

INSTALLATION INSTRUCTIONS

CW45 CHILLED WATER COIL

MANUAL 2100-077 REV. C
SUPERSEDES REV. B
FILE VOL. I, TAB 8

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General

The CW45 is an air conditioning cooling coil using chilled water, designed for use with the WPV53, WPVD53, WPV53B, WPV62, WPVD62, and WPV62B water source heat pumps. This manual deals only with the installation and performance of the CW45. Installation of the heat pump unit is detailed in the manual packaged with the heat pump.

The CW45 cooling coil should only be installed by trained refrigeration technicians. These instructions serve as a guide to the technician installing the CW45. They are not intended as a step-by-step procedure with which the mechanically inclined owner can install the unit.

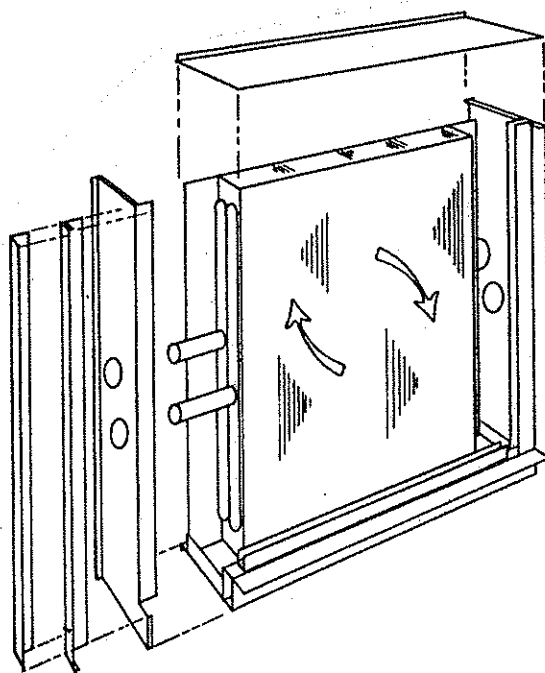
Unpacking

Upon receipt of the equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

Piping Access

The unit is shipped with piping access on the left-hand side of the coil. If it is determined that the installation requires piping access from the right side of the coil, this can be accomplished by removing the left-hand access panel, the enclosure top and the four screws holding the coil. See Figure 1. Remove the two plastic plugs from the right-hand access panel and place them in the holes in the left panel. Turn the coil upside-down so that the piping connections project through the right-hand access panel and reassemble.

FIGURE 1



Filter

The filter for the CW45 is the same filter used for the WPV/WPVD53 and WPV/WPVD62. Obtain the filter from its shipping location in the blower section of the heat pump unit. Remove the filter door of the CW45 enclosure and slide the filter into place. Replace the filter door. The filter frame assembly, packed in the compressor compartment of the heat pump unit, is not required when the CW45 is installed.

Installation (See Figure 2 and 3)

The CW45 mounts on the return air side of the WPV/WPVD water source heat pump. The top flange of the CW45 enclosure is intended to fit under and behind the WPV/WPVD top flange (Detail A, Figure 2), to form an air tight seal. Fasten the coil to the heat pump casing with the six screws in the holes provided in the heat pump casing. Return air duct can now be fitted to the CW45 air opening.

