ON-ROAD

R-6100 Rooftop

Air Conditioner Unit

COmmeRCIAL TRUCkS • CONSTRUCTION • AgRICULTURe

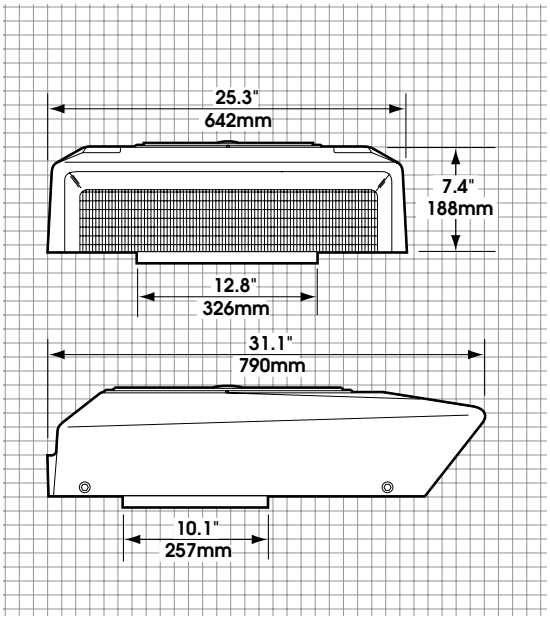
The R-6100 is a lightweight, high capacity unit with a styled low profile.

The R-6100 is our most popular low-profile rooftop A/C unit for trucks and heavy-duty equipment cabs.

Its rotomolded housing is tough, light, and extends just 7.4 inches above the roofline to reduce the risk of impact or interference with equipment bodies and accessories. Inside the cab, the ceiling plenum houses the controls for the double blowers and thermostat as well as a cab air filter yet it protrudes barely 1.5 inches below the headliner. Two large diffusers rotate 360 degrees to concentrate airflow wherever it's needed.

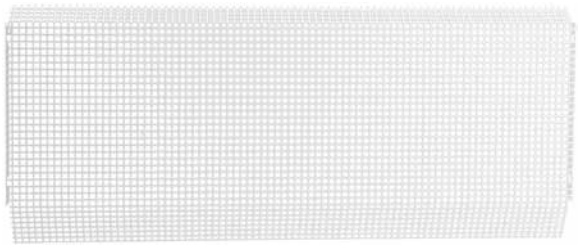
The R-6100 incorporates long-life features including tube-and-fin coil construction, a high-capacity receiver drier, and a Red Dot Trinary™ system protection switch. For easy service, only two outside bolts need to be removed to access any component.

Low profile ceiling plenum blends with any interior.



OpTIONS:

Bug Screen *RD-4-4529-1P*



Winter Cover *RD-5-4718-0P*

Universal Roof Mount Kit
RD-2-1302-0P

CLIMATRANS INC.

www.climatrans.com
Eastern Canada

R-6100 SPECIFICATIONS

BTU'S	Cooling –16,000 BTU/Hr with 36°F (4.7 kW with 2.2°C) refrigerant temp. and 80°F (26.7°C) wet bulb entering air
AIR FLOW	265 CFM (450 m^3/h)
WEIGHT	70 lbs. (32kg)
CONDENSER COIL	The coil is aluminum fin and copper tube construction. This material selection, which includes a tube of .022" (6 cm) wall thickness, results in an effective, lightweight, and rugged coil.
CONDENSER MOTOR/FAN	The motor is a permanent magnet type selected for its extended life. The motor is sealed and a slinger ring and hub cap added for weather protection. The fan is aluminum with a heavy duty spider and riveted blades.
CURRENT DRAW	33 amps @ 13.6 VDC (includes 4 amps for A/C clutch) 16.5 amps @ 27.2 VDC (includes 2 amps for A/C clutch)
CONTROLS	Three speed blower and adjustable thermostat

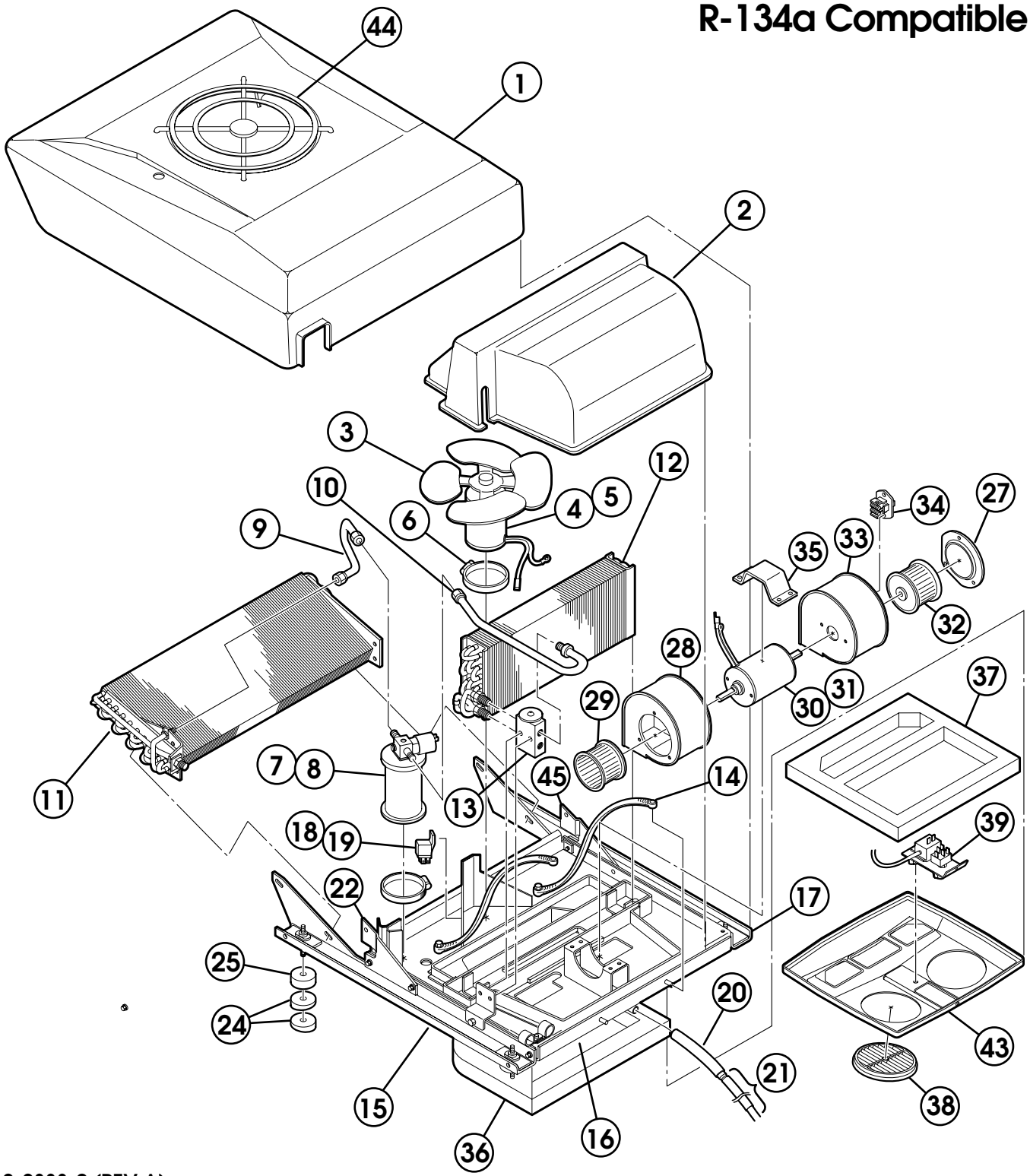
R-6100 SYSTEM ORDERING GUIDE

	R12/R-134a	NOTES	
UNITS	R-6100-4P R-6100-4-24P	12 VDC 24 VDC	
CONDENSER	Contained in R-6100 unit		
INSTALLATION KIT	78R1505	Refrigerant hose and fittings, etc.	
COMPRESSOR	See 75 Series Compressor section		
R134A CHARGE FITTING	75R5681 & 75R5688	Required with CCI or Tecumseh application.	
CLUTCH	See 75 Series Clutch section		
COMPRESSOR MOUNT KIT	See Compressor Mount Applications section		
OPTIONS	Bug Screen: Winter Cover: Universal Roof Mount Kit: Replacement Recirc. Filter: Replacement Receiver Drier: Replacement Plenum	RD-4-4529-1P RD-5-4718-0P RD-2-1302-0P 78R5300 74R2546 RD-2-5974-0P	 (Relocates unit mounting bolts to pick up integral roof bracing)

Universal Rooftop Air Conditioner R-6100 Series

SERVICE PARTS LIST

R-134a Compatible



RD-2-2333-0 (REV A)

Universal Rooftop Air Conditioner R-6100 Series

SERVICE PARTS LIST

ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO.
1		RD-2-1189-0	OUTER COVER ASSY	
2		RD-2-1245-0	INNER COVER ASSY	
3		RD-5-7297-0	FAN - CONDENSER	
4		RD-5-7809-0	MOTOR - CONDENSER (12V)	
5		RD-5-7129-24	MOTOR - CONDENSER (24V)	
6		RD-5-4035-52	CLAMP - 31/2" (2)	70R 5650
7		RD-5-7272-0	RECEIVER/DRIER	
8		RD-5-4583-0	TRINARYTM PRESSURE SWCH	71R 7550
9		RD-4-4747-0	TUBE - FREON	
		RD-2-2330-0	TUBE - FREON	
11		RD-4-4738-0	CONDENSER - ASSY	
12		RD-2-1195-0	EVAPORATOR COIL	76R 5500
13		RD-5-6868-0	EXPANSION VALVE	71R 8310
14		RD-5-4647-15	STRAP (2)	
15		RD-2-2329-0	RAIL ASSY (L.H.)	
16		RD-2-1218-1	BOTTOM PAN ASSY	
17		RD-2-2329-1	RAIL ASSY (R.H.)	
18		RD-5-6690-0	RELAY - 12V	71R 1902
19		RD-5-6693-0	RELAY - 24V	71R 1904
20		RD-5-3550-120	DRAIN HOSE	78R 0070
21		RD-2-1284-0	DRAIN HOSE ASSY	
22		RD-2-1288-0	BRACKET ASSY	
23	A	RD-2-1250-0	WIRE HARNESS ASSY	

ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO.
24		RD-5-4636-0	SPACER - TAPERED (8)	
25		RD-5-3855-1	SPACER - RUBBER (4)	
26	A	RD-4125-36	THERMOSTAT	71R 2250
27		RD-5-3928-2	ENTRY RINGS (2)	
28		RD-2-1207-1	BLOWER ASSY (L.H.)	
29		RD-5-4624-0	BLOWER WHEEL (CCW)	73R 6300
30		RD-5-5121-0	MOTOR (12V)	73R 4252
31		RD-5-5121-24	MOTOR (24V)	73R 4254
32		RD-5-4626-0	BLOWER WHEEL (CW)	73R 6350
33		RD-2-1207-0	BLOWER ASSY (R.H.)	
34		RD-5-3647-0	RESISTOR	71R 1450
35		RD-3-3174-0	RETAINER - MOTOR	
36		RD-2-1240-0	ROOF SEAL ASSY	
37		RD-2-1297-0	GASKET (PLENUM)	
38		RD-5-3846-0	LOUVER ASSY 41/2" (2)	72R 3200
39		RD-2-1296-0	CONTROL PANEL SUB ASSY	
40	A	RD-5-5928-0	KNOB (2)	71R 4040
41	A	RD-5-3646-0	3 SPEED SWITCH	71R 1150
42	A	RD-2-1293-0	LABEL CONTROL	
43		RD-2-1290-0	PLENUM ASSY	
44		RD-5-3894-2	FAN GUARD	
45		RD-2-1266-4	BRACKET ASSY (R.H.)	

NOTES: **A**= Not shown

ORDERING INFORMATION

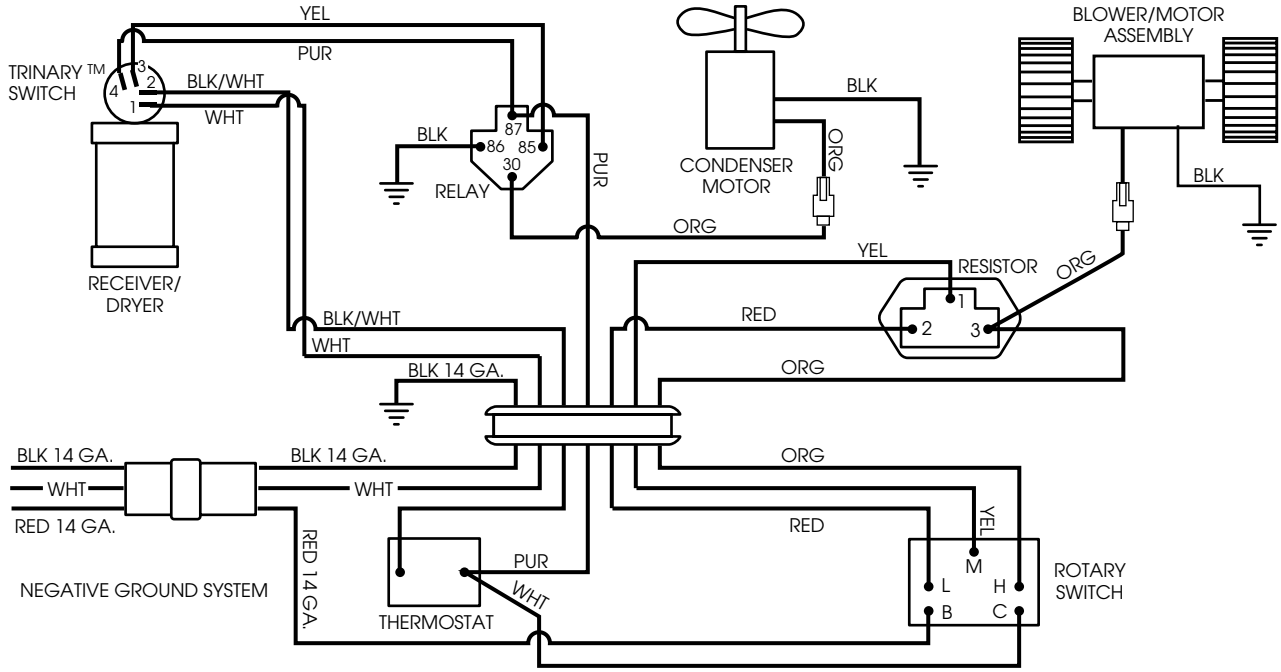
ORDER BY MODEL NUMBER **R-6100-0.**
FOR 24 VOLT APPLICATIONS ADD **-24** TO MODEL NUMBER.
Additional cost may be needed for complete systems:
1. Channel Mounting Kit - RD-2-1302-0P
2. Installation Kit - RD-5-5014-1P

RED DOT CORPORATION P.O. Box 58270 Seattle, WA 98138 (425) 575-3840

Universal Rooftop Air Conditioner R-6100 Series

ELECTRICAL SCHEMATIC

ELECTRICAL SCHEMATIC



1) ALL WIRE IS 16 GA. UNLESS OTHERWISE NOTED.
2) SEE RE-2-1255-0 AND RD-2-1250-0 WIRE HARNESS ASSYS FOR INDIVIDUAL WIRE DESCRIPTION AND SPECIFICATIONS.

ORDERING INFORMATION

ORDER BY MODEL NUMBER **R-6100-0.**
FOR 24 VOLT APPLICATIONS ADD **-24** TO MODEL NUMBER.
Additional cost may be needed for complete systems:
1. Channel Mounting Kit - RD-2-1302-0P
2. Installation Kit - RD-5-5014-1P

RED DOT CORPORATION P.O. Box 58270 Seattle, WA 98138 (425) 575-3840

R-6100 Rooftop Air Conditioners

INSTALLATION INSTRUCTIONS

MODEL R-6100 ROOFTOP AIR CONDITIONER INSTALLATION INSTRUCTIONS

NOTE:
1. Please read instructions all the way through before, beginning work.
2. Check that all items called out on the RD-2-1299-0 accessory kit list have been included.
3. A compressor, compressor bracket, bells and refrigerant are required to complete the installation. These items may be obtained from your RED DOT Distributor
4. The compressor must have sufficient capacity to allow the unit to deliver the rated BTU output, A compressor displacing 8 cubic Inches per revolution (Sanden SD-508 or equiv.) may be used if it can be turned 2,000 rpm or faster. A 10 cubic inch compressor (Tecumseh GH 1000, Sanden SD-10 , or equiv.) must turn foster than 1,750 rpm.

