

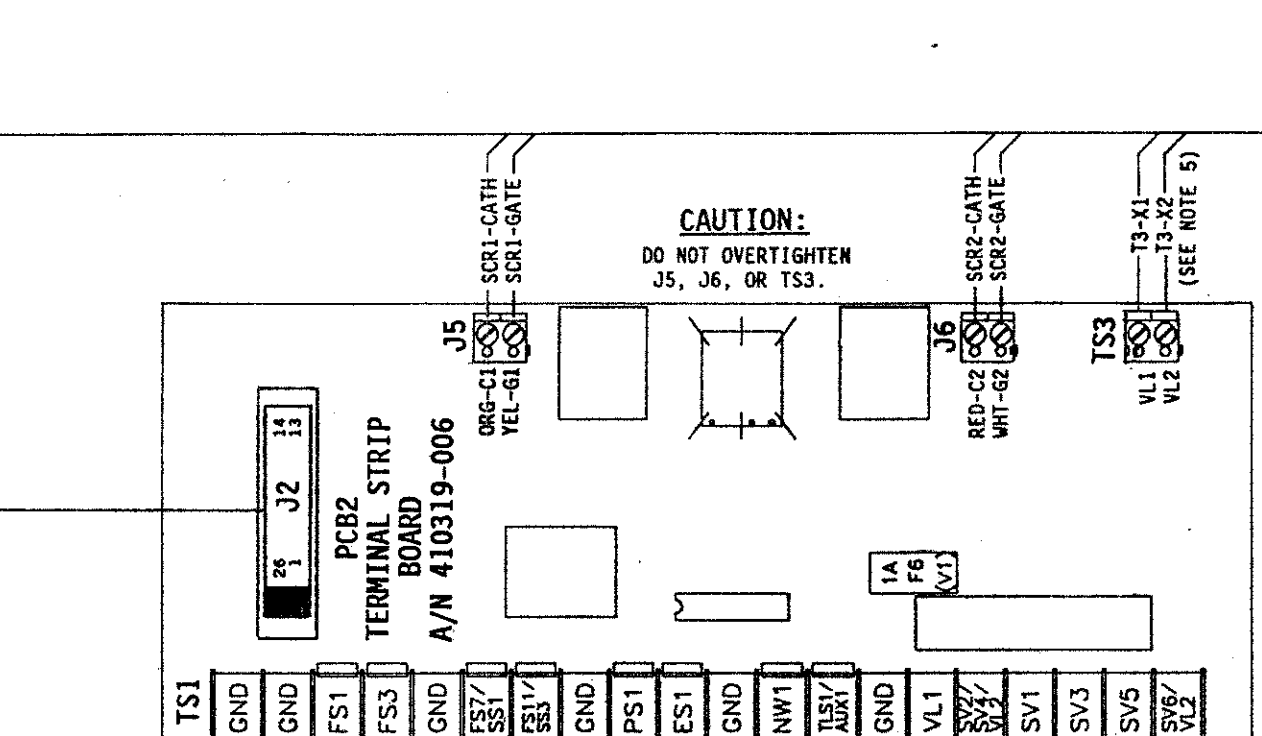
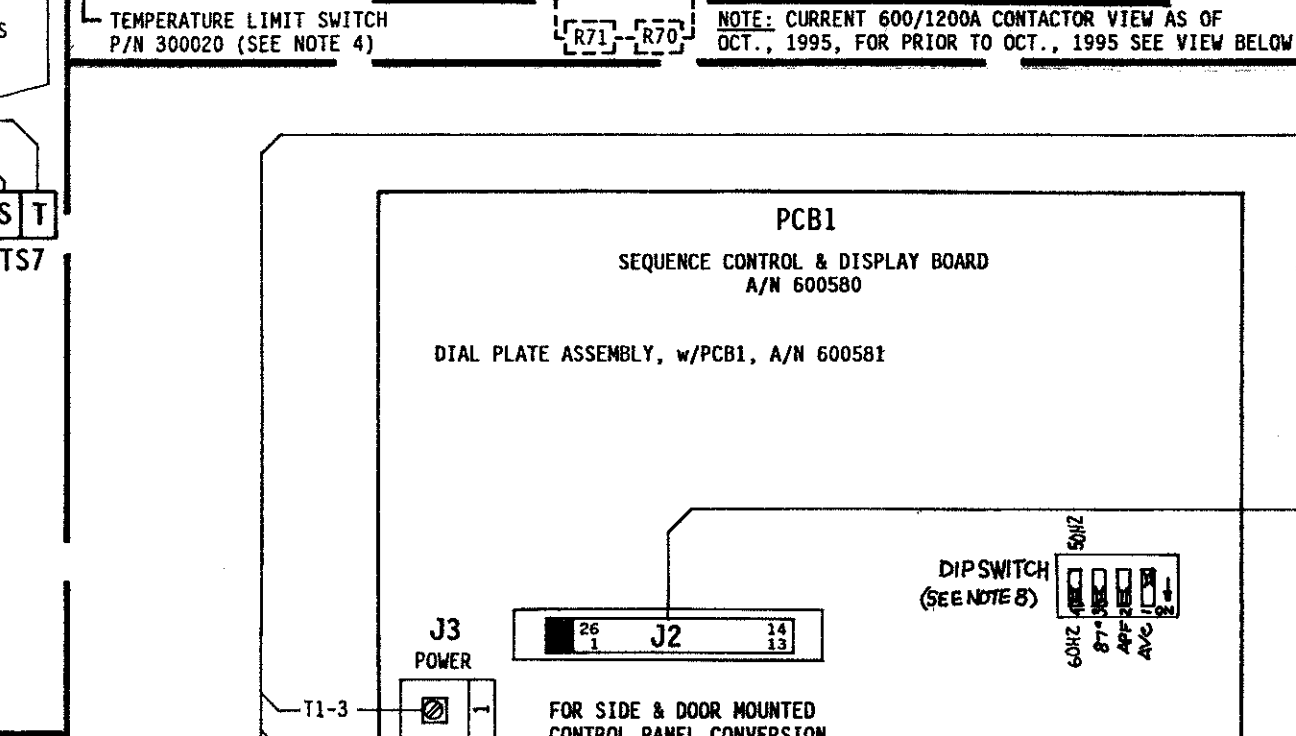
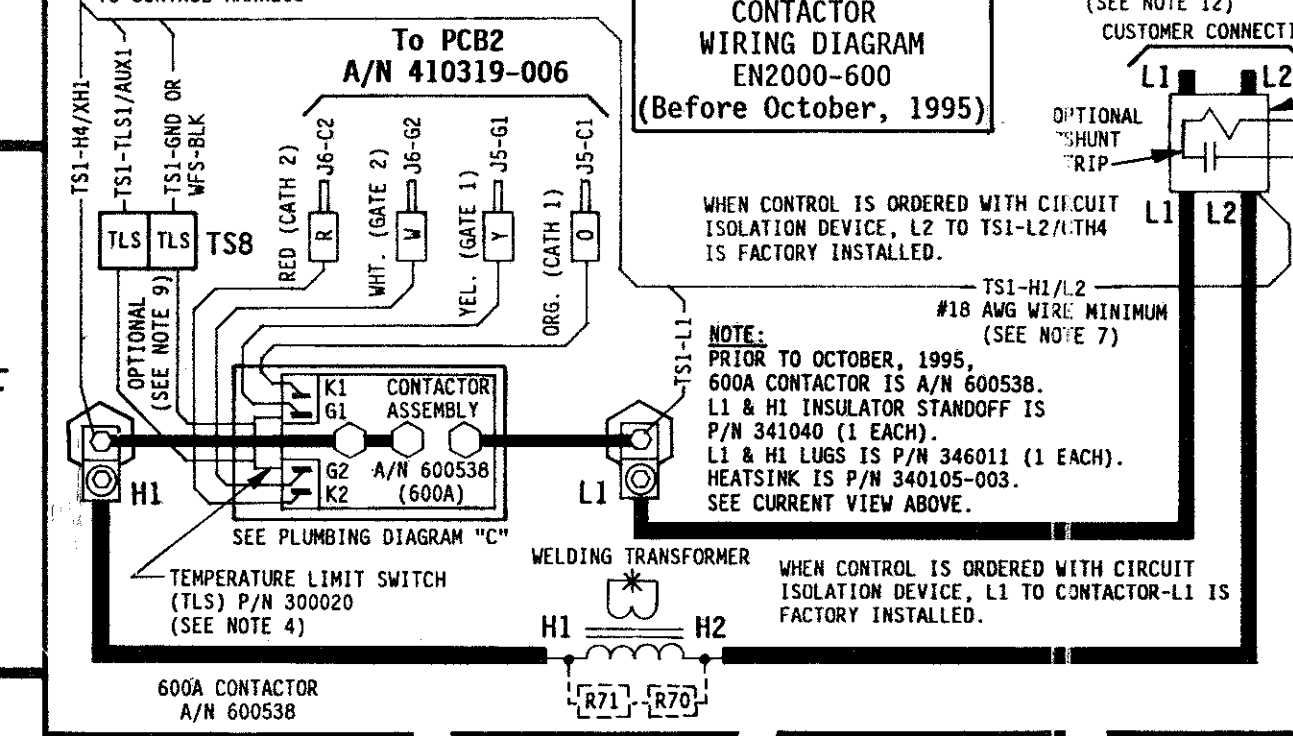
