



AirPac, Incorporated
AirPac Technology Park
888 Shenandoah Shores Road
Front Royal, Virginia 22630
U.S.A.

Toll Free 888-324-7722
Web: airpacinc.com
email: portapac@airpacinc.com



Instructions for Installation, Operation & Maintenance

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WARRANTY

AirPac warrants to its authorized distributor, each new PortaPac to be free from defects in material and workmanship for a period of one (1) year from date of installation or eighteen (18) months from date of delivery to distributor, whichever occurs first. The compressor(s) has a limited warranty of three (3) years from date of installation.

Limitations: This warranty shall not apply to nor include any of the following:

1. Any repair or replacement required as a result of accident, misuse, lack of proper maintenance, incorrect wiring, repairs improperly performed or replacements improperly installed by any person, or use of a replacement part or accessory not conforming to specifications of AirPac.
2. Any repair or replacement required as a result of normal wear and tear.
3. Any consequential, incidental, special, or exemplary damages.
4. Replacement of belts, pulleys, and filters.
5. Any unit which has its serial numbers altered, defaced or removed.

The sole obligation of AirPac under this warranty will be to furnish, without charge, a replacement part for a defective part. This warranty does not include installation, transportation, or postage costs associated with installing the replacement part.

In order for this warranty to become effective, the warranty registration card, delivered with the unit, must be completed and returned to AirPac within 30 days of purchase and delivery. Any claim under this warranty should be first presented to and processed by the authorized distributor from whom the equipment was purchased.

To the extent permitted by law, this warranty is expressly in lieu of any other warranties, either expressed or implied, made by AirPac, Incorporated. AirPac assumes no liability in any event for lost profits, or any consequential damages of any kind arising from breach of this warranty.

APPLICATION TIPS

Some tips and tricks we hope you'll find helpful. If you have any suggestions, please let us know.

- To make the unit easier to maneuver you can add some handles to either side.
- Keep duct runs as straight as possible to get the maximum air delivered.
- Attach a fused disconnect to the unit and hardwire to the disconnect instead of the unit.
- A remote thermostat (24V) can be added easily by running wires into the top of the electrical panel and connecting to R - T- Y1 (Y1&Y2 on 8 and 10 ton models).

IMPORTANT – READ BEFORE YOU PROCEED

When you receive your AirPac shipment be sure to inspect the packaging for visible damage.

**KEEP ALL ORIGINAL PACKAGING MATERIAL.
ORIGINAL PACKAGING MATERIAL IS REQUIRED
WHEN FILING A DAMAGE CLAIM FOR CONCEALED DAMAGE.**

Inspect all shipping cartons for visible shipping damage. You must document damage with the shipper. Call your AirPac Distributor immediately to report shipping damage. Your AirPac Distributor will advise you how to proceed with the shipping claim.

FORWARD

Thank you for purchasing the AirPac PortaPac portable air conditioner.

This manual describes the unit features and explains how to set-up and operate the PortaPac. Preventative maintenance procedures are outlined and a trouble-shooting guide is provided for your reference. Please read this operation manual thoroughly to familiarize yourself with the features of the unit and to ensure years of trouble-free operation.

We would like to ensure your satisfaction with the PortaPac family of products. If you have questions or require additional information please

WARNING:

Describes precautions that should be observed in order to prevent injury to the user during installation.

CAUTION:

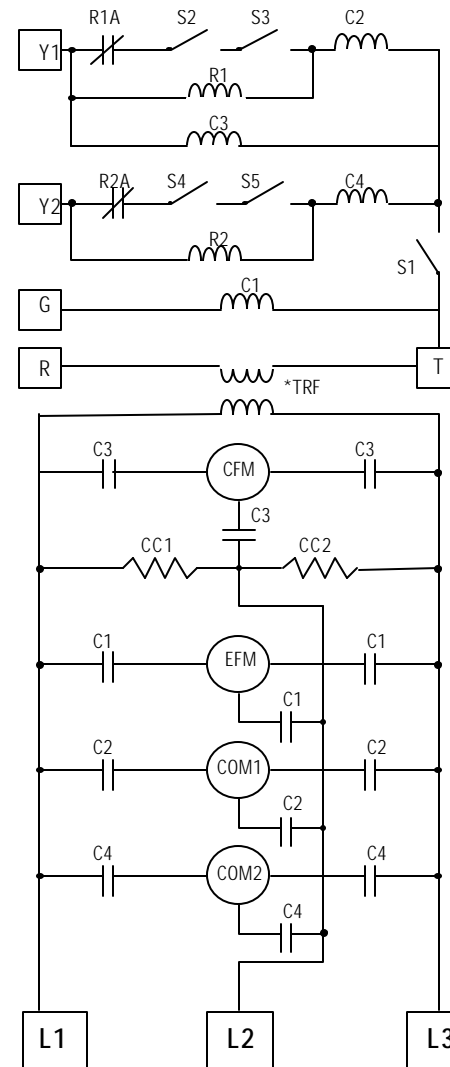
Describes precautions that should be observed in order to prevent damage to the unit or its components, which may occur during installation or unit operation if proper care is not exercised.

