Clima-Flex®
Air Conditioning
a member of DAIKIN group

Installation, Operation and Maintenance Manual

IOM

Group: Wall Mounted
Part Number: DWP IOM
Date: May 10th, 2024

DWP Series
Direct Expansion Unit with Scroll Compressor

Model

3 RT / 5 RT

Refrigerant R410A

60 Hz

CONTENT

NOMENCLATURE

CLIWP-036-AC-F-F-Y-Y-R-1-U-T-M-C-A-Y-Y-1-Y-G-X-4-Y-S-Y-Y-Y-Y

CLIWP - Wall-Packaged Unit

NOMINAL CAPACITY
036 - 36,000 Btu/h nominal cooling
060 - 60,000 Btu/h nominal cooling

OPERATING
AC - Air Conditioner

COMPRESSOR
F - Fixed Speed - Single Stage

VOLTAGE
E - 208-230 / 1 /60
F - 208-230 / 3 / 60
K - 460 /3 /60

DEHUMIDIFICATION
Y - None

ELECTRIC HEAT
1 - 5 Kw
2 - 10 Kw
Y - None

COMPRESSOR SIDE
R - Right

DESIGN SERIES
1 - Design series 1

DISCHARGE AIR
U - Upper

CONTROL OPTIONS
T - Thermostatic
L - Digital Controller
A - Low ambient Control

CONDENSER COIL
M - Al-Al Microchannel

EVAPORATOR FAN MOTOR
C - AC Fixed

CONDENSER FAN MOTOR
A - Axial Standard

EXTENDED WARRANTY
Y - None

PLACE HOLDER
Y - None

PLACE HOLDER
Y - None

THERMOSTAT 24V
Y - None
T - Included

PACKAGING
S - Standard / Botton Crate
C - International / Full Crate

IAQ Options
Y - None

REFRIGERANT
4 - R410-A

VENTILATION PACKAGES
X - Fresh air Damper
D - Economizer 0-10V Temperature control (Digital Controller)

COLOR
G - Gray

SUPPLY & RETURN GRILLS
1 - Single Deflection (Horizontal)
Y - None

FILTERS
1 - Disposable Fiber Glass
2 - Disposable 1” MERV 8
3 - Disposable 2” MERV 8
4 - Disposable 1“ MERV11
5 - Disposable 2” MERV 11
6 - Disposable 1“ MERV 13
7 - Disposable 2” MERV 13

UNIT COATING
Y - None

COIL COATING
E - E-Coat Condenser & Evaporator Coil
D - E-Coat Condenser Only
F - E-Coat Evaporator Only
Y - None

⚠ WARNING ⚠

Electric shock danger.

Improper handling of this equipment can cause personal injury or equipment damage. This equipment must be properly grounded.

Control panel connections and maintenance should be performed only by personnel knowledgeable in the operation of the equipment being controlled.

Disconnect electrical power before servicing equipment. Be sure to install a earth leakage circuit breaker.

Failure to install a earth leakage breaker may result in electric shock or fire.

⚠ CAUTION ⚠

Static sensitive components.

Static discharge during handling of the electronic circuit board can cause damage to components.

Use a static strap before performing any service work.

Never unplug any cables, circuit board terminal blocks, or power plugs while power is applied to the panel.

⚠ CAUTION ⚠

When moving refrigerant to/from the cooler using an auxiliary tank, a grounding strap should be used.

An electrical charge builds up when halo-carbon refrigerant travels in a rubber hose.

A grounding strap should be used between the auxiliary refrigerant tank and the cooler end sheet (ground to ground), which will safely carry the charge to ground.

Failure to follow this procedure may result in damage to sensitive electronic components.

⚠ WARNING ⚠

If refrigerant leaks from the unit, there is a potential choking danger as the refrigerant will displace air in the immediate area.

Be sure to follow all applicable published industry-related standards and local, state, and federal statutes, regulations, and codes if refrigerant is produced.

Avoid exposing refrigerant to an open flame or other ignition source.

⚠ WARNING ⚠

Polyolester oil, commonly referred to as POE oil, is a synthetic oil used in many refrigeration systems and may be present in this Clima Flex product.

POE oil, if it ever comes in contact with PCV/CPVC, will coat the inside wall of the PVC/CPVC pipe and cause environmental stress fractures.

Although there is no PCV/CPCV pipe in this product, keep this in mind when selecting piping materials for your application, as system failure and property damage could occur.

Consult the pipe manufacturer's recommendations to determine appropriate pipe applications.

⚠ WARNING ⚠

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

⚠ WARNING ⚠

Children should be supervised to ensure that they do not play with the appliance.

⚠ WARNING ⚠

For appliances intended for use at altitudes exceeding 2 000 m, the maximum altitude of use shall be stated by AHRI 390.

ANSI Z535.5 DEFINITIONS:

⚠ DANGER ⚠

Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury. The signal word “DANGER” is to be limited to the most extreme situations. DANGER [signs] should not be used for property damage hazards unless personal injury risk appropriate to these levels is also involved.

⚠ WARNING ⚠

Indicate[s] a hazardous situation which,if not avoided, could result in death or serious injury. WARNING [signs] should not be used for property damage hazards unless personal injury risk appropriate to this level is also involved.

⚠ CAUTION ⚠

Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION [signs] without a safety alert symbol may be used to alert against unsafe practices that can result in property damage only.

NOTE: Installation and maintenance should be performed only by qualified personnel familiar with local codes and regulations and with experience with this type of equipment.

⚠ DANGER ⚠

LOCK OUT/LABEL all power sources before starting, pressurizing, depressurizing or shutting down the equipment.

Disconnect electrical power before servicing equipment.

More than one disconnection may be required to de-energize the unit.

The inhability to follow this warning to the letter can result in severe injury or death. Be sure to read and understand the installation, operating, and service instructions in this manual.

The equipment covered in this manual is to be installed by trained, experienced service and installation technicians. The refrigerant system is completely assembled and charged. All internal wiring is complete. The unit is designed for use with or without ductwork. Flanges are provided to attach the supply and return ducts.
This manual explains the recommended method to install the direct expansion unit and the electrical wiring connections to the unit, the control operation and maintenance.

NOTE: A qualified technician should carefully read these instructions before starting the installation.

Note particularly “Starting Procedure” and any tags and/or labels attached to the equipment, and the safety warnings on this manual. While these instructions are intended as a general recommended guide, they do not supersede any national and/or local codes in any way. Authorities having jurisdiction should be consulted before. See the following section for information on codes and standards.

The size of the unit for a proposed installation should be based on heat loss calculation made according to the methods of Air Conditioning Contractors of America (ACCA). The air duct should be installed in accordance with the Standards of the National Fire Protection Association for the Installation of Air Conditioning and Ventilating Systems of Other Than Residence Type, NFPA No. 90A, and Residence Type Warm Air Heating and Air Conditioning Systems, NFPA No. 90B. Where local regulations differ from instructions, the installer should adhere to local codes.

RECOMMENDED INSTALLATION STANDARDS

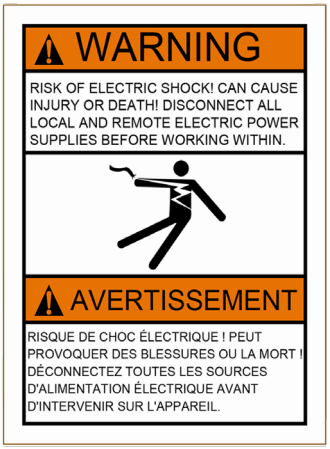
These standards can help when installing the air conditioner. Be sure to consult the current edition of each standard.
National Electrical Code (ANSI/NFPA 70)
Standard for the installation of Air Conditioning and Ventilating Systems (ANSI/NFPA 90A)
Standard for Warm Air Heating and Air Conditioning Systems (ANSI/NFPA 90B)

SHIPPING DAMAGE

Upon receipt of the equipment, the packaging should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier’s agent.

UNIT LABELS

In the unit, you will encounter the following warning and information pictograms.



GENERAL INFORMATION

GENERAL UNIT SPECIFICATIONS

	DWP036ACFE	DWP036ACFF	DWP036ACFK	DWP060ACFE	DWP060ACFF	DWP060ACFK
Unit Voltage Rating - Phase - 60Hz	208/230 -1	208/230 -3	460 - 3	208/230 -1	208/230 -3	460 - 3
Operating Voltage Range	197 - 253 V	197 - 253 V	414 - 506 V	197 - 253 V	197 - 253 V	414 - 506 V
Compressor Electrical Circuit						
Voltage	208/230V	200/230 V	460 V	208/230V	200/230 V	460 V
Rated Load Amps	10.5 A	7.4 A	3.8 A	18 A	11.7 A	6 A
Branch Circuit Selection Current	17.8 A	13	6.5 A	31 A	19 A	11 A
Lock Rotor Amps	79 A	73	38 A	144 A	110 A	52 A
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Outdoor Fan Motor & Condenser Fan						
Outdoor Fan Motor Horsepower - RPM	1150	1150	1150	1150	1150	1150
Outdoor Fan Motor - Amps	9.6 A	9.6 A	3.5 A	9.6 A	9.6 A	3.5 A
Outdoor Fan - Diameter and CFM	4,400	4,400	4,400	4,400	4,400	4,400
ndoor Motor Type	ECM	ECM	ECM	ECM	ECM	ECM
Indoor Blower Motor & Indoor Airflow						
Indoor Blower Motor - HP - Speeds	3/4 - 5	3/4 - 5	3/4 - 5	3/4 - 5	3/4 - 5	3/4 - 5
Indoor Blower Motor - Amps	3.5	3.5	1.5 A	7.5 A	7.5 A	1.7 A
Indoor Motor Type	ECM	ECM	ECM	ECM	ECM	ECM
Rated indoor CFM and static pressure (ESP) with wet coil and Standard filter	1150	1150	1150	1700	1700	1700

COOLING APPLICATION DATA AT RATED AIRFLOW

MODEL	EER	INDOOR RETURN AIR (DB/WB)	CFM INDOOR	CFM OUTDOOR	Dry Bulb Outdoor Air Temperature Entering Unit Condenser Area				
					COOLING CAPACITY (BTUH)	95°F	82.5°F	72°F	69°F
WP036	11	80 / 67°F	1150	4400	Total Cooling	35,041	37,979	39,944	40,138
					Sensible cooling	27,526	28,309	29,040	29,098
WP060	11	80°F / 67°F	1700	3466	Total Cooling	57,364	60,650	63,520	64,845
					Sensible cooling	42,017	43,173	44,331	44,605

UNIT STORAGE

Essential Precautions for Storing the Unit on the Ground

The Wallpack is designed for outdoor use; however, specific project requirements may necessitate storing the unit on the ground temporarily. When storing the Wallpack on the ground, it's crucial to observe the following precautions:

- Delay Unboxing: Wait to open the box containing the unit until construction activities are complete to prevent damage or exposure to elements.
- Ensure Proper Support: Ensure the unit is adequately supported along its base guide to prevent structural stress or deformation.
- Level Placement: Ensure the unit is positioned and leveled to prevent kinks or unevenness, which could create an accident by falling.
- Provide Drainage: It is essential to provide adequate drainage around the unit to prevent water accumulation, which could lead to flooding or damage to the equipment.
- Protect Against Hazards: Take measures to protect the unit from potential hazards such as vandalism, mechanical contact, or other environmental factors that could compromise its integrity or functionality.

By adhering to these precautions, you can ensure the safe storage of the Wallpack unit during construction, mitigating potential risks and ensuring optimal performance upon installation.

BEFORE INSTALLING

The unit has 4 fastenings located at the bottom corners attached to the structure and the pallet. These pieces prevent dangerous movement of the machine, thus preventing damage to the equipment during transportation. Before proceeding with the installation, it is necessary to remove these fastenings. To perform this procedure, follow the steps below:

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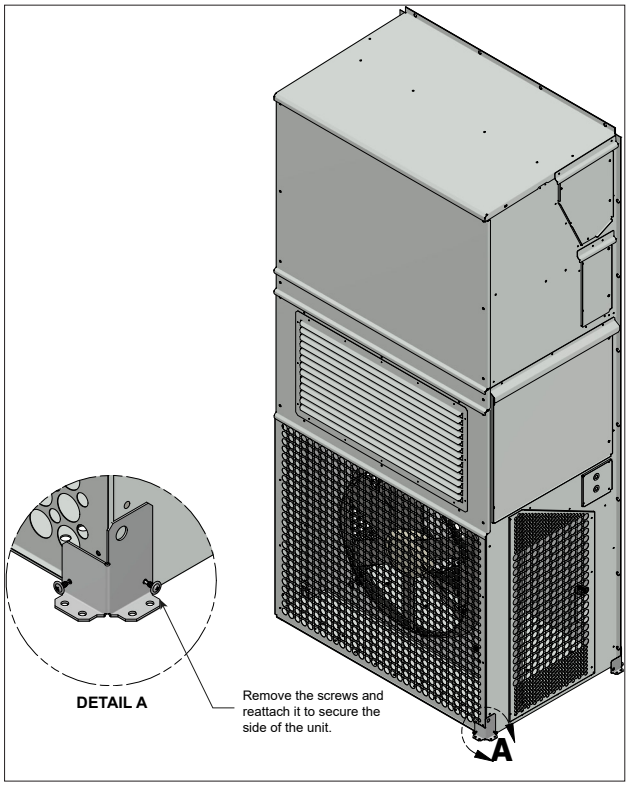
1. Remove the 2 corner pieces located at the rear bottom of the unit.
2. Next, remove the 2 bottom front corner pieces. These are attached to the equipment's structure with one of the screws that secure the sides. Therefore, once you remove the corner pieces, reattach the screw to the side. (See Figure 1).

Figure 1. Removal of support corner brackets.



DUCTWORK

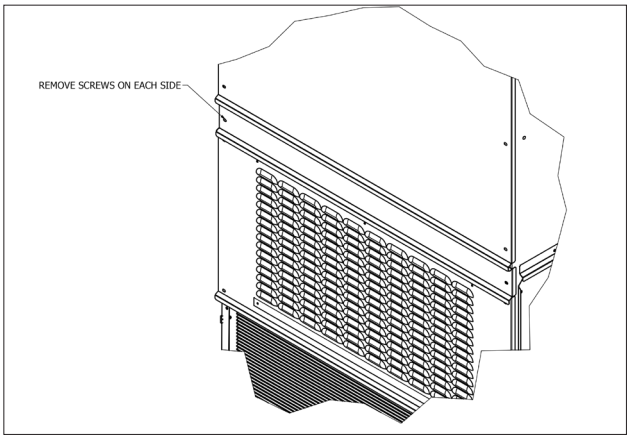
All ductwork, supplies and returns, must be properly sized to meet the equipment's airflow design requirement. You refer to Air Conditioning Contactors of America (ACCA), is an excellent guide to proper sizing.

Where ducts pass through unheated spaces, they should be insulated with a minimum of 1" of insulation. Flexible joints should be used to connect ductwork to equipment to minimize noise transmission.

FILTER

The filters can be serviced from the outside by removing the Air Filter access (See Figure 2).

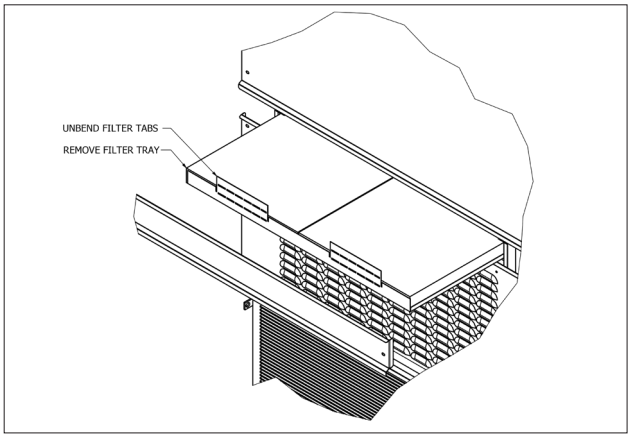
Figure 2. Remove the air filter acces.



Filter Installation / Removal

1. Remove the two screws located on each side of the filter cover (See Figure 2).
2. Slide the filter tray outwards from the unit.
3. Carefully unbend the filter tabs that are pointing upwards (See Figure 3).
4. Install the new filters and then reverse the sequence of steps for the installation of the new filter.

Figure 3. Removing filters.

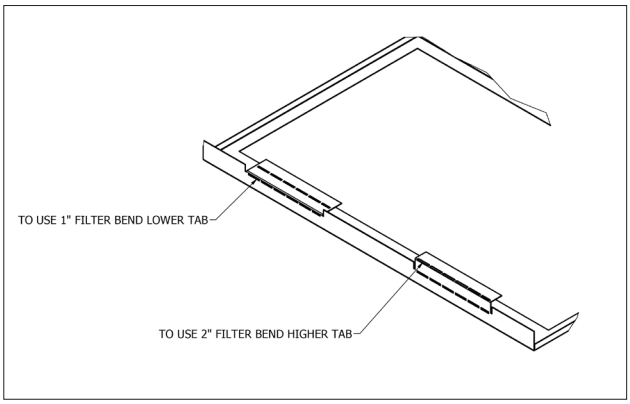


NOTE: When installing new filters, make sure that airflow arrows on filters point up.

Switching Filter Sizes

1. To switch from 1" to 2" filters, start by removing the filter slide and bend the tabs down out of the way (See Figure 4).

Figure 4. Switching filter sizes.

