

TOPAZ®

Portable Air Conditioners

Owner's Manual

Models: TZ-12B & TZ-18B

1-800-836-7432

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Warning!

Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Please read instructions before installing, operating or servicing the *TOPAZ* unit.

Avertissement !

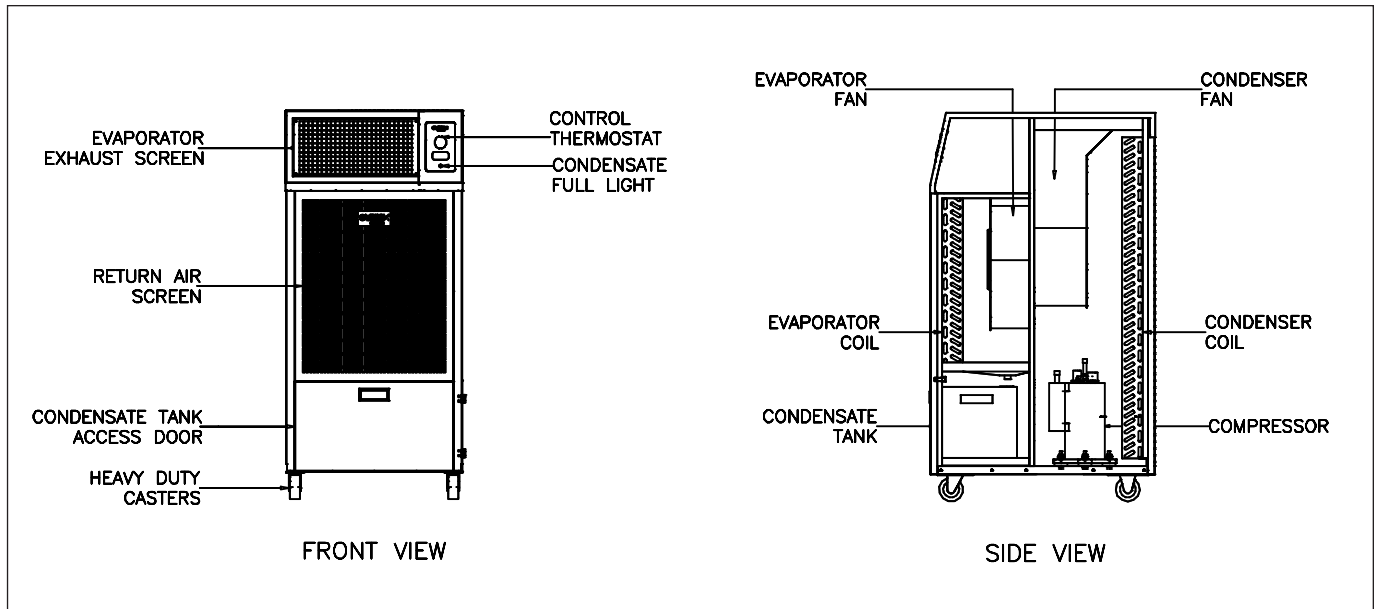
Le fait de modifier ou de mal installer, régler, réparer ou entretenir cet appareil peut entraîner des blessures ou des dommages matériels. On doit lire attentivement les directives d'installation, d'utilisation et d'entretien avant de manipuler l'unité TOPAZ

This manual is the property of the owner. Leave with the unit when set-up and start-up are complete. TEMP-AIR Inc. reserves the right to change design and specifications without prior notice.

Are you equipped to handle the heat?

Unit Specifications

Rating Information



SPECIFICATIONS	TZ-12B	TZ-18B
Cooling Capacity, BTU/hr ¹	11,900	17,300
power supply ² Volts/ph/Hz/amps	115/1/60/15	115/1/60/15
Thermostat control	Mechanical ³	Mechanical ³
Metering device	TX Valve	TX Valve
Total power consumption, kW	1.4	1.4
Current consumption, amps	11.9	12.0
Recommended circuit amps	15.0	15.0
NEMA plug type	5-15P	5-15P
Evaporator CFM, free discharge	350	500
Condenser CFM	500	1,000
Maximum esp, in wc	0.10	0.10
Maximum duct length, ft	40	40
Condensate-pump head, ft	15	15
Operating limits, (min-max) °F	65-105	65-110
Sound level, dB	57	61
R-410-A charge, oz	28	46
l x w x h, in	28 x 19 x 38	28 x 22 x 46
Weight, net wt/shipping wt, lb	155/198	221/279

1. Rating conditions: 90° F at 60% RH

2. Electrical ratings based on UL 484

3. Electronic/Programmable Thermostat available

Inspection

1. Inspect unit on delivery.
2. Report any damage to the delivery carrier.
3. Request a written inspection report from the Claims Inspector to substantiate claim.
4. File claims with the delivery carrier.
5. Compare unit received with description of product ordered.

