Honeywell

Replacement Data

14002573-002 TP971C UNIVERSAL MODERNIZATION KIT FOR THREE-PIPE INSTALLATIONS

GENERAL

This Modernization Kit contains the parts required to prepare most competitor three-pipe day/night thermostat installations for a TP971C Thermostat (Fig. 1). The TP971C Pneumatic Thermostat and cover are ordered separately.

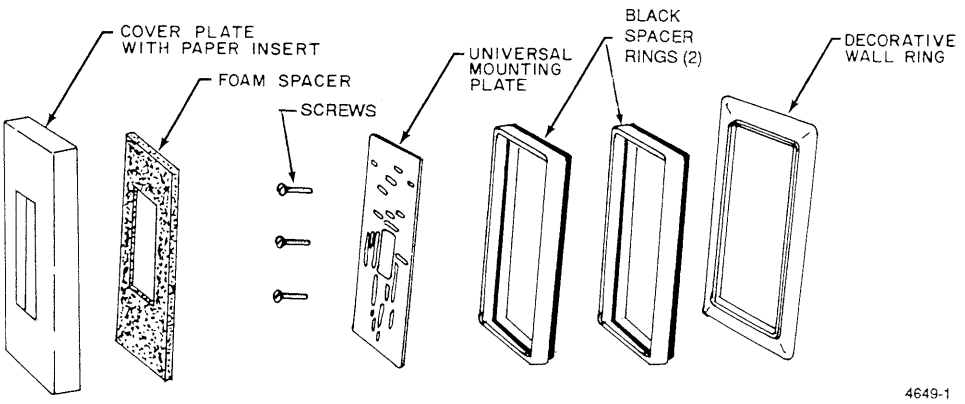


Fig. 1. Modernization Kit Parts.

APPLICATION

This Kit allows replacing Honeywell TP911C, Johnson T4512, Powers T21 DNV and TH180 DNV, and Robertshaw T25 thermostats with a Honeywell TP971C Pneumatic Thermostat.

INSTALLATION

NOTES:

1. This Kit contains more parts than will be used on any one installation. Discard unused parts.
2. If the pneumatic tubing is surface run, cut away a portion of the decorative wall ring and spacer ring (Fig. 2).
3. The same general installation procedure applies for all conversions.

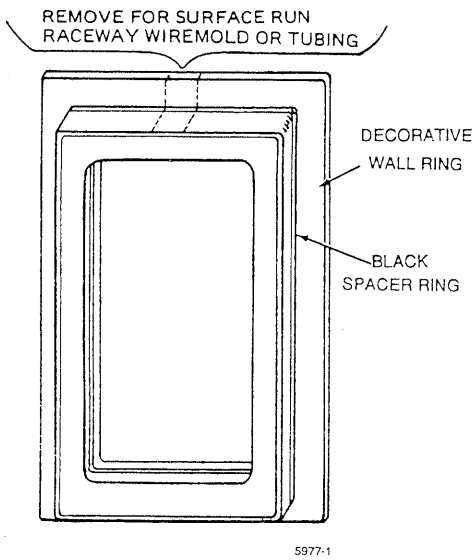


Fig. 2. Decorative Wall Ring and Spacer Ring Modification for Surface Run Tubing.

PREPARE LOCATION FOR TP971C

1. Remove and discard the competitor thermostat and rings from the wall.
2. Remove the tubing from the fitting.
3. Clean the fitting, if required.
4. Determine the appropriate installation figure number reference from Table 1.
5. Identify and install the correct mounting parts according to the figure number determined in Step 4.

NOTE: The cream-colored paper insert can be painted to match the wall or it can be used as a template to cut wallpaper.

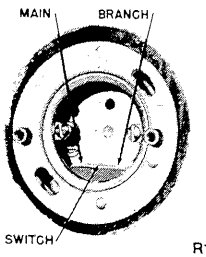
Table 1. Device to Figure Number Cross-Reference.

