

Model R-9727 Rooftop Air Conditioners

INSTALLATION INSTRUCTIONS

(FOR NEGATIVE GROUND ELECTRICAL SYSTEMS, POSITIVE GROUND SEE SECTION D)

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. A compressor, bracket, belts and refrigeration hoses are required to complete the installation. These items may be obtained from your RED DOT Distributor.
2. The compressor must have sufficient capacity to allow the unit to deliver the rated BTU output. A 10 cubic inch compressor (Tecumseh HG1000, Sankyo SD-510 or equiv.) turning faster than 1,750 rpm is required.
3. A fresh air filter, RD-5-3905-0 is available for use in dusty environments. Replacement element for filter is Donaldson No. P-101246 (not stocked by Red Dot).
4. Galaxy hose with crimp fittings are recommended for use with R-134a systems.

A. MOUNTING THE UNIT ON CAB ROOF

NOTE: Choose a mounting location for the unit that will not destroy or void warranty or effectiveness of either the Roll Over Protection Structure or Falling Object Protection Structure.

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. (See Figure 1)
 - a. Mark the front-to-rear centerline of the cab on the outside of the cab roof.
 - b. Place the mounting template on the roof using the centerline as a guide.
 - c. Insure that air flow to the unit is not obstructed.
 - d. Do not mount the unit with the front lower than the rear, as this will prohibit water drainage.
 - e. Avoid cutting roof stiffeners if possible. If stiffeners are cut or roof is weakened due to the cut-out, reinforcement may be required.
3. Tape the template to the roof at the desired location. Mark the roof cut-out area (scribe the roof).
4. Cut the roof where marked and drill the 3/8" dia. mounting holes. Remove burrs and sharp edges.

ROOFTOP AIR CONDITIONER INSTALLATION SCHEMATIC

CHECK INSTALLATION KIT TO MAKE CERTAIN THAT ALL PARTS LISTED ARE INCLUDED.

