

## Compressor Replacement Kit Installation Instructions

### REPLACEMENT KIT FOR AIR COMPRESSOR ON RA(D) AND RV HEATER MODELS (Excludes Model RA(D) 500 manufactured *before* 20 JAN 2005)

#### Description/Application

The original air compressor installed on used oil RA(D) and RV models manufactured *before* APR 2018 is no longer available. To replace it, order the new air compressor (PN 1012072) and the applicable replacement kit (PN 1021115 for models RA(D) 140, 235, 350, and 500 and RV 325 or PN 1021116 for models RA(D) 150 and 250, RAB 350 and 500, and RV 200). Refer to Table 1 for a list of replacement kit parts and see Figure 1 for component locations.

**NOTE: This installation should be performed by a qualified service technician and these instructions should be carefully followed.**

Table 1. Replacement Kit Parts List				
Item No.	PN	Description	Qty in Replacement Kit	
			Kit PN 1021115*	Kit PN 1021116**
1	1028	PLUG, PIPE, 1/8" NPT	2	2
2	16358	BUSHING, ANTI-SHORT	2	2
3	30486	WIRE, #18 AWG, 48" L (BLACK)	1	1
4	114172	WIRE, #18 AWG, 48" L (WHITE)	1	1
5	174872	WIRE, #18 AWG, 52" L (GREEN)	1	1
6	22573	CONNECTOR, CRIMP NUT	3	3
7	36563	CONNECTOR, BX, 90-DEG	1	1
	16202	CONNECTOR, BX, STRAIGHT	1	1
8	8256	CABLE, BX, 3-8 x 36" L	1	1
9	174704	SHELF, COMPRESSOR-MOUNTING	—	1
10	37661	SCREW, SELF-DRILLING	—	4
11	140868	CAPSCREW, 1/4-20 x 1" L	—	6
12	1012073	BRACKET, RV MOUNTING (USED ON MODEL RV 200 ONLY)	—	1
13	16246	CAPSCREW, HEX HD, 1/4-20 x 3/4" L	4	4
14	158207	TUBING, SILICONE, 48" L	1	1
15	87482	TEE, POLY, 3/16"	—	1

\*Replacement kit for models RA(D) 140, 235, 350, and 500 and RV 325  
\*\*Replacement kit for models RA(D) 150 and 250, RAB 350 and 500, and RV 200