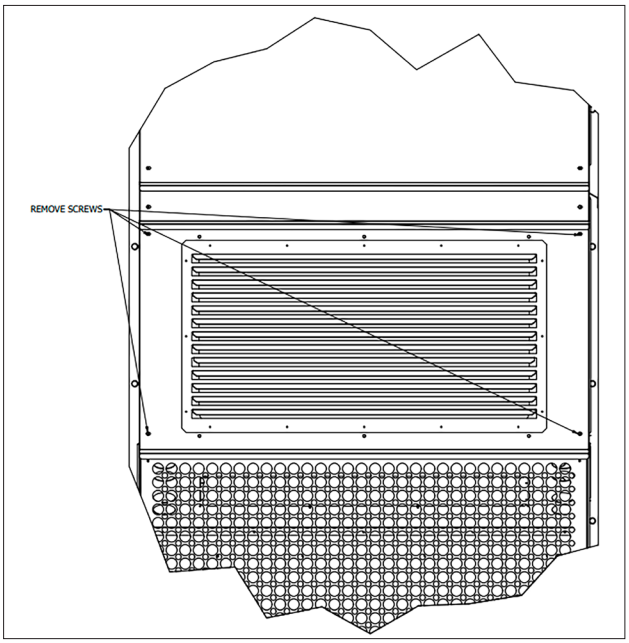


FRESH AIR DAMPER

All standard models are equipped with a fresh air inlet positioned internally within the unit, behind the front grill. This inlet is strategically designed to facilitate the recirculation or supply of fresh air from the exterior into the room. The dampers are initially configured in the closed position by default at the factory and require user intervention for adjustment if desired.

To access the damper, users must remove the four (4) screws securing the front grill cover. (See Figure 5)

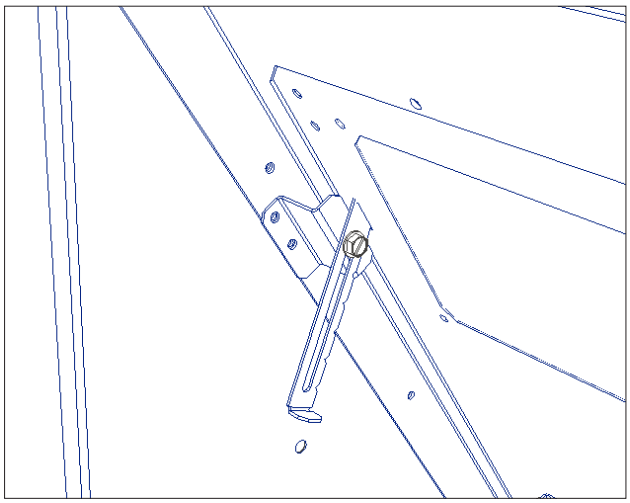
Figure 5. Fresh Air Damper



For adjusting the airflow to meet specific building requirements, the damper blade offers six distinct positions. After removing the four (4) screws securing the front grill, remove the screw holding the damper blade, located on the interior left wall of the opening. This action enables a complete opening of the damper. To regulate the volume of fresh air entering the unit, users can position the damper blade to their desired setting. (See Figure 6)

It is imperative not to leave the damper without the blade, as it may remain open and fail to close when the unit is turned off, resulting in continuous airflow.

Figure 6. Adjustable Blade



BASIC INSTALLATION DEVELOPMENT AND APPLICATION PLANNING

Successful equipment installation requires proper planning and site inspection before installation begins. Before installing a wall-mounted device, ensure that all maintenance and airflow clearances are met and that the device complies with all applicable standards and regulations. Inspect the structure's interior and exterior by checking the floor plan and verifying the installation location.

Wall Construction

You need to check if the wall can support the device's weight. Read all applicable building codes and regulations, including seismic requirements. When inspecting wood-framed walls, the wall structure must be strong and solid enough to support the weight of the equipment without transmitting vibrations. Structural members within the wall cavity must support the side unit wall mounting tabs and optional bottom bracket.

Concrete blocks and brick walls must be thoroughly inspected to ensure they can support the weight of the installed unit. Metal buildings must include structural components that support the weight of the unit. Corrugated panels may need to be cut and trimmed to create a flat, leveled surface to attach and seal the unit to the wall.

It may be necessary to install metal plates in the corrugated area for thick corrugations in shipping containers. The area of the appliance must be weatherproof and sealed to prevent air or water from entering the area between the appliance and the wall.

Visual Inspection

Inspect the exterior of your construction site and review construction plans to identify areas where you will install the wall mount. The outdoor area must be free of obstacles such as fences, bushes, walls, etc., that interfere with the operation of the device in terms of air circulation of the outdoor condenser and ease of maintenance of the device.

Do not install the device in an enclosed space where airflow is restricted at ambient temperatures. Warm air should be exhausted from the front condenser section of the unit, allowing outside temperature air to enter the side condenser inlet opening of the unit. Portable or modular building arrangements must ensure the wall units receive a constant outside air supply for proper operation.

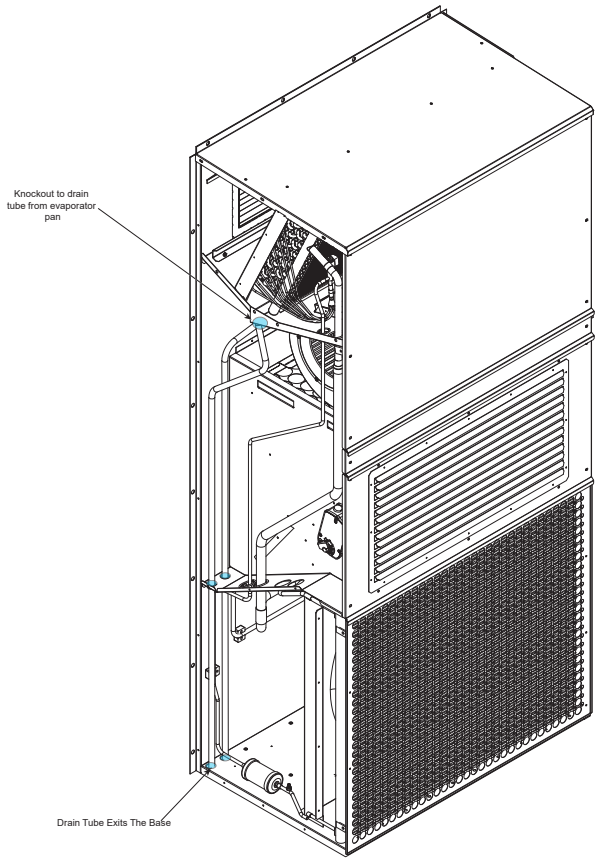
Make sure you can access the maintenance hatch on your device. Inspect walls for obstructions that may interfere with equipment installation or maintenance, such as outdoor electrical wiring, junction boxes, wall drains, exhaust hoods, windows, doors, overhangs, and supports.

Draining Condensate

Condensate drainage needs to be planned before installation. Check all regulations and requirements for equipment condensate drainage. A clear, flexible PVC drain hose (3/8 " ID) runs from the drain pan on top of the unit to the bottom. The rear of the equipment base has an opening for the drain hose to drain, and the hose extends 1 to 2 inches below the equipment base (See Figure 7).

During cooling, a large amount of moisture (condensed water) removed from the indoor air is discharged outside the device via the hose. If you operate the appliance in cooling mode at cold outside temperatures below freezing, the condensed water from the drain hose may freeze. If the drain hose is connected to any drainage system, it must be open or vented to ensure proper drainage throughout seasonal use.

Figure 7. Condensate Water Drainage



DUCTED AND NON-DUCTED INDOOR APPLICATIONS

Air distribution within a conditioned building plays a vital role in maintaining a constant temperature in the area. Improper air distribution can cause areas to become cold or warm, electrical equipment may not receive enough airflow, and the area may feel uncomfortable. Placing a thermostat or room temperature sensor within the conditioned area also plays a vital role in indoor temperature control.

Indoor Supply Air Flow

Indoor installation areas must provide an unobstructed path for the conditioned supply air to exit the supply air grilles and registers. Check the area to ensure that air can be supplied to all room areas. Ducts may be used to ensure proper air circulation. All specified piping guidelines and distances must be adhered to.

An air supply louver grill installed over the interior air supply opening should be used for non-ducted applications. Ensure the supply air deflector is adjusted to distribute the conditioned supply of air so that the conditioned supply air is properly distributed to all parts of the room. Avoid closing sections of the supply grille, as this may unnecessarily pressurize the supply channels.

Indoor Return Air Flow

There must be an unobstructed path through the room to return room air to the central part of the device. Do not place furniture, electronics, equipment racks, cabinets, etc., in front of appliance return grills or registers. At least 2 feet of distance between solid objects and return grilles or registers is recommended.
Ducts can be used to ensure proper air circulation. All specified piping guidelines and distances must be adhered to. Return air louvers installed in the indoor return air openings should be used for non-ducted applications.

Ducted Applications

Field-fabricated supply and return ducts can be installed within the conditioned structure. Before installing the unit, supply and/or return branch ducts can be connected to the supply and return flanges of the unit to facilitate duct connections within the structure. Supply and return ducts must be appropriately sized to match the unit's airflow design requirements. Air Conditioning Contractors of America (ACCA) is an excellent guide for proper sizing.

Piping or portions not within the conditioned space must be adequately insulated to save energy, reduce thermal conductivity, and prevent damage from condensation and moisture. Pipping should be designed according to the American Air Conditioning Contractors (ACCA) method. If the piping is installed in an unheated space, it must be insulated with at least 1 inch of insulation. Use insulation with a vapor barrier on the outside of the insulation.

Flexible joints should be used to connect the ductwork to the equipment to keep the noise transmission to a minimum. Ducts through the walls must be insulated, and all joints must taped or sealed to prevent air or moisture from entering the wall cavity.
All model series require a 1/4" clearance to combustible material for the first 3" of duct attached to the outlet air frame. See instructions on page 19, Figure 13.

Free Blow Applications

Some installations may not require extensive supply ductwork throughout the structure and are referred to as free blow applications. A short field-fabricated supply duct must be used in the wall cavity to transition between the supply collar on the unit and the supply louver grille in the room. This field-fabricated duct must be adequately insulated to conserve energy, reduce heat conductivity, and prevent condensation or moisture damage. All joints must be taped or sealed to avoid air or moisture entering the wall cavity. Follow all clearances, including distances to combustible materials and instructions in this manual.

A metallic return air grille is required for non-ducted applications. The spacing between louvers on the grille shall not exceed 5/8". It is recommended that a Clima Flex Return Air Grille Kit explicitly designed for the wall mount product be installed. Contact your local product distributor for ordering information.

A field-supplied return grille that meets the 5/8" louver criteria and does not cause the unit to exceed the maximum specified external static pressure (ESP) may be used (0.4 inWC).

Filter return air grilles do not filter air brought into the structure through ventilation options, including fresh air dampers, ventilators, and economizers. Be sure to install the return grille with the louvers pointed downward towards the floor; this will help ensure return air is drawn upward from the floor and improve air circulation in the room.

NOTE: If no return air duct is used, applicable installation codes may limit this cabinet to installation only in a single-story structure.

Thermostat or Indoor Temperature Sensor Placement

The location and installation of the thermostat or temperature sensor that monitors indoor temperature are essential for unit operation. Avoid placing the thermostat in an area exposed to direct sunlight or air from doorways leading outdoors. Use a piece of insulating material to close off conduit openings or holes in the wall surface for wire entry into the thermostat or temperature sensor.

This insulation will help prevent non-conditioned air from entering the thermostat, affecting temperature and/or humidity readings. As standard practice, the thermostat or temperature sensor should measure the temperature of the air being returned to the unit, and not the conditioned air being supplied by the unit. Placing the thermostat or temperature sensor near a return air opening normally results in optimal unit performance.

UNIT INSTALLATION

Before commencing the installation process, it is essential to equip the worksite with the appropriate tools necessary for the installation of the unit. The steps outlined below are designed to guarantee a correct installation on the wall surface, ensuring the unit operates efficiently with minimal maintenance requirements for many years.

Material/Tools List

- Appropriate safety gear, including gloves and safety glasses
- 5/16” hex bit with drill driver
- Phillips head screwdriver
- Small straight (thermostat) screwdriver
- Tape measure
- Leveling device
- Two (2) tubes of caulk and caulk gun
- Utility knife
- Tools for cutting holes in the wall surface (if needed)
- Electrical components and wiring, along with electrical tools
- Multimeter
- Wall fasteners for side flanges, bottom mounting bracket, and top rain flashing
- Duct tape and/or other duct-sealing materials

Wall Preparation Guidelines

Ensuring proper wall preparation is critical for a successful unit installation. Follow these steps meticulously:

1. **Opening Creation:** Cut two openings in the wall for the supply and return air passages, as detailed in Figure 12 on page 18. These openings must be square and leveled accurately. Adhere to all specified clearances, including proximity to combustible materials (See Figure 13 on page 19), and follow the instructions provided in this manual closely.

2. **Electrical Planning:** Thoroughly review the electrical specifications outlined in this manual. Plan the entry points for electrical connections into the building, as well as the routing for electrical conduits and the placement of the thermostat, if applicable.

3. **Ductwork Installation:** Proceed with the installation of the necessary ductwork, preparing the wall openings for the unit’s installation accordingly.

4. **Wall Surface Preparation:** Clean the area of the exterior wall where the unit will be mounted. Ensure the surface is smooth, level, and free from any debris to facilitate a seamless installation.

5. **Debris Removal:** Following the creation of supply, return, and electrical openings, eliminate any resultant construction debris to maintain a clean and safe installation environment.

Mounting

The unit is mounted against the wall, with passages for air running through the wall to the exterior of the conditioned space. The openings for both the supply and return in the wall must be at least 1/4” larger than the unit’s openings on each side to accommodate the installation of the grille (refer to page 14, table 2 for further details). It is critical to level the unit precisely to ensure the efficient flow of refrigerant gas and compressor oil, as well as to facilitate effective condensation drainage.

1. Carefully remove the packaging and inspect the unit for any damages. Ensure all specifications on unit labels and the serial plate on the unit’s side are thoroughly reviewed before proceeding with the installation.

2. Identify and mark the positions for bolt holes and the bottom mounting bracket. If applicable, securely affix the bottom mounting bracket to the wall using field-supplied fasteners, ensuring it is both level and correctly positioned to provide adequate support for the unit during installation (Refer to page 16, Figure 10 for further details).

3. Move the wall mount unit near its intended installation spot on the wall (PER ASME P30.1). Securely attach the rain flashing on the unit’s top edge, facing the wall, by engaging the hem bend with the unit top’s rear bend.

4. Generously apply caulk to the wall mount brackets on both the left and right sides of the cabinet, as well as the rear of the top rain flashing. Align the back surface of the unit flush against the wall, ensuring it is perfectly level to facilitate correct condensate drainage. The use of an optional bottom bracket is recommended for additional support.

5. Secure the units to the wall using fasteners provided by the installer, positioned through the built-in wall mounting brackets on each side. The installer must choose the appropriate fasteners that match the wall's construction material and comply with relevant building codes. Commonly, 5/16" fasteners with 7/8" diameter flat washers are used. Ensure the unit is firmly attached, with all load-bearing fasteners anchored to the wall's structural supports.

6. Apply a bead of caulk along the top back edge of the unit to seal and secure its position.

7. From the building's interior, attach the ductwork to the unit, adhering strictly to all provided clearances and guidelines. To enhance the installation's stability, you may anchor the return and supply air frames or collars directly to the structural wall through drilling and fastening or welding, depending on the wall's material. Use only duct tape or sealing solutions that meet building codes to ensure airtight connections between the ductwork and the unit.

8. For installations involving units placed side by side, ensure there is at least 36 inches of clearance on each side (See Figure 9, on page 15). This space is necessary for accessing the heat strips and ensuring adequate airflow around the outdoor coil. Local or national regulations may necessitate greater clearance distances.

Figure 8. Services Access

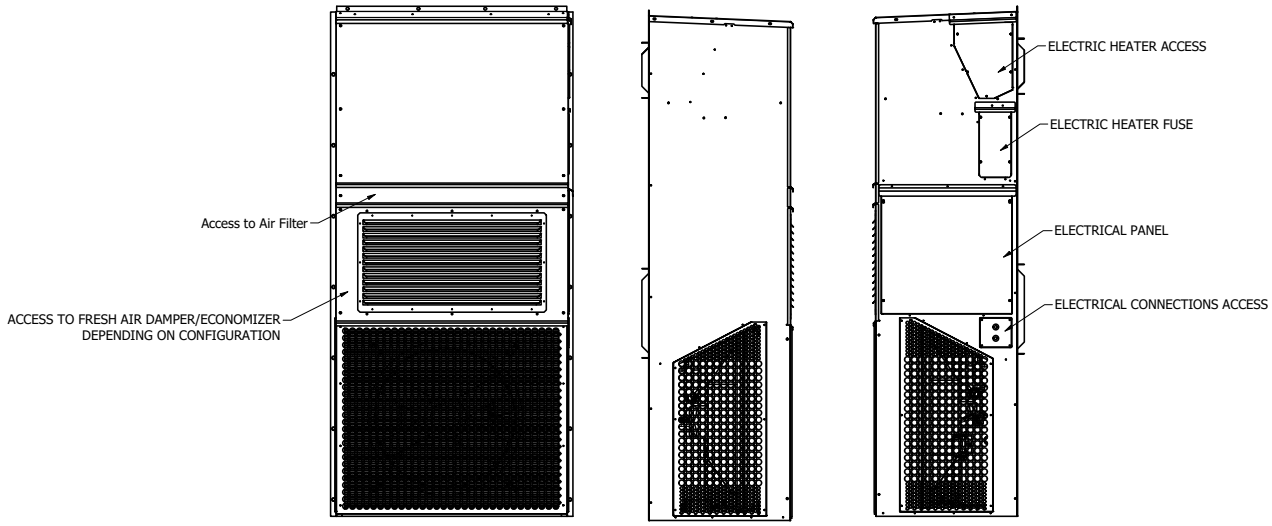


Table 1. Clearance Required For Services Purposes

Model	Left Side	Right Side	Discharge Front
ALL MODELS	36"	36"	36"