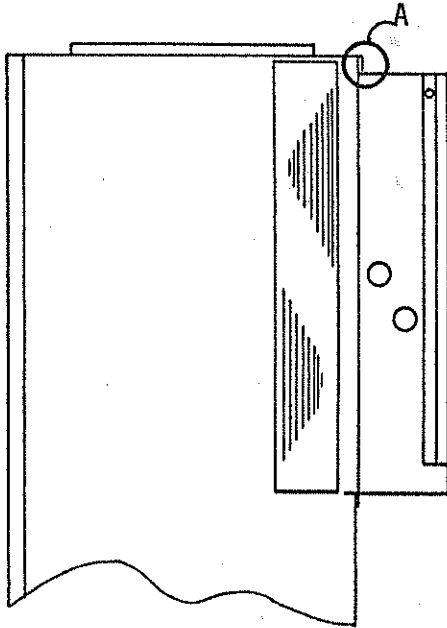


FIGURE 2

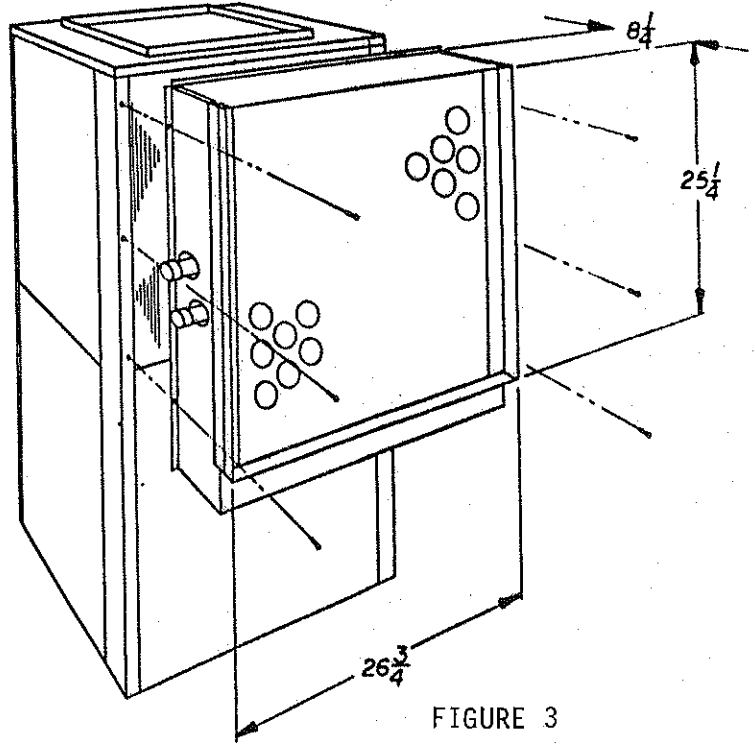


FIGURE 3

Condensate Drain Line

The drain connection is on the bottom of the coil enclosure and is 3/4" FPT. This drain must be trapped and the trap filled with water prior to start up. The drain line contains cold water and should be insulated to prevent condensation.

Drain lines must be installed according to local plumbing codes. It is not recommended that any condensate line be connected to a sewer line.

Water Piping (See Figure 4)

Water connections are 1" N.P.T. Install a solenoid valve (24V coil) and an 8 GPM constant flow valve in the water out pipe. If greater water flow is required, install (2) 6 GPM constant flow valves in parallel for a 12 GPM water flow rate. The water out piping for the CW45 can be connected to the heat pump leaving water pipe.

Electrical Wiring

1. Locating the Changeover Relay--Figure 5

The changeover relay is packed with the CW45 and is required for proper operation of the two units for heating and cooling. Mount the relay on the heat pump partition next to the control panel. Route the factory wires through the wire routing loop and out of the hole provided in the heat pump unit top. All wiring connections are made at the unit 24 volt terminal block.

