

AIR CONDITIONING SYSTEM**DYNAMIC DESCRIPTION**

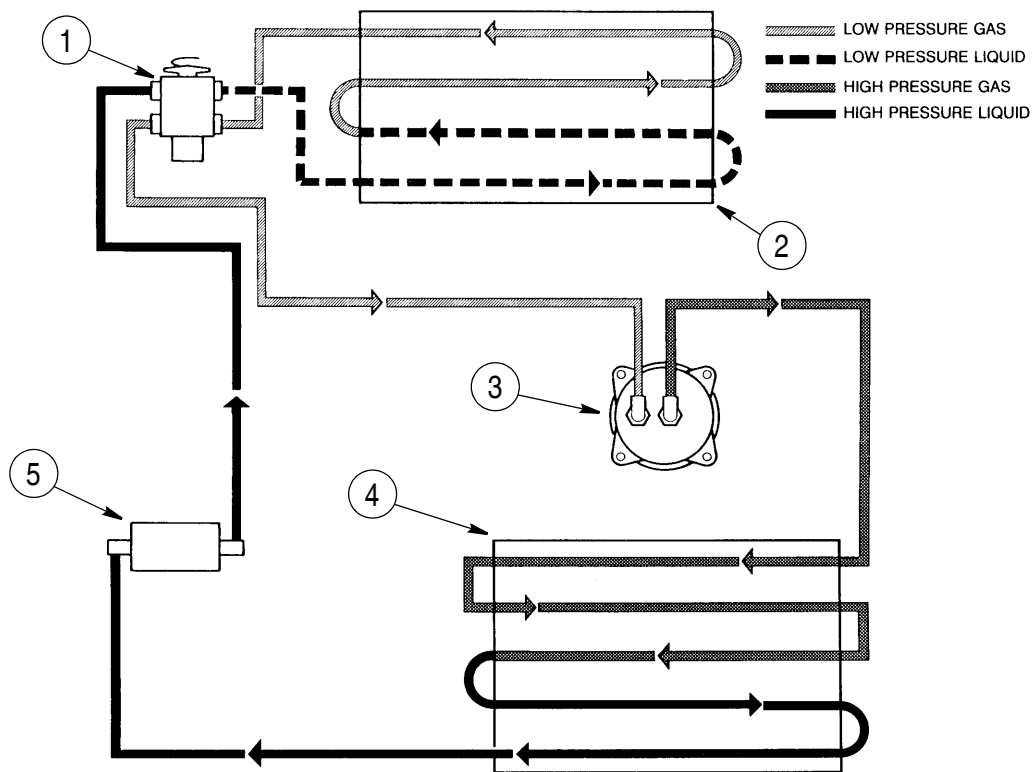
The refrigerant circuit of the air conditioning system contains five major components: Compressor, Condenser, Receiver/Drier, Expansion Valve, and Evaporator. These components are connected by tubes and hoses and operate as a closed system. The air conditioning system is charged with HFC134a refrigerant.

The compressor receives the refrigerant as low pressure gas. The compressor then compresses the refrigerant and sends it in the form of a high pressure gas to the condenser. The air flow through the condenser then removes the heat from the refrigerant. As the heat is removed the refrigerant changes to a high pressure liquid. The high pressure refrigerant liquid then flows from the condenser to the receiver/drier. The receiver/drier is a container filled with moisture removing material, which removes any moisture that may have entered the air conditioning system in order to prevent corrosion of the internal components of the air conditioning system.

The refrigerant still in a high pressure liquid form then flows from the receiver/drier to the expansion valve. The expansion valve then causes a restriction in flow of the refrigerant to the evaporator core.

As the refrigerant flows through the evaporator core the refrigerant is heated by the air around and flowing through the evaporator fins. The combination of increased heat and decreased pressure causes the air flow through the evaporator fins to become very cool and the liquid refrigerant to become a low pressure gas. The cooled air then passes from the evaporator to the cab for the operators comfort.

