

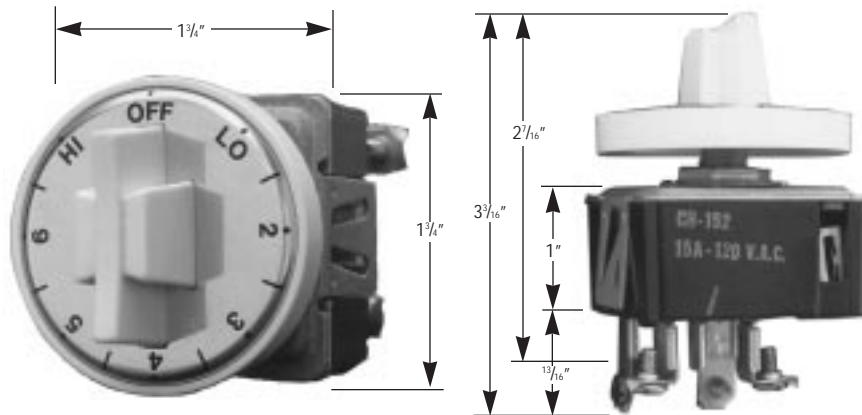
# Chromalox®

## Installation, Operation and RENEWAL PARTS IDENTIFICATION

### SERVICE REFERENCE

DIVISION 4		SECTION CH	
SALES REFERENCE	(Supersedes PK414-5)	PK414-6	
		161-048724-001	
DATE	DECEMBER, 1998		

## CH Infinite Control Mechanism



Model	* Switch Rating		
	Volts	Amps	Watts
CH-152	120	15	1800
CH-252	240	15	3600

\*Use the Chromatrol Switch with a magnetic contactor for:  
1. AC heating loads greater than 1800 watts at 120 volts and 3600 watts at 240 volts.  
2. All DC heating loads.

Note: All Terminal Connectors are supplied with screws.

Note: Type CH infinite controls are a UL recognized component.

### GENERAL

**WARNING: Hazard of Electric Shock.** This control must be installed by a qualified electrician. Before performing any of the following operations, disconnect all power to prevent possible fatal injury.

- No cams or levers to adjust, no motor to burn out.
- Gives infinite control for non-inductive loads up to 15 amperes on 120 or 240 volts.
- Can be turned either to left or right to select proper heat from 0 to 100% wattage with infinite control over first 50% of total wattage.
- Provides automatic compensation for line voltage fluctuations up to  $\pm 15\%$ .
- Energized continuously in HI position; at other settings it delivers continuously in HI position under control of simple bi-metal timer.
- DPST snap-acting switch. OFF position positively breaks both sides of line.
- Designed for operation in an ambient up to 180°F.
- Only 3 mounting holes are necessary to install in customer's box or panel.

**Uses.** An inexpensive yet positive control for laboratory or industrial hotplates. Type CH infinite controls can also be used for controlling comfort heaters, small electric furnaces, dies, platens and other applications where infinite control is required within the current rating of the switch. For higher AC heating loads and all DC heating loads, use with magnetic contactors.

**Note:** Type CH Infinite Controller functions as an energy control. Because they do not fail safe, they should not be used for temperature limiting duty.

**WARNING:** Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essen-

tial. Although the safety of the installation is the responsibility of the user, Chromalox will assist in identifying equipment options.

#### Principle of Operation – See Figure 1.

1. Simple bi-metal timer – no cams and levers to be readjusted, or motor to burn out. A small built-in shunt type heater provides a nominal low input of 5-1/2% ( $\pm 2-1/2\%$ ) of rated wattage.
2. Control contact is normally closed when the switch is moved from the “Off” position permitting the current to flow thru both the heater windings on the switch bi-metal strip and the load.
3. The bi-metal expands and bends as it becomes warm (due to current flow) to open the control contact which interrupts the flow of current to the heater windings and the load.
4. The bi-metal cools to close the contacts and the cycle repeats.

**WARNING:** Not for use in hazardous environments as described in National Electrical Code. Failure to comply can result in explosion or fire.

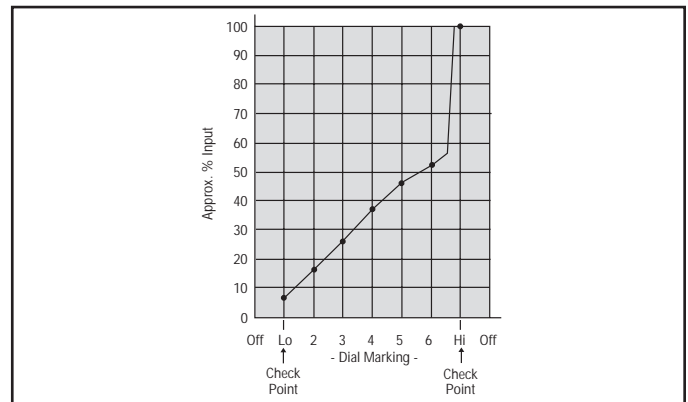


Figure 1

## MOUNTING

**Note:** Do not mount the controller where it will be subject to vibration, shock, grease, dust, lint or corrosive vapors. Do not mount adjacent to a large magnetic contactor, as vibration and shock will cause the controller to interact erratically – resulting in chattering of the contactor.

