Compact Headliner Air Conditioner Model R-9750

INSTALLATION INSTRUCTIONS

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 the 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 on vehicle.

NOTE:

1. Additional items required for complete installation:

A)	Compressor	8 to 10 cubic inch displacement are required (Sanden SD-5[]8, SD-510 or equivalent). For HFC-134a use a compressor compatible with R-134a
B)	Condenser	Remote Mount (R-9720 or equivalent); or Radiator Mount (77R 06,50 or equivalent). For R-134a use R-9725 or 77R 0650
C)	Compressor Mount Kit	This includes mounting hardware, belts and pulleys (if needed).
D)	Receiver Drier	High capacity (12 cubic inches of desiccant) 74R 1706 or equivalent. For R-134a applications use 74R 1806 or equivalent.
E)	System Protection Switch(es)	71R 7000 binary switch, high and low pressure cut-out or equivalent dual switches. For R-134a applications use 71R 7050.
F)	Refrigerant Hose	Nylon Barrier or nylon lined refrigerant hose is recommended minimum quality for heavy duty applications. Push-on fittings can be used on either hose although a "crimp fitting" is recommended. Reusable fittings can be used only with the Aeroquip nylon hose (R-12 applications only). Galaxy hose with crimp fittings are recommended for R-134a.

A. Mounting the Unit

1. Remove the headliner or loosen enough to drop the center portion (Disregard if no headliner).

2. Determine the most suitable location for mounting the air conditioning unit.
   a. Mark the front-to-rear centerline of the cab on the outside of the cab roof (if centering unit in the cab).
   b. Unbolt unit lid from main housing and place on the roof using the centerline as a guide.

   NOTE: For proper water drainage, be sure the rear of the unit is not mounted higher than the front.

3. Mark the mounting hole locations.

4. Drill the mounting holes and remove burrs and sharp edges. Clean 2" around mounting holes with solvent for application of adhesive sealant to waterproof holes. See Figure 1.

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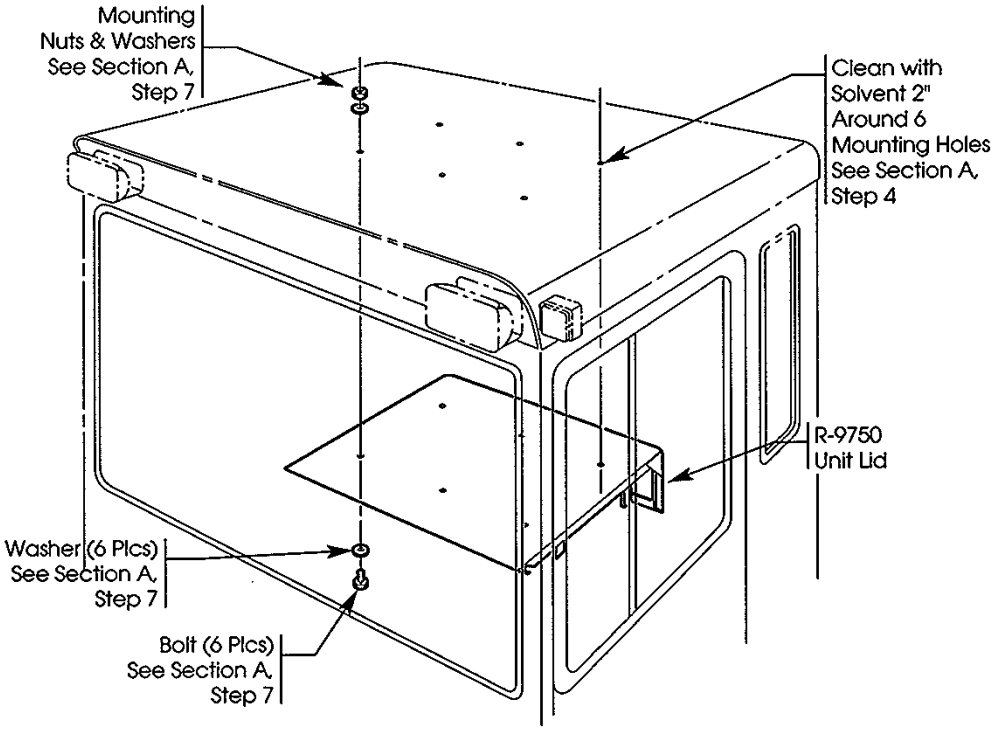
5. Re-assemble unit lid to main housing unit.

