

## **AUTOMOTIVE AIR CONDITIONING REPAIR**

### **Question:**

What is a sub-cool condenser?

### **Answer:**

There are two things that must be remembered about air conditioning. First, the evaporator can't collect any more heat than the condenser is capable of getting rid of. Second, the longer the refrigerant stays in the condenser, the lower the high side pressures will be.

As long as there has been air conditioning, there have been vehicles with systems that just wouldn't work well. Pressures too high, compressor-mounting brackets breaking, engines overheating, and systems that could only be used when on the open road.

The cure was stacking condensers. A second condenser was installed in front of the existing condenser and the two were connected together. In the top of one and out the bottom of the other. This increased the capacity of the system, allowing heat to dissipate from the refrigerant.

In the nineteen-eighties, systems from the factory had a second condenser in front of the original condenser. They referred to it as a sub cool condenser. In the late nineties, they came out with a condenser that was like a two for one unit. The refrigerant entered the top of the condenser and departed the condenser about two-thirds the way down. The refrigerant goes through the receiver/dryer and then reenters the lower section of the condenser to further remove any heat that may still exist in the refrigerant.

Nissan and Mitsubishi and Toyota, on some models, are using the sub cool condenser. On some units, the dryer is welded into the condenser. Some applications may require the replacement of the condenser to obtain a receiver/dryer. Others may have a replacement desiccant bag.

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This applies to all automotive air conditioning systems. If any of the above conditions exist, install a second condenser, of any size, anywhere there is room.

Walla, a sub-cool system!