

## Convertible Variable Speed – Communicating Air Handlers 2 1/2 - 5 Ton

2/4TEE3C31A1000A, 2/4TEE3C37A1000A,  
2/4TEE3C40A1000A, 2/4TEE3C49A1000A,  
2/4TEE3C65A1000A

**⚠ WARNING: HAZARDOUS VOLTAGE - DISCONNECT POWER BEFORE SERVICING**

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

**IMPORTANT** — This Document is **customer property** and is to remain with this unit. Please return to service information pack upon completion of work.

This Air Handler can be configured for Communicating or 24VAC modes. Using fully Communicating or 24VAC modes, the Air Handler can support multi or single stage Heat Pump, cooling only, or cooling with electric heat applications. Combined with a communicating Comfort Control only, the Air Handler will support a single stage 24VAC cooling outdoor unit.

**⚠ WARNING**

THIS INFORMATION IS FOR USE BY INDIVIDUALS HAVING ADEQUATE BACKGROUNDS OF ELECTRICAL AND MECHANICAL EXPERIENCE. ANY ATTEMPT TO REPAIR A CENTRAL AIR CONDITIONING PRODUCT MAY RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE. THE MANUFACTURER OR SELLER CANNOT BE RESPONSIBLE FOR THE INTERPRETATION OF THIS INFORMATION, NOR CAN IT ASSUME ANY LIABILITY IN CONNECTION WITH ITS USE.

**⚠ CAUTION**

TO PREVENT SHORTENING ITS SERVICE LIFE, THE AIR HANDLER SHOULD NOT BE USED DURING THE FINISHING PHASES OF CONSTRUCTION OR REMODELING. The low return air temperatures can lead to the formation of condensate. Condensate in the presence of chlorides and fluorides from paint, varnish, stains, adhesives, cleaning compounds, and cement creates a corrosive condition which may cause rapid deterioration of the cabinet and internal components.

### A. GENERAL INFORMATION

These instructions do not cover all variations in systems or provide for every possible contingency. Should further information be desired or particular issues arise which are not covered sufficiently by this manual, contact your local distributor or the manufacturer as listed on the Air Handler nameplate.

These Air Handlers are shipped from the factory in the upflow or horizontal right configuration and are fully convertible to downflow or horizontal left. Refer to Section C beginning on page 4 for additional information.

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### INSPECTION

Check carefully for any shipping damage. This must be reported to and claims made against the transportation company immediately. Check to be sure all major components are in the unit. Any missing parts should be reported to your supplier at once, and replaced with authorized parts only.

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## ⚠ CAUTION

FOR AIR HANDLERS NOT EQUIPPED WITH A FACTORY INSTALLED ELECTRIC HEATER, A FIELD INSTALLED HEATER IS AVAILABLE FROM THE DEALER. ONLY HEATERS BUILT BY TRANE ARE APPROVED FOR USE IN THE AIR HANDLER. These heaters have been designed and tested in accordance with UL standards to provide safe and reliable operation. A list of approved heaters is provided on the Air Handler rating nameplate. Heaters that are not factory approved could cause damage and are not covered under equipment warranty.

### INSTALLATION LIMITATIONS & RECOMMENDATIONS

The general location of the Air Handler is normally selected by the architect, contractor and/or home owner for the most effective application and satisfaction.

These Air Handlers are suitable for installation in a closet, alcove or utility room with free, non-ducted, air return, using the area space as a return air plenum. With ducted supply air, if the minimum clearances to combustible materials and service access are observed, the above installations are suitable.

This area may also be used for other purposes, including an electric hot water heater - **but in no case shall a fossil fuel device be installed and/or operated in the same closet, alcove or utility room.**

In addition, these Air Handlers are suitable for installation in an attic, garage or crawl space with ducted supply and return air.

This equipment has been evaluated in accordance with the Code of Federal Regulations, Chapter XX, Part 3280 or the equivalent. "SUITABLE FOR MOBILE HOME USE"

For proper installation the following items must be considered:

1. If adequate power is available and correct according to nameplate specifications.

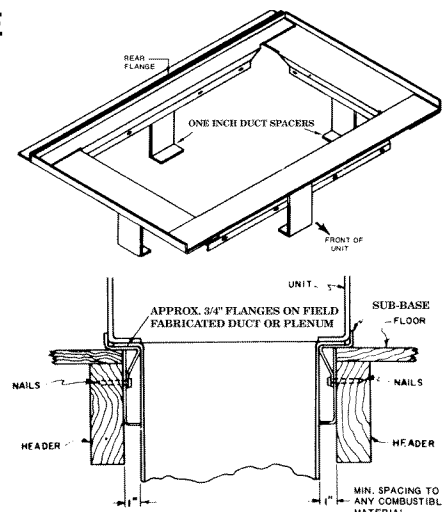
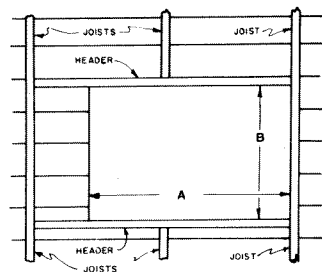
2. Insulate all ducts, particularly if unit is located outside of the conditioned space.
3. Pursuant to Florida Building Code 13-610.2.A.2.1, this unit meets the criteria for a factory sealed Air Handler.
4. To ensure maximum efficiency and system performance, the existing supply and return duct system static pressures must not exceed the total available static pressure of the Air Handler. Reference ACCA Manual D, Manual S and Manual RS along with the Air Handler Product Data and Service Facts for additional information.
5. Penetration around the Refrigerant lines must be sealed and Electrical inlets need to be sealed at both the Low and the High Voltage.
6. It is recommended that the outline drawing be studied and dimensions properly noted and checked against selected installation site. By noting in advance which knockouts are to be used, proper clearance allowances can be made for installation and possible future service.

## ⚠ CAUTION

WHEN THE AIR HANDLER WITH SUPPLEMENTARY HEATER IS TO BE INSTALLED IN THE DOWNFLOW POSITION ON COMBUSTIBLE FLOORING AN ACCESSORY SUB-BASE (TAYBASE101 FOR 2/4TEE3C31A, TAYBASE100 FOR 2/4TEE3C37A, TAYBASE102 FOR 2/4TEE3C40A-65A) MUST BE USED. SEE FIGURE 1.

7. If supplementary heat is to be added, power supply must be sufficient to carry the load.
8. For Air Handlers not equipped with a factory installed electric heater, a field installed heater is available from Trane.

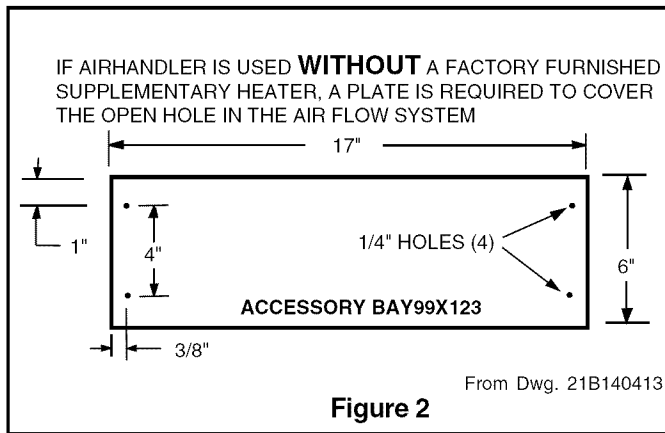
### AIR HANDLER SUB-BASE



FLOOR OPENING - SIZE		
MODEL NO.	A	B
TAYBASE100	23-3/4	14-13/16
TAYBASE101	21-3/4	14-13/16
TAYBASE102	26-3/4	14-13/16

Figure 1

**NOTE: If Air Handler is used WITHOUT a supplementary electric heater, a sheetmetal plate is required to cover the open hole in the airflow system. See Figure 2. Also seal the cabinet air tight where any wiring enters.**



**Figure 2**

9. If field installed electric heaters are applied, minimum airflow settings, unit and duct clearances to combustibles must be maintained as stated on the Air Handler rating nameplate.
10. If the unit is installed without a return air duct, applicable local codes may limit this Air Handler to installation only in a single story residence & within conditioned space.
11. If the outdoor unit is to be installed later, or by others, then installation of the Air Handler must be made to allow access for refrigerant lines, or attach refrigerant lines to Air Handler when installing.
12. Make sure there are provisions for installing condensate drain lines.
13. If side, front or rear return is required, Air Handler must be elevated or placed on a plenum [TAYPLNM100 for 2/4TEE3C37 (23.5" wide), TAYPLNM101 for 2/4TEE3C31 (21.5" wide), TAYPLNM102 for 2/4TEE3C40, 49, & 65 (26" wide)]. Connecting return duct directly to the side, front or rear of the cabinet is not approved.
14. Route refrigerant & condensate drain lines away from Air Handler so they do not interfere with access panels and filters.
15. When external accessories are used, the additional height and width requirements must be considered in the overall space needed.
16. These units are not approved for outdoor installation.
17. These units are approved for draw-through application only.

## 18. Flow-through Bypass Humidifiers

Excessive bypass air may cause water blow-off, which will adversely affect system operation and air cleaner performance. To verify bypass airflow, follow the Bypass Humidifier Pre-Installation Check-out and Set-Up Procedures available through your local distributor. Ask for publication number 18-CH37D1-1.

## Steam and Flow-through Fan Power Duct-mounted Humidifiers

Follow the humidifier installation instructions. These should only be installed on the supply air side of the system.

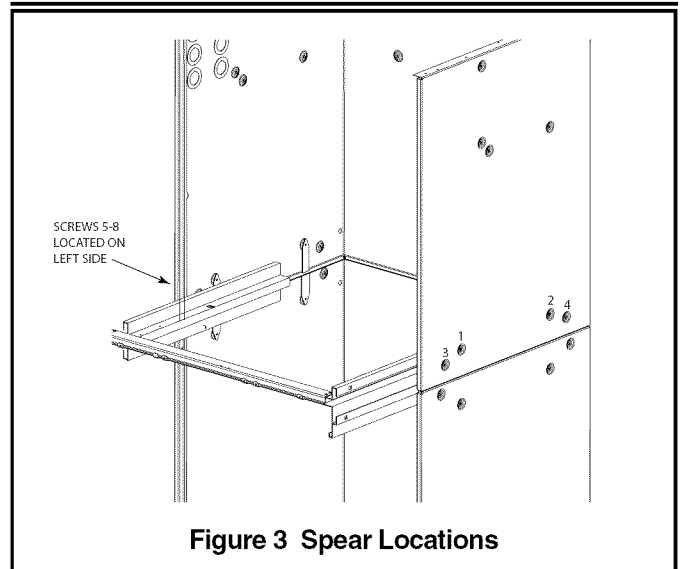
## B. TWO PIECE CABINET DISASSEMBLY (OPTIONAL)

**NOTE: For easier installation into tight areas, the 5 ton air handlers can be disassembled, moved to an attic or other space, and then reassembled.**

Steps for disassembly and reassembly (See Figures 3 and 4)

1. Disconnect wiring.
2. Remove center bracket.
3. Remove blower assembly.
4. Remove coil.
5. Cut foil tape at cabinet parting line.
6. Remove top 8 screws. See Figure 3.
7. Separate upper and lower sections.
8. Set air handler in place.
9. Attach screws - insure gaskets are aligned along flange.
10. Use foil tape to seal - use minimum 3" foil tape.
11. Insert coil.
12. Reinstall blower assembly.
13. Reinstall center bracket.
14. Reconnect wiring.

