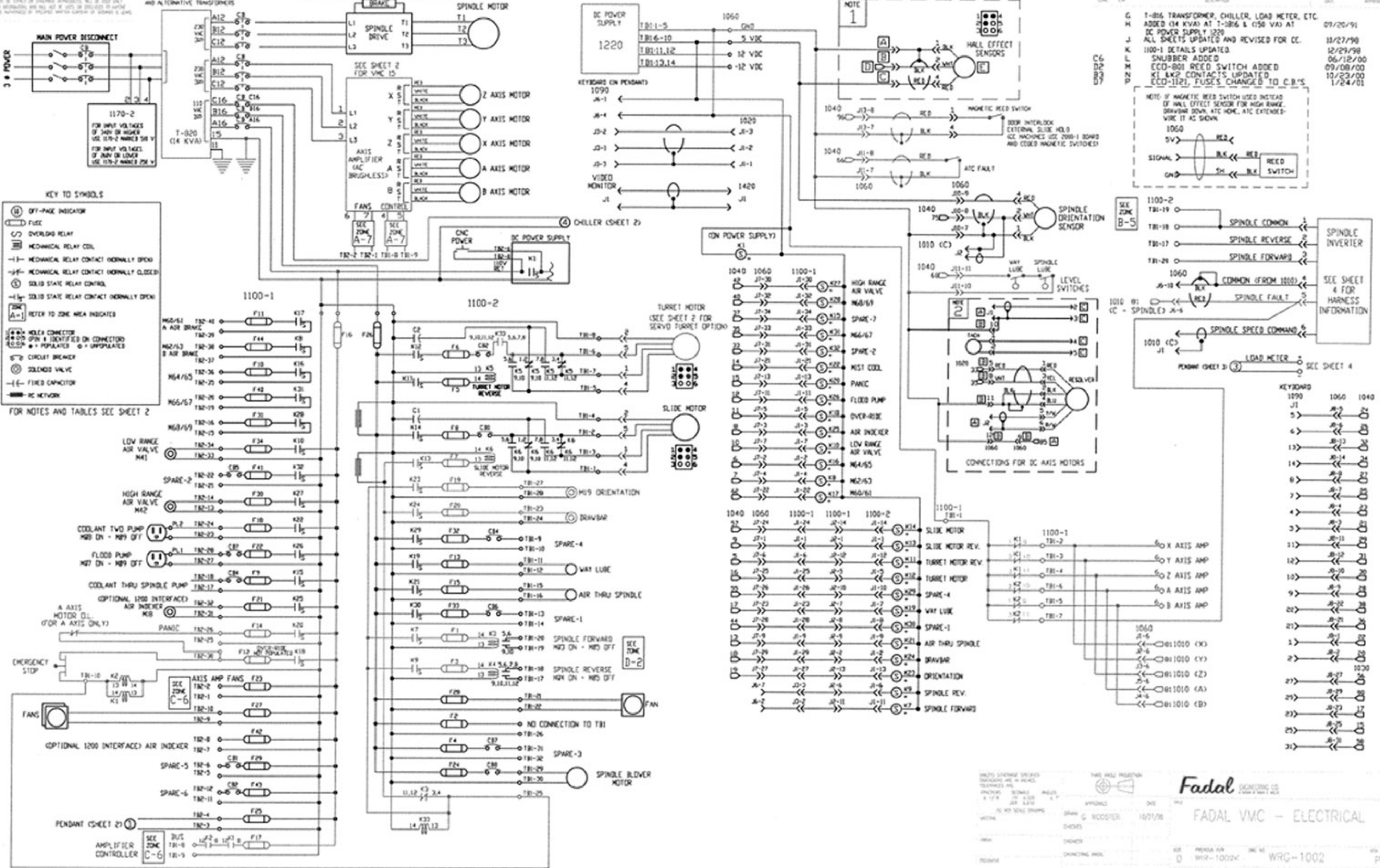


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SEE SHEET 2 FOR TRANSFORMER TAPPING AND ALTERNATIVE TRANSFORMERS

SEE SHEET 4 FOR SPINDLE DRIVE CONNECTIONS



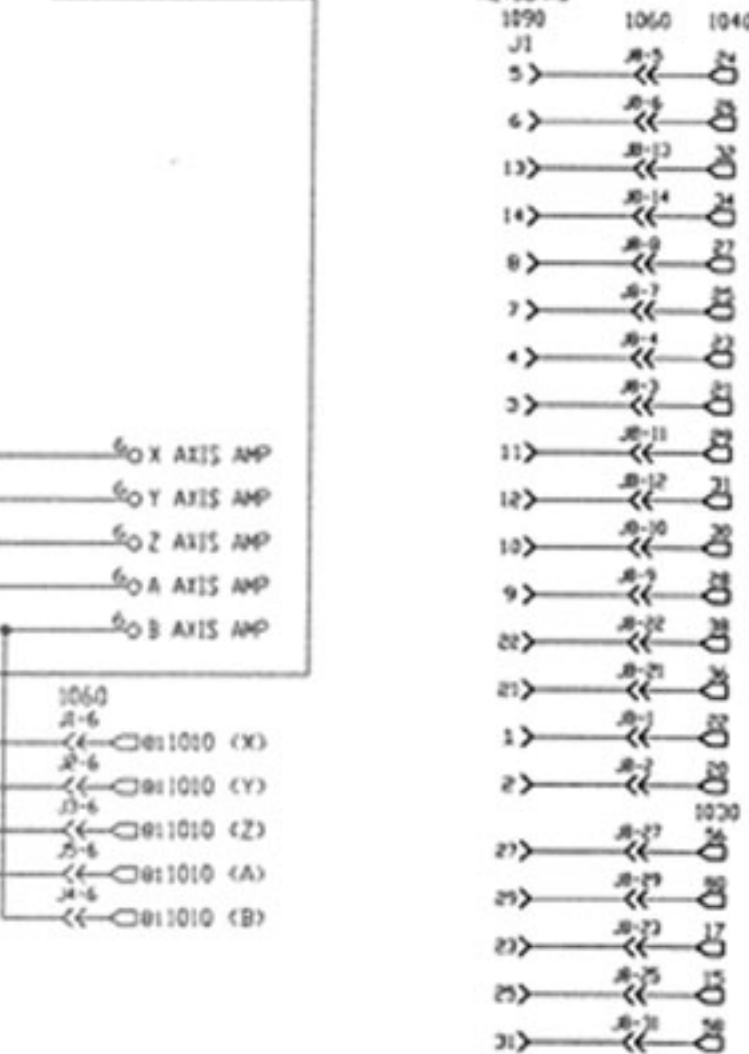
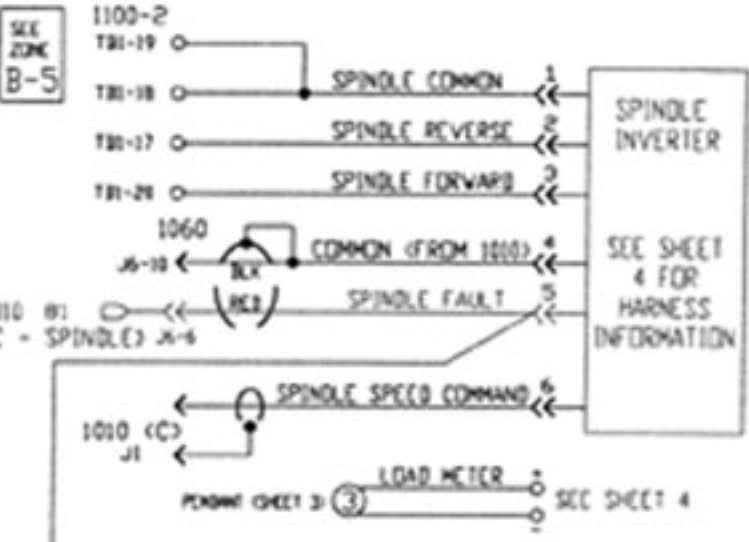
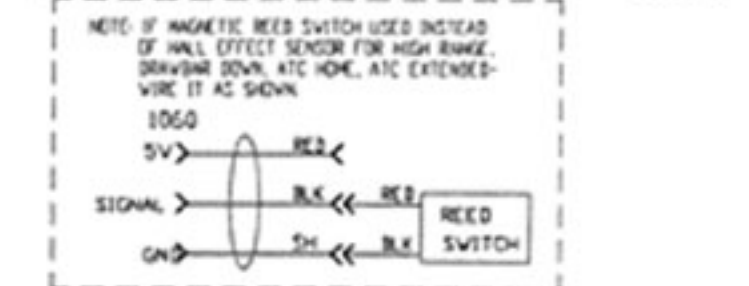
KEY TO SYMBOLS

- OFF-PAGE INDICATOR
- FUSE
- OVERLOAD RELAY
- MECHANICAL RELAY COIL
- MECHANICAL RELAY CONTACT NORMALLY OPEN
- MECHANICAL RELAY CONTACT NORMALLY CLOSED
- SOLID STATE RELAY CONTROL
- SOLID STATE RELAY CONTACT NORMALLY OPEN
- SOLID STATE RELAY CONTACT NORMALLY CLOSED
- REFER TO ZONE AREA INDICATED
- WIRE CONNECTOR
- OPEN & IDENTIFIED ON CONNECTION
- POPULATED
- UNPOPULATED
- CIRCUIT BREAKER
- SOLENOID VALVE
- FUSED CAPACITOR
- AC NETWORK

FOR NOTES AND TABLES SEE SHEET 2

REVISIONS

REV	DESCRIPTION	DATE
G	T-886 TRANSFORMER, CHILLER, LOAD METER, ETC. ADDED (34 KV) AT T-886 & (150 VA) AT DC POWER SUPPLY 1220	09/20/91
H	ALL SHEETS UPDATED AND REVISED FOR CC.	12/29/98
J	1100-1 DETAILS UPDATED	06/12/00
K	SNUBBER ADDED	09/08/00
L	ECC-801 REED SWITCH ADDED	10/23/00
M	K1 & K2 CONTACTS UPDATED	1/24/01
N	ECC-1121, FUSES CHANGED TO C.B.'S	
P		



Fadal ELECTRICAL CO.

FADAL VMC - ELECTRICAL

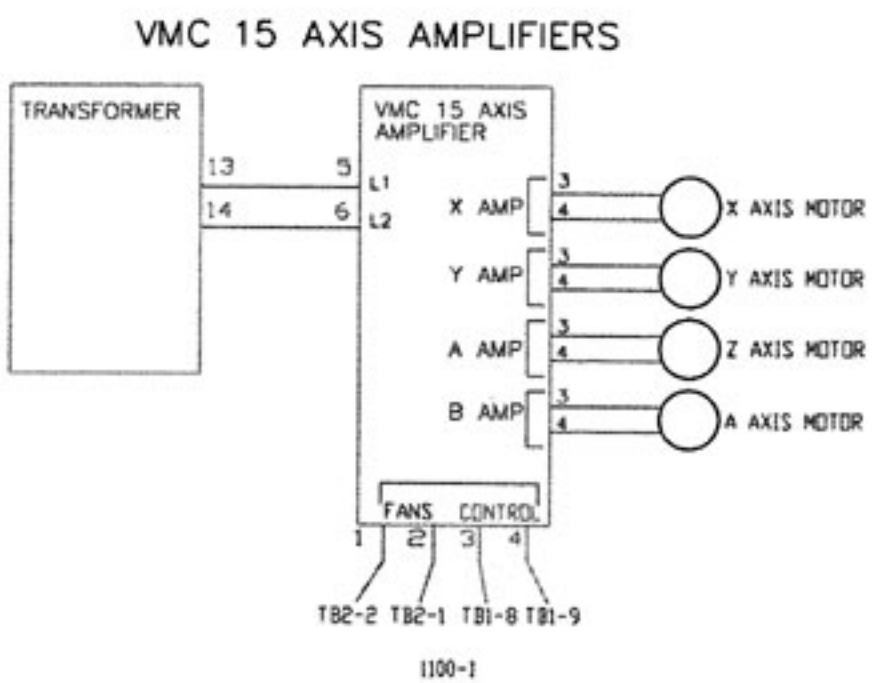
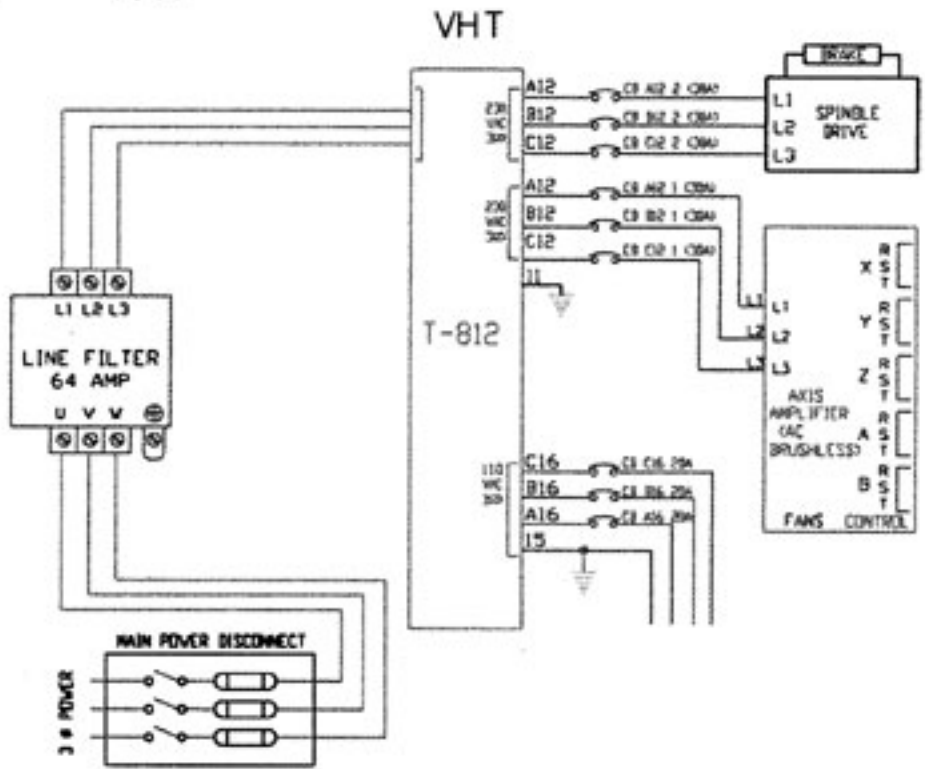
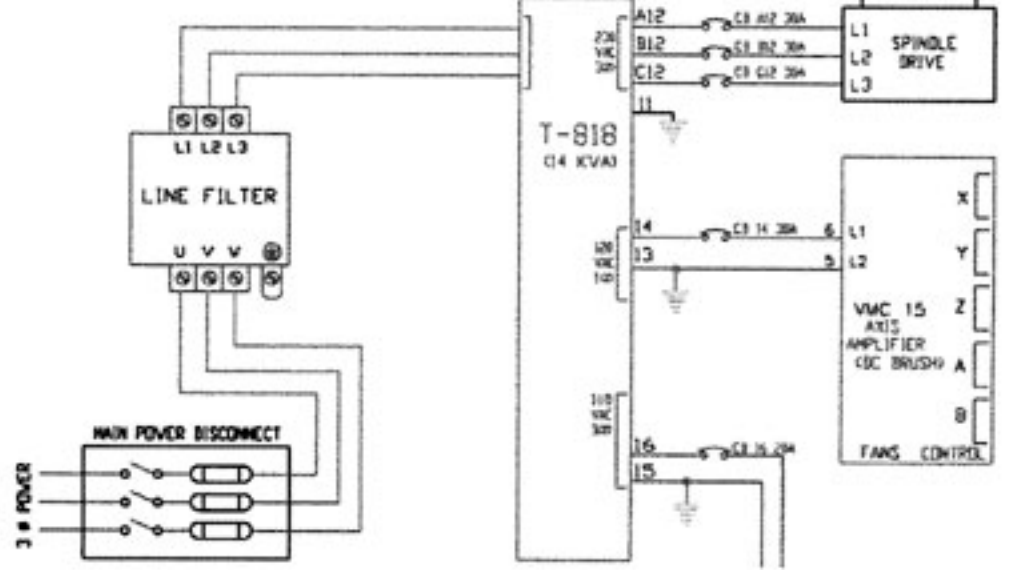
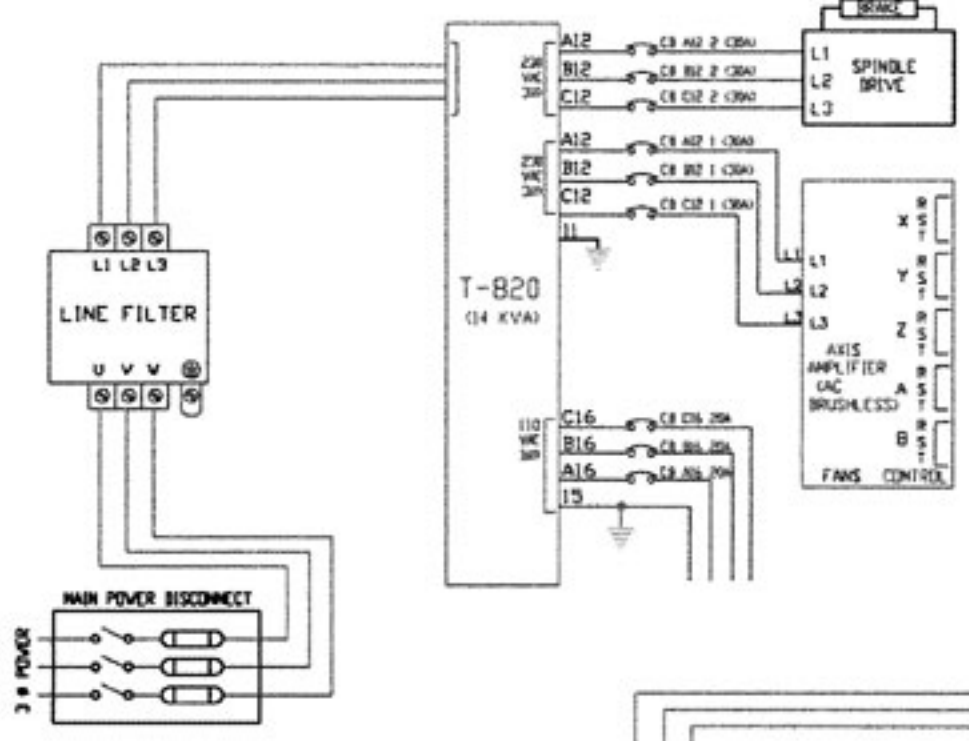
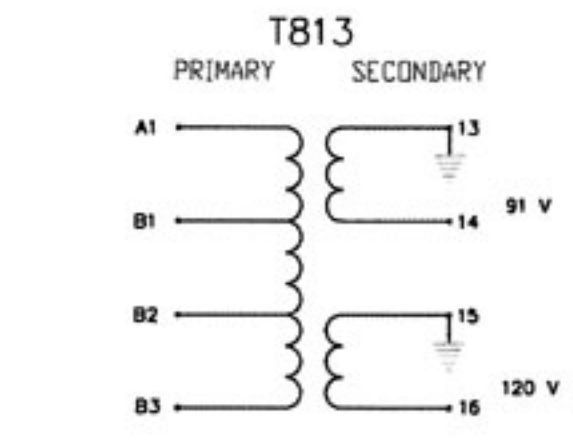
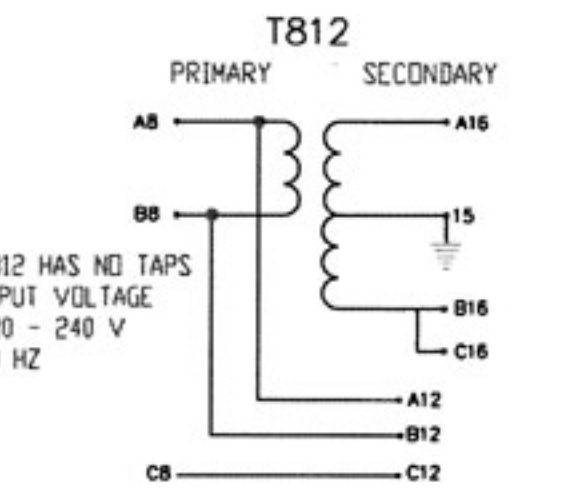
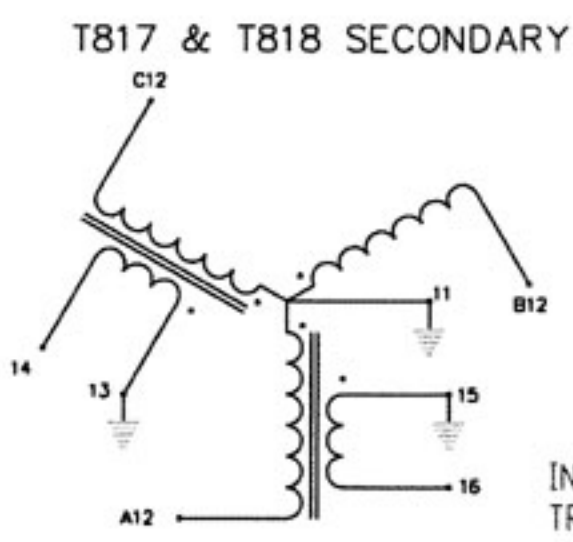
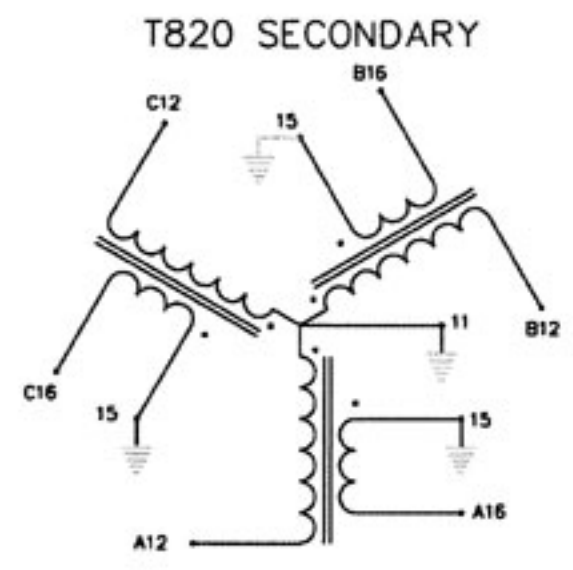
DATE: 10/21/98
DRAWN BY: G. WOODRUFF
CHECKED BY: []
APPROVED BY: []
SCALE: 1/1

WRC-1002

CE TRANSFORMERS & CIRCUIT BREAKERS

- J. ALL SHEETS UPDATED AND REVISED FOR CC. 10/27/98
- K. TRANSFORMER DETAILS UPDATED. 12/29/98
- L. TRANSFORMER T-812 ADDED. 03/29/00
- M. VHT OPTION ADDED. 06/12/00

TRANSFORMER DIAGRAMS:

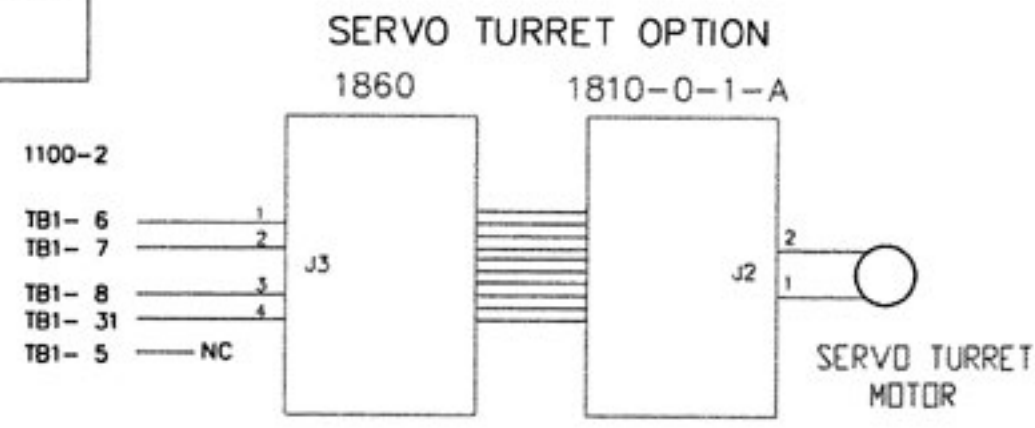
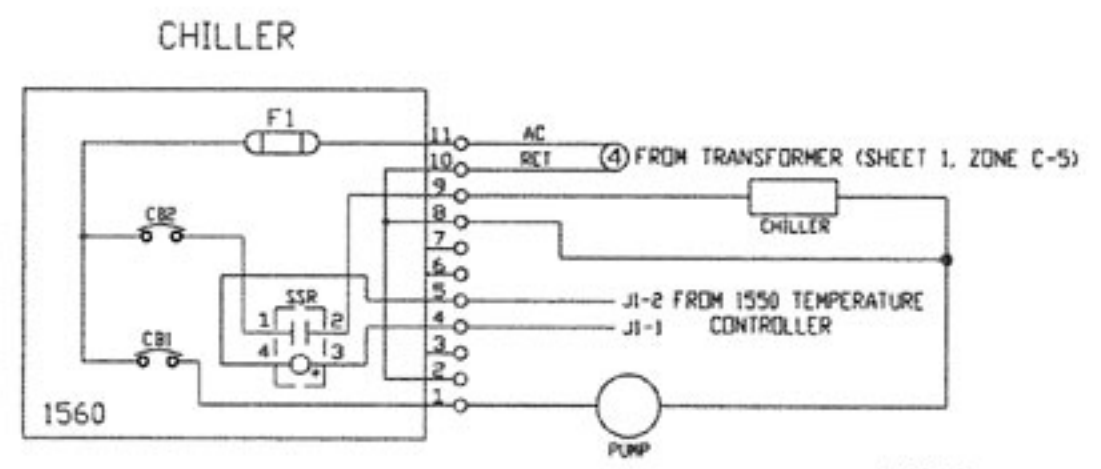


INPUT CONNECTIONS FOR MULTITAP TRANSFORMERS (EACH PHASE A, B & C)

INPUT VOLTAGE	JUMPER 3 PLS	AC INPUT
190	NONE	2
200	2-7	8
210	2-5	6
230	2-6	7
240	2-6	8
250	2-5	7
260	2-5	8
340	NONE	3
350	3-7	8
360	3-5	6
380	3-6	7
390	3-6	8
400	3-5	7
410	3-5	8
440	NONE	4
450	4-7	8
460	4-5	6
480	4-6	7
490	4-6	8
500	4-5	7
510	4-5	8

TRANSFORMER OUTPUTS

TRANSFORMER	TERMINAL	VOLTAGE
T817, T818, T820	11	GROUND FOR 240 V 3-PHASE
T817, T818, T820	A12, B12, C12	240 V 3-PHASE
T812, T820	A16, B16, C16	120 V SINGLE PHASE
T813, T817, T818	16	120 V SINGLE PHASE
ALL	15	RETURN FOR 16 (GROUNDED)
T813, T817, T818	14	120 V FOR DC AXIS AMPLIFIER CHASIS
T813, T817, T818	13	RETURN FOR 14, (GROUNDED)



NOTES

1 SENSOR TABLE

SENSOR	1040		1060	
	D	A	B	C 5VDC
SLIDE EXTENDED	70	J12-1	J12-2	J12-3
SLIDE HOME	72	J12-4	J12-5	J12-6
TURRET MOTION	74	J12-7	J12-8	J12-9
DRAWBAR DOWN	50	J9-1	J9-2	J9-3
HIGH RANGE	54	J9-10	J9-11	J9-12
LOW RANGE	58	J11-4	J11-5	J11-6

2 TYPICAL OF EACH AXIS (FOR D.C. MOTORS ONLY)

	A	B	C
X AXIS	1010 (X)	1060 J1	X AXIS AMP
Y AXIS	1010 (Y)	1060 J2	Y AXIS AMP
Z AXIS	1010 (Z)	1060 J3	Z AXIS AMP
A AXIS	1010 (A)	1060 J5	A AXIS AMP
B AXIS	1010 (B)	1060 J4	B AXIS AMP

BOARD DESCRIPTION

BOARD #	LOCATION	FUNCTION
1010 (X)	SLOT 9	X AXIS CONTROLLER
1010 (Y)	SLOT 10	Y AXIS CONTROLLER
1010 (Z)	SLOT 11	Z AXIS CONTROLLER
1010 (A)	SLOT 13	A AXIS CONTROLLER
1010 (B)	SLOT 12	B AXIS CONTROLLER
1010 (C)	SLOT 14	SPINDLE CONTROLLER
1020	SLOT 15	CLOCKS
1030	SLOT 8	COMPUTER INTERFACE
1040	SLOT 17	MILL INTERFACE
1050	SLOT 16	M FUNCTION
1060	CONTROL CAB.	BACKPLANE
1090	PENDANT	KEYBOARD
1100-1	CONTROL CAB.	POWER DISTRIBUTION
1100-2	JUNCTION BOX	POWER DISTRIBUTION
1110	PENDANT	PENDANT POWER DISTRIBUTION
1220	CONTROL CAB.	POWER SUPPLY
1400	SLOT 5	CPU
1420	SLOT 7	VIDEO
1550	SLOT 3	TEMPERATURE CONTROLLER
1560	CONTROL CAB.	CHILLER CONTROLLER
1610	SLOT 5	SOFTWARE MODULE

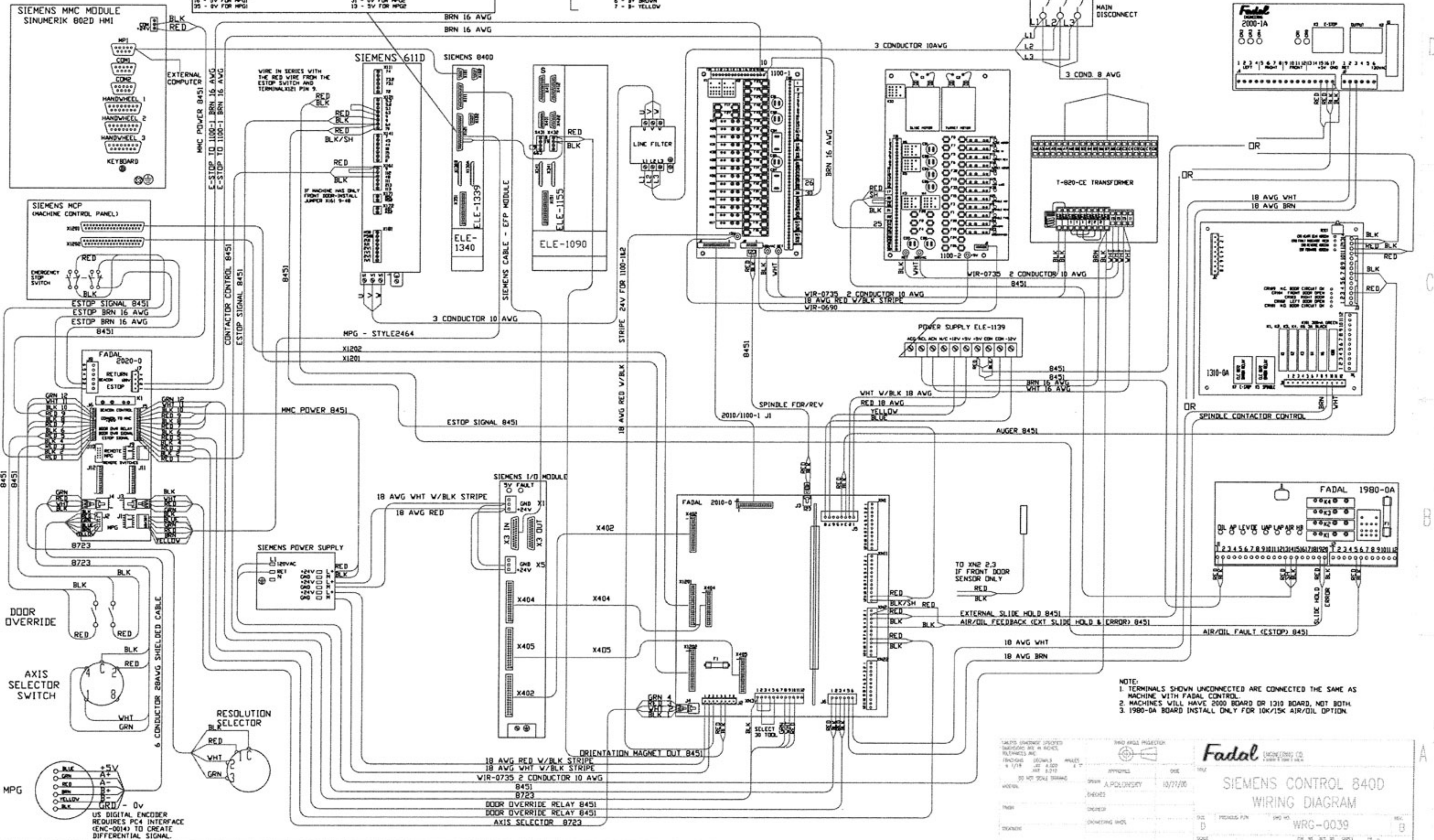
DATE: 12-27-98
 APPROVED: GARY HOOSTER
 Fadal ENGINEERING CO.
 FADAL VMC - ELECTRICAL NOTES & OPTIONS
 WRC-1002K WRC-1002

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X121 37 PIN D-SHELL
29 TO 34 PIN 19 (SPINDLE MAGNET)
35 TO 36 PIN 18 (SPINDLE MAGNET)
37 - 5V FOR MPG
38 - 5V FROM MPG
39 - 5V FROM MPG
40 - A- FROM MPG
41 - A+ FROM MPG
42 - 5V FOR MPG
43 - 5V FOR MPG
44 - 5V FOR MPG
45 - 5V FOR MPG

X141 25 PIN D-SHELL - SPINDLE ENCODER
1 - 5V BLUE
2 - 5V BLACK
3 - A+ GREEN
4 - A- RED
5 - 5V BLACK
6 - 5V BLACK
7 - 5V BLACK
8 - YELLOW

INPUT POWER MUST BE 300VAC



NOTE:
1. TERMINALS SHOWN UNCONNECTED ARE CONNECTED THE SAME AS MACHINE WITH FADAL CONTROL.
2. MACHINES WILL HAVE 2000 BOARD OR 1310 BOARD, NOT BOTH.
3. 1980-0A BOARD INSTALL ONLY FOR 10K/15K AIR/OIL OPTION.

Revision table and title block. Includes columns for APPROVED, DATE, and REVISION. Title: Fadal SIEMENS CONTROL 840D WIRING DIAGRAM. Part Number: WPG-0039.

MPG
US DIGITAL ENCODER
REQUIRES PC4 INTERFACE
(ENC-0014) TO CREATE
DIFFERENTIAL SIGNAL.

RESOLUTION SELECTOR

DOOR OVERRIDE

AXIS SELECTOR SWITCH

SIEMENS POWER SUPPLY
828222
000000
24V

POWER SUPPLY ELE-1139
AC 240V 50/60 HZ
DC 24V 1.5A

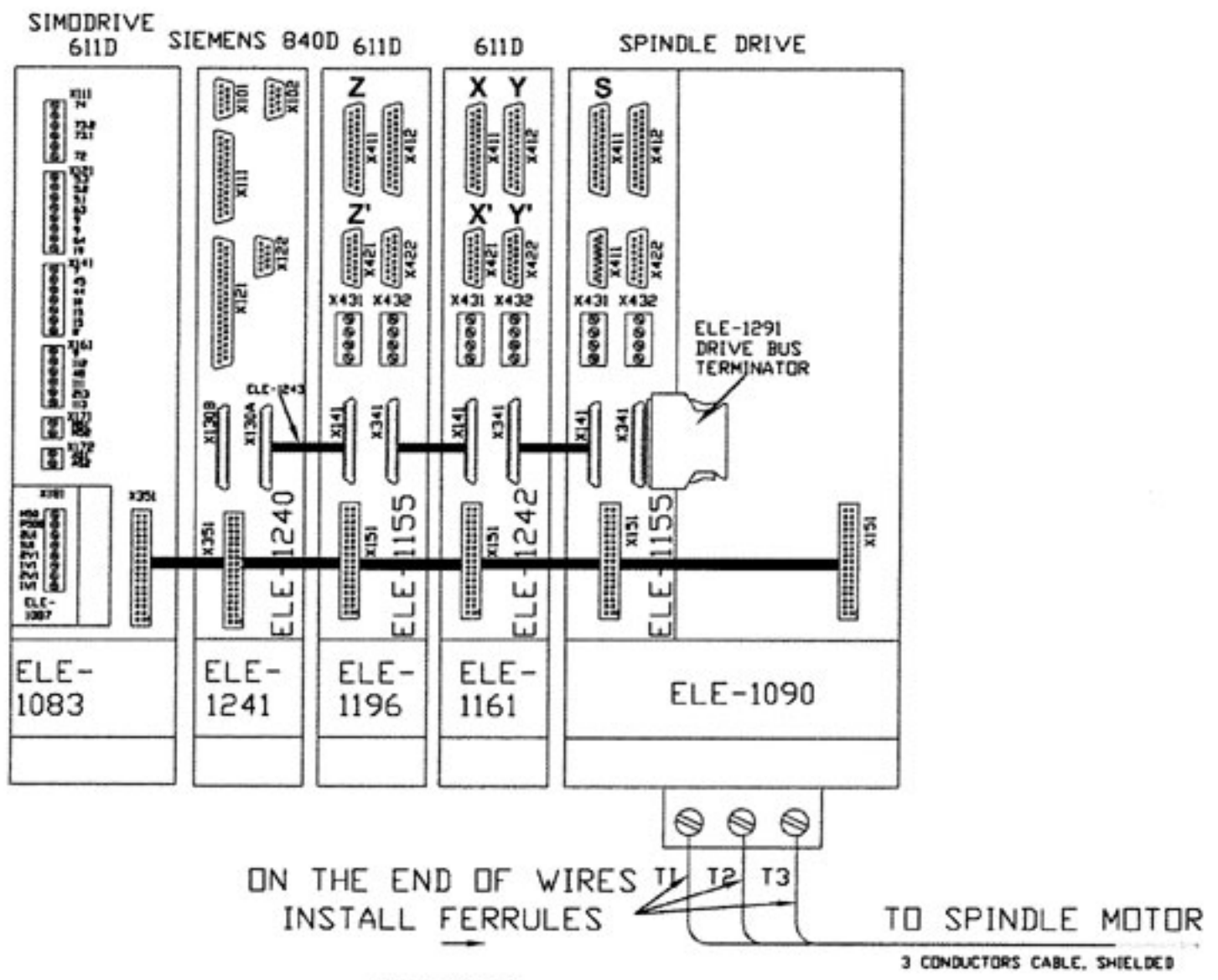
T-920-CE TRANSFORMER

Fadal 2000-1A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

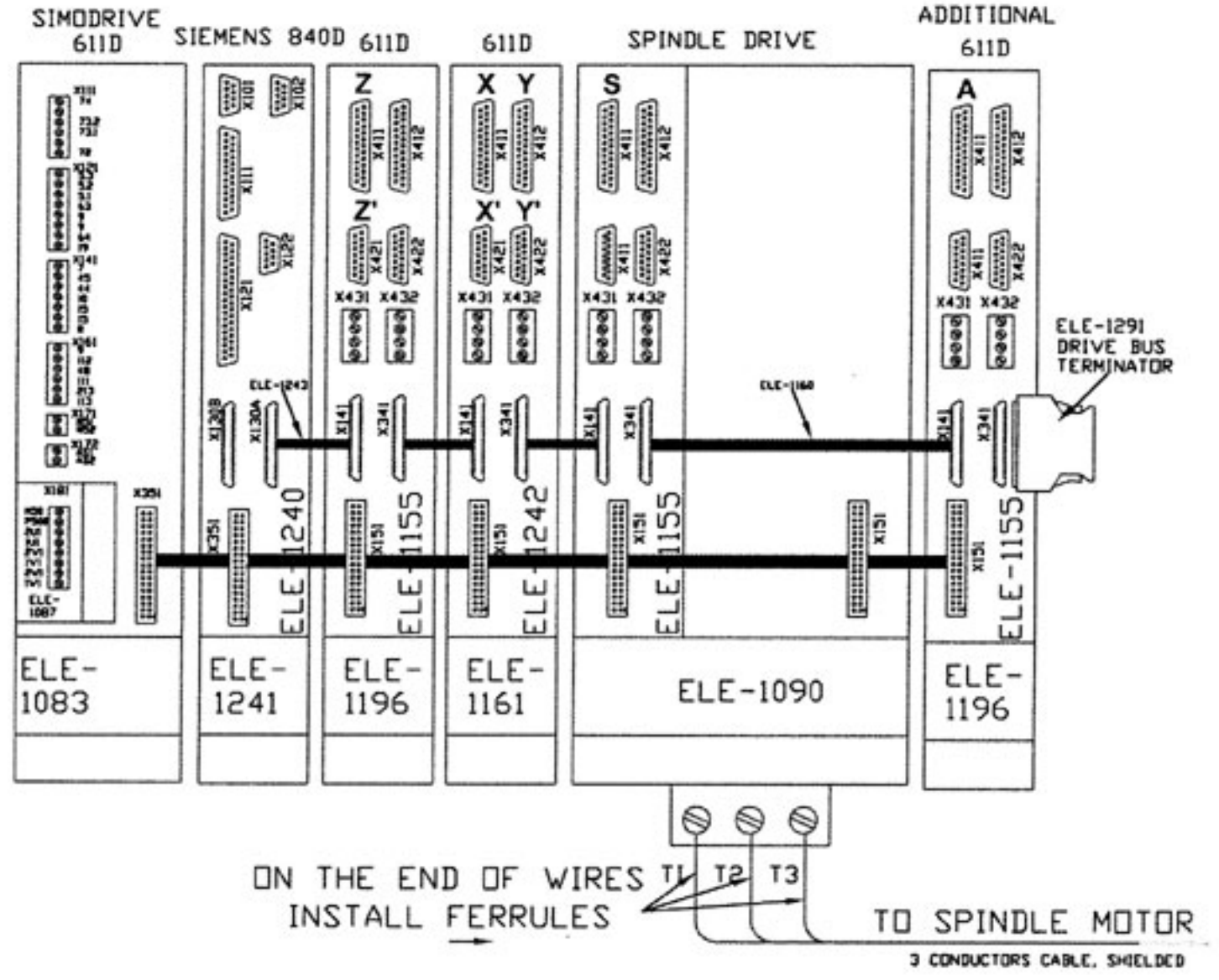
FADAL 1980-0A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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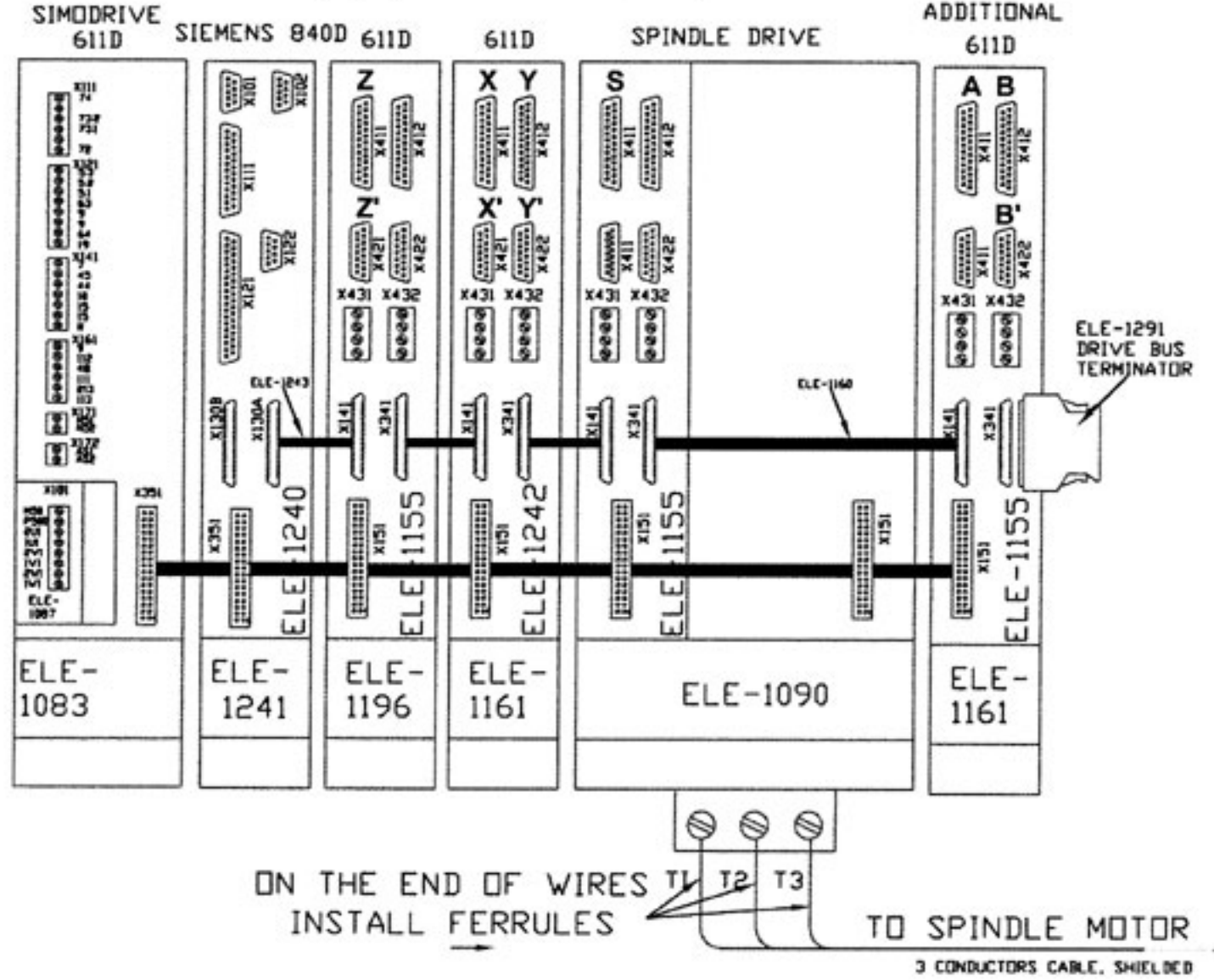
OPT-0266
 STANDARD (X, Y, Z SCALE IF REQUIRE)



OPT-0267
 A AXIS (X, Y, Z SCALE IF REQUIRE)



OPT-0268
 A&B AXIS (X, Y, Z SCALE IF REQUIRE)

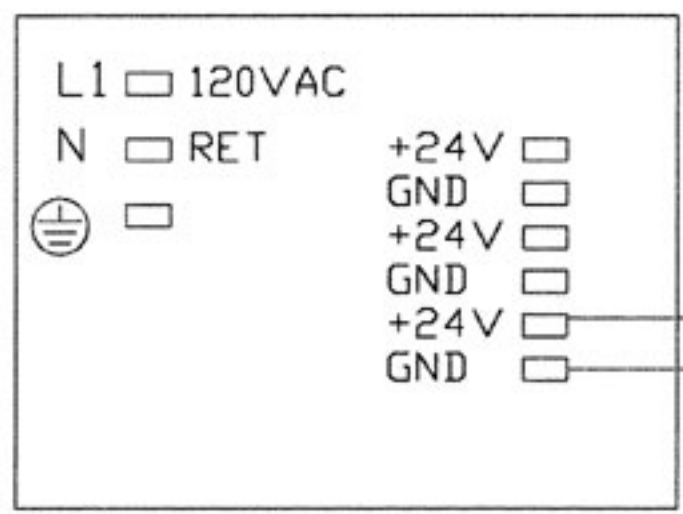


- NOTE: 1. X-X AXIS FEEDBACK
 Y-Y AXIS FEEDBACK
 Z-Z AXIS FEEDBACK
 S-SPINDLE FEEDBACK
 X'-X AXIS SCALE
 Y'-Y AXIS SCALE
 Z'-Z AXIS SCALE
 A-A AXIS FEEDBACK
 B-B AXIS FEEDBACK
 B'-B' AXIS SCALE
2. FOR V300 ROTARY TABLE USE ELE-1242 CONTROL MODULE

DATE: 10/25/00		DRAWN: ALP		CHECKED: []		APPROVED: []	
FADAL ENGINEERING CO.				SIEMENS CONTROL 840D			
WIRING DIAGRAM				WFG-0039			
REV: 0		REV: 0		REV: 0		REV: 0	

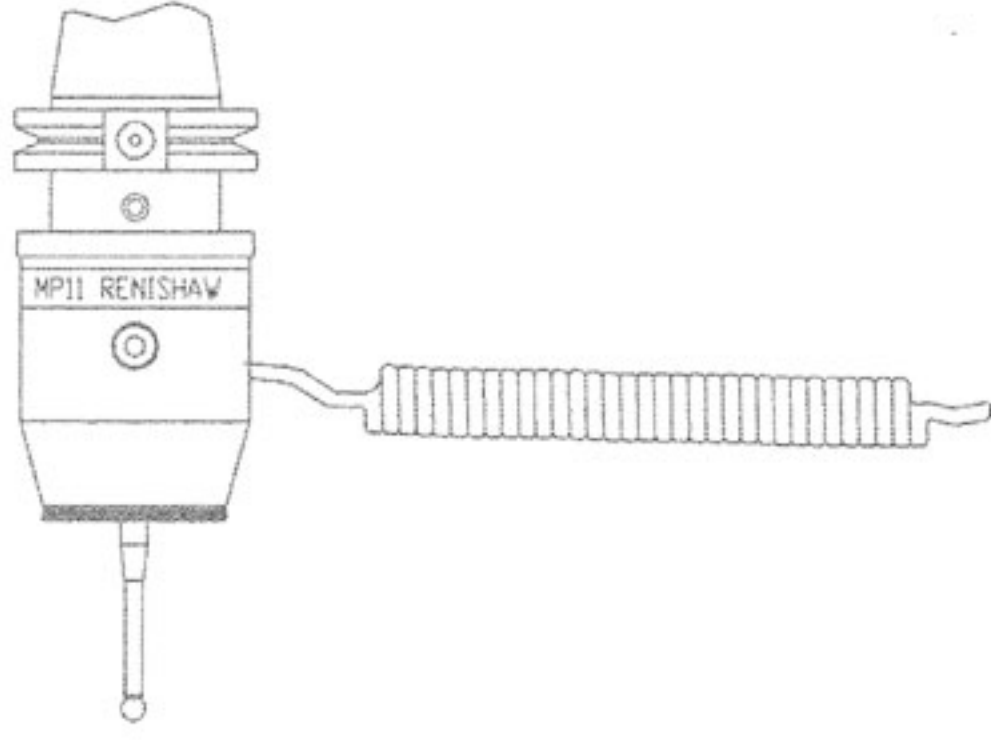
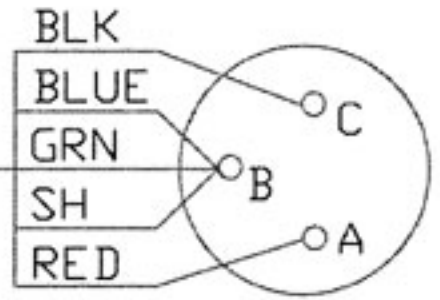
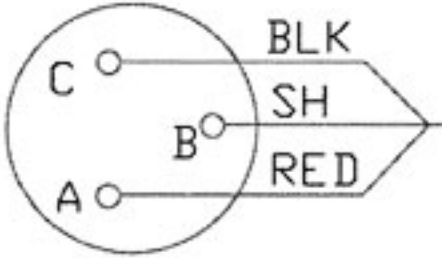
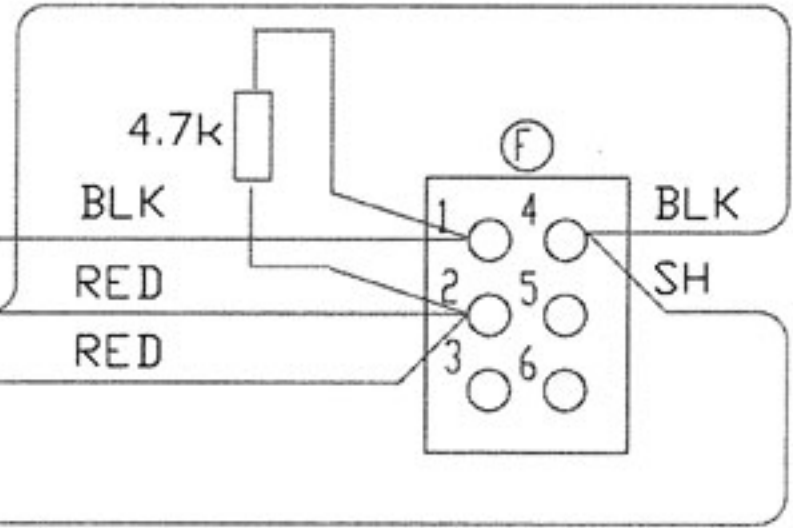
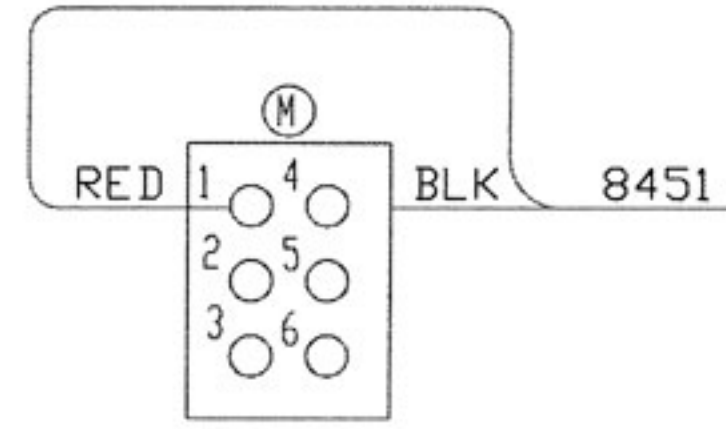
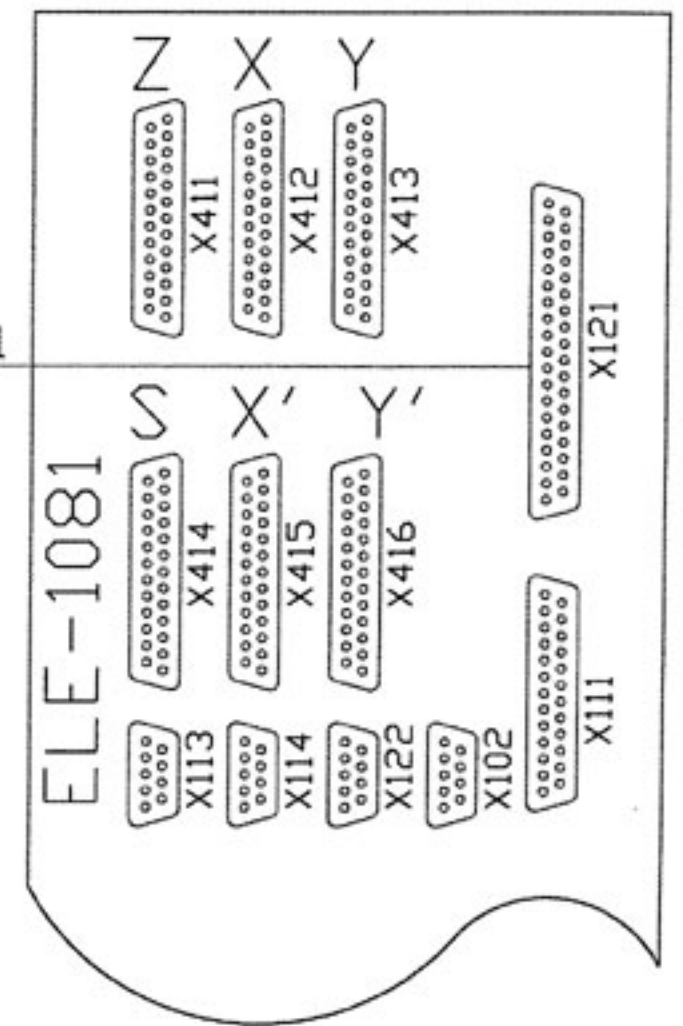
NOTICE: THE DESIGN OF ELECTRICAL CONNECTIONS IS THE RESPONSIBILITY OF THE USER. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE CORRECTNESS OF ALL CONNECTIONS AND SHALL BE RESPONSIBLE FOR THE PROPER USE OF THE EQUIPMENT AS SHOWN IN THIS WIRING DIAGRAM.

24V POWER SUPPLY



FOR THE PROBE OPTION
 CONNECTOR X121 IS
 PRE-WIRED WITH 8451
 WIRE. PIN 10-0V BLACK,
 PIN 9-SIGNAL RED.

SIEMENS 810D



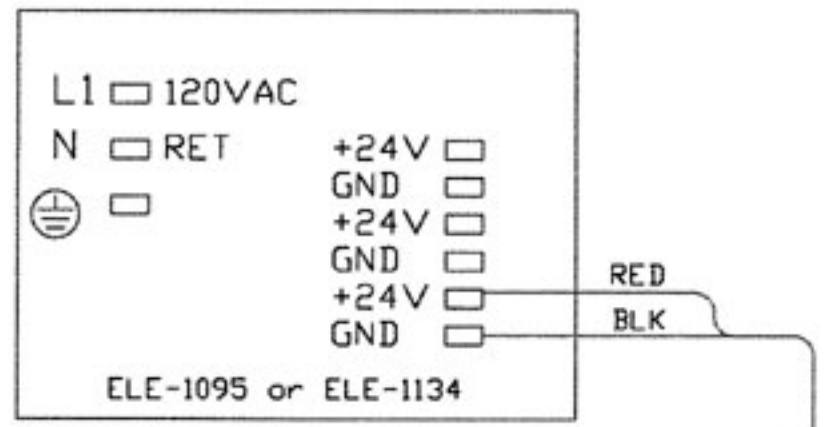
AUTO CHECKED DRAWING DRAWING NO. WRC-0038 REV. NO. 1 DATE 05/25/00 BY A.POLONSKY		DRAWN BY A.POLONSKY DATE 05/25/00		Fadal ENGINEERING CO. 1000 S. 10TH ST. #200 WILMINGTON, DE 19804	
MP11 PROBES SIEMENS WIRING DIAGRAM				WRC-0038 REV. A	

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REV. B Wires red & blk swapped
 REV. C ECD-1104 resistor 10K is added
 REV. D CHANGE RESISTOR 10K TO 4.7K

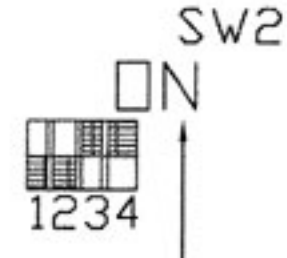
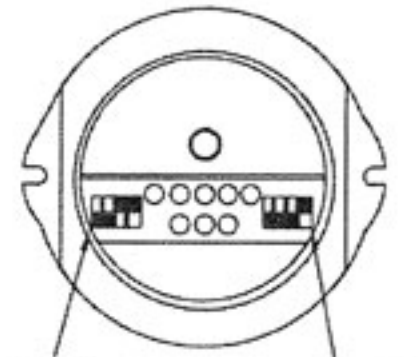
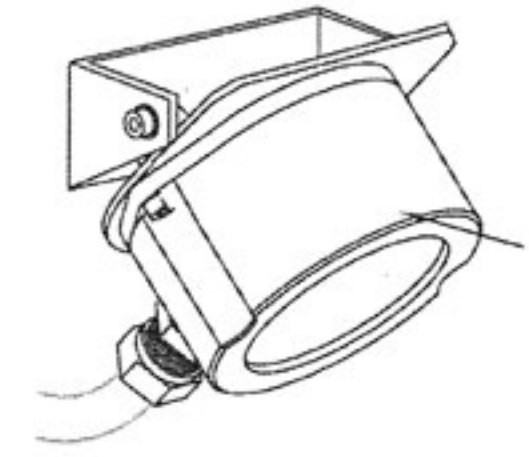
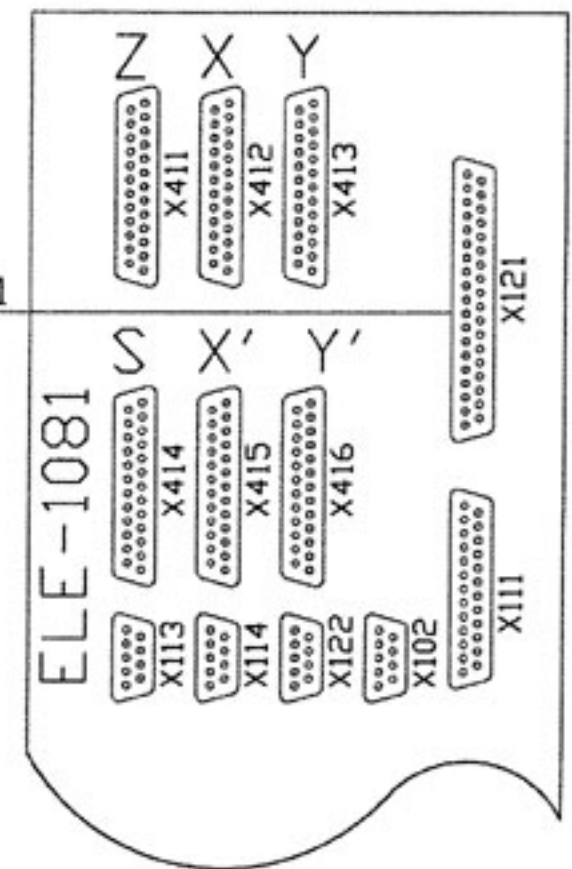
DATE: 08/16/00
 08/21/00
 10/05/00

24V POWER SUPPLY

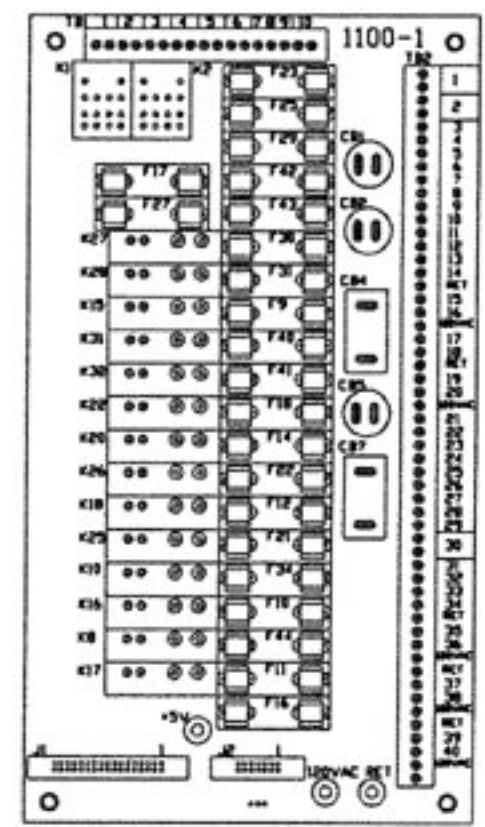
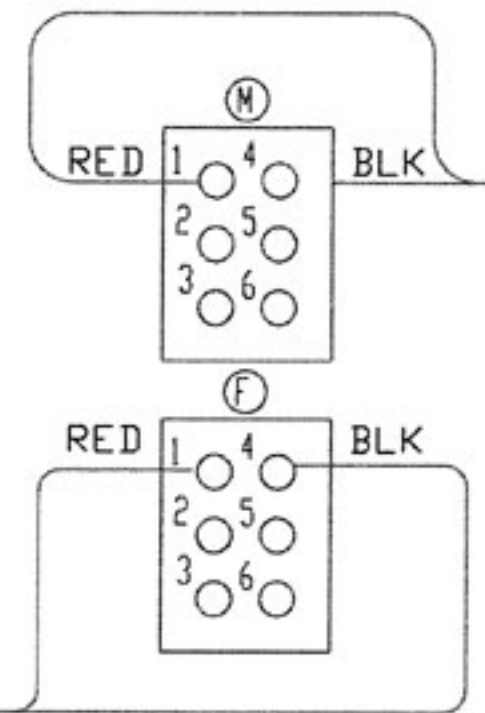
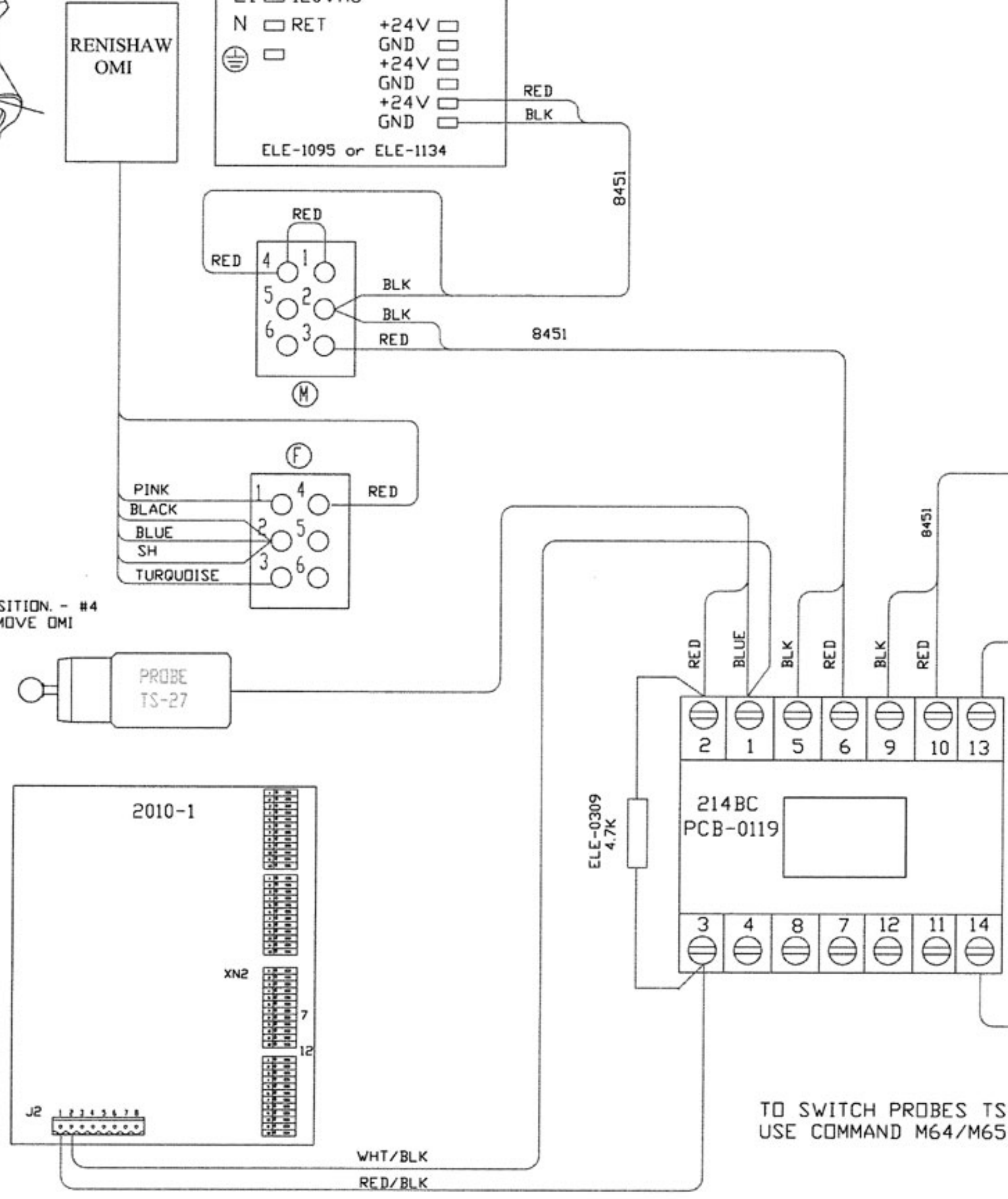


FOR THE PROBE OPTION
 CONNECTOR X121 IS
 PRE-WIRED WITH 8451
 WIRE. PIN 10-0V BLACK,
 PIN 9-SIGNAL RED.

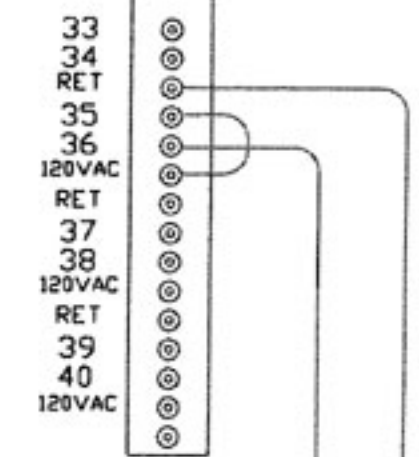
SIEMENS 810D



NOTE: SET SW1 TO AUTO START POSITION. - #4
 TO GAIN ACCESS TO SW1 REMOVE OMI
 WINDOW AND LABEL.



INSTALL FUSE F10
 AGC2 AND SS RELAY K16



TO SWITCH PROBES TS-27 AND MP12
 USE COMMAND M64/M65

DATE: 06/06/00

DESIGNER: A. POLINSKY

DATE: 06/06/00

PROJECT: TS27/MP12 PROBES SIEMENS WIRING DIAGRAM

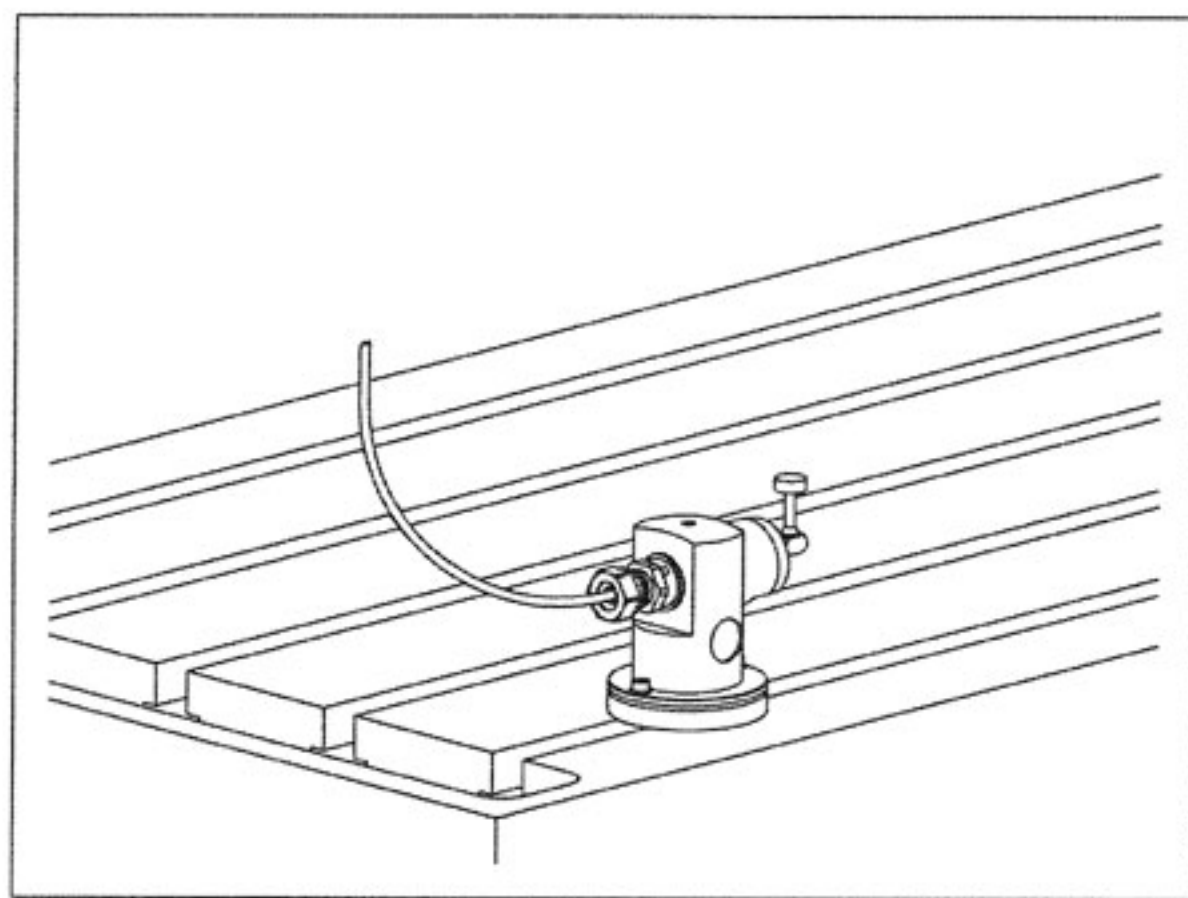
REV: D

WRG-0036

Fadal ENGINEERING CO.