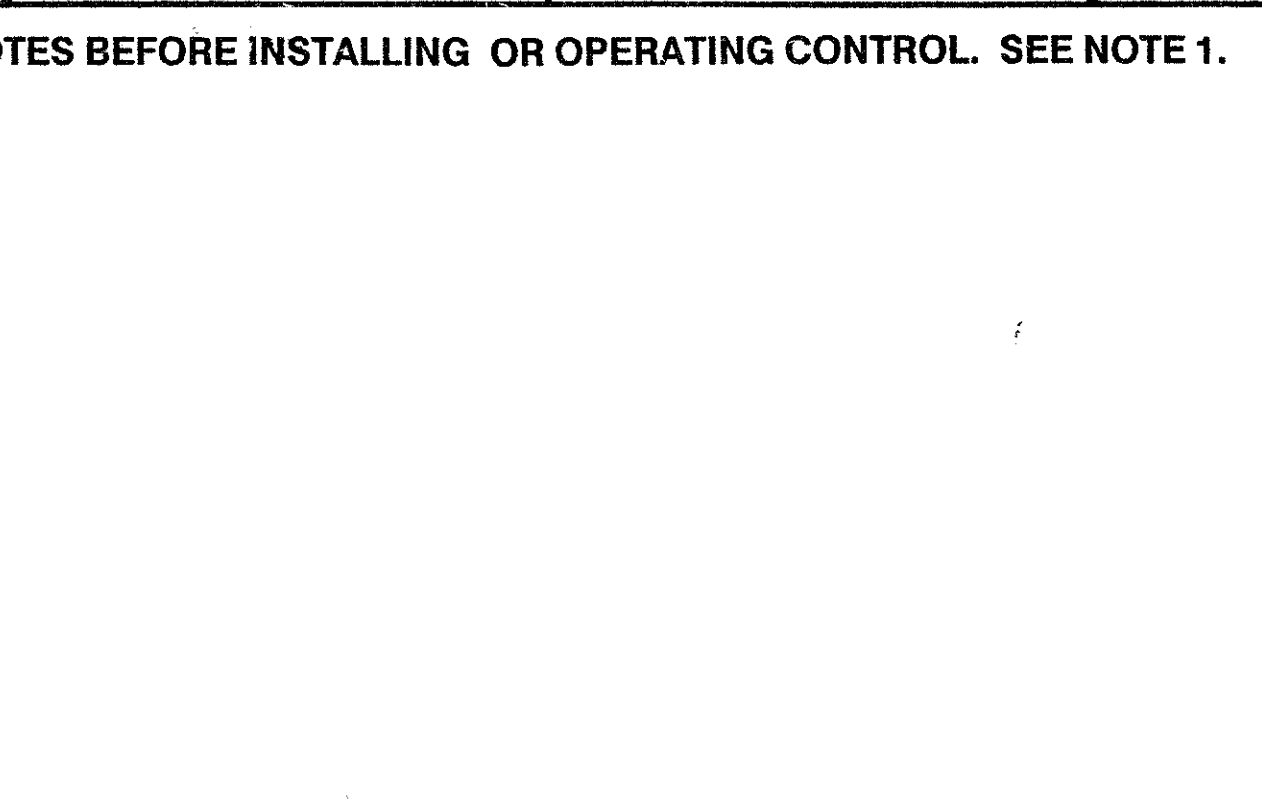
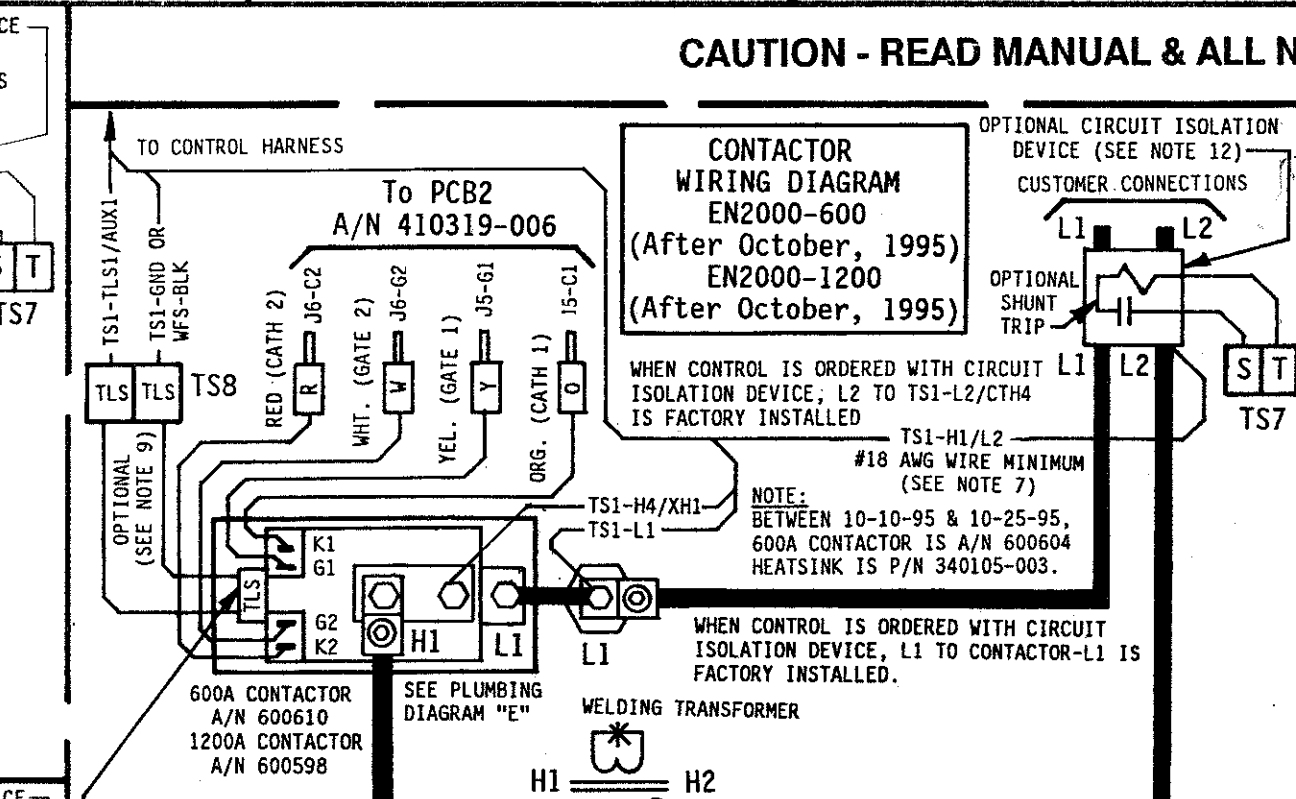