6. Temporarily install the headliner unit inside the cab and determine if roof reinforcing is needed, If so, make and install reinforcing at this time.

7. Mount unit to roof of cab using mounting bolts, nuts and washers. See Figure 1.
   NOTE: Apply adhesive sealant to the mounting hole locations before mounting unit. Tighten mounting bolts evenly and caulk with sealant.

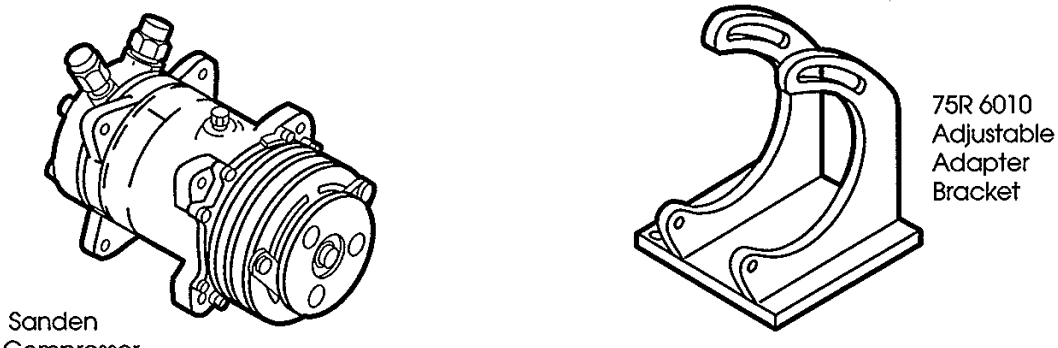


TYPICAL UNIT PLACEMENT
Figure 1

B. Compressor Mounting

1. Install compressor mounting hardware to engine block.

NOTE: Red Dot does not recommend any compressor mount designs that are not directly attached to the engine. If fabrication of compressor mounting bracket is required, be sure to design so the belt wrap is a minimum of 1/3 around the clutch pulley and can be tensioned easily. If designing for a Sanden Compressor, Red Dot does provide an adjustable adapter bracket 75R 6010 which often saves time in design and fabrication. See Figure 2.



SANDEN COMPRESSOR AND BRACKET
Figure 2

2. Install compressor making sure to properly align and tension drive belt.

3. Check compressor refrigerant oil level per compressor manufacturer's instructions.

C. Condenser Mounting (Remote or Radiator Style)

Remote Mount

1. Locate in an area as far from flying debris as possible so the condenser can be easily serviced when motors need changing or cleaning debris from fins.

2. Mount in a position so that the large (#8) hose fitting is above the small (#6) hose fitting.

Radiator Mount

1. A radiator mounted condenser will be effective only if positioned to receive maximum air flow. (Usually flow is greatest toward the outside versus the center of the radiator).

2. Install condenser allowing a minimum of 1.5 inch air space between the condenser and the radiator. Also, all radiators should have baffles on top and sides to prevent hot air recirculating back around the radiator.

D. Refrigerant Hose Installation

1. Determine desired hose routing and measure hose lengths, per plumbing schematic. See Figure 3.
   NOTE: If suction line #10 hose length is longer than 10 feet, Red Dot recommends using #12 refrigerant hose and "step-up" refrigerant fittings. This will improve system function.