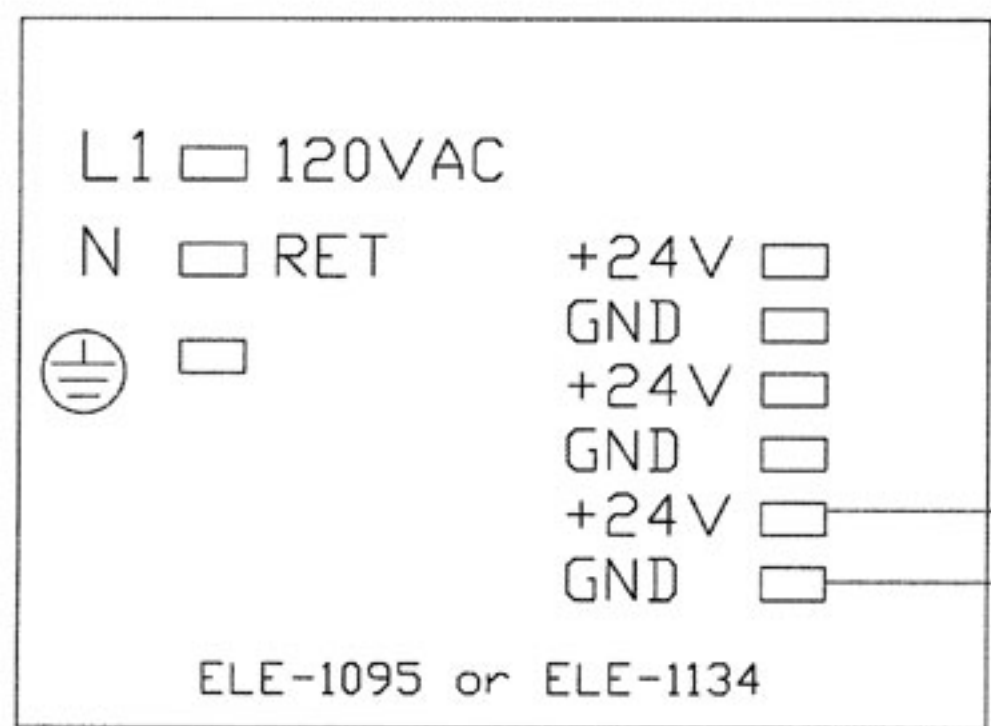
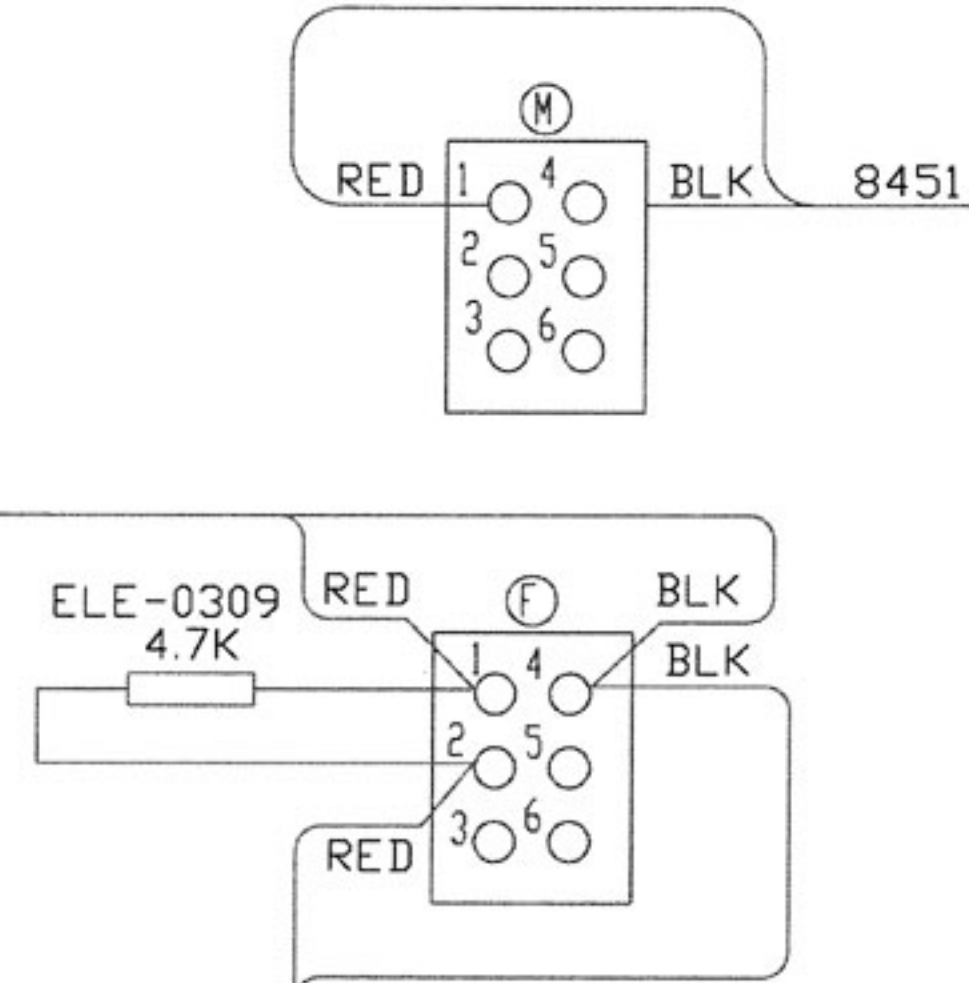
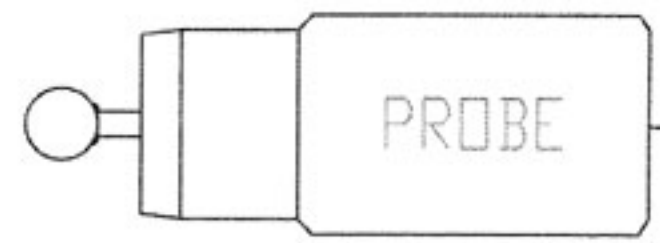
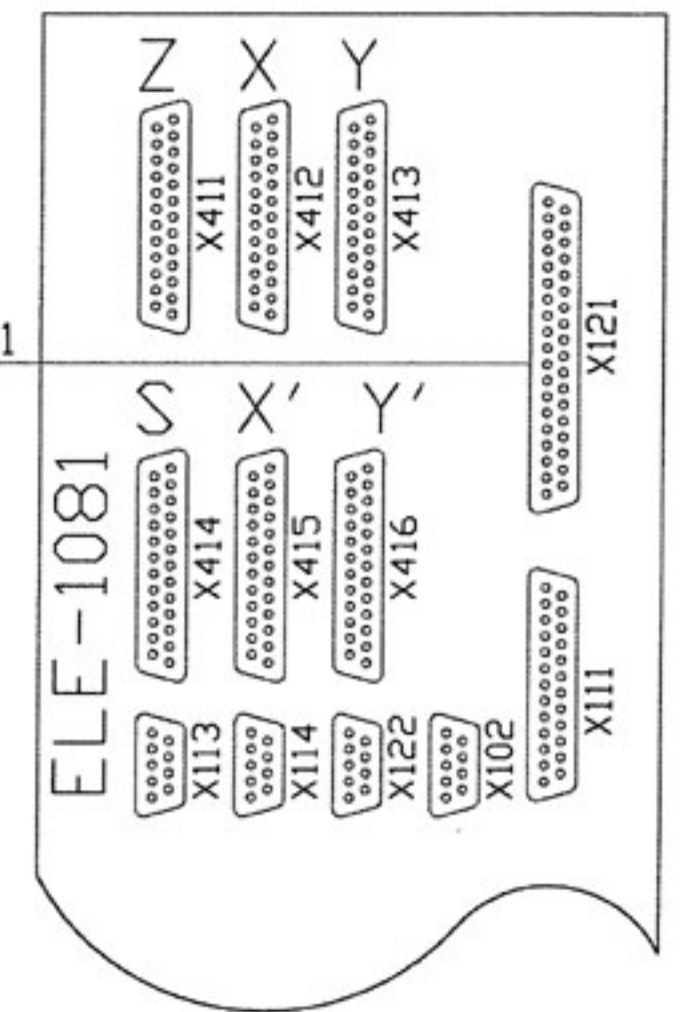
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REV.	DESCRIPTION	DATE
B6 B	2010 BOARD ADDED	09/09/00
B6 C	POWER SUPPLY REPLACED 2010 BOARD	09/28/00
D	PART NUMBERS ADDED	10/05/00



FOR THE PROBE OPTION
CONNECTOR X121 IS
PRE-WIRED WITH 8451
WIRE. PIN 10-0V BLACK,
PIN 9-SIGNAL RED.

SIEMENS 810D

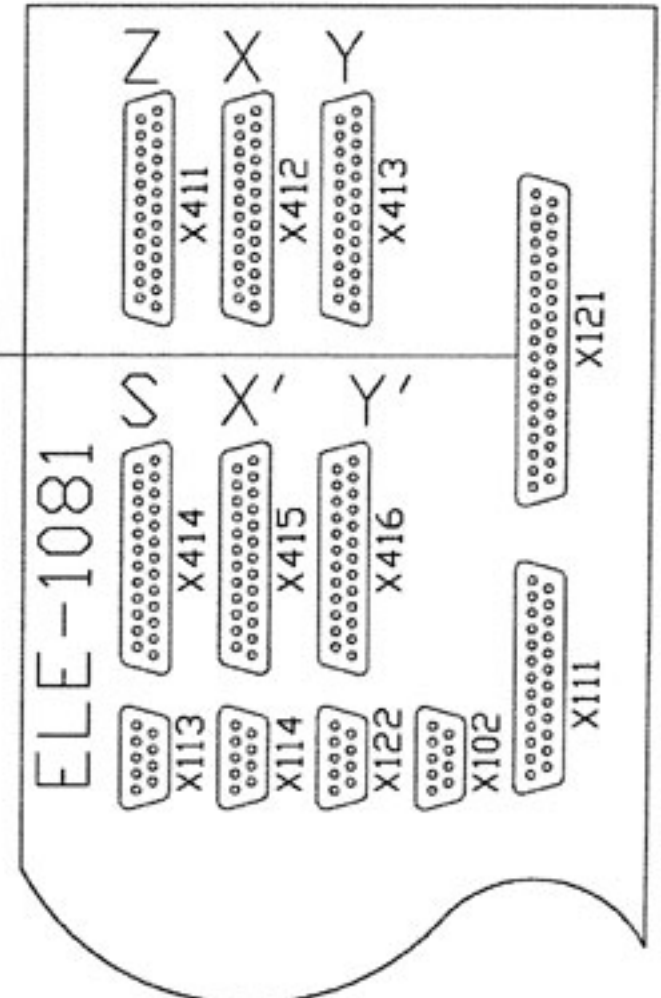


<small>UNITS UNLESS SPECIFIED DIMENSIONS ARE IN INCHES DIMENSIONS ARE FRACTIONS DECIMALS 3/16 1/32 1/64 1/8 1/16 1/32 1/64 1/8 1/16 1/32 1/64</small>		<small>THIRD ANGLE PROJECTION</small> 		Fadal ENGINEERING CO. <small>1000 S. 10TH ST. SUITE 100 MILWAUKEE, WI 53214</small>	
<small>DATE</small> <small>BY</small> <small>CHKD</small> <small>APPR'D</small>	<small>DATE</small> <small>DATE</small> <small>DATE</small>	TS-27 PROBE SIEMENS WIRING DIAGRAM		<small>REV.</small> D	<small>REV.</small> D
<small>DO NOT SCALE DRAWING</small>			<small>DATE</small> <small>BY</small> <small>CHKD</small> <small>APPR'D</small>	<small>DATE</small> <small>DATE</small> <small>DATE</small>	<small>REV.</small> D
<small>SCALE</small>			<small>DATE</small> <small>BY</small> <small>CHKD</small> <small>APPR'D</small>	<small>DATE</small> <small>DATE</small> <small>DATE</small>	<small>REV.</small> D

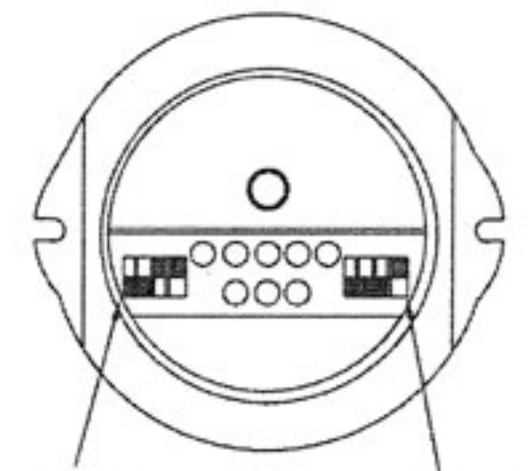
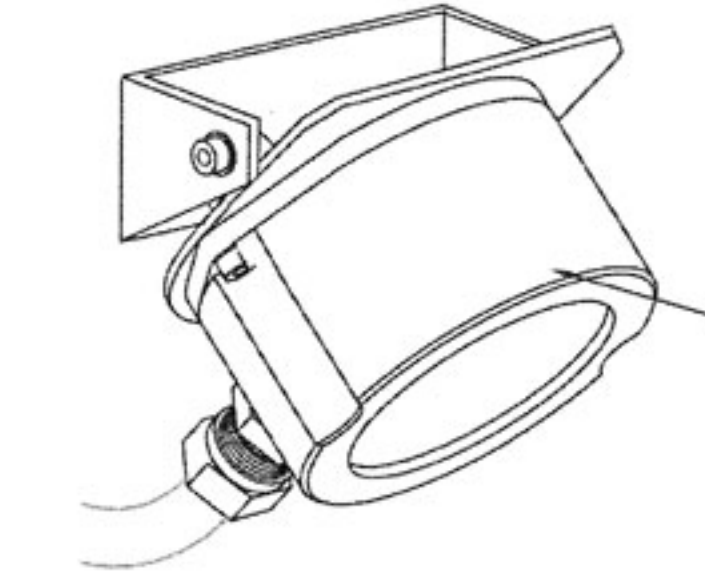
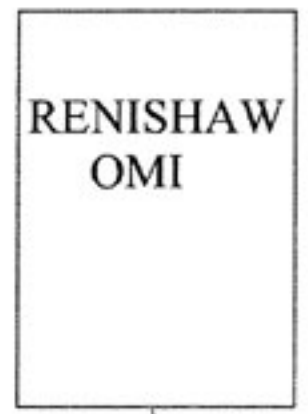
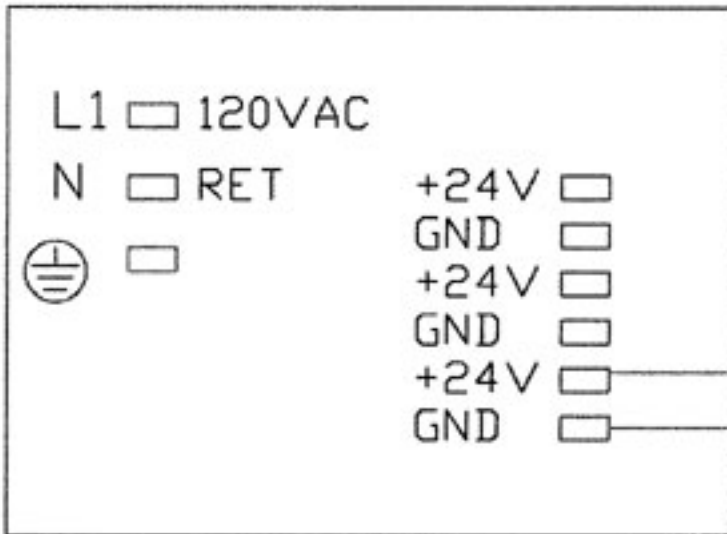
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FOR THE PROBE OPTION
CONNECTOR X121 IS
PRE-WIRED WITH 8451
WIRE. PIN 10-0V BLACK,
PIN 9-SIGNAL RED.

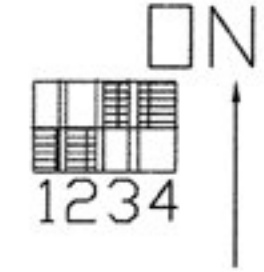
SIEMENS 810D



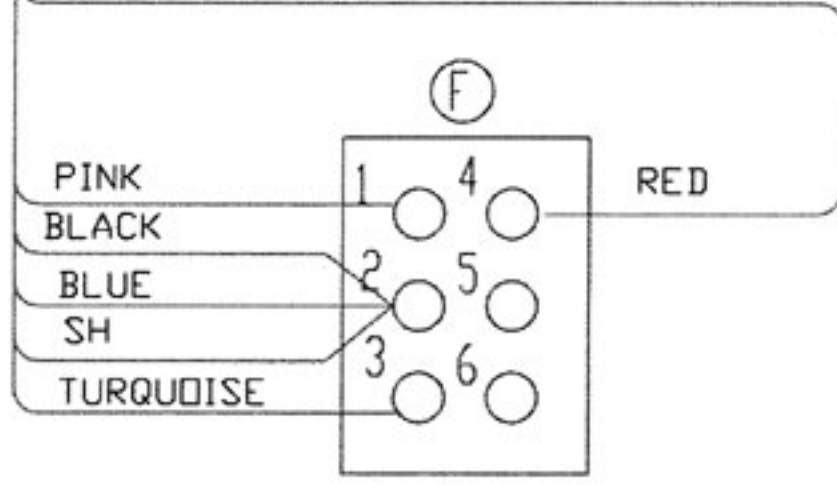
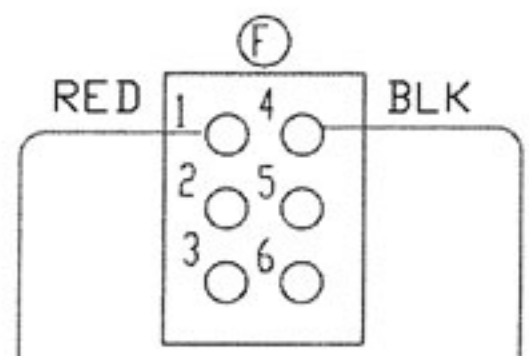
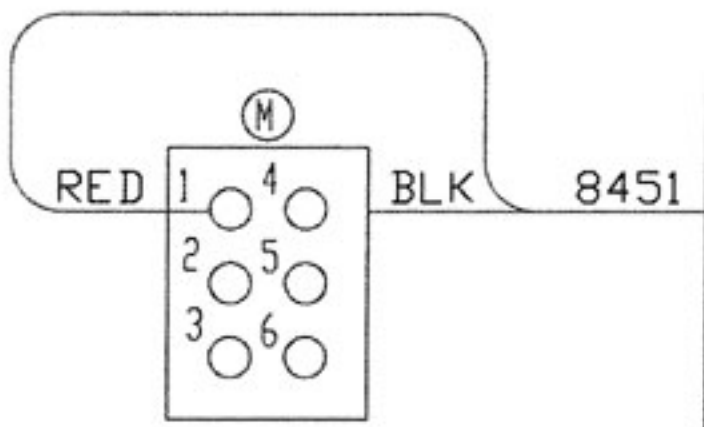
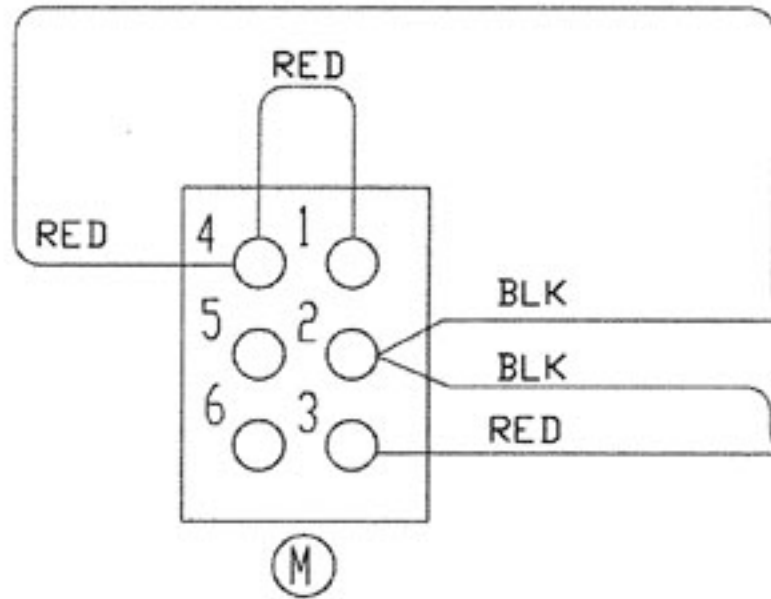
24V POWER SUPPLY



SW1 SW2



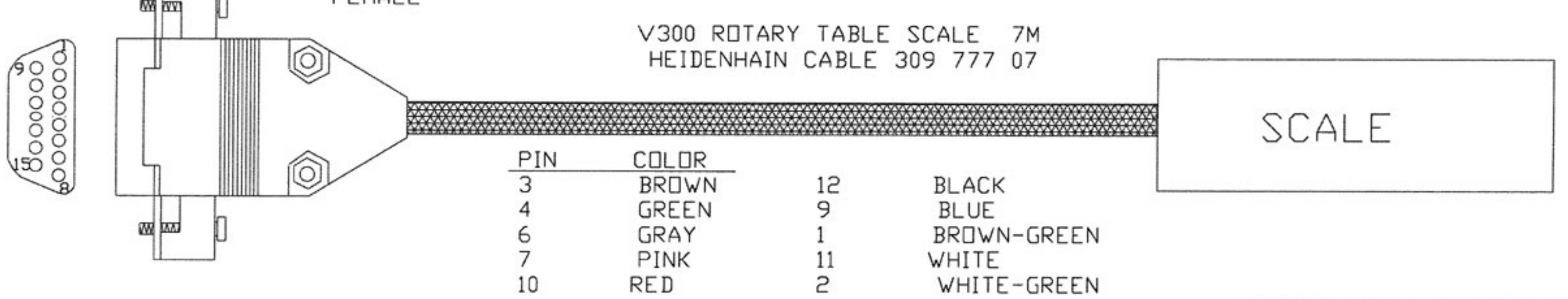
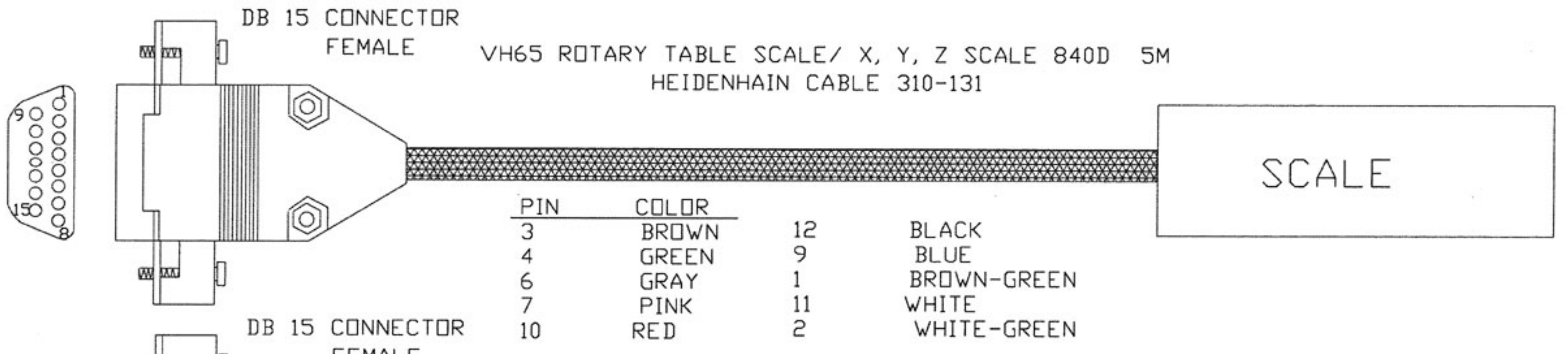
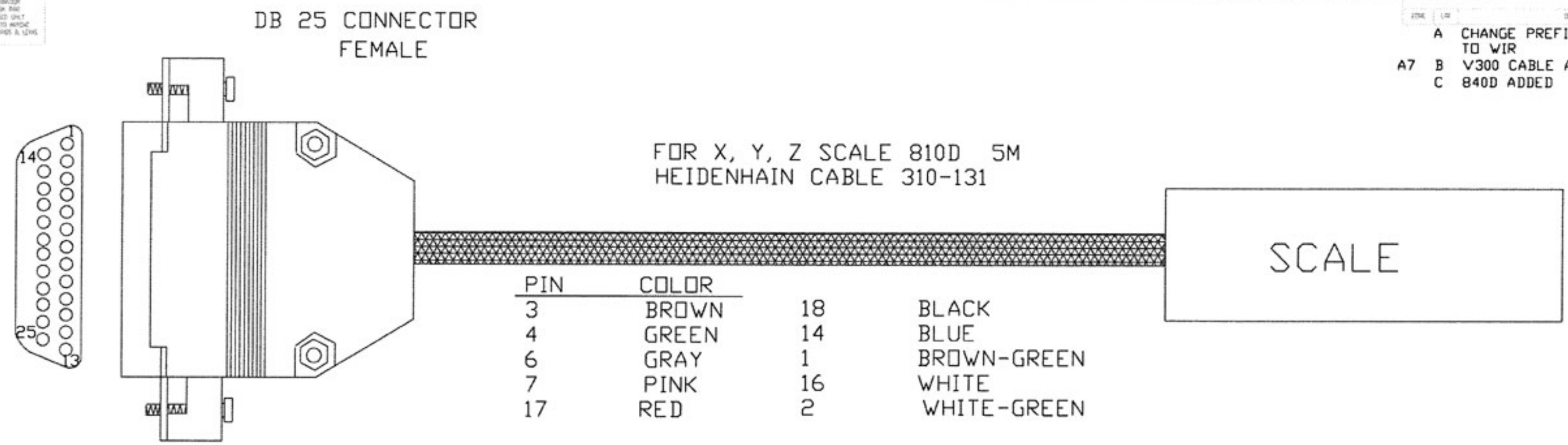
NOTE: SET SW1 TO AUTO START POSITION. - #4 TO GAIN ACCESS TO SW1 REMOVE OMI WINDOW AND LABEL.



<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:</small> FINISHES: DECIMALS ANGLES: 1/4° H: +.0005 J: +.0005 K: +.0005 L: +.0005 M: +.0005 N: +.0005 P: +.0005 Q: +.0005 R: +.0005 S: +.0005 T: +.0005 U: +.0005 V: +.0005 W: +.0005 X: +.0005 Y: +.0005 Z: +.0005 TO NOT SCALE DIMENSIONS		<small>THIS SHELL PROJECTION</small> 		Fadal ENGINEERING CO. <small>1000 W. 10TH ST. SUITE 1000</small>	
APPROVED A. POLONSKY 02/23/00	DATE 02/23/00	TITLE MP 12 PROBE SIEMENS WIRING DIAGRAM	SHEET NO. WRG-0031	REV. A	TOTAL SHEETS 1 OF 1

NOTE: THE DESIGN OF THESE CONNECTORS REPRESENTS A MODIFICATION OF STANDARD PRACTICE. IT IS SUBJECT TO CHANGE WITHOUT NOTICE. THIS DRAWING IS FOR INFORMATION ONLY AND IS NOT TO BE USED AS A BASIS FOR FABRICATION. ANY CHANGES TO THIS DRAWING WILL BE NOTICED BY A REVISION TO THIS DRAWING.

REV	DATE	DESCRIPTION
A	06/28/00	CHANGE PREFIXES FROM WRG TO WIR
A7	08/28/00	V300 CABLE ADDED
C	12/06/00	840D ADDED



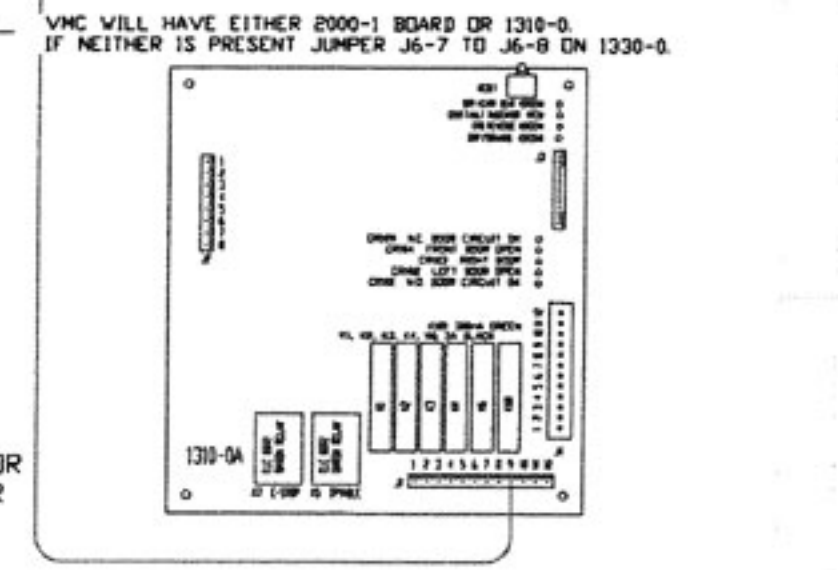
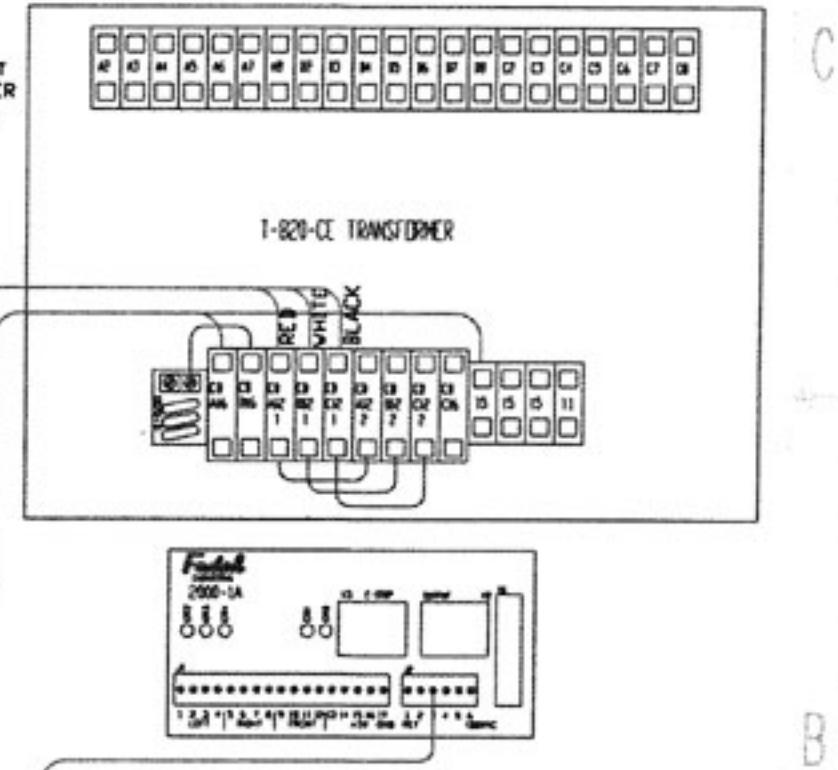
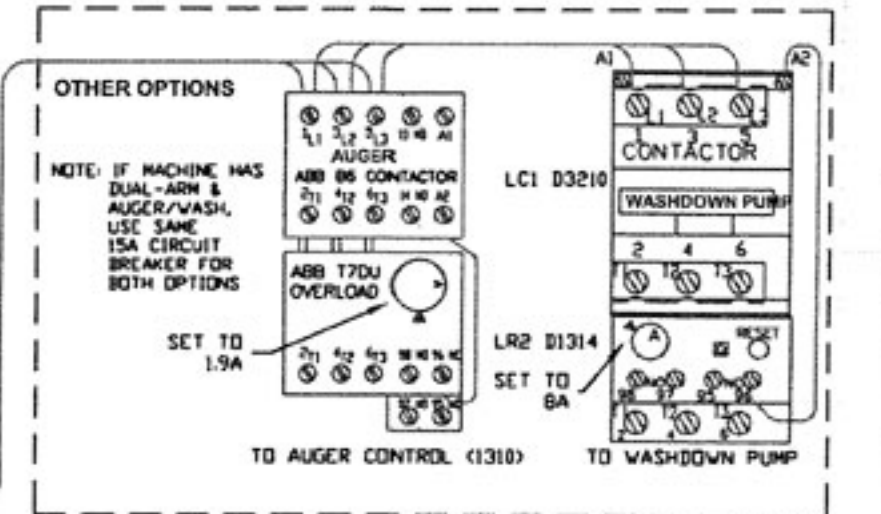
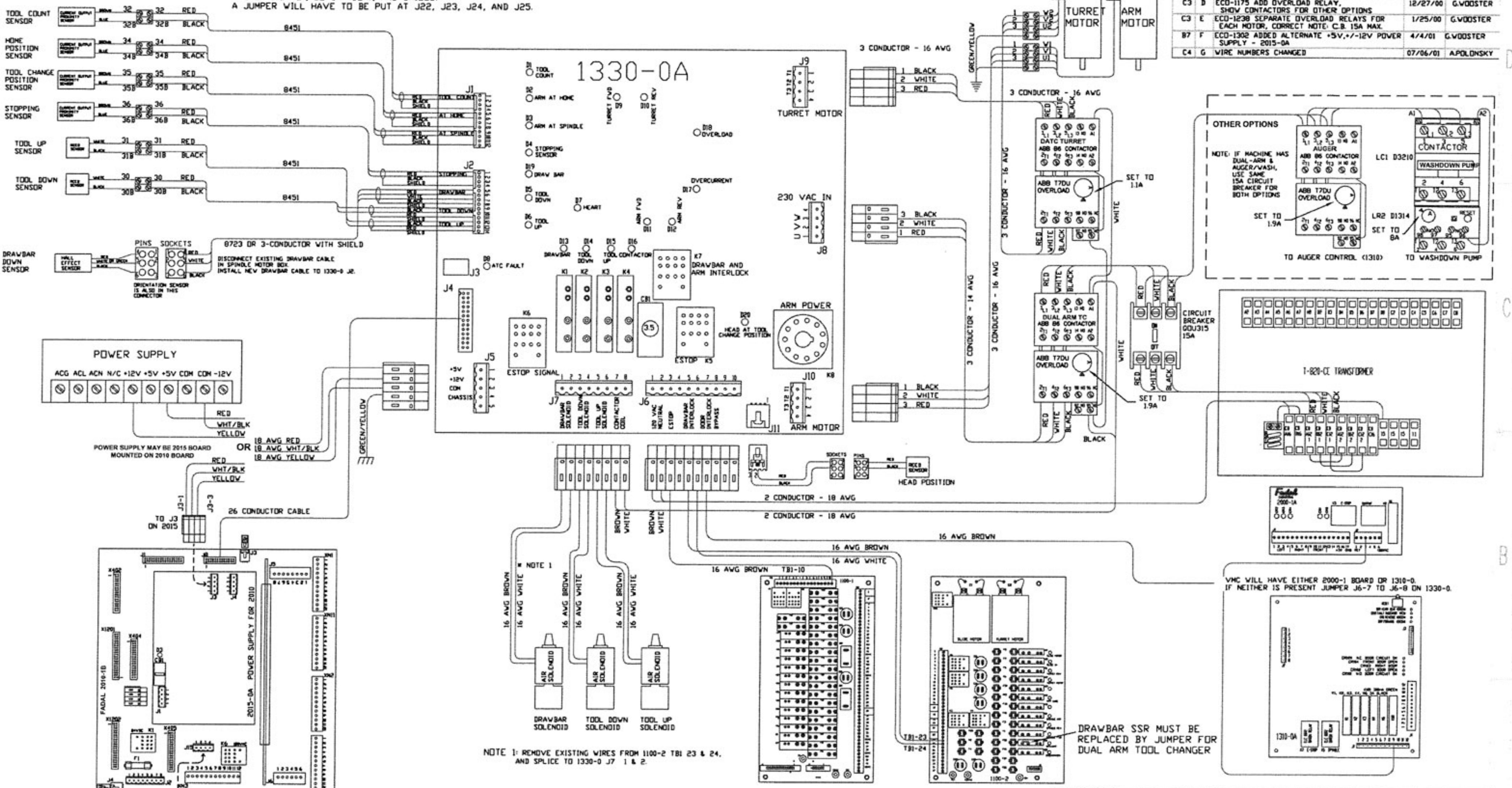
NOTE: OUTER SHIELD CONNECTED TO CONNECTOR HOUSING FOR ALL CABLES

DATE: 11/15/99 DRAWN: A. POLONSKI CHECKED:		APPROVED: [Signature] DATE: 11/15/99		Fadal ENGINEERING CO. SCALE CABLE SIEMENS 810D/840D	
TITLE: SCALE CABLE SIEMENS 810D/840D		DESIGNED:		REV: C	
PART:		DRAWING NO.: WIR-0019C		WIR-0019	

NOTE: THIS DRAWING IS SUBJECT TO CHANGE WITHOUT NOTICE. IF CORRECTIONS ARE NECESSARY IN CONFORMANCE OF STANDARD PRACTICE, IT WILL NOT BE COMPILED OR REPRODUCED UNLESS THE USER HAS BEEN ADVISED BY SPECIAL INSTRUCTIONS TO THE DRAWING.

IF VOLTAGE OUTPUT SENSORS ARE USED, USE 3-CONDUCTOR WITH SHIELD CABLE. THE CONNECTION AT J1 AND J2 WILL BE RED (+V), WHITE (SIGNAL), BLACK (COM), AND SHIELD. A JUMPER WILL HAVE TO BE PUT AT J22, J23, J24, AND J25.

REV.	DATE	DESCRIPTION	BY	APPROVED
B	10/05/00	ECCO-1120 CIRCUIT BREAKER 10A ADDED		
C	10/05/00	ECCO-1175 CIRCUIT BREAKER 10A CHANGED TO 15A		
C	12/27/00	ECCO-1175 ADD OVERLOAD RELAY. SHOW CONTACTORS FOR OTHER OPTIONS	G.WOOSTER	
C	1/25/00	ECCO-1238 SEPARATE OVERLOAD RELAYS FOR EACH MOTOR, CORRECT NOTE. C.B. 15A MAX.	G.WOOSTER	
B	4/4/01	ECCO-1302 ADDED ALTERNATE +5V, +12V POWER SUPPLY - 2015-0A	G.WOOSTER	
C	07/06/01	WIRE NUMBERS CHANGED	APOLONSKY	



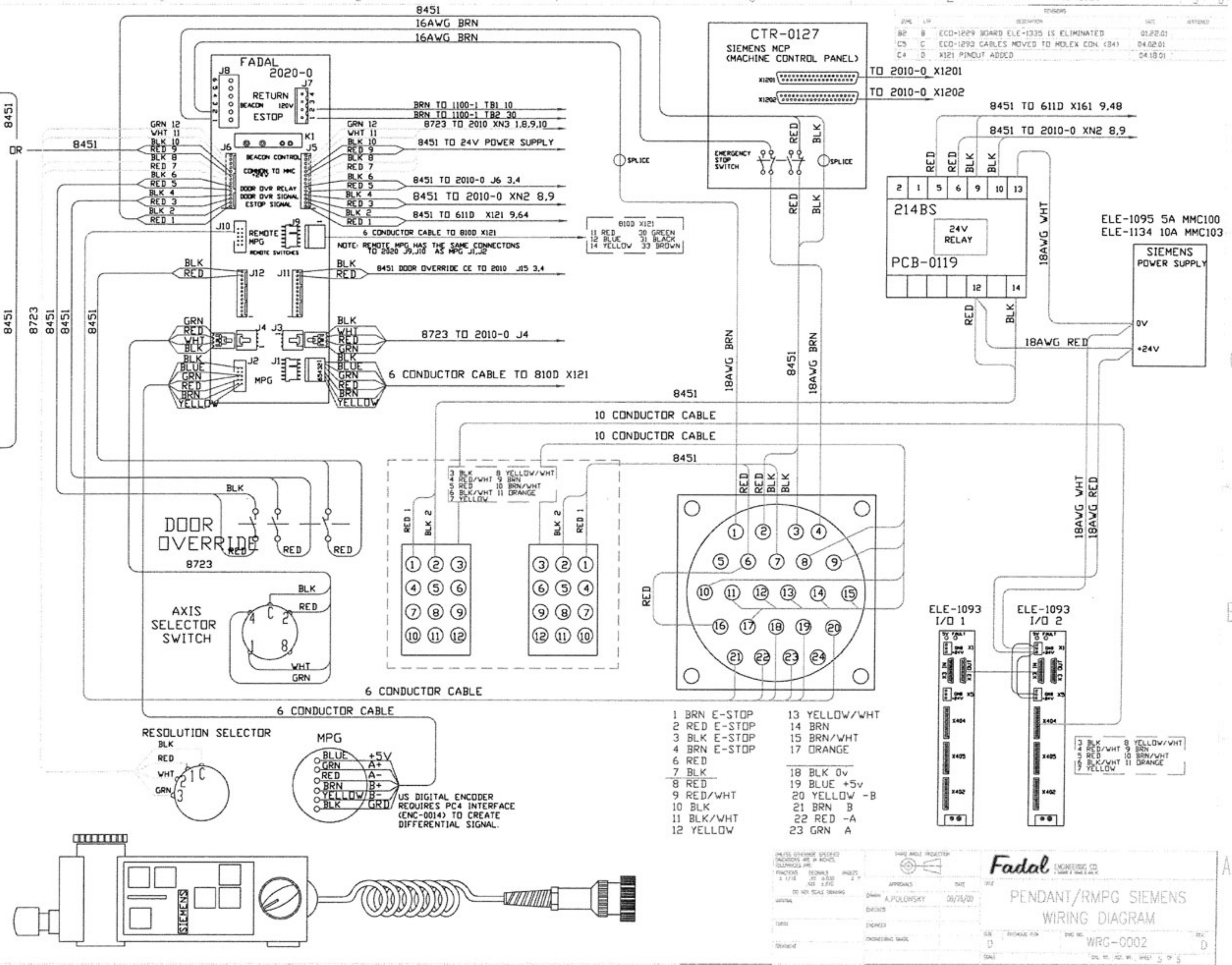
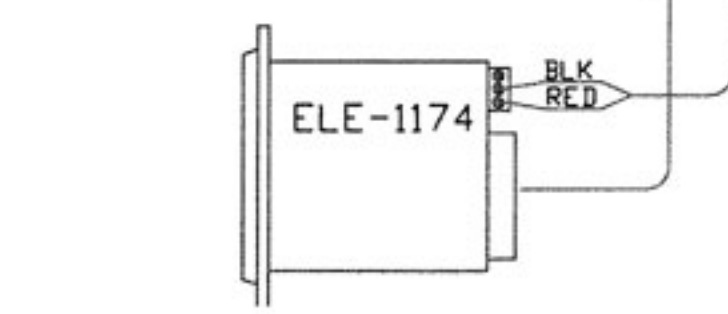
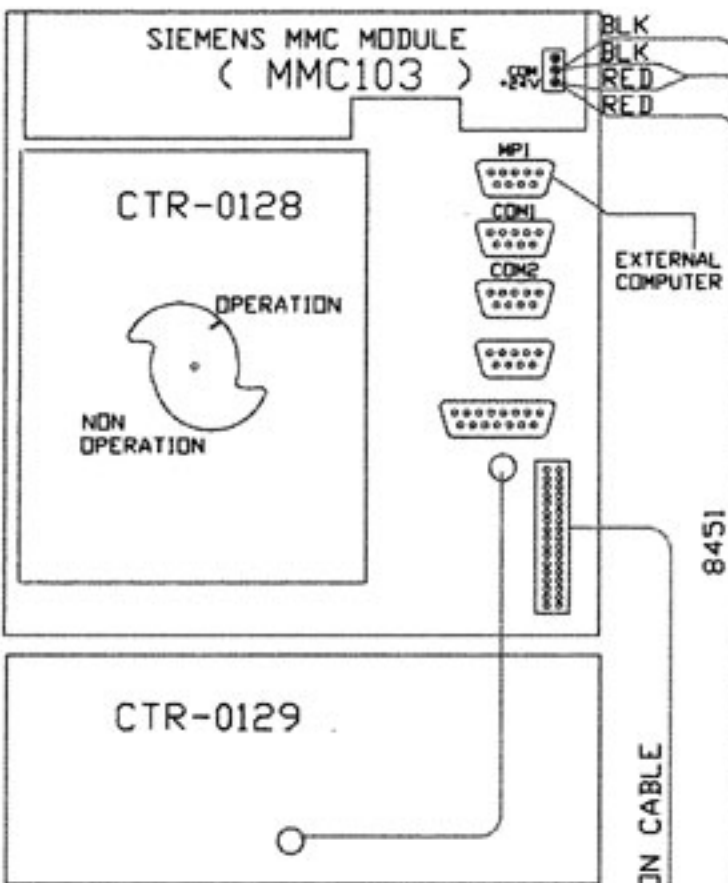
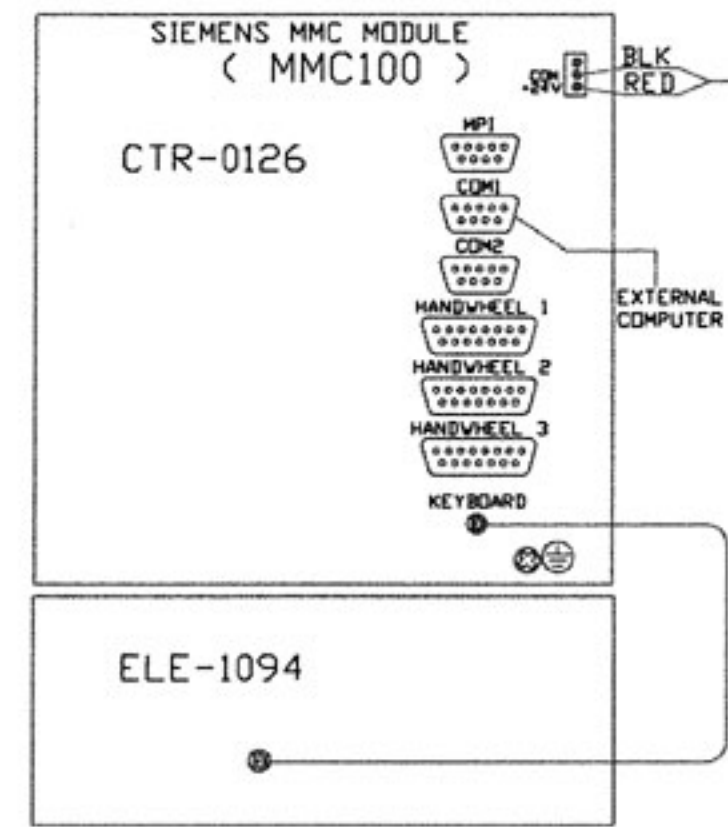
NOTE 1: REMOVE EXISTING WIRES FROM 1100-2 TBI 23 & 24, AND SPLICE TO 1330-0 J7 1 & 2.

DRAWBAR SSR MUST BE REPLACED BY JUMPER FOR DUAL ARM TOOL CHANGER

DATE	07-27-00	REV.	G
DESIGNER	A. POLONSKY	DATE	07-27-00
CHECKED		DATE	
APPROVED		DATE	
BY		DATE	
SCALE		DATE	
TITLE	DUAL-ARM TOOL CHANGER WIRING DIAGRAM SIEMENS		
DWG. NO.	WRG-0001		
REV. NO.	2 OF 2		

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REV.	DATE	DESCRIPTION	BY	CHKD.
B2	01/22/01	ECC-1229 BOARD ELE-1335 IS ELIMINATED		
C3	04/02/01	ECC-1293 CABLES MOVED TO MOLEX CON. (34)		
C4	04/18/01	X121 PINDUT ADDED		



Fadal ENGINEERING CO.

PENDANT/RMPG SIEMENS WIRING DIAGRAM

APPROVALS: ALPOLINSKY 08/28/00

DATE: 08/28/00

REV: 5

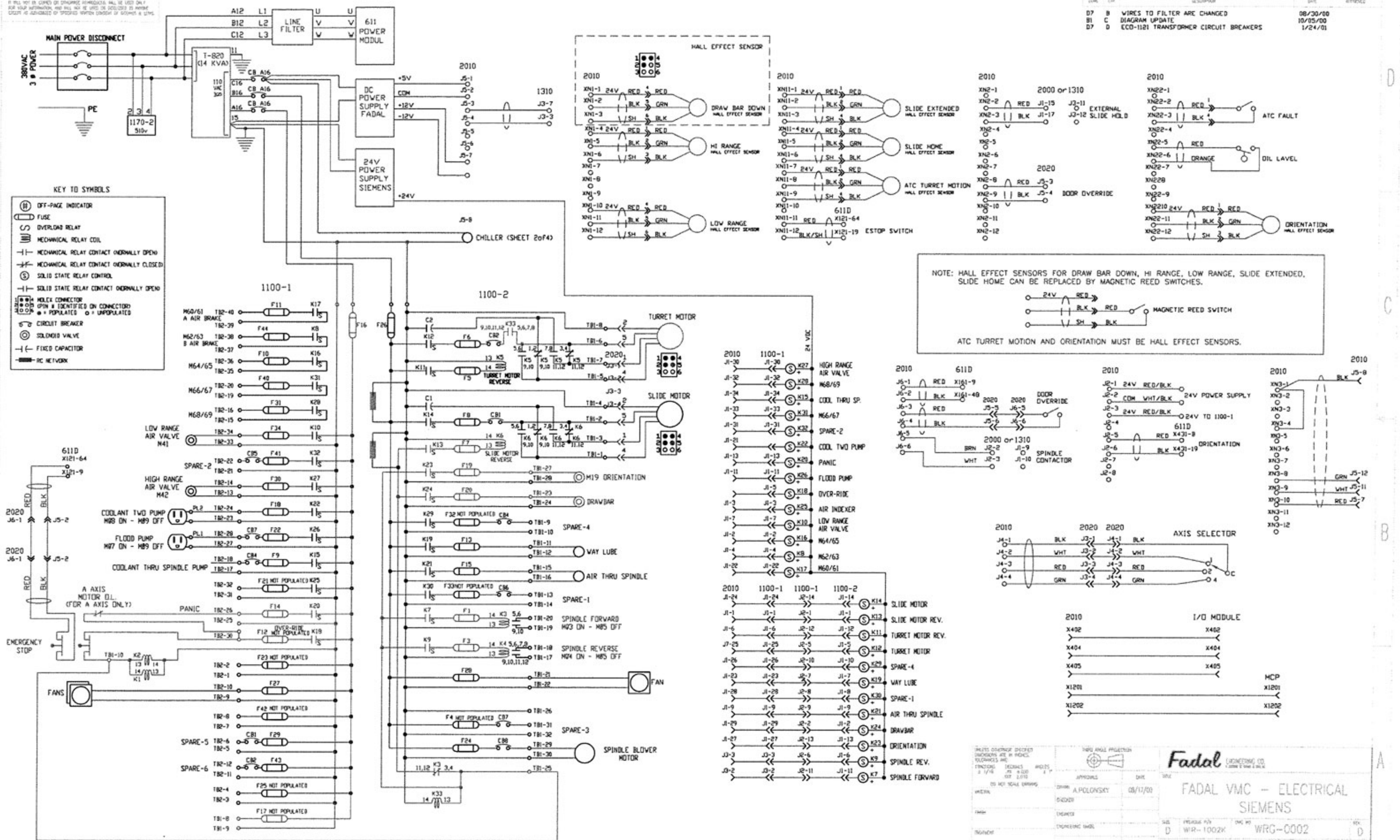
WIRING DIAGRAM

WIRING NO: WRG-0002

DATE: 04/18/01

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REV.	DESCRIPTION	DATE
D7	WIRES TO FILTER ARE CHANGED	08/30/00
B1	DIAGRAM UPDATE	10/05/00
D7	ECO-1121 TRANSFORMER CIRCUIT BREAKERS	1/24/01



Fadal (ENGINEERING) CO.
 10000 W. 104th St., Overland Park, KS 66213-1000

FADAL VMC - ELECTRICAL
 SIEMENS

DATE: 08/17/00
 DRAWN: A. POLONSKY
 CHECKED: []
 DESIGNED: []
 ELECTRICAL ENGINEER: []

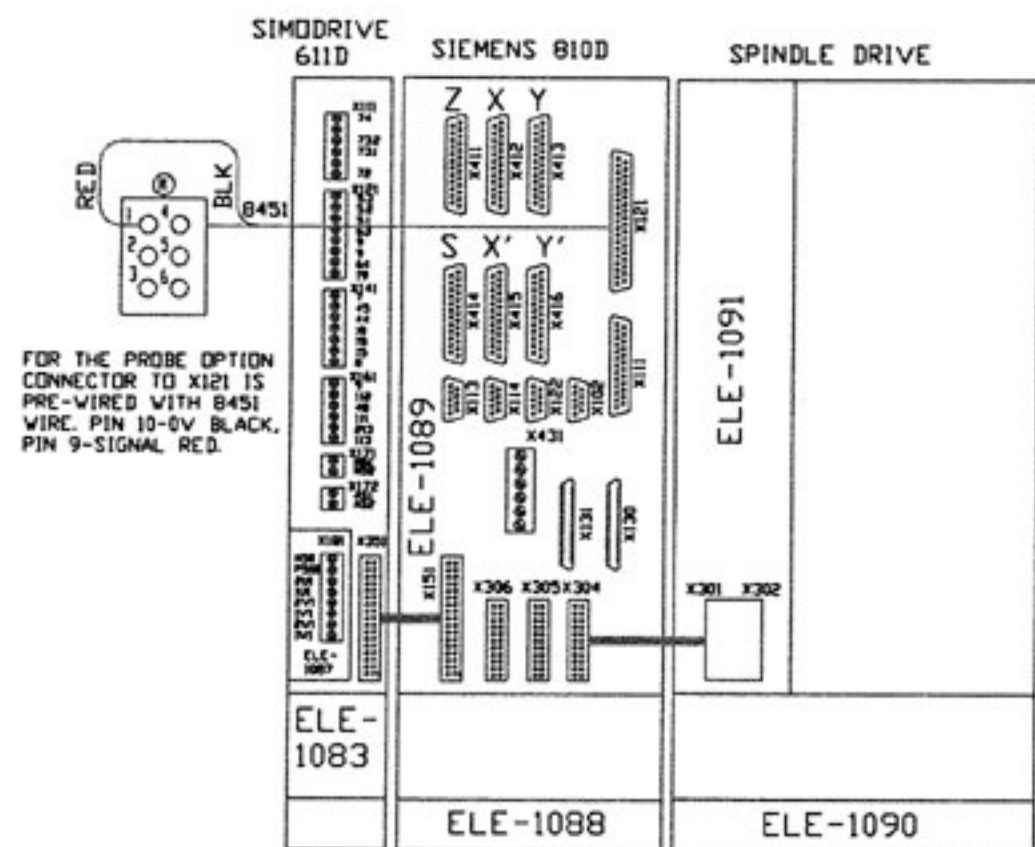
REV. D
 WIRING: WIR-1002K
 PROJECT NO: WRG-0002

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
D8	C PROBE INPUT CHANGED	06/06/00	
	D OPTIONS ADDED	06/22/00	
	F PART NUMBERS ADDED	10/05/00	
	F ELE-1331 CHANGED TO WIR-0791	12/12/00	
	G ADD JUMPER TO X431- 9,663	05/08/01	
A2	H NOTE #3 ADDED	05/24/01	

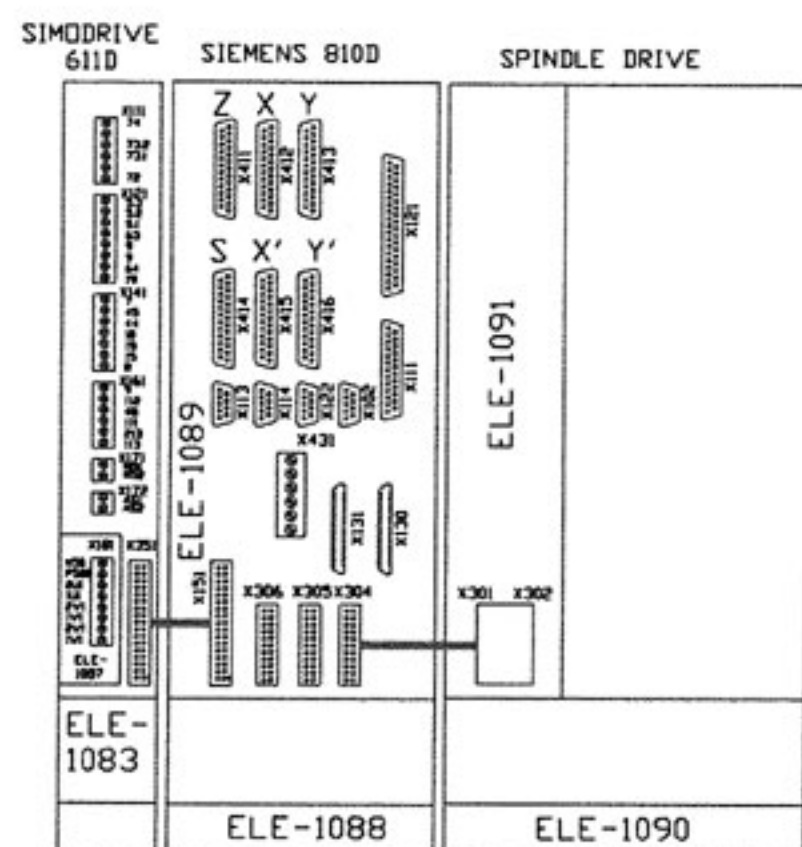
OPT-0186 VMC 3020
OPT-0233 VMC 4525

① STANDARD (NO SCALE)



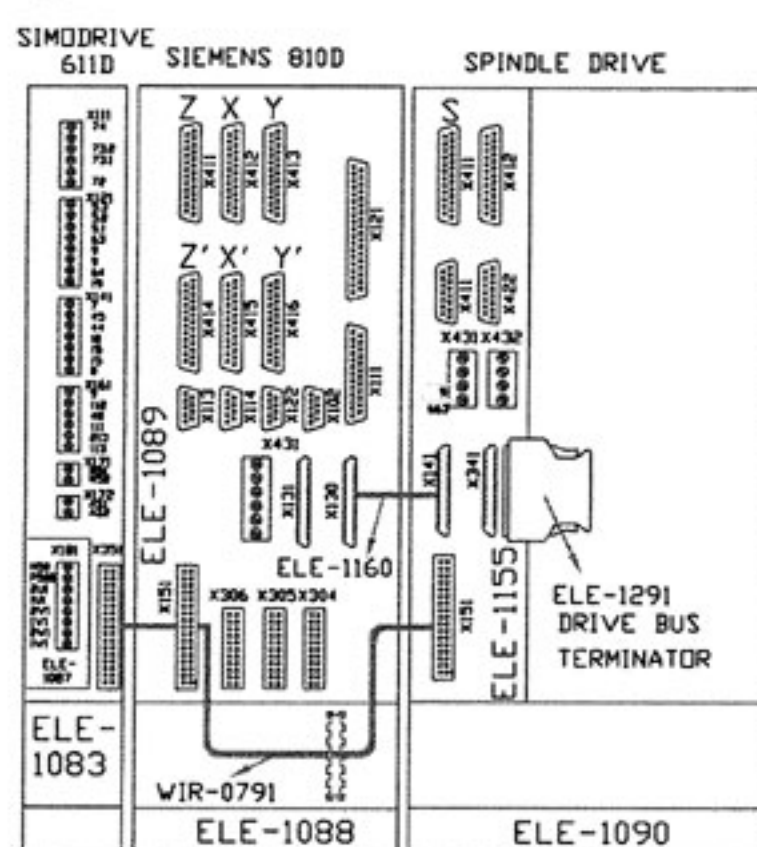
OPT-

② X, Y, SCALES FOR SIEMENS



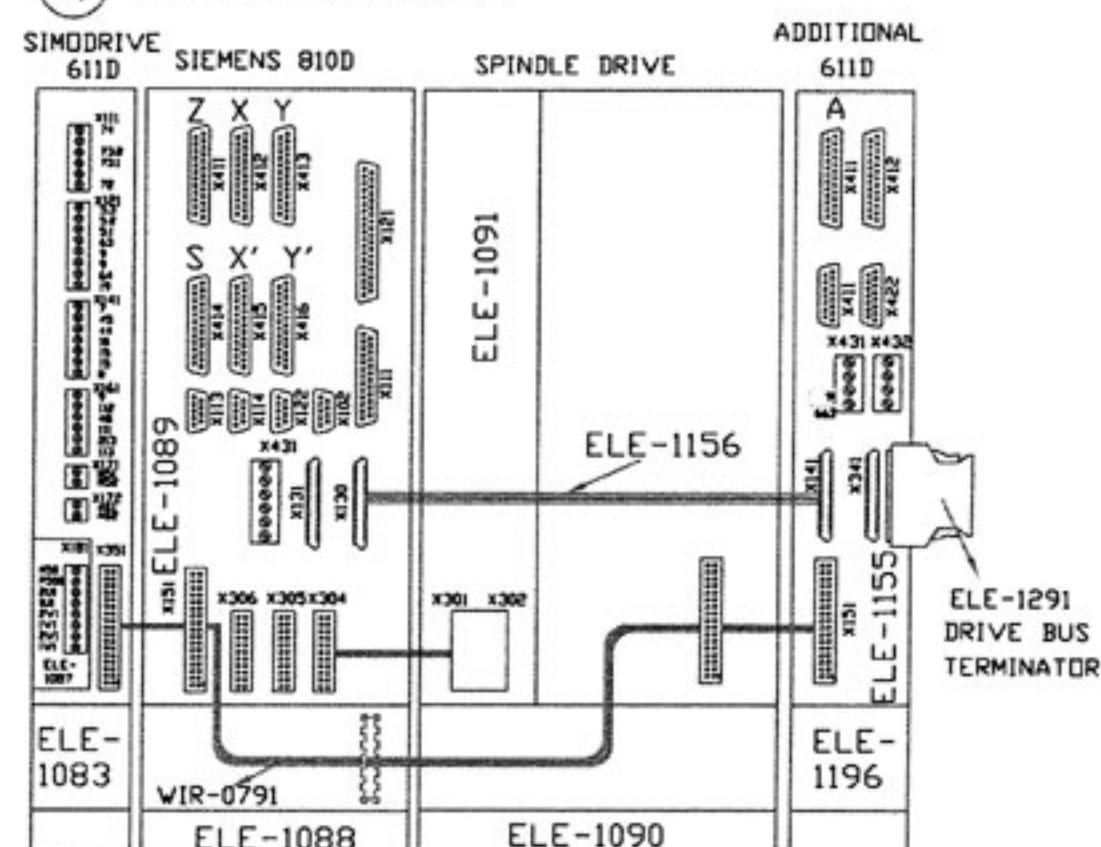
OPT-0197

③ X,Y,Z SCALES FOR SIEMENS



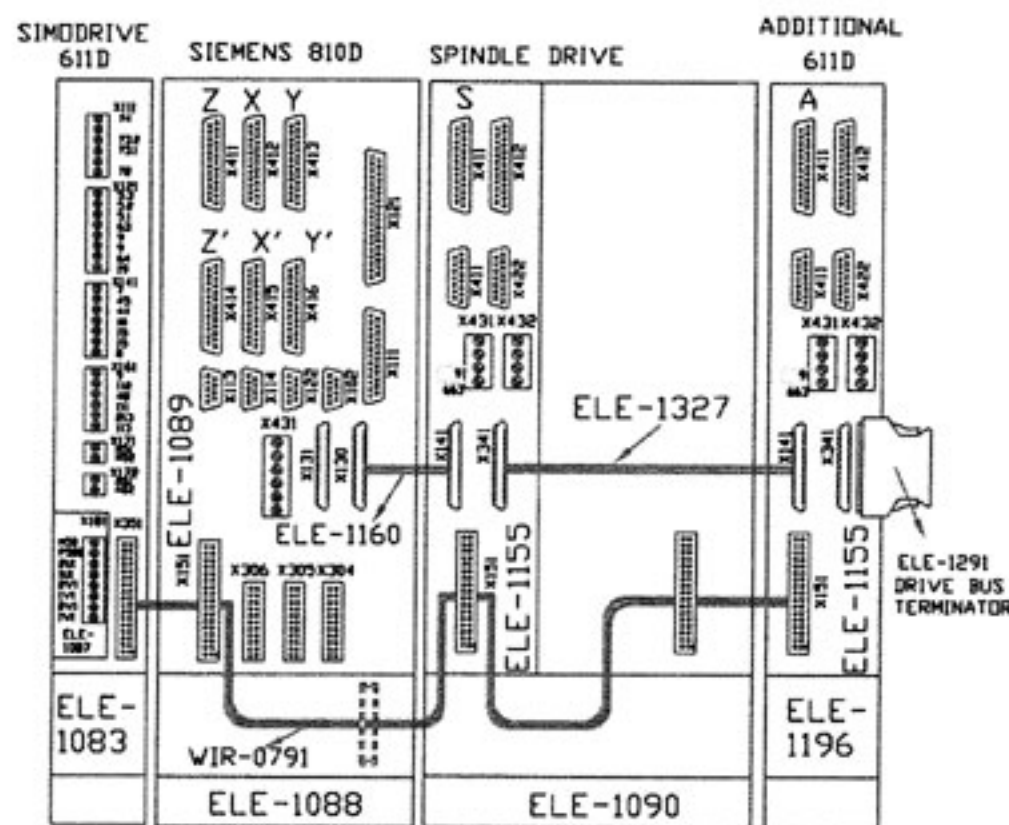
OPT-0199

④ A AXIS FOR SIEMENS



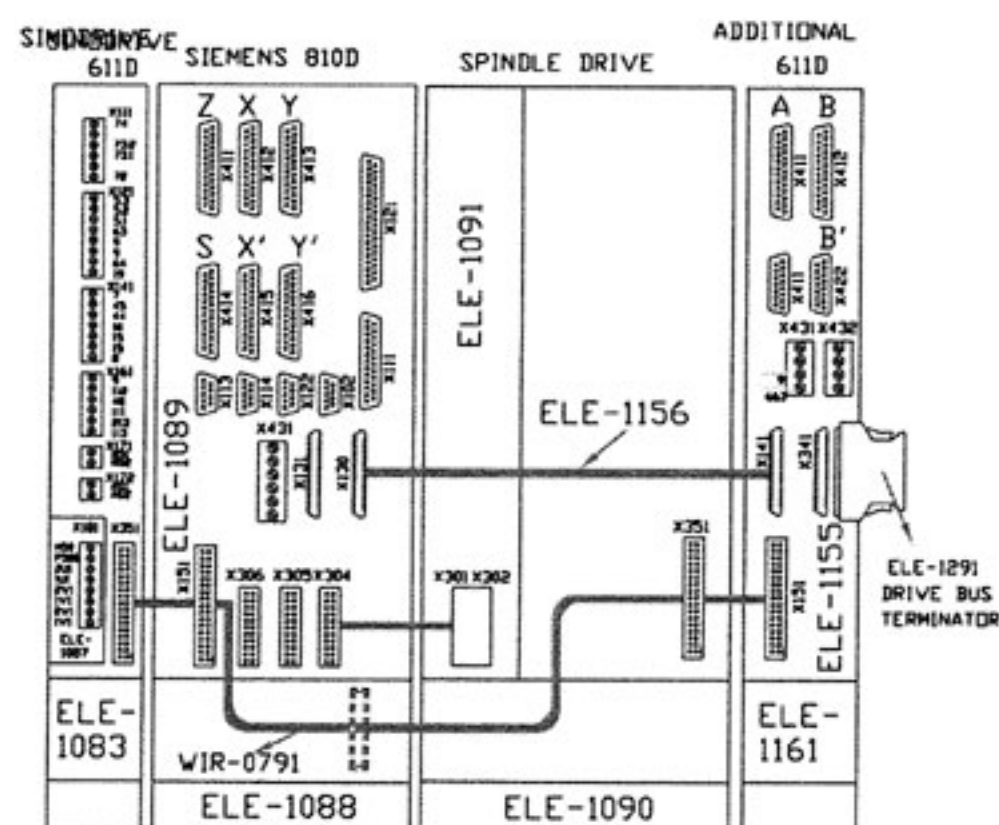
OPT-0197 & OPT-0199

⑤ A AXIS & X, Y, Z SCALE FOR SIEMENS



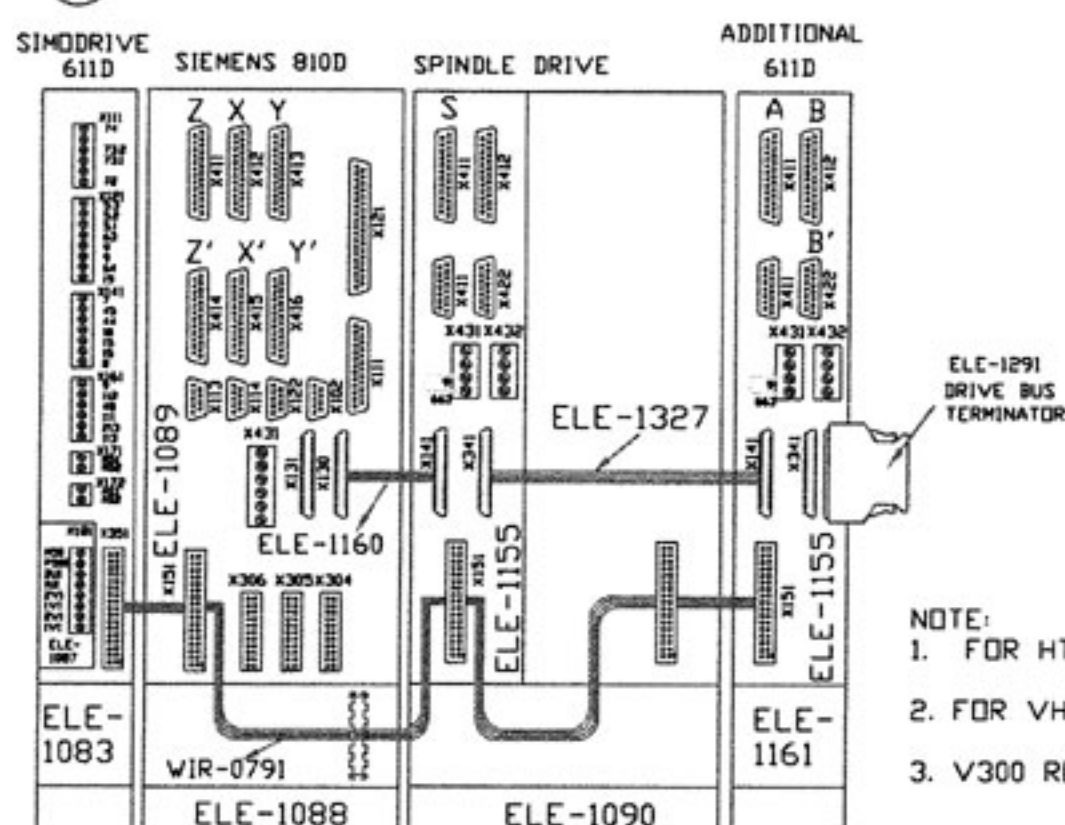
OPT-0200

⑥ A&B AXIS FOR SIEMENS



OPT-0197 & OPT-0200

⑦ A/B AXIS & X, Y, Z SCALE FOR SIEMENS



INSTALL FERRULES ON THE END OF WIRES

T1 T2 T3

TO SPINDLE MOTOR

3 CONDUCTORS CABLE, SHIELDED

FOR ALL MACHINES

- NOTE:
- FOR HT - USE I/R MODULE SIMODRIVE 611D (16KW)
ELE-1083, SPINDLE DRIVE 45 AMP ELE-1090
 - FOR VHT - USE U/E MODULE SIMODRIVE 611D (28KW)
ELE-1165, SPINDLE DRIVE 60 AMP ELE-1164
 - V300 ROTARY TABLE - USE ELE-1242 CONTROL MODULE.

SIEMENS CONTROL WIRING DIAGRAM

Fadal ENGINEERING CO.