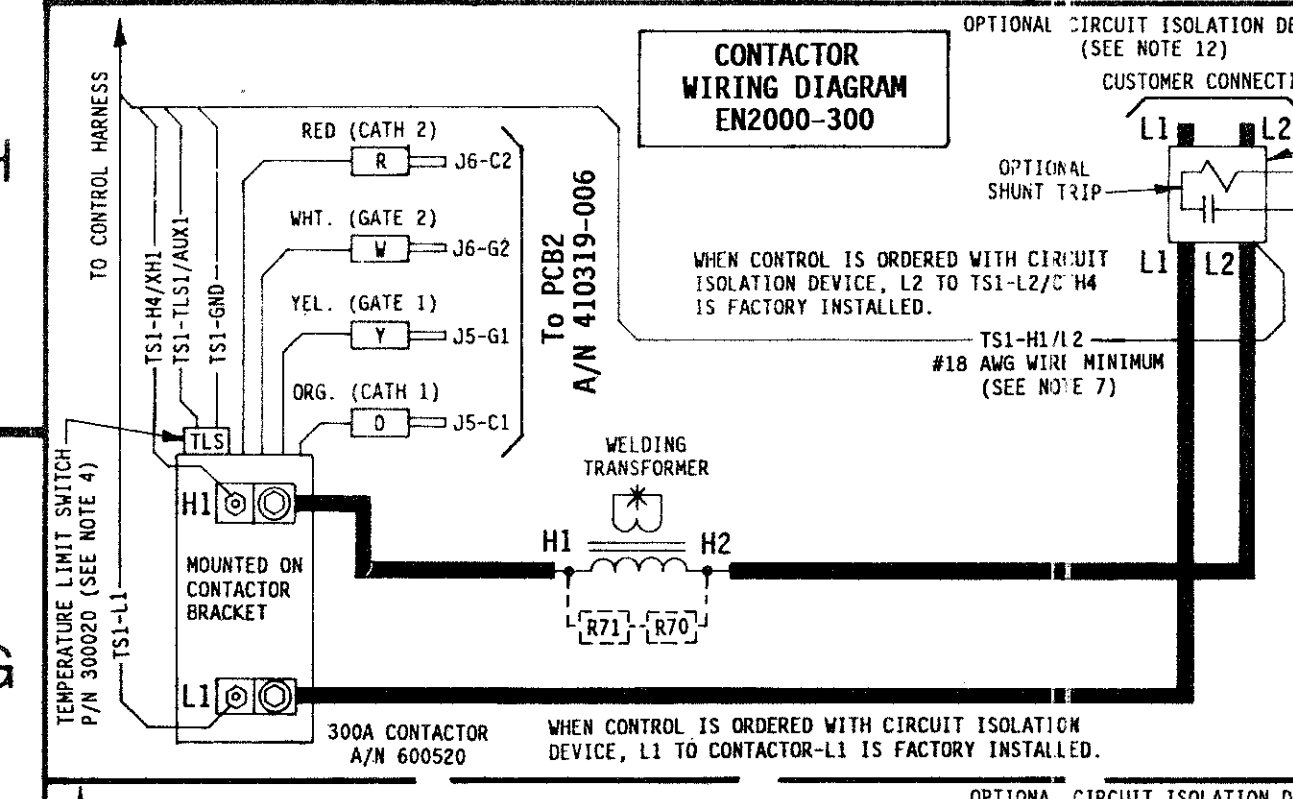
CAUTION - READ MANUAL & ALL NOTES BEFORE INSTALLING OR OPERATING CONTROL. SEE NOTE 1.