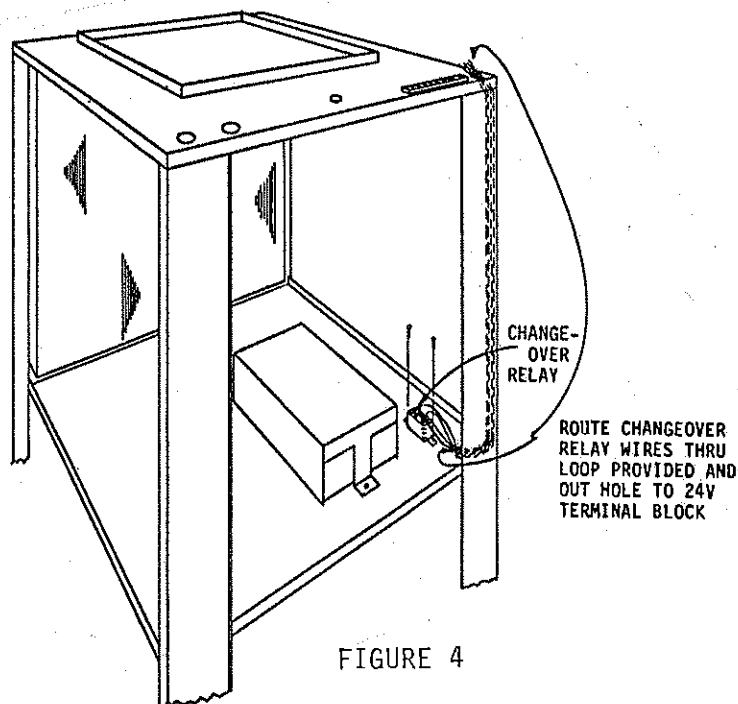


FIGURE 4

2. Wiring the changeover relay to the heat pump thermostat and solenoid valve.

Refer to the wiring diagram for connections. Make wire nut connections, where necessary, inside the unit.

