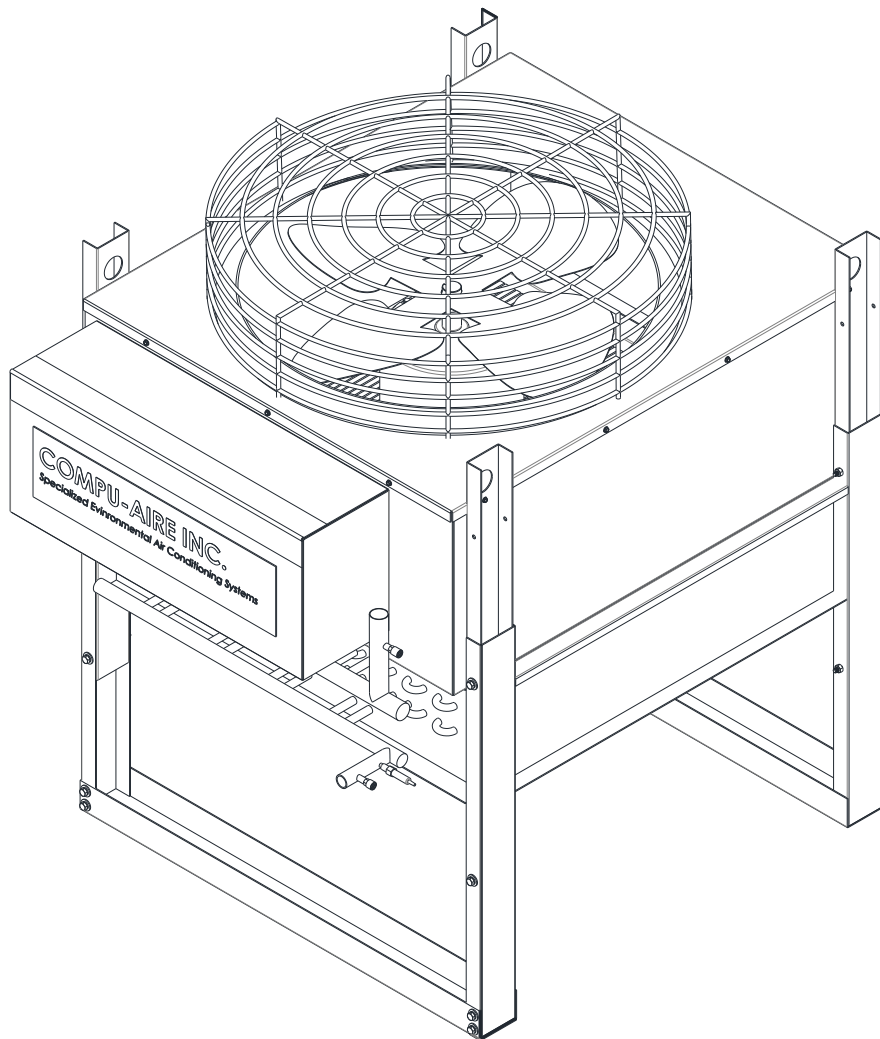




## AIR COOLED CONDENSER -INSTALLATION AND OPERATION MANUAL-



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# 1 GENERAL SAFETY INFORMATION

## PLEASE CAREFULLY READ THE FOLLOWING SAFETY INFORMATION BEFORE PROCEEDING FURTHER

This installation and operation manual (IOM) contains important safety information that should be followed during installation or servicing of a Compu-Aire Air Cooled Condenser system. Below is general safety information as well as descriptions of safety and accident prevention symbols that will be utilized throughout this document. In addition to safety information provided by this manual, all warnings, cautions, and safety instructions located on the unit should be adhered to at all times. If applicable, local codes or ordinances and any other safety requirements must also be taken into consideration when installing or servicing the unit.

This IOM should be stored in a safe and accessible location for service personnel during installation or servicing operations. When no longer needed, this IOM should be returned to its original location for future reference.

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## DESCRIPTION OF IMPORTANT ACCIDENT PREVENTION SAFETY SYMBOLS

### SYMBOL

### DEFINITION<sup>1</sup>



Indicates an extremely hazardous situation which, if not avoided, will result in death or serious injury. Use of this symbol is limited to the most extreme situations



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. Caution may be also be used to alert against unsafe practices



Indicates a statement of company policy as the message relates directly or indirectly to the safety of personnel or protection of property

<sup>1</sup>Accident prevention definitions per ANSI Z535.2- 2011.



HIGH VOLTAGE!

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Unit utilizes high voltage power supply. There is a high risk of arc flash and electric shock. Always proceed with caution and wear protective equipment per NFPA 70E specifications at all times before working on the electrical control panel. Failure to comply can cause serious injury or death. The required unit power supply can be found on the nameplate located on the unit.

Service personnel should ensure that the main power supply to the unit is disconnected and locked out from the feeder when installation or servicing operations are being performed and when power is not needed.

**Compu-Aire air cooled condenser equipment requires a permanent power connection from an isolated circuit breaker. The customer must provide earth ground to the unit per NEC, CEC, and local codes when applicable.**



#### **INSTALLATION AND SERVICING PERSONNEL TRAINING & QUALIFICATIONS REQUIREMENTS**

Installation and service of this equipment should be done only by qualified personnel who have been specially trained and qualified in the installation or servicing of HVAC equipment. Improper installation may result in unaccountable loss or damage.



#### **EQUIPMENT TRANSPORTATION, PROPER BRACING, & HIGH-SPEED MOVING PARTS**

Every precaution should be taken before the time of transportation of the equipment that all transportation equipment such as forklifts is properly rated to transport the equipment. Not doing so may cause equipment damage, injury, or death. Please refer to the shipping slip or contact the factory to determine the weight of the unit.

Once installation of the equipment is complete, the equipment should also be properly braced or anchored to the floor or wall if necessitated by local codes and ordinances.

High-speed moving parts can cause serious injury or death. Ensure that all unit panels and guards are installed before any functional testing is done.



#### **SHARP EDGES, SPLINTERS, EXPOSED FASTENERS, AND HOT SURFACES**

While every precaution has been made to ensure sharp edges, splinters, and exposed fasteners have been minimized internally and externally on the unit to prevent personal injury, it is highly

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recommended that all personnel installing or servicing the unit wear safety headgear, glasses, gloves, and shoes at all times. In addition, precaution should be taken to ensure the unit is sufficiently cool to perform any type of servicing operations.

A first aid kit should be readily available and accessible at all times when needed.

## **NOTICE**

### **EQUIPMENT STORAGE POSITION AND LOCATION**

Improper storage of unit may cause unintentional damage. If possible, keep unit in the upright position and stored in the unit original shipping package. In addition, steps should be taken to ensure that the unit is protected damage.

## **NOTICE**

### **EQUIPMENT TRANSPORTATION**

Prior to transporting unit to final installation location, ensure that there are no risks of overhead interference. Relevant measurements of the unit and all doorways should be taken to determine if unit will be able to be transported to its final location without causing damage to the building and to the unit itself. Required unit clearances at installation site should also be confirmed prior to unit transportation for safe and proper installation operations.

---

## **2 CONTACTING COMPU-AIRE FOR TECHNICAL ASSISTANCE**

Compu-Aire uses the latest in electronic and software technologies to develop some of the most reliable and cost efficient air conditioning systems in the world. Since many of our customer installations are sensitive to down time, we stock nearly all components for your system ready for same day shipment. In addition, our service department can usually diagnose and repair the electronic components and return them to you within a few days.

Our customer support staff is available should you require assistance in diagnosing a problem or in setting up your air conditioning system. During usual business hour, you may call at (562) 945-8971 between 8:00am and 04:30pm, Pacific Time, Monday through Friday except holidays, or you may send a facsimile message at (562) 696-0724 anytime. Finally, you may write us at Compu-Aire, 8167 Byron Road, Whittier, CA 90606.

Please do not return system components without prior authorization from Compu-Aire. Whether repair or replacement is required for in warranty or out of warranty parts, Compu-Aire must know what is being returned to keep proper records of returned parts. Call Compu-Aire's service center for a returned merchandise authorization number (RMA) and clearly mark all packages on the outside with the number before sending them to us.

When contacting the factory, please have information ready as to the model and size of the air conditioner system and most important, the job number. Compu-Aire keeps a file on all equipment sold detailing system components using this latter number. All such information can be found on the Warranty Plate attached to each unit.



### 3 RECEIPT OF UNIT AND TRANSPORTATION

Upon receipt of the unit, a visual inspection is required. The unit packaging should be entirely intact and the crate should not be damaged. If any damage is found, make note of the damage on the shipping bill of landing prior to signing. Transport the unit to the desired location in the upright position to avoid damaging to any external panels or internal components. Once the unit is uncrated and in the desired location, inspection of the unit for any external damage is crucial as this may be indicative of internal damage. Any signs of damage to the packaging or system panels or incomplete shipments require a claim to be filed with the shipping company. Freight damage claims are the responsibility of the receiver.