WARNING: HIGH VOLTAGE
VOLTAGES PRESENT IN THIS CONTROL CAN CAUSE SEVERE OR FATAL INJURIES.
NOTE: EVEN THOUGH SUPPLY POWER TO THIS UNIT HAS BEEN DISCONNECTED, THERE MAY BE VOLTAGES IN THIS CONTROL ORIGINATING FROM OTHER SOURCES.
FOR ALL VOLTAGE POTENTIAL TO BE REMOVED FROM THIS CONTROL, POWER MUST BE REMOVED FROM ALL EXTERNAL CONTROL CIRCUITS CONNECTED TO TERMINALS IN THIS CABINET.

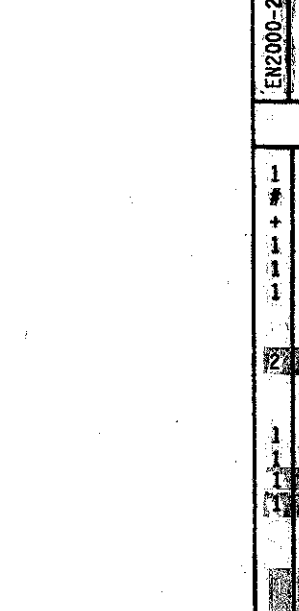
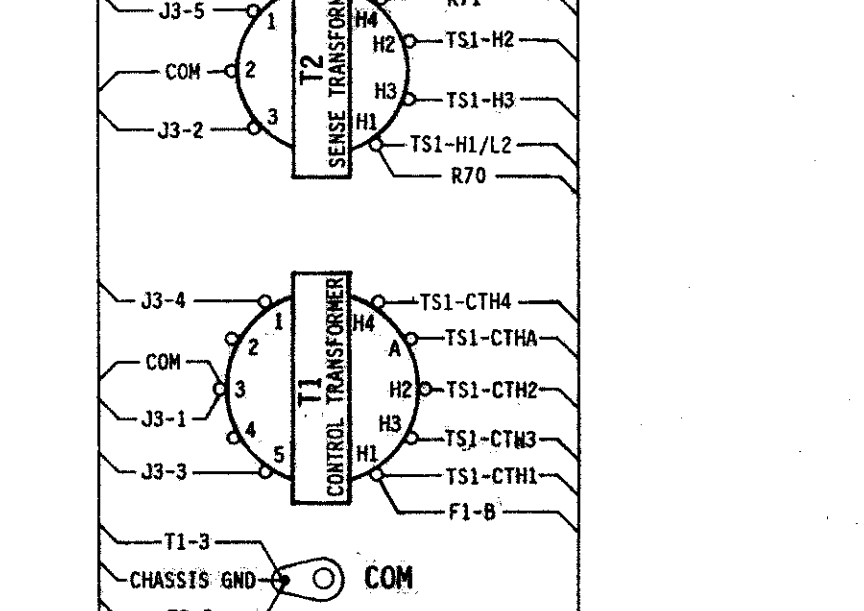
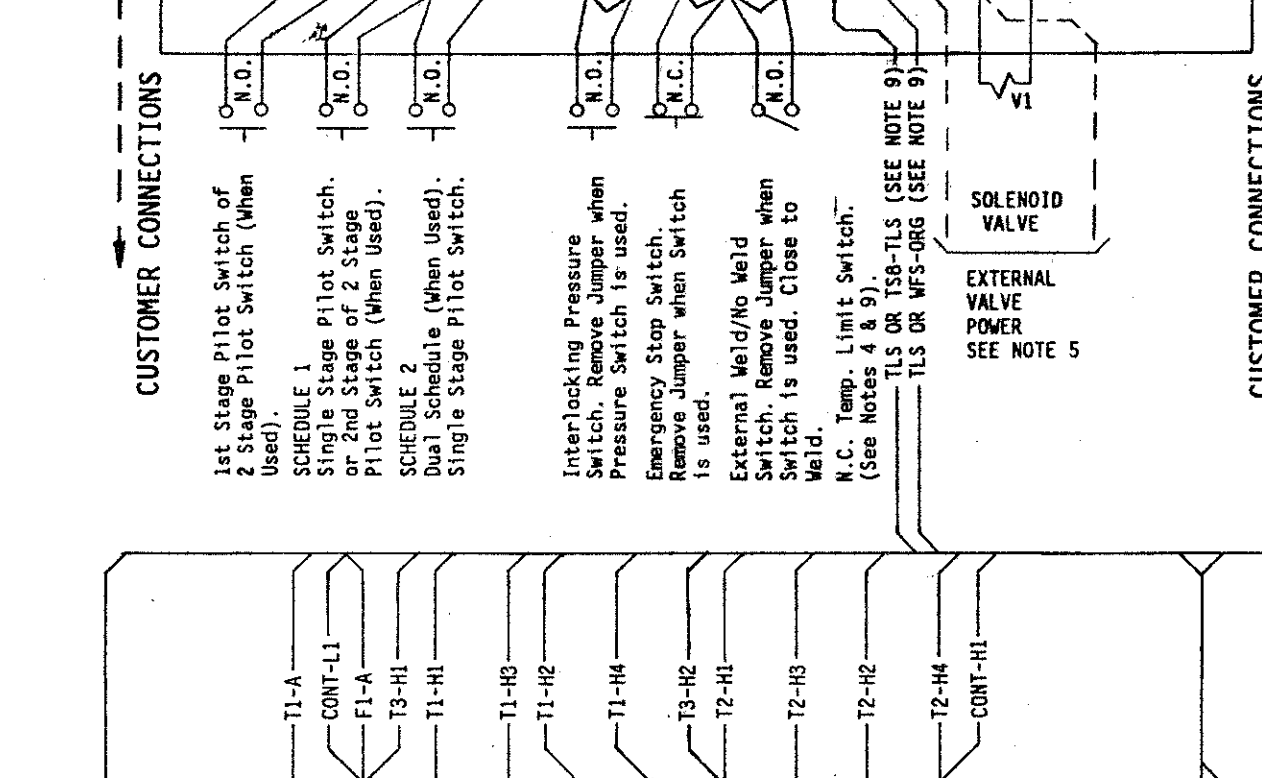
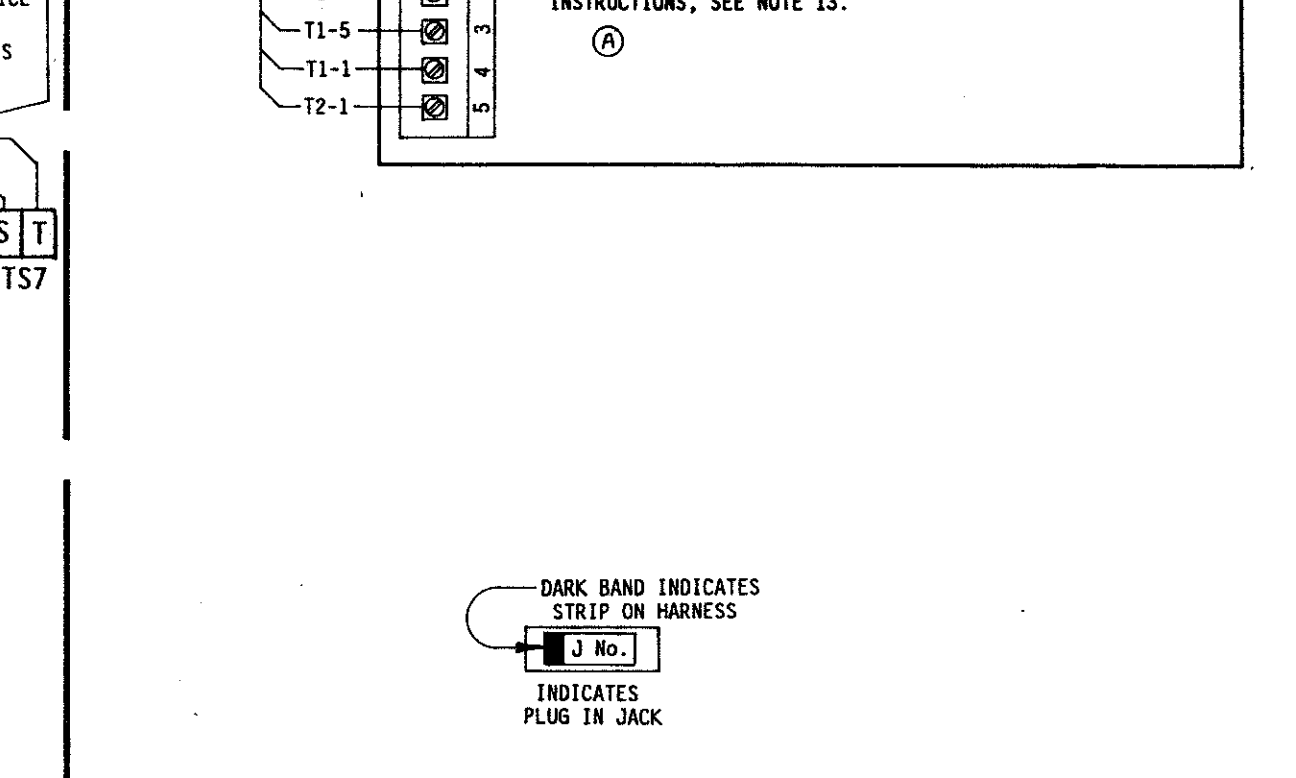
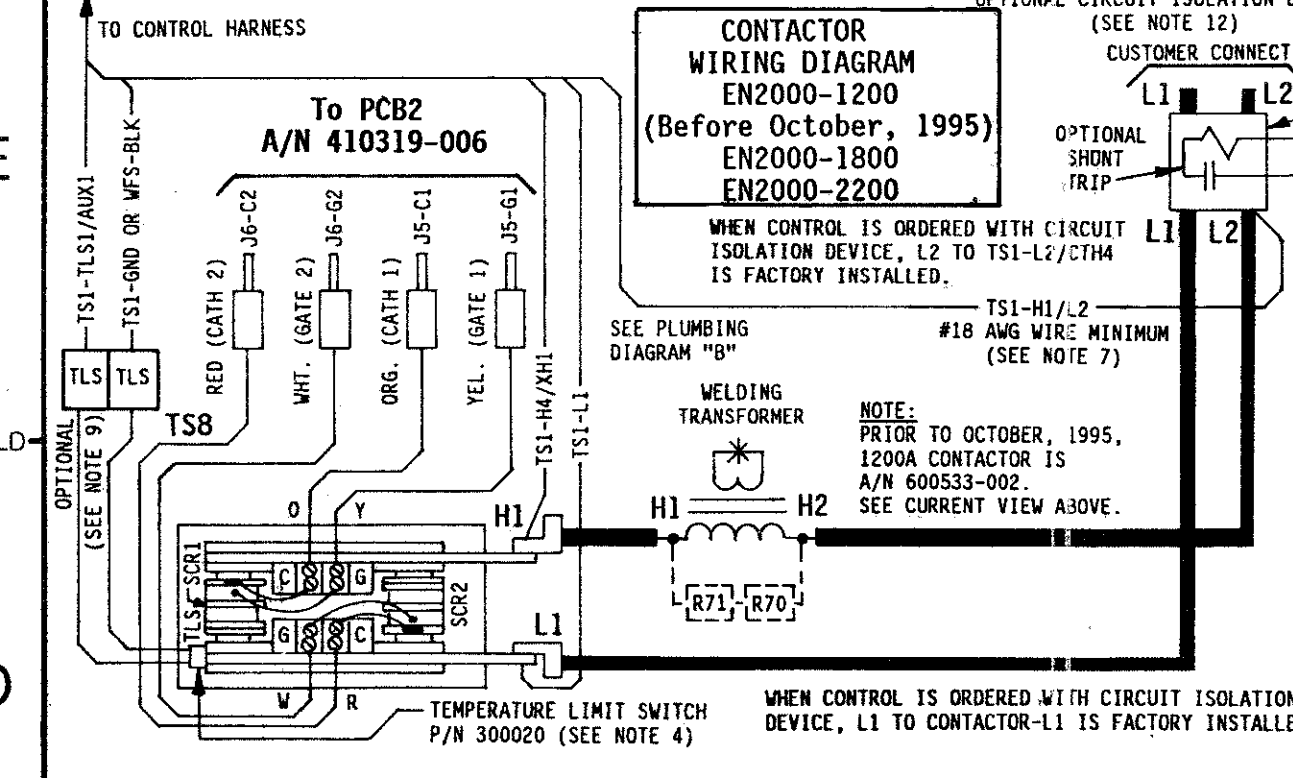
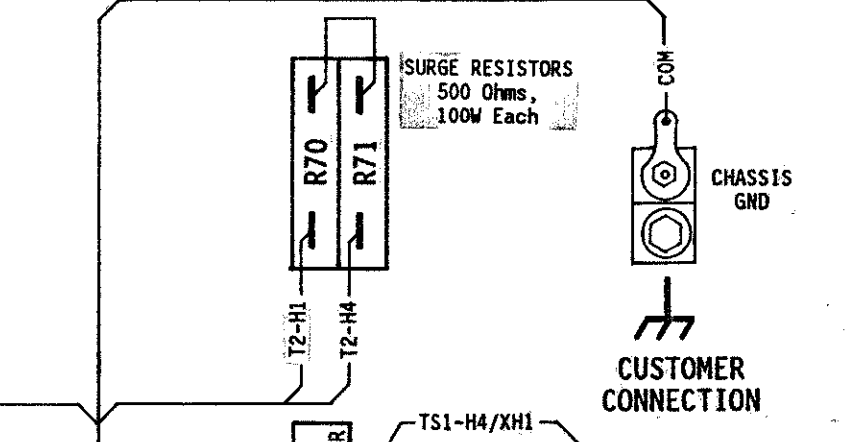
CAUTION
DO NOT OPERATE WITHOUT WATER ON
POWER ON WITHOUT WATER FLOW MAY CAUSE DAMAGE TO CONTROL. TURN POWER OFF WHEN CONTROL IS NOT IN USE.

