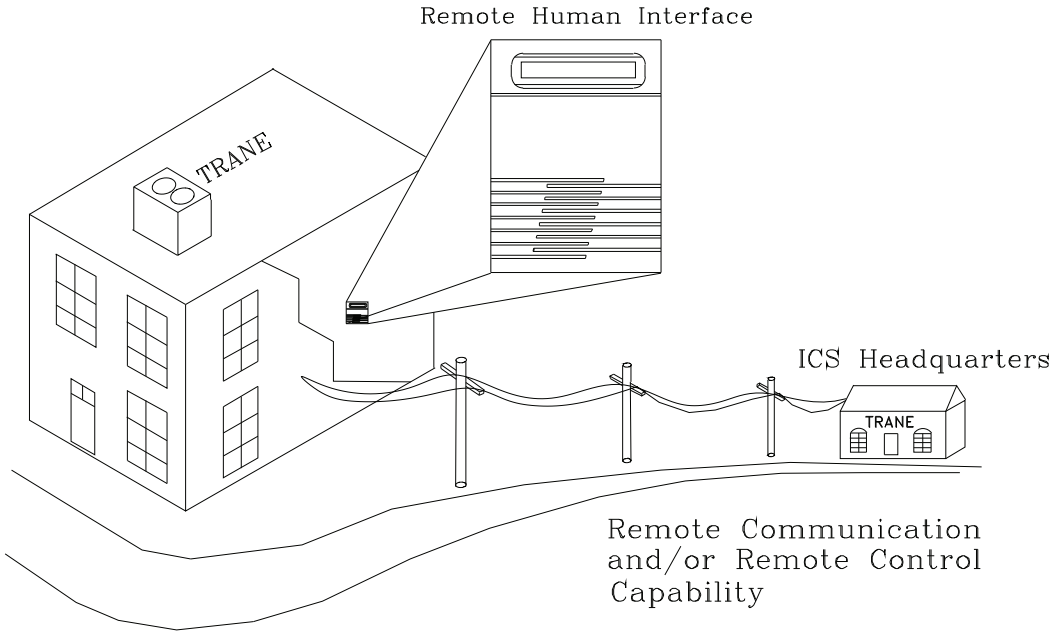
Installation Guide

TCI/IPCB Module

Trane Communication Interface and/or Interprocessor Communication Bridge for use with 20 - 130 Ton IntelliPak™ Rooftop Units



Used With

S_HF 20-75 Ton
S_HG 90-130 Ton
S_HL 20-75 Ton
S_HK 90-130 Ton

February 2010 **RT-SVN04B-EN**

Warnings, Cautions and Notices

Warnings, Cautions and Notices. Note that warnings, cautions and notices appear at appropriate intervals throughout this manual. Warnings are provided to alert installing contractors to potential hazards that could result in personal injury or death. Cautions are designed to alert personnel to hazardous situations that could result in personal injury, while notices indicate a situation that could result in equipment or property-damage-only accidents.

Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

ATTENTION: Warnings, Cautions and Notices appear at appropriate sections throughout this literature. Read these carefully.

⚠**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.

⚠WARNING
Ground Wire!

All field-installed wiring must be completed by qualified personnel. All field-installed wiring must comply with NEC and applicable local codes. Failure to follow this instruction could result in death or serious injuries.

⚠WARNING
Grounding Required!

Follow proper local and state electrical code on requirements for grounding. Failure to follow code could result in death or serious injury.

⚠WARNING
Personal Protective Equipment (PPE) Required!

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards.

- **Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate MSDS sheets and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations.**
- **If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit.**

Failure to follow recommendations could result in death or serious injury.

Inspecting the Kit

Before installing the TCI/IPCB Kit, open the box and verify the following parts are enclosed:

Qty 1 - TCI/IPCB module - This module is interchangeable between the two functions.

Qty 6/2 wire harness - 3 harnesses per module application.

Qty 3 - #6-32 x 3/4 inch long mounting screws

Qty 6 - #6-32 x 3/8 inch long mounting screws

Qty 1 - Sheet metal mounting bracket

Qty 1 - Sheet metal mounting plate

Qty 1 - Sheet metal cover plate

Contact the Trane Parts Center nearest your area should there be any damaged or missing components.