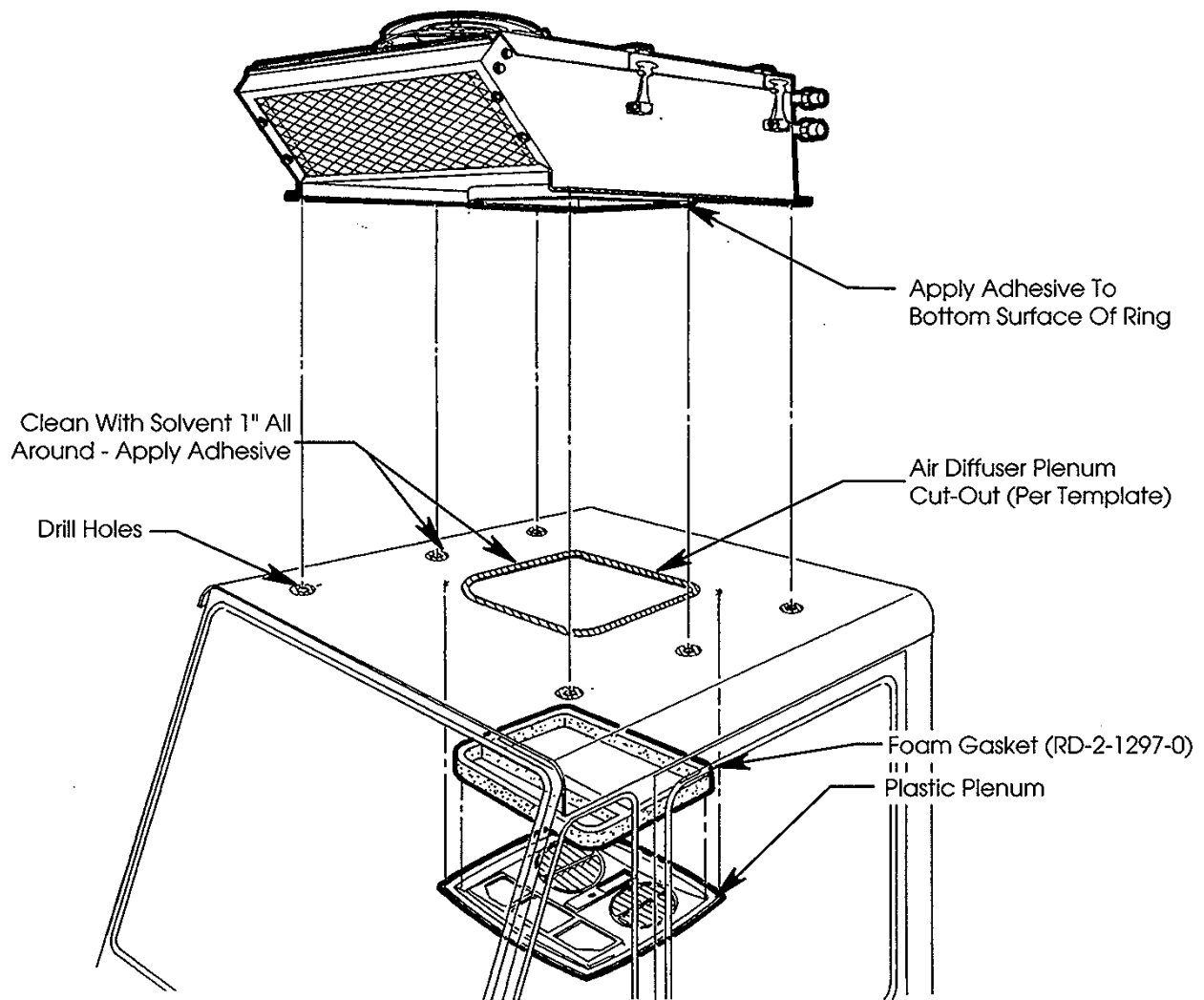


Figure 1

5. Temporarily install the headliner and trace the cut-out onto it from the roof. Remove the headliner and cut out the area marked. Use caution and do not cut headliner opening larger than roof opening. (Check against template if in doubt.)
6. Should roof reinforcing be required, fabricate and install at this time.
7. Clean the outside roof area around the cut-out and mounting holes using a mild solvent.
8. Apply a thin film of adhesive 1" wide around upper surface of roof cut-out and mounting holes. Apply sealer to the face of the sealing ring on the unit. See Figure 1.
9. Set unit on cab.
10. Apply sealant around bolts and nuts to prevent water leakage into cab.

B. REFRIGERATION HOSE INSTALLATION

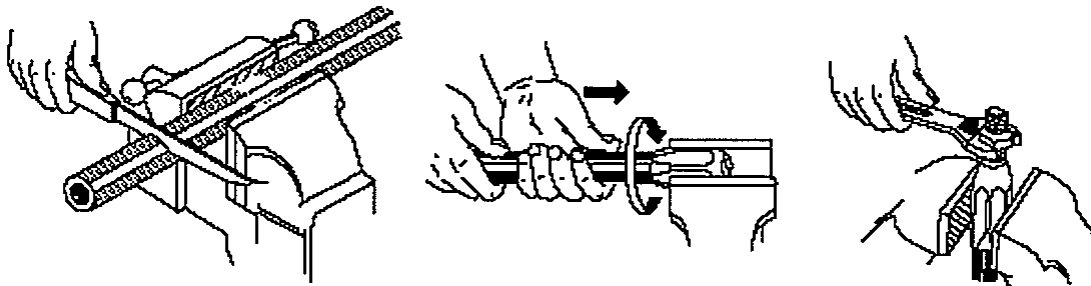
1. Install reusable or push on fittings on hose as shown in Figure 2. #12 suction line is recommended in place of #10 for increased cooling capacity. Use step-up fitting. Be sure to clean out refrigeration hose with clean, dry air after cuffing. Galaxy hose with crimp fittings are recommended for use with R-134a. Lubricate O-rings with mineral oil.
2. Install "O" Rings and connect hoses to fittings on unit.
3. Clamp hoses within unit using clamps provided. Cut off end of mounting cap screw if it interferes with hose.
4. Route hoses over the top of cab and down the back wall to the compressor. On tilt cab vehicles, route hose to the cab pivot point and then to compressor.
5. Use clamps provided to secure hoses and prevent hose movement. Hoses must not come in contact with hot vehicle components, exhaust manifolds, etc., and they should not be subjected to mechanical abrasions.

C. DRAIN HOSE INSTALLATION

1. Route the drain tubes to the unit so that they travel in a downward direction from the unit.
2. Cut off the 9/16 O.D. tubes to length and connect to fittings on unit. Secure drain tubes with tie wraps. Attach to refrigeration hoses only if they run downhill properly.
3. Red Wire: Connect to an ignition switch supply through a 30 amp circuit breaker (15amp/24V).
4. White Wire: Connect to compressor clutch. Route the wire around the hinge point before connecting to compressor clutch on tilt-cab installations.

