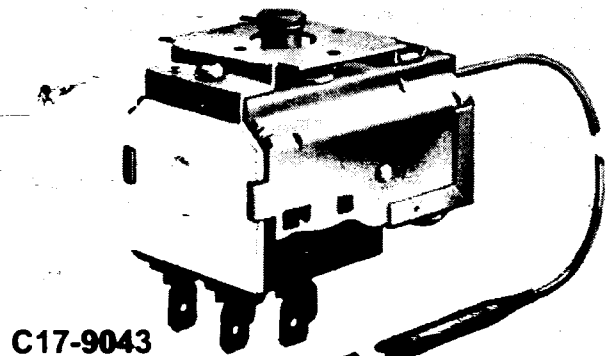




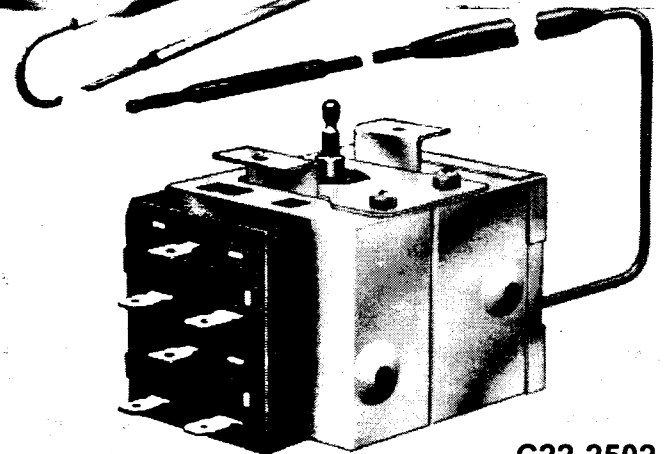
INSTRUCTION SHEET

INSTRUCTION SHEET NO. 1515099

Types C17-9043 and C22-2502 (C/DF) Air Conditioning and Heating Thermostats with Discharge Feedback



C17-9043



C22-2502

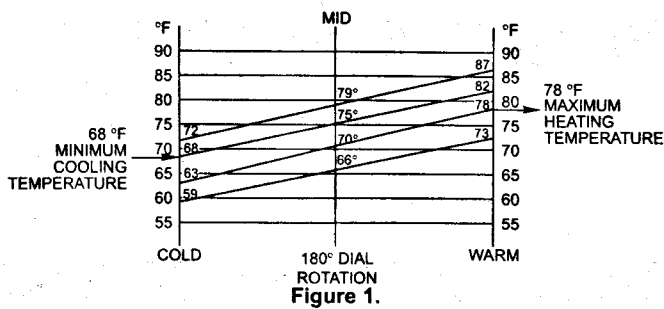
APPLICATIONS

- Room Air Conditioners - Heat/Cool Units
- Packaged-Terminal Air Conditioners
- Through-the-Wall Air Conditioners - Heat/Cool Units

DESCRIPTION

Type C/DF Discharge Feedback thermostats, types C17-9043 and C22-2502, are adaptable replacements for room, packaged-terminal and through-the-wall air conditioning units equipped for either manual or automatic heat/cool changeover. The C17 and C22 discharge feedback controls have separate switches for heating and cooling.

A wide energy-saving comfort zone ("dead band"), is provided between heating and cooling cycles. A limited adjustment range prevents user from over heating or cooling conditioned space.



INSTALLATION

MOUNT CONTROL

1. Disconnect electric power from unit.
2. Study Figure 2 or Figure 3 (whichever applies to your particular control) before beginning.
3. Remove unit panels to gain access to thermostat area.
4. Label or identify wiring to thermostat BEFORE you remove it.
5. Disconnect wiring to thermostat and remove it.
6. Rotate shaft of new C17 or C22 control to midpoint of its travel. See Fig. 2 or Fig. 3.
7. Mount C17 or C22 same as original. The C17 has terminals at the back, the C22 has terminals at the side.

