

**Honeywell**

**TROLA<sup>A</sup>TEMP**

# Zone Thermostat

Heating/Cooling Thermostat and  
Subbase or Wallplate  
Model T8090T

OWNER'S MANUAL



69-0432-1

Welcome to the world of energy savings with your new Honeywell Trol-A-Temp Zone<sup>®</sup> Thermostat.

Your new thermostat will automatically control the temperature in your home to provide a high level of comfort plus energy savings when programmed according to the instructions in this manual.

With zone control, you heat or cool each zone or living area only when needed. The independent control of each zone provides additional energy savings.

## Recycling Notice



This control contains mercury in a sealed tube. Do *not* place control in the trash at the end of its useful life.

If this control is replacing a control that contains mercury in a sealed tube, do *not* place your old control in the trash.

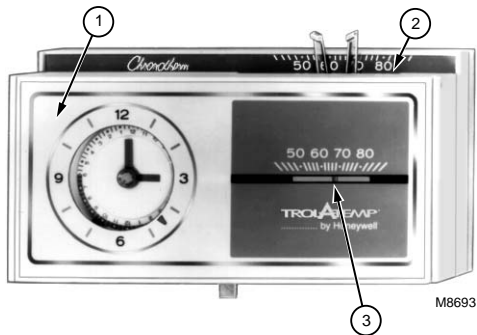
Contact your local waste management authority for instructions regarding recycling and the proper disposal of the control, or of an old control containing mercury in a sealed tube.


If you have questions, call Honeywell Inc. at 1-800-468-1502.

# Table of Contents

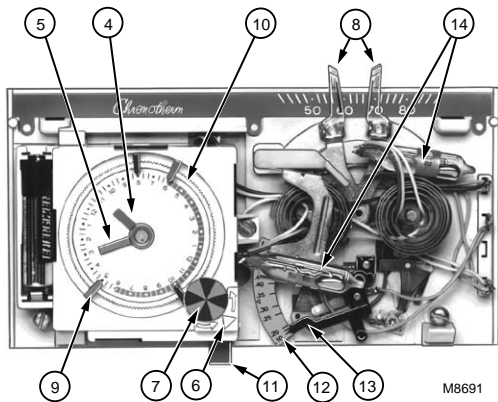
	<b>PAGE</b>
Features of Your Thermostat .....	4
Setting the Temperature .....	7
Inserting Clock Batteries .....	8
Setting the Clock .....	9
Programming .....	11
Troubleshooting .....	15
Servicing the Thermostat .....	21
Heat Anticipator Setting .....	21
Thermometer Adjustment .....	22

## Features of Your Thermostat



- ① **FLIP-UP COVER.** Lift it up to set clock for energy savings and normal temperature periods.
- ② **THERMOSTAT COVER.**
- ③ **THERMOMETER.** Provides accurate room temperature reading.
- ④ **CLOCK.** This clock provides a 24-hour slotted dial to hold the programming pins.
- ⑤ **CLOCK HANDS.** Turn minute hand clockwise  to match the correct AM or PM time to the time indicator.
- ⑥ **TIME INDICATOR.** Arrow head indicates time for 24-hour dial.
- ⑦ **PROGRAM INDEX WHEEL.** Controls high and low temperature at specific time of day as set by program pins.
- ⑧ **TEMPERATURE SETTING LEVERS.** Left (blue mark) controls the low temperature; right (red mark) controls the high temperature.

- ⑨ PROGRAM PINS. Must be inserted into 24-hour clock dial slots to control program index wheel.
- ⑩ PIN SLOTS. Located on 24-hour dial at 10-minute intervals for program pin insertion.
- ⑪ MANUAL PROGRAM ADVANCE BUTTON. Allows change from comfort to energy savings setting and vice versa without changing the program.
- ⑫ HEAT ANTICIPATOR SCALEPLATE. Calibrated to match the heating system current draw in amperes.
- ⑬ ANTICIPATOR SETTING LEVER. Must be set at 0.1A for proper system operation.
- ⑭ MERCURY BULB AND BIMETAL ELEMENT(2). Provide automatic temperature control by switching the heating or cooling system on and off.

