

CT1500, CT1501, CT1502, CT1503
**ELECTROMECHANICAL FUEL SAVER
THERMOSTAT AND
WALLPLATE/SUBBASE**

CT1500—24 V gas or oil heat.

CT1501—24 V gas or oil heat/cool.

CT1502—24 V central electric heat/cool or single stage heat pump without
auxiliary heat.

CT1503—750 millivolt heat.

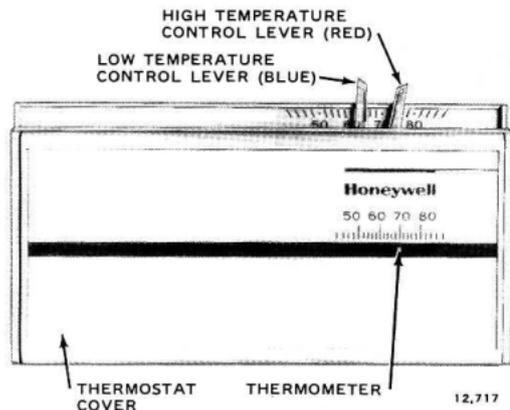
NOT FOR USE ON LINE VOLTAGE (120 V) SYSTEMS.

INSTALLATION MANUAL

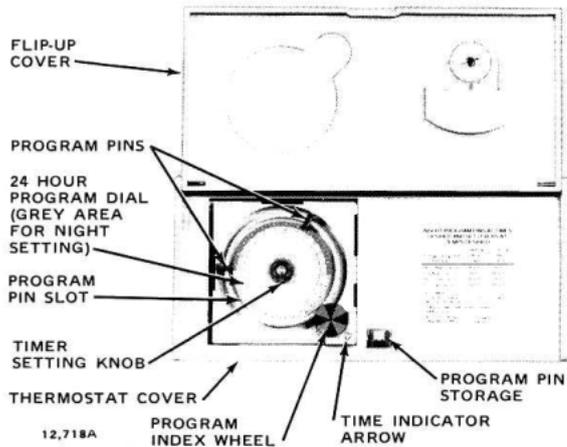
Any questions concerning the application of this thermostat should be directed to Honeywell Consumer Services at 1-800-468-1502, Monday-Friday 7:30 a.m.-5:00 p.m., Central time.

THERMOSTAT FEATURES

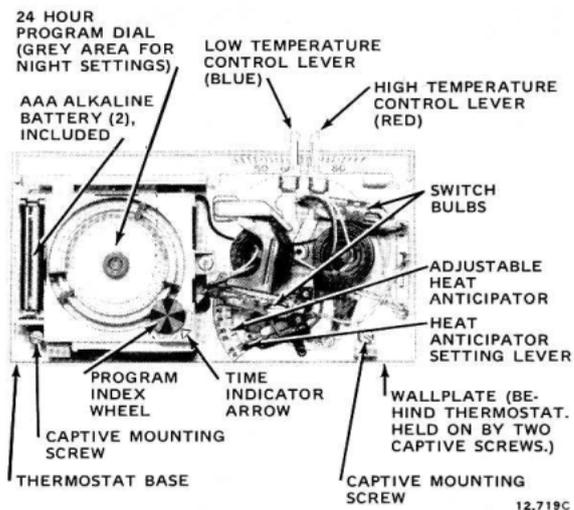
I—Front of thermostat.



II—Hinged cover lifted.



III—Cover removed.



STEP 1

PREPARATION

- Check thermostat and wallplate suitability for your heating or heating/cooling system. Refer to Table 1.

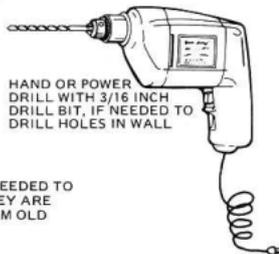
THERMOSTAT MODEL	SUBBASE OR WALLPLATE INCLUDED	FOR USE WITH
CT1500	199986C Wallplate	2-wire, 15 to 30 volt control circuit. For gas or oil heating system.
CT1501	Q682A1079 Subbase	4- or 5-wire, 15 to 30 volt control circuit. For gas or oil heating/cooling system.
CT1502	Q682B1227 Subbase	4-wire, 15 to 30 volt control circuit. For single stage heat pump or central electric heating/cooling systems that require the thermostat to control the fan in heating.
CT1503	199986D Wallplate	750 millivolt single-stage heating system.

