



Compact Headliner Air Conditioner/ Heater Model R-9753

R-9753-0 (12V A/C)

R-9753-1 (12V A/C & Heat)

R-9753-0-24 (24V A/C)

R-9753-1-24 (24V A/C & Heat)

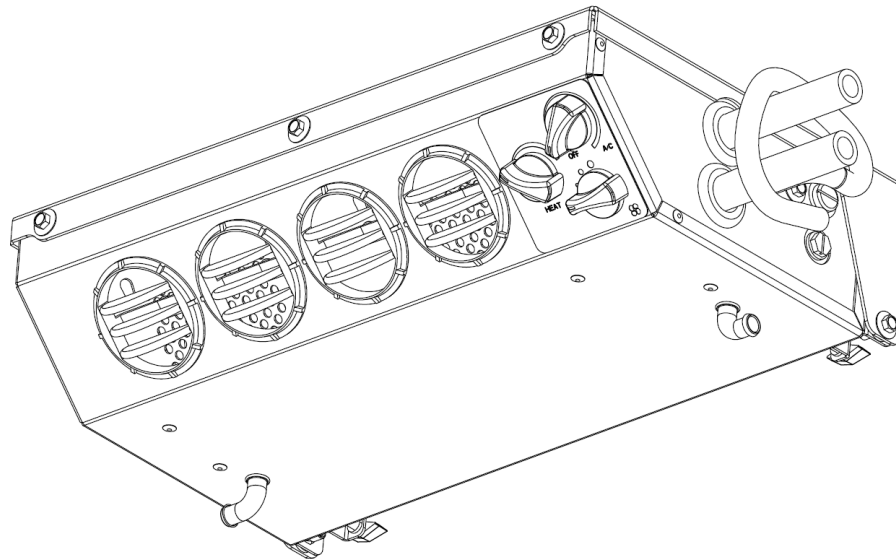
ABOVE UNITS INCLUDE

RD-5-16852-0 Installation Kit

OPTIONS

1834 Electronic Bypass Heater Valve Kit kit)

INSTALLATION AND SERVICE INSTRUCTIONS



Items Required for Model R-9753 Mounting

- Mounting Hardware: 10mm (3/8") bolts, nuts and washers (4 total)
- Drill
- 11mm (13/32") Drill Bit
- Metric Socket Set
- SAE Wrench Set (3/4" through 1-1/8")

Required Items for Complete A/C Installation. Available from your RedDOT Distributor.

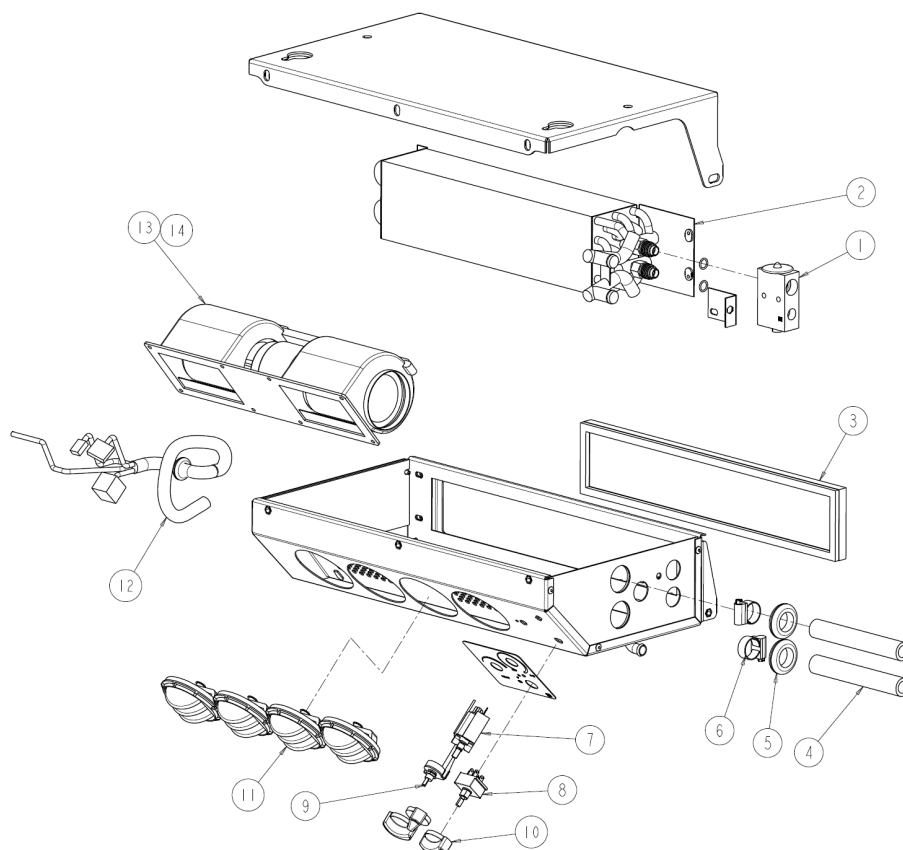
- Condenser (Remote Mount or Radiator Mount)
- Compressor
- Compressor Mount
- Compressor Drive Belt (add-on pulley may be required)
- Refrigerant Hoses, Fittings and O-Rings
- Electrical Components (Wire, Connectors, etc)
- Switches (Binary or High and Low Pressure)
- Misc. Accessories: Grommets, Clamps, etc.
- Models R-9753-1 & R-9753-1-24 only
- Heater Accessories: 5/8" ID Heater Hose, Clamps
- Electronic Water Valve Kits: 1834

