

### RETROLINE®

## TH 192 Pneumatic Room Thermostat Retrostat Kits

### Product Description

The TH 192 Pneumatic Room Thermostat Retrostat kits convert most existing pneumatic room thermostats to a Powers™ Controls TH 192 direct or reverse acting, two-pipe, single setpoint device. This kit includes a cover that can be configured to conceal or expose the setpoint adjustments, setpoint indicator, and thermometer. Also, the kits can include an optional 1/2-inch large, exposed setpoint adjustment knob.

### Contents

Part	Quantity
Retrostat Cover Kit	1
Thermostat *	1
Hardware kit	1
Optional 1/2-Inch Large, Exposed Setpoint Knob	1
Adapter Frame (192-308)	1

\* Includes thermostat installation instructions.

### Product Numbers

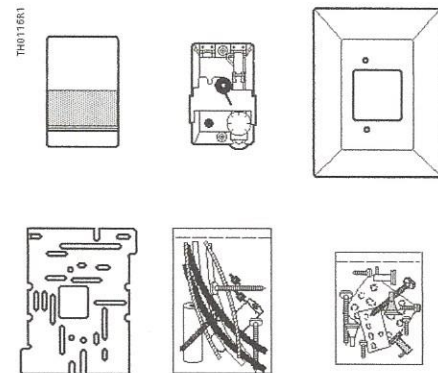
Retrostat Kit (See Notes below)	Type
192-840	Direct Acting Fahrenheit Scale
192-841	Reverse Acting Fahrenheit Scale
192-850	Direct Acting Celsius Scale
192-851	Reverse Acting Celsius Scale

#### NOTES:

- Includes all parts needed for all conversions listed in Table 1 including installations where a large rough-in hole must be covered. These installations may require an adapter frame (192-308).
- For Retrostat Kits with white cover, order the standard kit with "W" suffix.
- For Retrostat Kits with optional 1/2-inch large, exposed setpoint adjustment knob, order the standard kit with "K" suffix.

### 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



### Prerequisites

- Review all of these instructions before you begin installation.
- Check job drawings for any site-specific information.
- Verify that the existing thermostat installation has its supply and return air lines connected properly.
- Make certain air supply is 18 to 25 psi (124 to 172 kPa) normal.
- Obtain the installation instructions provided with the thermostat in the Retrostat Kit. The document provides instructions for calibrating the thermostat.
- Make certain a supply of wall anchors and plastic ties are available.

### Expected Installation Time

1 hour

## Installation

The following general procedures apply to all thermostat installations. Notice that some installations require the use of the adapter frame (192-308) to cover paint lines, broken walls, etc. For installations not included in this document, remove the existing terminal and connect directly to the tubing (see Figure 1).

### Removing Existing Thermostat

1. Remove the existing thermostat from the wall.
2. Remove the terminal head and the gasket from the fitting.
3. Clean the surface of the fitting, if required.

### Installing New Thermostat

See Figure 1 for typical thermostat installation.

1. Table 1 lists the figures that correspond to a particular thermostat application. See the appropriate figure to identify the mounting parts.
2. 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 (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.

3. Place the multi-slotted metal plate into the plastic adapter frame (plastic frame may or may not be required). Attach the multi-slotted plate to the terminal head or the wall using screws and slots shown in Figures 3 through 26.
4. Loosely screw adapter base to the multi-slotted plate.
5. Draw plastic tubing through the multi-slotted plate and the adapter base. Install the plug-in adapters on the wall plate.

6. Using mounting screws supplied with the thermostat chassis, install the wall plate on 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.
7. 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.
8. Configure the cover per installation instructions provided and mount the cover over the thermostat.

**NOTE:** For applications that use the 1/2-inch large setpoint 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-inch Allen wrench to tighten the two screws that secure the cover in place.

**Table 1. Retrostat Kit Thermostat Types.**

Thermostat Type	Type of Terminal	Figure Number
Powers Controls TH 192 with guard	—	4
Powers Controls TH 832D (See Note 1)	Flush	5
Powers Controls TH 180, TH 182, TH 192 to convert from horizontal to vertical installation	Flush box	6
	Surface	7
Honeywell TO900A, TP900A (See Note 1)	Surface box	8
	Flush box	9
Honeywell TP910A, B	Flush banjo	10
	Mortar joint	11
Honeywell TO91A, TP901A, B	Flush fitting	12
	Plaster back	13
Honeywell TP931B	Flush electrical box	14
Honeywell TP970A, B	Shallow wall box with plaster ring	15
	Deep wall box	16
Johnson T4002	Surface fitting	17
	Flush box	18
Johnson T400, 401, 403 (See Note 1)	Flush fitting	19
	Old round head	20
Robertshaw T18, T19, TP2212	Flush Box	21
Robertshaw T15, T16, TP2210	Surface Fitting	22
	Dry wall	23
Barber Colman TK1001, 1002, 1003, 1101, 1102, 1103, 9001, 9101	Surface box	24
	Flush electrical box	25
	Mortar Joint	26
Terminal Head Removed	1/8-inch OD Copper Tubing	27
	3/16-inch OD Copper Tubing	28

**NOTES:**

1. Use of an adapter frame (192-308) may be required to cover up large rough-in holes.
2. For replacement of thermostats not listed, use the Powers Universal Adapter Kit (192-300), Powerstar Thermostat, and Powerstar Thermostat. Consult your local Siemens Building Technologies representative for details.
3. Place the optional 1/2-inch large setpoint 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-inch Allen wrench to tighten the set screw on the knob.
4. Install the optional guard over the thermostat per Figure 2.

