



CTL036 ELECTRONIC TEMPERATURE CONTROL CONVERSION KIT INSTALLATION MANUAL

This manual outlines the procedures necessary to mount and wire the electronic temperature control conversion kits per specific JEWETT Model. Refer to the section below that pertains to the model of refrigerator that you are installing the control on.

REFER TO	KITK #	MODEL
Section I	A	BBR17-55, CR25-55, LR17-55 & PR17-55
Section II	B	CT1, MFC5 & UC5B
Section III	C	BB1 & BR1
Section IV	D	BB2 & BR2
Section V	E	BBWM2-10 & WM2-10

DANGER! DO NOT DRILL INTO THE CABINET, ELECTRICAL WIRES WITHIN THE INSULATION MAY BE STRUCK CAUSING AN ELECTRICAL SHORT!

SECTION I

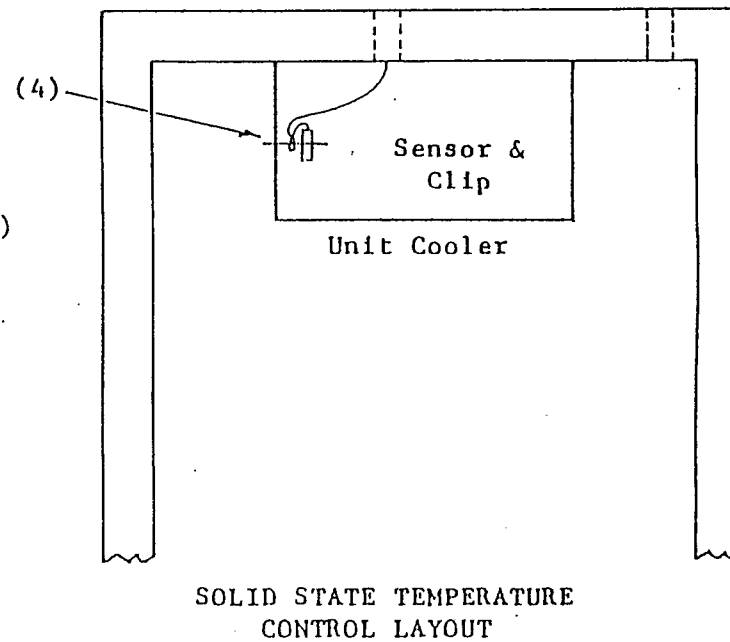
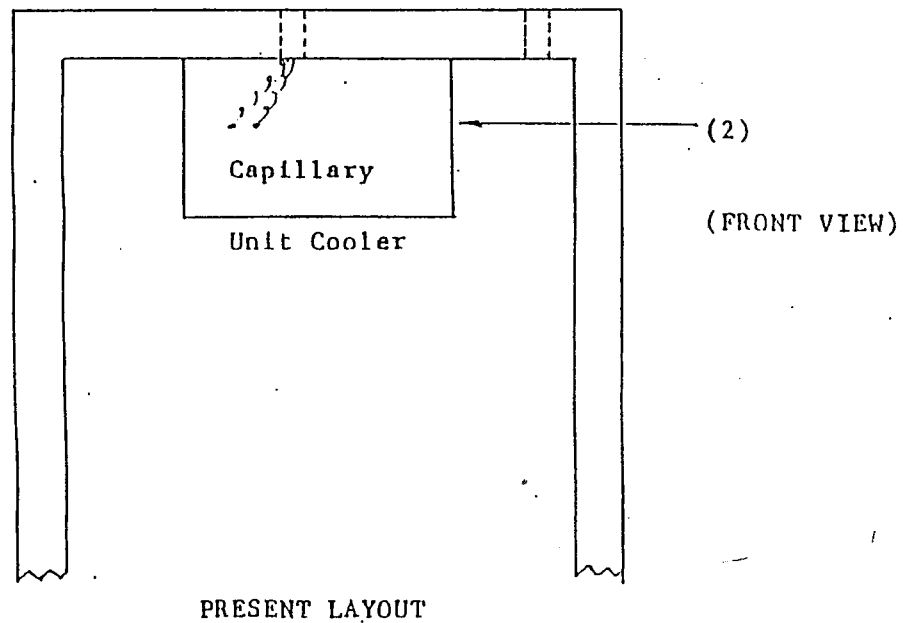
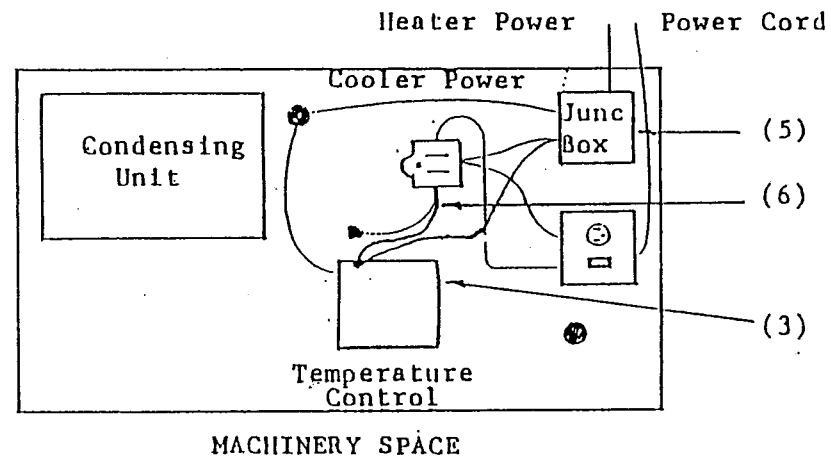
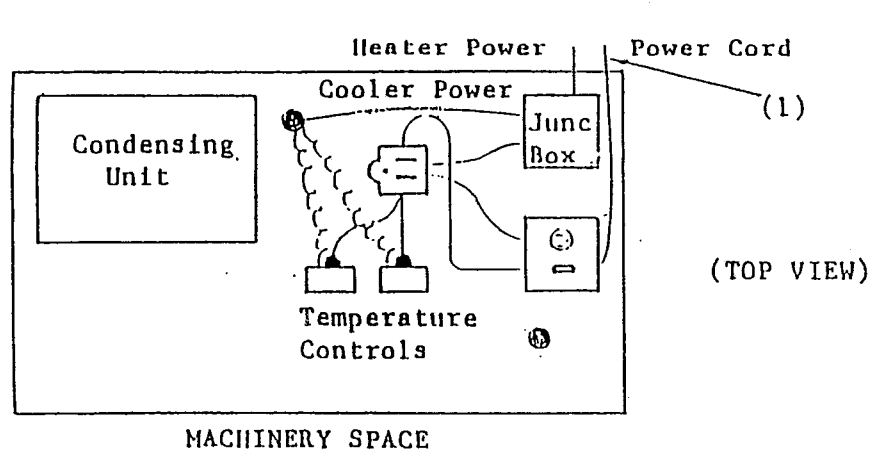
BBR17-55, LR17B-55B, PR17B-55B, CR25B-55B