General Description

Topaz Portable Air Conditioners are designed to spot cool industrial, commercial, institutional, and construction sites. These Two models provide 11,900 to 17,300 BTU/hr. Options include discharge nozzles to direct conditioned air precisely where needed, and flexible duct to transfer condenser hot air either outside or to an adjacent area.

Topaz Portable Air Conditioners are completely self-contained and housed within an insulated cabinet. The unit's exterior is constructed of galvanized steel and protected with a tough powder-coated, polyester finish. All models are equipped with standard heavy-duty casters for portability.

General Requirements

Topaz Portable Air Conditioners are designed for ease of operation and rugged dependability. Follow installation and maintenance instructions completely. Fill out and return the warranty registration card within 30 days of purchase to register the warranty or register online at www.gotopaz.com.

Standard Features

Serviceability

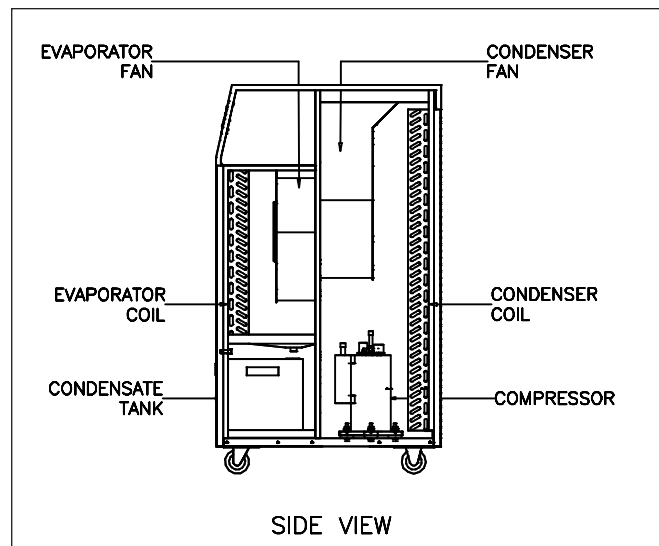
The only normal service required for Topaz Portable Air Conditioners is the periodic replacement of the filters and cleaning of the coil surfaces if they become dirty. Both of these items can be accessed by removing the inlet grills on the front and back of the unit. Pull on the handle near the bottom of the grills; pull the bottom away from the unit a few inches and lower the panel until the tabs on top are clear of the casing and remove the panel.

The condensate tank will need to be emptied on a regular basis. The tank and the high pressure switch reset can be accessed by sliding out the bottom drawer.

If more in-depth service is required, Topaz Portable Air Conditioners have a hinged, latched door to access most of the electrical controls including:

- Control voltage transformer
- Compressor and blower contactors
- Delayed start timer
- Float switch relay

Service ports for the refrigerant circuit can be accessed through the access panel on the left side of the unit. Access to any other component requires the removal of



the top and the left and/or right sides.

High-Pressure Safety Switch

All models feature a manual reset, high-pressure switch. If refrigeration circuit pressure exceeds control limits, power shuts off to protect the compressor and other critical components.

Note: Wait four minutes to restart unit after high-pressure safety switch trips.

Freeze Protection Control

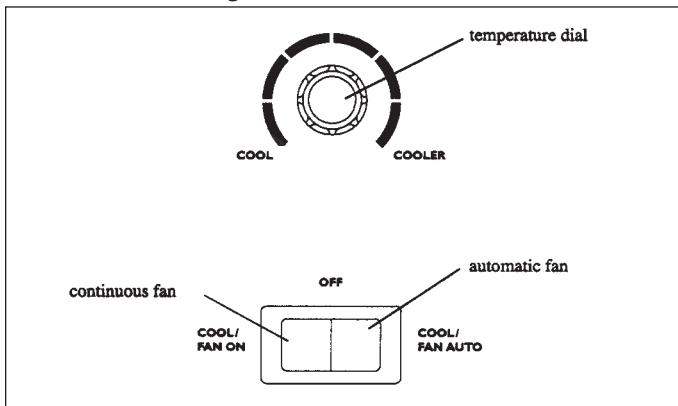
The TZ-12B and 18B models are equipped with an automatic freeze protection control. This control turns the compressor off if moisture on the evaporator coil freezes and blocks the coil. Normal cooling operation resumes when the temperature of the coil rises and the ice melts.