APPROVED: DATE: 11/10/99

DESIGN: A. POLONSKY

SCALE: 1/16

REV: D

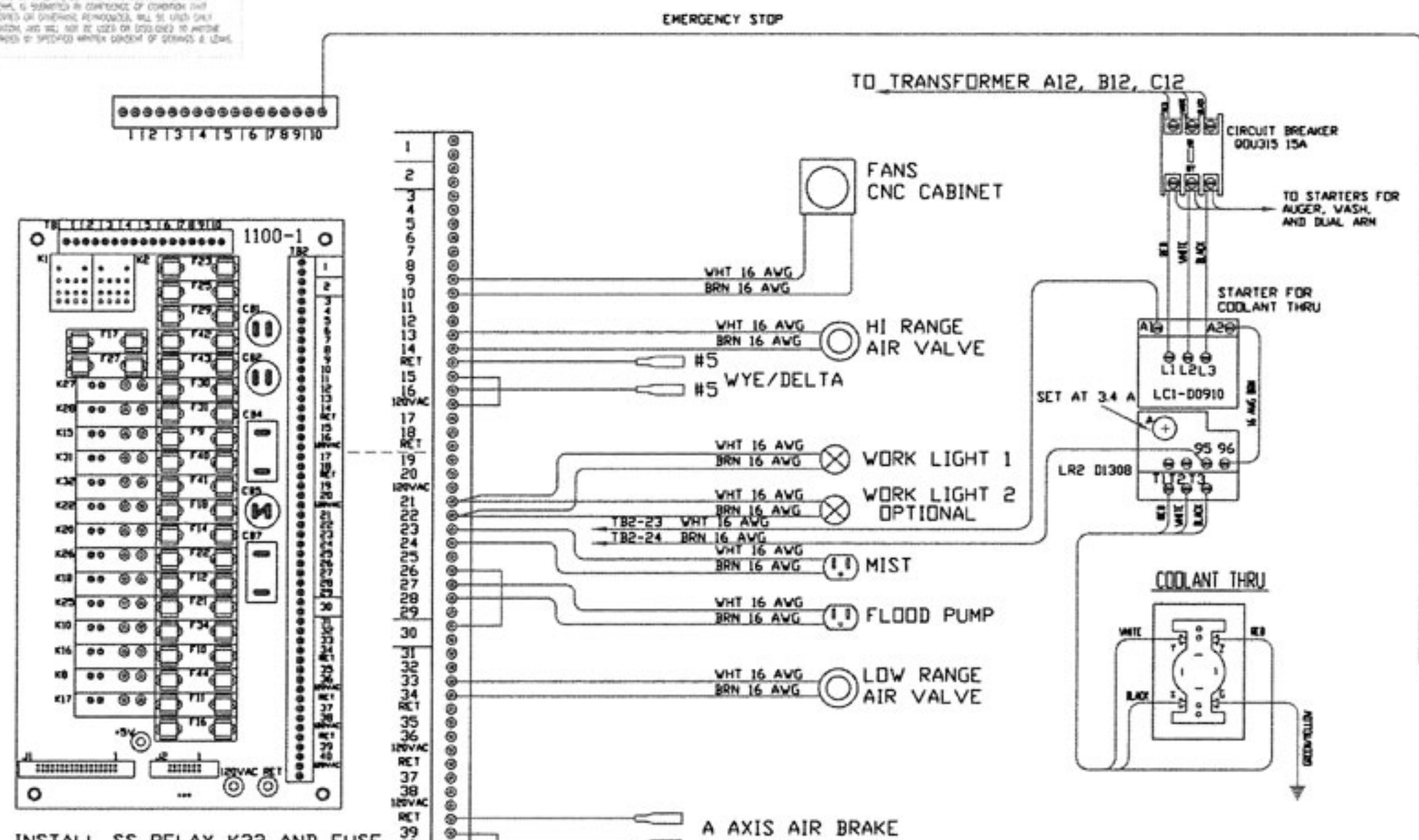
REV: H

WIRING DIAGRAM

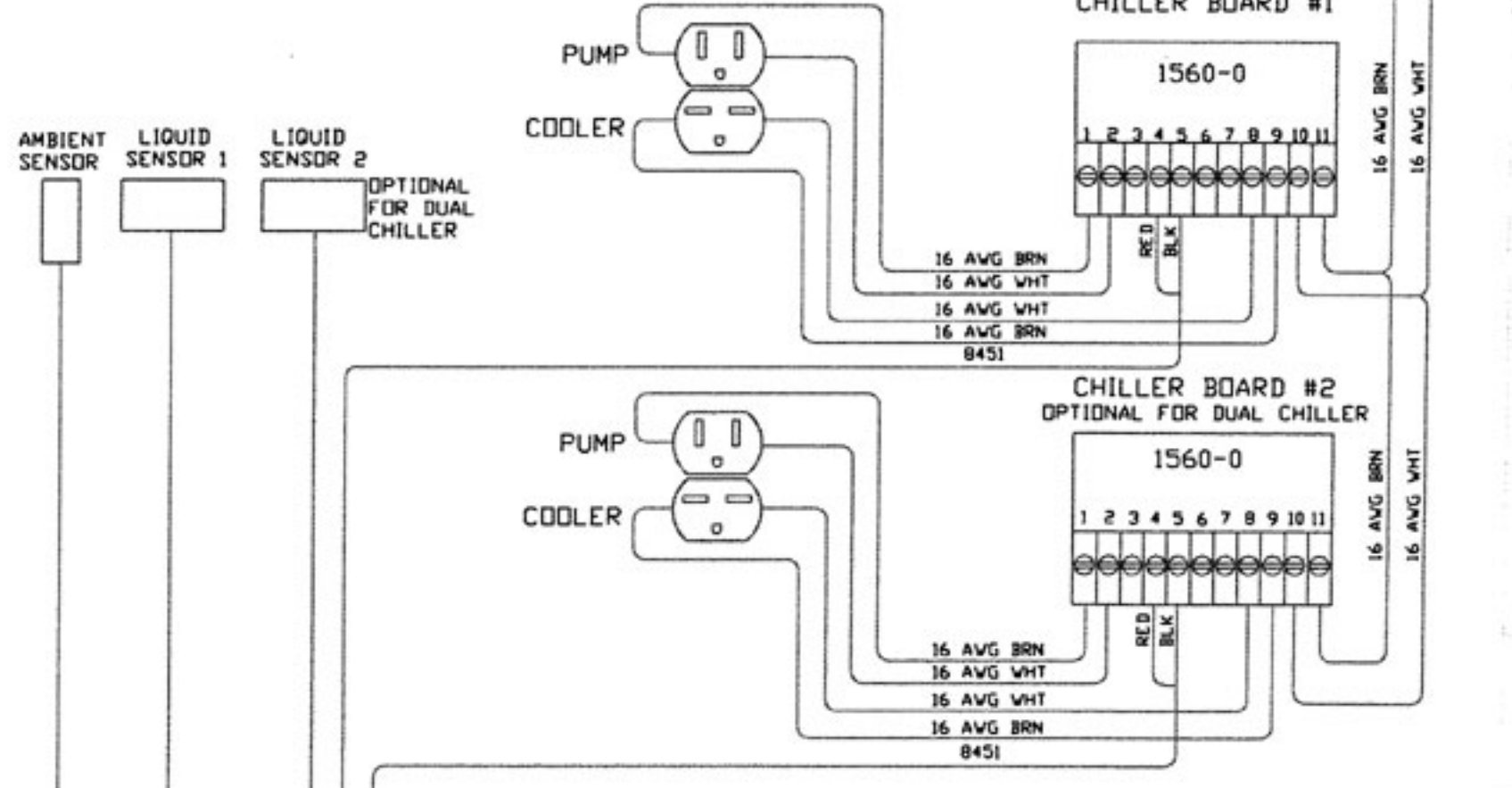
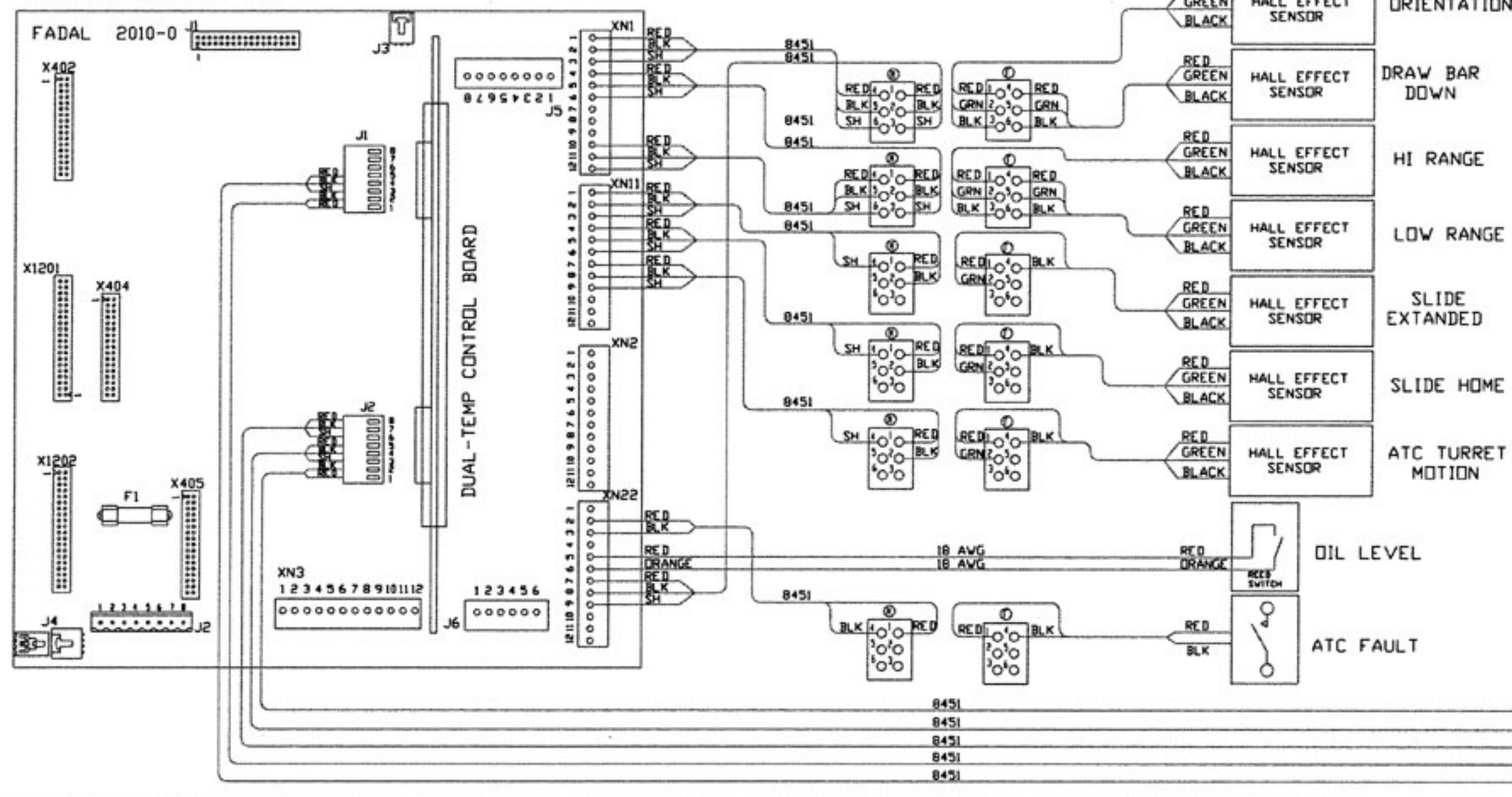
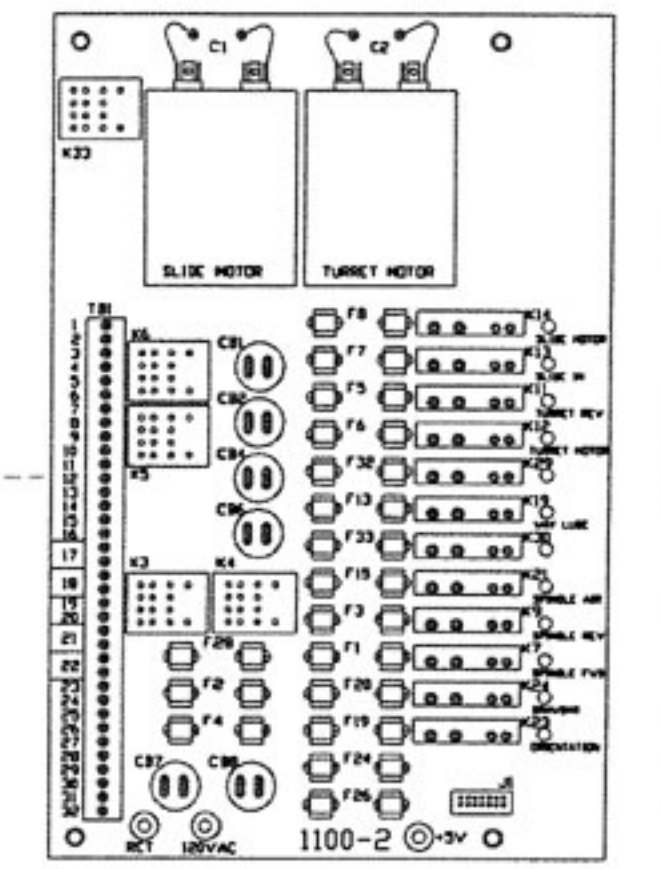
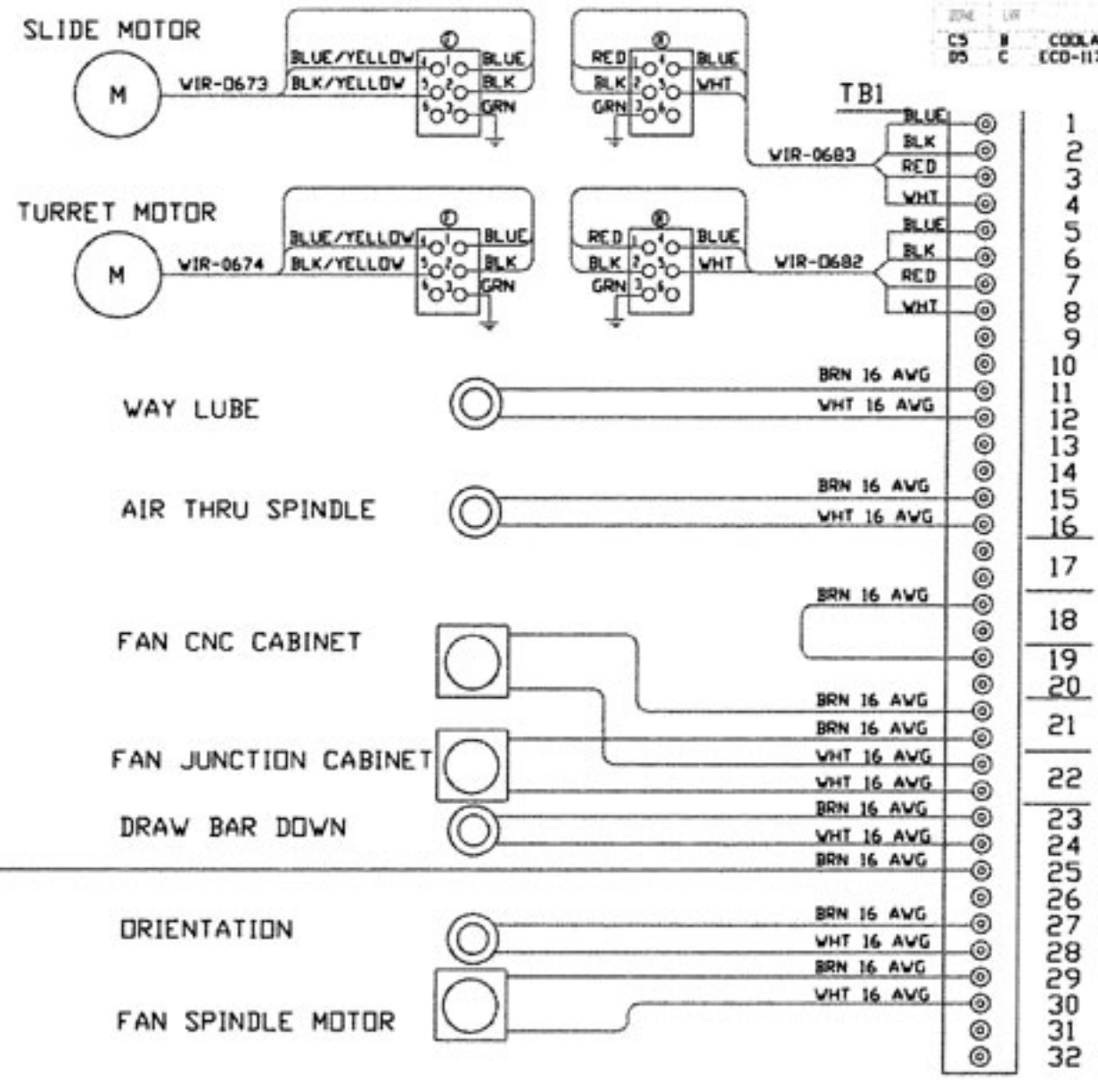
WIRING NO. WRG-0002

3 OF 5

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NOTE: 1. INSTALL SS RELAY K32 AND FUSE F41 AGC-2 FOR THE WORK LIGHT.
 2. SHORT TERMINALS CB5.



THIRD ANGLE PROJECTION

Fadal ENGINEERING CO.

SIEMENS CONTROL WIRING DIAGRAM

DATE 11/04/99
 APPROVED A. POLONSKY
 DRAWN A. POLONSKY

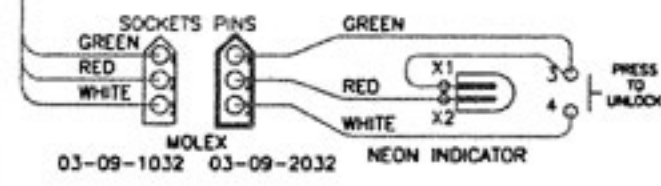
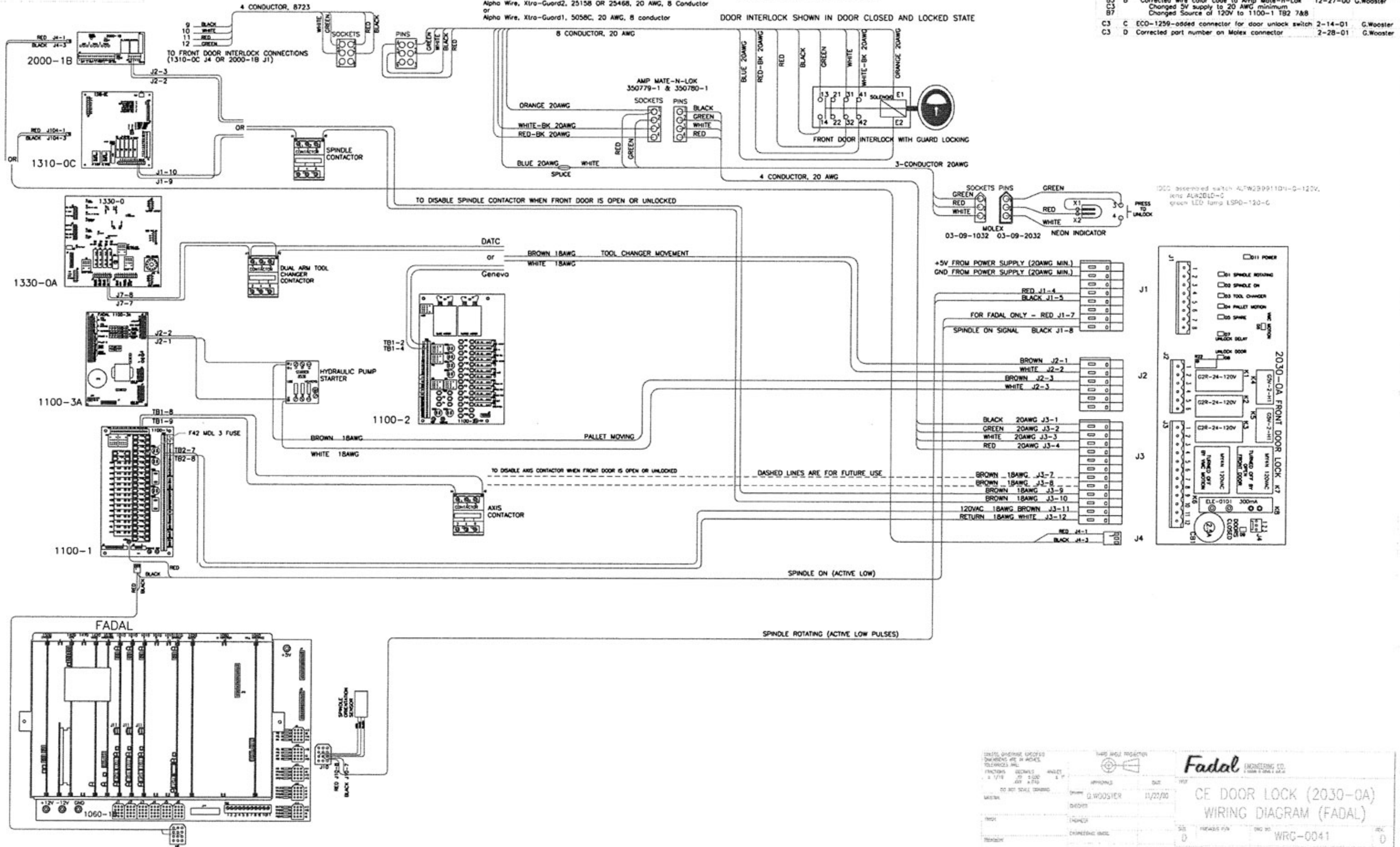
REV C
 WRG-0002

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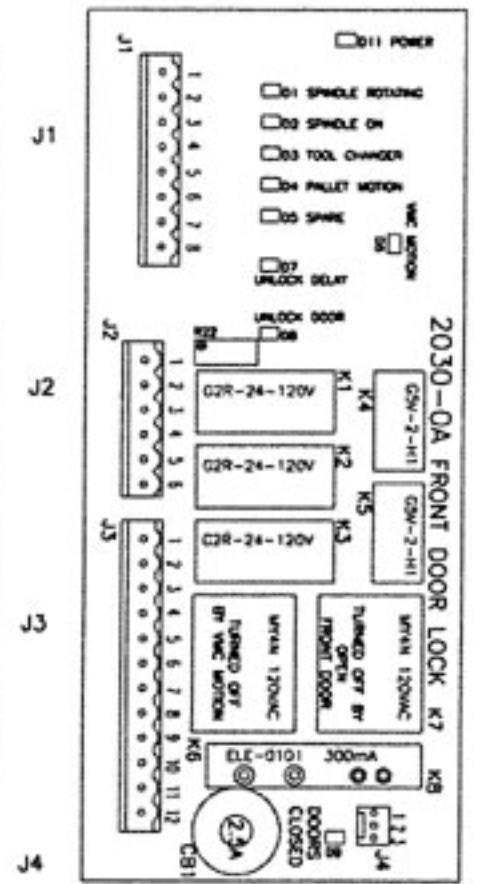
RECOMMENDED CABLE TO INTERLOCK:
 Coral Cable, C0784, 20 AWG, 8 Conductor
 or
 Alpha Wire, Xtra-Guard2, 25158 OR 25468, 20 AWG, 8 Conductor
 or
 Alpha Wire, Xtra-Guard1, 5058C, 20 AWG, 8 conductor

INTERLOCK TERMINAL NUMBERING IS FOR
 Lucas 143-412(A)DP
 (also works with Banner S1-LS42UM2)

REV.	LR	DESCRIPTION	DATE	APPROVAL
B3	B	Initial Release, ECD-1044	11-22-00	G.Wooster
C3	B	Corrected wire color code to Amp Mate-n-Lok	12-27-00	G.Wooster
B7	B	Changed 5V supply to 20 AWG minimum		
		Changed Source of 120V to 1100-1 TB2 7&8		
C3	C	ECD-1259-added connector for door unlock switch	2-14-01	G.Wooster
C3	D	Corrected part number on Molex connector	2-28-01	G.Wooster



1000 assembled switch ALP2599110V-0-120V,
 lens ALA20LD-0
 green LED lamp LSP0-120-C



DATE: 11/27/00
 DRAWING NO: WRG-0041
 PROJECT: CE DOOR LOCK (2030-0A)
 SHEET: 1 OF 2

APPROVED: G. WOOSTER
 DATE: 11/27/00

Fadal ENGINEERING CO.
 CE DOOR LOCK (2030-0A)
 WIRING DIAGRAM (FADAL)

REV: 0
 SHEET: 1/1

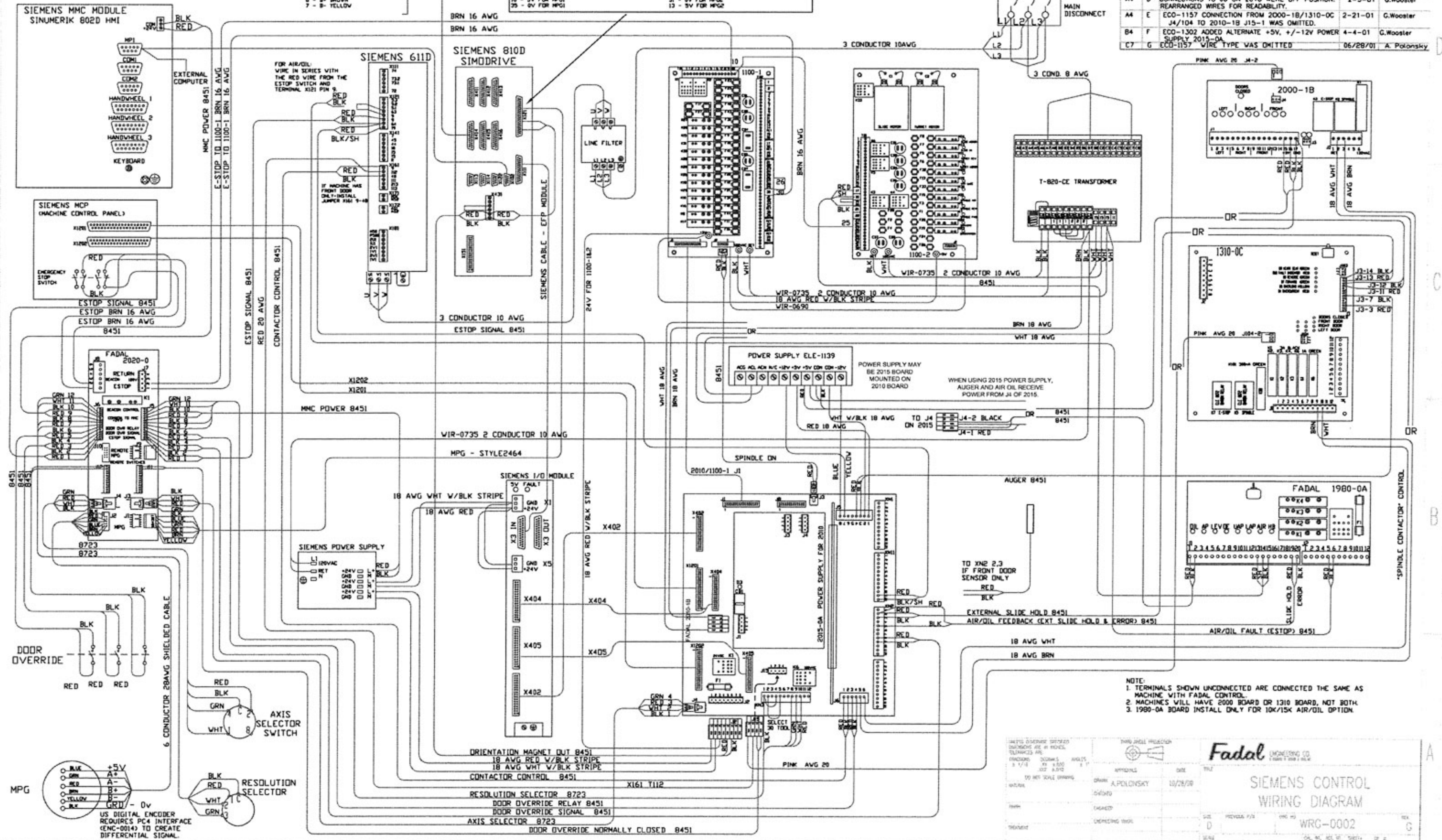
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- X141 25 PIN D-SHELL - SPINDLE ENCODER
- 1 - 5V BLUE
 - 2 - 0V BLACK
 - 3 - A+ GREEN
 - 4 - A- RED
 - 5 - 0V BLACK
 - 6 - B+ BROWN
 - 7 - B- YELLOW

- X121 37 PIN D-SHELL
- 19 - 0V REFERENCE FOR TOUCH PROBE
 - 20 - 0V REFERENCE FOR TOUCH PROBE
 - 21 - A+ FROM MPG
 - 22 - A- FROM MPG
 - 23 - 0V FOR MPG1
 - 24 - 0V FOR MPG1
 - 25 - 0V FOR MPG1
 - 26 - 0V FOR MPG1
 - 27 - 0V FOR MPG1
 - 28 - 0V FOR MPG1
 - 29 - 0V FOR MPG1
 - 30 - 0V FOR MPG1
 - 31 - 0V FOR MPG1
 - 32 - 0V FOR MPG1
 - 33 - 0V FOR MPG1
 - 34 - 0V FOR MPG1

INPUT POWER MUST BE 380VAC

REV	DATE	DESCRIPTION	BY	APPROVED
A8	06/02/00	NEW MPG CABLE		
A7	10/05/00	ECO-1069 RESOLUTION SELECTOR ADDED		
A6-4	11/02/00	ECO-1157 SIEMENS SET-UP SPEED LIMITATION	G.Wooster	
A4	2-5-01	CONNECTIONS TO J6 ON 2010 WERE OFF POSITION. REARRANGED WIRES FOR READABILITY.	G.Wooster	
A4	2-21-01	ECO-1157 CONNECTION FROM 2000-1B/1310-0C J4/104 TO 2010-1B J15-1 WAS OMITTED.	G.Wooster	
B4	4-4-01	ECO-1302 ADDED ALTERNATE +5V, +/-12V POWER SUPPLY 2015-0A	G.Wooster	
C7	06/28/01	ECO-1157 WIRE TYPE WAS OMITTED	A. Polonsky	



NOTE:
 1. TERMINALS SHOWN UNCONNECTED ARE CONNECTED THE SAME AS MACHINE WITH FADAL CONTROL.
 2. MACHINES WILL HAVE 2000 BOARD OR 1310 BOARD, NOT BOTH.
 3. 1980-0A BOARD INSTALL ONLY FOR 10K/15K AIR/OIL OPTION.

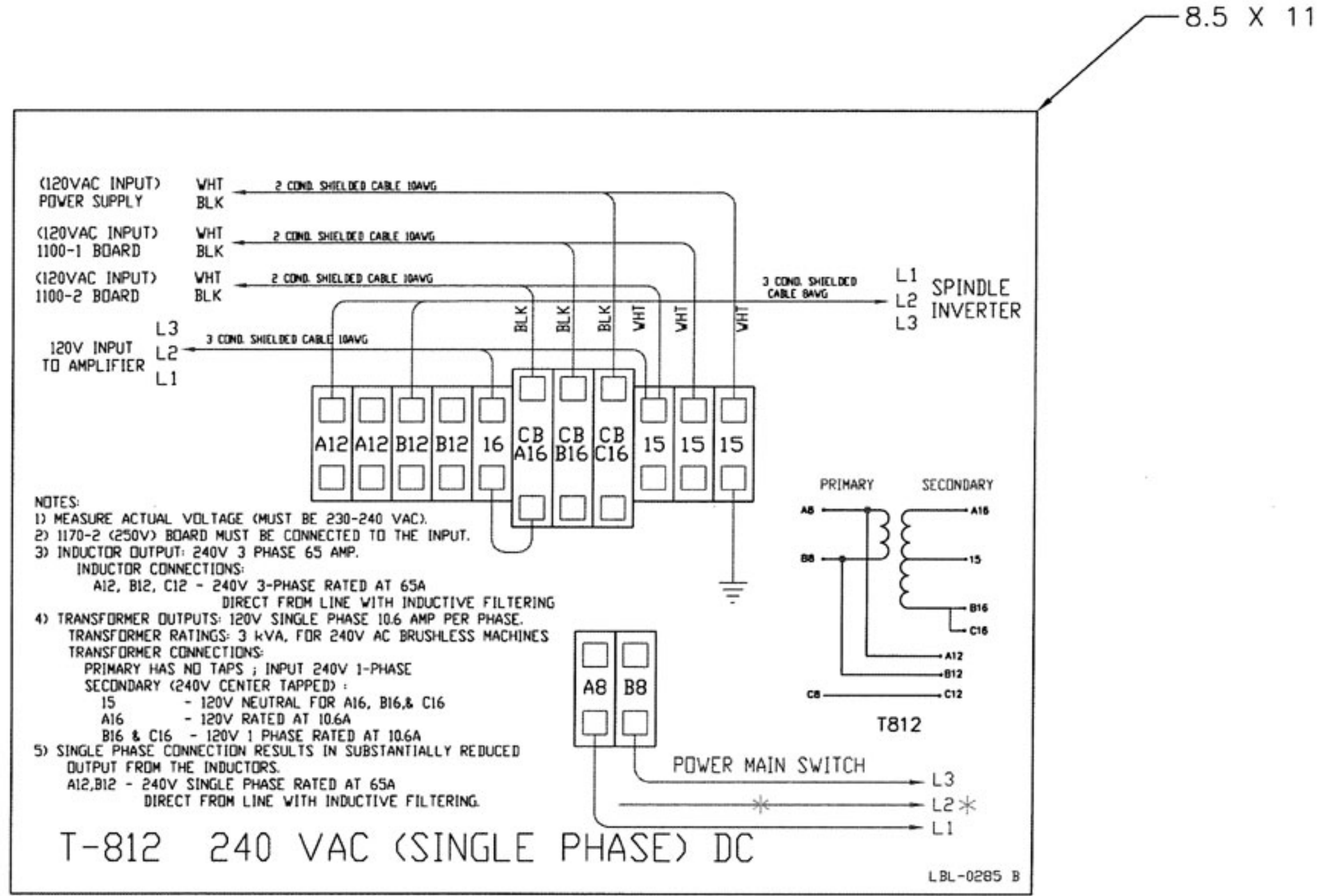
DATE: 10/28/00
 DRAWN: A. POLONSKY
 CHECKED: G. WOOSTER
 APPROVED: A. POLONSKY

Fadal ENGINEERING CO.
 1000 W. 10TH ST. S. #100
 TULSA, OK 74106

SIEMENS CONTROL WIRING DIAGRAM
 WRC-0002
 OF 5

REV	DESCRIPTION	DATE	APPROVED
A	(ECO-425) CORRECTED DRAWING	12/08/98	D.SEFERIAN
B3	B (ECO-1121) CHANGED FUSES TO CIRCUIT BREAKERS	12/11/00	GLW

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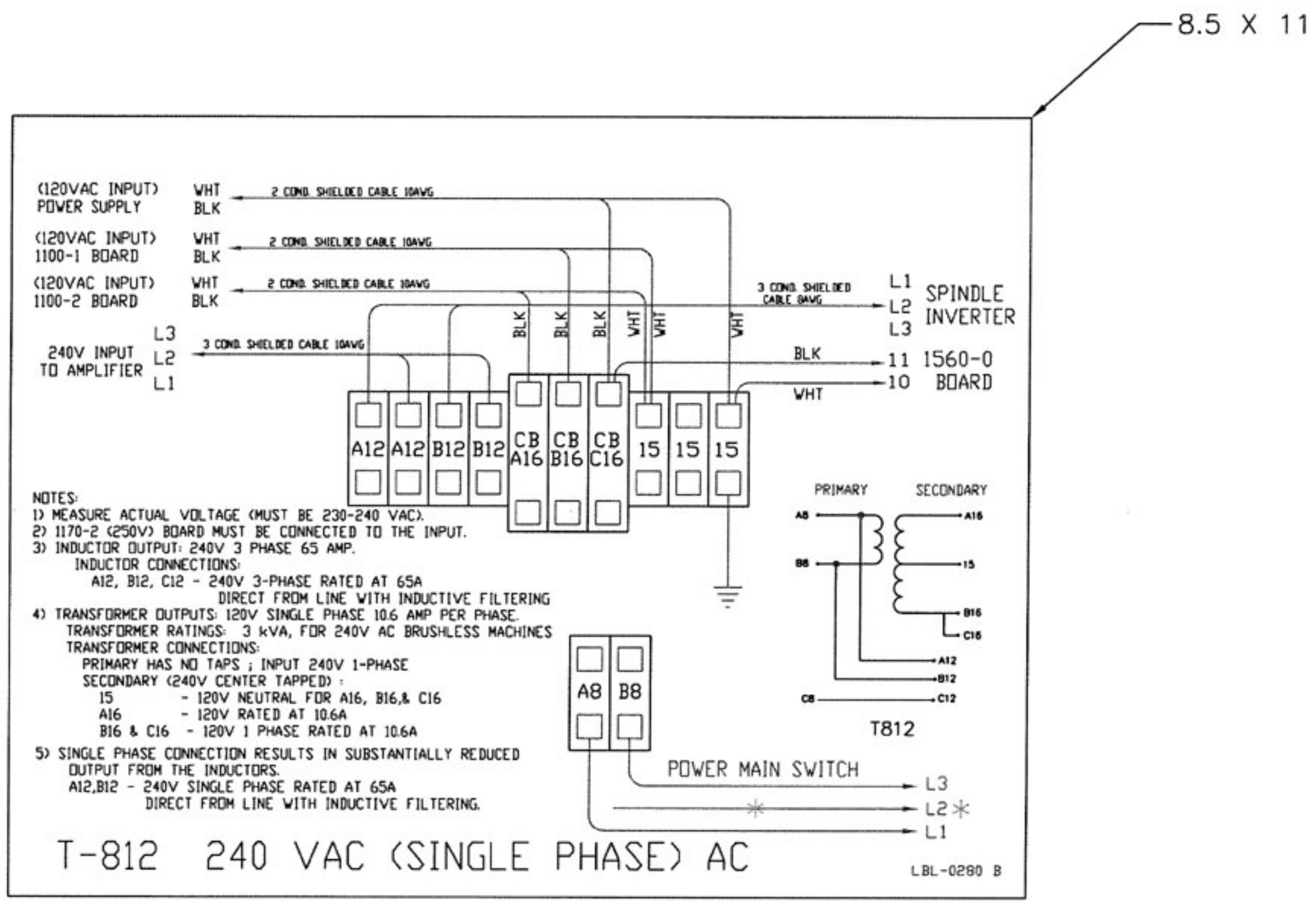


- NOTES:
- MEASURE ACTUAL VOLTAGE (MUST BE 230-240 VAC).
 - 1170-2 (250V) BOARD MUST BE CONNECTED TO THE INPUT.
 - INDUCTOR OUTPUT: 240V 3 PHASE 65 AMP.
INDUCTOR CONNECTIONS:
A12, B12, C12 - 240V 3-PHASE RATED AT 65A
DIRECT FROM LINE WITH INDUCTIVE FILTERING
 - TRANSFORMER OUTPUTS: 120V SINGLE PHASE 10.6 AMP PER PHASE.
TRANSFORMER RATINGS: 3 kVA, FOR 240V AC BRUSHLESS MACHINES
TRANSFORMER CONNECTIONS:
PRIMARY HAS NO TAPS ; INPUT 240V 1-PHASE
SECONDARY (240V CENTER TAPPED) :
15 - 120V NEUTRAL FOR A16, B16, & C16
A16 - 120V RATED AT 10.6A
B16 & C16 - 120V 1 PHASE RATED AT 10.6A
SINGLE PHASE CONNECTION RESULTS IN SUBSTANTIALLY REDUCED OUTPUT FROM THE INDUCTORS.
A12, B12 - 240V SINGLE PHASE RATED AT 65A
DIRECT FROM LINE WITH INDUCTIVE FILTERING.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, FRACTIONS ARE: 1/16 3/32 1/8 3/16 1/4 3/8 1/2 DECIMALS ARE: .015 .030 .060 .125 .250 .500 TO NOT SCALE DRAWING	THIRD ANGLE PROJECTION 	Fadal ENGINEERING CO. 10000 F 10000 1 10000
CHECKED DRAWN DESIGNED ESTIMATING SUPERVISOR	APPROVALS DATE 10/20/98 D.SEFERIAN	FILE LABEL, T812, TRANSFORMER 240V SINGLE PHASE, DC
DATE SCALE 1/1	PREVIOUS P/W DWG NO. LBL-0285	REV. B

ZONE	LN	DESCRIPTION	DATE	APPROVED
A		(ECO-425) CORRECTED DRAWING	12/08/98	D.SEFERIAN
B3	B	(ECO-1121) CHANGED FUSES TO CIRCUIT BREAKERS	12/11/00	GLW

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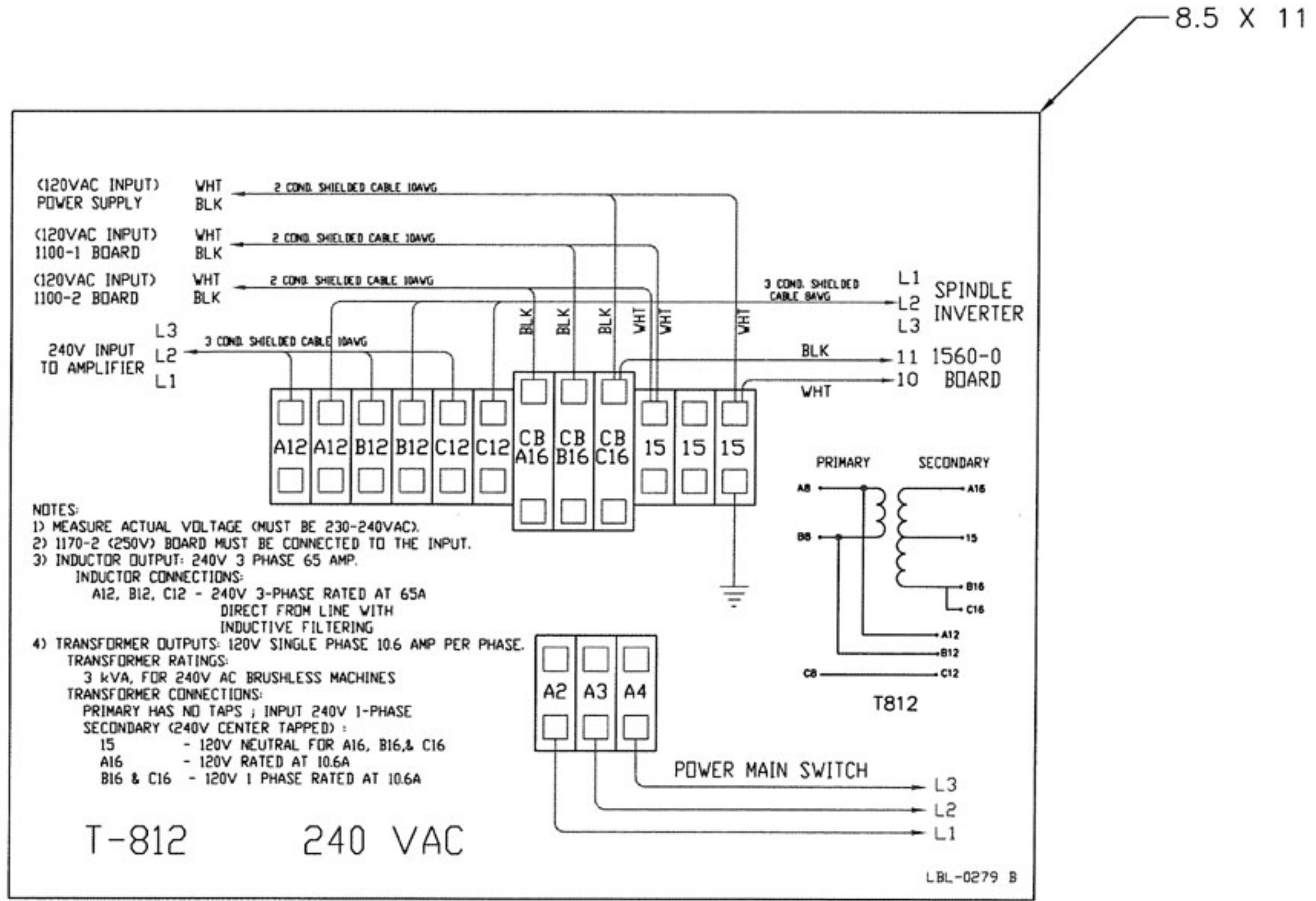


- NOTES:**
- 1) MEASURE ACTUAL VOLTAGE (MUST BE 230-240 VAC).
 - 2) 1170-2 (250V) BOARD MUST BE CONNECTED TO THE INPUT.
 - 3) INDUCTOR OUTPUT: 240V 3 PHASE 65 AMP.
INDUCTOR CONNECTIONS:
A12, B12, C12 - 240V 3-PHASE RATED AT 65A
DIRECT FROM LINE WITH INDUCTIVE FILTERING
 - 4) TRANSFORMER OUTPUTS: 120V SINGLE PHASE 10.6 AMP PER PHASE.
TRANSFORMER RATINGS: 3 kVA, FOR 240V AC BRUSHLESS MACHINES
TRANSFORMER CONNECTIONS:
PRIMARY HAS NO TAPS; INPUT 240V 1-PHASE
SECONDARY (240V CENTER TAPPED):
15 - 120V NEUTRAL FOR A16, B16, & C16
A16 - 120V RATED AT 10.6A
B16 & C16 - 120V 1 PHASE RATED AT 10.6A
 - 5) SINGLE PHASE CONNECTION RESULTS IN SUBSTANTIALLY REDUCED OUTPUT FROM THE INDUCTORS.
A12, B12 - 240V SINGLE PHASE RATED AT 65A
DIRECT FROM LINE WITH INDUCTIVE FILTERING.

<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ARE:</small> FRACTIONS DECIMALS ANGLES 1/16 .0625 30° 1.746 <small>DO NOT SCALE DRAWING</small>		<small>THIRD ANGLE PROJECTION</small> 		Fadal ENGINEERING CO. <small>10000 W. 100th St. - Overland Park, MO 66210</small>	
<small>DRAWN BY</small> D.SEFERIAN	<small>DATE</small> 10/20/98	<small>TITLE</small> LABEL, T812, TRANSFORMER 240V SINGLE PHASE, AC		<small>DATE</small> C	<small>REV.</small> B
<small>CHECKED BY</small> []	<small>DATE</small> []	<small>PREVIOUS P/N</small> []	<small>DRW. NO.</small> LBL-0280	<small>SCALE</small> 1/1	
<small>DESIGNED BY</small> []	<small>DATE</small> []	<small>NO. OF SHEETS</small> 1	<small>TOTAL NO. OF SHEETS</small> 1	<small>1 OF 1</small>	

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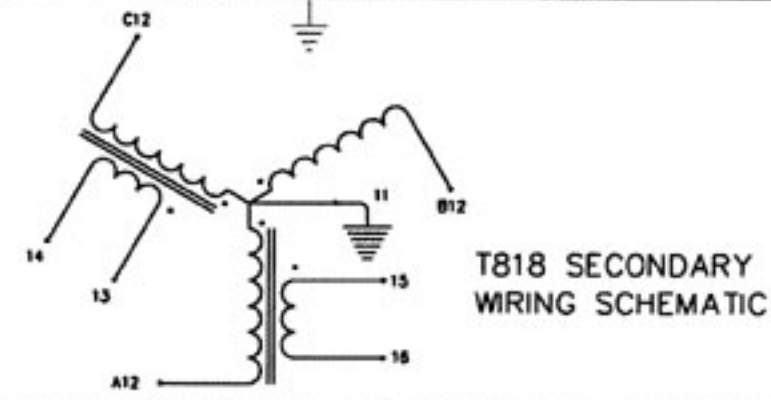
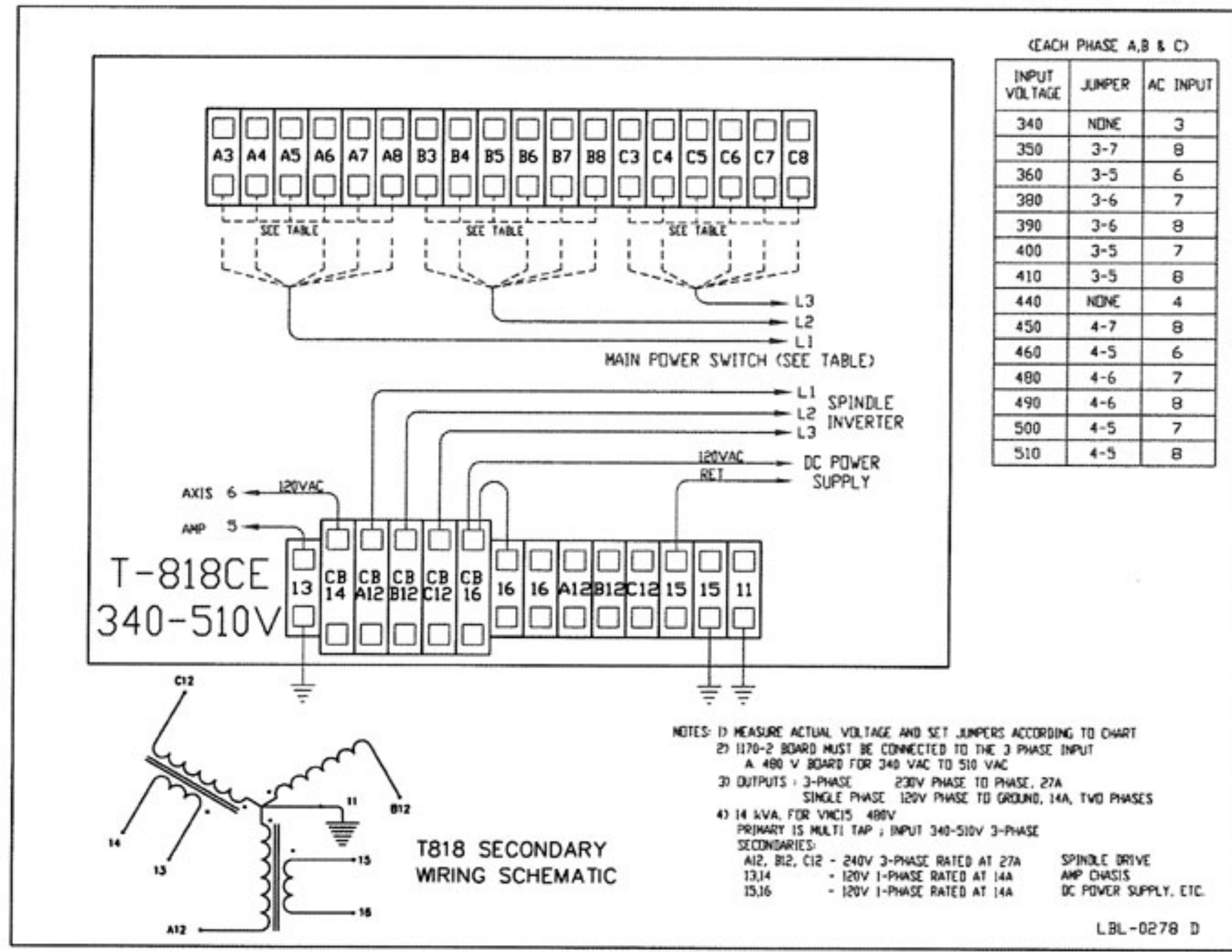
ZONE	LR	DESCRIPTION	DATE	APPROVED
B3	B	(ECCO-1121) CHANGED FUSES TO CIRCUIT BREAKERS	12/11/00	GLW



UNLESS OTHERWISE SPECIFIED OR NOTED, THIS DRAWING OR MATERIAL CONTAINS PROPRIETARY INFORMATION OF DESIGNER & LICENSEE. IT IS HEREBY DECLARED IN CONFIDENCE OF DESIGNER THAT IT WILL NOT BE COPIED OR REPRODUCED OR DISCLOSED TO ANYONE WITHOUT THE WRITTEN CONSENT OF DESIGNER & LICENSEE.		THIS SCALE INDICATES		Fadal ENGINEERING CO. 1000 P. BOX 3, BILK.	
FRANCHISE OFFICES ANGLES 1 1/2" 1/4" 3/8" 1/2" 5/8" 3/4" 1" 1 1/4" 1 1/2" 2" 2 1/2" 3" 4" 5" 6" 8" 10" 12" 15" 20" 25" 30" 36" 45" 60" 72" 90" 108" 120" 150" 180" 210" 240" 300" 360" 450" 540" 600" 720" 900" 1080" 1200"	APPROVALS	DATE	TITLE	DATE	REV
DO NOT SCALE DRAWING	DRAWN D. SEFERIAN	10/20/98	LABEL, T812, TRANSFORMER 240 VAC		
WORKING DRAWING 2MM CLEAR POLYESTER OR RECOMMENDED CONSTRUCTION	CHECKED		SITE	PREVIOUS EDITION	DWG. NO.
FINISH	ENGINEERING SPECIAL		C		LBL-0279
DESIGNER			SCALE	1/1	1 OF 1

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DATE	REV	DESCRIPTION	DATE	APPROVED
	A	RELEASED FOR PRODUCTION	2/3/00	D.SEFERIAN
B3.C3	B	CORRECTED TERMINAL 11, 14 AND DOTTED LINES	4/26/00	G.WOODSTER
C3	C	(ECON 110)CORRECTED RET CONNECTION	8/17/00	G.WOODSTER
B2	D	CORRECTED NOTES	12/12/00	G.WOODSTER



8.5 X 11

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

FRACCTIONS	DIMENSIONS	ANGLES
± 1/16	XX 0.000	± 1°
	XXX 0.010	

DO NOT SCALE DRAWING

DATE: 10/20/98
 DRAWN: D.SEFERIAN
 CHECKED: []
 ENGINEERING DEPT. []

Fadal ENGINEERING CO.
 10000 S. 100TH AVE. S. SUITE 200
 FREDERICK, MD 21704

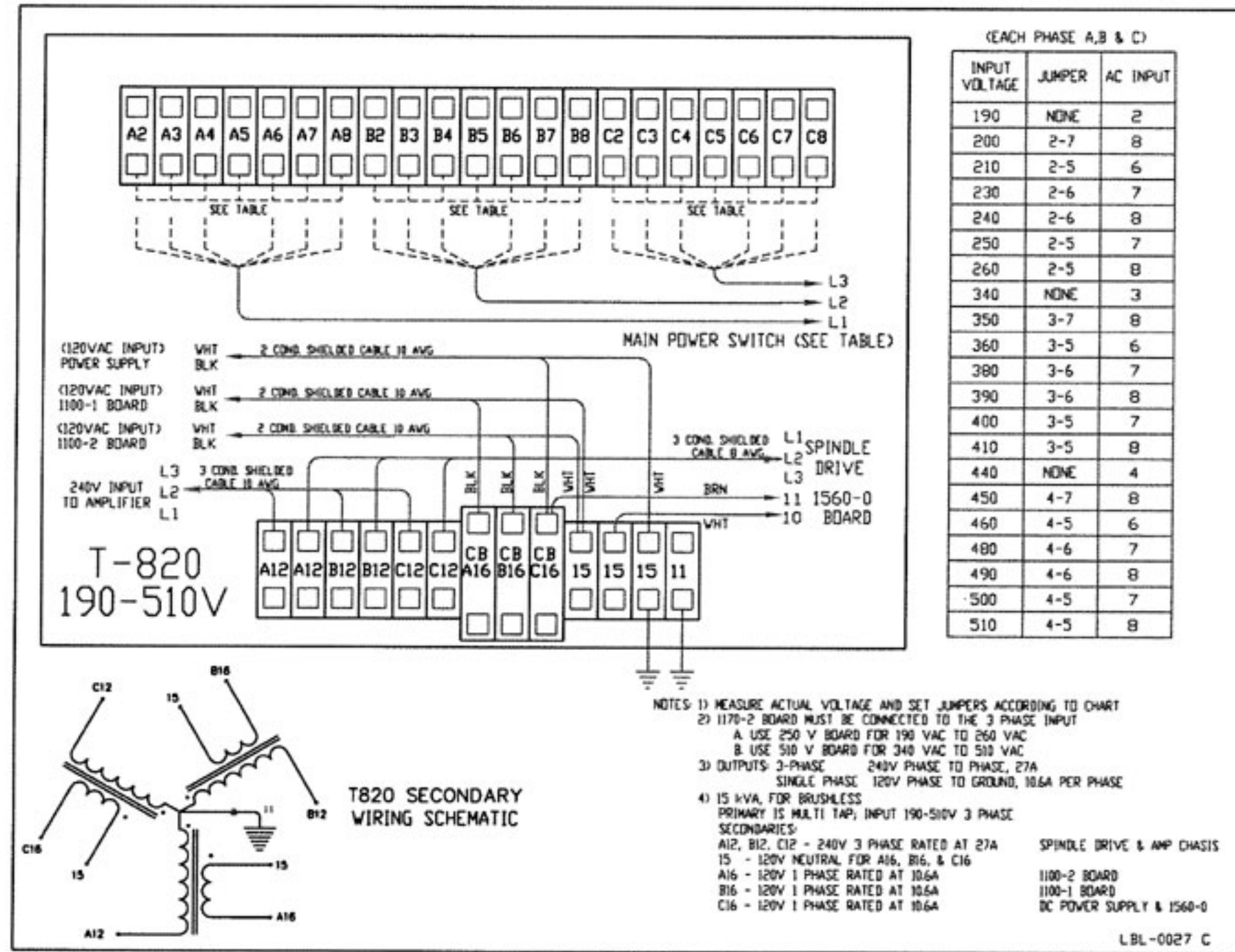
TITLE: LABEL, T818CE, TRANSFORMER
 340-512 VAC

DATE: 10/20/98
 ENG. NO.: LBL-0278
 REV: D

SHEET 1/1

NOTE: THIS DRAWING OF ELECTRICAL CONNECTION INFORMATION OF DEVICES & LINES, IS SUBMITTED IN SUPPORT OF CONTRACT AND IT WILL NOT BE COPIED OR OTHERWISE REPRODUCED, WILL BE USED ONLY FOR THE INFORMATION AND WILL NOT BE USED OR SPECIFIED TO ANYONE EXCEPT AS AUTHORIZED BY SPECIFIC WRITTEN CONSENT OF GEORGE & LEWIS.

ZONE	LTN	DESCRIPTION	DATE	APPROVED
C3-C8	A	(ECO-0776) CORRECTED SECONDARY WIRING AND LABELING	11-29-99	GLV
B3	B	(ECO-0924) TERMINAL 11 GROUND ADDED	4/24/00	GLV
B3	C	(ECO-1121) CHANGED FUSES TO CIRCUIT BREAKERS	12/11/00	GLV



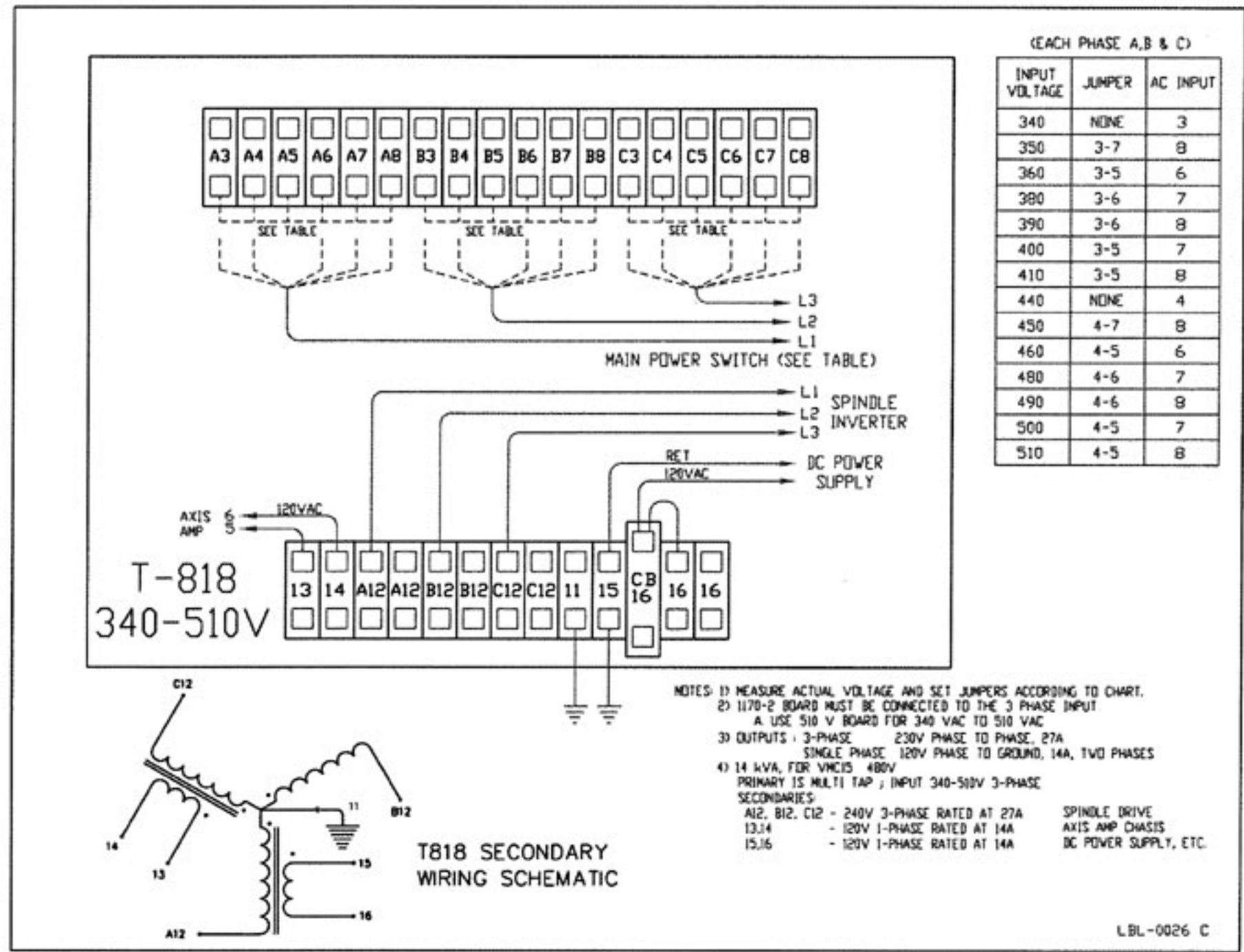
8.5 X 11

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FINISHES DECIMALS ANGLES ± .015 ± .025 ± .015 ± .015 ± .015 DO NOT SCALE DRAWING MATERIALS SHALL BE POLYESTER OR RECOMMENDED CONSTRUCTION FINISH: TREATMENT:	THIRD ANGLE PROJECTION APPROVALS: D. SEFERIAN 10/20/98 CHECKED: ENGINEER: ELECTRICAL SYMBOL:	Fadal ENGINEERING CO. 1000 W. 10th St. & 10th St. TITLE: LABEL, T820, TRANSFORMER 190-510V SIZE: C PREVIOUS EDITION: LBL-0027 REV: C SCALE: 1/1
---	--	--

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TIME	BY	DESCRIPTION	DATE	APPROVED
A		RELEASED FOR PRODUCTION	2/3/00	D.SEFERIAN
B3	B	TERMINAL 11 GROUND ADDED - ECD-0924	4/24/00	G.WOODSTER
B3	C	CHANGED FUSES TO CIRCUIT BREAKERS - ECD-1121	12/8/00	G.WOODSTER

8.5 X 11

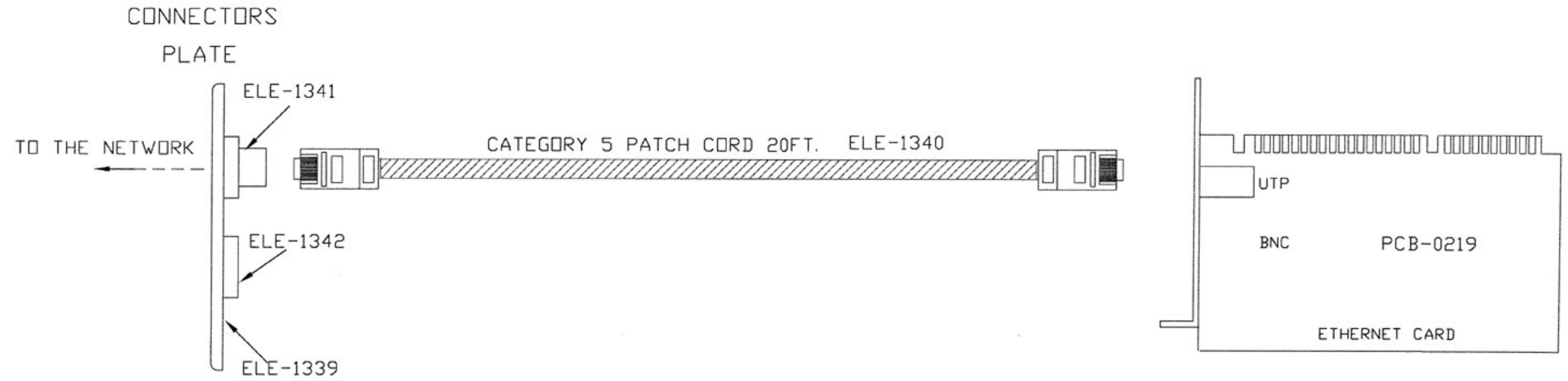


LBL-0026 C

QUALITY CONTROL SHEETS DIMENSIONS ARE IN INCHES, UNLESS NOTED OTHERWISE. FRACTIONS DECIMALS ANGLES 1/16 .0625 30 3.1416 .001 .0010 (DO NOT SCALE DRAWING)	WHO MADE PRODUCTION 		Fadal ENGINEERING CO. 10000 W. 10TH ST. ST. LOUIS, MO 63143	
	APPROVALS DRAWN: D.SEFERIAN CHECKED: DATE: 10/20/98	FILE LABEL, T818, TRANSFORMER 340-510 VAC	PREVIOUS P/P C	DWG NO. LBL-0026
MATERIAL: NEW CLEAR POLYMER IS RECOMMENDED CONSTRUCTION	FINISH: TREATMENT:	SCALE 1/1	SHEET NO. 1 OF 1	SHEET 1 OF 1

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REV.	DATE	DESCRIPTION
B	10/31/00	UPDATED DRAWING
C	03/19/01	IS 'ELE' WAS 'PCB'

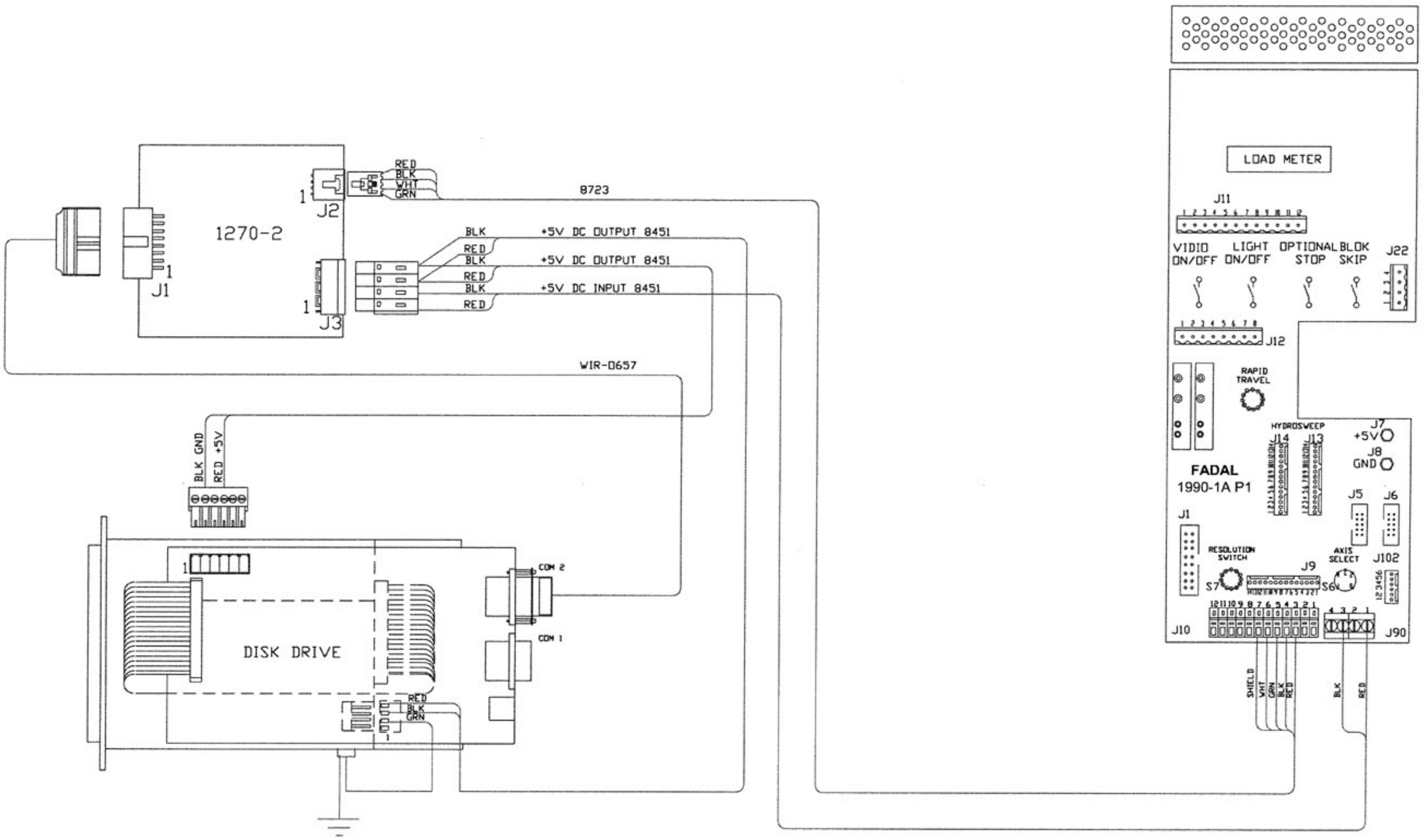


NOTE:

1. Install the Ethernet card into the PC chassis frame in 32MP control.
2. Install the conntactors plate on the right bottom side of CNC cabinet for standard sheet metal and on the left bottom side of CNC cabinet for SLANT 98.
3. If the PC mother board is ETHERNET ready, connect the ETHERNET cables to the appropriate terminals on mother board.