2. Cut refrigerant hose to length using a knife. DO NOT SAW OFF. See Figure 4, Step 1.

3. Install fittings on hose. See Figure 4, Steps 2 and 3. (Be sure to clean out refrigerant hose after cuffing).

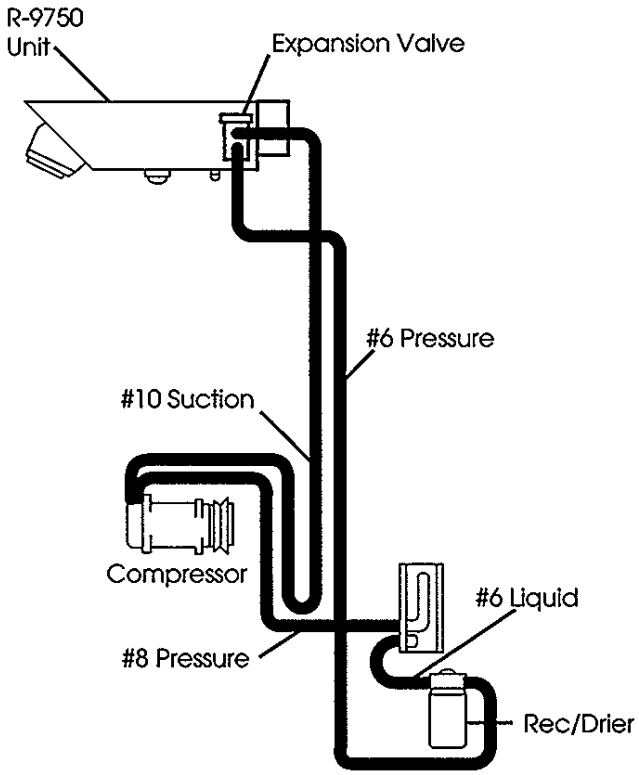
4. Add refrigerant oil to A/C components as follows:

   2 oz. - Condenser

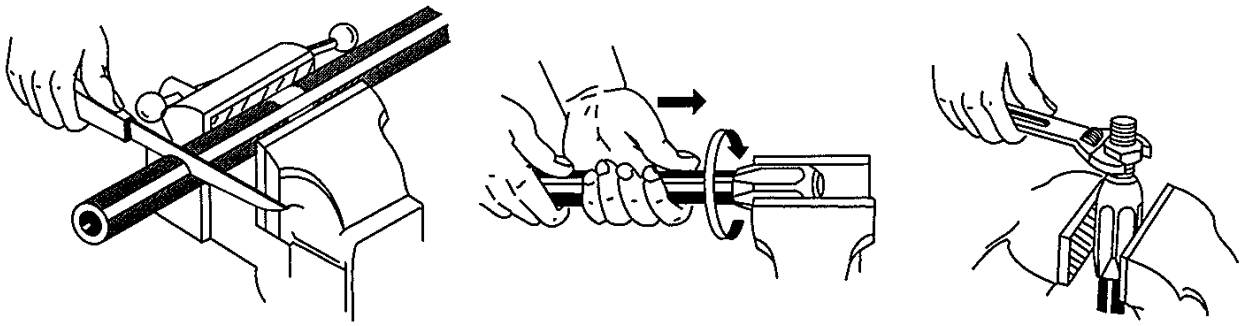
   1 oz. - Receiver Drier

   1 oz. – Evaporator

   If using R-134a refrigerant, be sure to use oil recommended by the compressor manufacturer.