Short Cycle Protection Timer

The TZ-12B and 18B models are equipped with a short cycle protection timer. The timer provides a five-minute delay before the refrigerant compressor restarts. Under normal conditions, no adjustments are necessary.

Manual Temperature-Control System

The manual temperature control system allows you to set the desired temperature by simply rotating the COOL/COOLER dial either left or right. The supply air fan can be set to run continuously whether the cooling circuit cycle is on and off, or can be set to cycle on and off with the cooling circuit.



Filter

All units are equipped with removable disposable filters, located behind the return air grilles for both the condenser and evaporator coils. The filters should be replaced when they are dirty. Filters should always be installed when the unit is operating to keep the coils clean and efficient.

Condensate Tank:

A five gallon polyethylene tank in the lower-front compartment of the unit collects evaporator coil condensate moisture. When full, a magnetic float activates a relay that turns the refrigeration circuit OFF and illuminates the condensate tank-full light on the front of the unit. To empty the tank pull the front access drawer open and remove the tank. Empty the tank, replace it in the drawer with the molded handle facing the front of the drawer and slide back in place, and restart.

Note: The unit will not operate unless the tank is drained periodically. An optional condensate pump is available for continuous operation.

Optional Features

Condenser Duct

Condenser discharge air can be removed from the conditioned space with flexible duct. Use 40-ft maximum for all models. Allow six feet for every 90° bend. Do not exceed 0.10-in wc external static pressure at the condenser.

Ceiling-Panel Duct Kit

A ceiling-panel duct kit comes complete with flexible duct and a 2-ft by 2-ft ceiling-tile adapter which allows condenser air to be vented to the plenum area above a suspended ceiling.

Discharge Nozzle Kit

A dual-nozzle, discharge-air assembly optimizes the ability to direct cool air precisely where needed. The flexible nozzles are attached to a mounting plate that fits over the evaporator-air grille. See Accessory Information on page 11 for proper sizing.

Condensate Pump

A condensate pump automatically drains the condensate pan by removing evaporator-coil water allowing continuous operation. The pump is connected to the condensate drain and to the air conditioner's power supply. A hose runs from the unit to a convenient drain or outdoor location.



Cord Kit (LCDI) (TZ-12B, 18B)

The LCDI cord set provides both personal shock as well as cord arcing and fire protection. Use the LCDI cord kit provided by TEMP-AIR, Inc.

Installation Instructions

Before Installing

Check unit for damage. Air conditioners are inspected at the factory. If any damage has occurred, save the packaging and file a claim with the delivering carrier within fifteen working days. *TOPAZ* requires minimal installation. Plug unit in proper NEMA receptacle, and it begins to cool immediately.

Model	Plug Configuration	Receptacle
TZ-12B		NEMA 5-15R
TZ-18B 115V		NEMA 5-15P

Electrical Supply

Determine the proper power by checking unit's rating plate. Refer to the Specifications section on page 3 for voltage and fuse requirements. Use wall outlets and receptacles found in the table below.

Operating unit on improper voltages voids the warranty.

Note: Extension cords may be used if rated at a minimum 120-V, 20-amp for models TZ-12B and TZ-18B. Extension cords must be fitted with the appropriate grounding-type attachment plug. Use 25-ft maximum length extension.

Unit Operation

Fan

1. Place unit on level surface.
2. Plug unit in.
3. Press the COOL/FAN on switch for continuous fan operation. The cooling circuit will cycle on and off.
Press the COOL/FAN AUTO switch for cycling the fan operating on and off with the cooling circuit.

Cooling Cycle

1. Set the desired temperature by adjusting the COOL-COOLER dial from 68°-115°

Note: Wait 4 minutes between turning cooling mode off and on.

Preventative Maintenance

TOPAZ provides maximum performance and reliability with minimum maintenance. The refrigeration and electrical circuits of the system should be serviced by qualified technicians only. To prolong the life of the unit, perform regular maintenance as described below.

Blower Motors

The blower motor has permanently lubricated ball bearings and requires no relubrication. Inspect fan for buildup of dirt on blades. Clean as needed.

