

# Installer's Guide

## Add-on Heat Pump Kit TAYPLUS103A

**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.

### GENERAL

The Plus One system was designed to combine warm air furnaces (indoor units) with heat pumps for maximum comfort and energy efficiency during the entire year.

This is compatible only with furnaces having 24V transformers at least 35 VA.

The control center enclosure is made of galvanized steel, with an attractive decorative logo on the front panel.

This enclosure is 9-3/16" x 7-1/8" x 2-1/2" in size. When the cover is removed, the components are readily accessible for field hook-up or service. All field electrical connections are to terminal board, or wire nuts (field supplied). This assembly can be mounted in any position.

### INSPECTION

1. Unpack the Plus One Control Center and remove cover. Included inside are:  
Control Box Assembly  
Installer's Guide
2. Check for any shipping damage, and if any, report it to the carrier immediately.
3. The field electrical connections and wiring must be done in accordance with the "National Electrical Code" and must comply with local electrical codes.
4. Minimum gauge 18 AWG thermostat wire.

### SYSTEM USAGE AND INSTALLATION

This system uses a heat pump outdoor section with an indoor heat pump coil, a Plus One Control Center and warm air furnace.

The Plus One Control Center as shipped from the factory is for operation in the "non-restrictive" mode. For "restrictive" operation, field wire in accordance with appropriate diagram (included in these instructions). TAYSTAT250A is required.

1. The indoor coil must be installed on the supply side of the furnace.
2. The Plus One Control Center is installed in close proximity to the furnace.
3. The outdoor thermostat (when used in restricted operation only) is installed in the outdoor section in accordance with TAYSTAT250A installation requirements.

*For Load Shedding in the heating cycle, use the restricted hook up diagram. The utility company's load shedding relay will be wired in place of the ODT as shown. The utility company's relay must be a SPDT switch type.*

*Do not connect wires to W terminal at thermostat and terminal #1 at ODT if utility company requires lockout (restriction) of gas furnace at an outdoor temperature above the setting on the outdoor thermostat. Emergency heat cycle and furnace blower will come on if thermostat is switched to emergency heat.*

### INSTALLATION OF BONNET THERMOSTAT \*THT1248 ON ALL OIL FURNACES

#### "A" Coil Application (Upflow)

1. Remove front cover panel from the "A" coil enclosure.
2. Select a location to make a 1-1/2" hole for the bonnet thermostat to pass thru (see Figure 2) in front coil baffle of "A" coil.
3. The location of the 1-1/2" hole should be on a vertical line (plane) to the top of the "A" coil and approximately 4" - 6" down from the front end of coil.
4. With the template provided make a 1-1/2" hole in coil baffle, install the bonnet thermostat with the screws provided in the kit.
5. Drill 3/8" hole in front cover panel for field wiring and install grommet provided with this kit.
6. Connect bonnet thermostat leads in Plus One Control Center thru grommet. (See hookup diagram).
7. Replace front cover panel on "A" coil enclosure and secure.

#### "A" Coil Application (Downflow)

1. Select a location on air entering side of the coil enclosure to make a 1-1/2" hole for the bonnet thermostat to pass thru (see Figure 1).
2. The location of the 1-1/2" hole should be on a horizontal line (plane) to the top of the "A" coil. The thermostat can not be in contact (touching) the coil.
3. With template provided, make a 1-1/2" hole in the coil enclosure, install the bonnet thermostat with the screws provided.

\*Available thru Service Parts only.

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## Flat Coil Application (Horizontal)

1. Select a location to make a 1-1/2" hole for the bonnet thermostat to pass thru (see Figure 1).
2. The location of the 1-1/2" hole should be between indoor unit (furnace) and flat coil and approximately 6" in from the side of the duct.
3. With the template provided make a 1-1/2" hole in duct, then install the bonnet thermostat with the screws provided.

### IMPORTANT:

After making the 1-1/2" hole with the template provided, duct, liner and foil materials **MUST** be removed so that air flow restriction does not occur.

## INSTALLATION OF CONTROL WIRING

The control wiring is connected to the Plus One Control Center per the field wiring diagrams and figures. If the gas furnace has an integrated control, Y from thermostat must be connected per field wiring diagram Note 4.

## SEQUENCE OF HEATING OPERATION

### Non-restrictive Mode – (As shipped)

Upon a call for first stage heat, the heat pump (only) operates in heating. If the outdoor temperature is high enough that the heat pump can handle the load, first stage will be satisfied after the required run time and the system shuts off until the next (first stage) call for heat.