B. Mounting The Unit On Cab Roof

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.
   - **b.** Place the mounting template on the roof using the centerline as a guide.
   - **c.** Consider position of horns and marker lights.
   - **d.** Ensure that air flow to the unit is not obstructed.
   - **e.** Do not mount the unit with the front lower than the rear, as this will prohibit wafer drainage.
   - **f.** Avoid cutting roof stiffeners if possible. If stiffeners are cut or roof is weakened due to the cutout, reinforcement may be required.
   - **g.** A Mounting Channel Kit No. RD-2-1302-0 is available if it is necessary to reduce the bolt spacing width. The minimum recommended spacing width is 14 inches to ensure proper support. The channels bolt directly to the unit and either one large or two tapered rubber spacers are used to space the unit away from the roof. See Figures 1 and 2.
3. Tape the template to the roof at the desired location. Mark the mounting hole location and the roof cut-out area (punch or scribe the roof'].
4. Cut the roof where marked and drill the mounting holes 1/2". Remove burrs and sharp edges,
5. Temporarily install the headliner and trace the cut-out onto it from the roof. Remove the head liner 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 cutout and mounting holes. Apply sealer to the face of the sealing ring on the unit, See Figure 1. Make sure that the drain tube is located within the sealing ring. A wire or string may be wrapped around sealing ring to keep it in place if necessary.
9. Set unit on cab. Make sure that drain tube is not pinched and roof brace is installed, if required.
10. Select spacers as required to level and support unit. See Figure 2.
11. Apply adhesive to the faces of all spacers and locate over mounting holes.
12. Tighten the four cap screws provided evenly until the spacers take the load and just

begin to "bulge" slightly. Do not overtighten. Bottom of unit and roof may distaff and cause water leakage.

13. Remove cover and install (4) 3/8 - 16 nuts on mounting cap screws to prevent them from backing out. Apply sealant around bolt threads and nutplates to prevent water leakage into cab.

ROOFTOP AIR CONDITIONER INSTALLATION SCHEMATIC

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

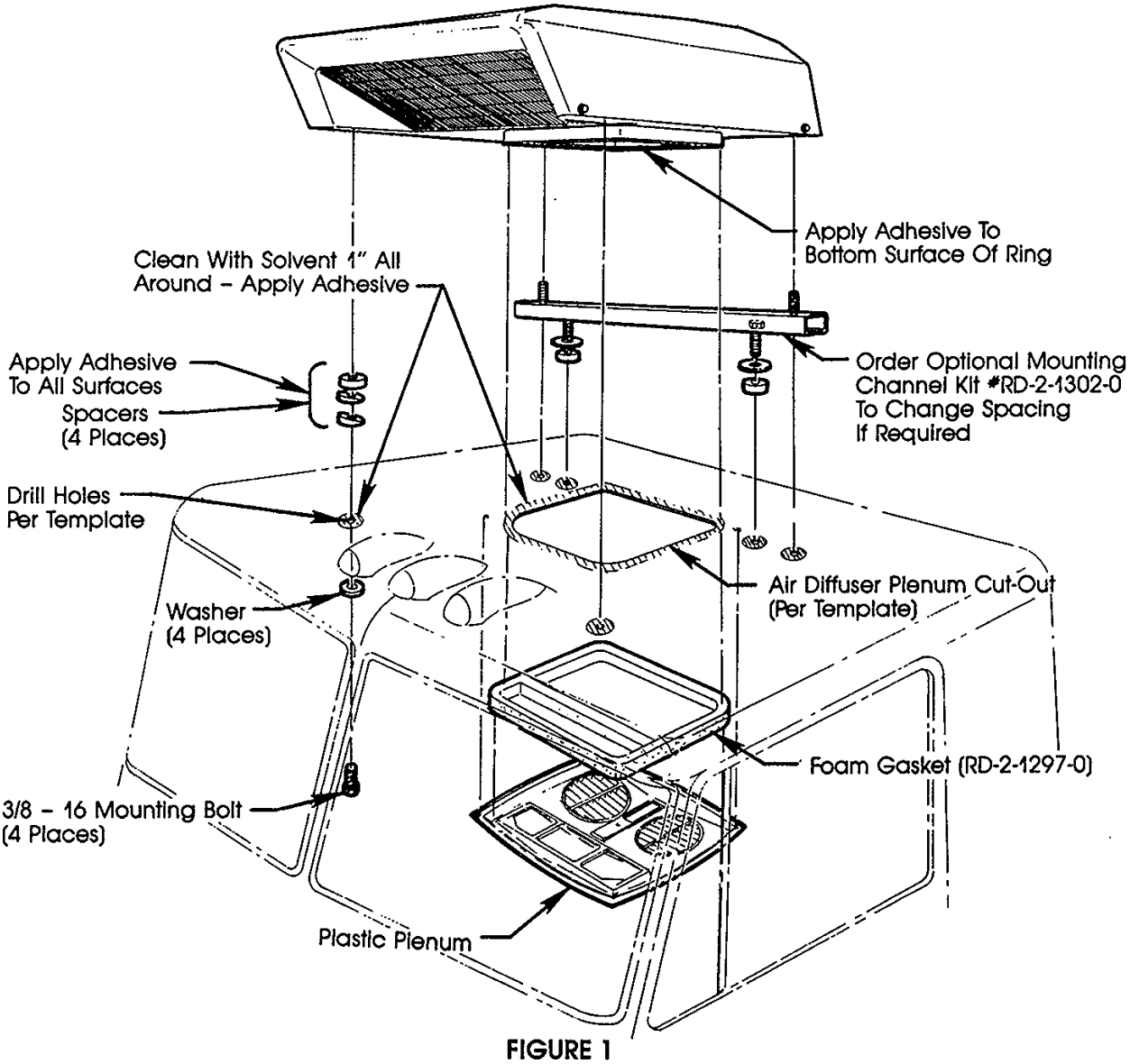
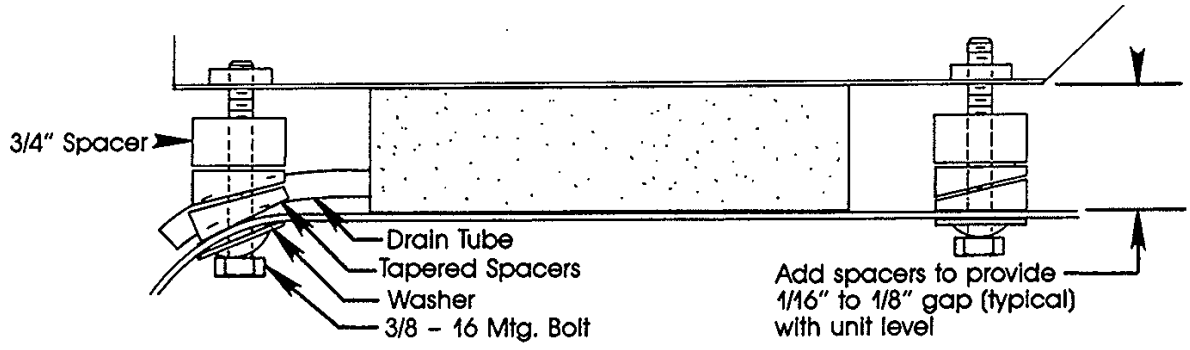


FIGURE 1



BEFORE TIGHTENING

FIGURE 2

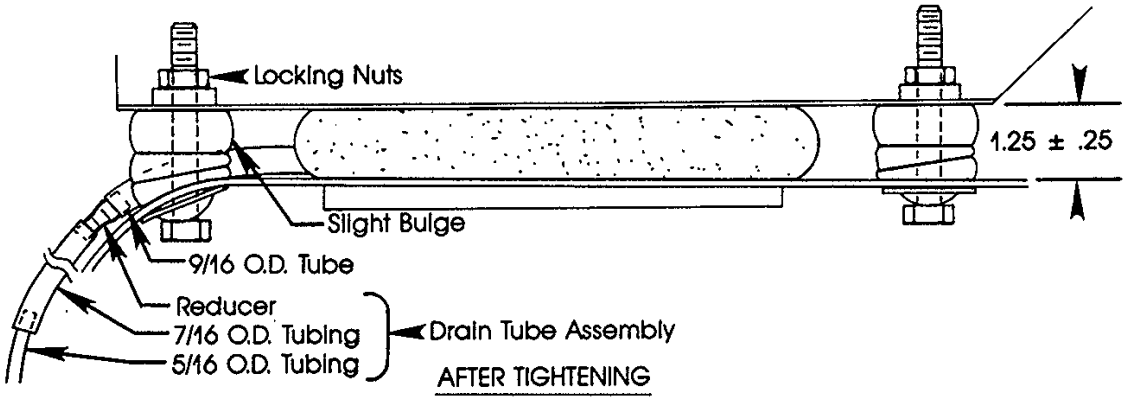
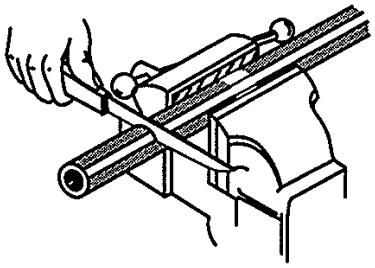


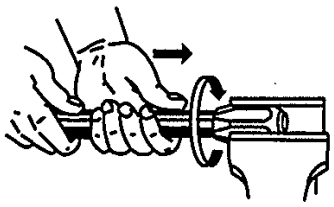
FIGURE 2

REFRIGERANT HOSE INSTALLATION

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



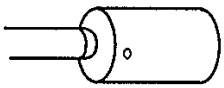
1. Cut refrigerant hose cleanly at 90° to proper length using a sharp clean edge.



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 - Figure 3



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 - Figure 4

C. Refrigerant Hose Installation

1. Install fittings on hose as shown in Figure 3 or Figure 4. #12 suction line recommended in place of # 10 for increased cooling capacity Use step-up fitting. Be sure to clean out refrigerant hose with clean, dry air after cuffing.
2. Install "0' Rings and connect hoses to fittings on unit (cover must be removed).
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.

D. Drain Hose Installation

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.

1. Locate small end of drain tube (5/16 O.D.) so that it exits at desired location. Make sure that it points downhill and secure With clamps or tie wraps. Do not crush the tube or cut off the 5/16 O.D. tubing.
2. Route the drain tube to the unit so that it travels in a downward direction from the unit.
3. Cut off the 7/16 O.D. tube to length and connect to reducer fitting on drain hose from unit. Secure drain tubes with tie wraps. Attach to refrigerant hoses if they run downhill properly.
4. Inspect to make sure that drain tubes are not kinked, especially at back of cab and at drain pan within plenum.

E. Wiring

Note:

a. Unit is wired for negative ground. For positive ground systems, reverse both motor leads on condenser motor and evaporator motor.

b. Electrical schematic and parts breakdown can be found on evaporator plenum cover.

1. Disconnect battery.
2. Connect the wire harness assembly to the terminal within the air plenum and route protective loom through 3/4" slot in plenum ring.
3. Route wire harness across inside of roof and down center or side post of windshield to lower dash area.
4. Black Wire: Connect to suitable ground.
5. Red Wire: Connect to an ignition switch supply through a 30 amp circuit breaker (15amp/24V).
6. White Wire: Connect to compressor clutch. Route the wire around the pivot point before connecting to compressor clutch on tilt-cab trucks.

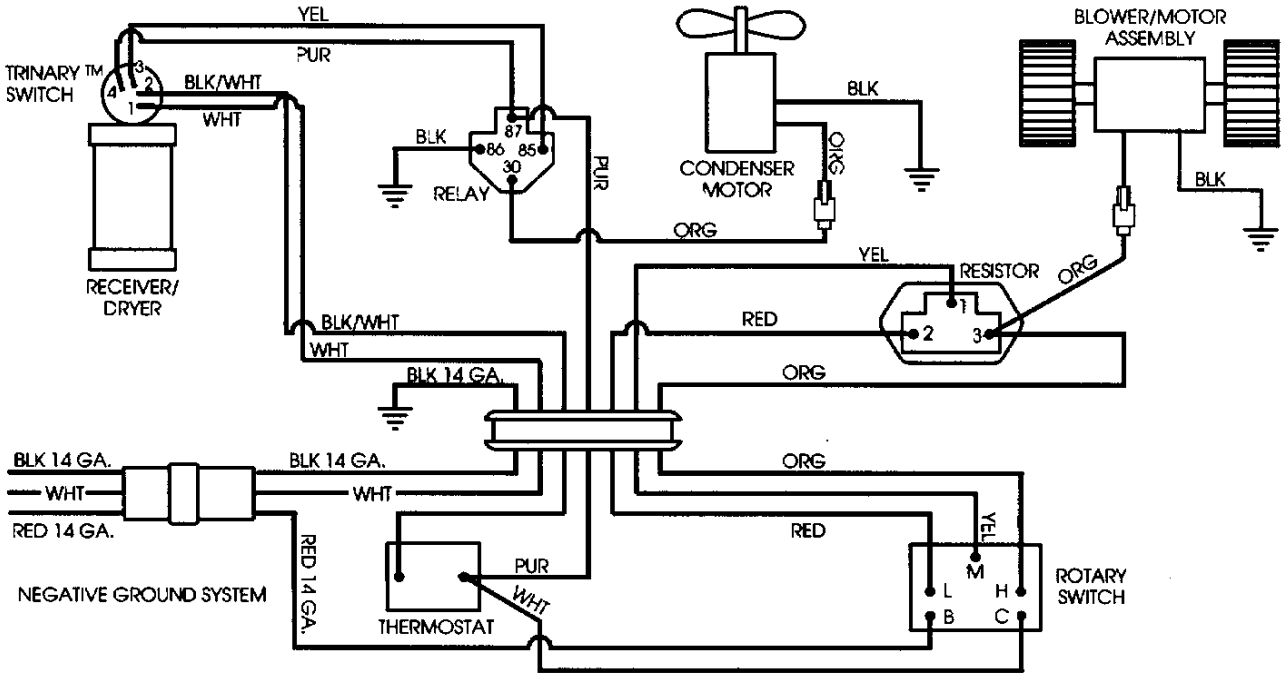
F. Air Diffuser Plenum

1. Install headliner. Make sure that wire loom exits plenum ring properly and is not pinched.
2. Install (4) 10 - 32 x 3" screws in the plenum assembly and secure with retainers provided.
3. 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.
4. Place the plenum assembly up to the unit and start one 10 - 32 x 3" screw.
5. Attach the switch-thermostat panel to the plenum with two 10 - 32 x 1/2" 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.

G. Final Assembly And Check

1. Install cover. Check condenser fan for adequate blade clearance.
2. Evacuate the system, test for leaks and charge with R-12 or R-134a. The unit requires 4 to 6 pounds of R-I 2 depending on hose length or 3 to 5 pounds of R4 34a.
3. Connect the battery.
4. 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 9.
   b. The condenser fan and evaporator blower should be turning at high speed.
5. Turn the fan switch to medium and low positions and check that the evaporator blower slows down.
6. Turn the thermostat off and clutch should disengage.
7. 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.
   NOTE: Be aware that the sight glass may appear "milky" when charging with R-134a. Be careful not to over charge the system.
8. Check thermostat to be sure clutch cycles on and off.
9. 9. If clutch does not engage the system may not have been charged to high enough pressure to actuate the Trinary switch. Place a jumper wire across terminals #1 and #2 in the switch and run system until it is fully charged then remove jumper wire.

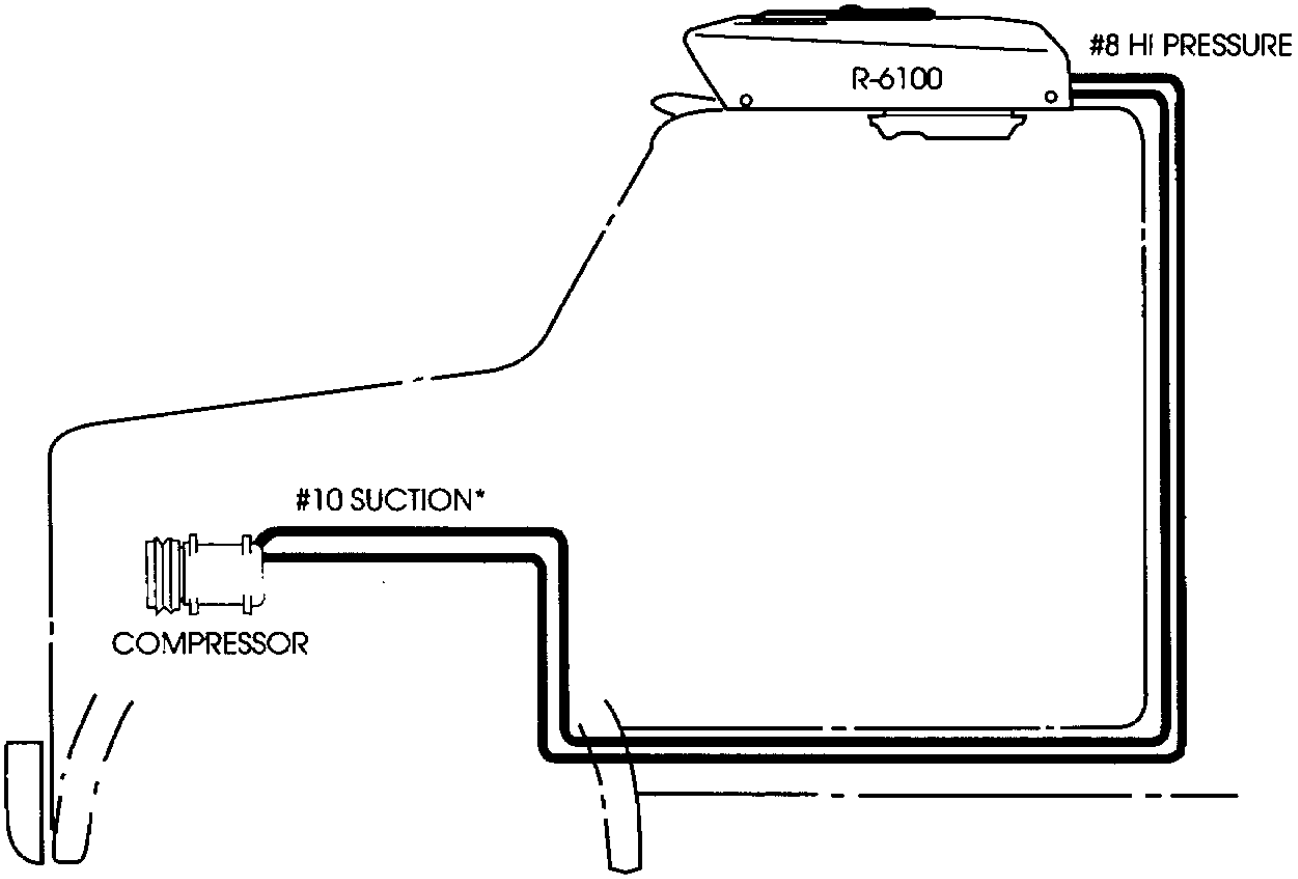
ELECTRICAL SCHEMATIC



1) ALL WIRE IS 16GA. UNLESS OTHERWISE NOTED.
2) SEE RD-2-1255-0 AND RD-2-1250-0 WIRE HARNESS ASSYS FOR INDIVIDUAL WIRE DESCRIPTION AND SPECIFICATIONS.

