Installation Instructions

Electric Heaters
Precedent™ 6 to 10 Ton Models

Model Numbers:

Used With:
See General Information

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

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ACC-SVN67H-EN

Ingersoll Rand

Introduction

Read this manual thoroughly before operating or servicing this unit.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

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

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

NOTICE: Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

⚠WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS/SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

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Trademarks

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Revision History

- Updated eFlex™ models

Table of Contents

General Information

Table 1. Heater information

Model Number	Used With			
BAYHTRS309 BAYHTRS318 BAYHTRS327 BAYHTRS336	TSC072F3			
BAYHTRS409	TSC072F4			
BAYHTRS418 BAYHTRS427 BAYHTRS436	TSC072F4	TSC072ED WSC072ED	WSC090ED	TSC090ED
BAYHTRSW09 BAYHTRSW18 BAYHTRSW27 BAYHTRSW36	TSC072FW			
BAYHTRT309 BAYHTRT318 BAYHTRT327 BAYHTRT336	TSC092F3	TSC102F3		
BAYHTRT409 BAYHTRT418	TSC092F4	TSC102F4		
BAYHTRT427	TSC092F4	TSC102F4	TSC102ED	
BAYHTRT436	TSC120ED		WSC120ED	
BAYHTRT454	TSC120ED		WSC120ED	
BAYHTRTW18 BAYHTRTW27 BAYHTRTW36	TSC092EW	TSC102EW		
BAYHTRA309	THC074F3, TZC072F3	THC092F3, TZC090F3	THC102F3, TZC102F3	
BAYHTRA318	TSC120F3	THC074F3	THC092F3	THC102F3
BAYHTRA327	TSC120F3	THC074F3, TZC072F3	THC092F3, TZC090F3	THC102F3, TZC102F3
BAYHTRZ318	TZC072F3	TZC090F3	TZC102F3	
BAYHTRA336	TSC120F3	THC074F3	THC092F3	THC102F3
BAYHTRZ336	TZC072F3	TZC090F3	TZC102F3	
BAYHTRA354	TSC120F3			
BAYHTRA409	THC074F4	THC092F4		
BAYHTRZ409	TZC072F4	TZC090F4	TZC102F4	
BAYHTRA418	TSC120F4	THC074F4, TZC072F4	THC092F4, TZC090F4	THC102F4, TZC102F4
BAYHTRA427	TSC120F4	THC074F4, TZC072F4	THC092F4, TZC090F4	THC102F4, TZC102F4
BAYHTRA436	TSC120F4	THC074F4, TZC072F4	THC092F4, TZC090F4	THC102F4, TZC102F4
BAYHTRA454	TSC120F4			
BAYHTRZ454A	TZC120F4			
BAYHTRAW18	TSC120FW	TZC072FW	THC092FW, TZC090FW	THC102FW, TZC102FW
BAYHTRAW36	TSC120FW	TZC072FW	THC092FW, TZC090FW	THC102FW, TZC102FW
BAYHTRAW54	TSC120FW			
BAYHTRB318	WSC120E3			
BAYHTRB327	WSC120E3			
BAYHTRB336	WSC120E3			
BAYHTRB354	WSC120E3			
BAYHTRB418	WSC120E4			

Table 1. Heater information (continued)

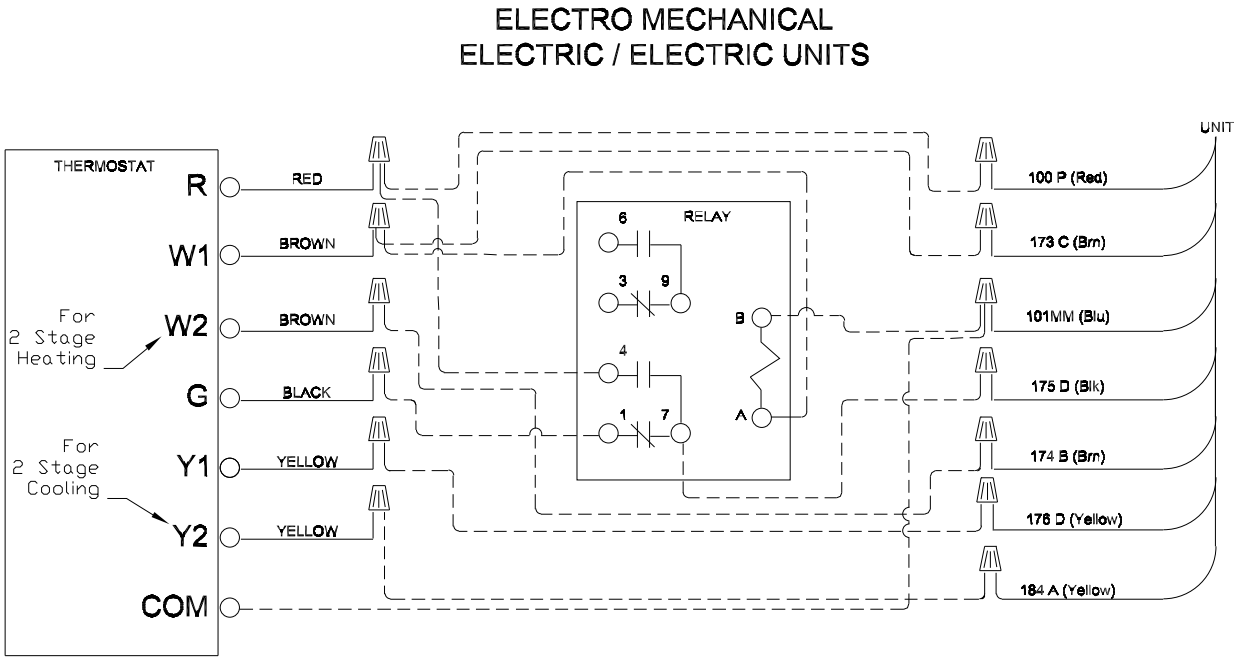
Model Number	Used With	
BAYHTRB427	WSC120E4	
BAYHTRB436	WSC120E4	
BAYHTRB454	WSC120E4	
BAYHTRBW18	TZC120FW	WSC120EW
BAYHTRBW36	WSC120EW	
BAYHTRBW54	WSC120EW	
BAYHTRD318	THC120E3	TZC120F3
BAYHTRD327	THC120E3	TZC120F3
BAYHTRD336	THC120E3	
BAYHTRZ337A	TZC120F3	
BAYHTRD354	THC120E3	
BAYHTRZ354A	TZC120F3	
BAYHTRD418	THC120E4	TZC120F4
BAYHTRD427	THC120E4	TZC120F4
BAYHTRD436	THC120E4	
BAYHTRZ436A	TZC120F4	
BAYHTRD454	THC120E4	
BAYHTRZ454A	TZC120F4	
BAYHTRU309	THC072F3	WSC090E3
BAYHTRU318	THC072F3	WSC090E3
BAYHTRU327	THC072F3	WSC090E3
BAYHTRU336	THC072F3	WSC090E3
BAYHTRU409	THC072F4	WSC090E4
BAYHTRU418	THC072F4	WSC090E4
BAYHTRU427	THC072F4	WSC090E4
BAYHTRU436	THC072F4	WSC090E4
BAYHTRUW18	THC072FW	WSC090EW
BAYHTRUW27	THC072FW	WSC090EW
BAYHTRUW36	THC072FW	WSC090EW
BAYHTRW309	TSC090F3	WSC072E3
BAYHTRW318	TSC090F3	WSC072E3
BAYHTRW327	TSC090F3	WSC072E3
BAYHTRW336	TSC090F3	WSC072E3
BAYHTRW409	TSC090F4	WSC072E4
BAYHTRW418	TSC090F4	WSC072E4
BAYHTRW427	TSC090F4	WSC072E4
BAYHTRW436	TSC090F4	WSC072E4
BAYHTRWW18	TSC090FW	WSC072EW
BAYHTRWW27	TSC090FW	WSC072EW
BAYHTRWW36	TSC090FW	WSC072EW