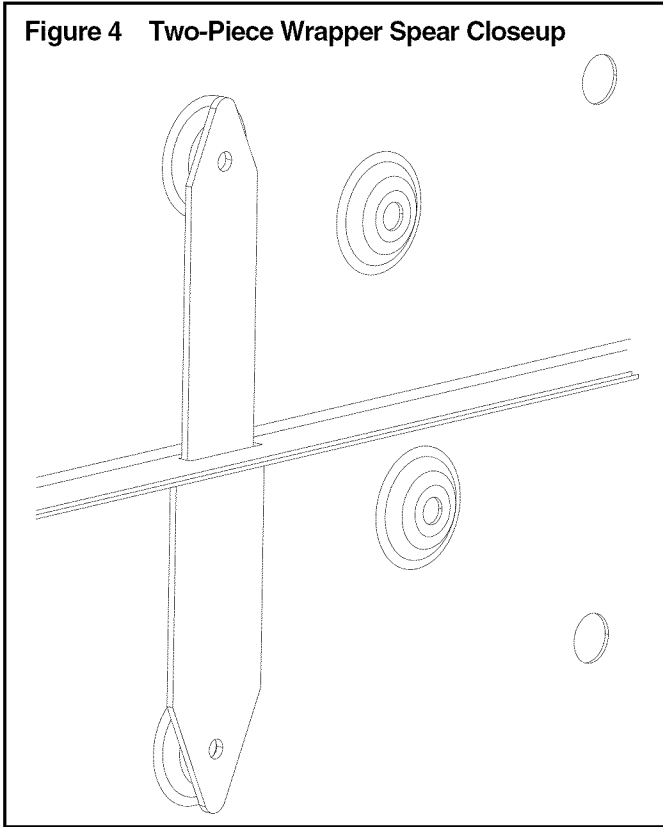
**NOTE: In Downflow, remove coil before blower by reversing steps 3 and 4.**



**Figure 3 Screw Locations**

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Figure 4 Two-Piece Wrapper Spear Closeup



## C. UNIT INSTALLATION

### UPFLOW

- a. **For maximum efficiency**, the horizontal drip tray should be removed. See Figures 5, 6 and 7. Tray removal requires that the coil be removed by sliding the coil out on the coil channel supports. For the TEE3C40-65 units, there is a coil support tab at the top of the coil connected to the case that must be removed first. Remove 1 inch insulation strip covering the lip of the drip tray. The tray is detached by removing the two screws at the drain pan. Remove the two screws holding the two brackets at the top of the coil. Remove drip tray by gently breaking the seal between the drip tray and drain pan.
- b. Remove the factory installed baffle assembly from the apex of the coil by using a 5/16" nutdriver to remove the screws. Replace this baffle with the factory supplied narrow coil baffle using the screws removed previously. See Figure 11.

### ⚠ CAUTION

**When installing the narrow coil baffle, make sure to align the baffle up with the holes so NOT to puncture the coil tubing.**

- c. Position unit on Pedestal or other suitable foundation. If Pedestal is not used, a frame strong enough to support the total weight must be provided. Provide a minimum height of 14 inches for proper unrestricted airflow.
- d. If a return air duct is connected to the air handler, it must be the same dimensions as shown in the outline drawing on page 18.
- e. Pedestal and unit should be isolated from the foundation using a suitable isolating material.
- f. **Openings where field wiring enters the cabinet must be completely sealed.** Location of power entry is shown on the outline drawing. Use 2.5" clear stickers to seal all unused electrical knockouts. See Figure 9.
- g. After ductwork connections are made, seal airtight and per local codes.

### DOWNFLOW

- a. **For maximum efficiency**, the horizontal drip tray should be removed. See Figures 5, 6 and 7. Tray removal requires that the coil be removed by sliding the coil out on the coil channel supports. For the TEE3C40-65 units, there is a coil support tab at the top of the coil connected to the case that must be removed first. Remove 1 inch insulation strip covering the lip of the drip pan. The tray is detached by removing the two screws at the drain pan and the two screws holding the two brackets at the top of the coil. Remove drip tray by gently breaking the seal between the drip tray and drain pan.
- b. Remove the factory installed baffle assembly from the apex of the coil by using a 5/16" nutdriver to remove the screws. Replace this baffle with the factory supplied narrow coil baffle using the screws removed previously. See Figure 11. Reinstall coil assembly.

### ⚠ CAUTION

**When installing the narrow coil baffle, make sure to align the baffle up with the holes so NOT to puncture the coil tubing.**

**NOTE: Installation of the downflow baffle kit included with unit is required on downflow applications. See Figure 10.**

- c. Remove the front shield from the coil. See Fig. 10.
- d. Detach the coil from the drain pan by removing 4 screws as shown in Figure 10.

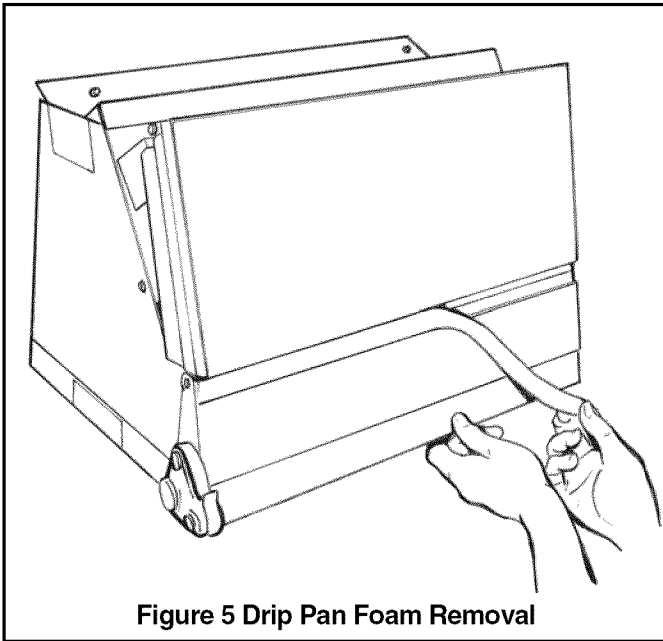


Figure 5 Drip Pan Foam Removal

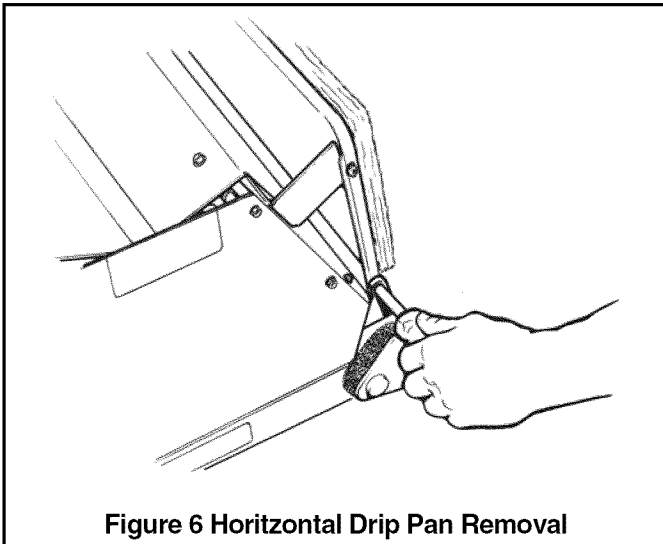


Figure 6 Horizontal Drip Pan Removal

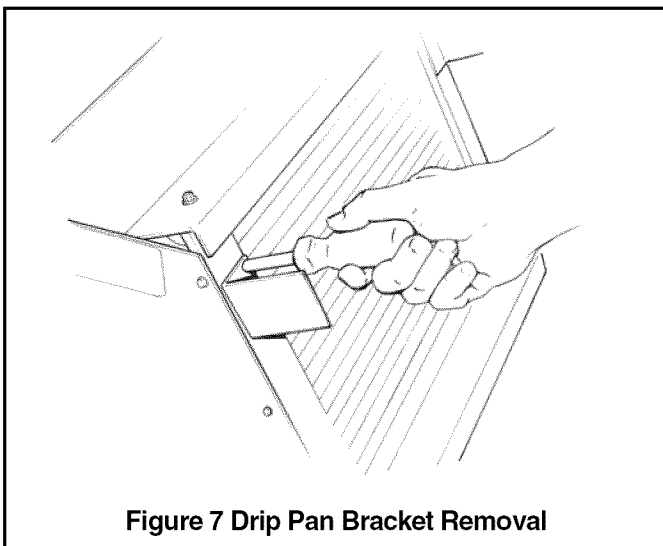
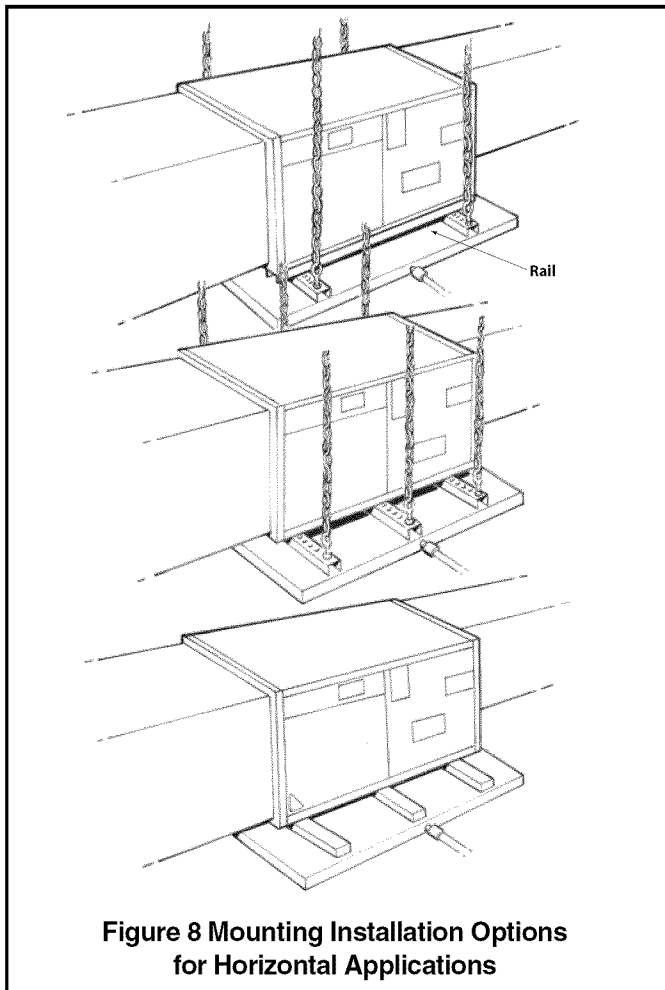


Figure 7 Drip Pan Bracket Removal

- e. Remove the front triangular baffle from the coil and install the 1/2" wide gasket provided per Figure 10. Trim the gasket length to fit the baffle. Reinstall the baffle to coil, with gasket material compressed against the coil.
- f. Install the water blow-off baffles provided on each side of the coil with the flange at the top as shown in Figure 10. The bottom of the baffle is to be as close to the bottom of the coil as possible.
- g. Install the 7/8" wide gasket in each side of the drain pan as shown in Figure 11 (sect. X-X).
- h. The 5 ton model (2/4TEE3C65A) requires 2 water diverter baffles to be placed underneath the coil on the inside edge of the drain pan. See Figure 10. Fill the bend in the baffle which fits the inner edge of the drain pan with non-acetic acid RTV type adhesive/sealant before installing the baffle.
- i. The unit is then placed with the blower side down and the coil is replaced on the coil channel supports with the drain connections at the bottom. The unit is now in downflow position with front access. Do not reattach coil support tab.
- j. When supplementary heaters are used, accessory subbase (TAYBASE101 for 2/4TEE3C31A, TAYBASE100 for 2/4TEE3C37A, and TAYBASE102 for 2/4TEE3C40-65A) **must** be used. See Figure 1.
- k. If a return duct is connected to the air handler, it must be the same dimensions as the return opening shown in the outline drawing on page 18.
- l. **Openings where field wiring enters the cabinet must be completely sealed.** Location of power entry is shown on the outline drawing. Use 2.5" clear stickers to seal all unused electrical knockouts. See Figure 9.
- m. After ductwork connections are made, seal airtight and per Local codes.