**NOTES:**

1. In applications with a 1/2-inch large setpoint 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-inch 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.
3. 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

Technical Bulletin

Document Number

TB 214 TH 192 Adapter Kits

155-231

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

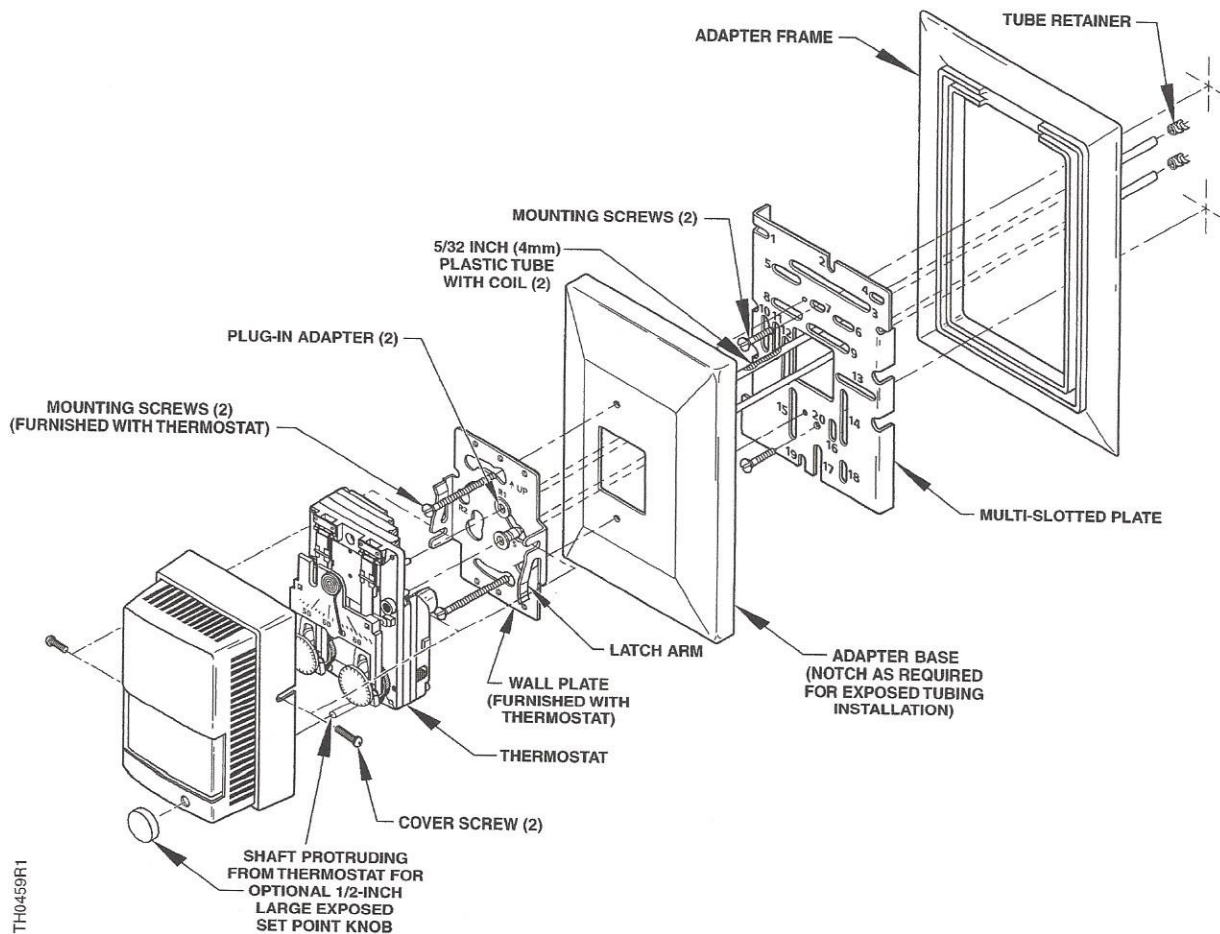
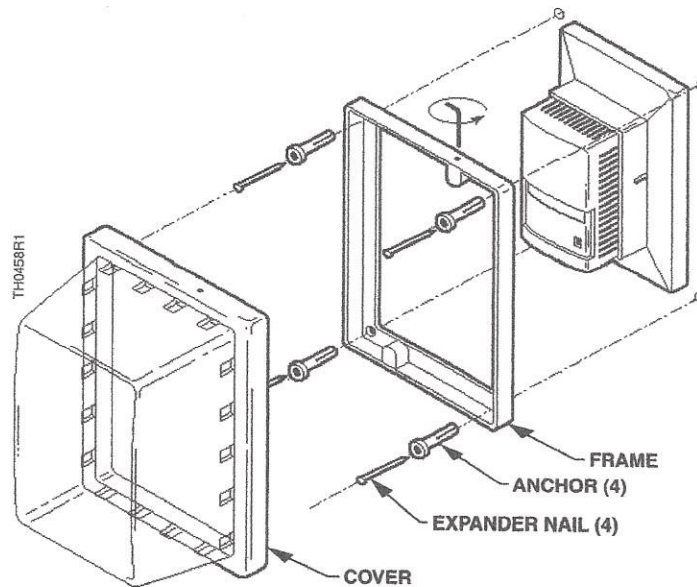
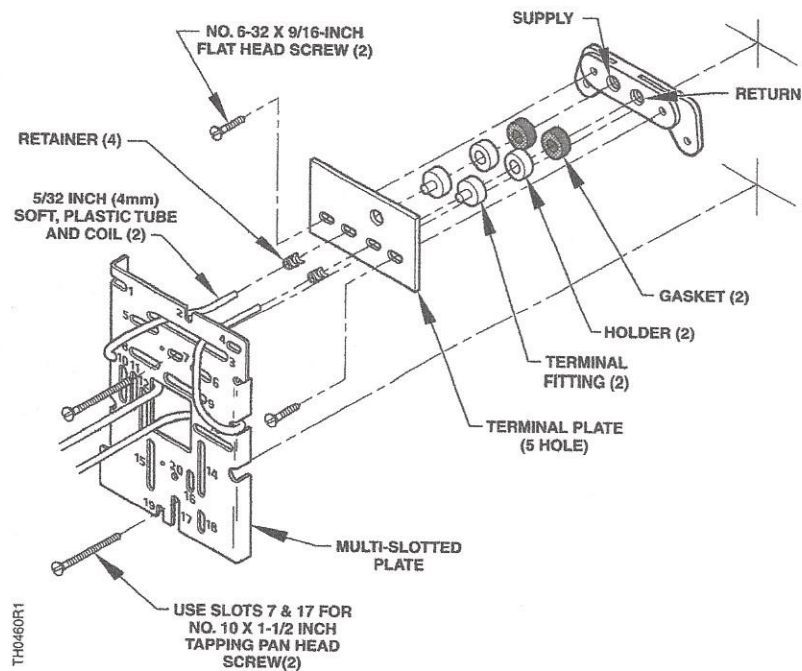