NOTE:

Provides additional information that facilitates unit operation.

WIRING DIAGRAM

8-Ton PAC96 & 10-Ton PAC120, Three Phase



- C1 = EVAPORATOR FAN CONTACTOR
- C2 = COMPRESSOR #1 CONTACTOR
- C3 = CONDENSER FAN CONTACTOR
- C4 = COMPRESSOR #2 CONTACTOR
- CC1 = COMPRESSOR #1 CRANKCASE HEATER
- CC2 = COMPRESSOR #2 CRANKCASE HEATER
- CFM = CONDENSER FAN MOTOR
- COM 1 = COMPRESSOR #1
- COM 2 = COMPRESSOR #2
- EFM = EVAPORATOR FAN MOTOR
- R1 = COMPRESSOR #1 LOCK-OUT RELAY
- R1A = COMPRESSOR #1 LOCK-OUT CONTACTOR
- R2 = COMPRESSOR #2 LOCK-OUT RELAY
- R2A = COMPRESSOR #2 LOCK-OUT CONTACTOR
- S1 = AIR SWITCH
- S2 = COMPRESSOR #1 LOW PRESSURE SWITCH
- S3 = COMPRESSOR #1 HIGH PRESSURE SWITCH
- S4 = COMPRESSOR #2 LOW PRESSURE SWITCH
- S5 = COMPRESSOR #2 HIGH PRESSURE SWITCH
- TRF = 24 VAC TRANSFORMER

AIR PAC

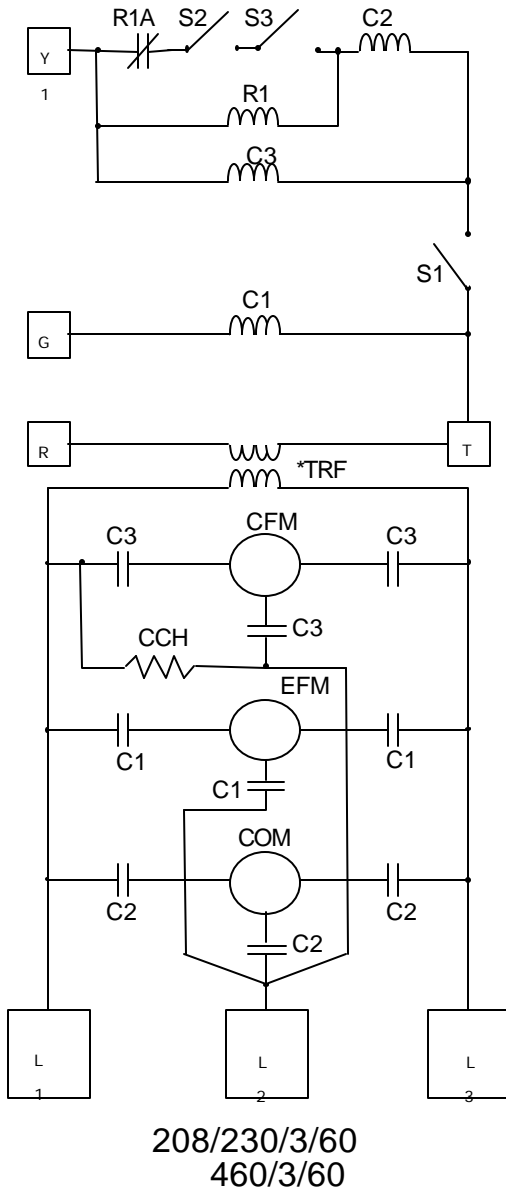
DESCRIPTION:	Dual Stage, 3 Phase Wiring Diagram
PART #:	DIA-103
MATERIAL:	
DATE: 02/28/94	APPROVED BY: ARB

