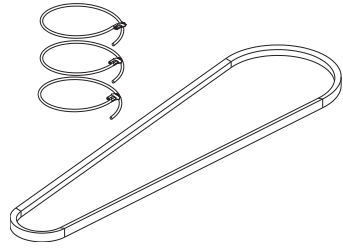


Installation Instructions

Reversible Discharge Wire Kit



Model Numbers: Used With Constant Volume Units:
BAYWRKT002 TWE051, TWE060, TWE072*D, TWE076, TWE101, TWE090*1,
TWE120*1

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.

March 2022

ACC-SVN123G-EN

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1 Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. 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

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 according to local rules. For the USA, 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.

2 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/national electrical codes.

WARNING

Personal Protective Equipment 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 Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labeling 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.

3 WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

WARNING

Live Electrical Components!

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury. When it is necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.

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4 General Information

The reversible discharge wire kit is used with TWE060, 072, 090 and 120 constant volume air handlers when the application requires a different discharge configuration than the one that is factory supplied. The discharge panel is designed to be rotated 180° and the control box relocated to accomplish this change. Some applications require changing to longer motor leads (provided). The installer should remove any excess motor lead to prevent it from interfering with moving parts, i.e. the blower wheel and/or sharp edges.

Parts List

- (1) Harness, frostat, 2 pin connector
- (1) Motor harness #12 AWG with 1/4 inch quick connect terminals on one end and stripped on the other end
- (1) Blue #18 AWG Evaporator Defrost Control (EDC) wire with 1/4 inch quick connect terminals
- (1) Belt
- (1) Yellow #18 AWG Evaporator Defrost Control (EDC) wire with 1/4 inch quick connect terminals
- (1) Green #12 AWG ground wire
- (6) Wire ties for field routing and securing of the cables
- (3) Non-re-usable wire nuts (used if required to terminate leads in motor junction box)
- (3) Labels (to be installed on access panel)
- (1) Snap bushing
- (2) Plug buttons (used to close low and high voltage power entry holes on corner panel adjacent to where the control box was originally located)

Inspection

Remove the kit contents from the shipping package and inspect for damage. Report any damage immediately to the transportation company and make any appropriate claims.

5 Installation

WARNING

Hazardous Voltage w/Capacitors!

Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

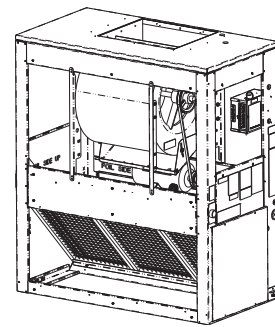
Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

1. Ensure all power to the air handler has been disconnected and locked out.
2. Remove the two evaporator fan access panels and the two end panels. These are the four upper panels of the air handler, see [Figure 1](#) and [Figure 2](#).
3. Remove the control box cover or screws securing the hinged high voltage access panel, and disconnect the motor leads from the contactor.
Note: Wire ties may have to be cut before the motor leads can be removed from the control box.
4. Remove the motor leads from the control box.
5. Disconnect the ground wire (green) from the control box and from the fan motor mount. Discard this wire (it will be replaced later) but retain any lock washer and reuse in same location.

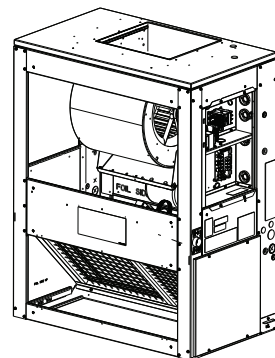
Note: On the TWE072, TWE090 and TWE120 air handler, the fan housing has two blower support angles on each side. The motor leads are routed through snap bushings in one of the angles.

6. On TWE072, TWE090 and TWE120 air handlers only - feed the motor leads back through the bushings. Remove the six screws that secure the fan housing to the support angles. Save these screws for later use.

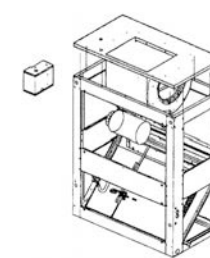
6 **Figure 1. Unit discharge - Constant volume units (unit with model number digit 15 = 0)**



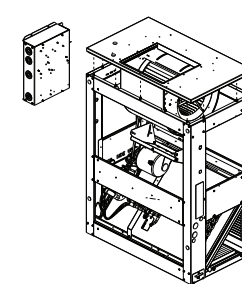
6 **Figure 2. Unit discharge - Constant volume units (unit with model number digit 15 = 1)**



7 **Figure 3. Removal of fan discharge assembly- Constant volume units (unit with model number digit 15 = 0)**



7 **Figure 4. Removal of fan discharge assembly- Constant volume units (unit with model number digit 15 = 1)**



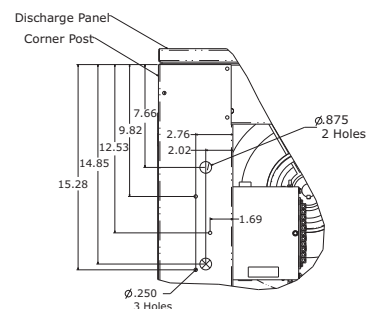
7. Remove the screws securing the discharge panel assembly to the air handler. These screws are located underneath the discharge panel in a vertical position. See [Figure 3](#) and [Figure 4](#).
8. Once these screws have been removed, raise the discharge panel assembly clear of the air handler and rotate 180°.