Figure 1. Typical Thermostat Installation.



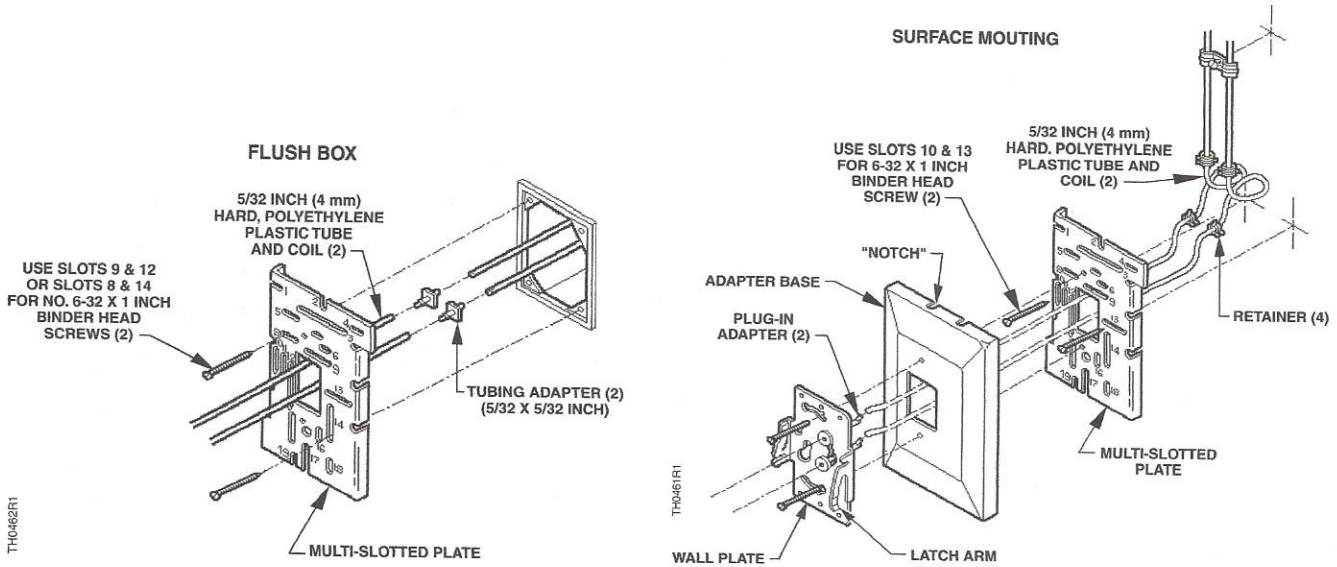
1. Put the flat side of the frame against the wall. Mark the four hole locations and drill each hole 1/4 × 1-inch deep.
2. Insert each anchor through the frame and into its respective hole. Drive the expander nails to secure the frame in place. To uninstall the frame, remove the expander nails by turning them counterclockwise.
3. Mount the cover over the frame and secure in place by turning each end locking screw five turns counterclockwise.

Figure 2. TH 192 Installation with Guard.



**NOTE:** Adapter Frame, Adapter Base, and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 3. TH 832D Flush Installation.

