

Heater/ Air Conditioner Models R-8820/R-8150

INSTALLATION INSTRUCTIONS

R-8820/R-8150 HEATER/AIR CONDITIONER INSTALLATION INSTRUCTIONS "R," "RL," "RS," "DM," "U" MODEL TRUCK CABS

NOTE

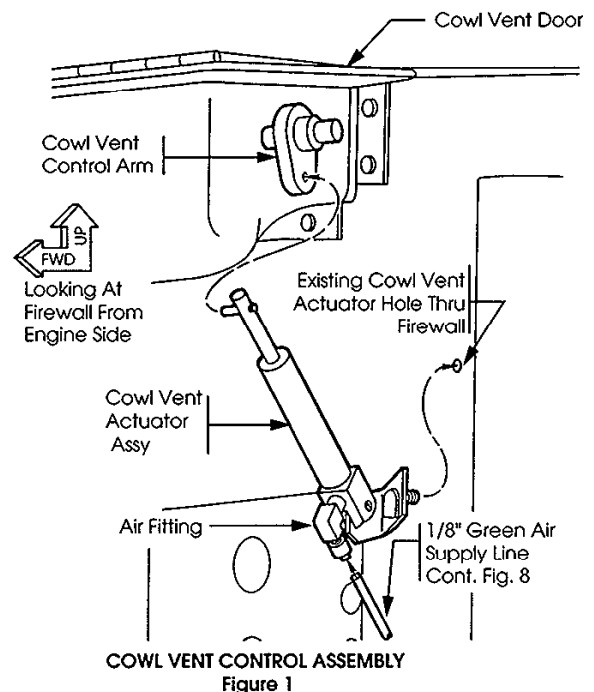
1. Please read instructions all the way through, making sure you have all the parts and tools.
2. While working on or around a vehicle disconnect the battery to prevent accidental start-up or electrical shorts.
3. It has been established that R-12 refrigerant does deplete the earth's protective ozone layer. Use care so as not to release this material into the atmosphere.
4. A/C systems operate under high pressure. At 77°F the refrigerant container will be pressurized to approximately 80 psi. Use caution when working with these materials. Goggles are recommended.
5. To function properly the A/C system must be clean and dry. Keep caps or protective covers on all hoses and fittings until final assembly.
6. **IMPORTANT:** Attach appropriate SAE warning label to vehicle.

NOTE:

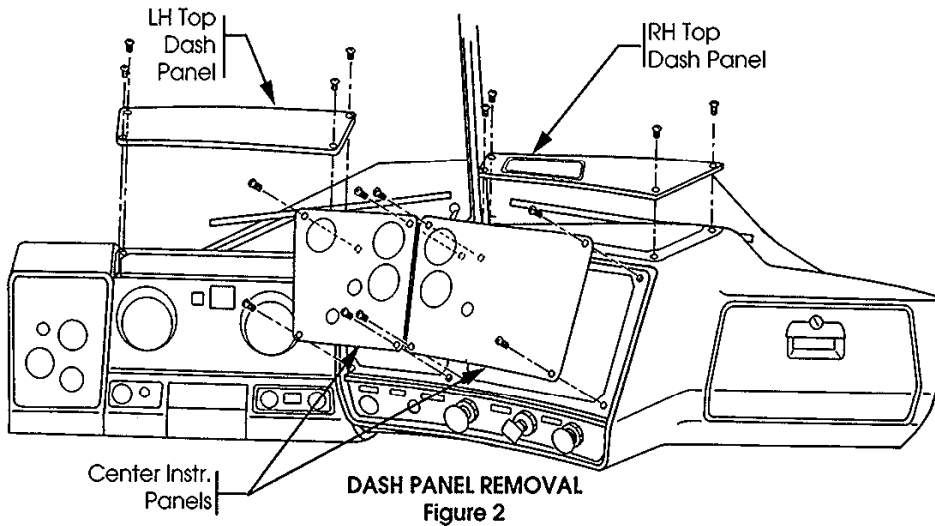
1. Install the condenser and compressor using instructions provided with each kit.

