









## 6. UNIT INSTALLATION

The air conditioner draws in topside air to cool the condensing coil.

The condensing airflow is drawn in from the end of the air conditioner (across the condensing coil) and discharged out through the top of the appliance (through the discharge opening).

To provide adequate condensing airflow, the installer must adhere to the following guidelines:

- 1) The topside air path to the condensing coil should be as direct and non-restrictive as possible.
- 2) Any decorative grille or louver used as an opening for condenser airflow should have a minimum of 90 square inches of free area.
- 3) Do not block or restrict the discharge or return air openings.
- 4) Ensure that there are no structural members or panels which would serve to cause condenser discharge air to recirculate into the condenser return air.
- 5) Attach the crimped adapter to the air conditioning unit using the four (4) long screws found in the small parts package.
- 6) The supply duct adapter is installed to exit conditioned air upward. Attach the adapter to the unit using the four (4) short screws supplied in the small parts package.
- 7) Mount the air conditioning unit by securing it to the mounting surface with bands or brackets. If using condensate evaporator with the air conditioner, elevate the air conditioner 4-5 inches to insure proper drainage of the condensate from the air conditioner drain pan to the evaporator.
- 8) Mount the thermostat to the thermostat mounting bracket using the screws provided with the thermostat. Connect extension cable to the thermostat cable. Attach thermostat with mounting bracket to the 10" diameter return air collar assembly using two (2) sheet metal screws.
- 9) Cut a 10 1/8" square opening in the cab top as far as possible from the intended location of the supply air duct into the cab. Position 10" diameter return air collar assembly with the thermostat/bracket over the opening. Fasten the collar to the cab top with rivets or screws. Using quality duct tape, seal the seams around the perimeter of the collar assembly.
- 10) Install the supply air distribution scoop inside the conditioned space in an area as far from the return air as possible. Air from the scoop should have a clear path into the conditioned area. Attach the scoop with adhesive, straps, brackets or by fastening through the part. If attaching with fasteners, pre-drill any clearance holes in the scoop to prevent cracking during installation. It is good practice to mount the scoop away from possible heat producing devices, such as lights, fixtures, etc.
- 11) Provide a 6" dia. hole in the roof to allow passage of the insulated 4" flex duct. The duct connects between the 4" collar at the unit and the oval opening at the air scoop. Secure the duct with 2 of the 4 cable ties provided in the Installation Kit.
- 12) Attach the 7/8" I.D. condensate drain hose to the unit drain pan. Secure with hose clamp.
- 13) Determine the most direct and shortest length of duct to be used to connect the 10" diameter uninsulated return air flex duct to the 10" diameter collar assembly installed in Step 8. Cut a small slit through the 10" diameter uninsulated return air flex duct directly above the 10" diameter collar assembly and route the thermostat extension cable through the slit in the duct. Cut off any excess duct and attach the duct to the return air bonnet using the duct ties provided. Seal the duct where the thermostat cable exits with a quality duct tape.
- 14) Connect the 10" flex duct between the return air bonnet and the adapter installed at Step #8. Secure with 2 cable ties.
- 15) Plug the remaining end of the cable into the air conditioners 4 pin thermostat connector.

### **DANGER - SHOCK HAZARD**

**Do not drill any openings into this air conditioner. When attaching ducting directly to the air conditioner, use only the pilot holes already provided. Drilling new openings and inserting screws may damage either the refrigeration circuit or electrical wiring, causing possible equipment damage, personal injury or death.**

## 7. 115 (240) VAC - ELECTRICAL WIRING

### 1. WARNING - SHOCK HAZARD

**To prevent the possibility of severe personal injury or equipment damage due to electrical shock, always ensure all the electrical power is disconnected and removed before beginning installation.**

2. This air conditioner contains a compressor refrigeration system and requires power from a 115 (240) volt electrical circuit. The circuit connects to a terminal block inside the main unit.

### 3. High Voltage Routing Specifications

When routing the high voltage supply wiring, the following guidelines must be followed:

A) High voltage wiring must be routed through a separate opening in the outer cabinet. This opening is referred to as the "power wire entry" (See Figure 1 (B), page 3). RV Products provides a 7/8" diameter opening for 1/2" conduit. A knockout for 3/4" conduit is also provided.