Filters

Dirty filters cause the unit to operate at reduced efficiencies. Inspect both evaporator and condenser air filters every six weeks, or more, if operating in a dirty environment. The filters are located behind the air inlet grilles on the front and back of the unit. Remove the grilles by pulling the bottom of each grill outward using the handle located near the bottom of the panels. When the bottom of the panel is clear of the unit casing, it can be lowered several inches, which will disengage tabs at the top of the panel from slots in the casing. At this point the panel can be removed. The filters are visible at this point but still retained by four clips. Use a screwdriver to loosen the screws securing the clip, so the clips rotate downward, clear of the filter. Remove the filter and replace with a clean one reversing the above procedure.

Do not operate the unit without filters. Doing so will cause the coil to become dirty faster, and may require professional cleaning.

Coil Cleaning

Evaporator and condenser coils can be cleaned using compressed air.

Condensate Pump

1. Disconnect unit from power source before attempting to service or remove any component.
2. Be sure floats move freely. Clean as necessary.
3. Remove floats and check for obstructions. Clean as needed.
4. Clean tank with warm water and mild soap when mineral deposits are visible.

5. Check inlet and outlet piping. Clean as necessary. Be sure there are no kinks in the lines that can inhibit flow.
6. Exterior of the unit can be cleaned with a damp cloth. Do not allow water to enter condenser fan outlet or the thermostat.

Troubleshooting Guide

Service, other than routine maintenance, should be performed by a qualified electrical and refrigeration professional.

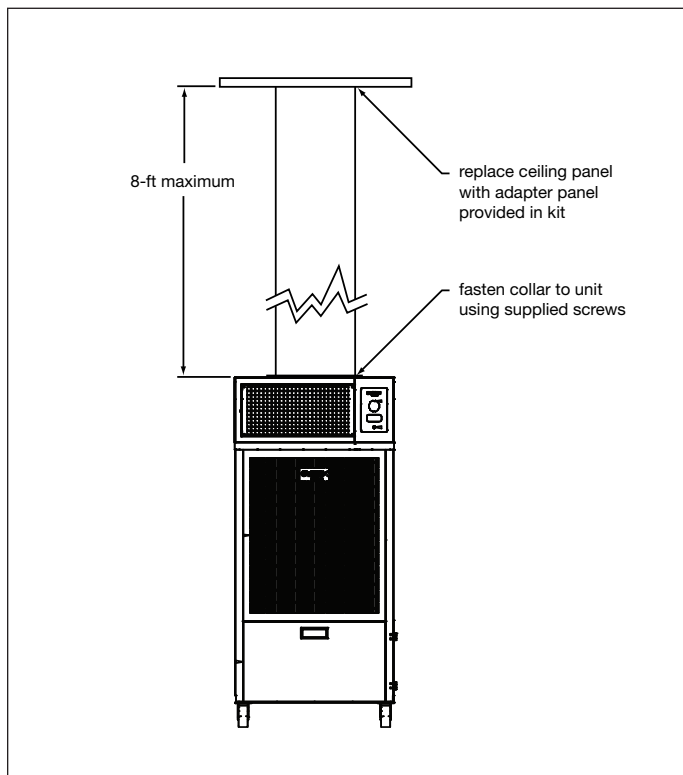
Problem	Cause	Remedy
Unit does not run	Power interruption	Check external power supply. Look for blown fuses or tripped circuit breakers. Reset or replace.
	Thermostat inoperable	Setting may be too high. Check and reset. Thermostat may be out of calibration or defective. Replace.
	Electrical Panel -24-Volt transformer defective	Check output of transformer. If not supplying 24 volts, replace.
	-Contactor coil defective -Contacts stuck open, burned or dirty -Wires loose	Replace. Correct or change. Tighten connections.
Evaporator fan runs, but compressor and condenser fan does not start	Low voltage	Check power supply for voltage outside the range of 106 to 126-V on 115-V units.
	Thermostat	Examine control unit for loose wires and tighten. Wait four minutes before re-starting.
	High-pressure control switch turning unit off	Replace condenser coil filter. Clean condenser discharge screen. Check for defective condenser fan motor. Replace if necessary. Restricted duct.
	Short cycle timer not timed out	Wait 5 min for timer to allow compressor to restart.
	Compressor contactor open or burned	Replace.
	Refrigerant leak - no freon	Locate leak and repair. Evacuate unit and recharge.
	Loose or defective wires,	Check for loose or shorted conductors. Secure contact between wires and connectors. Repair or replace as necessary.
	Defective compressor	Check for shorts, opens, and grounds. Compressor replacement should be done by a service technician.
	Condensate tank-full	Empty tank and replace. (See pg. 5 - condensate tank)
	Red indicator light defective	Check tank, if full, remove tank, empty and replace. If unit comes back on replace defective light. (See pg. 10)
Compressor runs, but fan does not run	Shorted or open run capacitor(s)	Replace.
	Condensate jumper plug or condensate pump not installed	Unit must have either condensate pump or condensate jump plug installed to operate unit.
	Open fan motor coil circuit	Replace fan motor.
	Shorted or open fan-motor capacitor	Replace capacitor.
	Loose or defective wires	Trace and repair.