Figure 9. Clearance Required For Services Purposes

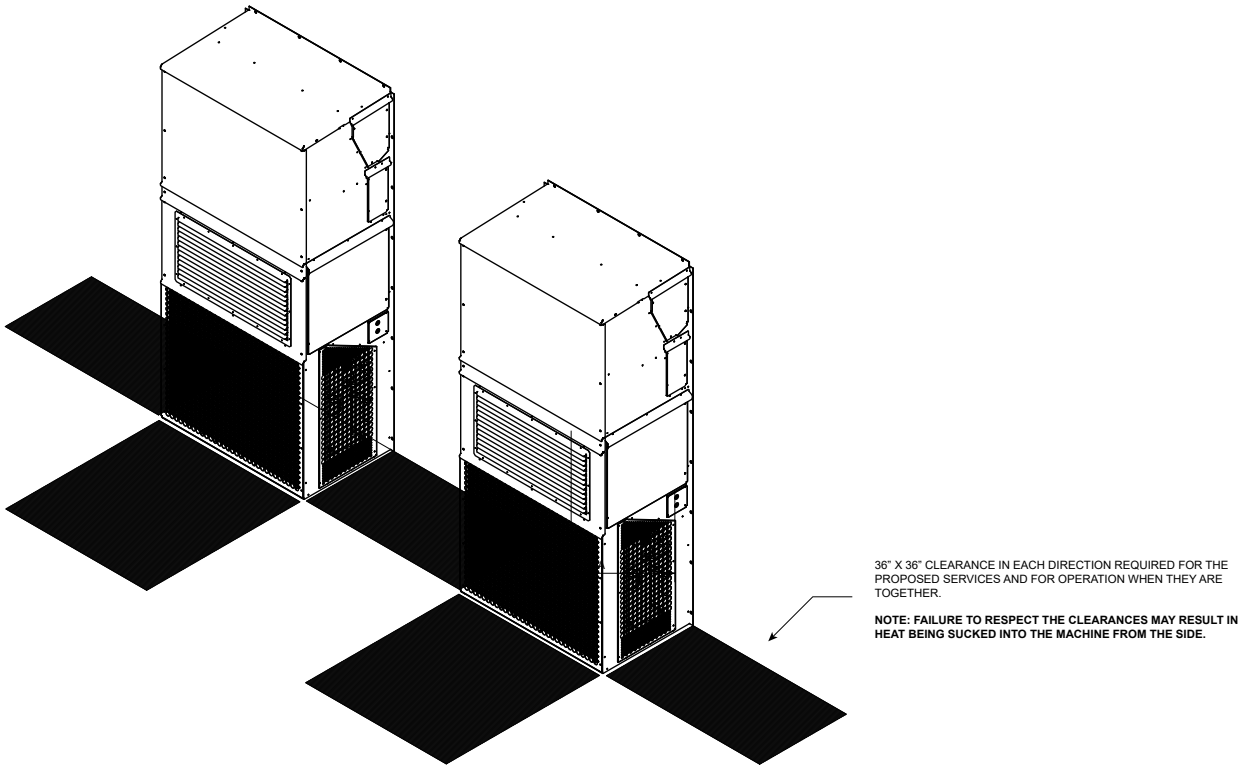
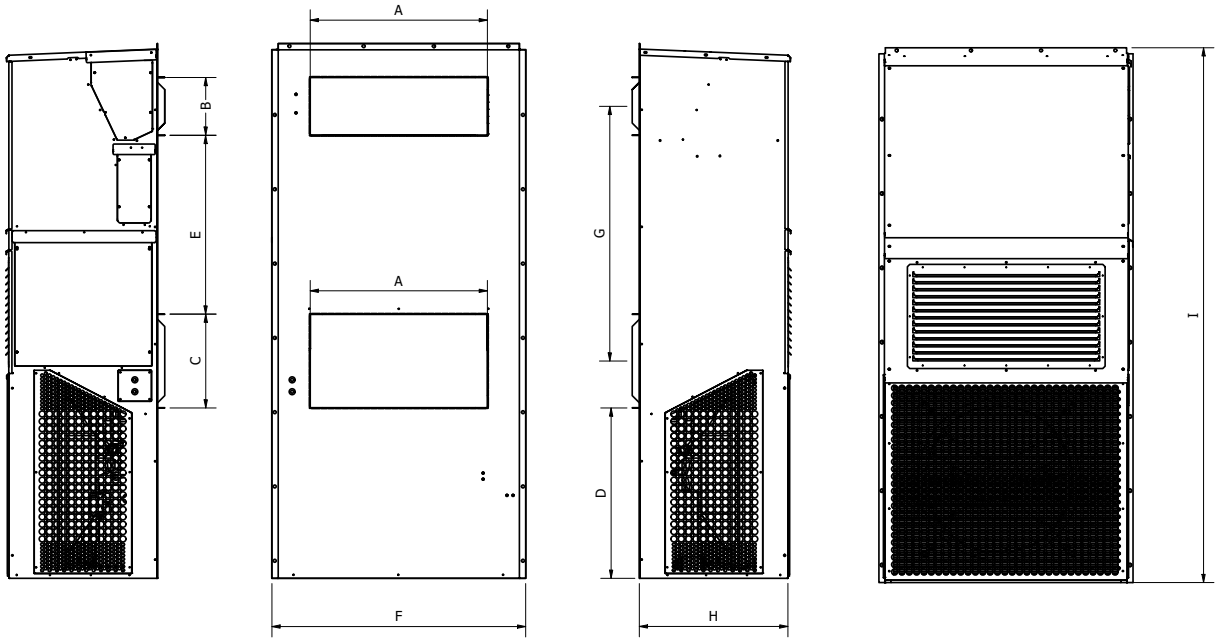


Table 2. Unit Dimensions

Model	Capacity	DIMENSIONS [IN]									
		SUPPLY (A) / (B)		RETURN (A) / (C)		WINDOW POSITION			WIDTH	DEPTH	HEIGHT
						G	D	E	F	H	I
DWP036	3 RT	27.92	7.71	27.92	13.71	28.81	43.65	17.80	42.74	25.49	90
DWP060	5 RT	30	9.88	30	15.88	42.89	28.64	30	42.74	25.49	90

Figure 10. Unit Dimensions



NOTE: Keep area cleared for 36” in front of panel for service purposes.

Figure 11. Position of holes for installation

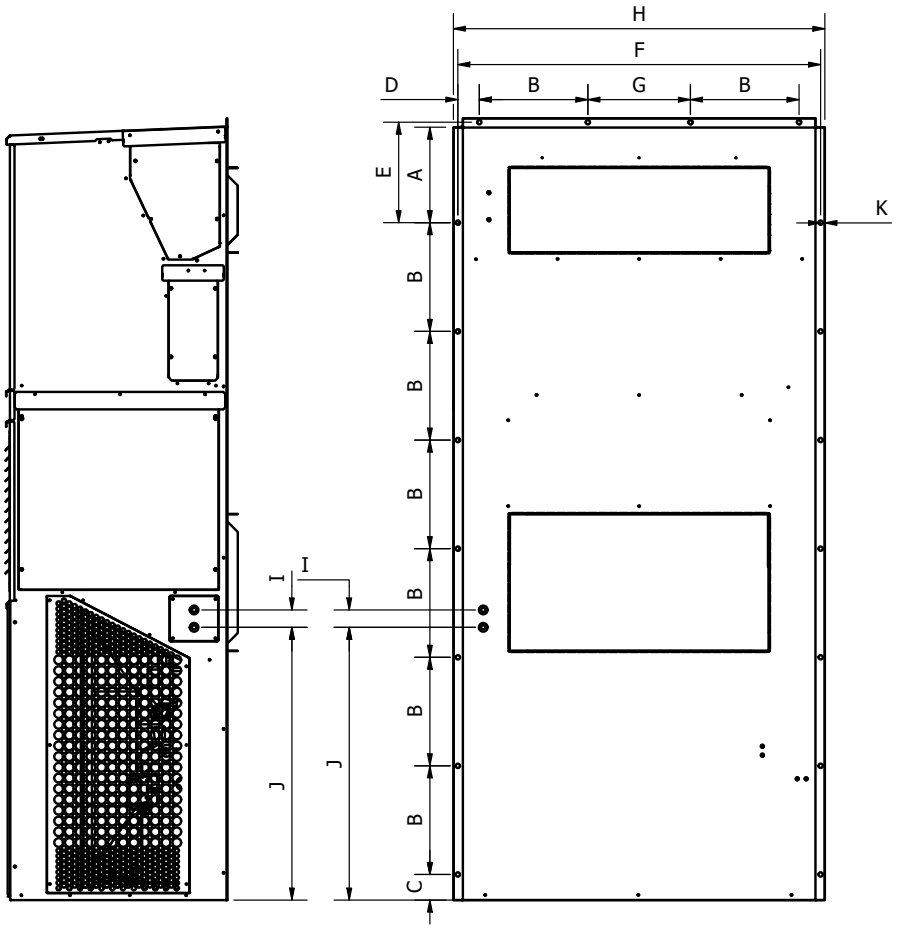


Table 3. Distance between holes

Distance Between Holes											
	A	B	C	D	E	F	G	H	I	J	K
In	10 61/64	12 33/64	2 61/64	2 7/16	11 35/64	41 23/32	11 13/16	42 45/64	2	31 13/32	1/2

Figure 12. Mounting Instructions

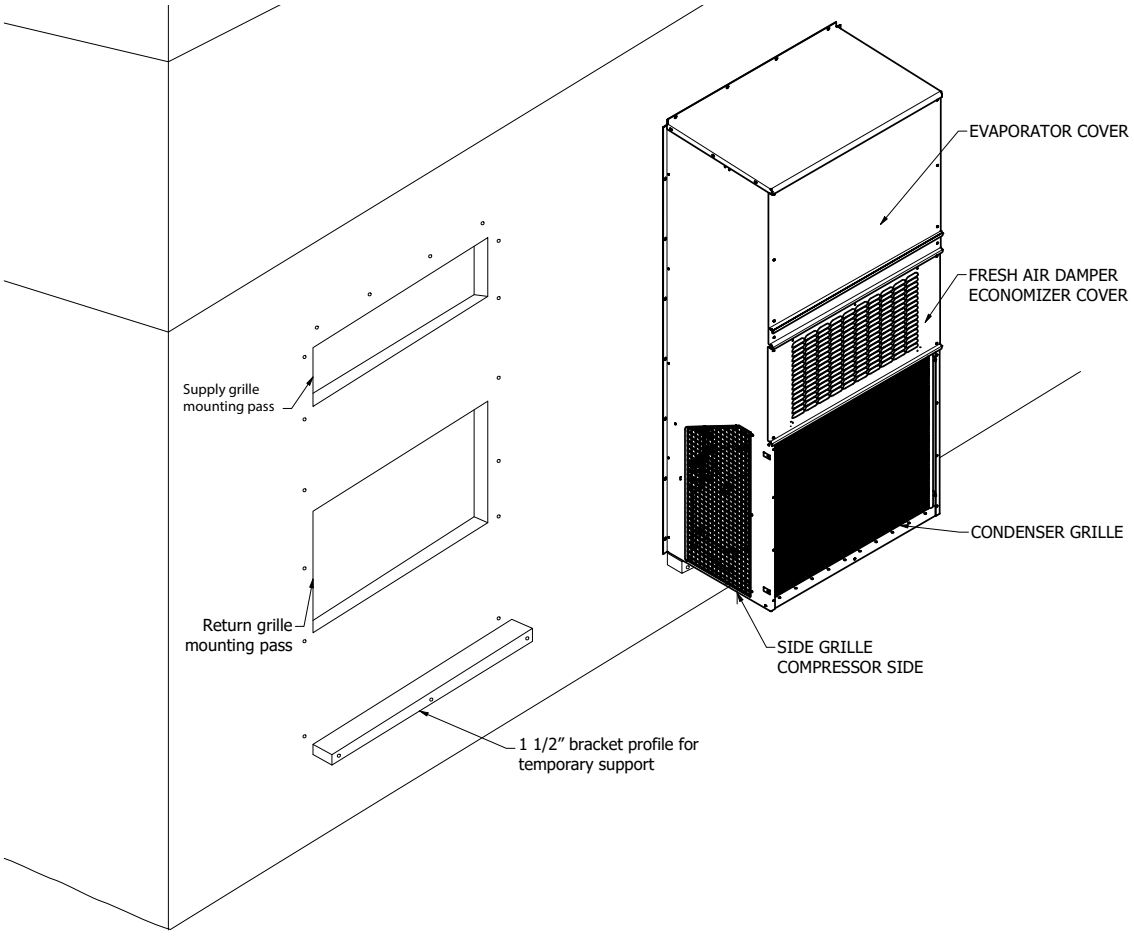
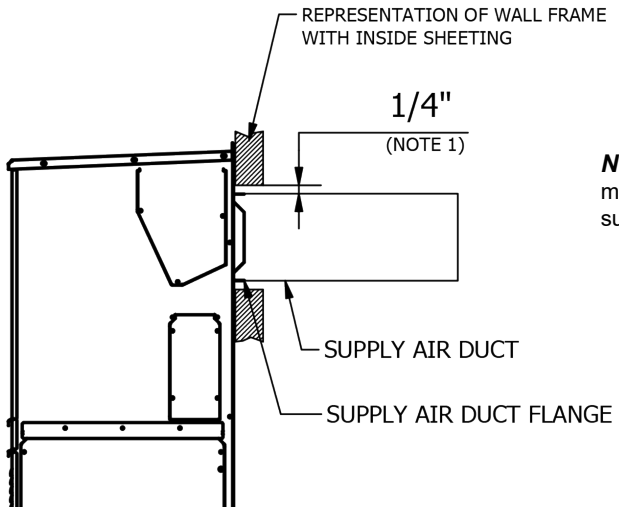


Figure 13. Distance Required For Combustible Surfaces



NOTE 1: Detail side view showing 1/4" minimum distance required between supply air duct from combustible surfaces.

⚠ WARNING ⚠

Fire hazard.

Maintain minimum 1/4" clearance between the supply air duct and combustible materials in the first 3" of ducting.

Failure to do so could result in fire causing damage, injury or death.

⚠ WARNING ⚠

Electric shock danger.

Improper handling of this equipment poses a risk of personal injury and can damage the equipment. It is essential to ensure the equipment is properly grounded.

Only personnel with expertise in operating this equipment should perform connections and maintenance on the control panel.

Always disconnect the electrical power before servicing the equipment. It is critical to install an earth leakage circuit breaker to prevent risks.

Neglecting to install an earth leakage circuit breaker could lead to electric shock or fire hazards.

The main power supply to the unit must originate from a clean and dependable source. Confirm that the voltage delivered to the equipment remains stable throughout the day and aligns with the equipment's specified requirements as indicated on its nameplate. Voltage measurements should be taken at the equipment's field current connection point while it is operating under full load (at maximum current operating conditions).

NOTE: In cases where a field-supplied transformer is utilized to reduce higher input voltages, it is imperative to connect the center leg to ground, especially when employing a high-impedance grounding method.

Each outdoor unit is labeled with a "minimum current capacity," indicating that the field wiring must be capable of handling at least this specified current level.

⚠ DANGER ⚠

Wiring must be conducted by qualified and licensed electricians due to the risk of electrical shock, which can result in serious injury or death.

Electrical connections to the unit must be established using copper wire, ensuring the wire size and quantity are compatible with the equipment's terminals. Consult the National Electrical Code (NEC) for comprehensive ampacity information relevant to different insulation classes of wiring materials.

A single-point power supply necessitates a singular disconnect mechanism to provide electrical power to the unit. This setup must be equipped with a fuse or a circuit breaker, with the fuse value varying based on the unit model.

Three-phase models require the correct phase alignment for operation. A phase monitor is incorporated with all three-phase models to ensure proper phase connectivity. Please refer to the specific section in this document that details the use and functionality of the phase monitor

⚠ CAUTION ⚠

Static discharge can damage components when handling circuit boards.

To prevent this, always use an antistatic strap before conducting any maintenance activities.

Additionally, ensure you do not unplug cables, circuit board terminal blocks, or plugs while the panels are energized.

Use With On-Site Generators

When onsite generators are used, transitioning between the main site power and generator power (and vice versa) requires shutting down the equipment or disconnecting the power for more than five seconds. This precaution prevents the introduction of out-of-phase voltage. To ensure seamless power transfer while the equipment is under load, it is essential to have a properly installed and fully synchronized automatic transfer switch.

Generator Sizing

⚠ WARNING ⚠

The generator should be sized by an electrical engineer familiar with generator applications.

WIRING-LOW VOLTAGE

For low voltage wiring, all 230/208V single-phase and three-phase equipment come equipped with dual primary voltage transformers. By default, the equipment is factory-set to the 240V tap. To adapt the equipment for 208V operation, you should switch the connection from the 240V tap to the 208V tap. The acceptable operating voltage ranges for both the 240V and 208V taps will be specified in the equipment documentation.

⚠ WARNING ⚠

Always halt the unit prior to switching power from the generator to the mains. Initiating power transfer while the equipment is operational can lead to significant damage to the unit.

NOTE: Voltage measurements should be taken at the unit's field power connection point during operation under full load (maximum amperage operating condition) to ensure accuracy.

For low voltage wiring, it is recommended to use an 18 gauge copper cable that is color-coded for easy identification.

NOTE: Refer to the electrical wiring diagram for fuse information (Example: F20A600V).

⚠ WARNING ⚠

When installing the ground leakage protector make sure that it is compatible with the inverter (resistant to high frequency electrical noise) to avoid unnecessary opening of the ground leakage protector.

