CARQUEST temperature control

1985 to 1993 Cadillac: Retrofitting to R134a

We have received many calls concerning the retrofitting of late 1985 to 1993 model Cadillacs. The use of a different refrigerant will cause the vehicle to set a low refrigerant code after a short period of operation. This is a very common complaint, which has prompted us to recommend that the Cadillac NOT be retrofitted.

The retrofit process requires the use of a smaller amount of R134a refrigerant than R12. The higher the summer temperature the less R134a is required. The first retrofit guides suggested the R134a amount should be approximately 90 % of the OEM R12 weight. The intense heat of the past two summers has made this percentage non-workable. We now suggest that in areas of high heat and high humidity the refrigerant amount should start at 70% of the R12 weight. This smaller amount equates to a reduced low side pressure when the temperature of the ambient air drops with the changing of the season. The cooler mornings make the low side pressure lower than it normally would be if the OEM R12 refrigerant were being used.

The late model Cadillac (those using a BCM /PCM) will interpret this drop in pressure as a possible leak in the system. When the system "thinks" it has a leak it tells the BCM that the pressure on the low side is abnormal. The BCM then records a very low refrigerant code. When the BCM records a very low refrigerant code the BCM causes the compressor to disengage. The BCM then keeps the compressor from engaging until the low refrigerant code is cleared. The process of setting the low pressure and very low-pressure codes varies with the year models. The process to clear the codes will also vary depending on the year model. The result of setting the low or very low refrigerant code will ultimately be the same.

At this time the only process that we are aware of that will eliminate the problem of a false low refrigerant code is to go back to R12. We do not know of anyone that is offering the switch/sensor/BCM prom combination to correct this problem.