A. PREPARATION OF TRUCK FOR INSTALLATION OF R-8820/R-8150 H/AC UNIT- "R," "U," AND "DM" MODEL TRUCKS.

1. Disconnect batteries.
2. Disconnect heater hoses from heater.
3. Remove cowl vent control assembly (actuator, linkage, and knob).
 - a. Install new cowl vent air actuator assembly. (See Figure 1).
 - b. Make sure air fitting on air actuator is pointing down after being installed.
4. Disconnect all wiring to heater.
5. Remove the following components: (keep all mounting screws to install new unit).
 - a. Right and left dash top panels. (See Figure 2).
 - b. Plastic shield behind left top dash panel.
 - c. Center instrument panels. (See Figure 2).
 - d. Doghouse on "U" and "DM" model vehicles.
 - e. Remove heater assembly by removing five (5) mounting screws.



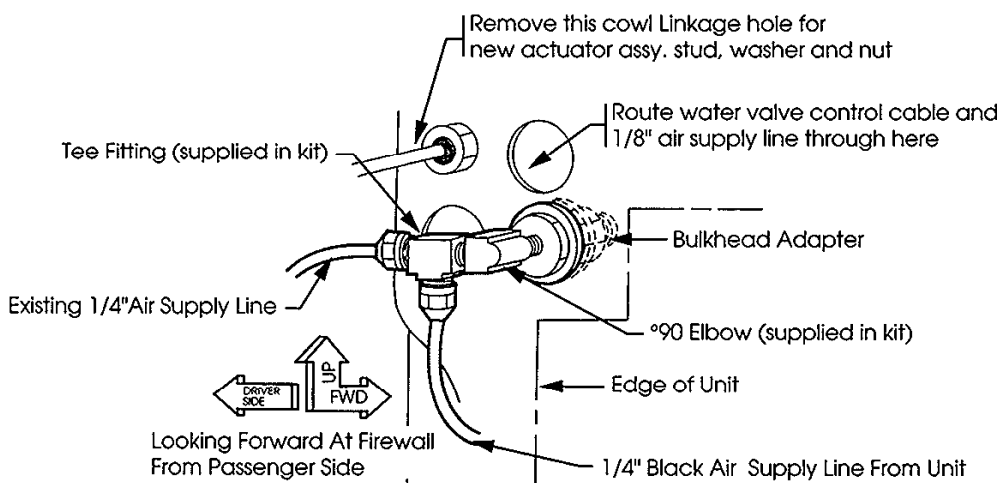
- f. Foam gaskets from firewall.
 - g. Rectangular cover plate located on firewall beneath wiper motor.
 - h. Inner and outer fresh air/defrost ducts.
6. Disconnect right wiper link at center pivot, push it up out of the way.