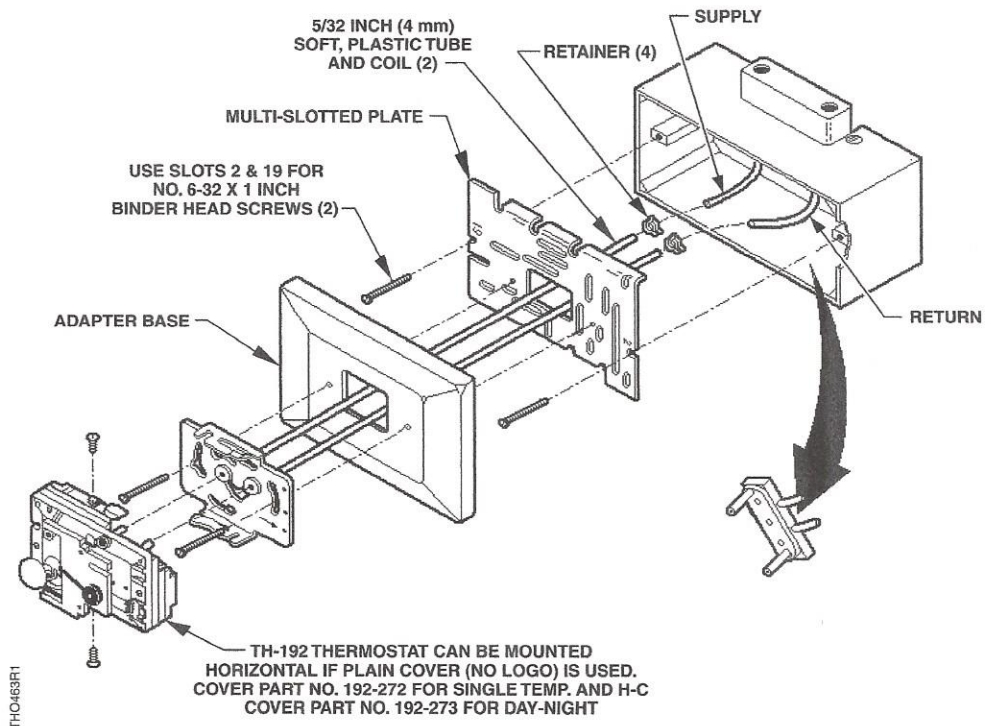


**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

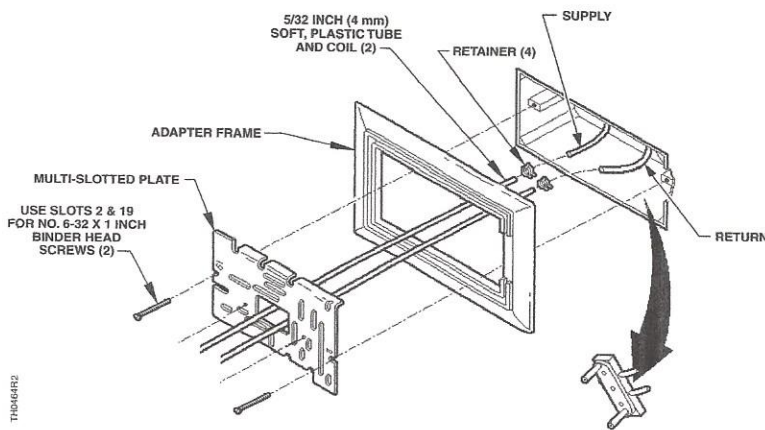
Figure 4. TH 180, TH 182, TH 192 Horizontal to Vertical Flush Installation.

Figure 5. TH 180, TH 182, TH 192 Horizontal to Vertical Surface Installation.



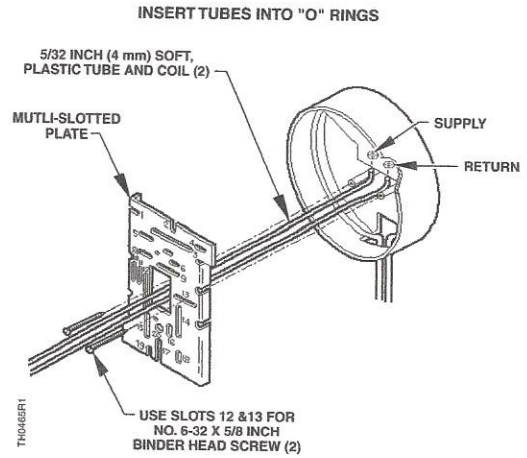
**NOTE:** Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**Figure 6. Honeywell TO900A, TP900A Surface Box Installation.**



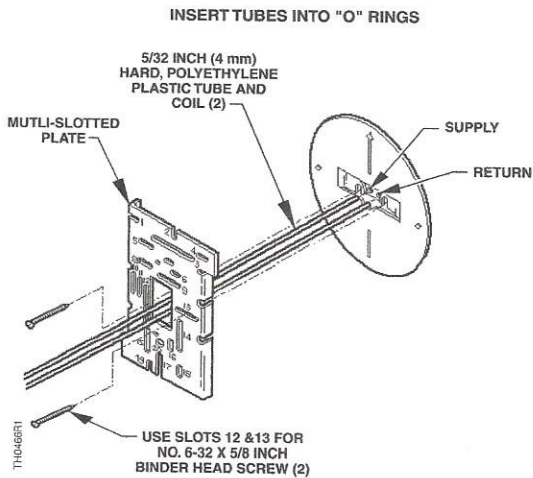
**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 7. Honeywell TO900A, TP900A Flush Box Installation.