3. When wiring is complete, stick new wiring diagram to inside of control panel cover and replace cover.

Sequence of Operation

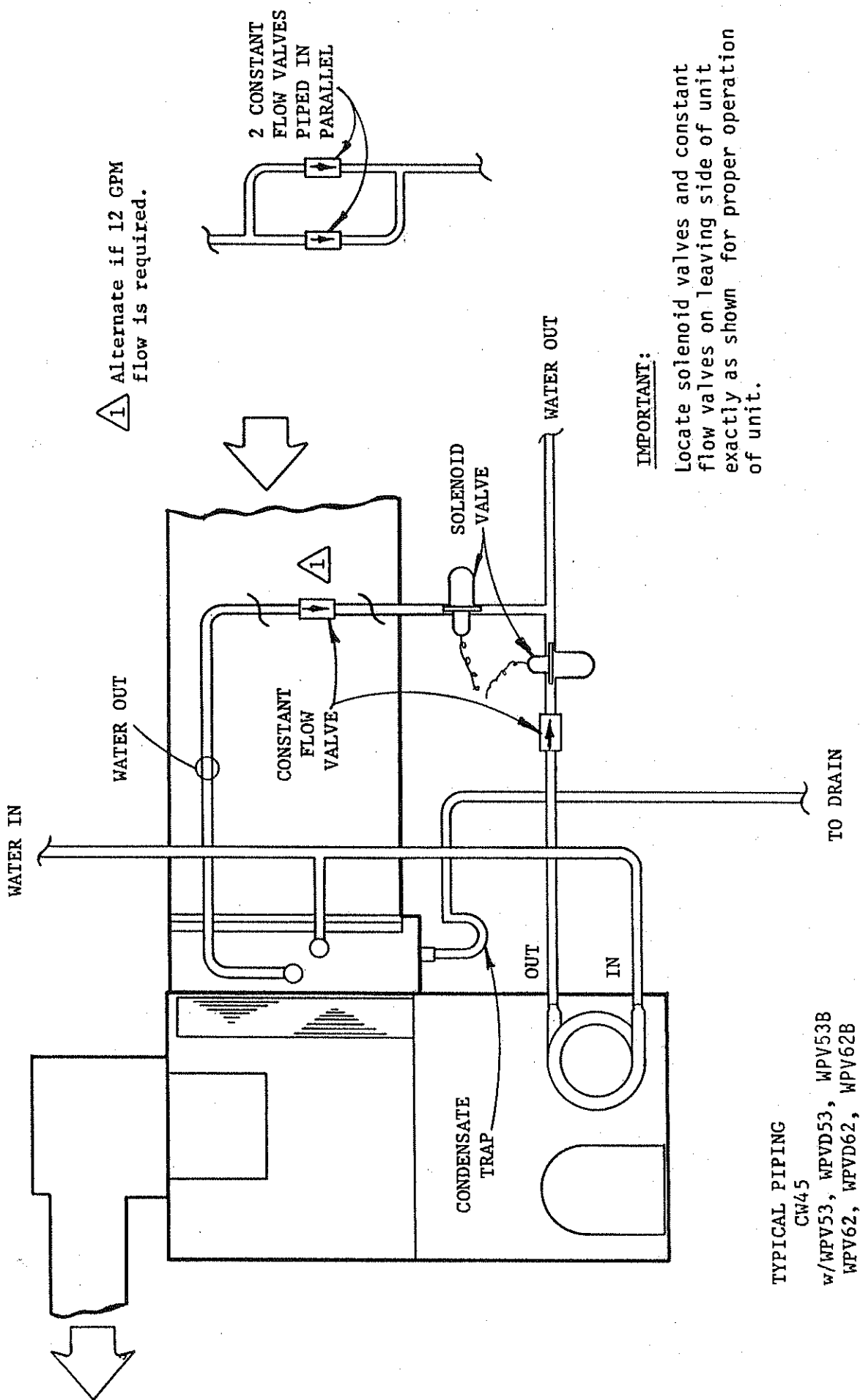
1. Heat Pump Unit--Heating

"Y" circuit of the wall thermostat is routed to the normally closed contacts (5 and 6) of the changeover relay and on to the heat pump unit lockout relay. It follows the normal heating circuit described in the heat pump unit installation manual.

2. CW45 Cooling

"O" circuit of the wall thermostat which is only energized during cooling, is routed through the 24V terminal block to the heat pump reversing valve solenoid and the changeover relay coil. "Y" circuit of the wall thermostat is broken at the normally closed contacts (5 and 6) of the changeover relay, breaking the circuit to the compressor contactor. The compressor will not run.

3. Normally open contacts (2 and 4) of the changeover relay close completing the "Y" circuit to the water solenoid valve. The solenoid valve opens permitting water to flow through the CW45 coil. The unit is cooling with cold water directly from the well.