B. INSTALLING R-8820/R-8150 UNIT

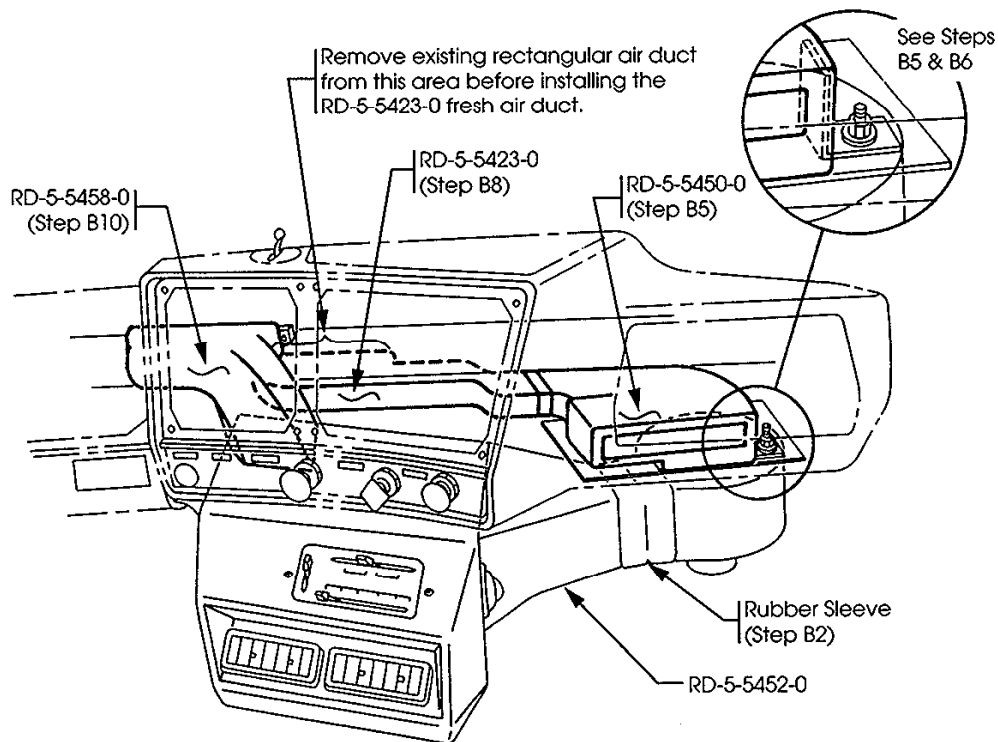
1. Modify the bulkhead adapter as follows (Bulkhead adapter is located on the driver's side of the firewall next to existing heater unit).
 - a. Remove and discard 90° 1/4" air fitting.
 - b. Attach 90° elbow and 1/4" brass tee fitting to the bulkhead adapter fitting and clock as shown in Figure 3.
 - c. Secure 1/4" air supply and unit air supply lines to brass tee fitting (See Figure 3).

NOTE: For installation steps 2 through 9 refer to Figure 4.



BULKHEAD ADAPTER/LOW AIR PRESSURE SENSOR ASSEMBLY & UNIT AIR SUPPLY
Figure 3

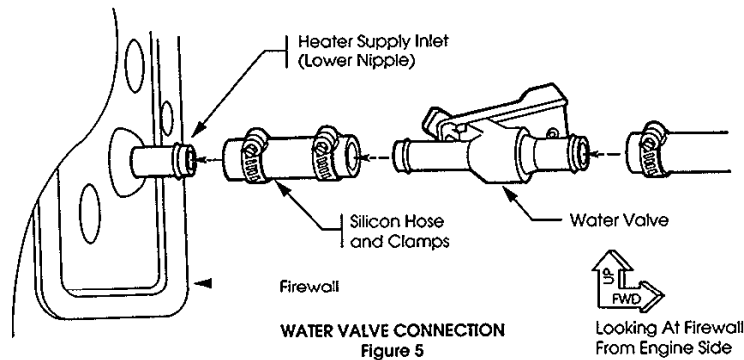
2. Slip the rubber sleeve attached to the blower assembly over the blower transition duct (RD-5-5452-0) before installing blower assembly (See Figure 4).
3. Install blower assembly on existing blower mounting plate using three (3) 5/16-24 screws. (Mounting plate located under dash on passenger side of vehicle.)
4. 1995 "R" Model trucks must have wire harness loosened at tiwrap and pulled down to allow air intake to fit above it.
5. Insert the new recirculation air intake duct (right-hand section RD-5-5450-0) under the dash and position it over the "D" shaped hole in existing mounting plate, with bracket going over right hand blower mounting screw (See Figure 4).
6. Secure recirculation air intake duct to blower mounting plate using (1) 5/16-24 nut and blower mounting screw.
7. Apply a 1/4" bead of press-tite around the lip of the fresh air intake duct. (Left-hand section RD-5-5423-0).
8. Insert the fresh air duct (left-hand section) under the dash and connect it to the recirculation air intake duct using the two (2) sheetmetal screws provided.
9. Secure the duct assembly to the firewall using the (1) retainer strap supplied.
10. Install the new defrost outlet duct (RD-5-5458-0) using screws removed from existing duct.
11. Retighten wire harness tie wrap.
12. Reconnect wiper link to center pivot.



