

DIAGNOSIS AND TESTING (Continued)

The diagnosis charts provide the most direct and sure way to determine the cause of any concern in a poorly performing refrigerant system.

After servicing and correcting a refrigerant system concern, take additional pressure readings and observe the clutch cycle rate while meeting the conditional requirements to ensure the concern has been corrected.

In ambient temperatures above 27°C (80°F), the compressor clutch will not normally cycle off. This will depend on local conditions and engine/vehicle speed. Also, clutch cycling will normally not occur when the engine is operating at curb idle speed.

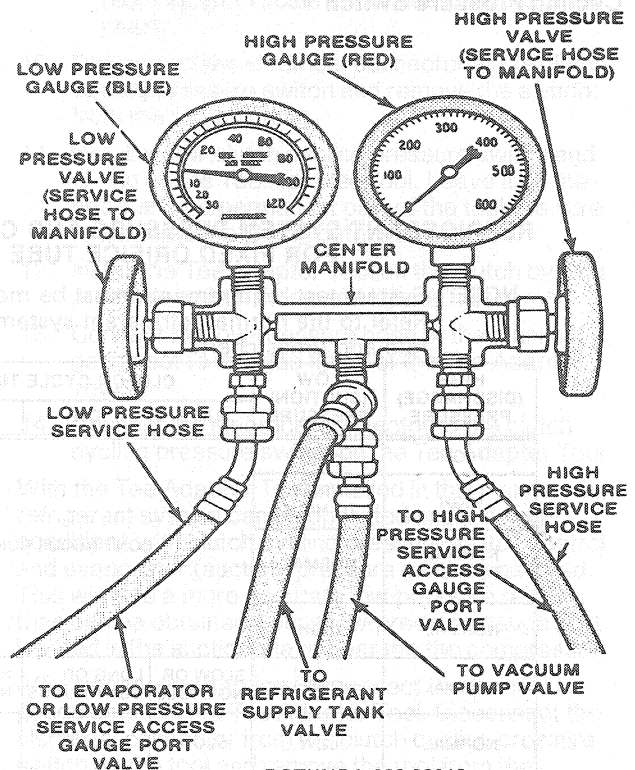
If the system contains no refrigerant or is extremely low on refrigerant, the clutch will not engage for compressor operation. A rapid cycling compressor clutch is usually an indication that the system is low on refrigerant. Refer to Insufficient or No A/C Cooling—Fixed Orifice Tube Cycling Clutch System Diagnosis chart.

Checking for Leaks

WARNING: GOOD VENTILATION IS NECESSARY IN THE AREA WHERE A/C LEAK TESTING IS TO BE DONE. IF THE SURROUNDING AIR IS CONTAMINATED WITH REFRIGERANT GAS, THE LEAK DETECTOR WILL INDICATE THIS GAS ALL THE TIME. ODORS FROM OTHER CHEMICALS SUCH AS ANTIFREEZE, DIESEL FUEL, DISC BRAKE CLEANER OR OTHER CLEANING SOLVENTS CAN CAUSE THE SAME CONCERN. A FAN, EVEN IN A WELL VENTILATED AREA, IS VERY HELPFUL IN REMOVING SMALL TRACES OF AIR CONTAMINATION THAT MIGHT AFFECT THE LEAK DETECTOR.

Attach the manifold gauge set. Leave both manifold gauge valves at the maximum clockwise (closed) position. Both gauges should show approximately 413-551 kPa (60-80 psi) at 24°C (75°F) with engine not running. If very little or no pressure is indicated, leave the vacuum pump valve closed, open the Refrigerant-12 cylinder valve, and set the low-pressure (suction) manifold gauge valve to the counterclockwise position. This opens the system to cylinder pressure.

Manifold Gauge Set



Check all system connections, the compressor head gasket and shaft seal for leaks, using a good leak detector. Pass the leak detector along the underside of all points being checked. Refrigerant is heavier than air and will show most readily in those locations.

Use Rotunda Electronic Leak Detector 055-00014, 055-00015 or equivalent (R-12 systems only, systems with refrigerant R134a require different equipment).

R-12 Leak Detector—Electronic 055-00014 or 055-00015