^aThermostat must be mounted on wallplate or subbase included in package to assure operation.

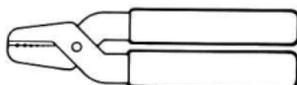
- Assemble tools required, as illustrated.



FLAT BLADE
SCREWDRIVER



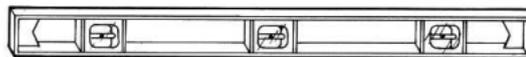
HAND OR POWER
DRILL WITH 3/16 INCH
DRILL BIT, IF NEEDED TO
DRILL HOLES IN WALL



WIRE CUTTER/STRIPPER OR SHARP KNIFE,
IF NEEDED TO STRIP WIRES



MASKING TAPE, IF NEEDED TO
LABEL WIRES AS THEY ARE
DISCONNECTED FROM OLD
THERMOSTAT



SPIRIT LEVEL TO LEVEL THERMOSTAT
FOR ACCURATE OPERATION

13,018

If wallplate or subbase is mounted on a vertical outlet box (check old installation), order 196393A Cover Plate and Adapter Ring (see appropriate figure under step 4). Call Honeywell Consumer Services (1-800-468-1502) for ordering information, Monday-Friday, 7:30 a.m. to 5:00 p.m. Central time.

Test to make certain that your heating and cooling systems are working. If either one

does not work, contact your local heating/air conditioning dealer.

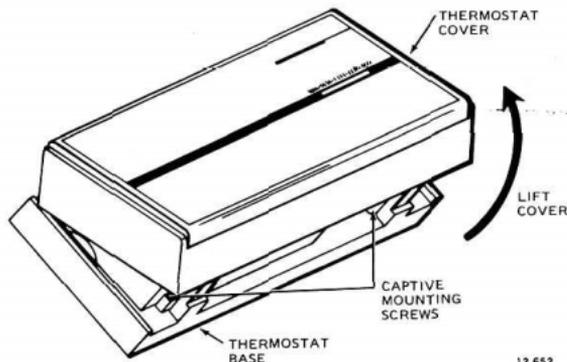
NOTE: Do not operate cooling system if outdoor temperature is below 50° F [10° C].

Turn off power to the heating/cooling system at the main fuse panel.

STEP 2

UNPACK THERMOSTAT

- Remove and discard shipping wrap. Save package of screws, instructions and receipt.
- Remove thermostat cover by lifting up from the bottom.
- Carefully remove insert protecting switch bulbs.
- Loosen two captive mounting screws, and separate wallplate or subbase from back of thermostat base.

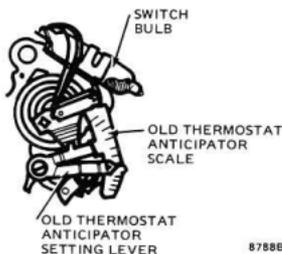


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STEP 3

REMOVE OLD THERMOSTAT

- Remove cover of old thermostat. If the cover doesn't snap off when pulled firmly from the bottom, check for a screw that locks the cover on.
- Before removing the old thermostat from the wall, look at it carefully to locate the heat anticipator adjustment mechanism. (See illustration to help you recognize the heat anticipator.) Make a note here of that anticipator setting for future reference. If your thermostat does not have a heat anticipator, do not be concerned. Move on to next paragraph.
- Loosen screws holding thermostat to wallplate, subbase or wall and lift away.



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- Disconnect wires from old thermostat, wallplate or subbase. Tape each wire and label with the letter of the terminal designation to make reconnection easier. If there are only two wires, labeling is not necessary.