UNDER DASH DUCT POSITIONING
Figure 4

13. Route the water valve control cable and 1/8" cowl vent air supply hose (green) through hole in firewall located above bulkhead adaptor assembly. (Seal hole with press-tite). See Figure 3.

14. Install the R-8820/R-8150 under the vehicle dash: evaporator, heater core and drain hose plumbing should fit through existing holes in firewall.
 - a. Trim excess insulation away from firewall around mounting surface of R-8820/R-8150 unit using provided trim template.
15. Secure unit to firewall and dash using four (4) screws from original heater installation.
16. Secure blower transition duct to passenger side of R-8820/R-8150 unit using (4) 10/32 hex head screws.
17. Connect blower motor lead wires to connectors #14R-BN and 14B shown on vehicle wiring diagram.
18. Look through instrument panel access holes and make sure defrost duct is properly aligned with outlet on top of R-8820/R-8150 unit. (See Figure 4).
19. Realign defrost duct if necessary, then reinstall all dash access panels.
20. Plug the R-8820/R-8150 1/4" air supply hose (black) into tee fitting installed on bulkhead adaptor assembly. (See Figure 3).
21. Connect the four (4) prong packard electrical connector on R-8820/R-8150/r-8150 to the connector unplugged from original heater only unit.
22. Connect the 1/8" green air line to the fitting on the cowl vent actuator. (See Figure 1).
23. Secure water valve to heater supply inlet (nipple located at bottom of unit) using two (2) hose clamps and short piece of silicone hose supplied. Cable mounting bracket pointing toward front of vehicle. (See Figure 5).
 - a. On "U" and "DM" model trucks the water valve may need to be located on the heater core outlet (nipple located at the top of unit).



24. Connect and adjust water valve control cable to water valve. For hose routing see Section E.
25. Mount Binary™ or Trinary™ pressure switch to receiver/drier when provided separately.
26. Install receiver/drier and bracket using existing radiator support bracket bolts. (See Figure 6).

C. WIRING INSTRUCTIONS

1. Units using a binary switch:
 - a. Route a wire from binary switch to #4 post of electrical junction block. (Junction block located on drivers side of firewall).
 - b. Route a wire from binary switch to compressor.
2. Units using a trinary switch:
 - a. Wire per provided wiring schematic. (See Figure 9).

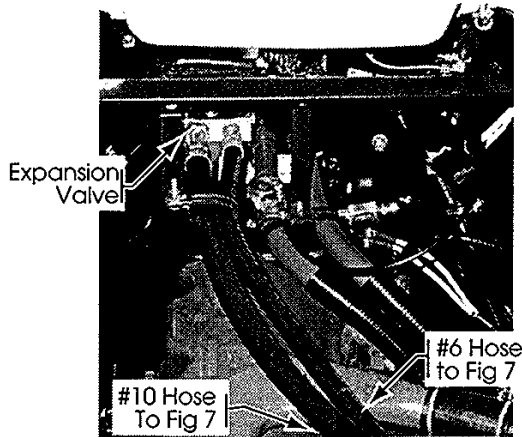
D. FREON HOSE ROUTING (SEE FIGURES 6 AND 7)

NOTES:

a. Lubricate "O" rings with refrigeration oil before using. b. Make certain "O" rings are installed on all refrigerant fittings. c. Provide sufficient clearance around sharp angles and edges to prevent damage to refrigerant hose. d. Do not leave hoses unsupported! The service life of the heater/air conditioner unit or condenser may be greatly reduced as a result of broken fittings. e. Hose clamps are provided in the RD-5-8012-0 general installation to secure both refrigerant and heater hoses.

1. Route the #6 refrigerant hose from the condenser to the "in" port of the receiver/drier.
2. Route the #8 refrigerant hose from the condenser to "high pressure" port of the compressor.
3. Route the #6 refrigerant hose from the "out" port of the receiver/drier and the #10 refrigerant hose from the expansion valve, located on R-8820/R-8150 unit, over the top of engine to the "suction" side of the compressor.
4. Tighten all fittings.

