

# EXPLOSION PROOF CRANKCASE HEATER



## PRODUCT APPLICATION

Commonly applied to units in destined for service in low ambient climates or environments with extreme changes in temperature, crankcase heaters are used to help prevent possible compressor lockup and failure.

Specific Systems Explosion Proof Crankcase Heater Option goes one step further, adding UL Listed Hazardous Class I, Division 2 and Class II, Zone 2 capabilities to an already popular option.

Crankcase heaters are used to prevent refrigerant in the system from reverse migrating back into the compressor and mixing with the oil. This is especially an issue if a compressor is used in a low ambient condition, because during the off-cycle the oil inside the compressor cools off. This cooled oil has a higher propensity to attract refrigerant because of the pressure difference between it and the vaporized refrigerant in the cycle. When the compressor is started during the next cycle, the oil, now attached to the refrigerant, flows out of the compressor and toward the condenser, leaving less oil to effectively lubricate the compressor. The compressor could then experience immediate or eventual failure.

## PRODUCT DESCRIPTION

Specific Systems Explosion Proof Crankcase Heaters are composed of UL Listed heat transfer cable terminated with ends designed to contain any short that may occur. As shown in Figure 3, the cable is manufactured using 5 layers of protection, including a fluoropolymer coating produced to give resistance to corrosion from acids, bases, and solvents. The cable is self-regulating, producing heat only if it is needed, and can therefore keep an even heat around the entire compressor.

## AVAILABLE OPTIONS

Specific Systems offers a wide range of options on our units. Other options to consider if a unit is to be used in a low ambient condition include:

- Freezestat
- Humidistat
- Explosion Proof Heater
- High/Low Temperature Alarms
- Remote Thermostat

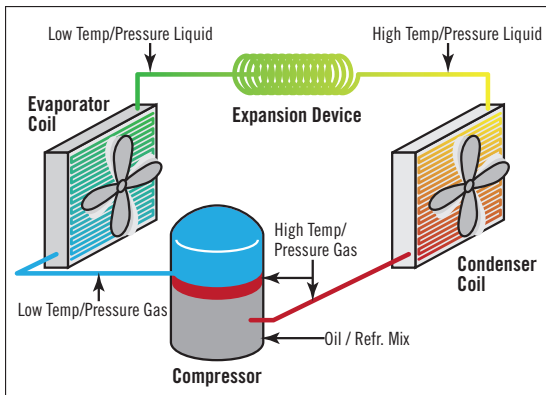


Figure 1. Low ambient temperatures allow refrigerant to migrate to compressor, and allow oil to attract the refrigerant. Because the oil is no longer able to lubricate the compressor effectively, eventual (or immediate) failure will occur.

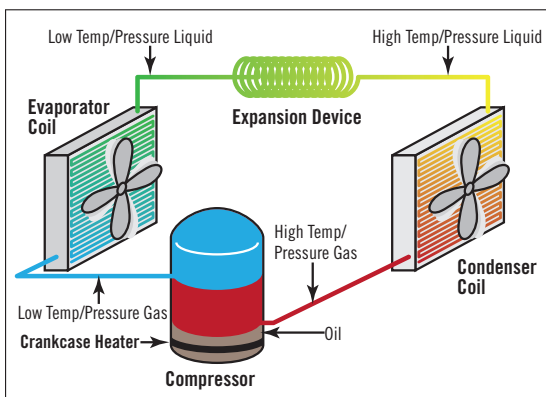


Figure 2. With a crankcase heater installed, the oil stays well-above the coldest temperature in the loop and is less able to force the migration of refrigerant into the compressor.