R-9750 PLUMBING SCHEMATIC
Figure 3



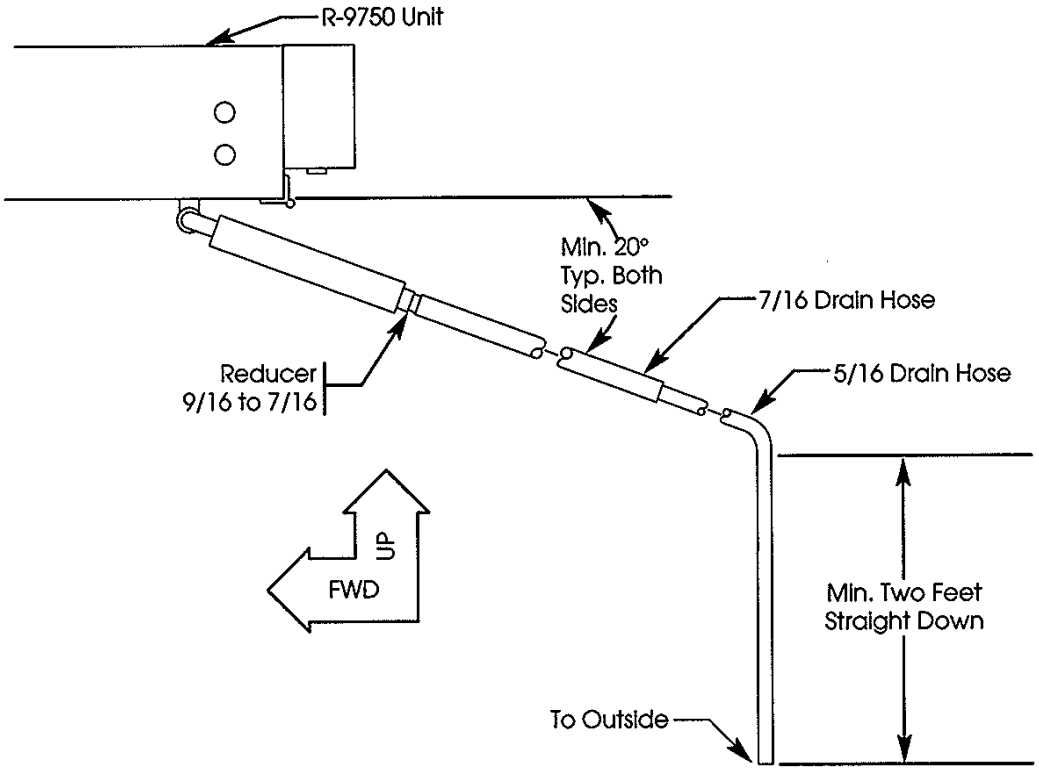
1. Cut hose to proper length.
2. Screw hose into collar (left hand thread) until hose bottoms. Back out 1/4 turn.
3. Screw fittings into collar until insert bottoms. (Lubricate insert and I.D. of hose for ease of assembly).

REUSABLE FITTING INSTALLATION
(R-12 Systems Only)
Figure 4

5. Lubricate "O" rings with mineral oil and attach to fittings. Route and connect #6, #8 and #10 hoses to unit, compressor, condenser, and receiver drier per plumbing schematic. See Figure 3. (Use appropriate oil for R-12 or R-134a).

6. Use clamps to secure hoses and prevent hose movement. Hoses must not come in contact with hot vehicle components, exhaust manifold, etc., and they should not be subject to mechanical abrasions. NOTE: Insulating the suction line is often required for proper system performance.

E. Drain Hose Installation
NOTE: See Figure 5 for additional information on drain hose installation.



DRAIN HOSE INSTALLATION
Figure 5

1. Attach drain hose assembly to the unit.

2. Route drain hoses out the cab at desired location. Be certain the drain hoses run downhill from the unit at a minimum slope angle of 20ø. Also be certain the last two feet point straight down.
   NOTE: The drain hose is stepped down in size at two places to promote siphoning water from the drain pan under evaporator. The reduction in diameter forces the water to flow in a solid column. This creates a suction that draws the rest of the water out of the pan, For this effect to work properly, the last two feet of 5/16 O.D. drain tube should point straight down or as close to this as possible.

