

2-10-79  
2,000 S.S.

# DUO-THERM

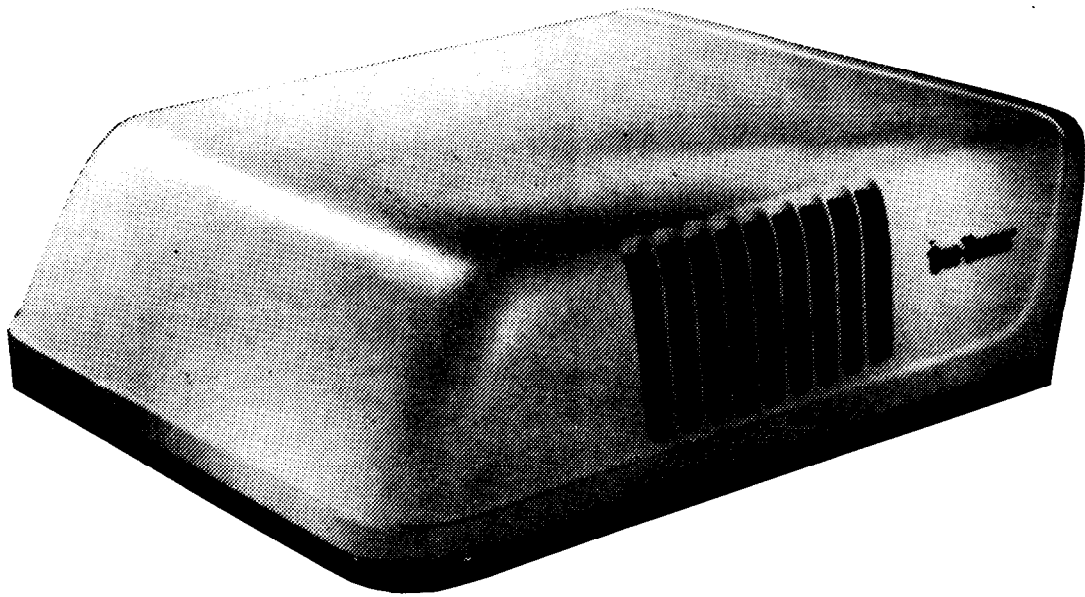
ROOF MOUNT  
AIR CONDITIONER

**INSTALLATION**  
and **OPERATING**  
INSTRUCTIONS

**MODELS**

54615-035  
54615-036

54615-045  
54615-046



## SPECIFICATIONS

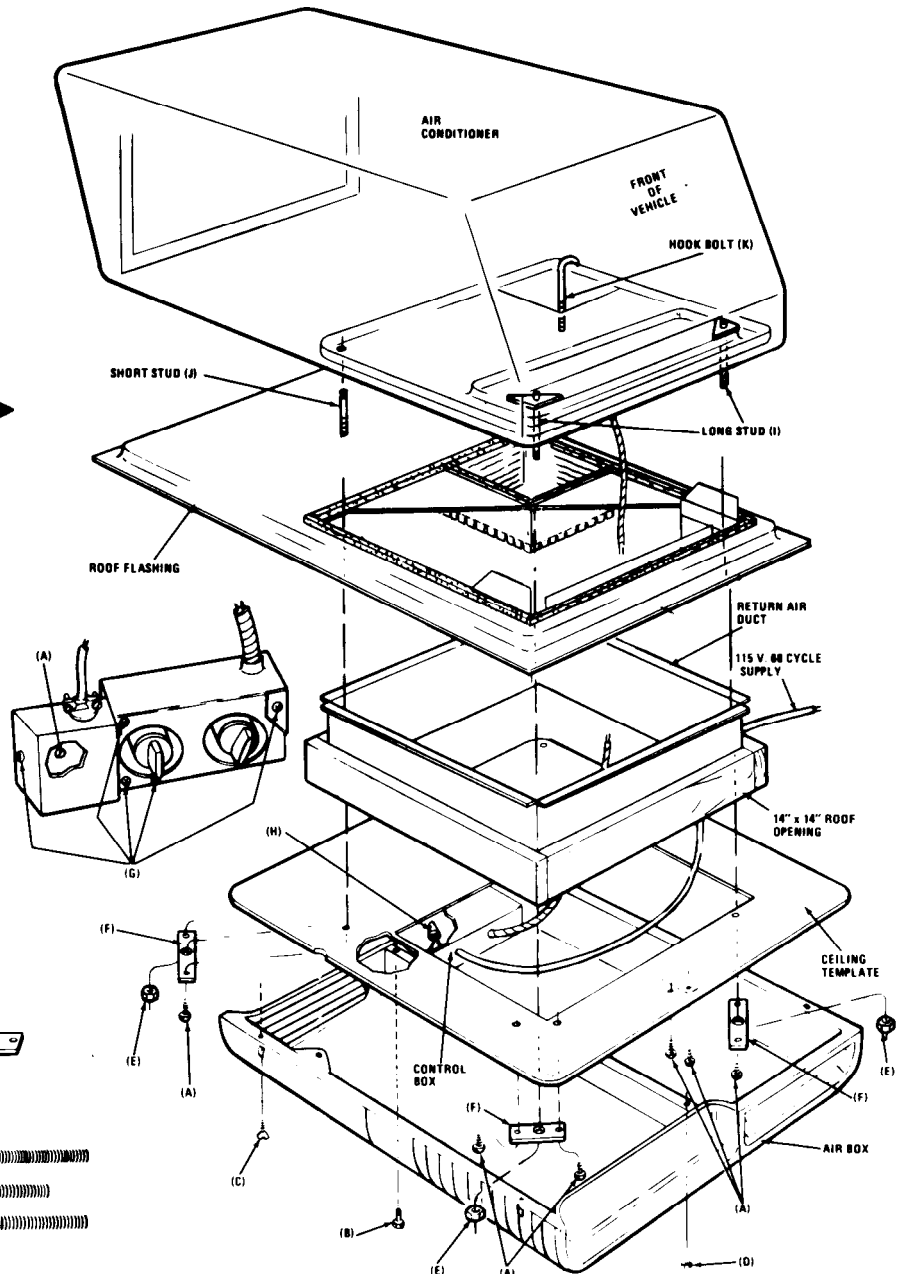
	MOEELS 54615-035 54615-036	MOEELS 54615-045 54615 046
BTU	13,500	13,500
Volts	115	115
Kilowatts	1.8	1.8
Run. Amps	15.0	15.0
Total Locked Rotor Amps	78.0	78.0
Wire Size	Up to 24' No. 12 AWG. UP to 24' No. 12 AWG.	
Min. Generator*	3,500 Watt	3,500 Watt
Fuse Size	20 Amp Max.	20 Amp Max.
Refrigerant Charge (R22)	17 oz.	26 oz.
Max. Roof Thickness	6"	6"
Min. Roof Thickness	1"	1"