- (1) Disconnect power.
- (2) Remove the present capillary tube control(s) and mounting bracket(s) from the refrigerator. To do so, the unit cooler fan face must be removed. Note the route of the control capillary because the electronic temperature control sensor wire will use the same route.
- (3) Install the electronic temperature control in the compressor compartment at the top of the refrigerator cabinet using the double sided tape on the back of the control case. **IMPORTANT!** To assure suitable adhesion of the tape, the area where the control is to be mounted should be cleaned thoroughly with alcohol.
- (4) Route the sensor wires along the same path of the removed capillary as noted in step 2. *Mount the temperature sensor vertically, centered, on the left inside wall of the unit cooler by drilling a 3/16" hole through the unit cooler wall and utilizing the nylon standoff clip. Carefully, reattach the unit cooler fan face, making sure no wires impede the movement of the fan blade. Route the sensor wires into the control and connect them to the screw terminals marked for the sensor on the printed circuit board.
***NOTE: New sensor will no longer be inserted into the fins of the evaporator coil.**
- (5) To power the electronic control, splice into the power supply in the junction box. Route the spliced wires into the electronic control. Using the spade terminals, connect the wires to either the 115V & Common posts or 220V & Common posts of the printed circuit board. Use the correct combination depending on your line voltage.
- (6) To wire the controller relay, cut the square female plug off of one of the old control wires. Using the spade terminals, connect the wires to the N.O. (normally open) and C (common) post on the printed circuit board.
IMPORTANT! Tape the end of the other plug securely as it will no longer be required.
- (7) Turn the "SET POINT" knob to number 6. The numbers are for index only and do not relate to temperature. Turn the "DIFFERENTIAL" knob counter-clockwise to the 2nd mark from full counter-clockwise position.
- (8) The refrigerator is now ready for operation.

NOTE: Further adjustments may be required, see last page for control setting instructions.

MECHANICAL LAYOUT

BBR17-55, LR17-55B, PR17-55B CR25-55B



SECTION II

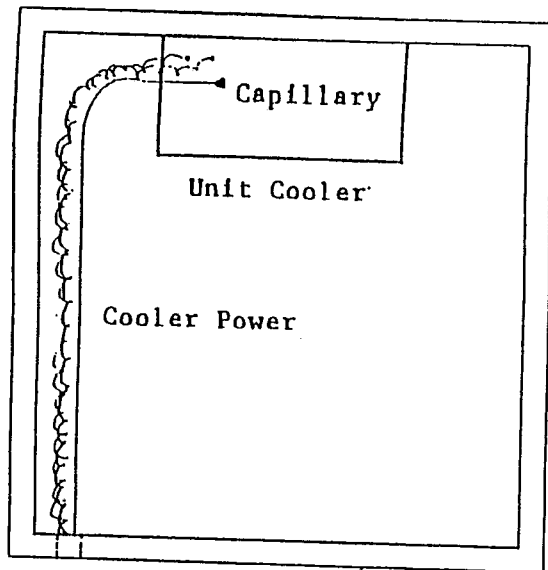
CT1, UC5B & MFC5

- (1) Disconnect power.
- (2) Remove the present capillary tube control(s) and mounting bracket(s) from the refrigerator. To do so, the unit cooler fan face must be removed. Note the route of the control capillary because the electronic temperature control sensor wire will use the same route.
- (3) Install the electronic temperature control in the compressor compartment at the bottom of the refrigerator cabinet, on the right hand wall using the double sided tape on the back of the control case. **IMPORTANT!** To assure suitable adhesion of the tape, the area where the control is to be mounted should be cleaned thoroughly with alcohol.
- (4) Replace the present wiring harness with the one provided. Locate the long wire with the rubber female plug. Route this wire through the sleeve in the bottom of the cabinet to the unit cooler. Route the sensor along the same path to the unit cooler. Mount the temperature sensor vertically, centered, on the left inside wall of the unit cooler by drilling a 3/16" hole through the unit cooler wall and utilizing the nylon standoff clip. Carefully, reattach the unit cooler fan face, making sure no wires impede the movement of the fan blade. Route the sensor wires into the control and connect them to the screw terminals marked for the sensor on the printed circuit board.
***NOTE: New sensor will no longer be inserted into the fins of the evaporator coil.**
- (5) To power the control, locate the wire that exits the harness block with the power cord and route this wire into the control. Using the spade terminals, connect the wires to either the 115V & Common posts or the 220V & Common posts on the printed circuit board. Use the correct combination depending on your line voltage.
- (6) Connect the last two conductor wire with spade terminals to the N.O. & Common connections on the control board.
- (7) Turn the "SET POINT" knob to number 6. The numbers are for index only and do not relate to temperature. Turn the "DIFFERENTIAL" knob counter-clockwise to the 2nd mark from full counter-clockwise position.
- (8) The refrigerator is now ready for operation.