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RD-5-16853-0

Rev (-)

Model R-9753 Service Parts



ITEM	PART #	DESCRIPTION	ITEM	PART #	DESCRIPTION
1	RD-5-6868-0	EXPANSION VALVE	9	RD-5-10934-0	*POTENTIOMETER
2	RD-3-20380-0	*COMBO CORE	10	RD-5-8812-0	KNOB
	RD-3-20372-0	+EVAP CORE	11	RD-5-10236-0	LOUVER
3	RD-3-20388-0	FILTER	12	RD-3-20382-0	*WIRE HARNESS
4	RD-5-6304-6	*HEATER HOSE		RD-3-20381-0	+WIRE HARNESS
5	RD-5-4590-0	*GROMMET	13	RD-5-16844-1	MOTOR BLWR 12V
6	RD-5-12692-0	HOSE CLAMP	14	RD-5-16845-1	MOTOR BLWR 24V
7	RD-4125-36	THERMOSTAT			
8	RD-5-10934-0	FAN SWITCH			

Items Not Shown From Install Kit **RD-5-16852-0**

ITEM	PART #	DESCRIPTION	ITEM	PART #	DESCRIPTION
22	RD-5-3550-240	DRAIN HOSE (1/2")	24	RD-5-4659-0	CHECK VALVE DRAIN
23	RD-5-16183-0	SPRING CLAMP (3/4")			

* Items only supplied with A/C & Heat units

+ Items only supplied with A/C units

For Reference Only, Subject to Change without Notice

CAUTION!

Complete the Following Items before Installation

- Read These Instructions Completely
- Disconnect Vehicle's Battery

Special Handling Instructions

- A/C system pressures during operation of up to 350 psi are common. Please use extreme care when charging and servicing any A/C system.
- For an A/C system to operate at peak efficiency, it must be both clean and dry. Take special care to keep all components clean and all fittings capped until refrigerant hoses are completely installed.

Mounting the Model R-9753 Air Conditioner/Heater

Step 1

Determine the desired mounting location. The supplied template gives you the dimensional requirements.

NOTES:

- Determine the routing of the (2) drain hoses most appropriate for your application. The drain hose should be routed to maintain a minimum 20° down slope. Note the location where each will exit the cab. (SEE PAGE 7)
- Determine the routing of the refrigerant hoses and note the location where each will exit the cab. (SEE PAGES 7 & 8)
- (Models R-9753-1 & R-9753-1-24 only)
Determine the routing of the heater hoses and note the location where each will exit the cab. (SEE PAGE 9)

Step 2

Remove the headliner (if applicable) to verify proper clearances for bolting of unit through roof.

Step 3

Tape the supplied template to the desired mounting location on the roof and drill four 11mm (7/16") mounting holes. Drill any holes required for the drain hoses, refrigerant hoses and heater hoses (if applicable).

NOTE: See the following recommendations on routing hoses out of the cab:

- Drain Hoses: Page 7, Step 2
- Refrigerant Hoses: Page 8, Steps 3 & 4
- Heater Hoses: Page 9, Step 2

Step 4

Remove all burrs from the holes.