DIAL SHAFT C17-9043

1. Remove knob from old control.
2. Measure length of shaft on old control.
3. Cut or break shaft of C17 to match length of old control shaft. See Fig. 2.
4. Push flatted shaft end into dial knob.
5. Position pointer of knob to midpoint of shaft travel. Push splinted end of shaft into socket of C17 control.
6. Test alignment and dial travel. Rotate knob through its travel. Reposition knob if necessary for correct alignment.
7. Snap locking spring into groove of control socket. (You may need to remove knob to gain access to locking spring.)

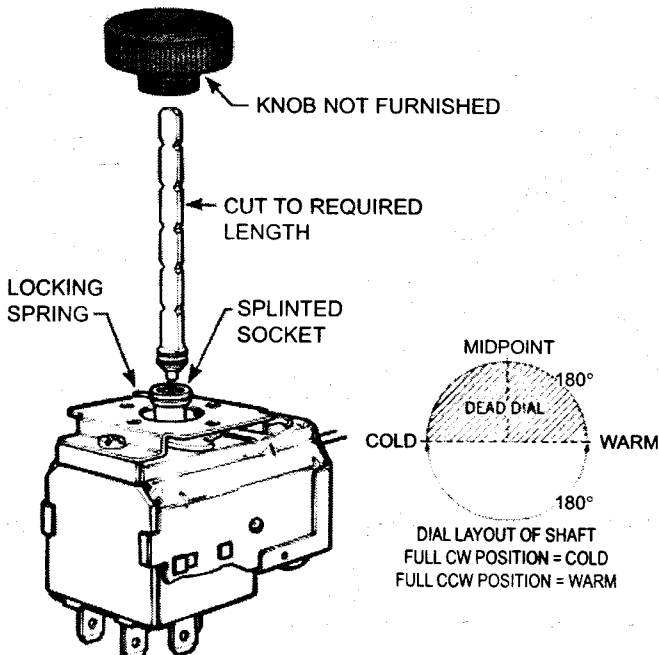
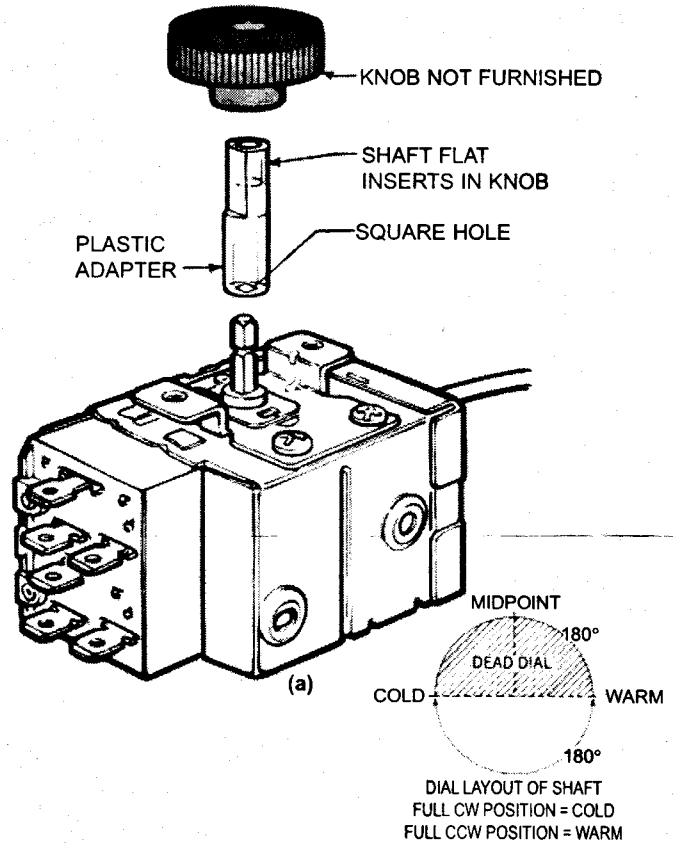


Figure 2. C17-9043 Dial Shaft Installation

DIAL SHAFT C22-2502

1. Remove knob from old control.
2. Select plastic dial shaft adapter which correctly fits knob.
3. Break adapter from cluster. Push adapter into knob.
4. Align pointer of dial knob at or near the midpoint of shaft travel.
5. Push knob adapter onto square shaft of C22 control.
6. Test dial alignment. Rotate knob through its travel from one end to the other. Reposition knob adapter on control shaft if necessary for correct alignment with scale on unit.