Problem	Cause	Remedy
Insufficient cooling	Insufficient airflow through evaporator coil due to: -Dirty air filter in unit -Dirty evaporator coil -Ice on evaporator coil -Obstructed air intake -Low refrigerant	See Preventive Maintenance section of this manual. -Replace filter. -Clean coil with a vacuum cleaner and hose. -Defrost. Run on fan only. -Remove obstruction. -Repair leak in system.
	Unit improperly sized	Check to assure unit is sized for load. Add supplemental unit if required.
Noisy operation	Copper tubing vibrating	Adjust by bending slightly to firm position. Segregate tubes touching cabinet or each other.
	Loose cabinet or internal component Machine vibrating - out of level Blower motor bearing defective	Check and tighten loose screws. Level unit base. Replace blower motor.
Water leaks from pan	Leaky drain pan	Replace pan.
	Drain plugged	Check and clear obstruction.
	Loose evaporator, drain, or condensate pump hose Defective condensate pump or excessive lift on pump	Tighten connections. If elevation exceeds 20-ft, a larger pump is required. Pump does not operate properly if combination of lift height and length of drain line exceeds 20-ft. Change pump, if defective.
Evaporator coil freezing and shuts unit down	Unit not on level surface.	Level.
	Evaporator exhaust screen obstructed	Remove obstruction.
	Freeze protection control not operating correctly	Check that control is securely attached to is in place. Check wiring connections to freeze protection control

Installing Replacement Parts

Ceiling-Panel Duct Kit

1. Secure one end of the duct to the ceiling-panel adapter and the other end over the unit's duct collar.
2. Place the ceiling-panel adapter under suspended ceiling panel's framework directly above unit.