TYPICAL PIPING
 CW45
 w/MPV53, WPVD53, WPV53B
 MPV62, WPVD62, WPV62B

FIGURE 5

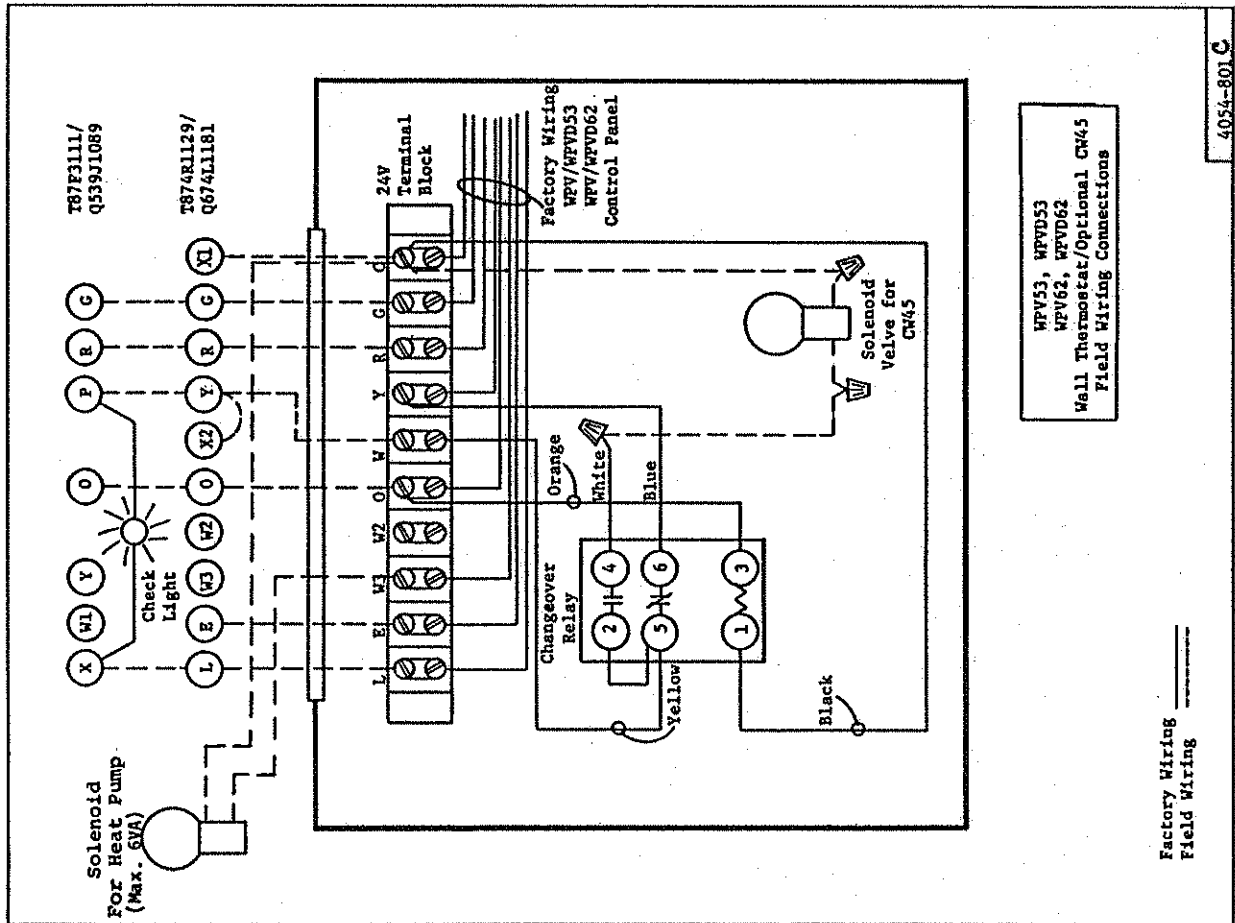