Step 5

Determine if roof requires reinforcement.

This can be verified by temporarily securing the housing to the roof (See Step 6 minus sealant). Complete reinforcement if required.

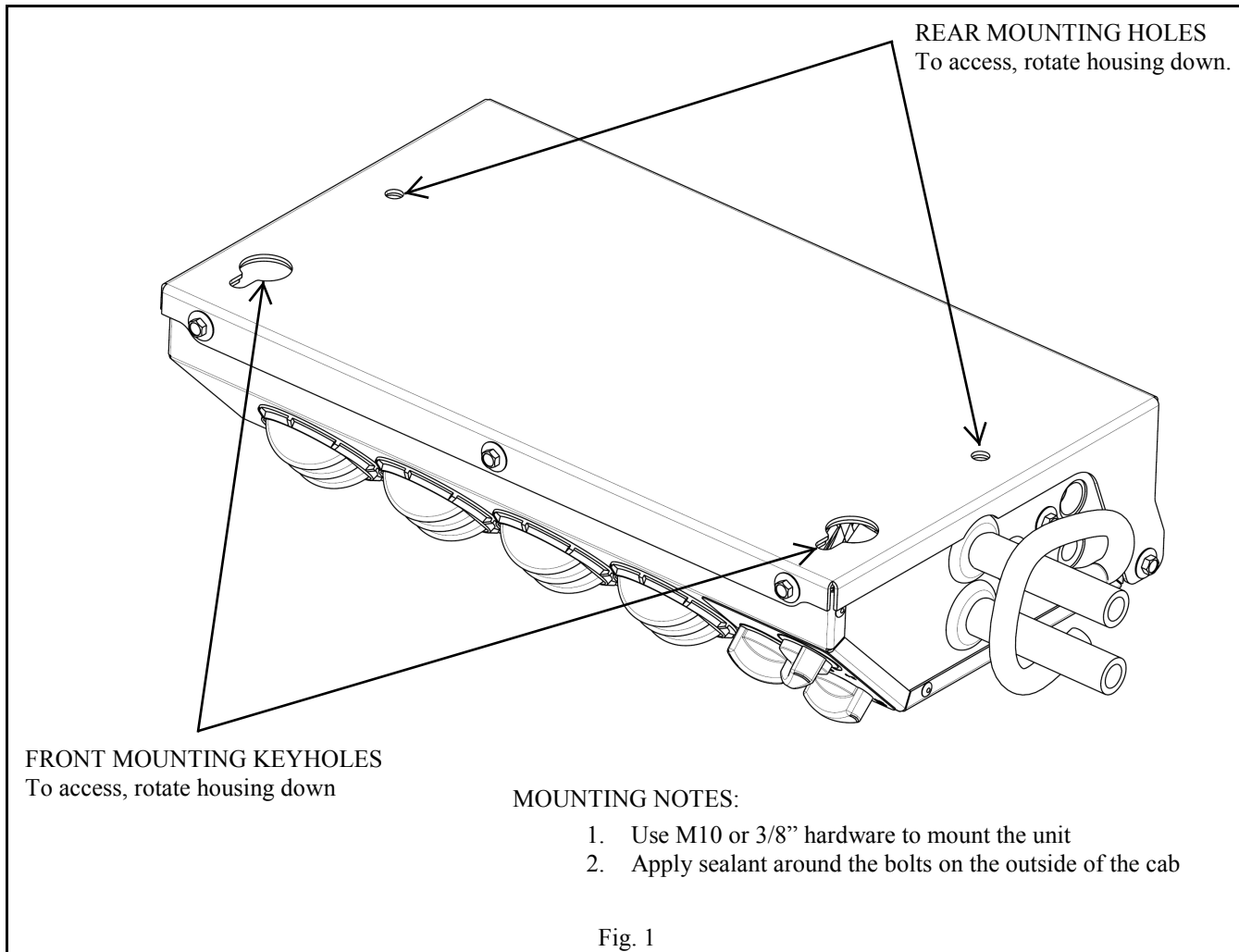
Step 6

Open the cover of the R-9753 unit. Apply adhesive sealant around the cover's mounting hole locations, then secure it to the vehicle using four 10mm (3/8") bolts, nuts and washers (NOT SUPPLIED) through the top of cover as shown in Fig. 1.

