

Heavy Duty Heater / Air Conditioner Model R-8545

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 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.

ADDITIONAL ITEMS REQUIRED FOR COMPLETE INSTALLATION:

- | | |
|--------------------------------|--|
| A) Compressor | 8 to 10 cubic inch displacement required (Sanden SD-508, SD-510 or equivalent). For HFC use a compressor compatible with 134a. |
| B) Condenser | Remote Mount (R-9720 or equivalent); or Radiator Mount (77R 0650 or equivalent). For R-134a use R-9725 or 77R 0650. |
| C) Compressor Mount Kit | This includes mounting hardware, belts and pulleys. |
| D) Receiver Drier | High capacity (12 cubic inches of desiccant) 74R 1706 or equivalent. For R-134a applications use 74R 1816 or equivalent. |
| E) System Protection | 71R7000 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 the minimum quality recommended 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 lined hose (R-12 applications only). Galaxy hose with, beadlock crimp fittings are recommended for 134a. |

A. Mounting the Unit

1. Determine the most suitable location for mounting the air conditioning unit.
2. Mark the mounting holes, drain hole locations and fresh air opening (optional) locations. See Figure 1.

NOTE: 1) If mounting template is lost the fresh air intake opening can be marked (for 78R 5150 panel filter by scribing a side and bottom of the unit line on the mounting surface and measuring up 1 1/4" from the bottom (for the bottom of the fresh air opening) and 4 1/4" from the side. Then mark a rectangular opening 2 3/4" high by 7 3/4" wide (to mark the outside of the fresh air opening).

- 2) If optional fresh air opening is used, fresh air door retaining screw on unit must be removed.

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3. Drill the mounting holes and remove burrs and sharp edges.
4. Mount unit to cab using mounting bolts, nuts and washers. See Figure 1.

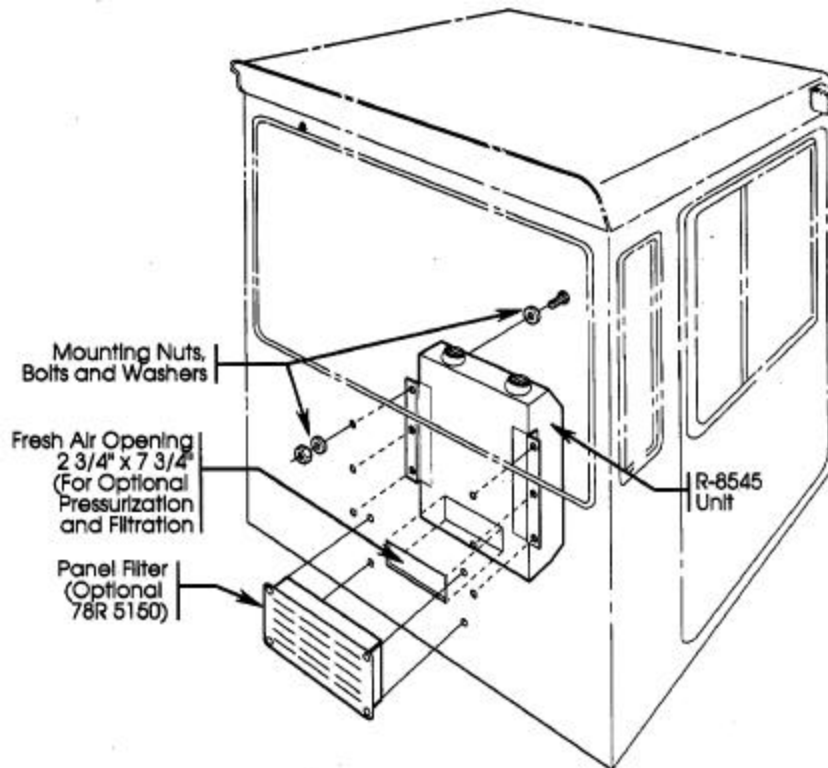
B. Compressor Mounting

1. Install compressor mounting hardware to engine block.

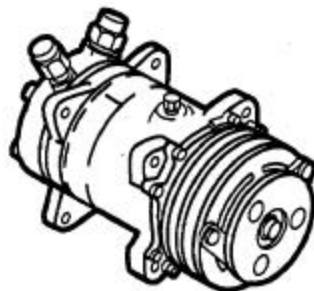
NOTE: Red Dot does not recommend any compressor mount designs that are not directly attached to the engine.

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.