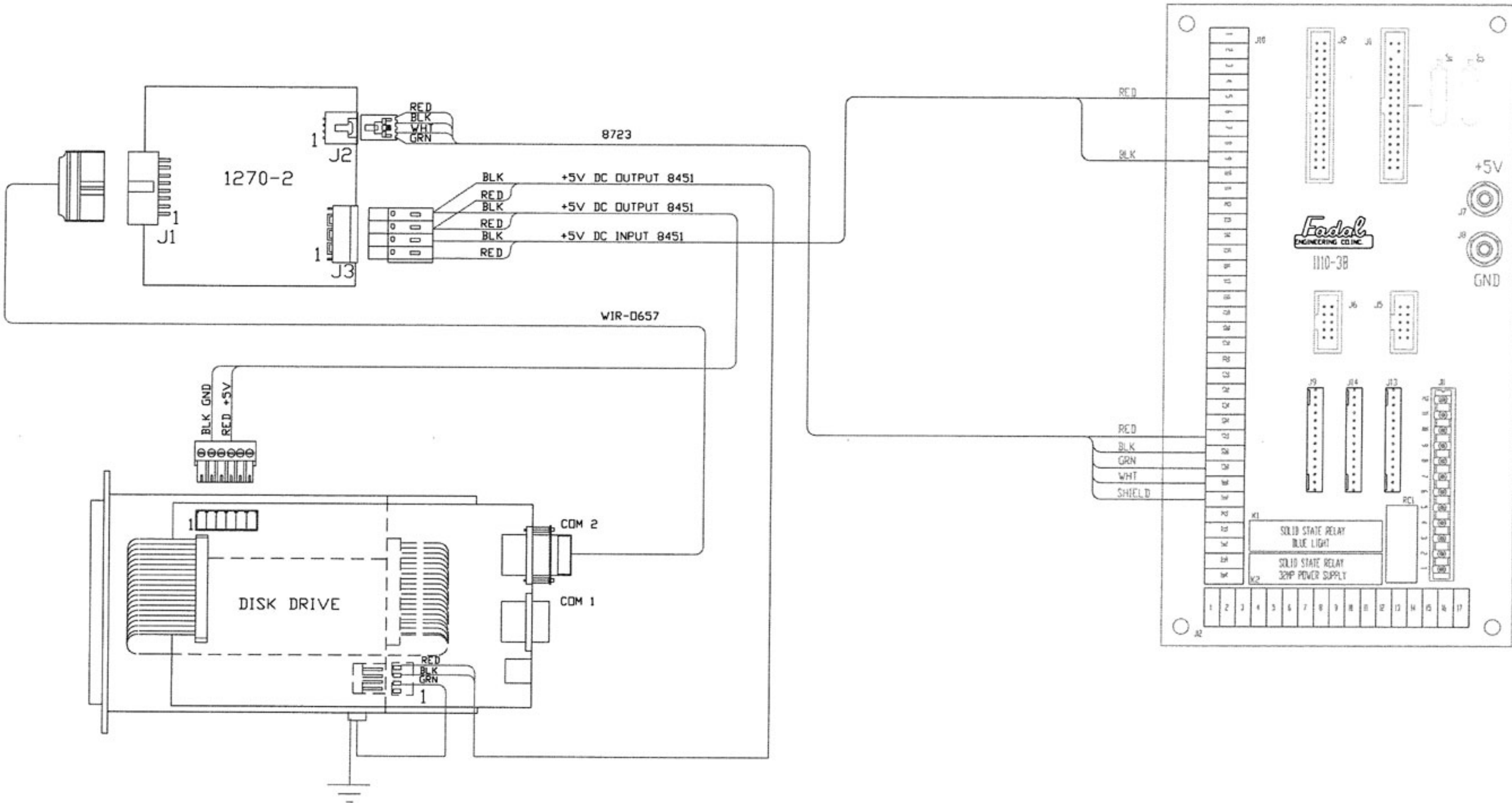
<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:</small> FINISHED: .0001" .0005" .0010" .0015" .0020" .0030" .0040" .0050" .0060" .0070" .0080" .0090" .0100" .0150" .0200" .0300" .0400" .0500" .0600" .0700" .0800" .0900" .1000" .1500" .2000" .3000" .4000" .5000" .6000" .7000" .8000" .9000" 1.0000"		<small>DATE AND REVISION</small> 	
<small>APPROVALS</small> DRAWN: A. POLONSKI CHECKED: [] DESIGNED: [] ENGINEER: []	<small>DATE</small> 10/21/99	Fadal ENGINEERING CO. 1000 S. 10TH ST. W. WYOMING, NEB. 68103	
TITLE: ETHERNET CONNECTION / 32MP WIRING DIAGRAM		SIZE: D	DRAWING NO: WFG-0010
SHEET: 1 OF 1		SCALE:	

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PARTS LIST PART NO. QTY. PART NAME 1270-2 1 CONTROL UNIT WIR-D657 1 CABLE DISK DRIVE 1 DISK DRIVE FADAL 1990-1A P1 1 CONTROL PANEL		DRAWN: A. POLONSKY CHECKED: [] DATE: 01/25/70		TITLE: DISK DRIVE SYSTEM WIRING DIAGRAM DESIGNED BY: [] CHECKED BY: []	
CONTROL & LOGIC 1000 W. 17th St. CHICAGO, ILL. 60608		Fadal CONTROL SYSTEMS, CO. 1000 W. 17th St. CHICAGO, ILL. 60608		DRAWING NO. WRG-0029 SHEET 2 OF 2	

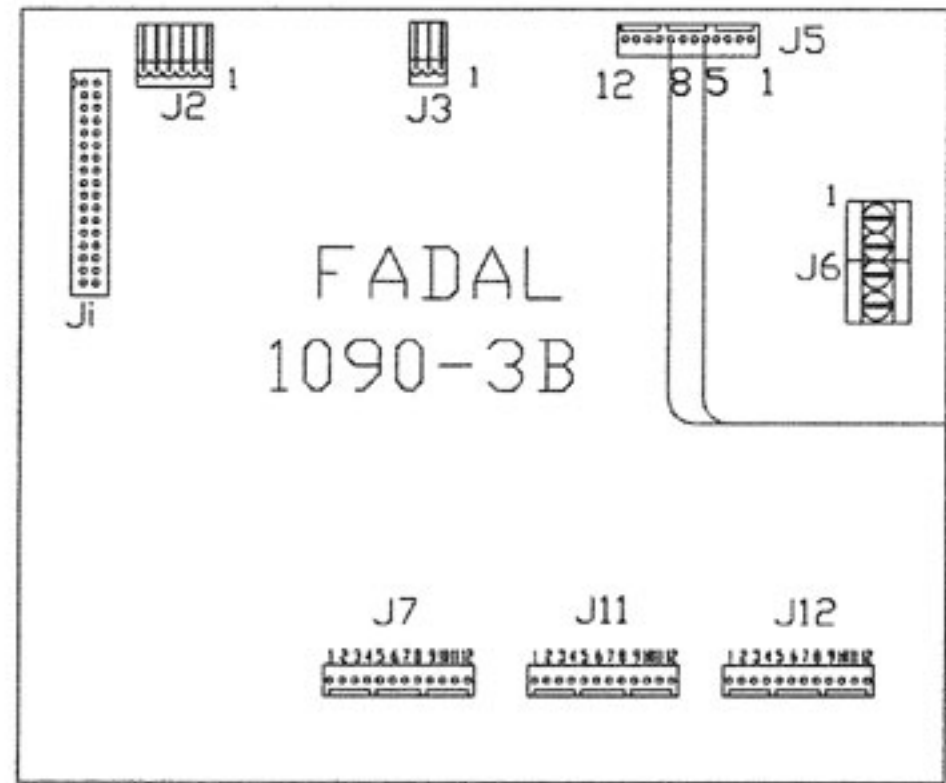
NOTE: THIS DRAWING OR SECTION CONTAINS PROPRIETARY INFORMATION OF ORIGINATOR & IS SUBJECT TO COPYRIGHT. NO PART OF THIS DRAWING OR SECTION MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE ORIGINAL AUTHOR.



CHECKS COMPLETE SATISFACTORY DIMENSIONS ALL IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ANGLES ± 1/16 ± 0.005 ± 0.010		Fadal ENGINEERING CO. 1000 S. 10TH ST. S.W. ALBUQUERQUE, N.M. 87102	
APPROVALS DRAWN: A. POLCHINSKY CHECKED: [] DESIGNED: [] ENGINEERING: []	DATE: 07/24/00	DISK DRIVE SYSTEM WIRING DIAGRAM	
TITLE: WRC-0029		SHEET: 1 OF 1	REV: A

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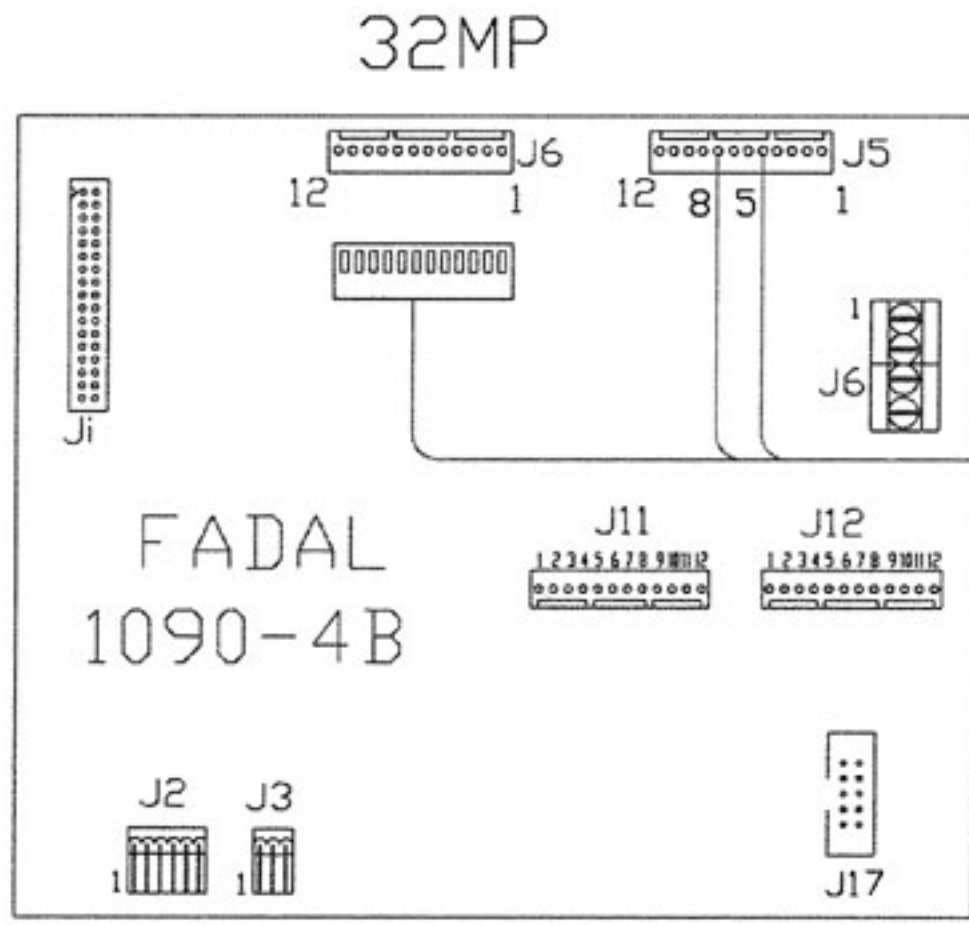
CNC 88/MULTI PROCESSOR



FADAL
1090-3B

RIBBON CABLE

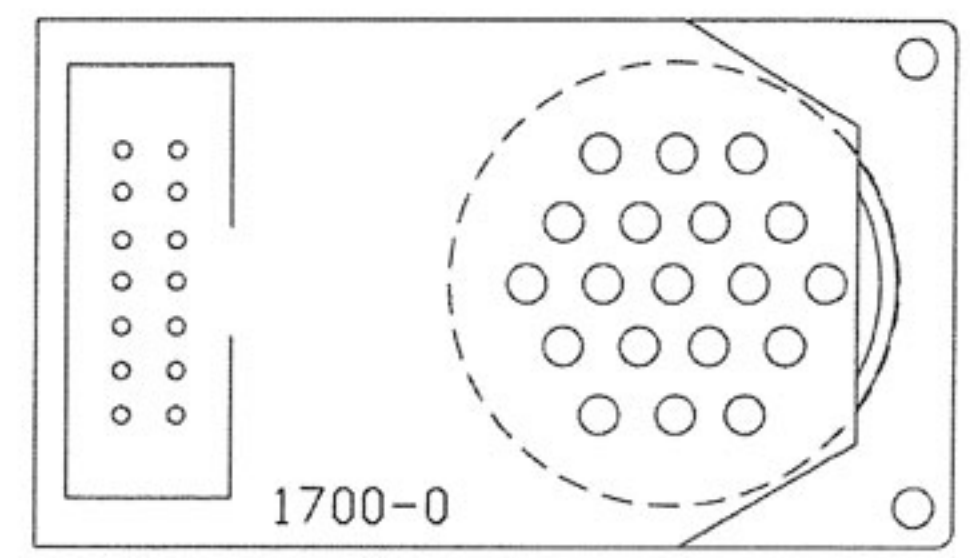
OR



32MP

FADAL
1090-4B

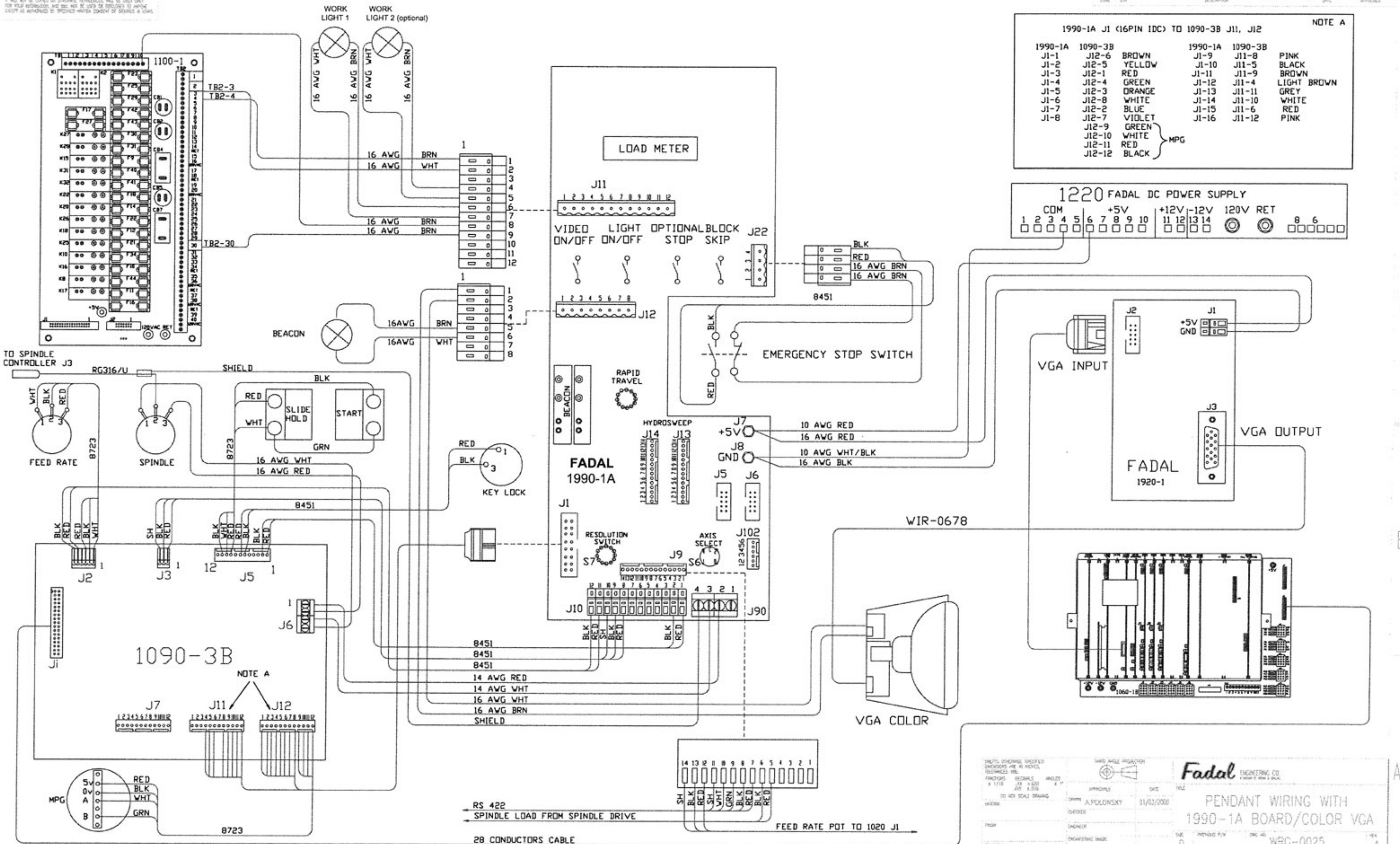
RIBBON CABLE



1700-0

CHECKS: DIMENSIONS CHECKED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES 1/16 0.001 1/16 0.001 1/16 0.001		WIRE AND SOLDER WIRE: 22 AWG SOLDER: 60/40		APPROVALS DATE: 01/11/00 BY: A. POLONSKY		Fadal ENGINEERING CO. 1000 S. 10TH ST. ANCHORAGE, ALASKA 99501	
DO NOT SCALE DRAWING				DRAWN BY: A. POLONSKY		MANUAL PULSE GENERATOR WIRING DIAGRAM	
TITLE:		PROJECT NO.:		DRAWING NO.: WRG-0028		SHEET: 1 OF 1	

NOTE: THIS DRAWING IS FOR INFORMATION PURPOSES ONLY. IT IS SUBJECT TO CHANGE WITHOUT NOTICE. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE CORRECTNESS OF THIS DRAWING. IT IS NOT TO BE USED FOR CONSTRUCTION OF ANY EQUIPMENT WITHOUT THE WRITTEN APPROVAL OF THE ORIGINAL DESIGNER.

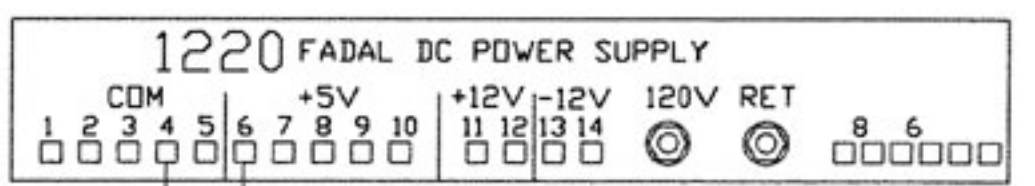


NOTE A

1990-1A J1 (16PIN IDC) TO 1090-3B J11, J12

1990-1A	1090-3B	1990-1A	1090-3B	
J1-1	J12-6	J1-9	J11-8	PINK
J1-2	J12-5	J1-10	J11-5	BLACK
J1-3	J12-1	J1-11	J11-9	BROWN
J1-4	J12-4	J1-12	J11-4	LIGHT BROWN
J1-5	J12-3	J1-13	J11-11	GREY
J1-6	J12-8	J1-14	J11-10	WHITE
J1-7	J12-2	J1-15	J11-6	RED
J1-8	J12-7	J1-16	J11-12	PINK
	J12-9			
	J12-10			
	J12-11			
	J12-12			

MPG: GREEN, WHITE, RED, BLACK



APPROVED BY: [] DATE: 01/03/2000

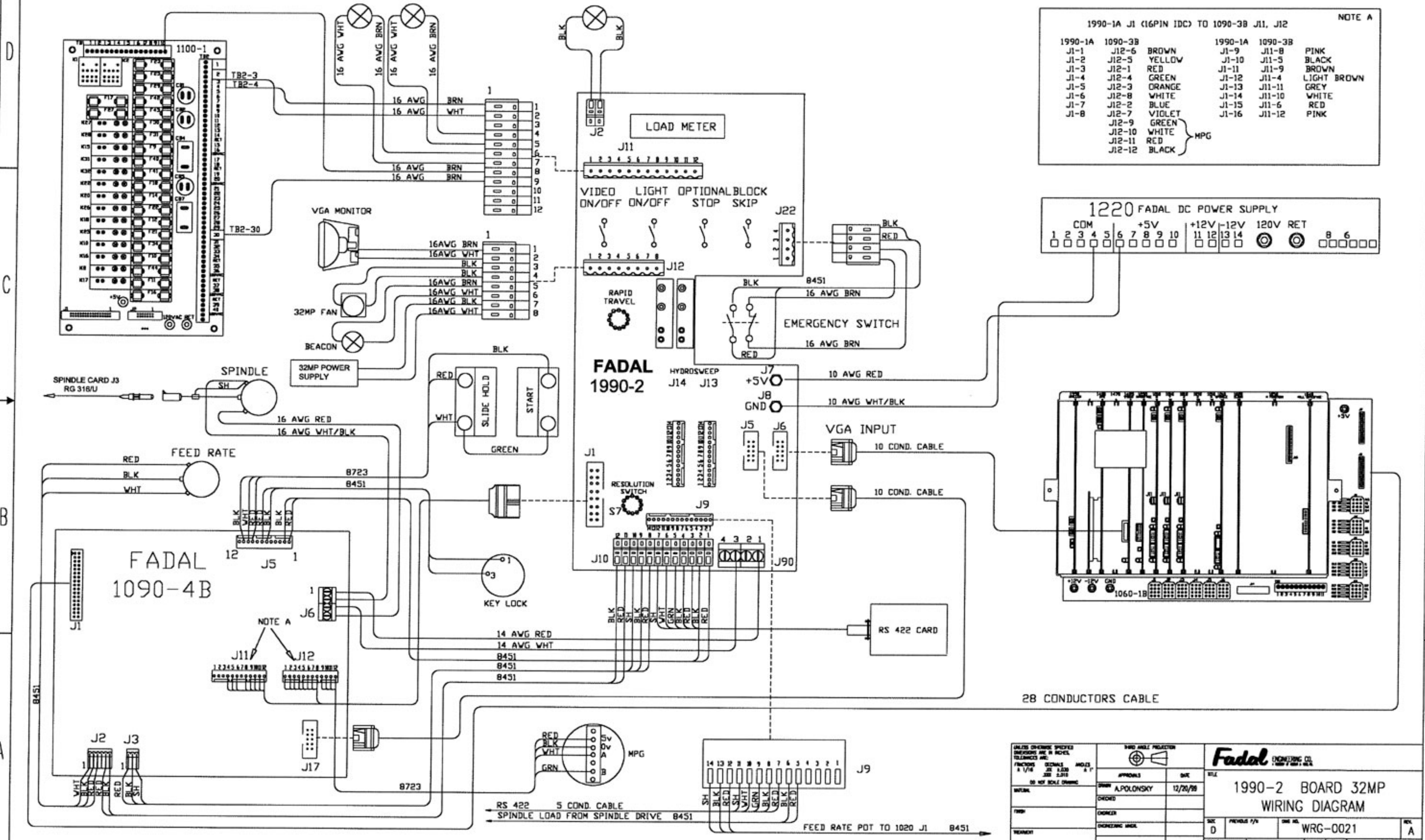
DESIGNED BY: A. POLONSKY

ENGINEERING: []

SCALE: 1:1

REV. NO. WRC-0025

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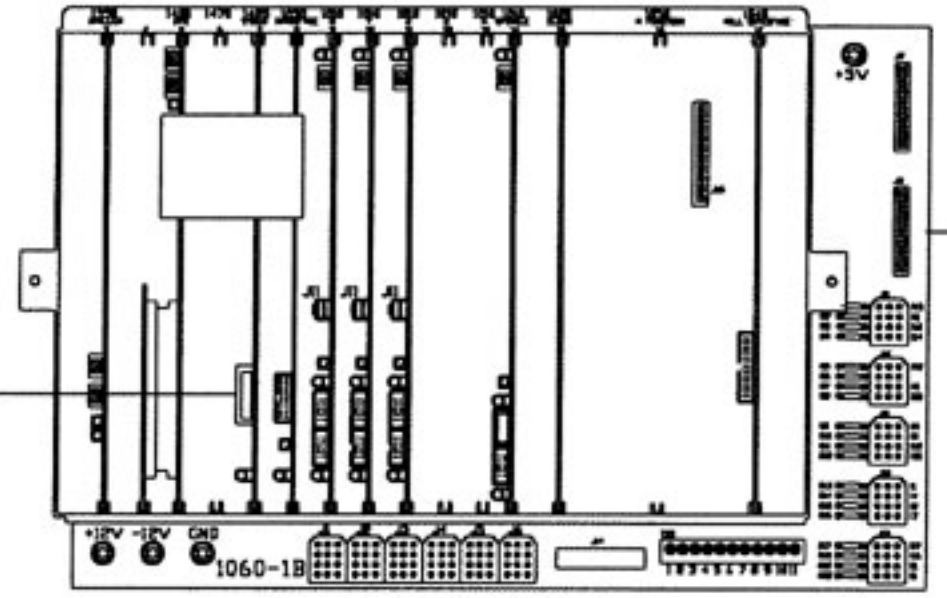
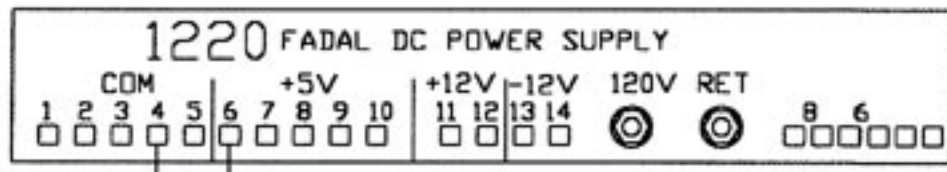


NOTE A

1990-1A J1 (16PIN IDC) TO 1090-3B J11, J12

1990-1A	1090-3B		1990-1A	1090-3B	
J1-1	J12-6	BROWN	J1-9	J11-8	PINK
J1-2	J12-5	YELLOW	J1-10	J11-5	BLACK
J1-3	J12-1	RED	J1-11	J11-9	BROWN
J1-4	J12-4	GREEN	J1-12	J11-4	LIGHT BROWN
J1-5	J12-3	ORANGE	J1-13	J11-11	GREY
J1-6	J12-8	WHITE	J1-14	J11-10	WHITE
J1-7	J12-2	BLUE	J1-15	J11-6	RED
J1-8	J12-7	VIOLET	J1-16	J11-12	PINK
	J12-9	GREEN			
	J12-10	WHITE			
	J12-11	RED			
	J12-12	BLACK			

MPG



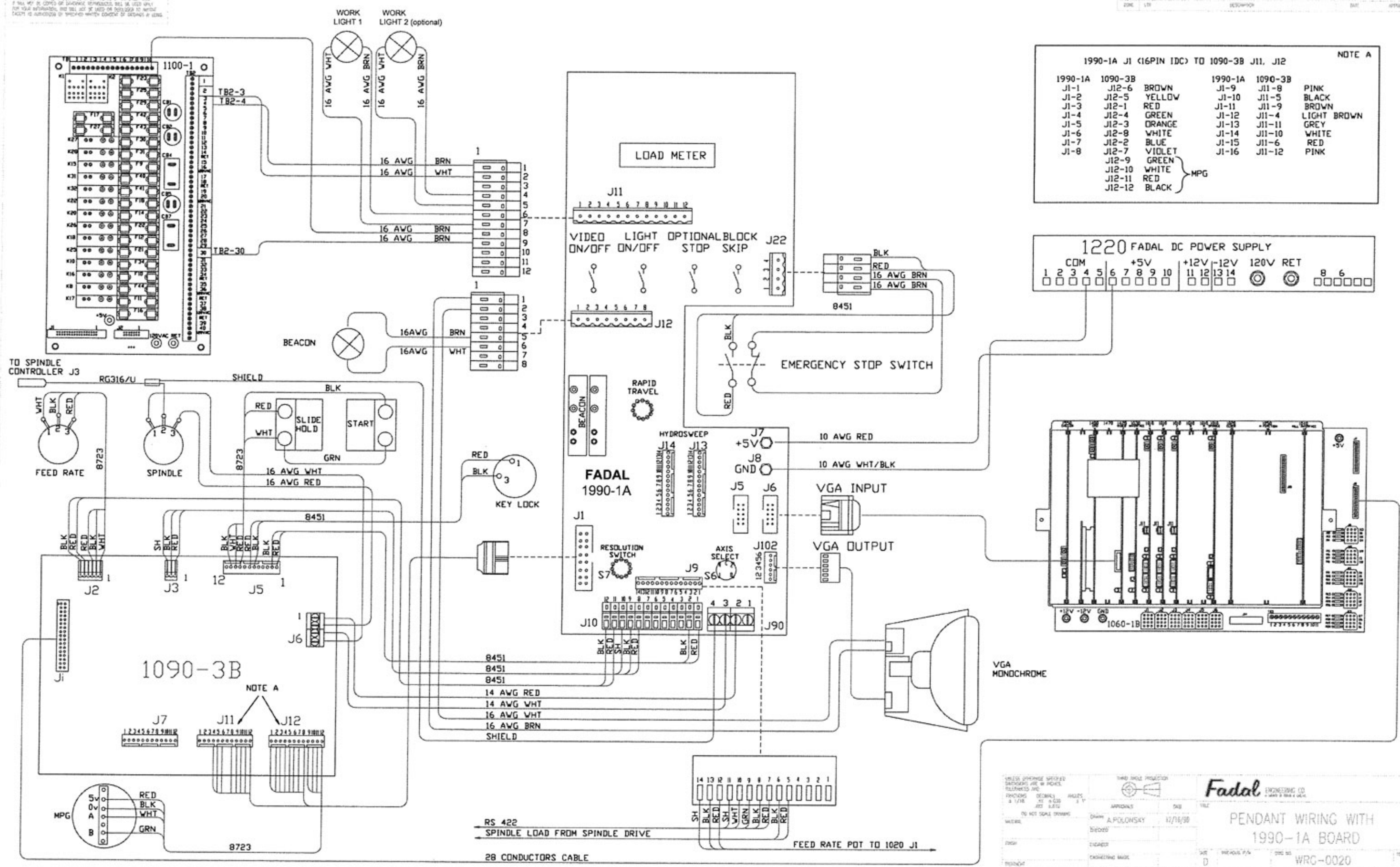
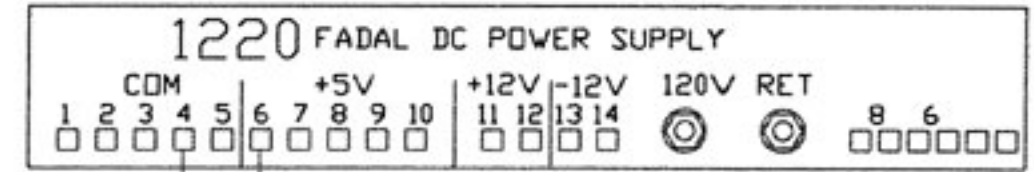
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES & 1/16 0.005 0.010 0.1°		Fadal ENGINEERING CO. 1990-2 BOARD 32MP WIRING DIAGRAM	
APPROVALS DESIGNED BY: A. POLONSKY CHECKED BY: DRAWN BY: DATE: 12/20/98	TITLE: 1990-2 BOARD 32MP WIRING DIAGRAM	REV. NO.: WRG-0021 SHEET: 1 OF 1	SCALE:

NOTE: THE TOP OF BOARD CONTAINS FREQUENCY INFORMATION OF CABLES & TRAYS IN CONFORMANCE WITH STANDARD 100. IF THIS INFO IS CHANGED IN CONFORMANCE WITH STANDARD 100, THE INFO MUST BE CHANGED IN CONFORMANCE WITH STANDARD 100. THIS INFO IS NOT TO BE USED FOR ANY OTHER PURPOSE. THIS INFO IS NOT TO BE USED FOR ANY OTHER PURPOSE. THIS INFO IS NOT TO BE USED FOR ANY OTHER PURPOSE.

NOTE A

1990-1A J1 (16PIN IDC) TO 1090-3B J11, J12

1990-1A	1090-3B	1990-1A	1090-3B	
J1-1	J12-6	J1-9	J11-8	PINK
J1-2	J12-5	J1-10	J11-5	BLACK
J1-3	J12-1	J1-11	J11-9	BROWN
J1-4	J12-4	J1-12	J11-4	LIGHT BROWN
J1-5	J12-3	J1-13	J11-11	GREY
J1-6	J12-8	J1-14	J11-10	WHITE
J1-7	J12-2	J1-15	J11-6	RED
J1-8	J12-7	J1-16	J11-12	PINK
	J12-9			MPG
	J12-10			
	J12-11			
	J12-12			



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS DECIMALS FEET/INCHES

3/16" ±0.005" 0.031" ±0.001" 0.062" ±0.002"

TO NOT SCALE DRAWING

DATE: 12/16/98

APPROVALS: DAWH APOLOWSKY

DESIGN: APOLOWSKY

DATE: 12/16/98

DRW: APOLOWSKY

CHK: D

APP: A

SCALE: 1" = 1"

PROJECT: PENDANT WIRING WITH 1990-1A BOARD

WRC-0020

REV: A

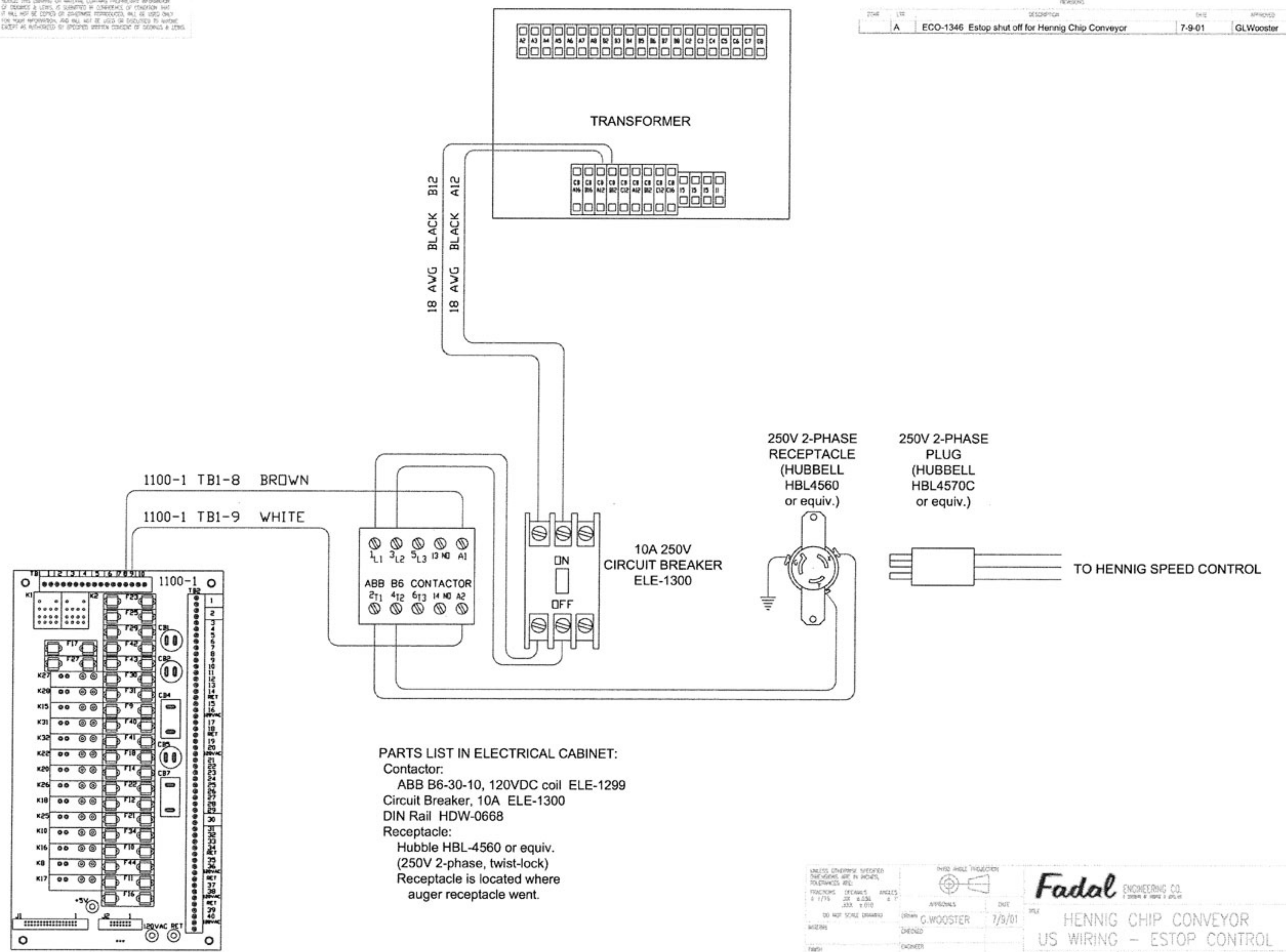
RS 422 SPINDLE LOAD FROM SPINDLE DRIVE

28 CONDUCTORS CABLE

FEED RATE POT TO 1020 J1

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DATE	REV.	DESCRIPTION	DATE	APPROVED
	A	ECO-1346 Estop shut off for Hennig Chip Conveyor	7-9-01	GLWooster

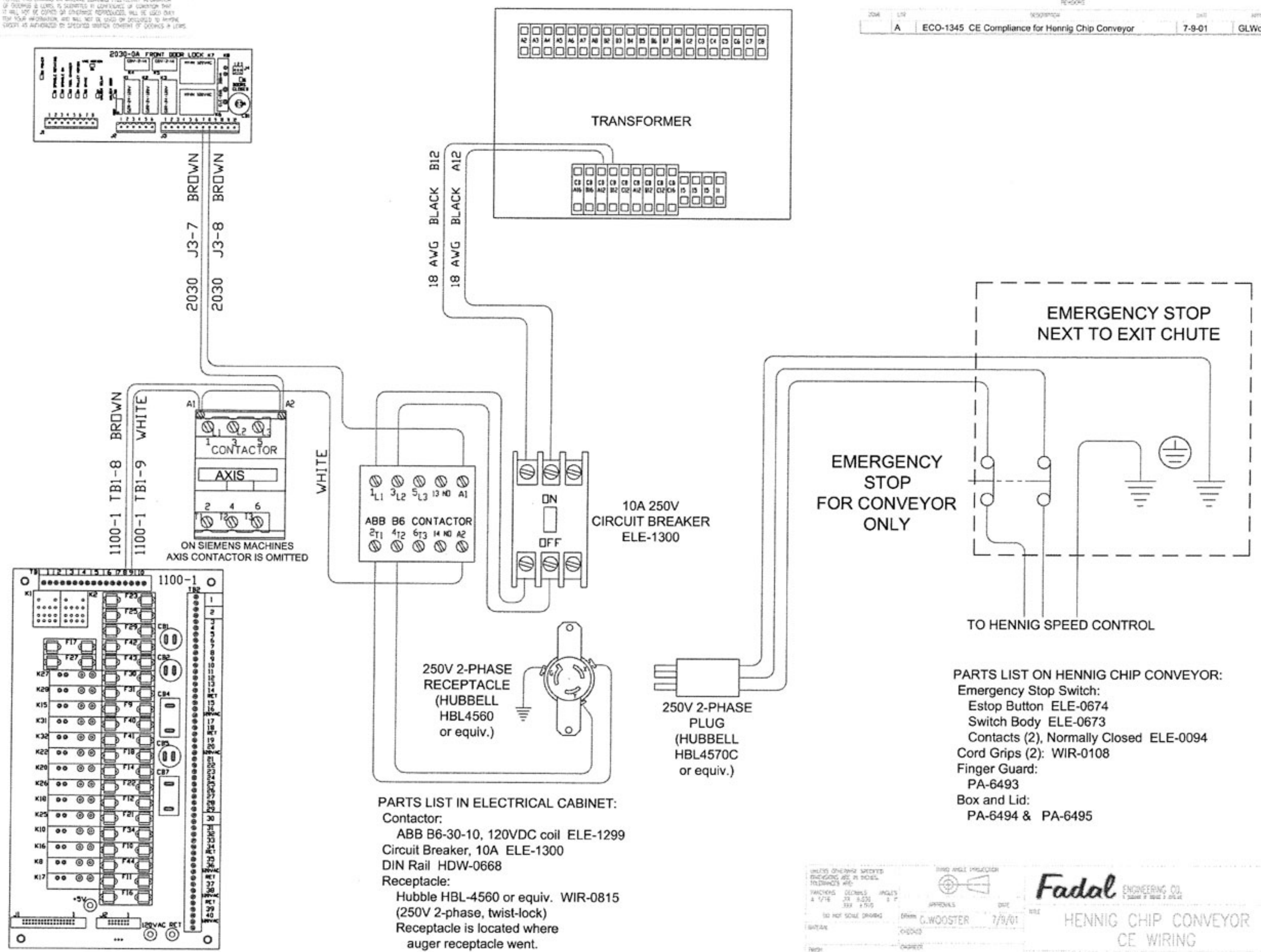


PARTS LIST IN ELECTRICAL CABINET:
 Contactor:
 ABB B6-30-10, 120VDC coil ELE-1299
 Circuit Breaker, 10A ELE-1300
 DIN Rail HDW-0668
 Receptacle:
 Hubbell HBL-4560 or equiv.
 (250V 2-phase, twist-lock)
 Receptacle is located where
 auger receptacle went.

<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, FRACTIONS ARE IN 16THS, DECIMALS ARE IN 10THS.</small>		<small>DO NOT SCALE DRAWING</small>		<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, FRACTIONS ARE IN 16THS, DECIMALS ARE IN 10THS.</small>	
<small>DATE</small> 7/9/01		<small>DESIGNED BY</small> G.WOOSTER		<small>DATE</small> 7/9/01	
<small>APPROVED BY</small> G.WOOSTER		<small>DATE</small> 7/9/01		<small>FILE NO.</small> HENNIG CHIP CONVEYOR US WIRING - ESTOP CONTROL	
<small>SCALE</small> 1/1		<small>REV.</small> A		<small>DESIGN NO.</small> WRG-0045	
<small>DR. BY</small> G.WOOSTER		<small>DATE</small> 7/9/01		<small>REV.</small> A	

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DATE	REV	DESCRIPTION	BY	APPROVED
	A	ECO-1345 CE Compliance for Hennig Chip Conveyor	7-9-01	GLWooster



PARTS LIST ON HENNIG CHIP CONVEYOR:
 Emergency Stop Switch:
 Estop Button ELE-0674
 Switch Body ELE-0673
 Contacts (2), Normally Closed ELE-0094
 Cord Grips (2): WIR-0108
 Finger Guard:
 PA-6493
 Box and Lid:
 PA-6494 & PA-6495

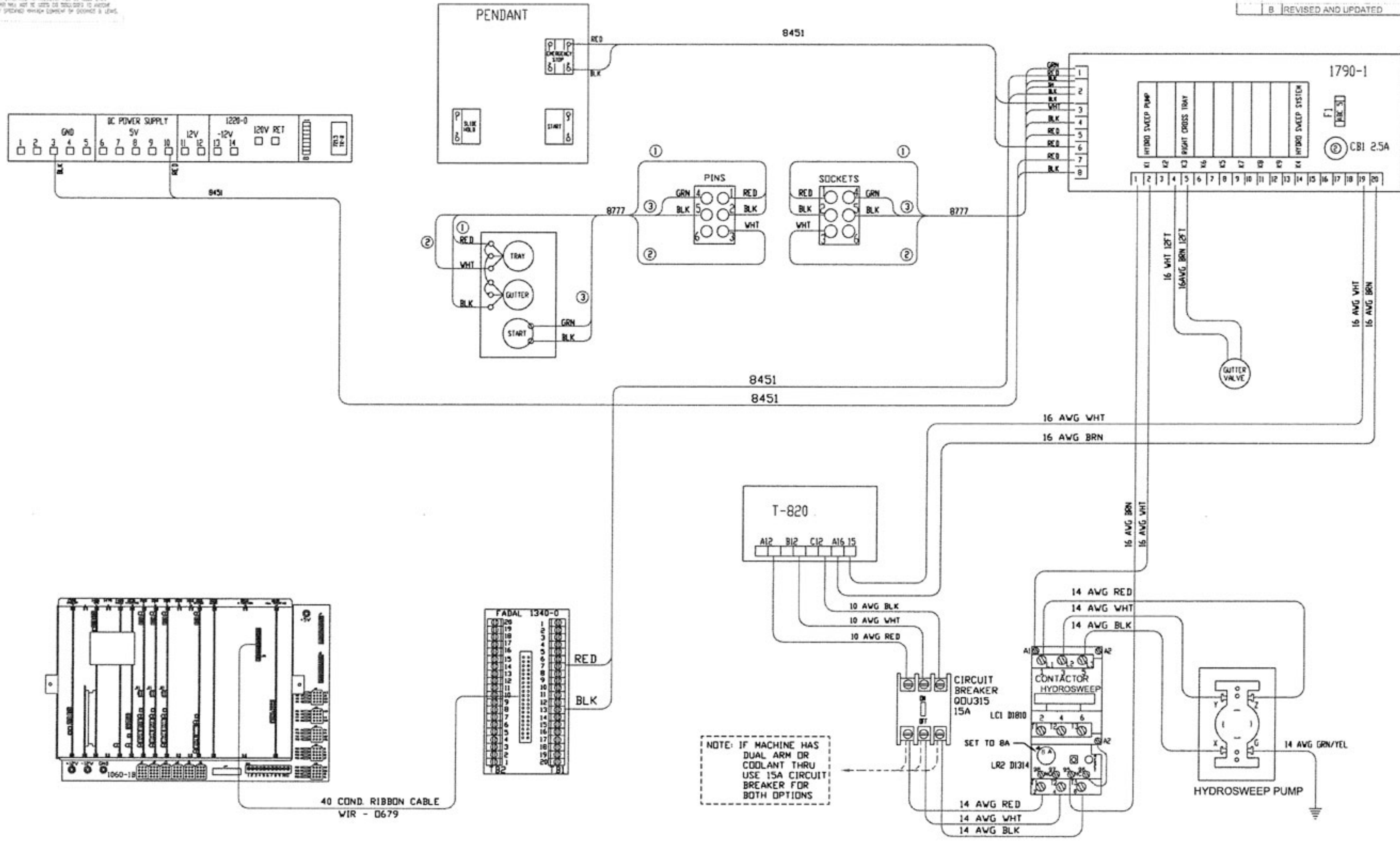
PARTS LIST IN ELECTRICAL CABINET:
 Contactor:
 ABB B6-30-10, 120VDC coil ELE-1299
 Circuit Breaker, 10A ELE-1300
 DIN Rail HDW-0668
 Receptacle:
 Hubbell HBL-4560 or equiv. WIR-0815
 (250V 2-phase, twist-lock)
 Receptacle is located where
 auger receptacle went.

DATE	REV	DESCRIPTION	BY	APPROVED
	A	ECO-1345 CE Compliance for Hennig Chip Conveyor	7-9-01	GLWooster

Fadal ENGINEERING CO.
 HENNIG CHIP CONVEYOR
 CE WIRING
 WRG-0045
 1/1

4 3 2

NOTE: THIS DRAWING OR ANY PART THEREOF IS UNCLASSIFIED UNLESS INDICATED OTHERWISE. UNCLASSIFIED INFORMATION IS UNCLASSIFIED BY DATE AND AUTHORITY. THIS INFORMATION WILL NOT BE USED OR RELEASED TO ANYONE EXCEPT AS AUTHORIZED BY SPECIFIC WRITERS OF DOCUMENTS & LETTERS.



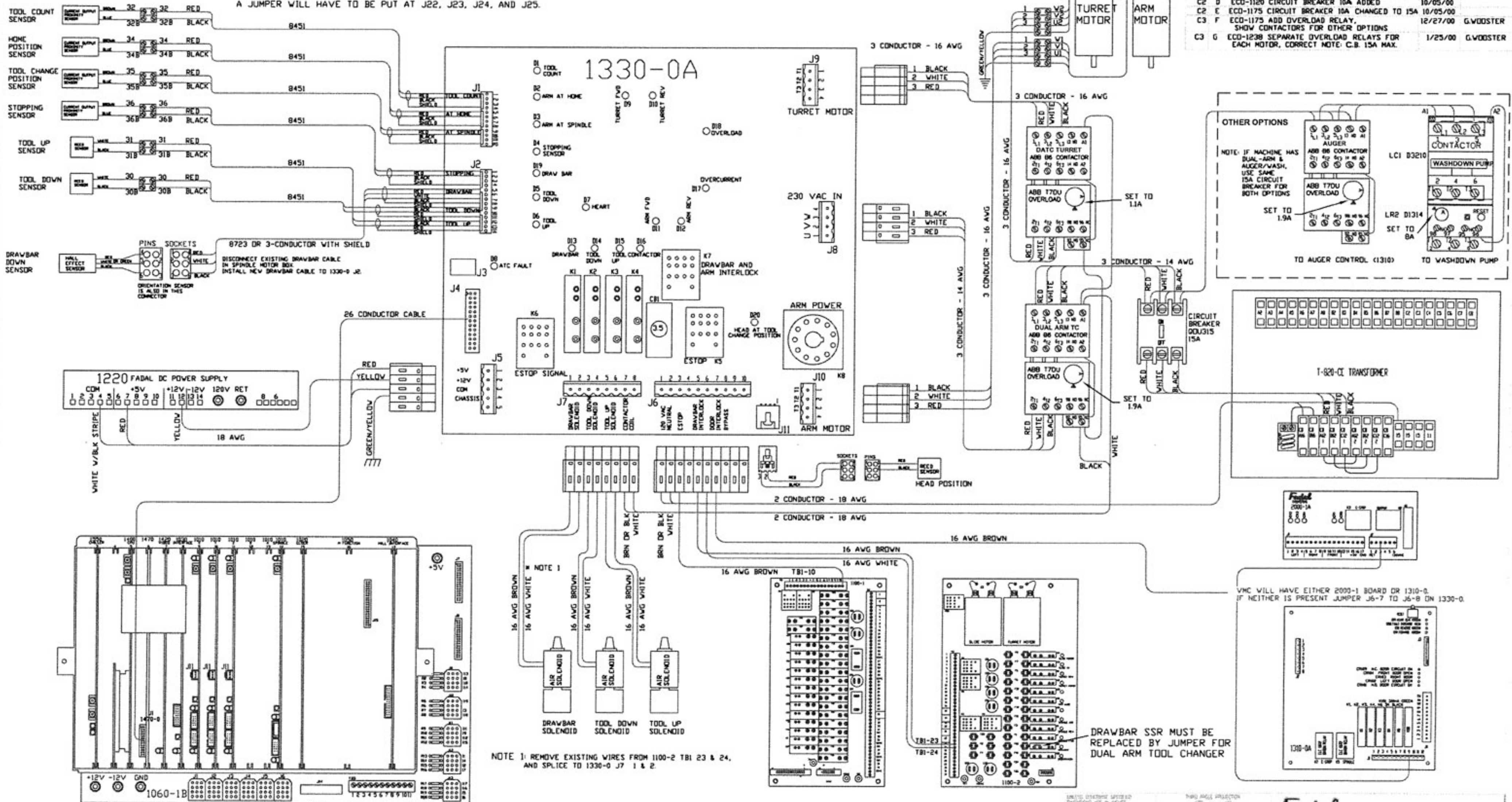
NOTE: IF MACHINE HAS DUAL ARM OR COOLANT THRU USE 15A CIRCUIT BREAKER FOR BOTH OPTIONS

NOTE: INSTALL EPROM VERSION 5.4 ON 1790-1 BOARD.

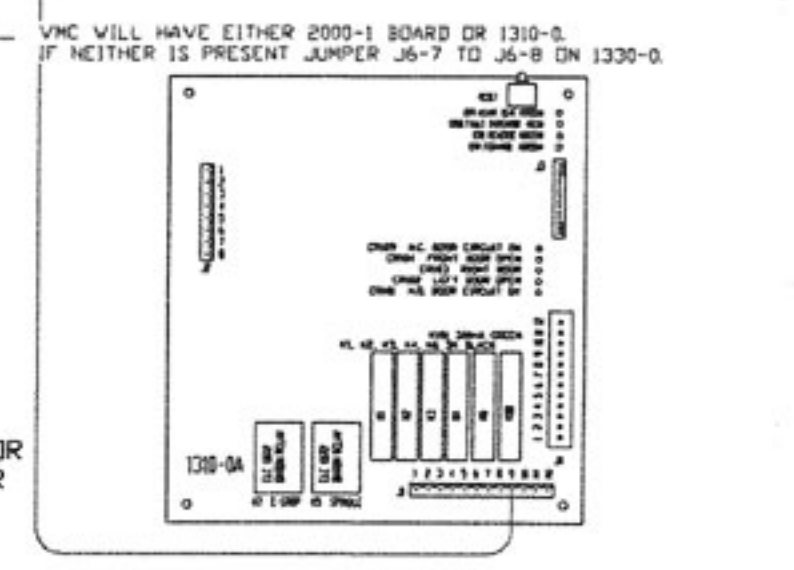
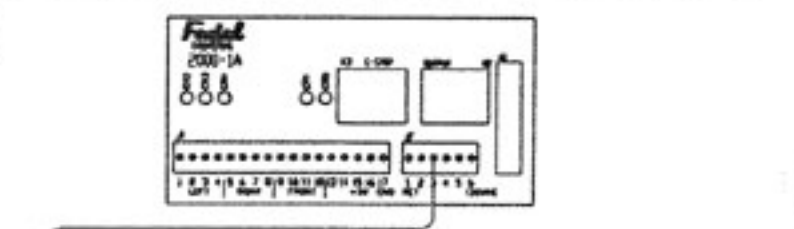
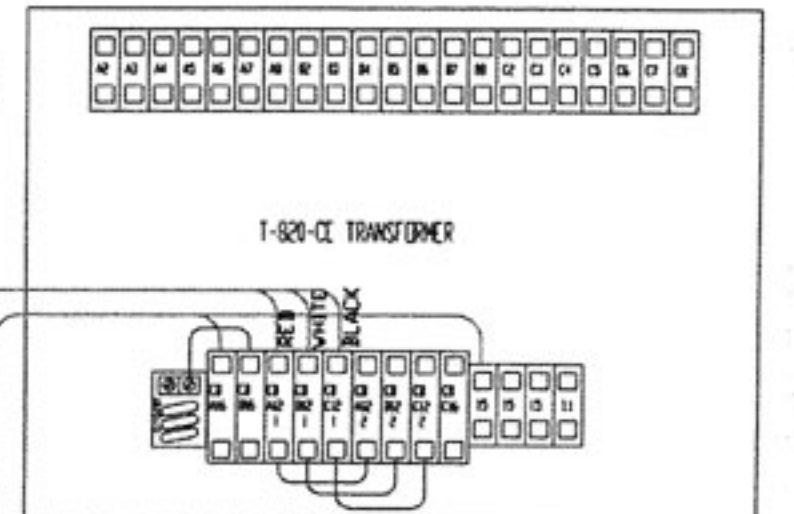
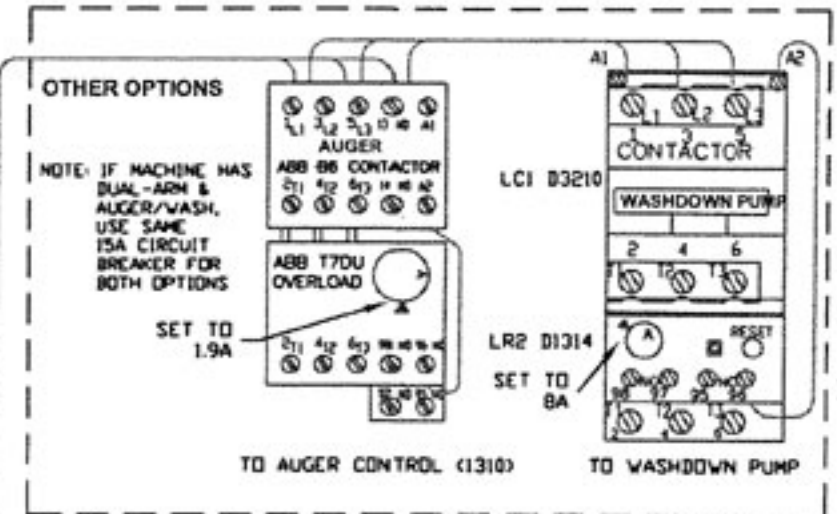
MULTI-GAUGE SPECIFIED DIMENSIONS ARE A PRACTICE TOLERANCE ARE		THIS PANEL PRODUCTION		Fadal ENGINEERING CO. 1000 W. 10TH ST. S. DENVER, CO 80202	
DATE: 08/09/01	BY: A. POLONSKY	DATE: 08/09/01	BY: A. POLONSKY	VMC 6535 WASHDOWN WIRING DIAGRAM	
REV: D	DESCRIPTION: WASHDOWN	REV: D	DESCRIPTION: WASHDOWN	REV: B	REV: B
SCALE: 1/8" = 1"		SCALE: 1/8" = 1"		SCALE: 1/8" = 1"	

NOTE: THE WIRING OF THIS MACHINE CONTAINS PROTECTIVE DEVICES OF VARIOUS TYPES. IF REMOVED OR BYPASSED, IT IS THE USER'S RESPONSIBILITY TO REPAIR OR REPLACE THEM TO MAINTAIN THE SAFETY OF THE MACHINE. THE USER SHOULD CONSULT THE ORIGINAL MANUFACTURER'S LITERATURE FOR THE CORRECT REPAIR PROCEDURES.

IF VOLTAGE OUTPUT SENSORS ARE USED, USE 3-CONDUCTOR WITH SHIELD CABLE. THE CONNECTION AT J1 AND J2 WILL BE RED (+V), WHITE (SIGNAL), BLACK (COM), AND SHIELD. A JUMPER WILL HAVE TO BE PUT AT J22, J23, J24, AND J25.



REV	DATE	DESCRIPTION	BY	APPROVED
3D	04/19/00	SNUBBER REMOVED FROM CONTACTOR ECD-0926		
3C	07/27/00	LED D20 AND CONNECTOR J11 ADDED ECD-0888		
C2	10/05/00	ECD-1120 CIRCUIT BREAKER 10A ADDED		
C2	10/05/00	ECD-1175 CIRCUIT BREAKER 10A CHANGED TO 15A		
C3	12/27/00	ECD-1175 ADD OVERLOAD RELAY, SHOW CONTACTORS FOR OTHER OPTIONS		GWOOSTER
C3	1/25/00	ECD-1238 SEPARATE OVERLOAD RELAYS FOR EACH MOTOR, CORRECT NOTE: C.B. 15A MAX.		GWOOSTER



VMC WILL HAVE EITHER 2000-1 BOARD OR 1310-0. IF NEITHER IS PRESENT JUMPER J6-7 TO J6-8 ON 1330-0.

DRAWBAR SSR MUST BE REPLACED BY JUMPER FOR DUAL ARM TOOL CHANGER

NOTE 1: REMOVE EXISTING WIRES FROM 1100-2 TBI 23 & 24, AND SPLICE TO 1330-0 J7 1 & 2.

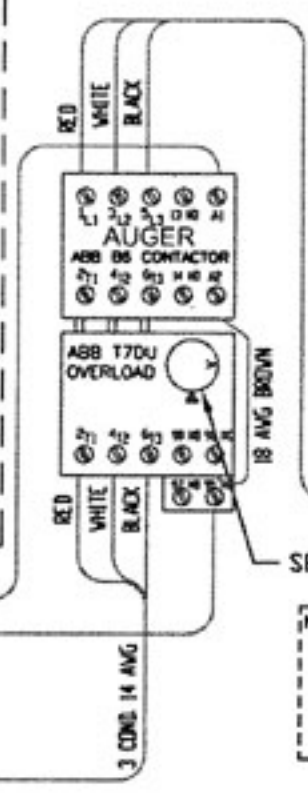
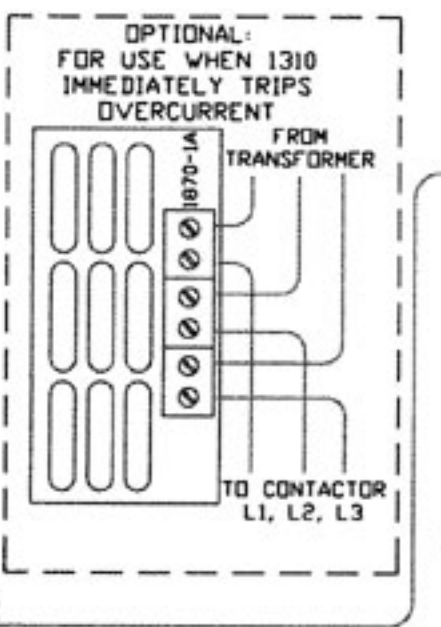
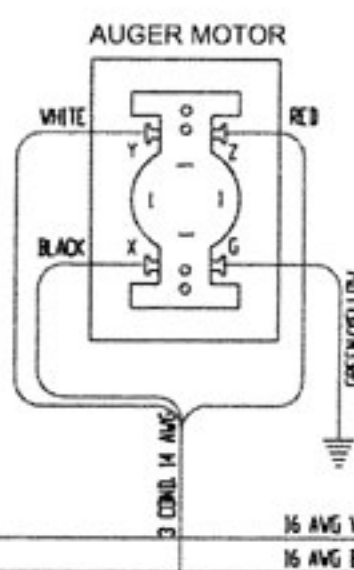
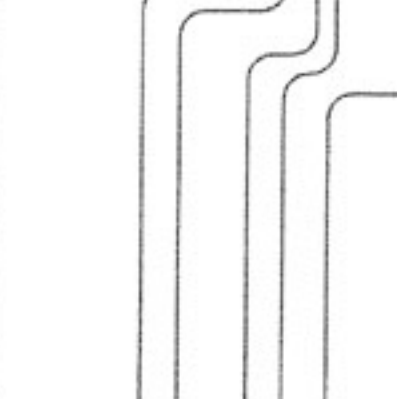
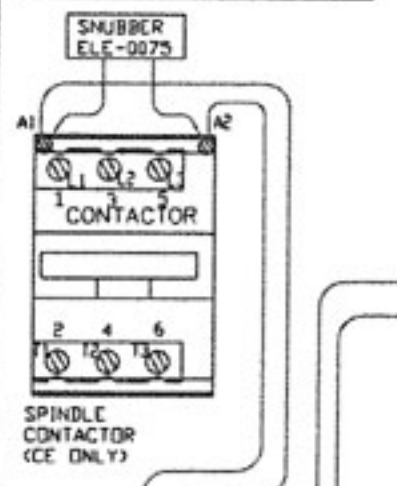
Fadal WIRING CO.
 DUAL-ARM TOOL CHANGER WIRING DIAGRAM (1330-0A)
 WRG-0001
 DATE: 12-3-99
 BY: G. WOOSTER
 CHECKED: []
 DRAWN: []
 APPROVED: []
 SHEET: 1/1 OF 2

NOTES: THIS DRAWING OR PARTIAL CONTAINS PROPRIETARY INFORMATION OF FADAL & ASSOCIATES, INC. IT IS THE PROPERTY OF FADAL & ASSOCIATES, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF FADAL & ASSOCIATES, INC.

1310 PIN LIST

- J1**
- 1. 120 VAC (INPUT)
- 2. PUMP
- 3. VALVE #1
- 4. VALVE #2
- 5. VALVE #3
- 6. 120V RETURN (INPUT)
- 7. E-STOP (INPUT)
- 8. CONTACTOR FOR AUGER
- 9. CONTACTOR FOR SPINDLE
- 10. RETURN FOR SPINDLE CONTACTOR
- 11. RETURN FOR AUGER CONTACTOR AND PUMP STARTER
- 12. RETURN FOR VALVE COILS
- J2**
- 1-3. AUGER MOTOR
- 4-7. 220 VAC
- J3**
- 1. START/STOP BUTTON
- 2. MODE SWITCH
- 3. M-FUNCTION INPUT
- 5. POT
- 6. +5V FOR POT
- 7. GROUND
- 8. EXTERNAL RESET
- 9. +5V
- 11. +5V (INPUT)
- 12. GROUND (INPUT)
- 13. EXTERNAL SLIDE HOLD OUTPUT
- 14. GROUND FOR EXTERNAL SLIDE HOLD
- J4**
- 1. LEFT DOOR SWITCH (BLK)
- 2. LEFT DOOR SWITCH (WHT)
- 3. LEFT DOOR SWITCH (GRN)
- 4. LEFT DOOR SWITCH (GRN)
- 5. RIGHT DOOR SWITCH (BLK)
- 6. RIGHT DOOR SWITCH (WHT)
- 7. RIGHT DOOR SWITCH (GRN)
- 8. RIGHT DOOR SWITCH (GRN)
- 9. FRONT DOOR SWITCH (BLK)
- 10. FRONT DOOR SWITCH (WHT)
- 11. FRONT DOOR SWITCH (GRN)
- 12. FRONT DOOR SWITCH (GRN)

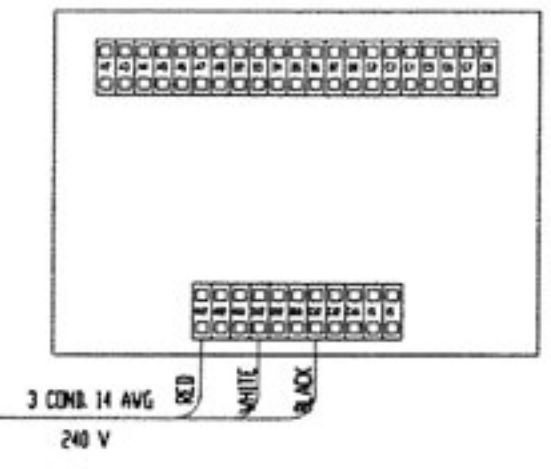
- K1 - SSR ELE-0070 TURN ON PUMP
- K2 - SSR ELE-0070 VALVE 1
- K3 - SSR ELE-0070 VALVE 2
- K4 - SSR ELE-0070 VALVE 3
- K6 - SSR ELE-0070 3 POLE RELAY 240V
- K101 - SSR ELE-0100 SPINDLE RELAY



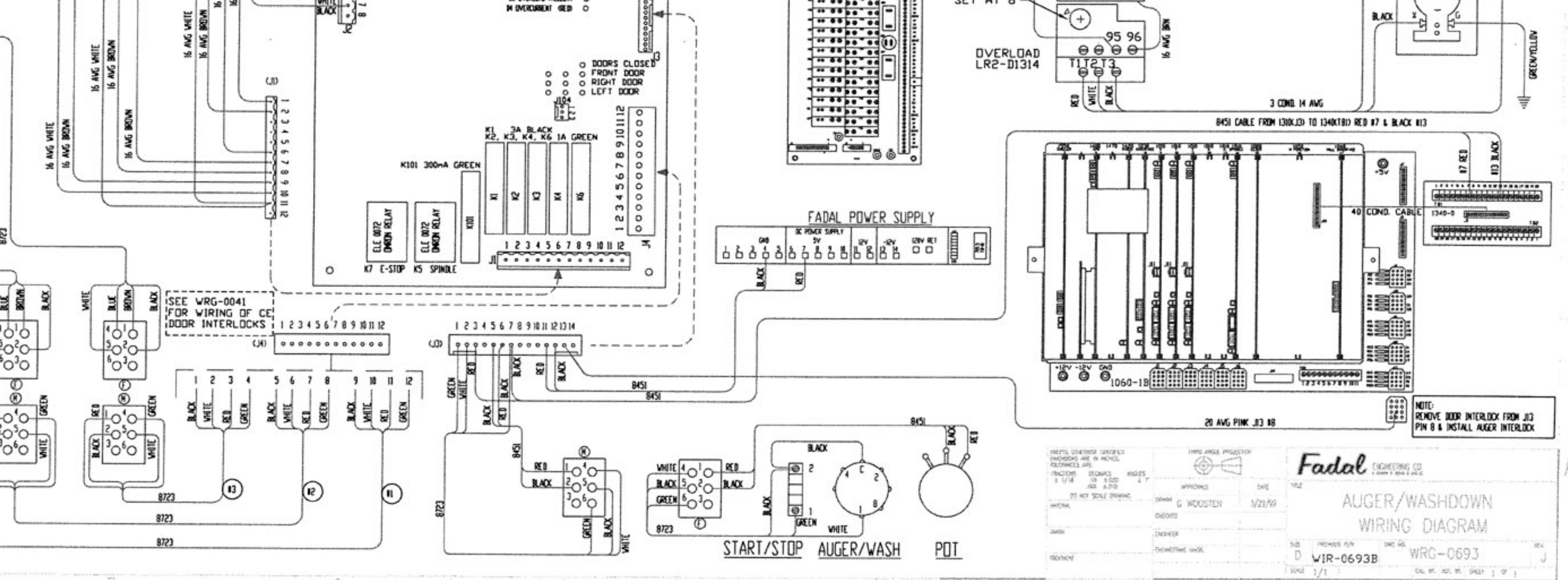
CIRCUIT BREAKER
15A QOU315
(IF MORE THAN 15A IS REQUIRED BECAUSE DATC, PALLET CHANGER, AND COOLANT THRU ARE ADDED, THEN A SECOND CIRCUIT BREAKER WILL BE NEEDED.)

NOTE:
IF MACHINE HAS COOLANT THRU SEE WRG-0037.
IF MACHINE HAS COOLANT THRU, DATC, AND PALLET CHANGER, A SECOND 15A CIRCUIT BREAKER WILL BE NEEDED.

T-820 TRANSFORMER



REV	DATE	DESCRIPTION	BY	APPROVED
A	10/10/98	ORIGINAL DRAWN BY T PARHAM		
B	5/3/99	CONVERTED TO AUTOCAD AND REVISED FOR 1310-0A		
C	6/24/99	ECO-0652 DETAIL ADDED TO 1340-0. 1100-1 F23 CHANGED TO 3A. WIRE COLOR CODE CHANGED. DC SIGNAL IS PINK.		
D3	06/26/00	STARTER ELE-0770 & HEATER ELE-0137 CHANGED TO CONTACTOR ELE-1232 & OVERLOAD RELAY ELE-1231		
D2	07/14/00	ECO-0988 ECO-0983 CIRCUIT BREAKER 15A ADDED TO WASHDOWN RELAYS ELE-0747 AND FUSE BLOCK ELE-370 CHANGED TO CONTACTOR 2HP AND CIRCUIT BREAKER 10A		
D2	08/30/00	ELE-1114 VALVES #1, 2, 3 AND WIRES REMOVED		
D4	10/12/00	ECO-1148 REMOVE 15A CIRCUIT BREAKER. USE 15A		
D4	01/01/01	ECO-1173 SHOW 3-PHASE FOR OTHER OPTIONS. 15A CIRCUIT BREAKER WILL BE 20A IF OTHER OPTIONS ARE ADDED.		GWOOSTER
D5	01/01/01	ECO-1207 ADD OVERLOAD RELAY TO AUGER CONTACTOR.		
D4	01/01/01	ECO-1238 CORRECT NOTE: C.B. 15A MAX CHANGED CONTACTORS		GWOOSTER
D6	01/01/01	ECO-1194 ADDED OPTIONAL 1870-1A INRUSH CURRENT LIMITER.		GWOOSTER



START/STOP AUGER/WASH POT

Fadal ENGINEERING CO.

AUGER/WASHDOWN WIRING DIAGRAM

DATE: 5/22/99
 DRAWN: G. WOOSTER
 CHECKED: []
 DESIGNED: []
 APPROVED: []

REV: D
 WIR-0693B
 WRG-0693

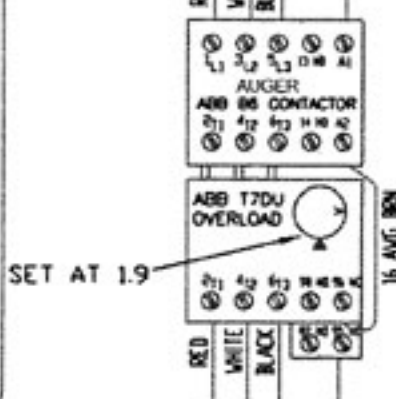
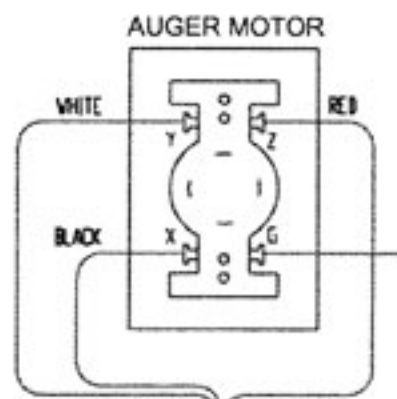
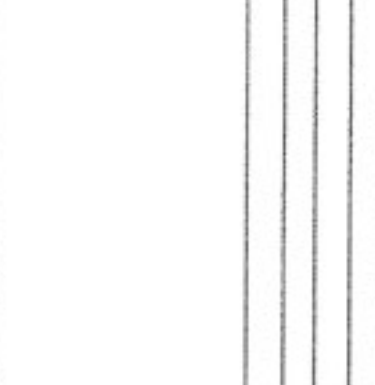
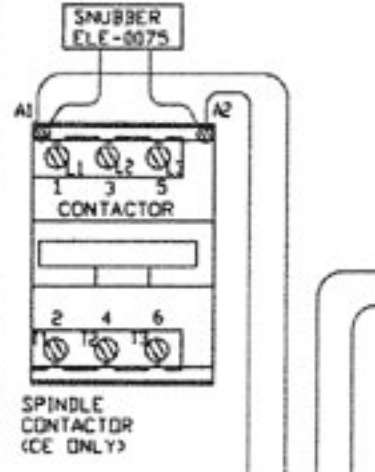
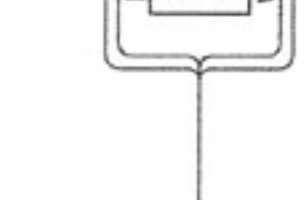
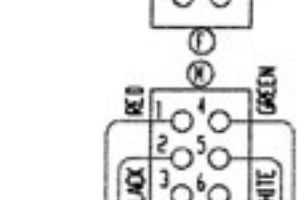
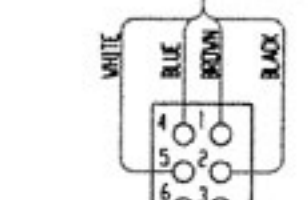
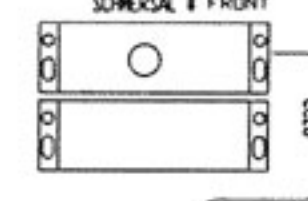
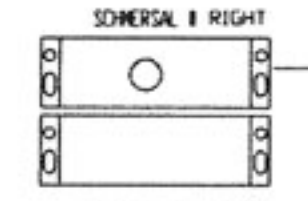
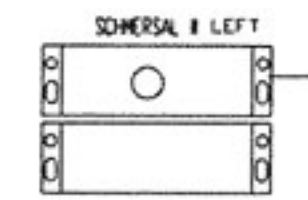
SCALE: 1/1

NOTE: THE COMPANY OR MANUFACTURER'S IDENTIFICATION OF PARTS & EQUIPMENT IS INDICATED IN THIS DRAWING. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE CORRECT PARTS & EQUIPMENT FOR THIS DRAWING. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE CORRECT PARTS & EQUIPMENT FOR THIS DRAWING.