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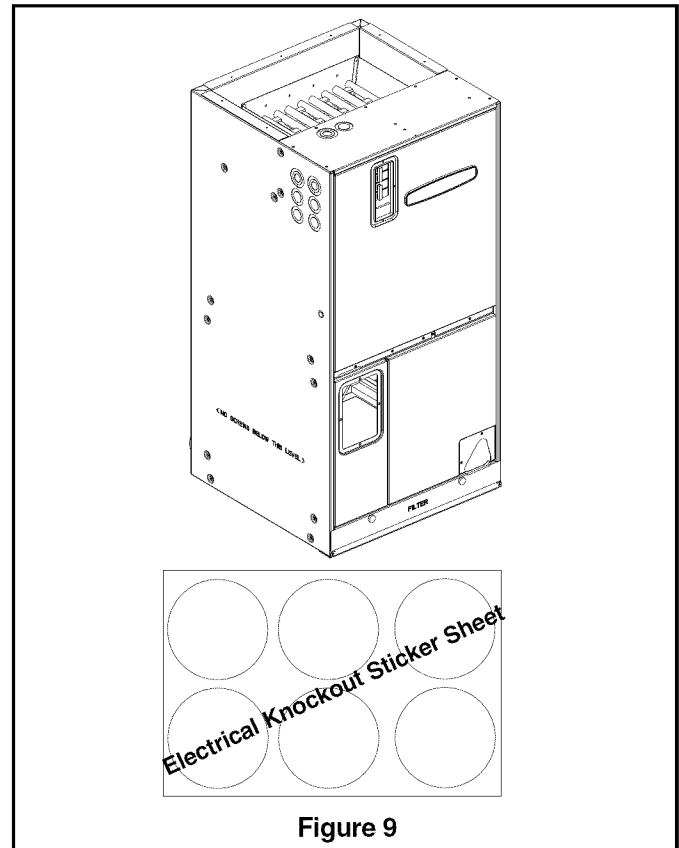
**Figure 8 Mounting Installation Options for Horizontal Applications**

## HORIZONTAL LEFT

- a. **For maximum efficiency** and Customer ease of filter maintenance, it is recommended that a properly sized **remote filter** and grille be installed for horizontal applications. Airflow should not exceed the face velocity of the filter being used. **The factory installed filter should then be removed from the unit.**
- b. To convert the unit to horizontal left, front access, slide the coil out on the coil channel supports and rotate the complete coil 180 degrees.
- c. Remove the factory installed baffle assembly from the apex of the coil by using a 5/16" nutdriver to remove the screws. For the TEE3C40-65 units, there is a coil support tab at the top of the coil connected to the case must be removed first. Replace this baffle with the factory supplied narrow coil baffle using the screws removed previously. See Figure 11.

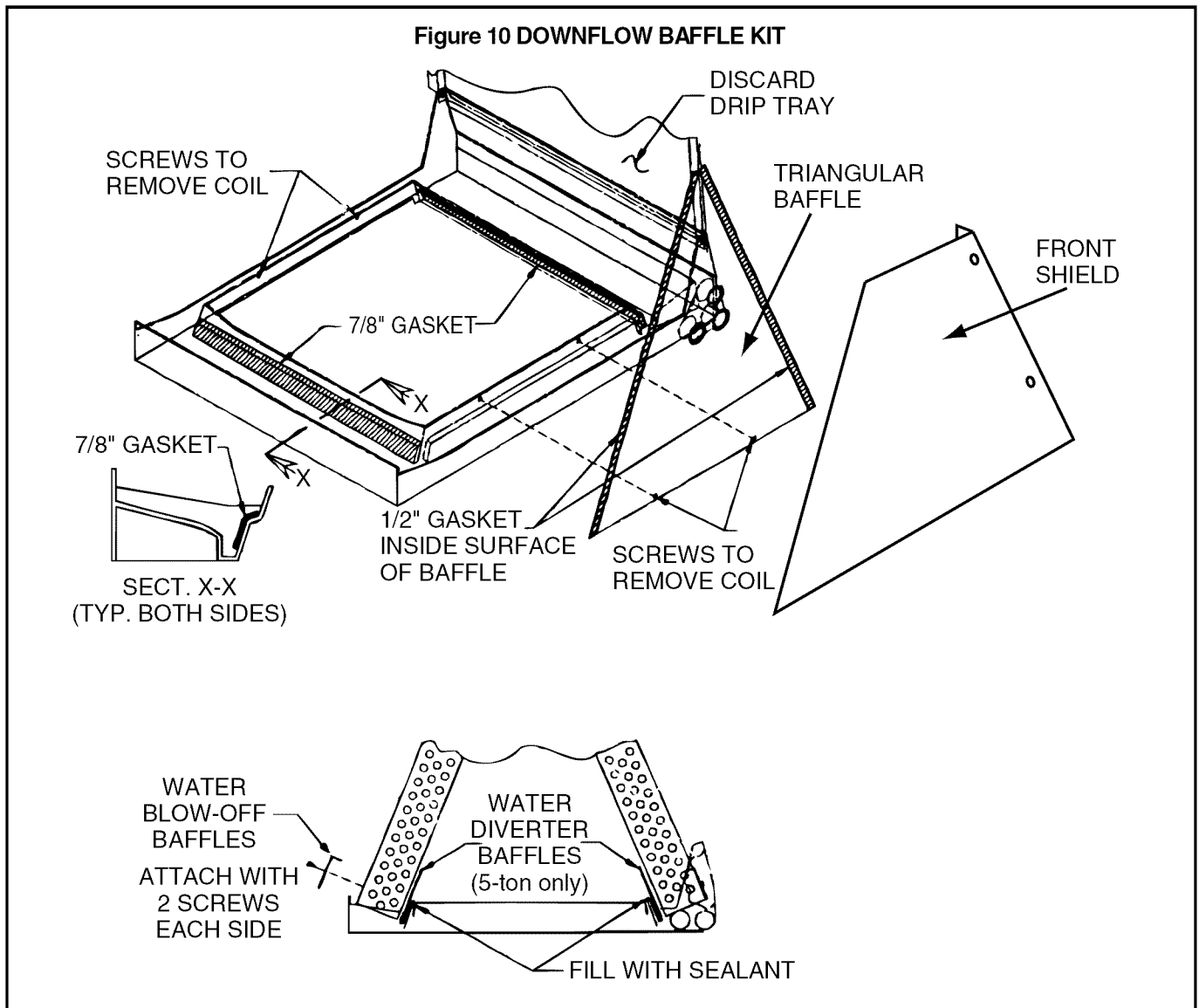
### **CAUTION**

**When installing the narrow coil baffle, make sure to align the baffle up with the holes so NOT to puncture the coil tubing.**



**Figure 9**

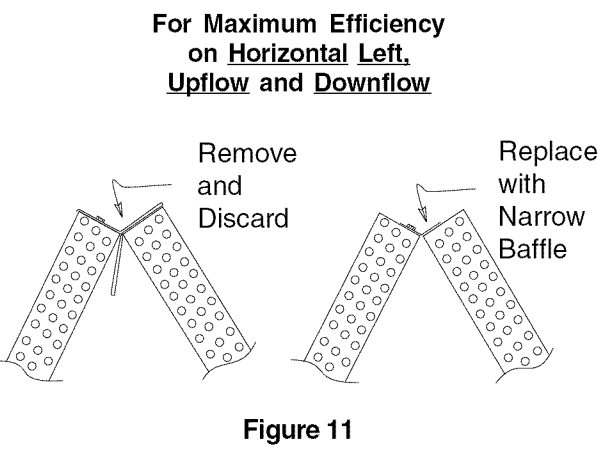
- d. The coil is then inserted back into the cabinet on the coil channels located near the center of the unit. Do not reattach coil support tab. Also rotate the coil access panel 180 degrees and install. The unit is now horizontal left with front access.
- e. If the unit is suspended, it must be supported from the bottom near both ends as well as the middle to prevent sagging. The service access must remain unobstructed. If the unit is supported along the length of the front and back with rails, the air handler only needs to be suspended at both ends. See Figure 8.
- f. If the unit is not suspended it must be supported as mentioned above and isolated carefully to prevent sound transmission. Vibration isolators (purchased locally) must be placed under the unit.
- g. It is always recommended that an auxiliary drain pan be installed under a horizontal air handler (See Condensate Piping) to prevent possible damage to ceilings.
- h. Isolate the auxiliary drain pan from the unit or from the structure.
- i. Connect the auxiliary drain line to a separate drain line (no trap is needed in this line) and terminate according to national and local codes.



- j. If a return duct is connected to the Air Handler, it must be the same dimensions as the return opening shown in the outline drawings on page 18.
- k. **Openings where field wiring enters the cabinet must be completely sealed.** Location of power entry is shown on the Outline Drawing. Use 2.5" clear stickers to seal all unused electrical knockouts. See Figure 9.
- l. After ductwork connections are made, seal airtight and per Local codes.

### HORIZONTAL RIGHT

- a. **For maximum efficiency** and Customer ease of filter maintenance, it is recommended that a properly sized **remote filter** grille be installed for horizontal applications. Airflow should not exceed the face velocity of the filter being used. **The factory installed filter should then be removed from the unit.**



- b. Unit is shipped from the factory in the upflow or horizontal right configuration. Unit conversion is not required.

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- c. If the unit is suspended, it must be supported from the bottom near both ends as well as the middle to prevent sagging. The service access must remain unobstructed. If the unit is supported along the length of the front and back, the air handler only needs to be suspended at both ends. See Figure 8.
- d. If the unit is not suspended it must be supported as mentioned above and isolated carefully to prevent sound transmission. Vibration isolators (purchased locally) must be placed under the unit.
- e. It is always recommended that an auxiliary drain pan be installed under a horizontal Air Handler (See Condensate Drain Piping) to prevent possible damage to ceilings.
- f. Isolate the auxiliary drain pan from the unit or from the structure.
- g. Connect the auxiliary drain line to a separate drain line (no trap is needed in this line) and terminate according to local codes.
- h. If a return duct is connected to the air handler, it must be the same dimensions as the return opening shown in the outline drawings on page 18.
- i. **Openings where field wiring enters the cabinet must be completely sealed.** Location of power entry is shown on the outline drawing. Use 2.5" clear stickers to seal all unused electrical knockouts. See Figure 9.
- j. After ductwork connections are made, seal air-tight and per local codes.