Fuse Nomenclature

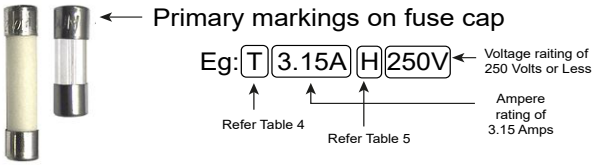


Table 4. Fuse element velocity markings

MARK	FUSE ELEMENT VELOCITY
SS	Very fast acting (Flink Flink)
F	Fast acting (Flink)
M	Medium acting (Mitterltrage)
T	Slow acting (Trage)
TT	Very slow acting (Trage Trage)

Table 5. Fuse element velocity markings

MARK	BREAKING CAPACITY
H	High breaking capacity
L	Low breaking capacity

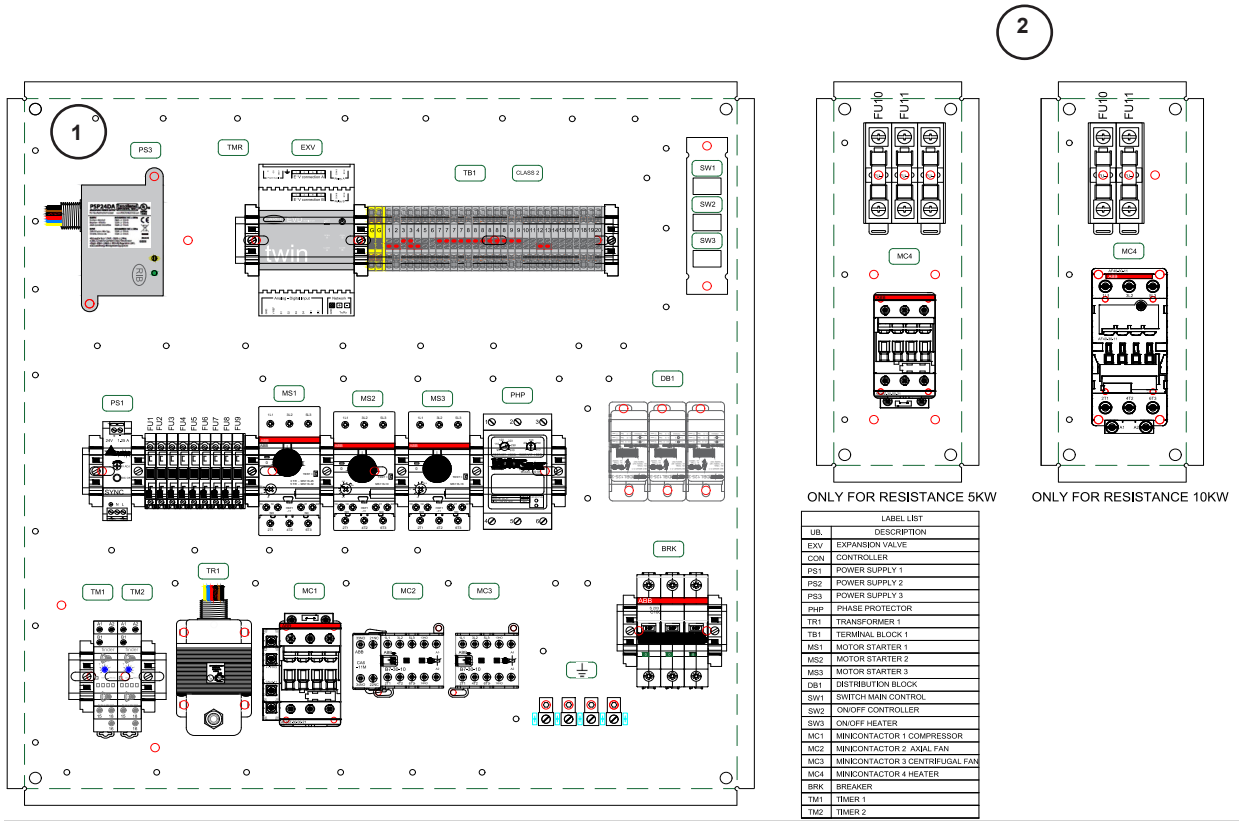
Protective ground (GND)

This symbol is used to identify any terminal intended to be connected to an external conductor for protection against electric shock in the event of a fault, or the terminal of a protective grounding electrode.

Table 6. Maximum overcurrent protection and Minimum circuit amperage

RT/UN	Voltage	PH	MCA	MOP
3	208-230	1	42.5	57.25
3	208-230	1	53.13	76.38
3	208-230	3	37.63	48.48
5	208-230	3	41.5	55.45
3	460	3	14	19.2
5	460	3	16.75	24.15

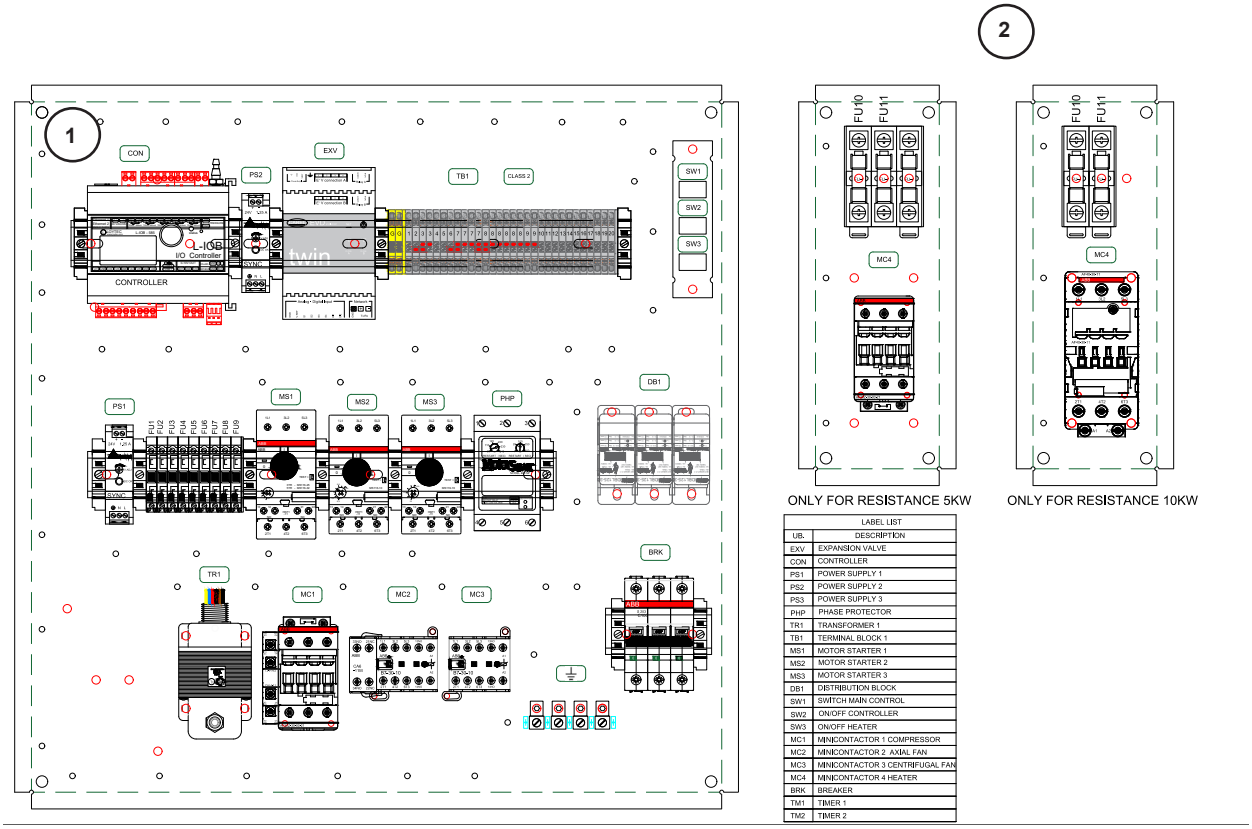
Figure 14. Layout Of Thermostat 3 and 5 RT 208-230/1/60 Models



NOTE: The board 2 is included only if a custom manufactured model with electric heater is requested. Otherwise, the unit is shipped with its main board 1 only.

For wiring information, refer to figures 16 and 17 starting from page 24.

Figure 15. Layout Of Loytec 3 and 5 RT 208-230/1/60 Models



LABEL LIST	
UB.	DESCRIPTION
EXV	EXPANSION VALVE
CON	CONTROLLER
PS1	POWER SUPPLY 1
PS2	POWER SUPPLY 2
PS3	POWER SUPPLY 3
PHP	PHASE PROTECTOR
TR1	TRANSFORMER 1
TB1	TERMINAL BLOCK 1
MS1	MOTOR STARTER 1
MS2	MOTOR STARTER 2
MS3	MOTOR STARTER 3
DB1	DISTRIBUTION BLOCK
SW1	SWITCH MAIN CONTROL
SW2	ON/OFF CONTROLLER
SW3	ON/OFF HEATER
MC1	MINICONTACTOR 1 COMPRESSOR
MC2	MINICONTACTOR 2 AXIAL FAN
MC3	MINICONTACTOR 3 CENTRIFUGAL FAN
MC4	MINICONTACTOR 4 HEATER
BRK	BREAKER
TM1	TIMER 1
TM2	TIMER 2

NOTE: The board 2 is included only if a custom manufactured model with electric heater is requested. Otherwise, the unit is shipped with its main board 1 only.

For wiring information, refer to figures 16 and 17 starting from page 24.

Figure 16. Power Diagram 3 and 5 RT 208-230/1/60 Models

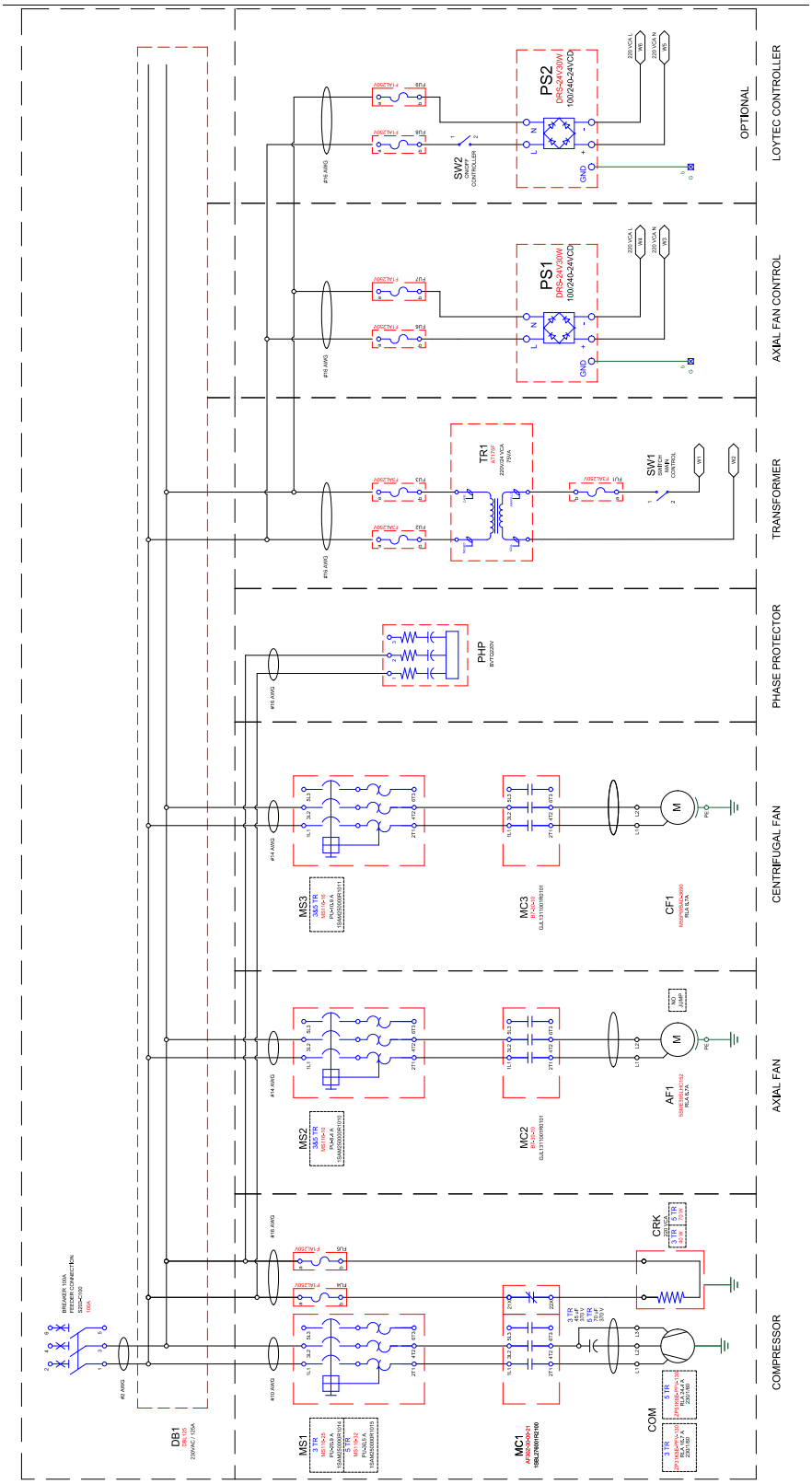


Figure 17. Heater Power Diagram 3 and 5 RT 208-230/1/60 Models

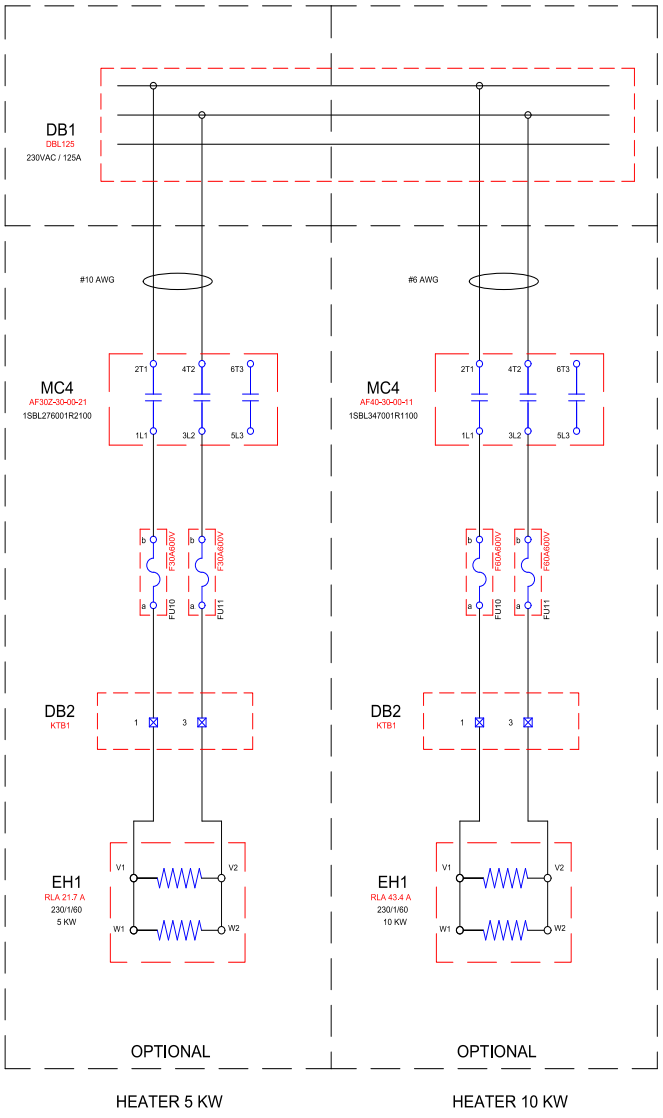
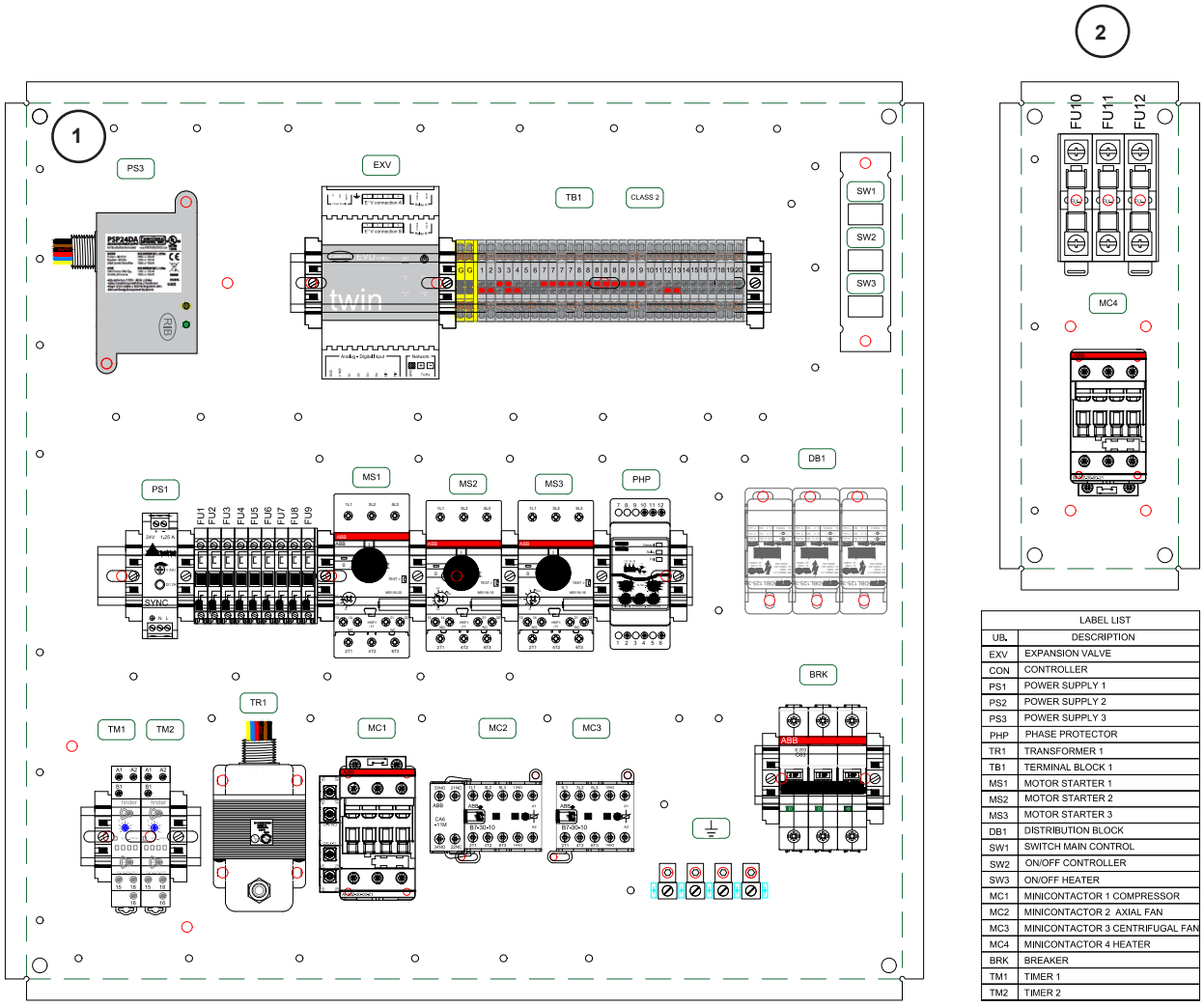