1. Locate the mounting position of the switch.
2. Layout mounting holes as per Figure 2.
3. Drill a 3/8" diameter hole for the switch adjustment shaft.
4. Drill two 1/4" diameter holes for the anti-turn locking tabs.
5. Pull off knob and remove 3/8" shaft hex nut from switch.
6. Insert switch shaft thru 3/8" hole and position an anti-turn locking tab in each 1/4" hole after switch side marked "Top" is in top-most position.

7. Tighten the hex nut (3/8-24) on the shaft.

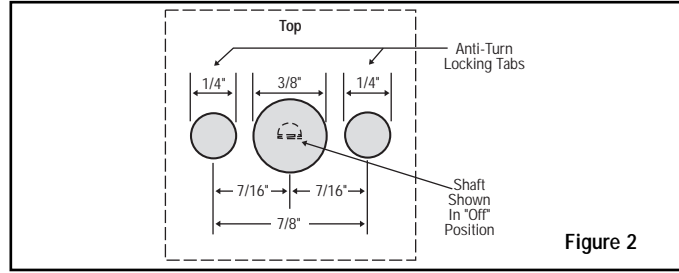


Figure 2

## WIRING

**WARNING: Hazard of Electric Shock. Disconnect all power before wiring or servicing this control.**

1. All wiring should be done in accordance with local codes and the National Electrical Code by a qualified person.
2. Wire Chromatrol for direct control of load or loads up to 15 amperes – See Wiring Diagram (Figure 3) – Connect:
  - A. Two line circuit wires to switch terminals marked L1 and L2 respectively.
  - B. Two load wires to switch terminals marked H1 and H2.
3. When used, connect Pilot Lite between switch terminals P and L2.

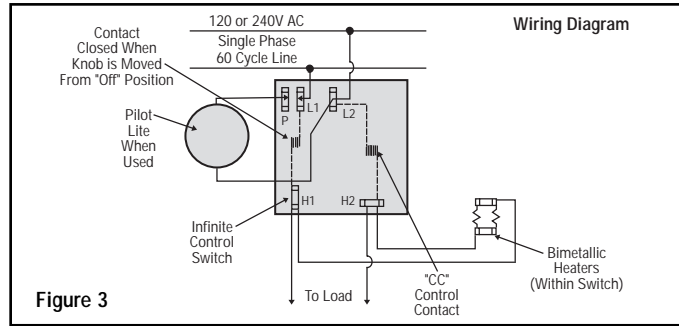
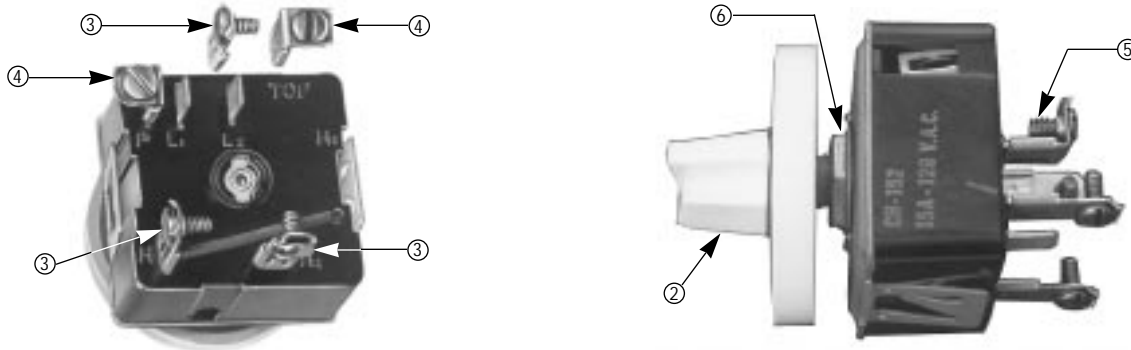


Figure 3

## RENEWAL PARTS IDENTIFICATION



Model	Volts	Watts	1 Switch	2 Knob	Connectors		5 Screws - Terminals	6 Nut - Adjustment Shaft
					3 Straight - L <sub>1</sub> , H, H <sub>2</sub>	4 Bent - P and L <sub>2</sub>		
CH-152	120	1800	292-042345-001	169-042522-001	070-043048-002 (3)	070-043048-001 (2)	Screw 6-32 x 1/4" Lg. R.H. Mach. - N.P. Brass or N.P. Steel (5)	Nut 3/8"-24, Hex
CH-252	240	3600	292-042345-002	169-042522-001	070-043048-002 (3)	070-043048-001 (2)		

**Note:** Part numbers suffixed by a number in ( ) indicates the number of same part no. used or supplied if more than one.

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