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



TYPICAL UNIT PLACEMENT
Figure 1



SANDEN COMPRESSOR AND BRACKET
Figure 2

75R 6010

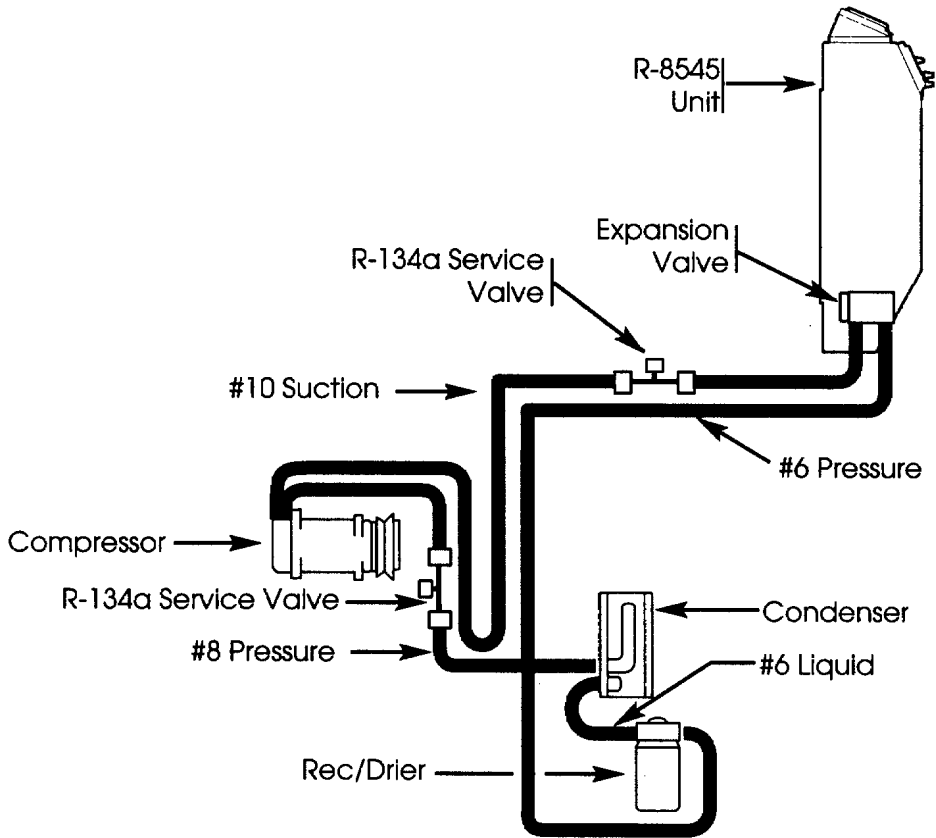


C. Condenser Mounting (Remote or Radiator Style) Remote Mount

1. Locate in an area easily accessible and free of dust and other debris.
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.
 2. Install condenser allowing a minimum of 1.5 inch air space between the condenser and the radiator to prevent heat transfer from 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.



R-8545 PLUMBING SCHEMATIC
Figure 3

3. Install fittings on hose. See Figure 4, (Be sure to clean out refrigerant hose after cutting).
4. Additional refrigerant oil is required for long hose applications.
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.
6. Use clamps to secure hoses and prevent hose movement. Hoses must not come in contact with hot engine components (exhaust manifold, etc.) and they should not be subject to mechanical abrasions

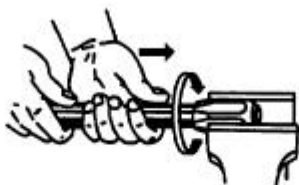
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REFRIGERANT HOSE INSTALLATION - Figure 4

MAKE CERTAIN "O" RINGS ARE ON ALL REFRIGERANT FITTINGS BEFORE SECURING



1. Cut refrigerant hose cleanly at 90° to proper length using a sharp clean edge.

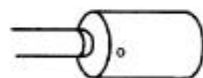


2. Screw hose into collar (left hand thread) until hose bottoms. Back out 1/4 turn.



3. Screw fitting into collar until insert bottoms. (Lubricate insert and I.D. of hose for ease of assembly.)

REFUSABLE FITTINGS



Bubble Crimp Fitting

1. Cut hose as above in Fig. 1. Lubricate the inside of the fitting ferrule with refrigerant oil. (It's important to form a seal.)



