

Contractor Service Tips



Tip Card
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Evaporator Vs. System Superheat

Q: What is the difference between evaporator superheat and system superheat?

Superheat varies within the system depending on where it is being measured. The superheat that the thermal expansion valve is controlling is the evaporator superheat. This is measured at the outlet of the evaporator. The refrigerant gains superheat as it travels through the evaporator, basically starting at 0 as it enters the evaporator and reaching a maximum at the outlet as the refrigerant travels through the evaporator absorbing heat.

System superheat refers to the superheat entering the suction of the compressor. Some people confuse system superheat with 'return gas temperature.' It should be remembered that superheat varies as the saturated suction pressure of the refrigerant varies. Return gas temperature is a temperature value measured by a thermometer or other temperature-sensing device. It does not vary because of pressure changes.

Q: How much system superheat should I see at the compressor inlet?

Compressor manufacturer's like to see a minimum of about 20 degrees of superheat at the compressor inlet. This is to assure them that no liquid refrigerant is entering the compressor.



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