Any items designated as field installed shall be packaged inside of the unit and must be removed and installed prior to startup of the equipment.

Optional articles such as jack-stand parts, condensate pump, and remote control panel are packaged separately.

**REPORT ANY DAMAGE TO THE CARRIER. COMPU-AIRE IS NOT RESPONSIBLE FOR FILING OF ANY CLAIMS. ALL NEEDED INSPECTION AND CLAIM FILING IS THE RESPONSIBILITY OF THE RECEIVER**

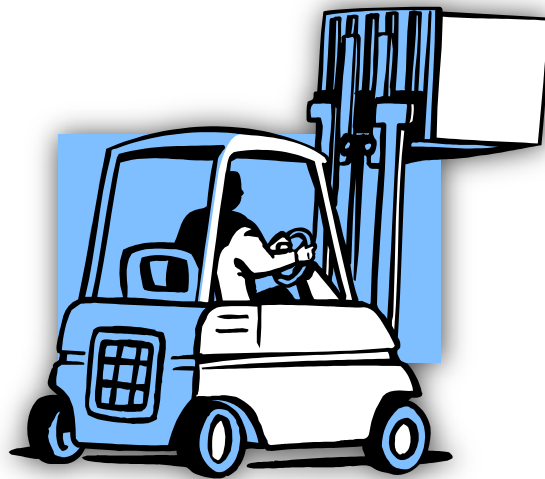


Figure 1 Transportation

#### TRANSPORTATION MODE

Visual inspection of the outer casing provides a simple indication of possible internal damage to the equipment. Move the unit to the installation site in the upright position.

**FILE A CLAIM WITH THE SHIPPING COMPANY IF THE SHIPMENT IS DAMAGED OR INCOMPLETE. FREIGHT DAMAGE CLAIMS ARE THE RESPONSIBILITY OF THE RECEIVER.**

---

Each fan section has heavy leg supports with lifting holes at the top. Do not lift with a choke sling around the unit. Spreader bars are recommended for lifting multiple fan units. Under no circumstances should the coil headers or piping be used for moving or lifting the condenser

Leg assembly: The legs must be unbolted from the shipping position and extended prior to placing the unit on its pad. Each leg extends down approximately 18 inches and reattaches using same bolt (see figure 3).

## **IMPORTANT – READ BEFORE INSTALLING**



Check the power supply. Voltage, frequency and phase must correspond to that specified on the unit nameplate. The power supply must be able to handle the additional load imposed by this equipment.

## **4 LOCATING THE CONDENSER**

Consult local building codes and National Code for special installation requirements. The remote heat exchangers must be located in an area that will ensure maximum security; maintenance accessibility and free air flow into and out of the unit. The unit should not be placed closer than 48 inches from any wall or other obstruction. When two or more units are installed in the same area, space them apart by a minimum of 96 inches. Short-circuiting of the airflow or the intake of warmer air from another unit will seriously degrade the performance of the air-cooled condenser.

Structural supports and roof or platforms should be sufficiently strong to support the condensers operating weight. For roof installations, mount the condensers on steel supports in accordance with local codes. For ground installations, a concrete pad is sufficient to carry the load.

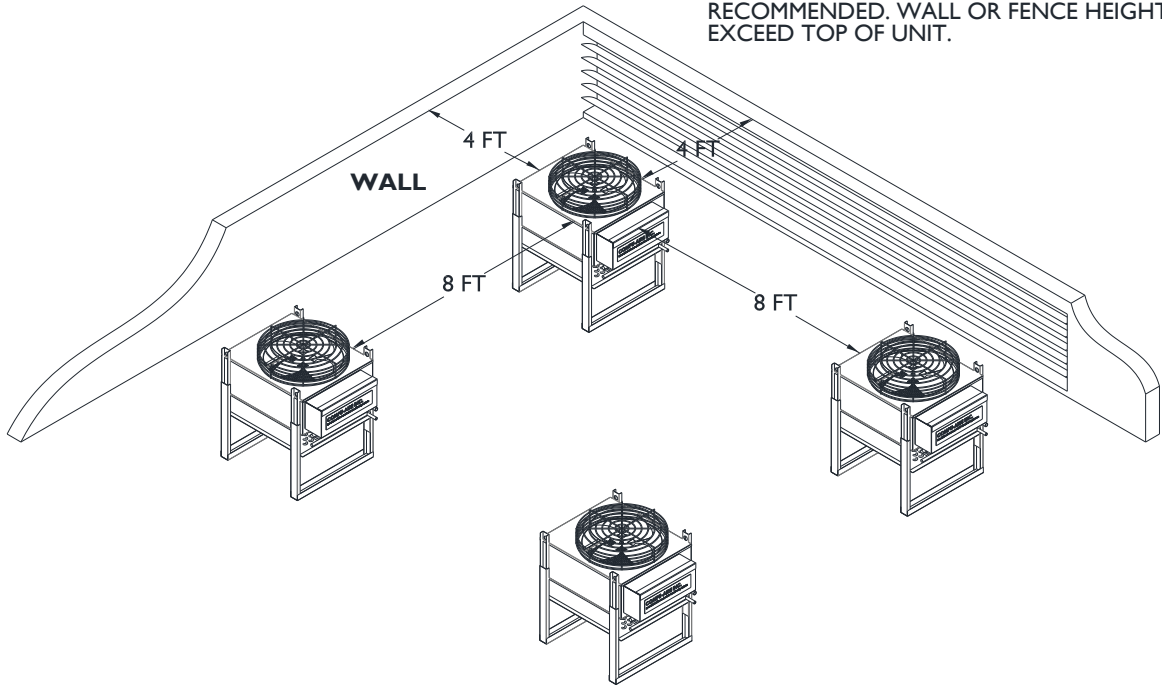
Noise consideration should also be considered when locating an air-cooled condenser. Proximity to windows, walls, and surrounding structures can cause objections by the occupants.

When installing the unit, allow sufficient space for air flow clearance, wiring and servicing the unit. For multiple units, place them as far apart from each other as possible for optimum air circulation.

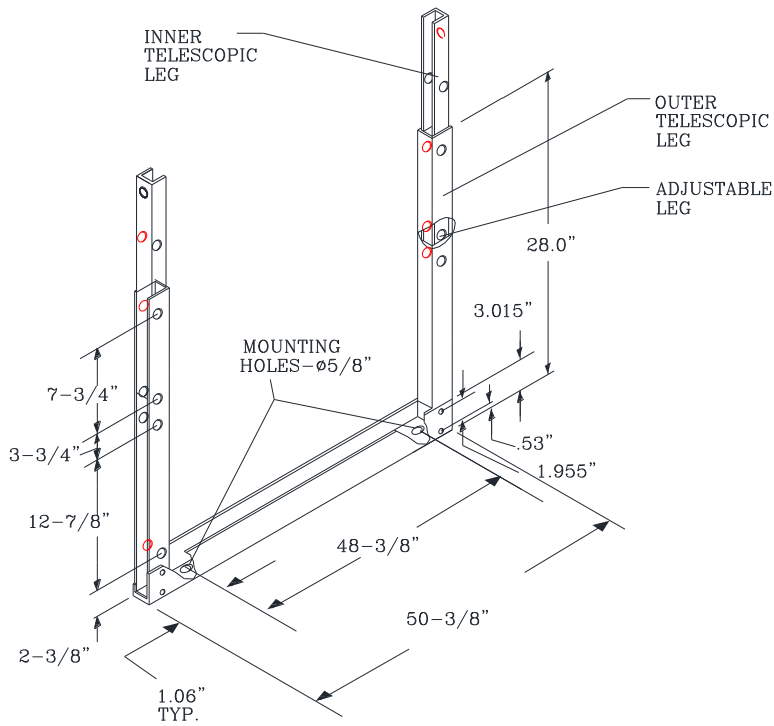
The location of the unit should be selected based on air circulation in the room and service access requirement. Proper clearance is important for the unit function and access to various components for service.

**MINIMUM DISTANCE REQUIREMENT.**

IF USED, 80% MIN. FREE OPENING AREA OF LOUVER IS RECOMMENDED. WALL OR FENCE HEIGHT MAY NOT EXCEED TOP OF UNIT.



**Figure 2 Recommended Minimum Distance Requirement**



**Figure 3 - 2 to 28 Ton Air Cooled Condenser Leg Dimension**

## 4.1 Connections

In connecting the unit, several items must be addressed. They are:

### 4.1.1 Structural Support

The unit can be installed directly on concrete pads or on the steel supports in accordance to local codes. The floor should be level. Gasket material should be placed between the leg support of the unit and the floor to act as vibration isolator.