Refrigerant Hose

2. Insert the hose into the ferrule, being certain to fully seat the hose so it is visible in the ferrule viewing hole.



Crimped Fitting and Refrigerant Hose

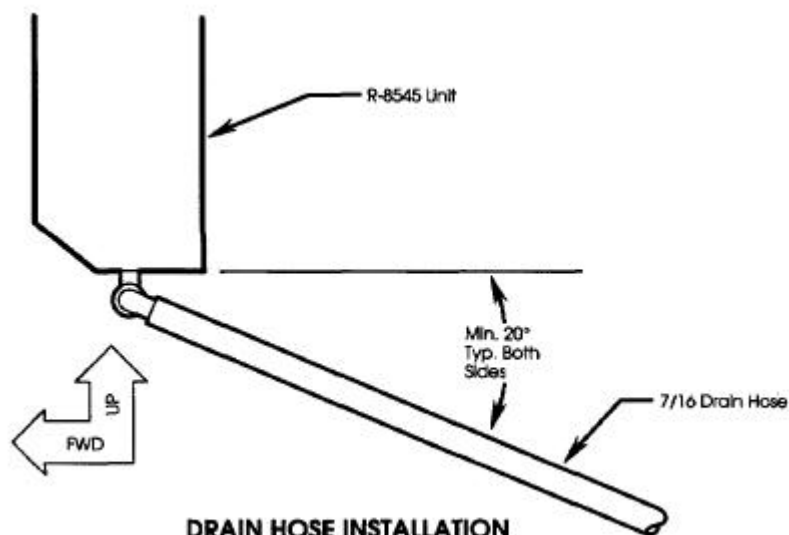
3. Use hand crimper part #79R 1510 or hydraulic crimper part #79R 1515 to crimp fitting on hose.

BUBBLE CRIMP

E. Drain Hose Installation

NOTE: See Figure 5 for additional information on drain hose installation.

1. Attach drain hose assembly to the unit.
2. Route drain hoses out the cab at desired location. Be certain the drain hose runs downhill from the unit at a minimum slope angle of 20°.
3. Secure drain hoses with tie wraps, inspect to make sure hoses are not kinked or pinched off.

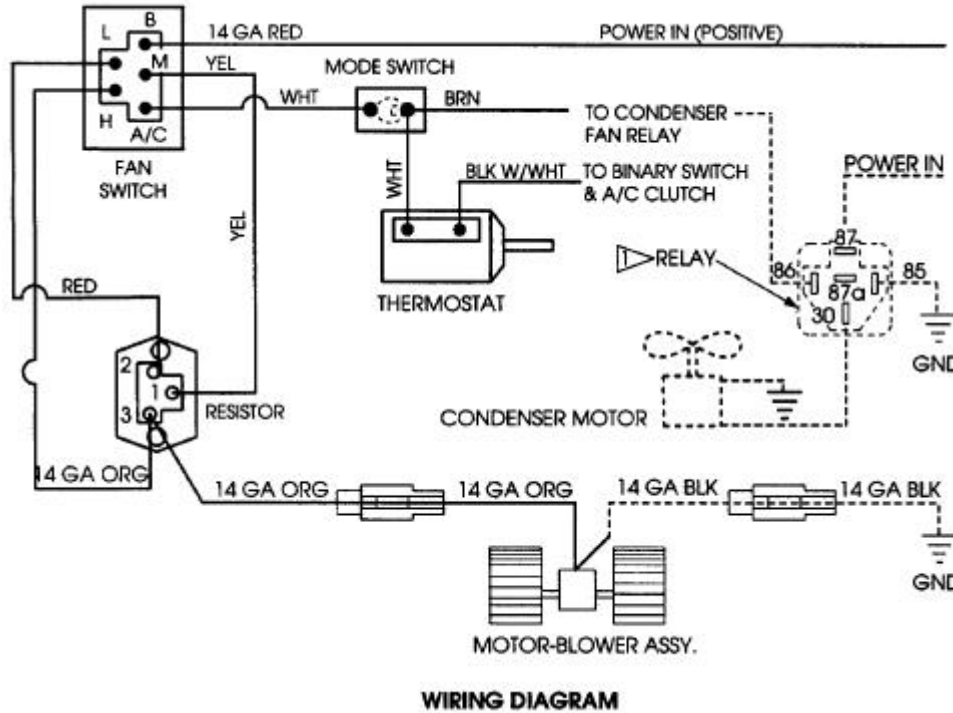


DRAIN HOSE INSTALLATION
Figure 5

F. Unit Wiring

NOTE: See Figure 6 for wiring diagram.

1. Disconnect battery.
2. Black W/White - Route to A/C clutch through low pressure protection switch if included.
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 fan relay (remote mount condenser).



G. Final Assembly and Check

WARNING

The owner/operator of the R-8545 unit accepts the responsibility for the proper and safe installation and maintenance of the unit. Special attention must be given to the mounting 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. Connect the battery.
2. Evacuate the system, then charge with refrigerant.
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-A/C switch to the "Heat" position and compressor should disengage.
7. Start engine and run at 1200-1500 rpm. Place the Heat-A/C switch to the "A/C" position and the fan speed on high. Check sight glass on receiver drier for bubbles. Add 6 to 8 ounces more R-12 after the sight glass just clears.

NOTE: Be aware that the sight glass may appear "milky" when charging with R-134a. Be careful not to overcharge the system.

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

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