General

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES. Installer must mark unit nameplate with heater information per instructions on nameplate.

Note: *If digit 9 in the unit model number equals "E" (electromechanical control), accessory relay BAY24X042 is required if the thermostat does not energize the fan circuit in the heating mode. See Figure 1 for wiring information.*

Figure 1. Electromechanical wiring diagram



Inspection

1. Unpack all components of the kit.
2. Check carefully for any shipping damage. If any damage is found it must be reported immediately and a claim made against the transportation company.
3. Check the heater nameplate model number and compare with the electrical data tables. Ensure that the available power supply and unit's model number complies with the particular heater being used.

Installation

⚠WARNING

Hazardous Voltage w/Capacitors!

Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury. Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged.

For additional information regarding the safe discharge of capacitors, see PROD-SVB06A-EN

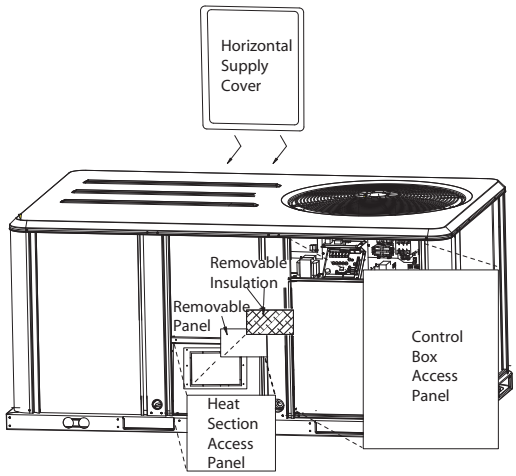
⚠WARNING

Fire Hazard!

On BAYHTRA, BAYHTRB, BAYHTRD, BAYHTRU, and BAYHTRW heater kits, failure to allow a one inch clearance from the supply ductwork to any combustible materials could cause the combustible materials to catch on fire which could result in death, serious injury, or property damage.

1. Remove heater compartment access panel and unit control box access panel. See Figure 2.

Figure 2. Control covers and access panels

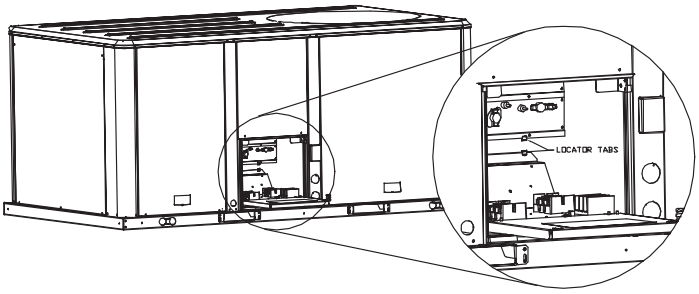


Note: *On downflow units with or without duct work installed or horizontal units without ductwork installed, remove horizontal supply cover from the rear of the heater compartment.*

2. Remove insulation to expose perimeter of removable panel in the vestibule panel. See Figure 2.
3. Clip or cut the retaining tabs around the perimeter of the removable panel.
4. Remove the panel.
5. Check the opening in the vestibule panel. Remove any metal burrs or slivers that could damage or pinch the heater elements resulting in a short circuit when elements are installed in the opening.

Note: *Locator tabs on the vestibule panel support the electric heat assembly and secure the inward edge of the electric heat accessory control panel. Slits in the insulation should allow the tabs to protrude through the insulation and be visible. However, it may be necessary to work the insulation back from the tabs and slightly bend the tabs outward if difficulty is encountered engaging the electric heater panel or the electric heat accessory control panel. See Figure 3.*

Figure 3. Electric heater element panel



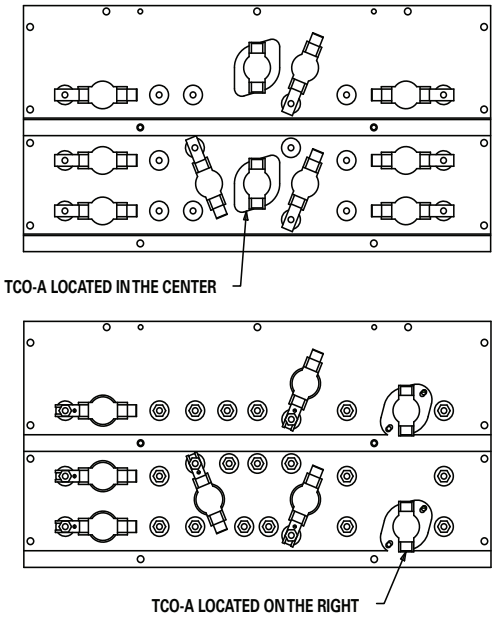
6. The electric heater element assembly has "BOTTOM" stamped in the mounting panel to identify the proper position for mounting.
7. Refer to Table 2. If the unit/heater combination being installed is the same as any in this table **and the application is for horizontal airflow**, the limit control TCO-A must be replaced with the extra limit control shipped with the heater. Replace TCO-A following the instructions in steps 8 and 9. If the unit/heater combination being installed does not correspond to any in this table or if the application is for downflow airflow, skip steps 8 and 9 and go on to step 10.