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

PLUMBING SCHEMATIC



WARNING: UNIT WARRANTY VOID IF FUSED POWER SOURCE NOT USED

OFF-ROAD

R-9727 Rooftop

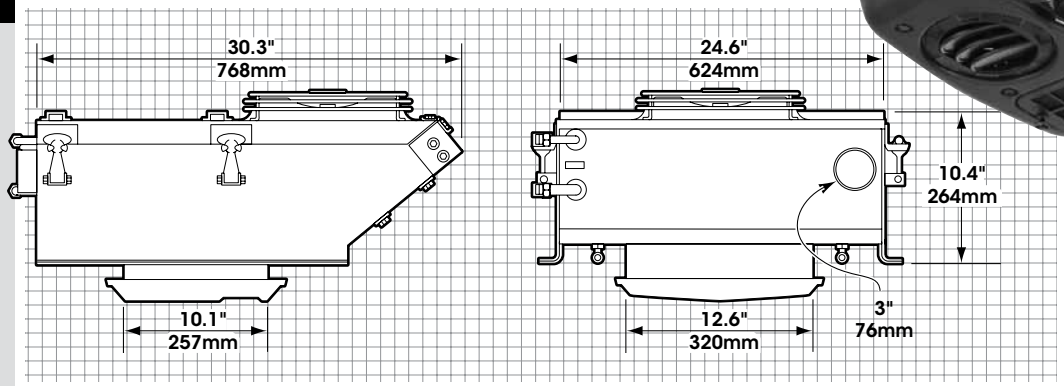
Air Conditioner

CONSTRUCTION • MINING • AGRICULTURE

The R-9727 sets the standard for rooftop air conditioners in tough work environments. Renowned for its build quality, reliability, and performance, the R-9727 uses a sealed, long-life evaporator and condenser motor with a slinger ring and hubcap for protection from weather and dust. The heavy-gauge steel casing is gusseted and reinforced for structural integrity. Rubber hood tie-downs unlatch to easily expose the components for service.

Options include a hydraulic compressor kit, remote-mount filter, and in-line booster blower for a pressurized, dust-free cab.

Low profile ceiling plenum blends with any interior.



OPTIONS:

Stiffener Brackets
RD-3-5790-0P

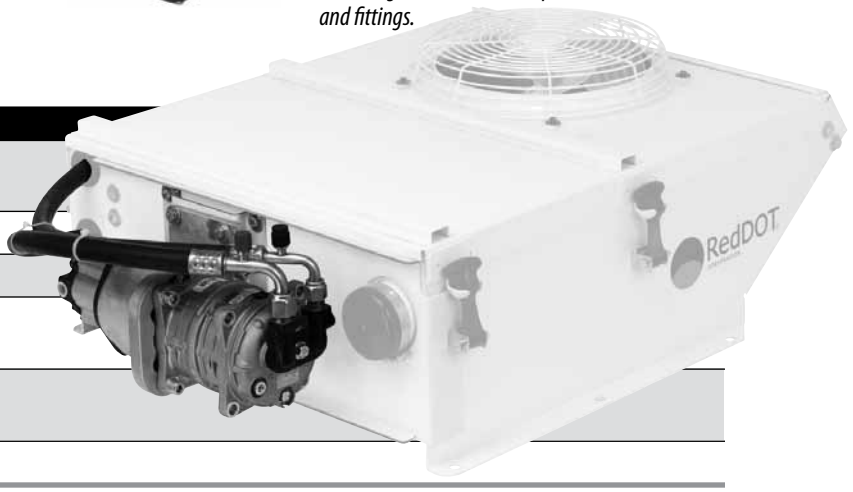
Remote Mount Filters
Must be used with In-line Booster Pressurizer
Horizontal: 78R5100 (26.04cm x 45.27cm)
10 ¼" dia. x 18" long
Vertical: 78R5110
10 ¼" dia. x 23 ¾" long
(26.04cm x 450.33cm)

In-line Booster Pressurizer:
73R9202 (12 VDC)
73R9204 (24 VDC)
For use w/Remote Mount Filters 78R5100 & 78R5110 only

Winter Cover
RD-5-4031-0
(not shown)

3" defrost hose
sold separately
78R0300
(not shown)

Hydraulic Compressor Kit
RD-5-13484-0P
Includes an R-9976 hydraulic axial direct drive, mounting bracket and all required A/C hoses and fittings.



INLINE BOOSTER PRESSURIZERS	
AIR FLOW:	140 CFM (238 m³/h) with filter 230 CFM (391 m³/h) free flow
WEIGHT:	7 lbs. (3 Kg)
MOTOR:	one 12 VDC, single speed (24 VDC available)
CURRENT Draw:	10.2 amps @ 13.6 VDC or 6 amps @ 27.2 VDC
INLET/OUTLET Size:	4" inlet, 3" outlet

LS = Limited to stock on hand

R-9727 SPECIFICATIONS

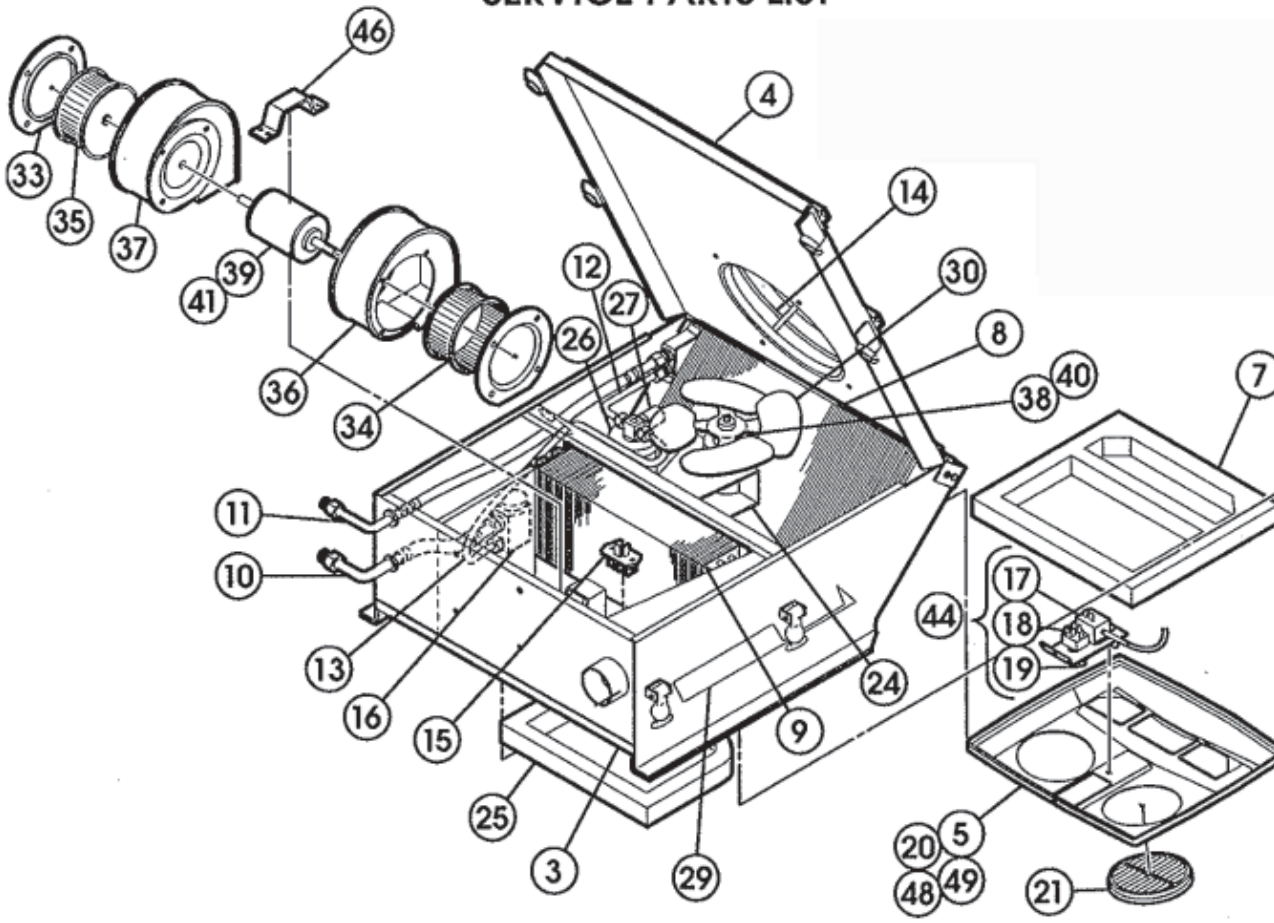
BTU'S	Cooling – 22,000 BTU/Hr with 36°F (6.4 kw w/2.2°C) refrigerant temp. and 80°F (26.7°C) wet bulb entering air
AIR FLOW	Evaporator – 320 CFM (544 m3/h) Condenser – 850 CFM (1444 m3/h)
WEIGHT	104 Lbs (47 Kg)
MOTORS	Evaporator – One, 12 VDC, three-speed, 24 VDC available Condenser – One, 12 VDC, single-speed, 24 VDC available
CURRENT DRAW	29 amps @ 13.6 VDC (includes 4 amps for A/C clutch) 15 amps @ 27.2 VDC (includes 2 amps for A/C clutch)
CONTROLS	Three speed blower and adjustable thermostat

R-9727 SYSTEM ORDERING GUIDE

	R12/R-134a	NOTES	
UNITS	R-9727-2P R-9727-2-24P	12 VDC 24 VDC	
CONDENSER	Contained in R-9727 Unit		
INSTALLATION KIT	78R1605	Refrigerant hose and fittings	
COMPRESSOR	See 75 Series Compressor section		
R134A CHARGE FITTING	75R5681 & 75R5688	Required with CCI and TECUMSEH appliacations.	
CLUTCH	See 75 Series Clutch section		
COMPRESSOR MOUNT KIT	See Compressor Mount Applications section		
OPTIONS	Winter Cover	RD-5-4031-0P	
	Stiffener Brackets	RD-3-5790-0P	
	Remote Mount Filters **	78R5100	(Horizontal)
		78R5110	(Vertical)
	Replacement Filters	78R5210	(Remote Mount)
	Replacement Gasket Kit	RD-2-0961-0P	
	Replacement Recirc. Filter	78R5300	
	Pressurizer Inlet Cap	RD-5-6423-0P	
	In-Line Booster Pressurizers *	73R9202	(12 VDC) For use with Remote Mount Filters
		73R9204	(24 VDC)
	Replacement Receiver Drier	74R2536	
	Replacement Plenum	RD-2-5974-0P	

* Booster Pressurizer Can Only Be Used With Remote Mount Filters
** Must be used with In-line Booster Pressurizer

SERVICE PARTS LIST



ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO.	ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO.
1	A	RD-5-3860-4	BLOWER MOTOR ASSY		26		RD-5-3843-1	RECEIVER DRIER	74R 2566
2	B	RD-5-3860-5	BLOWER MOTOR ASSY		27		RD-5-4640-0	SWITCH-PRESSURE, BINARY	72R 7050
3		RD-2-1067-1	HOUSING ASSY		28	C	RD-2-1378-0	CABLE RETAIN., COVER (2)	
4		RD-2-0921-1	COVER ASSY		29		RD-4-3883-1	DECAL - RIGHT HAND	
5		RD-2-1290-0	PLENUM ASSY		30		RD-4-3508-0	FAN BLADE 10"	73R 8100
6	C	RD-2-1060-0	DRAIN PAN ASSY		31	C	RD-2-0928-0	LABEL CONTROL	
7		RD-2-1297-0	GASKET (PLENUM)		32	C	RD-4-3883-0	DECAL LEFT HAND	
8		RD-4-3586-0	CONDENSER ASSY	77R 0350	33		RD-3-2592-0	ENTRY RING (2)	
9		RD-2-1121-2	EVAPORATOR ASSY	76R 7100	34		RD-3106-10	BLOWER WHEEL	73R 6100
10		RD-2-1072-0	#10 CRIMP-ON HOSE ASSY		35		RD-3106-14	BLOWER WHEEL	73R 6150
11		RD-2-1071-0	#8 CRIMP-ON HOSE ASSY		36		RD-2-0781-6	BLOWER ASSY	
12		RD-2-1280-0	#6 FREON HOSE ASSY		37		RD-2-0781-7	BLOWER ASSY	
13		RD-2-1184-0	TUBE ASSY #6 "O" RING		38	A	RD-5-5120-0	MOTOR, 12 VDC (COND)	73R 0512
14		RD-5-3894-1	FAN GUARD		39	A	RD-5-3757-12	MOTOR, 12 VDC (BLWR)	73R 4202
15		RD-5-3647-0	RESISTOR	71R 1450	40	B	RD-5-5120-24	MOTOR, 24 VDC (COND)	73R 0514
16		RD-4157-0	EXPANSION VALVE	71R 8300	41	B	RD-5-3757-24	MOTOR, 24 VDC (BLWR)	73R 4204
17		RD-4125-36	THERMOSTAT	71R 2250	42		RD-5-4195-0	ANCHOR, RUBBER (4)	
18		RD-5-3646-0	3 SPEED SWITCH	71R 1150	43	C	RD-3-3031-0	WIRING KIT	
19		RD-5-5928-0	KNOB (2)	71R 4050	44		RD-2-1296-1	CONT. PANEL SUB. ASSY	
20		RD-2-1289-0	PLENUM DIFFFUSER		45	C	RD-2-0919-0	SCREEN - CONDENSER	
21		RD-5-3846-0	LOUVER ASSY 4½" (2)	72R 3200	46		RD-3-3174-1	RETAINER, MOTOR	
22	C	RD-5-4086-0	FITTING ELBOW (2)		47	C	RD-2-1380-0	PNL. ACCESS. EXP. VALVE	
23	C	RD-5-3550-120	DRAIN HOSE (2)	78R 0070	48		RD-5-5937-0	FILTER - RECIRC.	
24		RD-2-1377-0	MOTOR MT. ASSY COND		49		RD-5-5938-0	RETAINER FILTER	
25		RD-2-0961-0	ROOF SEAL ASSY						

A. 12 VOLT APPLICATIONS B. 24 VOLT APPLICATIONS C. NOT SHOWN D. OPTIONAL FOR FILTERS SEE ORDERING INFORMATION.

Model R-9727 Series

RED DOT CORPORATION Seattle, WA

RD-2-1326-0 (REV A)

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.