NOTE: When using R-134a: at the compressor use included charge port fittings.



LOOKING AT FIREWALL
Fig 6

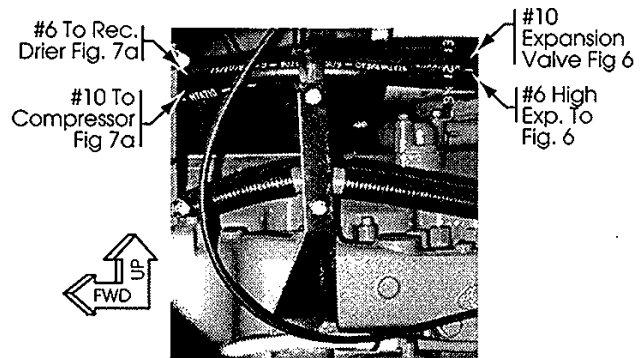
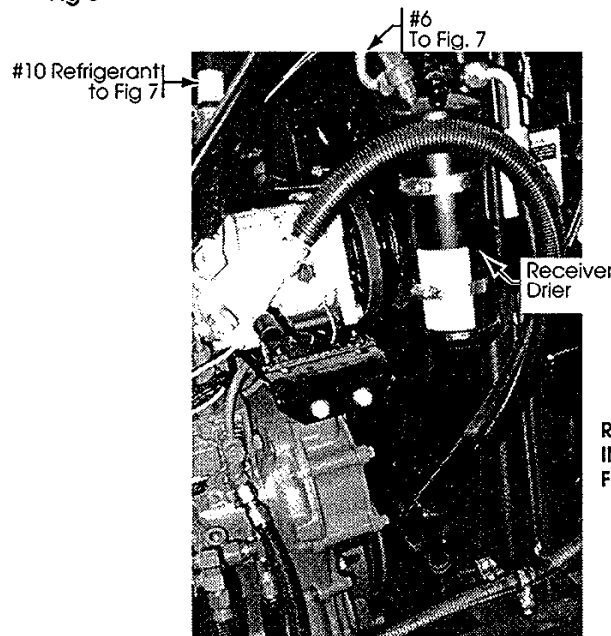


