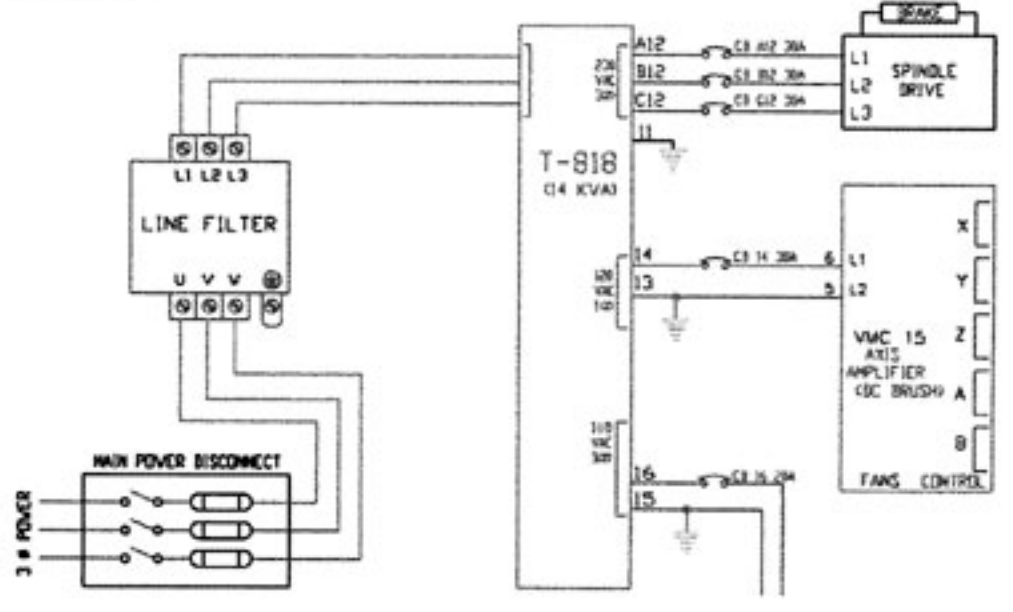
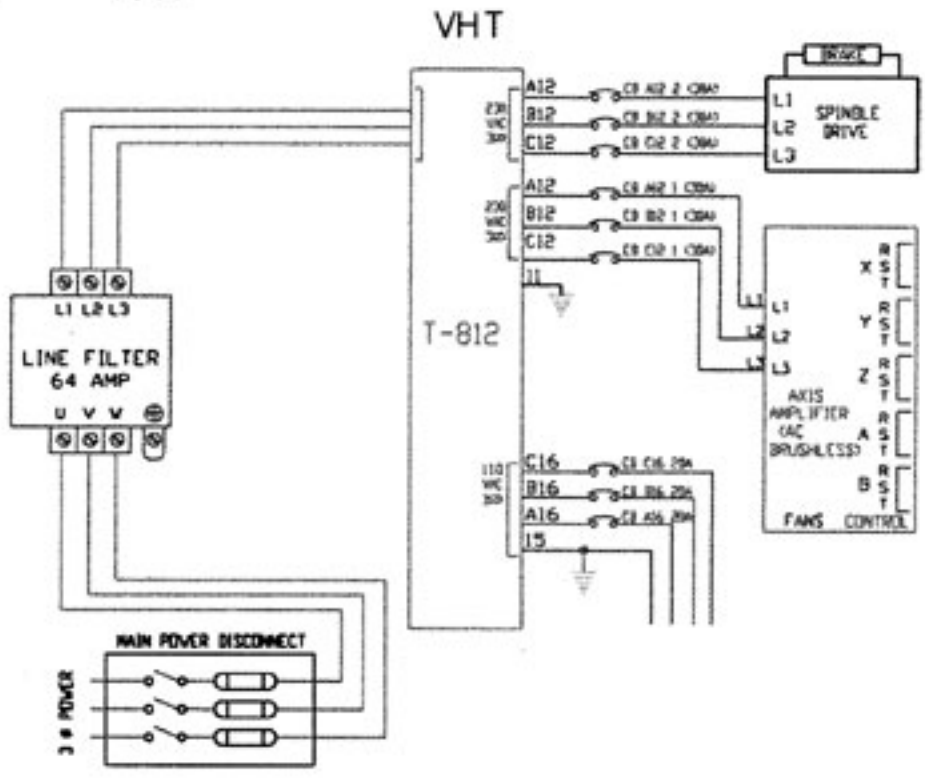
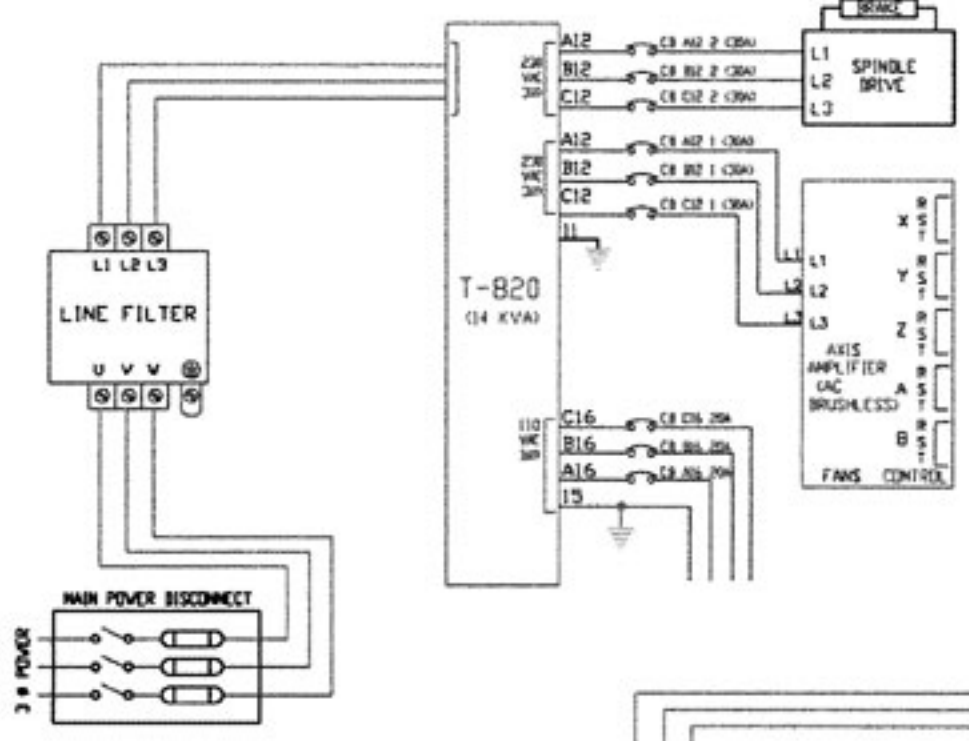
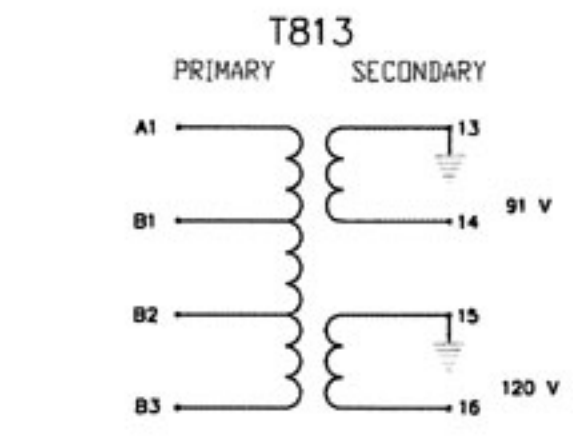