The electrical circuit of the air conditioning system consists of: A Fan Speed Control, Temperature Control, Thermostat, 20 Amp Fuse, Blower Motor, Compressor Clutch, Low Pressure Switch, High Pressure Switch, and Indicator Light.



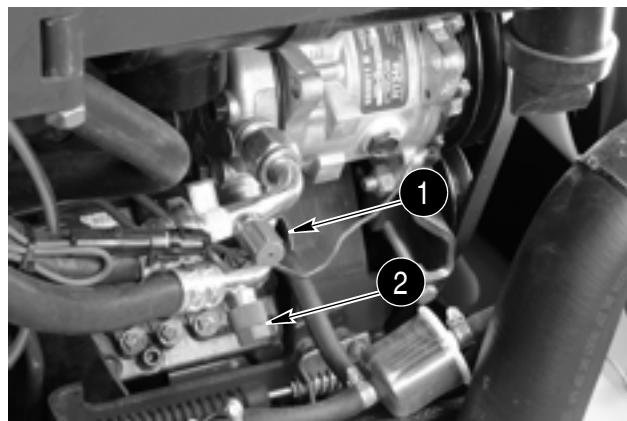
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Figure 1

1. EXPANSION VALVE
2. EVAPORATOR
3. COMPRESSOR
4. CONDENSER
5. RECEIVER/DRIER

AIR CONDITIONING SYSTEM**DISCHARGING AND EVACUATE AND RECOVERY**

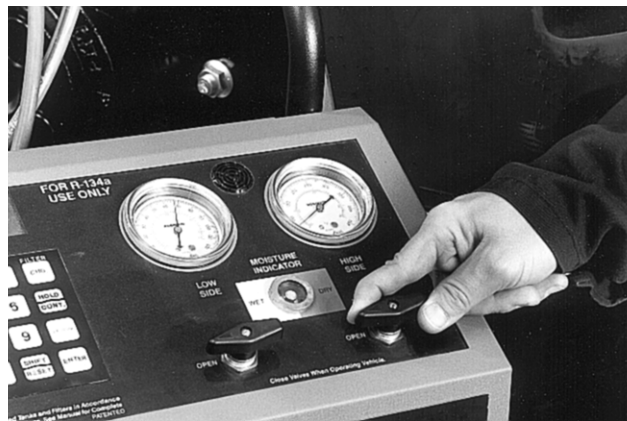
1. Recovered refrigerant passes through an oil separator and filter-dryer before entering the refrigerant tank. The moisture indicator will turn green when the dry refrigerant passes over it.
2. If possible run the air conditioning system for ten minutes before starting the recovery process. Turn the system off before proceeding.
3. Clean the external surfaces of the compressor and hoses. Remove the caps from the service ports on the suction (1) and pressure (2) hoses.
4. With the charging station manifold gauge valves in the closed position, connect the hoses from the test gauges to the service ports. Connect the hose from the low pressure gauge to the port (1) on the suction hose. Connect the hose from the high pressure gauge to the port (2) on the discharge hose.



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Figure 6

5. Open the high and low valves.



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Figure 7

6. Make certain the refrigerant tank gas and liquid valves are open.



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Figure 8

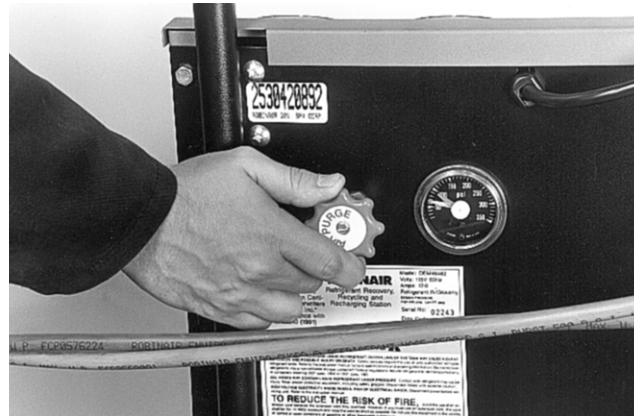
7. Connect the main power plug to a 115 volt AC outlet. Move the main power switch to the ON position and depress the recovery start switch. The compressor will shut OFF automatically when recovery is complete. Wait for 5 minutes and observe the manifold pressure gauges for a pressure rise. If the pressure rises above 0 PSI, depress the hold/continue switch then wait for the compressor to automatically shut OFF.