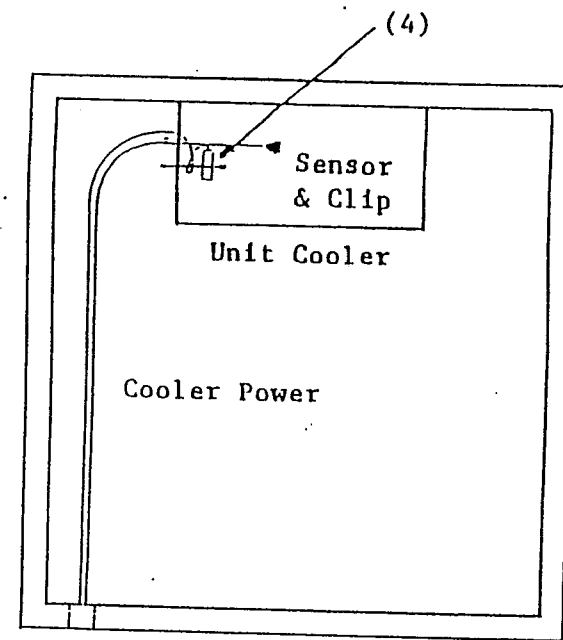
NOTE: Further adjustments may be required, see last page for control setting instructions.

MECHANICAL LAYOUT

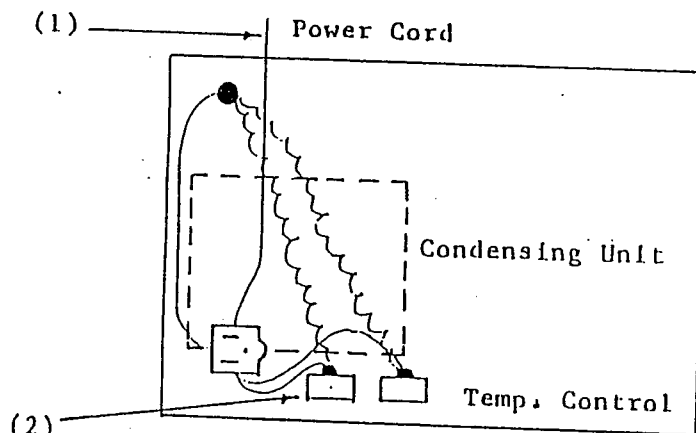
CT1, UC5B, MFC5



(FRONT VIEW)



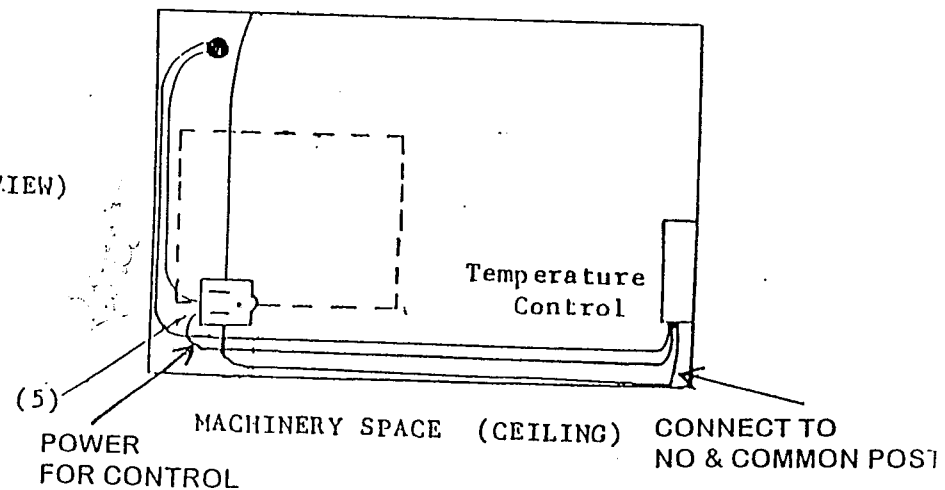
Power Cord



MACHINERY SPACE (CEILING)

PRESENT LAYOUT

(BOTTOM VIEW)