\*For two 54615's use 5000 watt generator.











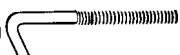
NOTE: The anchor bolts, supplied as standard equipment, will cover a range of 2-3/4" to 4-1/8" roof thickness. For roof thicknesses, other than the standard, special Bolt Kits can be obtained by special order. For roof sections thinner than the standard, bolts can be cut off, however, **care** must be taken so that threads are not damaged. Bolt Kits are available as follows:

KIT PART NO.	ROOF THICKNESS RANGE
3-10142 (std.)	2-3/4" to 4-1/8"
3-10142-1 (opt.)	1" to 2-3/8"
<b>3-10142-2 (opt.)</b>	<b>3-13/16" to 5-1/4"</b>
<b>3-10142-3 (opt.)</b>	<b>5-1/4" to 6-5/8"</b>

### INSTALLATION LAYOUT



### MOUNTING PARTS

	TOTAL NO.		
(A) Screw	13		
(B) Screw	1		
(C) Screw (Round Head) Chrome Plated	4	3	
(D) Hex Nut	2		
(E) Nut & Lockwasher	4		
(F) Metal Plates	4		
(G) Self Taping Screw [Blunt point]	5		
(H) Wire Connector	2		
(I) Anchor Bolt (Long)	2		
(J) Anchor Bolt (Short)	1		
(K) Anchor Bolt (Hook)	1		

## INSTALLATION

1. Remove the 14" x 14" roof vent and inside trim. If opening has to be cut, frame in to 14" x 14". Be sure framing stock is the same thickness as roof.

install the return air duct, which will be folded flat when received. Unfold, form it into a square, and bend over tabs as shown in Figure 2. Place duct down through opening, with tabs on top. Cut corners of duct with knife or scissors, for the particular roof thickness, and bend excess up against ceiling.

It is suggested in some applications, where the roof structure does not provide adequate support, that 1/4" plywood be placed around outer edges of opening, (under the metal roofing). See Figure 2.

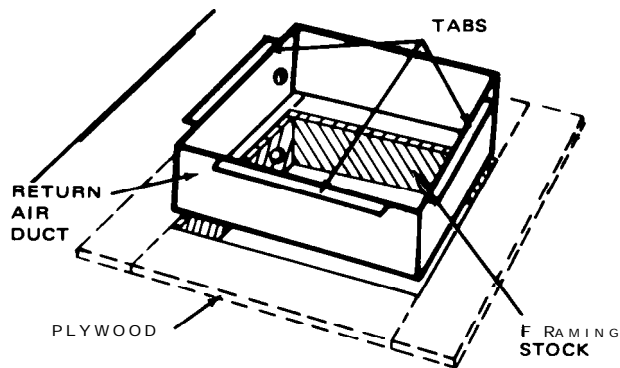


FIGURE 2

2. Run power line to vent or roof opening. If vent fan was removed, the existing wire may be used, providing it complies with the American National Standard Section A-1 19-1 or any revisions thereof and the National Electric Codes.

