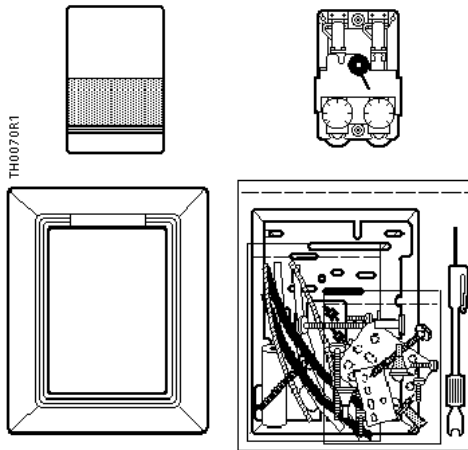


## **RETROLINE®** Retrostat Kits for POWERS™ CONTROLS TH 180, TH 182 D/N or H/C Thermostats

### Product Description

The Retrostat kits replace a discontinued Powers Controls TH 180 or TH182 day/night or a heating/cooling pneumatic thermostat with a TH 192 direct or reverse acting, two pipe, dual temperature pneumatic device.



### Contents

Part	Quantity
Retrostat Cover Kit	1
Thermostat *	1
Adapter frame	1
Bag assembly with installation hardware	1
Optional 1/2-inch Large, Exposed Set Point Knob	1

\* Includes thermostat installation instructions.

### Expected Installation Time

1 hour

### Required Tools

- Calibration and cover screw wrench (192-632) or 1/16" Allen wrench and 1/8" open-end wrench
- Medium flat-blade screwdriver
- Small level
- Accurate thermometer
- Needle nose pliers

### Product Numbers

Type	Thermostat		Replaces	Retrostat Kit (See Notes 1 and 2)
	Action	Scale		
Day/ Night	Direct	°F	180-410 180-413 180-910 180-913 182-500 182-501	192-3044
		°C	182-627 182-630 182-632	192-3144
	Reverse	°F	180-937 182-503	192-3054
		°C	182-633 182-634	192-3184
Heat/ Cool	Direct/ Reverse	°F	180-420 180-423 180-920 180-923 182-506 182-507	192-3084
		°C	182-633 182-634	192-3184

#### NOTE:

For Retrostat Kits with optional 1/2-inch large, exposed setpoint adjustment knob, order standard kit with "K" suffix.

#### Prerequisites

- Review all of these instructions before you begin installation.
- Check job drawings for any site-specific information.
- Verify the existing thermostat installation has its supply and return air lines connected properly.
- Obtain the installation instructions provided with the thermostat in this Retrostat Kit. The document provides instructions for calibrating the thermostat.
- Ensure that a supply of wall anchors and plastic ties are available.

## Installation

### Removing Existing Thermostat

1. Remove the existing thermostat from the wall.
2. Plug the supply (main) air line.
3. Place a piece of tape on the supply air line to identify it.
4. Remove the terminal head and the gasket from the fitting.
5. Clean the surface of the fitting, if required.

### Installing New Thermostat

Figure 1 shows a typical thermostat installation.

To connect directly to copper tubing, see Figures 2 and 3.

To connect to the terminal head, see Figure 4.

To convert the thermostat from a horizontal position to a vertical position, see Figure 5.

1. Complete the required air line connections as necessary. Secure all connections and install the plug-in adapters into the 5/32-inch (4 mm) plastic tube. Use the blue adapter for the supply air line. See Figure 1.

**NOTE:** Either polyethylene (hard, black) or polyurethane (soft, clear) tubing is recommended. The appropriate tubing depends on which is most compatible for the application.

2. Place the multi-slotted metal plate into the adapter frame, if required. Attach the multi-slotted plate to the terminal head or the wall using screws and slots shown in Figures 2 through 5.
3. Loosely screw adapter base to the multi-slotted plate.
4. Draw plastic tubing through the multi-slotted plate and the adapter base. Install the plug-in adapters on the wall plate.
5. Using mounting screws supplied with the thermostat chassis, install the wall plate on the adapter base as follows:
  - a. Guide screws through the slotted key holes on the wall plate and partially insert them into the adapter base.
  - b. Orient the wall plate so that it is square and level.
  - c. Tighten the mounting screws to secure the wall plate in place.
6. Moisten the thermostat supply and return ports to lubricate them. Carefully insert the thermostat ports into the terminal adapter O-rings on the wall plate.
7. Configure the cover per installation instructions provided and mount the cover over the thermostat.