Change To TP971C From	Fig. No.
Honeywell TP911C	3
Johnson T4512	4
Powers T21 DNV	5
Powers TH180 DNV	6
Robertshaw T25	7, 8, 9

INSTALL TP971C

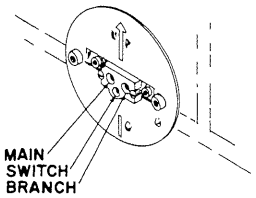
1. Feed the tubing through the mounting parts.
2. Attach the tubing to the TP971C backplate.
3. Attach the backplate using the screws furnished with the TP971C.
4. Remove any shipping stops and press the TP971C onto the backplate until the retaining clips on the backplate engage.
5. Proceed to CALIBRATION.

FLUSH BANJO



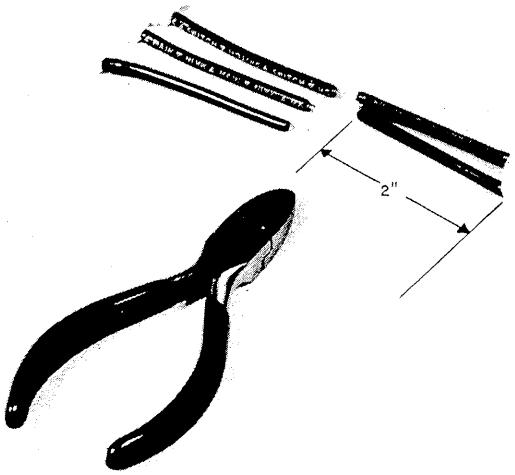
R1962

MORTAR JOINT



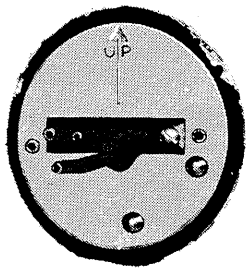
R3271

CUT TUBING TO LENGTH.
DISCARD CONNECTOR END.



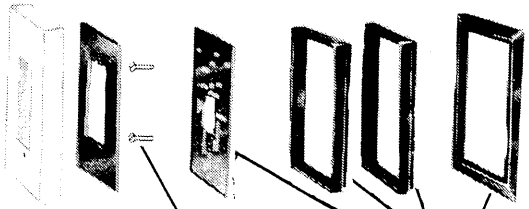
R3272

INSERT TUBING CAREFULLY INTO "O" RING. USE NEW "O" RINGS FROM BAG ASSEMBLY ONLY IF NECESSARY.



R3273-1

INSTALL REQUIRED MOUNTING PARTS.



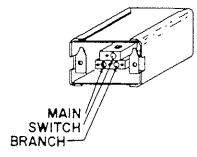
	SCREWS	SLOTS	USE	
FLUSH BANJO	NO. 6 x 1/2 IN. (2)	13 & 10 OR 13 & 12	0	1
SURFACE BANJO	NO. 6 x 1 IN. (2)		2*	1*
MOTAR JOINT	NO. 6 x 1/2 IN. (2)		0	1

*NOTCH FOR TUBING AS REQUIRED

R1966-1

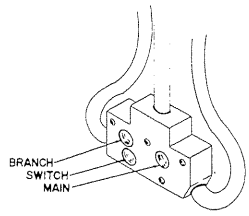
Fig. 3. Honeywell TP911C Replacement.

FLUSH BOX



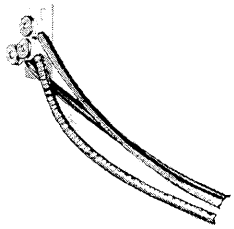
R3274

SURFACE FITTING



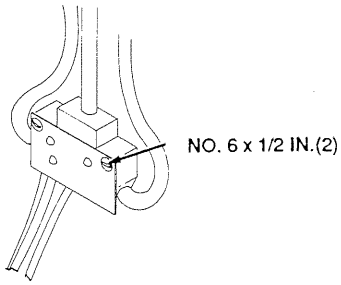
R3275

COLLECT PARTS FROM BAG. ASSEMBLE PARTS.



