

Contractor Service Tips

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COMPRESSOR OVERHEAT

Overheat is a major cause of compressor failures. Temperatures in the compressor head and cylinder become so hot that the oil thins and loses its ability to lubricate. This may cause rings, pistons, and cylinders to wear resulting in blow by, leaking valves and metal debris in the oil. It can also cause the stator to ground due to a spot burn.

Cylinder temperatures exceeding 300°F will begin the breakdown of oil and at 350°F oil will be vaporized. To measure cylinder temperature, place your temperature gauge no more than six inches out on the discharge line from the compressor. For most applications the temperature should be below 225°F. This factors in a 50-75 degree temperature drop from the cylinder to the measured point.

To correct for overheat:

1. Correct abnormally low load conditions
2. Correct high discharge and low suction pressure conditions
3. Insulate suction lines, clean dirty condensers
4. Provide proper compressor cooling
5. Check low pressure control settings

Pressure controls can help to identify or remedy system problems.

Copeland Pressure Controls

Copeland Kit #	Control	Connection	Range	Differential	Settings
985-CP1A-1K	Single Low Pressure	36" Capillary w/ 1/4" Flare Nut	20" to 42 psig	5 to 30 psid, adjustable	Cut-out 15 psig Cut-in 25 psig
985-CP1A-3K	Single Low Pressure	36" Capillary w/ 1/4" Flare Nut	15" to 100 psig	7 to 70 psid, adjustable	Cut-out 15 psig Cut-in 25 psig
985-CP1A-3A	Single Low Pressure	1/4" SAE Male Flare	15" to 100 psig	7 to 70 psid, adjustable	Cut-out 15 psig Cut-in 25 psig
985-CP1A-5K	Single High Pressure/ Fan Cycle	48" Capillary w/ 1/4" Flare Nut	100 to 450 psig	30 to 200 psid, adjustable	Cut-out 385 psig Cut-in 335 psig
985-CP1A-5A	Single High Pressure/ Fan Cycle	1/4" SAE Male Flare	100 to 450 psig	30 to 200 psid, adjustable	Cut-out 385 psig Cut-in 335 psig
985-CP1U-5A	Single High Pressure/ Limit	1/4" SAE Male Flare	100 to 450 psig	Fixed 50 psid, Auto/Man.	Cut-out 385 psig Cut-in Convertible Auto/Man
985-CP1U-5K	Single High Pressure/ Limit	36" Capillary w/ 1/4" Flare Nut	100 to 450 psig	Fixed 50 psid, Auto/Man.	Cut-out 385 psig Cut-in Convertible Auto/Man
985-CP2M-7K	Dual Pressure	48" Capillary w/ 1/4" Flare Nut	Low Pressure: 15" to 100 psig High Pressure: 100 to 450 psig	Low Pressure: 7 to 70 psig High Pressure Fixed 50 psid Auto/man.	Cut-out 385 psig Cut-in Convertible Auto/Man
985-CP2M-7A	Dual Pressure	1/4" SAE Male Flare	Low Pressure: 15" to 100 psig High Pressure: 100 to 450 psig	Low Pressure: 7 to 70 psig High Pressure Fixed 50 psid Auto/man.	Cut-out 385 psig Cut-in Convertible Auto/Man

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