### 4.1.2 Electrical Support

A fused disconnects or a HVAC approved circuit breaker must be field provided and install per the National Electric Code (NEC). There is access to the unit for electrical connection through the unit electrical box. Be sure unit is properly grounded.

### 4.1.3 Refrigeration Piping

It is of the greatest importance that all refrigerant piping be cleaned and free from dirt and moisture. One drop of water in a refrigerant system will greatly deter the operation and efficiency of the system. Upon installation, all open ends of piping should be sealed to prevent condensation from accumulating inside. (If it is not to be completed during the day). This avoids future problems, malfunctions and corrosion.

It is suggested that hot gas and liquid return lines be silver soldered, using one of the many types, such as silfoss, etc. Absolutely avoid soft solders such as 50/50 or 95/5. Use a flow of dry nitrogen through the piping while being soldered. (To eliminate formation of a copper oxide scale on the inside of the piping).

#### SUGGESTED REFRIGERANT PIPE SIZE "QUICK RULE OF THUMB"

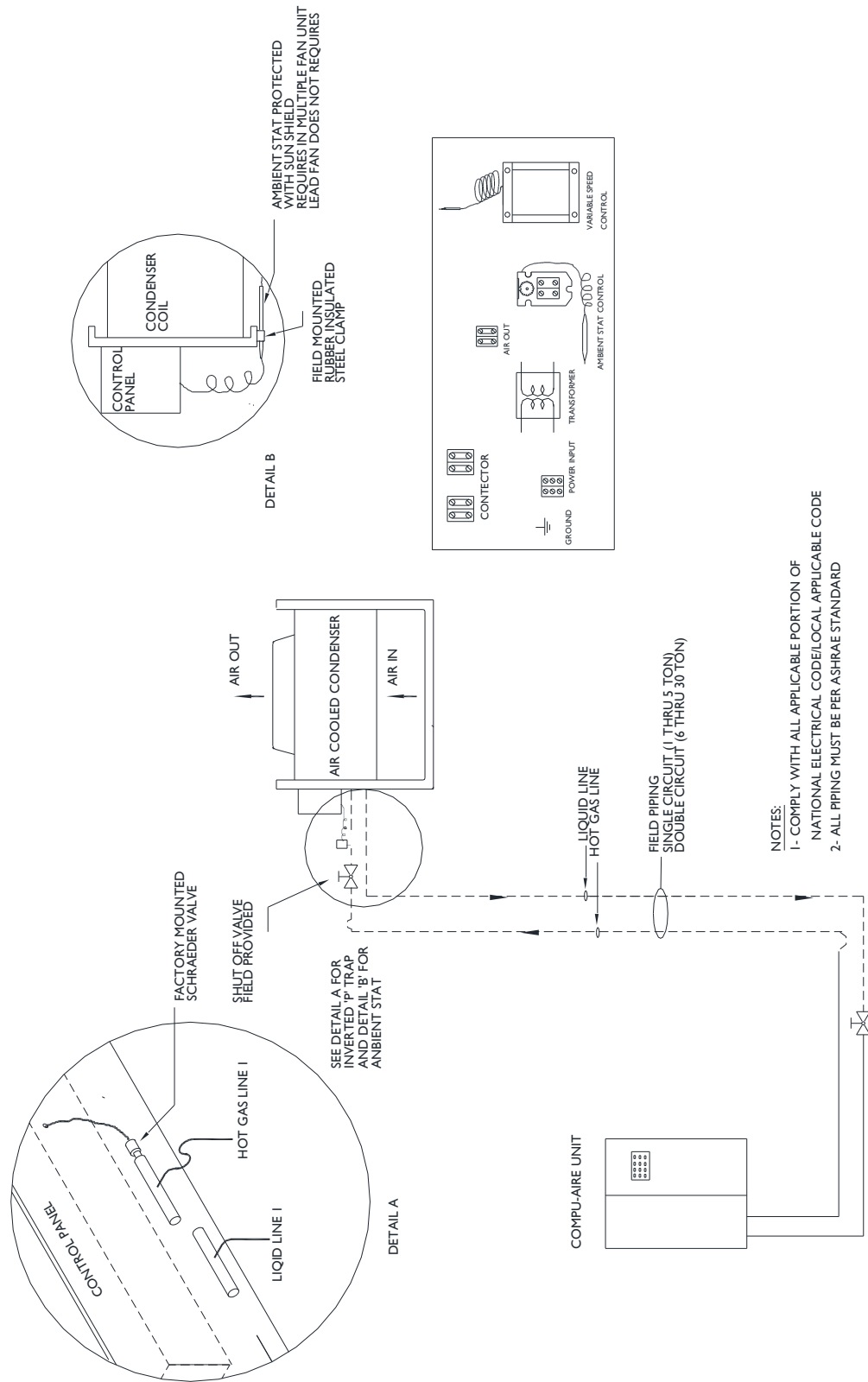
| TONS | DISTANCE BETWEEN INDOOR UNIT AND AIR COOLED CONDENSER |           |           |           |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|      | 250'  |           | 300'      |           | 350'      |           | 400'      |           |
|      | LIQ. LINE   | DIS. LINE | LIQ. LINE | DIS. LINE | LIQ. LINE | DIS. LINE | LIQ. LINE | DIS. LINE |
| 2    | 1/2"  | 3/4"      | 5/8"      | 3/4"      | 5/8"      | 3/4"      | 5/8"      | 7/8"      |
| 3    | 5/8"  | 7/8"      | 5/8"      | 7/8"      | 5/8"      | 7/8"      | 3/4"      | 7/8"      |
| 4    | 3/4"  | 7/8"      | 3/4"      | 1-1/8"    | 3/4"      | 1-1/8"    | 3/4"      | 1-1/8"    |
| 5    | 3/4"  | 1-1/8"    | 3/4"      | 1-1/8"    | 7/8"      | 1-1/8"    | 7/8"      | 1-1/8"    |
| 7 ½  | 7/8"  | 1-1/8"    | 7/8"      | 1-1/8"    | 7/8"      | 1-3/8"    | 7/8"      | 1-3/8"    |
| 10   | 1-1/8"  | 1-3/8"    | 1-1/8"    | 1-3/8"    | 1-1/8"    | 1-3/8"    | 1-1/8"    | 1-3/8"    |
| 12 ½ | 1-1/8"  | 1-3/8"    | 1-1/8"    | 1-3/8"    | 1-1/8"    | 1-3/8"    | 1-1/8"    | 1-5/8"    |
| 13   | 1-1/8"  | 1-3/8"    | 1-1/8"    | 1-3/8"    | 1-1/8"    | 1-5/8"    | 1-1/8"    | 1-5/8"    |
| 15   | 1-1/8"  | 1-5/8"    | 1-1/8"    | 1-5/8"    | 1-1/8"    | 1-5/8"    | 1-1/8"    | 1-5/8"    |

---

NOTES:

1. Distances shown are one way. Pipe sizes are based on Total Equivalent Length (TEL).  
Verify sizes with ASHRAE Standards.
2. Compu-Aire will not be responsible for any errors in pipe sizing or improper running of the piping.  
It is highly recommended that sound engineering practices be used for routing, piping, "p" traps,  
double risers and insulator requirements.
3. LIQ. = LIQUID      DIS. = DISCHARGE
4. All sizes are copper O.D.
5. Provide isolation valves for piping lines outside any air conditioner unit.

**Table 1 Refrigeration Line Size**



- NOTES:**
- 1- COMPLY WITH ALL APPLICABLE PORTION OF NATIONAL ELECTRICAL CODE/LOCAL APPLICABLE CODE
  - 2- ALL PIPING MUST BE PER ASHRAE STANDARD

Figure 4 Typical Piping Schematic

---

Standard units are designed for ambient controls down to 0°F. Air cooled condensers are provided with variable speed fan motor for ambient temperature between -20 °F to 115 °F.

Condensers are dropped shipped from another source. Control panels for the condenser are shipped with the air conditioners. This control panel is to be wired and connected in the field. Provide a rain tight fused disconnect switch. Single fan units are generally single phase.

The power supply to the air cooled condenser must be brought through a fused disconnect that is properly sized for electrical requirement of the condenser.

Two 28 gauge wires are required between the air conditioner and the condenser to interlock indoor unit with the outdoor unit. Run wires in conduit. The connection is 24 VAC.

Suggested pipe sizes are: Refer to the ASHRAE guide for proper sizing and layout. **A CHECK VALVE MUST BE INSTALLED IN THE DISCHARGE LINE.**

FOR UNITS REQUIRED AMBIENT BELOW 70°F.

An optional head pressure control is provided. Refer to low ambient section of this manual.