Step 7

After fully tightening mounting bolts, apply an additional sealant around bolts and washers on roof.

Standard Mounting Illustration



Install of Condenser, Compressor, Receiver/Drier & Pressure Switches

CONDENSER

- **Remote Mount**
Locate in an area that most closely meets the following conditions.
 - ◆ Accessible for service and cleaning
 - ◆ Inlet air free from dust and debris
 - ◆ Unobstructed airflow around condenser
 - ◆ Hose routing free from potential damage
- **Radiator Mount**
 - ◆ Position the condenser to receive maximum air flow.
 - ◆ Install with 1.5" (38mm) minimum gap between condenser and radiator.
 - ◆ Verify baffling around radiator to prevent hot air re-circulation.
 - ◆ Position with inlet on top.

COMPRESSOR & MOUNT

Choose a compressor with ports that facilitate a refrigerant hose routing free from stress and sharp objects. Bolt the compressor to a mount specifically designed for the engine utilized in your machine and tighten the belt to the prescribed tension. Check for proper belt alignment.

Receiver / Drier & Pressure Switches

Mount receiver/drier in a location shielded from the direct flow of hot air from the engine or radiator. Choose a location easily accessible for future replacement. RedDOT recommends placing the low pressure switch on the evaporator's outlet fitting and high pressure or binary switch on the condenser's inlet fitting or at the receiver/drier.

Connecting the Electrical Wiring

CAUTION!

Make sure the battery is disconnected before attempting the following steps.

Before you begin:

Reference the wire schematic on the next page. It shows system components not included with the Model R-9753 unit for reference only. The Model R-9753 wire harness may be connected to the vehicle by connector or butt splices. Model R-9753 units with the heat option have a potentiometer to control an electronic heater valve (purchased separately).

A/C ONLY UNITS

- These units do not include a potentiometer. Adding heat to existing a/c only units requires a wire harness change.

HVAC UNITS

- These units include a potentiometer to control an electronic heater valve (purchased separately).

NOTICE!

The following wire connections are wires exiting the R-9753 unit.

Step 1

Red Wire: To Power Supply
Connect this wire directly to an accessory feed on the fuse panel. Fuse the circuit as follows:
15A (24V); 25A (12V).

Step 2

Black Wire (14GA): To System Ground
Connect the R-9753's heavier gauge black wire to a secure vehicle ground.

Step 3

Green Wire: To Compressor Clutch
Connect to the clutch circuit. This circuit should contain either a binary switch or a combination of a high & low pressure switch.

Step 4

Tan Wire: To Electric Condenser Relay
Connect to the electric condenser's relay.

CAUTION!

The tan wire is intended to ONLY activate the condenser relay. Radiator mounted condensers do not utilize this wire (cap wire to prevent electrical short).

NOTE: Steps 5-7 for units with heat option only. Wires connect to heater valve kit's harness.

Step 5

Black Wire (16ga): To Valve's Black Wire
Connect the R-9753's lighter gauge black wire to the heater valve's black harness wire.

Step 6

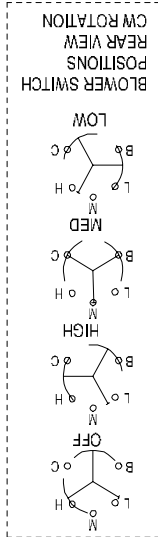
Blue Wire: To Valve's Blue Wire
Connect this wire to the heater valve's blue harness wire.