B) Do not allow excess wiring to contact electrical terminals, sharp screw ends or edging that can cut or damage the wiring insulation.

C) After connecting the ground wire to the grounding lug, verify that the ground wire (which in some instances will be bare copper) cannot come into contact with any high voltage terminal.

## 8. ADDITIONAL INSTALLATION INSTRUCTIONS

The **LiftAire I Series** of air conditioners are specifically designed and constructed for use on new elevator installations, modernizations and retrofits of existing elevator cabs. They are provided with all the materials needed to properly cool and/or heat an elevator cab. To ensure maximum efficiency and operation, the following should be adhered to:

1. Supply and return registers in the cab should not restrict airflow into and out of the cab. Any resistance of the airflow will limit the effectiveness of the unit and create wind noise. **The minimum amount of open area in the supply register should be 13 square inches and the return register, 79 square inches.** The return air and supply air registers should be as far away from each other to ensure proper air recirculation in the cab and back to the air conditioner.

2. While the installation kit provides 12.5 feet of supply and return air flexible duct, in order to limit airflow resistance, **all duct connections should be the most direct and the shortest possible.** Cut any extra flexible duct not required, connect flexible duct per previous installation instructions (page 4) and discard any extra material.

3. **Ensure that the thermostat is installed in the return duct or the cab.** If using the standard thermostat, check that the temperature and operation settings are correct. If using the automatic thermostat, make sure the unit is programmed for

the type of operation you require. When the thermostat is installed in the cab, it must be able to sense cab temperature to operate properly. If placed within the fixture area of the cab, there must be a perforated cover to allow cab air access to the thermostat. Locating the thermostat anywhere else affects the proper operation of the **LiftAire I** unit and cooling of the elevator cab as designed.

4. If you are retrofitting an existing cab for normal operating conditions, **it may not be necessary to use the fan supplied in the original cab.** The **LiftAire I** air conditioner has a fan that will run continuously with proper settings of the thermostat. If you allow the cab fan to operate during normal conditions you will bring hot, cold or humid hoistway air into the cab, thereby defeating the purpose of the air conditioner and its effectiveness. **If it is permitted, remove the original fan to prevent allowing warm hoistway air into the cab during ascent and descent of elevator.** If available, you can use the original fan's opening for the return air register provided it has 79 square inches of open area and is far enough away from the supply air register to ensure proper recirculation of the cool air. If using the **LiftAire I** on a new installation, a cab fan is probably not required.

5. All supply and return registers with duct work into the cab must be manufactured and installed to prevent any air leaks and losses of the cold supply air from the air conditioner and return air back to the air conditioner.
6. Never install the condensate evaporator under the return or supply air ducts. This can cause water accumulation, damage to the ducts and damage to the cab.
7. It is the responsibility of the installer to ensure that the installation meets any and all building, electrical and other applicable codes.

## 9. MAINTENANCE INSTRUCTIONS

The **LiftAire I Series** of air conditioners require very little maintenance during normal operating conditions. The following are general requirements that should be performed every 4-6 months.

1. Air filters should be inspected and washed on a regular basis. The filters are reusable after being washed.
2. Evaporator and condenser coils should be inspected and, if dirty, cleaned on a regular basis. Remove by hand any paper or debris that might have collected on the coils and blow compressed air through the coils. This should not have to be done very often unless the shaftway and installation are in a very dirty environment.
3. Inspect and clean the condensate drain pan. Ensure the drain hole and hose are clear of debris to allow any condensate to properly drain.
4. If a condensate evaporator is used, inspect to ensure there is no debris on the guard or in the evaporator pan. Ensure drain hole and hose are clear of debris.
5. If an automatic thermostat is used, check the LCD display and observe if the word "BATTERY" is flashing. If it is displayed, the "AA" alkaline batteries are low and should be replaced. See thermostat operating manual for battery replacement instructions.