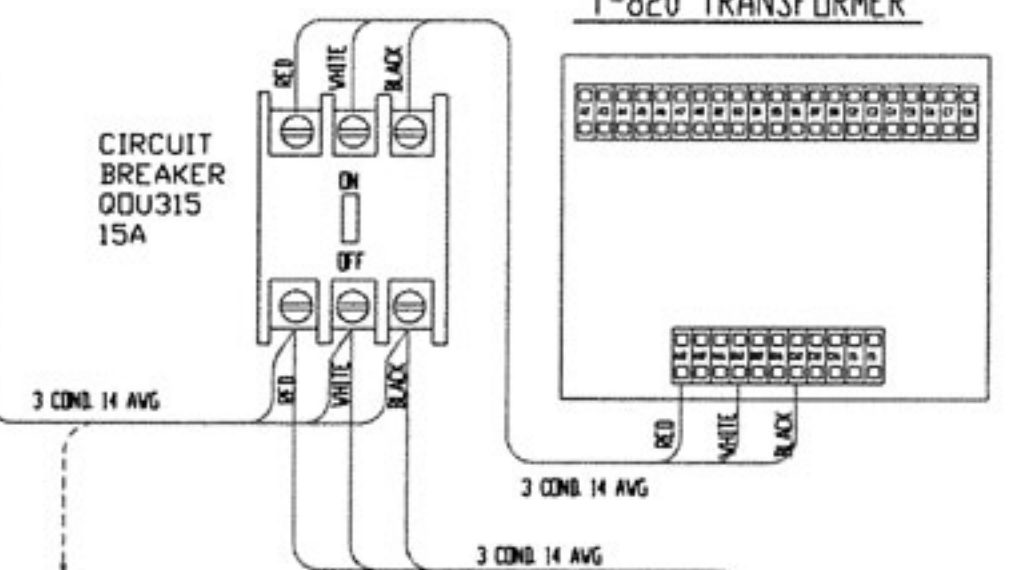
1310 PIN LIST

- J1**
 - 1. 120 VAC (INPUT)
 - 2. PUMP
 - 3. VALVE #1
 - 4. VALVE #2
 - 5. VALVE #3
 - 6. 120 RETURN (INPUT)
 - 7. E-STOP (INPUT)
 - 8. CONTACTOR FOR AUGER
 - 9. CONTACTOR FOR SPINDLE
 - 10. RETURN FOR SPINDLE CONTACTOR
 - 11. RETURN FOR AUGER CONTACTOR AND PUMP STARTER
 - 12. RETURN FOR VALVE COILS
- J2**
 - 1-3. AUGER MOTOR
 - 4-7. 220 VAC
- J3**
 - 1. START/STOP BUTTON
 - 2. MODE SWITCH
 - 3. M-FUNCTION INPUT
 - 5. POT
 - 6. +5V FOR POT
 - 7. GROUND
 - 8. EXTERNAL RESET
 - 9. +5V
 - 11. +5V (INPUT)
 - 12. GROUND (INPUT)
 - 13. EXTERNAL SLIDE HOLD OUTPUT
 - 14. GROUND FOR EXTERNAL SLIDE HOLD
- J4**
 - 1. LEFT DOOR SWITCH (BLK)
 - 2. LEFT DOOR SWITCH (WHT)
 - 3. LEFT DOOR SWITCH (GRN)
 - 4. LEFT DOOR SWITCH (GRN)
 - 5. RIGHT DOOR SWITCH (BLK)
 - 6. RIGHT DOOR SWITCH (WHT)
 - 7. RIGHT DOOR SWITCH (GRN)
 - 8. RIGHT DOOR SWITCH (GRN)
 - 9. FRONT DOOR SWITCH (BLK)
 - 10. FRONT DOOR SWITCH (WHT)
 - 11. FRONT DOOR SWITCH (GRN)
 - 12. FRONT DOOR SWITCH (GRN)

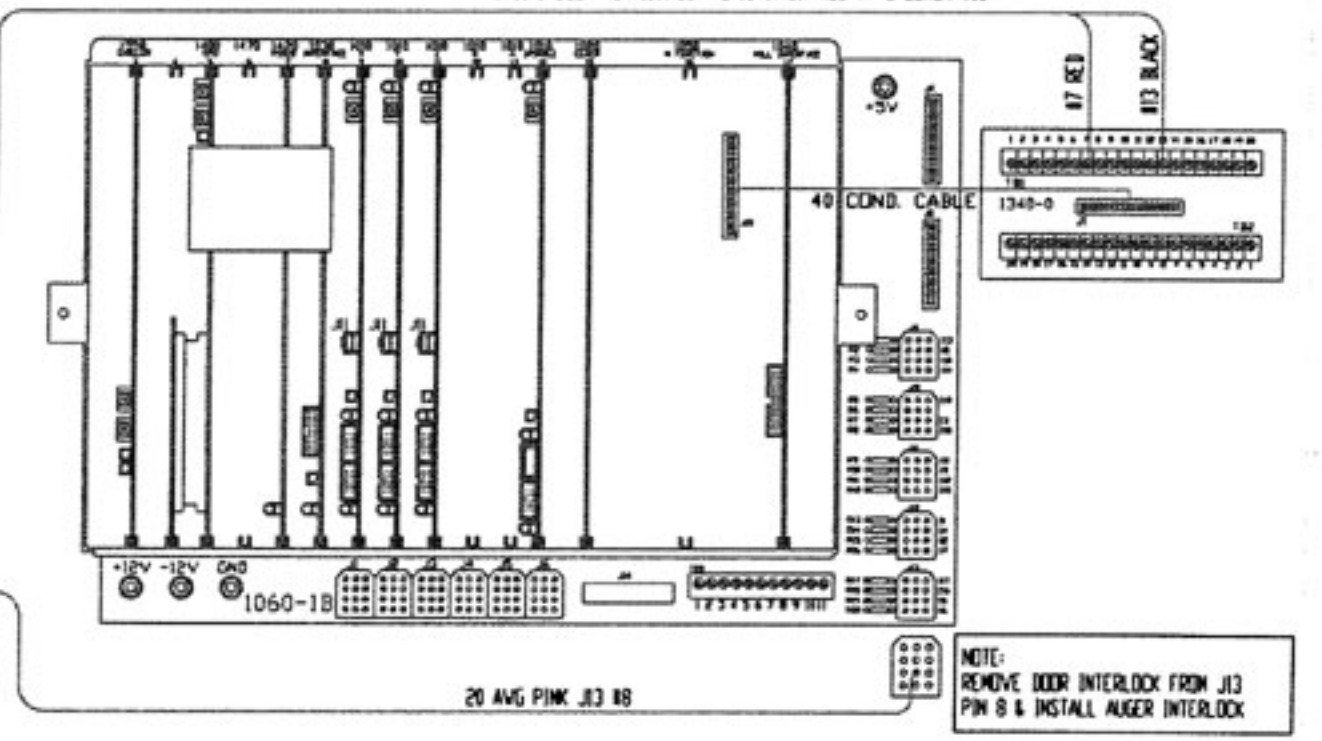
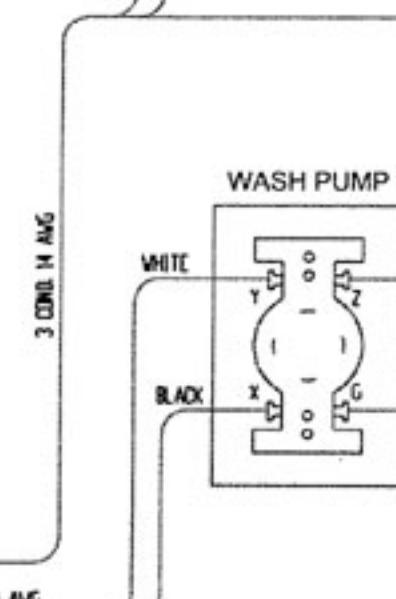
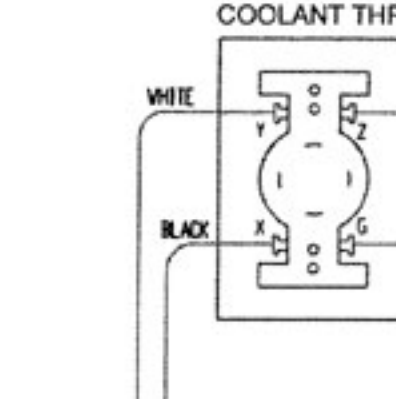
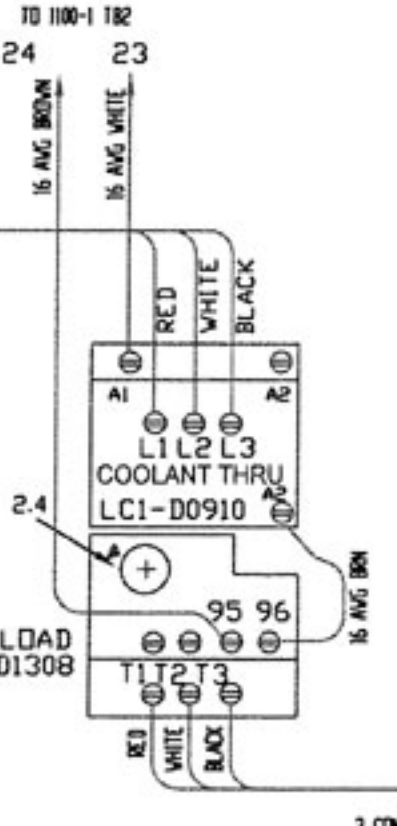
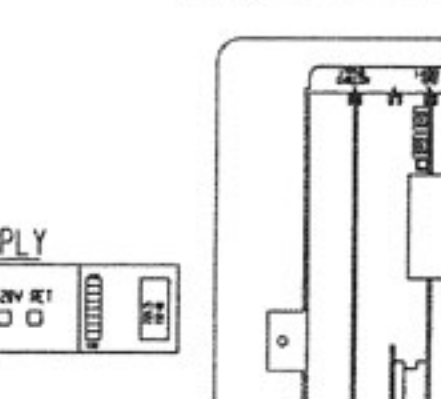
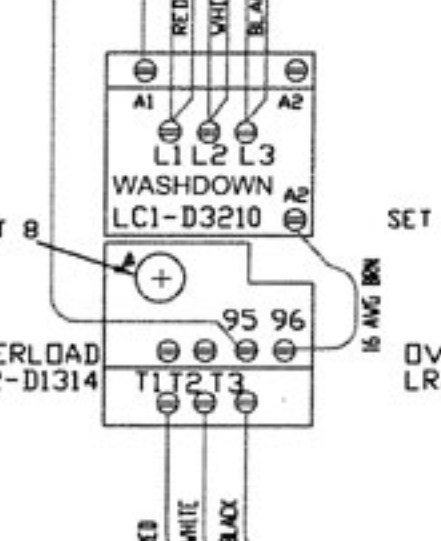
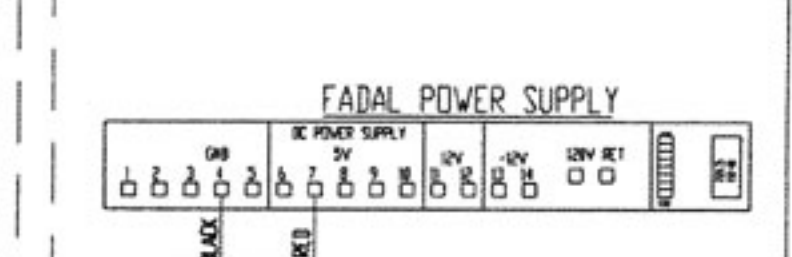
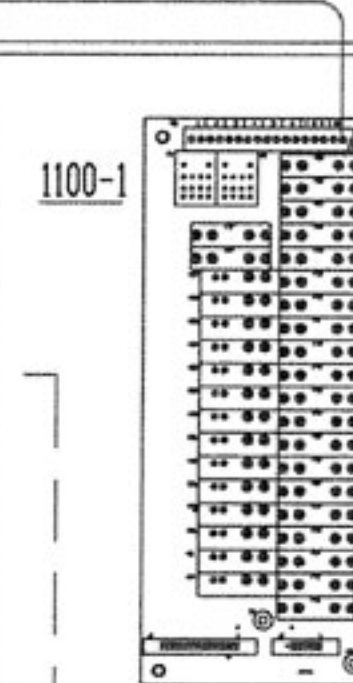
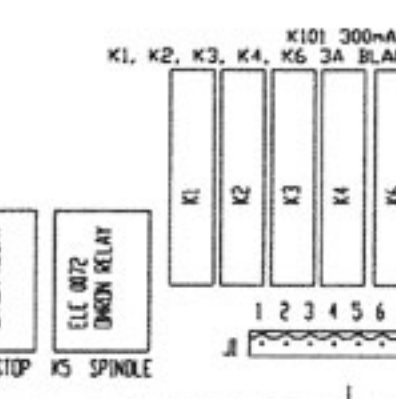
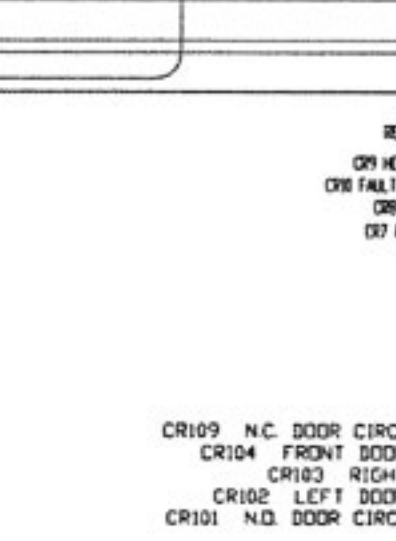
- K1 - SSR ELE-0070 TURN ON PUMP.
- K2 - SSR ELE-0070 VALVE 1
- K3 - SSR ELE-0070 VALVE 2
- K4 - SSR ELE-0070 VALVE 3
- K6 - SSR ELE-0070 3 POLE RELAY 240V.
- K101 - SSR ELE-001 SPINDLE RELAY



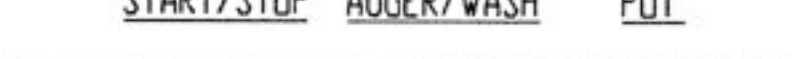
NOTE: IF MACHINE HAS ALSO HAS PALLET CHANGER AND DUAL ARM TOOL CHANGER THEN A SECOND 15 A CIRCUIT BREAKER WILL BE REQUIRED. UL LIMIT FOR BRANCH MOTOR PROTECTION IS 15 A.



CIRCUIT BREAKER 00U315 15A



NOTE: REMOVE DOOR INTERLOCK FROM J13 PIN 6 & INSTALL AUGER INTERLOCK

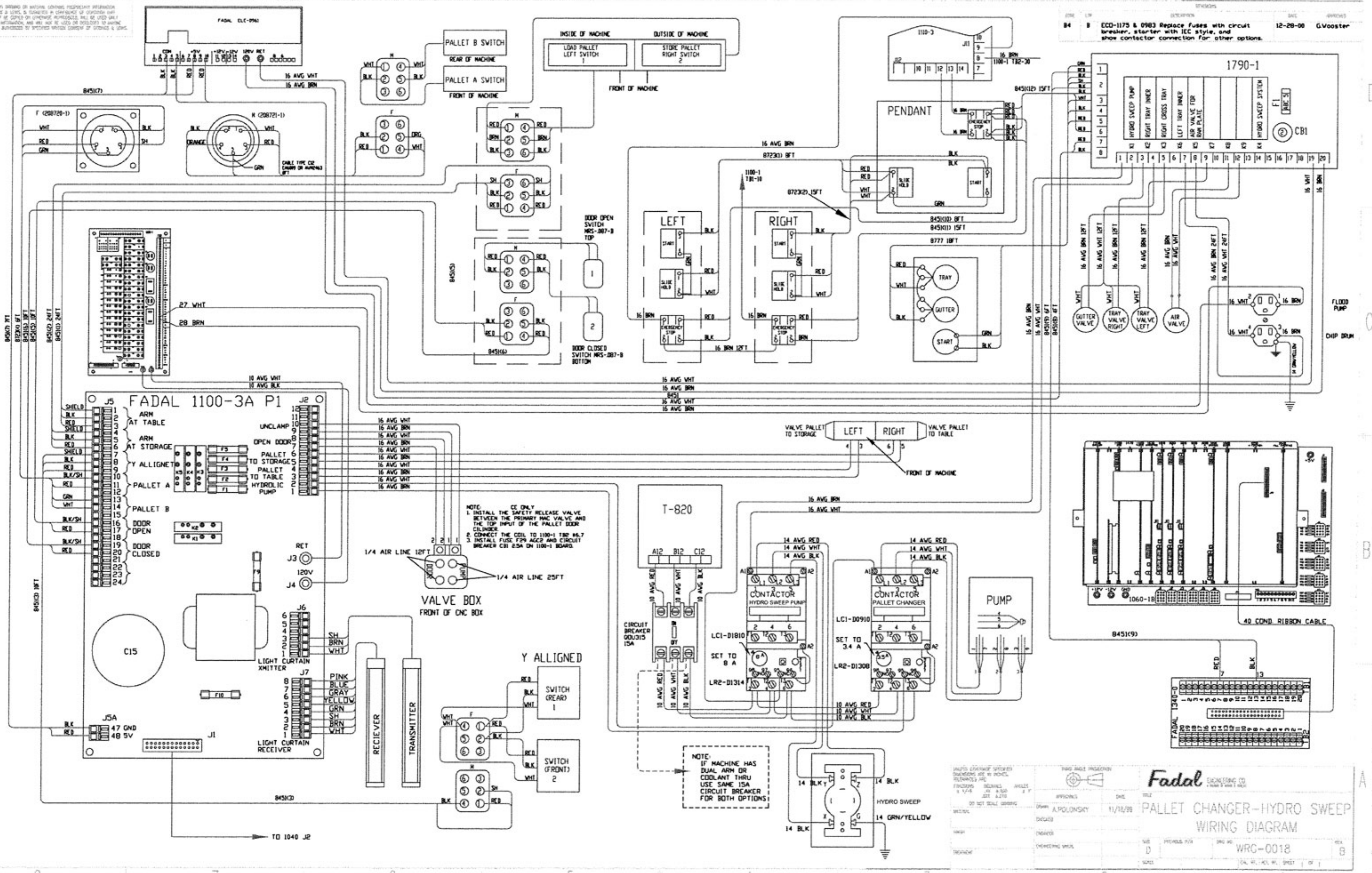


REV	DATE	DESCRIPTION	BY	CHKD
B2	07/14/00	ECD-0982-0983 CIRCUIT BREAKER 15A ADDED RELAYS ELE-0747 AND FUSE BLOCK ELE-370 CHANGED TO CONTACTOR 2HP AND CIRCUIT BREAKER 10A		
D3	07/14/00	ECD-0114 VALVES #1, 2, 3 AND WIRES REMOVED		
D4	10/12/00	ECD-1148 REMOVE 10A CIRCUIT BREAKER, USE 15A		
D4	12/28/00	ECD-1175 ONE 20A CIRCUIT BREAKER FOR ALL OPTIONS SHOW DATE BRANCH FROM CIRCUIT BREAKER	G.VOOSTER	
D5		ECD-1207 ADD OVERLOAD RELAY TO AUGER CONTACTOR		
D4	1/26/00	ECD-1238 CORRECT CIRCUIT BREAKER-MAX 15A CHANGED CONTACTORS	G.VOOSTER	

DATE: 07/25/00
 DRAWN: A. POLONYSKY
 CHECKED: []
 ENGINEER: []
 APPROVED: []
 TITLE: AUGER/WASHDOWN/COOL THRU WIRING DIAGRAM
 SHEET: 1/1
 WPG-0037

NOTE: THIS DRAWING OR ANYTHING CONTAINED THEREIN IS UNCLASSIFIED AND IS NOT BEING CONTROLLED BY THE NATIONAL ARCHIVES. IT IS NOT BEING CONTROLLED BY THE NATIONAL ARCHIVES. IT IS NOT BEING CONTROLLED BY THE NATIONAL ARCHIVES. IT IS NOT BEING CONTROLLED BY THE NATIONAL ARCHIVES.

REVISIONS
 84 8 ECO-1175 & 0983 Replace fuses with circuit breaker, starter with IEC style, and show contactor connection for other options. 12-28-08 G.Vooster



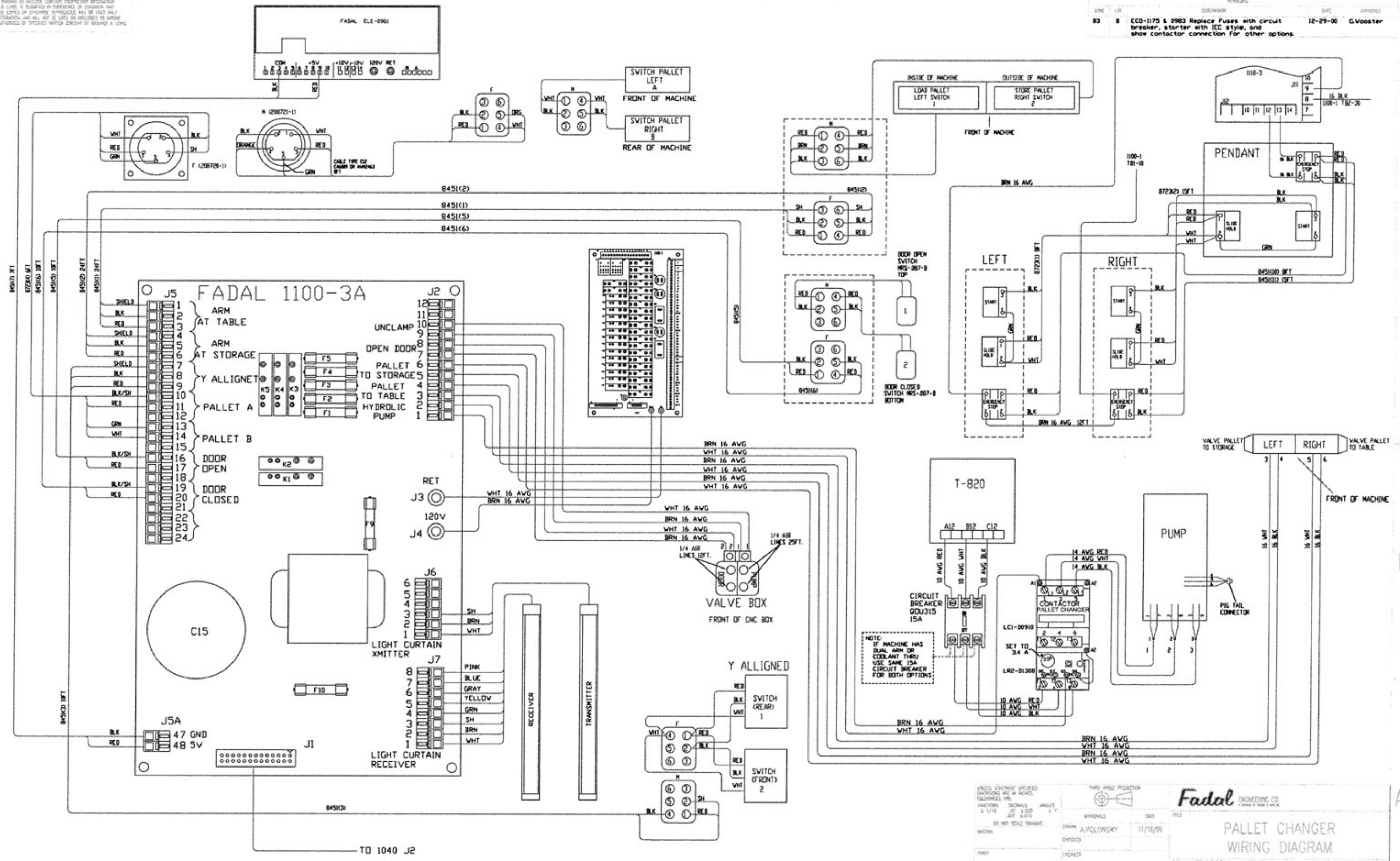
NOTE: CE ONLY
 1. INSTALL THE SAFETY RELEASE VALVE BETWEEN THE PRIMARY MAC VALVE AND THE TOP INPUT OF THE PALLET DOOR CYLINDER.
 2. CONNECT THE COIL TO 1100-1 TRM #6,7
 3. INSTALL FUSE F29 AG22 AND CIRCUIT BREAKER CBI 2.5A ON 1100-1 BOARD.

NOTE:
 IF MACHINE HAS DUAL ARM OR COOLANT THRU USE SAME ISA CIRCUIT BREAKER FOR BOTH OPTIONS!

<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.</p> <p>DO NOT SCALE DRAWING</p>		<p>DATE: 11/18/99</p> <p>DESIGNER: A. POLONSKY</p>	
<p>APPROVED: [Signature]</p>		<p>DATE: 11/18/99</p>	
<p>Fadal CHECKING CO.</p>			
<p>PALLET CHANGER-HYDRO SWEEP WIRING DIAGRAM</p>			
<p>NO. 10</p>	<p>REV. 8</p>	<p>DATE: 12-28-08</p>	<p>BY: G.Vooster</p>
<p>SCALE: 1/8" = 1"</p>		<p>1 OF 1</p>	

NOTE: THIS RANGE OF MACHINES CONTAINS PRECISION MECHANICAL
 OF DESIGN & CONSTRUCTION IS GUARANTEED IN CONFORMANCE WITH THE
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 FOR THIS AUTOMATIC AND WILL NOT BE USED OR APPLIED TO ANYONE
 EXCEPT AS AUTHORIZED BY SPECIFIC WRITING FROM FADAL & SONS.

REVISIONS
 DATE APPROVED
 83 8 ECD-1175 & 0983 Replace Fuses with circuit breaker, starter with IEC style, and show contactor connection for other options. 12-29-00 G.Vooster

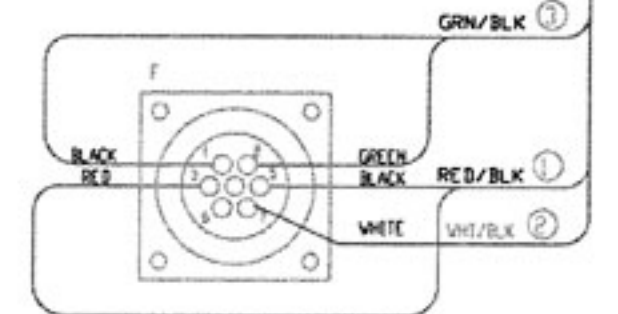
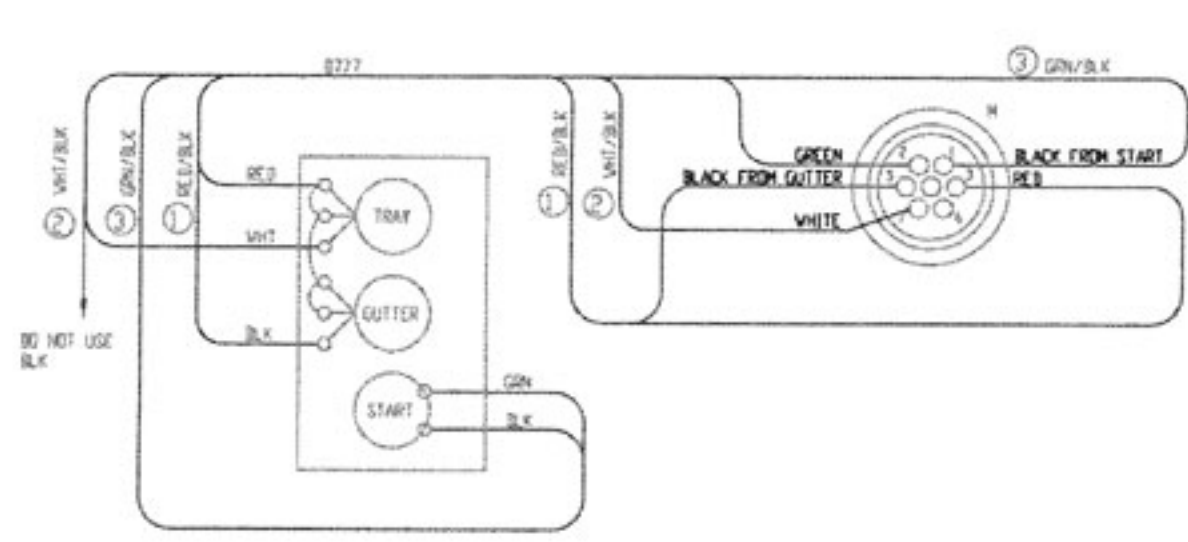
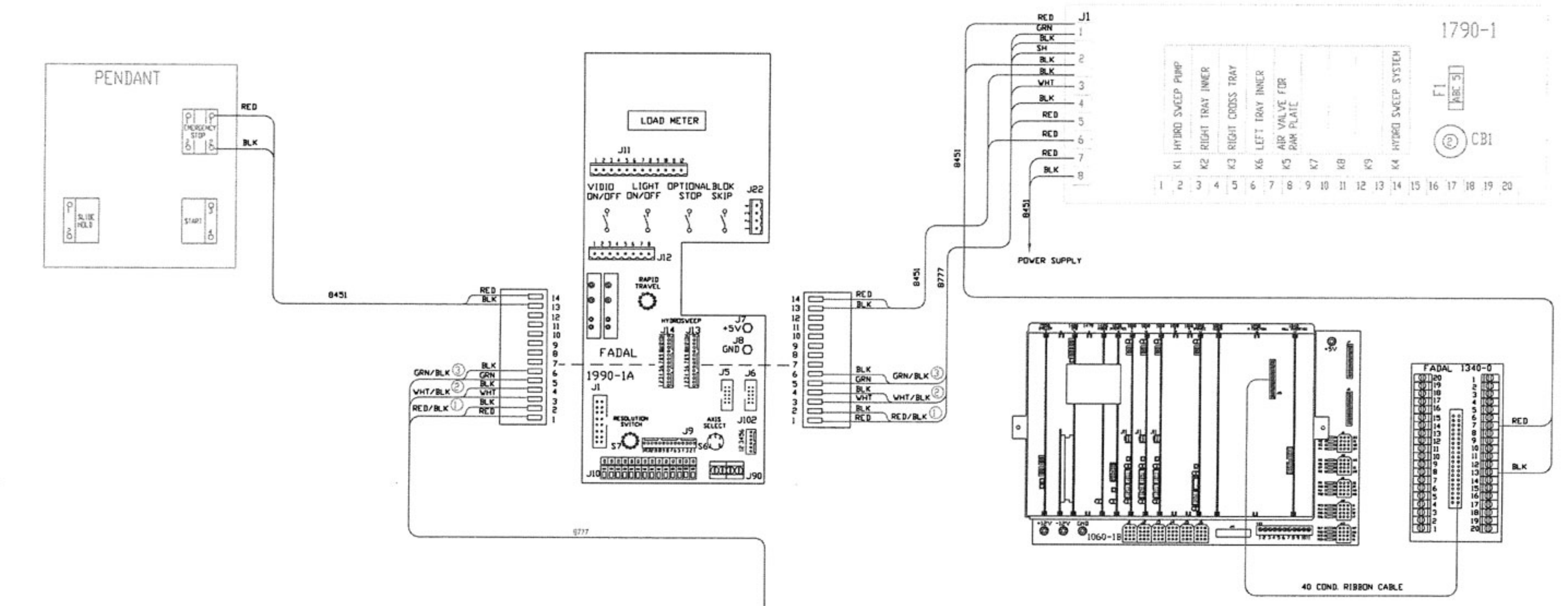


NOTE: IF MACHINE HAS DUAL ARM OR COOLANT THRU USE SAME 15A CIRCUIT BREAKER FOR BOTH OPTIONS

<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. FRACTIONS ARE DECIMALS. ANGLES ARE IN DEGREES. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.</p>		<p>THIRD ANGLE PROJECTION</p>	
<p>DATE: 11/18/99</p> <p>BY: A. POLONSKY</p> <p>DESIGNED: A. POLONSKY</p> <p>CHECKED: A. POLONSKY</p> <p>ENGINEERING: A. POLONSKY</p>	<p>DATE: 11/18/99</p> <p>BY: A. POLONSKY</p> <p>DESIGNED: A. POLONSKY</p> <p>CHECKED: A. POLONSKY</p> <p>ENGINEERING: A. POLONSKY</p>	<p>Fadal ENGINEERING CO. 1000 S. 10TH ST. W. WYOMING, NE 68002</p>	
<p>PROJECT: PALLET CHANGER</p> <p>DRAWING NO: WRC-0017</p> <p>REV: B</p>		<p>SCALE: 1" = 1" (SEE DIMENSIONS)</p>	

TO 1040 J2

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NOTE: 8777 WIRE CONNECTIONS

HYDRO SWEEP CONTROL BOX	1790-1 J1
① RED BLK SHIELD (DO NOT USE SHIELD)	① RED-5 BLK-4 SHIELD-2
② WHT BLK SHIELD (DO NOT USE BLK/SHIELD)	② WHT-3 BLK SHIELD (DO NOT USE BLK/SHIELD)
③ GRN BLK SHIELD (DO NOT USE SHIELD)	③ GRN-1 BLK-2 SHIELD (DO NOT USE SHIELD)

UNITS OPERATE AT 120V AC, 60 HZ. CHECK FOR PROPER PHASE SEQUENCE. FUSES ARE 1/2" x 1/8" x 1/4" 5.0A. WELLS ARE 1/8" DIA.

DO NOT SCALE DRAWING

DATE: 12/21/79

APPROVALS: A. POLONSKY

DATE: 12/21/79

WRC-0022

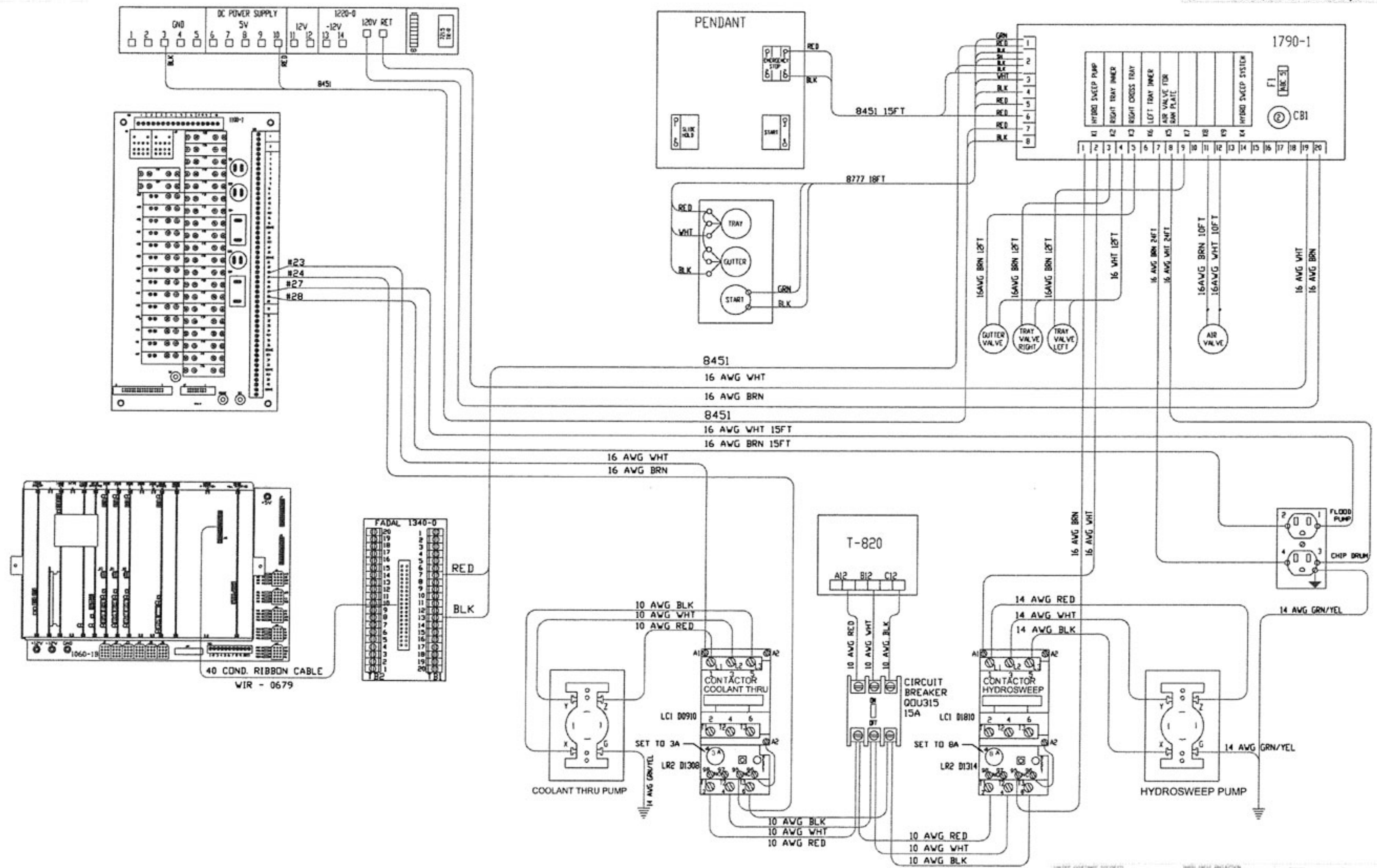
HYDRO SWEEP/1990-1A BOARD WIRING DIAGRAM

REV 1

SCALE: 1" = 1"

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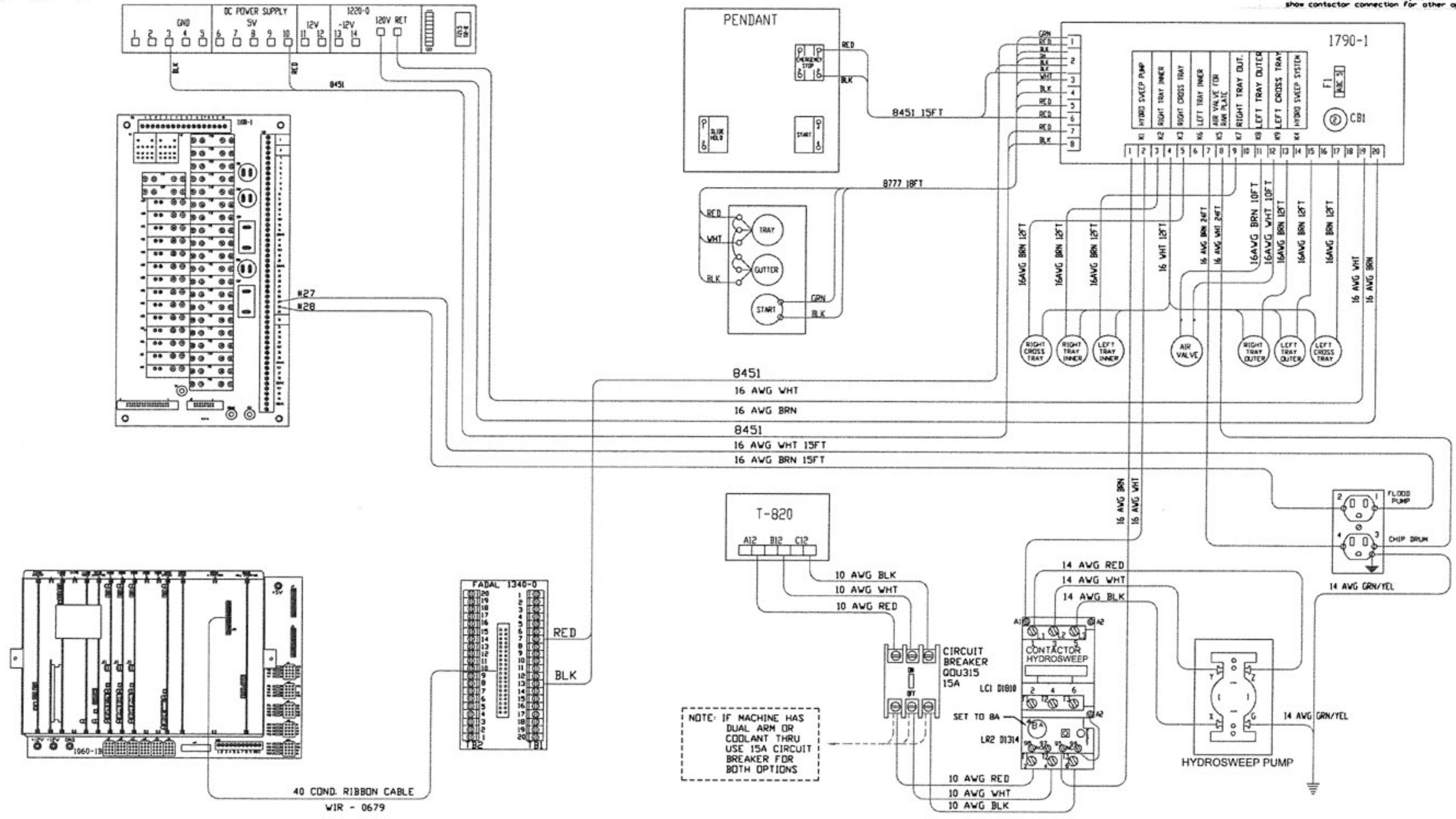
DESCRIPTION: ECD-1175 & 0983 Replace fuses with circuit breaker, starter with IEC style
 DATE: 12-28-00
 DRAWN BY: GVooster



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE FRACTIONS 1/16 1/8 3/16 1/4 3/8 1/2 5/8 3/4 7/8 1		THIS AREA PROTECTED APPROVED: A. POLONSKY DATE: 12/28/00		Fadal ENGINEERING CO. 1000 W. 14th St. #442 CHICAGO, IL 60607 TEL: 773-344-1100 FAX: 773-344-1101
TO NOT SCALE DRAWING DRAWN: A. POLONSKY CHECKED: G. VOOSTER DATE: 12/28/00		PROJECT: HYDRO SWEEP / COOLANT THRU WIRING DIAGRAM SHEET NO: WRG-0013 OF: 1		

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REVISIONS
 84 8 ECD-1175 & 0983 Replace fuses with circuit breaker, starter with IEC style, and show contactor connection for other options. 12-28-00 GVooster

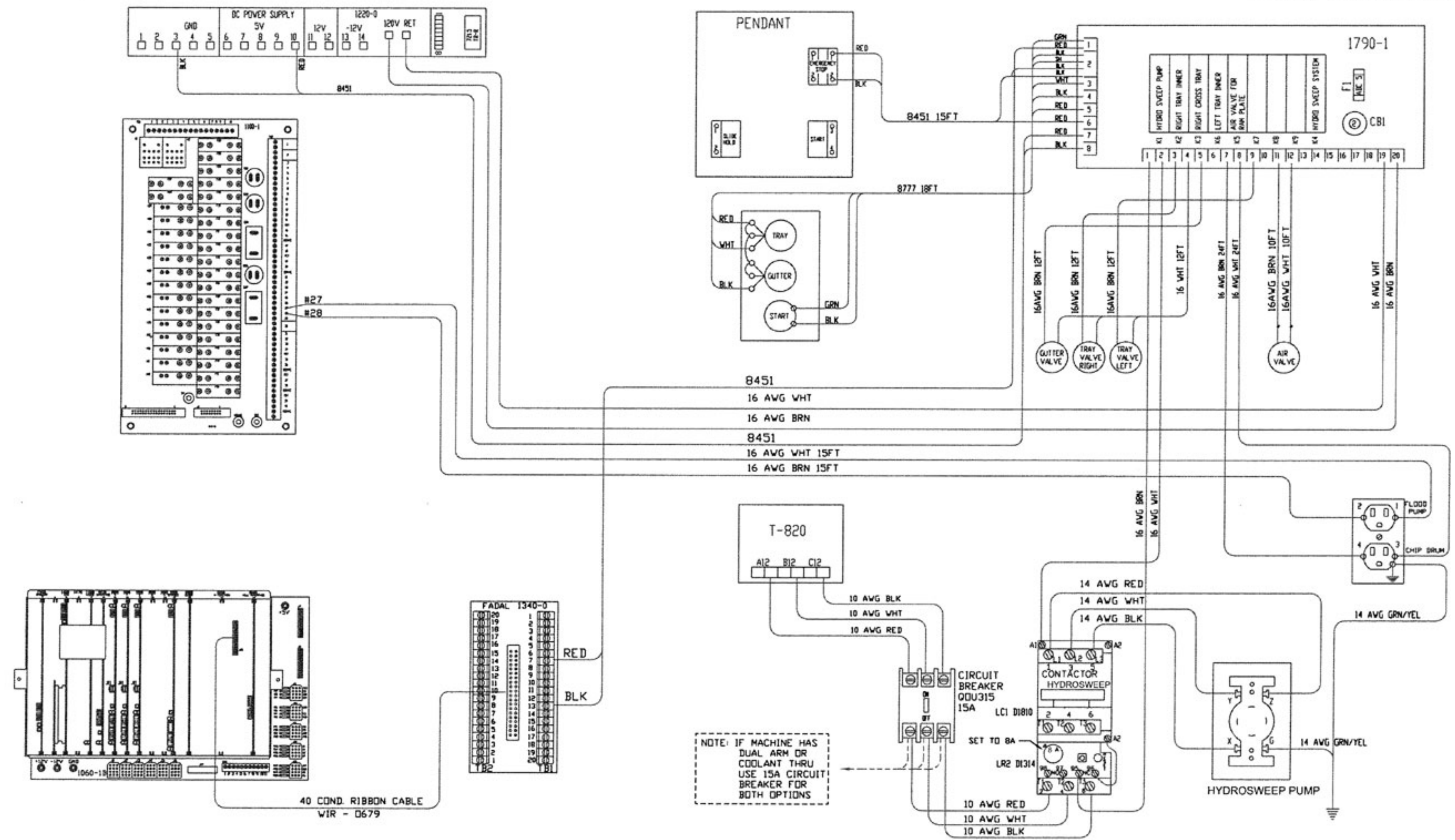


NOTE: INSTALL EPROM VERSION 6.4 ON 1790-1 BOARD.

<p>STREETS OVERLINE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:</p>		<p>FADAL ENGINEERING CO. 127195797</p>	
<p>FRONTING: 1/16" DIMENSIONS: 1/16" & 1/32" PROFILES: 1/8" & 1/16"</p>	<p>DATE: 10/28/99</p>	<p>Fadal ENGINEERING CO. HYDRO SWEEP 6 VALVES WIRING DIAGRAM / 8030</p>	
<p>TO ANY SCALE DIMENSIONS</p>	<p>DATE: 10/28/99</p>	<p>REV: D</p>	<p>REV: B</p>
<p>SCALE: 1" = 1'-0"</p>		<p>REV: D</p>	

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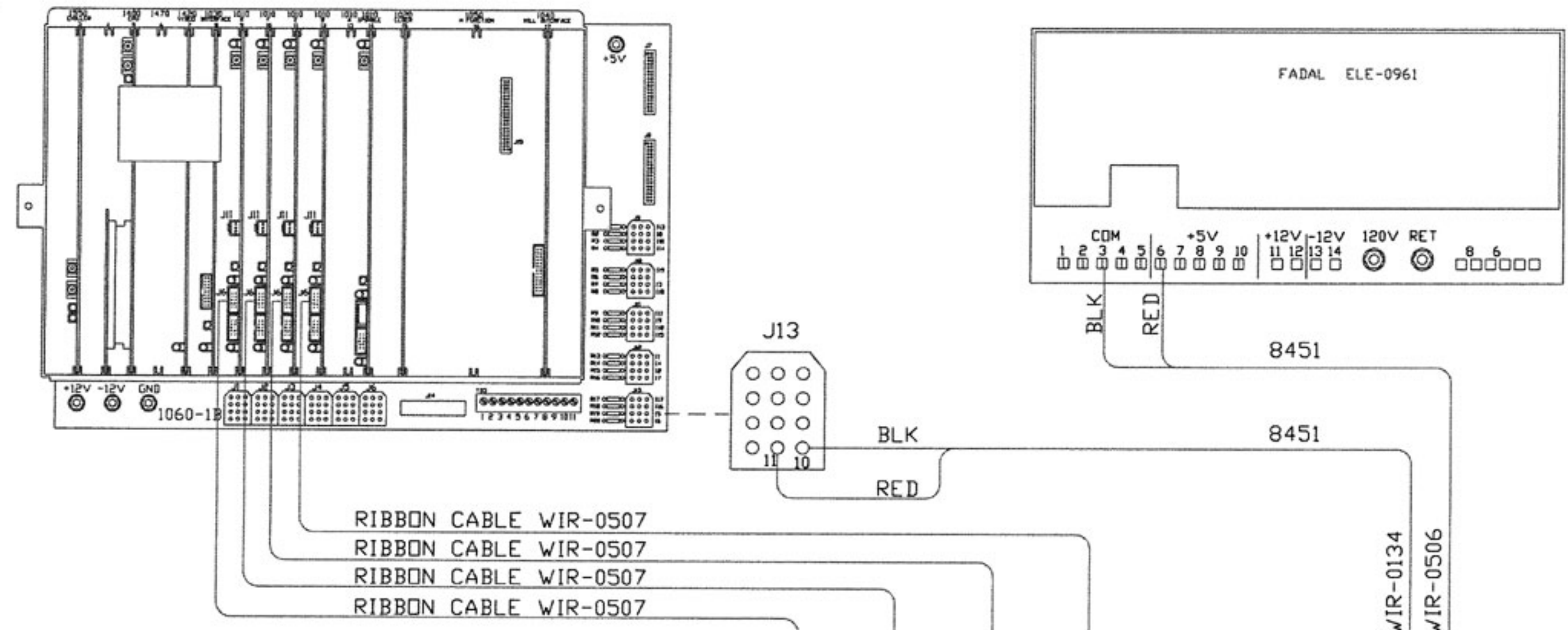
REV.	DATE	DESCRIPTION	APPROVED
B4	12-28-00	Replace fuses with circuit breaker, starter with IEC style, and show contactor connection for other options.	G. Vooster



NOTE: INSTALL EPROM VERSION 5.4 ON 1790-1 BOARD.

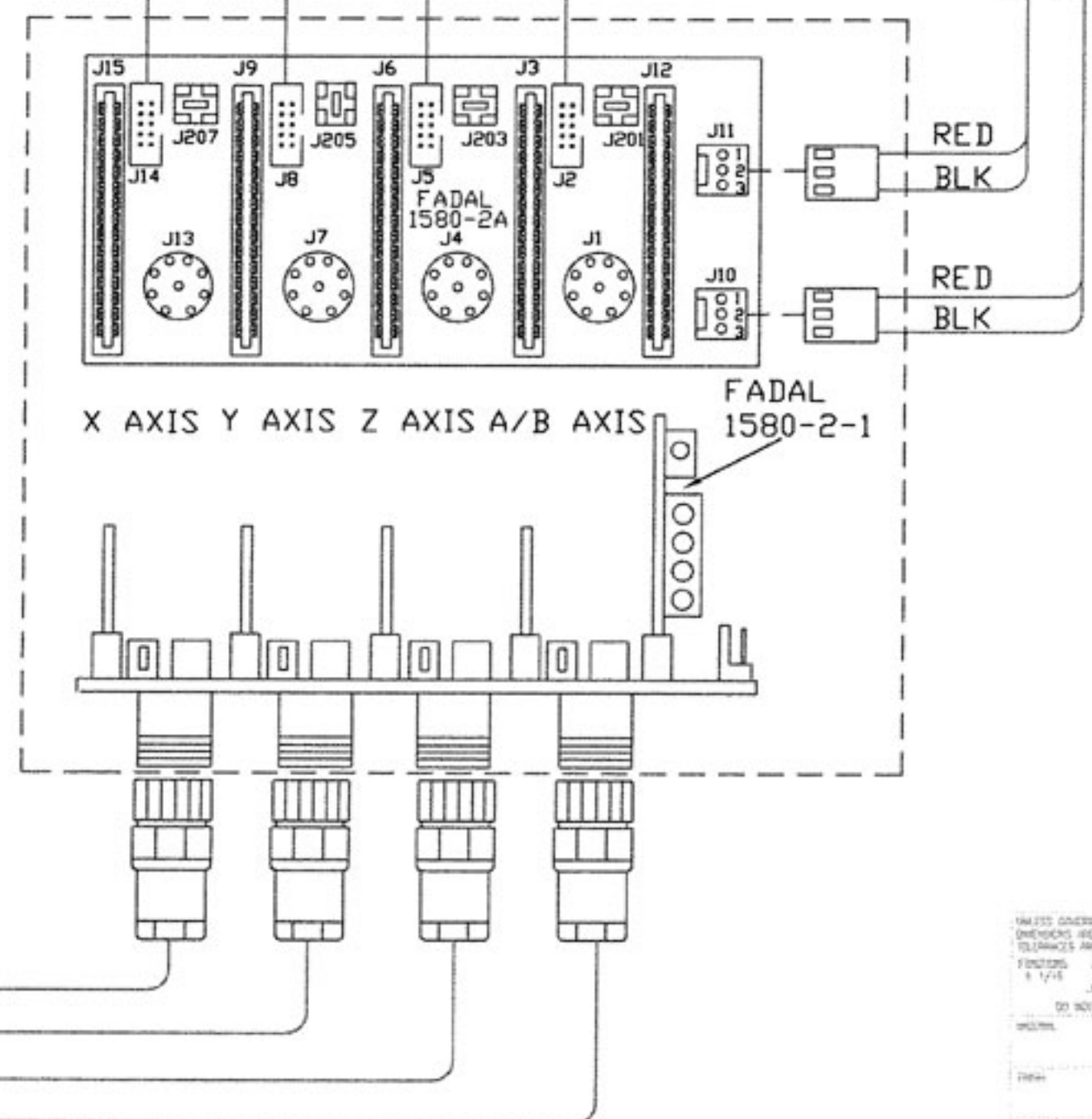
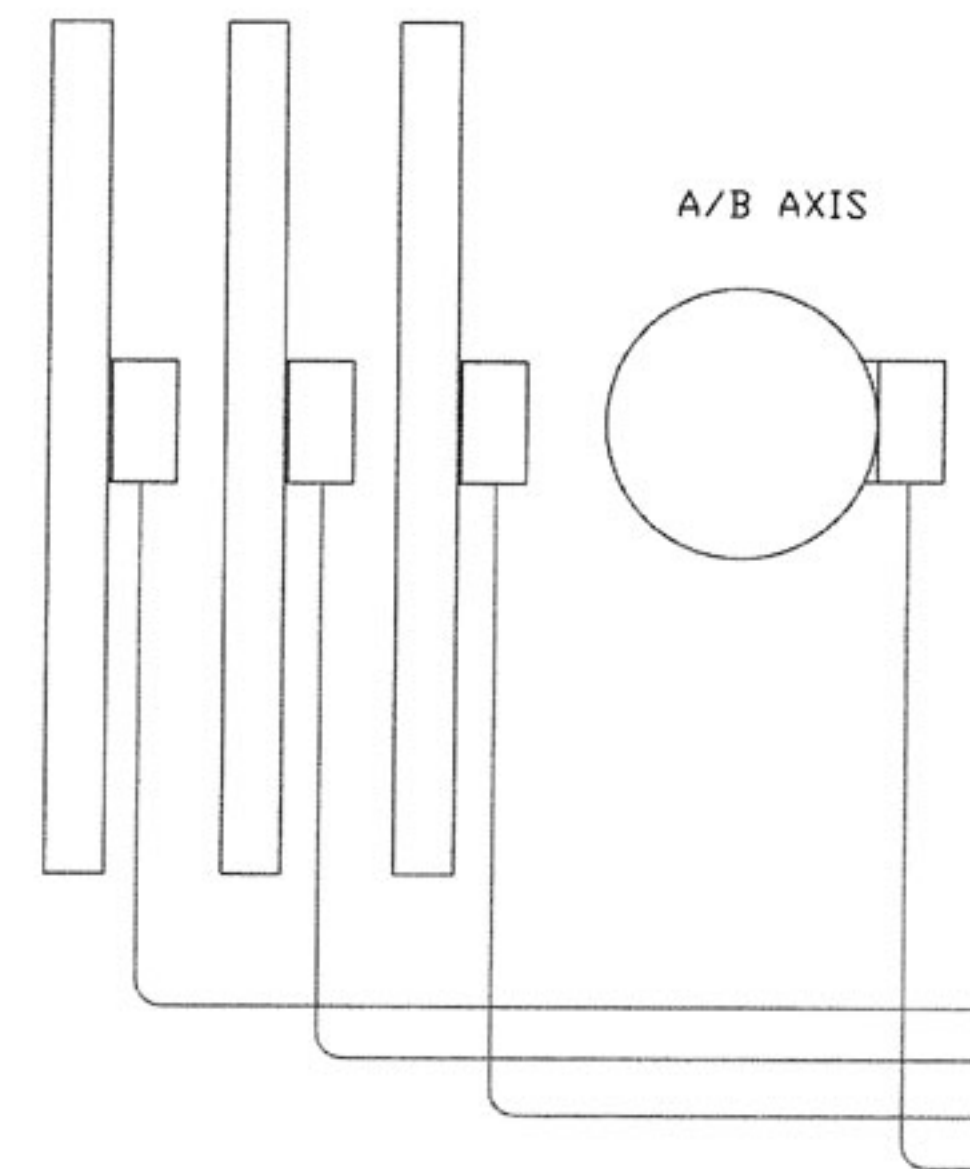
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS ARE FRACTIONS. DECIMALS ARE TO 1/16. TYPICAL DIMENSIONS ARE TO 1/32.</p>		<p>DATE: 10/28/99</p>	
<p>DESIGNED BY: A. POLONSKY</p>		<p>DATE: 10/28/99</p>	
<p>DRAWN BY: [Blank]</p>		<p>DATE: [Blank]</p>	
<p>CHECKED BY: [Blank]</p>		<p>DATE: [Blank]</p>	
<p>APPROVED BY: [Blank]</p>		<p>DATE: [Blank]</p>	
<p>SCALE: [Blank]</p>		<p>SCALE: [Blank]</p>	
<p>PROJECT: HYDRO SWEEP 3 VALVES WIRING DIAGRAM</p>		<p>REV. B</p>	
<p>DATE: 12/28/00</p>		<p>DATE: 12/28/00</p>	
<p>BY: G. VOOSTER</p>		<p>BY: G. VOOSTER</p>	
<p>APP. NO. WRG-0011</p>		<p>APP. NO. WRG-0011</p>	
<p>SCALE: 1/1" = 1'-0"</p>		<p>SCALE: 1/1" = 1'-0"</p>	

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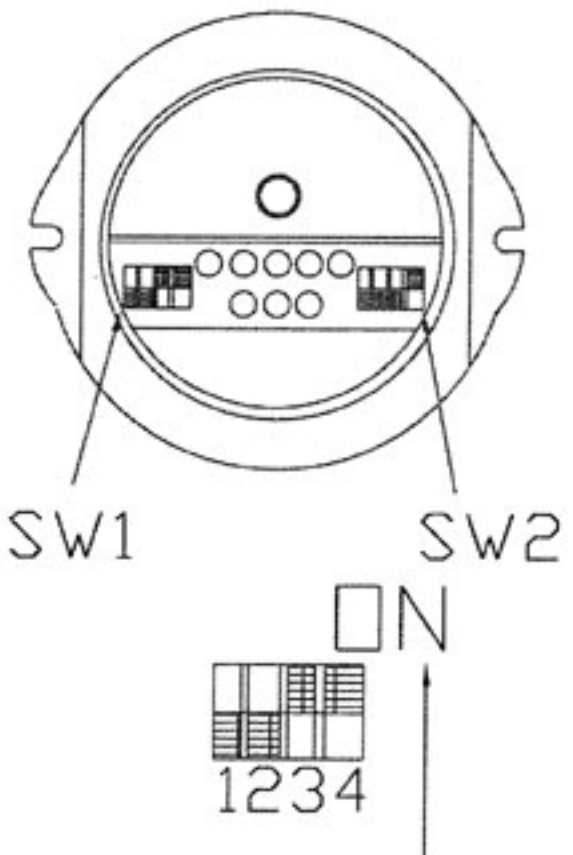
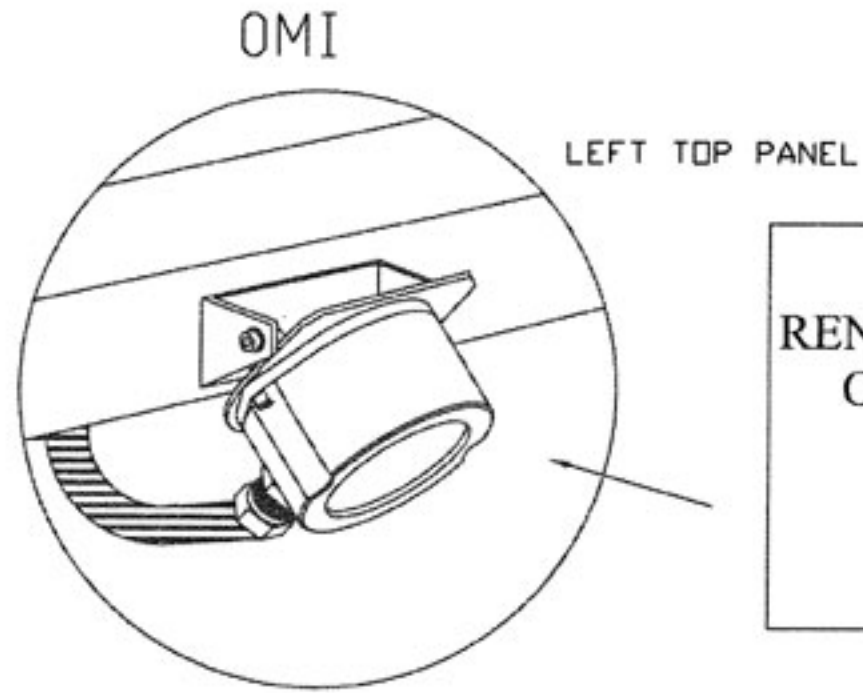
RIBBON CABLE WIR-0507
RIBBON CABLE WIR-0507
RIBBON CABLE WIR-0507
RIBBON CABLE WIR-0507

HEIDENHAIN SCALE
X AXIS Y AXIS Z AXIS

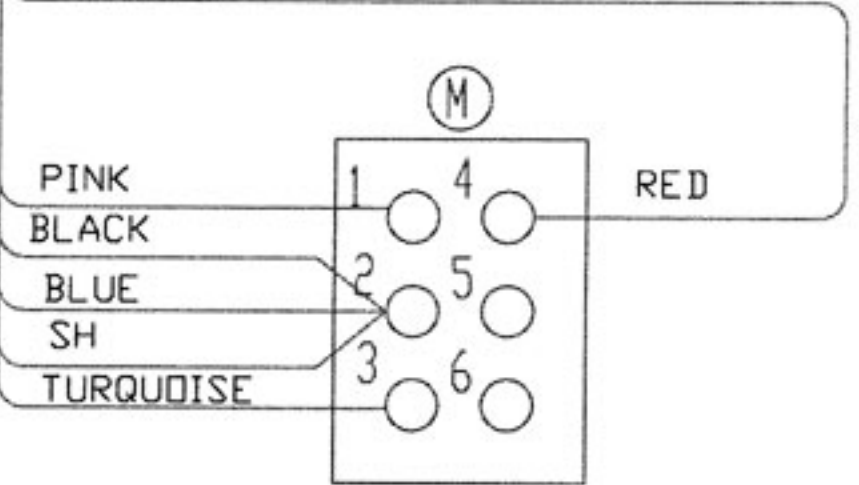
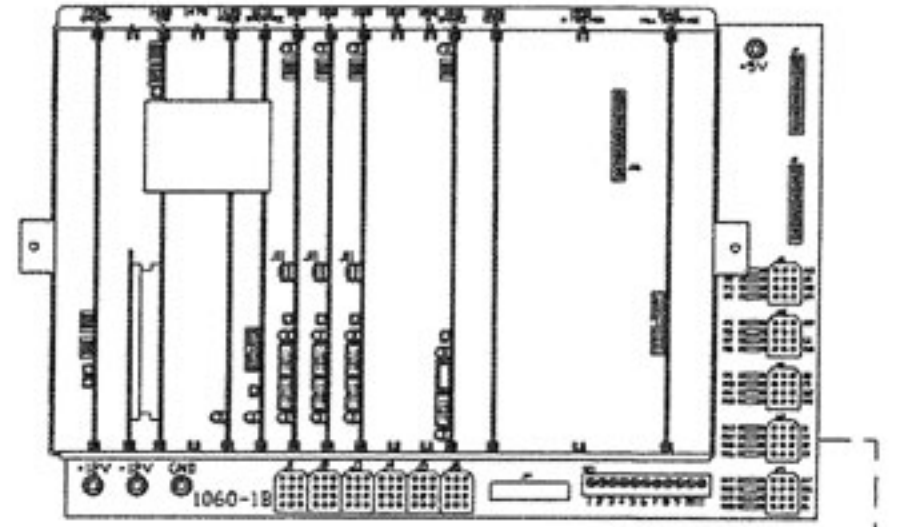
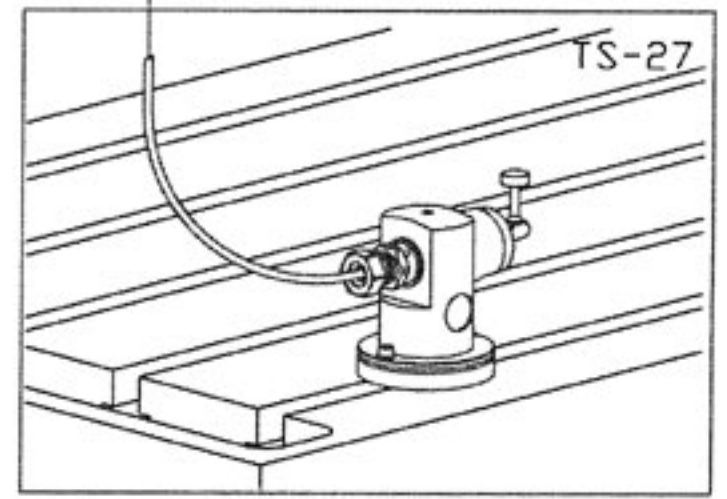
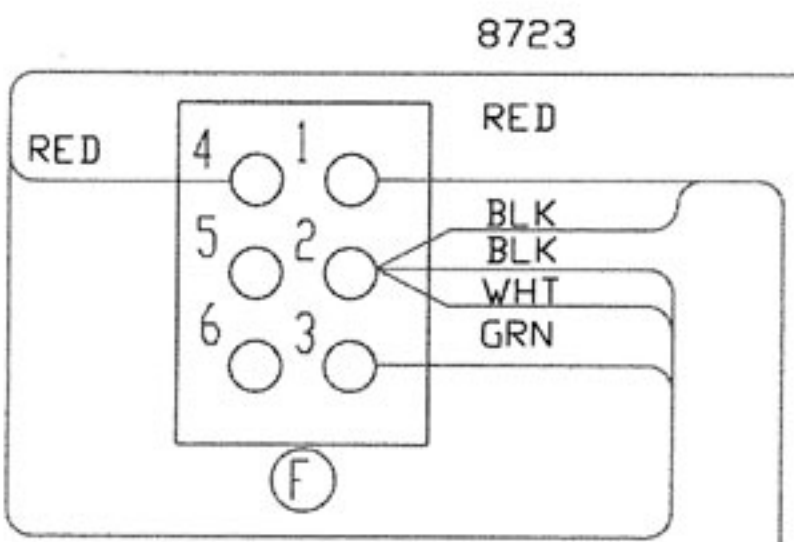
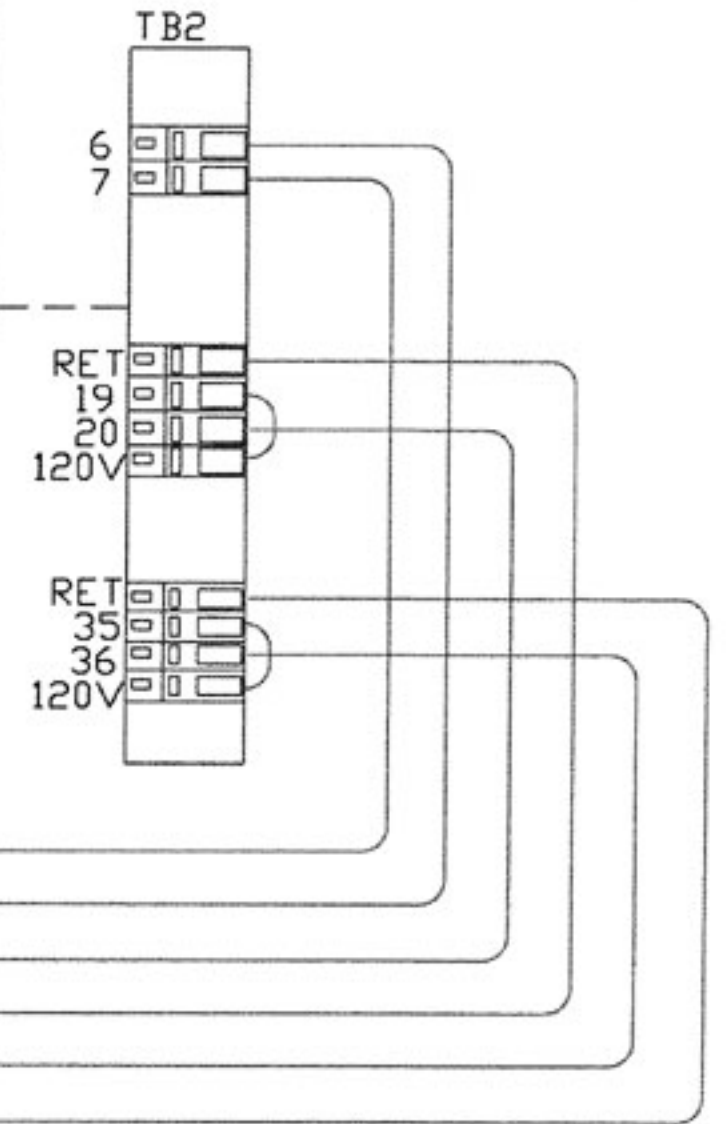
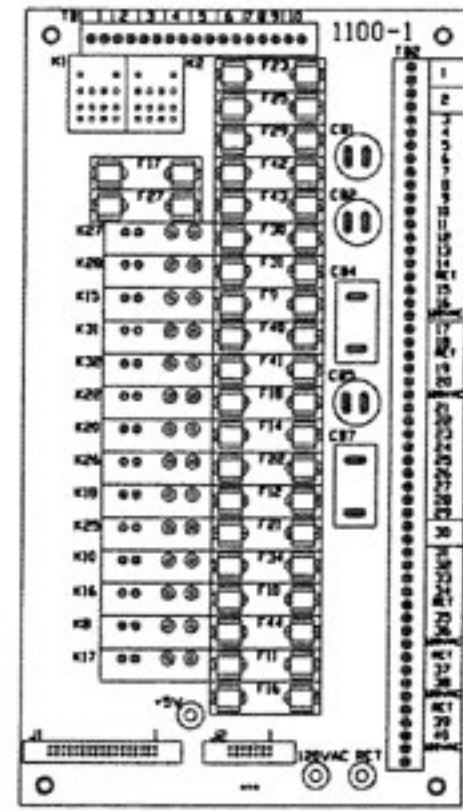
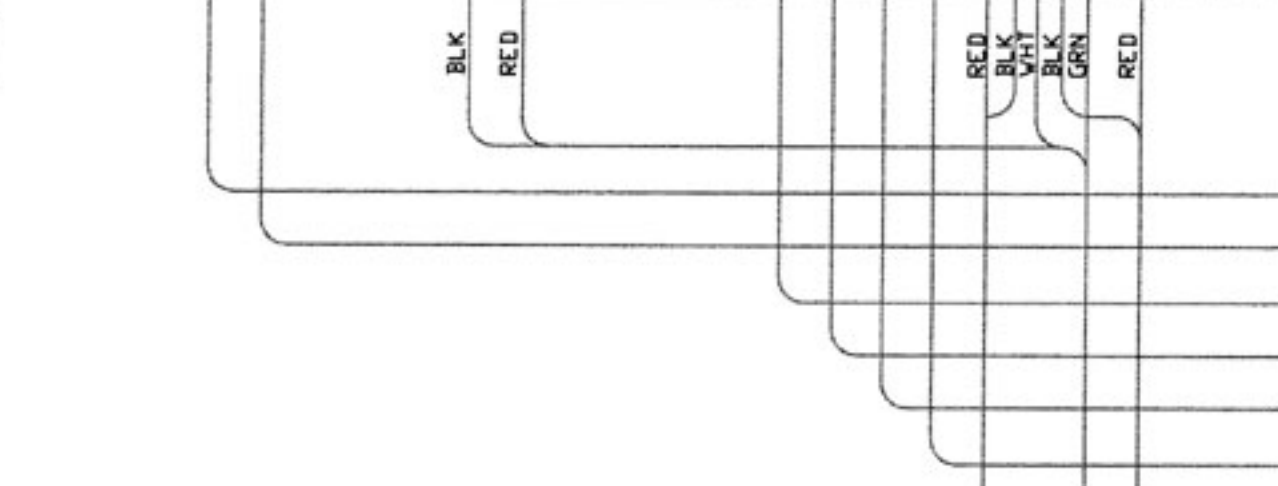
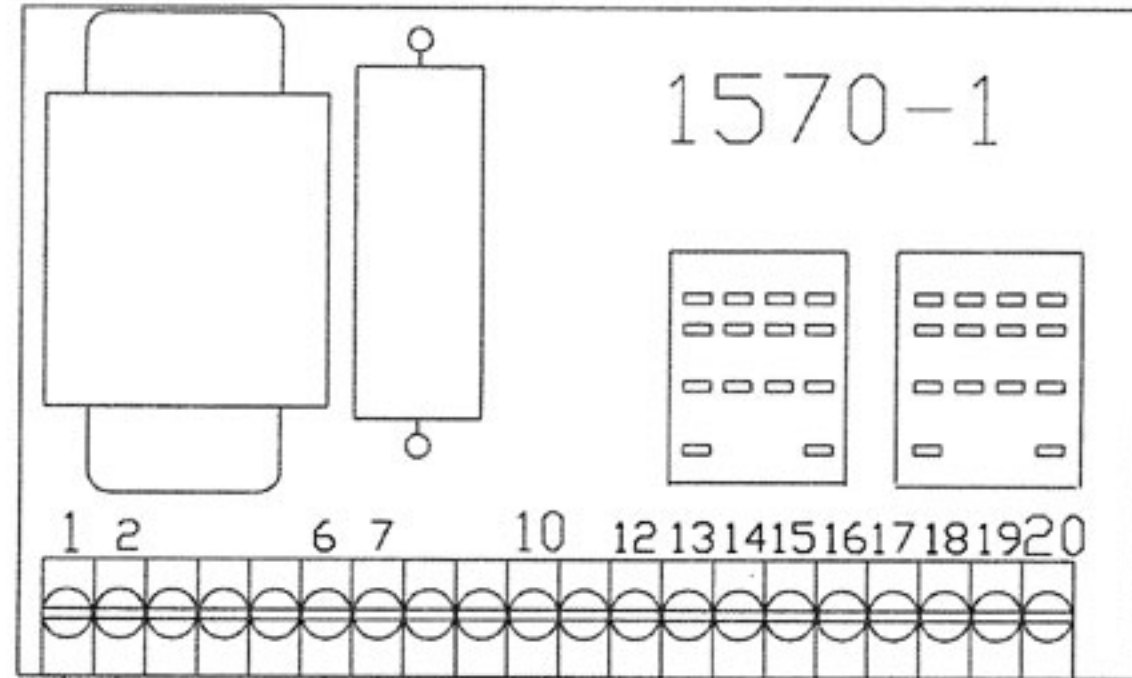


<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.</p> <p>SCALE: 1" = 1" (AS SHOWN)</p>		<p>APPROVED: [Signature]</p> <p>DATE: -1/14/88</p>		<p>Fadal ENGINEERING CO. 2000 S. HIGHWAY 100 MOUNTAIN VIEW, CA 94039</p>	
<p>SCALE WIRING DIAGRAM</p>		<p>SCALE: 1" = 1" (AS SHOWN)</p>		<p>WIR-0027</p>	
<p>SCALE: 1" = 1" (AS SHOWN)</p>		<p>SCALE: 1" = 1" (AS SHOWN)</p>		<p>SCALE: 1" = 1" (AS SHOWN)</p>	

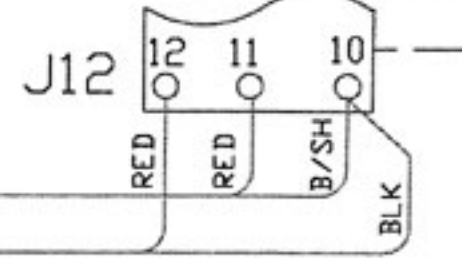
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NOTE: 1. SET SW1 TO THE AUTO START POSITION - #4 ON.
TO GAIN ACCESS TO SW1 REMOVE OMI WINDOW AND LABEL.
2. INSTALL FOLLOWING ELEMENTS ON 1100-1 BOARD:
FUSES AGC-2 - F10, F29, F40.
SOLID STATE RELAYS (BLACK) - K16, K31.
CIRCUIT BREAKER 2.5A - CB1
3. TO ACTIVATE THE PROBES USE THE FOLLOWING COMMANDS:
MP12 PROBE - M64, M66
TS 27 PROBE - M65.