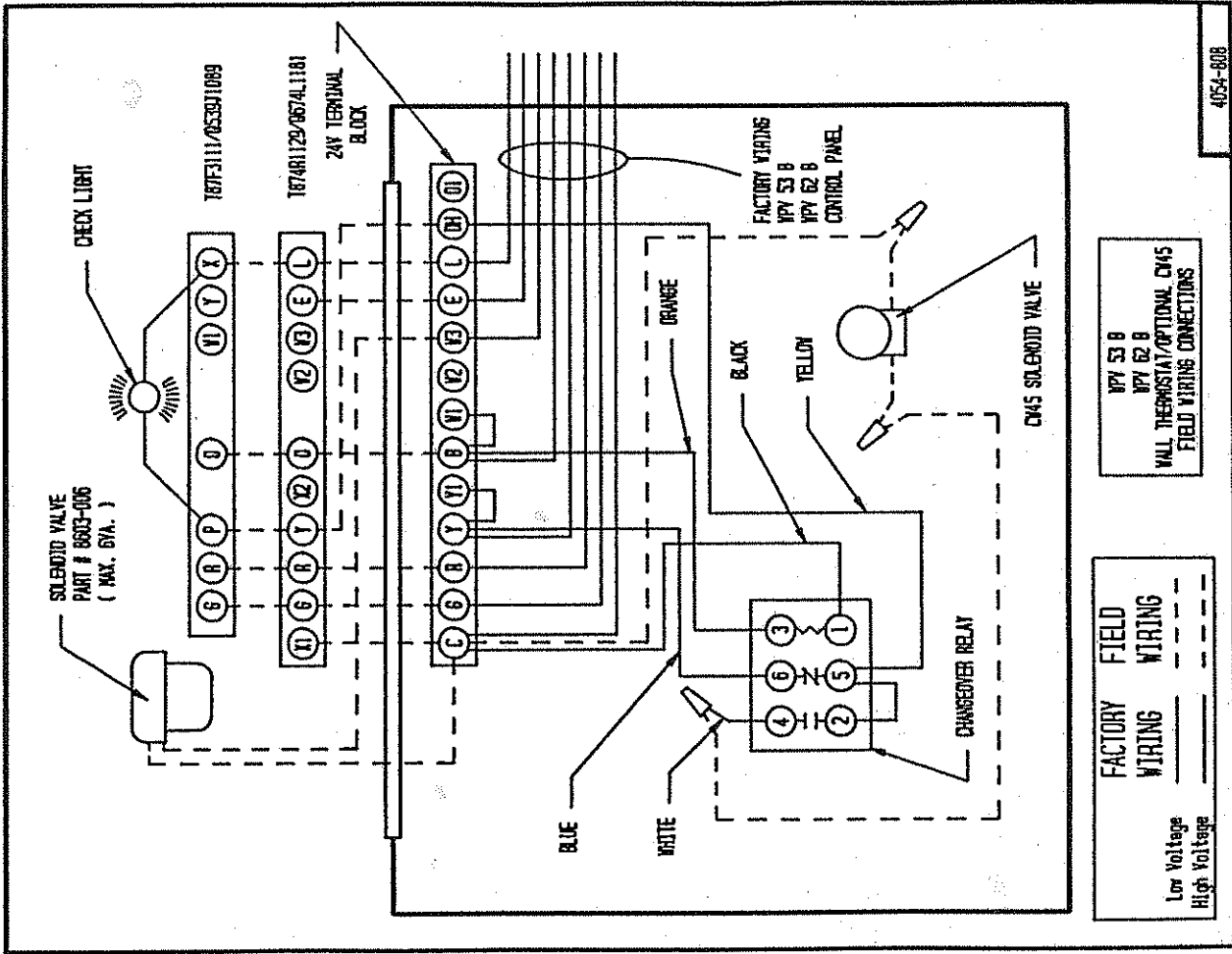
COOLING CAPACITY AND EFFICIENCY RATINGS