IMPORTANT

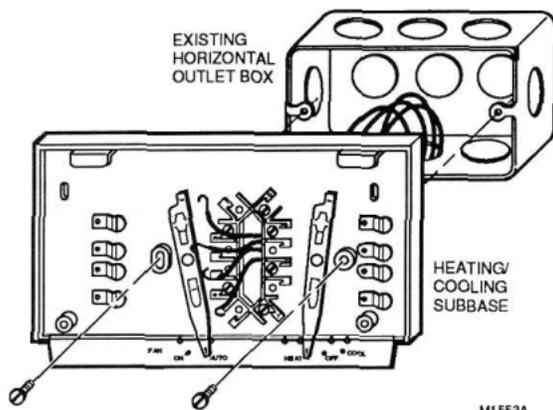
If old thermostat has B or O terminals, this thermostat cannot be used on your system.
EXCEPTION: The CT1502 thermostat can be used on a system with B or O terminals.

One or two extra wires?

If you are replacing a Honeywell Chronotherm thermostat, you may find one or two wires that go to the clock terminals on the Chronotherm thermostat wiring wallplate. Do not allow them to touch, or you may damage your transformer. Disconnect the wires, and wrap them separately, using electrical tape. **Do not wrap them together.** Place the wires where they will not interfere with the operation of the new thermostat. Record the colors and terminal designation labels of the rest of the wires.

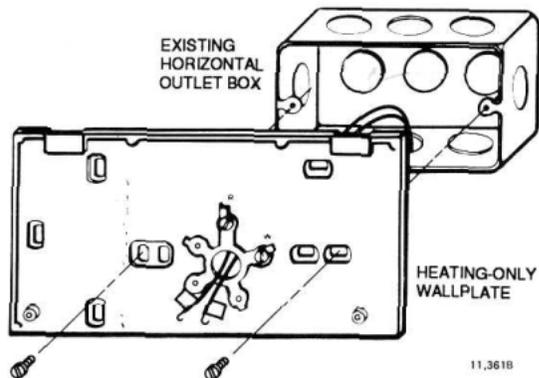
STEP 4

MOUNT WALLPLATE OR SUBBASE



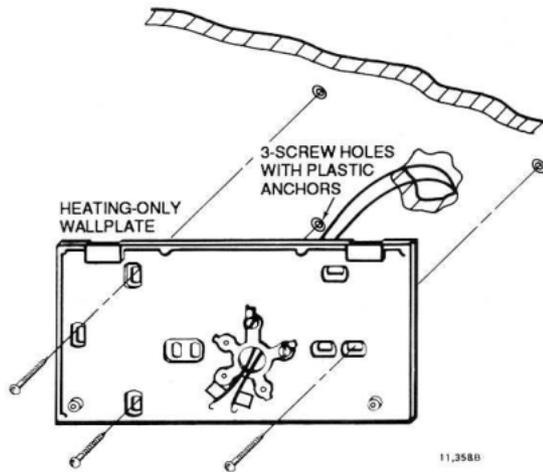
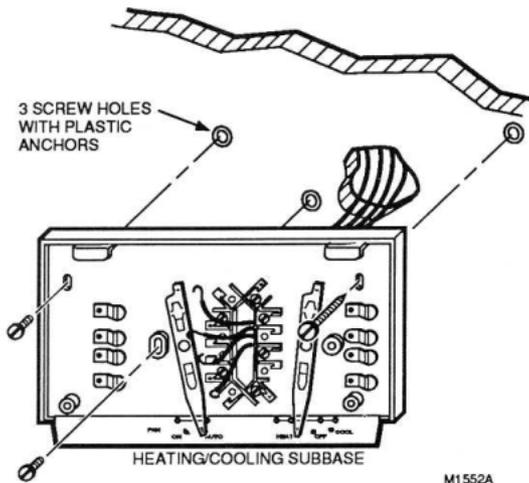
If mounting on outlet box, mount as shown on appropriate figure.