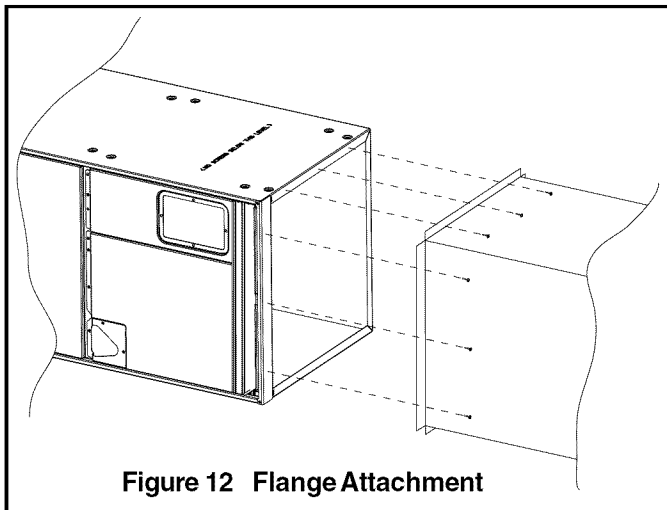


Figure 12 Flange Attachment

## D. DUCT CONNECTIONS

The supply and return air ducts should be connected to the unit with flame retardant duct connectors. Convertible duct flanges are provided on the discharge opening to provide a "flush fit" for 3/4" or 1-1/2" duct board applications, see the Outline drawing on page 18 for sizes of the duct connections. After the duct is secured, seal around the supply duct to prevent air leakage.

**NOTE: If the convertible duct flanges are not used, they must be removed and discarded for proper airflow.**

Control box must be removed to install or service heater accessory or communicating controls. See Figure 13.

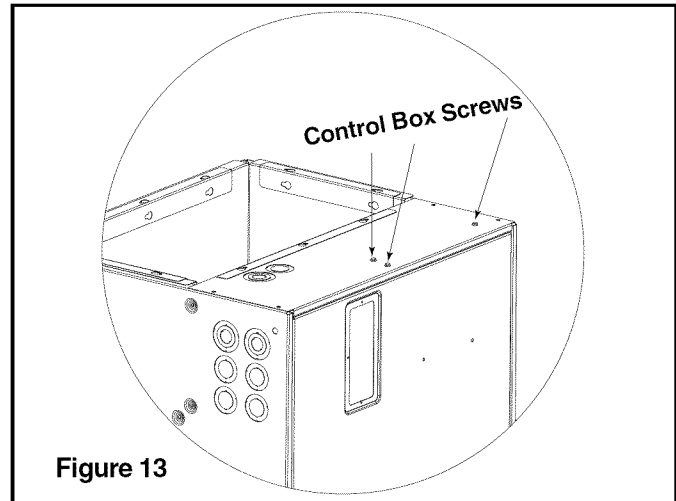


Figure 13

**NOTE: Do NOT cover up control box screws with duct work.**

**NOTE: Any duct board return connection can be made to the sides of the unit using tape or mastic.**

## E. REFRIGERANT PIPING

### IMPORTANT:

**Refrigerant piping must be routed to maintain service access to blower compartment and provide easy removal of filter access panel and filter.**

1. Refrigerant connections are made outside the cabinet.

**NOTE: TXV bulb MUST be protected (wrap a wet rag around the suction line between the TXV bulb and the braze joint) or removed, while brazing the tubing. Overheating of the sensing bulb will affect the functional characteristics and performance of the air handler.**

**NOTE: Penetration around the Refrigerant lines must be sealed and Electrical inlets should be sealed at both the low and the high voltage.**

2. Installation of refrigerant lines is covered in the installation instructions packaged with the outdoor unit. Evacuation, leak testing and brazing procedures are included in those instructions. Read those instructions before starting installation of refrigerant lines.



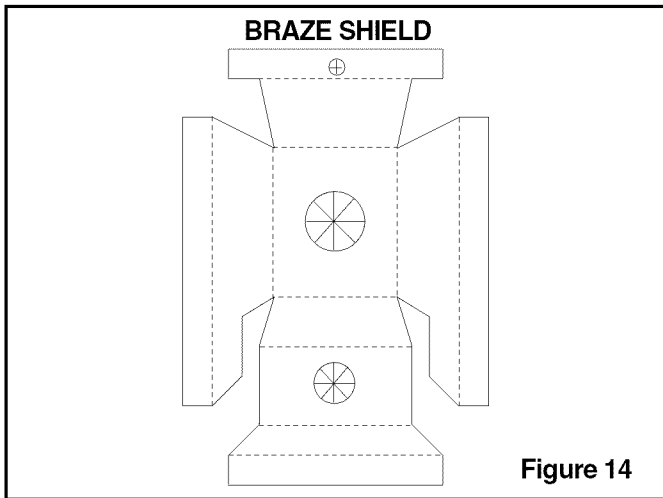


Figure 14

## F. BRAZING TO EVAPORATOR SECTION

**NOTE:** A brazing shield is provided in the information pack accompanying this unit. This shield fits over the refrigerant fittings while brazing. Wet the shield before brazing. See Figure 14.

### IMPORTANT:

**Do NOT unseal refrigerant tubing until ready to cut and fit refrigerant lines.**

1. Remove both sealing caps from indoor coil.
2. Field supplied tubing should be cut squared-off, ensuring the tube is still round and free of burrs at the connecting end. Clean the tubing to prevent contaminants from entering the system.
3. Run refrigerant tubing into the stub sockets of indoor unit coil. **Refrigerant line openings must be completely sealed.**
4. Braze and evacuate according to indoor and outdoor installation instructions.
5. Seal around refrigerant lines.

**PAINTED AREAS OF UNIT MUST BE SHIELDED DURING BRAZING.**

## G. CONDENSATE DRAIN PIPING

**NOTE:** Make certain that the unit has been installed in a level position to ensure proper draining.

The indoor blower is downstream of the evaporator coil which creates a negative pressure at the condensate drain connections during operation. The condensate drain connections in front of the indoor coil are 3/4" NPT. The lower right connection is the primary drain. See Figure 15.

Two secondary drain connections are provided for the different orientations (See Figure 15). The lower of the two secondary drains should be connected as a backup to prevent condensate overflow by a blocked primary drain. The weep hole in center of drain coupling area should be sealed with caulk or RTV except in downflow unless secondary drain is connected.

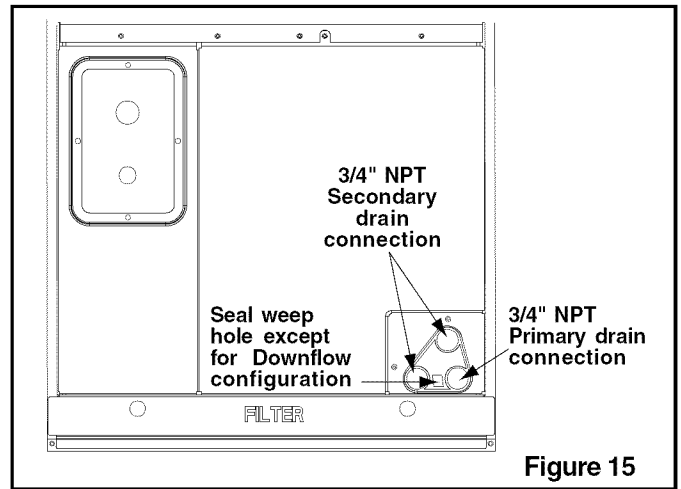


Figure 15

For proper drainage of condensate, the following steps should be followed:

1. The primary drain line must be trapped with a minimum of 2" water seal as shown in Figures 16 & 17. **Do not use preformed 3/4" PVC running traps.**

The use of Field fabricated or manufactured traps as shown in Figures 16 & 17 is acceptable. The manufactured trap shown in Figure 16 allows for a float switch option to be added. Refer to the manufacturer's data and instructions for details.

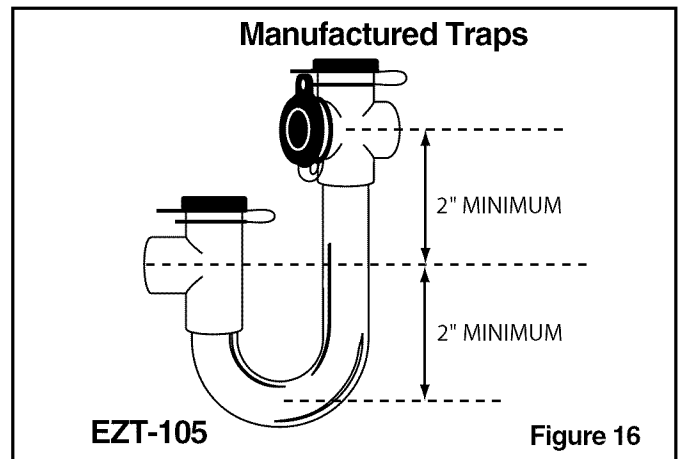


Figure 16

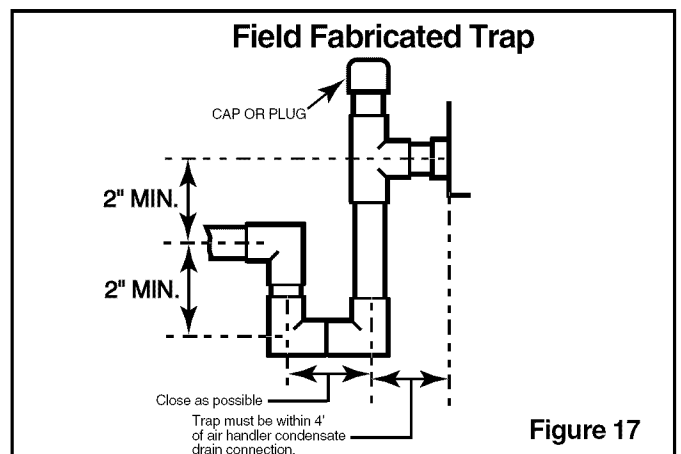


Figure 17

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- The trap must be located within 4 feet of the Air Handler drain outlet connection.
- It is recommended that a clean-out tee or cross be installed in the primary drain line for future maintenance (See Figure 16 & 17).
- Do not use reducing fittings in the condensate drain lines.
- Slope the drain lines downward a minimum of 1/4" per foot.
- Insulate the primary drain to prevent sweating where pipe temperature could meet or fall below dewpoint temperatures.
- Provide means for drainage to prevent winter freeze-up of condensate line.**
- Do not connect the drain line to a closed drain system.
- Use Teflon® tape on the Air Handler drain line connections! **Do Not** Use pipe joint compound or PVC/CPVC cement!

It is always recommended that an auxiliary drain pan be installed under a horizontally installed Air Handler. Connect the auxiliary drain line to a separate drain line (no trap is needed in this line) and terminate according to local codes.

**NOTE: Do NOT use a torch or flame near the plastic drain pan coupling.**

**NOTE: Do NOT tighten the drain pipe excessively. Support the condensate piping and traps outside the unit to prevent strain on the drain coupling.**

## H. ELECTRICAL - POWER WIRING

- These Air Handlers are shipped from the factory wired for 230 Volts. The units may be wired for 208 Volts. Follow instructions on unit wiring diagram located on inside blower panel housing and in the Service Facts document included with the unit.
- The selection of wire and fuse sizes should be made according to the Minimum Branch Circuit Ampacity and the Maximum Overcurrent Device listed on the unit nameplate.
- Field wiring diagrams for electric heaters and unit accessories are shipped with the accessory.
- Wiring must conform to National and Local codes. Ground unit per Local codes following recognized safety procedures.