PARTS LIST - CONTROL SECTION

QTY.	DESIG.	PART NO.	DESCRIPTION
1		600581	Assem., Dial Plate, w/scr. Assem., EN2000, Consisting of:
1	PCB1	600580	Assem., Switch, Sequence Control & Display Board
1		540244	Illustrated Panel, Dial Plate, EN2000
1		515104	Panel, Display Window, Red Filter, EN2000
1	J2-J2	322326	Assem., Harness, Ctrl Bd. to Term. Bd.
1	J3	322325-016	Assem., Harness, Power, EN2000, 3ØV



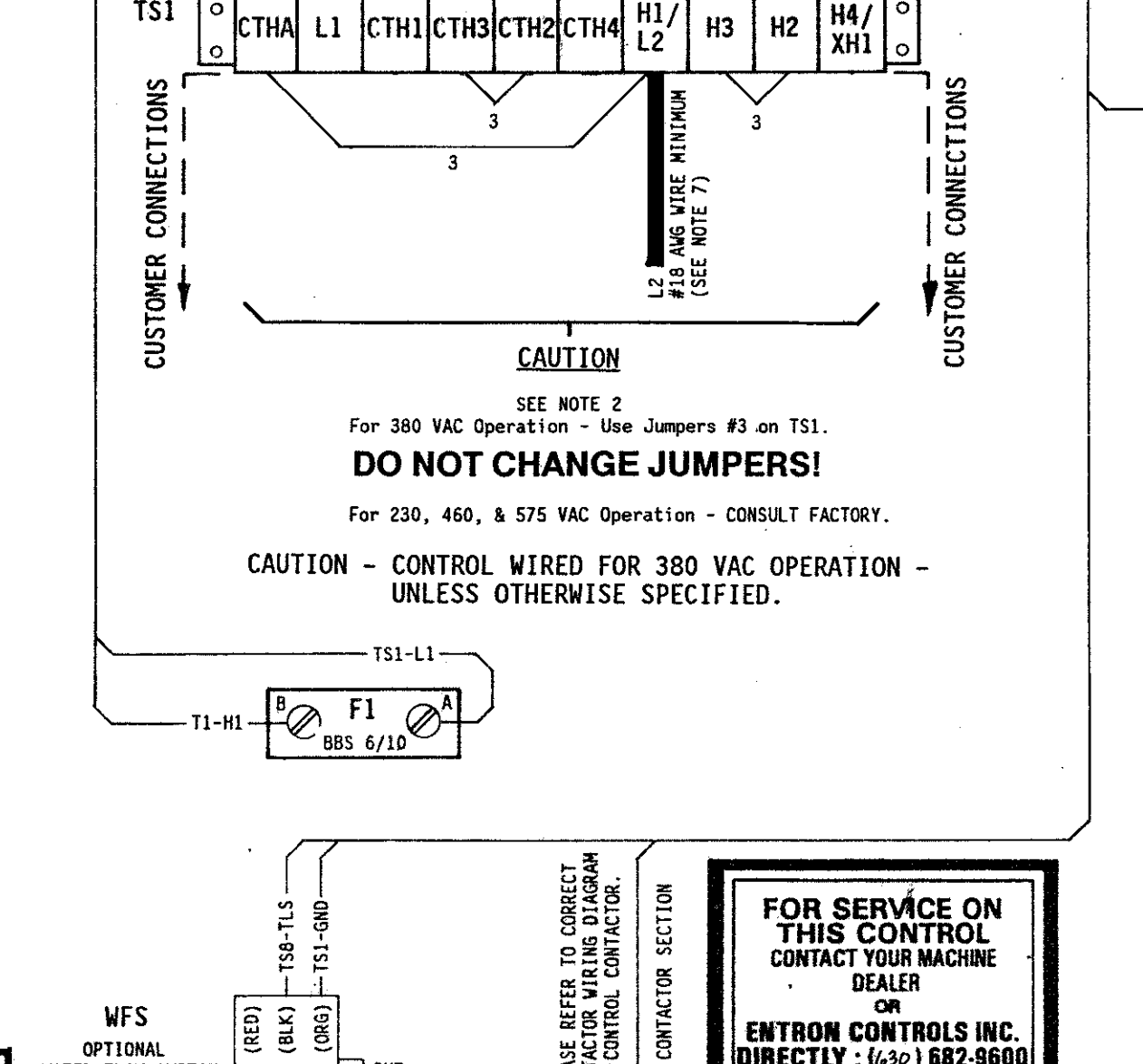
CAUTION
Control Shipped Wired For 380 VAC Unless otherwise specified - See Note 2.



