

# Contractor Service Tips

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## Scroll Compressor Safety Controls

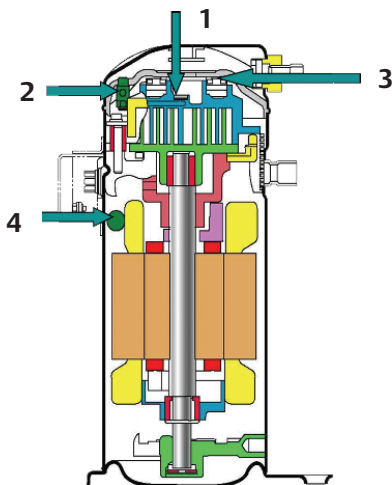
Many air conditioning systems incorporate a scroll compressor as the standard. It is extremely important for the HVAC technician to understand the design and operation of scroll compressors. If proper service practices are not followed severe system damage will result.

Scroll compressors incorporate a variety of internal safety controls. It is important to understand these safety features because they actuate the internal line break motor protection. Safety features that you could find in the air conditioning scroll under 7 tons may be:

- (1) Temperature Operated Disc (TOD) - This is a bimetallic disc that senses the discharge temperature and opens at approximately 270°F internal plenum temperature.
- (2) Internal Pressure Relief (IPR) - This opens at approximately 400 +/-50 pounds differential for R-22. If this pressure differential is exceeded, the IPR will open. On a ZP scroll for R-410A, the IPR differential is set higher, 550 to 625 PSID.
- (3) Floating Seal - This separates the high side from the low side, but also can prevent the compressor from drawing into a deep vacuum and damaging the Fusite® electrical terminal.

(4) Internal Motor Protector - This is an inherent protector, sensing both internal temperature and amperage. A compressor with a tripped motor protector will exhibit a high shell temperature. Allow the compressor to cool in order to reset the motor protector.

## Scroll Compressor Protection



**1 = Temperature Operating Disc**

**2 = Internal Pressure Relief**

**3 = Floating Seal**

**4 = Motor Protector**