Suggested pipe sizes are:

Hot gas – 7/8” – 50 ft TEL

Liquid Drain – 1 1/8” – 50 ft TEL (refer to ASHRAE guide for details)

(Liquids drain should be sized based on 100 FPM velocity)

- Once it is ascertained as to what kind of low ambient the unit is provided with, install proper size pipes and evacuate using triple evacuation method.
- Charge units based on superheat, set superheat not lower than 10°F and not greater than 15°F.
- Units provided with head pressure control valve and ambient below -10°F will require additional charge.
- Check valve-provide a check valve for the discharge like at the air cooled condenser.

## 4.2 Electrical Connection

**The unit is completely factory wired with self-contained controls.**

**IMPORTANT** - Before proceeding with the electrical connections, make certain that the volts, hertz and phase correspond to that specified on the unit rating plate. Also, check to be sure that service provided by the utility is sufficient to handle the additional load imposed by this equipment. Refer to the unit rating plate for equipment electrical requirements. The attached wiring diagram shows the proper high and low voltage field wiring.

Make all electrical connections in accordance with National Electrical Code and any local code ordinances that may apply. **USE COPPER CONDUCTORS ONLY.**

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WARNING -- The unit cabinet must have an uninterrupted or unbroken electrical ground to minimize personal injury if an electrical fault should occur. It is important that an electrical ground wire of adequate size can be connected to the ground lug provided inside the control box.

Supply voltage at the unit must be within  $\pm 10\%$  of the voltage indicated on the nameplate for a dual voltage rating, supply voltage must be within 5% from the lower nameplate rating and within 10% from the higher rating. Phase to phase imbalance must not exceed 3%. Contact your local utility company for correction of improper line voltage. Improper electrical power supply may cause premature failures and void unit warranties



# 5 GENERAL WIRING DIAGRAM

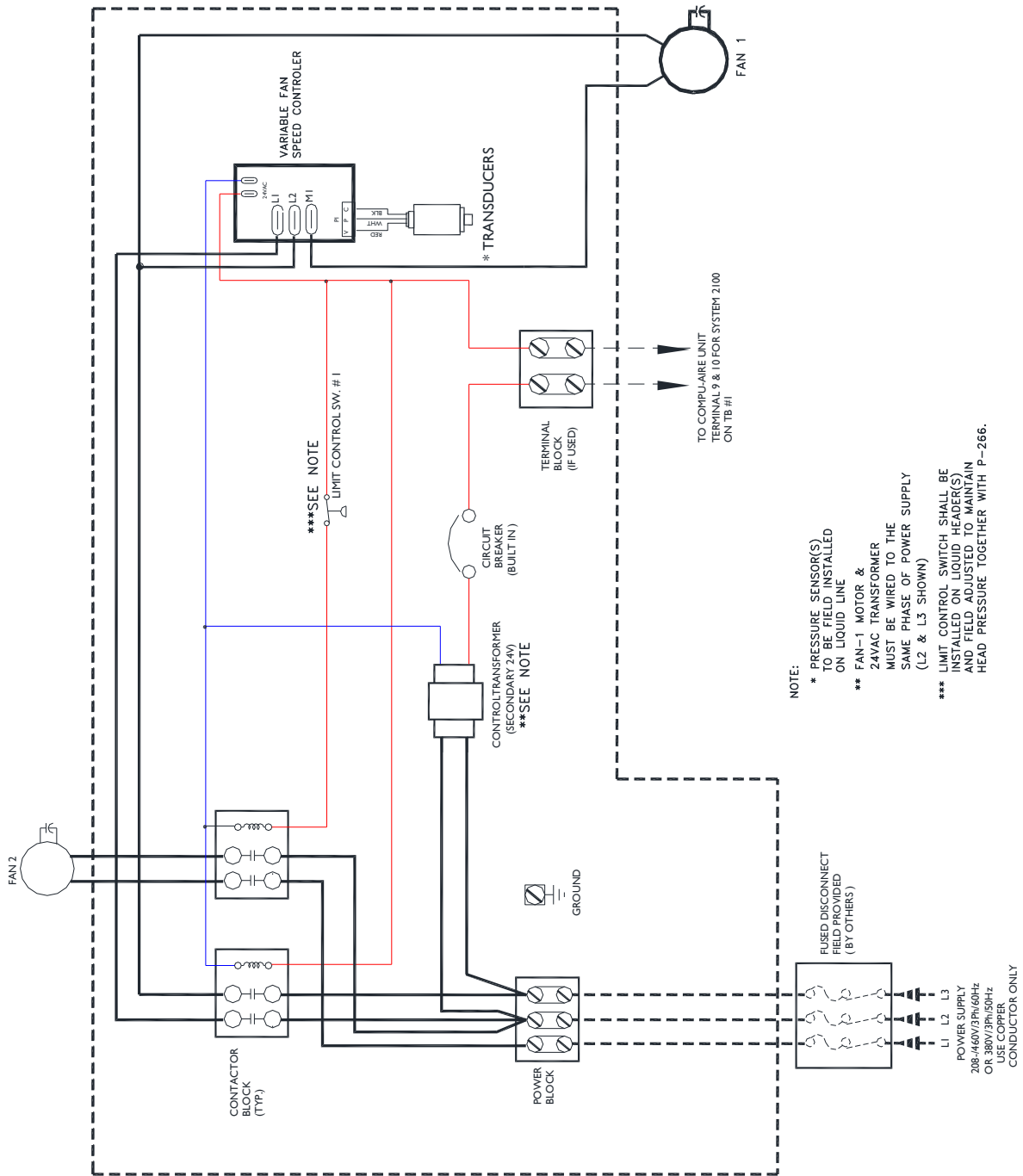


Figure 5 Typical Wiring Diagram 11 TO 19 Ton

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## 6 COMPONENTS OPERATION GUIDE AND MAINTENANCE



### HIGH-SPEED MOVING PARTS

Risk of high-speed moving parts can cause injury or death. Disconnect all local and remote electric power supplies and make sure fans have stopped rotating before performing service operations.

The unit you have received is very special. It is specifically designed for Computer Room applications. Please read the following INSTRUCTIONS prior to working on the equipment.

**ELECTRICAL DATA:** 208v, 3 phase, 60 h, 460v, 3 phase, 60 hz, 208v, 1 phase, 60 hz, 575v, 3 phase, 60 hz, 3 phase, 60 hz, or 415/380v, 3 phase, 50 hz.  
Please check the voltage.

**NAMEPLATE DATA:** Refer to the unit name plate. It indicates all the electrical data for the unit.  
**LOCAL ELECTRICAL CODES OR ANY OTHER APPLICABLE CODES MUST BE COMPLIED WITH PRIOR TO WORKING IN THE UNIT.**

### ELECTRICAL PANEL

The electric panel should be inspected for any loose electrical connections.

**AIR COOLED CONDENSERS (ACC):** is mostly dropped shipped to the job site ahead of the unit. Air cooled condenser supplied are usually provided with one of these options:

- A. Fan Cycling
- B. Variable Speed Fan Motor
- C. Head Pressure Control
- D. Control Box where motor wires terminates less any controls
- E. Access fittings to hook up SCR controller

**CONTROL PANEL:** This is for the air cooled condenser which is shipped from COMPU-AIRE with the air conditioner. This control panel is to be installed and wired in the field.

FOR UNITS EQUIPPED WITH LOW AMBIENT CONTROL BELOW -30°F: A head pressure control valve for each refrigeration circuit is provided and is shipped with the Computer Room air Conditioner for a FIELD installation on the air cooled condenser. An appropriate control panel for with fan cycling control is also supplied for field installation on the air cooled condenser.