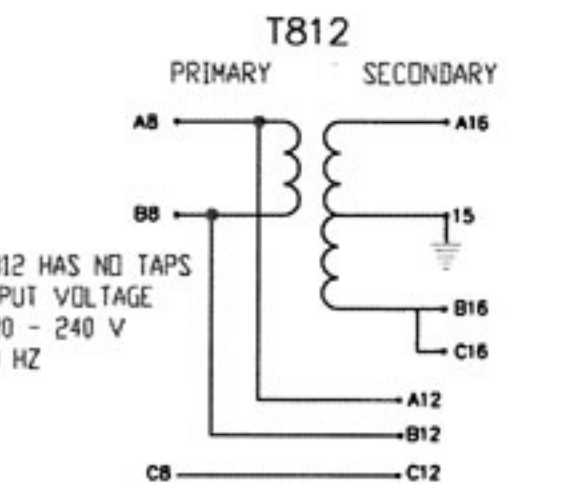
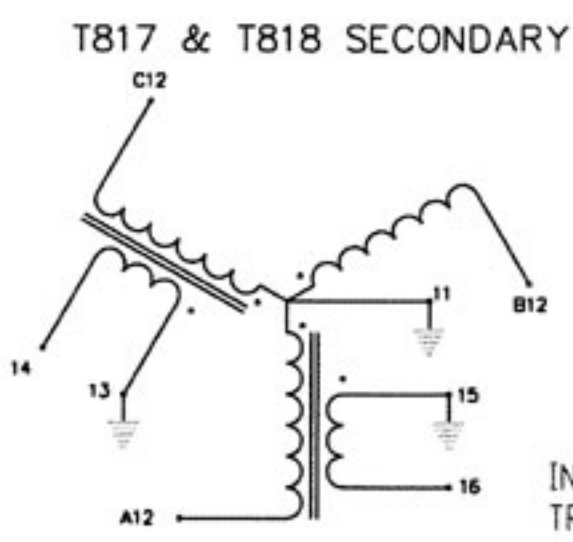
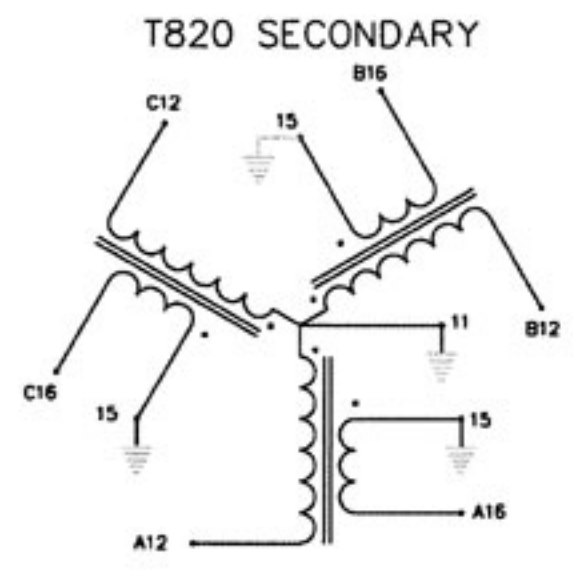