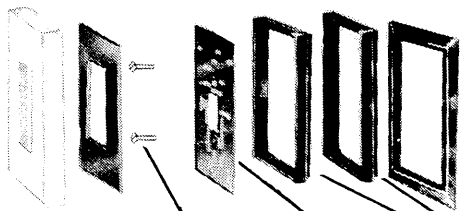
R3276

INSTALL ADAPTER.



R3277-1

INSTALL REQUIRED MOUNTING PARTS.



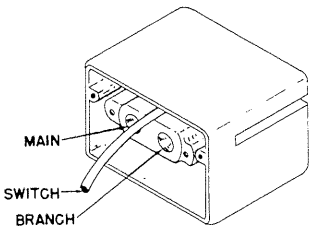
	SCREWS	SLOTS	USE	
MOTOR JOINT	NO. 6 x 1-1/2 IN.(2)	13 & 11 OR 9 & 16	2	1
FLUSH BOX	NO. 6 x 1 IN.(2)		1	1
SURFACE BOX	NO. SHEET METAL (3)	5,13 & 15	2*	1*

*NOTCH FOR TUBING AS REQUIRED

R1996-1

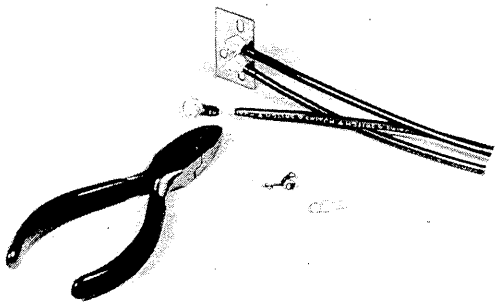
Fig. 4. Johnson T4512 Replacement.

FLUSH BOX



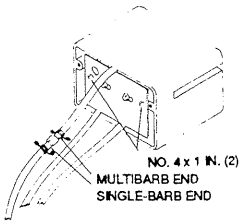
R3278

COLLECT PARTS FROM BAG. CUT SWITCH TUBE CLOSE TO CONNECTOR. DISCARD CONNECTOR.



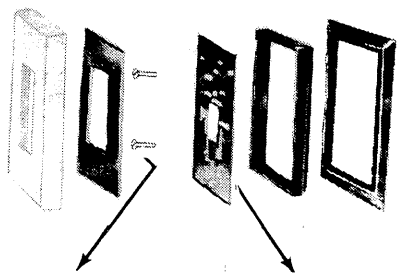
R3279

INSTALL ADAPTER. SPLICE PLASTIC TUBING.



R3280

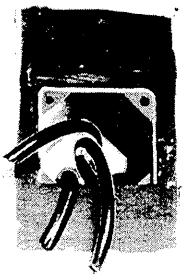
INSTALL REQUIRED MOUNTING PARTS.



R1989

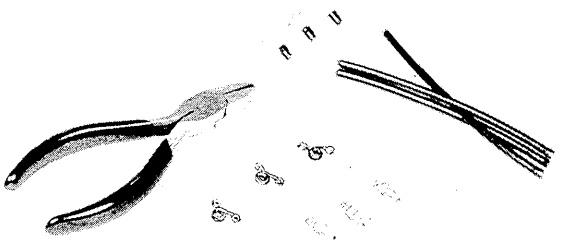
Fig. 5. Powers T21 DNV Replacement.

FLUSH BOX



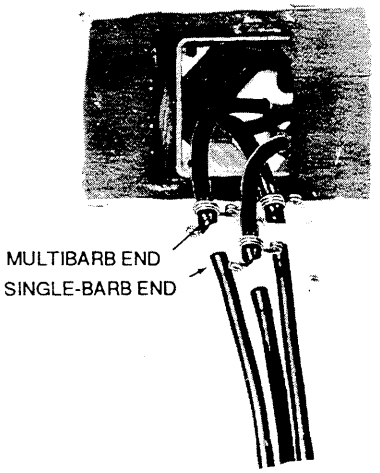
R3281

COLLECT PARTS FROM BAG. CUT TUBING CLOSE TO CONNECTORS. DISCARD CONNECTORS.



