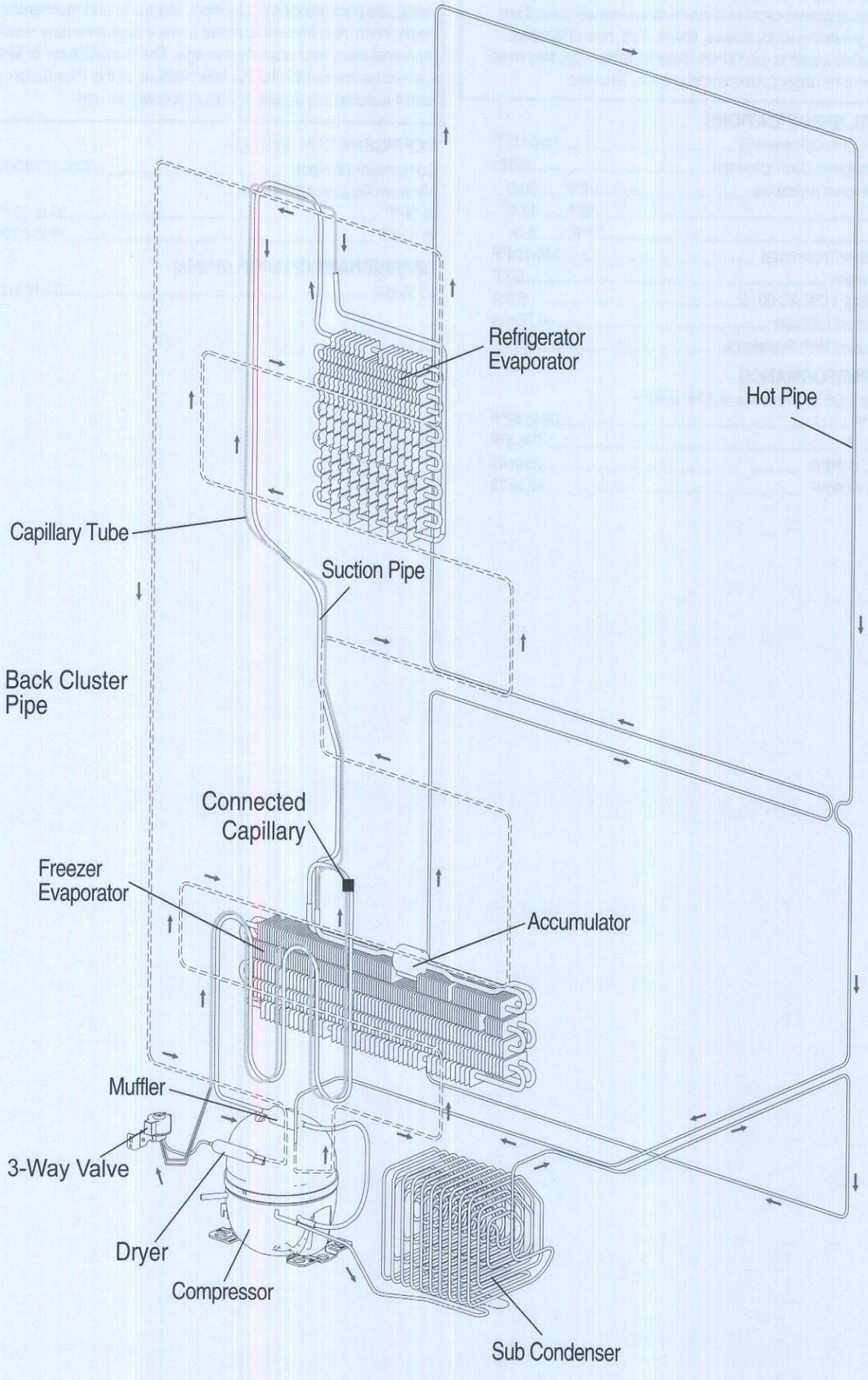
Refrigeration System

Refrigeration Components



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Sealed System

The 29-cubic foot units have a series dual evaporator like previous models, but now have a new sealed system. They now use a multi-speed inverter compressor and a 3-way valve.

The compressor function is controlled by the inverter board mounted in the main board compartment. The 3-way valve is controlled by the main board. This valve will switch the unit to freezer-only cooling when the fresh food temperatures are satisfied.

There are no procedure changes for replacing the evaporator because the freezer evaporator capillary is inaccessible inside the cabinet.

The back cluster pipe (see illustration) is a hot loop of the sealed system. With reduced insulation thickness in the back of the cabinet, this loop warms the cabinet behind the evaporators to minimize the possibility of cabinet sweat.

3-Way Valve

The 3-way valve, like previous models, controls refrigerant flow to the evaporators. When the refrigerator is off, or in defrost, the valve is open to both evaporators allowing for equalization.

If both compartments require cooling, the valve opens to the fresh food only. Refrigerant flows through the fresh food evaporator and then through the freezer evaporator which has the common suction line to the compressor. When the fresh food is satisfied, the valve will open to the freezer only until the freezer is satisfied and the refrigerator cycles off.

Evacuation and Charging Procedure

WARNING:

- Before cutting or using a torch on refrigerant tubes, recover the refrigerant from the system using approved recovery equipment.
- Never charge new refrigerant through the purge valve. This valve is always located on the high-pressure side of the system.
- Never apply heat from any source to a container of refrigerant. Such action will cause excessive pressure in the container.
- Always wear goggles when working with refrigerants and nitrogen holding charge in some replacement parts. Contact with these gases may cause injury.

1. Attach the hose from the R-134a charging cylinder to the process tube port on the compressor.
2. Evacuate the system to a minimum 20-in. vacuum using the refrigerator compressor and recovery pump, which is attached to the new drier assembly.
3. Turn off the recovery pump. Close the ball valve on the hose connected to the high-side port connection. Add 3 ounces of R-134a refrigerant to the system. Let the refrigerator operate and circulate the refrigerant for 5 minutes.
4. Open the ball valve. Recover the purge/sweep charge using the recovery pump and the refrigerator compressor until a 20-in. vacuum is attained. Close the ball valve and remove the recovery hose.
5. Charge the system with the exact amount of R-134a refrigerant specified.
6. Disconnect the power cord to the refrigerator. This allows the pressure to equalize. After 3 to 5 minutes, the low-side pressure will be positive and then the hose-to-charging port can be disconnected.
7. Using an electronic leak detector, check all brazed joints and both Schrader ports. Reinstall caps to the Schrader ports.