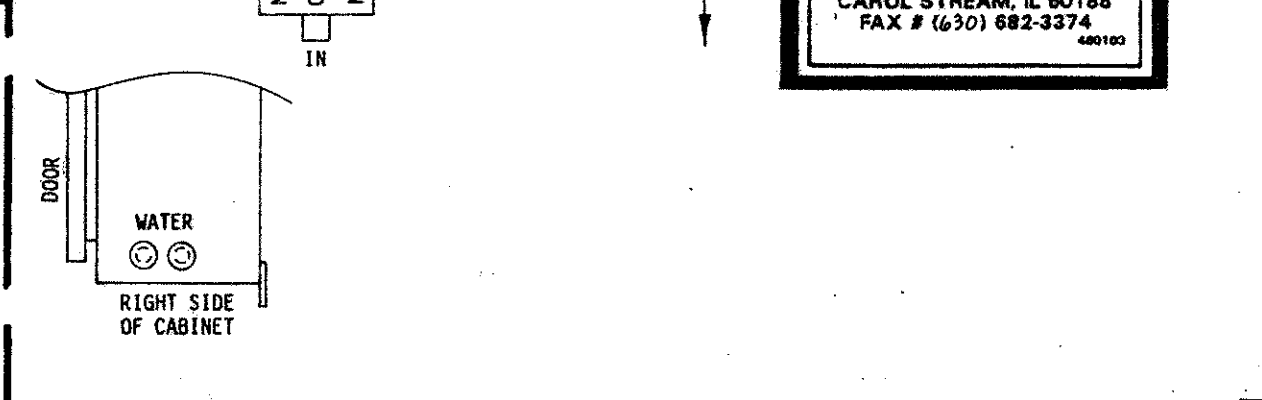
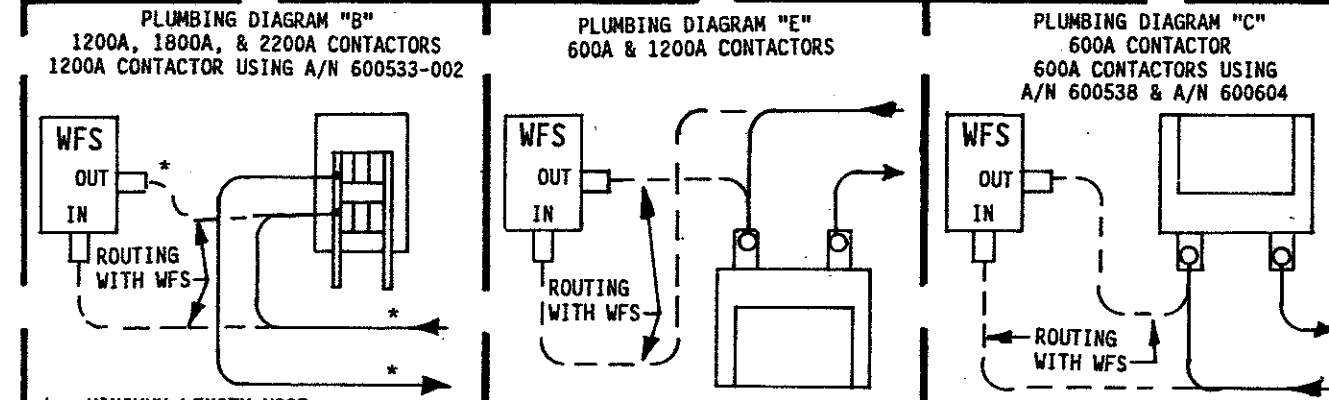
PARTS LIST - CONTACTOR SECTION

QTY.	DESIG.	PART NO.	DESCRIPTION
1	TS1	335034	Terminal Strip, 10 Pin, (Part of J3 Harness)
1	TS5	335044	Terminal Strip, 2 Pin
1	TS8	335037	Terminal Strip, 2 Pin, (Part of 1800/2200A Cont. Assem.)
1	T1	310001	Transformer, Control, (Part of J3 Harness)
1	T2	310002	Transformer, Sense, (Part of J3 Harness)
1	T3	310115	Transformer, Valve, 150VA, 3ØV
1	R70, R71	225016	Resistor, Power, Surge, 500 Ohm, 100W
1	F1	309010	Fuseholder, 1 Pole, Mini, 600V
1		307018	Fuse, Control, 6/10A, BBS 6/10
1		307022	Fuse, 1 Amp, Slow Blow, 2A, (Part of 410319-006)
1		325024	Assem., Wire, Surge Resistor, 10 Ga., Black
1		600520	Assem., Contactor, Thyristor, Air, 300A, 460/575V, w/LS
1		600610	Assem., Contactor, Thyristor, Water, 600A, 460/575V
1		600598	Assem., Contactor, Thyristor, Water, 1200A, 460/575V
1		600533-005	Assem., Contactor, SCR, Water, 1800A, 460/575V, w/LS
1		600533-003	Assem., Contactor, SCR, Water, 2200A, 460/575V, w/LS
1		341490	Standoff, Insulator, 600/1200A Thyristor Contactor, L1
1		325124	Assem., Wire, Contactor L1 to Lug L1, 600/1200A Thyristor Cont.
1		346004	Lug, Screw, 5/16 Bolt to 2/0 Wire, 600A Thyristor Contactor, H1
1		346011	Lug, Screw, 1/4 Bolt to 2/0 Wire, 600A Thyristor Contactor, L1
1		346028	Washer, 5/16 Hole, 3/20, 200A Wire, 1200A Contactor, L1, L1H
1	PCB2 (PCB2)	346004	Lug, Screw, Chassis GND, 2/0 Wire
1		410313-008	Assem., 2Ø, Terminal Strip Board, EN2000
1		510236	Plate, Mounting, Terminal Strip Board
1		525035	Bracket, Mounting, 300A Thyristor Contactor
1		525037	Bracket, Mounting, 600/1200A Contactors
1		530021	Plate, Mounting, 1800/2200A Contactors
1	TLS	300020	Switch, Temperature Limit, (N.C.), (Part of 300A Contactor & 1800/2200A Contactor Assem.)
1		900045	Hose, 3/8" I.D.
1		566010	Hose Clamp, 3/8" Hose
1		600179	Assem., Meter Fitting, 3/8" Hose
1	WFS	600297	Assem., Water Flow Switch, 3/8" Hose
1		550014	Vault Closing Door Mechanism, "D/T/LS/LF" Cabinet
1		510247	Cabinet, Control, Style "D/T", w/CR
1		510248	Door, Cabinet, Control, Style "D/T", w/CR
1		510103	Cabinet, Control, Style "LS/LF", w/CR
1		510247-005	Cabinet, Control, Style "D/T", w/CR, Modified for 300A Cont. Circuit Breaker, Pole App, Y, (See Note 12)
1	C/B	703121	Manual, EN2000
1		421279	Logic Diagram, EN2000 Control
1		421283-002	Wiring Diagram, EN2000 Control, "D/T/LS/LF" Cabinet