Red Dot Corporation P.O. Box 88790, Seattle, WA 98138 (425) 251-6897 Fax (425) 251-3934

ROOFTOP AIR CONDITIONER INSTALLATION SCHEMATIC

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

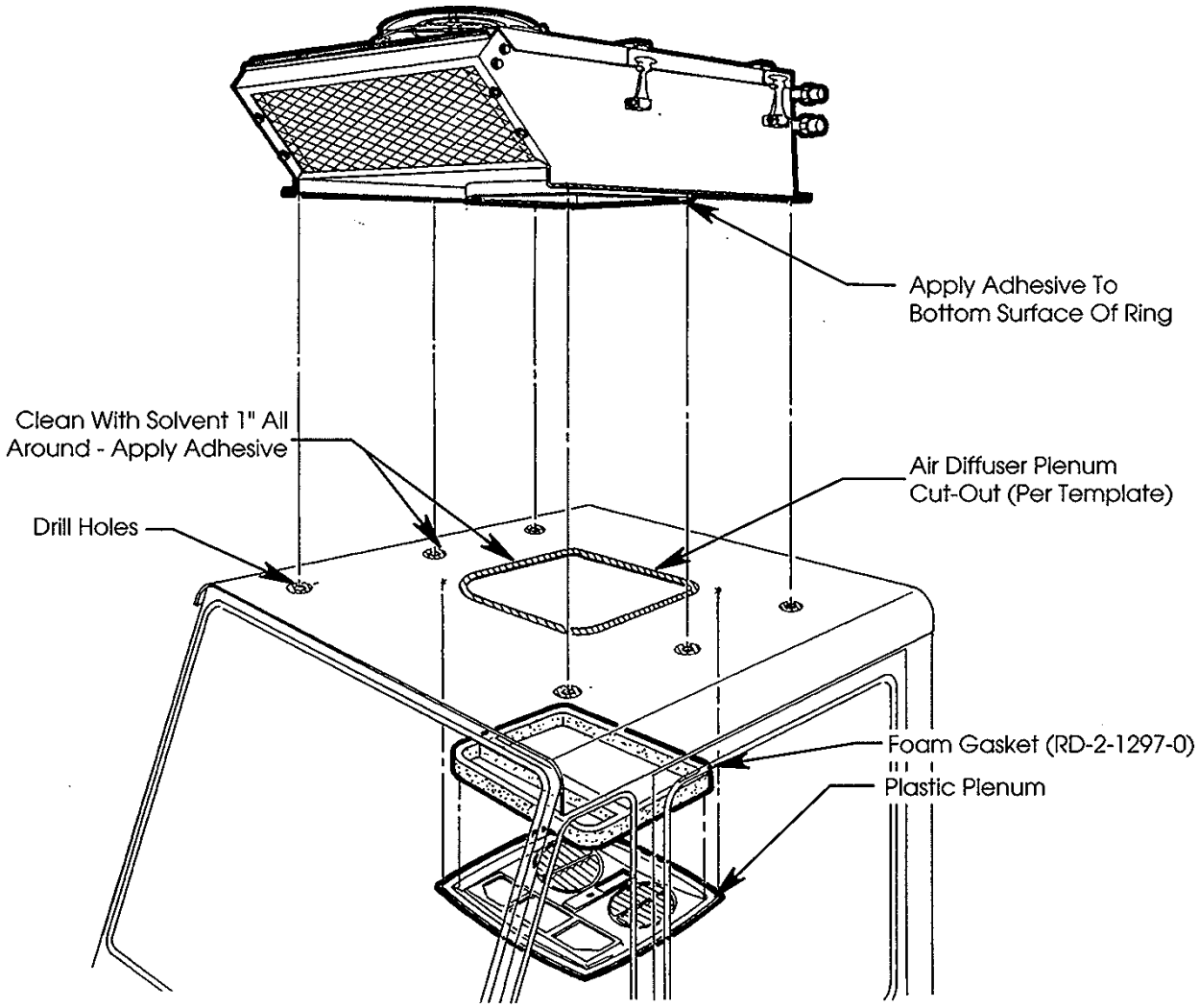


Figure 1

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

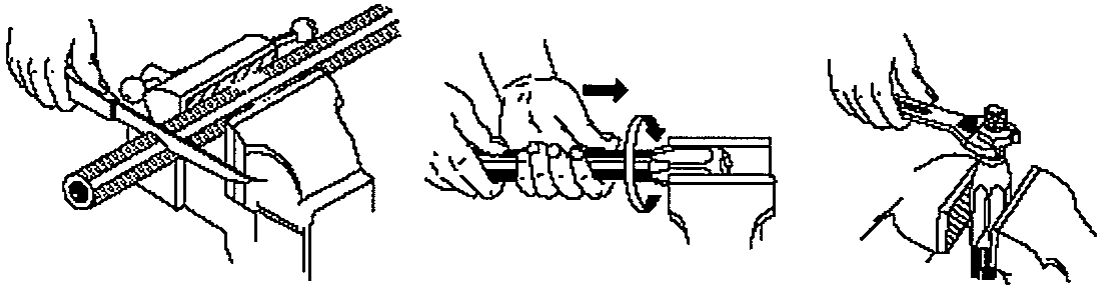
1. Install reusable or push on fittings on hose as shown in Figure 2. #12 suction line is recommended in place of #10 for increased cooling capacity. Use step-up fitting. Be sure to clean out refrigeration hose with clean, dry air after cuffing. Galaxy hose with crimp fittings are recommended for use with R-134a. Lubricate O-rings with mineral oil.
2. Install *"0"* 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.

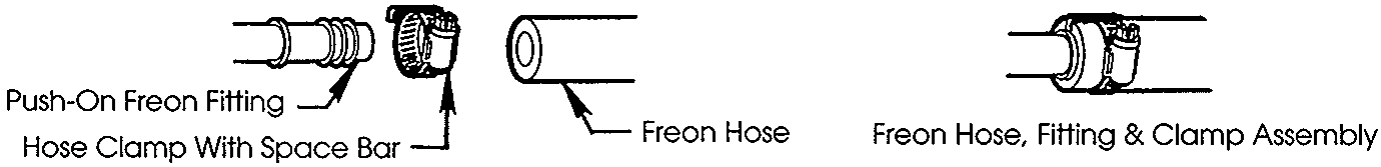
REFRIGERANT HOSE INSTALLATION

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.

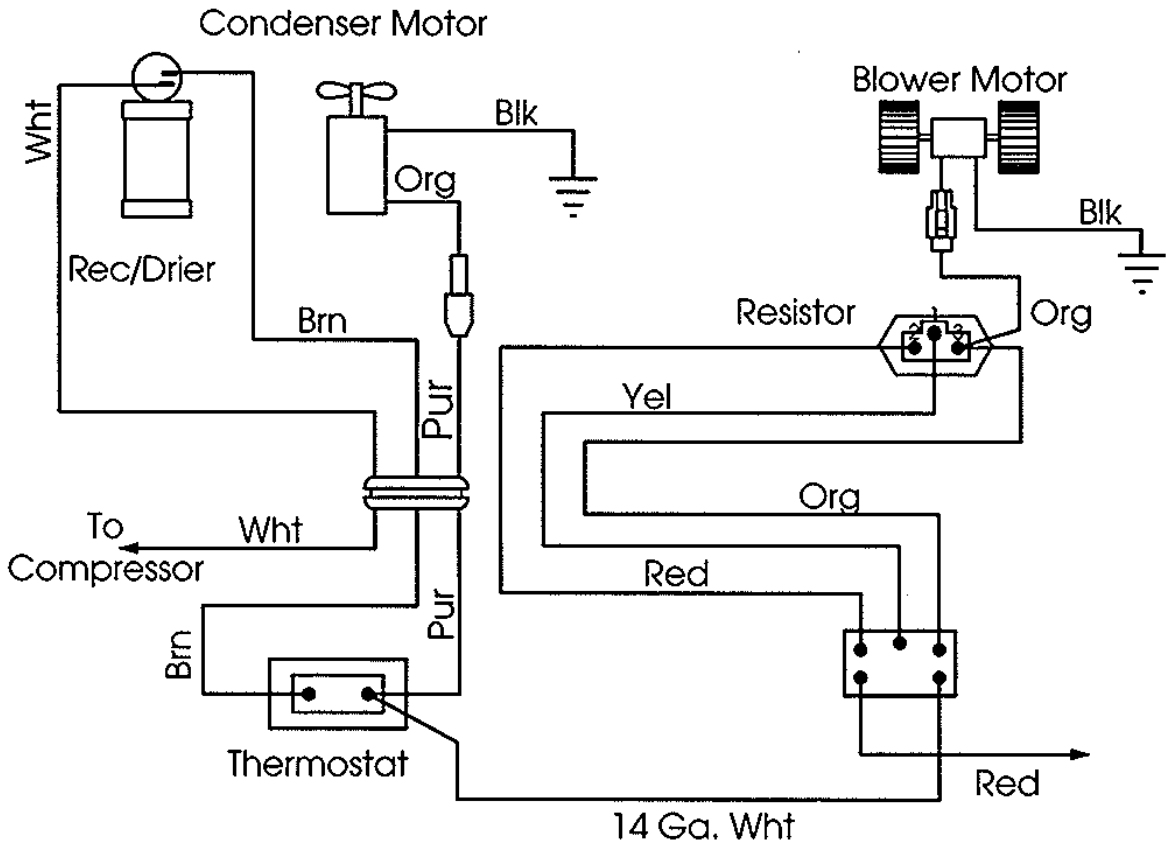
b. Unit is internally grounded.

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 dutch 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 tow 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 to 10-32 x 1 \2" screws.
5. Start the remaining three 10-32 x 3'1 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

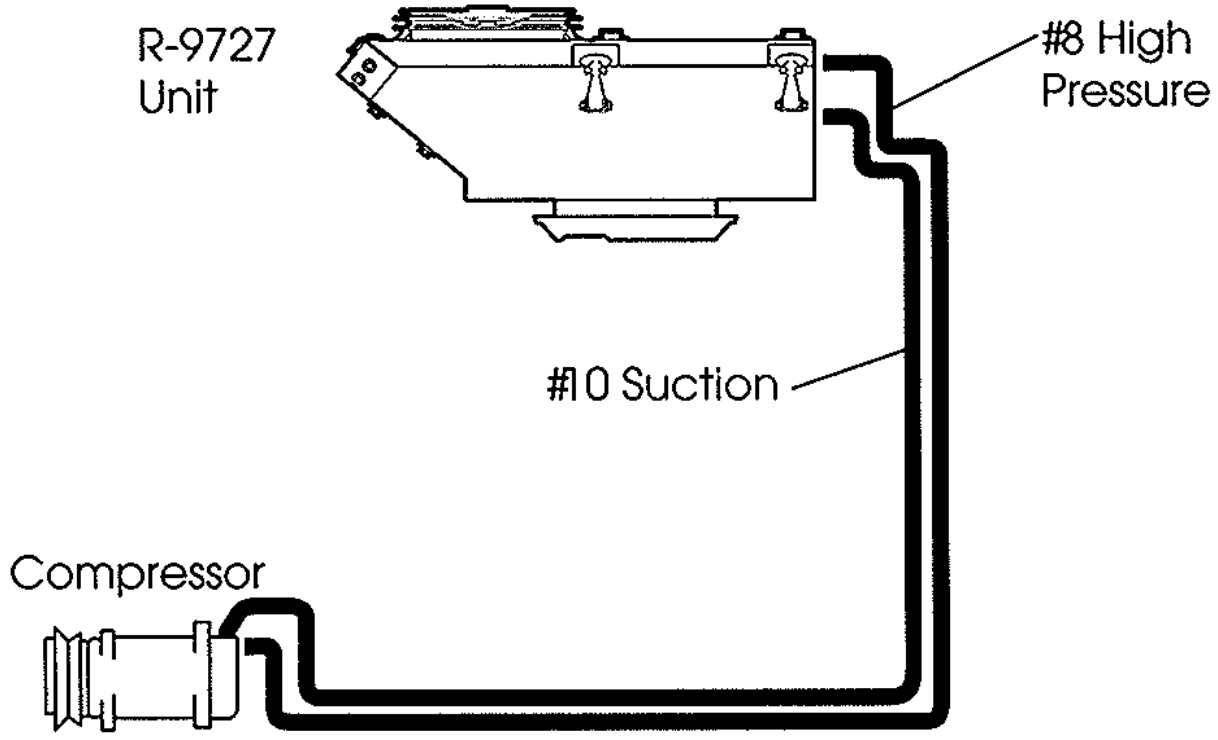


F. FINAL ASSEMBLY AND CHECK

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.

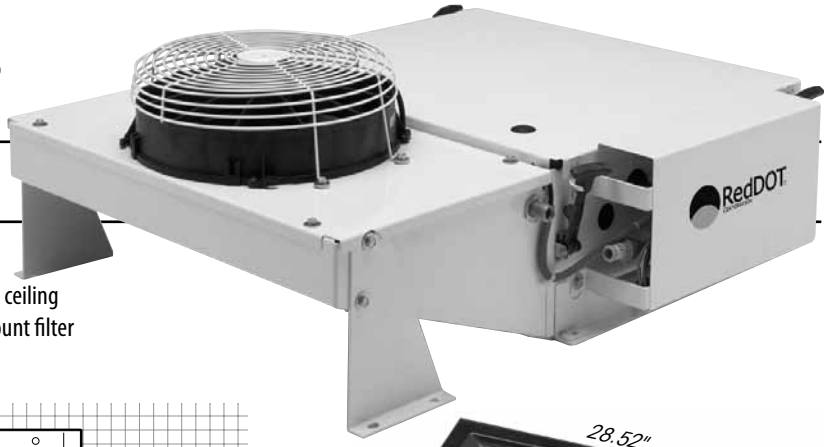
OFF-ROAD

R-9757 Rooftop

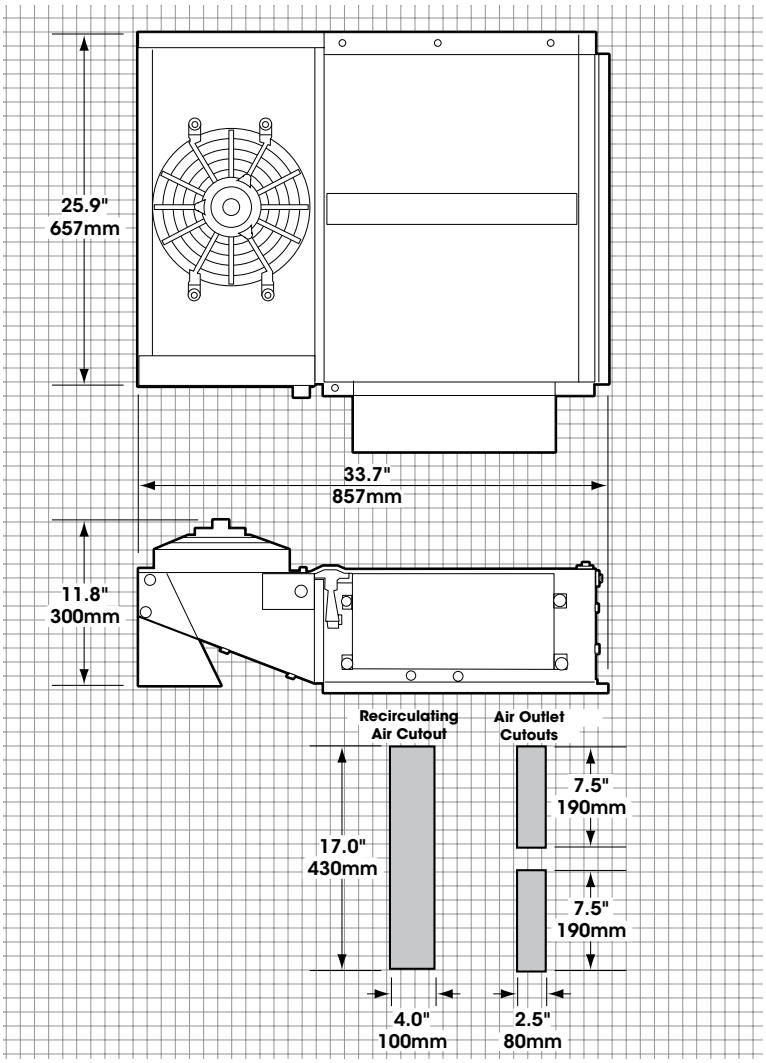
Heater/Air Conditioner

CONSTRUCTION • MINING • AGRICULTURE

With heating and cooling, the R-9757 rooftop unit delivers comfort and performance in any environment. The low-profile ceiling plenum blends with any interior. Options include a remote-mount filter and in-line booster blower for a pressurized, dust-free cab.