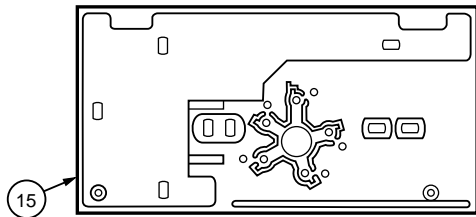


**15** WALLPLATE

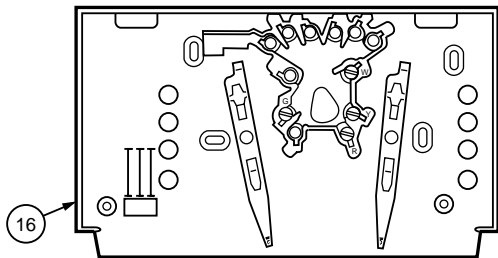
Provides mounting base and wiring connections for control of zones other than zone 1 in heating or heating-cooling systems.

**16** SUBBASE

Provides mounting base, wiring connections and manual switching for control of zone 1 in heating or heating-cooling systems.



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# Setting The Temperature

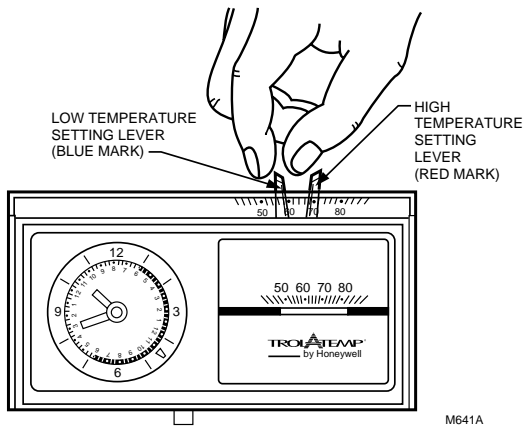
## For Heating:

- Set the left lever (blue mark) to the energy savings temperature you want when you are sleeping or the associated zone is unoccupied.
- Set the right lever (red mark) to the temperature you want for normal comfort periods.

NOTE: You may override the time program by setting both the red and blue levers to the same temperature setpoint.

## For Cooling:

- Set the left lever (blue mark) to the temperature you want for normal comfort periods.
- Set the right lever (red mark) to the energy savings temperature you want when you are sleeping or the associated zone is unoccupied.

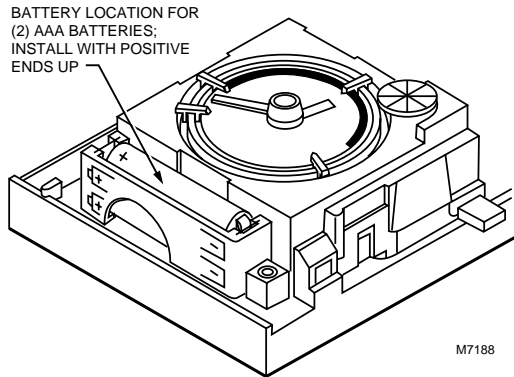


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**Fig. 1—Setting high and low temperature setting levers.**

## Inserting Clock Batteries


Power is supplied to the clock by two AAA alkaline batteries (included). Install batteries in thermostat as shown in Fig. 2. Once a year or when batteries are dead, replace with two new AAA alkaline batteries. We recommend Energizer® batteries.



**Fig. 2—Inserting clock batteries.**

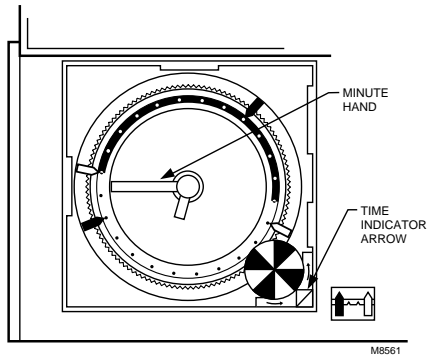


## Setting the Clock

Lift thermostat flip-up cover and you'll find the 24-hour program dial, slotted in 10-minute increments. Adjust the clock to the current time by moving the minute hand carefully in a clockwise direction.  DO NOT reverse the minute hand.