### DANGER

**WHEN USING NON-METALLIC SHEATH SUPPLY CABLES (ROMEX, ETC.); IF ALLOWED BY BUILDING, ELECTRICAL OR APPLICABLE CODES, STRIP SHEATH BACK TO EXPOSE 4-6 INCHES OF THE SUPPLY LEADS. STRIP THE INDIVIDUAL WIRE LEAD ENDS FOR WIRE**

**CONNECTION (ABOUT 3/4" BARE WIRE). INSERT THE SUPPLY WIRES INTO THE ELECTRICAL CONNECTOR CLAMP. SHEATH MUST PROTRUDE PAST CLAMP BUSHING INSIDE THE BOX. MAKE SURE SHEATH CABLE IS CENTERED IN CLAMP BEFORE TIGHTENING IT. DO NOT OVERTIGHTEN!! THIS COULD RESULT IN PINCHING THROUGH THE PLASTIC WIRE INSULATION AND CAUSE SHORTING OR "HOT" WIRES TO GROUND (SHOCK HAZARD). THE CLAMP IS INTENDED FOR STRAIN RELIEF OF THE WIRES. SLIGHT PRESSURE IS USUALLY SUFFICIENT TO ACCOMPLISH THIS.**

**IF OTHER THAN NON-METALLIC CABLES ARE USED FOR SUPPLY CONDUCTORS, APPROPRIATE STRAIN RELIEF CONNECTORS OR CLAMPS SHOULD BE USED.**

**IN NO CASE SHOULD CLAMPING OR PINCHING ACTION BE APPLIED TO THE INDIVIDUAL SUPPLY LEADS (NEUTRAL AND "HOT" WIRES).**

### DANGER - SHOCK HAZARD

**TO PREVENT THE POSSIBILITY OF SHOCK INJURY FROM APPLIANCE OPERATION:**

**THE WHITE WIRE MUST BE CONNECTED TO NEUTRAL IN THE SERVICE BOX ENTRANCE AND THE MECHANICAL GROUND MUST BE CONNECTED TO A GROUNDING LUG EITHER IN THE SERVICE BOX OR THE MOTOR GENERATOR COMPARTMENT.**

In order to utilize smaller gauge, less expensive follower cables; it may be economical to provide a stepdown transformer at the elevator car to provide power for the air conditioner.

# 10. THERMOSTAT AND 24 VAC WIRING

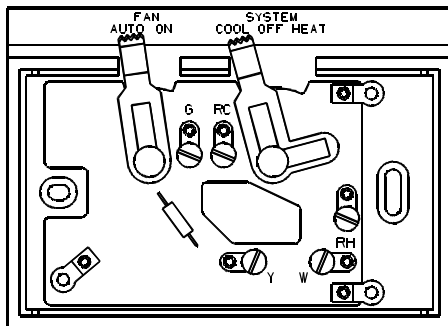
## THERMOSTAT OPERATING AND WIRING REQUIREMENTS

The 6531 (115 volt) and 6571 (240 volt) series air conditioners are designed to be controlled by the 24 VAC thermostat provided in the installation kit or by our optional automatic thermostat.

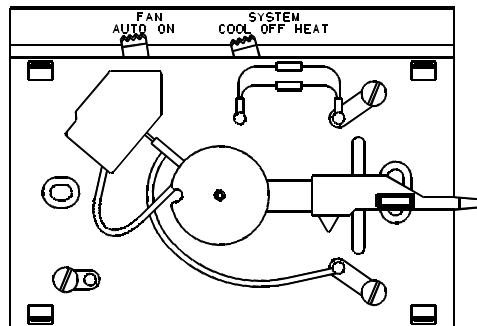
The thermostat should be mounted on the return air duct mounting bracket (See Figure 1 (C), page 5). The air conditioner and thermostat connect using the plug-in extension cable provided in the 6531A625 Installation Kit.

The chart below details system functions.