CE TRANSFORMERS & CIRCUIT BREAKERS

TRANSFORMER DIAGRAMS:

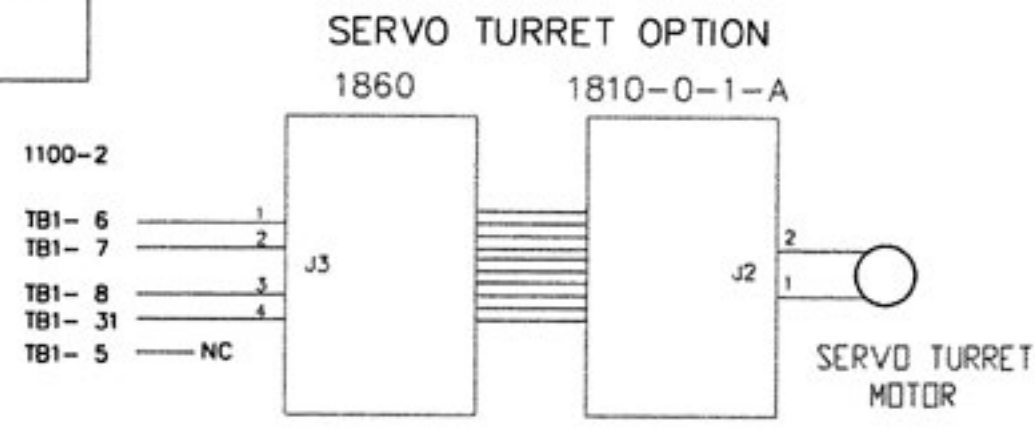
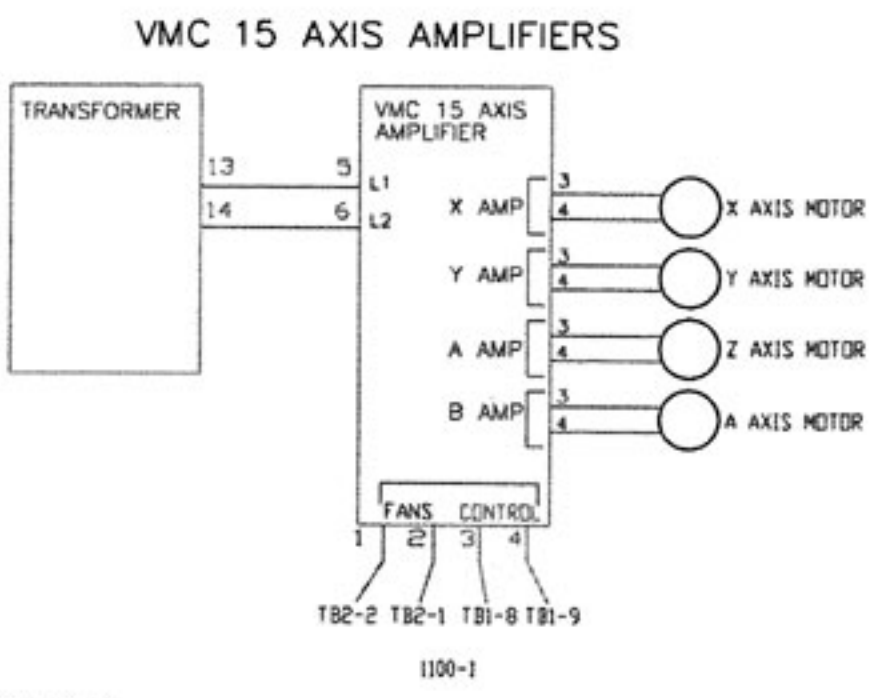
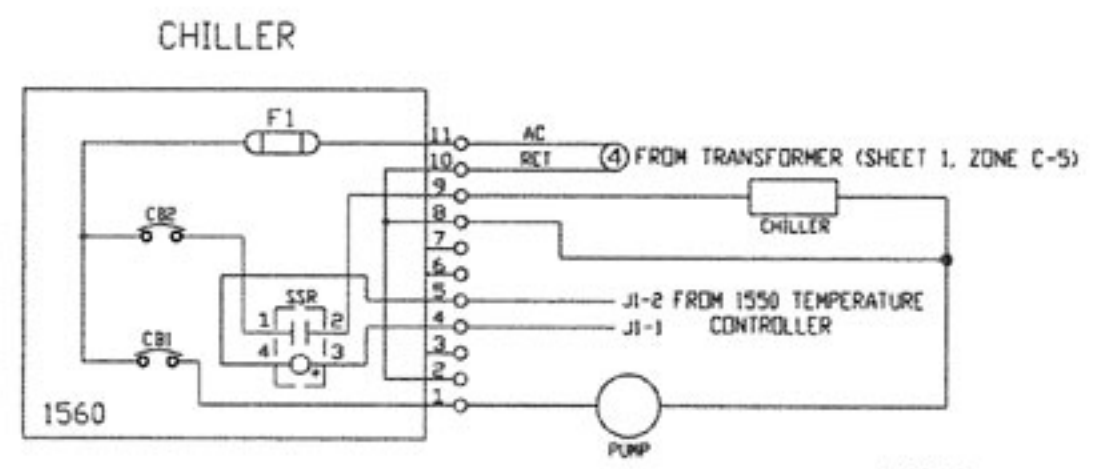


INPUT CONNECTIONS FOR MULTITAP TRANSFORMERS (EACH PHASE A, B & C)

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)



- J. ALL SHEETS UPDATED AND REVISED FOR CE 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

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

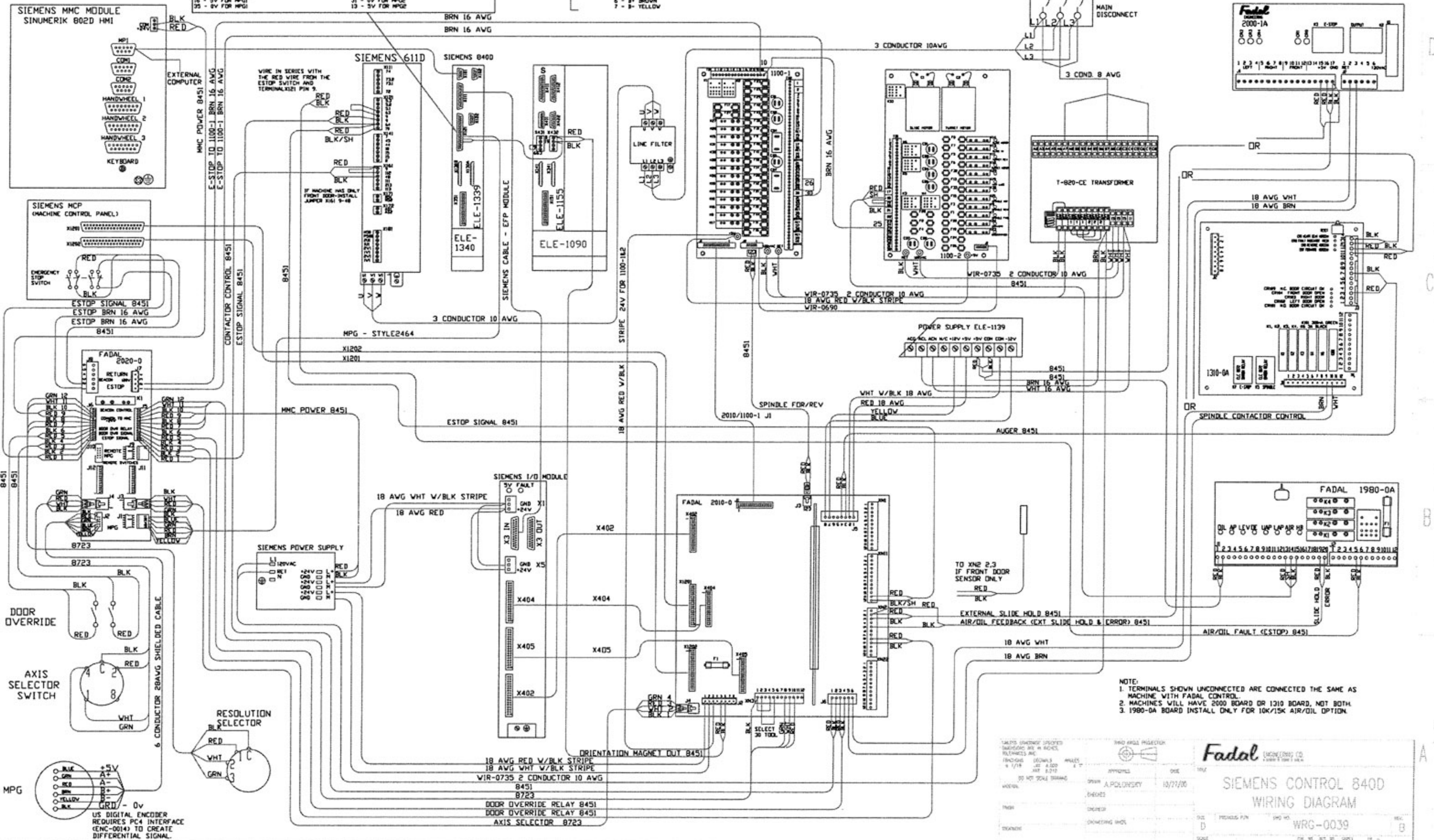
BOARD #	LOCATION	FUNCTION
1010 (X)	SLOT 9	X AXIS CONTROLLER
1010 (Y)	SLOT 10	Y AXIS CONTROLLER
1010 (Z)	SLOT 11	Z AXIS CONTROLLER
1010 (A)	SLOT 13	A AXIS CONTROLLER
1010 (B)	SLOT 12	B AXIS CONTROLLER
1010 (C)	SLOT 14	SPINDLE CONTROLLER
1020	SLOT 15	CLOCKS
1030	SLOT 8	COMPUTER INTERFACE
1040	SLOT 17	MILL 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
 CHECKED: []
 DESIGNED: []
 DRAWN: []
 Fadal ENGINEERING CO.
 FADAL VMC - ELECTRICAL NOTES & OPTIONS
 WRC-1002K WRC-1002