Low profile ceiling plenum blends with any interior.
Replacement Part:
12 VDC: RD-3-6401-0P 24VDC: RD-3-6401-1P



OPTIONS:

Remote Mount Filters
Must be used with
In-line Booster Pressurizer
Horizontal: 78R5100
10 ¼" dia. x 18" long
(26.04cm x 45.27cm)
Vertical: 78R5110
10 ¼" dia. x 23 ¾" long
(26.04cm x 50.33cm)

In-line Booster Pressurizers
73R9202 (12 VDC)
73R9204 (24 VDC)
For use with Remote Mount Filters
78R5100 & 78R5110 only

3" Defrost Hose Sold Separately
78R0300

INLINE BOOSTER PRESSURIZERS	
AIR FLOW:	140 CFM (238 m^3/h) with filter 230 CFM (391 m^3/h) free flow
WEIGHT:	7 lbs. (3 Kg)
MOTOR:	one 12 VDC, single speed (24 VDC available)
CURRENT Draw:	10.2 amps @ 13.6 VDC or 6 amps @ 27.2 VDC
INLET/OUTLET Size:	4" inlet, 3" outlet

LS = Limited to stock on hand

R-9757 SPECIFICATIONS

BTU'S	Heating – 45,000 BTU/Hr @ 100°F (13.2 kw @ 37.8°C) air temp. rise Cooling – 25,000 BTU/Hr with 36°F (7.3 kw with 2.2°C) refrigerant temp. and 80°F (26.7°C) wet bulb entering air
AIR FLOW	400 CFM (680 m3/h)
WEIGHT	135 lbs. (61kg)
MOTORS	Evaporator – One 12 VDC, three speed (24 VDC available) Condenser – One 12 VDC low profile (24 VDC available)
CURRENT DRAW	38.2 amps @ 13.6 VDC (includes 4 amps for A/C clutch) 19.1 amps @ 27.2 VDC (includes 2 amps for A/C clutch)

R-9757 SYSTEM ORDERING GUIDE

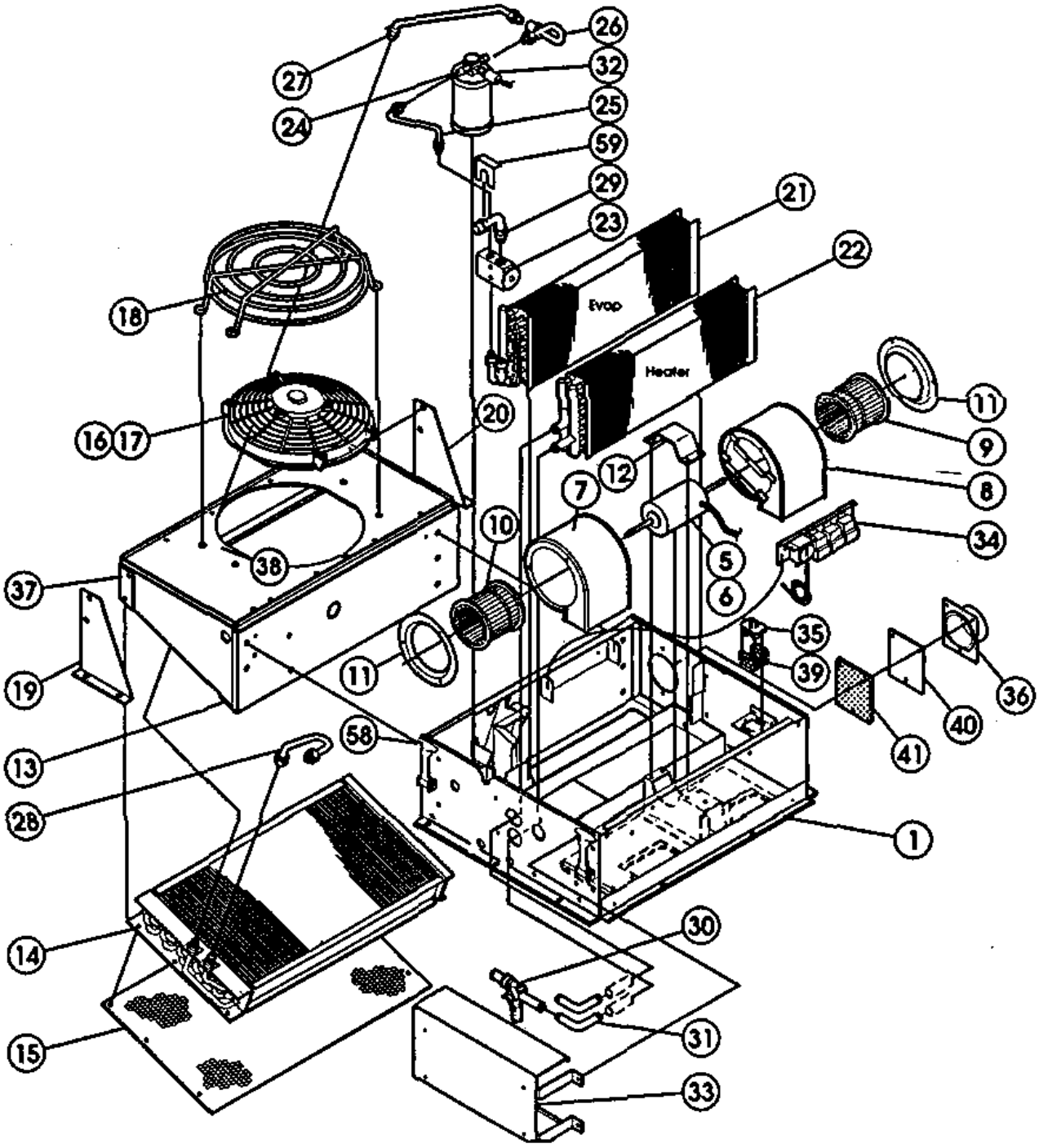
	R12/R-134a	NOTES	
UNITS	R-9757-0P R-9757-0-24P	12 VDC - Heater A/C 24 VDC - Heater A/C	
CONDENSER	Contained in the R-9757		
INSTALLATION KIT	78R1805	Refrigerant hose, fittings and hardware.	
COMPRESSOR	See 75 Series Compressor section		
R134A CHARGE FITTING	75R5681 & 75R5688	Required with CCI and TECUMSEH appliacations.	
CLUTCH TECUMSEH/CCI	See 75 Series Clutch section		
COMPRESSOR MOUNT KIT	See Compressor Mount Applications section		
OPTIONS	Replacement Filter Paper Replacement Filter Remote Mount Filters ** Replacement Filters Replacement Gasket Kit Replacement Recirc. Filter In-Line Booster Pressurizers * Replacement Receiver Drier	RD-3-6406-0P RD-3-6407-0P 78R5100 78R5110 78R5210 RD-3-9706-0P 78R5370 73R9202 73R9204 74R2546	(Fresh Air Filter Box) (Fresh Air Filter Box) (Horizontal) (Vertical) (Remote Mount) (Gasket Kit) (12 VDC) For use with Remote Mount Filters (24 VDC)

* Booster Pressurizer Can Only Be Used With Remote Mount Filters
** Must be used with In-line Booster Pressurizer

Rooftop Heater – A/C
Model R-9757 Series

R-134a Compatible

SERVICE PARTS LIST



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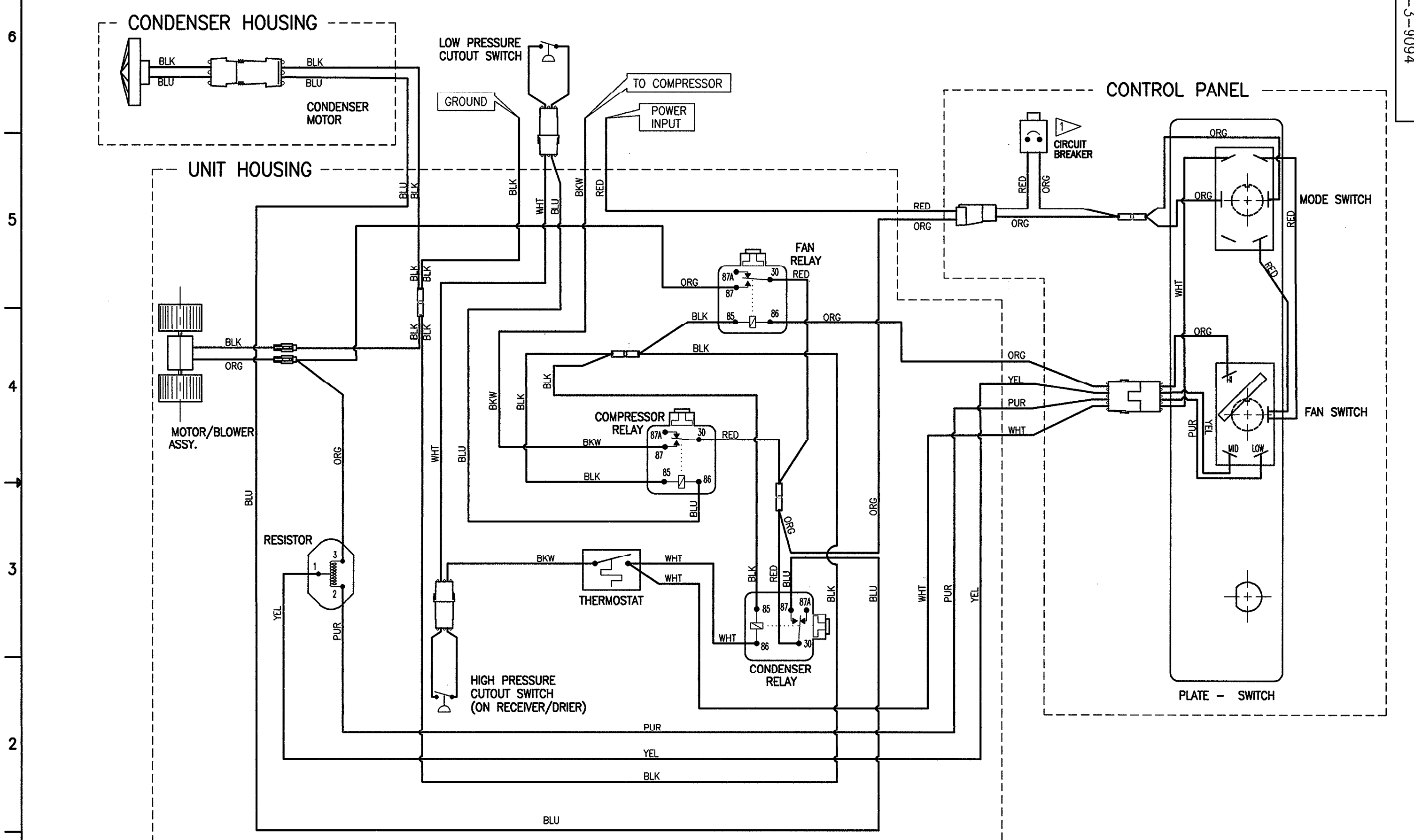
ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO.	ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO.
1		RD-3-9093-0	HOUSING ASSY		31		RD-4366-0	COOLANT TUBE 5/8" ELBOW (2)	70R7150
2	A	RD-3-9210-0	COVER ASSY		32		RD-5-6833-0	HIGH PRESSURE SWITCH	71R6120
3	B	RD-3-7383-0	BLOWER / MOTOR ASSY (12V)		33		RD-3-9212-0	PLUMBING COVER ASSY	
4	B	RD-3-7383-1	BLOWER / MOTOR ASSY (24V)		34		RD-3-6624-0	ELECTRICAL PANEL ASSY	
5		RD-5-5049-1	MOTOR (12V)	73R4422	35		RD-5-3647-0	RESISTOR	71R1450
6		RD-5-5049-2	MOTOR (24V)	73R4424	36		RD-3-4812-2	PLATE - RING ASSY	
7		RD-3-7382-0	BLOWER HOUSING - LEFT		37		RD-4-5445-2	CONDENSER SUPPORT ASSY	
8		RD-3-7382-1	BLOWER HOUSING - RIGHT		38		RD-4-5441-2	CONDENSER PLATE ASSY	
9		RD-5-8092-0	BLOWER WHEEL - CW	73R7200	39		RD-3-4351-0	RESISTOR GUARD	
10		RD-5-8092-1	BLOWER WHEEL - CCW	73R7210	40		RD-3-4814-3	PLATE - FRESH AIR	
11		RD-3-7376-0	ENTRY RING (2)		41		RD-3-6960-0	GASKET - FRESH AIR PLATE	
12		RD-3-3174-0	RETAINER - MOTOR		42	A	RD-5-4531-24	THERMOSTAT (PART OF # 34)	71R3200
13		RD-4-5444-0	CONDENSER HOUSING ASSY		43	A	RD-5-6690-0	RELAY 12V	71R1902
14		RD-4-4724-0	CONDENSER ASSY	77R0660	44	A	RD-5-6917-2	CABLE CONTROL WATER VALVE	
15		RD-4-4694-0	CONDENSER SCREEN		45	A	RD-5-5928-0	CONTROL KNOB	71R4040
16	C	RD-5-8747-4	FAN / MOTOR ASSY - 12VDC		46	A	RD-5-6395-1	LOW PRESSURE SWITCH - LOW SIDE	71R6045
17	C	RD-5-8747-5	FAN / MOTOR ASSY - 24VDC		47	A	RD-3-6475-0	PLASTIC PLENUM	
18		RD-5-8790-1	GUARD - FAN ASSY		48	A	RD-4123-2	SWITCH - MODE (ON-OFF-ON)	71R0200
19		RD-4-4520-4	SIDE BAR SUPPORT - LEFT		49	A	RD-5-0071-0	SWITCH - FAN (ON-ON-ON)	71R0400
20		RD-4-4520-5	SIDE BAR SUPPORT - RIGHT		50	A	RD-5-7192-0	CIRCUIT BREAKER - 35AMP (12V)	71R1330
21		RD-2-2791-0	EVAPORATOR ASSY	76R6015	51	A	RD-5-67814-0	CIRCUIT BREAKER - 20AMP (24V)	71R1315
22		RD-1-1379-0	HEATER CORE ASSY	76R1860	52	A	RD-5-3846-0	LOUVER - 4.5" DIAMETER	72R3200
23		RD-5-6868-0	EXPANSION VALVE	71R8300	53	A	RD-3-6408-0	FILTER - RECIRCULATING AIR	78R5370
24		RD-5-7272-0	RECEIVER DRIER ASSY	74R2546	54	A	RD-5-6693-0	RELAY (24V)	71R1904
25		RD-3-9099-0	TUBE ASSY - NO. 6 DRIER		55	A	DX-3-9095-0	WIRE HARNESS ASSY - UNIT (12V)	
26		RD-3-9096-1	TUBE ASSY - NO. 6		56	A	DRD-3-9095-1	WIRE HARNESS ASSY - UNIT (24V)	
27		RD-3-9097-0	TUBE ASSY - NO. 6		57	A	RD-3-6613-0	WIRE HARNESS ASSY - PLENUM	
28		RD-3-9101-1	TUBE ASSY - NO. 8		58		RD-5-8086-0	RETAINER ASSY	
29		RD-2-2156-0	REFRIG TUBE ASSY #10 O-RING		59		RD-3-6615-2	BRACKET - FITTING ASSY	
30		RD-5-7760-1	WATER VALVE ASSY	72R5220					

NOTES: A = NOT SHOWN B = INCLUDES MOTOR, BLOWER ASSY, BLOWER WHEELS AND ENTRY RINGS C = 12" DIAMETER

RD-3-9094

LTR	DATE	BY	CHK'D	PROD APPR	REVISION
--	7-21-98	CRT	JLP		INITIAL RELEASE; (QR 42688)



1 USE A 35 AMP CIRCUIT BREAKER FOR 12V AND A 20 AMP CIRCUIT BREAKER FOR 24V SYSTEM.

1) SEE RD-3-9095 & RD-3-6613 WIRE HARNESS ASSY'S. FOR INDIVIDUAL WIRE DESCRIPTIONS & SPECIFICATIONS.

NOTE:

ITEM	PART NO.	DESCRIPTION	MAT'L	FINISH
DWN C. TOWERS 5-20-98		WIRE SCHEMATIC R-9757		
CKD J. PATTERSON 6-8-98				
SCALE NONE				

THIS PRINT IS PROPRIETARY INFORMATION LOANED SUBJECT TO RETURN UPON DEMAND AND IS NOT TO BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO RED DOT CORPORATION.

RED DOT CORPORATION
495 Andover Park East
Seattle, WA 98188

NEXT ASSY: AFTERMARKET | DWG. NUMBER: RD-3-9094 | SIZE: C | SHEET: 1 OF 1

RD-3-9094 REV -

Rooftop Heater/Air Conditioner Model R-9757

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 R-134A 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.

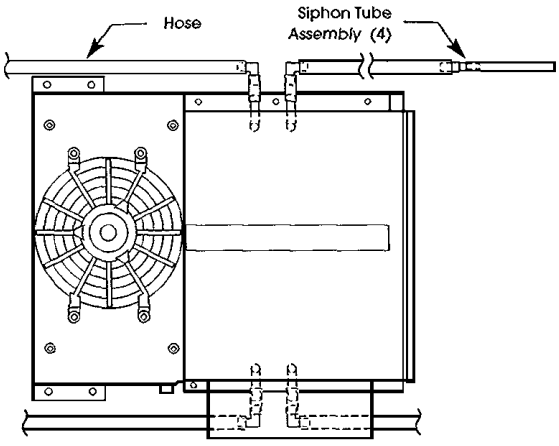
BEFORE STARTING

1. A compressor, compressor bracket, belts and refrigerant 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 8 cubic inch compressor turning faster than 1,750 rpm is required.
3. A fresh air filter, 78R 5000 is available for use in dusty environments. Replacement element for filter is 78R 5200. For pressurizing the cab and drawing fresh air, 78R 5110 remote mount filter is also available with booster blower (73R 9202 - 12V or 73R 9204 - 24V).

MOUNTING THE UNIT ON CAB ROOF

1. Connect drain hose assembly as provided in the installation kit (RD-3-7142) to the unit. (See Figure 1)

2. Determine the location for mounting the air conditioner unit per Red Dot template.
   - **a.** Refer to Figure 2
   - **b.** Mark the front-to-rear centerline of the cab on the outside of the cab roof.
   - **c.** Place the mounting template on the roof using the centerline as a guide.



DRAIN HOSE INSTALLATION
Figure 1

Red Dot Corporation P.O. Box 88790, Seattle, WA 98138 (425) 251-6897 Fax (425) 251-3934

d. Ensure that air flow to the unit is not obstructed.
e. Do not mount the unit with the front lower than the rear, as this will prohibit water drainage.
f. Avoid cutting roof stiffeners if possible. If **stiffeners are cut or roof is weakened due to the** cutout, reinforcement may be required.

3. Tape the template to the roof at the desired location. Mark the roof cut-out area (scribe the root).

4. Cut the roof where marked and drill the 1/2" dia. mounting holes. Remove burrs and sharp edges.

5. Clean the outside roof area around the cut-out and mounting holes using a mild solvent.

6. Apply a bead of sealant around upper surface of roof cut-out and mounting holes. Completely fill bolt holes with silicone to ensure proper sealing. Also, place rubber washers on all mounting holes to prevent water leakage into the cab. See Figure 2.

7. Set unit on cab.

8. Apply sealant around bolts and nuts to prevent water leakage into cab.

9. Place the reinforcing stiffeners from inside of cab against mount holes and install six bolts. Then install 4 condenser mount bolts.
NOTE: Apply adhesive sealant to the mounting hole locations as needed.

REFRIGERANT HOSE INSTALLATION

1. Cut hose to proper length. Make cut at right angles to centerline of hose. Blow cut hose with clean dry air after cutting to insure no foreign particles are left in hose. Install the appropriate steel bead lock filling on the end of the hose and crimp fitting using crimper

No. 79R 1510. A #12 suction line is recommended in place of the #10 for increased cooling capacity. Use a step up fitting to accomplish this.