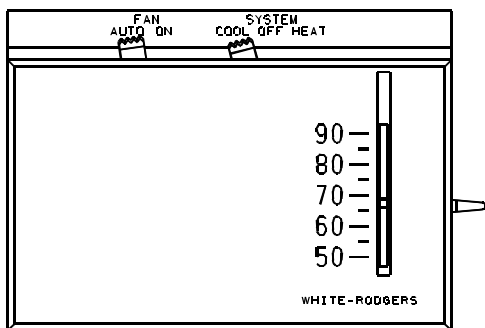
■ SHOWS POSITION OF SWITCH					OPERATION
FAN AUTO ON		SYSTEM COOL OFF HEAT			
■	□	■	□	□	Compressor and blower cycle as required.
■	□	□	■	□	No functions occur.
■	□	□	□	■	Heater and blower cycle as required.
□	■	■	□	□	Blower runs continuously. Compressor cycles as required.
□	■	□	■	□	Blower runs continuously. No heating or cooling function occurs.
□	■	□	□	■	Blower runs continuously. Heater cycles as required.



SUB-BASE



BI-METAL PLATE



COMPLETE ASSEMBLY  
BI-METAL PLATE SCREWED  
TO SUB-BASE AND WITH  
SNAP-ON COVER



## 11. PRE-CHECK PRIOR TO POWER UP

1. Before engaging power to any system, ensure the following:
  - A) All tools have been removed from the equipment;
  - B) All wiring is attached, routed and properly secured according to applicable codes;
  - C) All panels (both mechanical and electrical) are properly in place;
  - D) The thermostat system is switched to the "OFF" position; and
  - E) All co-workers have been warned that the equipment is about to be energized.
2. System wiring may be checked by referring to the wiring diagram located on either the back of the wiring box door or in this manual (See page 11).
3. After complying with Steps 1 and 2, engage power to all systems and begin checkout procedure.

## 12. INSTALLATION INSTRUCTIONS FOR 6531-3251 (115 VAC-20 AMPS) AND 6571-3251 (240 VAC-10 AMPS) CONDENSATE EVAPORATOR

### PACKAGE CONTENTS

- 1 - Condensate Evaporator Assembly
- 1 - Unit Drain Filter Pad
- 2 - Filter Pad Hold-Down Clips
- 1 - 3/8" I.D. x 4 Ft. Overflow Hose
- 1 - Hose Clamp
- 4 - Evaporator Mount Clips
- 1 - Evaporator Guard

### FILTER INSTALLATION

Center filter pad over condensate drain fitting inside of unit drain pan and secure filter pad with hold-down clips which slide over the edge of the unit drain pan to hold the filter in place (See Figure 2).

### EVAPORATOR INSTALLATION

- A. The elevator air conditioner should first be installed following the instructions provided with the unit. The air conditioner **must be installed** at least 5" higher than the mounting surface for the condensate evaporator to allow for proper drainage (See Figure 3).
- B. Install the condensate evaporator with four screws through the mounting flanges so the evaporator is level and will not shift. Position the evaporator guard basket over the evaporator, routing the conduit through a grid section. Secure evaporator guard to the base using the four clips provided. Position the guard to allow the overflow hose direct entry through a grid section to the evaporator.

- C. Route a length of 7/8" I.D. drain hose provided with the air conditioner through a grid section to provide drainage into the evaporator without touching the evaporator. The drain hose will fit snugly through a grid section. **Do not allow the drain hose to route above the a/c unit drain pan at any point.**
- D. Attach the 3/8" I.D. hose to the evaporator using the clamp provided. This hose will pass through an evaporator guard grid section. Free end of this hose will be inserted and secured into the remaining 7/8" I.D. hose which passes to the bottom of the elevator. The 7/8" I.D. hose should be clamped to the elevator side. Ensure that a minimum of 4 inches of evaporator overflow hose is inserted and secured into the larger drain hose. **Do not allow the overflow hose to route above the evaporator pan at any point.**
- E. Connect power supply per all building, electrical and other applicable codes.