SOLID STATE TEMPERATURE
CONTROL LAYOUT

REV. 7/97

PRF138

SECTION III

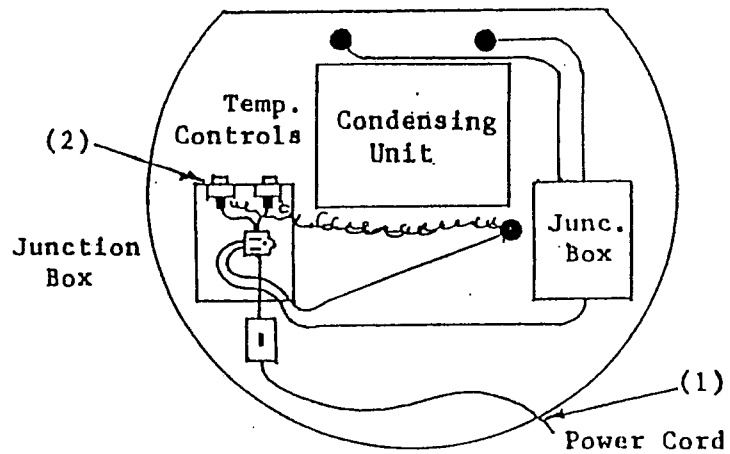
BB1 & BR1

- (1) Disconnect power.
- (2) Remove the present capillary tube control(s) and mounting bracket(s) from the refrigerator. To do so, the unit cooler fan face must be removed. Note the route of the control capillary because the electronic temperature control sensor wire will use the same route.
- (3) Install the electronic control in the compressor compartment on top of the refrigerator. Fasten the control to the wood top using the two #10 X 3/4" screws provided.
- (4) Route the control sensor down the access sleeve to the unit cooler. Mount the temperature sensor vertically, centered, on the left inside wall of the unit cooler by drilling a 3/16" hole through the unit cooler wall and utilizing the nylon standoff clip. Carefully, reattach the unit cooler fan face, making sure no wires impede the movement of the fan blade. Route the sensor wires into the control and connect them to the screw terminals marked for the sensor on the printed circuit board.
***NOTE: New sensor will no longer be inserted into the fins of the evaporator coil.**
- (5) To power the controller, splice into the power supply in the junction box. Route the spliced wires into the electronic control. Using the spade terminals, connect the wires to either the 115V & Common posts or the 220V & Common posts on the printed circuit board. Use the correct combination depending on your line voltage.
- (6) To wire the controller relay, cut the square female plug off of one of the old control wires. Using the spade terminals, connect the wires to the N.O. (normally open) and C (common) post on the printed circuit board.
IMPORTANT! Tape the end of the other plug securely as it will no longer be required.
- (7) Turn the "SET POINT" knob to number 6. The numbers are for index only and do not relate to temperature. Turn the "DIFFERENTIAL" knob counter-clockwise to the 2nd mark from full counter-clockwise position.
- (8) The refrigerator is now ready for operation.

NOTE: Further adjustments may be required, see last page for control setting instructions.

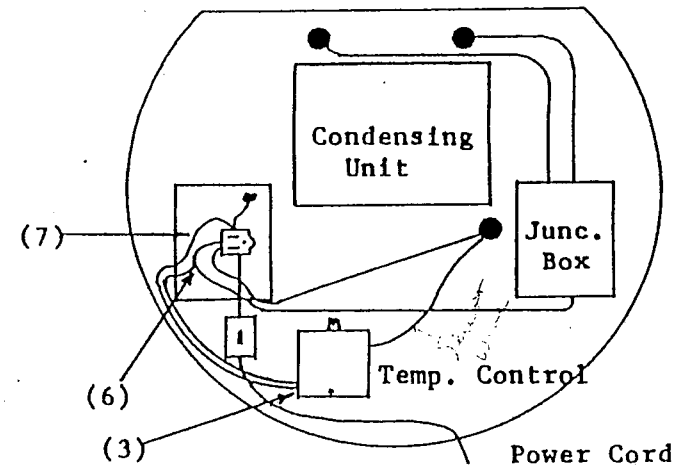
MECHANICAL LAYOUT

BB1 & BR1

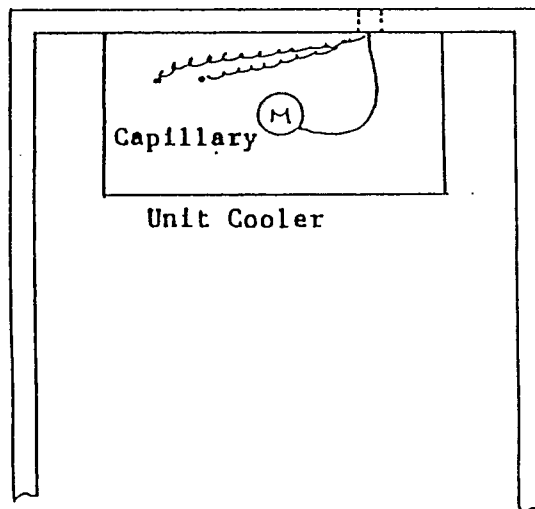


MACHINERY SPACE

(TOP VIEW)

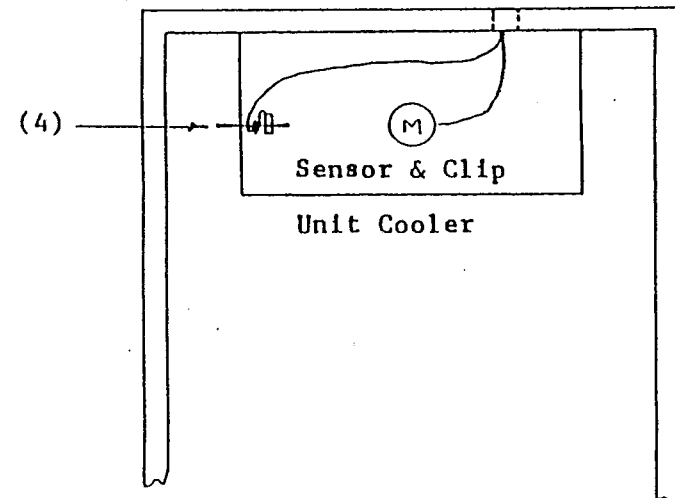


MACHINERY SPACE



PRESENT LAYOUT

(FRONT VIEW)



