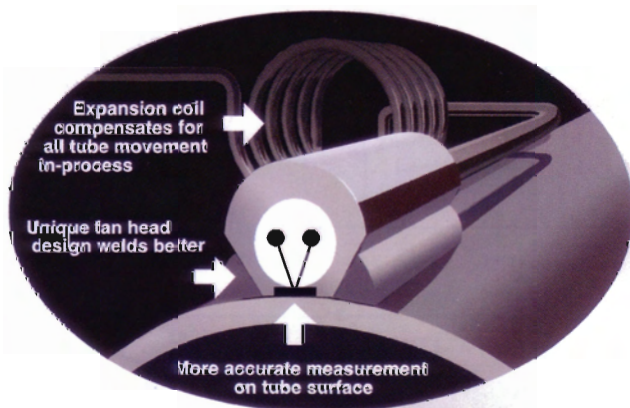




ARI Industries Inc.

FAN JUNCTION THERMOCOUPLES



For reliable and continuous tube temperature measurement in fired heaters

- More accurate measurement on tube surface
- Expansion coil compensates for all tube movement in-process
- Unique fan head design welds better

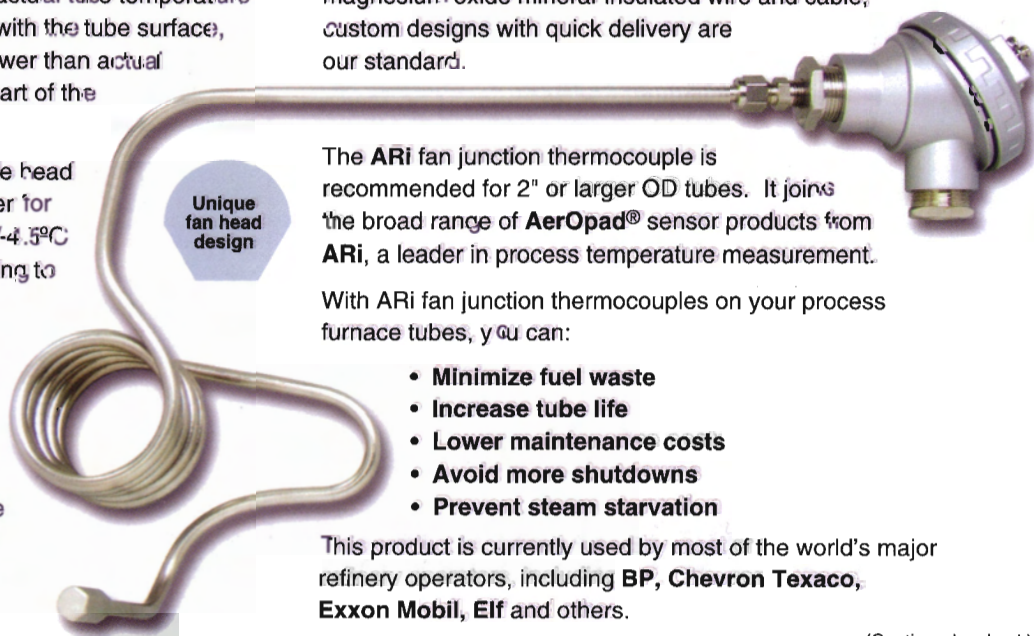
Furnace heater tube skin temperature measurements often vary greatly ($\pm 30^{\circ}\text{C}$) from the actual level, owing to the ambient conditions of air and flame around the tube. This can lead to significantly higher readings than the actual tube OD. Also, narrow-tipped thermocouple designs can cause a higher than actual tube temperature reading, due to improper contact with the tube surface, while shielded tips can result in lower than actual readings, because they insulate part of the tube from heat flux.

The ARI fan junction thermocouple head design offers superior heat transfer for improved accuracy, better than $\pm 4.5^{\circ}\text{C}$ at $\sim 500^{\circ}\text{C}$, as well as easier welding to the tube surface for improved installation integrity. Proper attachment of the sensor head to the tube surface is critical and the unique ARI design enables a more secure weld.

In addition, this ARI thermocouple features **Hastelloy X** sheath material, with excellent corrosion and heat resistance. It can be



manufactured in longer lengths and the standard 5/16" sheath is much more ductile and formable than 446 S.S., when required. This in-field formability allows the creation of expansion coils to offset heater tube movement. Because ARI manufactures its own compacted magnesium oxide mineral-insulated wire and cable, custom designs with quick delivery are our standard.



The ARI fan junction thermocouple is recommended for 2" or larger OD tubes. It joins the broad range of **AerOpad®** sensor products from ARI, a leader in process temperature measurement.