**ALL REFRIGERATION PIPING SHALL BE INSTALLED PER ASHRAE STANDARDS.**

# 7 UNIT DIMENSIONS AND GENERAL COMPONENT LAYOUT

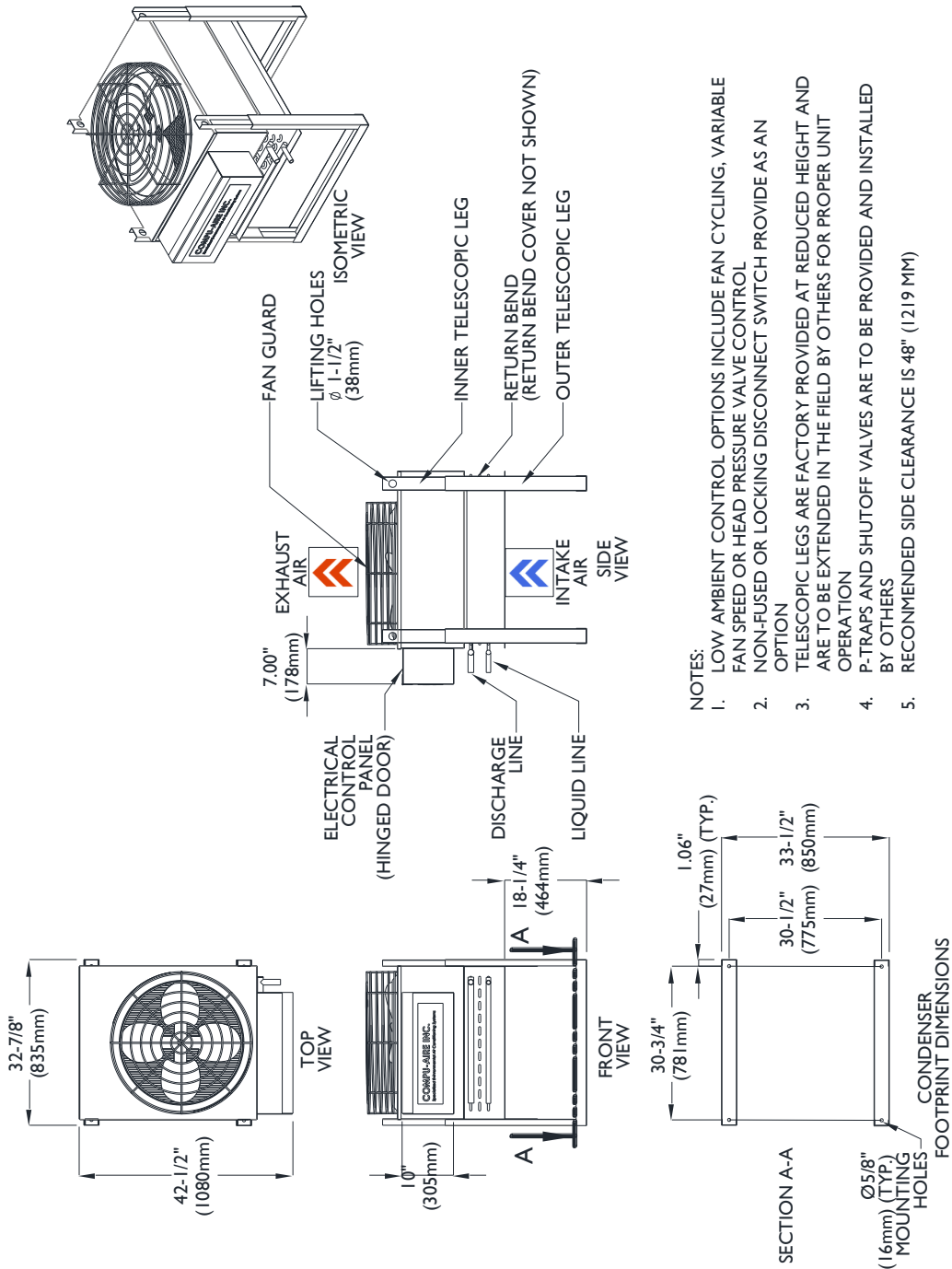


Figure 6 Unit Dimension 2 TO 5 Ton Unit Shown

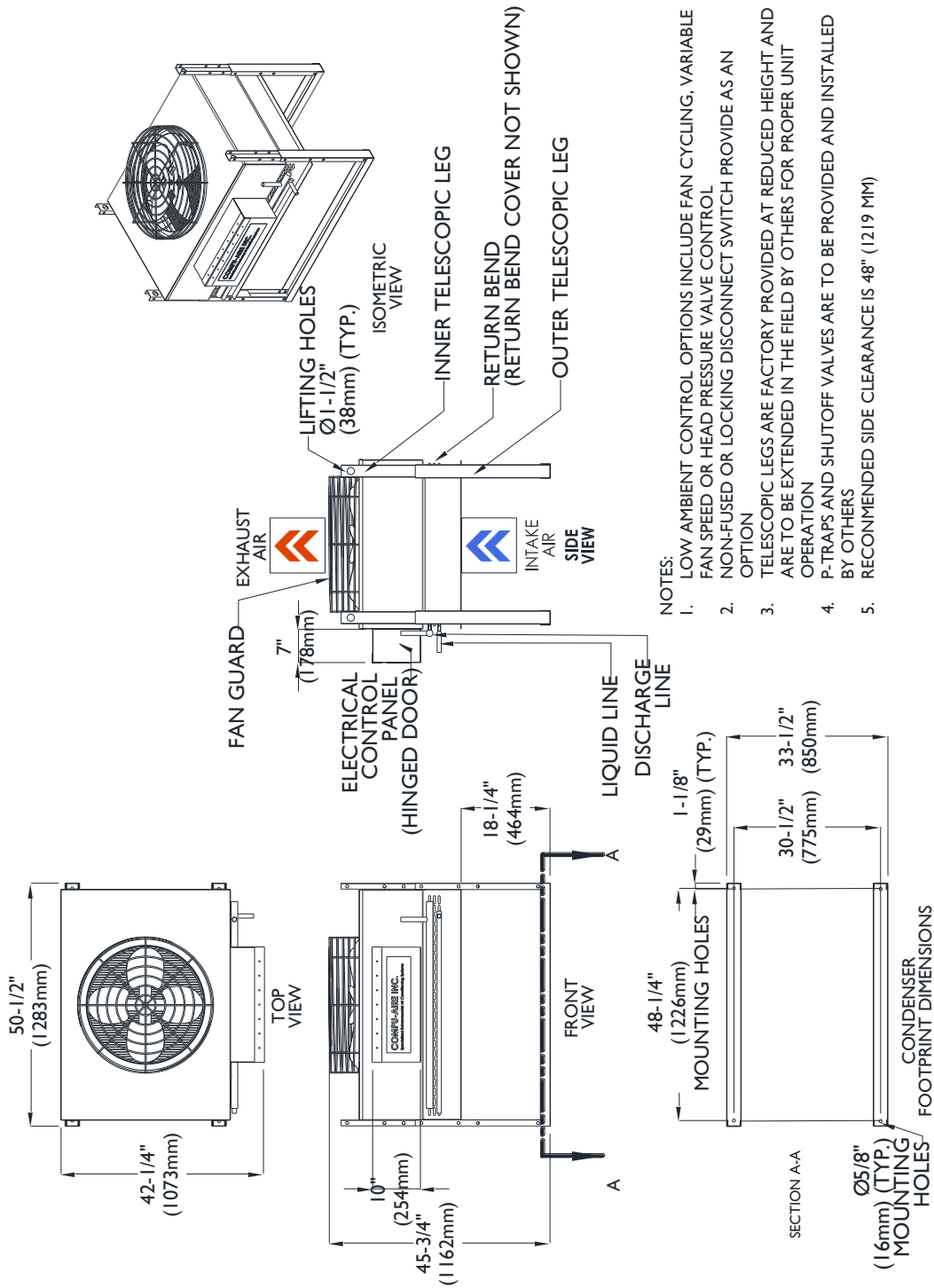
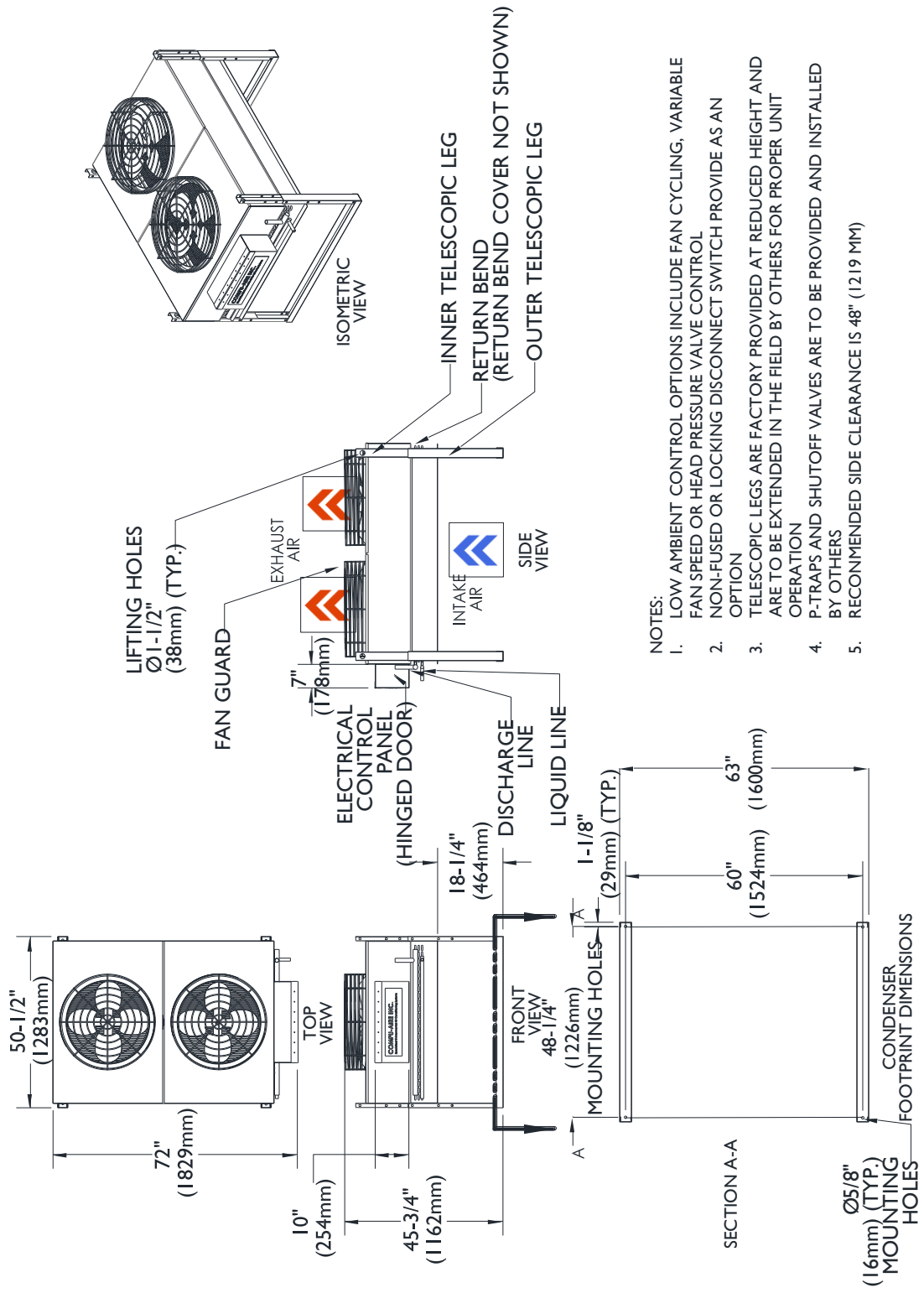