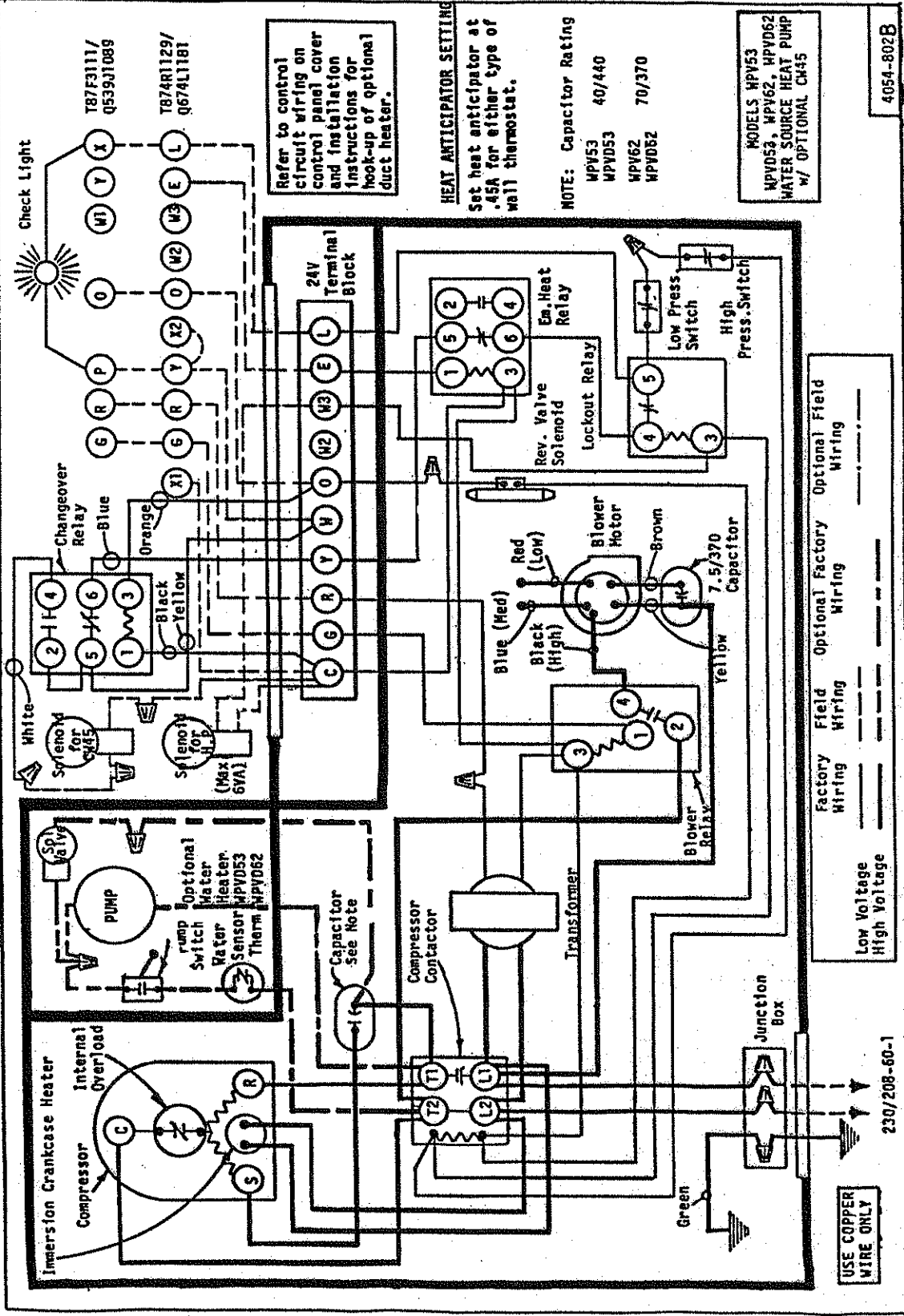
1700 CFM (80 DB/67 WB)							1550 CFM (80 DB/67 WB)						
EWT	GPM	Total Btuh	Sensible Btuh	S/T Ratio	Blower Watts	EER*	EWT	GPM	Total Btuh	Sensible Btuh	S/T Ratio	Blower Watts	EER*
45	8	37,800	30,000	79%	780	30.0	45	8	35,800	28,100	79%	720	29.8
	12	44,900	32,200	72%	780	29.9		12	42,800	30,000	70%	720	29.7
50	8	29,700	27,600	93%	780	21.9	50	8	28,500	25,300	88%	720	23.8
	12	33,600	29,400	88%	780	22.4		12	32,700	26,500	81%	720	22.7
52	8	25,800	25,000	97%	770	20.6	52	8	24,500	22,400	91%	720	20.4
	12	29,800	26,300	88%	780	19.9		12	28,800	23,500	82%	720	20.0