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- X121 37 PIN D-SHELL
- 29 TO 2431 PIN 19 (SPINDLE MAGNET)
 - 29 TO 2431 PIN 18 (SPINDLE MAGNET)
 - 30 - 5V REFERENCE FOR TOUCH PROBE
 - 9 - PROBE SIGNAL FOR TOUCH PROBE
 - 13 - A- FROM MPG
 - 34 - A+ FROM MPG
 - 16 - 5V FOR MPG
 - 35 - 5V FOR MPG
 - 17 - 5V FOR MPG
 - 36 - 5V FOR MPG
 - 37 - 5V FROM MPG
 - 31 - A- FROM MPG
 - 38 - A+ FROM MPG
 - 32 - 5V FOR MPG
 - 33 - 5V FROM MPG
 - 14 - 5V FROM MPG
 - 15 - 5V FROM MPG
 - 12 - 5V FROM MPG
 - 11 - 5V FROM MPG
 - 10 - 5V FROM 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 BROWN
 - 7 - 5V YELLOW



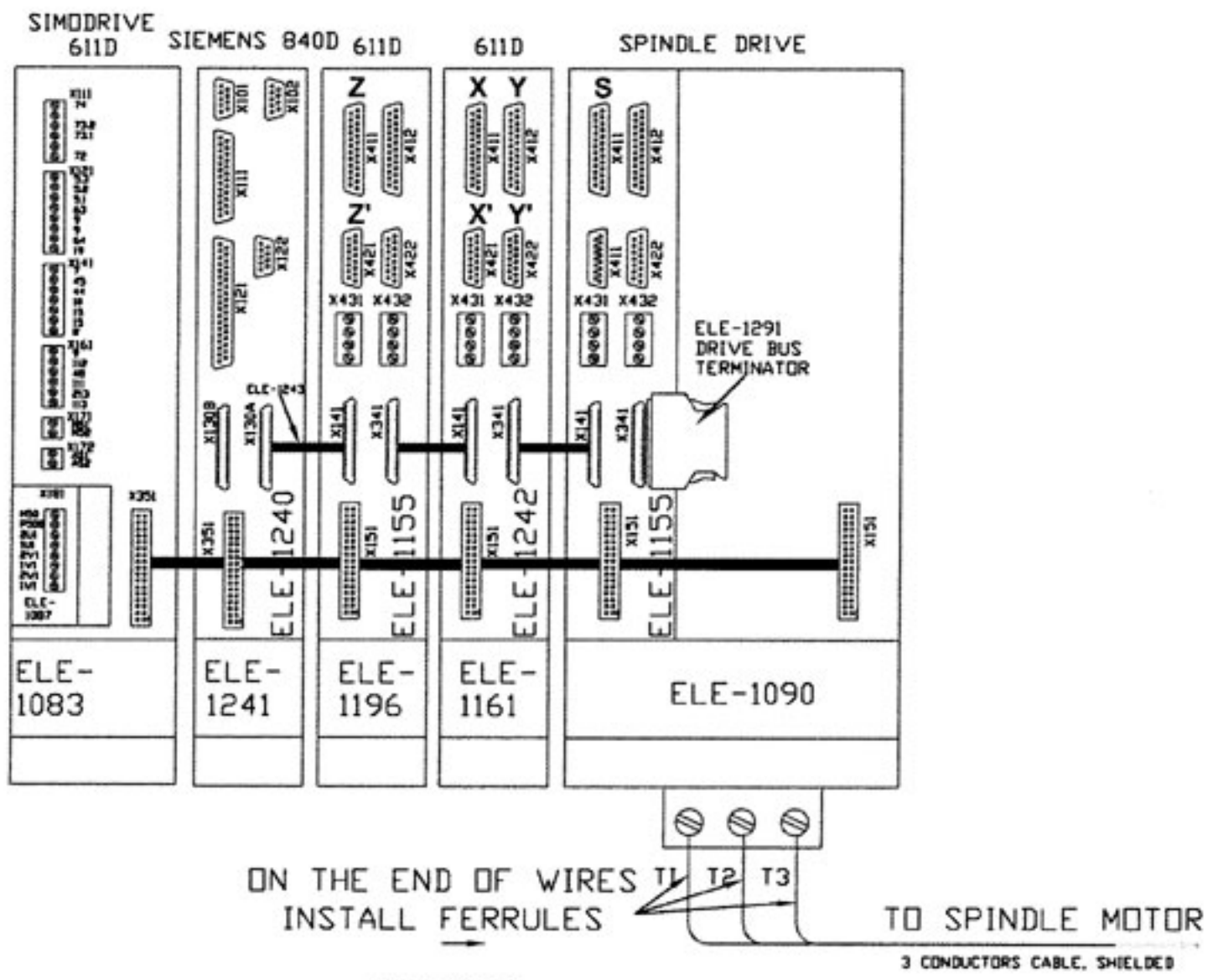
NOTE:
 1. TERMINALS SHOWN UNCONNECTED ARE CONNECTED THE SAME AS MACHINE WITH FADAL CONTROL.
 2. MACHINES WILL HAVE 2000 BOARD OR 1310 BOARD, NOT BOTH.
 3. 1980-0A BOARD INSTALL ONLY FOR 10K/15K AIR/OIL OPTION.