Installation

Step-by-step instructions for programming the setup information, default set point, diagnosing system failures and checking operating status can be found in the latest editions of the programming troubleshooting guides for Constant Volume applications (RT-SVP04*-EN) and Variable Air Volume (RT-SVP05*-EN).

Mounting the Module

Refer to the appropriate Figure 2, p. 6 to Figure 6, p. 8 for the proper location of the module(s) and screw hole configuration.

TCI Module Installation

⚠WARNING
Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

⚠WARNING
Grounding Required!

Follow proper local and state electrical code on requirements for grounding. Failure to follow code could result in death or serious injury.

1. Disconnect all power from the Rooftop Unit.

Note: *Units without a Heating module, proceed to step 4. Disregard references to the Heat Module within the remaining instructions.*

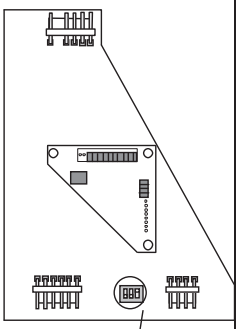
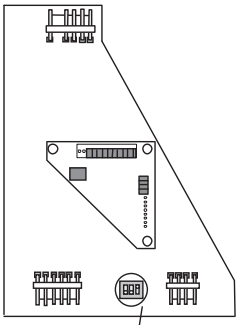
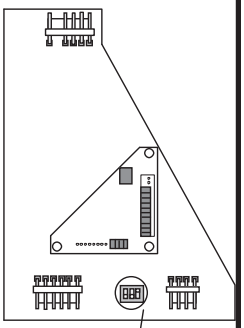
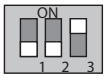
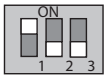
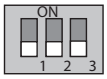
Units with a Heat Module:

2. Remove the four screws securing the top cover plate and the Heat Module to its mounting plate, if installed.

Note: *Once all the screws are removed, the top cover plate and the module will be free from the mounting plate. Remove and discard the Heat Module Cover Plate.*

3. Disconnect the wires from one end of the Heat Module by unplugging the connectors. Move the module away from its mounting plate.
4. Using 4 #6-32 x 3/8 inch mounting screws from the kit, align the mounting holes in the TCI Mounting bracket up with the holes in the Heat Module mounting plate. Refer to Figure 2, p. 6 to Figure 6, p. 8 for proper orientation.
5. Replace the Heat Module onto its mounting plate and install the four screws removed in step 2. Reconnect all wiring plugs to their appropriate terminals.
6. Using 2 #6-32 x 3/8 inch screws from the kit, install the mounting plate for the TCI Module as shown in Figure 2, p. 6 to Figure 6, p. 8.
7. Refer to Figure 1, p. 5 for proper dip switch settings and daughter board orientation.
8. Remove the Cover Plate from the kit.
9. Using 3 #6-32 x 3/4 inch screws from the kit, install the module onto the mounting plate.

Figure 1. Dip Switch Settings and Daughter Board Configurations

Default Configuration [1]		
Fig. 7a	Fig. 7b	Fig. 7c
IPCB	TCI/COMM4	TCI/COMM3 [2]
		
		
IPCB Non-Isolated Com3 or Com4 Dip Switch – Off, Off, On	TCI Non-Isolated Com3 or Com4 Dip Switch – On, Off, Off	TCI Isolated Com3 Dip Switch – Off, Off, Off
Remote Human Interface	Tracer Summit Comm4	Tracer Summit, 100, L, etc.

Notes:
1. The module ships in the IPCB configuration (Fig. 1a)
2. Please refer to XXX for proper daughter board rotation procedure.