Table 2. TCO-A replaced for horizontal duct configuration

Unit Model Number	Electric Heater Model Number	TCO-A location
TSC120F4	BAYHTRA454	Right
TSC120FW, TZC072FW, TZC090FW, and TZC102FW	BAYHTRAW18, BAYHTRAW36, W54	Right
TZC120FW, WSC120EW	BAYHTRBW18A, BAYHTRZW36A, BAYHTRZW54A, BAYHTRBW36, W54	Right
THC092F4, THC074F4, THC102F4, TSC120F4, TZC072F4, TZC090F4, and TZC102F, TZ102F4	BAYHTRA427, BAYHTRA436, BAYHTRZ409, BAYHTRA418	Right
THC072E4, WSC090E4	BAYHTRU427, 436	Center
WSC090EW	BAYHTRUW27, W36	Center
WSC072E3	BAYHTRW327, 336	Center
TSC090E4, WSC072E4	BAYHTRW427, 436	Center
TSC090EW, WSC072EW	BAYHTRWW27, W36	Center

8. TCO-A is the limit control located in the center or right part of the heater mounting plate that is located on the bottom of the two heater element assemblies. See Figure 4. To replace this device, first remove the two wires connected to the terminals. Next, remove the two screws which secure it to the heater element mounting plate. Once TCO-A has been removed from the heater element mounting plate, discard this device.

Figure 4.



9. Obtain the replacement TCO-A which is secured with a wire tie near the unit/heater terminal block located on the electric heater control panel. Attach it to the heater element mounting plate with the two screws that were removed in step 8. Connect the two wires that were unhooked in step 8 to the terminals on the new TCO-A. Refer to the heater package wiring diagram to assure that the wiring is connected properly.

Note: *The back of the electric heater element assembly is supported by a factory installed Electric Heat Support Rod Hanger or other sheet metal device in the unit.*

10. Tilt the back of the electric heater element assembly slightly upward as it is positioned in the opening to engage the support rod with the support rod hanger. The BAYHTRA, BAYHTRB, and BAYHTRD models will have a guide rod and a support bracket to help with the installation. See Figure 5. Be very careful to avoid dragging the heater element on the edges of the opening in vestibule panel, as this could damage or pinch the heater elements resulting in a short circuit. Engage the bottom edge of heater element panel with the two locator tabs. See Figure 3. BAYHTRB and BAYHTRD kits will have 4 locator tabs along the top, a filler panel to be placed below the heater, and 12 screws to attach the assembly in place. See Figure 6.

Figure 5.

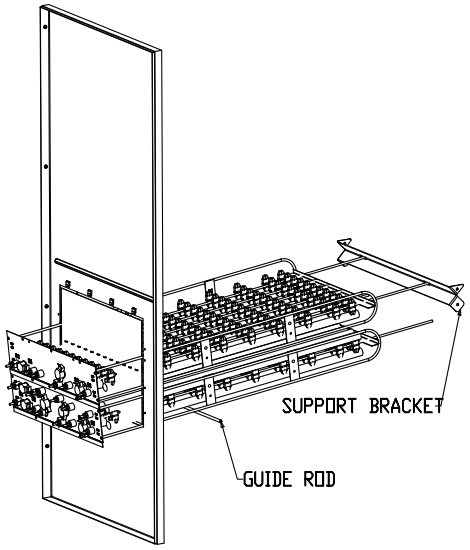
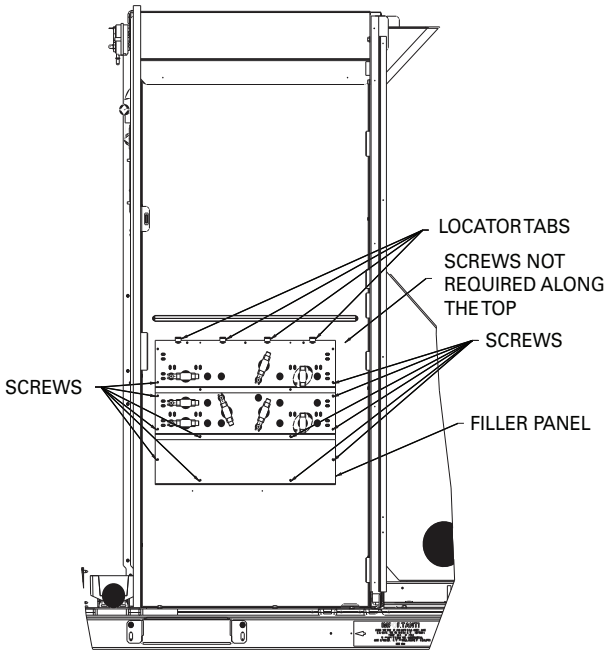
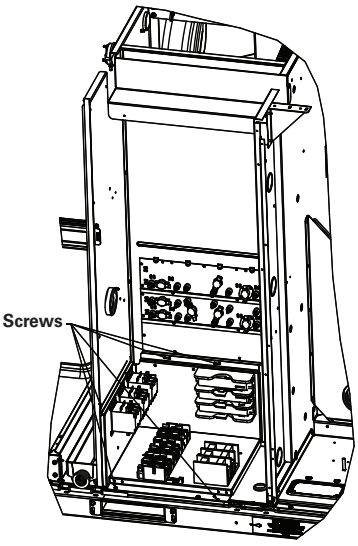


Figure 6.



11. Secure the electric heater element assembly with the necessary amount of screws.
12. Slide the electric heater control panel/access door assembly inward until the rear edge engages with retaining clips. See Figure 3. For the BAYHTRS, BAYHTRT, BAYHTRU, and BAYHTRW kits, secure the outer edge with 2 screws. The BAYHTRA, BAYHTRB, and BAYHTRD kits will secure the control panel with screws at the top against the vestibule panel and against the indoor divider panel. See Figure 7.

Figure 7.



13. To install the hinged door stops, loosen one existing screw from the upper left side of the electric heater compartment opening. Position each door stop with outer tab flush against center post and secure each door stop with 1 or 2 screws. See zoom view in Figure 8 or Figure 9.