If the outdoor temperature is below the balance point of the system, and the heat pump cannot handle the load, when the temperature in the room drops approximately 1-1/2 degrees further, second stage heat is called for. Second stage turns the heat pump off and simultaneously brings the furnace on. The furnace will now satisfy the second stage only. The first stage of the thermostat is still calling. After a minimum delay of 45 seconds, the heat pump will resume operation. If the indoor temperature continues to rise, the thermostat will be satisfied. If indoor temperature does not continue to rise but falls, the second stage will call and bring on the gas furnace again.

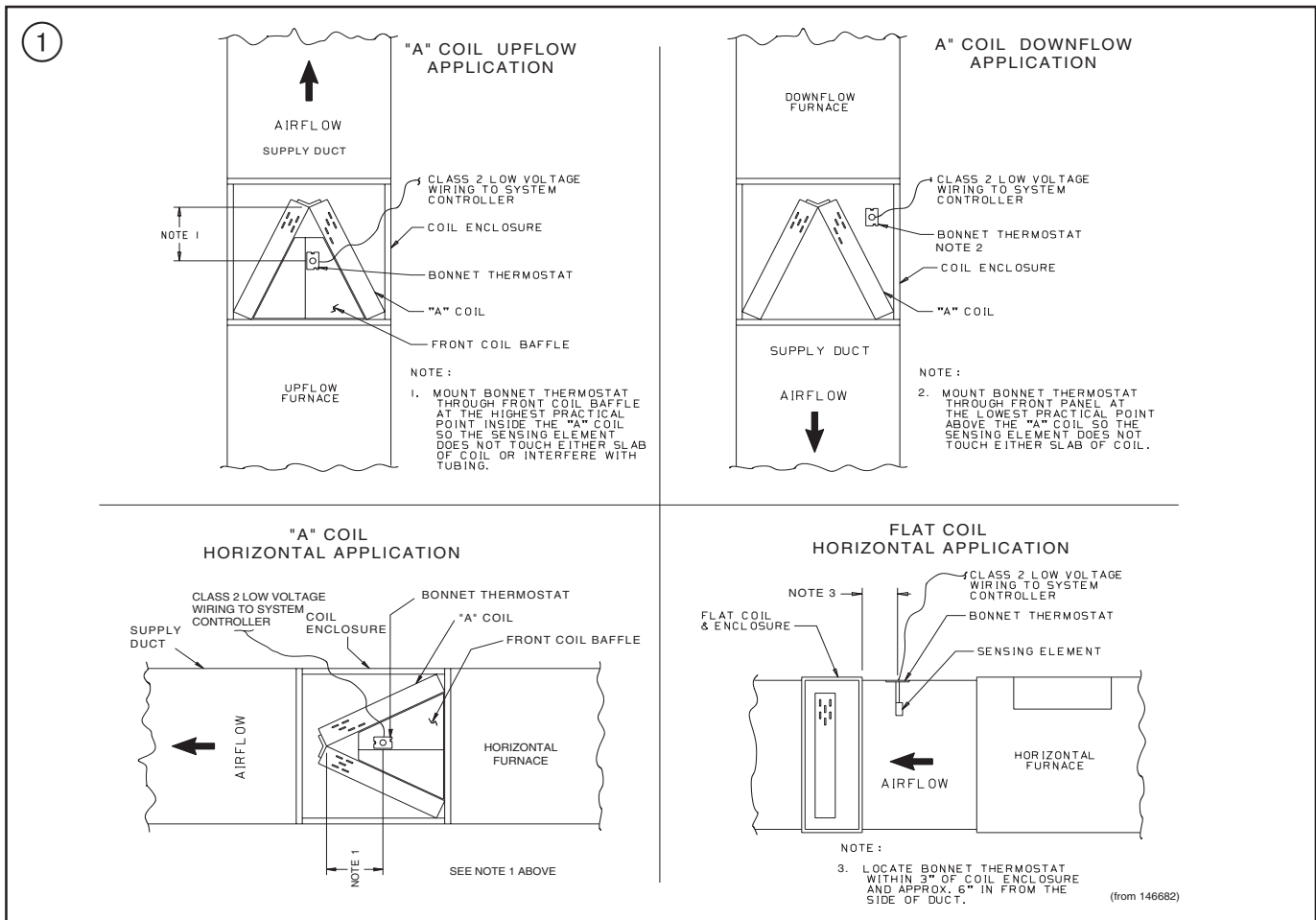
Moving thermostat with emergency heat switch to the "EMERGENCY HEAT" position converts the system to "furnace only" operation.