Figure 18. Layout Of Thermostat 3 and 5 RT 208-230/3/60 Models

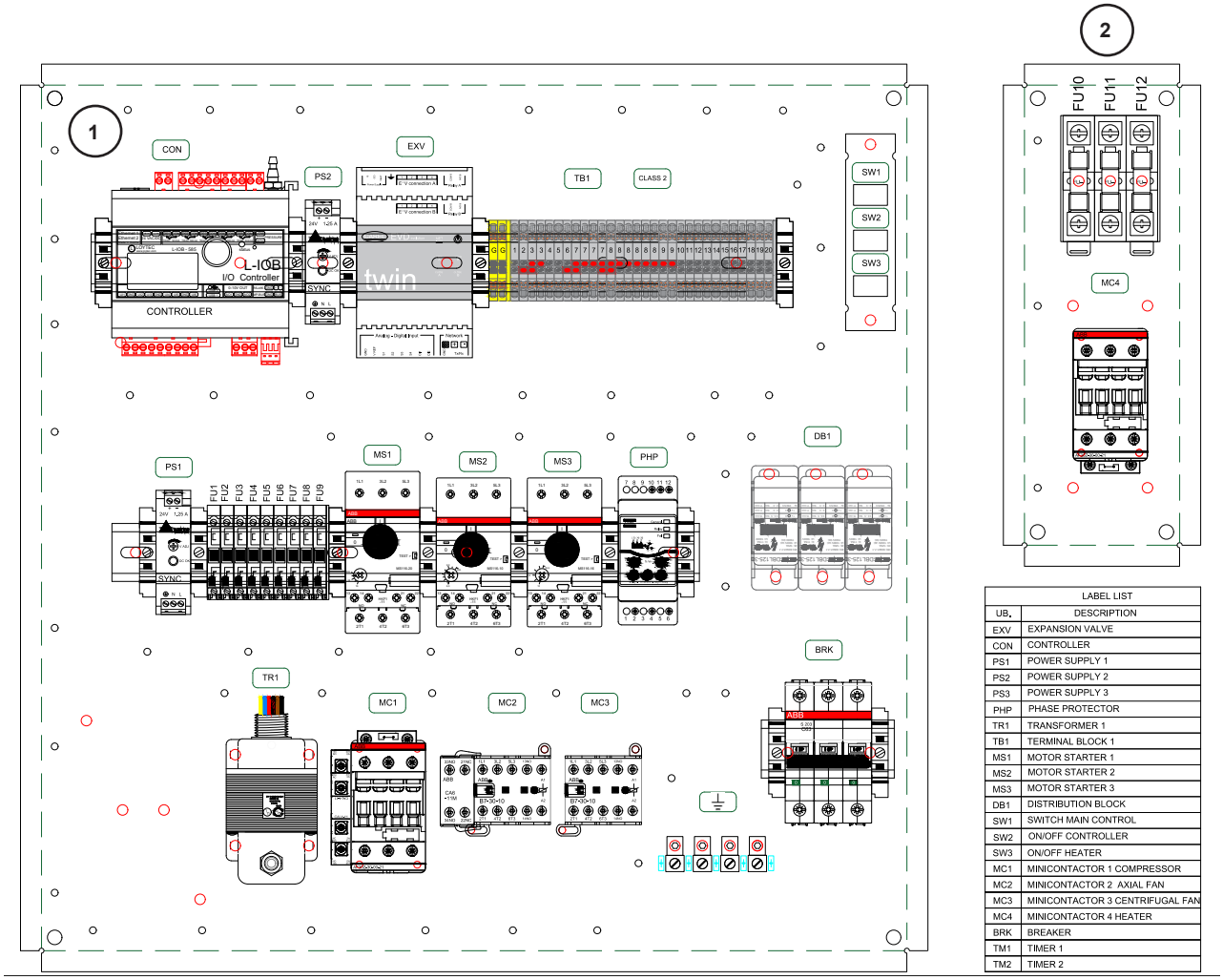


LABEL LIST	
UB.	DESCRIPTION
EXV	EXPANSION VALVE
CON	CONTROLLER
PS1	POWER SUPPLY 1
PS2	POWER SUPPLY 2
PS3	POWER SUPPLY 3
PHP	PHASE PROTECTOR
TR1	TRANSFORMER 1
TB1	TERMINAL BLOCK 1
MS1	MOTOR STARTER 1
MS2	MOTOR STARTER 2
MS3	MOTOR STARTER 3
DB1	DISTRIBUTION BLOCK
SW1	SWITCH MAIN CONTROL
SW2	ON/OFF CONTROLLER
SW3	ON/OFF HEATER
MC1	MINICONTACTOR 1 COMPRESSOR
MC2	MINICONTACTOR 2 AXIAL FAN
MC3	MINICONTACTOR 3 CENTRIFUGAL FAN
MC4	MINICONTACTOR 4 HEATER
BRK	BREAKER
TM1	TIMER 1
TM2	TIMER 2

NOTE: The board 2 is included only if a custom manufactured model with electric heater is requested. Otherwise, the unit is shipped with its main board 1 only.

For wiring information, refer to figures 20 and 21 starting from page 28.

Figure 19. Layout Of Loytec 3 and 5 RT 208-230/3/60 Models



LABEL LIST	
UB.	DESCRIPTION
EXV	EXPANSION VALVE
CON	CONTROLLER
PS1	POWER SUPPLY 1
PS2	POWER SUPPLY 2
PS3	POWER SUPPLY 3
PHP	PHASE PROTECTOR
TR1	TRANSFORMER 1
TB1	TERMINAL BLOCK 1
MS1	MOTOR STARTER 1
MS2	MOTOR STARTER 2
MS3	MOTOR STARTER 3
DB1	DISTRIBUTION BLOCK
SW1	SWITCH MAIN CONTROL
SW2	ON/OFF CONTROLLER
SW3	ON/OFF HEATER
MC1	MINICONTACTOR 1 COMPRESSOR
MC2	MINICONTACTOR 2 AXIAL FAN
MC3	MINICONTACTOR 3 CENTRIFUGAL FAN
MC4	MINICONTACTOR 4 HEATER
BRK	BREAKER
TM1	TIMER 1
TM2	TIMER 2

NOTE: The board 2 is included only if a custom manufactured model with electric heater is requested. Otherwise, the unit is shipped with its main board 1 only.

For wiring information, refer to figures 20 and 21 starting from page 28.

Figure 20. Power Diagram 3 and 5 RT 208-230/3/60 Models

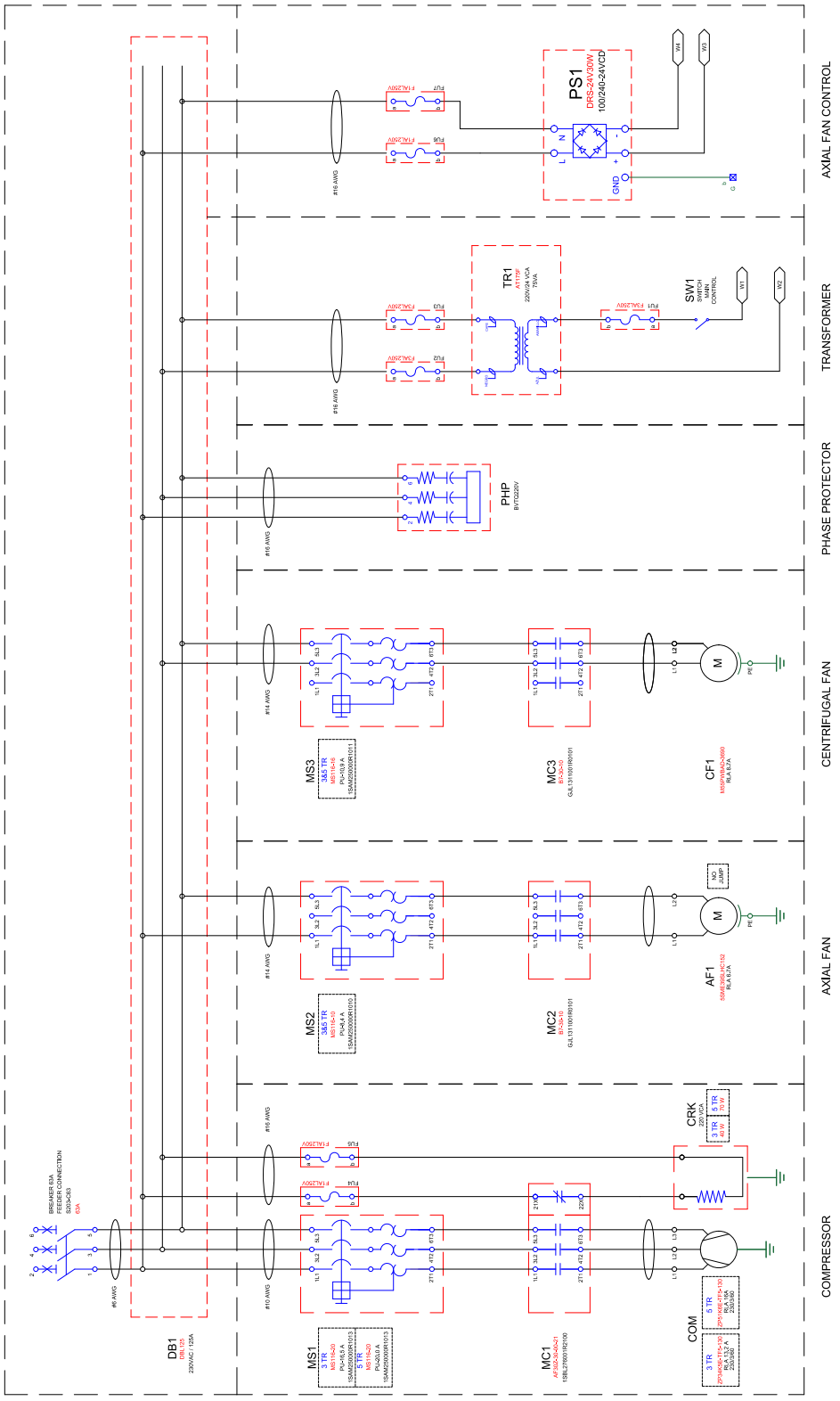


Figure 21. Loytec and Heater Power Diagram 3 and 5 RT 208-230/3/60 Models

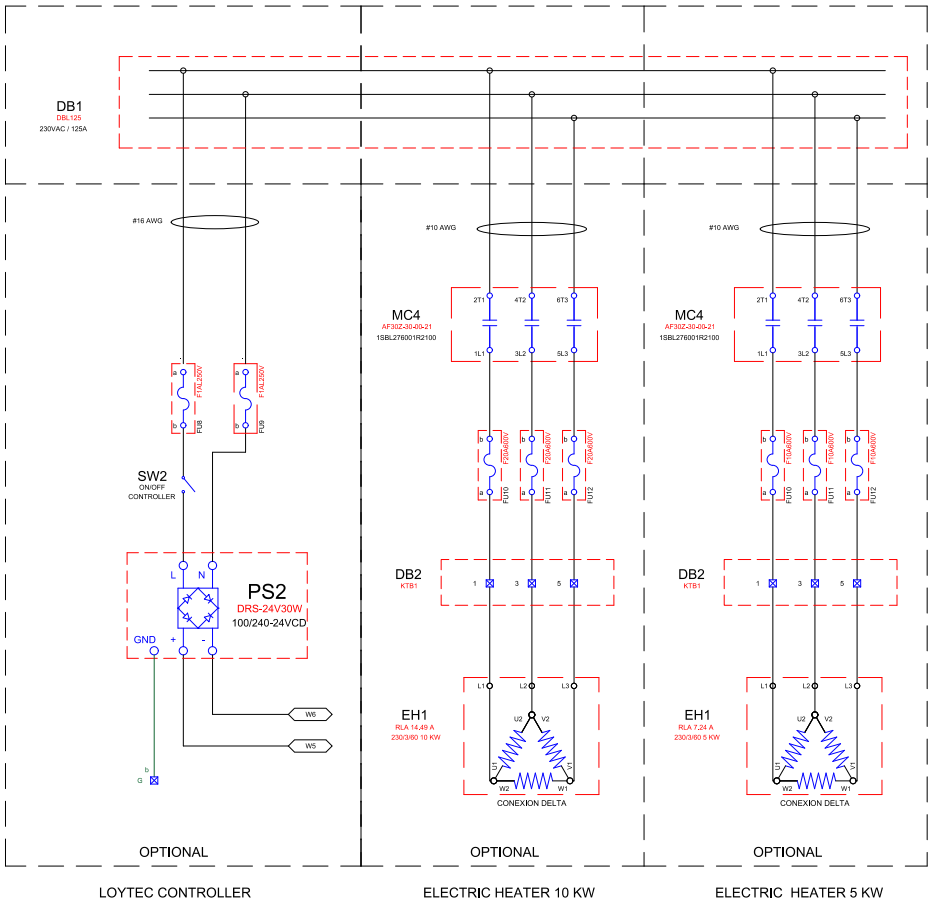
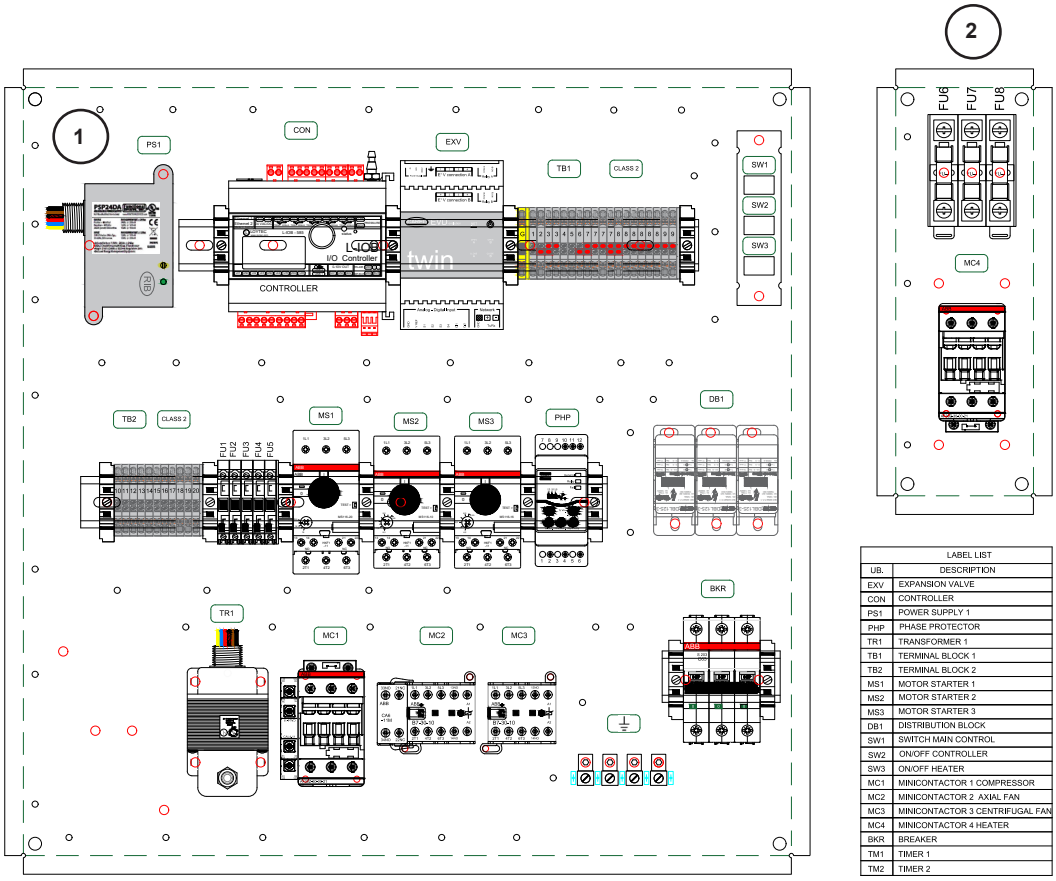


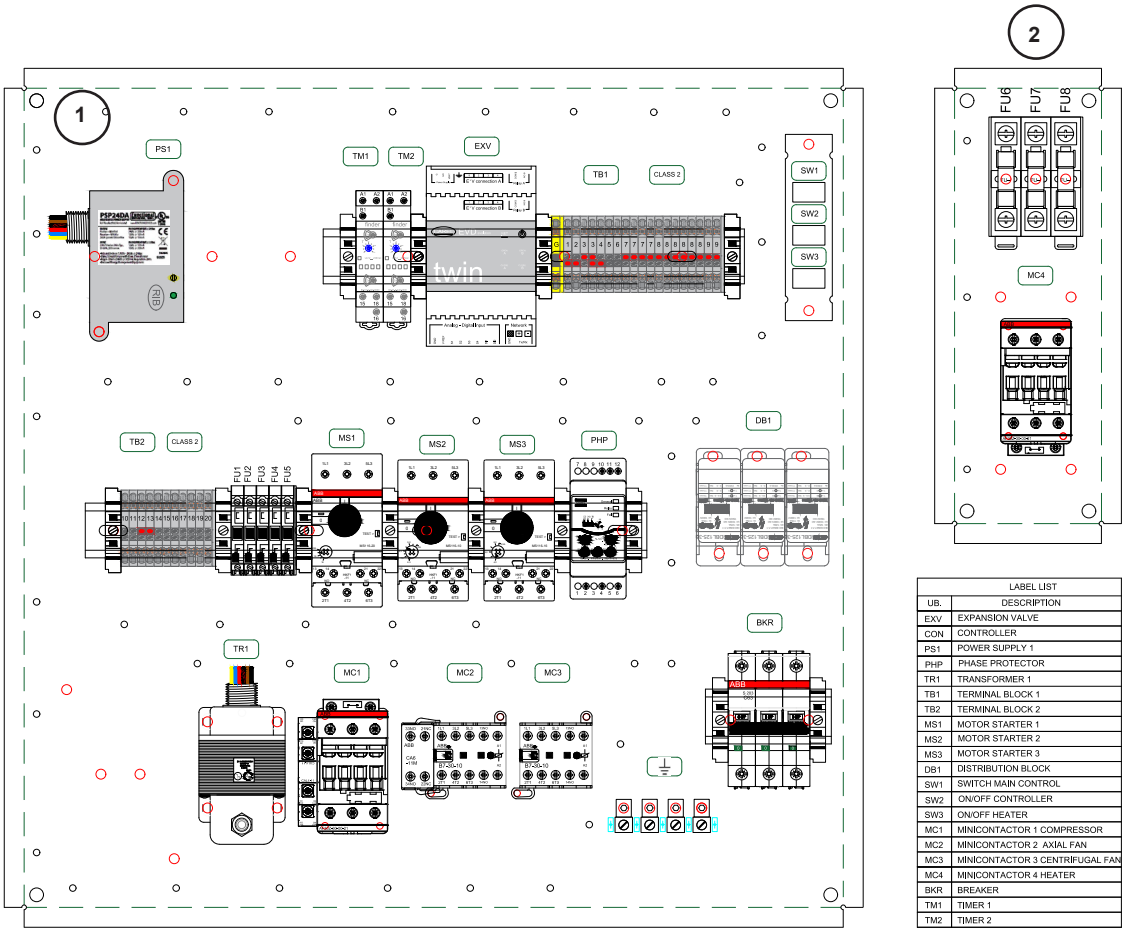
Figure 22. Layout Of Loytec 3 and 5 RT 460/3/60 Models



NOTE: The board 2 is included only if a custom manufactured model with electric heater is requested. Otherwise, the unit is shipped with its main board 1 only.