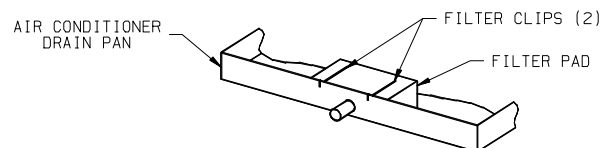


FIGURE 2

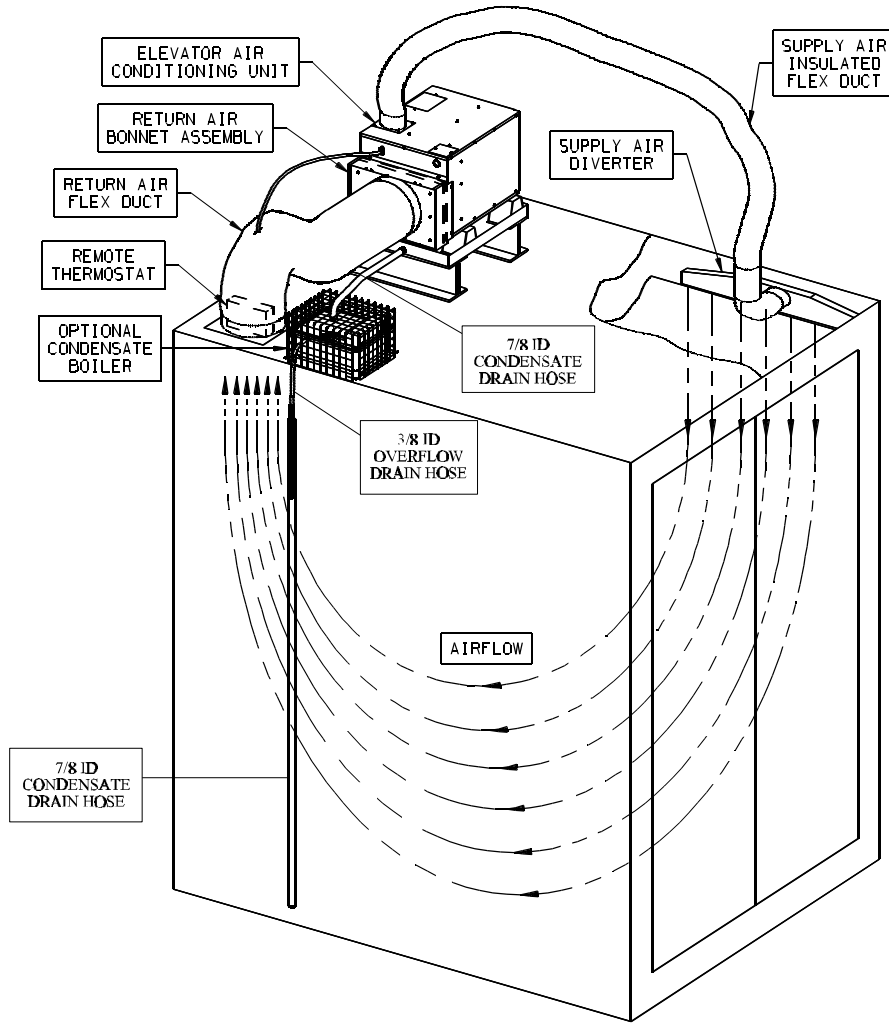
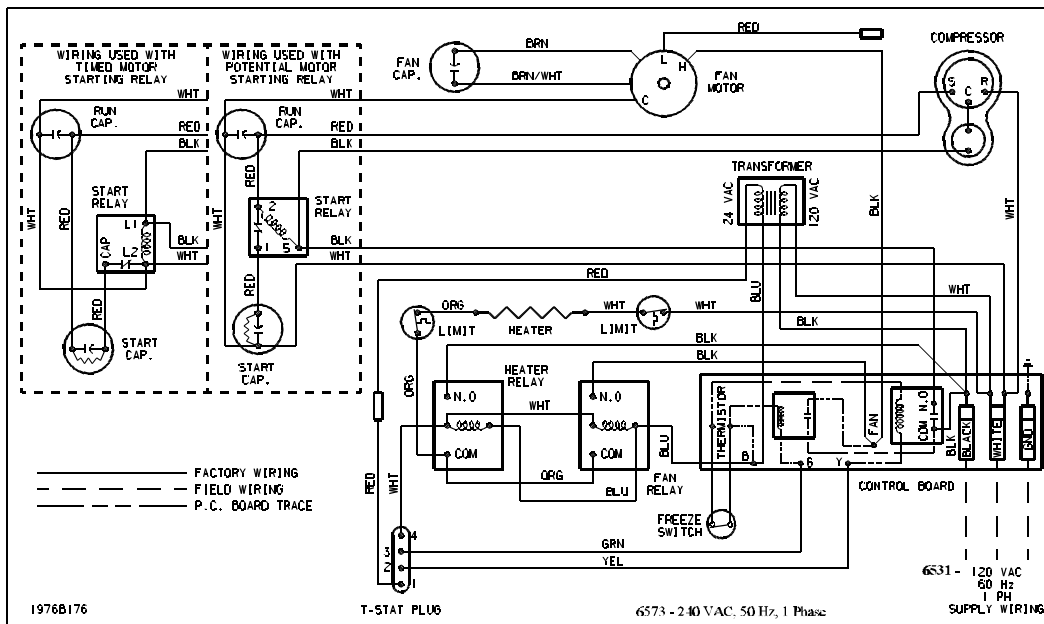