Figure 8. Single point power

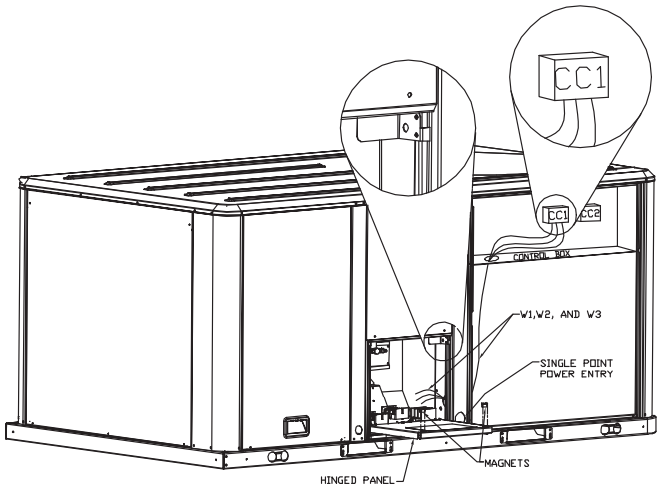
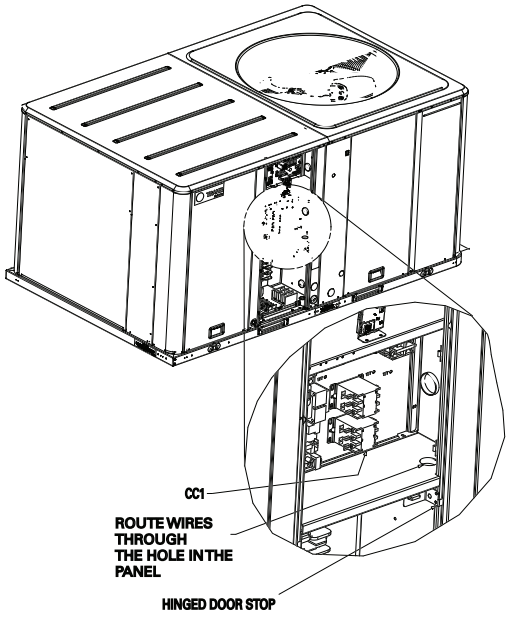


Figure 9.



14. Remove the wire nuts from W1, W2 and W3.
15. For models with the control box in the outdoor section, route the wires through the wire access opening in the divider panel, then up to the unit control box entering through the bottom wire access opening on the left side. See Figure 8. For models with the control box above the heat exchanger section, route the wires through the hole in the panel separating the heater compartment and the control box compartment. See Figure 9. Secure wires to the existing harness.

16. In the unit control box, route the wires along the existing harness to contactor CC1. Secure wires to existing harness.
17. Locate the low voltage wire harness with polarized plug in the electric heater section compartment. Remove the factory installed jumper. Connect the low voltage polarized plug from the unit to the polarized plug on the electric heater assembly.
18. Wire the heater element assembly to the electric heater control panel according to the wiring diagram attached to the electric heater control panel door.
19. Secure the green ground wire from the electric heat control panel to the right hand wall of electric heater compartment with star washer and #10 grounding screw.
20. Wire W1, W2 and W3 wires to CC1 according to the wiring diagram attached to the unit control panel door.
21. Route single point power entry wires through the front access opening of the support panel adjacent to the electric heater section compartment. Using good installation practices, provide strain relief for high voltage wires where necessary. See Figure 8 or Figure 9.

NOTICE:

Use Copper Conductors Only!

Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors could result in equipment damage.

⚠WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

22. Wire according to the wiring diagram attached to the electric heater control panel door. Ground unit at grounding lug provided on electric heater control panel assembly.

Important: *After heater is installed and before applying power, verify that heating elements are not damaged or pinched and that heating elements are not short circuited to each other or to the heater frame or equipment cabinet by doing the following: Test every heater element with ohmmeter and verify that heater element terminals are electrically isolated from cabinet and ground (infinite resistance). On downflow units with or without duct work installed or horizontal units without ductwork installed, remove horizontal supply cover and carefully inspect elements after installation for damage or proximity to supporting structure or cabinet. At least 1/4" clearance is required around electric heater coils.*

Important: *Be sure to check tightness of all terminal connections, clamps, screws, etc., as these may have become loose in shipment. Retighten all electrical connections after equipment has been in operation and components have reached operating temperature.*

23. Install the magnets into the door as seen in Figure 8 or Figure 9. Magnets should lock into place once installed. Close electric heater control panel access door, replace heat section access panel and unit control box access panel. Replace horizontal supply cover. Be careful when replacing cover and make sure gasketing is not torn or missing. Gasket must make water tight seal.
24. Scratch out the square on unit nameplate showing heater model installed in unit.

Electrical Data

Table 3. Air temperature rise (60 hz)[a]

		6 Ton		7.5 Ton		7.5 Ton	8.5 Ton	10 Ton	
		2000 cfm[b],[c] (2)		3000 cfm		3000 cfm	3400 cfm	4000 cfm[d],[e]	
Nominal kW Input	No. of Capacity Stages	T*C072E3 T*C072E4 T*C072EW THC074F3 THC074F4 TZC072F3, TZC072F4, and TZC072FW	WSC072E3 WSC072E4 WSC072EW	TSC090E3 TSC090E4 TSC090EW	WSC090E3 WSC090E4 WSC090EW	TSC092E3 TSC092E4 TSC092EW THC092F3,4 TZC090F3, TZC090F4, and TZC090FW	T*C102E3 T*C102E4 THC102F3,4 TSC102EW TZC102F3, TZC102F4, and TZC102FW	THC120E3 THC120E4 TSC120F3 TSC120F4 TSC120FW TZC120F3, TZC120F4, and TZC120FW	WSC120E3 WSC120E4 WSC120EW
9.0	1	14.2	14.2	9.5	9.5	9.5	8.4	—	—
11.3	1	14.9	14.9	11.9	11.9	—	—	—	—
16.9	2	22.3	22.3	17.8	17.8	15.7	15.7	13.4	13.4
18.0	1	28.5	28.5	19.0	19.0	19.0	16.7	14.2	14.2
22.6	2	29.8	29.8	23.8	23.8		21.0	7.9	17.9
27.0	2	42.7	42.7	28.5	28.5	28.5	25.1	21.3	21.3
33.80	2	—	—	—	—	—	—	26.7	26.7
36.00	2	56.9	56.9	37.9	37.9	37.9	33.5	28.5	28.5
54.00	2	—	—	—	—	—	—	42.7	42.7

(a) The air temperature rise (F) across the heaters is: (Heater kW x 3414)/(1.08 x cfm)
(b) The minimum allowable airflow for TSC072E, TZC072F with a 36.0 kW heater is 2200 cfm
(c) The minimum allowable airflow for WSC072E with a 36.0 kW heater is 2450 cfm
(d) The minimum allowable airflow for a TSC120EF, TZC120F and THC120E with a 54kW heater is 3400 cfm
(e) The minimum allowable airflow for a WSC120 with a 54kW heater is 4000 cfm

Table 4. Unit wiring with electric heat (single point connection) - standard efficiency