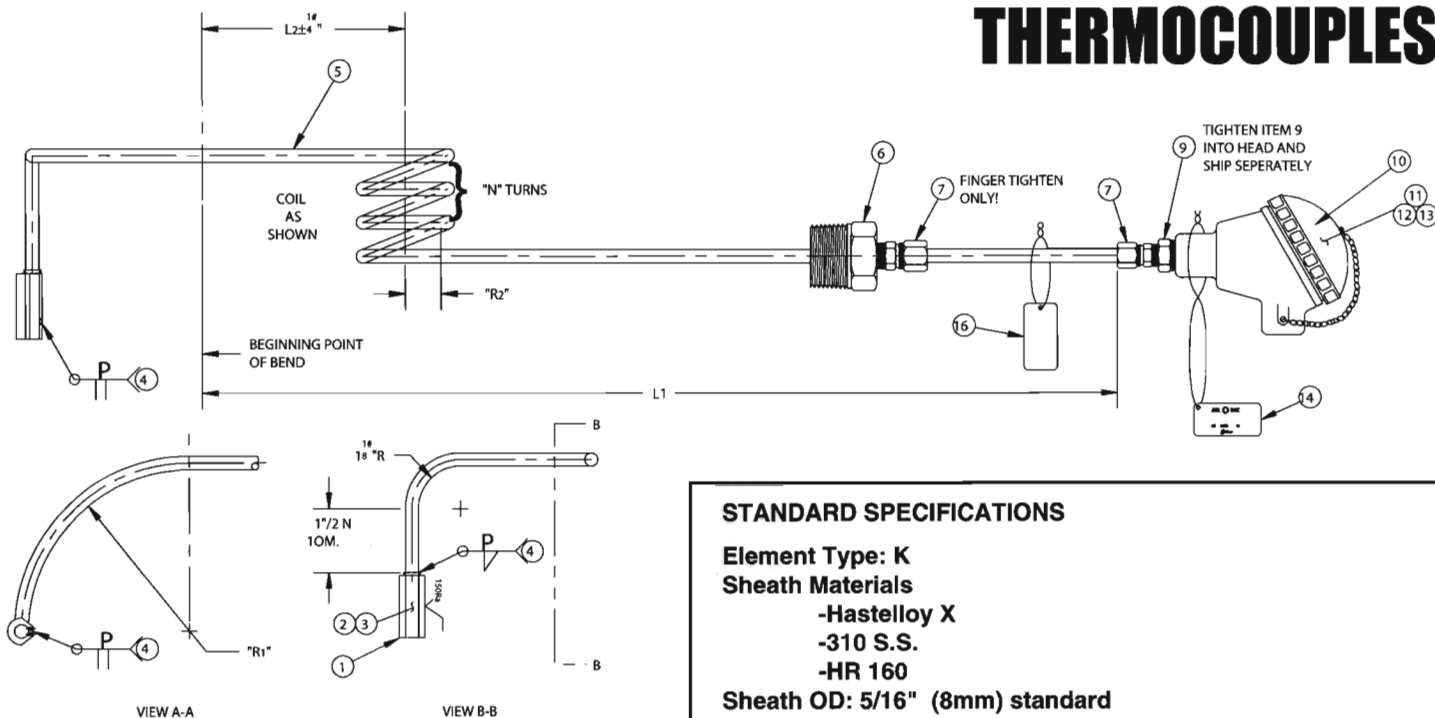
With ARI fan junction thermocouples on your process furnace tubes, you can:

- Minimize fuel waste
- Increase tube life
- Lower maintenance costs
- Avoid more shutdowns
- Prevent steam starvation

This product is currently used by most of the world's major refinery operators, including **BP, Chevron Texaco, Exxon Mobil, Elf** and others.

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FAN JUNCTION THERMOCOUPLES



STANDARD SPECIFICATIONS

Element Type: K

Sheath Materials

- Hastelloy X
- 310 S.S.
- HR 160

Sheath OD: 5/16" (8mm) standard

Junction Types: Grounded or Ungrounded

Termination Styles:

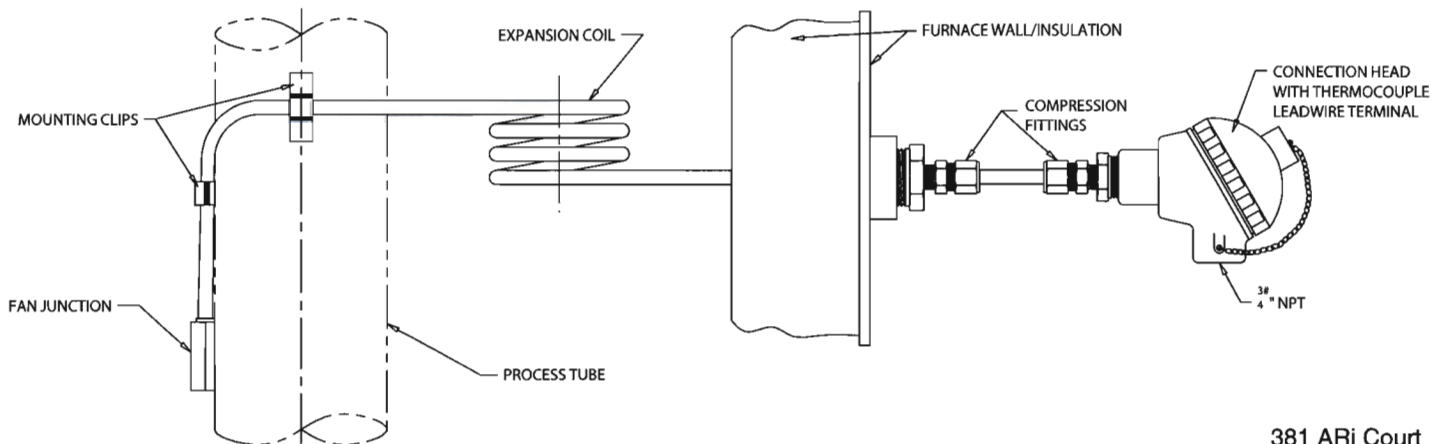
- Connection Head
 - Cast aluminum
 - Cast iron
 - Explosion-proof
- Extension Wire
 - Fiberglass insulated
 - Fiberglass with S.S. overbraid

Mounting Clips provided with assembly, compatible materials

Other materials offered, subject to availability and design considerations

"Hastelloy X" is a registered trademark of Haynes International. ARI is ISO 9001 Registered

TYPICAL INSTALLATION



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