Figure 2. 20 & 25 Ton S*HF

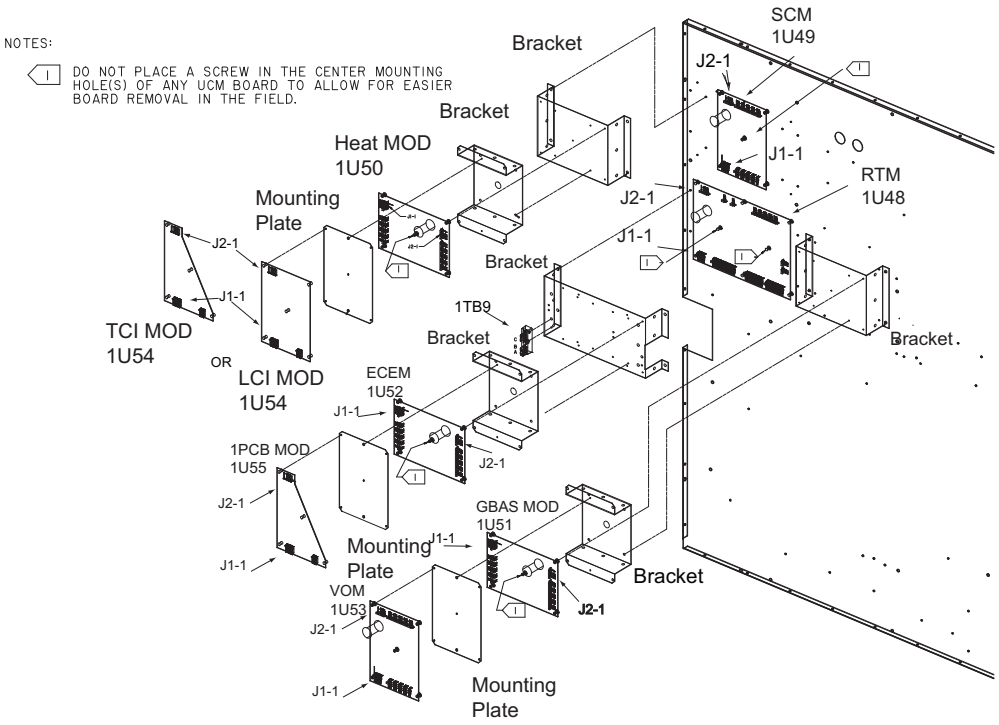


Figure 3. 30 Ton S*HF & 20 - 30 Ton S*HL

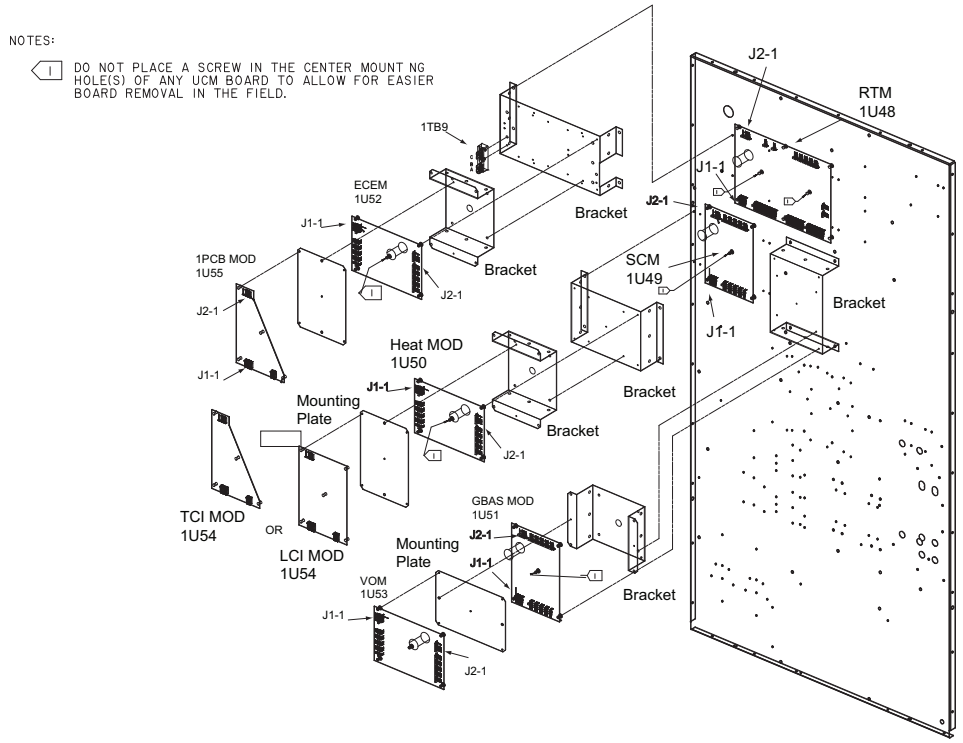


Figure 4. 40, 60, 70 and 75 Ton S*HF & 40 - 75 Ton S*HL

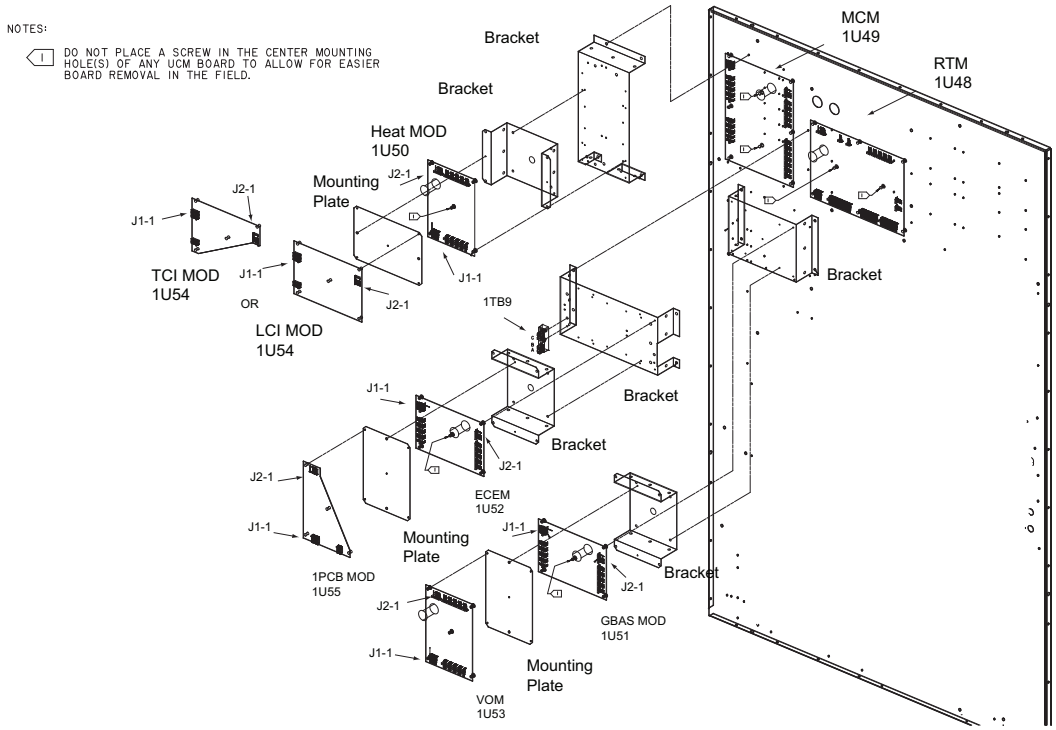


Figure 5. 50 & 55 Ton S*HF

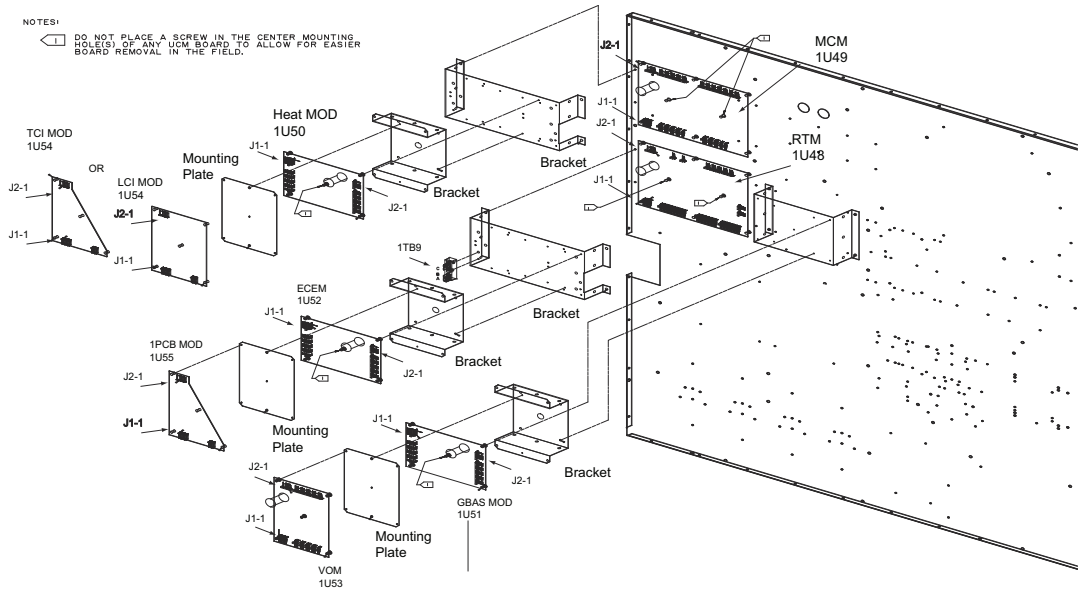
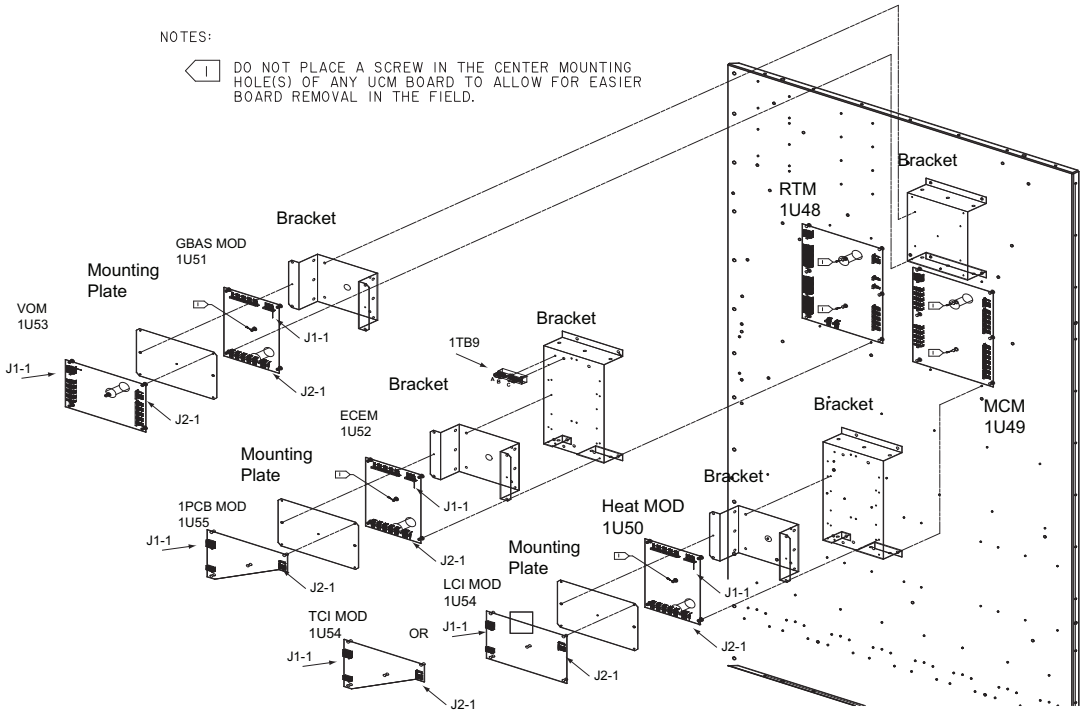


Figure 6. 90 - 130 Ton



TCI Wiring Harness Installation

⚠WARNING
Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

1. Remove all six (6) wire harnesses from the Kit. Refer to the Unit wiring diagram and select the three (3) harnesses which corresponds by wire numbers for the three (3) plugs on the TCI Module as follows:

   J1 - IPC Plug - 406D and 407D

   J2 - 24 VAC Plug - 403K and 436K

   J3 - Comm Link Plug - 533A and 534A
2. Connect each plug to its appropriate receptacle on the TCI Module.
3. IPC Harness - Connect the 1/4" spade connector on wire 406D to 1TB9-A. Connect wire 407D to 1TB9-C.
4. 24 VAC Harness - Connect the 1/4" spade connector on wire 403K to 1TB7-2. Connect wire 436K to 1TB7-5.
5. Comm Link Harness - Connect the 1/4" spade connector on wire 533A to 1TB5-19. Connect wire 534A to 1TB5-20.