The power line should be a separate circuit with a fuse box using 20 amp. maximum. The wire size for supply line should be No. 12 AWG with ground for runs up to 24'.

3. Peel off the protective wax paper from the adhesive on bottom of roof flashing. See Figure 3.

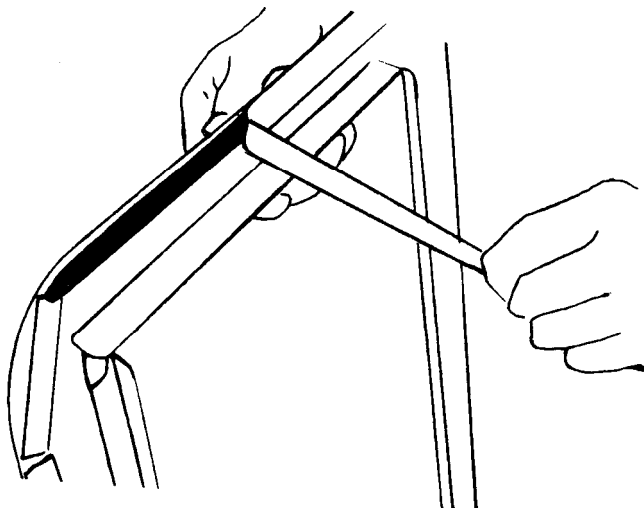


FIGURE 3

4. Place roof flashing, with the marking "REAR", (towards rear of vehicle). Be sure flashing is positioned properly. See Figure 4. Press down on outer edges of flashing to ensure proper seal on roof.

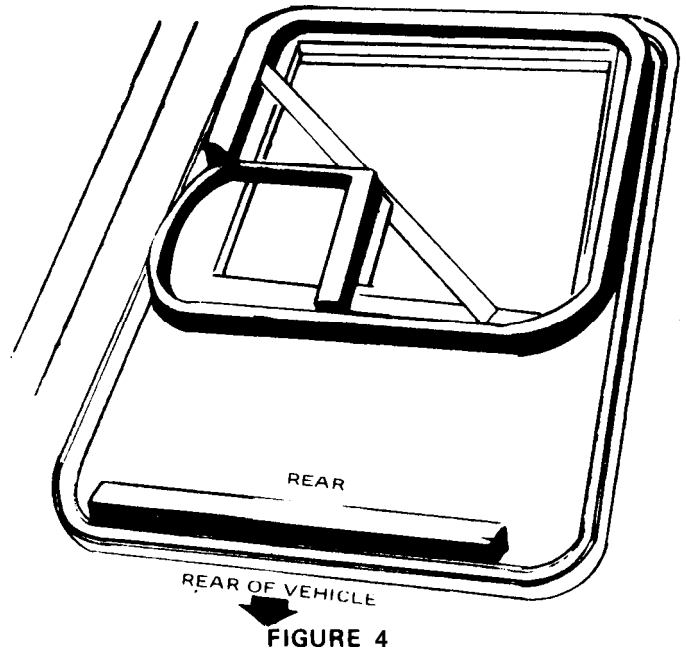


FIGURE 4

5. Set air conditioner on roof flashing, using the guide panels to align return air section on unit with the corresponding opening in roof flashing. **CAUTION: Do not damage' the foam tape sealer on top of roof flashing.** Figure 5.

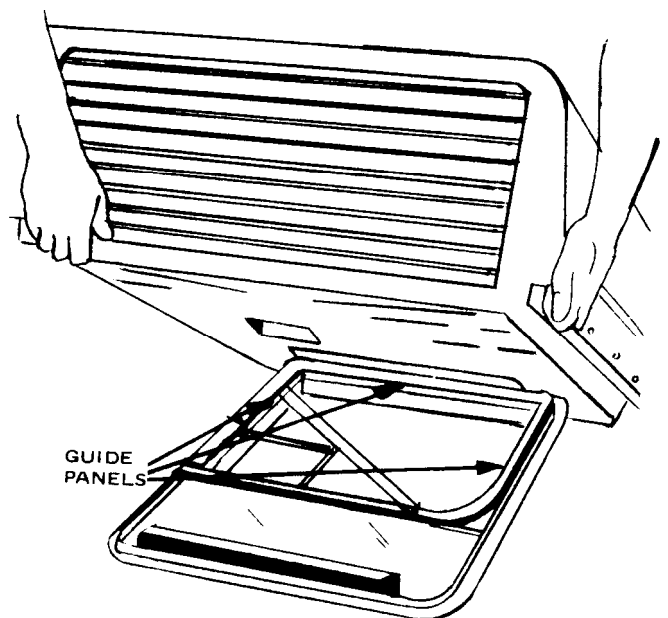


FIGURE 5

6. install the three straight anchor bolts (I) and (J) as shown. The two long bolts (I) are installed to the front of unit and the short one (J) to the rear. See Figure 6.