208/230/3/60

460/3/60

WIRING DIAGRAM

5-Ton PAC60, Three Phase



- C1 - EVAPORATOR FAN CONTACTOR
- C2 - COMPRESSOR CONTACTOR
- C3 - CONDENSER FAN CONTACTOR
- CCH - CRANKCASE HEATER
- CFM - CONDENSER FAN MOTOR
- COM - COMPRESSOR MOTOR
- EFM - EVAPORATOR FAN MOTOR
- R1 - LOCK-OUT RELAY
- R1A - LOCK-OUT RELAY CONTACT
- S1 - AIR SWITCH
- S2 - LOW PRESSURE SWITCH
- S3 - HIGH PRESSURE SWITCH
- TRF - 24 VAC TRANSFORMER

AIR PAC	
DESCRIPTION: Three Phase Wiring	
PART #: DIA-102	
MATERIAL:	
DATE: 02/28/94	APPROVED BY: ARR

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INTRODUCTION

The versatility of the AirPac PortaPac is adaptable for cooling various applications. The horizontal systems are designed to install in the ceiling so you do not lose valuable floor space.

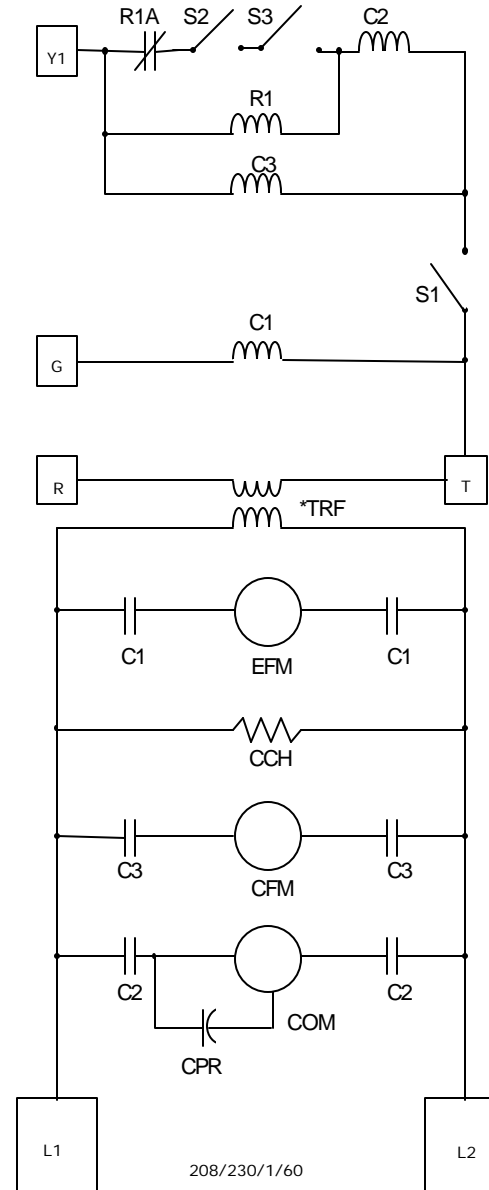
The PortaPac series is manufactured with quality materials and is designed to give you many years of reliable, trouble-free service. The PortaPac series features:

- * Sturdy cabinets with integral mounting rails
- * Compact size
- * Wide range of capacities
- * Over-sized motors and blowers for up to 1.5" ESP on both the evaporator and condenser
- * Pre-charged in the factory for packaged installation
- * Quick-connect valves for no loss of factory charge when installed as a split system
- * Removable panels for easy service and maintenance

Before installing and operating your PortaPac system, please read the instructions carefully to ensure maximum benefit from your portable air conditioner.

WIRING DIAGRAM

5-Ton PAC60, Single Phase



- C1 - EVAPORATOR FAN CONTACTOR
- C2 - COMPRESSOR CONTACTOR
- C3 - CONDENSER FAN CONTACTOR
- CCH - CRANKCASE HEATER
- CFM - CONDENSER FAN MOTOR
- COM - COMPRESSOR
- CPR - CAPACITOR
- EFM - EVAPORATOR FAN MOTOR
- R1 - LOCK-OUT RELAY
- R1A - LOCK-OUT RELAY CONTACT
- S1 - AIR SWITCH
- S2 - LOW PRESSURE SWITCH
- S3 - HIGH PRESSURE SWITCH
- TRF - 24 VAC TRANSFORMER

* TRANSFORMERS FOR 208/230 VOLT UNIT WIRED FOR 208 VOLT OPERATION. FOR 230 VOLT OPERATION, DISCONNECT AND TAPE 208 VOLT WIRE AND REPLACE WITH 230 VOLT WIRE.