For wiring information, refer to figures 24 and 25 starting from page 32.

Figure 23. Layout Of Thermostat 3 and 5 RT 460/3/60 Models



LABEL LIST	
UB.	DESCRIPTION
EXV	EXPANSION VALVE
CON	CONTROLLER
PS1	POWER SUPPLY 1
PHP	PHASE PROTECTOR
TR1	TRANSFORMER 1
TB1	TERMINAL BLOCK 1
TB2	TERMINAL BLOCK 2
MS1	MOTOR STARTER 1
MS2	MOTOR STARTER 2
MS3	MOTOR STARTER 3
DB1	DISTRIBUTION BLOCK
SW1	SWITCH MAIN CONTROL
SW2	ON/OFF CONTROLLER
SW3	ON/OFF HEATER
MC1	MINICONTACTOR 1 COMPRESSOR
MC2	MINICONTACTOR 2 AXIAL FAN
MC3	MINICONTACTOR 3 CENTRIFUGAL FAN
MC4	MINICONTACTOR 4 HEATER
BKR	BREAKER
TM1	TIMER 1
TM2	TIMER 2

NOTE: The board 2 is included only if a custom manufactured model with electric heater is requested. Otherwise, the unit is shipped with its main board 1 only.

For wiring information, refer to figures 24 and 25 starting from page 32.

Figure 24. Power Diagram 3 and 5 RT 460/3/60 Models

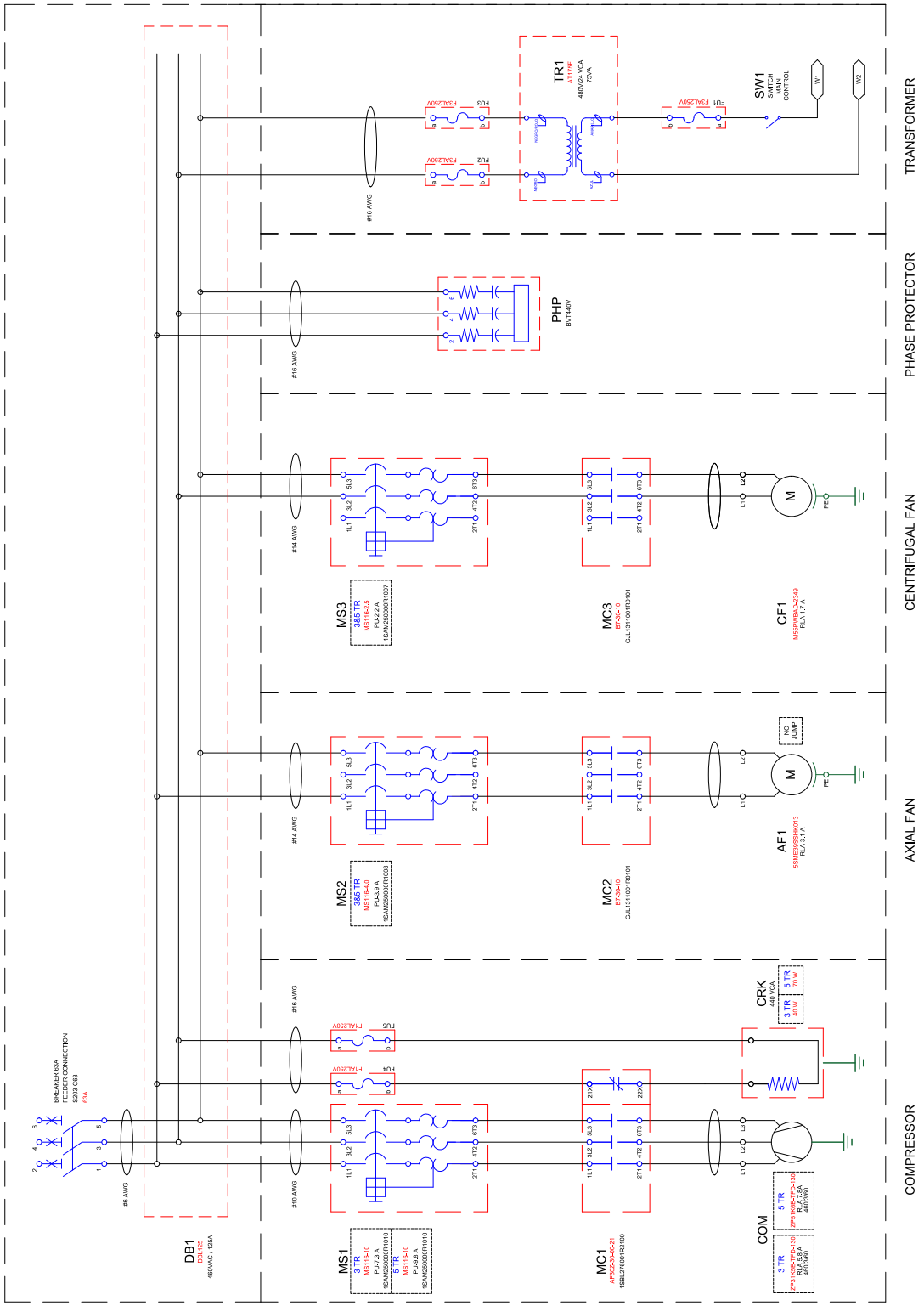


Figure 25. Loytec and Heater Power Diagram 3 and 5 RT 460/3/60 Models

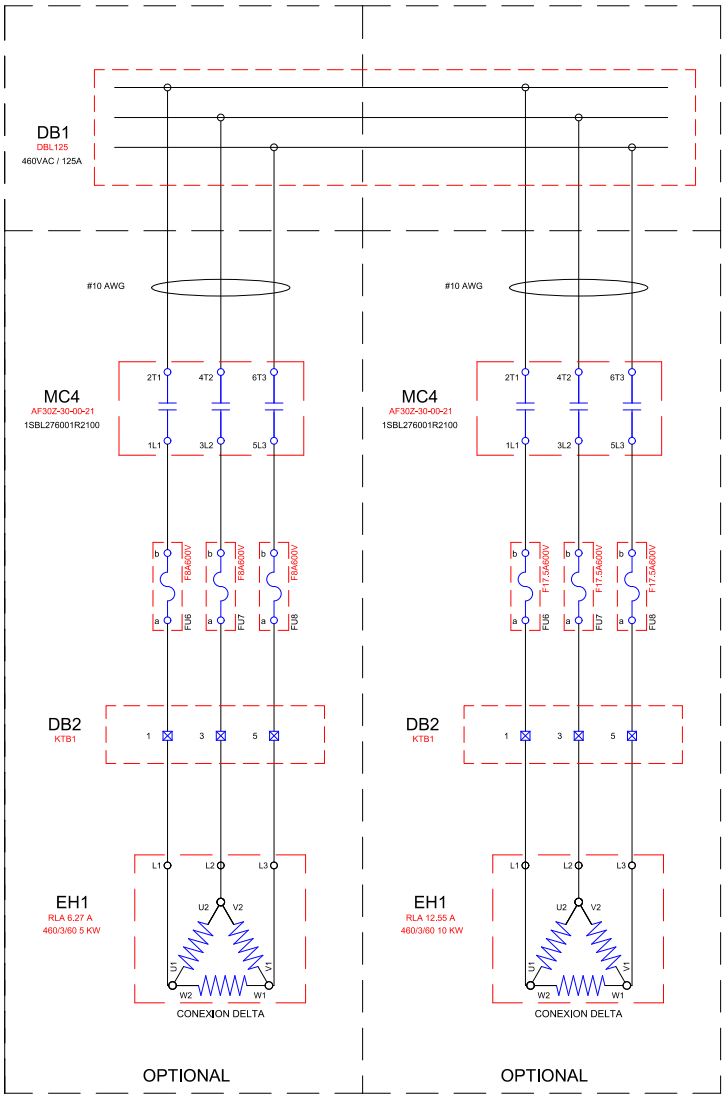
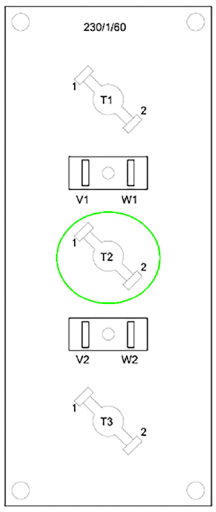
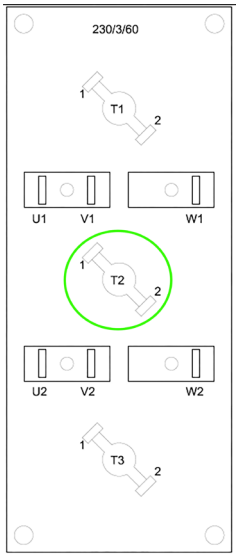


Figure 26. Electric Heater 230/1/30 3 & 5 RT 10 KW



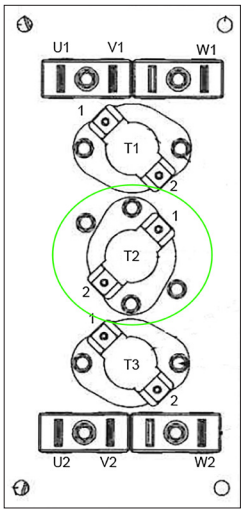
RESISTENCE LABEL LIST	
UB.	DESCRIPTION
T1	THERMOSTAT CONTROL
T2	ONE SHOT LIMIT
T3	THERMOSTAT CONTROL
V	RESISTENCE 1
W	RESISTENCE 2

Figure 27. Electric Heater 230/3/60 3 & 5 RT 10KW



RESISTENCE LABEL LIST	
UB.	DESCRIPTION
T1	THERMOSTAT CONTROL 1
T2	ONE SHOT LIMIT 1
T3	THERMOSTAT CONTROL 2
U	RESISTANCE 1
V	RESISTANCE 2
W	RESISTANCE 3

Figure 28. Electric Heater 460/3/30 3 & 5 RT 10KW



RESISTENCE LABEL LIST	
UB.	DESCRIPTION
T1	THERMOSTAT CONTROL 1
T2	ONE SHOT LIMIT 1
T3	THERMOSTAT CONTROL 2
U	RESISTANCE 1
V	RESISTANCE 2
W	RESISTANCE 3

Table 7. Thermistor Limits

	Open Temp	Close Temp
One Shot Limit	185°F+/-10°F [85°C+/-5.6°C]	-31°F [-35°C]
Thermostat Control	170°F+/-6°F [76.66°C+/-3.5°C]	100°F+/-8°F [37.77°C+/-4.5°C]

NOTE: These temperature limits must be respected in case of component replacement.

⚠ WARNING ⚠

The installer is responsible for ensuring that all procedures are carefully followed; it is imperative that the personnel conducting the installation are both qualified and certified.

This adherence to qualifications and certifications is crucial for compliance with all specifications and best practices, guaranteeing the unit's proper operation

⚠ WARNING ⚠

This appliance is designed for use only by individuals who do not have reduced physical, sensory, or mental capabilities and possess the necessary experience and knowledge (including children). If this is not the case, the appliance should be operated under the supervision or guidance of someone responsible for ensuring the user's safety.

⚠ WARNING ⚠

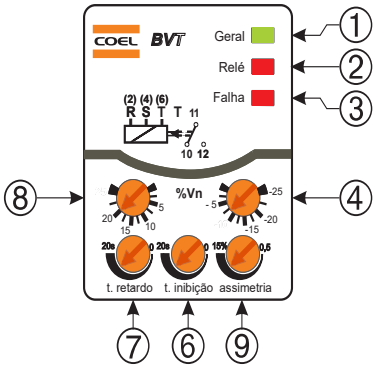
Children should be supervised to ensure that they do not play with the appliance.

⚠ WARNING ⚠

For appliances intended for use at altitudes exceeding 2 000 m, the maximum altitude of use shall be stated by AHRI 390.

Phase Protector (Motorsaver)

1. General LED on: indicates instrument energized.
2. Relay LED on: indicates relay energized, i.e. the input voltage is within the set parameters.
3. Fault LED (BVT): flashing once per second: indicates lack of phase R
   Flashing 2 times per second: indicates lack of phase S
   Flashing 3 times per second: indicates lack of phase T
   Flashing 4 times per second: indicates under voltage fault
   Flashing 5 times per second: indicates overvoltage fault
   Flashing constantly: indicates reversed phase sequence
   LED Falha (BVD): flashing once per second: indicates under voltage fault
   flashing twice per second: indicates overvoltage fault
4. Under voltage setting
5. Hysteresis setting (only BVD)
6. Inhibit time setting
7. Delay time setting
8. Maximum voltage setting
9. Asymmetry setting (BVT only) Under voltage set



NOTE: While the units are preset at the factory, the power supply can differ at each installation site. Due to potential imbalances, adjustments must be made before start-up. This is essential to safeguard the motors and electrical components of all units.

EQUIPMENT INSTALLATION

The following data should be checked before putting the unit into operation.

INSTALLATION DATA					
Job Name:		Check Test Date:			
City:		State:		Zip:	
Clima Flex Model #					
Clima Flex Serial #		Job Site Unit ID #:			
General Contractor:		Mechanical Contractor			
Technician Performing Start-UP: Name:		Employer:			

PRE-START UP CHECK LIST

GENERAL INSPECTION		
Condition	**Yes**	**No**
Is there any shipping damage ?		
If such is the case, where is located?		
Will this damage prevent starting the unit ?		
Is there a leak in the refrigerant pipe?		
If such is the case, report to service dept.		

INSPECTION THE ELECTRICAL SOURCE	
	Comments
Ensure that the workspace is secured and hazard-free prior to commencing start-up activities.	
Prior to installation, ensure that the unit's circuit breaker and control switches are in off position.	
Conduct a thorough visual examination of the unit's electrical connections to verify proper connectivity.	
Ensure that the compressor and fan protection settings are configured to match the designated values.	
Ensure that the designated circuit breaker for the field corresponds to the Minimum Circuit Ampacity (MCA) specified in the equipment datasheet.	
Ensure that the phase monitor is correctly configured to the suitable voltage setting.	
Confirm the phase-to-phase, phase-to-ground power supply voltage corresponds to that indicated for the unit.	

INSPECTION OF THE CONTROL PANEL		
Condition	**Yes**	**No**
Is the control panel free from any foreign objects ?		
Are all wiring terminals (including main power supply) tight ?		
On 208-230V units is control transformer (24 AC) wired for correct voltage ?		
Prepare the power supply unit for operation with three-phase electrical current.		
Confirm that the phase unbalance remains within 2% of the average value.		
Activate each fan individually to ensure the correct rotation direction.		

NOTE: Upon verifying all installation points and confirming the accuracy of all unit components, the unit is ready to be energized. Activate the unit by turning the switch on the CONTROL UNIT to the ON position, which supplies the control unit with 24 volts.

INSPECTION OF THE CONDENSATE SECTION		
Condition	**Yes**	**No**
Has water been placed in drain pan to confirm proper drainage ?		
Are correct filter in place?		

CHECK RATED VOLTAGE AT TERMINAL BLOCK FOR IMBALANCE BEFORE STARTING OF UNIT

___ 208/230V 1 Phase ___ 208/230V 3 Phase ___ 460v 3 Phase

Mesured line to line Volts L1 & L2 _____ V. L1 & L3 _____ V. L2 & L3 _____ V.

(L1 & L2+ L1 & L3 + L2 & L3) / 3 = Avg. Voltage = _____

Max. Deviation from avg.voltage = _____ Volts

Voltage imbalance = (100 x Max. Deviation) / avg. Volatge = _____ %

A voltage deviation greater than 2% with the unit running should be addressed and corrected. Excess voltage deviation can cause the compressor to overheat and to operate inefficiently.

Three phase units only check fan and compressor rotation.

COOLING MODE CHECK AND RECORD REFRIGERANT PRESSURES

Confirm voltage imbalance.

Measured line to line Volts L1 & L2_____ V. L1 & L3 _____ V. L2 & L3 _____ V.

(L1 & L2+ L1 & L3 + L2 & L3) / 3 = Avg. Voltage = _____

Max. Deviation from avg.voltage = _____ Volts

Voltage imbalance = (100 x Max. Deviation) / avg. Voltage = _____ %

After 10 minutes of compressor operation, record the following:

Room Temperature	
Outside Temperature	
Suction Pressure	
Suction Line Temperature	
Discharge Pressure	
Discharge Line Temperature	
Entering Condenser Air	
Leaving Condenser Air	
Evap. Entering Air DB Temp	
Evap. Entering Air WB Temp	
Evap. Leaving Air DB Temp	
Evap. Leaving Air WB Temp	
Compressor Amps (L1)	
Compressor Amps (L2)	
Compressor Amps (L3)	

ADDITIONAL NOTES:

START UP

After activating the controller, allow a 5-minute period for the unit to prepare for operation. During this time, it will initiate an operating sequence that includes verifying all pre-programmed safety points. If all necessary conditions are met and deemed correct, the unit will then be ready to commence operations. If unit fails to meet the safety requirements, it will not commence operation.