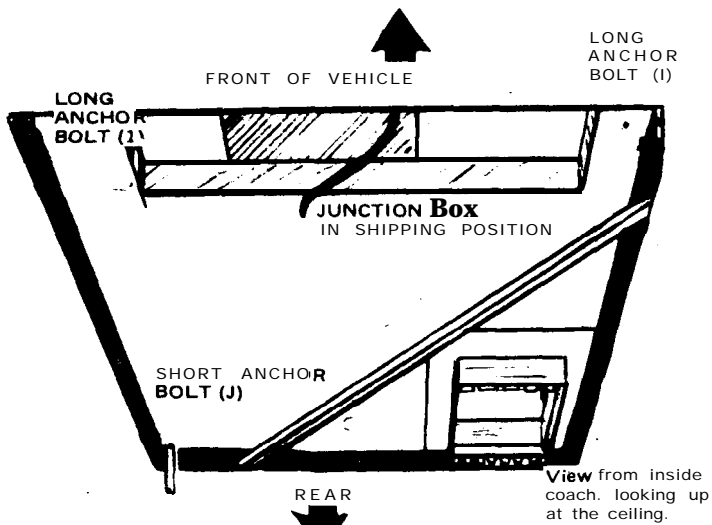


FIGURE 6

Remove the cardboard carton containing the junction box as shown. Leave the junction hanging until ceiling template has been installed.

- Place ceiling template in position and secure to ceiling with the four screws (A) provided. Be sure anchor bolts protrude through the ceiling template. Figure 7.

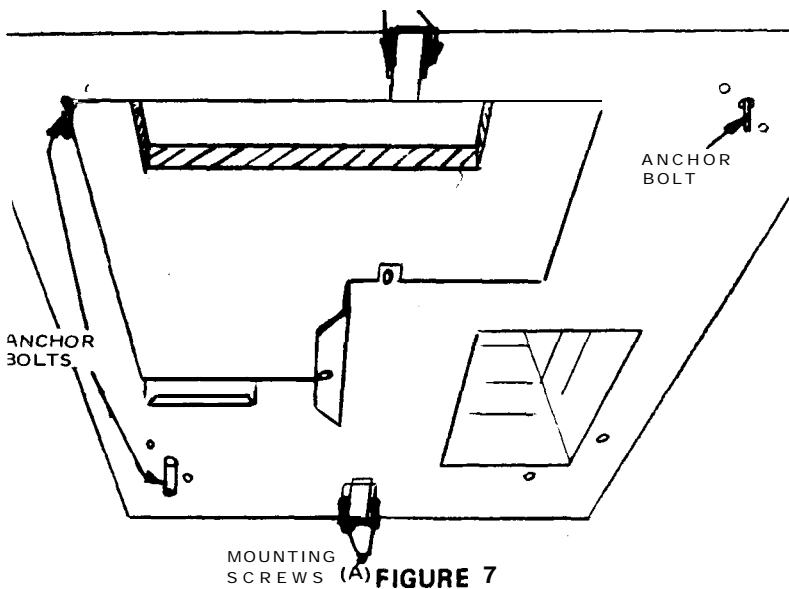


FIGURE 7

- Remove shipping tape and pull flexible duct down. Connect duct to ceiling template by bending over the tabs as shown. Figure 8.

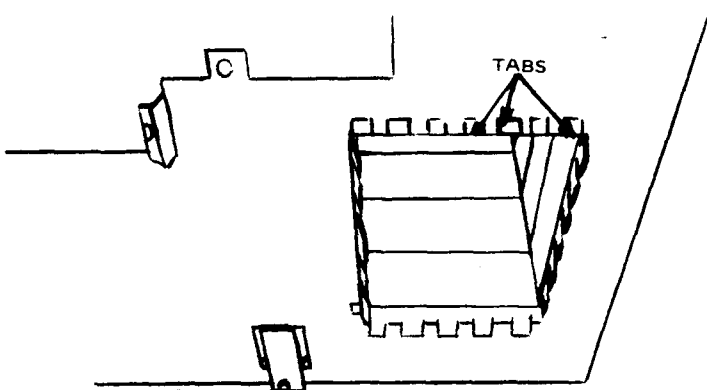
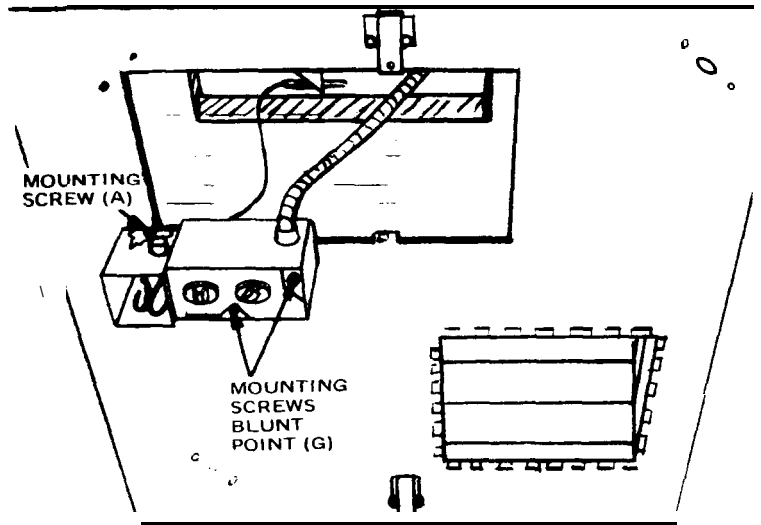