When time is correctly set, the time indicator arrow (see Fig. 3) will point to the correct time and corresponding daytime (light) or nighttime (dark) band of the program dial.

**EXAMPLE:** For 11 PM, the time indicator arrow will point directly to the dark band. For 11 AM, the arrow will point to them light band on the dial.



**Fig. 3—Setting the clock.**

## Daylight Savings Time

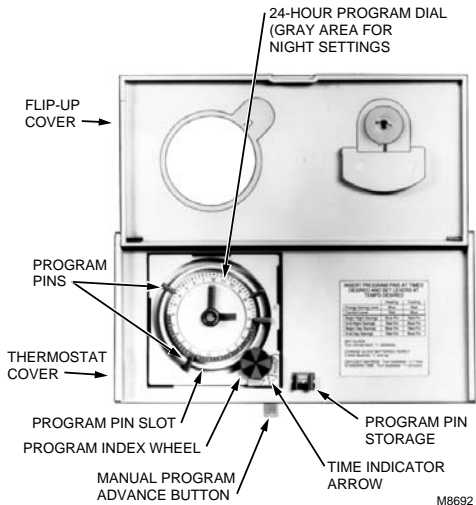
When Daylight Savings Time starts, move the minute hand carefully in a clockwise  direction one hour. When Daylight Savings Time ends, move the minute hand carefully in a clockwise  direction 23 hours. Do NOT reverse the minute hand, or damage to the timer mechanism may occur.

# Programming

You can program your thermostat to automatically lower and raise the temperature one or more times every 24 hours.

## Before setting your program

- To insert a pin, push it straight into the selected notch on the program dial until it is completely seated.
- Lift thermostat flip-up cover and you'll find the 24-hour program dial. The slots on the program dial (Fig. 4) are for the program pins, which can be inserted at 10-minute intervals.
- Three red and three blue program pins are included with your thermostat. The red pins start the high-temperature period; the blue pins start the low-temperature period. A heating program is preprogrammed. A red



**Fig. 4—Program components.**

pin is inserted at 6:00 AM for high temperature (comfort period); a blue pin is inserted at 10:00 PM for low temperature (energy saving period). Two additional sets of pins are located in the program pin storage area. You can set up to six temperature changes with the pins supplied. We recommend at least five hours for each energy saving period.

- To change the pins add a new energy saving period.
- To remove a pin, press against the program dial and pull the pin straight out. DO NOT attempt to change a pin if it is engaged with the program index wheel.
- On heating/cooling systems, be sure to reset the pins when the seasons change. You will also probably want to change the lever positions.

## Setting the Heating Program

- Decide when you want the temperature to reach the comfort level. Find the notch on the dial that is one-half hour before this time and insert a *red* pin. The half-hour head start gives the furnace time to heat the house before you wake up or arrive home.
- Decide when you want the energy saving period to start and insert a *blue* pin at the notch that corresponds to this time. After the blue pin engages, the furnace will be off until room temperature drops to the energy saving setpoint.
- You can set both a day and a night program. See Fig. 5 for program examples.

		WINTER			SUMMER		
		TEMPERATURE		PROGRAM PIN IN CONTROL	TEMPERATURE		PROGRAM PIN IN CONTROL
		°F	°C		°F	°C	
NIGHT ENERGY SAVING PERIOD	BEGINS 10:00 PM	58	14	BLUE	80	27	RED
	ENDS 6:00 AM	68	20	RED	75	24	BLUE
DAY ENERGY SAVING PERIOD	BEGINS 7:30 AM	58	14	BLUE	80	27	RED
	ENDS 4:00 PM	68	20	RED	75	24	BLUE

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**Fig. 5—Programming examples.**

## Setting the Cooling Program

- Decide when you want the temperature to reach the comfort level. Find the notch on the dial that is one-half hour before this time and insert a *blue* pin. The half-hour head start gives the air conditioner time to cool the house before you wake up or arrive home.
- Decide when you want the energy saving period to start and insert a *red* pin at the notch that corresponds to this time. After the red pin engages, the air conditioner will be off until the room temperature rises to the energy saving setpoint.