Step 7

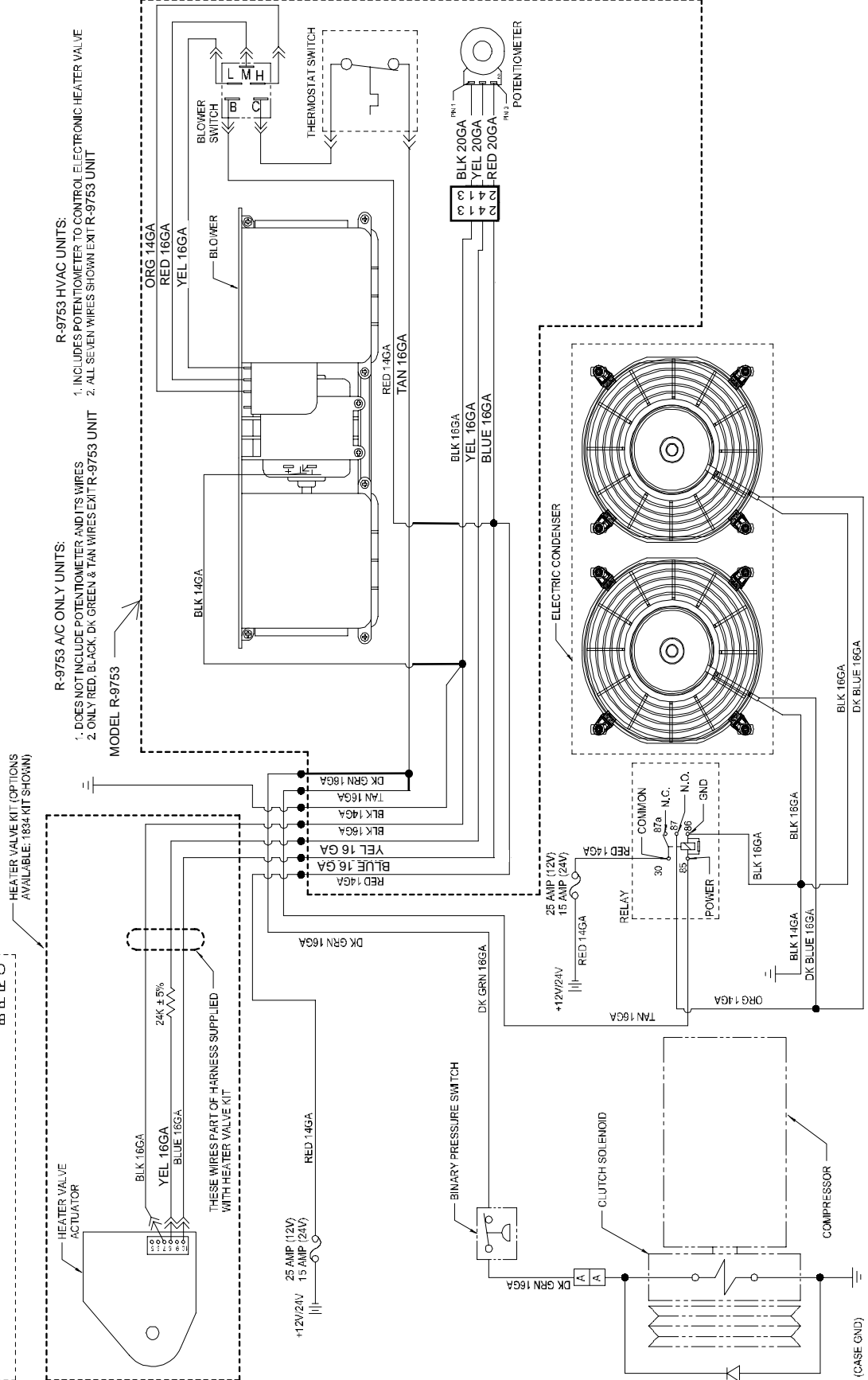
Yellow Wire: To Valve's Yellow Wire
Connect this wire to the heater valve's yellow harness wire.

NOTICE!

Wire the system as shown on the following page. Exact wire colors and sizes for all components except the R-9753 may vary based on installer preference.



GENERAL WIRING NOTES:
 1. SYSTEM COMPONENTS SHOWN FOR REFERENCE ONLY INCLUDE CONDENSER, RELAY, COMPRESSOR, BINARY SWITCH & ELECTRONIC HEATER VALVE.
 2. TAN WIRE NOT USED WITH RADIATOR MOUNTED CONDENSERS.
 3. SYSTEM COMPONENT WIRING (EXCEPT MODEL R-9753) MAY VARY IN COLOR AND GAUGE (SHOWN FOR REFERENCE ONLY).



R-9753 A/C ONLY UNITS:
 1. DOES NOT INCLUDE POTENTIOMETER AND ITS WIRES
 2. ONLY RED, BLACK, DK GREEN & TAN WIRES EXIT R-9753 UNIT

R-9753 HVAC UNITS:
 1. INCLUDES POTENTIOMETER TO CONTROL ELECTRONIC HEATER VALVE
 2. ALL SEVEN WIRES SHOWN EXIT R-9753 UNIT

Routing and Connecting the Drain Hoses

NOTE: Run each drain hose to its corresponding corner of the cab for proper drainage under all working conditions.