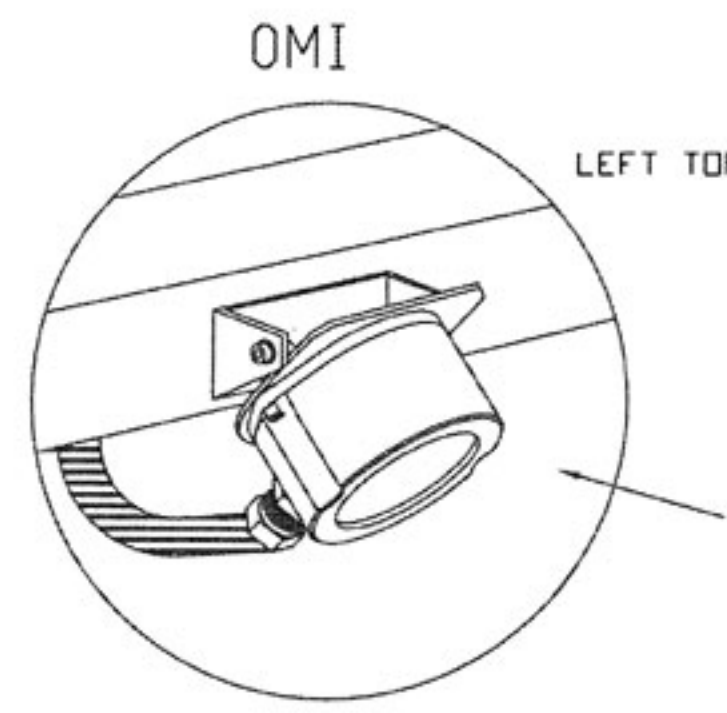


8451
8451



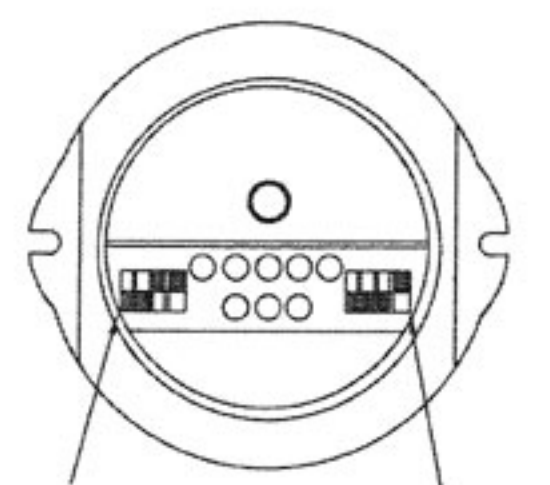
ORIG. DRAWING
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS DECIMALS ANGLES
3/16 0.0004 45°
DO NOT SCALE DRAWING
DRAWN A. POLONSKY DATE 10/26/79
CHECKED
DESIGNED
CHECKED
DATE
SCALE
Fadal
WIRING DIAGRAM
MP12 OMI & TS27
WRC-0009
REV. A

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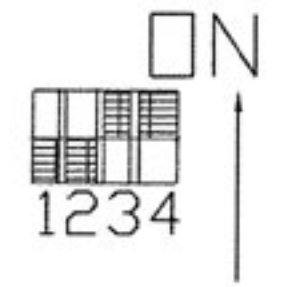


LEFT TOP PANEL

RENISHAW OMI

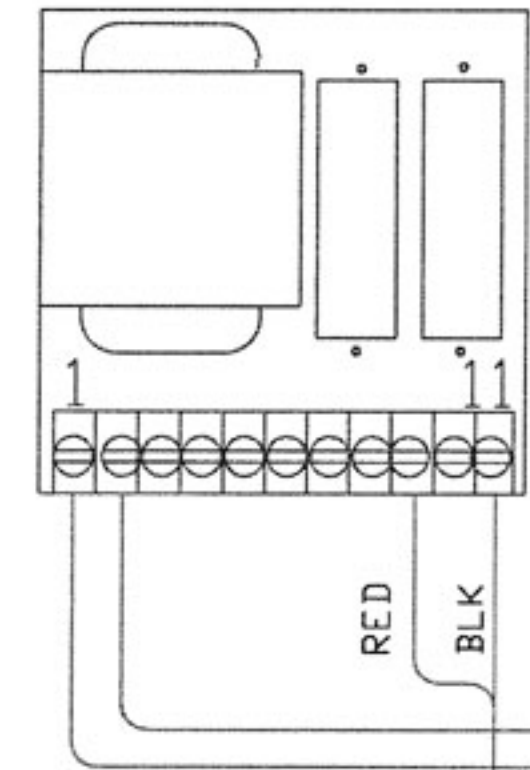


SW1 SW2



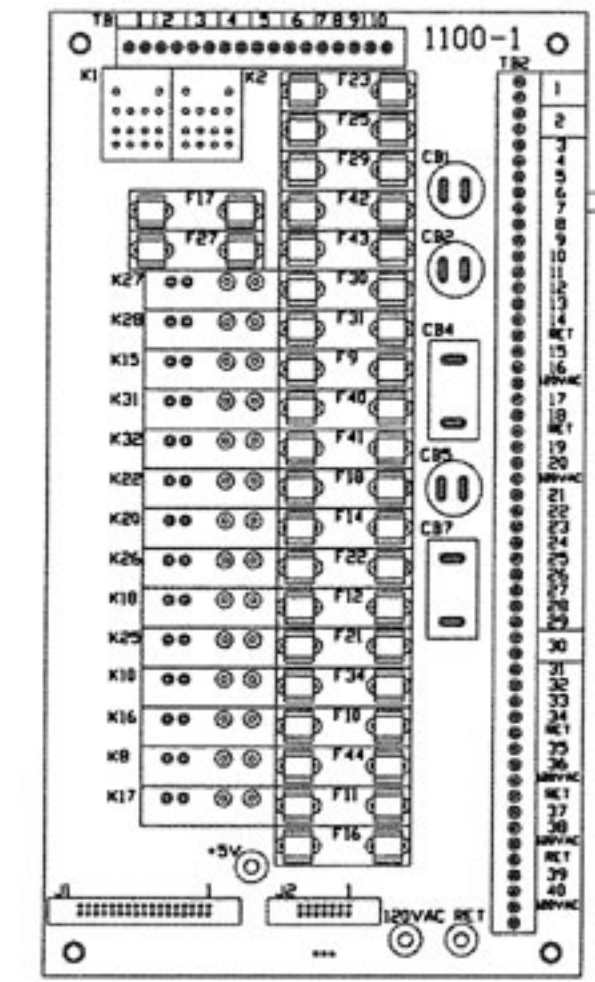
NOTE: SET SW1 TO AUTO START POSITION. - #4 TO GAIN ACCESS TO SW1 REMOVE OMI WINDOW AND LABEL.

24V POWER SUPPLY

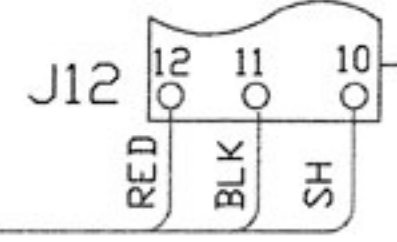
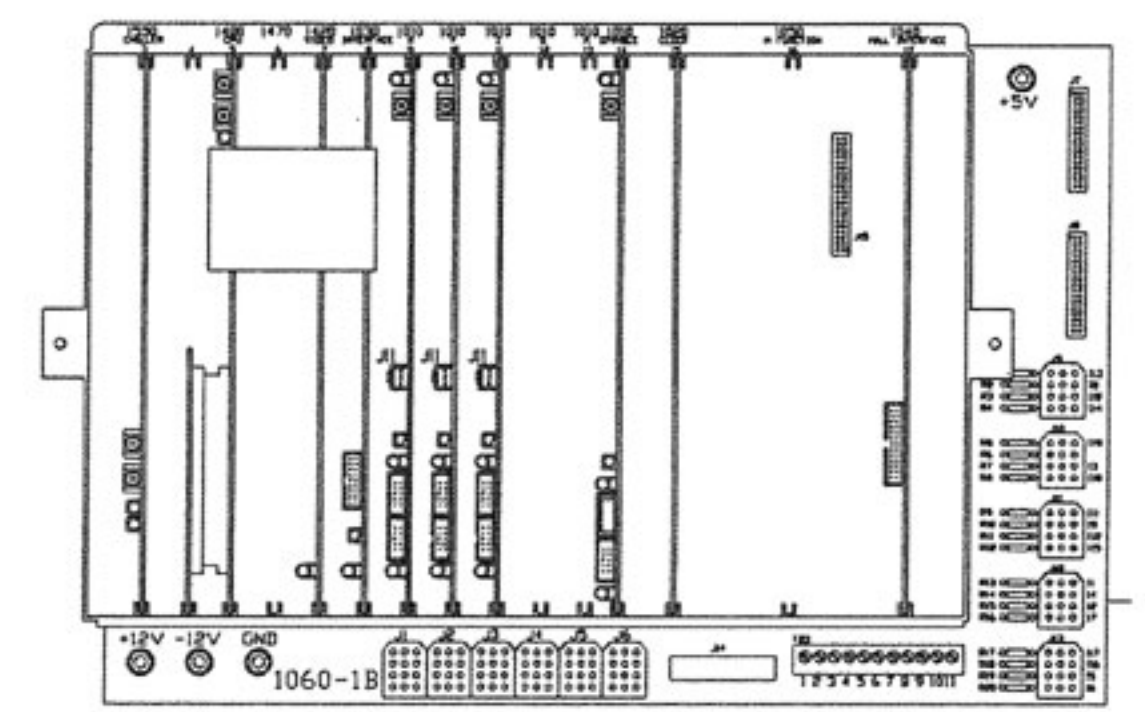
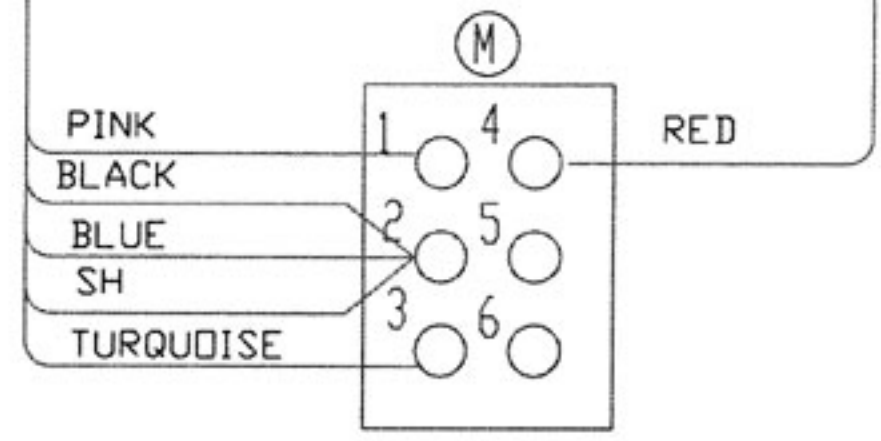
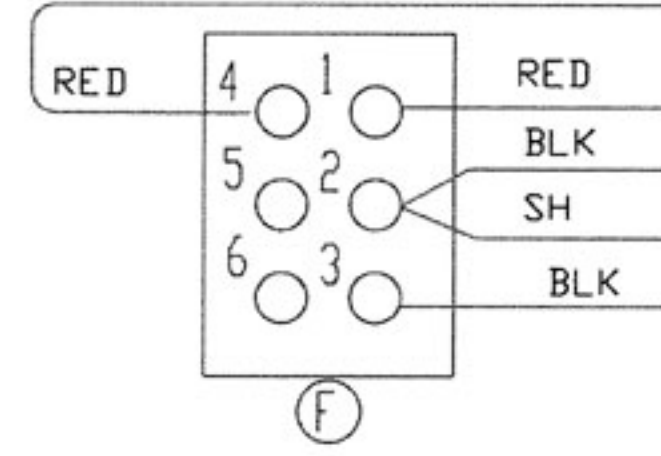


16AWG BRN

16AWG WHT



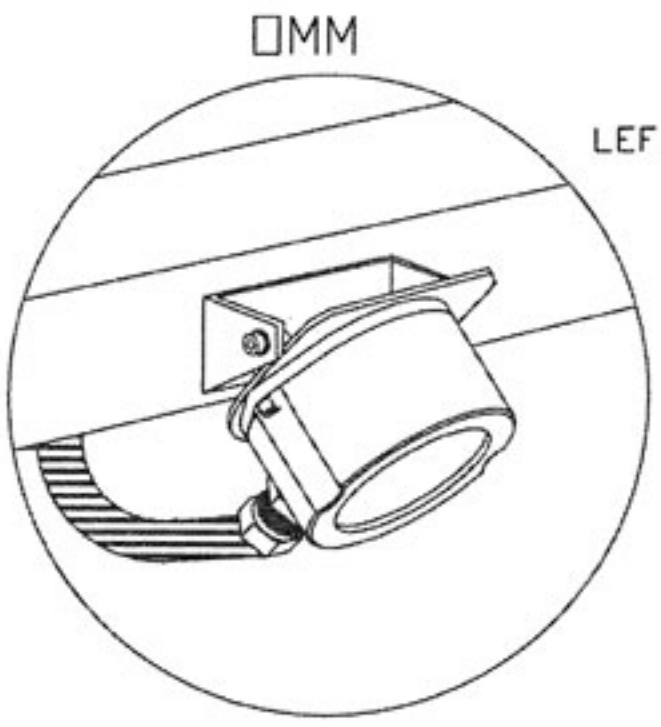
NOTE: INSTALL FUSE F 29 AGC-2, CIRCUIT BREAKER CB1 2.5A



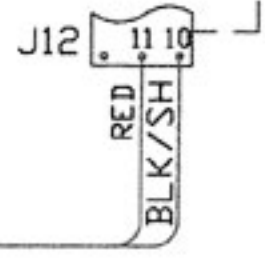
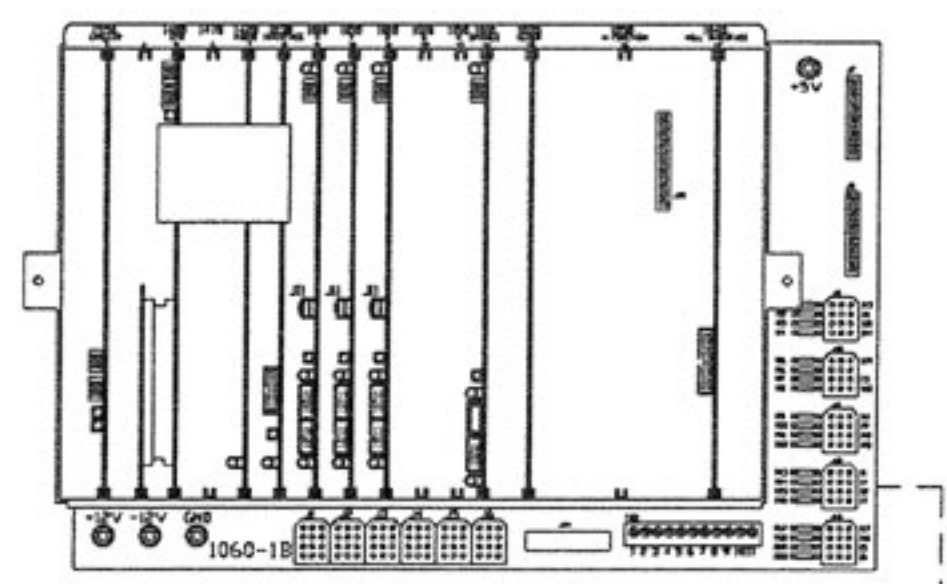
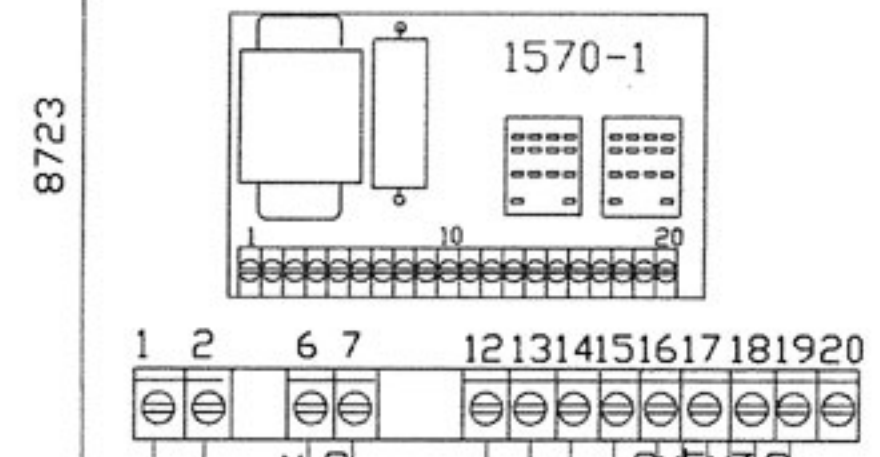
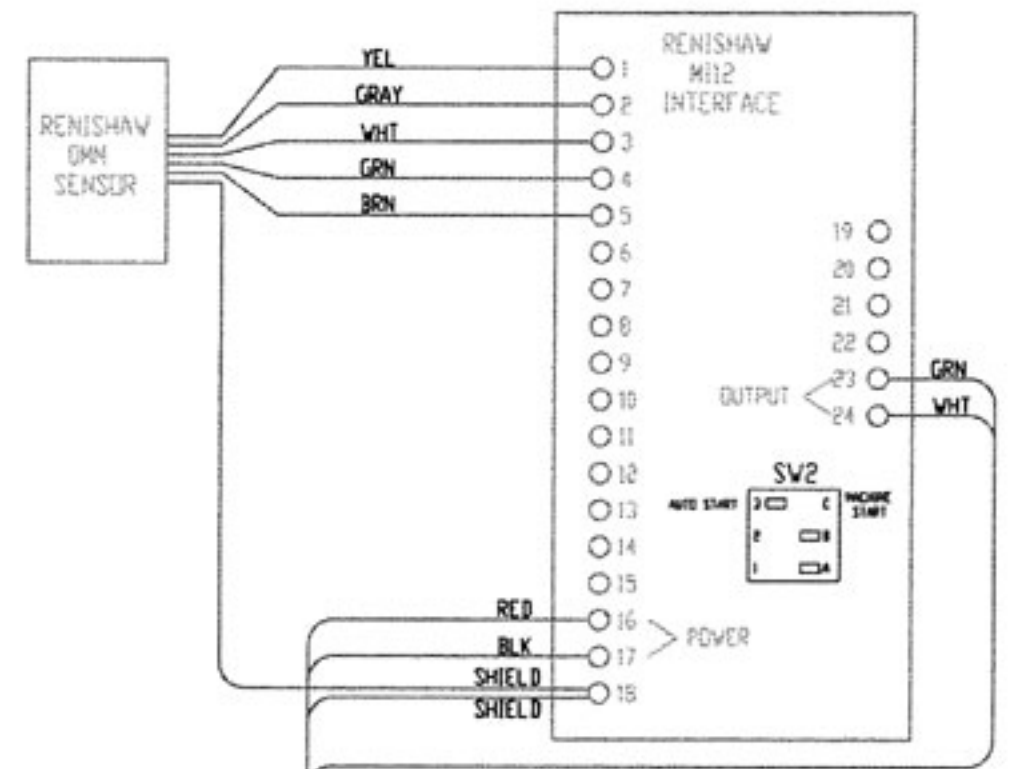
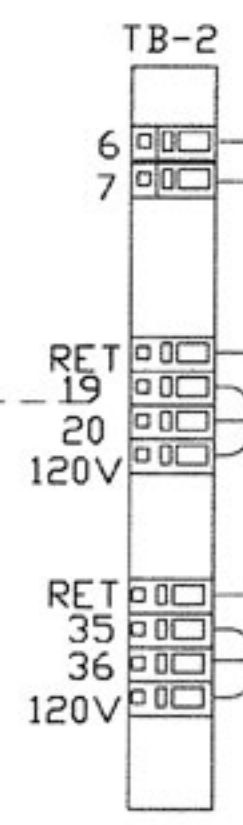
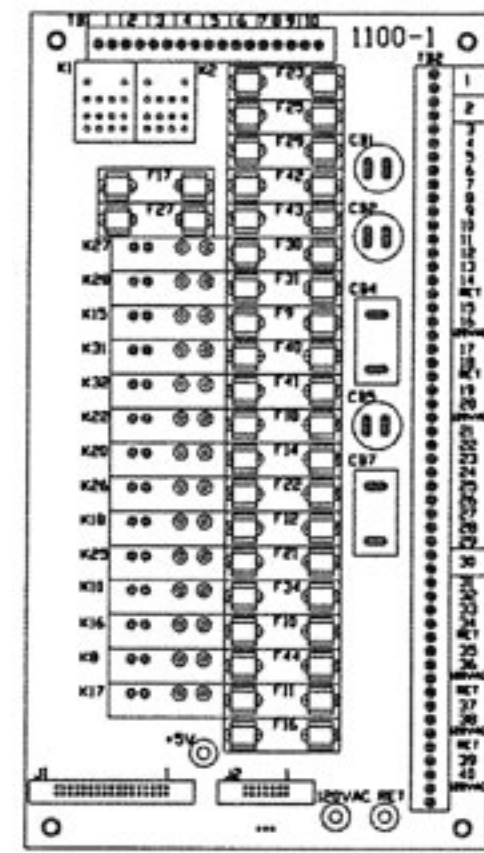
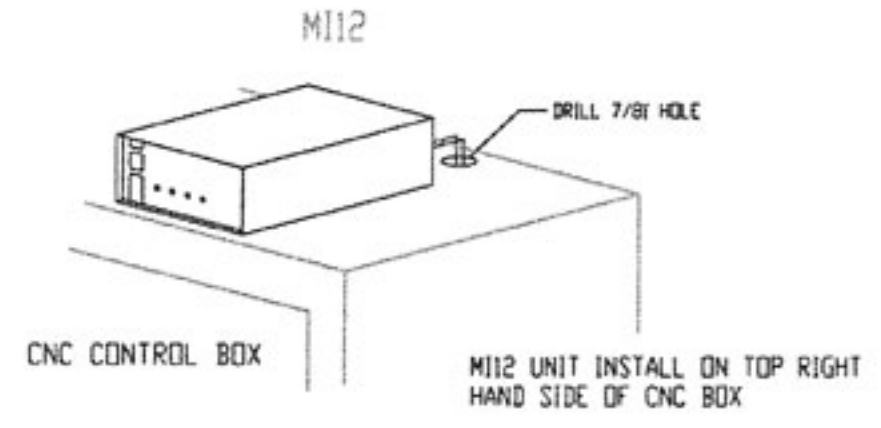
ALWAYS GROUND GROUNDING STRIPPED DIMENSIONS ARE IN INCHES. DIMENSIONS ARE FINISH TO SURFACE UNLESS NOTED OTHERWISE. TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONS DECIMALS ANGLES .1/16 .005 .010 .015		THIRD ANGLE PROJECTION 		Fadal ENGINEERING CO. 1000 S. MAIN ST. #200 CHICAGO, ILL. 60605	
DRAWN A. POLLOWSKY	DATE 10/28/99	TITLE MP12 OMI WIRING DIAGRAM	REV. NO. 0	PREVIOUS P/N WRC-0008	REV. A
SHEET 1 OF 1					

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MP12/TS27 PROBE WITH FADAL 3 PROBE INTERFACE BOARD 1570-1

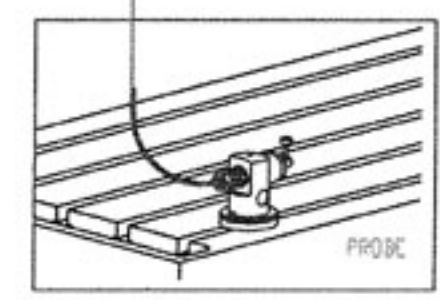


LEFT TOP PANEL



- NOTE:**
1. SET SWITCH SW2 (#3) IN MI12 INTERFACE UNIT TO THE AUTO START POSITION.
 2. INSTALL THE FOLLOWING ELEMENTS ON 1100-1 BOARD:
 FUSE AGC-2 - F10, F29, F40.
 SOLID STATE RELAY - K16, K41.
 CIRCUIT BREAKER 2.5A - CB1
 3. TO ACTIVATE THE PROBES USE THE FOLLOWING COMMANDS:
 MP12 PROBE - M64, M66
 TS-27 - M65.

- 16AWG BRN
- 16AWG WHT
- 16AWG WHT
- 16AWG BRN
- 16AWG WHT
- 16AWG BRN

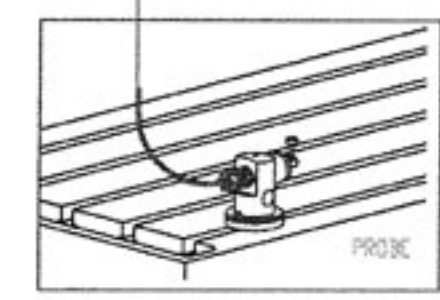
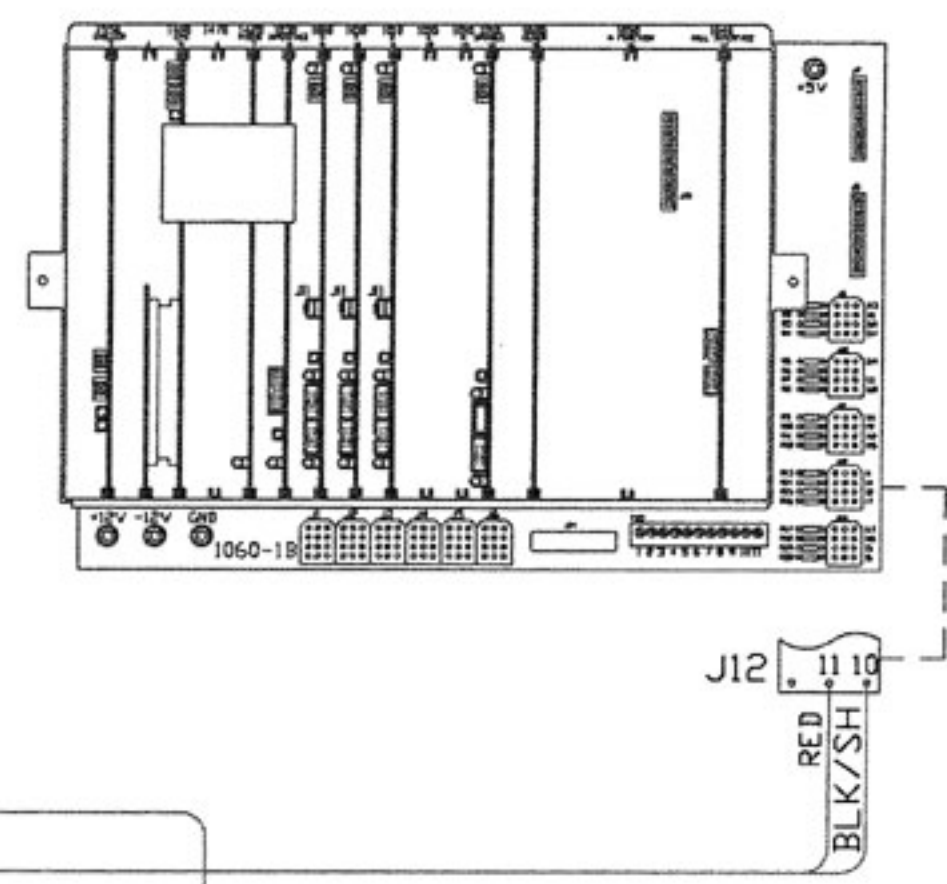
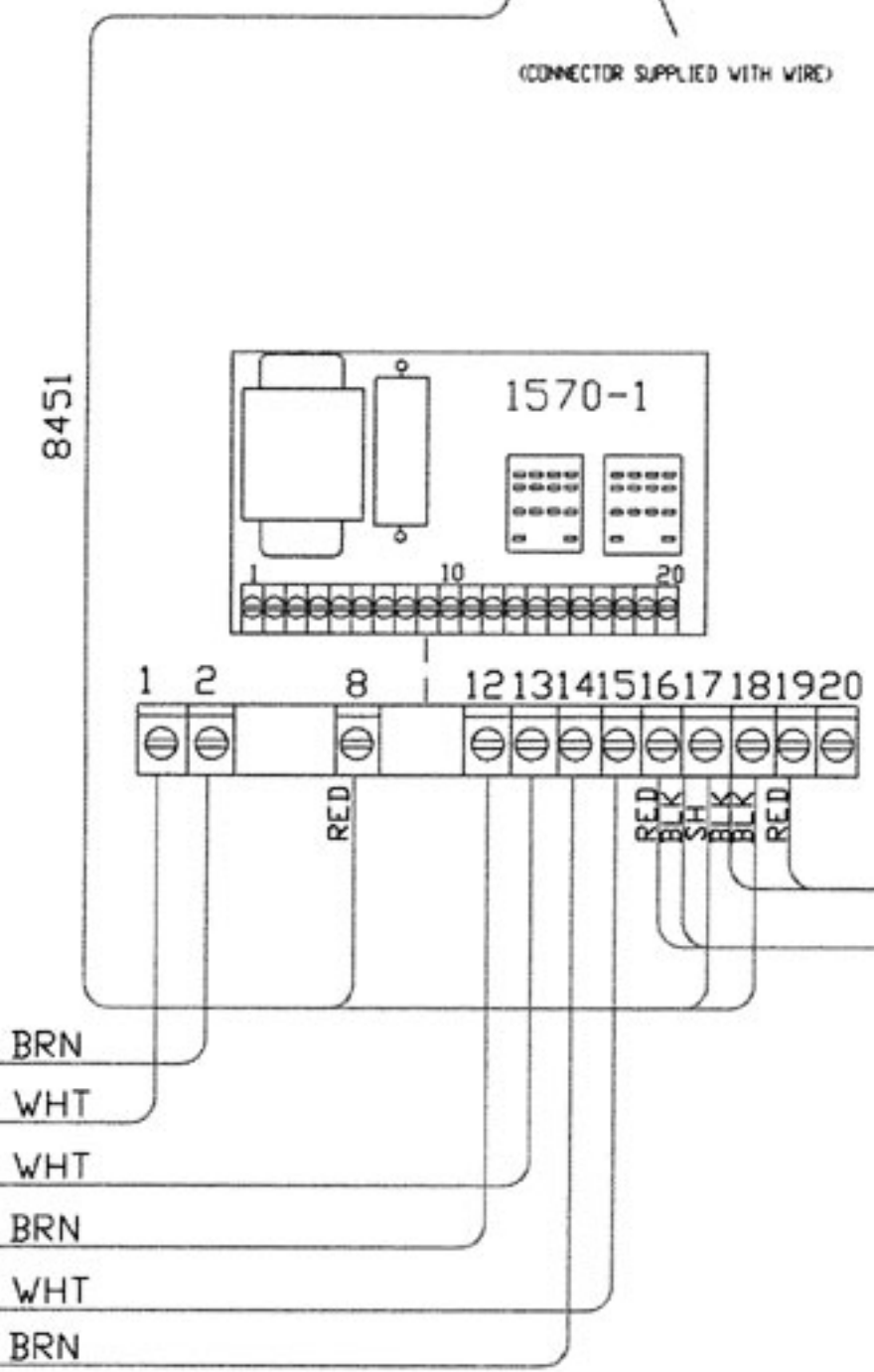
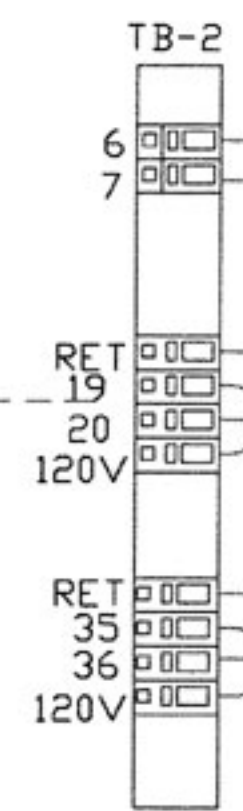
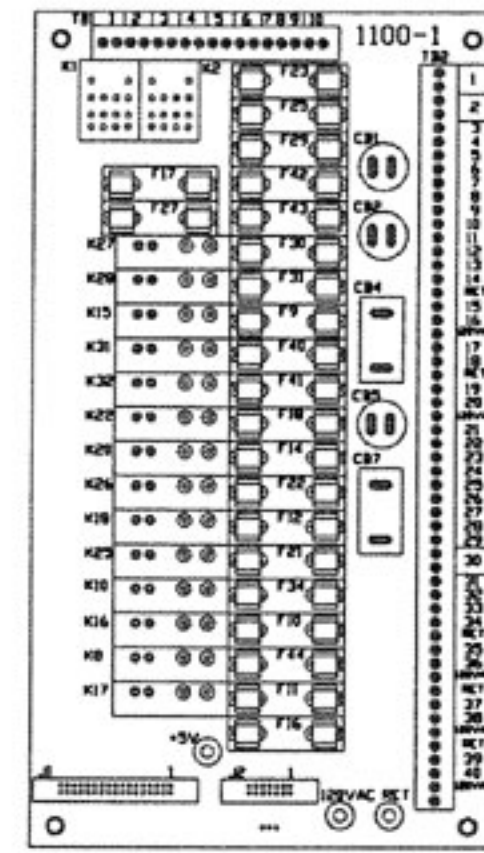
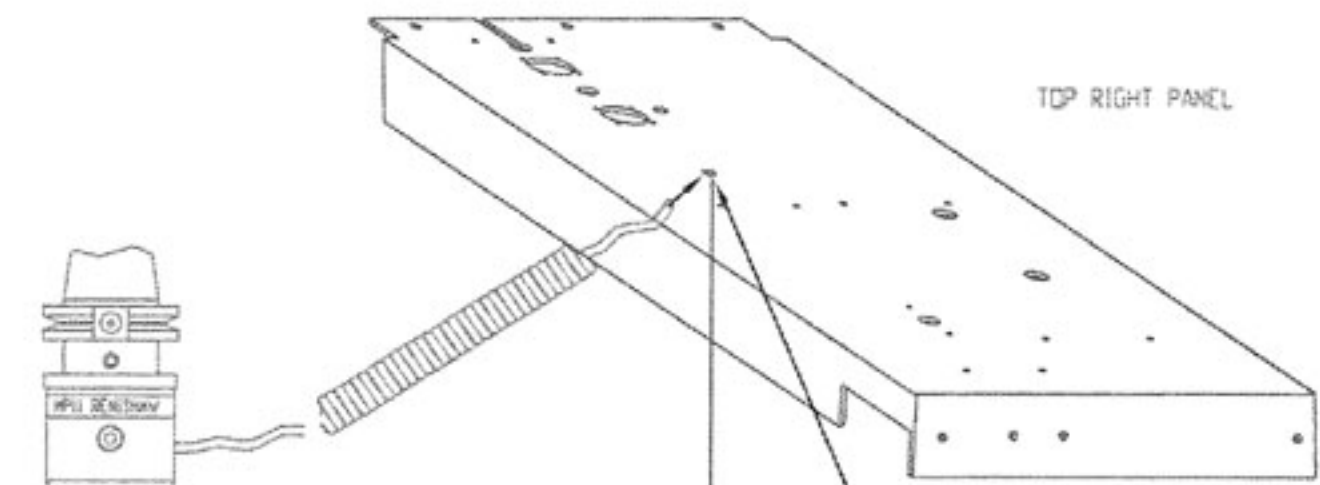
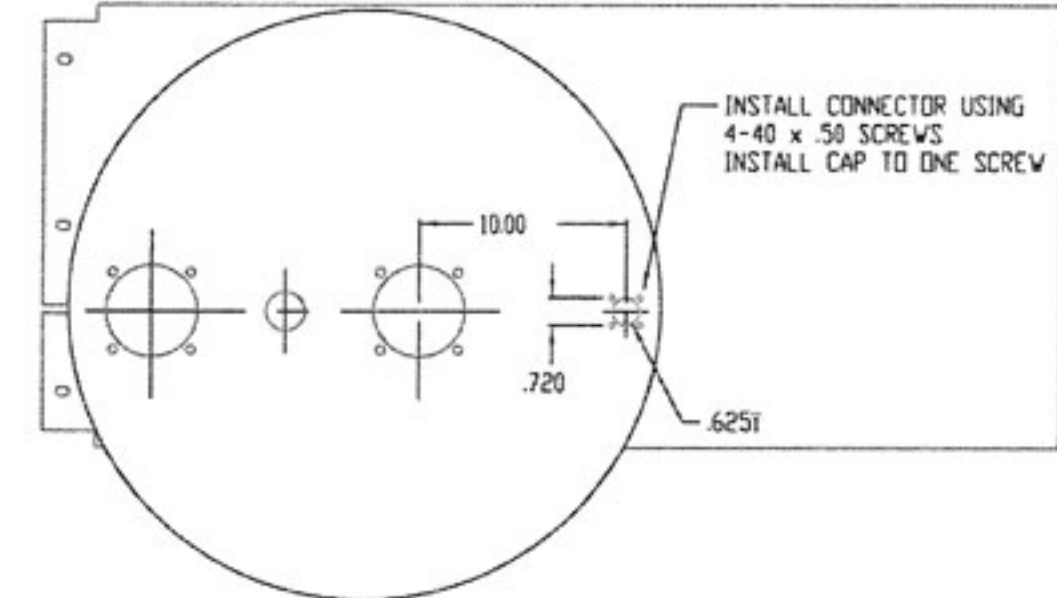


DATE: 10/20/98 DRAWN: A. POLONSKY CHECKED: [] APPROVED: [] TITLE: MP12/TS27 & 1570-1 BOARD WIRING DIAGRAM SHEET NO: 1 OF 1 REV: B WRC-0007		Fadal WIRING CO. 1000 W. 20th St. #414 WILMINGTON, DE 19806
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MP11/TS27 PROBE WITH FADAL 3 PROBE INTERFACE BOARD 1570-1

TOP RIGHT PANEL

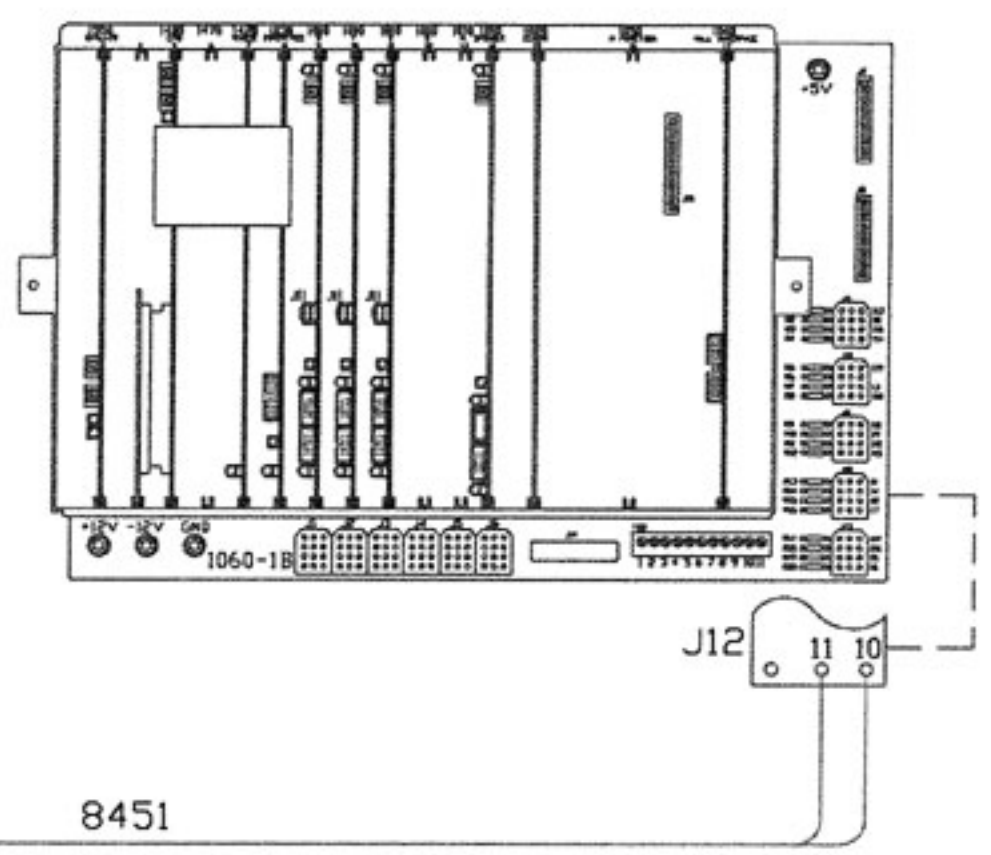
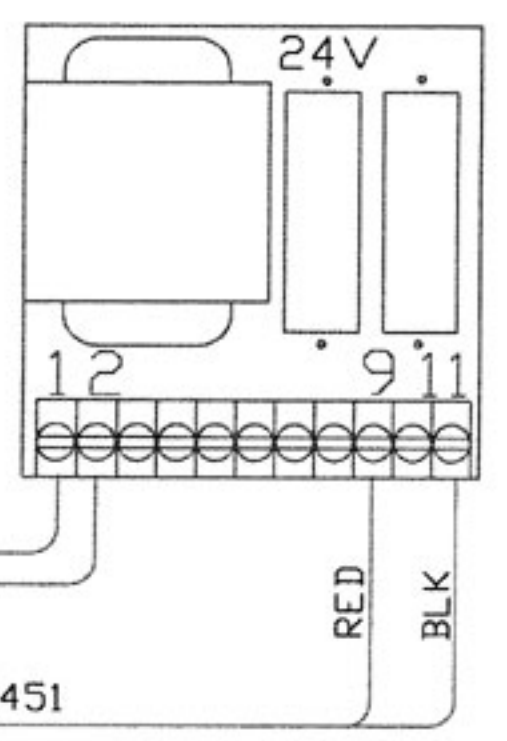
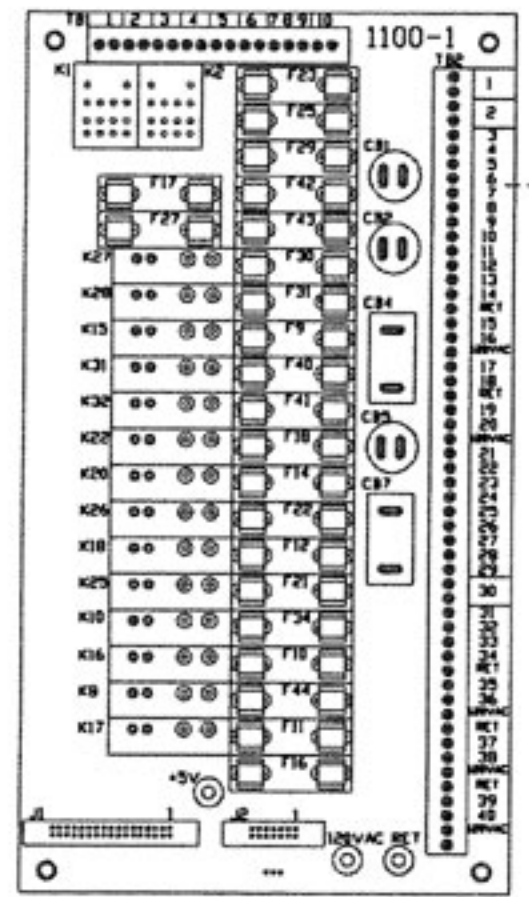
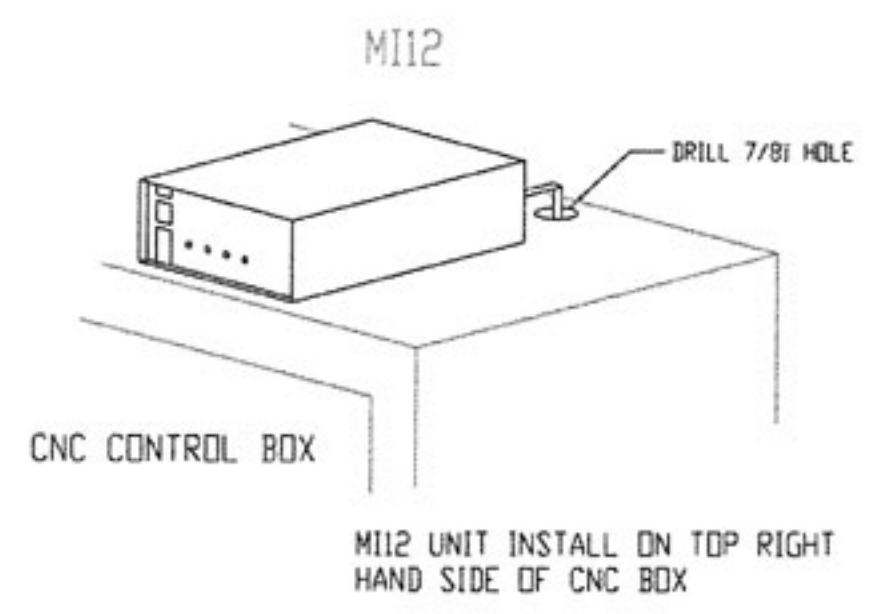
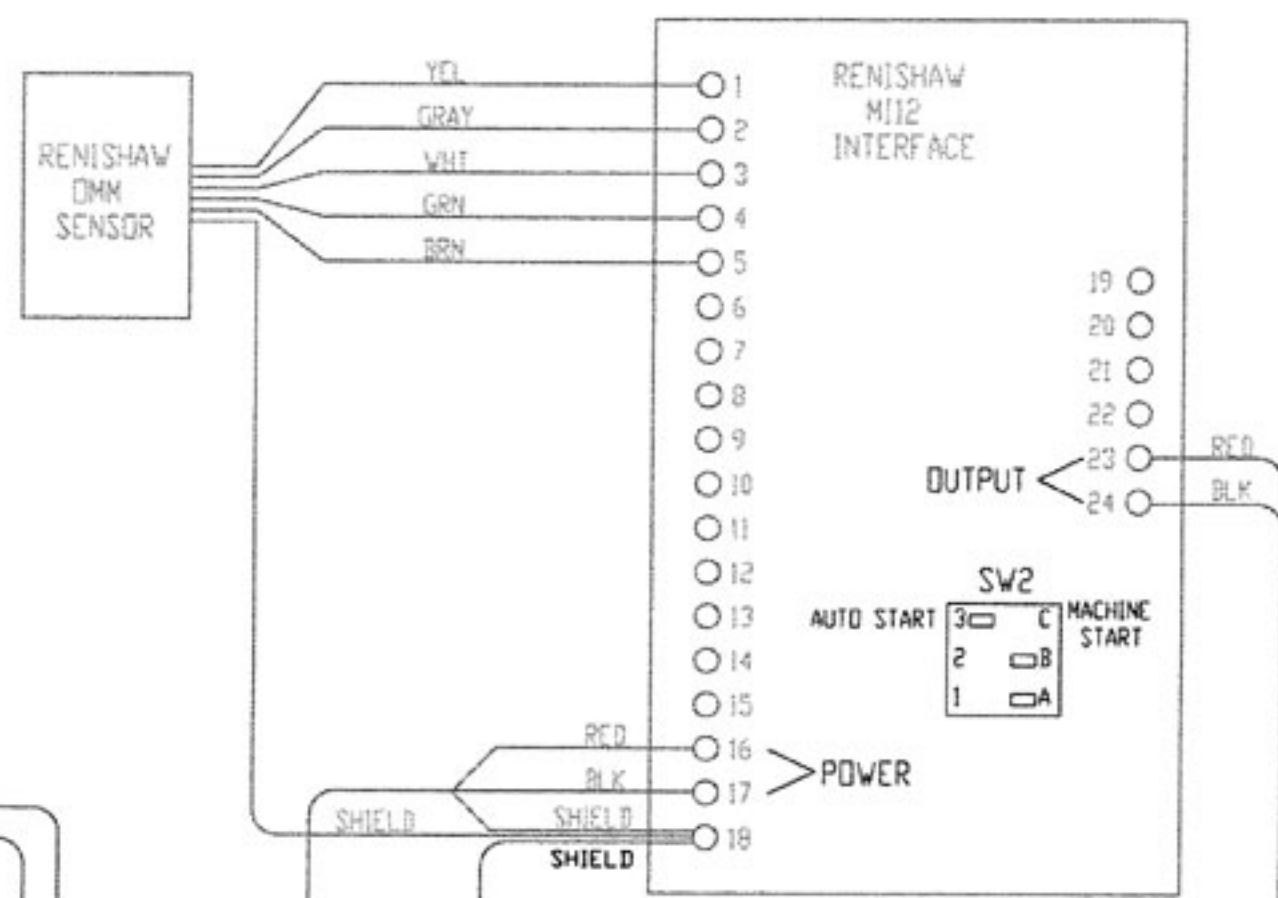
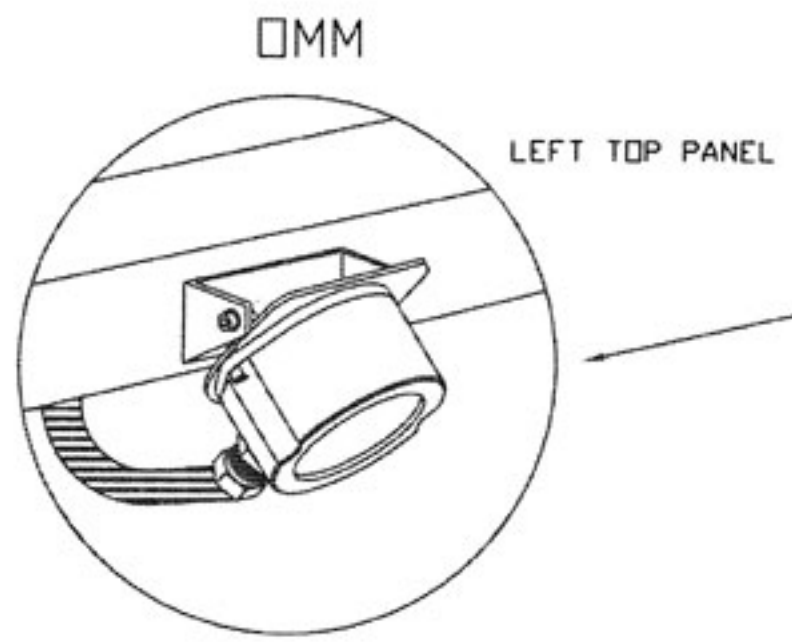


- NOTE:
1. SET SWITCH SW2 (#3) IN MI12 INTERFACE UNIT TO THE AUTO START POSITION.
 2. INSTALL THE FOLLOWING ELEMENTS
 ON 1100-1 BOARD:
 FUSE AGC-2 - F10, F29, F40.
 SOLID STATE RELAY - K16, K41.
 CIRCUIT BREAKER 2.5A - CB1
 3. TO ACTIVATE THE PROBES USE THE FOLLOWING COMMANDS:
 MP12 PROBE - M64,M66
 TS-27 - M65.

CHECKS: OK DATE: 10/28/99 BY: APOLSKY		Fadal MANUFACTURING CO. MP11/TS27 & 1570-1 BOARD WIRING DIAGRAM WRG-0006
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MP12 RENISHAW PROBE WITH FADAL 24V POWER SUPPLY



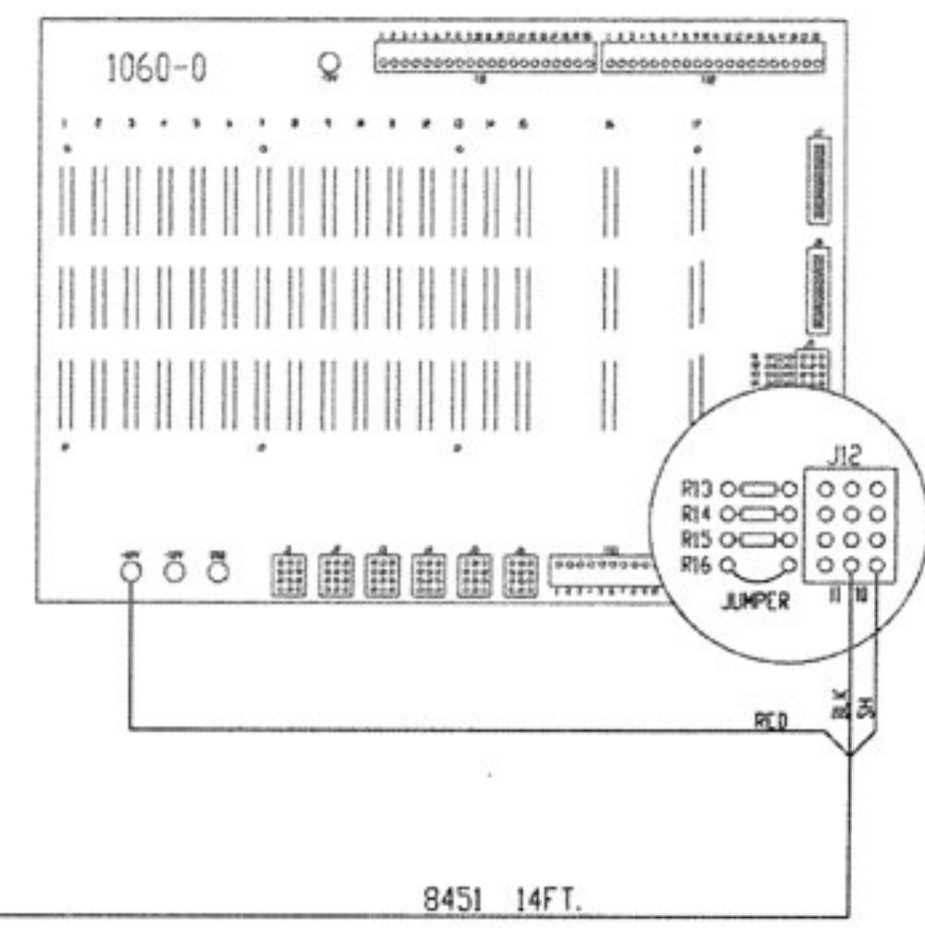
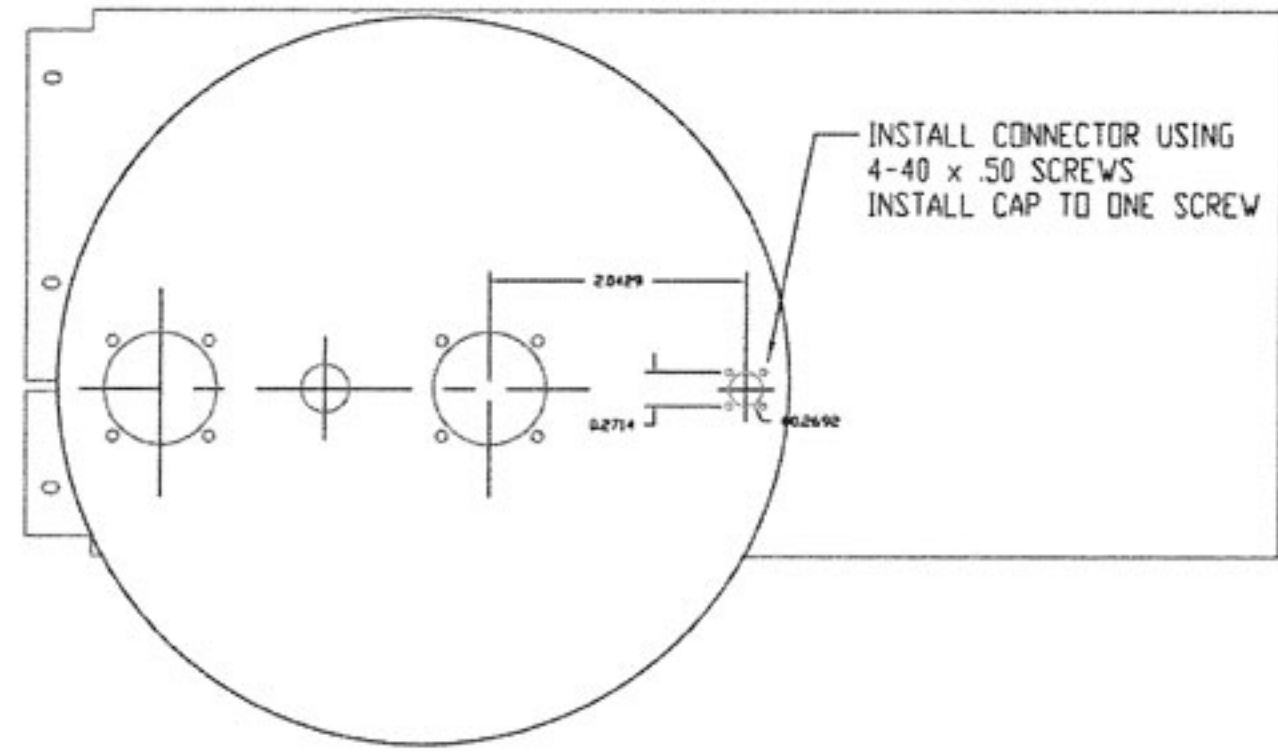
- NOTE:
1. INSTALL FUSE F29 AGC 2 AND CIRCUIT BREAKER CB1 2.5A ON 1100-1 BOARD.
 2. SET SWITCH SW2 (#3) IN M12 INTERFACE UNIT TO THE AUTO START POSITION.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		FADAL ENGINEERING CO. 1000 S. 10TH ST. SUITE 100 MILWAUKEE, WI 53214	
FRONT VIEW	APPROVALS	DATE	REV
DRAWN	APPROVED		
CHECKED	DATE		
DESIGNED	ENGINEERING UNIT		
PROJECT			
MP12 / 24V POWER SUPPLY WIRING DIAGRAM		REV D	REV A
WRG-0005		CAL. BY: JAC	

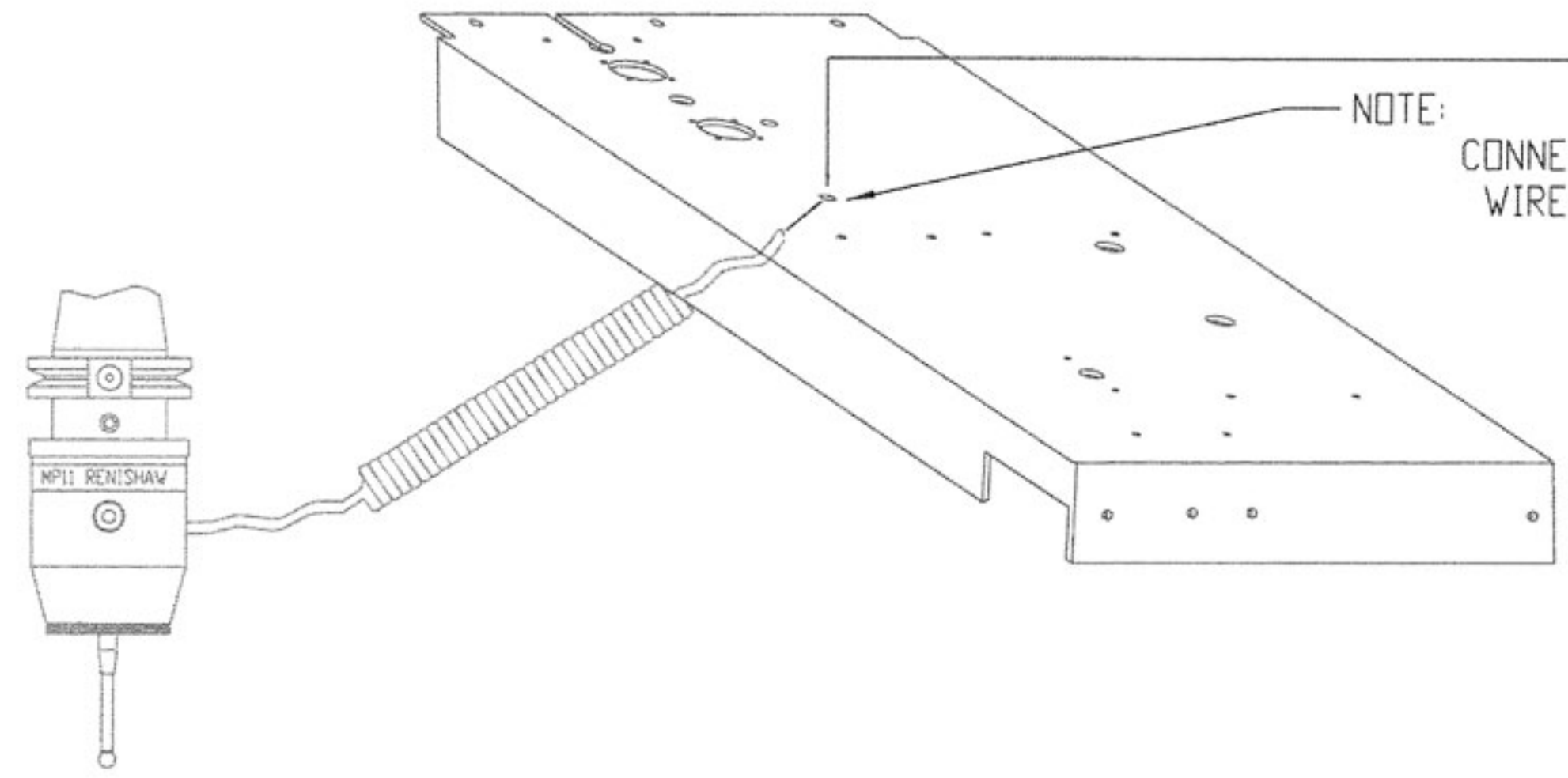
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MP11 PROBE

TOP RIGHT PANEL



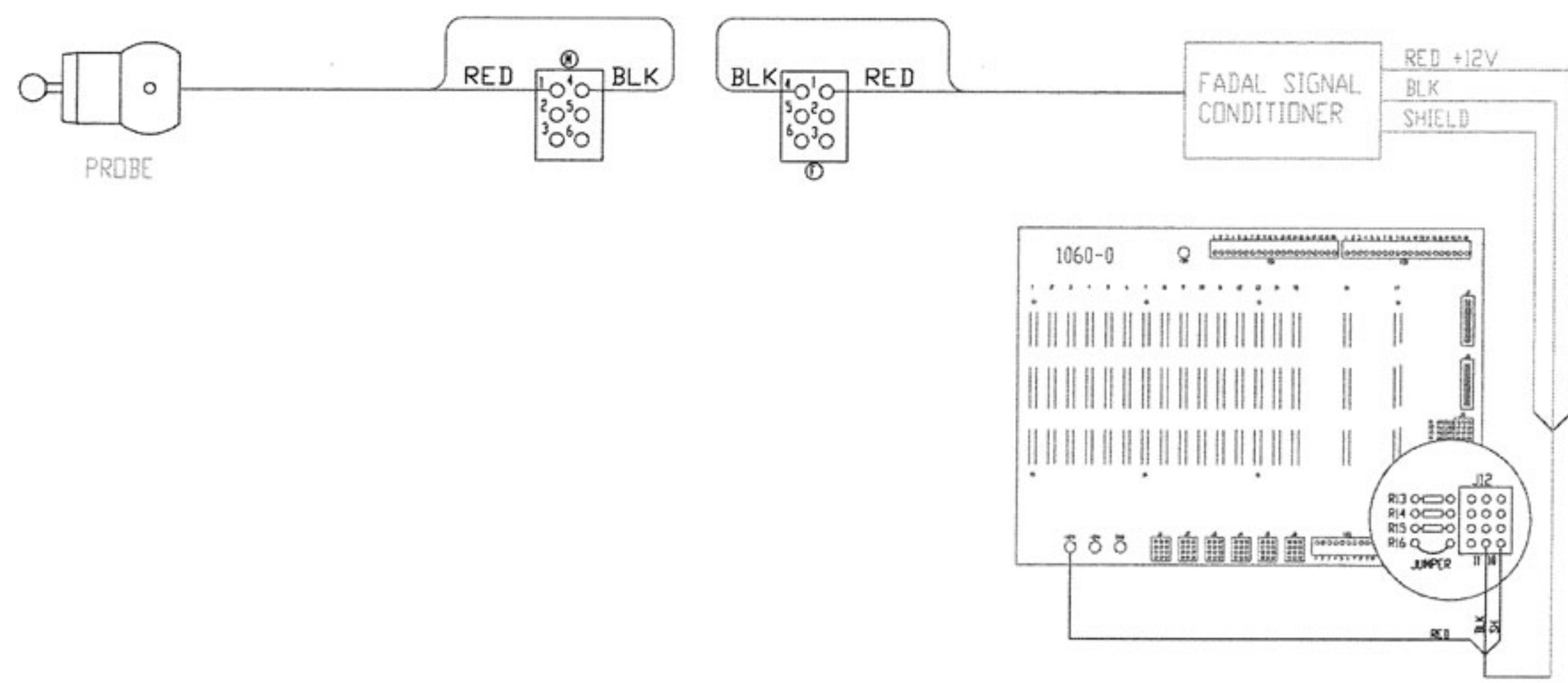
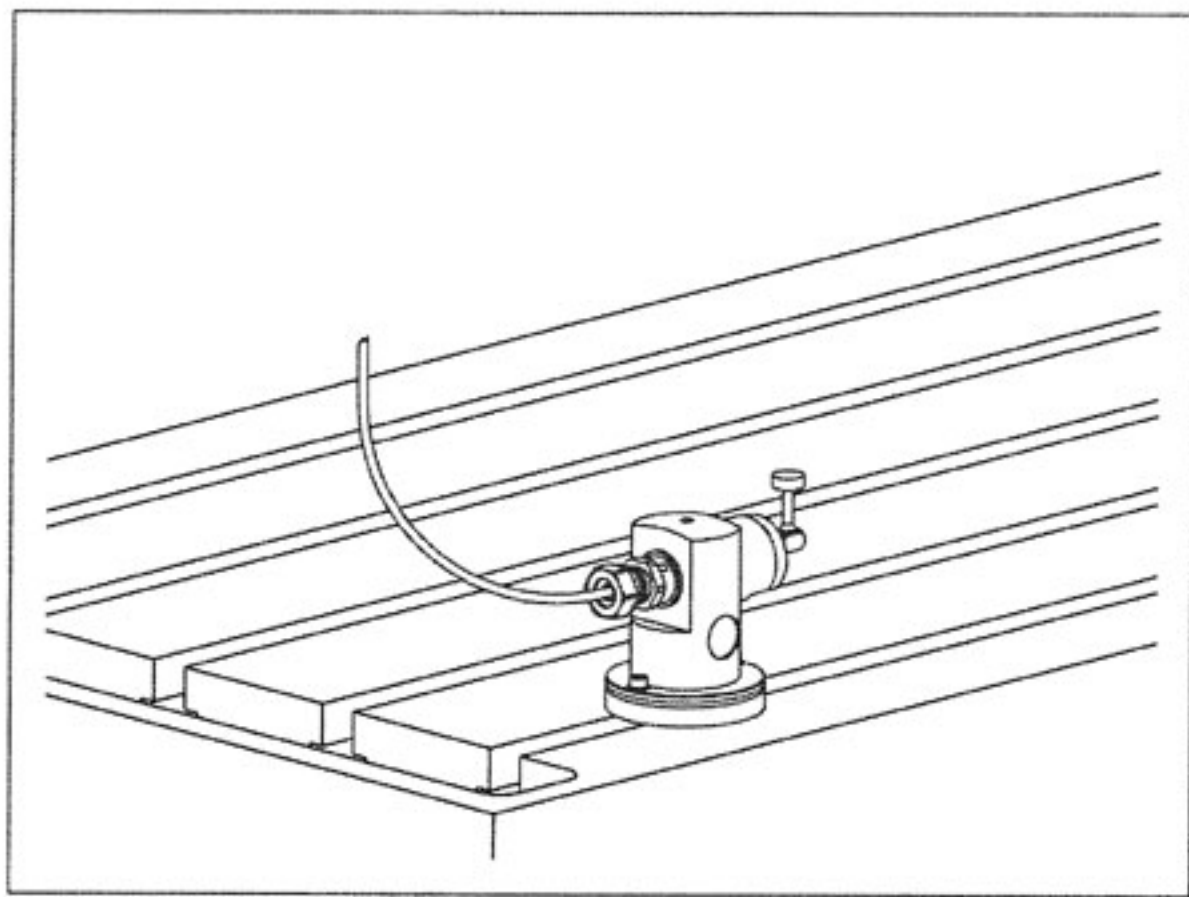
NOTE:
CONNECTOR SUPPLIED WITH
WIRE HARNESS