Tons	Unit Model Number	Heater Model Number	Heater kW Rating[a]	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
208/230 Volts Three Phase								
6	TSC072F3	BAYHTRS309*	6.8/9.0	1	36.5/36.5	50/50	37.8/37.8	60/60
6	TSC072F3	BAYHTRS318*	13.5/18.0	1	53.1/60.4	60/70	54.8/62.0	60/70
6	TSC072F3	BAYHTRS327*	20.3/27.0	2	76.6/87.5	80/90	78.3/89.1	80/90
6	TSC072F3	BAYHTRS336*	27.0/36.0	2	100.1/114.5	110/125	101.8/116.1	110/125
7.5	TSC090F3	BAYHTRW309*	6.8/9.0	1	38.2/38.2	60/60	44.0/44.0	60/60
7.5	TSC090F3	BAYHTRW318*	13.5/18.0	1	51.4/58.6	60/60	58.6/65.9	60/70
7.5	TSC090F3	BAYHTRW327*	20.3/27.0	2	74.9/85.8	80/90	82.1/93.0	90/100
7.5	TSC090F3	BAYHTRW336*	27.0/36.0	2	98.4/112.8	100/125	105.6/120.0	110/125
7.5[b]	TSC092F3	BAYHTRT309*	6.8/9.0	1	39.3/39.3	50/50	45.1/45.1	50/50
7.5[b]	TSC092F3	BAYHTRT318*	13.5/18.0	1	51.4/58.6	60/60	58.6/65.9	60/70
7.5[b]	TSC092F3	BAYHTRT327*	20.3/27.0	2	74.9/85.8	80/90	82.1/93.0	90/100
7.5[b]	TSC092F3	BAYHTRT336*	27.0/36.0	2	98.4/112.8	100/125	105.6/120.0	110/125
8.5	TSC102F3	BAYHTRT309*	6.8/9.0	1	43.3/43.3	50/50	46.4/46.4	60/60
8.5	TSC102F3	BAYHTRT318*	13.5/18.0	1	54.8/62.0	60/70	58.6/65.9	60/70
8.5	TSC102F3	BAYHTRT327*	20.3/27.0	2	78.3/89.1	80/90	82.1/93.0	90/100
8.5	TSC102F3	BAYHTRT336*	27.0/36.0	2	101.8/116.1	110/125	105.6/120.0	110/125
10	TSC120F3	BAYHTRA318*	13.5/18.0	1	57.5/64.8	60/70	—/—	—/—
10	TSC120F3	BAYHTRA327*	20.3/27.0	2	81.0/91.9	90/100	—/—	—/—
10	TSC120F3	BAYHTRA336*	27.0/36.0	2	104.5/118.9	110/125	—/—	—/—
10	TSC120F3	BAYHTRA354*	40.6/54.0	2	151.4/140.5	175/150	—/—	—/—

Table 4. Unit wiring with electric heat (single point connection) - standard efficiency (continued)

Tons	Unit Model Number	Heater Model Number	Heater kW Rating[a]	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
460 Volts Three Phase								
6	TSC072F4	BAYHTRS409*	9.0	1	18.2	25	19.3	25
6	TSC072F4	BAYHTRS418*	18.0	1	30.3	35	31.6	35
6	TSC072F4	BAYHTRS427*	27.0	2	43.8	45	45.1	50
6	TSC072F4	BAYHTRS436*	36.0	2	57.3	60	58.6	60
7.5	TSC090F4	BAYHTRW409*	9.0	1	19.5	30	22.4	35
7.5	TSC090F4	BAYHTRW418*	18.0	1	29.3	30	32.9	35
7.5	TSC090F4	BAYHTRW427*	27.0	2	42.8	45	46.4	50
7.5	TSC090F4	BAYHTRW436*	36.0	2	56.3	60	59.9	60
7.5[b]	TSC092F4	BAYHTRT409*	9.0	1	18.5	20	21.4	25
7.5[b]	TSC092F4	BAYHTRT418*	18.0	1	29.3	30	32.9	35
7.5[b]	TSC092F4	BAYHTRT427*	27.0	2	42.8	45	46.4	50
7.5[b]	TSC092F4	BAYHTRT436*	36.0	2	56.3	60	59.9	60
8.5	TSC102F4	BAYHTRT409*	9.0	1	21.4	25	22.4	25
8.5	TSC102F4	BAYHTRT418*	18.0	1	31.6	35	32.9	35
8.5	TSC102F4	BAYHTRT427*	27.0	2	45.1	50	46.4	50
8.5	TSC102F4	BAYHTRT436*	36.0	2	58.6	60	59.9	60
10	TSC120F4	BAYHTRA418*	18.0	1	32.5	35	—	—
10	TSC120F4	BAYHTRA427*	27.0	2	46.0	50	—	—
10	TSC120F4	BAYHTRA436*	36.0	2	59.5	60	—	—
10	TSC120F4	BAYHTRA454*	54.0	2	70.4	80	—	—
575 Volts Three Phase								
6	TSC072FW	BAYHTRSW09*	9.0	1	13.0	20	14.0	20
6	TSC072FW	BAYHTRSW18*	18.0	1	23.8	25	24.8	25
6	TSC072FW	BAYHTRSW27*	27.0	2	34.6	35	35.6	40
6	TSC072FW	BAYHTRSW36*	36.0	2	45.4	50	46.4	50
7.5	TSC090FW	BAYHTRWW18*	18.0	1	23.4	25	25.9	30
7.5	TSC090FW	BAYHTRWW27*	27.0	2	34.3	35	36.8	40
7.5	TSC090FW	BAYHTRWW36*	36.0	2	45.0	45	47.5	50
7.5[b]	TSC092FW	.5AYHTRTW18*	18.0	1	23.4	25	26.3	30
7.5[b]	TSC092FW	BAYHTRTW27*	27.0	2	34.3	35	37.1	40
7.5[b]	TSC092FW	BAYHTRTW36*	36.0	2	45.0	45	47.9	50
8.5	TSC102FW	BAYHTRTW18*	18.0	1	24.8	25	26.3	30
8.5	TSC102FW	BAYHTRTW27*	27.0	2	35.6	40	37.1	40
8.5	TSC102FW	BAYHTRTW36*	36.0	2	46.4	50	47.9	50
10	TSC120FW	BAYHTRAW18*	18.0	1	27.0	30	—	—
10	TSC120FW	BAYHTRAW36*	36.0	2	48.6	50	—	—
10	TSC120FW	BAYHTRAW54*	54.0	2	57.4	60	—	—

(a) No optional motors available for 3 to 5 tons. The standard motor is a multispeed, direct drive motor. The standard motor for the 3-phase (6-8½ ton models) is a belt drive motor.
(b) Dual refrigeration system.