If mounting on wall, hold wallplate or subbase in position and mark holes on wall. Use spirit level to make sure wallplate or sub-

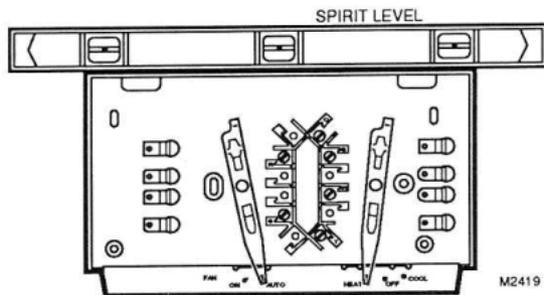
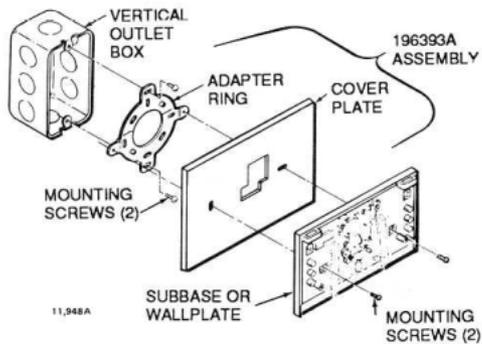


base will be level. Drill 3/16 in. holes and gently tap anchors into holes until flush with the wall.

Position wallplate or subbase as shown in appropriate figure, and loosely insert the screws supplied.



☐ Carefully level the wallplate or subbase and firmly tighten screws.



STEP 5

WIRE WALLPLATE OR SUBBASE

NOTE: All wiring must comply with local electrical codes and ordinances.

- Refer to illustration and strip thermostat wire insulation as necessary.

FOR STRAIGHT CONNECTION—
STRIP 5/16 in. [8 mm]



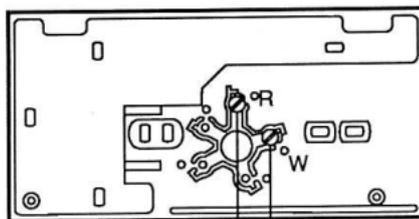
FOR WRAPAROUND CONNECTION—
STRIP 7/16 in. [11 mm]



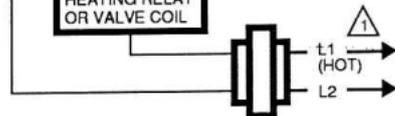
BARRIER

M1556B

For CT1500 heating-only



HEATING RELAY
OR VALVE COIL



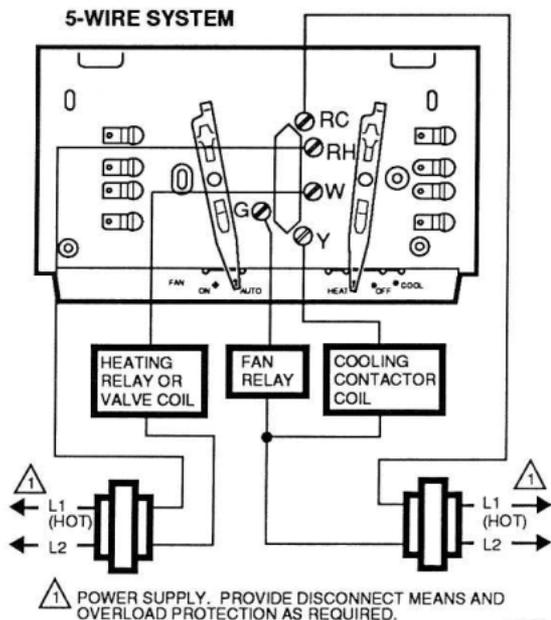
 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

M2417

- Connect either wire to R terminal and the other wire to W terminal. Firmly tighten screws.
- Push excess wire back into wall, and plug hole in wall with nonflammable insulation to prevent drafts from affecting thermostat operation.