FIGURE 8

- Rotate the junction box 180° from the shipping position and fasten junction box to the ceiling template with the three screws provided as shown. *Note: Two of these must be the blunt point screws (G) and the third is (A).*



- Connect the 115 volt, 60 cycle supply. figure 10.

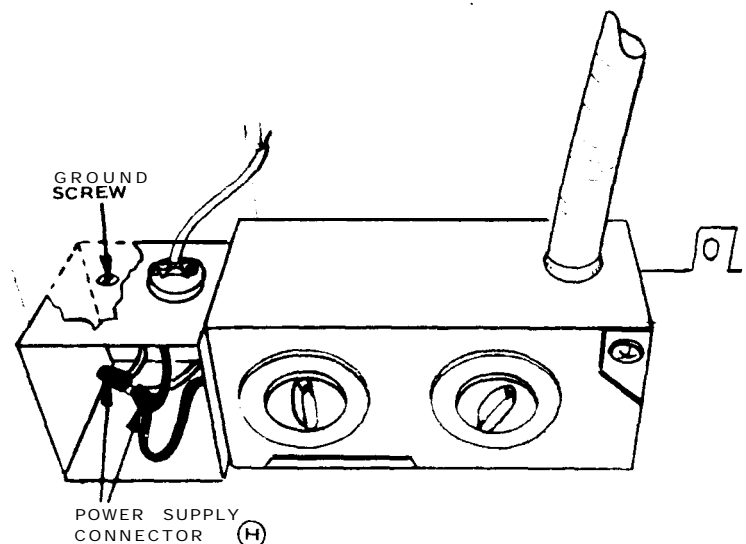


FIGURE 10

As mentioned previously all wiring must comply with the American National Standards, National Electric Codes and all local codes. For wiring diagrams, see page 6.

- Connect white wire in junction box to the white or neutral wire from power supply, as shown.
- Connect black wire in junction box to the black or hot wire from power supply, as shown.
- Connect the ground wire from power supply to the identified ground screw in junction box, as shown.

- Secure the air conditioner with the four anchor bolts, nuts, plates and screws provided. Figure 11. Anchor bolts should be tightened evenly to insure the proper seal on roof. Install junction box cover. Figure 11. Place thermobulb in the bracket provided. Figure 11A.

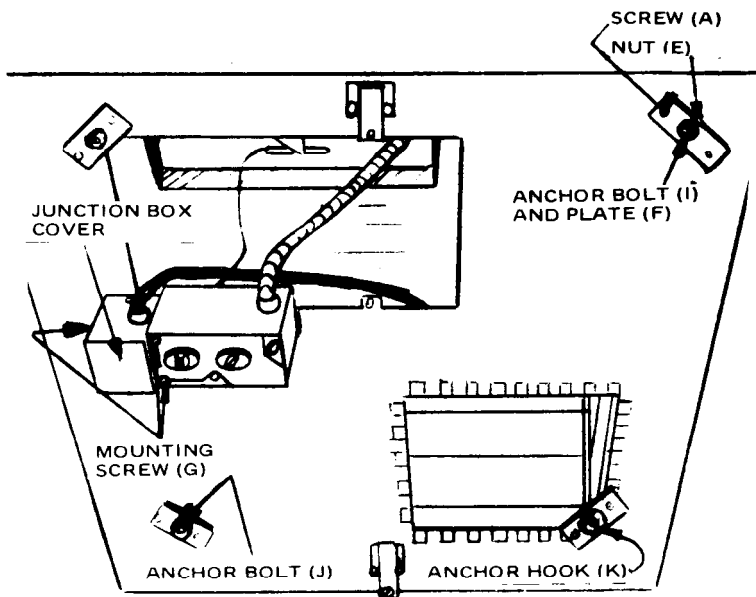


FIGURE 11

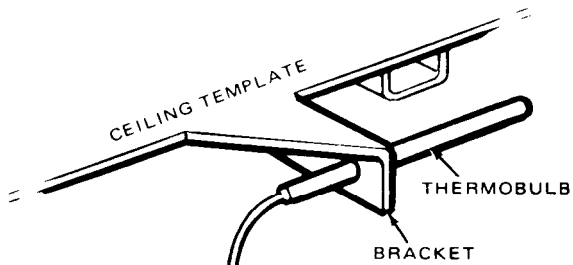


FIGURE 11A

12. Remove the return air grille and fasten air box to ceiling template and ceiling as shown. When air box is installed, place cover plate over the exterior mounting hole.