2. Use 70R 4692S Fitting #10-12 (with a schrader port) on the suction line. Place low side pressure switch (71R 6045) on #10 -#12 Ftg (w/Schrader port) near unit under plumbing cover.

3. 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 and then to compressor.

4. 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.

SECURE DRAIN HOSE

1. Secure drain tube with tie wraps. Attach to refrigerant hoses only if they run downhill properly. **NOTE: Be cautious not to over-tighten tie wraps. Otherwise the drainage may be restricted.**

2. Inspect to make sure that drain tubes are not kinked, especially at back of cab.

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.

1. Disconnect battery.

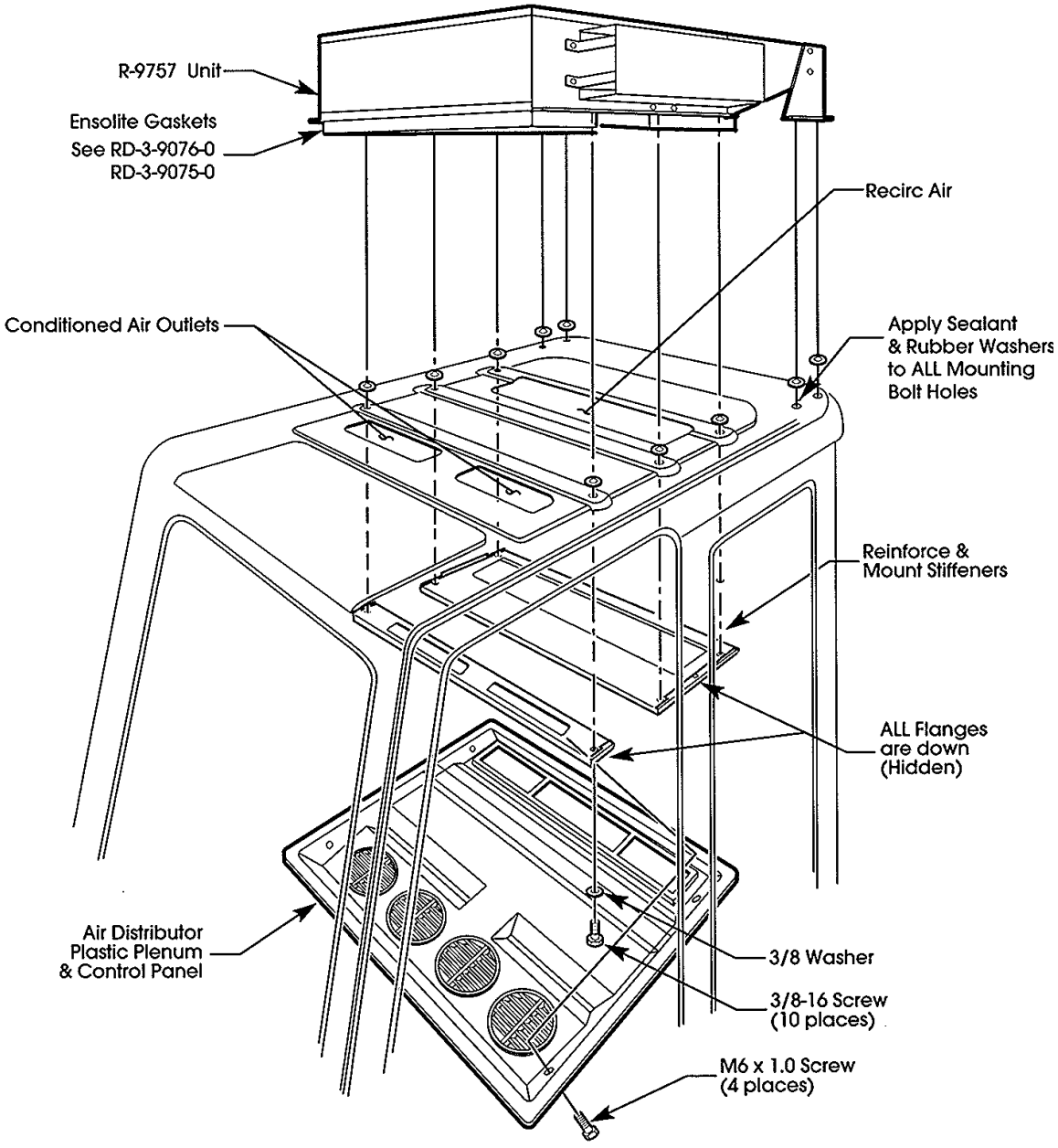
2. Connect plenum/control panel assembly to unit connectors.

3. Red Wire: Connect to an ignition switch supply through a 35 amp circuit breaker (20 amp/24V).

4. Black/White Wire: Connect to compressor clutch. Route the wire around the hinge point before connecting to compressor clutch on tilt-cab installations.

5. If clutch does not engage the system may not have been charged to high enough pressure to actuate the pressure switch. Place a jumper wire across the switch to start system.

6. See Wiring Schematic provided in installation kit (RD-3-9094).



ROOFTOP AIR CONDITIONER INSTALLATION
Figure 2

AIR DIFFUSER AND RECIRC PLENUM

1. Place cable control converter through control panel *CD"* hole from inside of plenum) and use control knob provided in the kit (71R 4040) to secure it against control panel. (connect control panel wiring to unit wiring).

2. Place the plenum assembly up to the unit and start one of the mount bolts.

3. Start the remaining bolts.

4. Tighten unit/plenum assembly bolts evenly until the plenum fits snugly against headliner and reinforcement stiffeners.

FINAL ASSEMBLY AND CHECK

1. Evacuate the system, test for leaks and charge with R-134a. The unit requires 2.5 to 3.10 pounds depending on hose lengths. If clutch does not engage the system may not have been charged to high enough pressure to actuate the pressure switch. Place a jumper wire across the switch to start system.

2. Connect the battery.

3. Turn the ignition switch to the "on" position.
- **a.** The clutch should click on and be engaged.
- **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. Turn the fan switch to the "off" position and compressor 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 refrigerant after the sight glass just clears. (R-12 only) **NOTE:** Check gauges for normal pressures for R-134a.

7. Check thermostat to be sure clutch cycles on and off.

OFF-ROAD

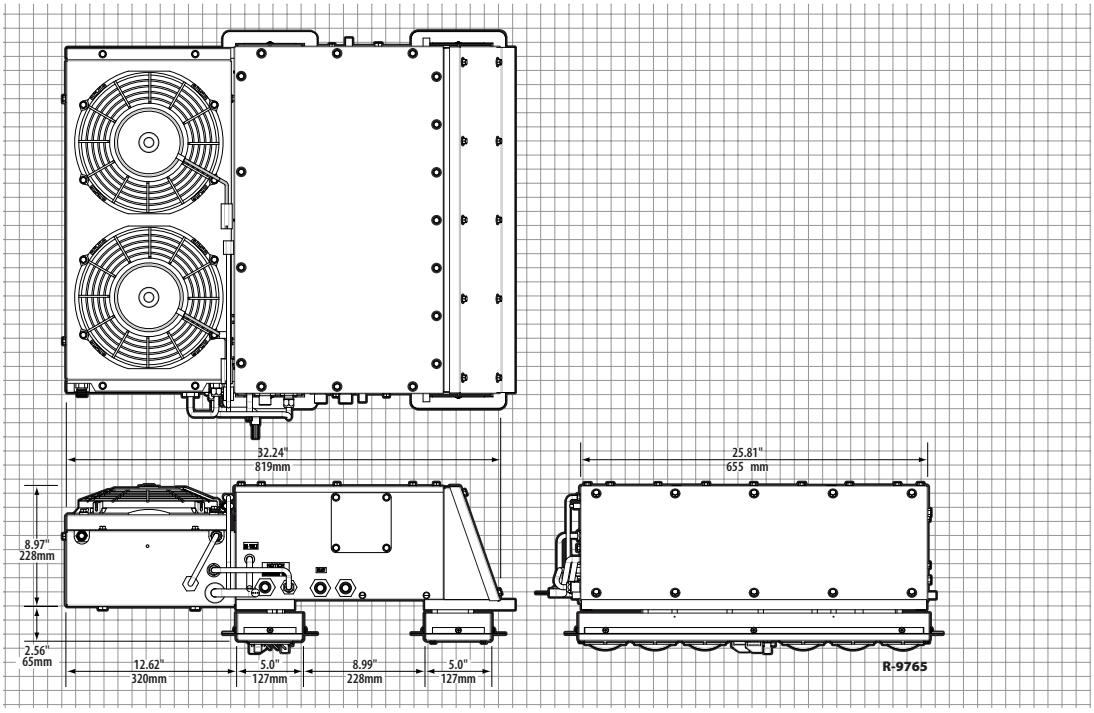
R-9765 Rooftop

Heater/Air Conditioner Unit

OFF-ROAD • CONSTRUCTION • INDUSTRIAL

The R-9765 is a designed as direct-fit replacement for the Caterpillar wheel loader rooftop unit along with other applications from Cat and Kress.

R-9765 SPECIFICATIONS	
BTU'S	Cooling - 27,000 BTU/Hr Heating - 48,000 BTU/Hr
AIR FLOW	415 CFM (705 m^3/h)
WEIGHT	70 lbs. (32kg)
CURRENT DRAW	32 amps at 13.5 VDC 17.6 amps at 27 VDC



R-9757 SYSTEM ORDERING GUIDE		
	R12/R-134a	**NOTES**
UNITS	R-9765-0P R-9765-0-24P	12 VDC - Heater A/C 24 VDC - Heater A/C
CONDENSER	Contained in the R-9765	
INSTALLATION KIT	78R1805	Refrigerant hose, fittings and hardware.
COMPRESSOR	See 75 Series Compressor section	
R134A CHARGE FITTING	75R5681 & 75R5688	Required with CCI and TECUMSEH appliacations.
CLUTCH TECUMSEH/CCI	See 75 Series Clutch section	
COMPRESSOR MOUNT KIT	See Compressor Mount Applications section	

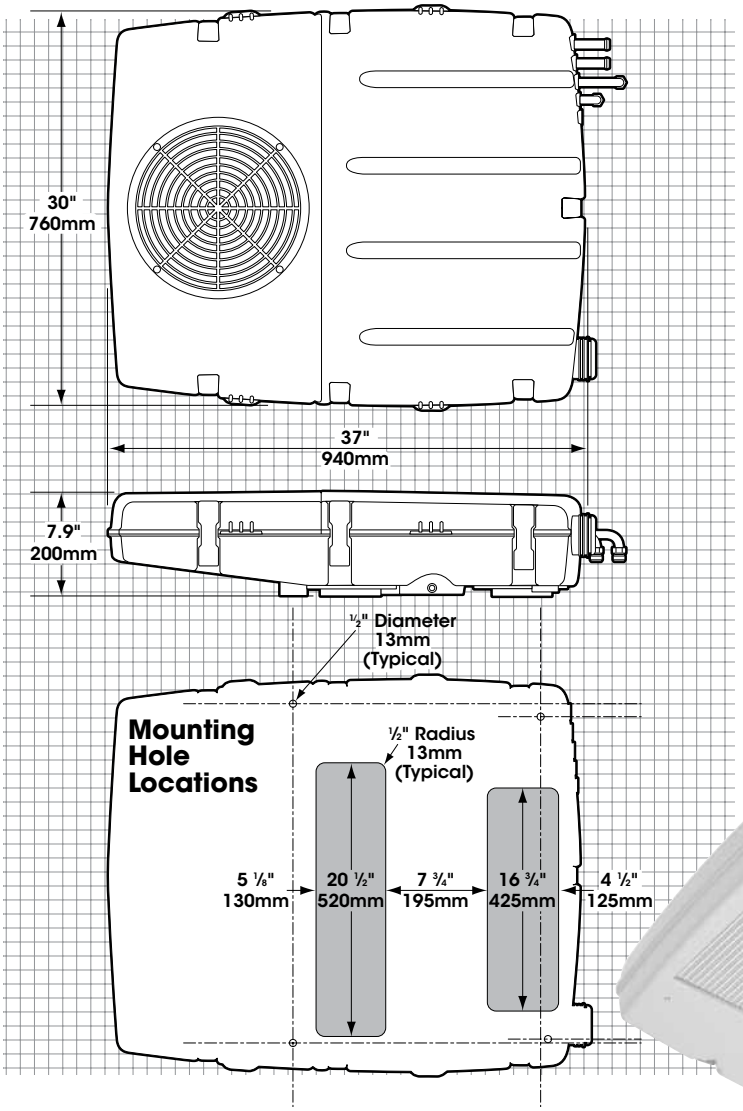
ON-ROAD/OFF-ROAD

R-9777 Rooftop

Heater/Air Conditioner

CONSTRUCTION • MINING • AGRICULTURE

The R-9777 rooftop unit packages high-performance heating and cooling capacity into a tough, sleek engineered-resin housing. At just 7.9 inches high and 65 lbs., it has the low profile and low weight necessary for installation and durability on many equipment cabs. Optional equipment includes a remote-mount filter and in-line booster blower for a pressurized, dust-free cab.



Component Selection and Performance

- High Performance Blower
- Heavy Duty Tube and Fin Evaporator
- High Capacity Spring Loaded Receiver Drier
- Multi flow Condenser
- A Single High Performance Durable Condenser Fan

Design and Styling

- Unique Low Profile Housing
- "Built to Survive" Engineered Resin Housing
- Positive Pressure Design
- Optional Outside Air Pressurization
- Easy to Service Components

Plenum

- Contoured Design
- Four Multi-Direction Louvers
- Easy to Operate Switches and Controls
- Recirculation Air Filtration

Performance

- 45,000 BTUs Heating
- 25,000 BTUs Cooling
- 355 CFM Air Flow

Plenum
Included with kit

LS = Limited to stock on hand

R-9777 SPECIFICATIONS

BTU'S	Heating – 45,000 BTU/Hr @ 100°F (13.2 kW @ 37.8°C) air temp. rise Cooling – 25,000 BTU/Hr with 36°F (7.3 kW with 2.2°C) refrigerant temp. and 80°F (26.7°C) wet bulb entering air
AIR FLOW	355 CFM (580 m3/h)
WEIGHT	65 lbs.
MOTORS	Evaporator – One 12 VDC, three speed (24 VDC available) Condenser – One 12 VDC low profile (24 VDC available)
CURRENT DRAW	38.2 amps @ 13.6 VDC (includes 4 amps for A/C clutch) 19.1 amps @ 27.2 VDC (includes 2 amps for A/C clutch)

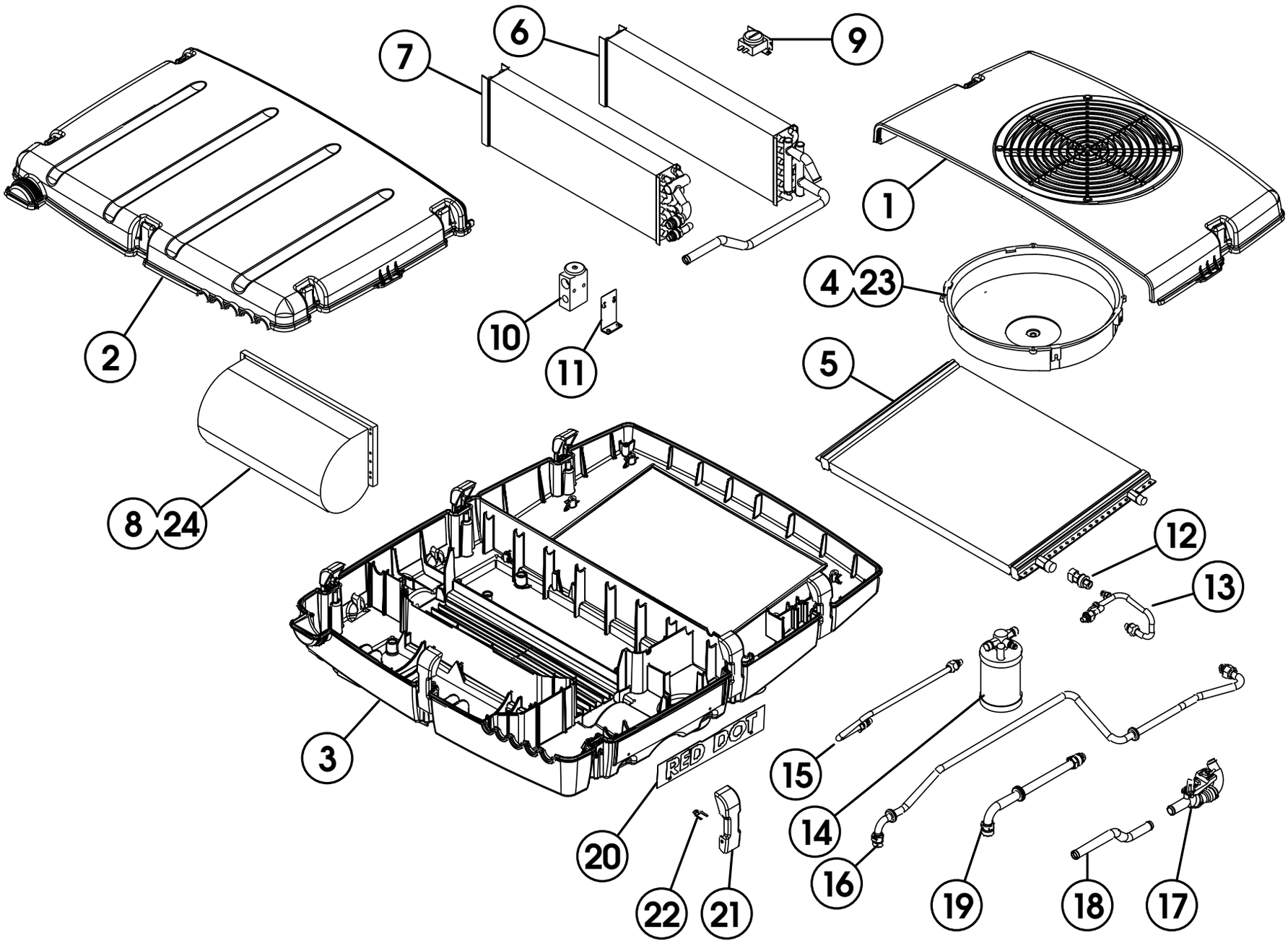
R-9777 SYSTEM ORDERING GUIDE

	R12/R-134a	NOTES	
UNITS	R-9777-0P R-9777-0-24P R-9777-1P R-9777-1-24P	Heater A/C 12VDC Heater A/C 24VDC A/C Only 12VDC A/C Only 24VDC	
CONDENSER	Contained in the R-9777		
INSTALLATION KIT	78R1805	Refrigerant hose, fittings and hardware.	
COMPRESSOR	See 75 Series Compressor section		
R134A CHARGE FITTING	75R5681 & 75R5688	Required with CCI and TECUMSEH applications.	
CLUTCH TECUMSEH/CCI	See 75 Series Clutch section		
COMPRESSOR MOUNT KIT	See Compressor Mount Applications section		
OPTIONS	Remote Mount Filters ** Replacement Filters Replacement Gasket Kit In-Line Booster Pressurizers * Replacement Receiver Drier	78R5100 78R5110 78R5210 RD-3-10210-0P 73R9202 73R9204 74R2546, 74R2590	(Horizontal) (Vertical) (Remote Mount) (12 VDC) For use with Remote Mount Filters (24 VDC)

