

DIAGNOSIS AND TESTING (Continued)

If a momentary hiss can be heard when the function selector knob is rotated from one position to another, vacuum is available at the control assembly, then cycle the function selector control knob through each position with the blower on HI and check the location(s) of the discharge air. The airflow schematic and vacuum control chart shows the vacuum motors applied for each position of the function control knob along with a system airflow diagram. The airflow diagram shows the position of each door when vacuum is applied and the no-vacuum position. Using this chart, airflow for each position of the control assembly can be determined. If a vacuum motor fails to operate, the motor can readily be found because the airflow will be incorrect.

If a vacuum motor is inoperative, check the operation of the motor with Rotunda Vacuum Tester 021-00014 or equivalent. If the vacuum motor operates properly, the vacuum hose is probably pinched, kinked, disconnected or has a hole in it.

If the vacuum system functions normally at idle but goes to defrost during acceleration, a small leak exists in the system. The leak can be located by turning off the engine and using a gauge to check for vacuum delay while selectively blocking off vacuum hoses.

Refrigerant System

System Using Refrigerant R-134a

The major components of R-134a A/C systems are similar to those used previously on Ford R-12 fixed orifice tube type systems. R-12 and R-134a components are similar in design and function. As a result, all Diagnosis and Testing procedures for R-12 components can be used for R-134a components. However, it is very important to note that R-134a system components can only be replaced with other R-134a components. R-134a components cannot be replaced with components used with R-12 systems. The same is true for R-12 components: they cannot be replaced with R-134a components.

CAUTION: R-12 and R-134a components are not interchangeable. Do not replace components from an R-134a system with components for an R-12 system. Also, do not replace components from an R-12 system with components for an R-134a system. Mixing components from these two types of systems may cause component failure and damage to the A/C system.

The best way to diagnose a condition in the refrigerant system is to note the system pressures (shown by the manifold gauges) and the clutch cycle rate and times. Then, compare the findings to the following charts.

- The system pressures are low (compressor suction) and high (compressor discharge).
- A clutch cycle is the time the clutch is engaged plus the time it is disengaged (time on plus time off).
- Clutch cycle times are the lengths of time (in seconds) that the clutch is ON and OFF.

R-134a Special Servicing Equipment

R-134a systems require the use of special servicing equipment designed specially for R-134a systems. R-12 servicing equipment cannot be used when servicing R-134a A/C systems. R-134a special servicing equipment includes:

- R-134a Manifold gauge set
- R-134a Charging station
- R-134a Reclamation system
- R-13a Leak detector

For more information on R-134a special tools and equipment, refer to the Rotunda Equipment Catalog.

CAUTION: Do not use R-12 Special Tools and Equipment when servicing an R-134a system. Also, do not use R-134a Special Tools and Equipment when servicing an R-12 system. Doing so may cause damage to the A/C system. Refer to the Rotunda Equipment Catalog for more information on R-134a Special Servicing Equipment.

Test equipment must be connected to the refrigerant system in order to make system tests. If a charging station is used, follow the instructions of the station manufacturer.