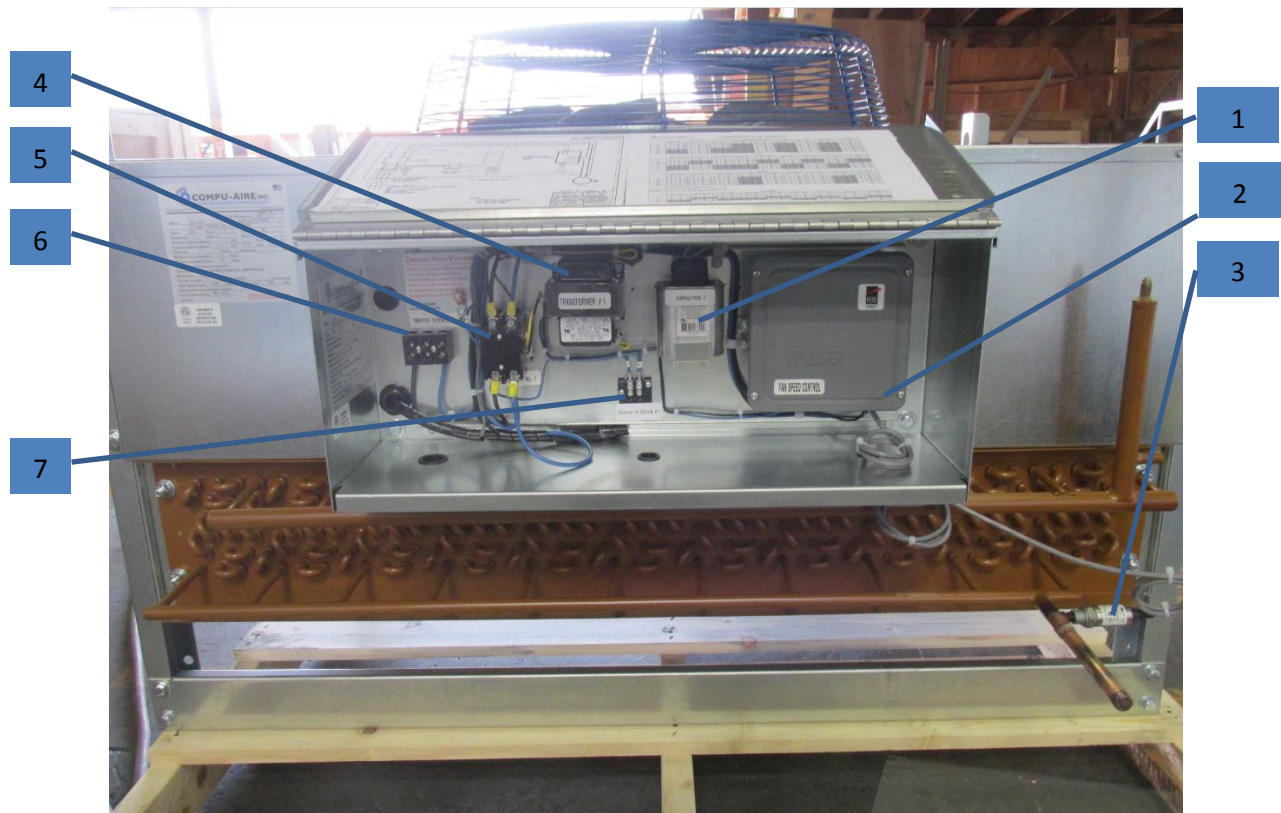
Figure 7 Unit Dimensions 6 to 9 Ton Unit Shown



- NOTES:
1. LOW AMBIENT CONTROL OPTIONS INCLUDE FAN CYCLING, VARIABLE FAN SPEED OR HEAD PRESSURE VALVE CONTROL
  2. NON-FUSED OR LOCKING DISCONNECT SWITCH PROVIDE AS AN OPTION
  3. TELESCOPIC LEGS ARE FACTORY PROVIDED AT REDUCED HEIGHT AND ARE TO BE EXTENDED IN THE FIELD BY OTHERS FOR PROPER UNIT OPERATION
  4. P-TRAPS AND SHUTOFF VALVES ARE TO BE PROVIDED AND INSTALLED BY OTHERS
  5. RECOMMENDED SIDE CLEARANCE IS 48" (1219 MM)

Figure 8 Unit Dimension 11 to 19 Ton Unit Shown

## 8 COMPONENTS IDENTIFICATION



**Figure 9 Front Layout-Single Fan**

| NUMBER | NAME                           |
|--------|--------------------------------|
| 1      | CAPACITOR FOR FAN MOTOR        |
| 2      | P266 VARIABLE SPEED CONTROLLER |
| 3      | P266 PRESSURE TRANSDUCER       |
| 4      | TRANSFORMER                    |
| 5      | FAN CONTACTOR/RELAY            |
| 6      | ELECTRICAL INPUT POWER BLOCK   |
| 7      | TERMINAL BLOCK (TO MAIN UNIT)  |

**Table 2 Control Panel Layout**

---

## 9 START-UP

Prior Star-up check the following items:

1. Check fans for freedom of movement
2. Check all fans blade set screw, motor mounts, and mounting leg fasteners
3. Check all electrical connections for tightness
4. Check that the nameplate voltage matches the power supply voltage
5. Upon start-up check the rotation of all fans to ensure that air is being discharge upward.

## 10 LOW AMBIENT CONTROL OPTIONS:

### 10.1 Fan Speed Control (Low ambient control up to -20 °F)

The fan speed control provide an infinite number of speed variation(s) on specially designed permanent split-capacitor motor(s). Controller varies the quantity of air passing through the air-cooled condenser by directly sensing refrigerant pressure.

Fan speed control provides air delivery in direct proportion to heat rejection requirements of the system. This to maintain optimum system capacities and pressures in widely varying operating ambient(s).

As ambient temperature drops, the refrigerant pressure will also drop. As the ref. pressure drops, this will be sensed by the pressure transducer and the air quantity will be reduced by reducing the motoR (fan) speed.

Fan speed controller refrigerant connection: The fan speed control requires that the transducer be connected to liquid line header through shraeder fitting provided.