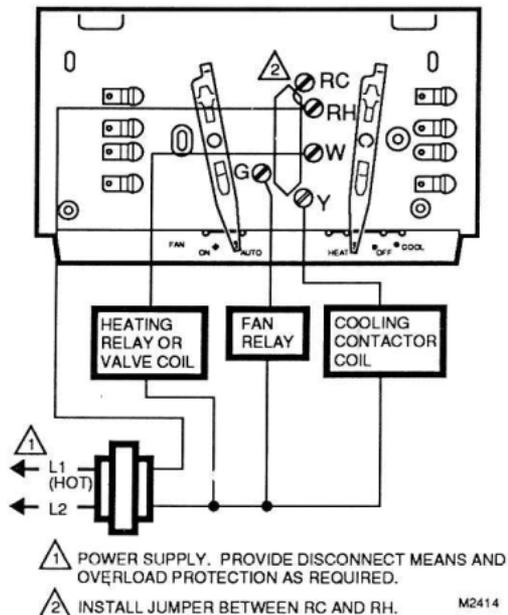
For CT1501 heating/cooling

Connect the wires to matching terminals on the subbase.



NOTE: If there are four wires, connect wire marked R to terminal RH and add a jumper wire to connect to RC. If RC is left unconnected, the air conditioner will not turn on. The 4-wire drawing on this page shows how to jumper RC to RH. Strip the insulation off the wire where it connects to the terminals. Firmly tighten screws.

4-WIRE SYSTEM



If the labels do not agree with the terminal designations on your new subbase:

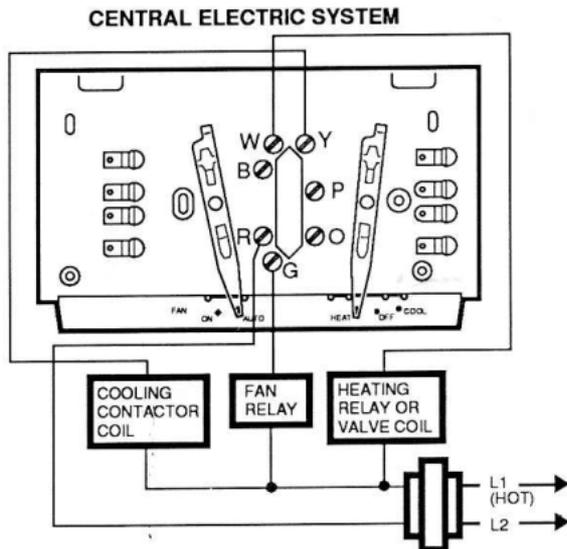
- Refer to Table 2 on page 8.
- Determine correct hookup from the listed control function and the equipment control circuit.

TABLE 2—TERMINAL DESIGNATIONS.

OLD SUBBASE TERMINAL	CONTROL FUNCTION
R or RH	Heating transformer power to control circuit.
RC	Cooling transformer power to control circuit.
W	Heating relay or valve.
Y	Cooling relay.
G	Fan relay.
B	Heating changeover valve or damper control circuit.
O	Cooling changeover valve or damper control circuit.
P	Heat pump compressor control circuit.

 Push excess wire back into wall, and plug hole in wall with nonflammable insulation to prevent drafts from affecting thermostat operation.