*Includes well pump watts at a rate of 60 watts per GPM. Ex: 8 GPM x 60 Watts = 480 Watts.

INDOOR BLOWER PERFORMANCE CFM--Dry Coil With Filter					
E.S.P. W.C.	Without Optional CW45 Installed			With Optional CW45 Installed	
	High	Med.	Low	High	Med.
0	1920	1780	1600	1920	1750
.10	1880	1750	1580	1880	1710
.20	1830	1720	1550	1830	1670
.30	1810	1680	1540	1750	1630
.40	1750	1630	1500	1700	1570
.50	1650	1570	1440	1610	1520
.60	1580	1500	1400	1550	1450
Model	Rated CFM		Recommended Airflow Range (CFM)		
WPV53 WPVD53 WPV53B	1550		1400 - 1700		
WPV62 WPVD62 WPV62B	1700		1530 - 1830		

CHILLED WATER COIL PRESSURE DROP		
Model CW45		
GPM	PSIG	FT. HD.
8	3.8	8.8
12	9.2	21.4





Refer to control circuit wiring on control panel cover and installation instructions for hook-up of optional duct heater.

HEAT ANTICIPATOR SETTING
 Set heat anticipator at .45A for either type of wall thermostat.

NOTE: Capacitor Rating
 WPV53 40/440
 WPVD53
 WPV62 70/370
 WPVD62

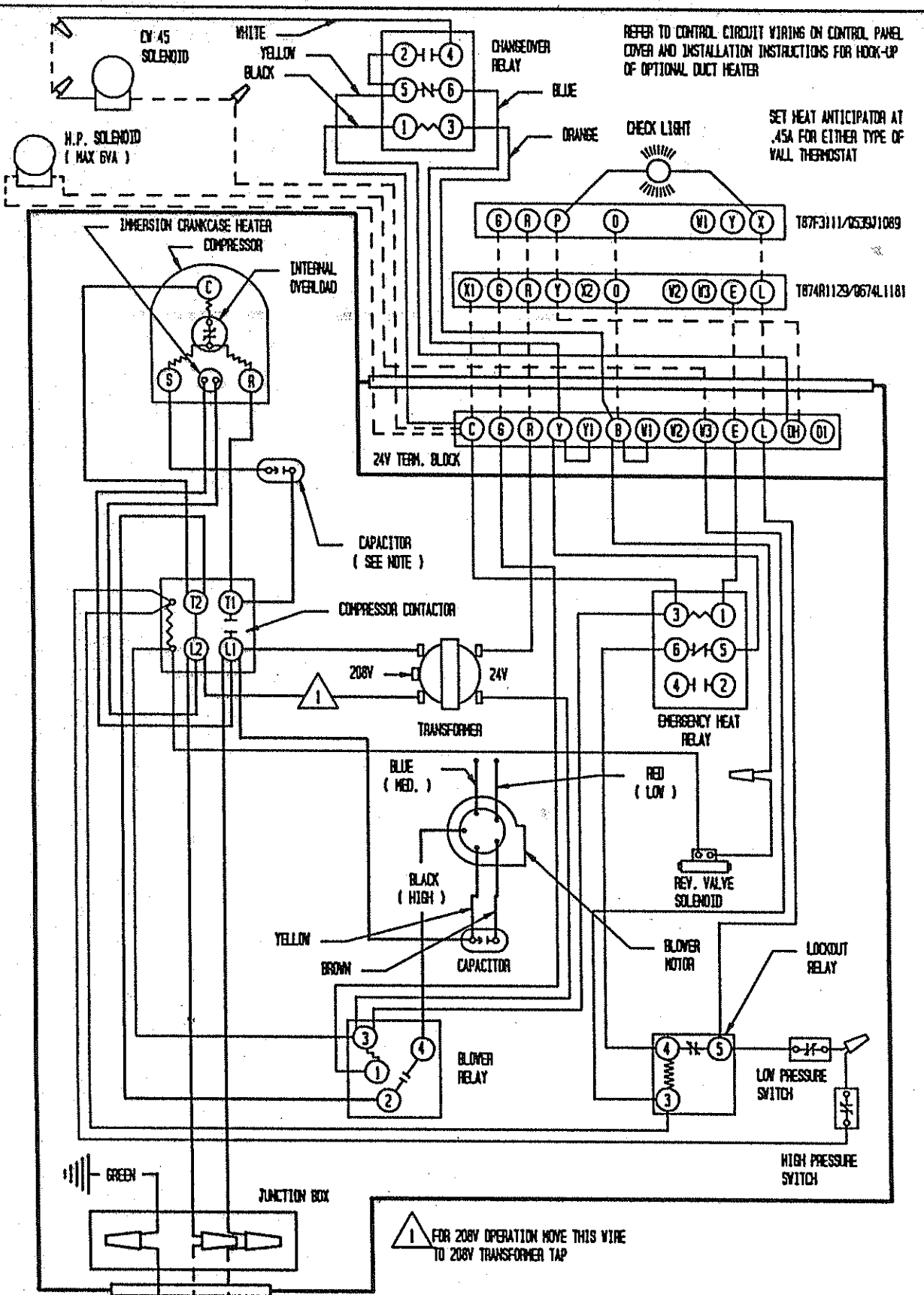
MODELS WPV53
 WPVD53, WPV62, WPVD62
 WATER SOURCE HEAT PUMP
 w/ OPTIONAL C445

4054-802B

Factory Wiring _____
 Field Wiring _____
 Optional Factory Wiring _____
 Optional Field Wiring _____
 Low Voltage _____
 High Voltage _____

230/208-60-1

USE COPPER WIRE ONLY



REFER TO CONTROL CIRCUIT WIRINGS ON CONTROL PANEL COVER AND INSTALLATION INSTRUCTIONS FOR HOOK-UP OF OPTIONAL DUCT HEATER

SET HEAT ANTICIPATOR AT .45A FOR EITHER TYPE OF WALL THERMOSTAT

FOR 208V OPERATION MOVE THIS WIRE TO 208V TRANSFORMER TAP

USE COPPER CONDUCTORS ONLY

230/208 - 60 - 1

	FACTORY WIRING	FIELD WIRING
Low Voltage	_____	-----
High Voltage	_____	-----

CAPACITOR RATINGS		
MODEL	COMPRESSOR	BLOWER
WPV53B	40/440	7.5/370
WPV62B	45/440	7.5/370