**NOTE:** For applications that use the 1/2-inch large set point adjustment knob, align the key hole in the cover over the shaft protruding from the thermostat when mounting the cover (see Figure 1).

Use either the hex key end of the calibration and cover screw wrench or a 1/16" Allen wrench to tighten the two screws that secure the cover in place.

8. Place the optional 1/2-inch large set point adjustment knob on the shaft protruding through the cover. Use either the hex key end of the calibration and cover screw wrench or a 1/16" Allen wrench to tighten the set screw on the knob.

### NOTES:

1. In applications with a 1/2-inch large set point adjustment knob, whenever you remove the thermostat cover, *first* remove the adjustment knob by loosening its set screw with either the hex key end of the calibration and cover screw wrench or a 1/16" Allen wrench.
2. To remove the thermostat from the wall plate, hold the thermostat firmly at the top and bottom and start to pull the thermostat from the wall plate. At the same time, use a screwdriver to pry the wall plate latch arms away from the thermostat chassis and pull the thermostat away from the wall plate.

Frequent removal and installation of the thermostat can bend the latch arms beyond their operating positions. If this occurs, bend the latch arms back to their operating positions before mounting the thermostat.

The installation is complete.

## Calibration, Adjustment, and Troubleshooting

See the installation instructions provided with the thermostat in this retrostat kit for the following procedures:

- Thermometer Calibration
- Changeover Point Adjustment
- Limit Stop Adjustment
- Sensitivity Adjustment
- Thermostat Cooling/Heating Calibration
- Troubleshooting