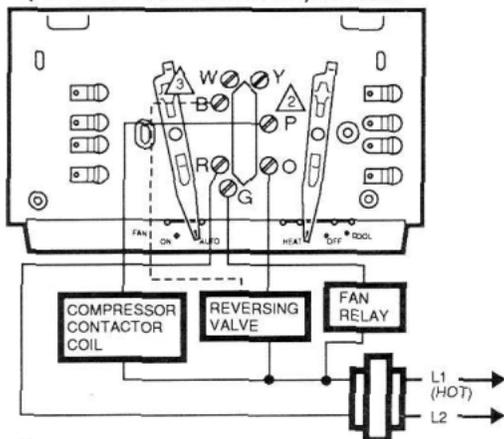
For CT1502 heating/cooling



 **POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.**

M2412

SINGLE STAGE HEAT PUMP (WITHOUT AUXILIARY HEAT) SYSTEM

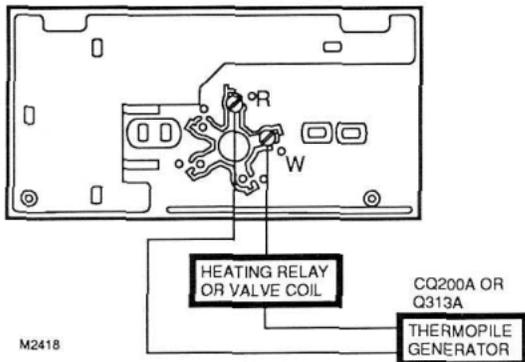


1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. IF COMPRESSOR IS CONNECTED TO OLD THERMOSTAT'S "Y" TERMINAL WITH A JUMPER TO "W", USE NEW THERMOSTAT'S "P" TERMINAL FOR COMPRESSOR. IF OLD THERMOSTAT HAS ONE WIRE TO "Y" AND ONE TO "W", USE "Y" AND "W" ON NEW THERMOSTAT; DO NOT USE "P". IMPORTANT—IF OLD THERMOSTAT USES A W2 (AUXILIARY OR EMERGENCY HEAT) TERMINAL, THIS THERMOSTAT MAY NOT BE USED. THIS THERMOSTAT IS NOT DESIGNED TO CONTROL AUXILIARY HEAT.
3. SOME HEAT PUMPS USE "B" INSTEAD OF "O".

M2415A

For CT1503 750-millivolt heating

- Connect either wire to R terminal and the other wire to W terminal. Firmly tighten screws.
- Push excess wire back into wall, and plug hole in wall with *nonflammable insulation* to prevent drafts from affecting thermostat operation.



M2418

CQ200A OR
Q313ATHERMOPILE
GENERATOR

- Connect the wires to matching terminals on the subbase. Firmly tighten screws.
- Push excess wire back into wall, and plug hole in wall with *nonflammable insulation* to prevent drafts from affecting thermostat operation.

STEP 6

MOUNT THE THERMOSTAT

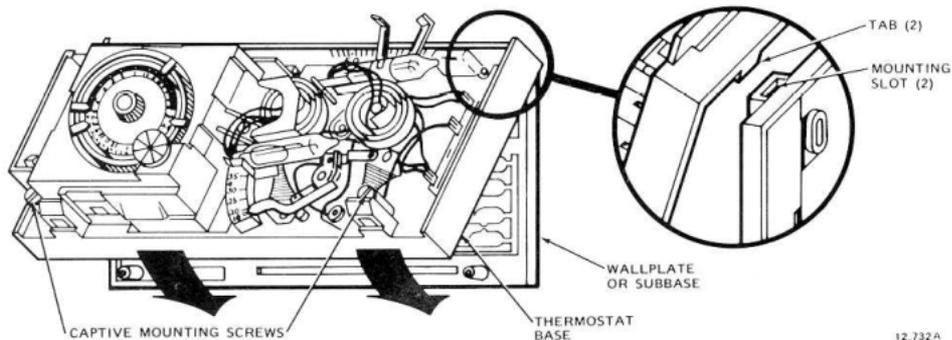
Note the tabs on the top inside edge of the thermostat base. These fit the slots molded into the top of the wallplate or subbase.

Hang the thermostat base on the wallplate or subbase as shown in illustration.

Insert the two captive mounting screws located in the bottom corners of the thermostat base (see illustration); firmly tighten.

IMPORTANT

Do NOT cycle heating system until Step 7 is completed.



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STEP 7

SET HEAT ANTICIPATOR LEVER

NOTE: Not applicable on CT1503 millivolt model.

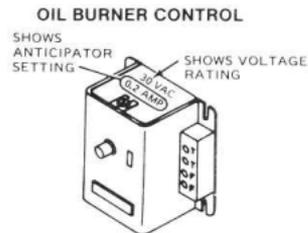
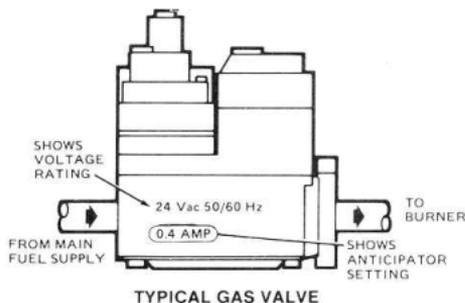
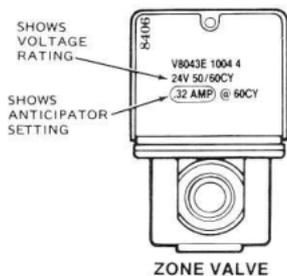
The thermostat's adjustable heat anticipator must be correctly set to accurately control the on-time length of the system. An incorrect setting can result in room temperature swings or burn out the anticipator and void the thermostat warranty.