DATE: 10/71/80
 DRAWN: A. POLANSKY
 CHECKED: []
 APPROVED: []
 TITLE: SIEMENS CONTROL 840D WIRING DIAGRAM
 PROJECT: []
 SHEET: 1 OF 2
 SCALE: []

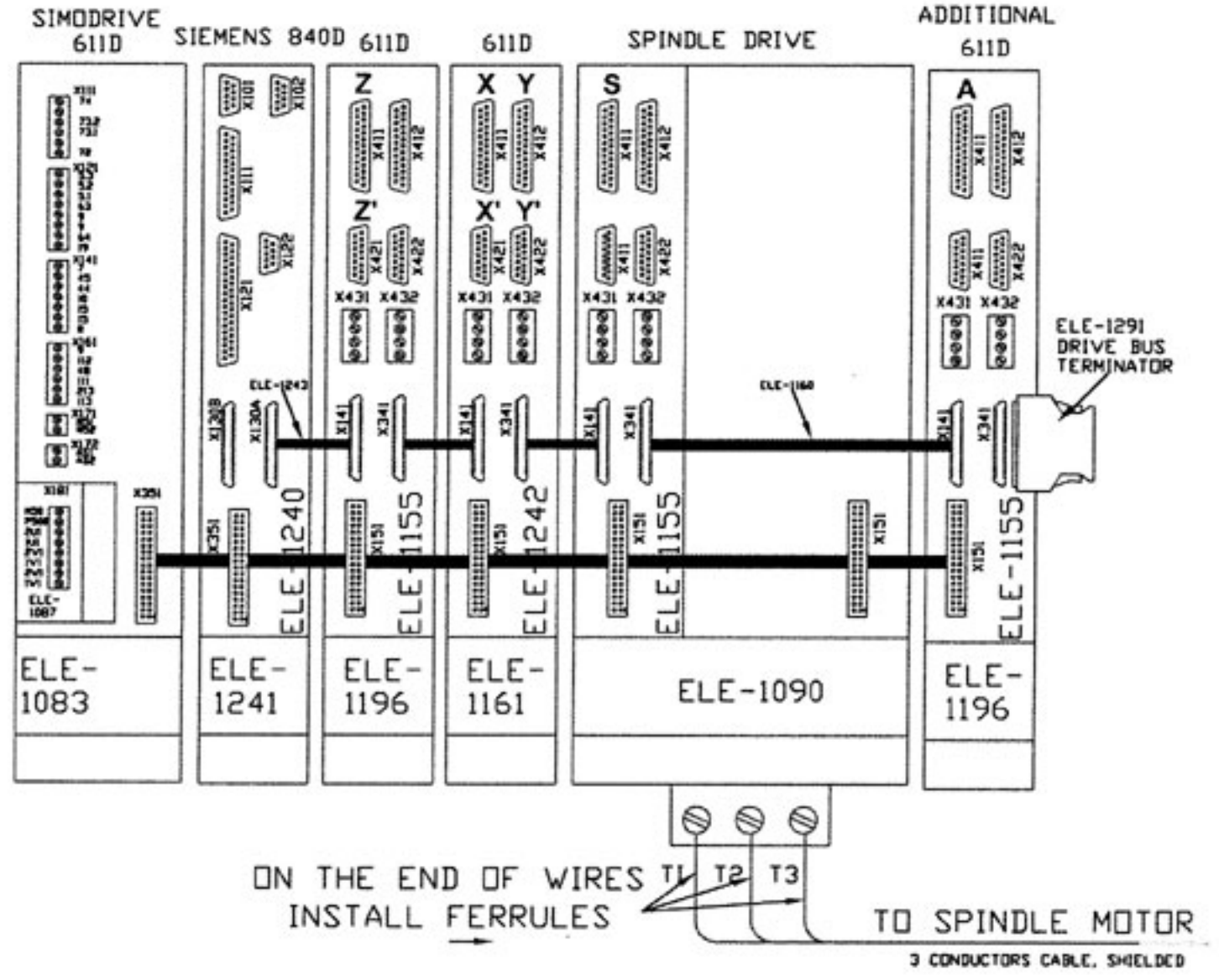
Fadal (INCORPORATED)
 2000-1A
 1980-0A

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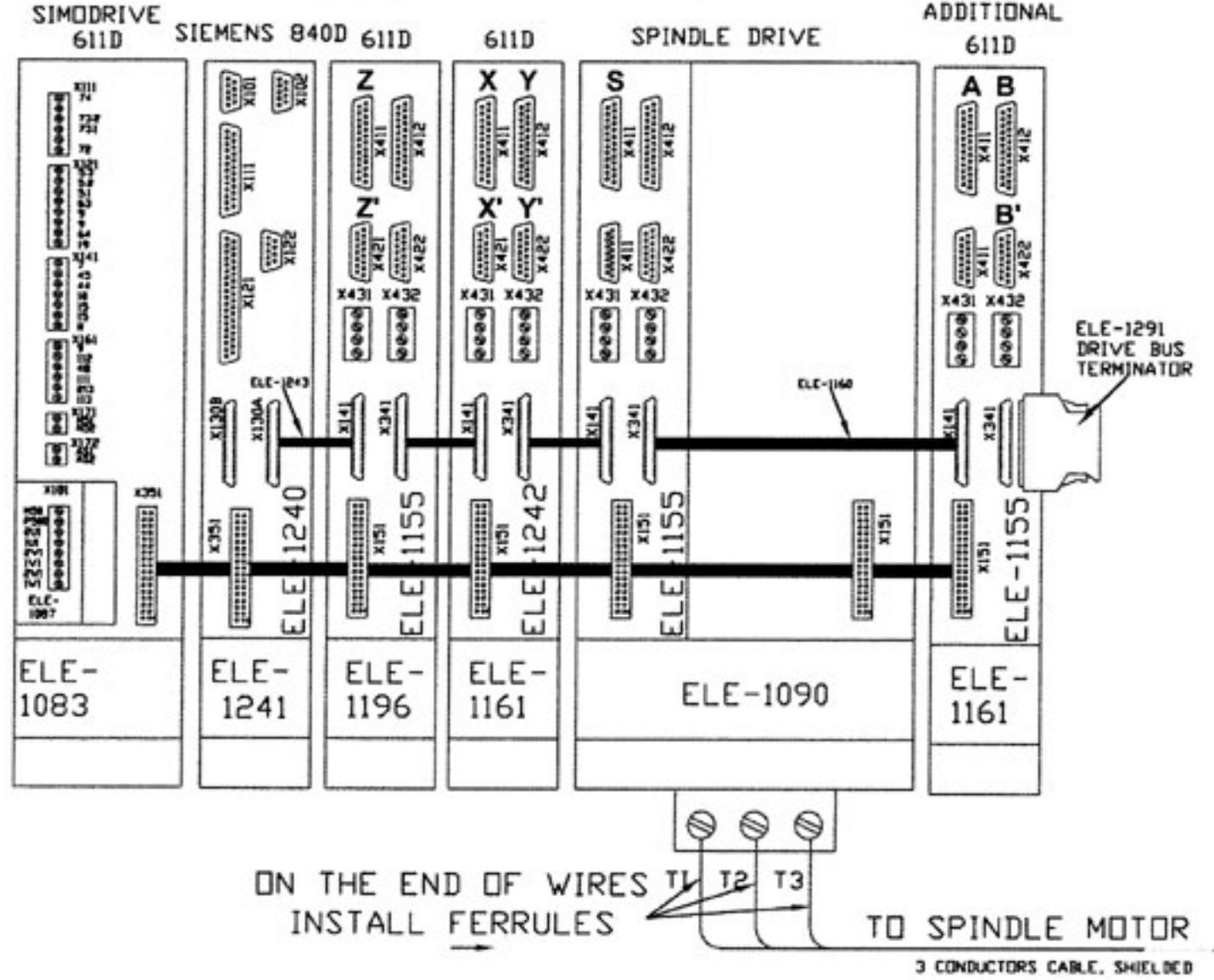
OPT-0266
 STANDARD (X, Y, Z SCALE IF REQUIRE)



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

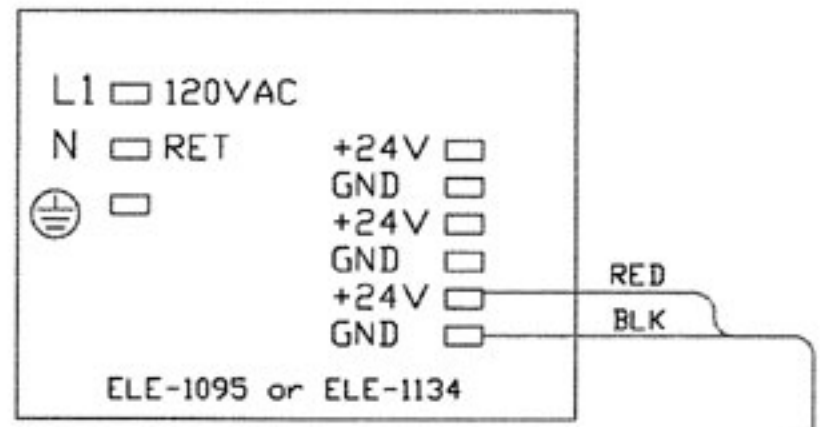
DATE: 10/25/00		DRAWN: ALP		CHECKED: []		APPROVED: []	
PROJECT: []		SHEET: 1 OF 2		REV: B		DATE: 10/25/00	
Fadal ENGINEERING CO.				SIEMENS CONTROL 840D			
WIRING DIAGRAM				WFG-0039			

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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