SOLID STATE TEMPERATURE
CONTROL LAYOUT

SECTION IV

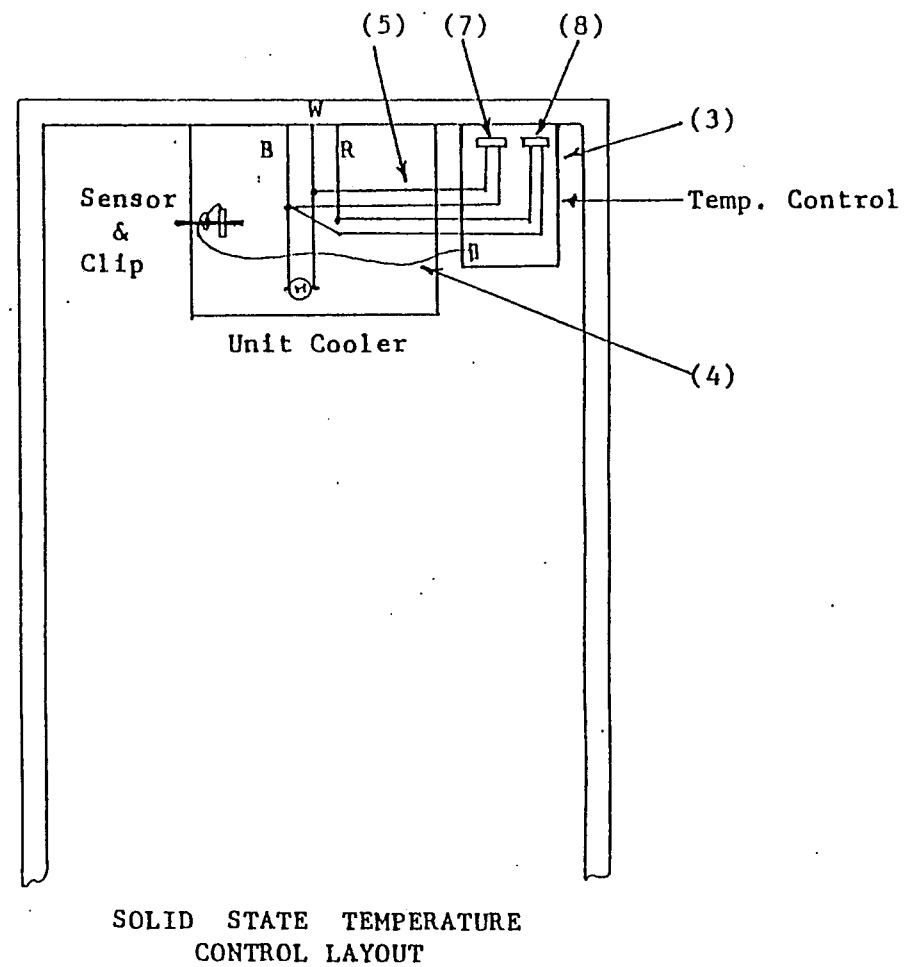
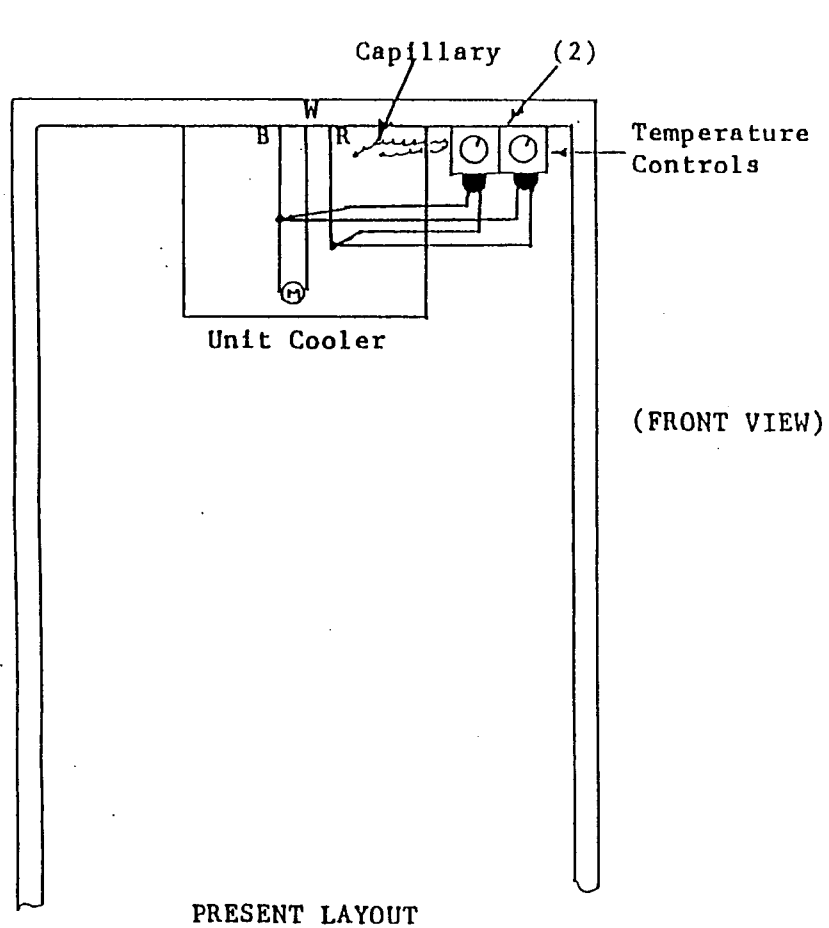
BB2, BR2