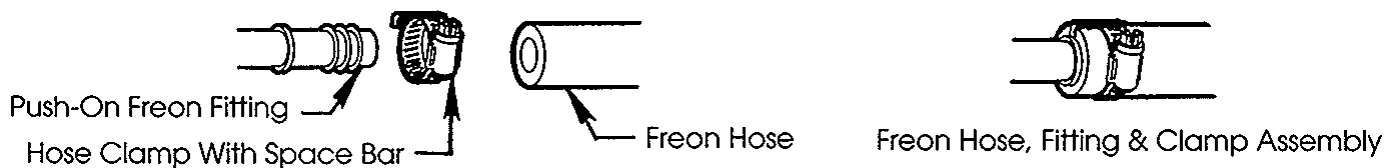
REFRIGERANT HOSE INSTALLATION

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



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 FITTINGS (R-12 SYSTEMS ONLY)-Figure 2



1. Cut hose as above in Fig. 2
2. Push hose onto fitting until hose bottoms against stop
3. Attach Hose clamp to hose assembly with space bar over cut end of hose as show

PUSH ON FITTING (R-12 SYSTEMS ONLY)-Figure 3

D. WIRING

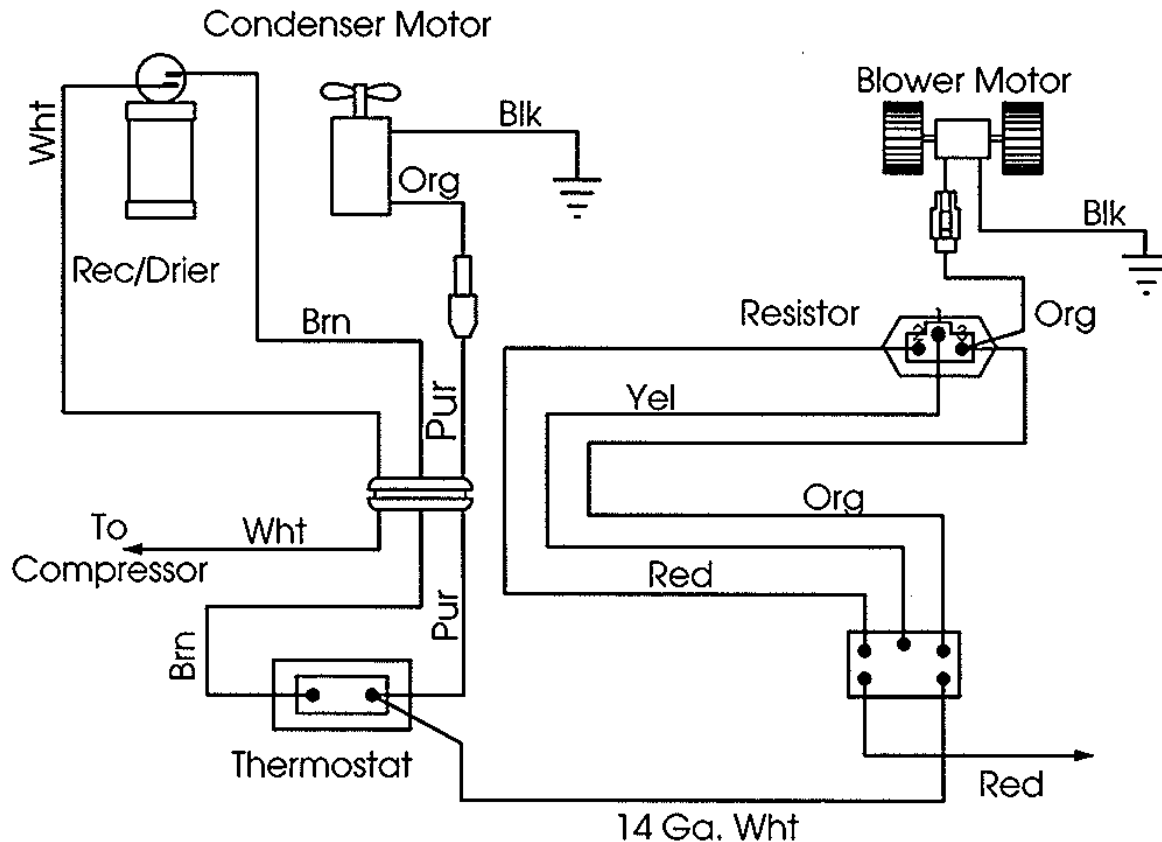
Note:

- a. Unit is wired for negative ground. For positive ground systems, reverse both motor leads on condenser motor and evaporator motor.
 - b. Unit is internally grounded.
2. Disconnect battery.
 3. Route red & white wire through 3/4 slot in plenum ring.
 4. Red Wire: Connect to an ignition switch supply through a 30 amp circuit breaker (15 amp/ 24V).
 5. White Wire: Connect to compressor clutch. Route the wire around the hinge point before connecting to compressor clutch on tilt-cab installations.