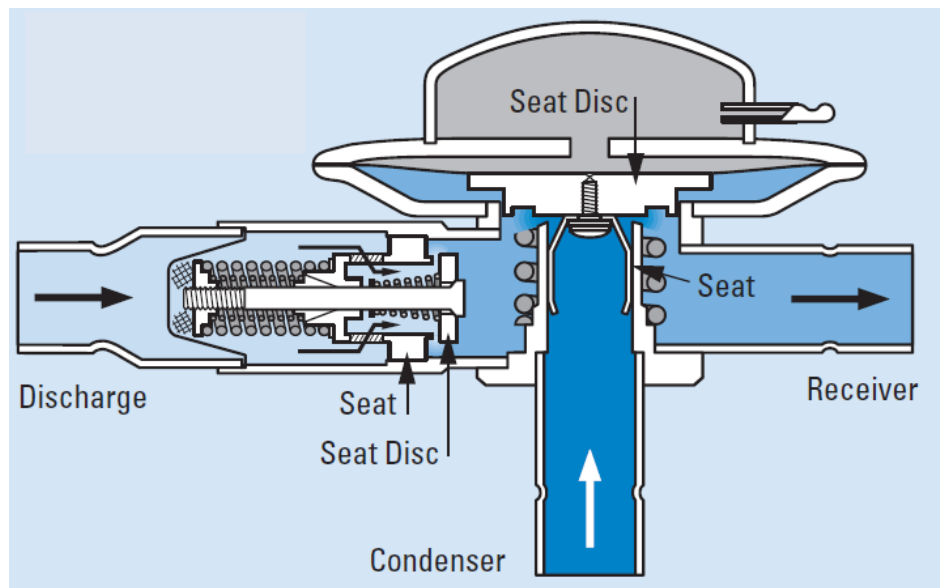
Also, for multi fan unit(s), there is thermostat for each condenser fan motor with the exception of the control motor (variable-speed). The thermostat should be set in accordance with wiring diagram provided with the unit. (Refer to manufacture cut sheet provided for detail of the P266 controller)



## 10.2 Head Pressure Control Valve (Low ambient control below -30° F)

This type of low ambient control includes head pressure control valve(s) and the receiver(s) package. The receiver(s) are installed in separate enclosure(s). The enclosure(s) are shipped loose for field installation at the condenser. The head pressure control valve(s) are installed on the condenser or shipped separately for field installation on the air-cooled condenser. Upon receipt of these items should be checked against the packing list and stored inside the building until they are ready to be installed.

Operation: During periods of low ambient temperatures the condensing temperature falls until it approaches the setting of the head pressure control valve, which throttles towards a closed setting, thus restricting the flow of the liquid from the condenser. This causes the refrigerant to back up in the condenser and reduces the effective condenser surface. The check valve opens after the head pressure control has offered enough restriction and then causes the differential between the condensing pressure and the receiver pressure to exceed 20 psig. The hot gas flowing through the check valve serves to heat the cold liquid being passed by the limitizer valve. Thus, the liquid reaches the receiver warm and with sufficient pressure to assure proper expansion valve operation. The check valve and limitizer valve modulate the flow automatically to maintain proper condensing pressures.



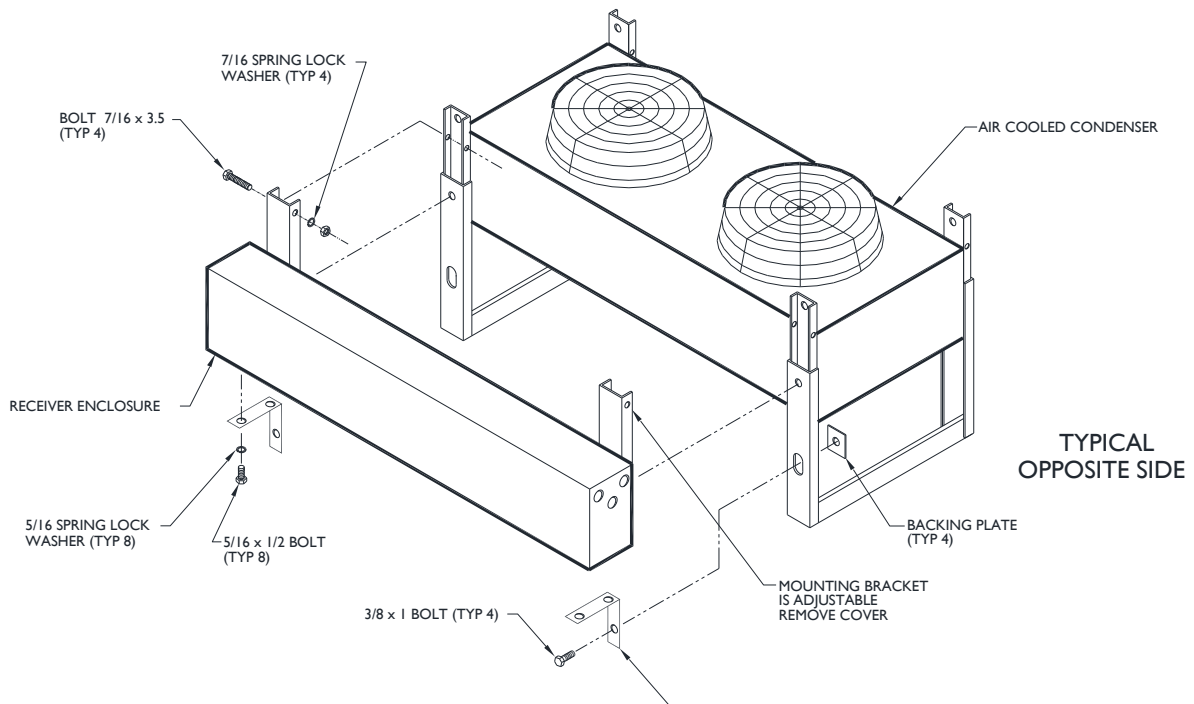
Installation of Head Pressure Control Valve: There is one head pressure control valve on each of the limitizer system. These control valves, or limitizer valves as they are called, can be installed in a horizontal or a vertical line, whichever application permits easy adjustment and accessibility to either valve. Care should be taken to install the valves with the flow in the proper direction. It is important that head pressure control valve be protected by wrapping the valve with a wet cloth to keep the body of valve at a temperature below 250° F. It is important to keep the flame away from the valve body, to insure that no body damage is done to the valve. The valve should not be subjected to pressure in excess of 250 psig during the leak testing procedure. The limitizer valves are factory



set to maintain 180 psig. The Head Pressure Control Valves are hermetically sealed therefore, when a valve comes inoperative, it must be replaced. There are two types of malfunctions that may occur. (I) Failure to open or (II) failure to close. If particles of solder are in the system, they can restrict the orifice of the valve and cause the valve to malfunction. If this occurs, gently tap the valve, this will possibly allow the particles to flow through the valve. Since a synthetic material is used in the construction of the valve, damage to this will cause hot gas to leak constantly. If this occurs, the valve must be replaced.

**Liquid Receiver(s) Installation:** Liquid receiver(s) are factory installed in the separate enclosure(s). These enclosure(s) need to be field installed on side(s) of the air-cooled condenser. Also, the liquid receiver(s) need to be field piped. Install a Refrigerant Sight Glass (By Others) immediately after the Liquid Receiver Outlet. Only the sight glass at the receiver outlet should be used to determine if the additional refrigerant must be added.

Liquid Receiver(s) are wrapped with the Self Regulating Heating Cable and insulated. Provide 240Vac Power Supply to the Heating Cable as shown in the wiring diagram.



**Figure 10 Liquid Receiver Option**

## 11 TECHNICAL DATA

| <b>AIR COOLED CONDENSER BASED ON 95°F (35°C) AMBIENT</b>    |                      |                      |                      |                      |
|---|----------------------|----------------------|----------------------|----------------------|
| <b>Variable Fan Speed Type - Good down to -20°F (-7°C).</b> |                      |                      |                      |                      |
| <b>CONDENSER MODEL</b>                                      | <b>ACC-2</b>         | <b>ACC-5</b>         | <b>ACC-5</b>         | <b>ACC-6</b>         |
| <b>FAN DATA - DIRECT DRIVE - Propeller Fan Type</b>         |                      |                      |                      |                      |
| CFM(L/s)  | 2,500( <b>1180</b> ) | 5,200( <b>2454</b> ) | 5,200( <b>2454</b> ) | 5,100( <b>2407</b> ) |
| Motor HP  | 1/6                  | 3/4                  | 3/4                  | 3/4                  |
| Fan Size  | 18                   | 24                   | 24                   | 24                   |
| <b>PIPING CONNECTION DATA - All sizes in copper OD</b>      |                      |                      |                      |                      |
| Liquid Line   | 1/2"                 | 7/8"                 | 7/8"                 | 7/8"                 |
| Hot Gas Line  | 5/8"                 | 1-1/8"               | 1-1/8"               | 1-1/8"               |
| Weight LBS(kg)  | 240( <b>109</b> )    | 275( <b>125</b> )    | 310( <b>140</b> )    | 350( <b>159</b> )    |