Make sure you have the current draw (anticipator setting) for your system. This is the number you wrote in the box in Step 3. If you were unable to find the current draw for Step 3, this information can be found printed on the primary control at the furnace or boiler. The primary control is usually a

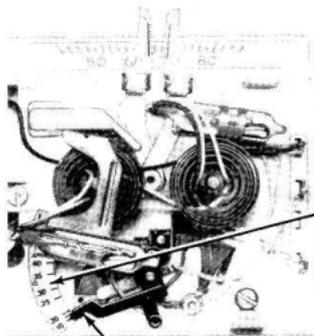
gas valve, a relay or burner control box, Aquastat controller or zone valve with the thermostat wires connected to it. These controls are usually located behind the furnace cover. See next illustration.

If current rating is still unavailable, proceed as follows:

- Connect the probes of an ac ammeter (0 to 2.0 A, for example) between R (or RH) and W terminals on the wallplate or subbase.
- Let the system operate through the ammeter for at least one minute before taking reading. Record the reading here .



On the CT1500, CT1501 or CT1502 thermostats, move the heat anticipator indicator to match the number you recorded in Step 4 or found on the primary control as shown above, or as recorded in Step 7.



ANTICIPATOR
SCALEPLATE

ANTICIPATOR
SETTING LEVER

12,716A

IMPORTANT

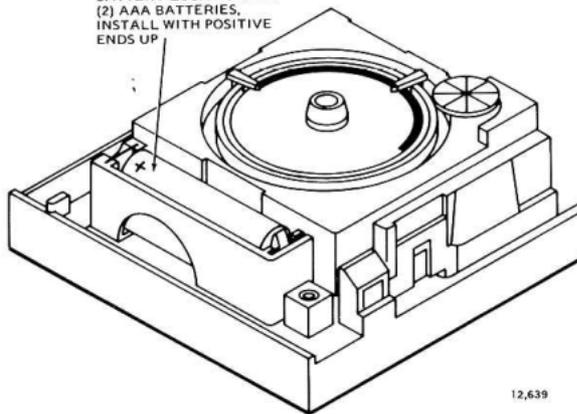
Most hot water systems require a setting of 1.3 times the valve current rating.

STEP 8

INSTALL TIMER BATTERIES

Power is supplied to the timer by two AAA alkaline batteries (included). Install timer batteries in thermostat as shown. Once a year, or when batteries are dead, replace with two new AAA alkaline batteries. Other types of batteries are more likely to leak, which could damage the timer. The thermostat itself will operate without batteries, but will not operate as a fuel saver.

BATTERY LOCATION FOR
(2) AAA BATTERIES,
INSTALL WITH POSITIVE
ENDS UP

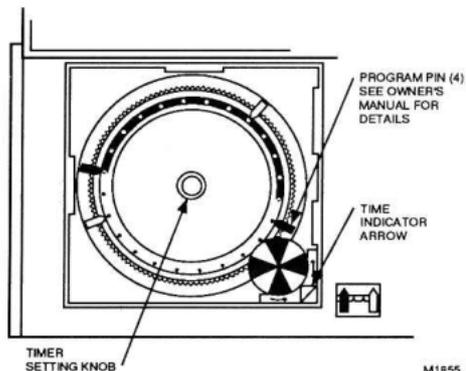


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STEP 9

SET TIMER

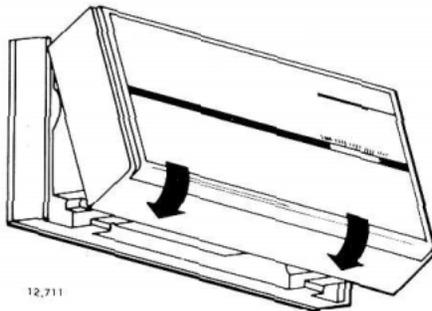
- Adjust the timer by moving the knob in clockwise  direction. Do NOT reverse the knob.
- When time is correctly set, the Time Indicator Arrow (see illustration) must point to the correct time and the corresponding daytime (light) or nighttime (dark) portion of the program dial.