If an electric heater is not installed, the Knockout Plate provided in the Accessory Kit **MUST** be installed on the air handler and the conduit terminated to it. The electrical connections are made using the two power leads and ground wire connections which are located near the discharge of the

blower. **Openings where field wiring enters the cabinet must be completely sealed.** Location of power entry is shown on the outline drawing. Use 2.5" clear stickers to seal all unused electrical knockouts.

**NOTE: If Air Handler is used with or without a heater, the electrical entry hole as well as any other cabinet penetrations must be sealed air tight.**

## I. CONTROL WIRING

- Connect wiring between indoor unit, outdoor unit and Comfort Control. The use of color-coded low-voltage wires is recommended.
- A low voltage terminal board is provided for control wiring, and is located on the left side of the cross brace in the center of the unit.
- Field wiring diagrams are provided which show the low voltage wiring hookup for a single speed cooling only system (with supplementary heaters) and a Heat Pump system (with supplementary heaters). Plug in type electrical connectors are provided for use with supplementary heaters.

### **IMPORTANT:**

**When supplementary heaters are installed, inspect to insure that all packaging material has been removed.**

## J. AIRFLOW ADJUSTMENT

Blower speed changes are made using the User Interface mounted on the communicating Comfort Control box. The Air Handler control board controls the variable speed motor.

Table 1 — Control Wiring

ComfortLink™ II Control Wiring	
WIRE SIZE	MAX. WIRE LENGTH*
18 AWG	250 FT

NEC Class II Wiring - 24 VOLTS	
WIRE SIZE	MAX. WIRE LENGTH**
18 AWG	150 FT
16 AWG	225 FT.
14 AWG	300 FT.

\* The maximum total cable length for the entire Comfort Control communicating system is 500 ft. 18 AWG.

\*\* Maximum **total** length of low voltage wiring from outdoor unit, to indoor unit, and to Comfort Control.

**NOTE: Direct drive motors have bearings which are permanently lubricated and under normal use lubrication is not recommended.**

When paired with a communicating outdoor unit, the Air Handler control board will auto-discover the outdoor unit size. Default settings are 400 cfm/ton and 1.5 minute at 100% cfm off delay. For other airflow settings, access the User Interface Menu (See Figure 18) to select options or use the options in the communicating Comfort Control. The full menu is listed in Figure 19.

**When Air Handler is to be used in 24V mode, access the User Interface to change the comfort control mode to 24V, match the airflow for the outdoor unit size (tons), adjust the cooling airflow (cfm/ton), set the Fan on/off-delay options, and adjust the heating airflow per the Nameplate specifications on the air handler front panel.** The User Interface appears as shown in Figure 18. The full menu is listed in Figure 20.

If the airflow needs to be increased or decreased, see the Blower Performance Table in the Service Facts. Information on changing the speed of the blower motor for your specific outdoor model size is in the Blower Performance Table.

Be sure to set the airflow for the correct tonnage. Refer to the User Interface for correct setting.

If the optional humidistat is used, remove R-BK jumper from the low voltage terminal board (not shown) and install the humidistat between R and BK. (Jumper R to O for cooling-only/non-heat pump systems with a humidistat.)

## K. UNIT TEST MODE

Unit Test Mode (Air Handler)

The system must be idle or thermostat switched to "OFF" before the Unit Test will run the air handler. The unit will work the same way in either Communicating or 24VAC modes.

To access the Unit Test Mode scroll down through the User Interface Information Menu until you see

the Unit Test option. Press ENTER. When prompted select YES and press ENTER. When the User Interface displays ARE YOU SURE? select YES and press ENTER to begin the Unit Test.

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**NOTE: While in Test Mode all thermostat requests will be ignored but if any button on the User Interface is pressed, the Unit Test will exit. The Unit Test will exit if a fault is detected during the test sequence.**

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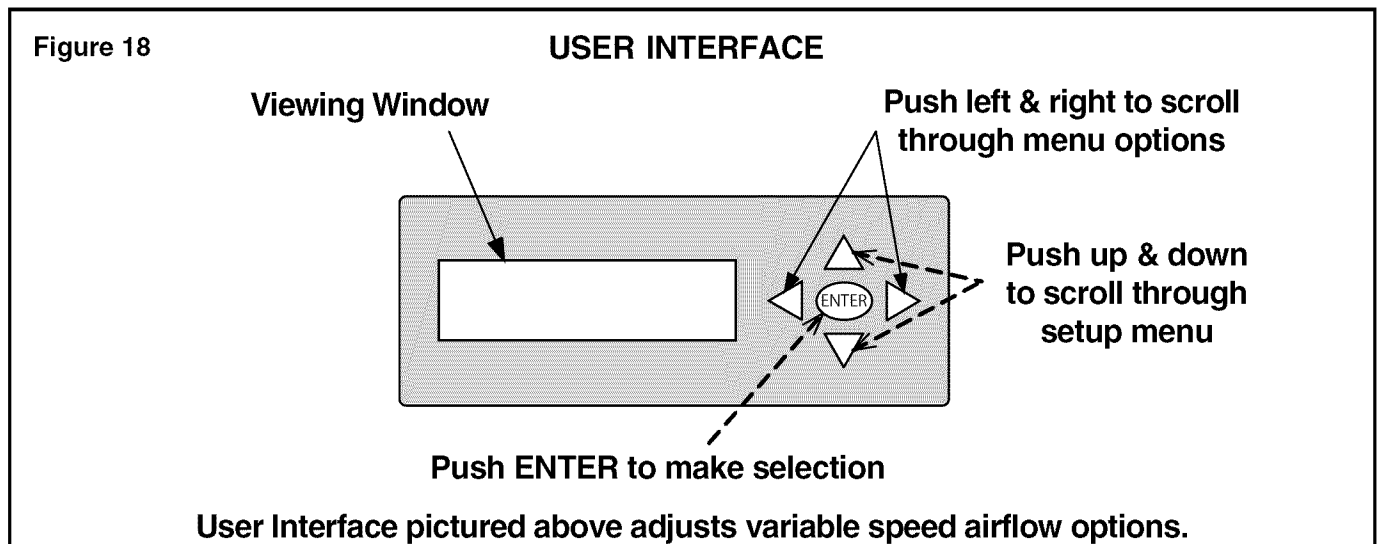
The Unit Test will perform the following steps without delays.

1. Start blower at 50% airflow and Energize EAC relay.
2. After 10 seconds, go to 100% airflow for 10 seconds. **(User Interface displays UNIT TEST – BLWR)**
3. Energize Y1 relay for 15 seconds with 100% airflow. **(User Interface displays UNIT TEST – COOL)**
4. De-energize Y1 relay and go to Electric Heat airflow. **(User Interface displays UNIT TEST – HEAT)**
5. Energize blower interlock and stage 1 heat relay.
6. Energize humidifier relay.
7. After 1 second energize stage 2 heat relay.
8. After 1 more second energize stage 3 heat relay.
9. After 5 seconds de-energize blower interlock, stage 1, 2 & 3 heat, humidifier and EAC relays. **(User Interface displays UNIT TEST – EXIT)**  
*Displayed for three seconds*

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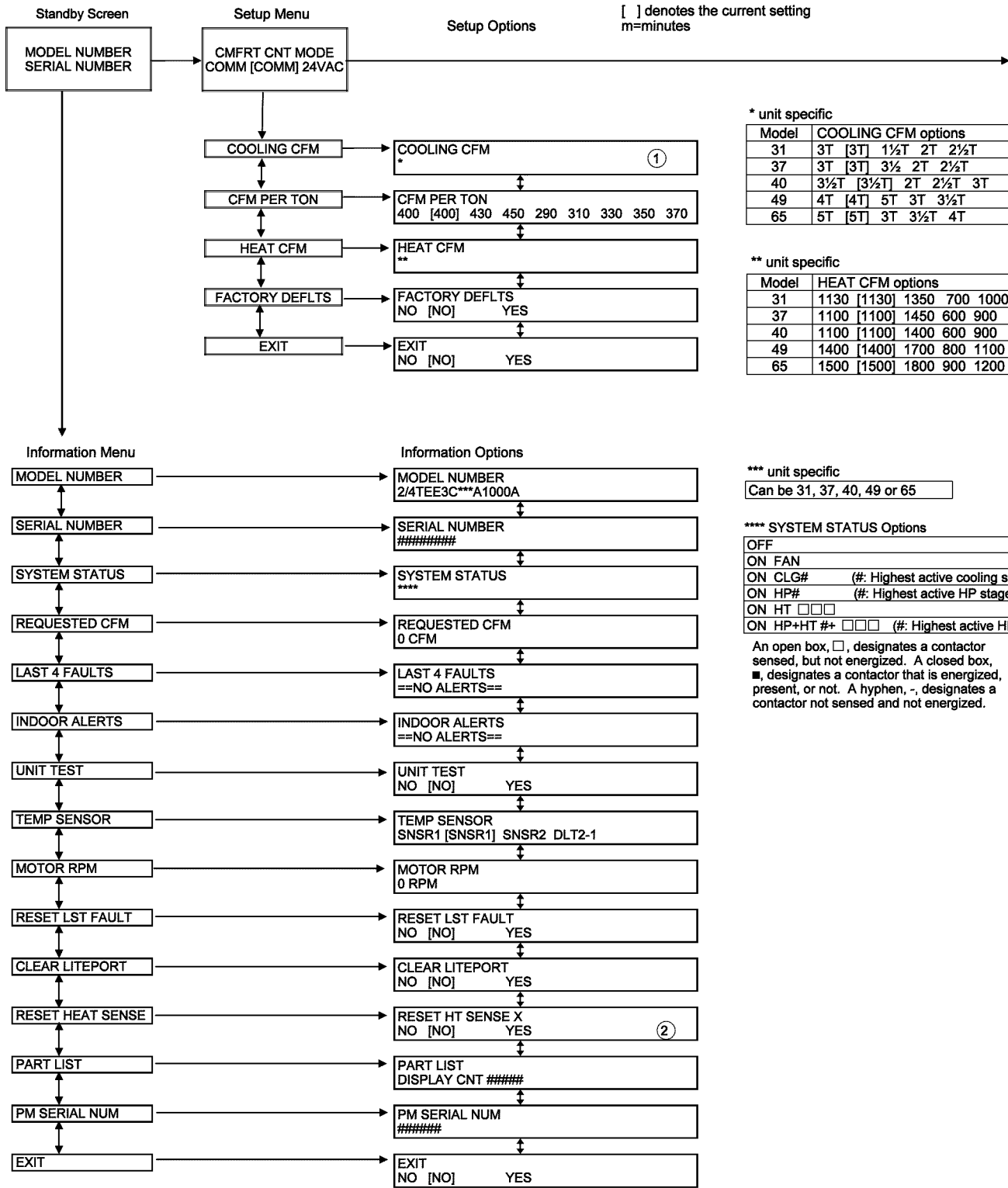
**NOTE: Airflow is default or programmed selections.**