**Bold Face Data In Metric Units**

| <b>AIR COOLED CONDENSER (ACC)</b> |                  |            |            |                      |            |            |                  |            |            |                  |            |            |                  |            |            |
|-----------------------------------|------------------|------------|------------|----------------------|------------|------------|------------------|------------|------------|------------------|------------|------------|------------------|------------|------------|
| <b>VOLTAGE / PHASE / HERTZ</b>    |                  |            |            |                      |            |            |                  |            |            |                  |            |            |                  |            |            |
| <b>MODEL</b>                      | <b>208V/1/60</b> |            |            | <b>208-230V/3/60</b> |            |            | <b>380V/3/50</b> |            |            | <b>460V/3/60</b> |            |            | <b>575V/3/60</b> |            |            |
|                                   | <b>FLA</b>       | <b>MCA</b> | <b>MFS</b> | <b>FLA</b>           | <b>MCA</b> | <b>MFS</b> | <b>FLA</b>       | <b>MCA</b> | <b>MFS</b> | <b>FLA</b>       | <b>MCA</b> | <b>MFS</b> | <b>FLA</b>       | <b>MCA</b> | <b>MFS</b> |
| ACC-2                             | 2.9              | 3.6        | 15         | N/A                  | N/A        | N/A        | N/A              | N/A        | N/A        | N/A              | N/A        | N/A        | N/A              | N/A        | N/A        |
| ACC-5                             | 4.5              | 5.6        | 15         | 4.5                  | 5.6        | 15         | 2.3              | 2.9        | 15         | 2.3              | 2.9        | 15         | 2.3              | 2.9        | 15         |
| ACC-5                             | 4.5              | 5.6        | 15         | 4.5                  | 5.6        | 15         | 2.3              | 2.9        | 15         | 2.3              | 2.9        | 15         | 2.3              | 2.9        | 15         |
| ACC-6                             | 4.5              | 5.6        | 15         | 4.5                  | 5.6        | 15         | 2.3              | 2.9        | 15         | 2.3              | 2.9        | 15         | 2.3              | 2.9        | 15         |

**NOTES:**

1. **LRA** = Locked Rotor Amps, **RLA** = Rated Load

Amps,

**FLA** = Full Load Amp, **MCA** = Minimum recommended fuse size

2. All applicable portions of NATIONAL, STATE, LOCAL, electrical codes, OSHA standards, and FIRE MARSHALL requirements must be consulted and complied with prior to installation of this equipment

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## 12 GENERAL MAINTENANCE

### **WARNING**

Check that ALL WIRING IS CORRECT

Maintenance of the air-cooled condenser is extremely important for extended life and peak performance. Following scheduled maintenance is recommended. The frequency of the maintenance plan may vary based on site condition. The Warranty does not cover corrosion, misuse, or misapplication of the condenser.

1. Shut all power off to the air cooled condenser and the entire system at the closest disconnect switch and use a lock to prevent others from turning power back on to the unit.
2. Remove Fan Guards.
3. Remove all large debris (leaves, paper, cardboard, plastic film, etc.) from the top as well as beneath the unit. Keep the area clean around the condenser by removing loose debris around the air-cooled condenser.
4. Inspect the unit for damaged fins caused by the debris. Comb out any bent fins with a fin comb. Inspect the unit for signs of corrosion. Note the area and amount of corrosion in your maintenance reports.
5. If the heat transfer surface requires cleaning use the following procedure. Use a cleaning solution that is compatible with the finned material and any protective coating that may have been applied to the heat transfer surface. Follow the cleaning instructions exactly as described by the manufacturer of the cleaning agent. It is extremely important that a proper rinse be applied to the core once the cleaning process is completed. Use a hose with a spray wand and rinse from the top of the unit only. Do not rinse from the underside, as this will not properly flush the cleaning agent from the core. Any residue of cleaner left for any extended period will begin to corrode the heat transfer surface. It is recommended to use a detergent type cleaner like Cal-Clean as a cleaning solution.
6. Inspect all fan and motor fasteners for tightness before installing the fan guards.
7. Turn power back ON to the system.

**For inland installations (30 +(plus) miles from any body of salt water):** Schedule visual inspection of the heat transfer surface and unit once every 6 months. Clean the heat transfer surface should it show signs of significant dirt accumulation. Recommended minimum cleaning cycle is once every 12 months.

**For seacoast installations (Up to 30 miles from any body of salt water):** Schedule visual inspections of the heat transfer surface and unit once every 3 months. Clean the heat transfer surface thoroughly every 3 to 6 months with water to remove accumulated layers of salt. Every 12 months clean the heat transfer surface with an approved cleaning solution.

# 13 PART LIST

| Sub-Components      | Components                        | Voltage/Ph/Hz | Unit(Ton) |   |   |   |   |             | Part Number |
|---------------------|-----------------------------------|---------------|-----------|---|---|---|---|-------------|-------------|
|                     |                                   |               | 2         | 3 | 5 | 7 | 9 | 11          |             |
| Refrigeration Parts | A/C Limit Control                 | ALL           | .         | . | . | . | . | .           | 255-200-022 |
|                     | Limit Control Switch Cover        |               | .         | . | . | . | . | .           | 255-201-012 |
| Air Moving Parts    | Fan Motor                         | 380/3/50      | .         | . | . | . | . | .           | 206-007-025 |
|                     | Propeller Fan, 4 blade (20")      | ALL           | .         | . | . | . | . | .           | 209-420-003 |
|                     | Propeller Fan, 4 blade (24")      |               | .         | . | . | . | . | 209-242-003 |             |
|                     | Hex Hub ½" Bore fan               |               | .         | . | . | . | . | 213-002-002 |             |
| Electrical Parts    | V&F Transformer (Special Voltage) |               | .         | . | . | . | . | .           | 275-675-012 |
|                     | Contactator                       | 380-575/3/50  | .         | . | . | . | . | .           | 274-030-243 |
|                     | Relay                             |               | .         | . | . | . | . | .           | 276-400-012 |
|                     | Capacitor 20 MFD                  |               | .         | . | . | . | . | .           | 278-370-020 |
| Optional Parts      | Head Pressure Control 7/8" ODF    | ALL           | .         | . | . | . | . | .           | 242-001-001 |
|                     | P266 Fan Speed Control            |               | .         | . | . | . | . | 248-122-262 |             |
|                     | P266 Pressure Transducer          |               | .         | . | . | . | . | .           | 236-211-002 |

Table 3. Part List



8167 Byron Rd., Whittier, CA 90606

PH (562) 945-8971 FAX (562) 696-0724

## STANDARD ONE YEAR WARRANTY

Job Name: \_\_\_\_\_ Job No. \_\_\_\_\_ Date: \_\_\_\_\_

We warrant this Compu-Aire, Inc. computer room unit to be free from defects in material and workmanship; our obligation being limited to repairing or replacing at our factory any part (except as noted below) within one year from the date of shipment to the original purchaser. Parts to be returned to us PREPAID. Proof of start-up date must be submitted to the factory.

This warranty is effective only if the unit has been installed in accordance with our instructions and connected to proper and adequate electric, water and drain services, correctly dehydrated and placed into operation by a competent service representative.

Fan motor compressor warranty is covered by original manufacturer's warranty and any repair or replacement should be made by the local authorized service facility as listed the telephone book.

Maintenance and service such as replacing filters, humidifier cylinder, infra-red lamps, float valve assemblies, belts, cleaning, lubrication, calibration and adjusting are NOT INCLUDED in this warranty.

Replacement or repair parts shall be shipped from the factory pre-paid and invoiced for the full amount. Upon receipt of warranted parts within 30 days with prepayment of the component and which our inspection discloses the parts are defective, and show no signs of misuse, alterations, or abuse, full credit will be issued.

Compu-Aire, Inc. does not assume any responsibility for the labor expense for changing defective parts or replacement of any refrigerant or other cooling medium such as glycol etc.

All parts and goods are thoroughly inspected and packed to meet the requirements of railroad freight classifications bureaus, and under standard shippers risk, when they leave our factory. SHOULD GOODS ARRIVE DAMAGED, call the agents attention to damage, and have same noted on freight bill. For concealed damage, demand immediate inspection from agent of the shipping company and insist on a notation being made on freight bill.

|                       |                     |                      |
|-----------------------|---------------------|----------------------|
| _____                 | _____               | _____                |
| <b>Purchaser-User</b> | <b>Model Number</b> | <b>Serial Number</b> |
|                       |                     | _____                |
|                       |                     | <b>Serial Number</b> |
|                       |                     | _____                |
|                       |                     | <b>Serial Number</b> |
|                       |                     | _____                |
|                       |                     | <b>Serial Number</b> |

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## Technical Support/ Service

### Website

[www.compu-air.com](http://www.compu-air.com)

### Location

Compu-Aire, Inc.  
8167 Byron Road  
Whittier, California 90606  
United States of America  
+1 (562) 945-8971 (Phone)  
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