THIS DRAWING SHOWS DIMENSIONS ARE IN INCHES. DIMENSIONS ARE 16/07/99 17 0.00 2.00 20 101 SCALE DRAWING		Fadal ENGINEERING CO. 1000 S. 10TH ST. W.	
DATE 16/07/99	DRAWN A. POLONSKY	DATE 10/23/99	TITLE MP11 PROBE WIRING DIAGRAM
PART 1060-0	CHECKED DIRECTOR WEL	SIZE D	WRC-0004 1 A

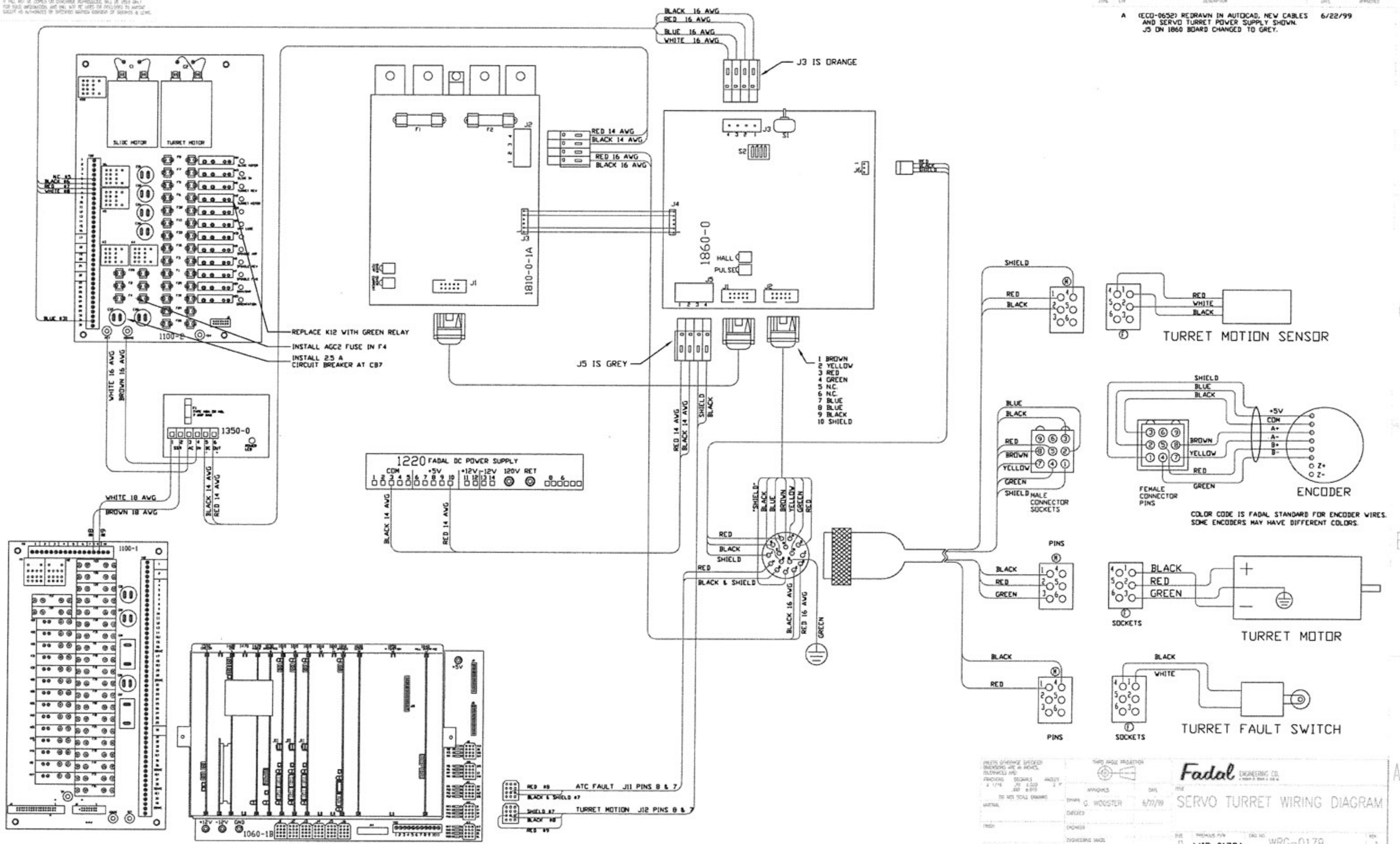
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RENISHAW TS-27 INTERFACE



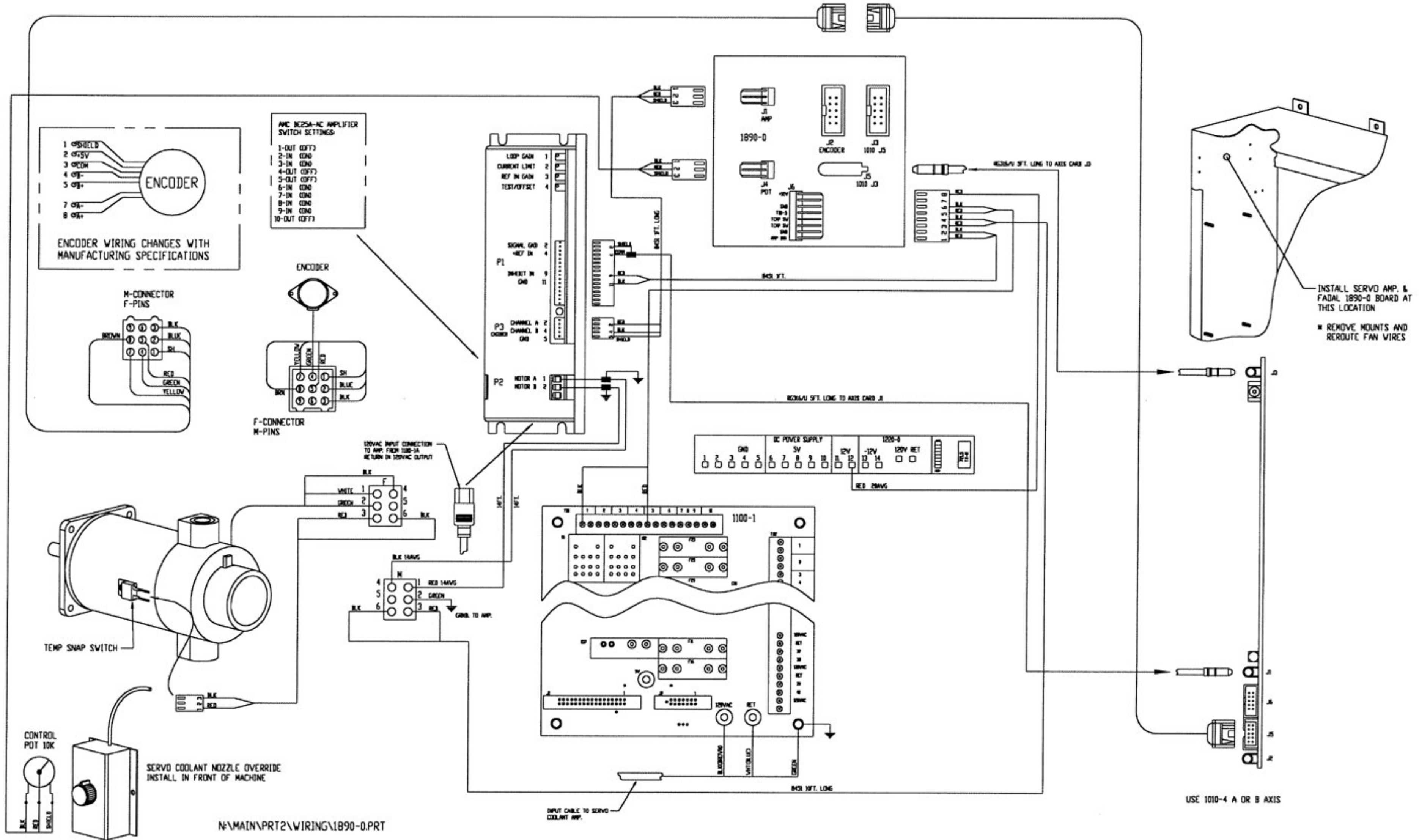
<small>UNITS: DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES. DIMENSIONS ARE TO UNLESS OTHERWISE SPECIFIED.</small> <small>FRACTIONS: 1/16" TO 1/8" DECIMALS: 0.0005" TO 0.001" ANGLES: 1/16" TO 1/8" DECIMALS: 0.0005" TO 0.001"</small> <small>TO MET SCALE DRAWING</small>		Fadal ENGINEERING CO. <small>1000 S. 10TH ST. W. WYOMING, WY. 82197</small>	
APPROVED: _____ DATE: 10/28/78	DRAWN: A. P. DLOWSKY CHECKED: _____ DATE: _____	TS 27 PROBE WIRING DIAGRAM	
DESIGNED: _____ DATE: _____	CHECKED: _____ DATE: _____	DESIGNED BY: _____ DATE: _____	DRAWN BY: _____ DATE: _____
PROJECT: _____		SHEET: 0 TOTAL SHEETS: 1 OF 1	WRC-0003 <small>DATE: 10/28/78</small>

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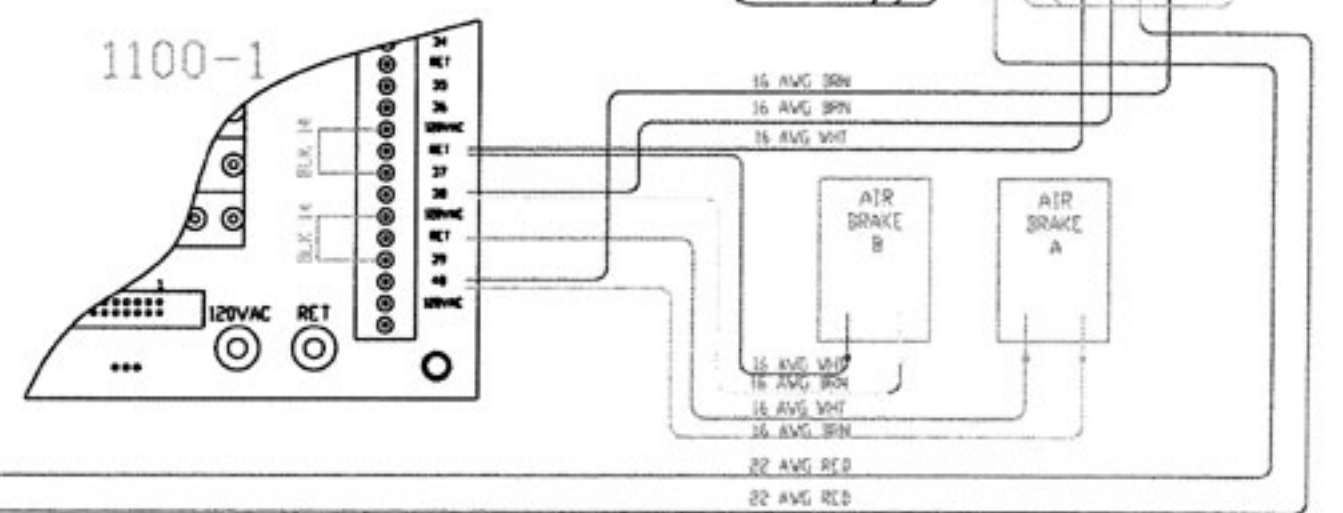
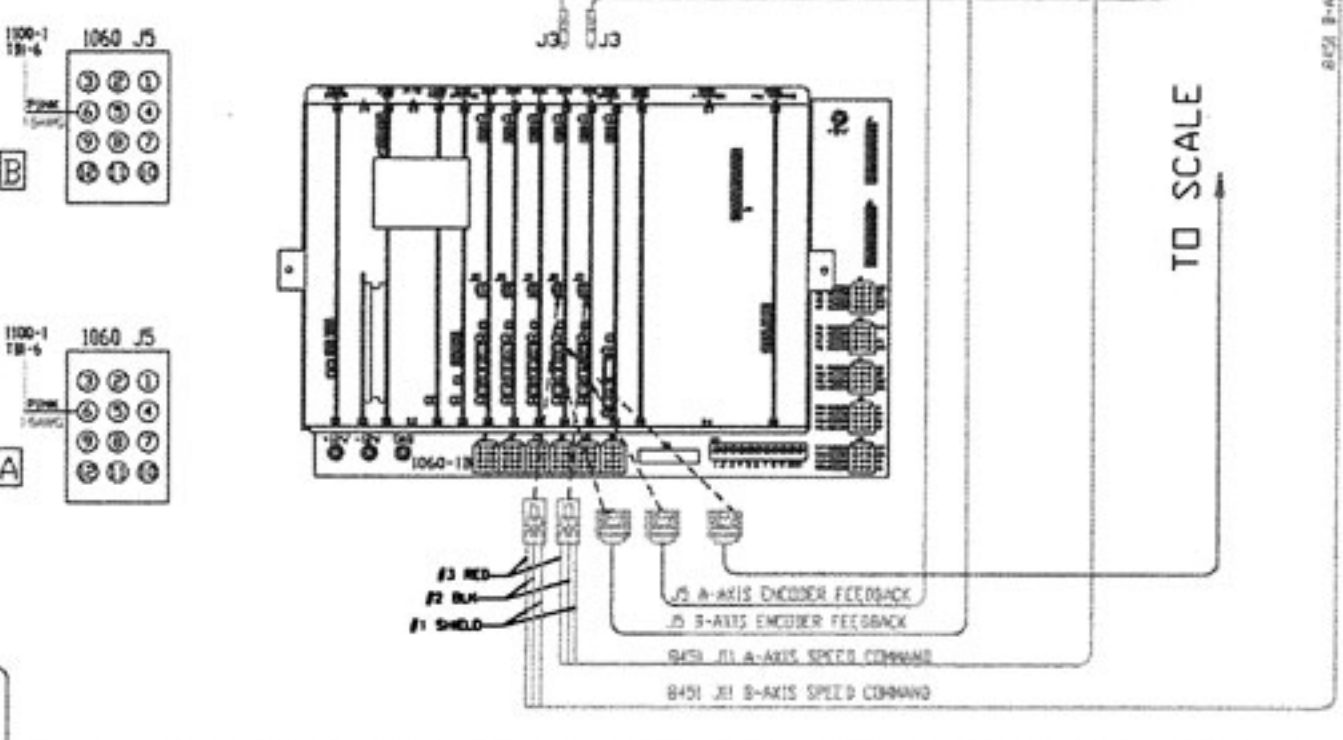
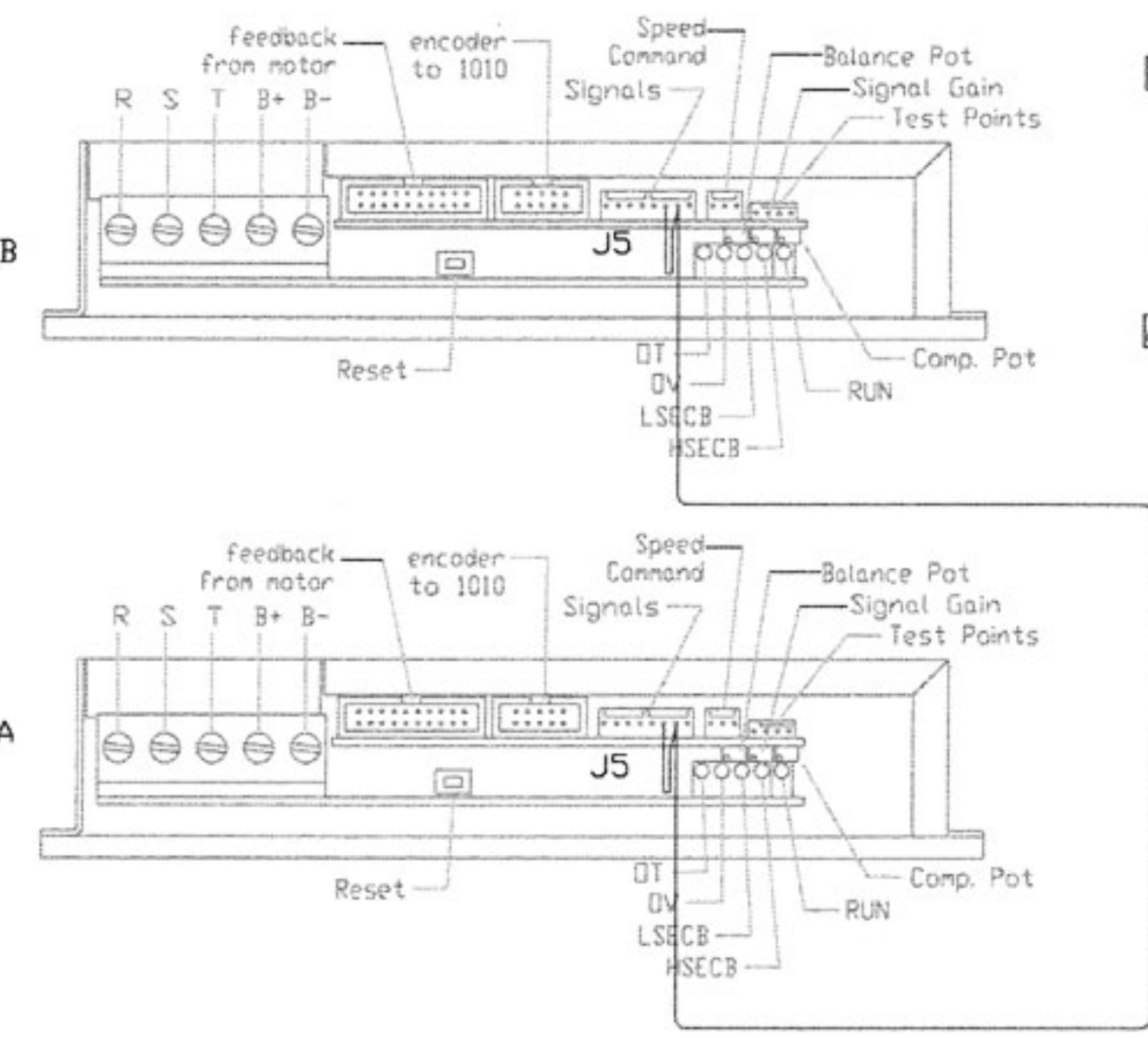
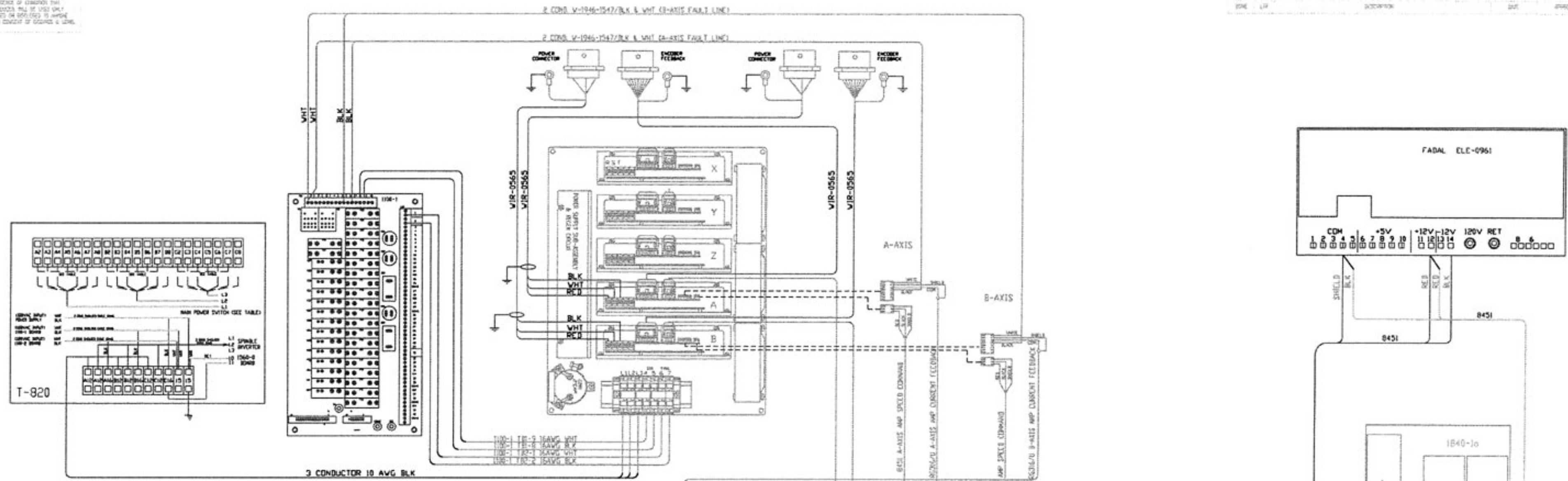


<p>WIRING SPEEDS: DRAWING: 1/16" PLOTTER: 1/16" TO GET TOLL DRAWING</p>	<p>THIRD ANGLE PROJECTION</p>	<p>Fadal DRAWING CO. 1700 S. 10TH & 54th</p>
<p>DATE: 6/22/99</p>	<p>APPROVED: G. WOOSTER</p>	<p>FILE: SERVO TURRET WIRING DIAGRAM</p>
<p>DESIGNED:</p>	<p>CHECKED:</p>	<p>REV: A</p>
<p>DRAWING NO: WIR-0179A</p>	<p>DATE: 6/22/99</p>	<p>REV: A</p>
<p>SCALE: 1/1</p>	<p>TOTAL SHEETS: 1 OF 2</p>	

SERVO COOLANT WIRING DIAGRAM(4607-200)



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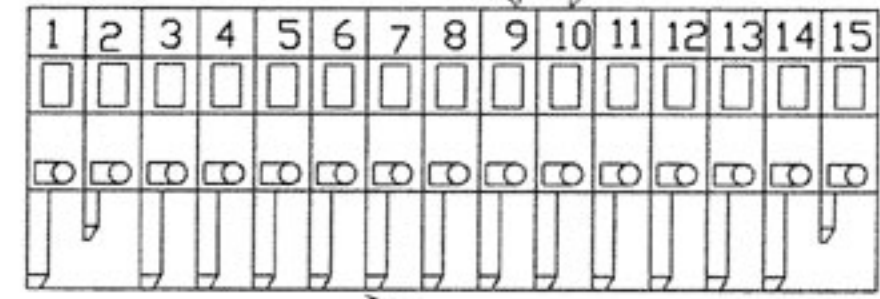
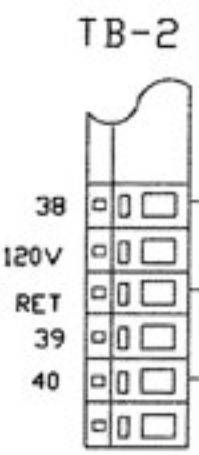
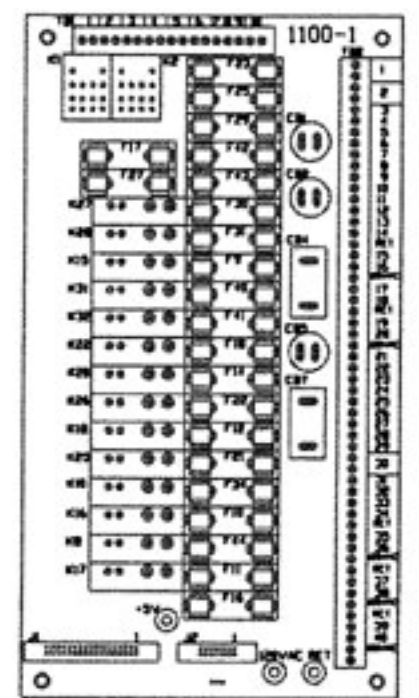
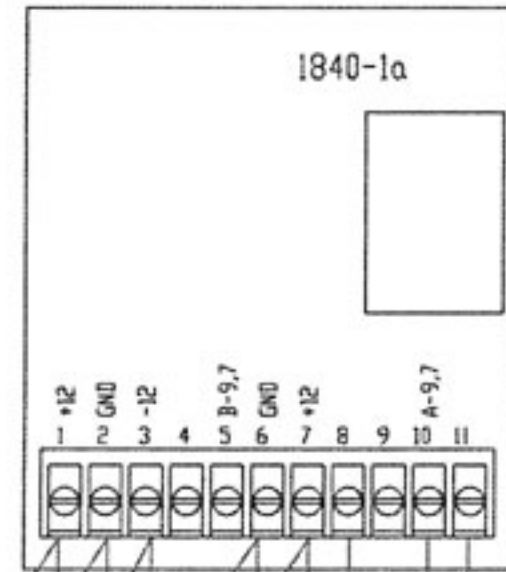
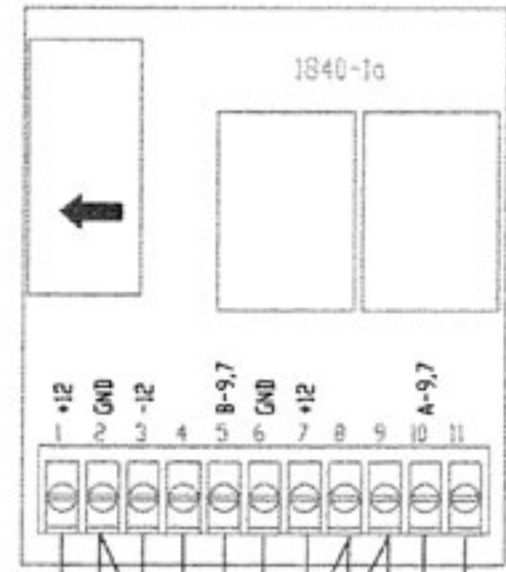
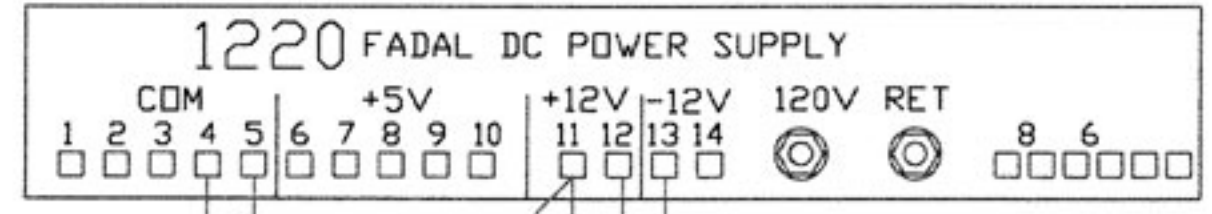
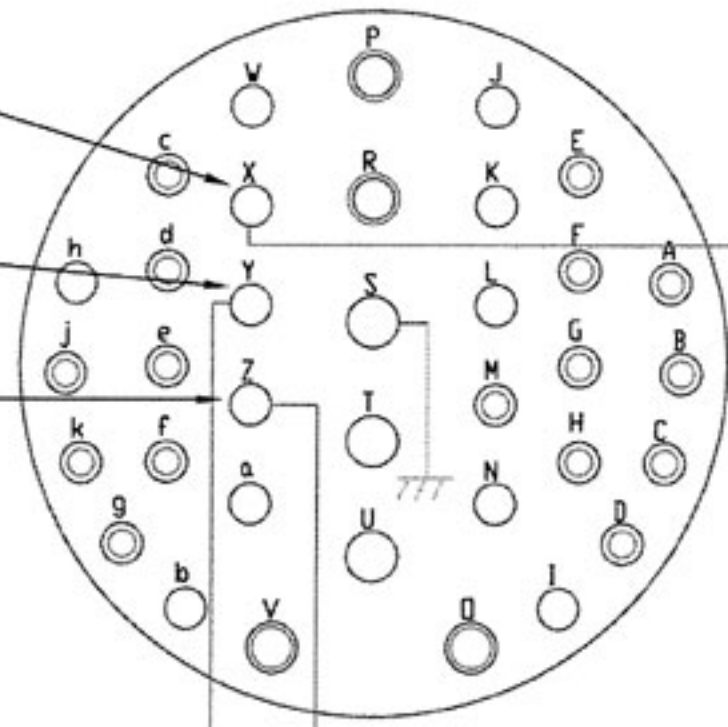
- NOTE:
1. INSTALL FUSES F11, F44 (AGC2) AND SOLID STATE RELAYS K17, K08 (BLACK) ON 1100-1 BOARD.
 2. USE GLENTEK AMPLIFIER AMP-0041.
 3. INSTALL JUMPERS ON 4th & 5th AXIS AMPLIFIERS INJ5 BETWEEN +LIMIT & -LIMIT (22 AWG RED).

<p>DATE: 11/23/98 DRAWN: A. POLONSKY CHECKED: [] DESIGNED: [] ENGINEER: [] DRAWING NO.: WRC-0016</p>		<p>REVISIONS</p> <p>NO. 11/23/98</p> <p>DATE</p> <p>BY</p>		<p>Fadal ENGINEERING CO. 1000 S. 10TH ST. SUITE 100 DENVER, CO 80202</p>	
<p>AC 4TH & 5TH AXIS WIRING DIAGRAM</p>			<p>WRC-0016 REV A</p>		

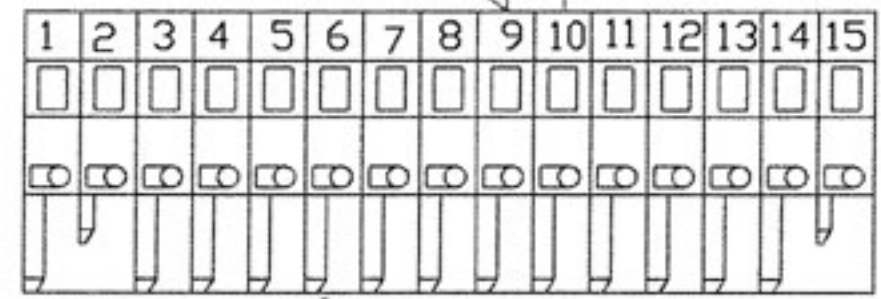
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B-AXIS CONNECTOR
(ON THE TOP OF SHEET METAL)

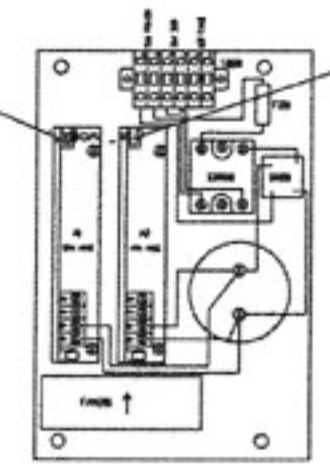
MECHANICAL LIMIT SWITCH INPUT
SWITCH OUTPUT + LIMIT
SWITCH OUTPUT - LIMIT



B - AXIS



A - AXIS

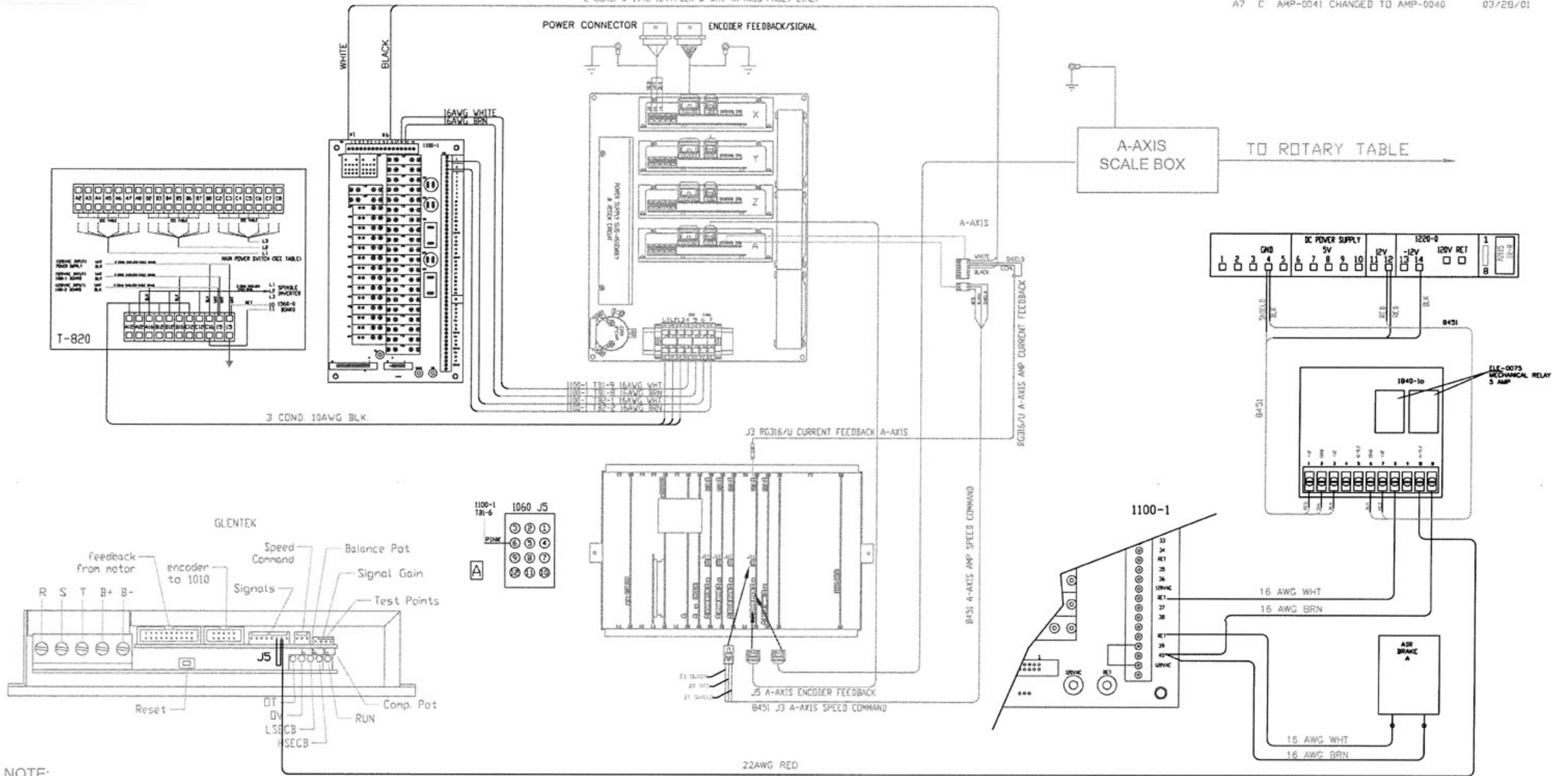


(METRIC DIMENSIONS GIVEN) DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS 1/16 1/32 3/32 1/8 5/16 3/8 1/2 5/8 3/4 7/8 1		(MILLIMETER DIMENSIONS GIVEN) DIMENSIONS ARE IN MILLIMETERS FRACTIONS DECIMALS 1/16 1/32 3/32 1/8 5/16 3/8 1/2 5/8 3/4 7/8 1	
APPROVALS DRAWN: A. POLANSKY CHECKED: DESIGNED: ENGINEER: DATE: 10/28/79	DATE: 10/28/79	TITLE: 4th/5th AXIS WITH LIMIT SWITCH 1840-1 BOARD WIRING DIAGRAM	
DESIGNED BY: [blank] CHECKED BY: [blank]	DATE: [blank]	REV. NO.: WRG-0015 REV. A	FILE NO.: [blank]

NOTE: ALL WIRING ON MACHINE CHASSIS, PARTICULARLY INTERFACES OF CONTROL SYSTEM, IS SUBJECT TO INSPECTION BY COMPANY QUALITY CONTROL. ALL WIRING MUST BE DONE IN ACCORDANCE WITH THE WIRING DIAGRAM FOR THIS EQUIPMENT AND THE USE OF WIRING DIAGRAMS IS PERMITTED ONLY AS APPROVED BY DESIGN WHEN MODIFICATION OF GEOMETRY IS MADE.

REV	DATE	DESCRIPTION	BY	APPROVED
AB	09/19/00	NOTE #2,4,5 ADDED		
A7	03/28/01	AMP-0041 CHANGED TO AMP-0040		

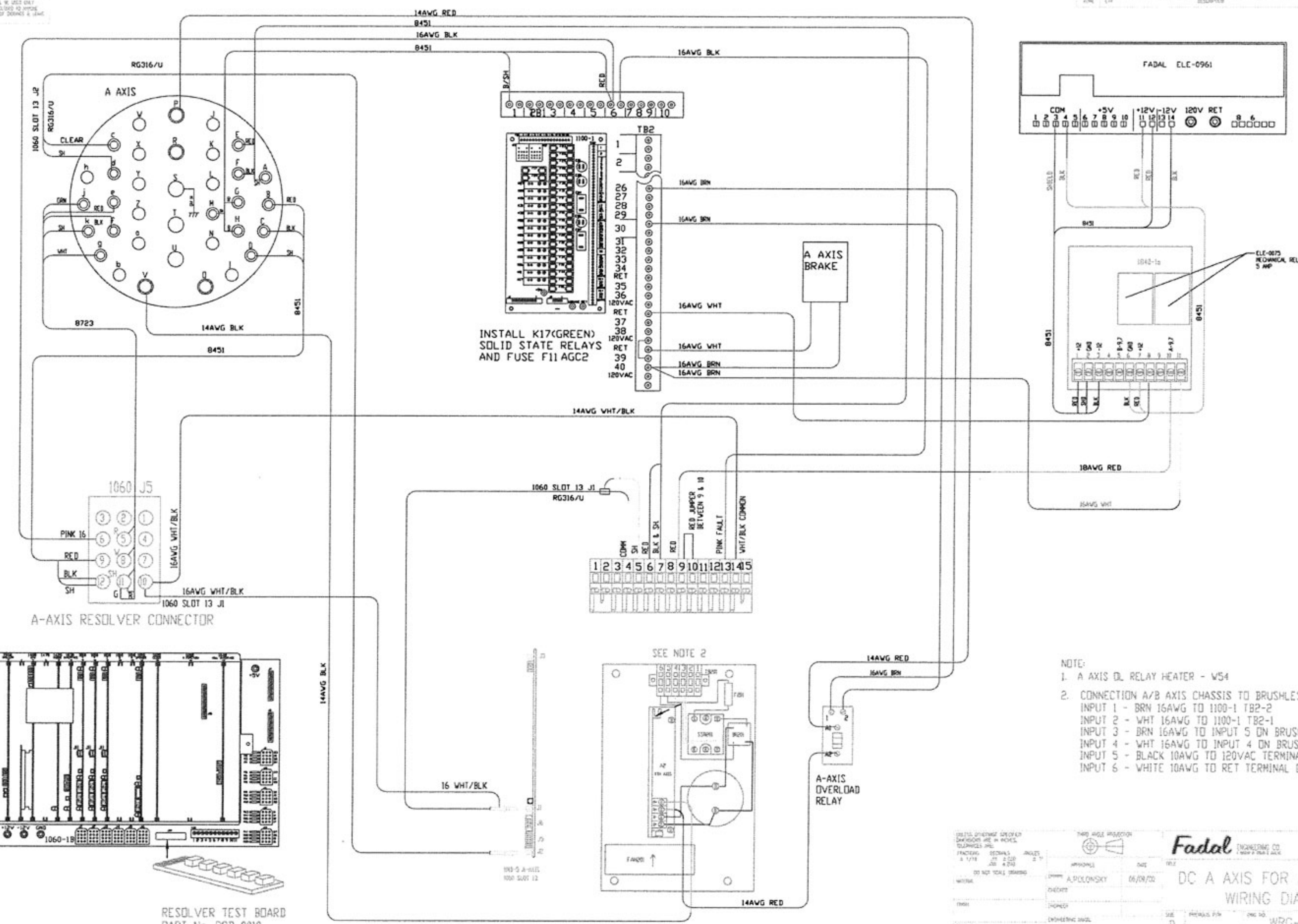
2 COND. W-1946-1547/BLK & WHT (A-AXIS FAULT LINE)



- NOTE:
1. INSTALL FUSE F11 (AGC 2) AND SOLID STATE RELAY K17 (GREEN) ON 1100-1 BOARD.
 2. USE GLENTEK AMPLIFIER AMP-0040 FOR V300 AND AMP-0029 FOR VH65.
 3. INSTALL JUMPER ON 4th AXIS AMPLIFIER IN J5 BETWEEN +LIMIT & -LIMIT (20 AWG RED).
 4. INSTALL FUSE 20A ONTO AXIS AMP. CHASSIS IN 4th AXIS FUSE HOLDER.
 5. FOR V300 ROTARY TABLE INSTALL SCALE BOX.

APPROVED: A. POLOVSKY DATE: 10/25/99		Fadal DESIGNING CO. AC 4TH AXIS STD./ SLANT 98 WIRING DIAGRAM	
DRAWN: A. POLOVSKY CHECKED: [] DATE: []	DESIGNED: [] DATE: []	PROJECT NO: [] DWG NO: WRG-0014	REV: C SHEET: 1 OF 1

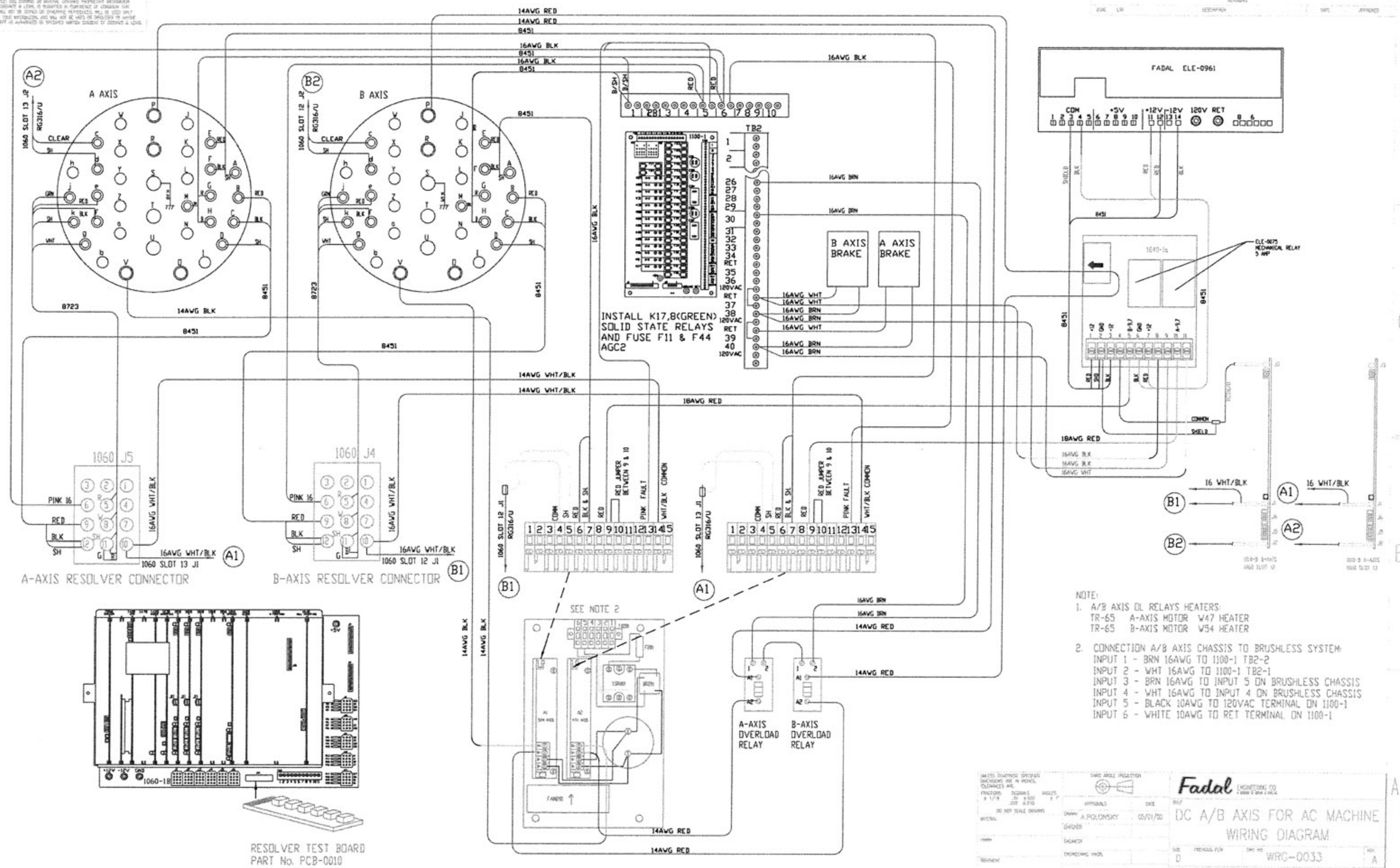
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- NOTE:
1. A AXIS DL RELAY HEATER - W54
 2. CONNECTION A/B AXIS CHASSIS TO BRUSHLESS SYSTEM:
 INPUT 1 - BRN 16AWG TO 1100-1 TB2-2
 INPUT 2 - WHT 16AWG TO 1100-1 TB2-1
 INPUT 3 - BRN 16AWG TO INPUT 5 ON BRUSHLESS CHASSIS
 INPUT 4 - WHT 16AWG TO INPUT 4 ON BRUSHLESS CHASSIS
 INPUT 5 - BLACK 10AWG TO 120VAC TERMINAL ON 1100-1
 INPUT 6 - WHITE 10AWG TO RET TERMINAL ON 1100-1

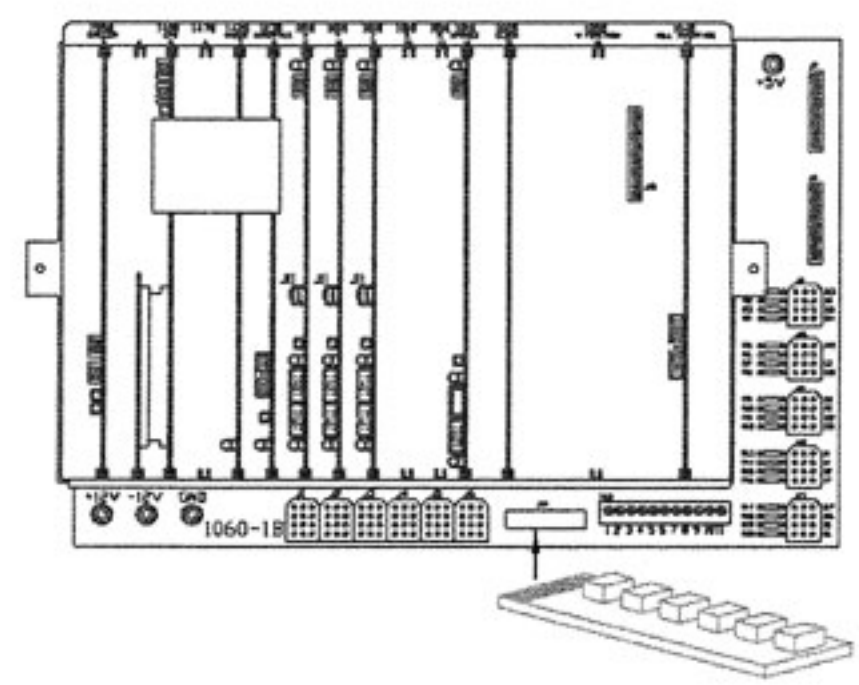
THIS DRAWING IS UNCLASSIFIED UNLESS INDICATED OTHERWISE BY A DATE AND AUTHORITY. THIS DOCUMENT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE BY A DATE AND AUTHORITY.		THIS AXIS PROJECTOR		Fadal ENGINEERING CO. 1000 P. ROAD 1, ALEXANDRIA, EGYPT	
DATE: 06/09/02 DRAWN BY: A. POLONSKY CHECKED BY:	DATE: 06/09/02 DRAWN BY: A. POLONSKY CHECKED BY:	DC A AXIS FOR AC MACHINE WIRING DIAGRAM		REV. 1 A	WRG-0034
TITLE: DC A AXIS FOR AC MACHINE WIRING DIAGRAM		SHEET NO: 0	TOTAL SHEETS: 1	DRAWN BY: A. POLONSKY	CHECKED BY:

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INSTALL K17.8(GREEN)
SOLID STATE RELAYS
AND FUSE F11 & F44
AGC2

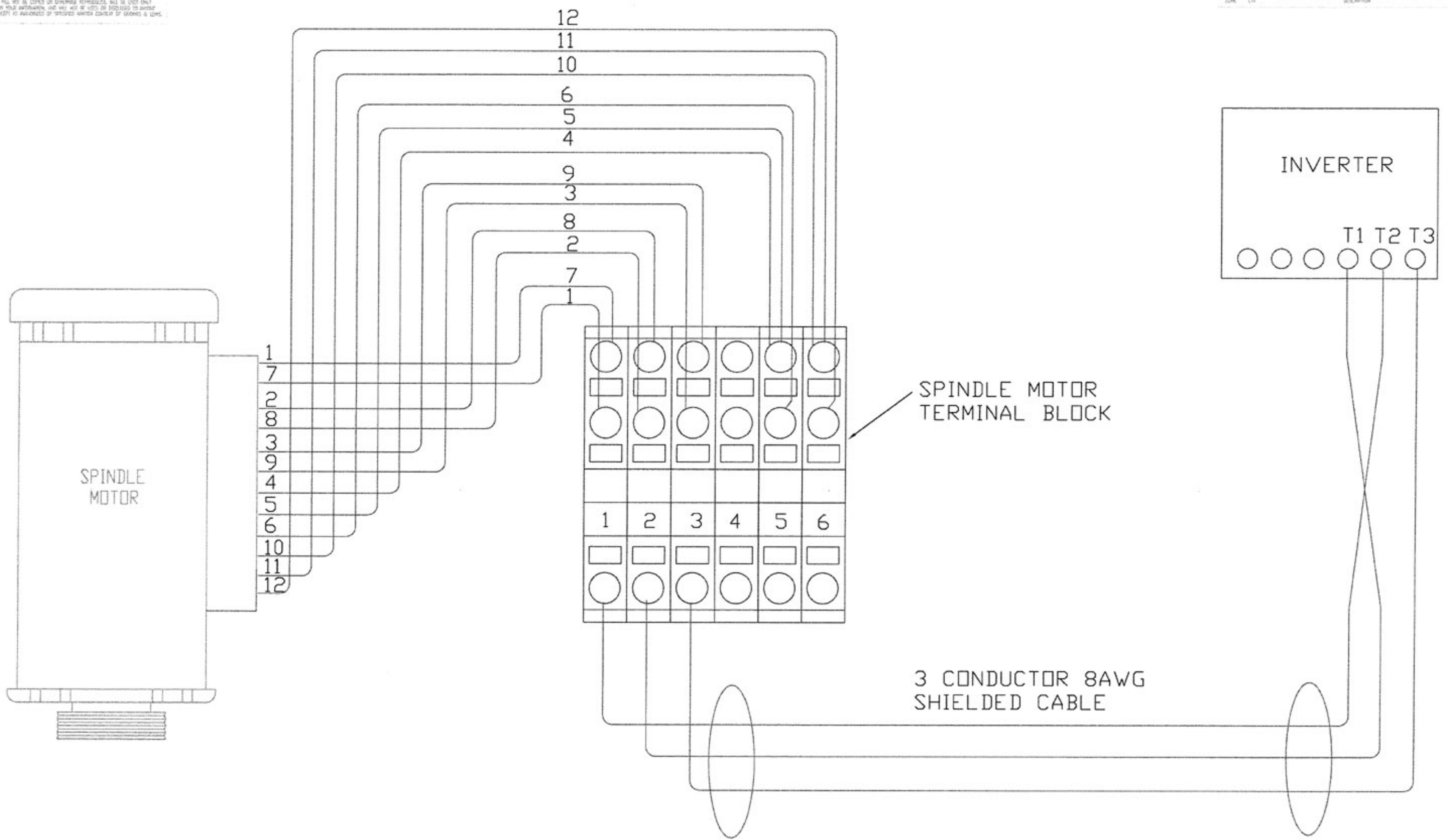
- NOTE:
1. A/B AXIS OL RELAYS HEATERS:
TR-65 A-AXIS MOTOR W47 HEATER
TR-65 B-AXIS MOTOR W54 HEATER
 2. CONNECTION A/B AXIS CHASSIS TO BRUSHLESS SYSTEM:
INPUT 1 - BRN 16AWG TO 1100-1 TB2-2
INPUT 2 - WHT 16AWG TO 1100-1 TB2-1
INPUT 3 - BRN 16AWG TO INPUT 5 ON BRUSHLESS CHASSIS
INPUT 4 - WHT 16AWG TO INPUT 4 ON BRUSHLESS CHASSIS
INPUT 5 - BLACK 10AWG TO 120VAC TERMINAL DN 1100-1
INPUT 6 - WHITE 10AWG TO RET TERMINAL DN 1100-1



RESOLVER TEST BOARD
PART No. PCB-0010

<p>DATE: 05/01/70 DRAWN: A. POLONSKY CHECKED: [blank] APPROVED: [blank]</p>		<p>DATE: 05/01/70 DRAWN: A. POLONSKY CHECKED: [blank] APPROVED: [blank]</p>	
<p>PROJECT: DC A/B AXIS FOR AC MACHINE WIRING DIAGRAM</p>		<p>REV: 1 DATE: 05/01/70 DRAWN: A. POLONSKY CHECKED: [blank] APPROVED: [blank]</p>	
<p>REV: 1 DATE: 05/01/70 DRAWN: A. POLONSKY CHECKED: [blank] APPROVED: [blank]</p>		<p>REV: 1 DATE: 05/01/70 DRAWN: A. POLONSKY CHECKED: [blank] APPROVED: [blank]</p>	

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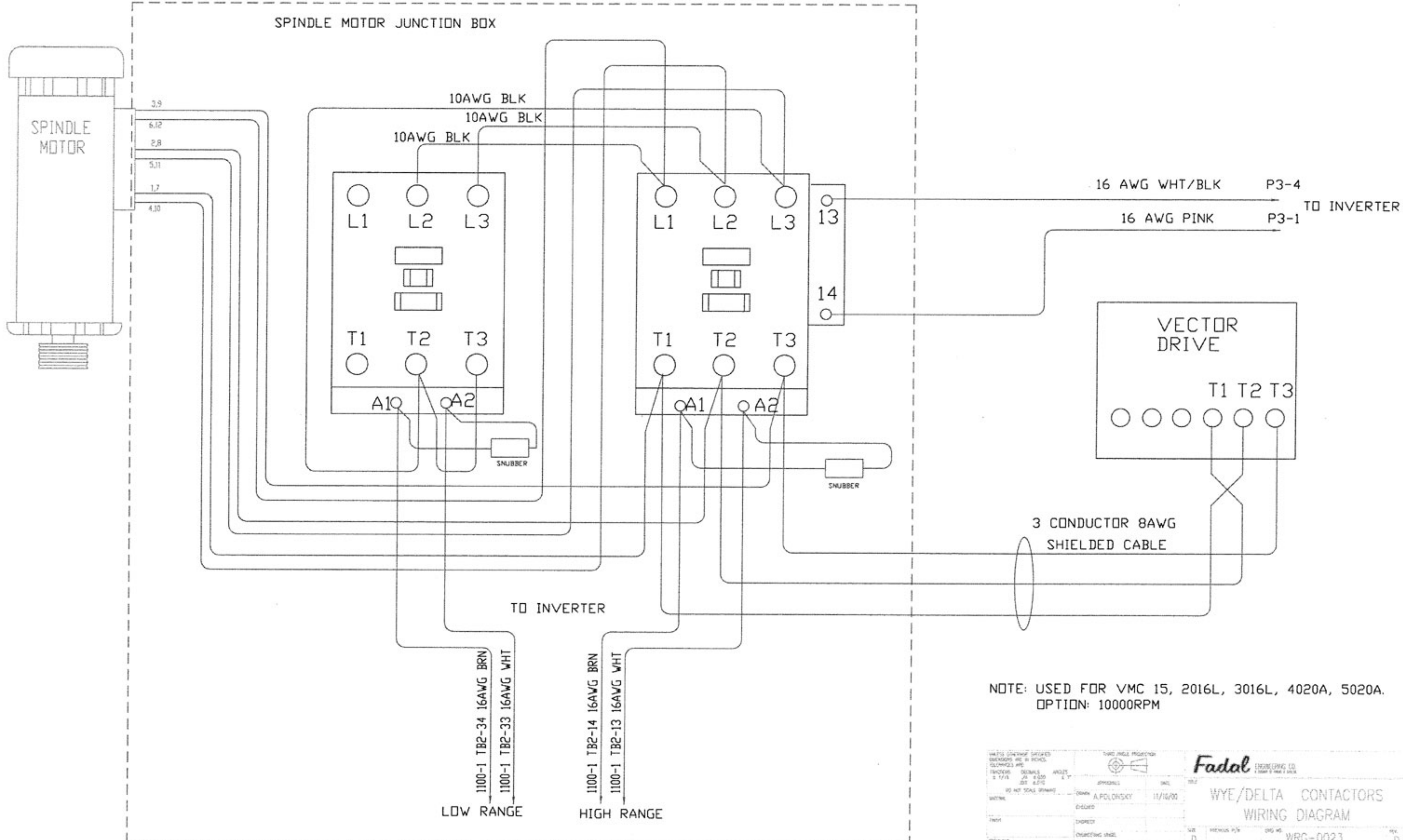


FOR VMC 2216, 3016, 3020, 4020, 6030, 8030.

DRG NO. WRG-0024 REV. 1 A		Fadal ENGINEERING CO. <small>1000 S. 10TH ST. W. WYOMING, NEB. 68103</small>	
DATE: 12/7/99 DRAWN BY: A. POLONSKI CHECKED BY:	PROJECT:	SPINDLE MOTOR CONNECTION WIRING DIAGRAM	
TITLE:	DRAWN BY:	DATE:	REV. 1 A
CHECKED BY:	PROJECT NO.:	DRG NO.: WRG-0024	SHEET: 1 OF 1

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REV	DESCRIPTION	DATE	BY	CHKD
B	ECD-1165 CONTACTORS REPLACED RELAYS	11/10/00		
C	DRAWING UPDATE	11/28/00		
D	DRAWING UPDATE	01/16/01		



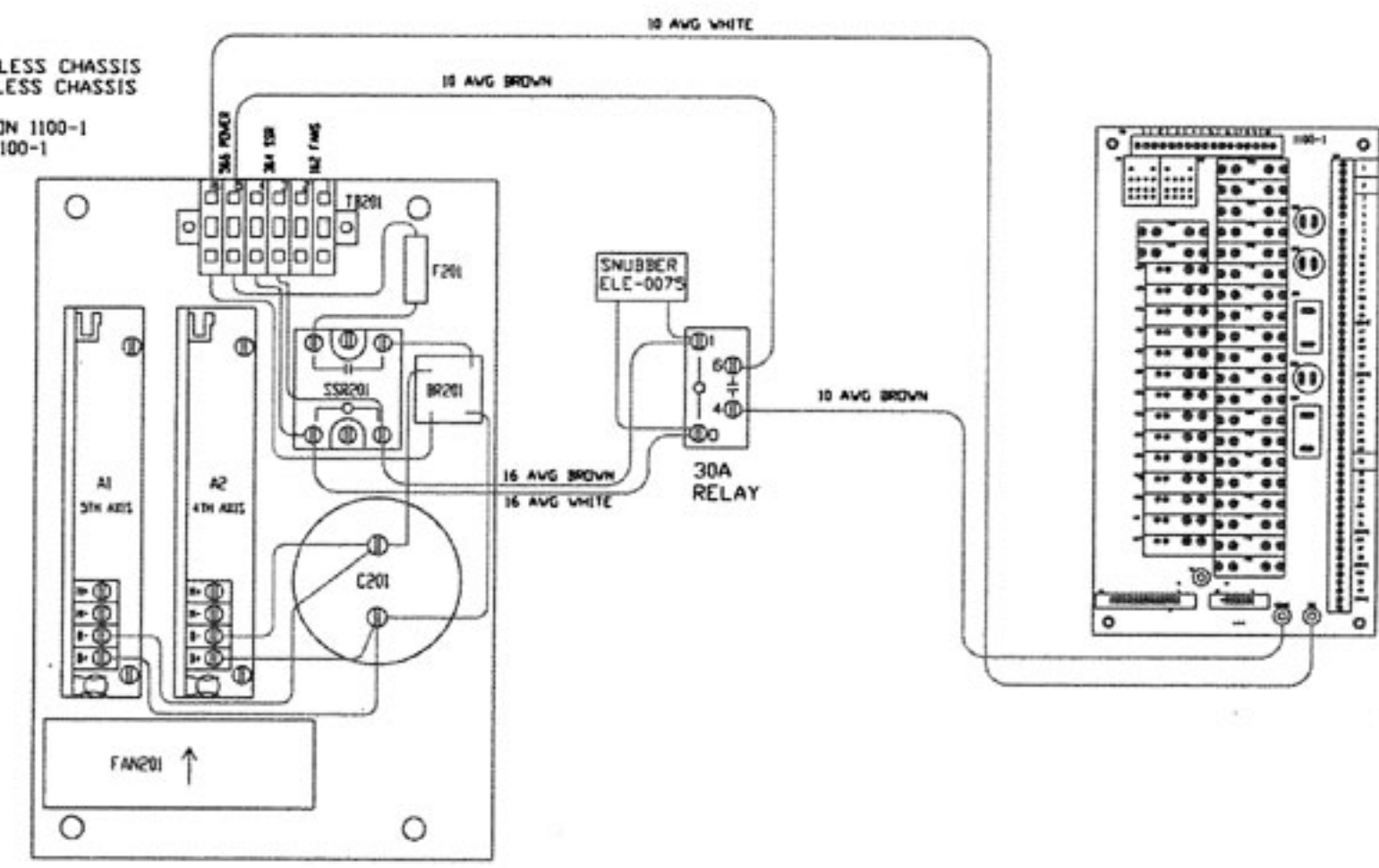
NOTE: USED FOR VMC 15, 2016L, 3016L, 4020A, 5020A.
OPTION: 10000RPM

WAFS CONTROL SYSTEMS ENGINEERING INC. 88 BROAD GLOUCESTER, MA 01930-1111 TEL: 978-686-1111 FAX: 978-686-1111 WWW: WWW.WAFS.COM	THIRD ANGLE PROJECTION DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED DECIMAL ANGLES 1/16 1/8 3/16 1/4 5/16 3/8 7/16 1/2 5/8 3/4 7/8 1	Fadal ENGINEERING CO. WYE/Delta CONTACTORS WIRING DIAGRAM DATE: 11/10/00 DRAWN BY: A.POL/DROSKY CHECKED BY: [] APPROVED BY: [] PROJECT NO: [] SHEET NO: [] TOTAL SHEETS: []	WRG-0023 REV. D
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- A. WIRE COLOR CODE CHANGED. 120 VAC IS BROWN. 12/4/98
- B. (ECO-0652) ADDED SNUBBER. 6/17/99

- FOR CONNECTION TO BRUSHLESS SYSTEM
- INPUT 1 - BROWN 16 GA. WIRE TO 1100-1 TB2-2
 - INPUT 2 - WHITE 16 GA. WIRE TO 1100-1 TB2-1
 - INPUT 3 - BROWN 16 GA. WIRE TO INPUT 5 ON BRUSHLESS CHASSIS
 - INPUT 4 - WHITE 16 GA. WIRE TO INPUT 4 ON BRUSHLESS CHASSIS
 - INPUT 5 - BROWN 10 GA. WIRE TO 120VAC TERMINAL ON 1100-1
 - INPUT 6 - WHITE 10 GA. WIRE TO RET TERMINAL ON 1100-1



SOLID ORANGE WIRE BRUSHLESS MOTOR TERMINALS ARE 1 1/2" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" 12"		THIS PANEL MOUNTED 		Fadal LIGHTSPEED CO. <small>1000 W. 10TH ST. SUITE 100, DENVER, CO 80202</small>	
DRAWN BY: G. WOODSTER CHECKED BY: DATE: 11/98	PROJECT: CE DOOR INTERLOCK WIRING DRAWING NO.: WIR-0696B	REV: 1 DATE: 12/4/98	REV: 2 DATE: 6/17/99	CE DOOR INTERLOCK WIRING DIAGRAM 4TH/5TH AXIS	
SCALE: 1/1		SHEET NO.: 3 OF 3		REV: 1 DATE: 11/98	

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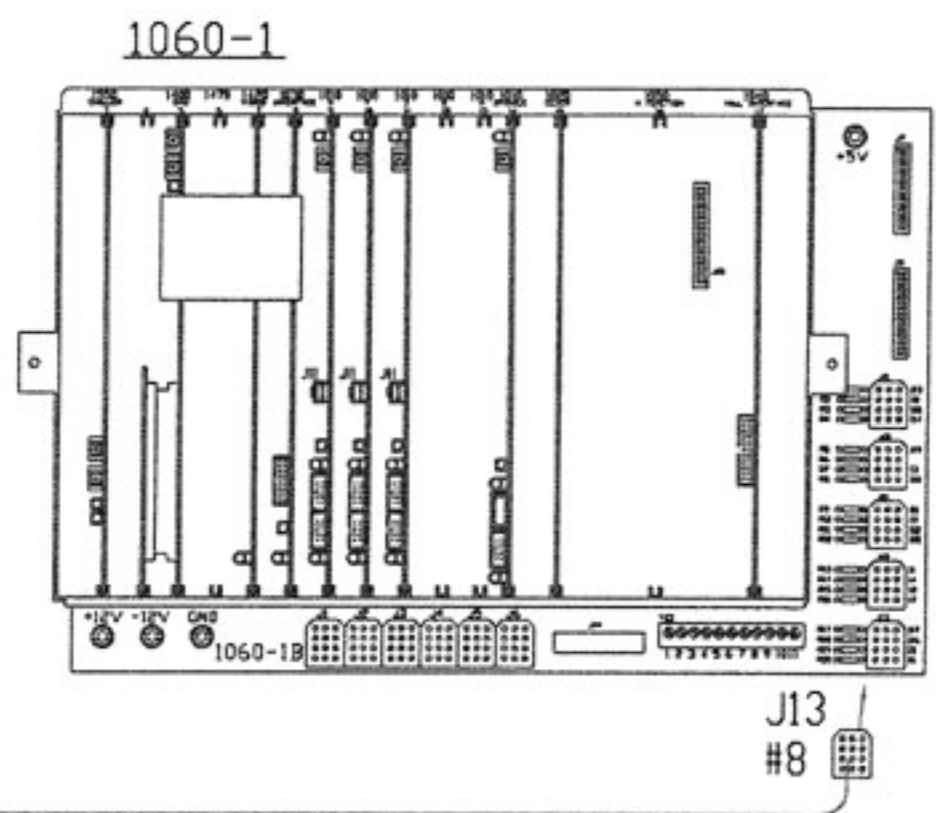
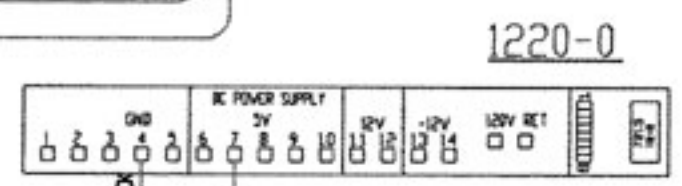
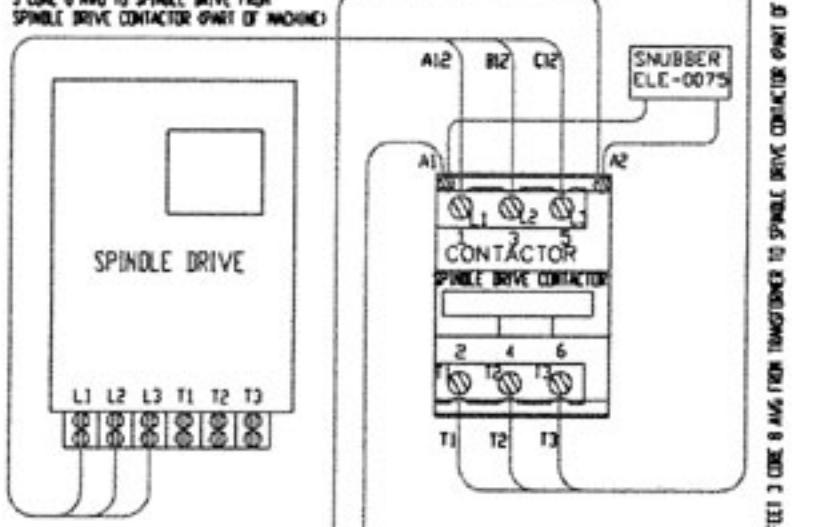
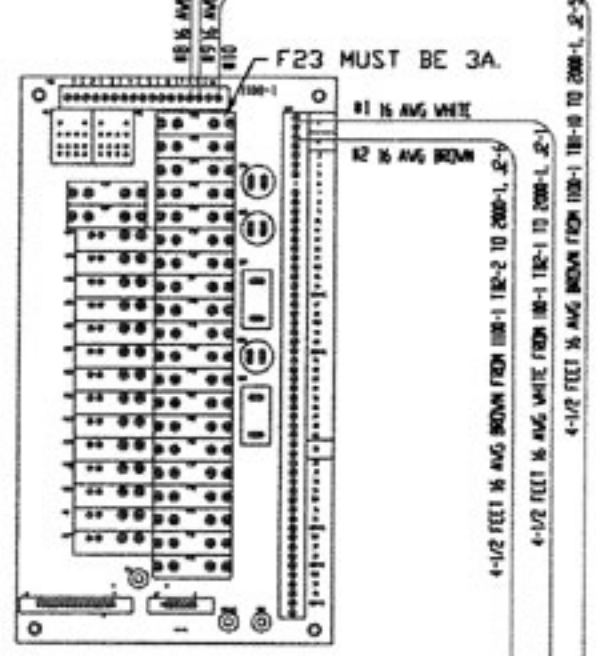
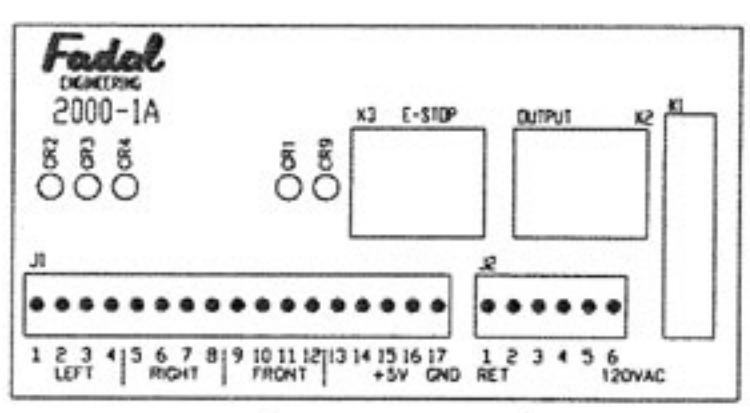
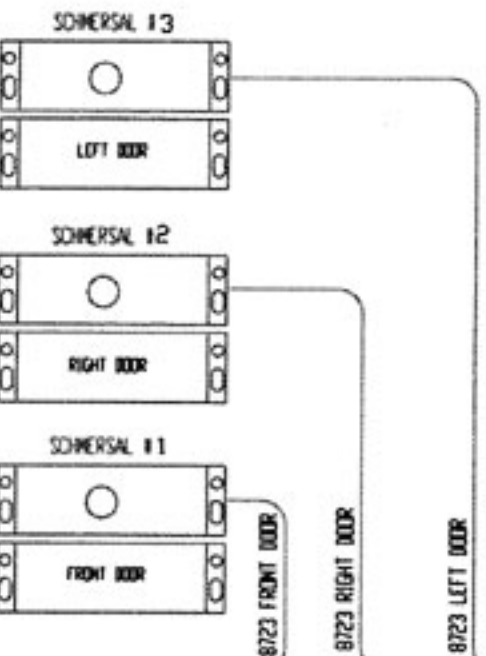
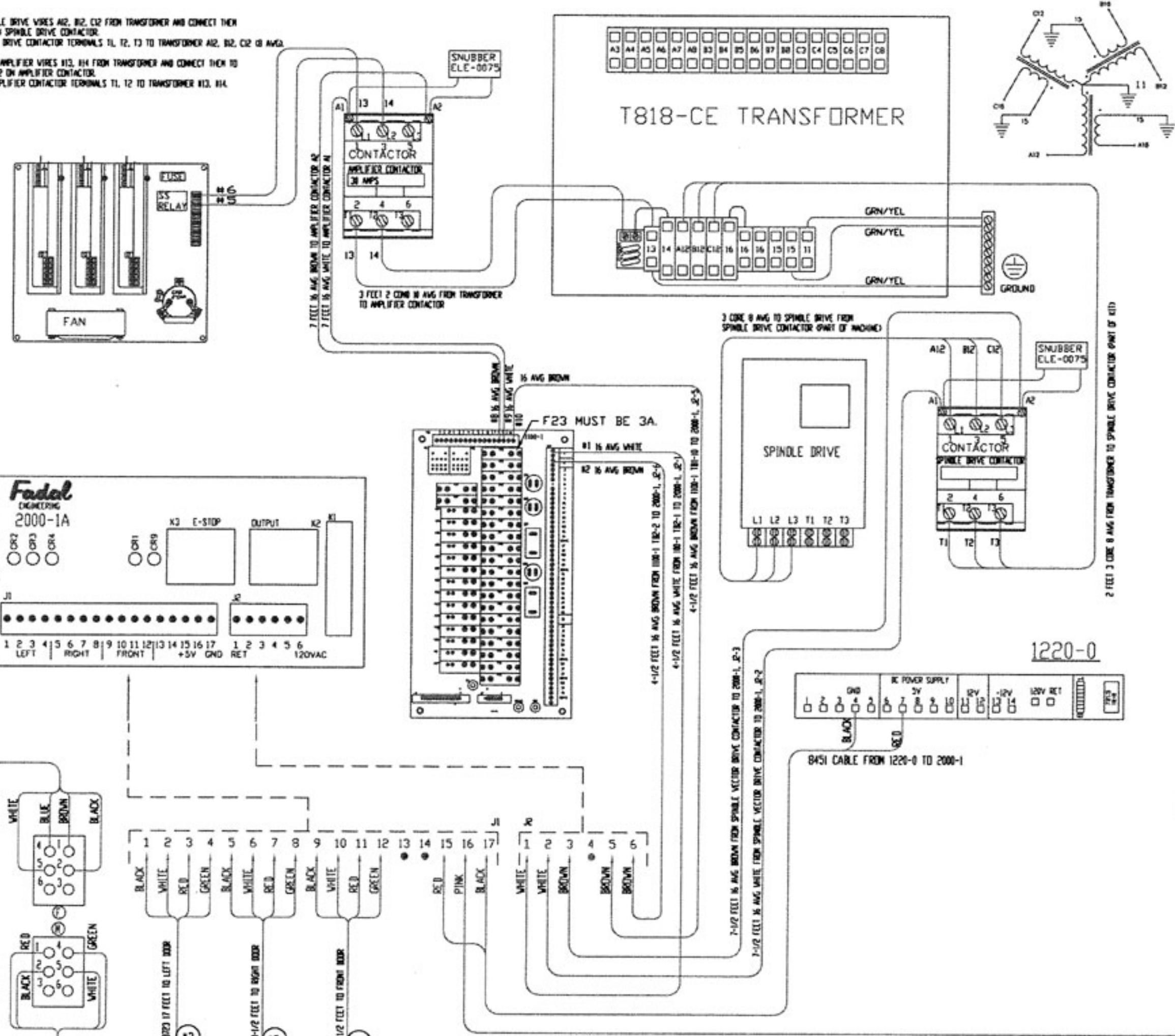
- A. WIRE COLOR CODE CHANGED. 120 VAC IS BROWN, DC SIGNAL IS GRAY. 12/4/98
- B. CHANGED 2000-1 TO 2000-1A BOARD. 2000-1 PIN LIST CORRECTED. 12/29/98
- C. (ECO-0652) 1100-1 F23 CHANGED TO 3A. UPDATED TRANSFORMER, ADDED SNUBBERS. WIRE COLOR CODE CHANGED, DC SIGNAL IS PINK. 6/24/99

2000-1 PIN LIST

LEFT DOOR	
1	DOOR SWITCH (BLACK)
2	DOOR SWITCH (WHITE)
3	DOOR SWITCH (RED)
RIGHT DOOR	
4	DOOR SWITCH (GREEN)
5	DOOR SWITCH (BLACK)
6	DOOR SWITCH (WHITE)
7	DOOR SWITCH (RED)
8	DOOR SWITCH (GREEN)
9	DOOR SWITCH (BLACK)
FRONT DOOR	
10	DOOR SWITCH (WHITE)
11	DOOR SWITCH (RED)
12	DOOR SWITCH (GREEN)
13	
14	
15	+5V
16	REMOTE SLIDE HOLD
17	GROUND

1	T82-1 (WHITE)
2	CONTACTOR (WHITE)
3	CONTACTOR (BROWN)
4	
5	T81-10 (BROWN)
6	T82-2 (BROWN)

- NOTE:**
- DISCONNECT SPINDLE DRIVE WIRES A12, B12, C12 FROM TRANSFORMER AND CONNECT THEM TO L1, L2, L3 ON SPINDLE DRIVE CONTACTOR.
 - CONNECT SPINDLE DRIVE CONTACTOR TERMINALS T1, T2, T3 TO TRANSFORMER A12, B12, C12 (B AWG, PART OF KIT).
 - DISCONNECT AXIS AMPLIFIER WIRES #13, #14 FROM TRANSFORMER AND CONNECT THEM TO TERMINALS L1, L2 ON AMPLIFIER CONTACTOR.
 - CONNECT AXIS AMPLIFIER CONTACTOR TERMINALS T1, T2 TO TRANSFORMER #13, #14 (PART OF KIT).