AIR PAC	
DESCRIPTION: Single Phase Wiring	
PART #: DIA-101	
MATERIAL:	
DATE: 02/28/94	APPROVED BY: ARB

MAINTENANCE

Evaporator and Condenser Coils- It is important to keep the face of the evaporator and condenser coils clean. A dirty evaporator coil will reduce unit capacity and eventually cause the unit to shut down by activating the low pressure control safety. A dirty condenser coil will cause high condensing pressures which results in higher power consumption, or the high pressure safety control will be activated and cause system shut down.

TROUBLESHOOTING

Check the points below when troubleshooting

SYMPTOM	POSSIBLE CAUSE	POSSIBLE REMEDY
Unit does not operate	1. No power applied 2. Incorrect voltage applied	- Check power - Check voltage with meter
“POWER” Lamp off	1. No power applied 2. Defective lamp	- Check power - Check “POWER” lamp
No Cooling “Cool” lamp off	1. Air switch override 2. Defective contactors 3. Defective relay	- Check evaporator air switch - Check contactors - Check relays
No Cooling “Cool” lamp on	1. Defective contactor 2. Defective relay	- Check contactors - Check relays
Water overflow	1. Blocked condensate drain 2. Unit left out in rain	- Clean drain and lines - Remove excess water
Insufficient cooling	1. Blocked air intakes 2. Dirty filters 3. Time delay setting 4. Loose V-belts	- Check filters - Clean filters - Check time delay settings - Check V-belt tension
Excessive vibration	1. Unit not level 2. Loose mounts	- Level unit - Check motor mounts

If symptoms still persist after applying remedy, turn control switch to “OFF”, disconnect power, and contact your local service center or AirPac’s Service Department at 1-800-457-7127.

EQUIPMENT CHECK LIST

The first step in preparing the PortaPac for installation is to run through this check list to ensure you have all the pieces necessary for your installation.

Your equipment is shipped by common carrier. The equipment is on sturdy wooden pallets and the units are covered with either cardboard boxes or vinyl tarps.

Your shipment will consist of one pallet per unit ordered.

If you purchased optional accessories they will be packaged separately and may be shipped with the unit or by another delivery method. Your packing list is attached to the outside of the packaging in a plastic pouch. Please consult the packing list to determine if your shipment is complete.

Optional accessories available with the PortaPac include:

1. Evaporator Plenum
2. Flange/clamp assembly
3. Return Air Assembly
4. Flex ducting
5. Fabric poly ducting

GENERAL WARNINGS

Your safety when operating AirPac equipment is of paramount importance. Please review these warnings to ensure safety.

- All electrical work, if necessary should be performed by licensed and qualified electrical personnel. Repair to electrical components by non-certified technicians may result in personal injury and/or damage to the unit. By design, all electrical components are available from your local supply house but please contact AirPac if you have questions or require additional information.
- All PortaPac equipment must be hardwired and should be installed with a UL approved ground-fault breaker to prevent electrical shock.
- Doors and access panels are not screwed shut to enable easy access in the field. If the equipment is operating in an area where unauthorized personnel may attempt to access internal components, you may want to consider securing the access panels to restrict unit access by unauthorized personnel.
- Connect to the proper electrical voltage. Connecting to the wrong voltage can cause damage to the unit and may result in personal injury. Always check the voltage source with a volt meter or reliable source to make sure the proper voltage is being applied.

SET UP

AirPac PortaPac is versatile and can be used in a variety of installations. Most installations require - *Power Connection, Drain Connection and Air Duct Connections.*

Select a level surface that can withstand the weight of the unit. Secure the unit by blocking the wheels to prevent movement.

WARNING:

Failure to secure the unit can cause personal injury or equipment damage.

POWER CONNECTION

Use only the proper AC power required. Make sure power is disconnected before connecting to the unit. Do not connect or disconnect the power or operate any switches with wet hands. Make sure the electrical circuit is properly protected with fuse or circuit breaker protection and that all necessary ground wires are connected.

MAINTENANCE

Your PortaPac is designed and built with reliable components to provide years of troublefree dependable service.