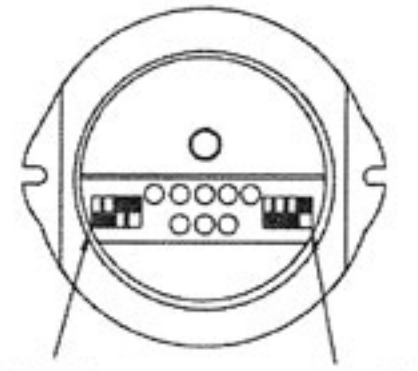
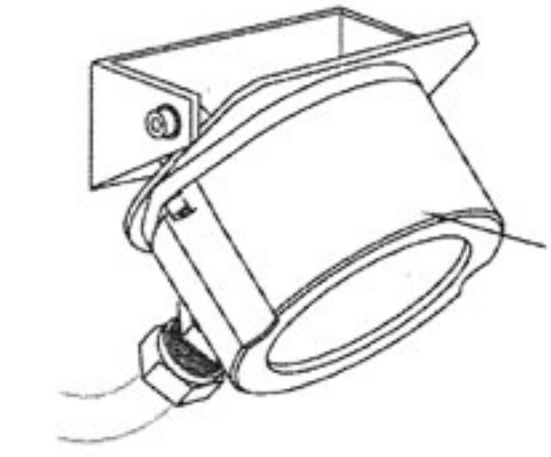
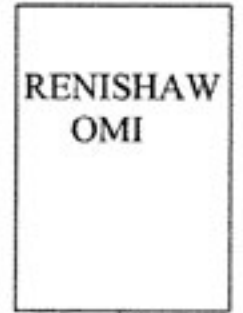
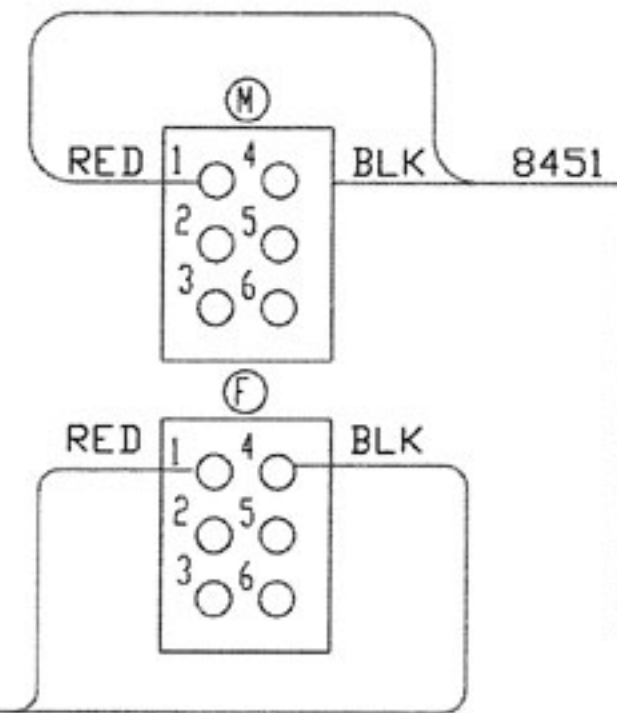
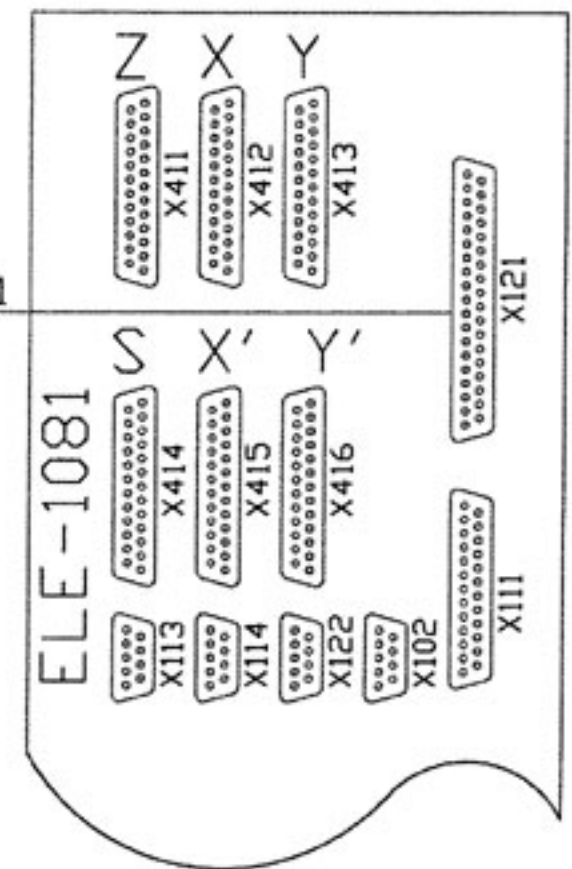
DATE: 08/16/00
 08/21/00
 10/05/00

24V POWER SUPPLY

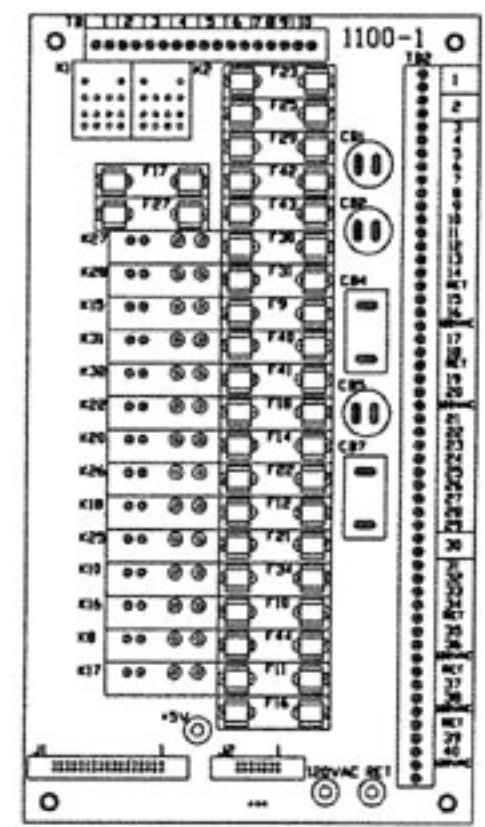
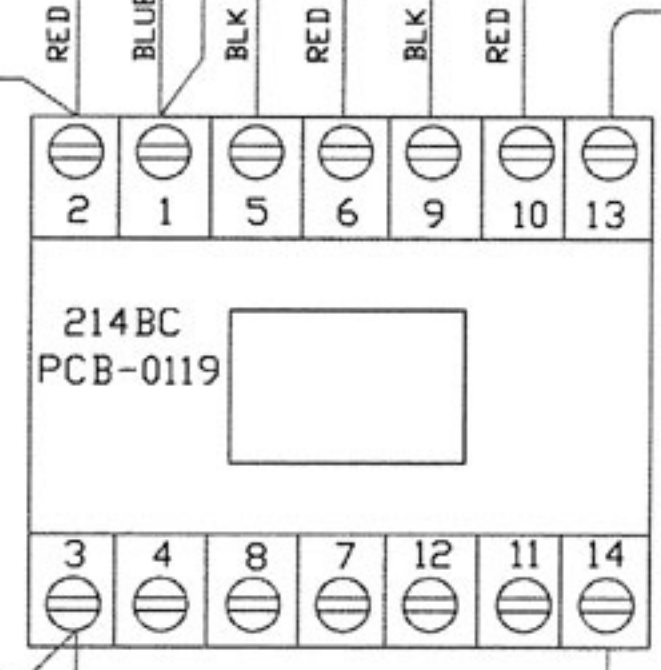
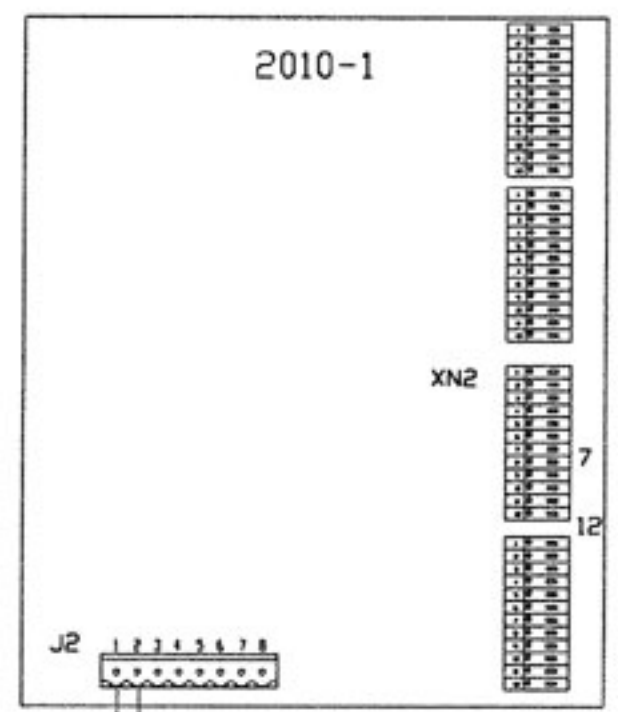
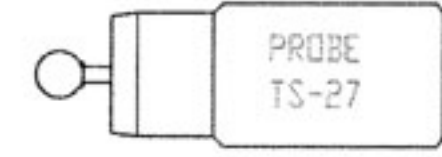