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# Installer's Guide

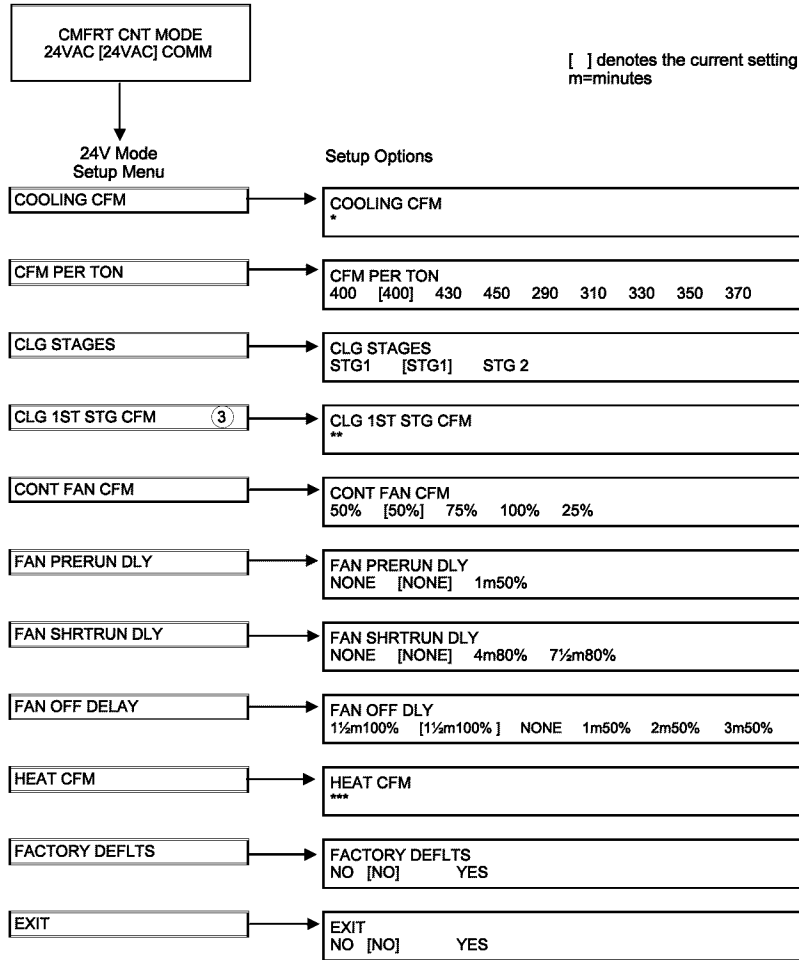
FIGURE 19- USER INTERFACE MENU - COMMUNICATING MODE



Notes:

- ① Shown only when Outdoor Communicating Unit is not detected.
- ② X indicates actual number of heat banks detected under reset menu.

FIGURE 20- USER INTERFACE MENU- 24V MODE



\* unit specific

Model	COOLING CFM options				
31	3T	[3T]	1½T	2T	2½T
37	3T	[3T]	3½	2T	2½T
40	3½T	[3½T]	2T	2½T	3T
49	4T	[4T]	5T	3T	3½T
65	5T	[5T]	3T	3½T	4T

\*\* unit specific

Model	CLG 1ST STG CFM options				
31	50%	[50%]	55%	65%	80%
37	50%	[50%]	55%	65%	80%
40	55%	[55%]	65%	80%	50%
49	55%	[55%]	65%	80%	50%
65	60%	[60%]	65%	80%	50%

\*\*\* unit specific

Model	HEAT CFM options				
31	1130	[1130]	1350	700	1000
37	1100	[1100]	1450	600	900
40	1100	[1100]	1400	600	900
49	1400	[1400]	1700	800	1100
65	1500	[1500]	1800	900	1200

③. CLG 1ST STG CFM menu will not appear if STG1 is selected in CLG stages menu.

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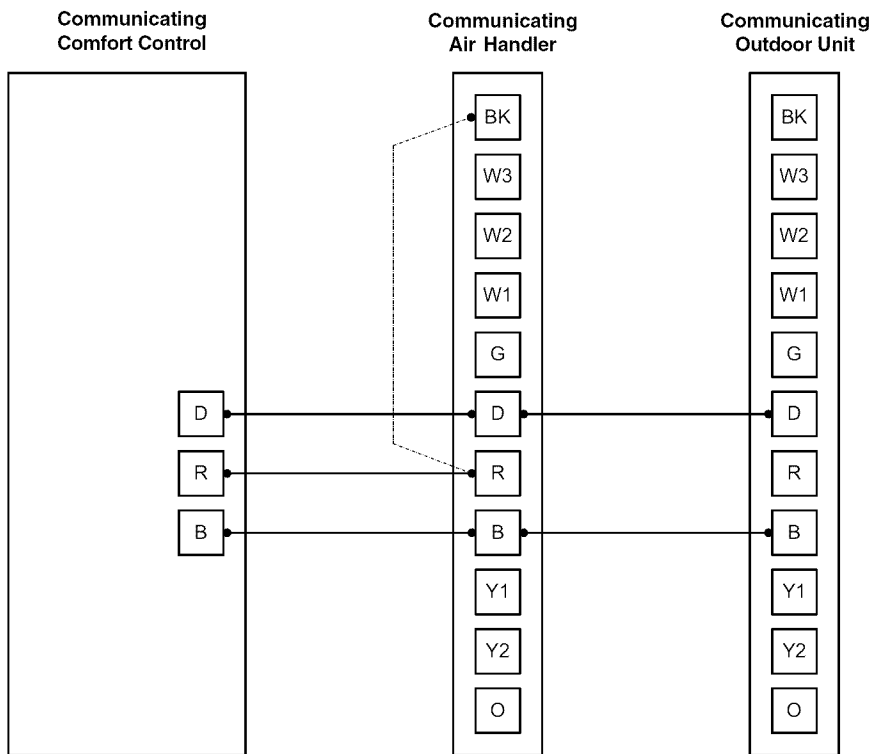
# Installer's Guide

## L. AIR HANDLER FLASH CODES

Alert Notification				Alert Code	Alert Group	Alert Description
Fault LED	COMM LED	User Interface Display	Comfort Control Display			
Solid ON ‡	N/A	CNTRL FAULT †	ERR 18	<b>18</b>	Control Failure	Internal Control Error
Solid ON ‡	N/A	CHECK FUSE †	N/A +	<b>92</b>	Fuse Failure	24V Fuse Open Error
1 Flash *	N/A	EXT SW OPEN *	ERR 106 *	<b>106</b>	External Shutdown Fault	External Shutdown Input Open Error
2 Flash	N/A	PM MEM ERR	ERR 114	<b>114</b>	PM Bad or Missing Fault	PM Data Corrupt Error
		PM MISSING				PM Missing Error
		ID MTR ERR				Motor Mismatch Error
		PM UNIT ERR	PM Unit Data Error			
		CAP MISMATCH	Compressor Capacity Mismatch Error			
		PM DATA ERR	PM Data Section Error			
3 Flash **	Fast Flash	NO SYS CLK	ERR 91	<b>91</b>	Communication Inactive Fault	COMM Bit Master Clock Error
		SYS COMM ERR				COMM Heat/Cool Demand Error
3 Flash	N/A	BLW COMM ERR	N/A	<b>90</b>	Communication Busy Fault	Serial Motor Communication Inactive Error <sup>1</sup>
3 Flash **	Fast Flash	SYS COMM CRC				COMM System Busy Error
3 Flash	N/A	BLW COMM CRC	ERR 105	<b>105</b>	Heater Interlock Relay Fault	Serial Motor Communication Busy Error
4 Flash	N/A	HT+LK ON ERR				Both Interlock Relay & Heater Relay Stuck Closed Error
		INTLK ON ERR				Interlock Relay Stuck Closed Error
4 Flash	N/A	NTLK OFF ERR	ERR 104	<b>104</b>	Heater Relay Fault	Interlock Relay Stuck Open Error
		HT ON ERR				Heater Relay Stuck Closed Error
4 Flash	N/A	HT OFF ERR	ERR 104	<b>104</b>	Heater Relay Fault	Heater Relay Stuck Open Error
		DAS RNG ERR *				ERR 118 *
5 Flash *	N/A	DAS UL ERR *	Discharge Air Temperature Upper Limit Error			
		DAS LL ERR *	Discharge Air Temperature Lower Limit Error			
5 Flash *	N/A	DAS SHORT *	N/A	<b>52</b>	Discharge Air Sensor Fault	Discharge Air Sensor Short Error
		DAS OPEN *				Discharge Air Sensor Open Error
6 Flash *	N/A	RAS RNG ERR *	N/A	<b>117</b>	Return Air Temperature Fault	Return Air Temperature Range Error
6 Flash *	N/A	RAS SHORT *	N/A	<b>110</b>	Return Air Sensor Fault	Return Air Sensor Short Error
		RAS OPEN *				Return Air Sensor Open Error
7 Flash	N/A	Y1 ON ERR	ERR 101	<b>101</b>	Y1 Relay Fault	Y1 Relay Stuck Closed Error
		Y1 OFF ERR				Y1 Relay Stuck Open Error
8 Flash	N/A	TWIN ERROR	N/A	<b>19</b>	Twinning Fault	Air Handler Twinning Error
9 Flash	N/A	DEMAND ERR *	N/A	<b>123</b>	Demand Configuration	Heat/Cool Demand Conflict Error
		HT CFG ERR				Electric Heat Configuration Error
<b>Notes:</b>	† If Air Handler processor is reset or fuse is open, COMM Alert cannot be reported; if the processor is reset the User Interface will not be updated * Alert flash code will not be implemented for initial release ** COMM communication errors may also be flashed on Fault LED ‡ LitePort™ transmissions will be allowed during ON flash codes + Fuse alert notification level would show on Comfort Control, but when fuse is open the COMM bus has no power <sup>1</sup> Comfort Control will switch system to "OFF" until this fault condition clears					