Table 5. Unit wiring with electric heat (single point connection) - standard efficiency

Tons	Unit Model Number	Heater Model Number	Heater kW Rating[(a)]	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
208/230 Volts Three Phase								
6	WSC072E3	BAYHTRW309*	6.8/9.0	1	59.8/63.4	70/80	61.1/64.7	70/80
6	WSC072E3	BAYHTRW318*	13.5/18.0	1	83.2/90.4	90/100	84.5/91.7	90/100
6	WSC072E3	BAYHTRW327*	20.3/27.0	2	106.7/117.6	110/125	108.0/118.9	110/125
6	WSC072E3	BAYHTRW336*	27.0/36.0	2	130.2/144.6	150/150	131.5/145.9	150/150
7.5	WSC090E3	BAYHTRU309*	6.8/9.0	1	61.9/65.5	80/80	67.7/71.3	80/90
7.5	WSC090E3	BAYHTRU318*	13.5/18.0	1	85.2/92.5	100/100	91.0/98.3	100/100
7.5	WSC090E3	BAYHTRU327*	20.3/27.0	2	108.7/119.6	110/125	114.5/125.4	125/150
7½	WSC090E3	BAYHTRU336*	27.0/36.0	2	132.2/146.6	150/150	138.0/152.4	150/175
10	WSC120E3	BAYHTRB318*	13.5/18.0	1	98.8/106.1	100/110	—/—	—/—
10	WSC120E3	BAYHTRB327*	20.3/27.0	2	122.3/133.2	125/150	—/—	—/—
10	WSC120E3	BAYHTRB336*	27.0/36.0	2	145.8/160.2	150/175	—/—	—/—
10	WSC120E3	BAYHTRB354*	40.6/54.0	2	192.7/181.8	200/200	—/—	—/—
460 Volts Three Phase								
6	WSC072E4	BAYHTRW409*	9.0	1	33.8	40	34.4	40
6	WSC072E4	BAYHTRW418*	18.0	1	47.4	50	48.0	50
6	WSC072E4	BAYHTRW427*	27.0	2	60.9	70	61.5	70
6	WSC072E4	BAYHTRW436*	36.0	2	74.4	80	75.0	80
7.5	WSC090E4	BAYHTRU409*	9.0	1	32.5	40	35.4	40
7.5	WSC090E4	BAYHTRU418*	18.0	1	46.1	50	49.0	50
7.5	WSC090E4	BAYHTRU427*	27.0	2	59.6	60	62.5	70
7.5	WSC090E4	BAYHTRU436*	36.0	2	73.1	80	76.0	80
10	WSC120E4	BAYHTRB418*	18.0	1	53.2	60	—	—
10	WSC120E4	BAYHTRB427*	27.0	2	66.7	70	—	—
10	WSC120E4	BAYHTRB436*	36.0	2	80.2	90	—	—
10	WSC120E4	BAYHTRB454*	54.0	2	91.1	100	—	—
575 Volts Three Phase								
6	WSC072EW	BAYHTRWW18*	18.0	1	34.0	35	34.9	35
6	WSC072EW	BAYHTRWW27*	27.0	2	44.9	45	45.8	50
6	WSC072EW	BAYHTRWW36*	36.0	2	55.6	60	56.5	60
7.5	WSC090EW	BAYHTRUW18*	18.0	1	36.1	40	38.1	40
7.5	WSC090EW	BAYHTRUW27*	27.0	2	47.0	50	49.0	50
7.5	WSC090EW	BAYHTRUW36*	36.0	2	57.7	60	59.7	60
10	WSC120EW	BAYHTRBW18*	18.0	1	42.7	45	—	—
10	WSC120EW	BAYHTRBW36*	36.0	2	64.4	70	—	—
10	WSC120EW	BAYHTRBW54*	54.0	2	73.1	80	—	—

(a) The standard motor for the 1-phase models is a multispeed, direct drive motor. The standard motor for 3-phase models (10 ton) is a multispeed, direct drive motor. The standard motor for 3-phase (6 to 7.5 tons) is a belt drive motor.

Table 6. Unit wiring with electric heat (single point connection) - high efficiency and eFlex™ - 6 to 10 tons

Tons	Unit Model Number	Heater Model Number	Heater kW Rating[a]	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
208/230 Volts Three Phase								
6	THC072E/F3	BAYHTRU309*	6.8/9.0	1	32.3/33.4	50/50	33.6/35.0	50/50
6	THC072*3	BAYHTRU318*	13.5/18.0	1	53.1/60.4	60/70	54.8/62.0	60/70
6	THC072*3	BAYHTRU327*	20.3/27.0	2	76.6/87.5	80/90	78.3/89.1	80/90
6	THC072*3	BAYHTRU336*	27.0/36.0	2	100.1/114.5	110/125	101.8/116.1	125/110
6	THC074F3	BAYHTRA309*	6.8/9.0	1	37.4/37.8	50/50	—/—	—/—
6	THC074F3	BAYHTRA318*	13.5/18.0	1	57.5/64.8	60/70	—/—	—/—
6	THC074F3	BAYHTRA327*	20.3/27.0	2	81.0/91.9	90/100	—/—	—/—
6	THC074F3	BAYHTRA336*	27.0/36.0	2	104.5/118.90	110/125	—/—	—/—
6	TZC072F3	BAYHTRA309A	6.8/9	1	18.8/21.7	52/52	—/—	—/—
6	TZC072F3	BAYHTRZ318A	13.5/18	1	37.5/43.3	86/86	—/—	—/—
6	TZC072F3	BAYHTRA327A	20.3/27	2	56.3/65.0	120/120	—/—	—/—
6	TZC072F3	BAYHTRZ336A	27/36	2	75.1/86.6	154/154	—/—	—/—
7.5	THC092F3	BAYHTRA309*	6.8/9.0	1	41.9/41.9	50/50	—/—	—/—
7.5	THC092F3	BAYHTRA318*	13.5/18.0	1	57.5/64.8	60/70	—/—	—/—
7.5	THC092F3	BAYHTRA327*	20.3/27.0	2	81.0/91.9	90/100	—/—	—/—
7.5	THC092F3	BAYHTRA336*	27.0/36.0	2	104.5/118.9	110/125	—/—	—/—
7.5	TZC090F3	BAYHTRA309A	6.8/9	1	18.8/21.7	52/52	—/—	—/—
7.5	TZC090F3	BAYHTRZ318A	13.5/18	1	37.5/43.3	86/86	—/—	—/—
7.5	TZC090F3	BAYHTRA327A	20.3/27	2	56.3/65.0	120/120	—/—	—/—
7.5	TZC090F3	BAYHTRZ336A	27/36	2	75.1/86.6	154/154	—/—	—/—
8.5	THC102F3	BAYHTRA309*	6.8/9.0	1	42.0/42.0	50/50	—/—	—/—
8.5	THC102F3	BAYHTRA318*	13.5/18.0	1	57.5/64.8	60/70	—/—	—/—
8.5	THC102F3	BAYHTRA327*	20.3/27.0	2	81.0/91.9	90/100	—/—	—/—
8.5	THC102F3	BAYHTRA336*	27.0/36.0	2	104.5/118.9	110/125	—/—	—/—
8.5	TZC102F3	BAYHTRA309A	6.8/9	1	18.8/21.7	52/52	—/—	—/—
8.5	TZC102F3	BAYHTRZ318A	13.5/18	1	37.5/43.3	86/86	—/—	—/—
8.5	TZC102F3	BAYHTRA327A	20.3/27	2	56.3/65.0	120/120	—/—	—/—
8.5	TZC102F3	BAYHTRZ336A	27/36	2	75.1/86.6	154/154	—/—	—/—
10	THC120F3	BAYHTRD318*	13.5/18.0	1	57.5/64.8	60/70	—/—	—/—
10	THC120F3	BAYHTRD327*	20.3/27.0	2	81.0/91.9	90/100	—/—	—/—
10	THC120F3	BAYHTRD336*	27.0/36.0	2	104.5/118.9	110/125	—/—	—/—
10	THC120F3	BAYHTRD354*	40.6/54.0	2	151.4/140.5	175/150	—/—	—/—
10	TZC120F3	BAYHTRD318A	13.5/18	1	37.5/43.3	86/86	—/—	—/—
10	TZC120F3	BAYHTRD327A	20.3/27	2	56.3/65.0	120/120	—/—	—/—
10	TZC120F3	BAYHTRZ337A	27/36	2	75.1/86.6	154/154	—/—	—/—
10	TZC120F3	BAYHTRZ354A	40.6/54	2	112.6/129.9	181/181	—/—	—/—
460 Volts Three Phase								
6	THC072*4	BAYHTRA409*	9.0	1	16.6	20	17.4	20
6	THC072*4	BAYHTRA418*	18.0	1	30.3	35	31.0	35
6	THC072*4	BAYHTRA427*	27.0	2	43.8	45	44.5	45
6	THC072*4	BAYHTRA436*	36.0	2	57.3	60	58.0	60
6	THC074F4	BAYHTRA409*	9.0	1	18.9	25	—	—
6	THC074F4	BAYHTRA418*	18.0	1	32.5	35	—	—
6	THC074F4	BAYHTRA427*	27.0	2	46.0	50	—	—