## Reference

Technical Bulletin	Document Number
TB 214 TH 192 Adapter Kits	155-231

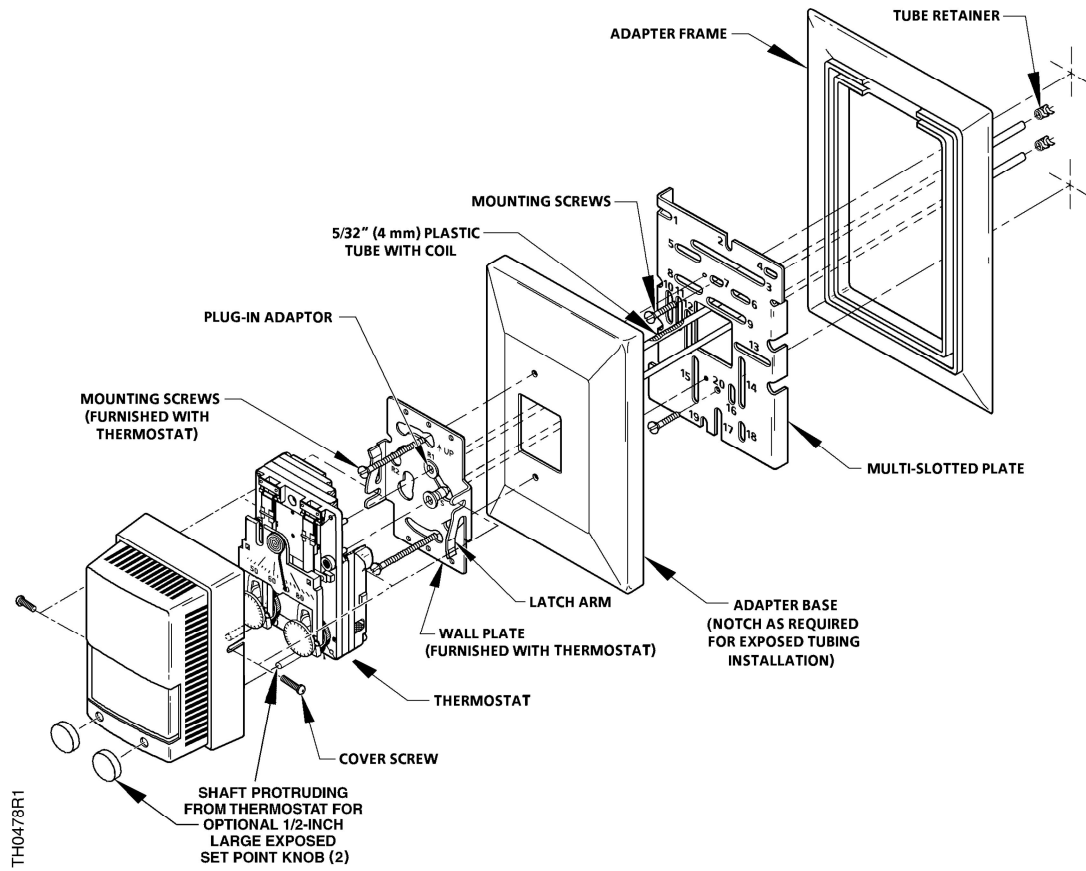


Figure 1. Typical Thermostat Installation.

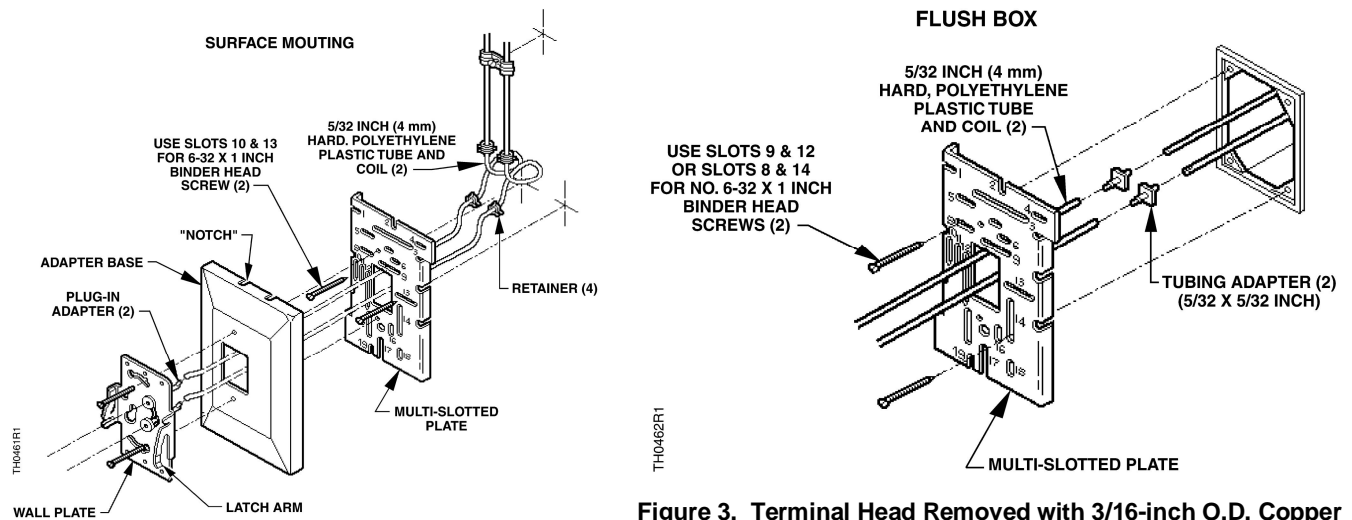
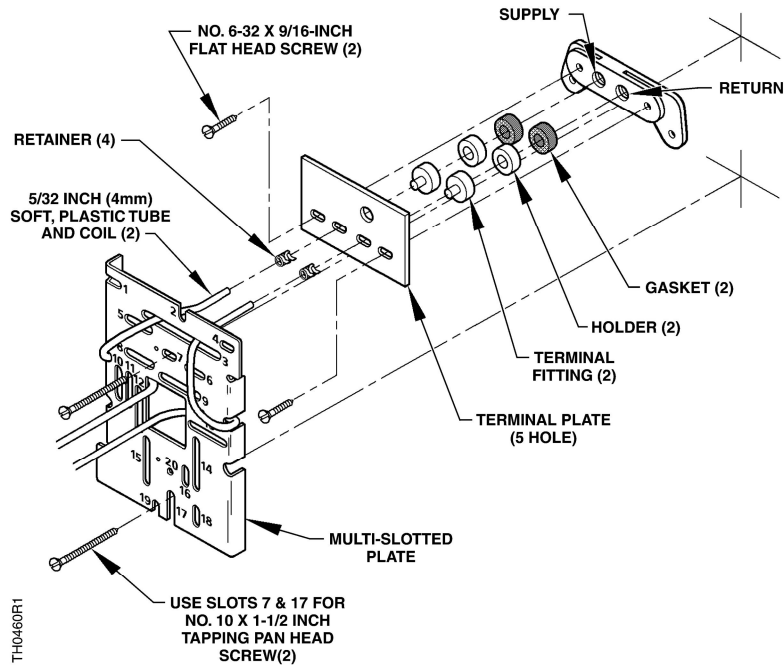