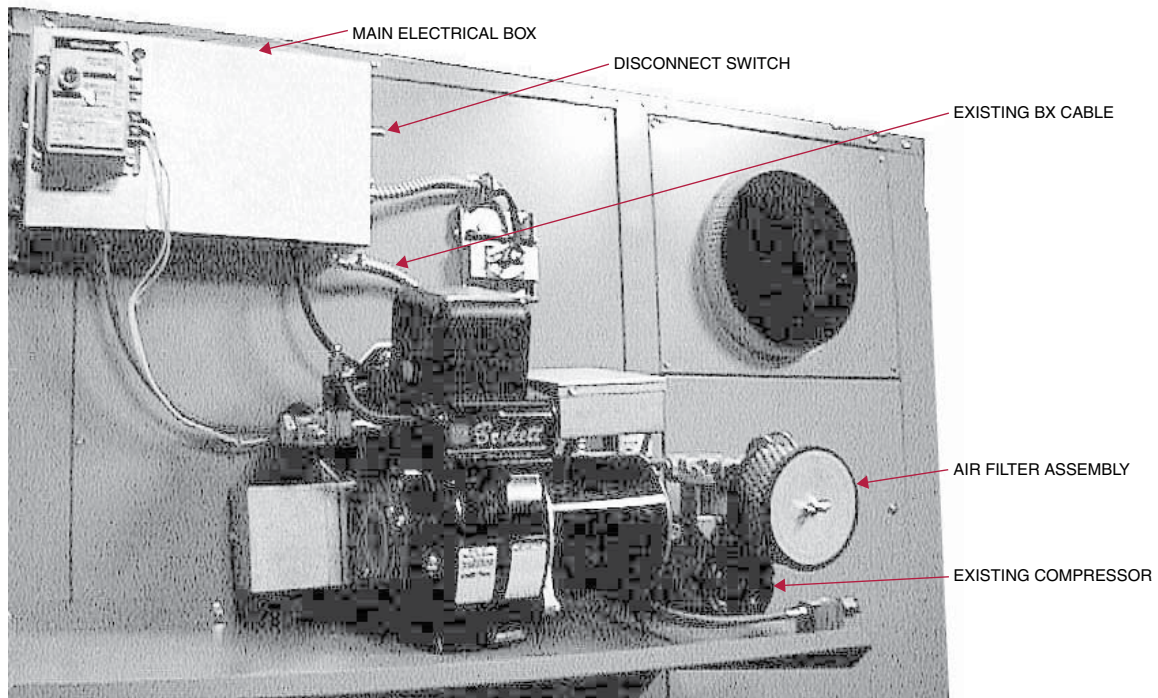


Figure 1. Component Locations (Model RA(D) 500 Shown)

## Replacement Procedure (Item Numbers in Parentheses Refer to Table 1)

1. Turn off power to the heater (if heater is installed): Place disconnect switch (see Figure 1) in OFF position.
2. Remove and save the air filter assembly: Remove air filter assembly and save all components (air filter assembly will be reinstalled on replacement compressor).

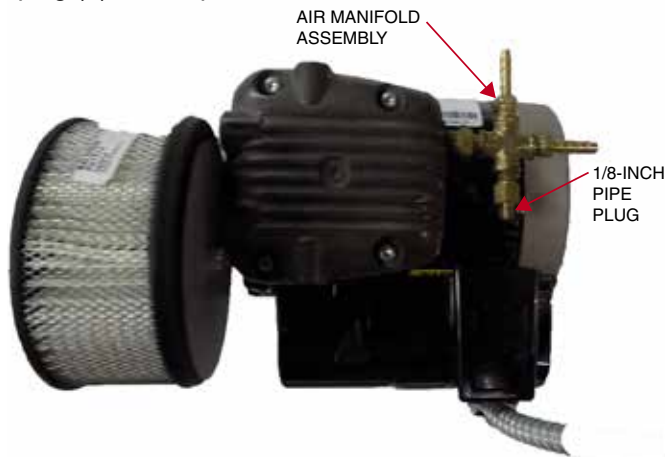
**NOTE: Inspect the replaceable air filter. If it needs replacing, use one of the following: Reznor® (PN 107216), Wix Filter (PN 42374), or NAPA (PN 2374).**

### 3. Remove the existing compressor as follows:

- a. Disconnect existing BX cable at main electrical box (see Figure 1) being sure to leave BX connector on box.
- b. Open main electrical box and identify compressor wire leads to ensure correct reconnection. Disconnect compressor wires and remove BX cable.
- c. Disconnect tubing from barbed fittings on air manifold assembly.
- d. Underneath compressor-mounting shelf, remove three compressor-mounting screws and remove compressor (do not discard compressor).

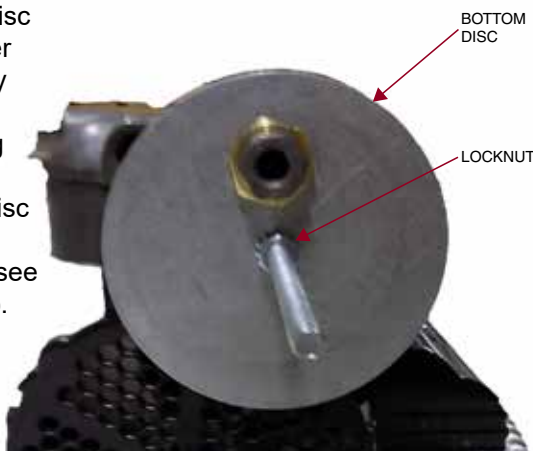
### 4. Prepare the replacement compressor for installation in accordance with steps 4a, 4b, and 4c and reconnect wiring in accordance with step 4d: Use non-Teflon-based pipe thread compound on all threaded fittings.