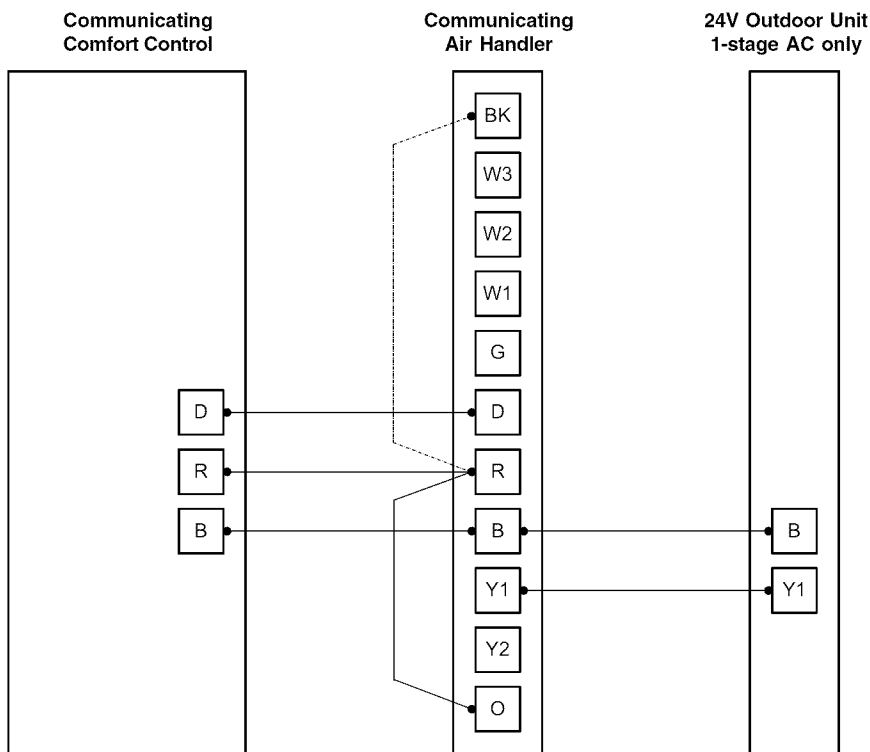
## M. FIELD WIRING - REFERENCE ONLY

### 2/4TEE3C31, 37, 40, 49 & 65A AIR HANDLERS WITH COMMUNICATING COMFORT CONTROL & COMMUNICATING OUTDOOR UNIT



**NOTE:** See Wiring Diagrams in Service Facts for complete wiring information.

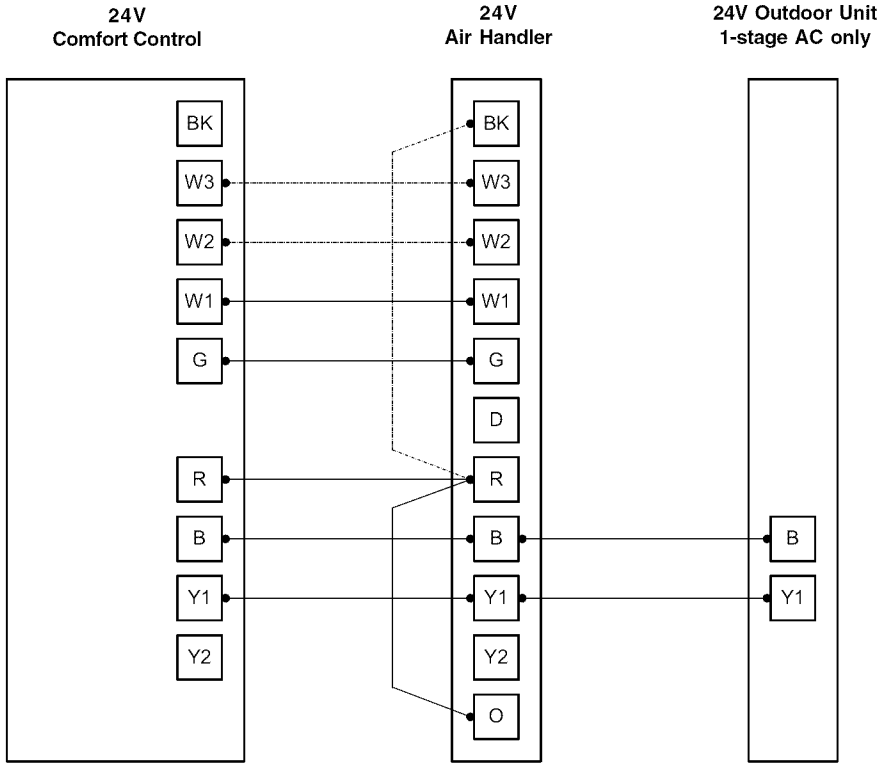
### 2/4TEE3C31, 37, 40, 49 & 65A AIR HANDLERS WITH COMMUNICATING COMFORT CONTROL, 24V SINGLE STAGE COOLING



**NOTE:** See Wiring Diagrams in Service Facts for complete wiring information.

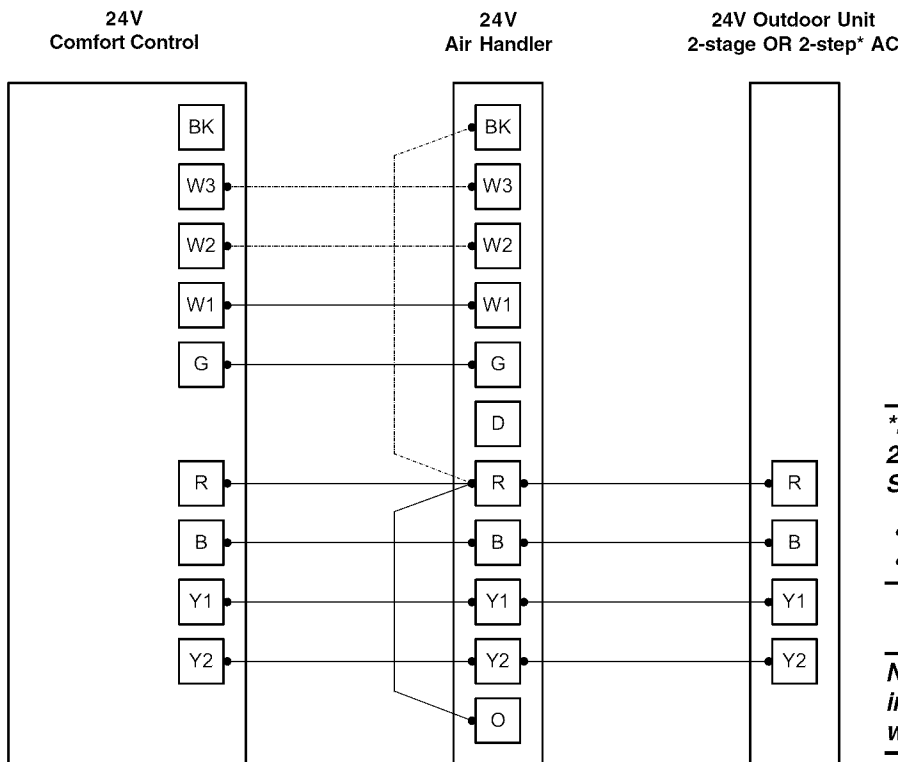
# Installer's Guide

## 2/4TEE3C31, 37, 40, 49 & 65A AIR HANDLERS WITH 24V COMFORT CONTROL, 24V SINGLE STAGE COOLING



**NOTE:** See Wiring Diagrams in Service Facts for complete wiring information.

## 2/4TEE3C31, 37, 40, 49 & 65A AIR HANDLERS WITH 24V COMFORT CONTROL, 24V 2-STAGE OR 2-STEP\* COOLING



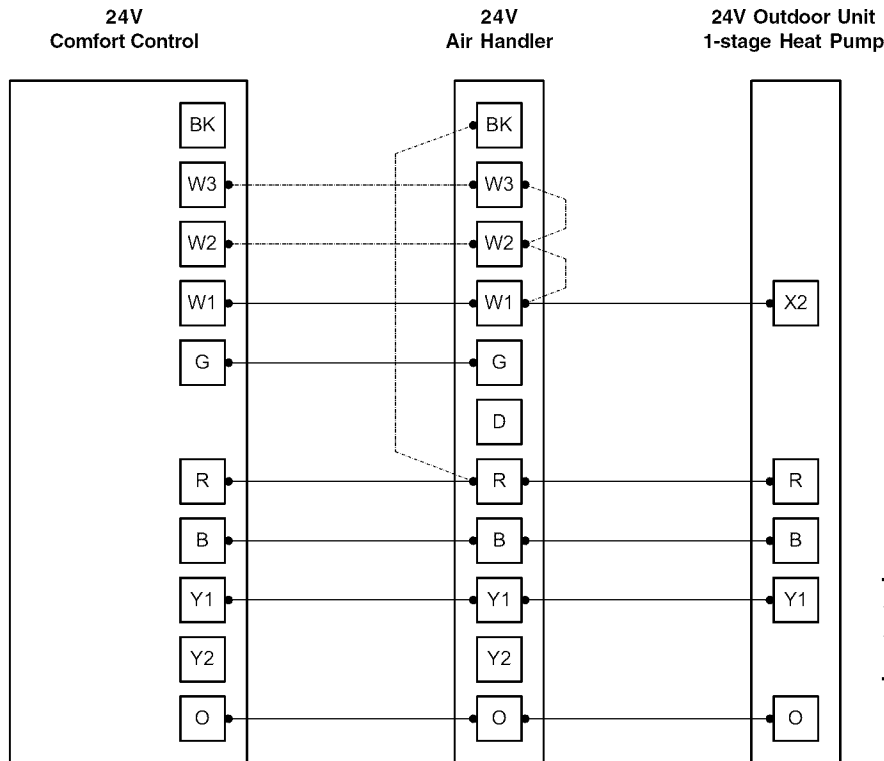
**\*NOTE:** See User Interface 24V Mode Setup Menu for 1st Stage CFM Options.

- 2-Stage = 50-60%
- 2-Step = 65-80%

**NOTE:** See Wiring Diagrams in Service Facts for complete wiring information.

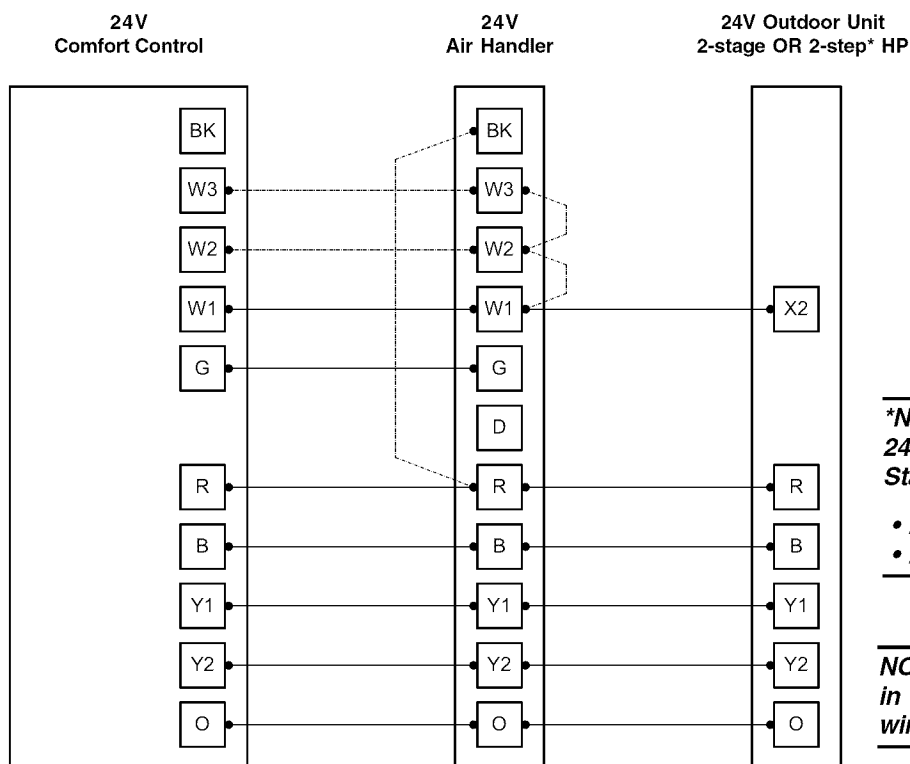


## 2/4TEE3C31, 37, 40, 49 & 65A AIR HANDLERS WITH 24V COMFORT CONTROL, 24V 1-STAGE HEAT PUMP



**NOTE:** See Wiring Diagrams in Service Facts for complete wiring information.

## 2/4TEE3C31, 37, 40, 49 & 65A AIR HANDLERS WITH 24V COMFORT CONTROL, 24V 2-STAGE OR 2-STEP\* HEAT PUMP



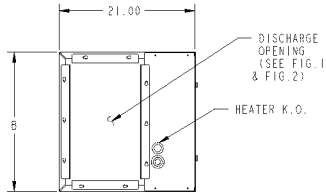
**\*NOTE:** See User Interface 24V Mode Setup Menu for 1st Stage CFM Options.