Regular Maintenance Schedule

	DAILY	WEEKLY	MONTHLY	YEARLY
Air Filters	X	X	X	X
Condensate Pump	X	X	X	X
Belts	X	X	X	X
Blowers			X	X
Refrigerant Site Glass(es)			X	X
Coils				X

Air Filters - It is important to check filters and replace as necessary. The air filter material used in the PortaPac is a poly mat - suitable for harsh and even wet locations. It can be cleaned with water and reused. Replacement filter pads are available through most well stocked hardware stores.

Condensate Pump - Inspect drain lines and pump after each use to insure free flow of condensate. Clean as necessary.

Belts - Inspect and check for wear and correct tension. If the two legs of the belt pressed in midpoint results in 1" to 1-1/2" movement then the tension is good.

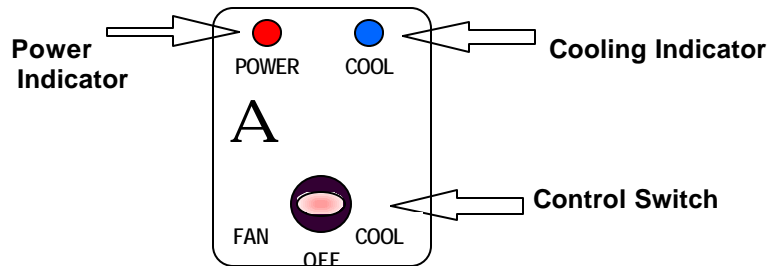
Blowers - Check that the blower wheel is tight on the shaft and does not contact the housing. Bearings are permanently sealed but should be checked periodically for signs of wear. Check for restrictions or foreign material in the air circuit.

Refrigerant Site Glasses - If bubbles appear in the sight glass, the circuit may either be undercharged or there may be a restriction in the liquid line upstream of the sight glass. The sight glass also contains a moisture indicator which changes color when moisture is present in the system.

OPERATION

Before operating the unit, familiarize yourself with the basic controls and their operation.

Listed below in the control panel and its configuration.



Power Indicator: Illuminates when electrical power is supplied to the unit. Amber LED

Cooling Lamp: Illuminates when the cooling stage is active (on). Green LED

Control Switch: Select desired operating mode. (Fan - Off - Cool). Three position toggle.

CAUTION:

Make sure the control switch is in the off position whenever connecting or disconnecting power to the unit.

OPERATING MODES

Move the control switch (3 position toggle) to “FAN”. The unit will circulate air in the evaporator section only. The condenser fan will not operate in this mode.

Move the control switch to “COOL”. The unit will begin cooling in approximately 2-3 minutes (time delay factory setting). The green COOLING indicator will illuminate when the compressor is on.

Automatic Restart Feature

If there is an interruption of electrical power or a high or low pressure safety is activated while in the “FAN” or “COOL” mode, the unit will automatically restart upon return of electrical power.

SET UP

NOTE:

When connecting to three phase power be sure to check the rotation of the fan motors before operating the unit. If the blower rotates in the opposite direction, phase sequence of the power source is reversed. To correct, disconnect power and change any two of the power legs from the power source.

DRAIN CONNECTION

Make sure the unit is set on a level surface or is leveled to ensure proper condensate removal. Connect the drain to the output of the condensate pump or by-pass the pump and connect directly to the condensate pan outlet. The condensate pump has a head of 20'.

AIR DUCT CONNECTION

Ducted Supply - Free Return

This method is commonly used for tents, factories, or temporary work spaces, or any open area where the air return can be directly from the area you are trying to cool.



Ducted Supply - Ducted Return

In certain applications it may be necessary to duct the return air to the unit. For example, when the A/C is remote from the area to be cooled. Ducted return air can be done by adding the optional return air flange assembly and flexible duct as needed.