* Booster Pressurizer Can Only Be Used With Remote Mount Filters
** Must be used with In-line Booster Pressurizer

Heater-Air Conditioner Model R-9777

SERVICE PARTS LIST



ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO.
1		RD-3-9135-0	COVER - CONDENSER	
2		RD-3-9152-1	COVER - EVAPORATOR	
3		RD-3-9151-1	HOUSING	
4		RD-5-9076-2	FAN/MOTOR ASSY, 12V	73R8642
5		RD-4-5378-0	CONDENSER	77R1290
6		RD-1-1755-0	HEATER CORE ASSY	76R1560
7		RD-2-3413-0	EVAPORATOR ASSY	76R5820
8		RD-5-8583-0	MOTOR BLOWER ASSY, 12V	73R5552
9		RD-5-4531-24	THERMOSTAT - SIDE & BTM MNT	71R3200
10		RD-5-7015-0	EXPANSION VALVE	71R8320
11		RD-3-9530-1	BRACKET - EXP. VALVE	
12		RD-5-9577-0	PRESSURE SWITCH	
13		RD-2-3418-0	TUBE - #6 REC. DRIER-COND.	
14		RD-5-9419-0	RECIEVER DRIER, R134A	74R2590
15		RD-2-3419-0	TUBE - #6 CONDENSER	
16		RD-4-5453-0	TUBE ASSY - INLET, COND.	
17		RD-5-9224-1	WATER VALVE - CABLE OPER.	
18		RD-1-1896-0	TUBE - HEATER	
19		RD-2-3416-0	TUBE ASSY - OUTLET	
20		RD-3-9144-0	PLACARD	
21		RD-3-9405-0	LATCH - OVER CENTER ASSY	
22		RD-3-9406-0	RETAINER - LATCH PIVOT	
23		RD-5-9076-3	FAN/MOTOR ASSY, 24V	73R8644
24		RD-5-8583-1	MOTOR BLOWER ASSY, 24V	73R5554
25	A	RD-5-5260-0-.500	SCREW - #8 PLASTITE HEX HD.	
26	A	RD-5-5261-0-.750	SCREW - #12 PLASTITE HEX HD.	
27	A	RD-3-9608-0	WIRE HARNESS ASSY	
28	A	RD-5-6690-0	RELAY, 12V	71R1902
29	A	RD-5-6693-0	RELAY, 24V	71R1904
30	A	RD-3-9137-0	WATER VALVE CONVERTER	
31	A	RD-3-9142-0	PLENUM - OUTLET	
32	A	RD-5-9053-0	LOUVER	72R3140
33	A	RD-5-9833-0	SWITCH - ROTARY, 3 SPEED	71R1160
34	A	RD-5-8967-0	SWITCH - ROCKER, BLACK	71R0840
35	A	RD-5-8812-0	KNOB - ROTARY CONTROL	
36	A	RD-3-9136-0	HOUSING - FILTER, PLENUM	
37	A	RD-5-9077-0	FILTER - RECIRC.	78R5410
38	A	RD-3-9390-2	COVER - RECIRC. FILTER	
39	A	RD-5-9437-0	RESISTOR (FOR 12V)	71R1402
40	A	RD-5-9445-0	RESISTOR (FOR 24V)	71R1401

NOTES: A=Not Shown **FOR REFERENCE ONLY. SUBJECT TO CHANGE WITHOUT NOTICE**

RED DOT CORPORATION

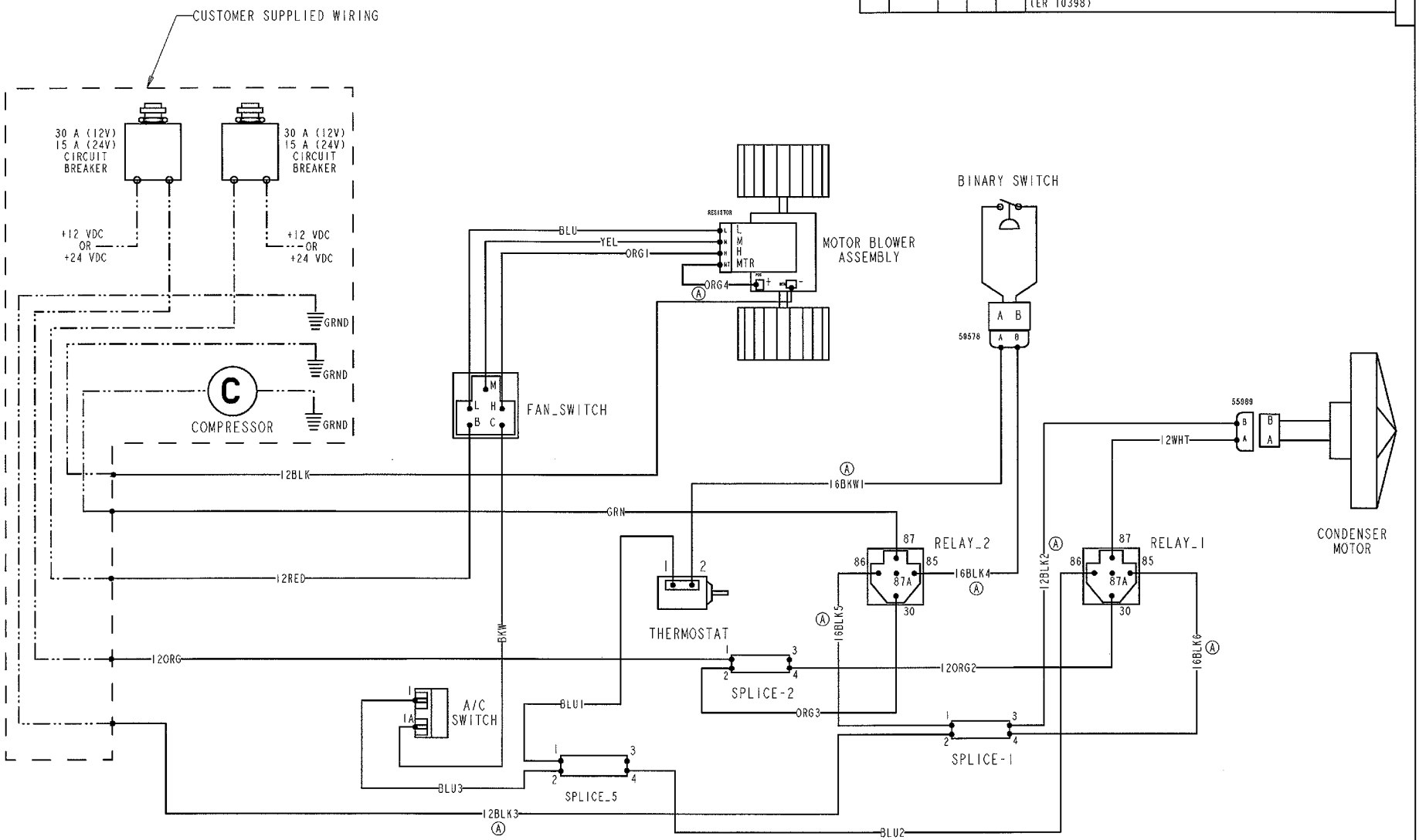
Aftermarket Office P.O.Box 88790 Seattle, WA 98138
(425) 251-6897 fax (206) 251-3934

RD-3-9141-0 (REV A)

RD-3-9609

LTR	DATE	BY	CHK'D	PROD APPR	REVISION
--	11-15-99	TCT	CCC	MT	INITIAL RELEASE (ER 10398)
A	1-7-00	TCT	KO	MT	DELETED RELAY_3, SPLICE_3, SPLICE_4, 12BLK3, 12RED2, ORG2, 12BLK4 & 12RED3; RE-ROUTED 12BLK, 12RED & ORG1; ORG4 16BKW1, 16BLK4, 12BLK2, 16BLK5, 16BLK6, ORG3 & 12BLK3 WERE ORG, BKW1, BLK8, 12BRN2, 12BRN1, 12BRN3, 120RG1 & 12BRN (ER 10398)

RD-3-9609



2) SEE RD-3-9608-0 WIRE HARNESS ASSEMBLY FOR INDIVIDUAL WIRE DESCRIPTIONS AND SPECIFICATIONS

1) ALL WIRING 14 GA. UNLESS OTHERWISE SPECIFIED

NOTE:

ITEM		PART NO.	DESCRIPTION	MAT'L	FINISH
DWN	T. THOMPSON	5-27-99			
CKD	C. COPPOCK	10-21-99			
SCALE: DRAWING SCALE					

RED DOT CORPORATION
495 Andover Park East
Seattle, WA 98188

WIRING SCHEMATIC
R-9777

NEXT ASSY CUSOMER	DWG. NUMBER	SIZE	SHEET
	RD-3-9609	C	1 of 1

Model R-9777
Air Conditioner / Heater

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. Use care so as not to release any R-134a refrigerant into the atmosphere.
4. A/C systems operate under high pressure. At 77°F the R-134a 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 refrigerant hoses and fittings until final assembly.

BEFORE STARTING

1. A compressor, compressor bracket, belts and refrigerant 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. An 8 cubic inch compressor turning faster than 1,750 rpm is required.
3. For pressurizing the cab and drawing fresh air, 78R 5110 remote mount filter is available with booster blower (73R 9202-12V or 73R 9204-24V).

MOUNTING THE UNIT ON CAB ROOF

1. Connect drain hose and 90° elbows as provided in the installation kit (RD-3-9146) to the unit.(See Figure 1)
2. Determine the location for mounting the heater-air Conditioner unit per Red Dot template.
   a. Refer to figure 2.
   b. Mark the front-to-rear centerline of the cab on the outside of the cab roof.
   c. Place the mounting template on the roof using the centerline as a guide.
   d. Ensure that air flow to the unit is not obstructed.
   e. Do not mount the unit with the front lower than the rear, as this will prohibit water drainage.
   f. Avoid cuffing 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).

   NOTE: Before taping the template to the roof, decide what direction the unit is to be oriented. It is recommended that the "recirc inlet" be to the rear and the "discharge air" be positioned toward the front of the cab (This puts the condenser at the front and the plumbing to the rear).

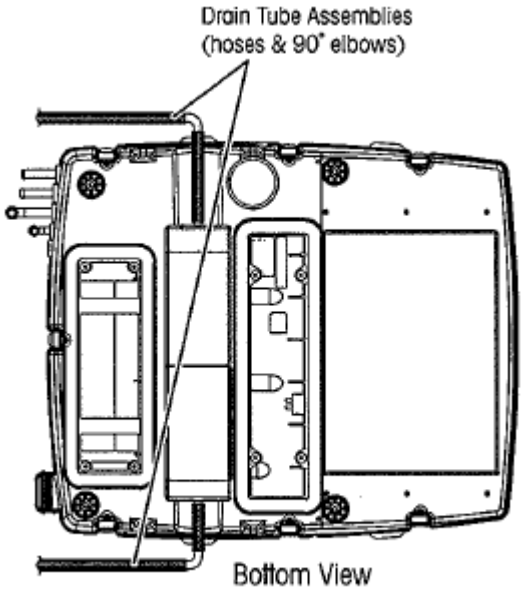
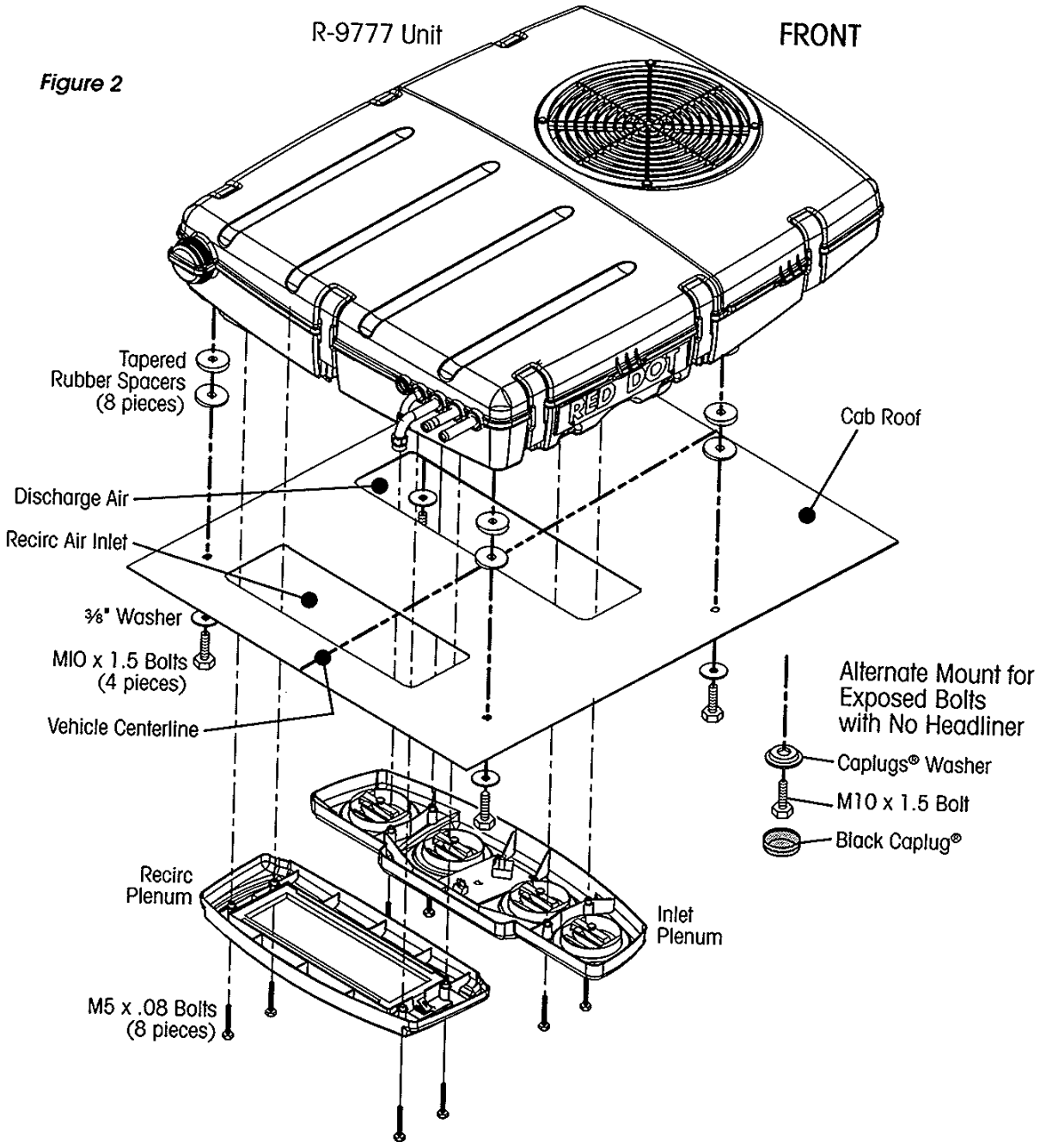


Figure 1

Red Dot Corporation P.O. Box 88790, Seattle, WA 98138 (425) 251-6897 Fax (425) 251-3934

Figure 2



4. Cut the rectangular inlet and outlet holes into the roof where marked (stay inside the lines). Then remove the headliner and drill the 1/2" dia. mounting holes. Remove burrs and sharp edges. NOTE: The rectangular holes should go through the headliner, the mounting holes should not go through the headliner. If the headliner is difficult to remove (or if the cab has no headliner), drill the 1/2" dia. mounting holes through the headliner and use cap plug washers and cap plugs (supplied with kit) in conjunction with the M l0 mounting bolts as shown in figure 2.
5. Clean the outside roof area around the cut-out and mounting holes using a mild solvent.
6. Apply a bead of sealant around upper surface of roof cut-out and mounting holes. Completely fill bolt holes with silicone to ensure proper sealing. Also, place two rubber tapered spacers on each of the mounting holes and rotate the spacers relative to one another to level the unit on the roof (figure 2).