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Note: When lowering discharge panel assembly back down onto unit, make sure that the motor does not hit the coil. If there is going to be interference, adjust motor to avoid coil interference.

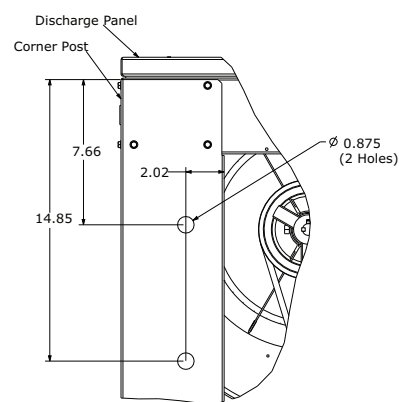
- Secure the discharge panel assembly with the screws that were removed earlier.
- Locate the corner of the unit where the control box is to be repositioned. See [Figure 5](#), [Figure 6](#), [Figure 7](#) and [Figure 8](#).
- Using the dimensional data from [Figure 5](#) or [Figure 6](#), mark and bore (or pull) new holes for the high and low voltage wires and the three holes that will be needed to attach the control box.
- Cut the wire ties that were used to secure the frostat wires.
- For constant volume units with model number digit 15=0, disconnect the yellow and blue wires from the B1 and B2 terminals on the low voltage terminal board and from the EDC switch and discard these wires. (They will be replaced later by longer wires provided in the kit).
- For constant volume units with model number digit 15=1, disconnect and remove the frostat harness 2-pin connector between the EDC switch and the relay board and discard this harness (it will be replaced later by a longer harness provided in the kit).

Figure 5. Dimensional data for locating new holes (measure from zero) - Constant volume units (unit with model number digit 15 = 0)



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Figure 6. Dimensional data for locating new holes (measure from zero) - Constant volume units (unit with model number digit 15 = 1)



- Remove the rubber grommet from the low voltage wire entrance and close the hole with the plug button from the kit. Save the rubber grommet for the new wire entrance on the opposite end. Use the two plugs provided in the kit to close the holes for the previous high and low voltage power entry.

Note: For units with model number digit 15=0, follow steps 16 to 24. For units with model number digit 15=1, skip to step 25.

- Remove the control box from its present location. Rotate it 180° (top to bottom and bottom to top). Mount it on the opposite end of the air handler using new holes. See [Figure 7](#).

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Figure 7. Typical air handler after conversion - Constant volume units (unit with model number digit 15 = 0)

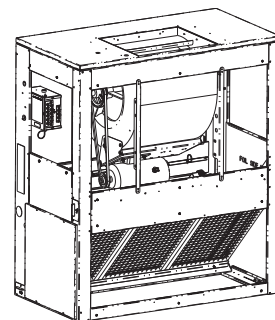
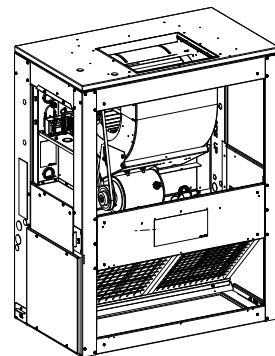
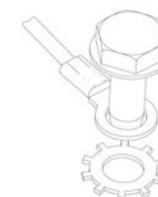


Figure 8. Typical air handler after conversion - Constant volume units (unit with model number digit 15 = 1)



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Figure 9. Ground screw



- Remove the two screws that secure the low voltage terminal board to the control box. Rotate the board 180° and replace screws. (For ease of reading the terminal designations).
- Place bushing (provided) in fan housing support angle to protect motor leads on the TWE072, 090 and 120 air handlers.
- Install new motor leads at this time.
- Remove the cover of the motor junction box and disconnect the leads.
- Remove the old leads and replace with the new ones. Check voltage stamped on unit nameplate and rewire the motor per the wiring diagram on the backside of the junction box cover.

Important: Install the new ground wire (green) to the motor mount plate with the lock washer that was removed earlier. See [Figure 9](#) for proper assembly.

- Feed motor leads and ground wire through the bushing in the angle on the TWE072, 090 and 120 air handlers.
- Feed the motor leads through the bushing in the back of the control box and connect to the contactor per the wiring diagram on the control box cover.

Note: Motor leads should be cut to the proper length and terminated properly at the motor.

Important: Connect the ground wire to the back of the control box with the lock washer that was removed earlier. See [Figure 9](#) for proper assembly.

- Using the yellow and blue wires (W11 and W12) from the kit, connect one of their ends to the B1 and B2 terminals on the low voltage board and

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their other ends to the EDC per the wiring diagram on the control box cover.