Table 6. Unit wiring with electric heat (single point connection) - high efficiency and eFlex™ - 6 to 10 tons (continued)

Tons	Unit Model Number	Heater Model Number	Heater kW Rating[a]	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker
460 Volts Three Phase								
6	THC074F4	BAYHTRA436*	36.0	2	59.5	60	—	—
6	TZC072F4	BAYHTRA409A	9	1	10.8	26	—	—
6	TZC072F4	BAYHTRA418A	18	1	21.7	43	—	—
6	TZC072F4	BAYHTRA427A	27	2	32.5	60	—	—
6	TZC072F4	BAYHTRA436A	36	2	43.3	77	—	—
7.5	THC092F4	BAYHTRA409*	9.0	1	19.9	25	—	—
7.5	THC092F4	BAYHTRA418*	18.0	1	32.5	35	—	—
7.5	THC092F4	BAYHTRA427*	27.0	2	46.0	50	—	—
7.5	THC092F4	BAYHTRA436*	36.0	2	59.5	60	—	—
7.5	TZC090F4	BAYHTRA409A	09	1	10.8	26	—	—
7.5	TZC090F4	BAYHTRA418A	18	1	21.7	43	—	—
7.5	TZC090F4	BAYHTRA427A	27	2	32.5	60	—	—
7.5	TZC090F4	BAYHTRA436A	36	2	43.3	77	—	—
8.5	THC102F4	BAYHTRA409*	9.0	1	21.6	25	—	—
8.5	THC102F4	BAYHTRA418*	18.0	1	32.5	35	—	—
8.5	THC102F4	BAYHTRA427*	27.0	2	46.0	50	—	—
8.5	THC102F4	BAYHTRA436*	36.0	2	59.5	60	—	—
8.5	TZC102F4	BAYHTRA409A	09	1	10.8	26	—	—
8.5	TZC102F4	BAYHTRA418A	18	1	21.7	43	—	—
8.5	TZC102F4	BAYHTRA427A	27	2	32.5	60	—	—
8.5	TZC102F4	BAYHTRA436A	36	2	43.3	77	—	—
10	THC120F4	BAYHTRD418*	18.0	1	32.5	35	—	—
10	THC120F4	BAYHTRD427*	27.0	2	46.0	50	—	—
10	THC120F4	BAYHTRD436*	36.0	2	59.5	60	—	—
10	THC120F4	BAYHTRD454*	54.0	2	70.4	80	—	—
10	TZC120F4	BAYHTRD418A	18	1	21.7	43	—	—
10	TZC120F4	BAYHTRD427A	27	2	32.5	60	—	—
10	TZC120F4	BAYHTRZ436A	36	2	43.3	77	—	—
10	TZC120F4	BAYHTRZ454A	54	2	65.0	91	—	—
575 Volts Three Phase								
6	TZC072FW	BAYHTRAW18*	18	1	17.3	37	—	—
6	TZC072FW	BAYHTRAW36*	36	2	34.6	64	—	—
7.5	TZC090FW	BAYHTRAW18*	18	1	17.3	37	—	—
7.5	TZC090FW	BAYHTRAW36*	36	2	34.6	64	—	—
8.5	TZC102FW	BAYHTRAW18*	18	1	17.3	37	—	—
8.5	TZC102FW	BAYHTRAW36*	36	2	34.6	64	—	—
10	TZC120FW	BAYHTRBW18*	18	1	17.3	37	—	—
10	TZC120FW	BAYHTRZW36*	36	2	34.6	64	—	—
10	TZC120FW	BAYHTRZW54*	54	2	52.0	75	—	—

(a) Heater kW ratings are at 208/240V for 208/230V units, 480V for 460V units.