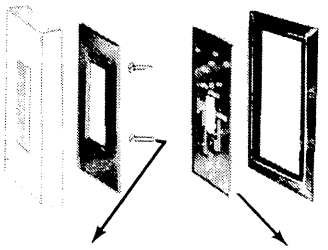
R3282

SPLICE TUBING. INSTALL AIR HEAD



R3283

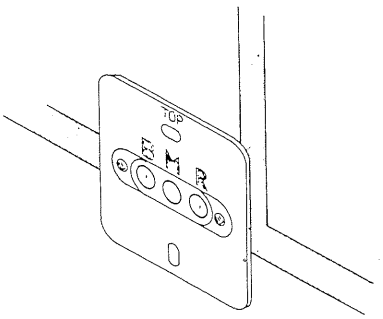
INSTALL REQUIRED MOUNTING PARTS.



R1981

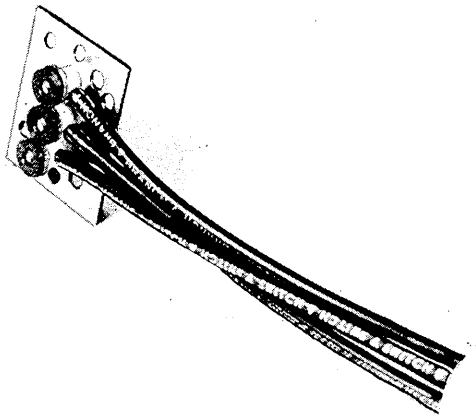
Fig. 6. Powers TH180 DNV Replacement.

MORTAR JOINT



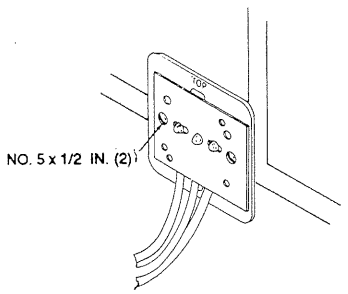
R3284

COLLECT PARTS FROM BAG. ASSEMBLE PARTS.



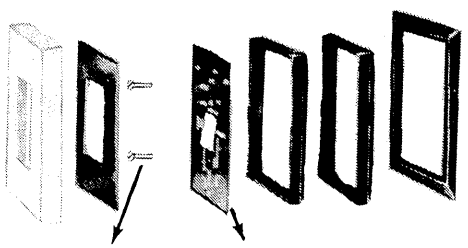
R3285

INSTALL ADAPTER.



R3286

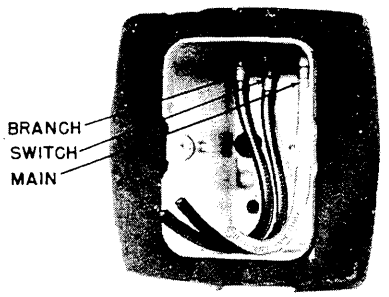
INSTALL REQUIRED MOUNTING PARTS.



R1998

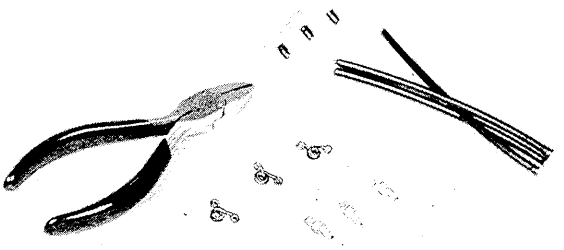
Fig. 7. Robertshaw T25 Replacement (Mortar Joint).