(b) Dial Layout of Shaft

Figure 3. C22-2502 Dial Shaft Installation

MOUNT CAPILLARY

1. Uncoil capillary to required length to mount return air bulb (large bulb) in return air stream. Use original bulb clamp. Coil and secure excess capillary.
 2. Uncoil remaining capillary and mount discharge air bulb (small bulb) in discharge air stream under grill. Coil and secure excess capillary.
- NOTE: MOUNT THE DISCHARGE AIR SENSING BULB 2 INCHES BELOW DISCHARGE AIR GRILL IN THE AREA OF MAXIMUM AIR FLOW FOR CORRECT CONTROL RESPONSE.**

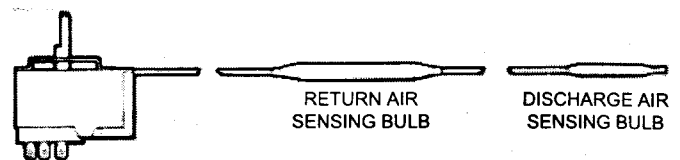
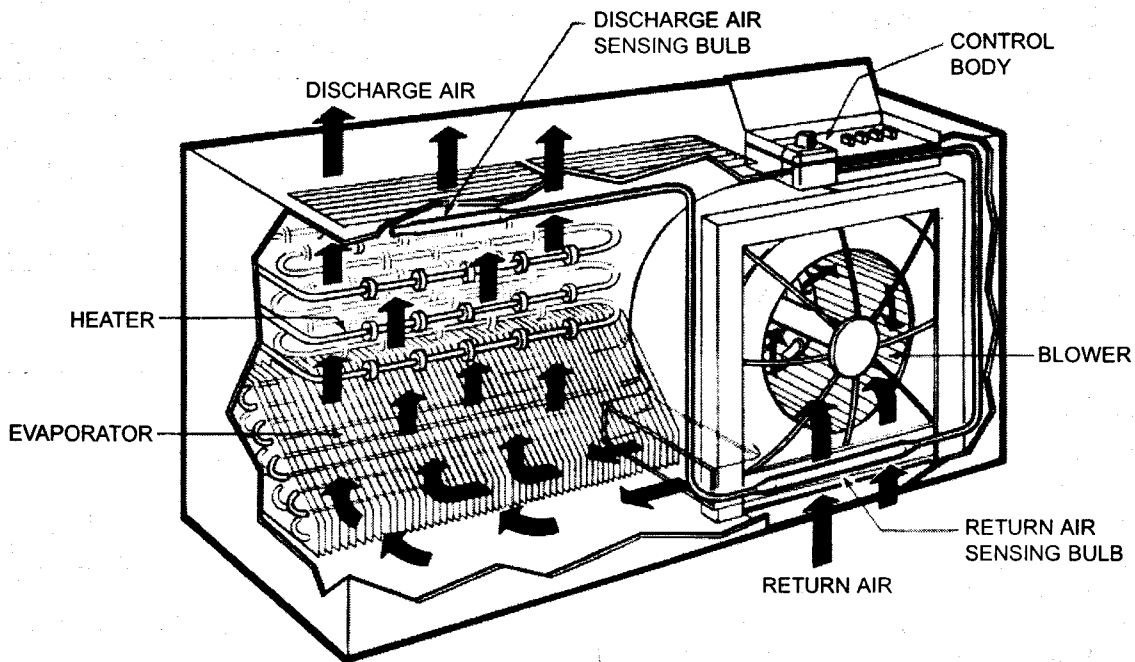


Figure 4. Sensing Bulbs



IMPORTANT

To assure proper control response, make sure all cracks and leaks are properly sealed between the unit shroud and wall installation. Any outside air reaching the control bulb from poor unit installation will affect its temperature, causing excessive heating or cooling operation. Caulk installation if necessary.