Condensate Pump

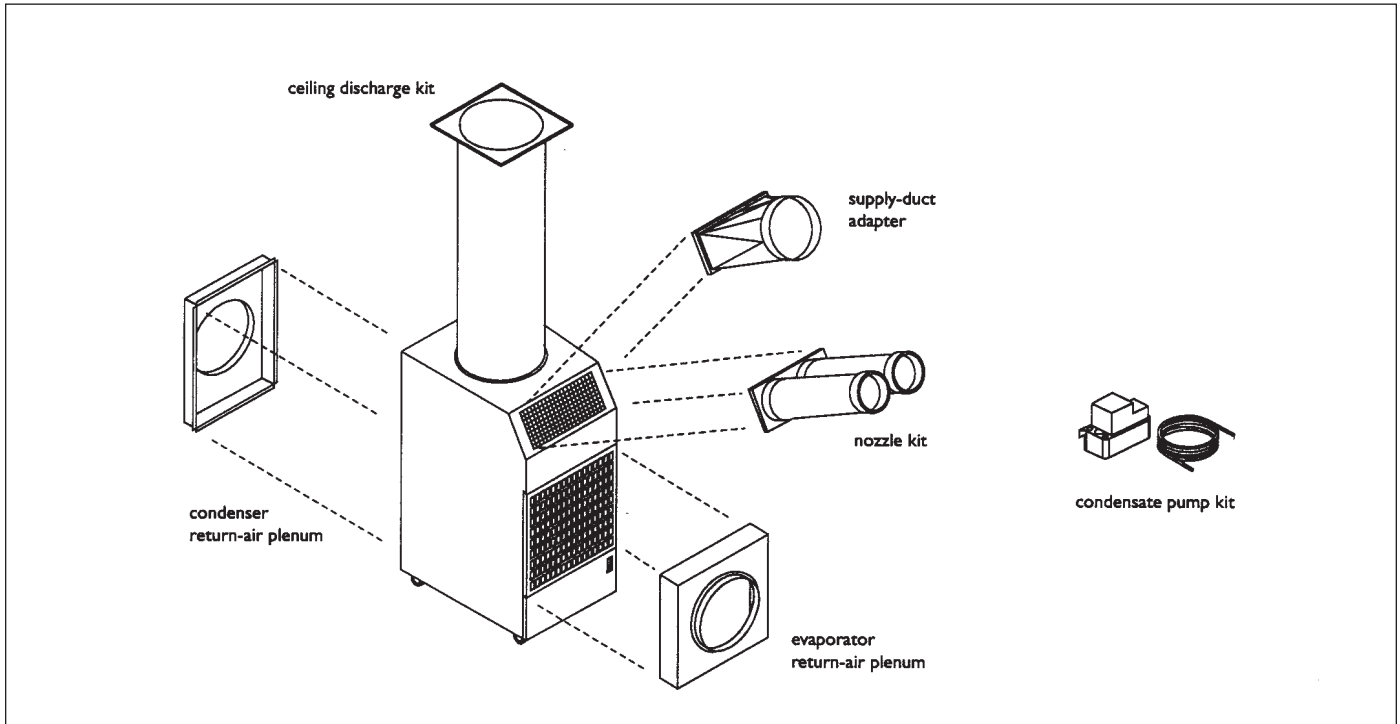
1. Unplug unit from power source. Remove condensate tank and hose from drain pan.
2. Place condensate pump on condensate-tank shelf. Align holes in shelf with mounting slots in molded tank. Secure pump to condensate-tank shelf using two supplied sheet metal screws.
3. Remove electrical plug and jumper wire from receptacle located on bulkhead next to the service fittings.
4. Connect condensate pump's power plug to receptacle.
5. Install hose from drain pan to the pump inlet.
6. Remove plug from hole in side of unit.

7. Install drain hose from condensate-pump outlet through hole in side of unit to a convenient drain or outdoor location.

Red Indicator Light

1. To replace pilot light, disconnect wires from control panel, bend tinnerman clip holding light, and pull out.
2. Install new light, reversing the procedure.