Step 1

Connect a piece of drain hose to each drain fitting and route them out of the cab at the desired locations. Maintain a minimum 20° down slope. SLOPE RECOMMENDATION: Maintain a min. down slope as follows: Maximum operating grade of your machine + 5°

RECOMMENDATION:

Route the drain hoses through 5/8" ID grommets.

Step 2

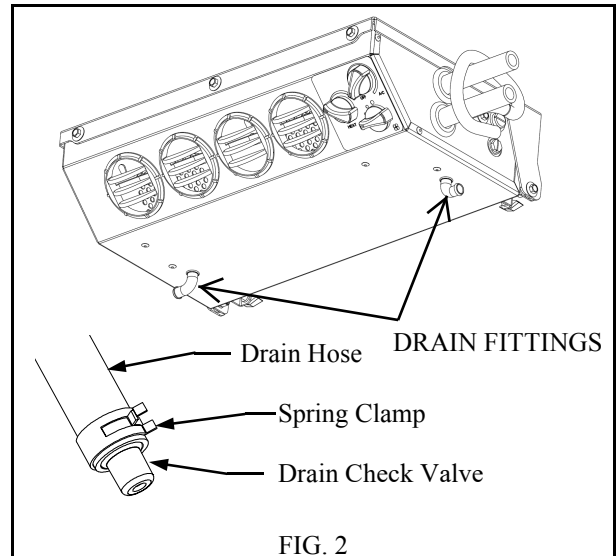
Route drain hoses out of cab and allow for a minimum vertical drop of 12".

Step 3

Secure all connections with tie wraps and verify hoses are free from kinks.

Step 4

Install a drain check valve in end of each drain hose and secure with a spring clamp.



Routing and Connecting the Refrigerant Hoses

Hose Requirements:

Pressure Lines:

- Compressor to Condenser: #8
- Condenser to Receiver/Drier: #6
- Receiver/Drier to Evaporator: #6

Suction Line:

- Evaporator to Compressor: #10

NOTE:

For optimum system performance, RedDOT recommends using #12 hose with step up fittings on systems with suction lines over 10 feet (305cm).

CAUTION!

Properly installed refrigerant lines should be routed to ensure the following criteria are met:

- Fittings are not under stress
- Hoses well secured
- Hoses routed away from sharp and abrasive surfaces

Step 1

COMPRESSOR to CONDENSER

Determine the desired hose routing from the compressor to the condenser (See Fig. 3). Cut a #8 refrigerant hose to proper length. The hose should be free of inner contaminants. Install the required #8 steel bead lock fittings on the hose and crimp each using a bubble style crimper for #8 refrigerant hose.

NOTE: Install a #8 R-134a compatible O-Ring to each fitting before installation.

Step 2

CONDENSER to RECEIVER/DRIER

Determine the desired hose routing from the condenser to the receiver/drier (See Fig. 3). Cut a #6 refrigerant hose to proper length. The hose should be free of inner contaminants. Install the required #6 steel bead lock fittings onto the hose and crimp each using a bubble style crimper for #6 refrigerant hose.

NOTE: Install a #6 R-134a compatible O-Ring to each fitting before installation.

Step 3

RECEIVER/DRIER to EVAPORATOR

Determine the desired hose routing from the receiver/drier to the evaporator (See Fig. 3). Cut a #6 refrigerant hose to proper length. The hose should be free of inner contaminants. Install the required #6 steel bead lock fittings onto the hose and crimp each using a bubble style crimper for #6 refrigerant hose.

NOTE: Install a #6 R-134a compatible O-Ring to each fitting before installation.

RECOMMENDATION

Route the #6 refrigerant hose into the cab through a 3/4" ID grommet.

Torque Recommendations for Steel Beadlock Fittings

#6:	11 - 13 ft•lbs	(15 - 18 N•m)
#8:	15 - 20 ft•lbs	(20 - 27 N•m)
#10:	21 - 27 ft•lbs	(29 - 37 N•m)

Step 4

EVAPORATOR to COMPRESSOR

Determine the desired hose routing from the evaporator to the compressor (See Fig. 3). Cut a #10 (#12) refrigerant hose to proper length. The hose should be free of inner contaminants. Install the required #10 (step up for #12) steel bead lock fittings onto the hose and crimp each using a bubble style crimper for #10 (#12) refrigerant hose.