Figure 5. Capillary Installation

WIRING

TERMINAL DESIGNATIONS

The C17 or C22 thermostat has two SPDT switches which are electrically isolated from each other for automatic or separate manual heat/cool changeover. The heating switch is called Stage A and is identified by terminals 4, 5 and 6.

When using heating switch (Stage A), terminal 2 is common to terminals 1 and 3 (See Figures 6 and 7).

When using cooling switch (Stage B), terminal 5 is common to terminals 4 and 6 (See Figures 6 and 7).

In applications covered in this Instruction Sheet, terminals 1 and 6 are not used. Thus, heating terminals are 2 and 3 which CLOSE ON TEMPERATURE DROP. Cooling terminals are 5 and 4 which CLOSE ON TEMPERATURE RISE (See Figures 6 and 7).

ELECTRICAL RATINGS

C17-9043 and C22-2502

C17 and C22 Switch Terminal	Connects to
2	Power supply for heat and cool circuit
3	Heating load
4	Cooling load
5	Jumper to Terminal 2

AUTOMATIC CHANGEOVER, TWO STAGE SWITCHING

Connect jumper wire between terminals 2 and 5 on C17 or C22 control. This provides power to terminal 5 for the separate heating and cooling functions. See Figure 6.

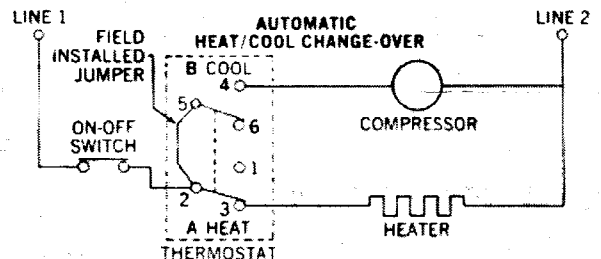


Figure 6. C/DF Two-Stage Switching With Automatic Changeover

MANUAL CHANGEOVER, TWO STAGE SWITCHING

Connect jumper wire between terminals 2 and 5 of C17 or C22 control. This provides power to terminal 5 for the separate heating and cooling functions. See Figure 7.

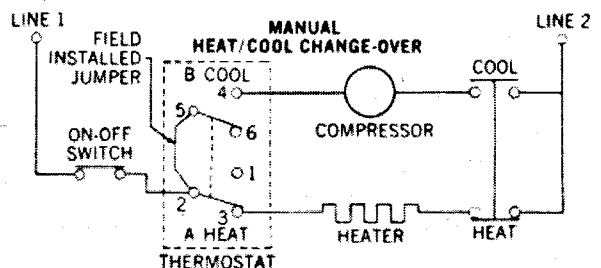


Figure 7. C/DF Two-Stage Switching With Manual Changeover for Separate Heat/Cool

CONVERTING MANUAL SINGLE-STAGE TO MANUAL TWO-STAGE SWITCHING

Either C17 or C22 control can be used for converting a manual single-stage heat/cool system to a manual two-stage switching for separate heating and cooling control functions. Rewire unit to conform to Figure 7 for Manual Two-Stage Control.