- (1) Disconnect power.
- (2) Remove the present capillary tube control(s) and mounting bracket(s) from the refrigerator. To do so, the unit cooler fan face must be removed. Note the route of the control capillary because the electronic temperature control sensor wire will use the same route.
- (3) Using the two pieces of two-way tape (supplied), mount the new CTL036 control to the ceiling of the interior where the cap tube controls had been located.
IMPORTANT! To assure suitable adhesion of the tape, the area where the control is to be mounted should be cleaned thoroughly with alcohol.
- (4) Route the sensor wire into the unit cooler. Mount the temperature sensor vertically, centered, on the left inside wall of the unit cooler by drilling a 3/16" hole through the unit cooler wall and utilizing the nylon standoff clip. Route the sensor wires into the control and connect them to the screw terminals marked for the sensor on the printed circuit board.
***NOTE: New sensor will no longer be inserted into the fins of the evaporator coil.**
- (5) To power the control, splice into the power supply to the fan inside the unit cooler. Route the spliced wires into the electronic control. Using the spade terminals, connect the wires to either the 115V & Common posts or the 220V & Common posts on the printed circuit board. Use the correct combination depending on your line voltage.
- (6) To wire the controller relay, cut the square female plug off of one of the old control wires. Using the spade terminals, connect the wires to the N.O. (normally open) and C (common) post on the printed circuit board.
IMPORTANT! Tape the end of the other plug securely as it will no longer be required. Carefully, reattach the unit cooler fan face, making sure no wires impede the movement of the fan blade.
- (7) Turn the "SET POINT" knob to number 6. The numbers are for index only and do not relate to temperature. Turn the "DIFFERENTIAL" knob counter-clockwise to the 2nd mark from full counter-clockwise position.
- (8) The refrigerator is now ready for operation.

NOTE: Further adjustments may be required, see last page for control setting instructions.

MECHANICAL LAYOUT

BB2, BR2



SECTION V

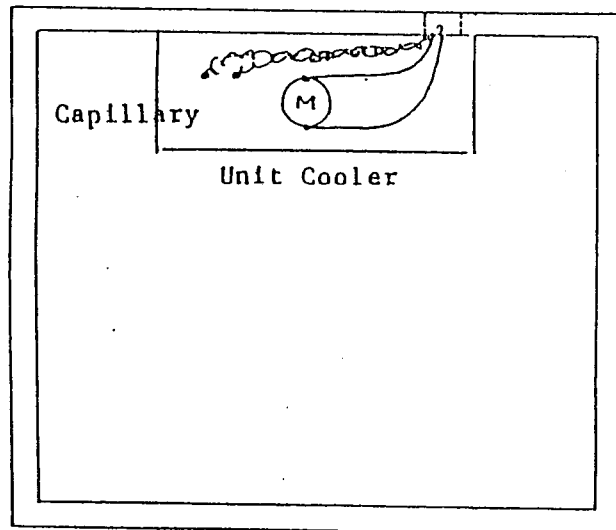
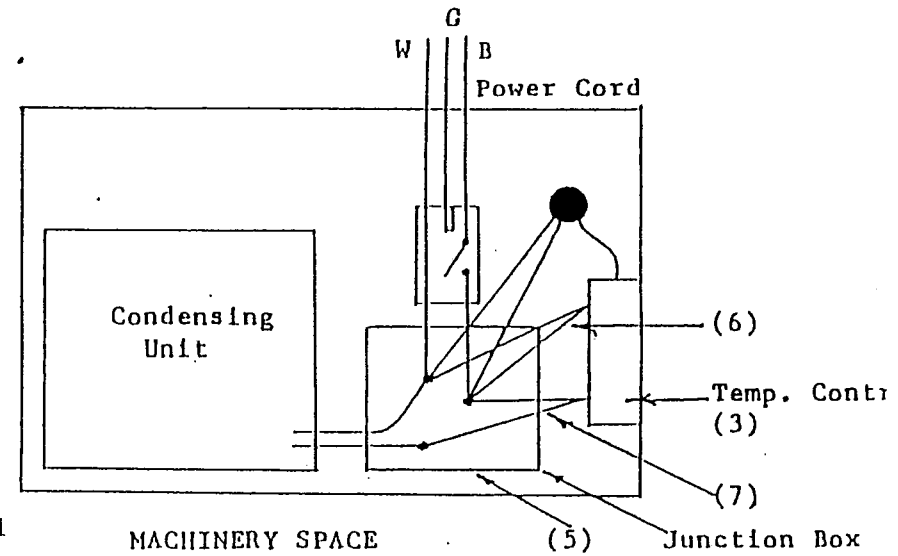
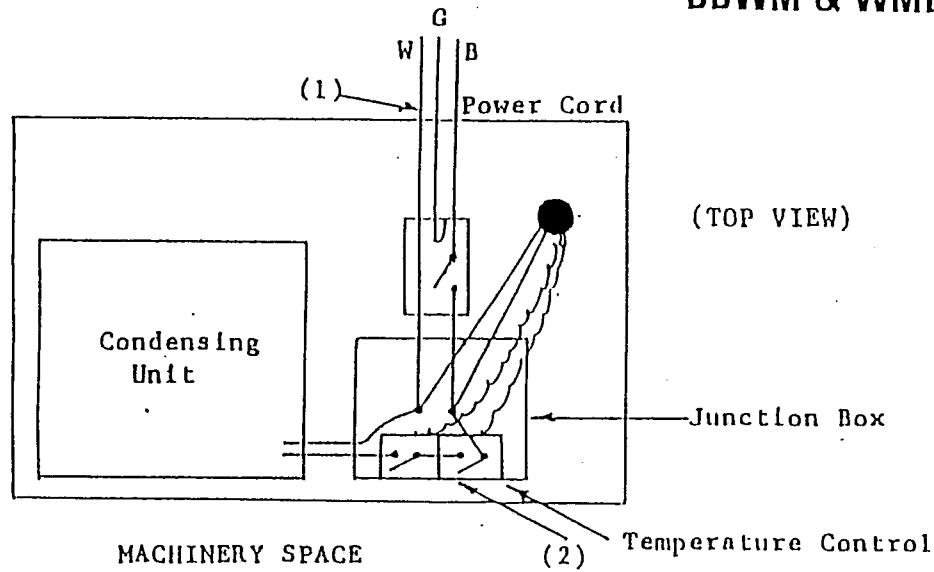
BBWM & WMB