STEP 10

ATTACH THERMOSTAT COVER

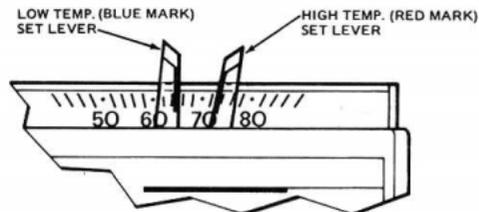
- Make sure the packing inserts in the thermostat base have been removed, as explained in step 3.
- Place the two tabs on upper edge of cover into mounting slots in thermostat base.
- Swing cover downward until it engages catch at bottom of base.



STEP 1 1

CHECK OUT THERMOSTAT OPERATION AND SET TEMPERATURE CONTROL LEVERS

The two levers on top of the thermostat control the low and high temperature for energy savings and comfort control, as shown in illustration.



CAUTION

Do NOT check operation by shorting across terminals of relay or valve coil; this will burn out the thermostat heat anticipator, which will void the warranty.

Heating-only System

- Turn on power to the furnace.
- Push both temperature control levers together at least 5° F [3° C] above room temperature. The heat should come on. The fan will start when the furnace heats up.
- Move both levers 5° F [3° C] below room temperature. The heat should shut off.
- Operate the entire heating system for at least one complete cycle.

IMPORTANT

If thermostat fails any test, refer to troubleshooting guide in owner's manual.

Heating/Cooling System

- Turn on power to the furnace and cooling system.
- Place the system switch lever at HEAT and the fan switch lever at AUTO.
- Push both temperature control levers together at least 5° F [3° C] above room temperature. The heat should come on. The fan will start when the furnace heats up. On the CT1502, the fan will start immediately.
- Move both levers together 5° F [3° C] below room temperature. The heat should shut off. The fan will stop when the furnace cools.

IMPORTANT

To avoid compressor damage, do not operate the cooling system if outdoor temperature is below 50° F [10° C]. Refer to manufacturer's recommendations.

- Place the system switch lever at COOL and the fan switch lever at AUTO.
- Push both temperature control levers together at least 5° F [3° C] below room temperature. The cooling equipment should operate, and the fan will start. Allow for any time delay that may be built into the compressor control circuit.
- Move both levers together 5° F [3° C] above room temperature. The cooling equipment should shut off.
- Place the fan switch at ON. The fan should run continuously with the system switch in any position.
- Place the system switch at OFF. Move both temperature levers to various positions. The heating and cooling systems should not operate.
- Operate the entire system for at least one complete cycle with the system switch at COOL and one complete cycle with the switch at HEAT.

IMPORTANT

If thermostat fails any test, refer to troubleshooting guide in owner's manual.

- After checkout, reset both temperature levers to desired temperatures.

For heating season:

- Move the **blue** lever to the **energy savings** temperature you want when you are sleeping or your home is not occupied.
- Set the **red** lever to the temperature you want for **normal** comfort periods.

For cooling season:

- Move the **red** lever to the **energy savings** temperature you want when you are sleeping or your home is not occupied.

- Set the **blue** lever to the temperature you want for **normal** comfort periods.

REFER TO THE OWNER'S MANUAL FORM 69-0333 FOR OPERATING AND PROGRAMMING INSTRUCTIONS.

IF YOU HAVE QUESTIONS REGARDING THE INSTALLATION OF THE HONEYWELL FUEL SAVER THERMOSTAT, PLEASE CALL OUR TOLL-FREE CONSUMER SERVICES GROUP NUMBER AT 1-800-468-1502, MONDAY-FRIDAY, 7:30 AM - 5:00 PM CENTRAL TIME.

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