Important: *The Communication Link is polarity sensitive. Do not interchange these wires.*

6. Secure the harness wires within the control panel to the existing wire bundles. Coil any excess wire and secure as well.
7. For the TCI external wiring connections, refer to the Field Connection Wiring Diagram inside the Rooftop Unit control panel.

This completes the TCI Module installation and wiring. If an IPCB Module is being installed at this time, proceed to "IPCB Module Installation". If not, restore power to the unit.

Before operating the unit, the operating parameters must be re-programed to include the TCI Module. Refer to the latest editions of the programming troubleshooting guides for Constant Volume applications (RT-SVP04*-EN) and Variable Air Volume (RT-SVP05*-EN) for re-configuration instructions.

IPCB Module Installation

⚠WARNING
Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

1. Disconnect all power from the Rooftop Unit.

Note: *Units without an Exhaust Comparative Enthalpy module, proceed to step 4. Disregard references to the ECE Module within the remaining instructions.*

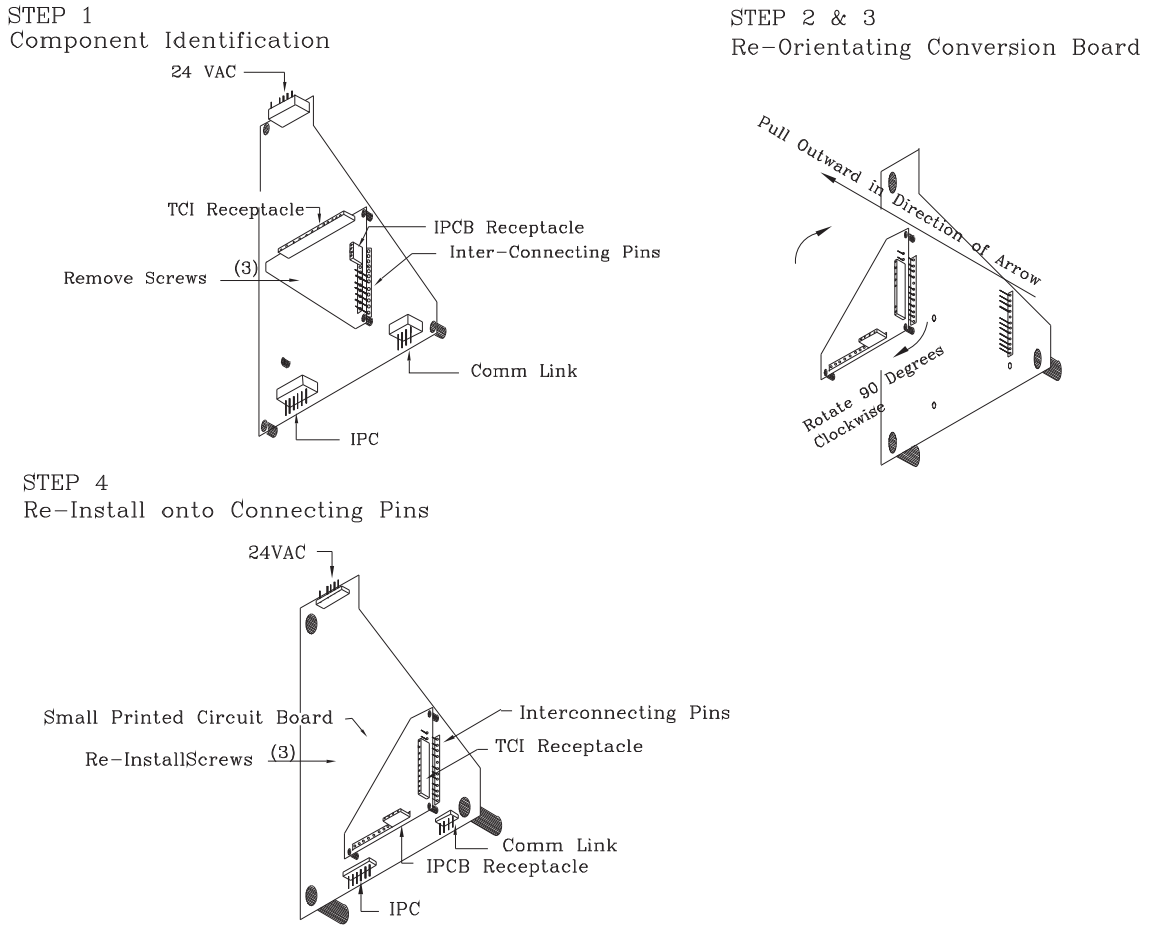
Units with an Exhaust Comparative Enthalpy Module (ECEM):