### Restrictive Mode – (Requires TAYSTAT250A)

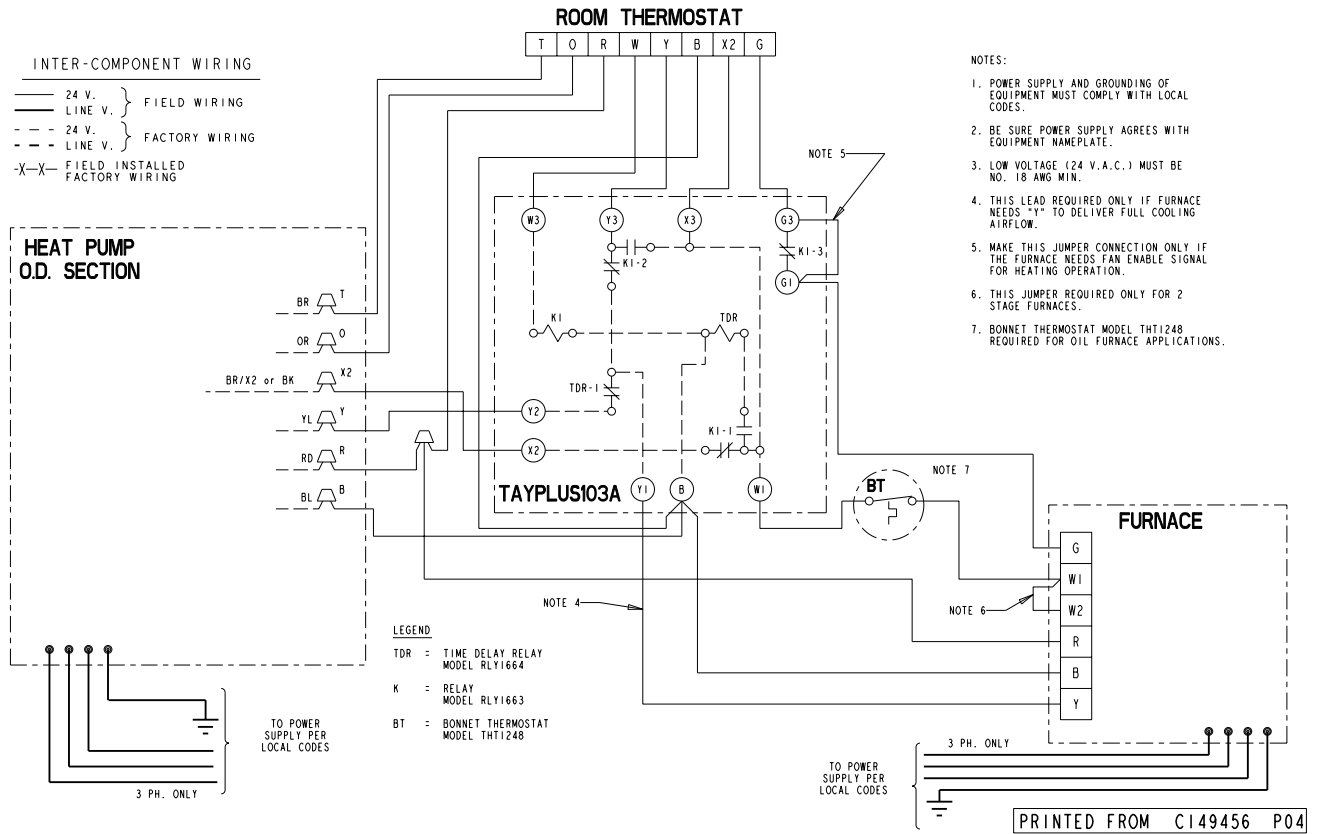
The O.D.T. changeover must be at or above the application balance point of the system. The heat pump alone cannot handle the load at outdoor temperatures below the application balance point.

At any temperature above the setting of the O.D.T., the heat pump only will operate when called for by the first stage of the thermostat. When the outdoor temperature drops below the setting of the outdoor thermostat, the call for heat goes to the furnace and the heat pump is cut off. When the outdoor temperature rises above the setting of the outdoor thermostat, the system returns to heat pump (only) operation.