NOTE: Install a #10 R-134a compatible O-Ring to each fitting before installation.

RECOMMENDATION

Route the suction line refrigerant hose out of the cab through one of the following grommets:

#10 Hose: 1" ID

#12 Hose: 1.25" ID

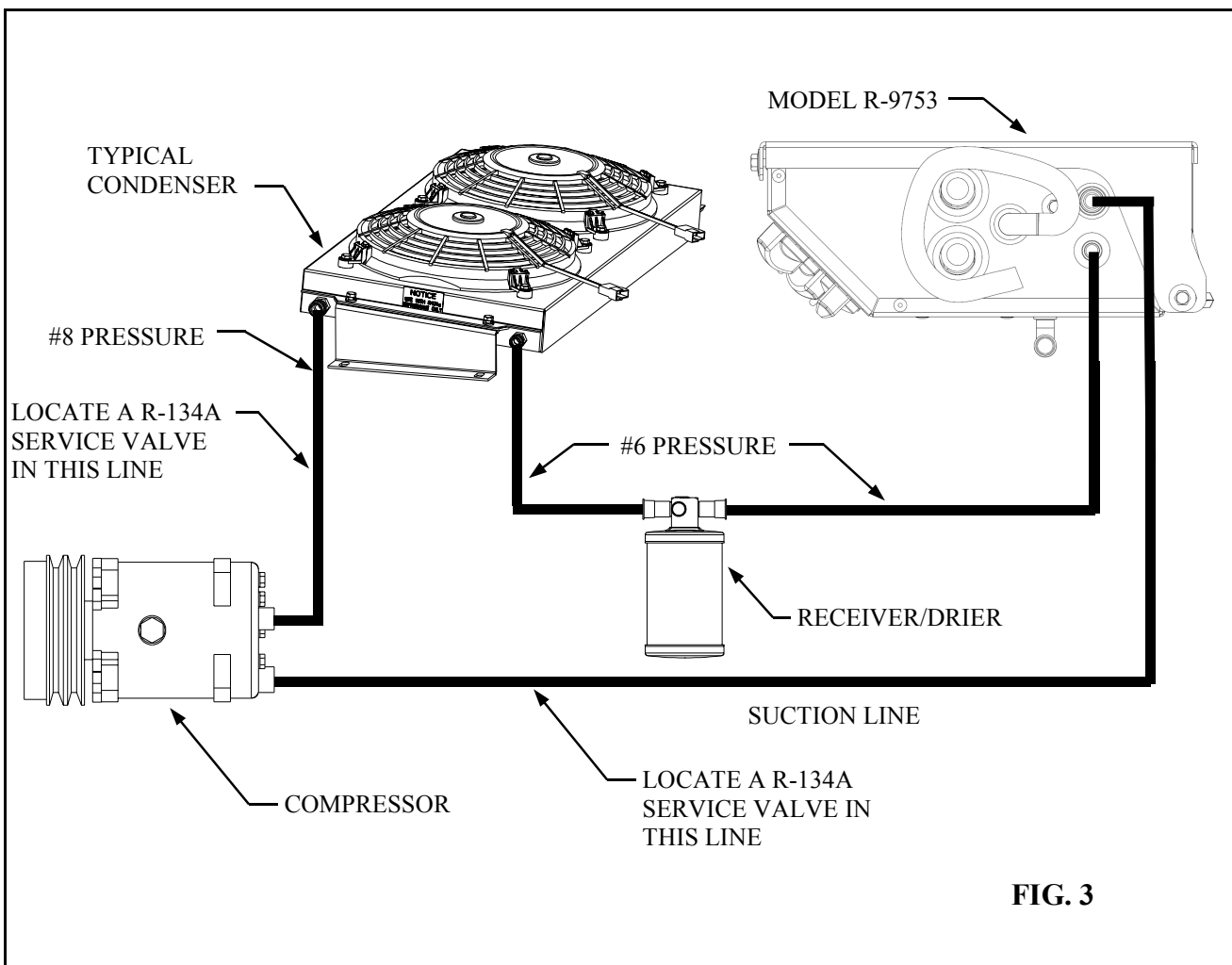


FIG. 3

Routing and Connecting the Heater Hoses (Models R-9753-1 & R-9753-1-24 only)

Hose Requirement: 5/8" ID Heater Hose

CAUTION!