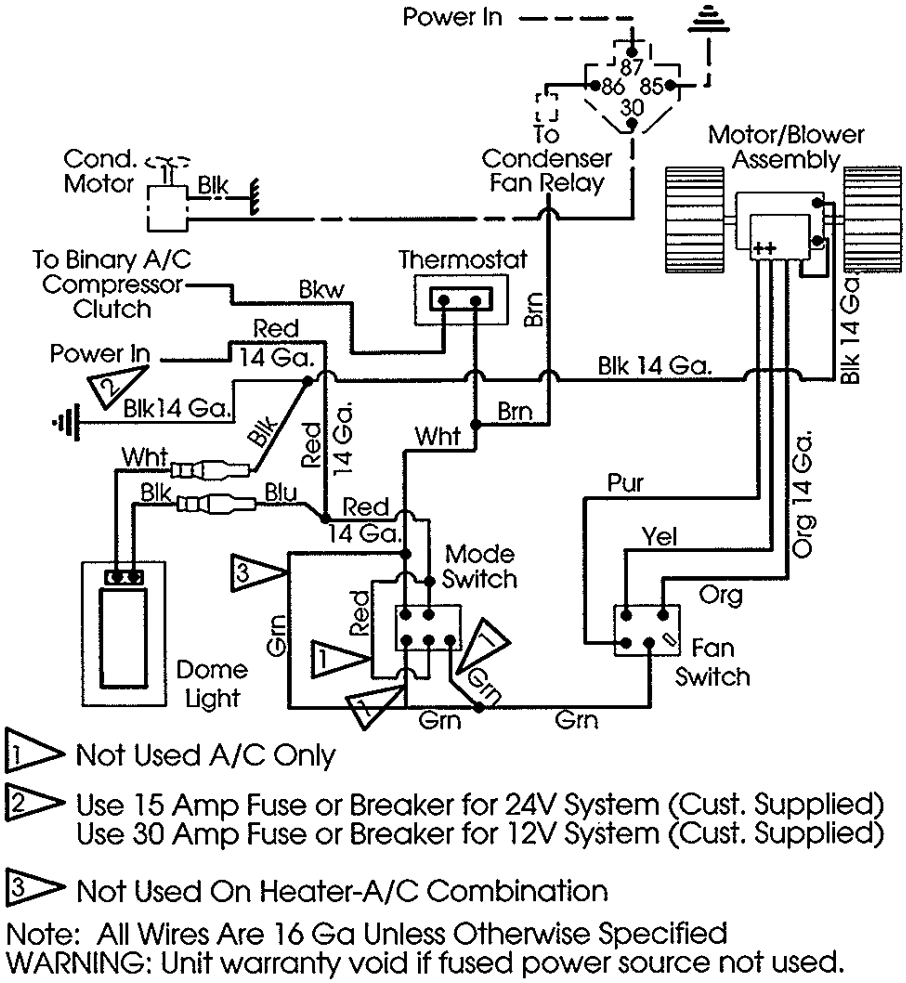
3. If drain hose assembly is too long remove 7/16 drain hose at reducer; cut to desired length and re-install.

4. Secure drain hoses with tie wraps. Inspect to make sure hoses are not kinked or pinched off.

F. Unit Wiring

NOTE: See Figure 6 for wiring diagram provided for additional information.

1. Disconnect bakery.
2. Black w/White - Route to low pressure protection switch stripe wire.
3. Red Wire - Connect to an ignition switch supply through a 30 amp circuit breaker for 12 volt system; a 15 amp circuit breaker for 24 volt system.
4. Black Wire - Unit grounding wire.
5. Brown Wire - Route to condenser motor via relay.



WIRING DIAGRAM
Figure 6

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G. Final Assembly and Check

WARNING

The owner operator of the R-9750 unit accepts the responsibility for the proper and safe installation and maintenance of the unit. Special attention must be given to the mounting assembly and fasteners as well as the hose assembly and connections to be sure that they are securely fastened and in good condition to preclude the possibility of personal injury.

1. Evacuate the system, then charge with refrigerant and test for leaks.

2. Connect the battery.

3. Turn the ignition switch to the "on" position and place the fan speed switch on the highest position.

4. Place the Heat-A/C switch to the "A/C" position and the temperature control lever on the coldest position.
   a. The clutch should click on and be engaged.
   b. The evaporator blower should be turning at high speed.

5. Turn the fan switch to the "off" position and compressor clutch should disengage.

6. Move the Heat-NC switch to the "Heat" position and compressor should disengage.

7. Start engine and run at 1500-2000 rpm. Place the Heat-A/C switch to the "A/C" position and the A/C fan switch to the high speed position. Check sight glass for bubbles. Add 6 to 8 ounces more refrigerant after the sight glass just clears.

8. Make sure clutch cycles off and on as system is operating.