Note: For units with model number digit 15=1, follow steps 25 to 29.

- Remove the control box from its present location and mount on the opposite end of the AH using the existing mounting holes. See [Figure 8](#).
- Place bushing (provided) in fan housing support angle to protect motor leads on the TWE072, 090 and 120 air handlers.
- Remove the cover of the motor junction box and disconnect the leads.
- Remove the old leads and replace with the new ones provided in the kit. Check voltage stamped on unit nameplate and rewire the motor per the wiring diagram on the backside of the junction box cover.

Important: Install the new ground wire (green) to the motor mount plate with the lock washer that was removed earlier. See [Figure 9](#) for proper assembly.

- Route the motor and ground wires through the bushing on the side of the control box and connect to the contactor per wiring diagram on the control box cover.

Note: Motor leads should be cut to the proper length and terminated properly at the motor.

Important: Connect the ground wire inside the control box above the contactor with the lock washer that was removed earlier. See [Figure 9](#) for proper assembly.

- Install the frostat harness provided in the kit between the EDC switch and the relay board per the wiring diagram on the control box cover.

Note: The following steps apply for model number with digit 15 = 0 and 1.

- Wire the air handler according to the wiring diagrams on the control box cover.

Notes:

- Unit wiring diagrams are also available via e-Library or by calling Technical Support. See TWE Installation, Operation and Maintenance for a complete list of TWE wiring diagrams.
 - Ensure wires are secure in such a manner that they will not come in contact with moving parts and/or sharp edges.
- Replace/secure the control box cover.

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Note: Steps 33 through 36 for TWE090*1 units only. For all other units, skip to step 37.

- Loosen the motor mounting bracket bolts.
- Rotate motor to remove original belt.
- Place new belt (provided in kit) on fan and motor pulleys. It may be necessary to remove the motor bracket adjustment bolts to install new, smaller belt.
- Tighten belt by following instructions for "Fan Belt Adjustment".
- Replace the access panels removed earlier.
- Remove the new warning labels from the kit and paste on the access panel for the new control box location in the same locations as on the old access panel.
- Close the unit disconnect switch and set thermostat for normal operation.

Fan Belt Adjustment

WARNING

Rotating Components!
Failure to disconnect power before servicing could result in rotating components cutting and slashing technician which could result in death or serious injury. Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized.

The fan belts must be inspected periodically to ensure proper unit operation. Replacement is necessary if the belts appear frayed or worn.

When removing or installing the new belts, do not stretch them over the sheaves. Loosen the belts using the belt tension adjustment bolts on the motor mounting base.

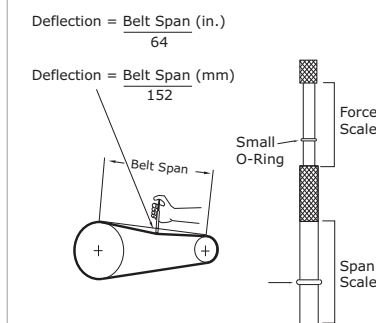
Once the new belts are installed, using a Browning or Gates tension gauge (or equivalent) illustrated in [Figure 10](#); adjust the belt tension as follows:

- To determine the appropriate belt deflection;
 - Measure the center-to-center shaft distance (in inches) between the fan and motor sheaves.

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- Divide the distance measured in Step 1a by 64; the resulting value represents the amount of belt deflection that corresponds to the proper belt tension.
- Set the large O-ring on the belt tension gauge at the deflection value determined in Step 1b.
 - Set the small O-ring at zero on the force scale of the gauge plunger.
 - Place the large end of the gauge at the center of the belt span; then depress the gauge plunger until the large O-ring is even with the top of the next belt or even with a straightedge placed across the fan and motor sheaves.
 - Remove the belt tension gauge. The small O-ring now indicates a number other than zero on the plunger's force scale. This number represents the force (in pounds) required to give the needed deflection.
 - Compare the "force" scale reading (Step 5) with the appropriate "force" value listed in [Table 1](#). If the "force" reading is outside the range, read just the belt tension.

Figure 10. Belt tension gauge



Note: Actual belt deflection "force" must not exceed the maximum "force" value shown in [Table 1](#).

Recheck the belt tension at least twice during the first 2 to 3 days of operation. Belt tension may decrease until the new belts are "run in".

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Table 1. Belt tension measurement and deflection

Belt Cross Section	Small Pitch Diameter Range	Deflection Force (lbs)			
		Standard V-Belt		V-Belt with Molded Notches	
		Min.	Max.	Min.	Max.
A	3.0 - 3.6	3	4 1/2	3 7/8	5 1/2
	3.8 - 4.8	3 1/2	5	4 1/2	6 1/4
	5.0 - 7.0	4	5 1/2	5	6 7/8
B	3.4 - 4.2	4	5 1/2	5 3/4	8
	4.4 - 5.6	5 1/8	7 1/8	6 1/2	9 1/8
	5.8 - 8.8	6 3/8	8 3/4	7 3/8	10 1/8

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