- (1) Disconnect power.
- (2) Remove the present capillary tube control(s) and mounting bracket(s) from the refrigerator. To do so, the unit cooler fan face must be removed. Note the route of the control capillary because the electronic temperature control sensor wire will use the same route.
- (3) Install the electronic temperature control in the compressor compartment using the double sided tape on the back of the control case. **IMPORTANT!** To assure suitable adhesion of the tape, the area where the control is to be mounted should be cleaned thoroughly with alcohol.
- (4) Route the control sensor through the access sleeve to the unit cooler. Mount the temperature sensor vertically, centered, on the left inside wall of the unit cooler by drilling a 3/16" hole through the unit cooler wall and utilizing the nylon standoff clip. Carefully, reattach the unit cooler fan face, making sure no wires impede the movement of the fan blade. Route the sensor wires into the control and connect them to the screw terminals marked for the sensor on the printed circuit board.
***NOTE: New sensor will no longer be inserted into the fins of the evaporator coil.**
- (5) To power the controller, splice into the power supply in the junction box. Route the spliced wires into the electronic control. Using the spade terminals, connect the wires to either the 115V & Common posts or the 220V & Common posts on the printed circuit board. Use the correct combination depending on your line voltage.
- (6) To wire the controller relay, cut the square female plug off of one of the old control wires. Using the spade terminals, connect the wires to the N.O. (normally open) and C (common) post on the printed circuit board.
IMPORTANT! Tape the end of the other plug securely as it will no longer be required.
- (7) Turn the "SET POINT" knob to number 6. The numbers are for index only and do not relate to temperature. Turn the "DIFFERENTIAL" knob counter-clockwise to the 2nd mark from full counter-clockwise position.
- (8) The refrigerator is now ready for operation.

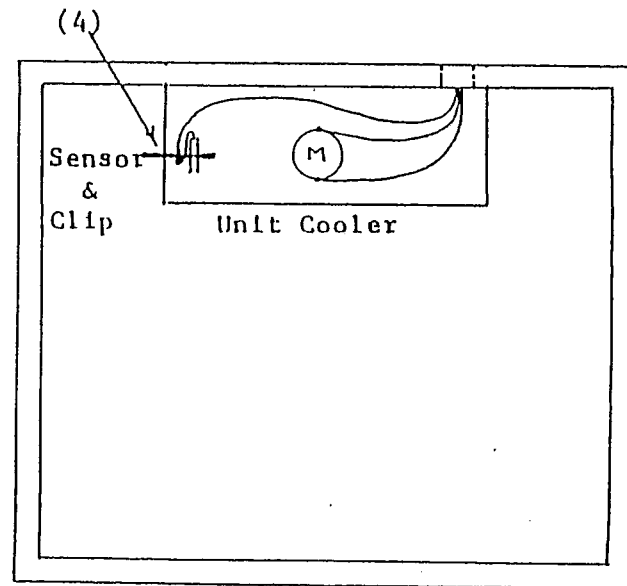
NOTE: Further adjustments may be required, see last page for control setting instructions.

MECHANICAL LAYOUT

BBWM & WMB



PRESENT LAYOUT



SOLID STATE TEMPERATURE
CONTROL LAYOUT

INSTRUCTIONS FOR SETTING SOLID STATE TEMPERATURE CONTROL - CTL036

OPERATION

This control is a single stage, solid state temperature control. It utilizes a thermistor sensor, a setpoint dial and a differential dial to drive a relay that closes the circuit on an increase in temperature and opens the circuit on a decrease in temperature. This controls the "cut-in" and "cut-out" of the condensing unit.

SETPOINT DIAL

Turning the dial knob changes the "cut-in" and "cut-out" setting, clockwise for warmer, counter-clockwise for colder.

DIFFERENTIAL DIAL

NOTE: THE FOLLOWING ADJUSTMENTS ARE TO BE MADE BY AUTHORIZED PERSONNEL ONLY.

Turning the dial knob changes the "cut-in" only, the "cut-out" remains the same. Turn the dial knob clockwise for wider differential and counter-clockwise for a narrower differential.

TEMPERATURE SETTINGS

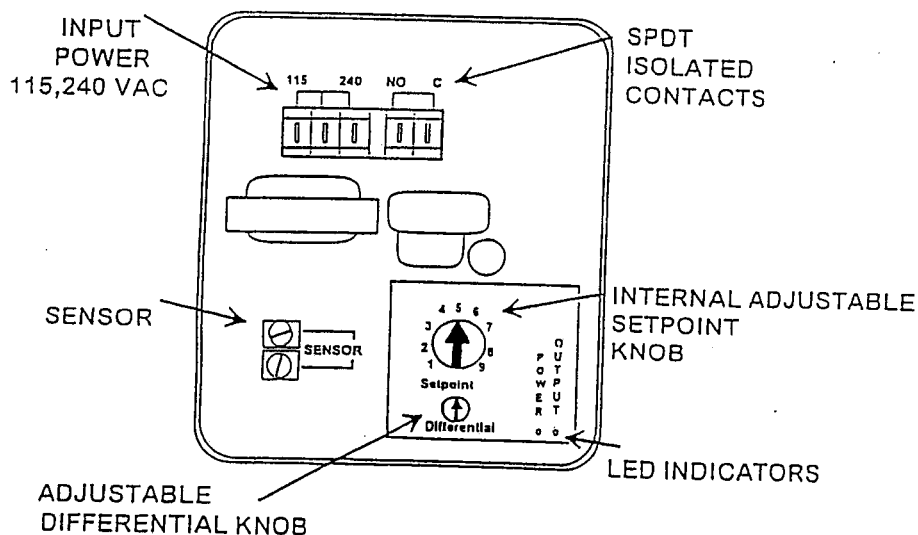
CUT-IN

5° C. (41° F.)