FLUSH BOX



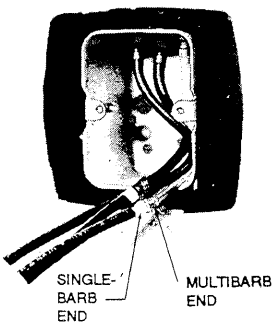
R3287

CUT TUBING NEAR CONNECTORS. LOCATE PARTS SHOWN



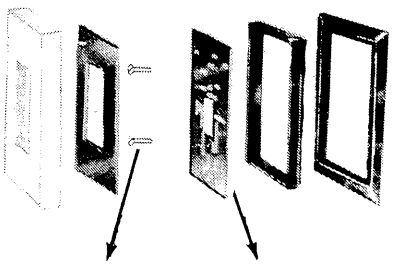
R3282

SPLICE PLASTIC TUBING.



R3288

INSTALL REQUIRED MOUNTING PARTS.



R2001

Fig. 8. Robertshaw T25 Replacement (Flush Mount).

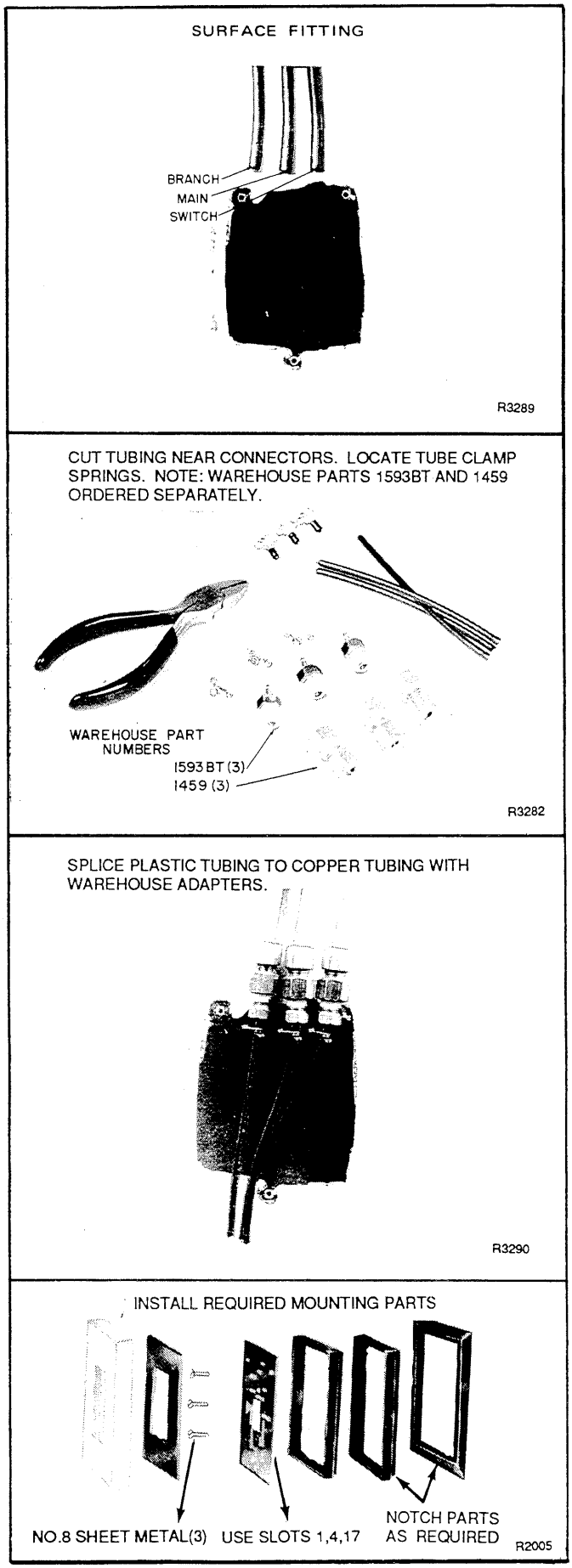


Fig. 9. Robertshaw T25 Replacement (Surface Mount).