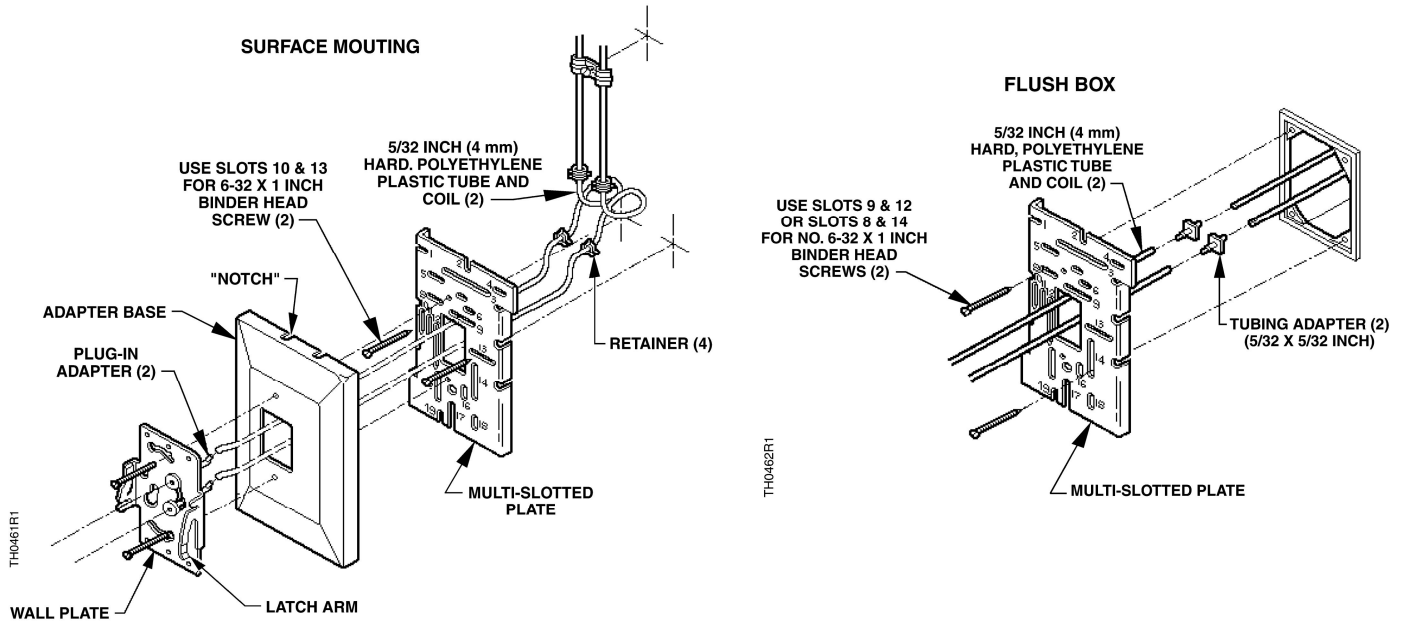
Figure 2. Terminal Head Removed with 1/8-inch O.D. Copper Tubing.

Figure 3. Terminal Head Removed with 3/16-inch O.D. Copper Tubing.



**NOTE:** In some terminal heads there is a ball check valve. Remove the ball check valve before beginning the installation. You will know there is a check valve present if there is no supply air passing through the terminal when you remove the existing thermostat. Other style terminal heads exist in addition to the one shown here.

**Figure 4. Terminal Head Fixed in Place.**



**Figure 5. Conversion from Horizontal to Vertical Installation.**

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