E. AIR DIFFUSER PLENUM

1. Install headliner. Make sure that wire loom exits plenum ring properly and is not pinched.
2. Place one foam gasket in plastic plenum assembly. If headliner is over 1 inch thick, glue two foam gaskets together. An extra foam gasket may be ordered (Part-RD-2-1297-0) if required.
3. Place the plenum assembly up to the unit and start one 1-32 x 3" screw.
4. Attach the switch-thermostat panel to the plenum with two 10-32 x 1 1/2" screws.
5. Start the remaining three 10-32 x 3" screws.
6. Tighten the four plenum assembly screws evenly until the plenum fits snugly against headliner. Make sure that gasket does not shift out of place and electrical connectors remain attached.

ELECTRICAL SCHEMATIC

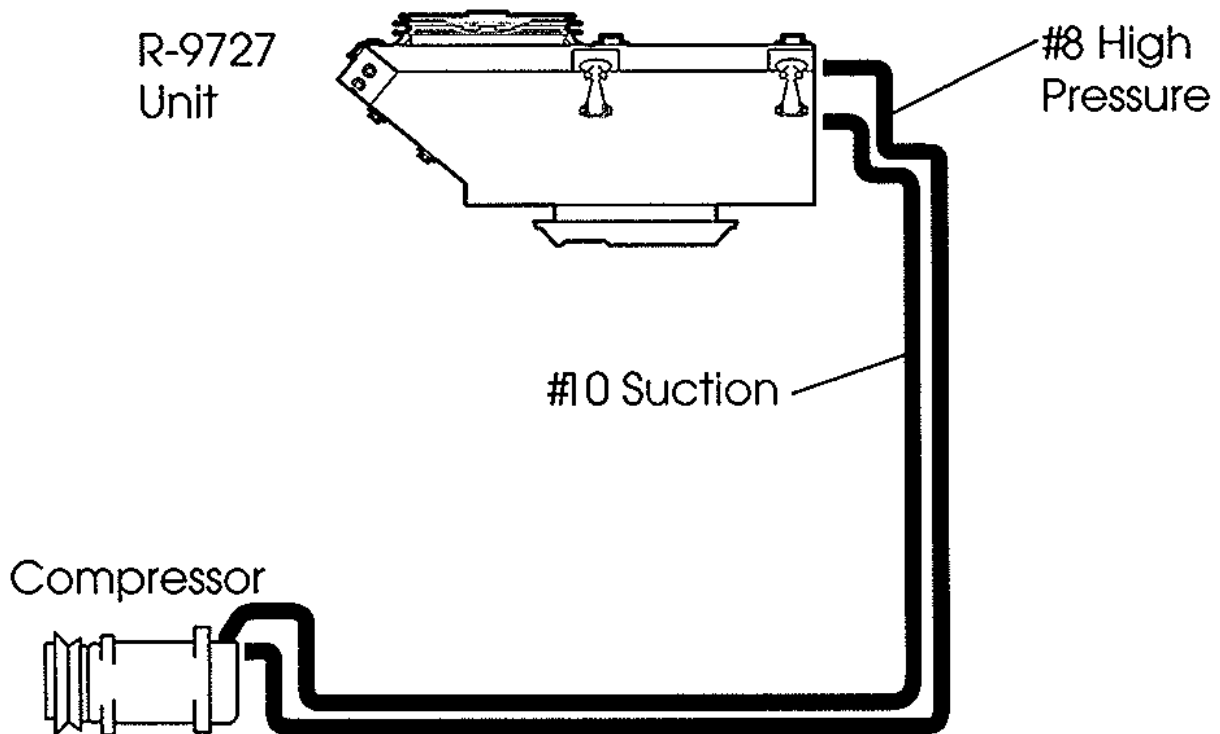


F. FINAL ASSEMBLY AND CHECK

1. Evacuate the system, test for leaks and charge with refrigerant. The unit requires 4-6 pounds depending on hose length.
2. Connect the battery.
3. Turn the ignition switch to the "on" position, turn the thermostat to the coldest point and the fan switch to "high"
 - a. The clutch should click on and be engaged. If not, see Step 8.
 - b. The condenser fan and 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. Turn the thermostat off and clutch should disengage.
6. Start engine and run at 1500-2000 rpm. Turn unit on "full cold", "high fan". Check sight glass on receiver-drier for bubbles, Add 6 to 8 ounces more R-12 after the sight glass just clears.
7. Check thermostat to be sure clutch cycles on and off.
8. If clutch does not engage the system may not have been charged to 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.

WARNING: UNIT WARRANTY VOID IF FUSED POWER SOURCE NOT USED.

PLUMBING SCHEMATIC



***NOTE #12 SUCTION LINE RECOMMENDED FOR INCREASED EFFICIENCY.**