FIGURE 3



# LIFTAIRE™ ELEVATOR AIR CONDITIONER

## FEATURES

- Lightweight, 75 lb. unit mounts easily in virtually any position on top of the elevator.
- Self-contained, packaged design for easy installation.
- Compact rotary compressor saves space and weight.
- Rated at 7,100 BTUH nominal cooling capacity.
- Mechanical heat/cool thermostat mounted in return air flex duct for secure settings and more accurate temperature sensing. 15' umbilical for remote thermostat mounting. Optional automatic changeover heat/cool thermostat available.
- Standard 1600 watt electric heater delivers 5,600 BTUH heat capacity.
- Fan can be set to operate continuously for improved air circulation and filtration.
- 150 cubic feet per minute airflow rate.
- Compressor hermetically sealed at factory for leakproof refrigerant flow and efficient operation.
- Black finish on supply air diverter conceals it in the gap between the false ceiling and interior wall.
- Compressor and outer cabinet are mounted on shock absorbing rubber for added durability and noise reduction.
- Long lasting copper tubing is fabricated with shock loops to strengthen the system's vibration resistance.
- Gas-flux brazed joints on the tubing to resist corrosion.
- Start circuit with start capacitor and relay makes starting easier on the compressor.\*
- All galvanized steel construction of the outer cabinet ensures corrosion resistance.
- Heavy-duty, galvanized steel drain pan is specially designed for corrosion-resistant durability with bronze-brazed corners and powder-coated corners and powdered-coated epoxy paint.
- Freeze protection is provided to prevent evaporator freeze-up.
- 4-pin connector plugs into air conditioner for easy thermostat hookup.
- Field wiring accomplished simply and easily to lugs on Printed Circuit Board.
- Washable filter, 10" x 16" drops into return air bonnet.

## OPTIONAL ACCESSORIES

- Automatic Transformers, 240 Volt, 50 Cycle, 1 Phase to 115 Volt, 60 Cycle, 1 Phase.
- Automatic Thermostat - Programmable for 7-day operation; on-off, heat/cool
- Condensate Evaporator - 115V or 240V, 2000 watts complete with pan, filter, overflow tube and connection cables
- Overflow Detection Device

## SPECIFICATIONS

Nominal BTUH Cooling Capacity.....	7,100	
Delivered BTUH Heating Output.....	5,600	
Electrical Rating.....	1/60/115V	1/50/240V**
Locked Rotor Cooling Amps.....	34	19.3
Approximate Full-Load Amps/Cooling.....	9.8	5.8
Approximate Full-Load Amps/Heating.....	15.4	8.2
Running Watts (1).....	990	975
Running Watts (2).....	1,150	1,130
Running Watts/Heating.....	1,600	1,600
Evaporator Air Delivery CFM (high speed).....	150	150

(1) Tested under the following conditions: Cooling A.R.I. Standard Conditions 80°F. DB/67°F. WB Indoor, 95°F. DB Outdoor at 115 VAC.

(2) Tested under the following conditions: Cooling A.R.I. Standard Conditions 95°F. DB/71°F. WB Indoor, 115°F. DB Outdoor at 103.5 VAC.

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\* Available for 115 volt models only.

\*\* 240 volt model is not U.L. listed.