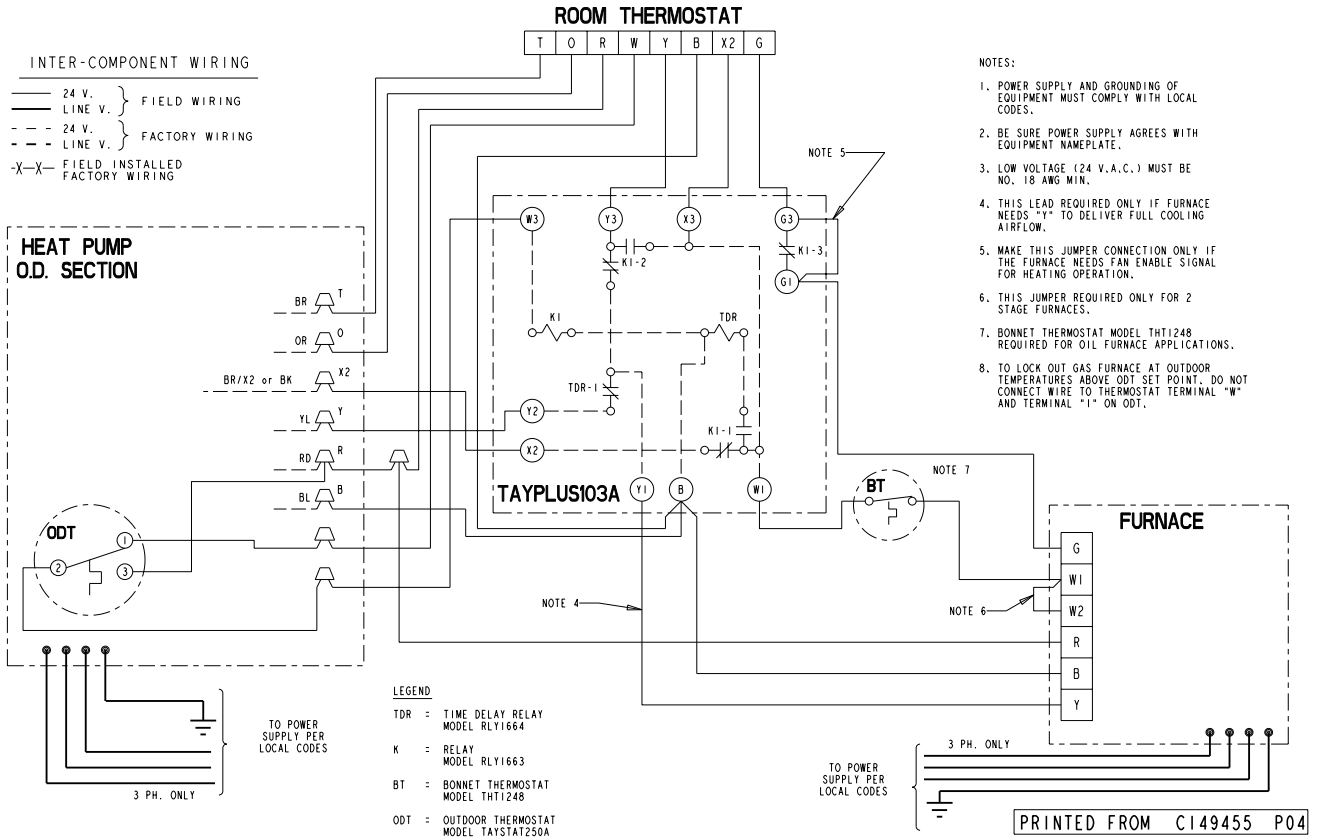
Moving thermostat with emergency heat switch to the "EMERGENCY HEAT" position converts the system to "furnace only" operation.