7. Set unit on cab.
8. Apply sealant around bolts to prevent water leakage into cab.
9. Install four mounting bolts.

   NOTE: Do not use an impact wrench to install the mount bolts. Do not exceed 25 lb.-ft torque on the mount bolts.

   NOTE: Apply adhesive sealant to the mounting hole locations as needed.

REFRIGERANT HOSE INSTALLATION

1. Cut hose to proper length. Make cut at right angles to centerline of hose. Blow cut hose with clean dry air after cutting to insure no foreign particles are left in hose. Install the appropriate steel bead lock fitting on the end of the hose and crimp fitting using crimper No. 79R 1510. A #12 suction line is recommended in place of the #10 for increased cooling capacity. Use a step up fitting to accomplish this.
2. 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 and then to compressor.
3. Use clamps 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.

SECURE DRAIN HOSES

1. Secure drain tube with tie wraps. Attach to refrigerant hoses only if they run downhill properly.

   NOTE: Be cautious not to over-tighten tie wraps. Otherwise the drainage may be restricted.

2. Inspect to make sure that drain tubes are not kinked, especially at back of cab.

AIR DIFFUSER AND RECIRC PLENUM

NOTE: Unit is wired for negative ground.

1. Disconnect battery.
2. **Orange and brown wires (condenser fan circuit):** Connect the orange wire to the ignition switch supplied power through a 30 amp circuit breaker (15 amp/24V) and the brown wire to ground.
3. **Red wire and black wire (motor blower circuit):** Connect the red wire to ignition switch supplied power through 30 amp circuit breaker (15 amp/24V) and the black wire to ground.
4. **Green Wire (compressor clutch circuit):** Connect to compressor clutch. Route the wire around the hinge point before connecting to compressor clutch on tilt-cab installations.
5. See Wiring Schematic (RD-3-9609) provided in installation kit.

SECURE DRAIN HOSES

1. Reinstall the headliner (if it was removed).
2. Place cable control converter through control panel ("D" hole from inside of plenum) then tighten the nut on the outside of the panel over the converter. Push the control knob provided in the kit over the shaft of the converter. (connect unit wiring to the rocker switch and the fan switch, refer to the Wiring Schematic for terminal information).
3. Place the control/distribution plenum assembly up to headliner so that it covers the large rectangular cutout (curved side of the plenum toward the condenser end of the unit) and start one of the mount bolts.
4. Start the remaining bolts and tighten plenum assembly bolts evenly until the plenum fits snugly against the headliner.

   NOTE: Do not use an impact wrench to install these bolts. Do not exceed 8 lb.-ft torque for plenum bolts.

5. Remove the filter from the recirc/filter plenum by turning the quarter turn fastener counterclockwise and then removing the grill and filter.
6. Place the recirc/filter plenum up to the headliner so that it covers the small rectangular cutout (curved side either away from or toward the condenser) and start one of the bolts.

7. Start the remaining bolts and tighten the plenum assembly bolts evenly until the plenum fits snugly against the headliner.

   NOTE: Do not use an impact wrench to install these bolts. Do not exceed 8 lb.-ft torque for plenum bolts.

8. Replace the recirc filter and grill into the recirc/filter plenum.

FINAL ASSEMBLY AND CHECK

1. Evacuate the system, test for leaks and charge with R-134a. The unit requires 3.2 to 3.4 pounds depending on hose lengths.
2. Connect the battery.
3. Turn the ignition switch to the "on" position, turn the blower switch to the high speed position, flip the a/c rocker switch to the "on" position:
   a. The a/c clutch should click on and be engaged.
   b. The evaporator blower should be turning at high speed.
   c. The condenser blower should be turning.
4. Turn the fan switch to medium and low positions and check that the evaporator blower slows down.
5. Turn the fan switch to the "off" position and compressor clutch should disengage.
6. Start engine and run at 1500-2000 rpm. Turn unit on "full cold", "high fan". Check gauges for normal pressures for R-134a.

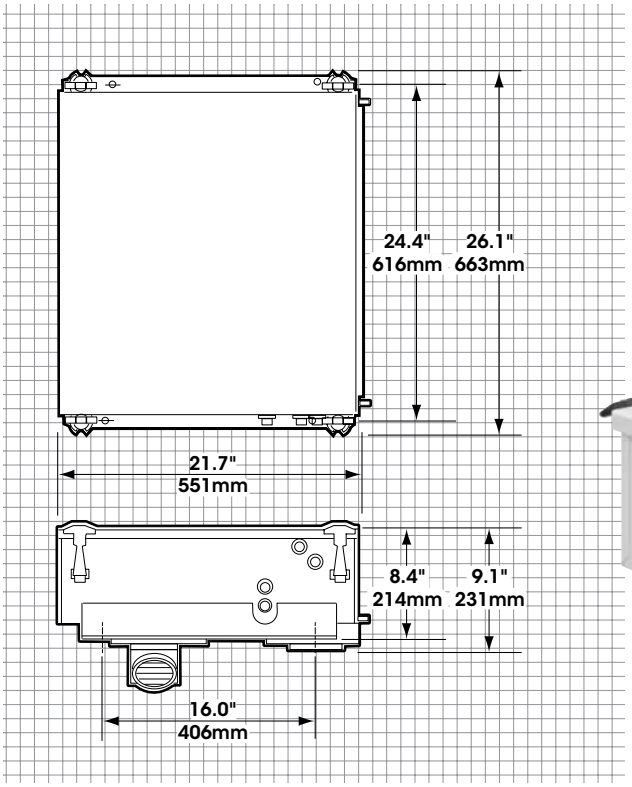
OFF-ROAD

R-9800 RoofTop or Side Mount

Heater/Air Conditioner Unit

CONSTRUCTION • MINING • AGRICULTURE

Vertical or horizontal—the R-9800 mounts either way to fit your space. The control panel can be remote-mounted for the convenience of the operator. Rubber tie-downs unlatch for easy servicing of all components. Optional equipment includes a remote-mount filter and in-line booster blower for a pressurized, dust-free cab.



OPTIONS:

Remote Mount Filters
Must be used with In-line Booster Pressurizer

Horizontal: 78R5100
10 ¼" dia. x 18" long
(26.04cm x 45.27cm)

Vertical: 78R5110
10 ¼" dia. x 23 ¾" long
(26.04cm x 450.33cm)

In-line Booster Pressurizer:
73R9202 (12 VDC)
73R9204 (24 VDC)
For use w/Remote Mount Filters
78R5100 & 78R5110 only

Replacement Filter Backpack Mount
78R5200

Replacement Filter Remote Mount
78R5210

Air Outlet Adapter For Pressurization
72R4531

LS = Limited to stock on hand

R-9800 SPECIFICATIONS

BTU'S	Heating – 45,000 BTU/Hr @ 100°F (13.2 kW @ 37.8°C) air temperature rise Cooling – 25,000 BTU/Hr with 36°F (7.3 kW @ 2.2°C) refrigerant temp and 80°F (26.7°C) wet bulb entering air
AIR FLOW	400 CFM (680 m3/h)
WEIGHT	70 lbs. (32 kg)
MOTORS	One 12 VDC, three-speed (24 VDC available)
CURRENT DRAW	22.7 amps @ 13.6 VDC (includes 4 amps for A/C clutch) 11.4 amps @ 27.2 VDC (includes 2 amps for A/C clutch)

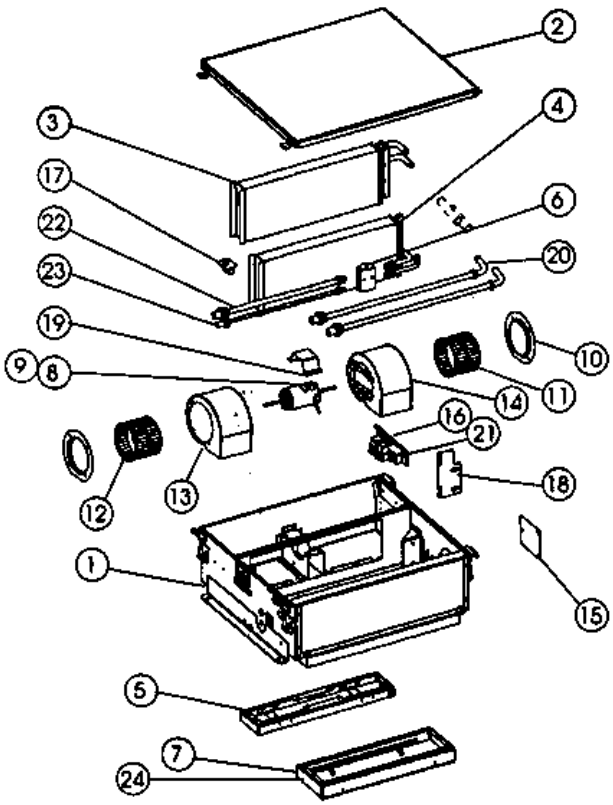
R-9800 SYSTEM ORDERING GUIDE

	R12/R-134a	NOTES	
UNIT	R-9800-0P R-9800-0-24P	12 VDC 24 VDC	
CONDENSER	77R0700 Radiator Mount R-9725 Remote Mount	See 77 Series Condenser section See Units Condenser section	
INSTALLATION KIT	78R1705	Regrigerant hose, fittings and hardware	
COMPRESSOR	See 75 Series Compressor section		
R134A CHARGE FITTING	75R5681 & 75R5688	Required with CCI and TECUMSEH application.	
CLUTCH TECUMSEH/CCI	See 75 Series Clutch section		
COMPRESSOR MOUNT KIT	See Compressor Mount Applications section		
OPTIONS	Remote Mount Filters **	78R5100 78R5110	(Horizontal) (Vertical)
	Replacement Filters	78R5210	(Remote Mount)
	Replacement Recirculating Filters	78R5360	
	Replacement Gasket Kit	RD-3-10210-0P	
	In-Line Booster Pressurizers *	73R9202 73R9204	(12 VDC) For use with Remote Mount Filters (24 VDC)
	Replacement Receiver Drier	74R2546	
	Air Outlet Adapter for In-Line Booster Pressurizer		72R4531

* Booster Pressurizer Can Only Be Used With Remote Mount Filters
** Must be used with In-line Booster Pressurizer

Heater-
Air Conditioner
Model R-9800

SERVICE PARTS LIST

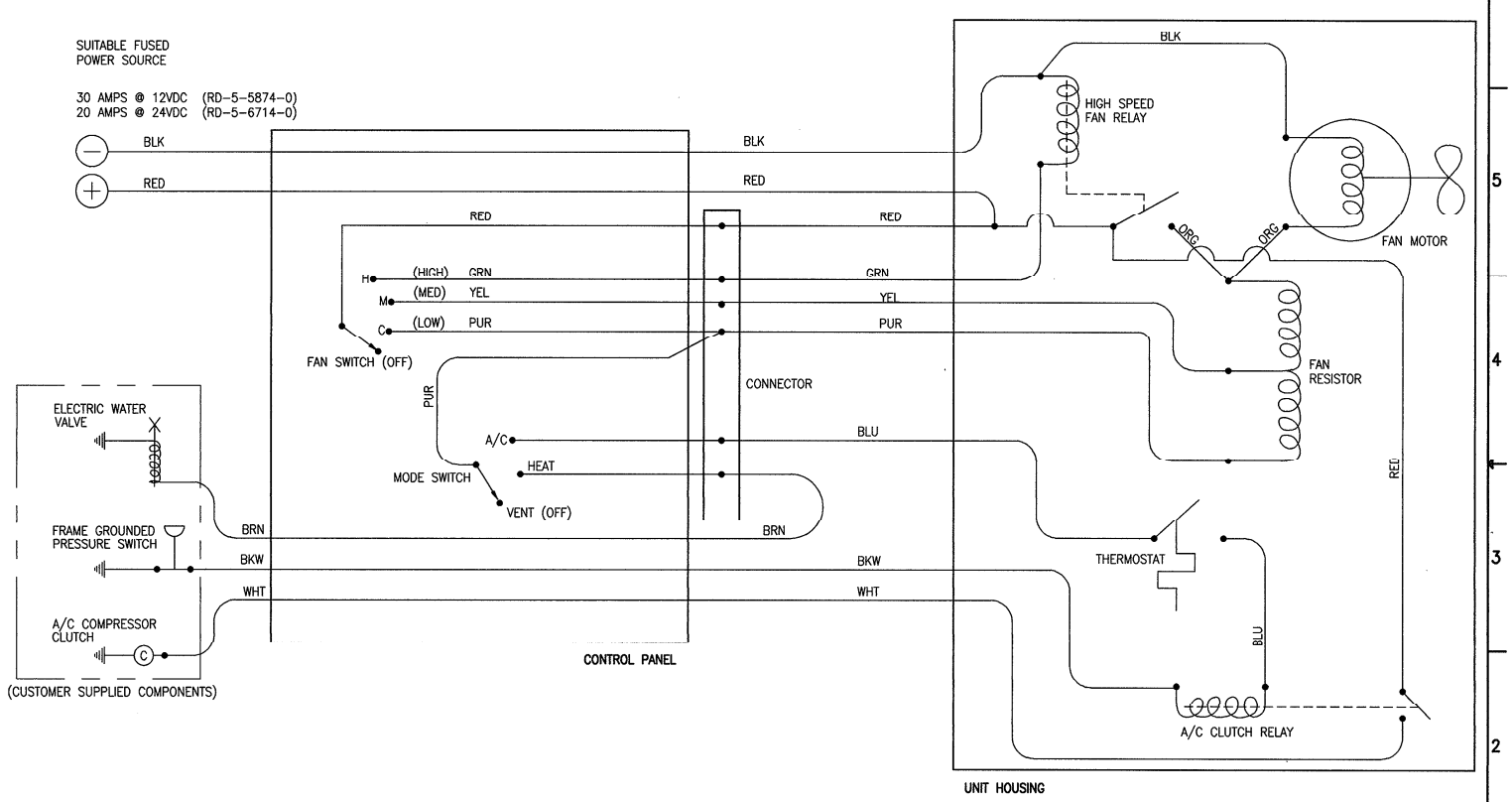


ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO	ITEM	NOTE	PART NO.	DESCRIPTION	CAT. NO
1		RD-3-7801-0	HOUSING ASSY.		13		RD-3-7382-0	BLOWER ASSY.	
2		RD-3-7799-0	COVER ASSY.		14		RD-3-7382-1	BLOWER ASSY.	
3		RD-1-1480-0	HEATER CORE ASSY.		15		RD-3-4814-2	PLATE - FRESH AIR	
4		RD-2-2885-0	EVAPORATOR ASSY.		16		RD-3-7826-1	PANEL ASSY. - ELECTRIC	
5		RD-3-7820-0	DUCT ASSY. - OUTLET		17		RD-5-3647-0	RESISTOR	
6		RD-3-7822-0	VALVE - EXPANSION		18		RD-3-7813-O	RETAINER - CORE, TOP	
7		RD-3-7817-0	DUCT ASSY. - INLET		19		RD-3-3174-0	RETAINER - MOTOR	
8		RD-5-5049-0	MOTOR ASSY. 12V		20		RD-1-1474-0	TUBE ASSY. - HEATER 90°	
9		RD-5-5049-24	MOTOR ASSY. 24V		21		RD-5-4531-24	THERMOSTAT	
10		RD-3-7376-0	RING - ENTRY		22		RD-2-2895-0	TUBE ASSY. - EVAP. #10	
11		RD-5-8092-0	BLOWER WHEEL (CW)		23		RD-2-2896-0	TUBE ASSY. EVAP. #6	
12		RD-5-8092-1	BLOWER WHEEL (CCW)		24	A	RD-5-8076-0	FILTER- AIR	

A. NOT SHOWN

Red Dot Corporation PO Box 88790, Seattle, WA 98138 (425) 251-6897 Fax (425) 251-3934

LTR	DATE	BY	CHK'D	PROD APPR	REVISION
--	3-2-96	DMG	DEA	jm	INITIAL RELEASE; (ER08003).



1) SEE RD-3-7871-0 AND RD-3-7872-0 FOR INDIVIDUAL WIRE DESCRIPTIONS AND SPECIFICATIONS

NOTE:

RD-3-7879 REV -

ITEM		PART NO.	DESCRIPTION	MAT'L	FINISH
DWN	D. GATELY	02-02-96	WIRING SCHEMATIC		
CKD	D. ASHER	02-05-96	R-9800		
SCALE	NONE				

TOLERANCES EXCEPT AS NOTED: LINEAR .0 = ±, .00 = ±, .000 = ±; ANGULAR = ±

RED DOT CORPORATION
105 Andover Park East
Seattle, WA 98188

NEXT ASSY	DWG. NUMBER	SIZE	SHEET
RD-3-7804	RD-3-7879	C	1 OF 1