Accessories

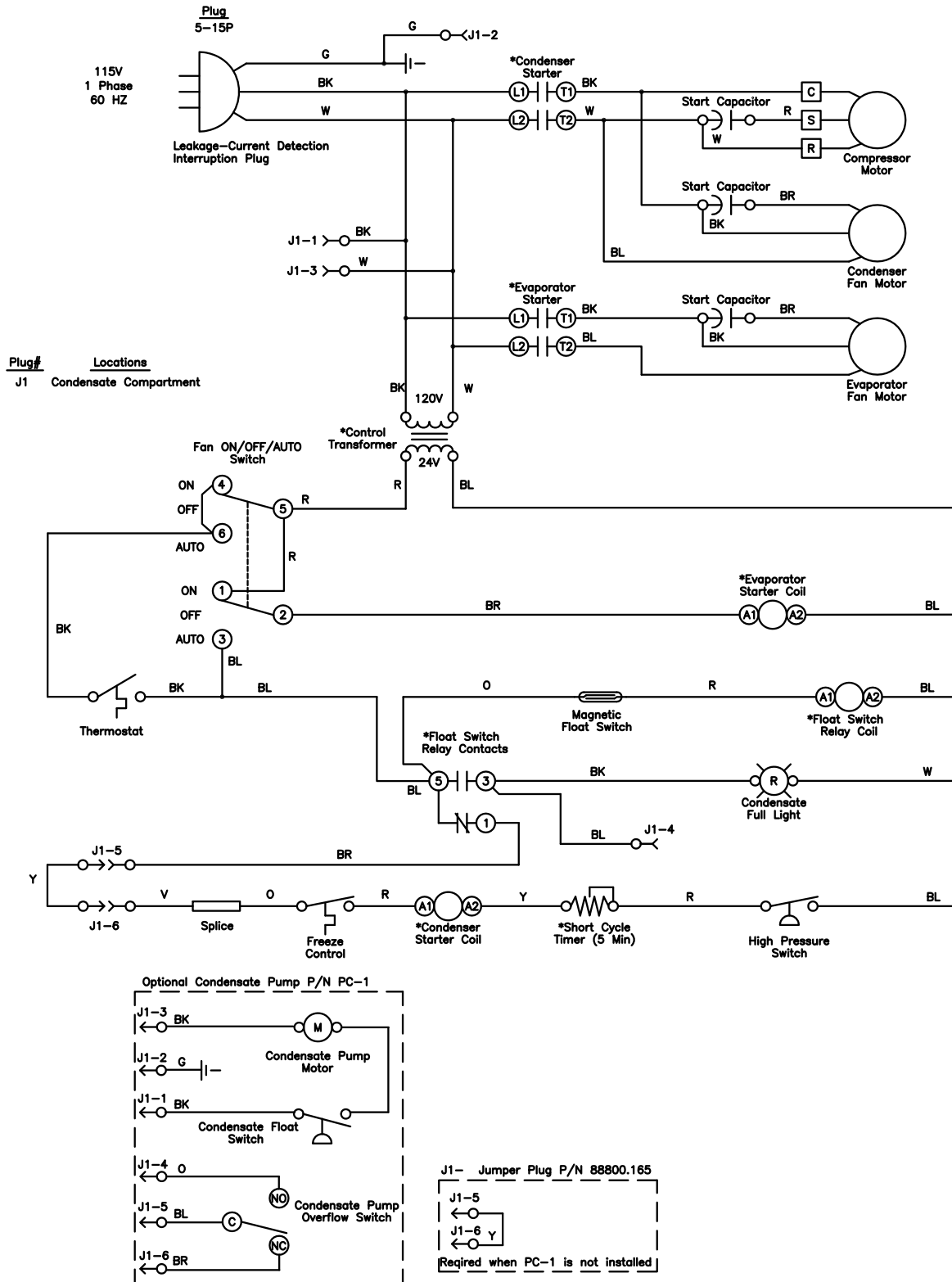


Part	Description
NK-1	two, 4-in nozzles with attachment kit, TZ-12B
NK-2	two, 6-in nozzles with attachment kit, TZ-18B
CK-1	10-in ceiling discharge kit, TZ-12B
CK-3	14-in ceiling discharge kit, TZ-18B
PC-1	condensate pump, 115 volt, TZ-12B and TZ-18B
CP-1B	10-in condenser return-air plenum, TZ-12B
CP-2B	14-in condenser return-air plenum, TZ-18B
EP-1B	10-in evaporator return-air plenum, TZ-12B
EP-2B	14-in evaporator return-air plenum, TZ-18B
DA-6B	6-in cold-air supply duct adapter, TZ-12B
DA-10B	10-in cold-air supply duct adapter, TZ-18B

Replacement parts List

Description	Part Number	TZ-12B	TZ-18B
service valve, 5/16-in	88400.284	•	•
service valve, 1/2-in	88400.250	•	•
filter drier	83201.043	•	•
expansion valve	88400.477	•	
	88400.478		•
evaporator blower & motor assembly	83100.102	•	
	83100.159		•
condenser blower & motor assembly	83100.116	•	
	83100.205		•
compressor	82200.023	•	
	82200.028		•
evaporator-motor capacitor	85601.713	•	
	85601.724		•
condenser-motor capacitor	85601.724	•	
	85601.733		•
compressor-motor capacitor	85601.716	•	
	85601.722		•
supply cordset	82900.254	•	•
control transformer	88000.043	•	•
fan contactor	87300.242	•	•
red indicator light	80700.051	•	•
ON-OFF-AUTO switch	87500.144	•	•
filter door latch	84900.044	•	•
door handle	84900.004	•	•
evaporator filter	83200.201	•	
	83200.203		•
condenser filter	83200.200	•	
	83200.202		•
evaporator coil	81400.343	•	
	81400.341		•
condenser coil	81400.344	•	
	81400.342		•
3-in caster, (2) per unit	81000.051	•	•
3-in swivel caster, (2) per unit	81000.050	•	•
high pressure switch	87500.424	•	•
manual thermostat	87800.102	•	•
thermostat knob	82000.081	•	•
condensate tank	99900.717	•	•
spring clip, 3/8-in	83100.030	•	•
latch - snap in door	84900.054	•	•
freeze protection control	87800.090	•	•
drain pan	84600.196	•	
	84600.197		•
condensate jumper plug	88800.165	•	•
delay timer	87900.038	•	•
magnetic proximity switch w/mag.	87500.425	•	•
condensate relay	86300.019	•	•
relay base	86300.020	•	•

Wiring Schematic, TZ-12B & TZ-18B



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