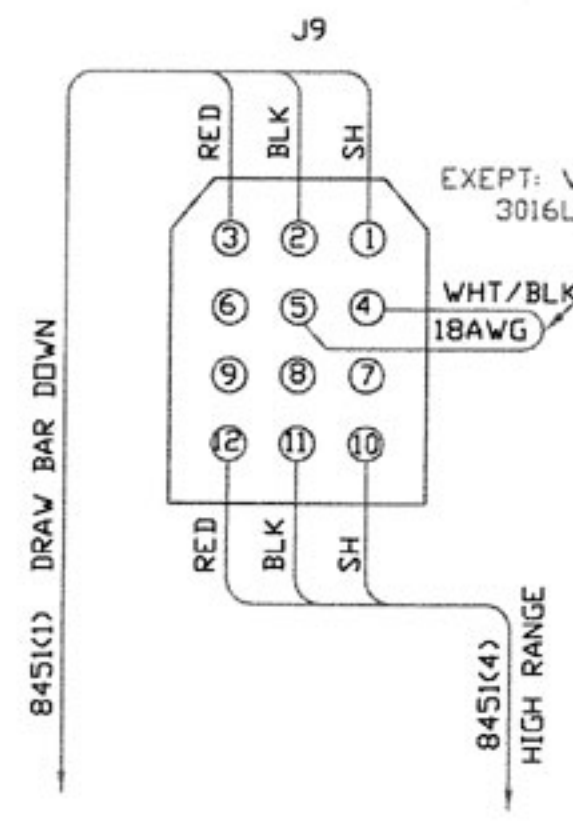
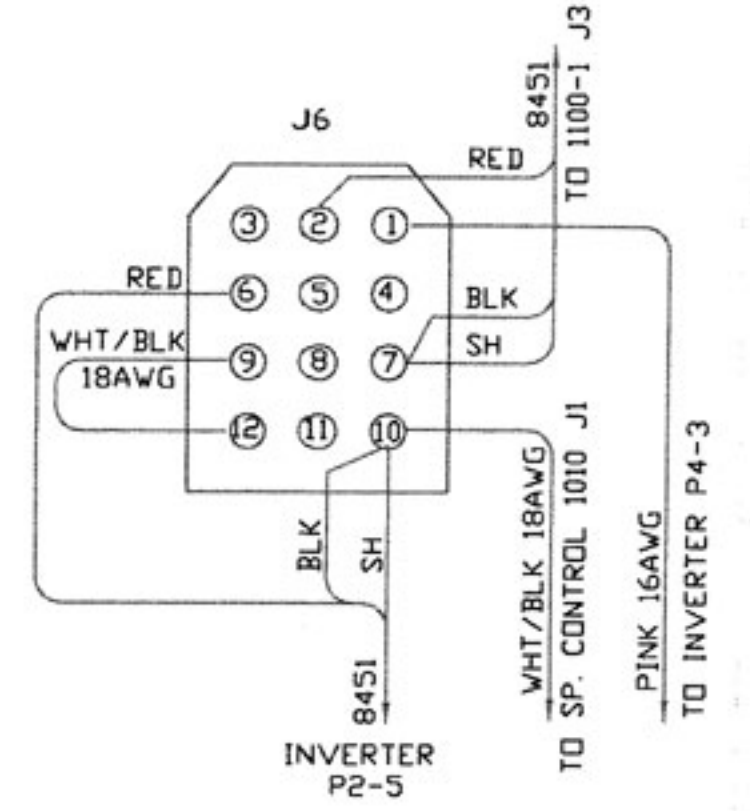
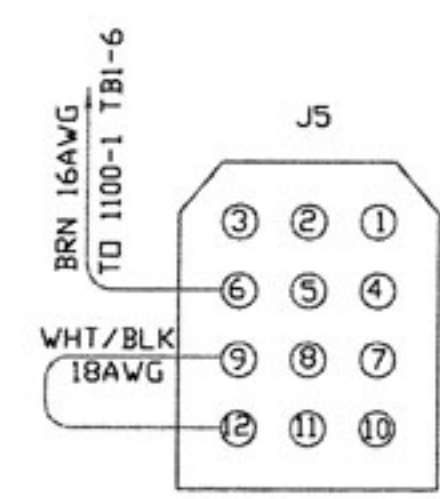
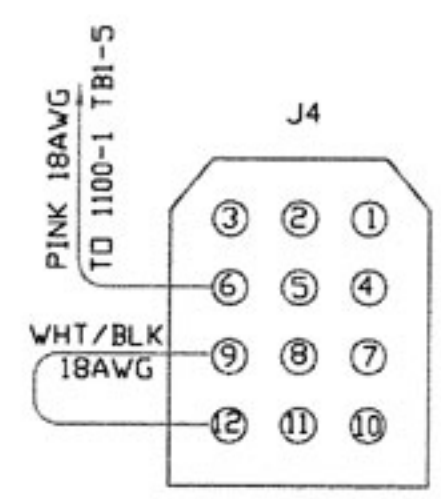
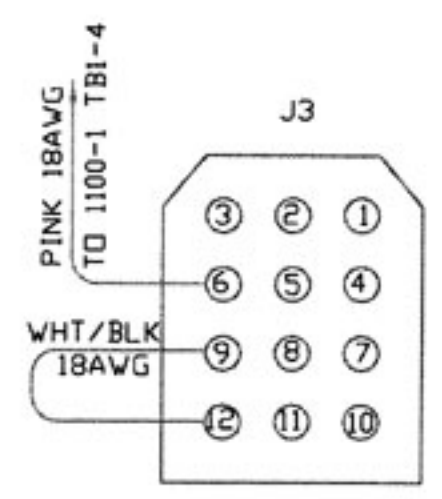
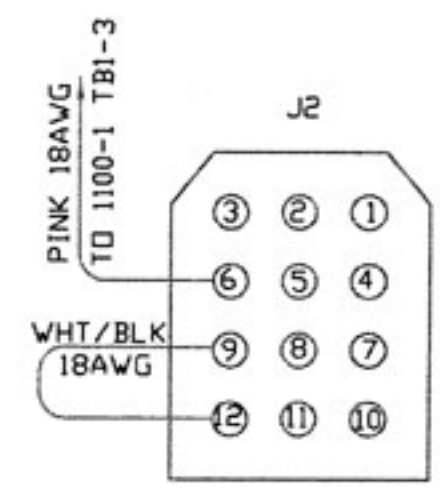
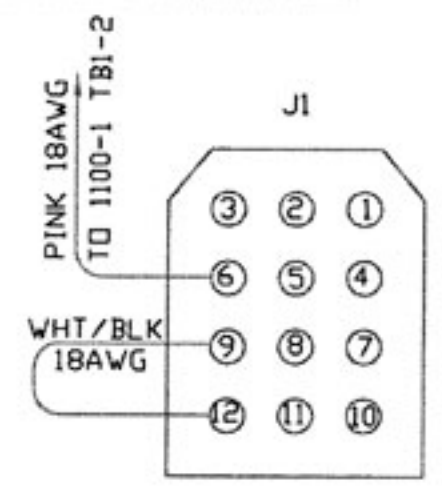


⊕ CONNECTOR HAS PINS
⊙ CONNECTOR HAS SOCKETS

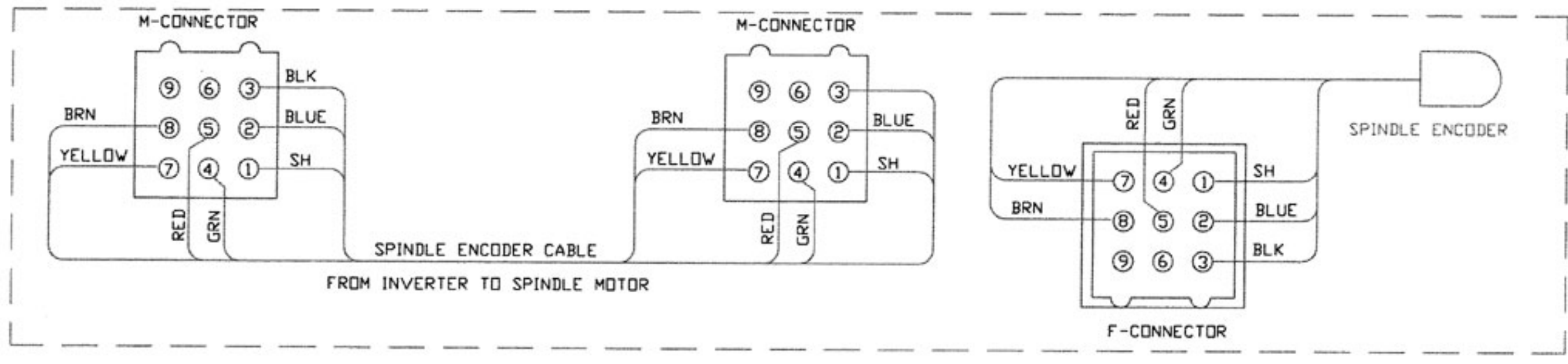
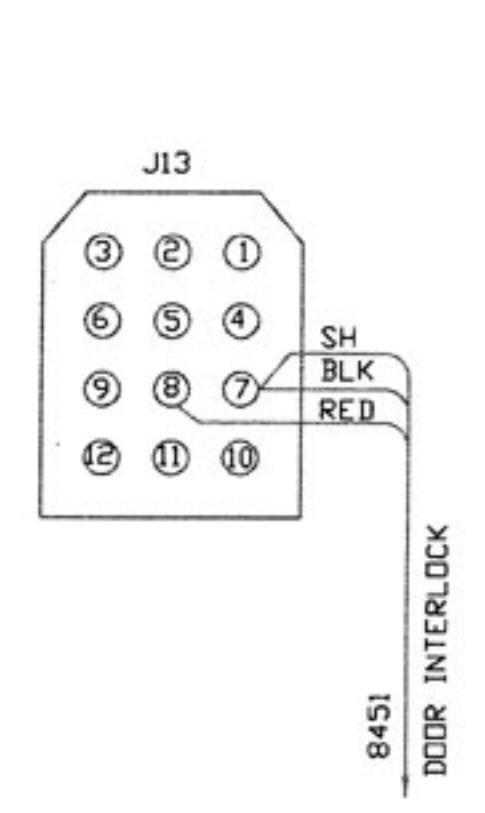
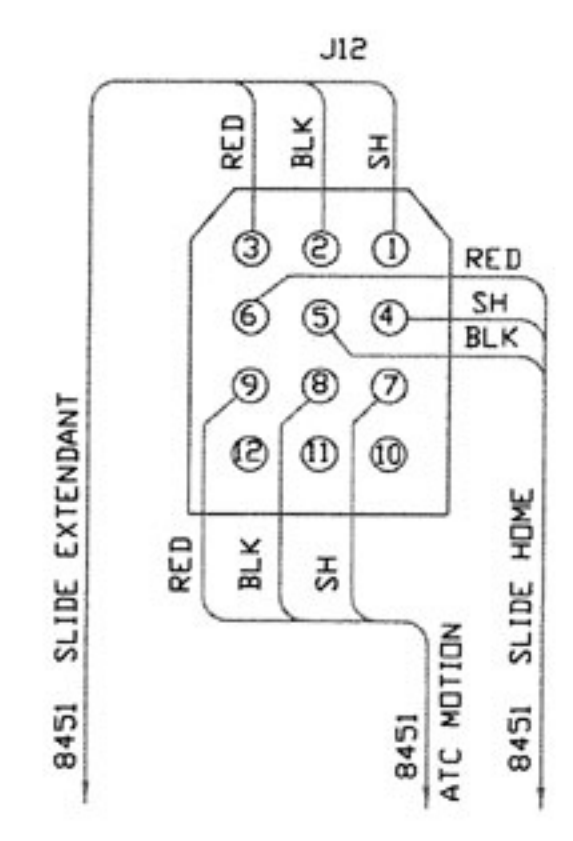
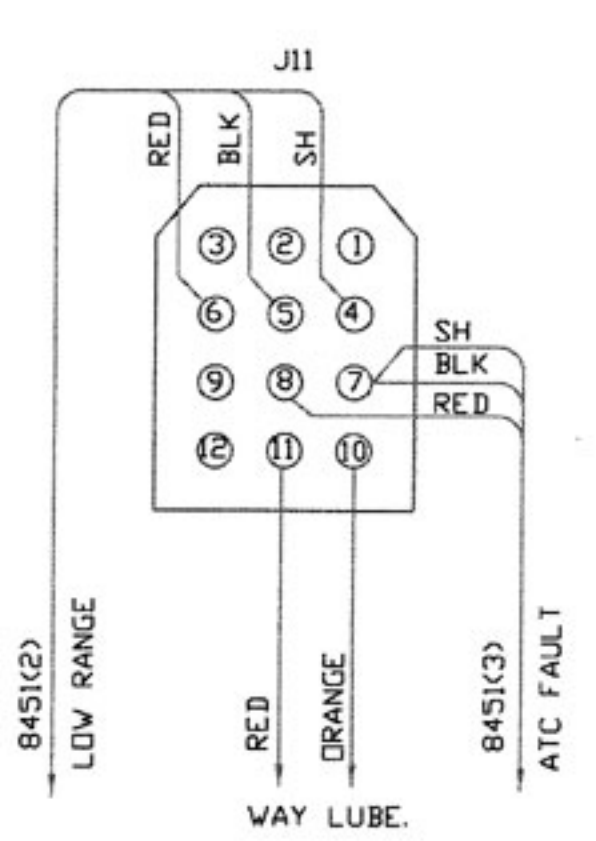
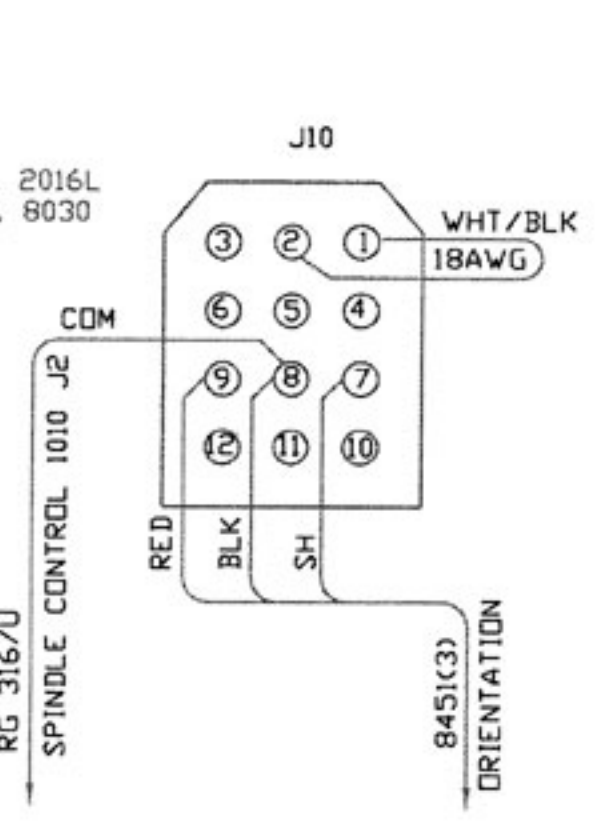
REMOVE EXISTING WIRES AND INSTALL 20 AVG PINK J13 #8

<p>DATE: 11/9/98 DRAWN: G. WOOSTER CHECKED: [] DESIGNED: [] COURTESY: []</p>		<p>DATE: 11/9/98 DRAWN: G. WOOSTER CHECKED: [] DESIGNED: [] COURTESY: []</p>	
<p>PROJECT: CE DOOR INTERLOCK WIRING</p>		<p>PROJECT: DC MACHINE</p>	
<p>REV: D REVISED BY: [] DATE: 11/9/98</p>		<p>REV: C REVISED BY: [] DATE: 11/9/98</p>	
<p>WIRING: WIR-0696C</p>		<p>WIRING: WRC-0696</p>	

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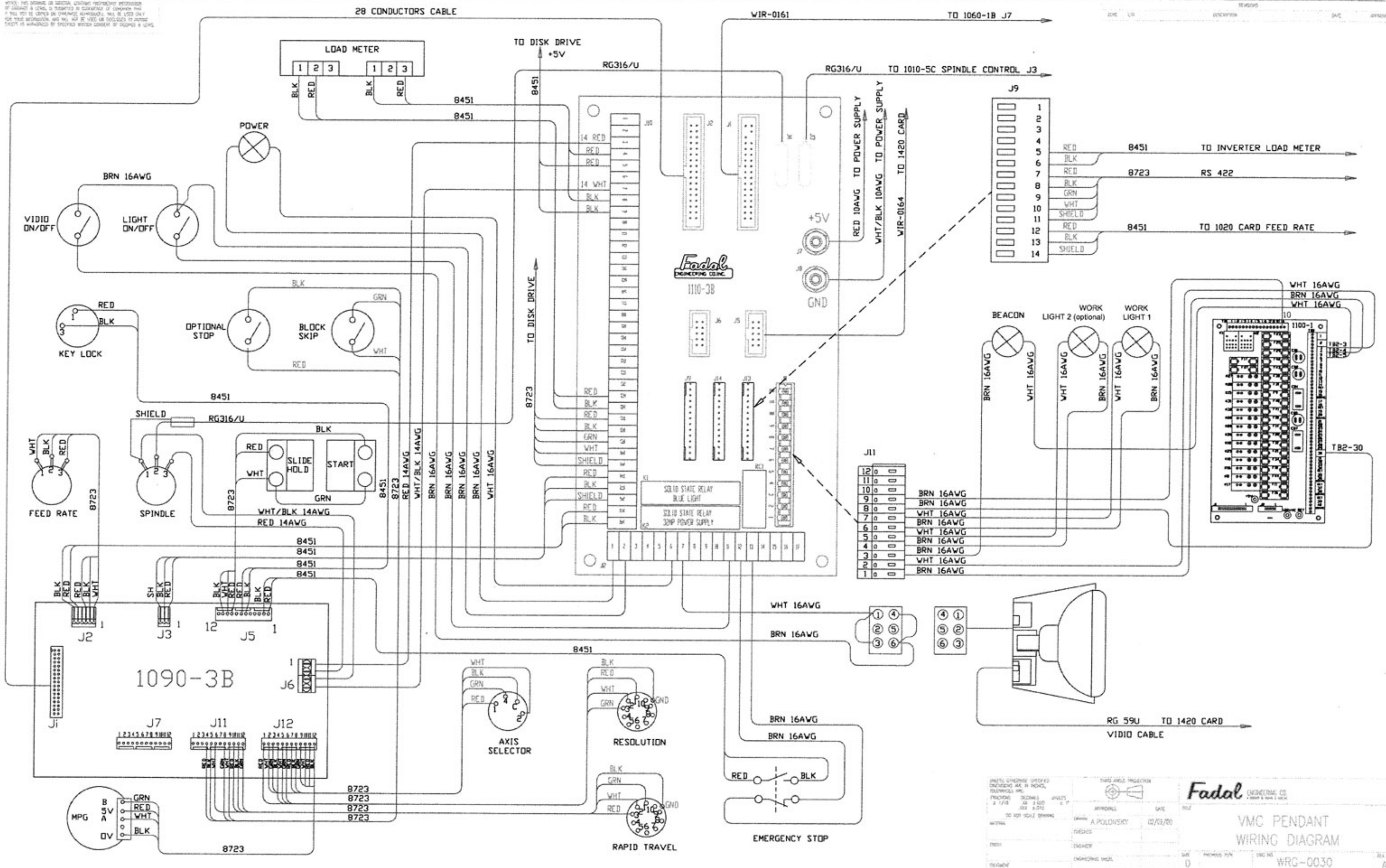


EXEPT: VMC 15, 2016L, 3016L, 6030, 8030



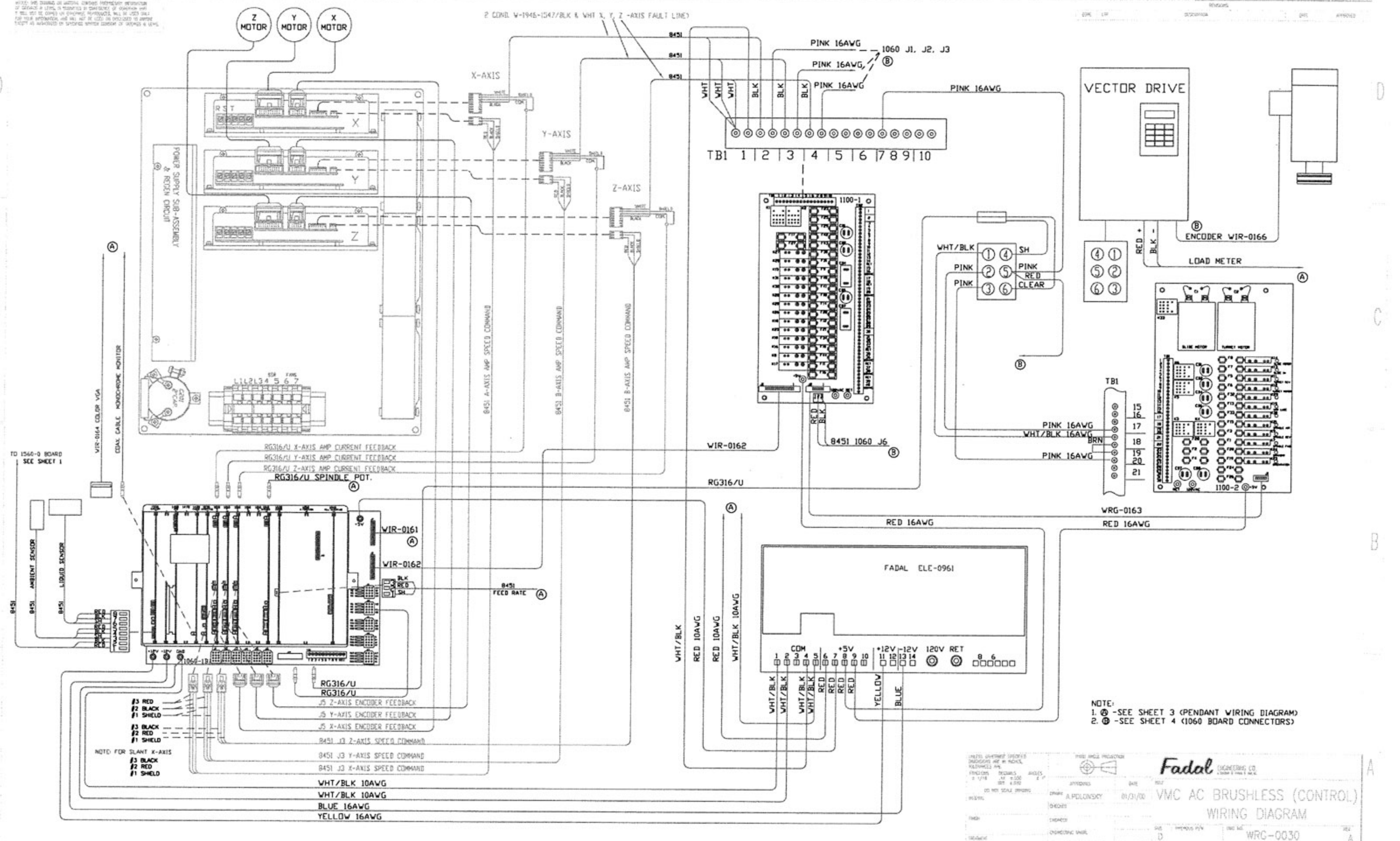
DESIGNED: [] DRAWN: [] CHECKED: [] APPROVED: [] DATE: 02/08/00 TITLE: VMC AC BRUSHLESS (CONNECTORS) WIRING DIAGRAM PART NO: WRG-0030 REV: A	<p>Fadal ENGINEERING CO.</p> <p>VMC AC BRUSHLESS (CONNECTORS) WIRING DIAGRAM</p> <p>WRG-0030</p> <p>REV: A</p>
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FADAL ENGINEERING CORP. 1110-3B 1 1/4" x 1 1/4" x 1 1/4" 100% INSULATED 100% UL LISTED		DATE: 02/02/80 APPROVED BY: [] CHECKED BY: [] DRAWN BY: A. POLONSKY	
TITLE: VMC PENDANT WIRING DIAGRAM PROJECT: [] SHEET: 3 OF 5		Fadal ENGINEERING CORP. 1110-3B 1 1/4" x 1 1/4" x 1 1/4" 100% INSULATED 100% UL LISTED	

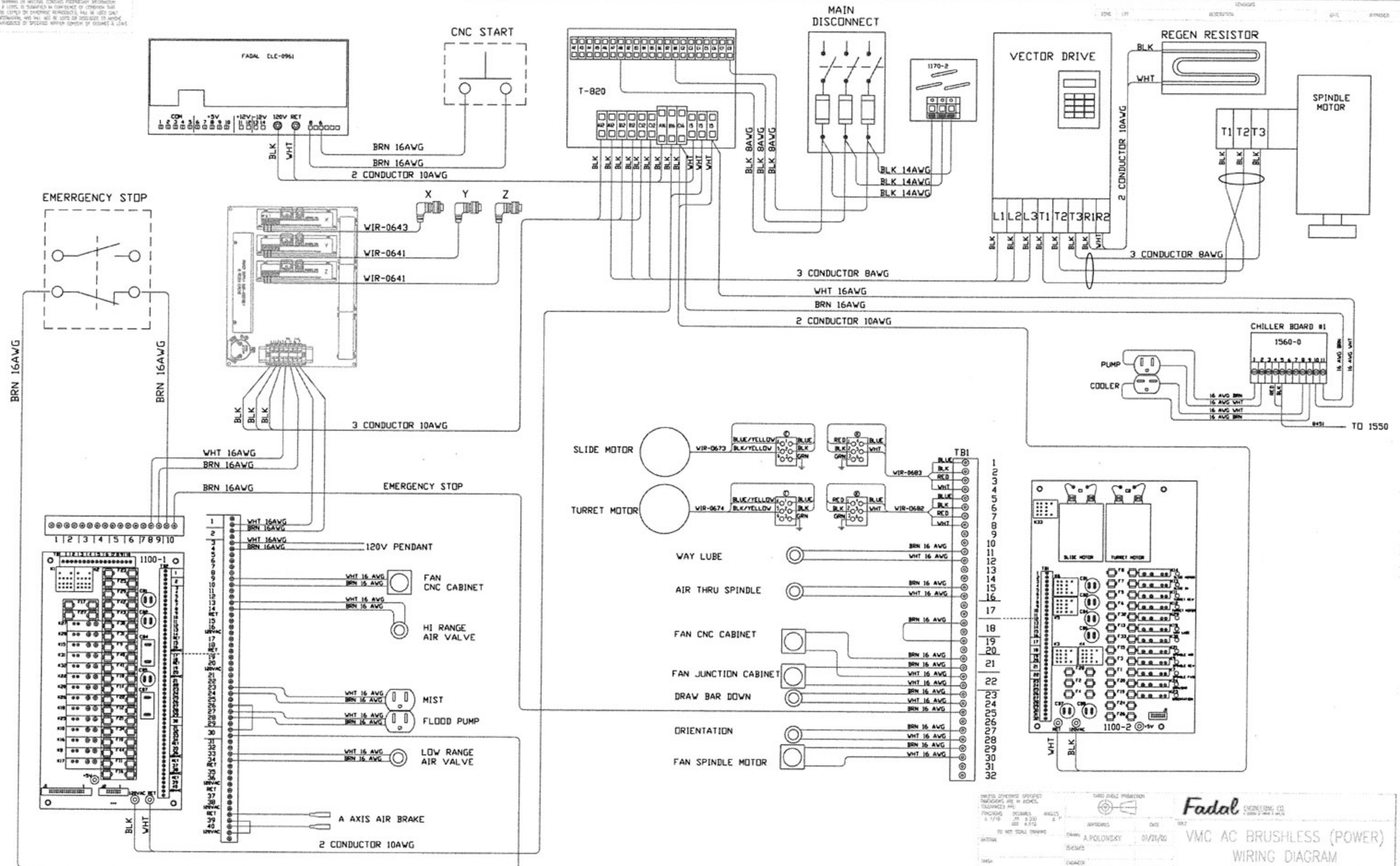
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NOTE:
1. ⓐ - SEE SHEET 3 (PENDANT WIRING DIAGRAM)
2. ⓑ - SEE SHEET 4 (1060 BOARD CONNECTORS)

<p>DATE: 08/21/00 DRAWN: A. PELOUSKY CHECKED: [] DESIGNED: [] INSTRUMENTED: []</p>	<p>DATE: 08/21/00 REV: 2 APP'D: []</p>	<p>Fadal ENGINEERING CO. VMC AC BRUSHLESS (CONTROL) WIRING DIAGRAM WRC-0030 REV. 2 A</p>
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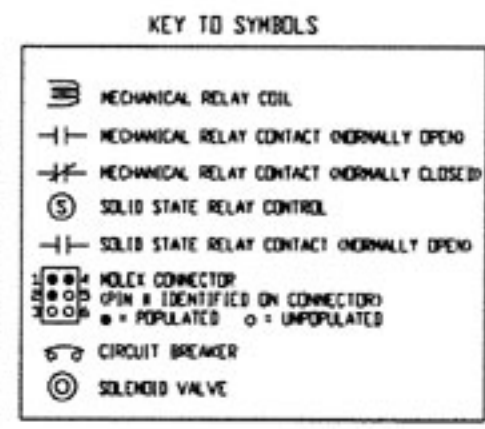
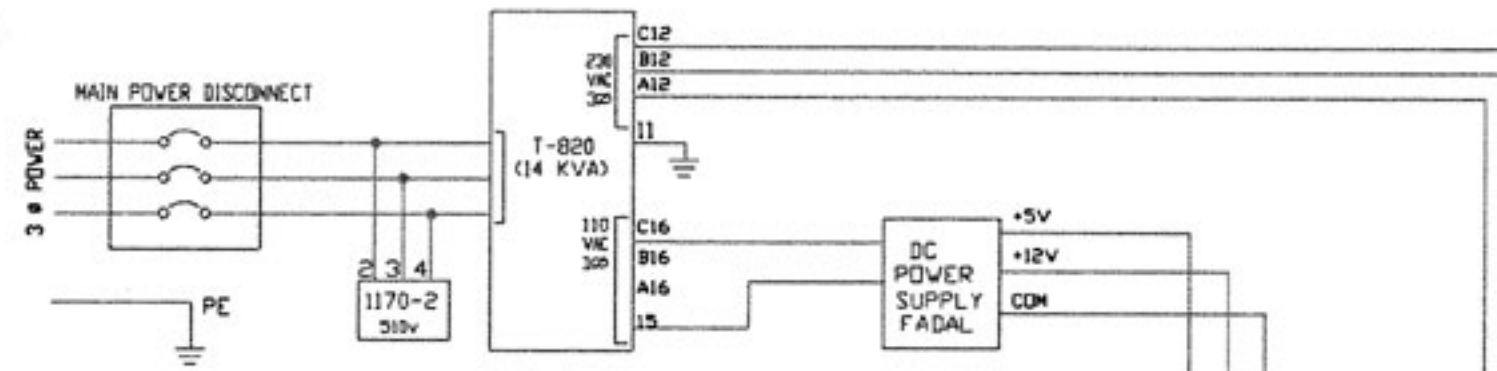
NOTE: THE WIRING OF THIS UNIT CONTAINS PROPRIETARY INFORMATION OF FADAL. IT IS TO BE KEPT IN CONFIDENCE BY THE PERSONS TO WHOM IT IS LOANED OR REPRODUCED. NO PART OF THIS DOCUMENT IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF FADAL.



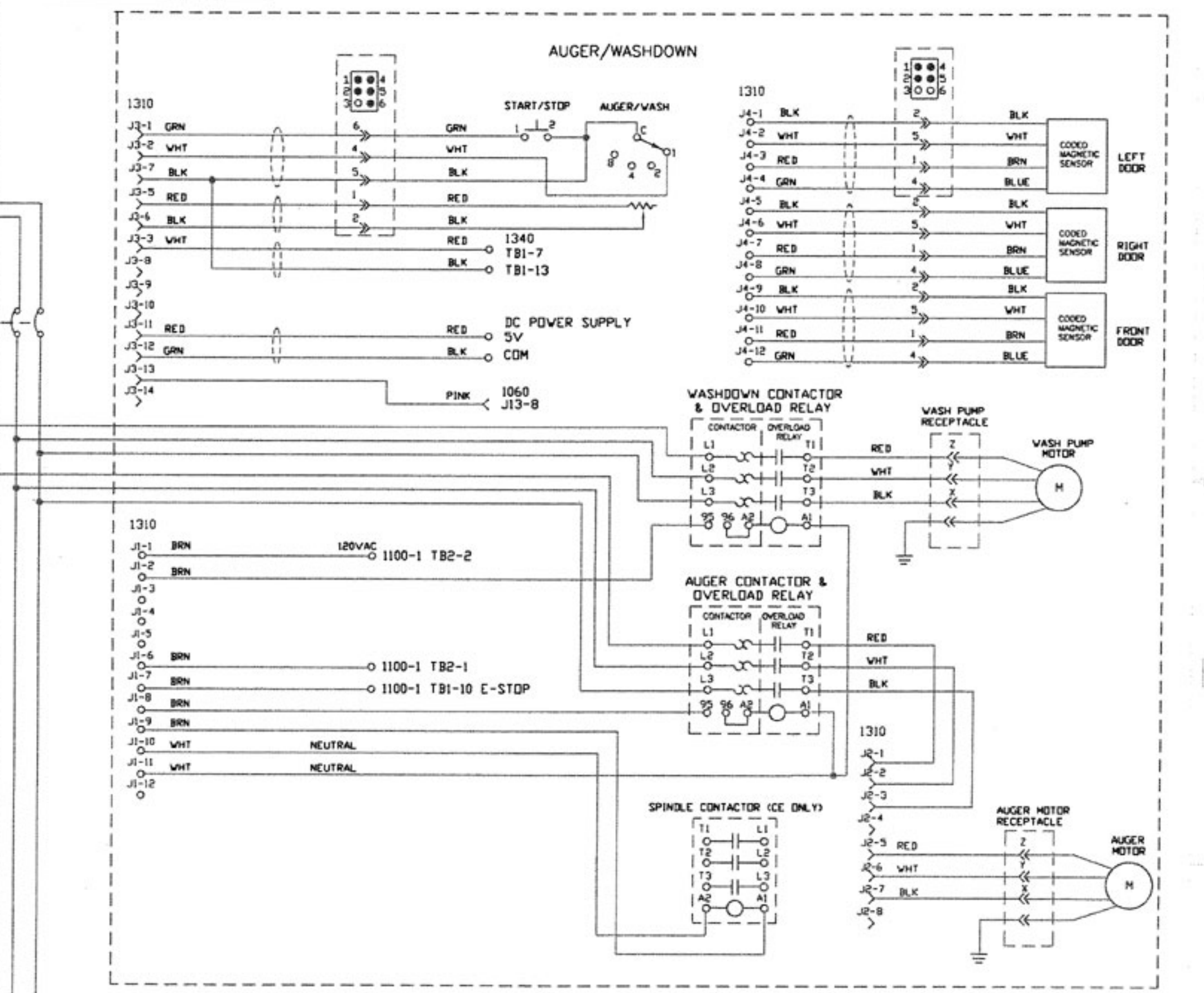
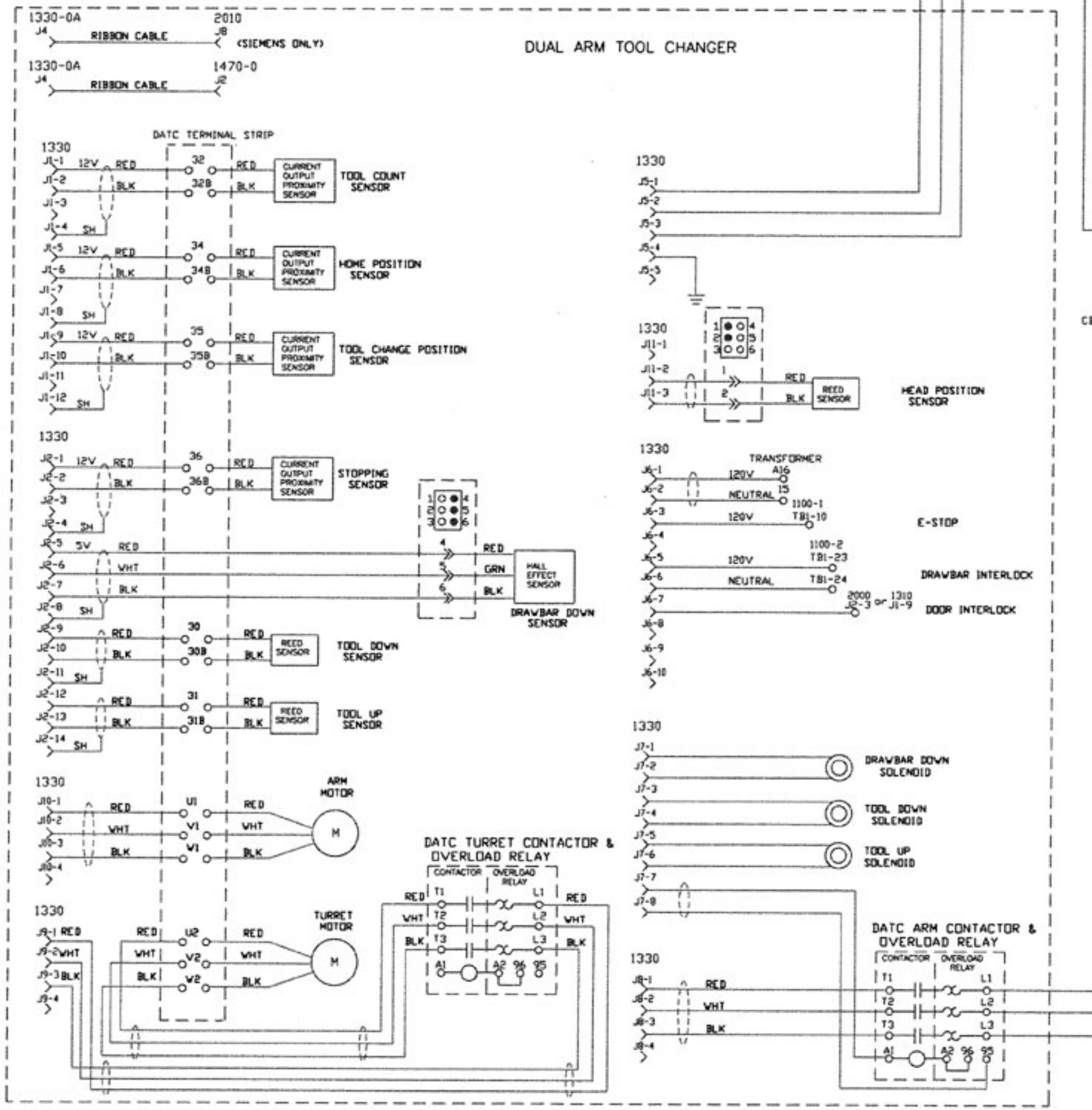
<p>DATE: 01/21/00 DRAWN: A. POLONDAY CHECKED: [] ENGINEER: []</p>		<p>DATE: 01/21/00 BY: []</p>	
<p>PROJECT: VMC AC BRUSHLESS (POWER)</p>		<p>WIRING DIAGRAM</p>	
<p>REV: 0</p>		<p>WRC-0030</p>	

Fadal ENGINEERING CO.

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DATE	BY	DESCRIPTION	DATE	BY
C5	B	ECO-1175 DATC AND AUGER 3-PHASE FROM SAME CIRCUIT BREAKER.	01/01/01	C.WOOSTER
A8		ADD OVERLOAD RELAY TO DATC CONTACTOR		
B2		ECO-1207 ADD OVERLOAD RELAY TO AUGER CONTACTOR.		
C5		ALSO CORRECTED PINOUT OF MOLEX CONNECTOR.		
A7	C	ECO-1238 ADD CONTACTOR & OL RELAY TO DATC TURRET	05/07/01	
B3		ECO-1114 VALVES #1, 2, 3 AND WIRES REMOVED		



UNITS OVERSEAS SHIPPED AIRFREIGHT AND 18 WEEKS FOLLOWING DELIVERY

ENCLOSURE: DRAWINGS: SHEETS: 2 P.

DO NOT SCALE DRAWING

APPROVED: A. POLONSKY 08/11/00

DATE: 08/11/00

DESIGNED: ENGAGED: CHECKING OVER: 08/11/00

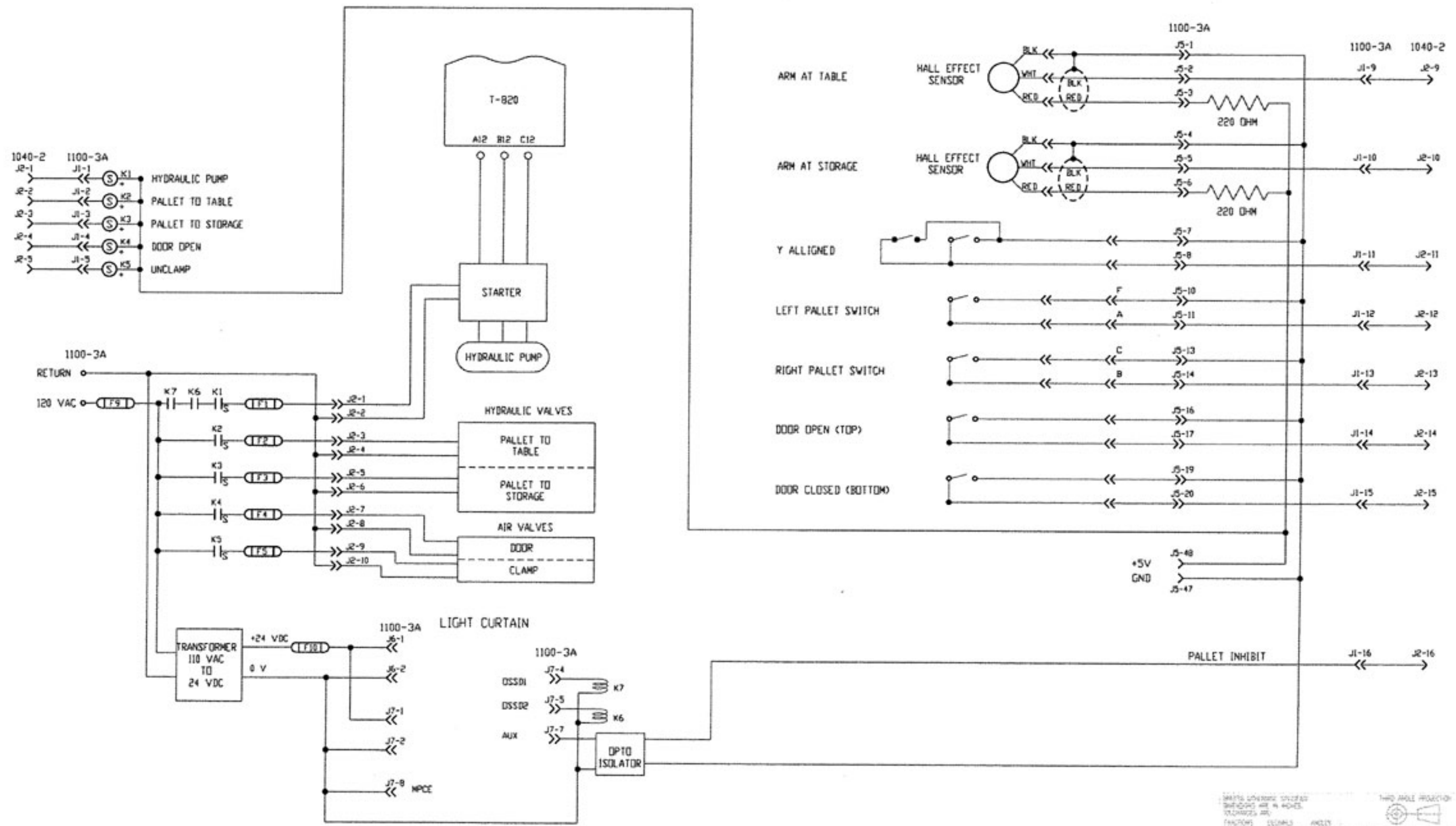
DATE: 08/11/00

Fadal ENGINEERING CO. FADAL VMC - ELECTRICAL DUAL ARM/AUGER

WRC-1002

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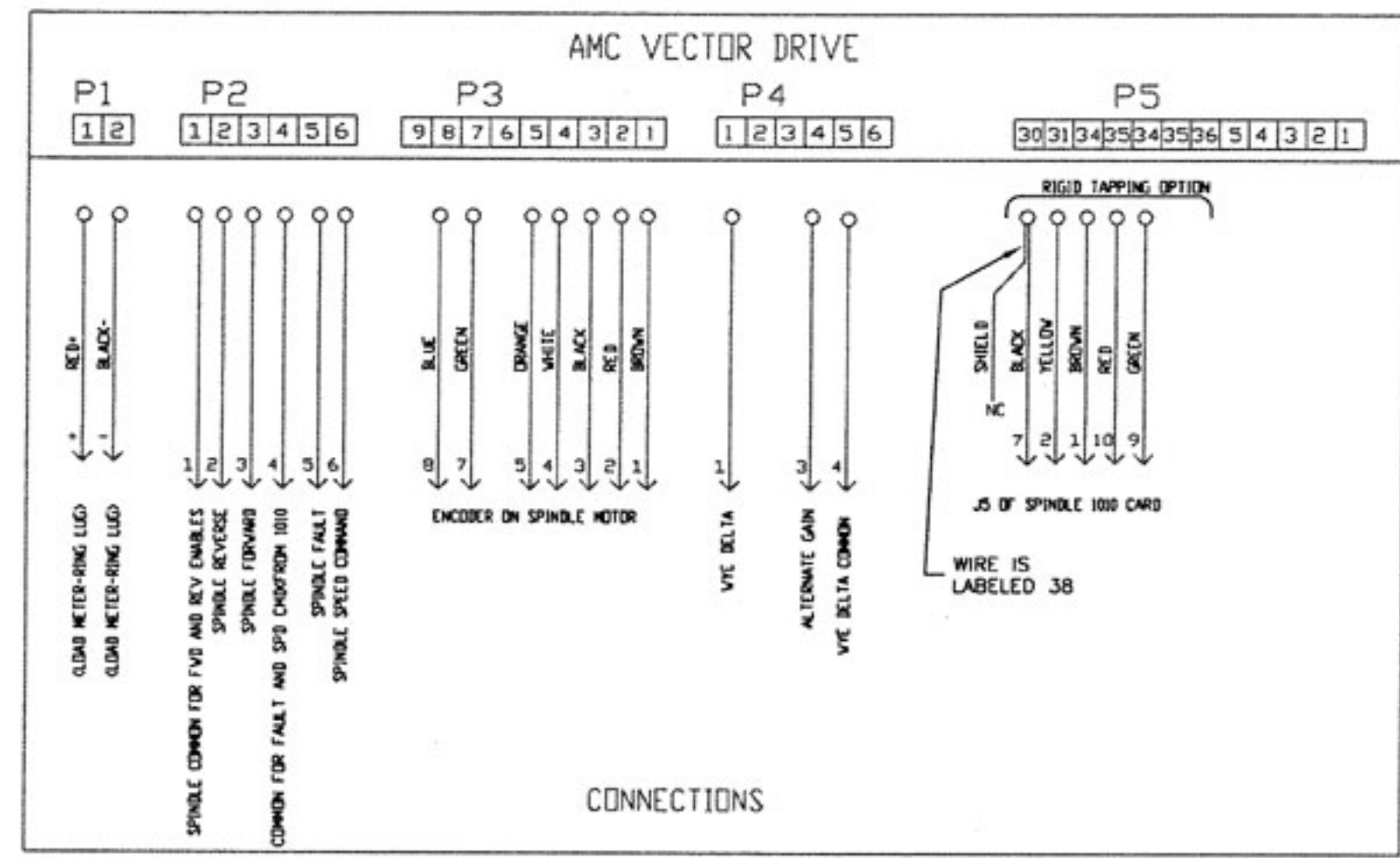
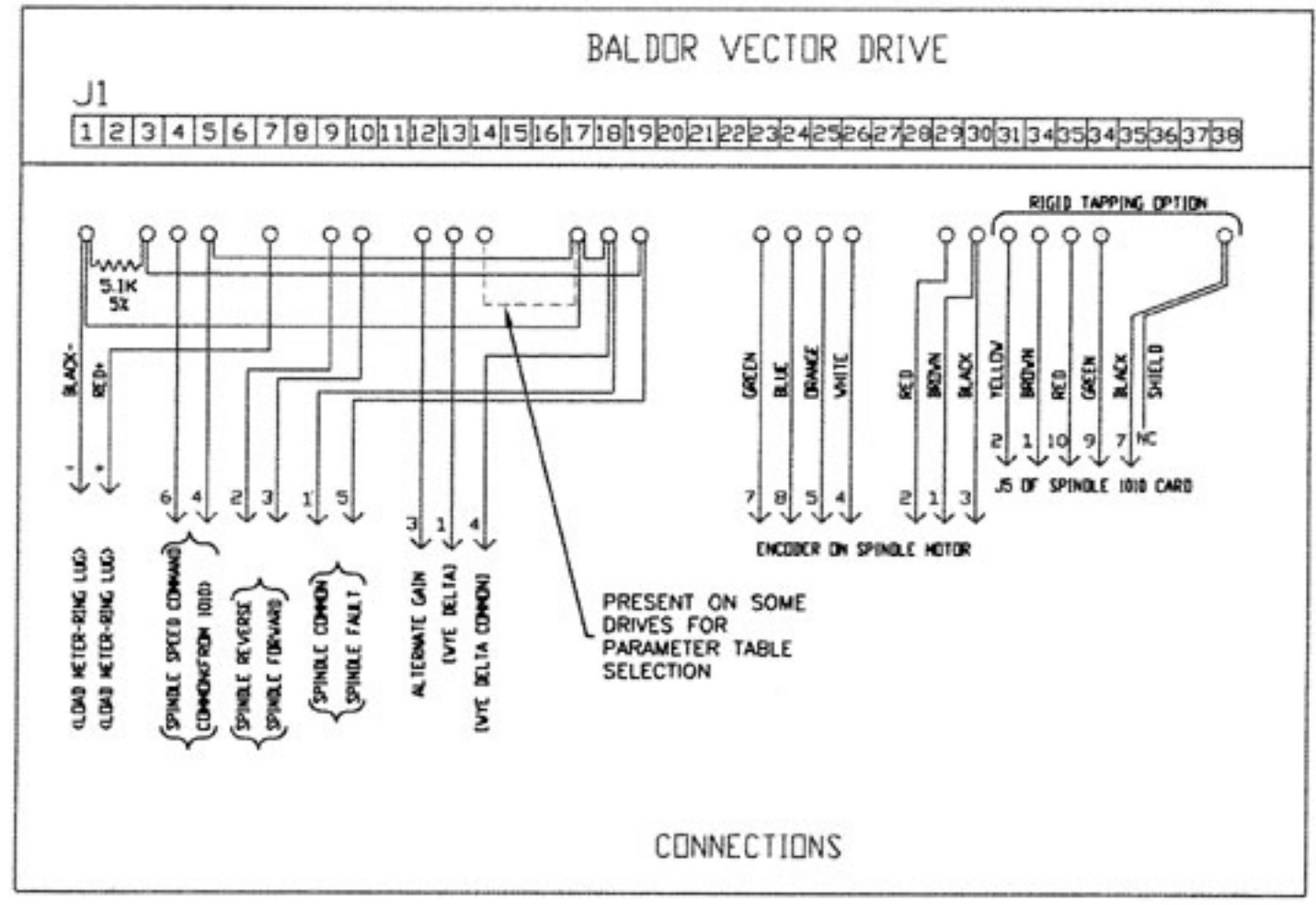
REV	DATE	DESCRIPTION	BY	CHKD
J	10/27/98	ALL SHEETS UPDATED AND REVISED FOR CE		
K	2/15/00	UPDATED AND REVISED FOR 1100-3A AND NEW LIGHT CURTAIN (ECO-0708)		G. Vooster



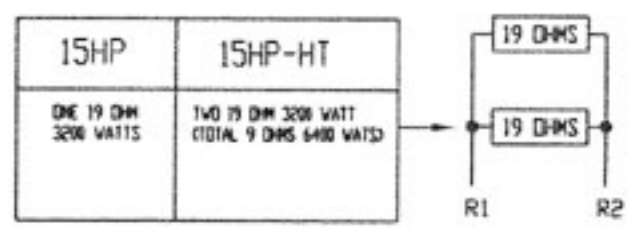
<p>DATE: 10/27/98 DRAWN: G. VOOSTER CHECKED: G. VOOSTER TITLE: FADAL VMC - ELECTRICAL PALLET CHANGER</p>	<p>REV: 0 DATE: 10/27/98 BY: G. VOOSTER DESCRIPTION: ALL SHEETS UPDATED AND REVISED FOR CE</p>	<p>REV: 1 DATE: 2/15/00 BY: G. VOOSTER DESCRIPTION: UPDATED AND REVISED FOR 1100-3A AND NEW LIGHT CURTAIN (ECO-0708)</p>
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Fadal ENGINEERING LTD.
FADAL VMC - ELECTRICAL PALLET CHANGER
WRG-1002
SHEET 3 OF 5

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SPINDLE DRIVE BRAKE DESCRIPTION



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:
 FINISHES: 1/16 DECIMALS .0005 ANGLES 1/2 1/4
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:
 FINISHES: 1/16 DECIMALS .0005 ANGLES 1/2 1/4

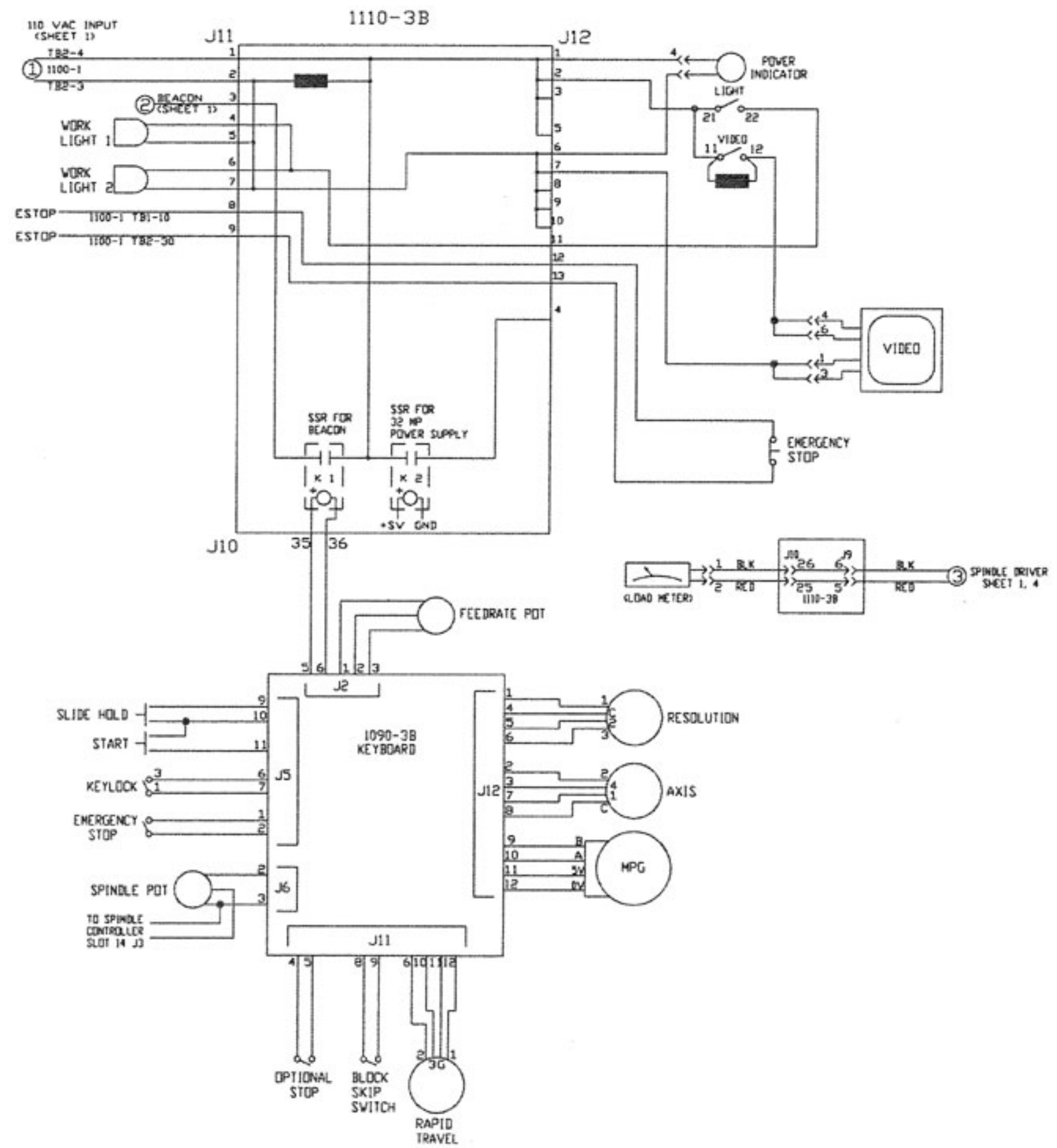
APPROVED: G. WOOSTER 10/11/06 DATE: 10/11/06 FILE: FADAL VMC - ELECTRICAL SPINDLE DRIVE CONNECTIONS

DESIGNED: ENGINEER: CHECKED: DRAWING NO.: WIR-1002J

Fadal ENGINEERING CO.
 1000 S. 10TH ST. SUITE 100
 WICHITA, KS 67202
 TEL: 316.262.1111 FAX: 316.262.1112

SCALE: 1/2" = 1"

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CHECKED BY: G. WOOSTER DATE: 10/27/88		Fadal ENGINEERING CO. 2000 S. 10TH AVE.	
DRAWN BY: G. WOOSTER DATE: 10/27/88		FADAL VMC - ELECTRICAL BASIC PENDANT	
PART NO.: WRG-1002J REV.: 0		REV.: 0 WRG-1002	
SHEET: 3 OF 4		DATE: 10/27/88	

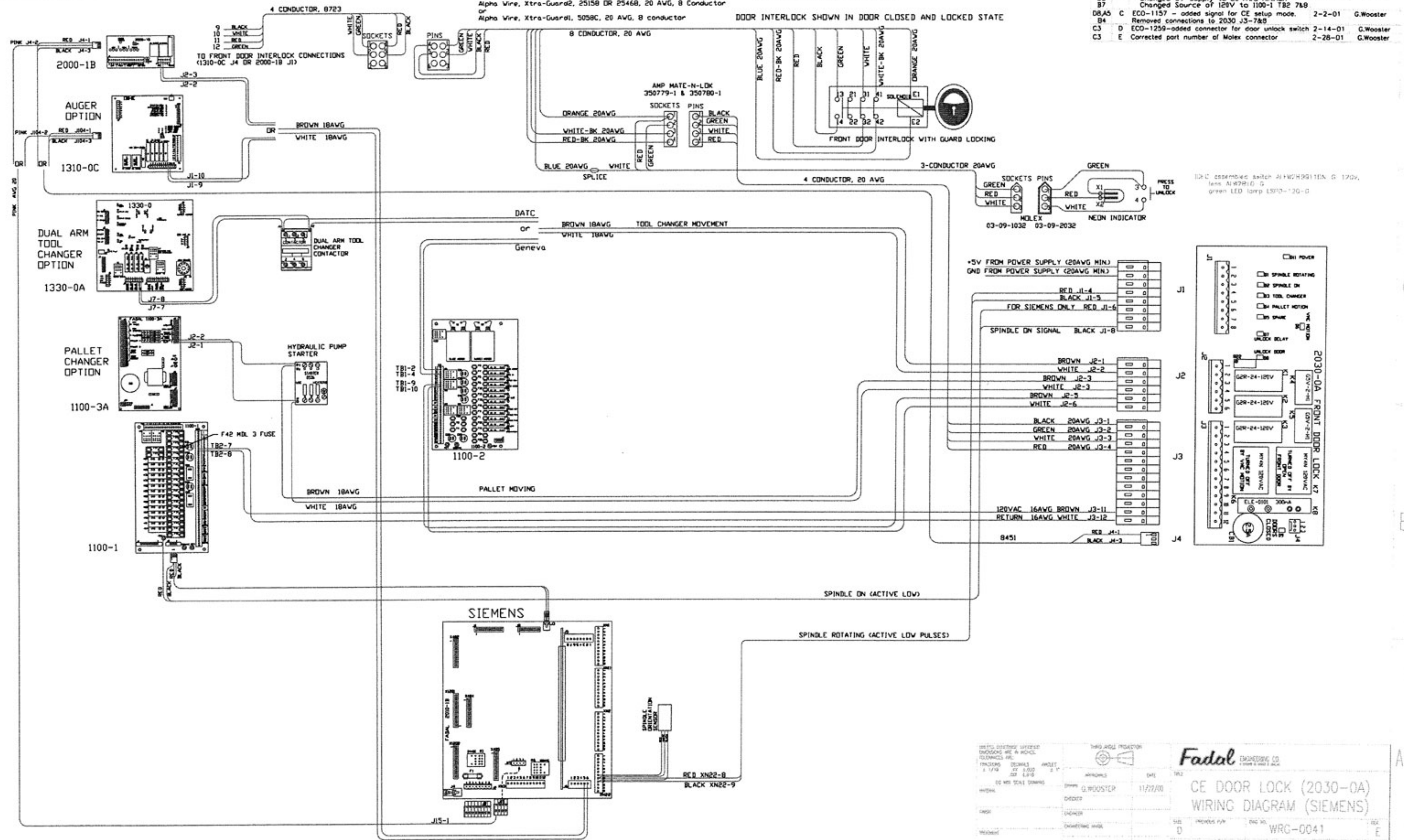
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RECOMMENDED CABLE TO INTERLOCK:
 Carol Cable, C0784, 20 AWG, 8 Conductor
 or
 Alpha Wire, Xtra-Guard2, 25158 DR 25468, 20 AWG, 8 Conductor
 or
 Alpha Wire, Xtra-Guard1, 5058C, 20 AWG, 8 conductor

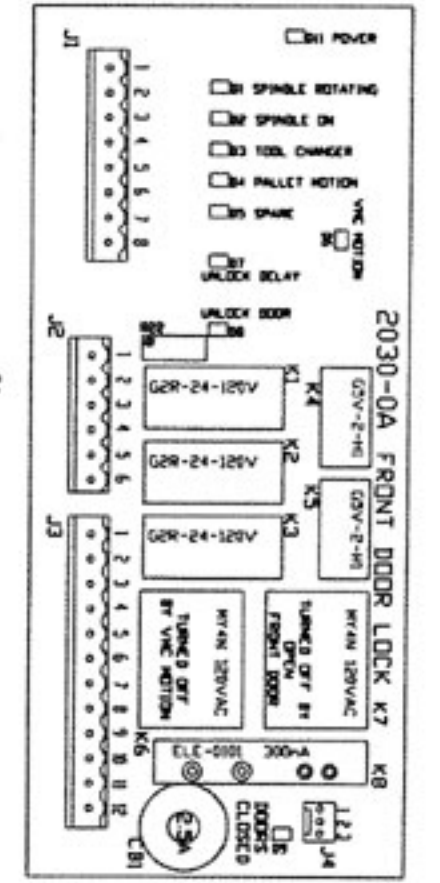
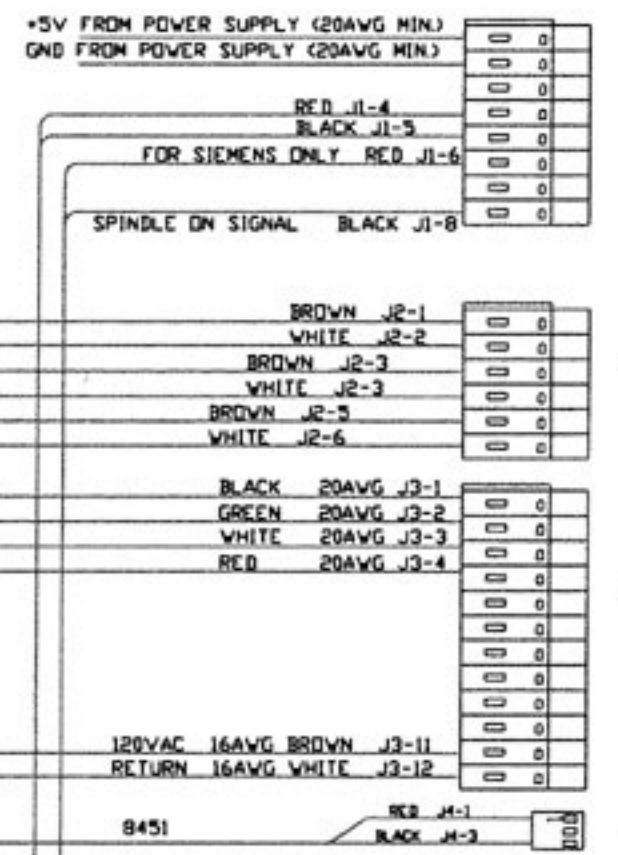
INTERLOCK TERMINAL NUMBERING IS FOR:
 Euchner TP3-4121A110PG
 (also works with Banner SI-LS42UMSI)

DOOR INTERLOCK SHOWN IN DOOR CLOSED AND LOCKED STATE

REV	DATE	DESCRIPTION	BY
A	11-22-00	Initial Release, ECO-1044	G.Wooster
B3	12-27-00	Corrected wire color code to Amp Mate-n-Lok	G.Wooster
B7		Changed 5V supply to 20 AWG minimum	
		Changed Source of 120V to 1100-1 T&E 7&8	
DBA5	2-2-01	ECO-1157 - added signal for CE setup mode.	G.Wooster
B4		Removed connections to 2030 J3-7&8	
D	2-14-01	ECO-1259-added connector for door unlock switch	G.Wooster
C3	2-28-01	Corrected part number of Molex connector	G.Wooster



120V AC assembled switch A1FWH9G110A, 0 170V, 1 amp, A1W9P1G, 0 green LED lamp E57D-130-0



Fadal ENGINEERING CO.

CE DOOR LOCK (2030-0A) WIRING DIAGRAM (SIEMENS)

DATE: 11/22/00
 BY: G.WOOSTER

REV: 0
 WRC-0041

SCALE: 1/1