Condenser Air Exhaust & Condenser Supply Ducting

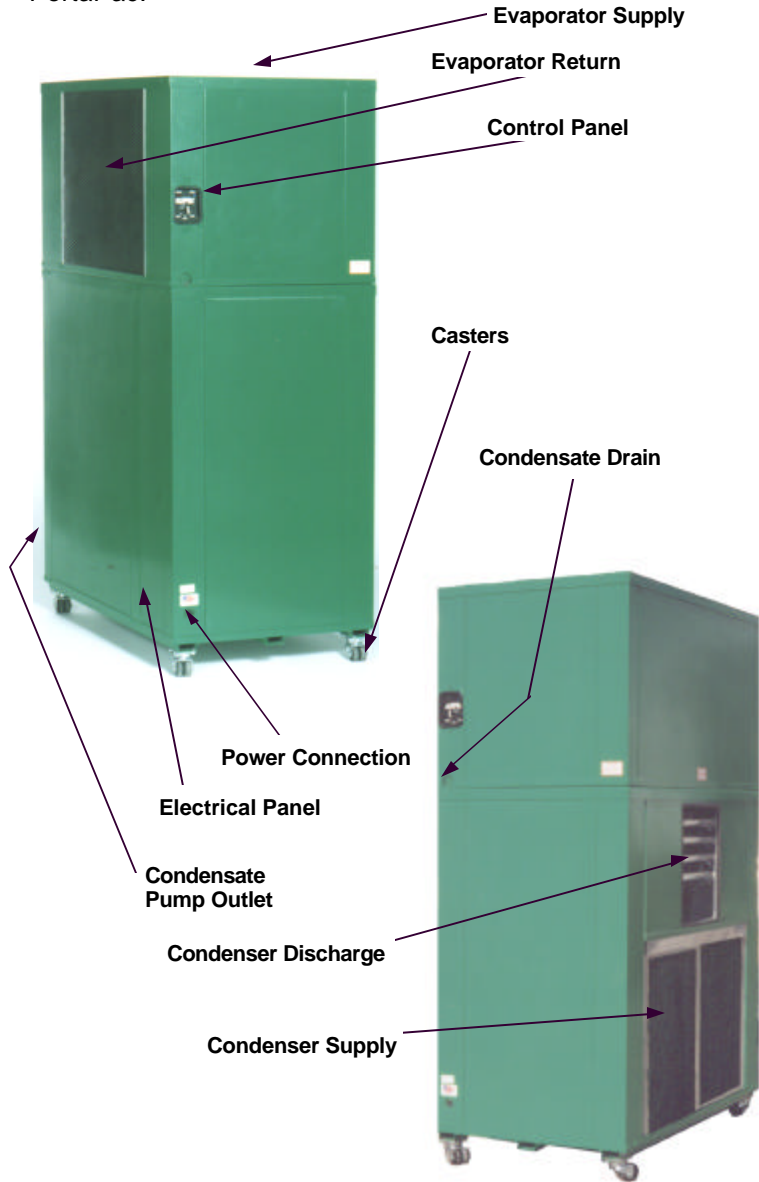
In some installations it may be necessary to duct the condenser air intake and condenser exhaust. The PortaPac is built with powerful blowers to handle duct runs on both sides. Duct work can be fitted to the condenser air intake or exhaust as needed and optional accessories from AirPac make it easy.

CAUTION:

When using flexible duct . Flexible duct is convenient and typically has a high compression ratio, however it can also greatly restrict air flow when improperly installed. Observe all warnings and instructions when using flexible duct. If air flow is restricted possible damage can occur.

UNIT FEATURES

Please take a few minutes to familiarize yourself with the AirPac PortaPac.



UNIT FEATURES

Evaporator Supply: This is the cold air supply. The evaporator supply should be ducted to ensure proper delivery of cool air. You can use the optional evaporator supply flange and attach field duct work or connect to an existing duct work system.

NOTE:

The optional poly plenum used with the poly diffuser duct is the most desirable air distribution method for rental and temporary applications. The poly material allows the greatest flexibility for installation, is washable so it can be used repeatedly and folds for easy transport and storage.

Evaporator Return: This area must be kept clear so airflow is not restricted. Return is fitted with filters to keep coils clean. Return can be ducted - see AirPac optional accessories.

Control Panel: Panel for the OFF - FAN - COOL selector switch with power and cool indicator lamps.

Electrical Panel / Power Connection: High voltage power connection and access to all relays, contactors and electrical controls behind panel.

Casters: Heavy duty industrial casters. Low profile, dual wheel, swivel casters for ease of mobility.

Condensate Pump Outlet: Remove front panel to access condensate pump. Outlet is 3/8" ID tubing. Pump is automatic and has 20' head. Pump only operates in "FAN" or "COOL" mode.

Condensate Drain Outlet: Pump can be by-passed and condensate can be removed by gravity flow. Outlet is available directly under the evaporator coil.

Condenser Discharge: Area must be kept clear. Move adjustable vanes to direct exhaust air away from personnel and condenser supply. Discharge can be ducted - see AirPac optional accessories.

Condenser Supply: Fitted with filters, this area must be kept open to allow air supply to the condenser. Supply can be ducted - see AirPac optional accessories.