Fig 7



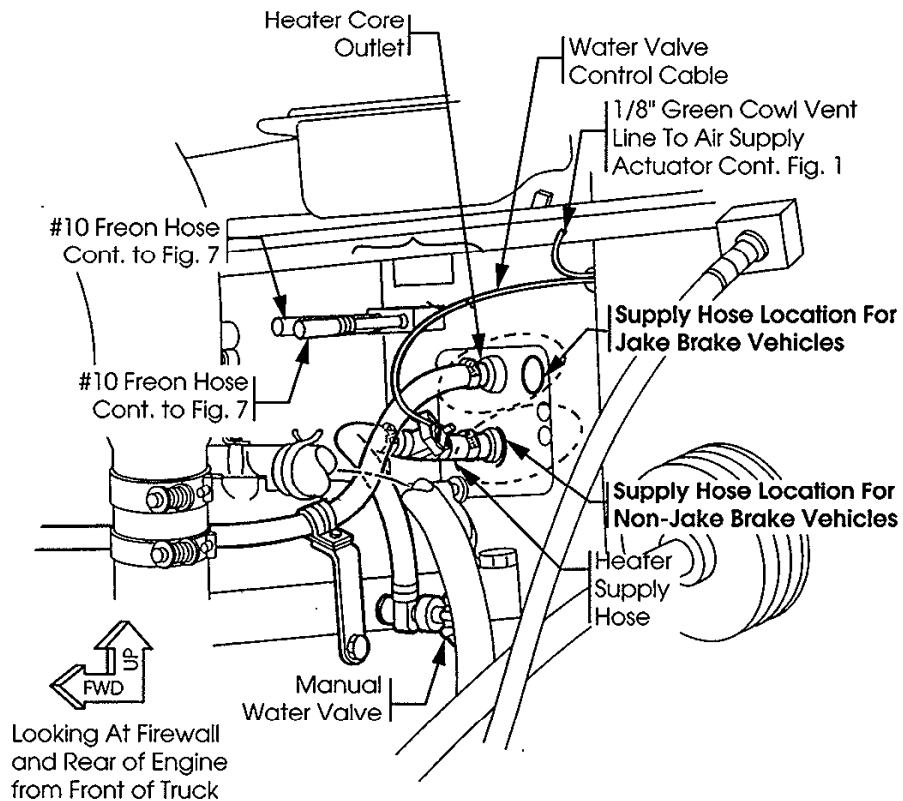
RECEIVER DRIER
INSTALLATION
FIG 7a

E. HEATER HOSES AND WATER VALVE

NOTE:

On "R" model trucks the cable operated water valve is located on the heater supply inlet, on "U" and "DM" model trucks it may need to be located on the heater core outlet. (See Figure 8).

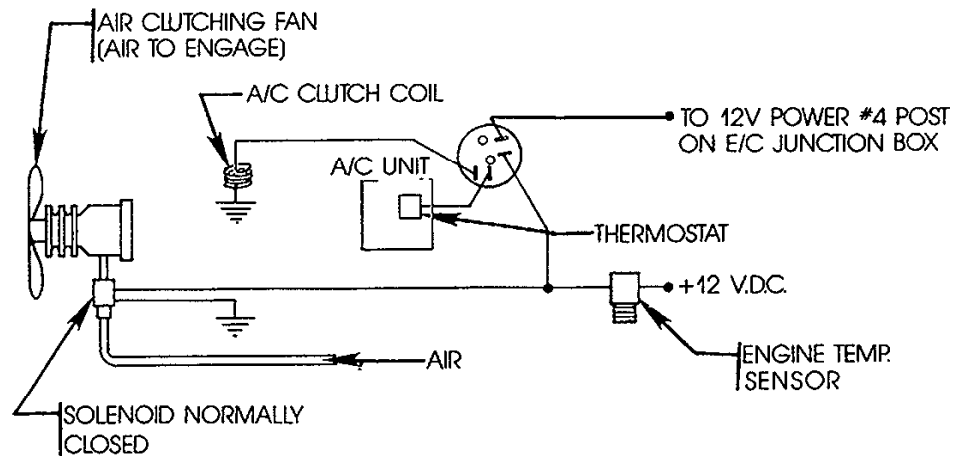
1. Connect the existing heater hose from the engine block shutoff valve to heater supply inlet. (Nipple located at the bottom of unit).
2. Connect the heater hose return line to the heater core outlet. (Nipple located at the top of unit).



**HEATER HOSE AND WATER VALVE
ROUTING FROM FIREWALL
Figure 8**

F. FINAL ASSEMBLY AND CHECK

1. Evacuate the system, test for leaks and charge with refrigerant
2. Connect battery.
3. Turn the ignition switch to the "on" position, place the A/C control lever on max A/C and the temperature control lever to the coldest position.
 - a. The clutch should click on and be engaged. If not, see step #8.
 - b. The evaporator blower should be turning at high speed.
4. Turn the fan switch to medium and low positions and check that the evaporator blower slows down.
5. Move the A/C control lever to the off position and compressor clutch should disengage.
6. Start engine and run at 1500 RPM. Turn unit on "full cold," "high fan." Check sight glass on receiver drier for bubbles. Add 6 to 8 ounces more R-12 (3-5 ounces R-134a) after the sight glass just clears.
7. Make sure clutch cycles on and off as system is operating.
8. If clutch does not engage the system may not have been charged to a high enough pressure to actuate the binary switch™. Place a jumper wire across the switch and run system until it is fully charged then remove jumper wire.



The Above Diagram is Intended To Show A Typical Application.

TYPICAL TRINARY SWITCH APPLICATION

FIGURE 9