Unit Control

To initiate operations, set the ON/OFF switch to the ON position. Six seconds later, the control system will signal the unit to start.

NOTE: Ensure that all installation points have been thoroughly inspected and confirmed to be correct before powering the unit. Activate the unit by switching the CONTROL UNIT to the ON position, which will supply the control panel with 24 volts.

Three Phase Scroll Compressor Start Up Information

Scroll compressors, similar to many compressor types, compress air in only one specific rotational direction. Single-phase compressors inherently start and run in the correct direction, eliminating concerns about rotation.

Conversely, three-phase compressors can rotate in either direction based on the power phase connection. With an equal chance of connecting power to cause reverse rotation, it's crucial to verify the correct rotation direction. This verification can be observed by noting a drop in suction pressure and an increase in discharge pressure upon compressor activation. Reverse rotation is identifiable by an unusually high sound level and significantly lower current draw than the expected values.

It's imperative to confirm the proper rotation direction when the equipment is first commissioned. Correcting an incorrect rotation at this stage will not adversely affect the compressor's longevity. However, allowing the compressor to operate in reverse for more than an hour might negatively impact the bearings due to the oil pump mechanism being compromised.

NOTE: Allowing the compressor to operate in reverse rotation for an extended period will trigger the internal protector to trip, halting operation to prevent damage.

Internally, all three-phase compressors are wired in the same manner. Therefore, once the correct phasing for a particular system or installation is identified, connecting properly phased power leads to the designated terminals will ensure the correct rotational direction is maintained.

To alter the compressor's rotation direction, simply reverse any two line connections to the unit. This adjustment allows for easy correction of the rotation direction if initially set incorrectly.

Phase Monitor

All units featuring three-phase scroll compressors come with a three-phase line monitor designed to avert compressor damage resulting from phase reversal. This phase monitor is equipped with two LEDs for clear status indication.

When the Y signal (call for cooling) reaches the phase monitor and the phases are correctly aligned, the green LED will illuminate, signaling proper operation. Conversely, if the phases are reversed, the red fault LED will activate, and the compressor's operation will be automatically inhibited to prevent damage.

Should a fault condition be detected, indicating phase reversal, rectify this by switching two of the supply leads to the unit. It's crucial not to alter any of the unit's factory-set wiring, as doing so could lead to damage.

Condenser Fan Control

The condenser fan control is designed to activate the fan as needed when the compressor operates within the circuit. The fan and solenoid valve are deactivated when the circuit is off or in a pre-open condition. Digital outputs for the condenser fan respond instantly to condenser stage changes, activating or deactivating as required. Meanwhile, the condenser solenoid valve outputs activate immediately for an increase in stage but include a 20-second delay when deactivating during a decrease in stage. Should the circuit be powered down, the outputs for the capacitor solenoid valve deactivate immediately, without any delay.

NOTE: Some models are equipped with low ambient control (LAC). For these models, the condenser fan motor's startup is delayed until the refrigerant operating pressure within the system reaches an adequate level. Upon starting, the fan motor's operation may cycle based on ambient conditions, which is considered normal behavior.

Service Hints

1. It's important to advise the owner/operator to always keep air filters clean and to avoid unnecessarily blocking supply and return air registers. Limiting airflow in this way can reduce the lifespan of the equipment and lead to higher operating costs.
2. Ensure all power fuses or circuit breakers are properly rated for the system. For specifics, refer to the wiring diagrams provided in the electrical section of the documentation.
3. Regular cleaning of the outdoor coil is crucial to maintain full and unrestricted airflow, which is essential for optimal system performance.

Sequence Of Operation

When the thermostat activates circuit R-Y1, it engages the compressor contactor, initiating the operation of both the compressor and the outdoor motor. Concurrently, the G (indoor motor) circuit is completed either automatically by the thermostat during any cooling request or can be manually activated using the fan switch on the subbase for continuous air circulation.

Compressor Logic Control

The compressor is designed to function exclusively when the circuit is in the operating or pumping state, and it should not be operational if the circuit is in any alternative state.

Compressor Star-Up

The initiation of a compressor occurs only upon receiving a start command from the unit's capacity control logic.

Compressor Shutdown

A compressor should cease operation under any of the following conditions:

- The unit's capacity control logic issues a command for the unit to stop.
- An unload alarm is triggered, and based on sequencing, this compressor is designated to be the next one to shut down.
- The circuit status is in a pumping state and, according to sequencing, this compressor is next in line for shutdown.

There are mandatory minimum intervals for both the time between compressor startups and the time from compressor shutdown to the next start. These intervals are governed by the start and stop timer settings. It's crucial that these cycle timers are not reset by simply turning the equipment's power off and on. Instead, if the power is interrupted, these timers should remain inactive. They can, however, be reset through a specific control setting on the controller.

Features:

Delay-On-Make Timer
Short Cycle Protection/Delay-on-Break
Low Pressure Detection
High Pressure Detection

Delay-On-Make Timer

This feature ensures a delayed startup of the compressor following any interruption in shore power, allowing systems to stabilize before re-engagement.

Short Cycle Protection/Delay-on-Break

To prevent the compressor from short cycling, an anti-short cycle timer is incorporated. Following the cessation of a compressor activation signal, the control logic mandates a 5-minute waiting period before the compressor can be reactivated.

Low Pressure Detection

Monitoring of the low pressure switch facilitates a lockout condition should the switch open, preventing operation under potentially harmful low-pressure conditions.

High Pressure Detection

Similar to low pressure monitoring, the high pressure switch monitoring enables a lockout state when the switch is open, safeguarding against operation under dangerous high-pressure scenarios.

Pressure Service Parts

For maintenance and monitoring purposes, high and low pressure service ports are standard on all units. These ports allow for direct observation of the system's operating pressures.

MAINTENANCE

Service and maintenance of these units require personnel experienced in refrigeration and specifically trained in this field. It is crucial to conduct thorough checks of safety devices and assess cycling control components for any necessary adjustments or repairs before undertaking any reset procedures. The design of the refrigeration circuit minimizes potential issues during standard operation, eliminating the need for routine maintenance of the circuit under regular use conditions.

The design phase prioritized ease of maintenance, ensuring that the unit is accessible for service. The service panel, located at the front of the unit, provides straightforward access for maintenance tasks. The electrical components are conveniently located in the terminal box located on the side of the unit.

Under typical conditions, maintenance primarily involves inspecting and cleaning the air inlet and coil surface, which should be done monthly or quarterly based on the operating environment. In environments prone to grease or dust accumulation, it is essential to have the coils cleaned regularly by a qualified air conditioning technician to maintain optimal cooling capacity and efficient operation. Neglecting proper maintenance can significantly reduce the unit's lifespan.

To preserve the unit's durability and performance, regular maintenance is indispensable.

NOTE: The Company will not be held liable for any malfunction of the unit attributable to inadequate maintenance or if the unit's operating conditions deviate from the recommendations provided in this manual.

GENERAL

Components of the cooling system should undergo inspection every four months to verify their proper functioning and to identify any signs of wear. Often, signs indicating operational issues will manifest before an actual component failure occurs. Regular inspections are a critical preventive measure against the majority of potential system failures.

Routine inspections and maintenance are crucial both at start-up and at regular intervals during commissioning. Essential checks include evaluation of the condensing liquid line and suction, and evaluation of the unit for overheating and undercooling. It is recommended that a maintenance schedule, shown at the end of this section, be followed to ensure optimum performance and longevity of the system.

COMPRESSOR MAINTENANCE

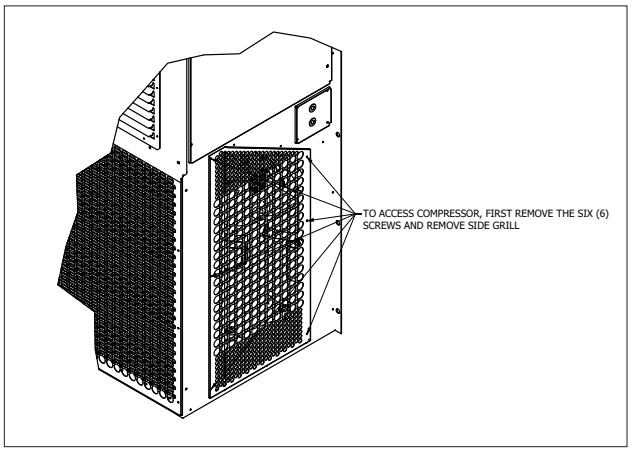
To prevent compressor issues related to the system, periodic maintenance is advised:

- Ensure that all safety devices are functional and correctly set.
- Confirm the system's airtight integrity.
- Check the compressor's current consumption to ensure it is within expected parameters.
- Ensure consistent system operation by reviewing past maintenance records and assessing environmental conditions
- Inspect all electrical connections to ensure they are securely fastened.
- Maintain the compressor's cleanliness, and check for the absence of rust and oxidation on the compressor, its frame, tubing, and electrical connections.

Replacement Compressor

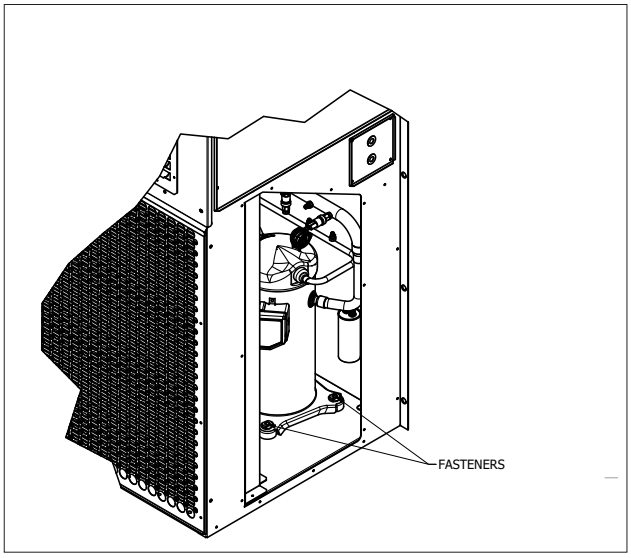
1. Restrict access to the control panel to prevent unauthorized entry.
2. Attach pressure gauges to the service valves to assess the presence of refrigerant gas and its pressure levels.
3. In the event refrigerant gas is detected, follow the recovery guidelines outlined on page 43.
4. Implement a lockout procedure on the power supply to ensure the equipment is fully de-energized and safe to work on.
5. Detach the side grid by unscrewing the 6 screws securing it to the unit (See Figure 29). The grid's position, either on the right or left side, varies depending on the compressor's location.

Figure 29. Removal of the grill



6. After completing the above, if necessary, proceed to disconnect all electrical components and strip away any thermal insulation from the piping.
7. Detach the solder connecting the compressor to the discharge and suction piping using specialized soldering equipment. Alternatively, cutting the piping is also an option if preferred.
8. Unfasten the 4 compressor retaining screws found at the compressor's base (refer to figure 30 for details).

Figure 30. Compressor removal



NOTE: When replacing the compressor, it is mandatory to also replace the drier filter to ensure system integrity and efficiency.

9. To replace the filter, cut the pipe where the filter is installed.
10. Install the new filter and secure the connections using new tubing, utilizing couplings or expansion techniques for a tight fit.

ELECTRICAL TERMINALS

Electrical connections require regular inspection and tightening, as heat and vibration may lead to loosening over time. To ensure safe and efficient servicing of electrical components, follow these guidelines:

- Always disconnect the main power lines before conducting repairs or replacements of any components or cables.
- Attached to the terminal block and/or components to ensure a stable electrical connection.
- Inspect connectors, cables, and components for signs of damage, such as burn marks or worn wires. Any damaged items should be immediately repaired or replaced to prevent electrical failures.
- Periodically use a meter to check the equipment's voltage, ensuring the power supply remains adequate and stable.

NOTE: Each unit is supplied with complete wiring schematics. Keep these diagrams accessible during connection tasks. The essential electrical connections during installation include the power line to the power inlet and the control wiring for the remote control. Ensure the remote control is not wired with high voltage lines, as high voltage can disrupt control signals and result in erratic or compromised operation.

AIR FILTER

Particulate matter emanating from the condenser piping requires the use of a filter sized for the evaporator. This filter, designed for easy maintenance, is located inside the machine. Although often overlooked in air conditioning systems, filters play a crucial role in maintaining operating efficiency. It is essential to inspect them regularly and replace them when necessary. To replace filters, refer to page 7.

INJECTION PACKAGE

Regular inspection of the injection package should include checks on the bearings, housings, motor, and motor mounts. With the engine powered off, visually inspect and clean any deposits from the bearings and housings. Ensure all hardware is securely fastened, the motor rod rotates without hindrance, and the blades are free to spin.

REFRIGERATION SYSTEM

Cooling system components require inspection every four months to ensure they are functioning correctly and to identify any signs of wear. While operational failures often precede component breakdowns, conducting regular inspections plays a significant role in preventing many potential system failures.

NOTICE

IMPORTANT: THESE UNITS REQUIRE R-410 REFRIGERANT AND POLYOLESTER OIL.

GENERAL

Components of the cooling system should undergo inspection every four months to verify their proper functioning and to identify any signs of wear. Often, signs indicating operational issues will manifest before an actual component failure occurs. Regular inspections are a critical preventive measure against the majority of potential system failures.

Routine inspections and maintenance are crucial both at start-up and at regular intervals during commissioning. Essential checks include evaluation of the condensing liquid line and suction, and evaluation of the unit for overheating and undercooling. It is recommended that a maintenance schedule, shown at the end of this section, be followed to ensure optimum performance and longevity of the system.

Topping Off System Charge

If the system experiences a leak, it is recommended to perform reclamation, evacuation (adhering to the criteria specified), and recharging according to the charge specified on the nameplate. If executed properly, the system's charge can be topped off without issue.

R-410A refrigerant does not undergo significant composition changes even after multiple leaks and recharges. This refrigerant is nearly azeotropic, meaning it acts similarly to a pure compound or single-component refrigerant. After a leak, the remaining refrigerant charge within the system can still be utilized. To "top-off" the charge, use the pressure charts found on the inner control panel cover for guidance.

NOTE: When adding R-410A refrigerant, ensure it is dispensed from the charging cylinder/tank in liquid form to prevent fractionation and maintain system efficiency. Always follow the instructions provided with the cylinder for the correct method of liquid extraction.

Safety Practices

1. R-410A should never be mixed with other refrigerants due to compatibility and safety issues.
2. Always wear gloves and safety glasses when handling R-410A. Polyol ester oils can irritate the skin, and direct contact with liquid refrigerant can cause skin freeze.
3. Air and R-410A should not be used together for leak checks; this combination can become flammable under certain conditions.
4. Avoid inhaling R-410A as its vapor can adversely affect the nervous system, potentially causing dizziness, loss of coordination, slurred speech, and in severe cases, cardiac irregularities, unconsciousness, or even death.
5. R-410A should not be burned as it decomposes into hazardous vapors. If exposed to such vapors, evacuate the area immediately.
6. Only use cylinders that are rated DOT4BA/4BW 400 for storing R-410A to ensure they can safely handle the pressure.
7. Cylinders should not be filled more than 80% of their total capacity to allow for expansion.
8. Store R-410A cylinders in a cool, shaded area to avoid exposure to direct sunlight and excessive heat.
9. Cylinders should never be heated to temperatures above 125°F to prevent pressure buildup and potential bursting.
10. Avoid trapping liquid R-410A in manifold sets, gauge lines, or cylinders. R-410A expands with temperature increases, and any enclosed liquid can cause the container to burst if it becomes too warm.

Important Installer Note

To enhance start-up performance, it's recommended to clean the indoor coil using a dishwashing detergent. This can help remove any residues that may impede airflow or heat transfer.

High Pressure Switch

All models in the wall-mounted air conditioner series come equipped with a remotely resettable high pressure switch. In the event of a trip, the pressure switch can be reset by turning the thermostat off and then on again. The high pressure switch operates within specific parameters: it opens at 601.9 ± 14.5 PSI and closes at 435.1 ± 50 PSI.

Refrigerant Lines

It is crucial to examine all refrigerant lines as well as vibration isolation capillary lines, providing support where necessary. Conduct a visual inspection for any signs of leaks to ensure the integrity and efficient operation of the system.

Vacuum Process

For systems that have been open to the atmosphere, proper dehydration is essential, achieved through an effective vacuum process. This requires the use of a vacuum pump (distinct from a compressor) and a vacuometer to accurately measure vacuum levels (See Figure 31 “Diagram to vacuum and refrigerant charge”)

Procedure:

Access Point Identification: Determine the system’s access points, utilizing the service valves on the condensing unit for both the low and high sides. The high pressure switch connects to the smaller diameter pipe, and the low pressure switch connects to the larger diameter pipe.
System Draining: This can be executed in two primary ways:

a) Dilution Method:

1. Activate the vacuum pump to establish a vacuum within the pump itself (register 1 should be closed during this initial step).
2. Open register 1 to allow the system to evacuate until a vacuum level of at least 500 microns is achieved.
3. For vacuum measurement, close register 1, open register 2, and adjust the vacuum gauge to sense the system’s pressure.
4. Upon reaching 500 microns, disconnect the vacuum pump from the system and open register 3 to introduce nitrogen and disrupt the vacuum.
5. Seal off the nitrogen supply.
6. Vent the nitrogen via the connection point between the copper line and register 3.
7. Perform this entire procedure at least two more times, aiming for a vacuum level of 200 microns on the final evacuation.

To ensure the accuracy of the vacuum measurement, it’s crucial to isolate the vacuum pump from the system. This can be done by closing register 1 and allowing approximately 5 minutes to pass for the system pressure to stabilize, providing a precise reading. If the vacuum level does not remain stable, it may indicate the presence of moisture within the system or a potential leak. It’s important to meticulously check all connections, including the access points identified (points 1, 3, and valves), for any issues.

b) High Vacuum Method.