SPECIFICATIONS

Single-Stage or Two-Stage Automatic/Manual Heat/Cool Changeover

Code No.	Switch Action	TEMPERATURE RANGE F/C				RETURN AIR		DISCHARGE AIR	
		HEATING		COOLING		Capillary inch/cm	Bulb inch/cm	Capillary inch/cm	Bulb inch/cm
		Low Cut-In	High Cut-Out	Low Cut-Out	High Cut-In				
C17-9043	Two SPDT	59°F	77°F	68°F	86°F	36"	3/8" x 8 1/4"	36"	5/32" x 3 1/4"
	1-2, 4-5 close on temp. rise	15°C	25°C	20°C	30°C	91.4 cm	.95 x 21 cm	91.4 cm	.40 x 8.25 cm
C22-2502	Two SPDT	59°F	78°F	68°F	87°F	36"	3/8" x 6 3/4"	36"	5/32" x 3 1/4"
	1-2, 4-5 close on temp. rise.	15°C	25.6°C	20°C	30.6°C	91.4 cm	.95 x 17.1 cm	91.4 cm	.40 x 8.25 cm

Terminals: .25 inch male quick-connect

Parts Package: Mounting Studs (2)
Mounting Screws (2)

Dial Shaft Extensions (2) or Plastic Dial Adapters (7)

Knob Spring Clip (1) C17-9043 Only
Bulb Clamps (2)
Jumper Wire (1)

ELECTRICAL RATINGS

C17-9043 and C22-2502

Voltage AC	Full Load Amp	Locked Rotor Amp	Noninductive Amp
240	20	80	25
277	16	60	20

Pilot Duty: C17-9043 24 VA at 240 VAC
C22-2502 240 VA at 277 VAC

OUTLINE DIMENSIONS

All dimensions in inches.

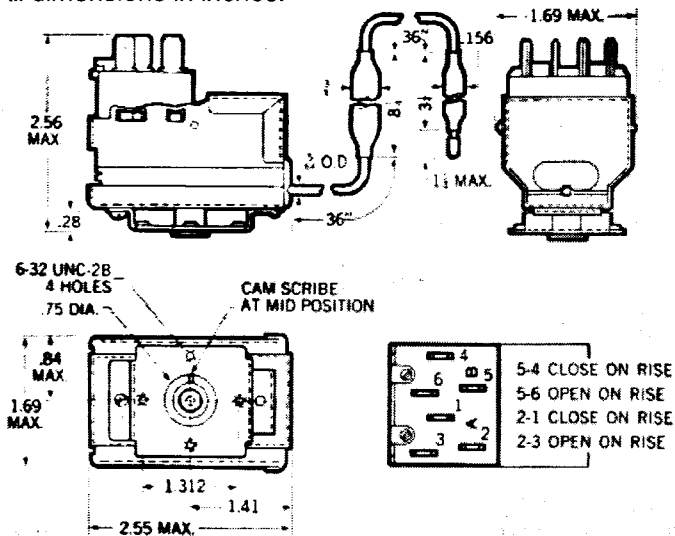


Figure 8. C17-9043

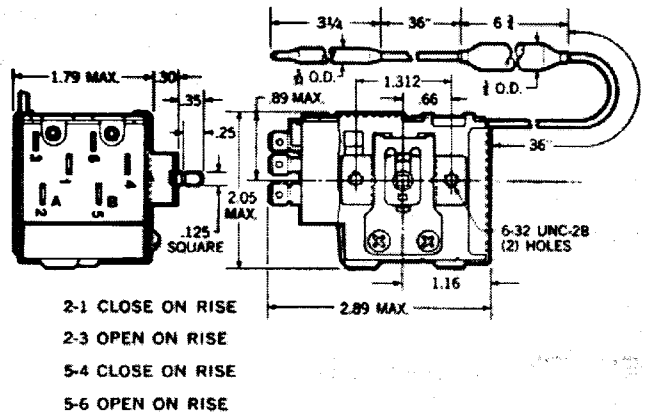


Figure 9. C22-2502



RANCO

CONTROLS DIVISION 8115 U.S. Route 42 North, Plain City, Ohio 43064 U.S.A.

Ranco is a multi-national manufacturer of environmental comfort, convenience and safety control devices, and systems automatically regulating temperature pressure time, current, flow and humidity.

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