2. Remove the four screws securing the top cover plate and the ECE Module to its mounting plate, if installed.

Note: *Once all the screws are removed, the top cover plate and the module will be free from the mounting plate. Remove and discard the ECEM Cover Plate.*

3. Disconnect the wires from one end of the ECE Module by unplugging the connectors and move it away from its mounting plate.
4. Using 4 #6-32 x 3/8 inch mounting screws from the kit, align the mounting holes in the IPCB Mounting bracket up with the holes in the ECE Module mounting plate. Refer to Figure 2, p. 6 to Figure 6, p. 8 for proper orientation.
5. Replace the ECE Module onto its mounting plate and install the four screws removed in step 2. Reconnect all wiring plugs to their appropriate terminals.
6. Using 2 #6-32 x 3/8 inch screws from the kit, install the mounting plate for the IPCB Module as shown in Figure 2, p. 6 to Figure 6, p. 8.

Figure 7. TCI/IPCB Board Conversion



7. Remove the IPCB Module from the kit. Locate and remove the three (3) screws that secure the small printed circuit board to the main module board. See Figure 1, p. 5, Step 1.
8. If necessary, gently pull the small printed circuit board straight outward to disconnect it from the connecting pins. See Figure 7, Step 2 and 3.

NOTICE

Equipment Damage!

Any direction other than "straight outward" could damage the connecting pins.

9. Rotate the small printed circuit board 90 degrees counterclockwise. See Figure 7, Step 2 and 3.
10. Replace the printed circuit board onto the main module. Insure that the connecting pins are aligned with their respective holes on the small printed circuit board. Press downward to seat the connecting pins. See Figure 7, Step 4.
11. Install and tighten the three screws securing the small printed circuit board to the main module removed in step 6.
12. Verify that Dip Switches 1 and 2 are in the "Off" position and number 3 is in the "On" position. Refer to Figure 1, p. 5 for proper dip switch settings and daughter board orientation.

13. Remove the Cover Plate from the kit.
14. Using 3 #6-32 x 3/4 inch screws from the kit, install both the cover plate and the module onto the mounting plate

IPCB Wiring Harness Installation

1. Remove all six (6) wire harnesses from the Kit. Refer to the Unit wiring diagram and select the three (3) harnesses which corresponds by wire numbers to the three (3) plugs for the IPCB Module as follows:

   J1 - IPC Plug - 406E and 407E

   J2 - 24 VAC Plug - 404E and 436P

   J3 - Comm Link Plug - 537A and 538A
2. Connect each plug to its appropriate receptacle on the IPCB Module.
3. IPC Harness - Connect the 1/4" spade connector on wire 406E to 1TB9-A. Connect wire 407E to 1TB9-C.
4. 24 VAC Harness - Connect the 1/4" spade connector on wire 404E to 1TB7-3. Connect wire 436P to 1TB7-4.
5. Comm Link Harness - Connect the 1/4" spade connector on wire 537A to 1TB4-20. Connect wire 538A to 1TB4-21.

Important: *The Communication Link is polarity sensitive. Do not interchange these wires.*

6. Secure the harness wires within the control panel to the existing wire bundles. Coil any excess wire and secure as well.
7. For the IPCB external wiring connections, refer to the Field Connection Wiring Diagram inside the Rooftop Unit control panel.

This completes the IPCB Module installation and wiring. Restore power to the unit.

Before operating the unit, the operating parameters must be re-programmed to include the IPCB Module. Refer to the latest editions of the programming troubleshooting guides for Constant Volume applications (RT-SVP04*-EN) and Variable Air Volume (RT-SVP05*-EN) for re-configuration instructions.

Literature Order Number	RT-SVN04B-EN
Date	February 2010
Supersedes	RT-SVN04A-EN (May 2003)

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. Only qualified technicians should perform the installation and servicing of equipment referred to in this literature.

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For more information, contact your local Trane office or e-mail us at comfort@trane.com