- a. Install air manifold assembly on replacement compressor as follows (see Figure 2):
  - (1) Remove air manifold assembly from existing compressor and install on outlet side of replacement compressor.
  - (2) Remove air bleed orifice and replace with 1/8" pipe plug (1) from replacement kit.



**Figure 2. Air Manifold Assembly and Pipe Plug**

- b. Slide bottom disc of air filter assembly onto mounting stud and secure disc using locknut (see Figure 3).



**Figure 3. Air Filter Bottom Disc Installation**

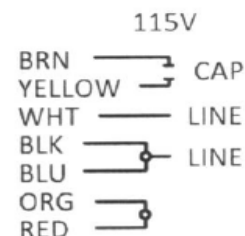
- c. Slide filter onto bottom disc of air filter assembly and attach top disc using wing nut (see Figure 4).



**Figure 4. Replacement Compressor with Air Manifold and Air Filter Assemblies Installed**

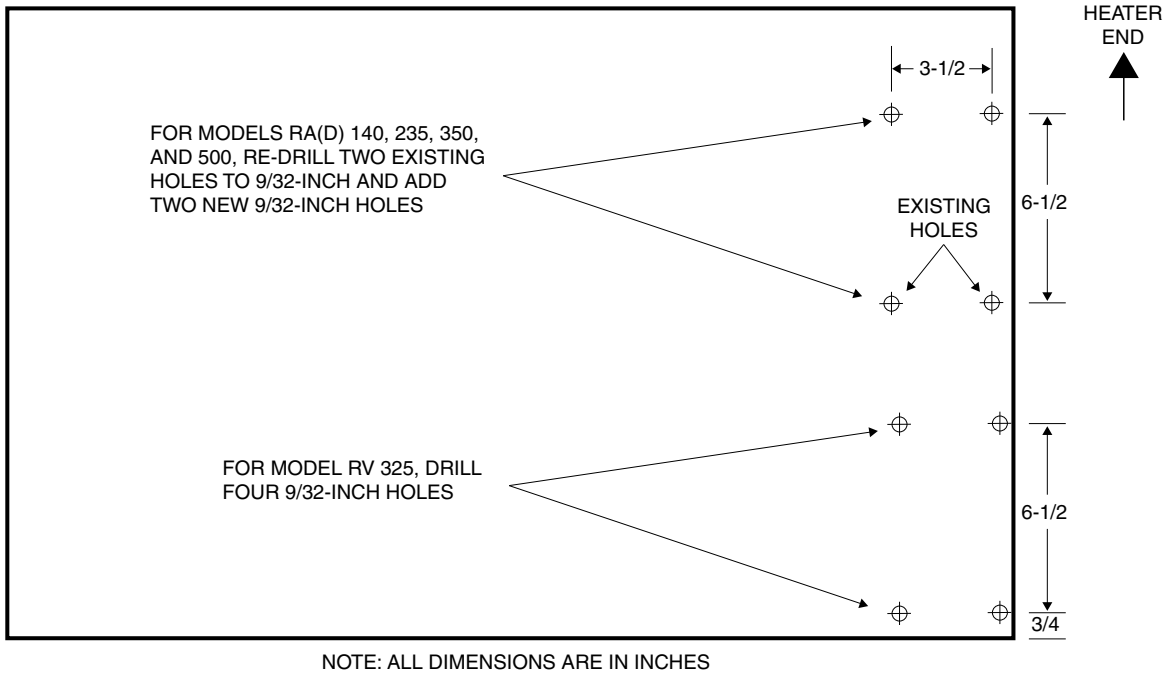
- d. Connect electrical wiring to replacement compressor, ensuring that anti-short bushings (2) are used to protect wiring, as follows:

- (1) Remove plastic capacitor mount and cut black, green, orange, and red wire so that about 6 inches remains.
- (2) Strip wire ends.
- (3) Refer to Figure 5 below. Join red and orange wires together using crimp nut. Join black wire, blue wire, and 48-inch-long black wire (3) together using crimp nut (6).
- (4) If white and green wire leads aren't long enough, cut and crimp them together with longer wires (4 and 5) included with replacement kit.
- (5) Install BX connector (7, either angled or straight as needed) to capacitor mount, pull black, white, and green wires through fitting, and connect BX cable (8) after cutting it to proper length.