Table 7. Air temperature rise 380/415 volt (50 hz)[a]

(Degrees C)[b]					
			6 Ton	7.5 Ton	10 Ton
			4100 M^3/H	5100 M^3/H	6800 M^3/H
kW	Voltage	Stages	WSC072ED	WSC090ED	WSC120ED
11.3	380-415/50/3	1	8.3	6.6	—
12.5	380-415/50/3	1	9.1	7.3	—
13.5	380-415/50/3	1	9.9	7.9	—
16.9	380-415/50/3	2	12.4	9.9	7.4
18.8	380-415/50/3	2	13.8	11.0	8.3
20.2	380-415/50/3	2	14.8	11.8	8.9
22.6	380-415/50/3	2	16.5	13.2	9.9
25.0	380-415/50/3	2	18.3	14.6	11.0
26.9	380-415/50/3	2	19.7	15.7	11.8
33.9	380-415/50/3	2	—	—	14.9
37.5	380-415/50/3	2	—	—	16.5
40.4	380-415/50/3	2	—	—	17.7

(Degrees F)[c]					
			6 Ton	7.5 Ton	10 Ton
			2400 cfm	3000 cfm	4000 cfm
kW	Voltage	Stages	WSC072ED	WSC090ED	WSC120ED
11.3	380-415/50/3	1	14.9	11.9	—
12.5	380-415/50/3	1	16.5	13.2	—
13.5	380-415/50/3	1	17.8	14.2	—
16.9	380-415/50/3	2	22.3	17.8	13.4
18.8	380-415/50/3	2	24.8	19.8	14.9
20.2	380-415/50/3	2	26.6	21.3	16.0
22.6	380-415/50/3	2	29.8	23.8	17.9
25.0	380-415/50/3	2	32.9	26.3	19.8
26.9	380-415/50/3	2	35.4	28.3	21.3
33.9	380-415/50/3	2	—	—	26.8
37.5	380-415/50/3	2	—	—	29.6
40.4	380-415/50/3	2	—	—	31.9

(a) For minimum design airflow, see performance table for each unit.
(b) To calculate the temperature rise in Celsius at different airflow, use the following formula: Temperature rise (C) across electric heater = (kW x 2985)/(M3/H).
(c) To calculate the temperature rise in Fahrenheit at different airflow, use the following formula: Temperature rise (F) across electric heater = (kW x 3414)/(1.08/H).

Table 8. Air temperature rise 380/415 volt (50 hz)[a]

(Degrees C)[b]						
			6 Ton	7.5 Ton	8.5 Ton	10 Ton
			4100 M^3/H	5100 M^3/H	5800 M^3/H	6800 M^3/H
kW	Voltage	Stages	TSC072ED	TSC090ED	TSC102ED	TSC120ED
11.3/13.5	380-415/50/3	1	8.3/9.9	6.6/7.9	—	—
16.9/20.2	380-415/50/3	2	12.4/14.8	9.9/11.8	8.7/10.4	7.4/8.9
22.6/26.9	380-415/50/3	2	16.5/19.7	13.2/15.7	11.7/13.9	9.9/11.8
33.8/40.4	380-415/50/3	2	—	—	—	14.8 / 17.7

(Degrees F)[c]						
			6 Ton	7.5 Ton	8.5 Ton	10 Ton
			2400 cfm	3000 cfm	3400 cfm	4000 cfm
kW	Voltage	Stages	TSC072ED	TSC090ED	TSC102ED	TSC120ED
11.3/13.5	380-415/50/3	1	14.9/17.8	11.9/14.2	—	—
16.9/20.2	380-415/50/3	2	22.3/26.6	17.8/21.3	15.7/18.8	13.4/16.0
22.6/26.9	380-415/50/3	2	29.8/35.4	23.8/28.3	21.0/25.0	17.9/21.3
33.8/40.4	380-415/50/3	2	—	—	—	26.7/31.9

(a) For minimum design airflow, see performance table for each unit.
(b) To calculate the temperature rise in Celsius at different airflow, use the following formula: Temperature rise (C) across electric heater = (kW x 2985)/(M3/H).
(c) To calculate the temperature rise in Fahrenheit at different airflow, use the following formula: Temperature rise (F) across electric heater = (kW x 3414)/(1.08/H).

Table 9. Cooling only units with electric heater — single power source — 380/415 volt three phase (50hz)

					Standard Indoor Fan Motor		Oversized Indoor Fan Motor	
Unit Model No.	Heater Model No.	Heater[a] kW Rating	Heater[a] MBh	Control Stages	MCA	Maximum Fuse Size Or Maximum Circuit Breaker	MCA	Maximum Fuse Size Or Maximum Circuit Breaker
TSC072ED	BAYHTRS418	11.3/13.5	39/47	1	26.9/28.9	35/35	28.1/30.1	35/35
	BAYHTRS427	16.9/20.2	58/69	2	37.5/40.5	40/45	38.8/41.8	40/45
	BAYHTRS436	22.6/26.9	78/92	2	48.3/52.1	50/60	49.5/53.4	50/60
TSC090ED	BAYHTRS418	11.3/13.5	39/47	1	28.1/30.1	35/35	30.3/32.3	35/35
	BAYHTRS427	16.9/20.2	58/69	2	38.8/41.8	40/45	40.9/43.9	45/45
	BAYHTRS436	22.6/26.9	78/92	2	49.5/53.4	50/60	51.6/55.5	60/60
TSC102ED	BAYHTRT427	16.9/20.2	58/69	2	38.8/41.8	40/45	40.9/43.9	45/45
	BAYHTRT436	22.6/26.9	78/92	2	49.5/53.4	50/60	51.6/55.5	60/60
TSC120ED	BAYHTRT427	16.9/20.2	58/69	2	40.9/43.9	45/45	40.9/43.9	45/45
	BAYHTRT436	22.6/26.9	78/92	2	51.6/55.5	60/60	51.6/55.5	60/60
	BAYHTRT454	33.8/40.4	116/138	2	73.1/79.0	80/80	73.1/79.0	80/80

(a) kW and MBh shown for 380V/415V

Table 10. Heat pump units with electric heater — single power source — 380/415 volt three phase (50hz)

					Standard Indoor Fan Motor		Oversized Indoor Fan Motor	
Unit Model No.	Heater Model No.	Heater[a] kW Rating	Heater[a] MBh	Control Stages	MCA	Maximum Fuse Size Or Maximum Circuit Breaker	MCA	Maximum Fuse Size Or Maximum Circuit Breaker
WSC072ED	BAYHTRS418	11.3/13.5	39/47	1	43.4/45.4	50/50	44.4/46.4	50/50
	BAYHTRS427	16.9/20.2	58/69	2	54.1/57.1	60/60	55.1/58.1	60/60
	BAYHTRS436	22.6/26.9	78/92	2	64.8/68.7	70/70	65.8/69.7	70/70
WSC090ED	BAYHTRS418	11.3/13.5	39/47	1	46.3/48.3	50/50	48.0/50.0	50/50
	BAYHTRS427	16.9/20.2	58/69	2	56.9/59.9	60/60	58.6/61.6	60/60
	BAYHTRS436	22.6/26.9	78/92	2	67.7/71.6	70/70	69.4/73.3	70/70
WSC120ED	BAYHTRT427	16.9/20.2	58/69	2	63.3/66.3	70/70	—	—
	BAYHTRT436	22.6/26.9	78/92	2	74.0/77.9	80/80	—	—
	BAYHTRT454	33.9/40.4	116/138	2	95.5/101.4	100/110	—	—

(a) kW and MBh shown for 380V/415V

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