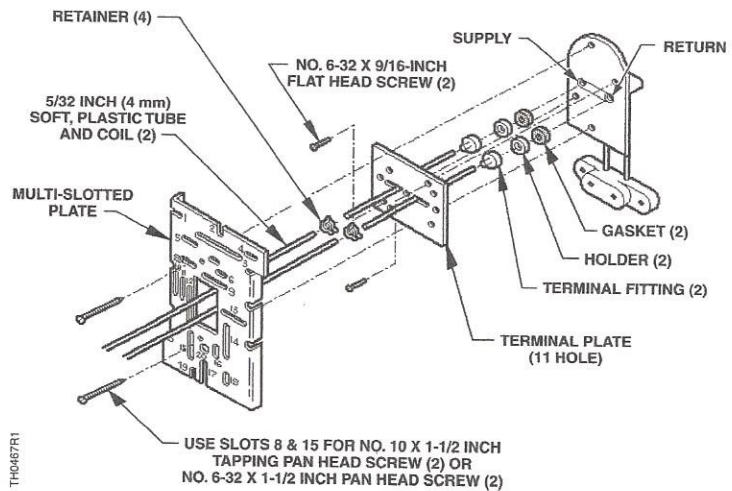
**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 8. Honeywell TP910A, B Flush Banjo Installation.



**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

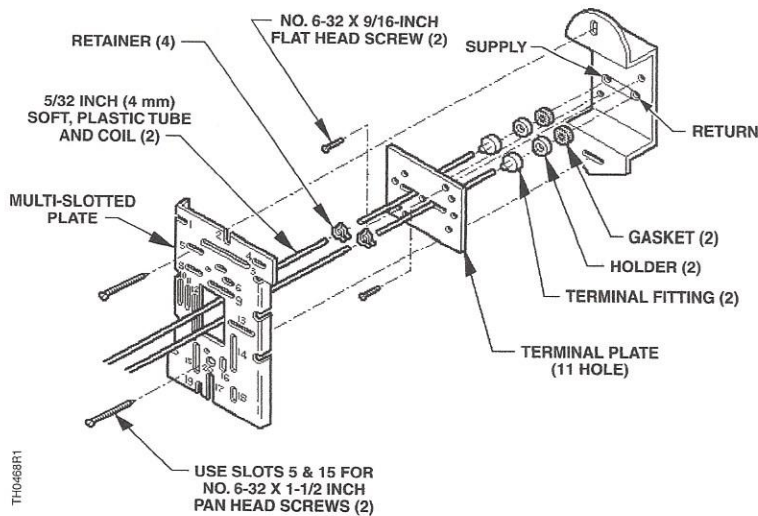
Figure 9. Honeywell TO91A, TP901A, B Mortar Joint Installation.



**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

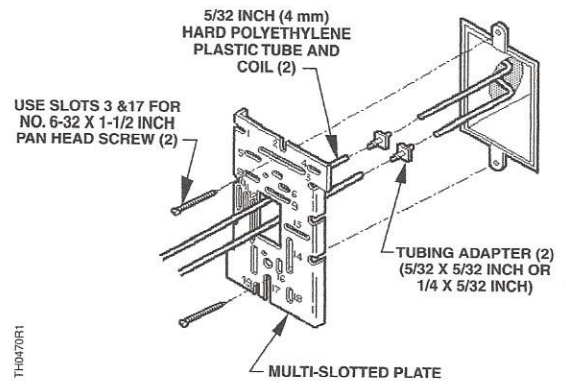
Figure 10. Honeywell TO91A, TP901A, B Flush Fitting Installation.





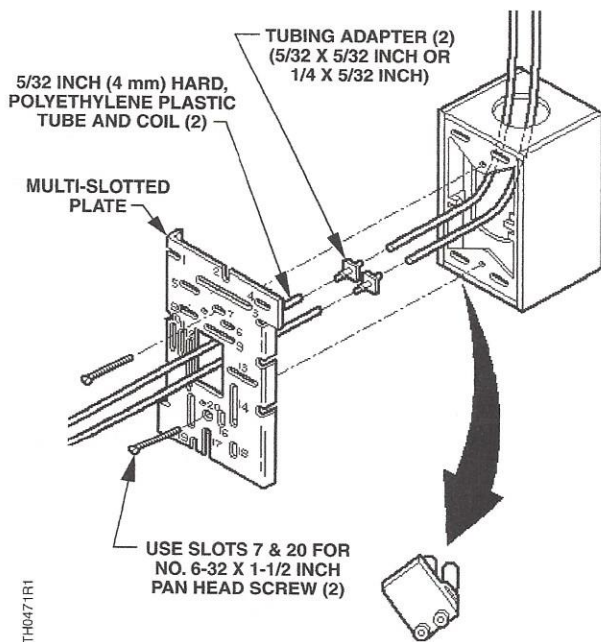
**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 11. Honeywell TO91A, TP901A, B Plaster Back Installation.