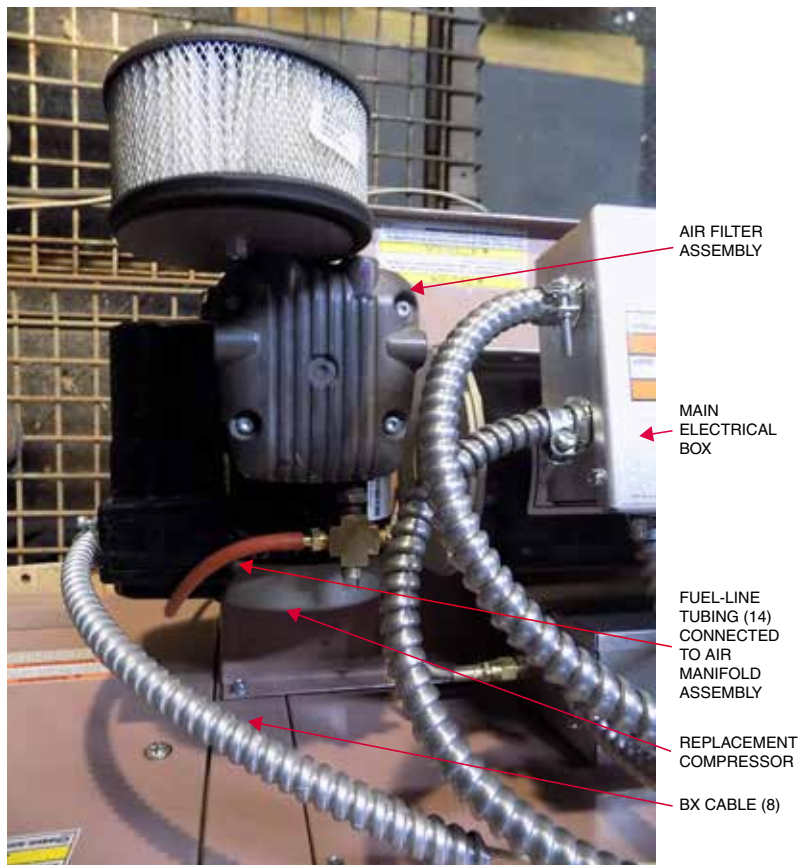
**Figure 5. Wiring Diagram**

- 5. Modify or replace the existing compressor-mounting shelf to accommodate the replacement compressor in accordance with step 5a or 5b:** Refer to step 5a for models RA(D) 140, 235, 350, and 500 and RV 200 and 325. Refer to step 5b for models RA(D) 150 and 250 and RAB 350 and 500.
- a.** Refer to Figure 6 below to modify holes in existing compressor-mounting shelf.



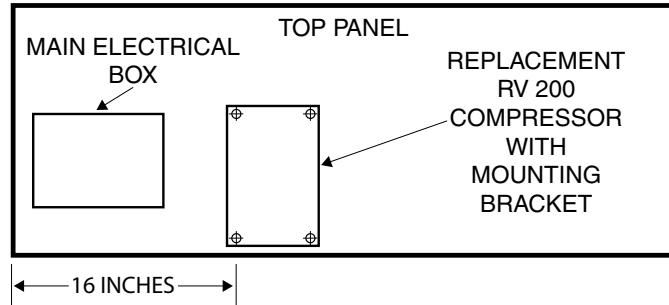
**Figure 6. Holes in Existing Compressor-Mounting Shelf**

- b.** Remove fasteners as needed to remove existing existing compressor-mounting shelf. Install replacement compressor-mounting shelf (9) using four self-drilling screws (10) and six 1/4-20 × 1 capscrews (11).
- 6. Install the replacement compressor in accordance with steps 6a through 6f:** See Figure 7 for component and connection locations.