- 1. It is recommended that control wiring (i.e., initiation, pressure switch, etc.) be physically separated from the high voltage wiring (115 volts or higher).
- 2. For 380 VAC Operation - Use Jumpers #3 on TS1.
DO NOT CHANGE JUMPERS!
For 230, 460, & 575 VAC Operation - CONSULT FACTORY.
- 3. For Single Stage Pilot Operation - Connect pilot switch to TS1-FS3 & TS1-GND. No jumpers required across TS1-FS1 & TS1-GND.
For Two Stage Pilot Operation - Connect 1st stage pilot switch to TS1-FS1 & TS1-GND. Connect 2nd stage pilot switch to TS1-FS3 & TS1-GND.
For DUAL COUNT/DUAL CURRENT (Dual Weld/Dual Heat) or TRIPLE COUNT/TRIPLE CURRENT (Triple Weld/Trip/le Heat) or External Schedule Selection, SEE MANUAL.
- 4. EN2000-SERIES "D/T/LS/LF" CABINET:
ENTRON supplies Temperature Limit Switch (TLS) P/N 300020 and provides connections to TS1-TLS1/AUX1 & TS1-GND. Jumper not required between TS1-TLS1/AUX1 & TS1-GND. NOTE: TLS SCR will open at temperatures greater than or equal to 150°F.
- 5. When external valve power is supplied to the control. Remove and insulate leads TS3-VL1 & TS3-VL2 on the Terminal Strip Board (PCB2), (from T3-X1 & T3-X2). Connect external AC power supply (24-240 VAC) to TS1-VL1 & TS1-SV2/SV4/VL2.
CAUTION: Do not overtighten TS3.
- 6.
- 7. Connect TS1-H1/L2 to L2/H2 side of Welding Transformer Primary. (Factory wired on control supplied with Circuit Isolation Device).
- 8. The Automatic Voltage Compensation (AVC), Automatic Power Factor (APF), 87° Delayed Firing, and 50Hz/60Hz functions are determined by the settings of the four position DIP switch on PCB1 (A/N 600580). As shipped from the factory, AVC is OFF, APF is ON, 87° Delayed Firing is ON, and 60Hz operation is selected. To change any of these functions, see instructions in the manual.
- 9. When TLS and WFS are used together, add WFS P/N 600297 & Terminal Strip TS8 P/N 335017. Wire as shown below. Jumper not required between TS1-TLS1/AUX1 & TS1-GND. WFS will open with flows less than .75 GPM.
- 10.
- 11.
- 12. When Optional Circuit Isolation Device is required list P/N and size of Circuit Isolation Device, and note appropriate cabinet A/N.
- 13. To convert the Control Panel from side mounted cabinet control to door mounted or door mounted cabinet control to side mounted. Remove Cover Plate and Control Panel Dial Plate Assembly. Position spiral wrap around all harness wiring to prevent interference of wiring with the closing of cabinet door. When mounting Control Panel on side of cabinet, use clamp to secure J3 harness wires. CAUTION: When changing the position of the Control Panel, be sure harness wires do NOT interfere with the closing of the cabinet door. Wires may pinch in between door & cabinet and cause damage to wiring.
- 14. See Wiring Diagram #421280-001 for EN2000-Series, "S" Cabinet, 380 VAC Operation.



CAUTION - CONTROL WIRED FOR 380 VAC OPERATION - UNLESS OTHERWISE SPECIFIED.



FOR SERVICE ON THIS CONTROL CONTACT YOUR MACHINE DEALER OR
ENTRON CONTROLS INC.
DIRECTLY: (630) 882-9600
405 EAST RANDY ROAD
CAROL STREAM, IL 60188
FAX # (630) 882-3374

NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.

REV.	AUTH.	DESCRIPTION	DATE	REV.	AUTH.	DESCRIPTION	DATE
		EN2000-3000, T, LS, LF				EN2000-1200, T, LS, LF	
		EN2000-6000, T, LS, LF				EN2000-1800, T, LS, LF	
						EN2000-2200, T, LS, LF	

△ Optional, See Note 12.
* Supplied when optional Shunt Trip (ST), 115V is specified.
+ Optional Water Flow Switch Assembly & TS8. An additional Thirty-Six inches (36") of hose, P/N 900045 and two (2) hose clamps, P/N 566010 are to be supplied. See Note 9.
X For all contactors in "D/T" cabinet supply 3/8" of hose. For all contactors in "LS/LF" cabinet supply 60" of hose.

MANUFACTURING INSTRUCTIONS:
See Drawings #440365, #515112, #515114, & #600552 for Mechanical Assembly Instructions of EN2000 "LS/LF" Cabinet.
See Drawing #440366 for Mechanical Layout of "LS/LF" Cabinet Rear Panel.
See Drawing #440367 for Crating Instructions of "LS/LF" Cabinet.
See Drawing #600552 for Mechanical Assembly of EN2000 "D/T" Cabinet.
See Drawing #440368 for Mechanical Assembly of EN2000 "D/T" Cabinet.
See Drawing #440366 Inner Pack & Use Carton #650016 for "D/T" Cabinet Packing Instructions.
See Drawing #440437 for Circuit Breaker to Contactor L1 Cable Connection.
See Drawing #600526 for Layout/Assem. of Front Panel.

REVISION HISTORY

REV.	AUTH.	DESCRIPTION	DATE	REV.	AUTH.	DESCRIPTION	DATE
A		IN CTRL SECTION OF P/LING QTY COLUMN REPLACED TWO SEPARATE QTY COLUMNS WITH ONE PREVIOUSLY USED FOR "D/T" CAB'S & ONE FOR "LS/LF" CAB'S. SEE DRAWING #440368 FOR "D/T" CAB'S & ONE FOR "LS/LF" CAB'S. A J3 HARNESS REVISION IS BEING RELOCATED. SEE DRAWING #440367 FOR "D/T" CAB'S & ONE FOR "LS/LF" CAB'S. ADD NOTE 13 "SIDE/DOOR CTRL PANEL CONVERSION...".	7-31-96	DEC			
		ORIGINAL RELEASE					
		DESIGN		CHK'D BY			
		DATE		APPROVED BY			
		SCALE		DATE			

ENTRON CONTROLS INC.

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
A/4	5-17-96	DEC	DEC	5-17-96

ANGLES: ± 1/2"
DECIMALS: ± .010
FRACTIONS: ± 1/64

WIRING DIAGRAM, EN2000-SERIES, "D/T" "LS/LF" CABINET, WIRED FOR 380 VAC OPERATION		
NEXT ASSM/USED ON	DRAWING NUMBER	REV
EN2000-3000, T, LS, LF	EN2000-1200, T, LS, LF	
EN2000-6000, T, LS, LF	EN2000-1800, T, LS, LF	
	EN2000-2200, T, LS, LF	
	421283-002	A