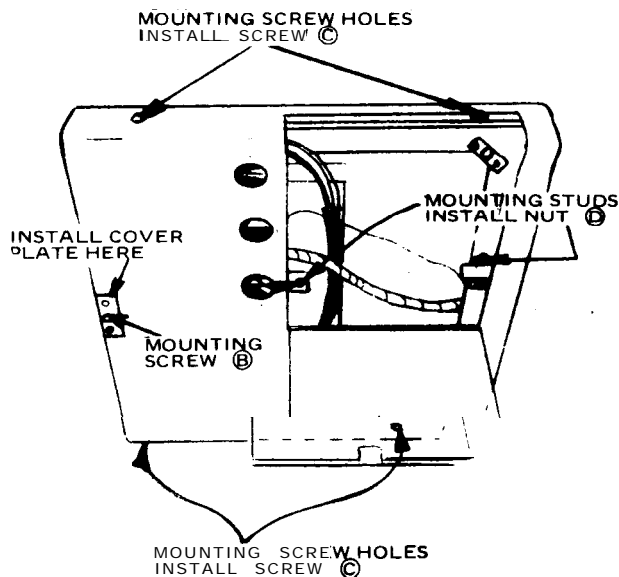


FIGURE 12

13. Reinstall the return air grille and turn on power supply.

## OPERATING INSTRUCTIONS

1. Set thermostat dial to desired temperature.
2. Place blower switch in desired position.
 

Hi-Fan..	.....	High Speed Fan Only
Med. Fan..	.....	Med. Speed Fan Only
Low-Fan	.....	Low Speed Fan Only
Hi-Cool	.....	High Speed Fan with Cooling
Med. Cool.	.....	Med. Speed Fan with Cooling
Low-cool	.....	Low Speed Fan with Cooling
3. Adjust air flow for the desired air distribution.
4. Adjust louvers on air box for the best air distribution.
5. To completely shut down unit, place blower switch in the "OFF" position.

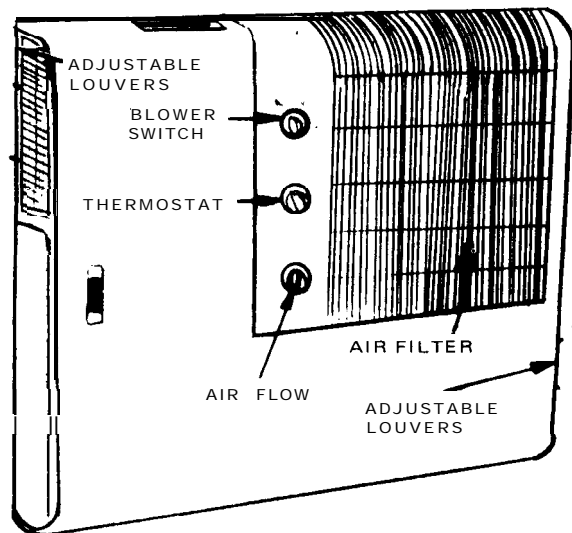


FIGURE 13

## MAINTENANCE

NOTE: Models 54615-036 and 54615-046 have a delayed start kit installed. When unit is turned on, the fan will start, and in approximately two (2) minutes the compressor will start. After shut down, unit will not restart for approximately two (2) min.

NOTE: Models 54615-035 and 54615-045 do not have delayed start kits installed. When unit is turned on, the fan and compressor start at the same time. After shut down, wait 4 or 5 minutes before restarting unit.

**NOTE:** There is a vinyl cover available as optional equipment. Part Number 3-9937.

## AIR FILTER

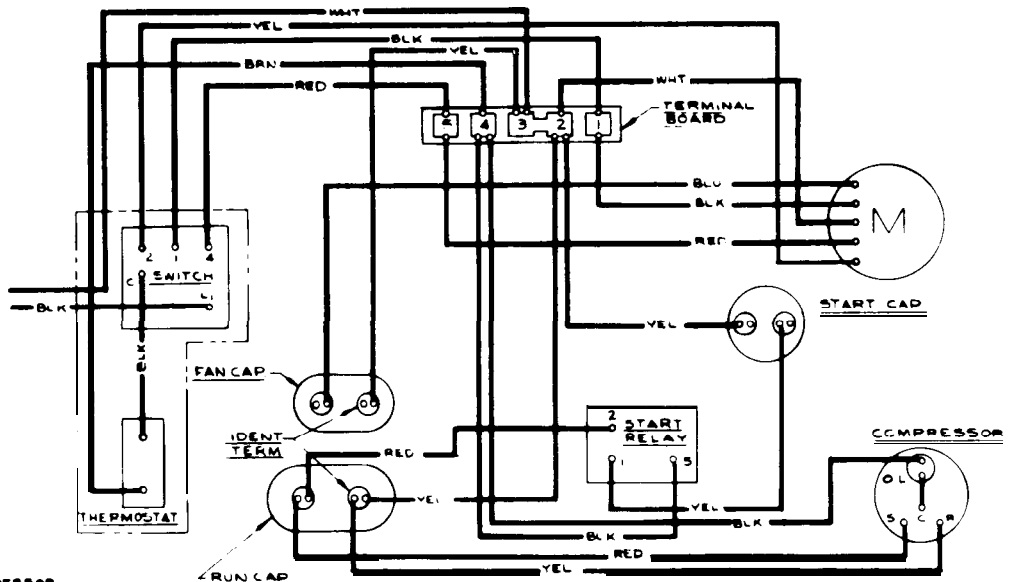
The air filter should be cleaned or replaced periodically. Filter may be washed in warm suds water, let dry and reinstalled. Replacement filters are available from nearest dealer, distributor or direct from factory. Part No. 3-8166