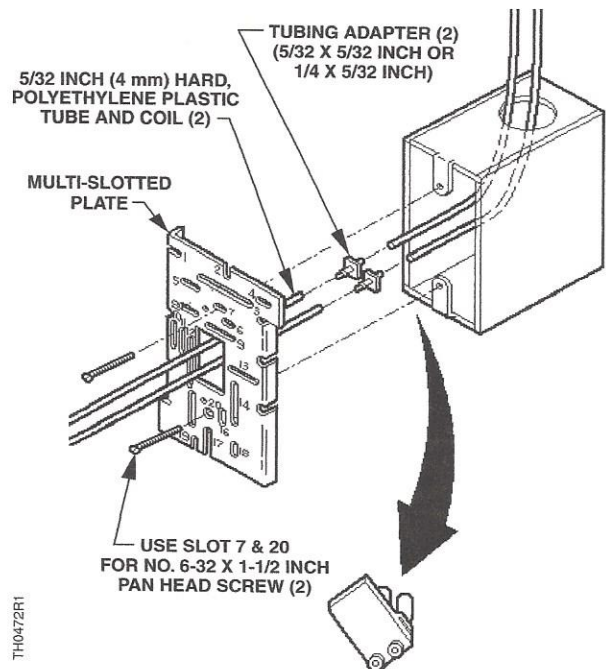
**NOTE:** Retainer (2), Adapter Base, and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 12. Honeywell TP931B Flush Electrical Box Installation.



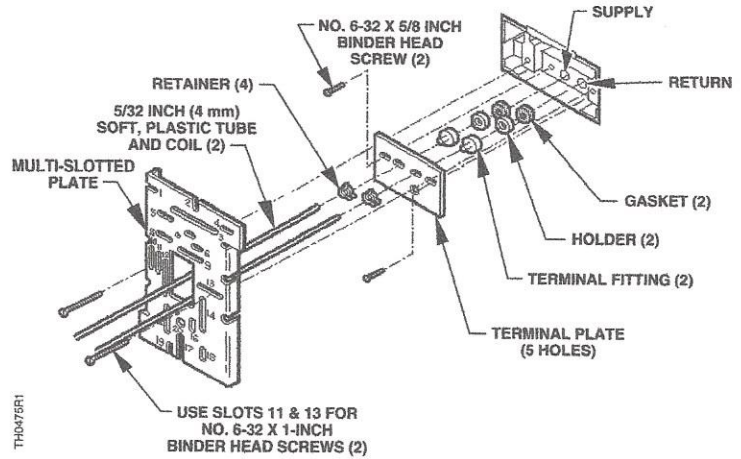
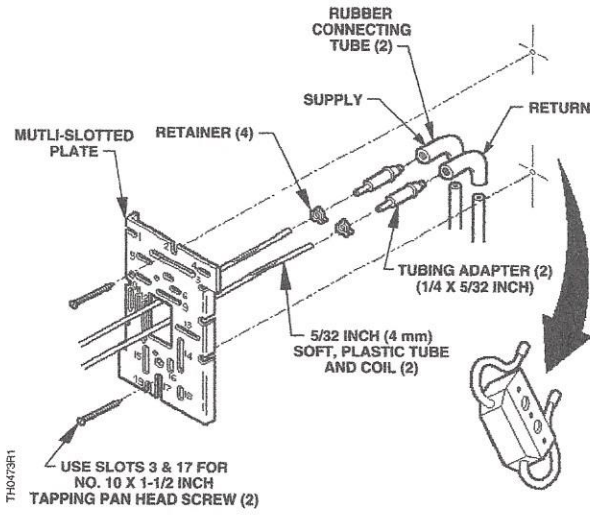
**NOTE:** Retainer (2), Adapter Base, and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 13. Honeywell TP970A, B Shallow Wall Box with Plaster Ring Installation.



**NOTE:** Retainer (2), Adapter Base, and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 14. Honeywell TP970A, B Deep Wall Box Installation.

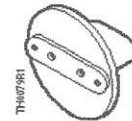
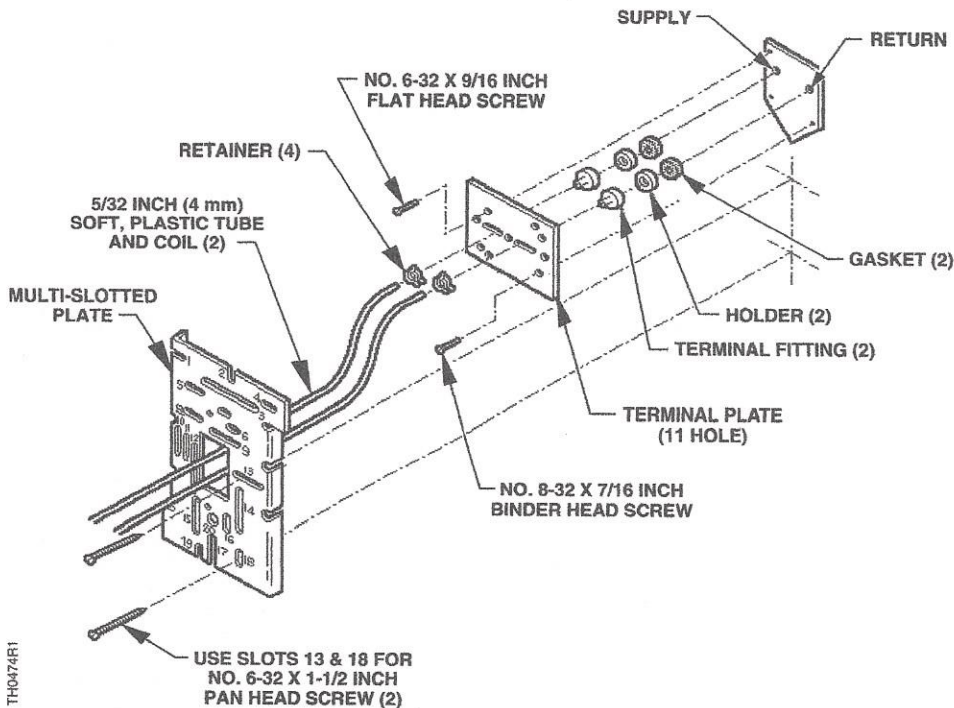


**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 15. Johnson T4002 Surface Fitting Installation.

Figure 16. Johnson T4002 Flush Box Installation.