This method is utilized with a vacuum pump capable of reaching a vacuum level below 200 microns through a single evacuation process. The steps are as follows:

1. Activate the vacuum pump and open register 1 to start the evacuation process.
2. After a period, isolate the vacuum pump by closing off its connection to the system, then open register 2 to continue with the process.
3. Once a vacuum level of less than 200 microns is achieved, aiming for the lowest possible value, the vacuum process is considered complete. This deep vacuum ensures that moisture and air have been effectively removed from the system, preparing it for efficient operation.

R-410 Refrigerant Charge

This unit comes pre-charged with the specific quantity of refrigerant as noted on the serial plate. After conducting a thorough evacuation:

1. Close the manifold valves to isolate the system from the vacuum pump, vacuum gauge, and nitrogen supply
2. Swap the nitrogen line for a refrigerant gas line to prepare for charging.
3. Purge the hose connecting the refrigerant cylinder to the service valve to clear any air.
4. Open the service valve linked to the refrigerant line, followed by the manifold discharge valve.
5. Refer to the unit’s identification labels to determine the correct amount of refrigerant required for the system.
6. With the system offline, introduce the liquid refrigerant through the liquid line service valve (the line with the smaller diameter).
7. Use a scale for accuracy, waiting at least 10 minutes before powering on the system.
8. After initial charging, close the manifold’s discharge valve, open the suction valve, and with the system operational, finish charging with refrigerant in its gaseous state, accounting for 5% to 20% of the total charge.
9. Monitor the scale to confirm the exact amount of refrigerant added. Upon completing the charge, close the manifold suction valve, detach both suction and discharge hoses, and close the valve on the pipe.
10. The charging process is now complete, ensuring the system is correctly filled with R-410 refrigerant as per factory specifications.

NOTE: The required amount of refrigerant can vary by a certain percentage due to various specific circumstances surrounding the installation.

If there is any uncertainty regarding the charge, the recommended procedure is to reclaim the refrigerant, evacuate the system, and then recharge. It is important to highlight that the charge can be adjusted by trained technical personnel.

Refrigerant Gas Recovery

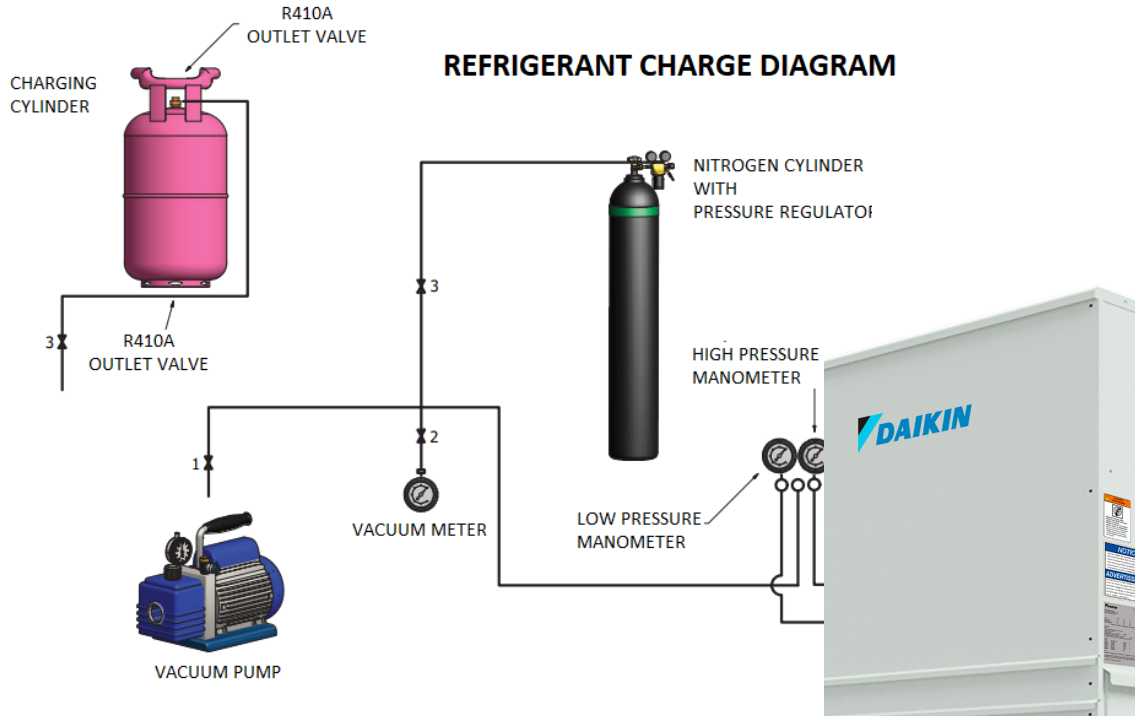
If there's a requirement to remove or recover refrigerant gas, the service valves on these units facilitate the collection of the refrigerant gas within the condensing unit itself.

Procedure:

1. Attach the manifold hoses to the service valve ports located on the condensing unit.
2. Seal off the 1/4" liquid line service valve to prevent any refrigerant flow through this line.
3. Activate the unit in cooling mode and monitor until the system pressures stabilize at 2 psi, indicating that the refrigerant is being properly circulated and collected.
4. Once the desired pressure is achieved, promptly close the 3/8" suction line service valve. This action ensures the refrigerant gas is collected and contained within the unit.

NOTE: It may be necessary to adjust the refrigerant charge by approximately 20% to achieve the correct evaporating temperature. For guidance on verifying and adjusting the charge, refer to the information provided on the following page.

Figure 31. Diagram to vacuum and refrigerant charge.



CONDENSER

Maintenance primarily involves clearing dirt and debris from the external surface of the fins and addressing any fin damage. For units operating in corrosive environments, fin cleaning must be a routine part of the maintenance schedule. In such settings, it's critical to promptly remove dust and debris to prevent accumulation that could disrupt the unit's normal functioning.

Condenser Fan Speed Control Card

You have the capability to adjust the speed of the capacitor motor to enhance the equipment's efficiency. This adjustment should be undertaken by a professional since the standard setting is 6 VDC, but adjustments can range from 4 VDC to 8 VDC to optimize operational efficiency based on specific conditions.

The DS power supply is designed to convert 24 VAC into a regulated DC power supply suitable for transmitters with 4 to 20 mA outputs. Its output voltage is field-adjustable from 1.5 V to 27 V using a potentiometer, allowing for precise control based on the needs of

the connected devices. Additionally, the power supply is equipped with a 3 A fuse to safeguard against overcurrent conditions, ensuring the system's safety and longevity. The inclusion of a snap-on bracket facilitates easy and secure surface mounting on any flat area, enhancing installation flexibility.

BLOWER SPEEDS

The motor comes with five factory-programmed speed taps (torque settings), which are activated through various unit operation modes. These modes receive 24VAC signals from the low-voltage terminal block within the control panel, signals that can be issued by a thermostat or another controlling device. Each speed tap is preset at the factory to correspond to specific motor torque settings.

EXPANSION VALVE

Electronic

The electronic valve is engineered for integration into refrigerant circuits, functioning as the refrigerant expansion device. It utilizes the superheat value, determined by a pressure and temperature probe situated at the evaporator outlet, as its control signal. To ensure optimal operation of the valve, the inlet fluid must be adequately subcooled. This precaution prevents the valve from functioning with flash gas, which can occur when the refrigerant partially vaporizes before expanding, potentially leading to inefficiency in the cooling process. Additionally, valve noise can escalate if the refrigerant charge is below the necessary level or if there is a significant pressure drop occurring downstream of the valve. These factors can affect the performance and longevity of the valve, making proper installation and maintenance critical.

TROUBLESHOOTING EVAPORATOR MOTORS

If The Motor Is Running

1. It's a common occurrence for the motor to exhibit slight back-and-forth movement upon startup. This should not be considered a fault, and the motor does not require replacement based on this behavior alone.
2. If the system demonstrates excessive noise, fails to adjust speeds according to demand changes (Heat, Cool, Other), or exhibits operational issues such as tripping limits or coil freezing, consider the following troubleshooting steps:
3. Allow time for any programmed delays to conclude.
4. Verify the motor's control inputs are connected as depicted in the wiring diagram provided by the manufacturer, ensuring the motor receives the correct control signals and follows the intended sequencing.
5. Inspect and, if necessary, remove the filter to check that all dampers, registers, and grilles are open and allowing free airflow. If removing the filter resolves the issue, the filter should be cleaned or replaced due to its pressure drop. Additionally, examine and clean the blower wheel or coil if needed.
6. Measure the external static pressure (0.4 inWC, which is the sum of supply and return pressures) to confirm it aligns with the specifications on the unit's serial plate. If the static pressure exceeds the permissible limit, expanding the ductwork may be necessary.
7. Should the motor fail to cease operation at the cycle's conclusion, allow any set delays to expire, which should not exceed 90 seconds. Additionally, verify that there is no "Continuous Fan" request active on the G terminal.
8. If the troubleshooting steps fail to rectify the issue, proceed to perform voltage checks as outlined in the following section. After completing these checks, continue with Communication Diagnostics to further investigate and resolve the problem.

If The Motor Is Not Running

1. Verify the presence of correct high voltage and ground at the L/L1, G, N/L2 connections on the motor (refer to Figure 31 on page 31). Address any voltage discrepancies before moving forward. It's crucial to note that the motor operates on a specific voltage; thus, only the designated voltage should be applied. An input voltage deviation of plus or minus 10% from the nominal line power VAC is considered acceptable.
2. Should the motor receive the appropriate high voltage and ground at the L/L1, G, N/L2 connections, the next step involves proceeding with Communication Diagnostics to identify and resolve the issue.

Communication Diagnostics

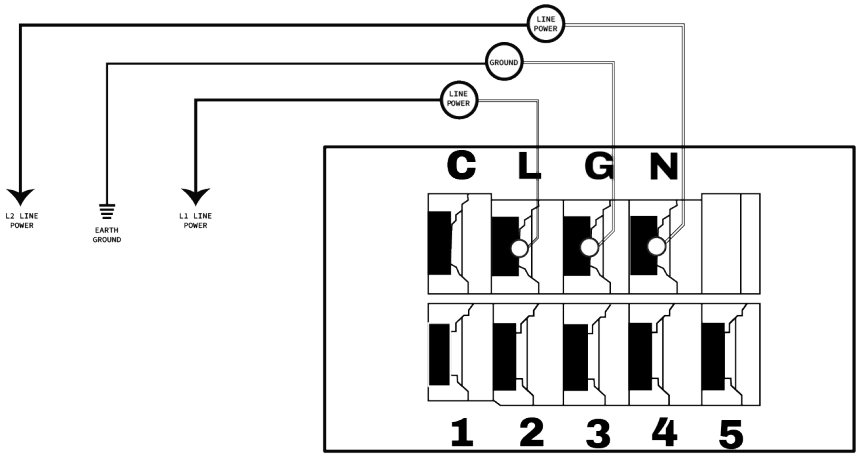
The evaporator motor's operation is regulated by 24 VAC low voltage, spanning from C (Common) to a chosen tap, labeled from 1 to 5, as determined by the thermostat or controller circuit wiring.

1. Begin by consulting the unit's wiring diagram to ensure all connections are correct and voltage levels are appropriate.
2. Trigger a demand from the thermostat and measure the voltage between the common and the relevant motor terminal (1-5). Note that the G input is usually connected to terminal #1, but it's essential to always cross-reference with the wiring diagram for accuracy.

a. If there's no low voltage signal detected, investigate the thermostat's demand signal. Additionally, inspect the output terminal and wires leading from the terminal strip or control relay(s) to the motor for any issues.

b. In the event the motor receives adequate high voltage (as verified in Step 1 under the section "If the Motor Is Not Running" on page 45), and correct low voltage to a designated terminal yet fails to operate, it indicates a malfunction. Under these circumstances, the motor is deemed to have failed and must be replaced.

Figure 32. Connection Layout For Wallpack Motor



ELECTRICAL MAINTENANCE													
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Re-tighten electrical panel connectors and terminals, control parts, power and junction boxes (quarterly)	Plan	x			x			x			x		
	Real												
Physical inspection of all electrical panel connectors and relays (Monthly)	Plan	x	x	x	x	x	x	x	x	x	x	x	x
	Real												
Check the amperage of all electric motors, compare them according to the nameplate of the equipment to detect anomalies (quarterly)	Plan	x			x			x			x		
	Real												
Physically check for false contacts (Monthly)	Plan	x	x	x	x	x	x	x	x	x	x	x	x
	Real												
Check the setting and condition of electrical protections and fuses; these must be within the manufacturer's specifications (Bimonthly)	Plan	x		x		x		x		x		x	
	Real												
Cleaning of the electrical panel (Monthly)	Plan	x	x	x	x	x	x	x	x	x	x	x	x
	Real												

PHYSICAL INSPECTION													
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cleaning of the condenser with pressurized water (Bimonthly)	Plan	x		x		x		x		x		x	
	Real												
Refrigerant pressure check (Quarterly)	Plan	x			x			x			x		
	Real												
Inspection and cleaning of fan blades (Quarterly)	Plan	x			x			x			x		
	Real												
Check compressor power consumption to determine any refrigerant loss (Quarterly)	Plan	x		x		x		x		x		x	
	Real												
Compressor oil inspection (Monthly)	Plan	x	x	x	x	x	x	x	x	x	x	x	x
	Real												
Review and cleaning of the inside of the equipment (Bimonthly)	Plan	x		x		x		x		x		x	
	Real												
Review of condensate drain line, must not be clogged (Quarterly)	Plan	x			x			x			x		
	Real												
Review of alarm history (Monthly)	Plan	x	x	x	x	x	x	x	x	x	x	x	x
	Real												

TROUBLESHOOTING CHART

Problems	Possible causes	Possible corrective actions
The compressor does not run.	Main or compressor disconnect switch open.	Circuit breaker closed.
	Fuse damaged, circuit breakers open.	Check the electrical circuit and possible short circuit, line to ground, loss of connections or motor windings causing the failure. Replace the fuse and reset the compressor brakes, only after detecting and correcting the cause of the fault.
	Thermal overloads have tripped.	Overloads are self-resetting. Check supply voltage, operating amps, cycle times and mechanical operations. Allow time for automatic reset.
	Defective contactor or coil.	Replace.
	System shutdown by equipment protection devices.	Determine the type and cause of the shutdown and correct it before restarting the equipment. For example, low or high pressure, etc.
	No cooling required.	Wait until the unit calls for cooling.
	Liquid line solenoid does not open.	Repair or replace the solenoid. Check wiring.
	Motor electrical problems.	Check for open, shorted or bubbled motor.
	Loose wiring.	Check all wire connections and tighten all terminal screws.
Compressor makes noise or vibrates	Compressor running in reverse.	Check that the unit and compressor are on the correct phase of the line voltage.
	Inadequate piping or supports on suction or discharge.	Reposition, add or remove hangers.
	Worn compressor insulator bushing.	Replace.
	Compressor mechanical failure.	Check for possible problem in compressor failure and replace.
	Low oil level.	Check the possible problem before it damages the compressor.
High discharge pressure.	Condenser coil dirty.	Clean the coil.
	Fan does not work.	Check the electrical circuit and the fan motor.
	Fan failure.	Check the electrical circuit and possible problems before replacing the motor fan.
	Refrigerant overcharge.	Remove excess coolant and check liquid subcooling.
	Fan motor runs in reverse.	Check that the unit and fan motor are correctly supplanted by the line voltage.
	No or failed condenser caps.	Check or replace condenser caps on front and rear of unit.
	Incondensable in system.	Remove the non-condensables in the system and replace the charge.

Problems	Possible causes	
Low suction pressure.	Dirty evaporator.	Backwashing or chemical cleaning.
	Lack of refrigerant.	Check for leaks, repair and add the necessary charge. Check liquid sight glass.
	Expansion valve malfunction or failure.	Check or replace (if necessary) the valve and adjust the proper superheat.
	Liquid line filter drier fouled.	Check pressure drop or temperature for diagnostics.
	Condensing temperature too low.	Check means of regulating condenser temperature.
	Excess oil used.	If the system has excess oil, recover and adjust by observing the sight glass on the compressor.
Open motor overload relays or circuit breakers.	Voltage unbalance or out of range.	Correct power supply.
	Faulty or grounded wiring on motor.	Check electrical circuit for possible problem. Then replace compressor.
	Loose power wiring or faulty contactors.	Check all connections and tighten, if necessary replace contactors.
	High condenser temperature.	See corrective steps for high discharge pressure.
Compressor thermal protection switch open.	Operation beyond design conditions.	Correct to bring conditions within allowable limits.
	Voltage range or unbalance.	Check and correct.
	High superheat.	Set correct superheat.
	Compressor mechanical failure.	Check for possible problem. Then replace the compressor.
	Short cycling.	Check and stabilize load or correct control settings for the application.
Compressor oil level too high or too low.	Low oil level.	Check superheat, if necessary add oil.
	Short cycling.	Check and stabilize load and correct control settings for the application.
	Excess liquid in crankcase - level too high.	Check crankcase heater. Check operation of the liquid line solenoid value.
	Level too high with compressor operation.	Confirm superheat is correct, remove oil.
	Operation or selection of expansion value.	Confirm superheat at minimum and maximum load conditions.
	Compressor mechanical problems.	Check for possible problem. Then replace compressor.
	Incorrect oil for application.	Check.
	Oil collapse in remote piping.	Check refrigerant piping if correction is necessary.
	Loose fitting in oil line	Repair.

All Clima Flex Applied equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Clima Flex Applied representative for warranty details. Refer to from 933-430285Y. To find your local Clima Flex Applied representative, go to www.Clima Flex Applied.com.

Aftermarket Services

To find your local parts office, visit www.Clima Flex Applied.com or call 800 - 37PARTS (800 - 377- 2787).
To find your local service office, visit www.Clima Flex Applied.com or call 800 - 432 – 1342.

This product contains the most current product information as of this printing. For the most up-to date product information, please go to www.Clima Flex Applied.com.

Product manufactured in an ISO certified Facility.

Clima-Flex®

Air Conditioning

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