**Figure 7. Replacement Compressor Installed (Model RA(D) 500 Shown)**

- a. For model RV 200 only:  
 (1) Attach RV mounting bracket (12) to bottom of replacement compressor using four 1/4-20 × 3/4 capscrews (13).  
 (2) Position replacement compressor with RV mounting bracket as shown in Figure 8 and attach mounting bracket to top panel using four self-drilling screws (10).



**Figure 8. Mounting Replacement Compressor on Model RV 200**

- b. For all other models, attach replacement compressor to compressor-mounting shelf using four 1/4-20 × 3/4 capscrews (13).  
 c. Reconnect tubing that was disconnected from barbed fittings on air manifold assembly in step 3c. Ensure that tubing connections to nozzle on oil burner assembly and to pressure switch are secure. Use tubing (14) from replacement kit as needed.  
 d. For model RV 200 only—due to location of replacement compressor—run one section of tubing (14) to oil burner area and use poly tee (15) to connect tubing to nozzle on oil burner assembly and to pressure switch.  
 e. Run replacement BX cable (8) to bottom of main electrical box and push wire leads through existing BX connector into box.  
 f. Connect wire leads for replacement compressor wires to terminals identified in step 3b.
7. **Turn on power to the heater:** Place disconnect switch (see Figure 1) in ON position, set thermostat to above room temperature, and check heater for proper operation.

**NOTE: Startup will be delayed approximately 15 minutes until heater reaches pre-heat temperature requirements**

8. Check heater air pressure in accordance with steps 8a through 8e:

**NOTE: Air pressure within a specific range is required for proper atomization of the oil. The air pressure switch ensures that the minimum air pressure required for atomization is available before allowing oil to flow through the nozzle. The air pressure range for the heater with the replacement compressor is 9–12 PSIG.**

**NOTE: Under normal operating conditions, the air pressure will be in the correct range, and there is no need to verify the pressure. However, in the case of a partially-blocked nozzle or air line, the pressure switch will be satisfied, allowing the burner to fire even though the volume of air has been reduced. When this happens, complete atomization does not occur and smoking can result. It is important to visually check the appearance of the flame after installing the replacement compressor. A normal flame will occupy the first 1/3 to 1/2 of the furnace length and will appear to have some spin or mixing. When a nozzle is partially blocked, the flame will lengthen and in some case actually impinge on the large access door. The flame will lack any kind of spin and will appear soft or lazy. If a problem with the nozzle is suspected, the air pressure must be checked.**

- a. Turn off power to heater in accordance with step 1.  
 b. Remove brass plug in air manifold assembly and insert 0–30 PSIG pressure gauge.  
 c. Turn on power to heater in accordance with step 7. Set thermostat above room temperature and allow heater to run for at least 5 minutes.

**NOTE: Startup will be delayed approximately 15 minutes until heater reaches pre-heat temperature requirements**

- d. After heater has run for at least 5 minutes, visually check pressure gauge and proceed as follows:  
 (1) If pressure is well within correct range (9–12 PSIG), proceed to step 8e.  
 (2) If pressure is at or below low portion of correct range (9–12 PSIG), check air line connections for leaks. If leaks are found, tighten connections and/or replace tubing. When correct air pressure is established, proceed to step 8e.  
 (3) If pressure exceeds correct range (9–12 PSIG), turn off power to heater in accordance with step 1 and check fuel nozzle and air lines for obstructions. Refer to applicable heater manual for instructions on removing nozzle. Install nozzle and repeat steps 8c and 8d. When correct air pressure is established, proceed to step 8e.  
 e. Remove pressure gauge and reinstall brass plug removed in step 7b.

**www.ReznorHVAC.com (800)695-1901**

©2018 Reznor LLC, All rights reserved.  
 Trademark Note: Reznor® is registered in at least the United States.  
 10211170 (07-18) I-RA(D)&RV