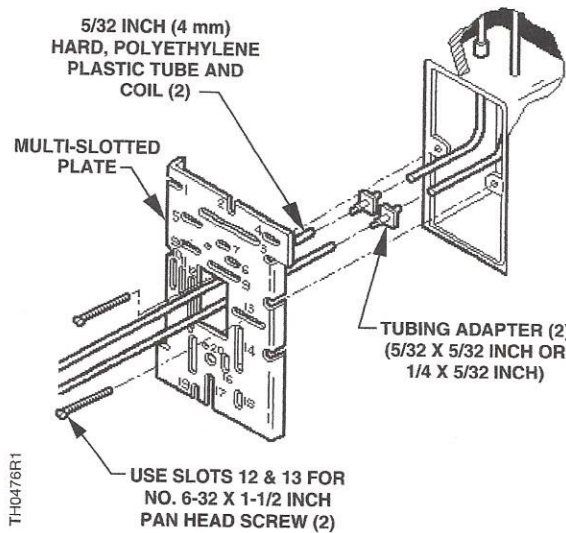


**NOTE:** If the terminal head is too close to the wall surface, loop the plastic tubing around the multi-slotted plate as shown in Figure 3.

Figure 18. Johnson T400, 401, 402 Old Round Head.

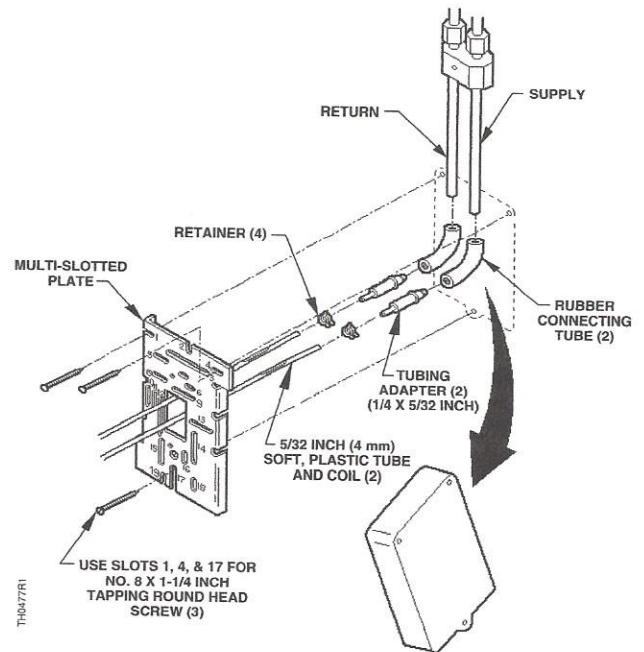
**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

Figure 17. Johnson T400, 401, 402 Flush Fitting Installation.



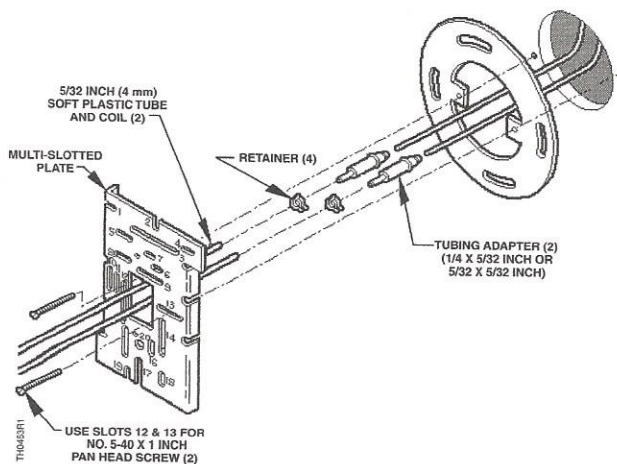
**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**Figure 19. Robertshaw T18, T19, TP2212 Flush Box Installation.**



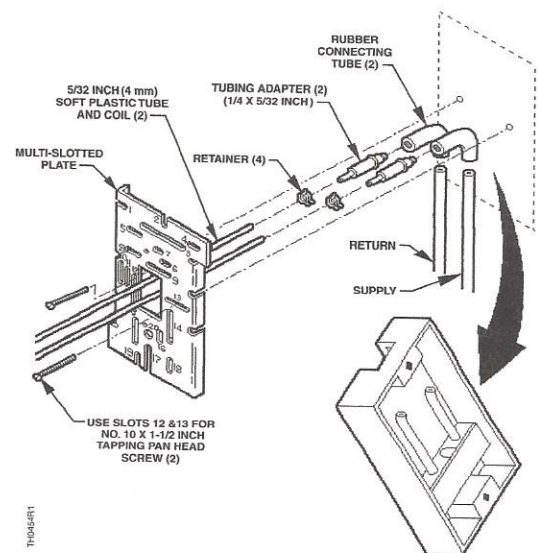
**NOTE:** Adapter Frame (if required), Adapter Base, and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**Figure 20. Robertshaw T15, T16, TP2210 Surface Fitting Installation.**