- 2-Stage = 50-60%
- 2-Step = 65-80%

**NOTE:** See Wiring Diagrams in Service Facts for complete wiring information.

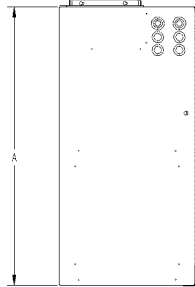
# Installer's Guide

## N. OUTLINE DRAWING FOR 2/4TEE3C31, 37, 40, 49 & 65A1000A

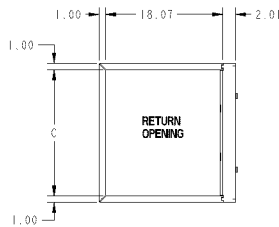


TOP VIEW

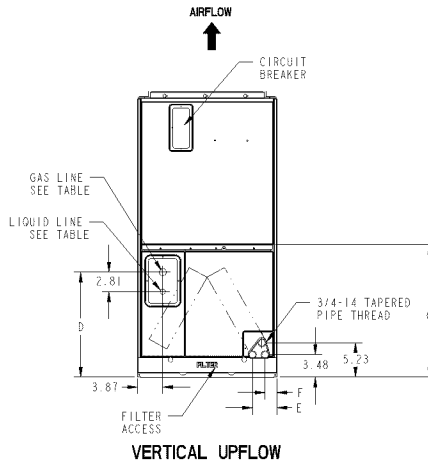
88" X 1.38" DUCT FLANGES (SEE FIG. 1 & FIG. 2) REVERSIBLE



SIDE VIEW



BOTTOM VIEW



VERTICAL UPFLOW

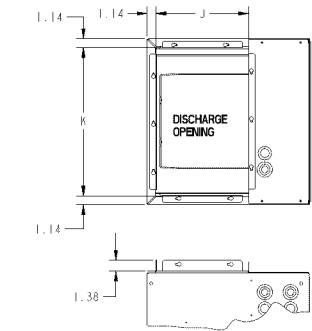


FIG. 1

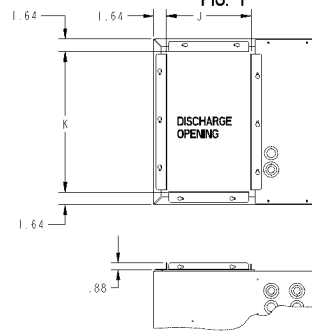


FIG. 2

MODEL NO.	FIG. 1		FIG. 2	
	J	K	J	K
2TEE3D31, 4TEE3D31 2TEE3C31, 4TEE3C31		19.5		18.5
2TEE3D37, 2TEE3F39, 4TEE3D37, 4TEE3F39 2TEE3C37, 2TEE3F48, 4TEE3C37, 4TEE3F48 2TEE3F64, 4TEE3F64	12.0	21.5	11.0	20.5
2TEE3D40, 4TEE3D40, 2TEE3C40, 4TEE3C40 2TEE3D49, 4TEE3D49, 2TEE3C49, 4TEE3C49 2TEE3D65, 4TEE3D65, 2TEE3C65, 4TEE3C65		24.0		23.0

	TO COMBUSTIBLE MATERIAL (REQUIRED)	SERVICE CLEARANCE (RECOMMENDED)
SIDES	0"	2"
FRONT	0"	21"
BACK	0"	0"
INLET DUCT	0"	1"
OUTLET DUCT	1"	

1" FOR THE FIRST 3 FT. OF OUTLET DUCT WHEN ELECTRIC HEATERS ARE INSTALLED.

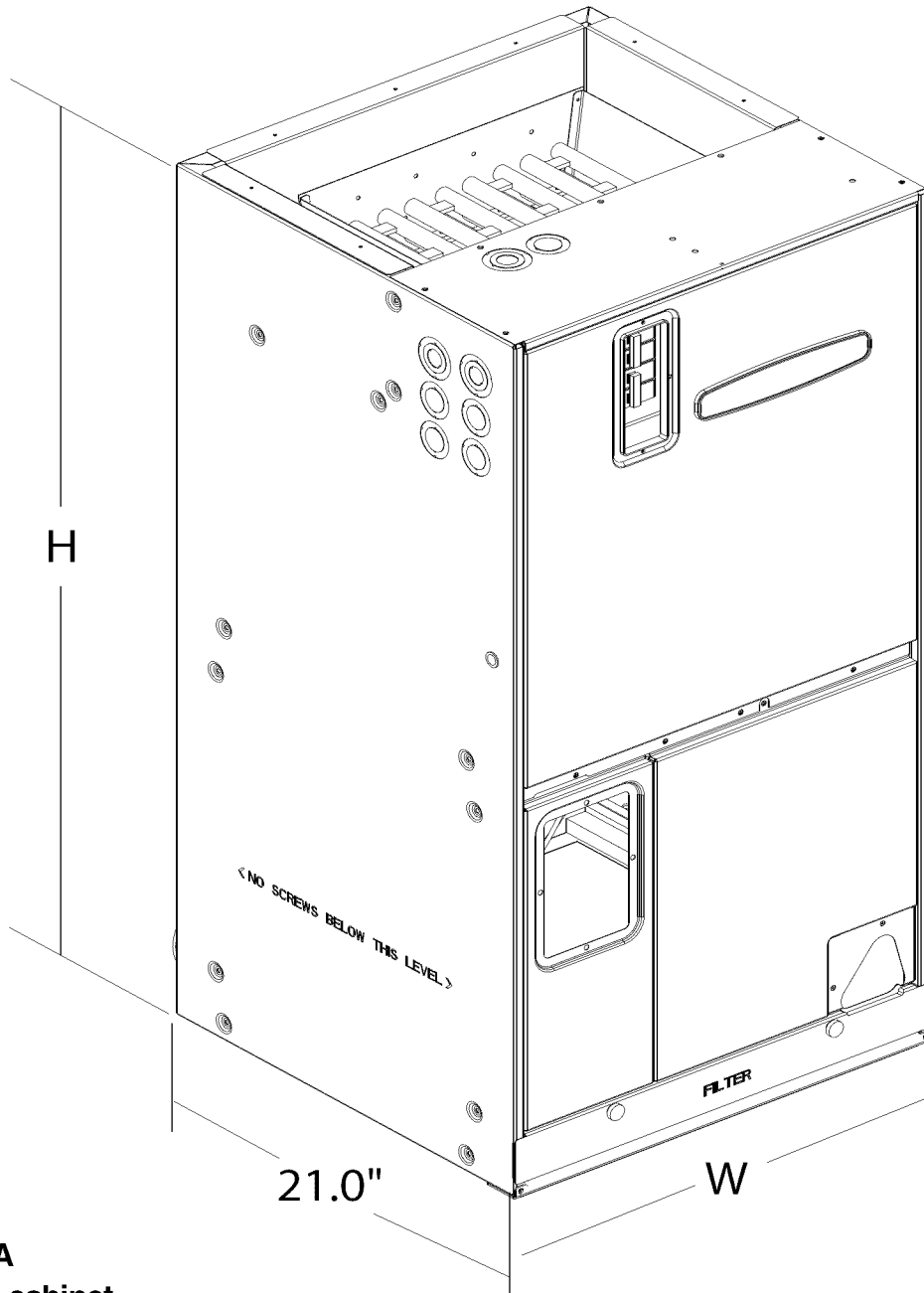
MODEL NO.	A	B	C	D	E	F	G	FLOW CONTROL	GAS LINE BRAZE	LIQ. LINE BRAZE
2TEE3D31, 4TEE3D31 2TEE3C31, 4TEE3C31	43	21.50	19.50	15.51	3.62	1.89			3/4	5/16
2TEE3D37, 2TEE3C37	45	23.50	21.50	17.57			N/A		7/8	
2TEE3D40, 2TEE3C40	51.75			18.33					1-1/8	
2TEE3D49, 2TEE3C49	57.90	26	24	27.12	3.21	1.48				
2TEE3D65, 2TEE3C65	62.75						36.00			
4TEE3D37, 4TEE3C37	45	23.50	21.50	17.57	3.62	1.89			3/4	3/8
4TEE3D40, 4TEE3C40	51.75			18.33				N/A	7/8	
4TEE3D49, 4TEE3C49	57.90	26	24	27.12	3.21	1.48				
4TEE3D65, 4TEE3C65	62.75						36.00			
2TEE3F39	57.90			17.00			31.15		3/4	
4TEE3F39	57.90	23.50	21.50	26.77	3.62	1.89	31.15		1-1/8	
2TEE3F48, 2TEE3F64 4TEE3F48, 4TEE3F64	57.90						31.15		7/8	

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## O. CHECKOUT PROCEDURE

1. Check the Air Handler installation in accordance with the instructions on page 20.
2. "Operational Procedure" for the system installation can be found in the outdoor unit Installer Guide and will be compatible with this Air Handler.

## 2/4TEE3C31, 37, 40, 49 & 65A AIR HANDLERS DIMENSIONAL DATA



**2/4TEE3C 65A**  
is a two piece cabinet

Model No.	H	W
2/4TEE3C31A1000A	43.00	21.50
2/4TEE3C37A1000A	45.00	23.50
2/4TEE3C40A1000A	51.75	26.00
2/4TEE3C49A1000A	57.90	
2/4TEE3C65A1000A	62.75	

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## CHECKOUT PROCEDURES

After installation has been completed, it is recommended that the Air Handler be checked against the following checklist.

1. Make sure power is "OFF" at power disconnect switch ..... [ ]
2. Check all field wiring for tight connections. See that grounding of unit is in accord with code ..... [ ]
3. Make sure unit suspension (if used) is secure and that there are no tools or loose debris in, around or on top of the unit ..... [ ]
4. Check all duct outlets; they must be open and unrestricted ..... [ ]
5. Check drain lines and be sure all joints are tight ..... [ ]
6. Make sure secondary drain pan is installed ..... [ ]
7. .... Check power supply for correct requirements per unit nameplate ..... [ ]
8. Check filters for proper size. Inform owner of proper procedure for removal and reinstallation ..... [ ]
9. Energize the system and carefully observe its operation; make any necessary adjustment ..... [ ]
10. ... Instruct owner, engineer (if applicable) on proper operating procedure and leave Use and Care Manual with owner ..... [ ]

## SUPPLEMENTARY HEATERS CHECKOUT PROCEDURES

**IF A HEATER IS USED, SEE "LIMITATIONS AND RECOMMENDATIONS"  
TO DETERMINE IF THE HEATER REQUIRES A SPECIAL CIRCUIT.**

1. Be sure the disconnect switch is "OFF", and safety label (if any) is attached ..... [ ]
2. Check on field wiring for tight connections and grounding according to codes ..... [ ]
3. Check circuit protection for proper size per nameplate specifications ..... [ ]
4. Check control box panel — in place and secured ..... [ ]

**NOTE: OPERATION OF HEATERS MUST BE CHECKED DURING THE OPERATION CHECK OF THE TOTAL SYSTEM.**