CALIBRATE TP971C

NOTES:

1. The TP971C is accurately factory calibrated and should require only the CALIBRATION CHECK to ensure correct operation.
2. The antihum spring (Fig. 10) must be free. Be sure the spring just touches the throttling plate and is not wedged against it (does not apply to any TP971C starting with 2000 [e.g., TP971C2009]).
3. The TP971C is very sensitive and should not be heated by excessive handling during calibration.

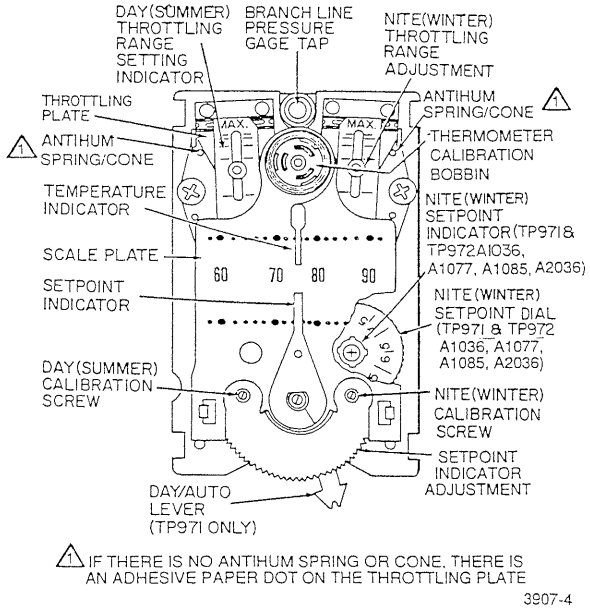


Fig. 10. TP971C Front View with Cover Off Showing Controls and Indicators.

EQUIPMENT REQUIRED

Pressure Gage 14003519-001 (0 to 30 psi [0 to 207 kPa])
Gage Adapter MQP729 (CCT729)
Thermostat Tool MQT735A (CCT735A) or 0.05 in. (3/64 in.) hex key
Thermometer Calibration Tool MQT970

CALIBRATION CHECK

1. Set the TP971C to the desired setpoint and let the system operate long enough to stabilize.
2. Ensure that the system is stable before proceeding.
3. Turn the setpoint indicator adjustment down (DA) or up (RA) until the setpoint indicator reads 5 degrees F (2.8 degrees C) below (DA) or above (RA) room temperature. If the TP971C branchline pressure (BLP) does not build up within 30 seconds, proceed to CALIBRATION PROCEDURE.
4. Turn the setpoint indicator adjustment up (DA) or down (RA) slowly. If the TP971C does not bleed off audibly between 1 and 3 degrees F (0.56 and 1.7 degrees C) below (DA) or above (RA) room temperature, proceed to CALIBRATION PROCEDURE.

CALIBRATION PROCEDURE

1. Measure the ambient temperature with an accurate thermometer. Compare the thermometer reading with the TP971C thermometer reading.
2. If the difference is more than 1 degree F (0.56 degree C), use the Thermometer Calibration Tool MQT970 to turn the TP971C thermometer calibration bobbin (Fig. 10) until the TP971C thermometer reading is correct.
3. Ensure the main line pressure is at the recommended setting.
4. Install the Pressure Gage with the Gage Adapter into the branchline pressure gage tap.
5. Turn the setpoint indicator adjustment until the setpoint indicator reads the existing temperature.
6. With 13 psi (90 kPa) main line pressure, turn the DAY (SUMMER) (left) calibration screw (Fig. 10) until the Pressure Gage reads 0 psi (0 kPa).
7. Turn the calibration screw in the opposite direction until the Pressure Gage reads 8 ±1 psi (55 ±7 kPa).
8. With 18 psi (124 kPa) main line pressure, rotate the NITE (WINTER) setpoint dial until the setting agrees with the indicated temperature.
9. Repeat Steps 1 and 2 using the NITE (WINTER) (right) calibration screw (Fig. 10).
10. Proceed to SWITCHOVER CALIBRATION PROCEDURE.

SWITCHOVER CALIBRATION PROCEDURE

Switchover allows for normal supply line fluctuations.