## Start or End Programs With Manual Program Advance Button

### IMPORTANT


To prevent damage to the program advance mechanism, DO NOT use the program advance button within a 30-minute period before or after a program change.

The manual program advance button enables immediate, one-time-only program changes to accommodate temporary schedule changes.


Press the button to immediately begin an energy saving period or return to the normal setting. After pressing the button, check the program indicator to assure the system is in the desired mode. If the program indicator shows blue, the lower temperature is in effect; if the program indicator shows red, the higher temperature is in effect. Using the manual advance button will not affect the stored program.

# Troubleshooting

Your Honeywell Trol-A-Temp<sup>®</sup> Thermostat requires little or no attention. Most problems can be traced to the following.

<b>PROBLEM</b>	<b>CHECK</b>	<b>ACTION</b>
No heat.	—system switch. May be in OFF or COOL position. 	Move system switch to HEAT position.
	—fuse or circuit breaker.	If blown or tripped, replace fuse or reset breaker.
	—furnace power switch. May be Off.	Move switch to ON.
	—heating equipment for proper operation.	See manufacturer's instructions.
	—thermostat connections.	Turn Off power. Check for correct terminal hookups. Repair any frayed or broken wires. Firmly tighten all terminal screws.
	—airflow at register. Zone damper may be closed.	If damper is closed, contact a qualified service technician for assistance.

*Troubleshooting (continued)*

<b>PROBLEM</b>	<b>CHECK</b>	<b>ACTION</b>
No heat.	—other.	Contact a qualified service technician for assistance.
Energy saving temperature program 12 hours off.	—program dial for proper day or night phase.	Turn clock ahead 12 hours. Move minute hand clockwise only.
Rooms do not warm up at programmed time.	—timer program for heating system. May need more time to warm up rooms.	Move red pin one-half hour earlier on the program dial.
Temperature change occurs at the wrong time.	—program pins for correct time locations.	Relocate pins to desired settings.
Room temperatures are not correct.	—positions of thermostat setpoint levers.	Reset to desired temperatures.
	—position of subbase system switch. 	Move to desired operating position.
	—air flow at register.	Damper may be operating improperly. Contact a qualified service technician for assistance.

*(continued)*





*Troubleshooting (continued)*

<b>PROBLEM</b>	<b>CHECK</b>	<b>ACTION</b>
Room temperatures are not correct.	—thermostat circuits.	<p>HEATING—Make sure zone 1 system switch is set at HEAT and fan switch is set at AUTO. Move temperature setting levers on the appropriate zone thermostat 5° F [3° C] above room temperature. Heating should start; damper should be open.</p> <p>COOLING—Make sure zone 1 system switch is set at COOL and fan switch is set at AUTO. Move temperature setting levers on the appropriate zone thermostat 5° F [3° C] below room temperature. Cooling should start; damper should open. IF SYSTEMS DO NOT OPERATE, CONTACT A QUALIFIED SERVICE TECHNICIAN.</p>

*(continued)*

Troubleshooting (continued)

<b>PROBLEM</b>	<b>CHECK</b>	<b>ACTION</b>
No cooling. 	—system switch. May be in OFF or HEAT position. 	Move switch to COOL position.
	—fuse or circuit breaker.	If fuse is blown or breaker tripped, replace or reset.
	—condenser switch position. Located outdoors and may be turned Off.	Move to ON position.
	—cooling equipment for proper operation.	See manufacturer instructions.
	—thermostat connections.	Turn Off power. Check for correct terminal hookups. Repair any frayed or broken wires. Firmly tighten all terminal screws.
	—airflow at register. Zone damper may be closed.	If damper is closed, contact a qualified service technician for assistance.
	—other.	Contact a qualified service technician for assistance.