For service work refer to the service directory supplied with unit. Form No. OS-447. When requesting service, give complete model and serial number of unit.

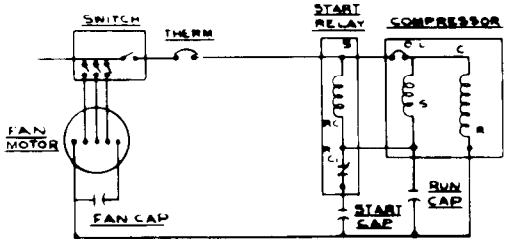
# WRING DIAGRAMS

MODELS  
54615-035

54615-045



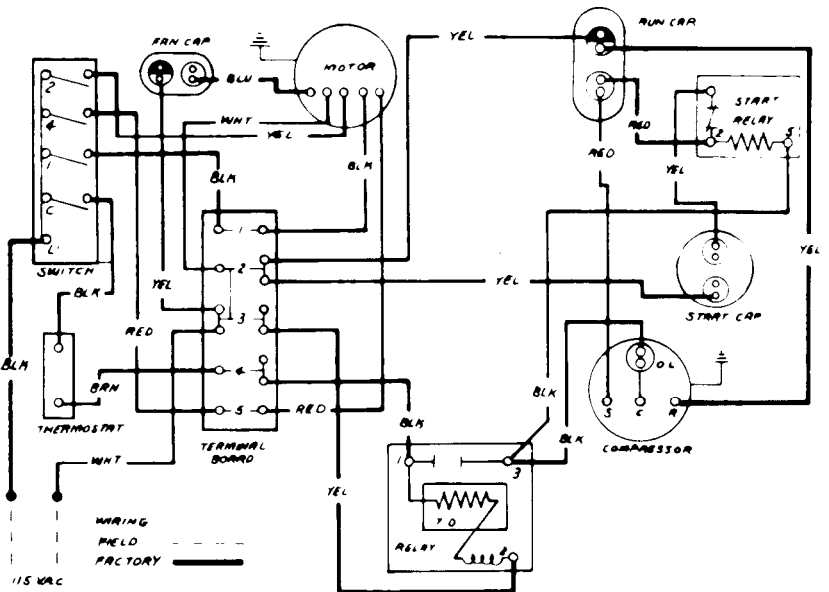
CIRCUIT DIAGRAM



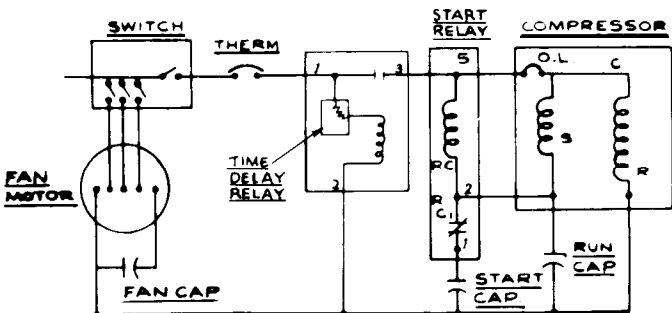
MODELS

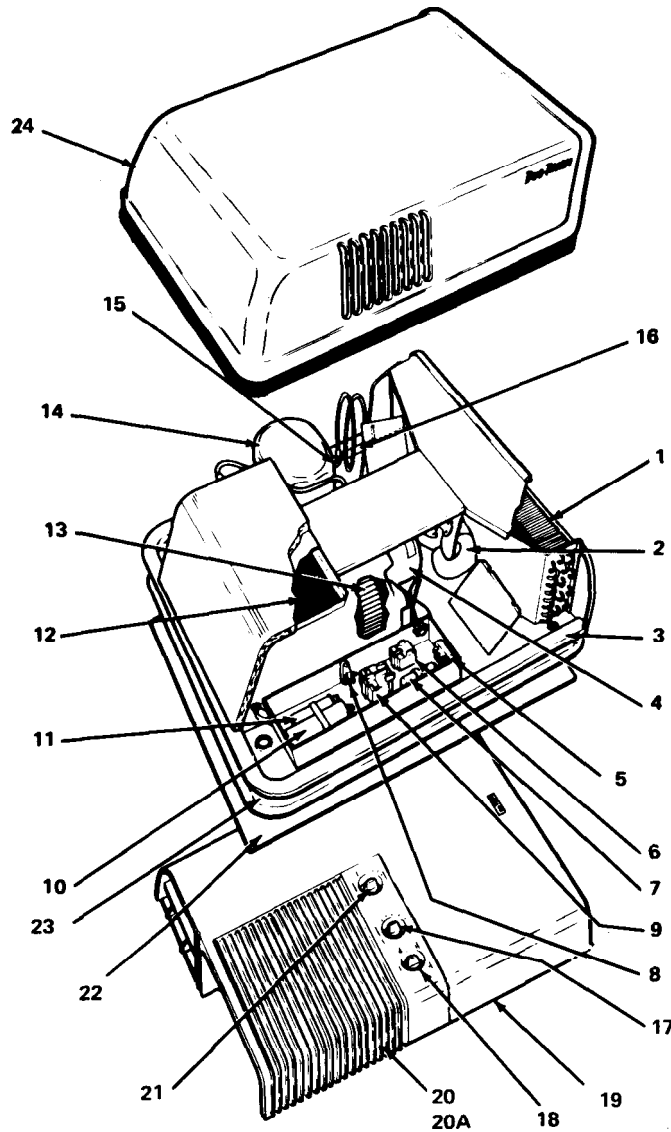
54615-036

54615-046



CIRCUIT DIAGRAM





**PARTS LIST**

Index Number	Description	Part Number by Model			
		54615-035	54615-036	54615-045	54615-046
1	Condenser Coil	3-9311	3-9311	3-12936	3-12936
2	Fan Blade	3-9313	3-9313	3-9313	3-9313
3	Base Pan	3-9336-001	3-9336-001	3-9336-001	3-9336-001
4	Motor	3-9650	3-9650	3-9650	<b>3-9650</b>
5	Time Delay Relay	-----	<b>3-10456</b>	-----	3-10456
6	Start Relay	3-5040-007	3-5040-007	3-5040-007	<b>3-5040-007</b>
7	Start Capacitor	3-5046-011	<b>3-5046-011</b>	<b>3-5046-011</b>	3-5046-011
8	Terminal Block	<b>3-8024</b>	<b>3-8024</b>	3-8024	3-8024
9	Line Contactor	-----	-----	-----	-----
10	Run Capacitor	3-9425-012	<b>3-9425-012</b>	3-9425-012	3-9425-012
11	Fan Capacitor	3-9425-003	3-9425-003	<b>3-9425-003</b>	3-9425-003
12	Evaporator Coil	<b>3-9305</b>	3-9305	3-9305	3-9305