1. Ensure that main line pressure is set to low (13 psi [90 kPa]) pressure requirement.
2. Turn the setpoint indicator adjustment until the setpoint indicator reads 5 degrees F (2.8 degrees C) below actual temperature.
3. Pressure Gage should read 0 psi (0 kPa) (RA) or 13 psi (90 kPa) (DA). If it does not, turn switchover adjustment screw (Fig. 11) clockwise until it does.
4. Turn the switchover adjustment screw counterclockwise until the pressure begins to increase (RA) or decrease (DA). This indicates switchover. Allow the Pressure Gage to go to full main line pressure (RA) or 0 psi (0 kPa) (DA).

5. Turn the switchover adjustment screw counterclockwise until pressure decreases to 0 psi (0 kPa) (RA) or increases to full main line pressure (DA). Turn the switchover adjustment screw an additional 1/8- to 1/4-turn clockwise.

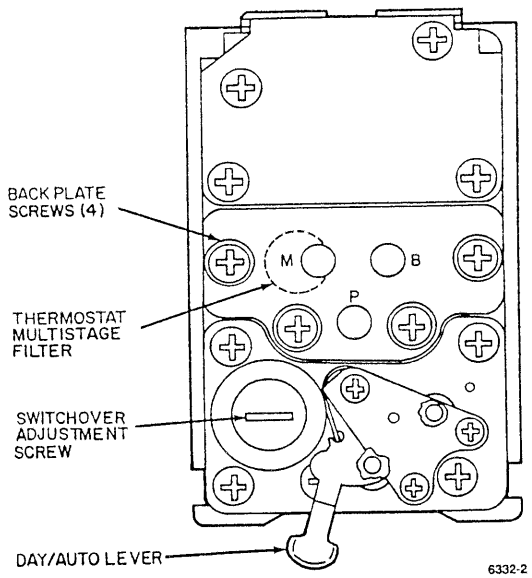


Fig. 11. Back View of TP971C Showing Switchover Adjustment Screw and DAY/AUTO Lever.

MOUNT TP971C COVER

1. Remove the caution card from the cover.
2. Select the correct window (vertical or horizontal/dual or blank) and peel the release liner from window back.

CAUTION

Before installing the window, carefully check the window selection and orientation. Once assembled, disassembly may damage the window.

3. Ensure that the window is oriented correctly for the installation. When viewed from the front of the cover, the setpoint and day/auto openings are on the bottom for a vertical thermostat or on the right for a horizontal thermostat. The cover has slots which must mate with the mounting ears on the backplate. Insert the top edge of the window into the slot in the top of the window hole (Fig. 12). Bend the window slightly and pop the bottom edge into the slot in the bottom of the window hole. Press in place to secure window.
4. Mount the cover by hooking the two slots on the cover bottom (right end for horizontal mounting) to the ears on the backplate. Swing the cover into place. Back out (counterclockwise) the setscrews with the Thermostat Tool to secure the cover.

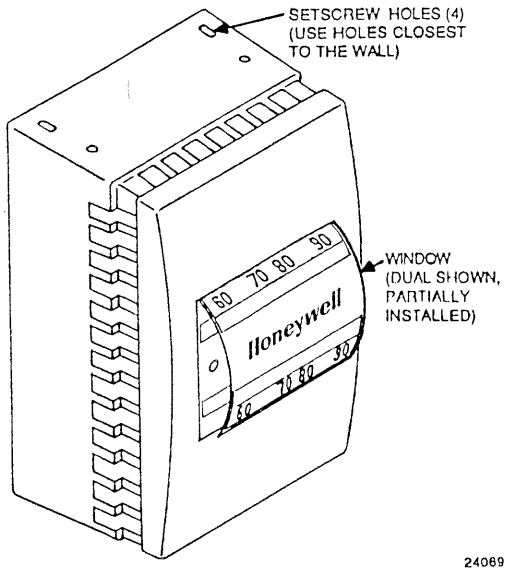


Fig. 12. Assembly of Cover with Window and Insert.