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Figure 9

8. Drain the oil separator of A/C system oil. Open the air purge valve long enough to let some compressor discharge pressure back into the separator.



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Figure 10

9. Slowly open the oil drain valve and drain the oil into the reservoir. When the oil stops draining, close the oil drain valve completely.



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Figure 11

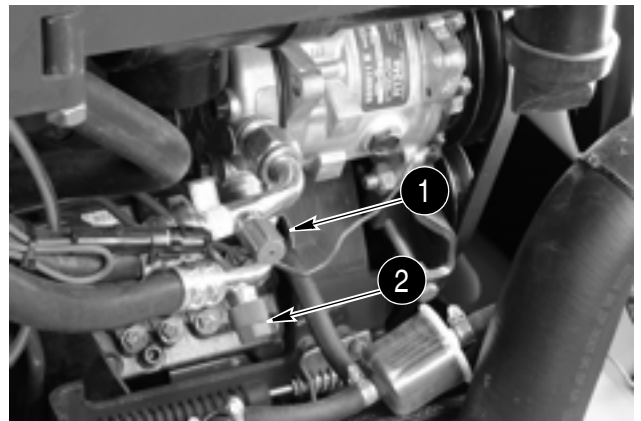
10. Fill the A/C compressor with fresh oil equal to the amount in the reservoir.



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Figure 12

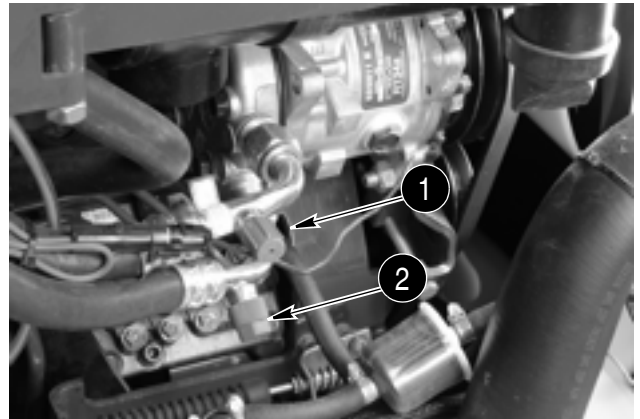
11. Remove the hoses from the service ports (1 and 2) and install the caps.



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Figure 13

12. Replace the receiver-drier if one or more of the following conditions occurs before you remove the air and moisture from the system.
 - A. The system has been opened for service before.
 - B. Receiver-drier has operated two or more years.
 - C. Disassembly of compressor shows small particles of moisture removing material (gold or brown particles).
 - D. Large system leak (broken hose, break in line).
 - E. Too much air or moisture in system.
 - F. Removal of compressor caused the system to be open (uncapped) longer than 5 minutes.
13. With the charging station manifold gauge valves in the closed position, connect the hoses from the test gauges to the service ports (1 and 2). Turn in both thumbscrews to depress the service valves.



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Figure 14

14. Removal of air and moisture from the system is necessary after refrigerant has been removed from the system or after the system has been opened for maintenance. Air enters the system when the system is opened. Air has moisture that must be removed to prevent damage to system components. Air and moisture are removed from the system by a vacuum pump. A vacuum pump is the only equipment made to lower the pressure enough to change the moisture to vapor that can be removed from the system.

NOTE: Refer to the manufacturers user manual for additional information.