13	Blower Wheel	3-9302	3-9302	3-9302	3-9302
14	Capressor	3-9318	<b>3-9318</b>	3-9318	3-9318
15	Cap. Tube (1 Req.)	3-9326	3-9326	3-9326	3-9326
16	Drier	3-9312	3-9312	3-9312	3-9312
17	Thermostat	3-4825	3-4825	3-4825	3-4825
18	Blower Switch	3-9610	<b>3-9610</b>	3-9610	3-9610
19	Air Box Assembly	3-9684	3-9684	3-9684	3-9684
20	Air Filter	3-8166	3-8166	3-8166	3-8166
20A	Filter Grille	3-8047	3-8047	3-8047	<b>3-8047</b>
21	Knob	3-8151	3-8151	3-8151	3-8151
22	Ceiling Template	3-8169	3-8169	3-8169	3-8169
23	Roof Flashin	<b>3-8178</b>	3-8178	3-8178	3-8178
	*Anchor Bolt (Hook)	<b>3-8174-001</b>	3-8174-001	3-8174-001	3-8174-001
	*Anchor Bolt (Stud-Long)	3-8173-001	3-8173-001	3-8173-001	3-8173-001
	*Anchor Bolt (Stud-Short)	3-6689	3-6689	3-6689	3-6689
24	Shroud	3-9857	<b>3-9857</b>	3-9857	3-9857
25	Vinyl Cover (Opt.)	<b>3-9937</b>	<b>3-9937</b>	3-9937	3-9937

*These bolts are supplied as standard equipment, under Kit No. 3-10142 for roof thicknesses of 2-3/4" to 4-1/8".*

Optional Bolt Kits are available as follows:

- 3-10142-001 Covers 1" to 2-3/8" Roof Thickness.
- 3-10142-002 Covers 3-13/16" to 5-1/4" Roof Thickness.
- 3-10142-003 Covers 5-1/4" to 6-5/8" Roof Thickness.