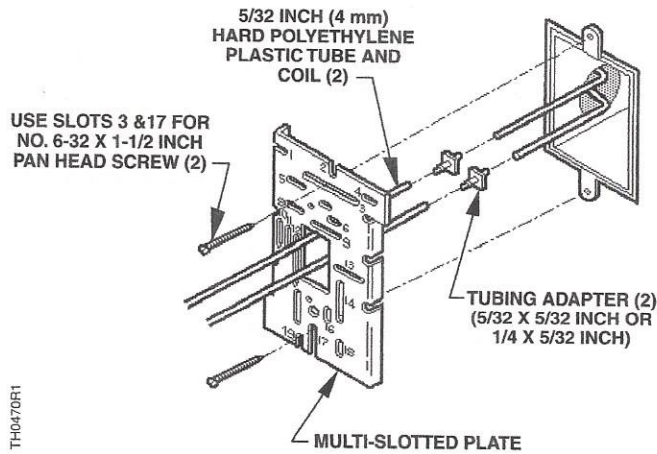
**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**Figure 21. Robertshaw T15, T16, TP2210 Dry Wall Installation.**



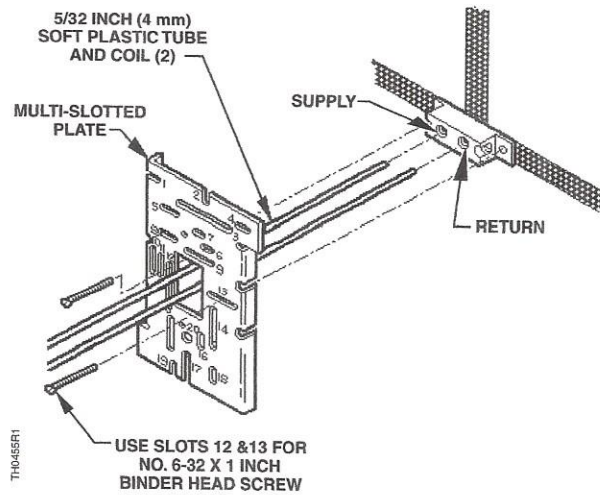
**NOTE:** Adapter Base and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**Figure 22. Barber Colman TK1001, 1002, 1003, 1101, 1102, 1103, 9001, 9101 Surface Box Installation.**



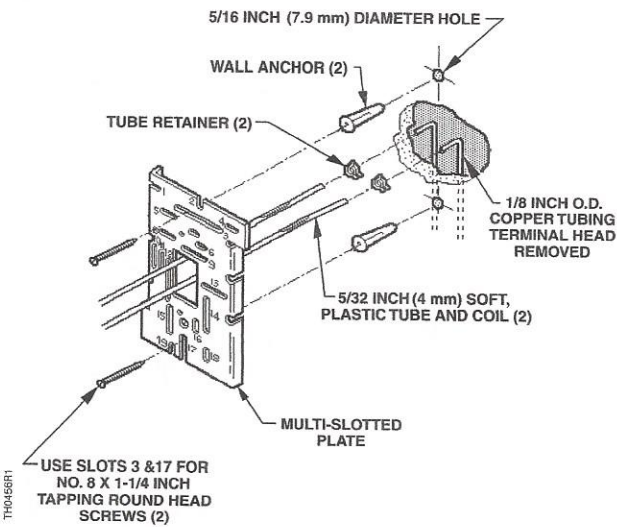
**NOTE:** Retainer (2), Adapter Base, and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**Figure 23.** Barber Colman TK1001, 1002, 1003, 1101, 1102, 1103, 9001, 9101 Flush Electrical Box Installation.

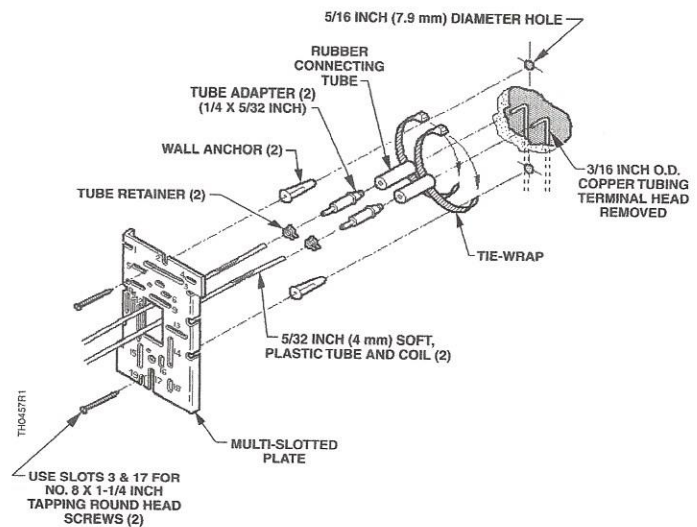


**NOTE:** Retainer (2), Adapter Base, and Plug-in Adapter (2) not shown. See Figure 1 for proper installation.

**Figure 24.** Barber Colman TK1001, 1002, 1003, 1101, 1102, 1103, 9001, 9101 Mortar Joint Installation.



**Figure 25.** Terminal Head Removed with 1/8-Inch OD Copper Tubing.



**Figure 26.** Terminal Head Removed with 3/16-Inch OD Copper Tubing.

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