(continued)

*Troubleshooting (continued)*

<b>PROBLEM</b>	<b>CHECK</b>	<b>ACTION</b>
Clock does not run.	—voltage across the C and R terminals.	Remove thermostat from the wallplate or subbase, and measure the voltage. Refer to page 20 for cause and action.
Thermostat setting and thermometer reading disagree.	—level position of thermostat.	Reinstall thermostat wallplate or subbase. Use a spirit level.
	—area around thermostat for drafts or radiant heat.	Thermostat should be about 5 ft [1.5m] above floor on an inside wall. Contact qualified service technician for change of location.
	—calibration of thermometer.	See instructions on page 22.

 Applicable on zone 1 thermostat only.

 Not applicable on heating-only system.

If this Troubleshooting section has not solved the problem, call a qualified Trol-A-Temp<sup>®</sup> customer service at or service technician, 1-800-828-8367 for additional assistance.

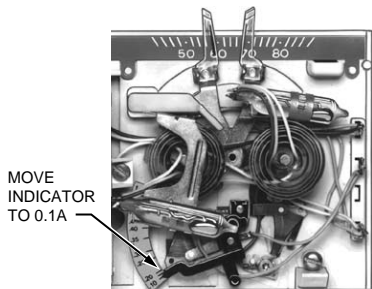
## Voltage at Clock Terminals

AC VOLTAGE AT C-R TERMINALS	POSSIBLE CAUSE CHECK	ACTION
0 Vac	1. System power is Off.	1. Restore power.
	2. Short in clock power supply wiring.	2. Replace wiring.
	3. Limit switch contacts stuck open.	3. Free or replace limit switch.
	4. Transformer supplying power is burned out.	4. Replace transformer.
Up to 15 Vac.	1. System transformer used to power the clock is inadequate.	1. Use additional (separate) transformer.
	2. Additional (separate) transformer used to power the clock has inadequate voltage.	2. Install transformer with proper secondary voltage.
15 to 30 Vac.	1. Spring fingers on thermostat are not making proper contact with the subbase terminals.	1. Rebend spring fingers to a 45 degree angle to assure proper contact.
	2. Clock has failed.	2. Replace the thermostat.

# Servicing the Thermostat

## Heat Anticipator Setting

The T8090T Thermostat has an adjustable heat anticipator that was factory-set at 0.1A. The heat anticipator must be set at 0.1A for proper system operation. See Fig. 6.



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**Fig. 6—Heat anticipator setting.**

## Thermometer Adjustment

The thermometer was accurately calibrated at the factory and should only need adjustment if it was dropped or mishandled.

If the setpoint lever and the thermometer reading do not agree, follow the procedure below.

Remove the thermostat cover and open the flip-up cover.

Set the thermostat cover on a table near a thermometer of known accuracy.

Allow at least five minutes for the cover thermometer to sense the area temperature; then compare the readings. Be careful not to touch the thermometer or breathe on it.

If the readings are the same, replace the cover and put the system into operation.

If the readings are different, insert a small screwdriver in the thermometer slot, shown in Fig. 7, and turn it until both thermometers read the same.

Replace thermostat cover and put the system into operation.

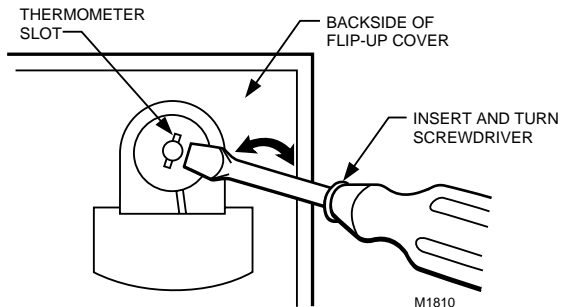


Fig. 7—Thermometer adjustment.

If you have questions regarding the installation and programming of your Honeywell Trol-A-Temp<sup>®</sup> Thermostat, please contact a Trol-A-Temp<sup>®</sup> customer service representative at 1-800-828-8367. Before you call, please have the following information available: Make and model of your furnace, old thermostat and air conditioner.

# Honeywell

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