CUT-OUT

1.5° C. (35° F.)

Place a thermocouple or thermistor from a remote reading thermometer in the return air flow in front of the unit cooler fan guard. Make sure that it does not touch any metal surface. Adjust the setpoint and differential dials as needed. Sufficient time should be allowed between adjustments so that the system can balance out.



Problem	Possible Cause	What to Check
"PWR" Lamp not Lit	No AC Power	AC Supply and Power Wiring
"OUTPUT" Lamp Permanently ON or OFF	Sensor Temperature Above or Below Setpoint Range. or Sensor or Sensor Wiring Shorted or Open.	Disconnect sensor wiring from Terminal Block and measure resistance across wires with an ohmmeter. Use the Temp./Resistance Chart to calculate sensor temperature and compare with actual temperature.
"OUTPUT" Lamp working but device not operating.	Incorrect wiring of output relay contacts, or No supply to load.	Output wiring and supply to load.

Temperature vs. Resistance (°F vs. ohms)
10,000 ohm Thermistor @ 77°F

°F	OHMS	°F	OHMS	°F	OHMS	°F	OHMS	°F	OHMS	°F	OHMS	°F	OHMS
-28	218281	9	64449	46	22153	83	8653	120	3758	157	1786	194	917
-27	210723	10	62499	47	21573	84	8449	121	3679	158	1753	195	901
-26	203454	11	60614	48	21000	85	8250	122	3602	159	1720	196	886
-25	196462	12	58793	49	20445	86	8057	123	3527	160	1688	197	871
-24	189735	13	57033	50	19906	87	7869	124	3453	161	1655	198	857
-23	183263	14	55332	51	19383	88	7685	125	3382	162	1625	199	842
-22	177025	15	53687	52	18876	89	7507	126	3312	163	1595	200	828
-21	171041	16	52096	53	18383	90	7333	127	3244	164	1566	201	814
-20	165271	17	50558	54	17905	91	7165	128	3177	165	1537	202	801
-19	159716	18	49071	55	17440	92	7000	129	3112	166	1509	203	788
-18	154368	19	47633	56	16990	93	6839	130	3048	167	1481	204	775
-17	149218	20	46241	57	16553	94	6683	131	2986	168	1454	205	762
-16	144258	21	44895	58	16128	95	6531	132	2925	169	1427	206	749
-15	139481	22	43593	59	15715	96	6383	133	2866	170	1402	207	737
-14	134878	23	42333	60	15314	97	6238	134	2808	171	1378	208	725
-13	130444	24	41113	61	14925	98	6098	135	2752	172	1351	209	713
-12	126172	25	39933	62	14548	99	5961	136	2697	173	1327	210	702
-11	122054	26	38791	63	14180	100	5827	137	2643	174	1303	211	690
-10	118085	27	37625	64	13823	101	5697	138	2590	175	1280	212	679
-9	114260	28	36514	65	13477	102	5570	139	2538	176	1257	213	668
-8	110571	29	35577	66	13140	103	5446	140	2488	177	1235	214	658
-7	107015	30	34574	67	12812	104	5326	141	2439	178	1213	215	647
-6	103586	31	33602	68	12494	105	5208	142	2391	179	1191	216	637
-5	100278	32	32660	69	12185	106	5094	143	2344	180	1170	217	627
-4	97088	33	31748	70	11884	107	4982	144	2298	181	1150	218	617
-3	94010	34	30864	71	11592	108	4873	145	2253	182	1129	219	607
-2	91041	35	30008	72	11308	109	4767	146	2209	183	1110	220	597
-1	88176	36	29179	73	11032	110	4663	147	2166	184	1090	221	588
0	85410	37	28375	74	10763	111	4562	148	2124	185	1071	222	579
1	82742	38	27597	75	10502	112	4464	149	2083	186	1053	223	570
2	80166	39	26841	76	10248	113	4368	150	2043	187	1035	224	561
3	77679	40	26109	77	10000	114	4274	151	2004	188	1017	225	552
4	75277	41	25400	78	9760	115	4183	152	1966	189	999	226	543
5	72959	42	24712	79	9526	116	4094	153	1928	190	982	227	535
6	70719	43	24045	80	9299	117	4006	154	1891	191	965	228	527
7	68557	44	23399	81	9078	118	3922	155	1856	192	949	229	519
8	66467	45	22771	82	8862	119	3839	156	1820	193	933	230	510

Important

For your future reference and when contacting the factory, please have the following information readily available:

Model Number: _____

Serial Number: _____

Date Purchased: _____

The above information can be found on the dataplate attached to the equipment. If available, please provide the date purchased, the source of purchase (specific agent/rep organization), and purchase order number.

IF YOU NEED ASSISTANCE:

SALES DIVISION

Phone: 828/658-4455
800/879-7767

FAX: 828/645-0363

LABORATORY PARTS and SERVICE

Phone: 800/438-4851

FAX: 828/658-2576

TECHNICAL SUPPORT

Phone: 800/438-4851

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