## Split Heat Pump System With TAYPLUS103A In Furnace (Unrestricted Mode)

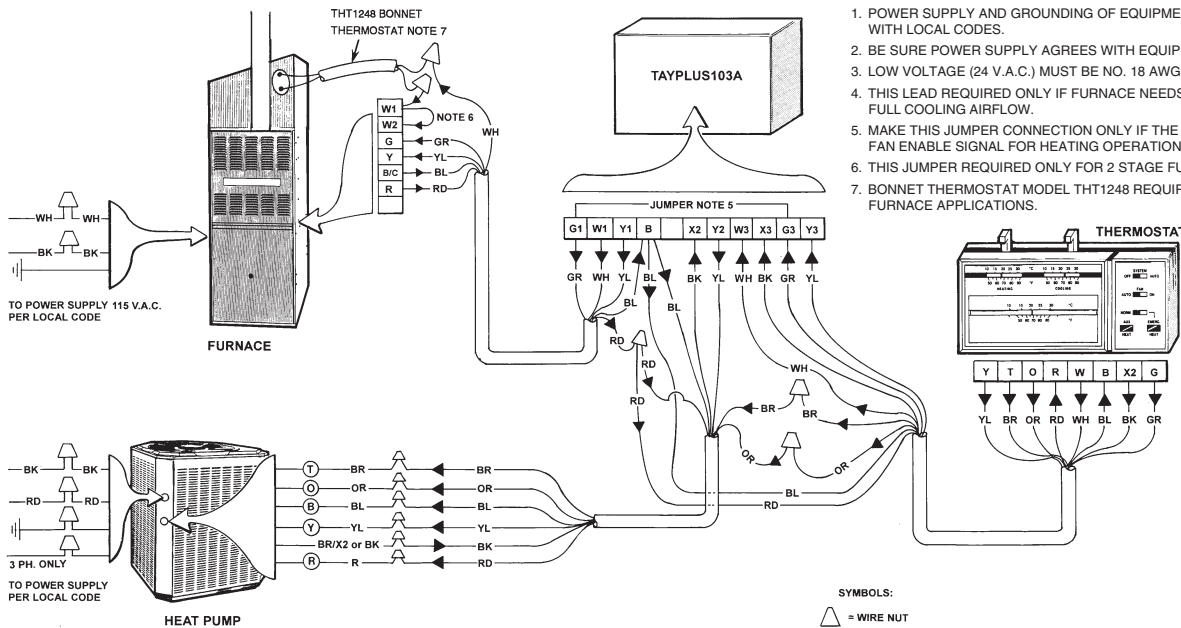


## Split Heat Pump System With TAYPLUS103A In Furnace (\*Restricted Mode)

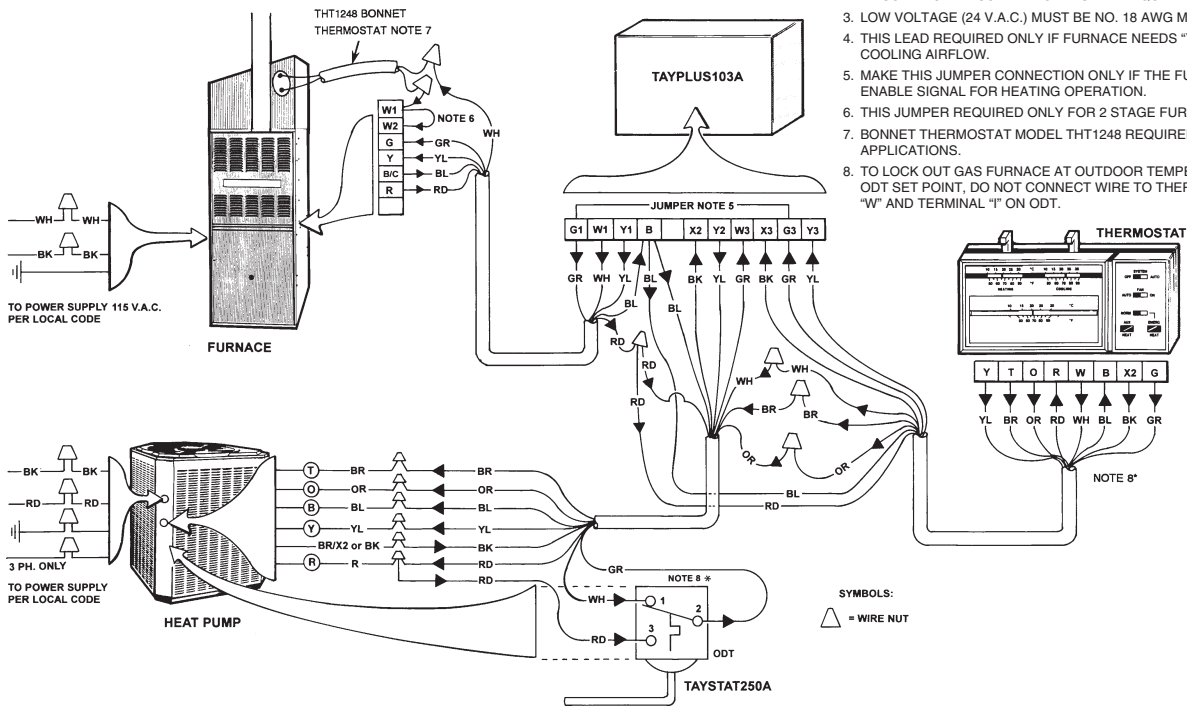


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## TAYPLUS103A Heat Pump Dual Fuel Kit UNRESTRICTED MODE



## \*RESTRICTED MODE



Literature Order Number	PLUS-IN-1C
File Number	SV-UN-ACC-PLUS-IN-1C 09/03
Supersedes	PLUS-IN-1B
Stocking Location	PI Louisville

**Trane**  
A business of  
American Standard Companies

For more information contact  
your local dealer (distributor)

Since the manufacturer has a policy of continuous product and product data improvement, it reserves the right to change design and specifications without notice.