Properly installed Heater lines should be routed to ensure the following criteria are met:

- Connections are not under stress
- Hoses are not collapsed
- Hoses well secured
- Hoses routed away from sharp and abrasive surfaces

Step 1

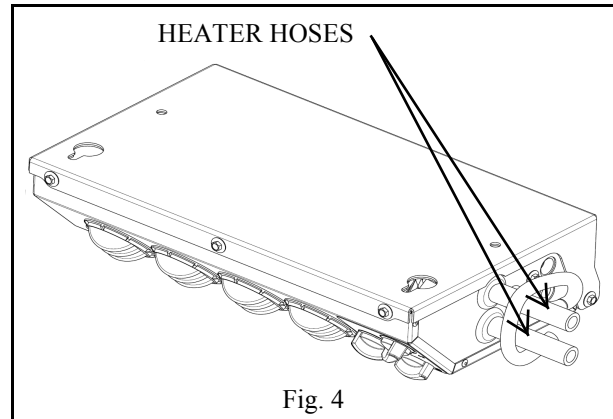
Determine the desired hose routing from the engine to your Model R-9753 Heater/Air Conditioner, then cut appropriate lengths of 5/8" ID heater hose.

Step 2

Route hoses and connect to the hoses exiting the right side of Model R-9753 housing as shown in Fig. 4. Clamp each connection with a constant tension 5/8" clamp.

RECOMMENDATION:

Route the heater hoses into and out of the cab through a 1" ID grommet.



Step 3

Install the electronic water valve as detailed in the kit's instructions.

NOTE: The heater valve kit is purchased separately.

CAUTION!

The heater valve will not function properly if the inlet/outlet plumbing as detailed in the kit's instructions are switched.

Final System Check

Step 1

Evacuate the system, then charge with refrigerant (R-134a only) and test for leaks. (See a RedDOT catalog for the proper charging procedure)

Step 2

Re-connect the battery.

Step 3

Turn the ignition switch to the "on" position and rotate the blower speed switch to "high".

- The evaporator blower should be at high speed
- Verify blower speeds "low" and "medium"

Step 4

Turn the A/C thermostat switch on with the blower running.

- The clutch circuit should click on and engage

Step 5

Turn the blower speed switch to the "off" position

- The clutch circuit should disengage

Step 6 (A/C & Heat units only)

Turn the potentiometer "heat" switch to its coldest position.

- Heater valve should be completely closed
- Rotate potentiometer to fully "warm" position to verify heater valve fully opens

Step 7

Start engine and run at 1500 - 2000 rpm. Turn the blower speed switch to "high" and the a/c thermostat switch to its coldest position.

Step 8

Complete system charging

- Clutch should cycle on and off under normal operating conditions. This may not occur at elevated ambient temperatures.

Model R-9753 Service Notes

EXPANSION (BLOCK) VALVE SERVICE & HEATER/EVAPORATOR COIL SERVICE

- Evacuate a/c system
- Disconnect hose fittings from the block valve
- UNITS W/ HEAT ONLY: Disconnect heater hoses at unit (leave short hoses thru unit wall attached to coil)
- Remove the four screws securing the coil at the rear of the unit and the screw securing the expansion valve bracket beside the block valve.
- Remove the front cover screws and loosen pivot screws, then rotate lower housing away from cover.
- Lift coil assembly from housing; service block valve and/or coil, then re-assemble in reverse order

NOTE: Use new R-134a compatible O-Rings

SWITCH SERVICE

- Disconnect power from a/c unit
- Remove the front cover screws and loosen pivot screws, then rotate lower housing away from cover.
- Disconnect the harness and/or blower from the switch to be serviced, then remove switch
- Re-assemble in reverse order. Reconnect the blower and switches as shown in the wire schematic

BLOWER SERVICE

- Disconnect power from a/c unit
- Open unit and disconnect the blower's harness
- Remove the six nuts securing the blower to the housing, then remove blower. NOTE: Use an angled deep well socket to access lower nuts.
- Re-assemble in reverse order. Reconnect the blower and switches as shown in the wire schematic

CRITICAL FOR PROPER WATER DRAINAGE