FOR THE PROBE OPTION
 CONNECTOR X121 IS
 PRE-WIRED WITH 8451
 WIRE. PIN 10-0V BLACK,
 PIN 9-SIGNAL RED.

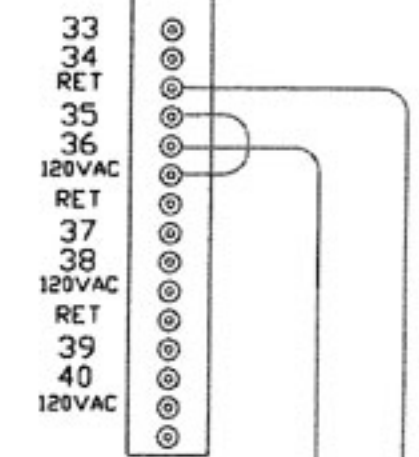
SIEMENS 810D



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

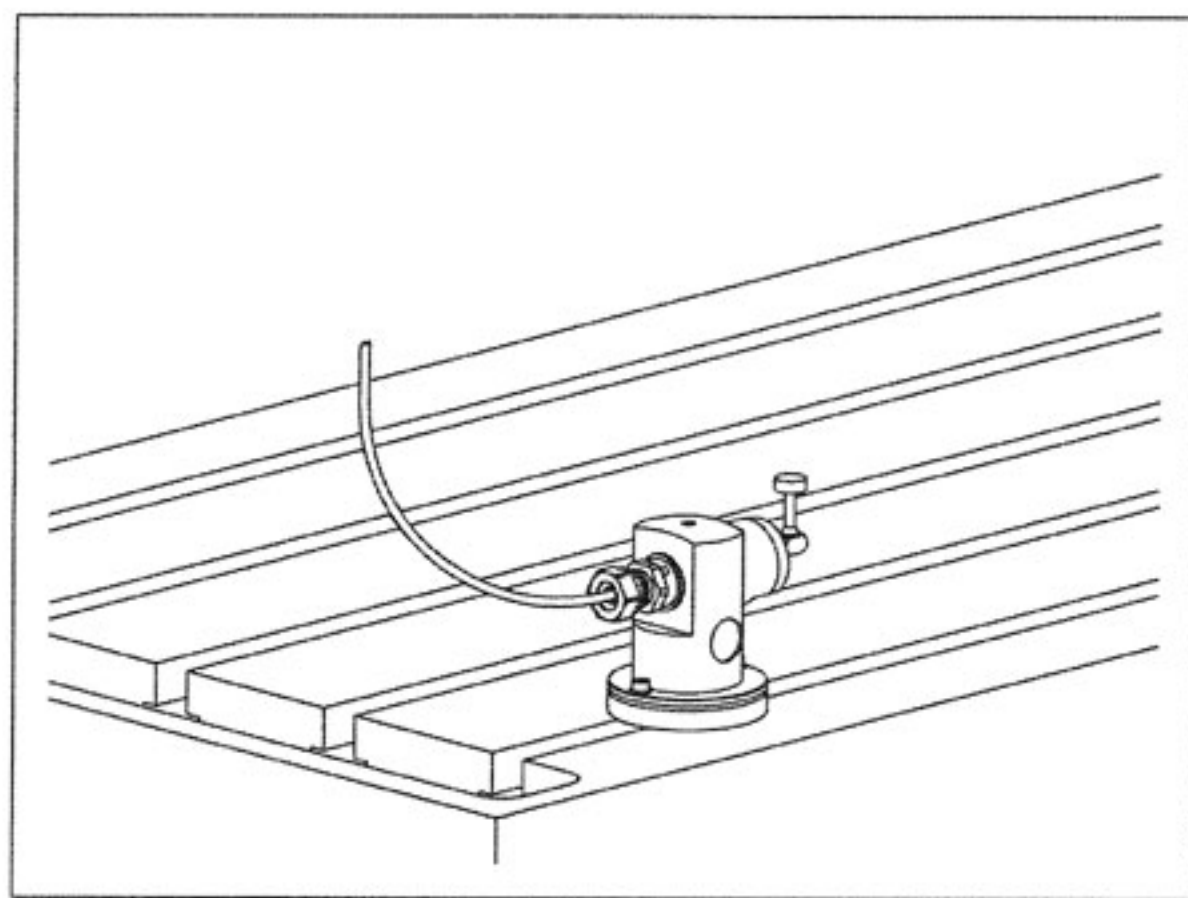


TO SWITCH PROBES TS-27 AND MP12
 USE COMMAND M64/M65

FADAL ENGINEERING CO. 1100 S. 17th St., Lincoln, NE 68502 TEL: 402-478-1100 FAX: 402-478-1101		Fadal ENGINEERING CO. 1100 S. 17th St., Lincoln, NE 68502	
DRAWING NO. WRG-0036 TITLE: TS27/MP12 PROBES SIEMENS WIRING DIAGRAM DATE: 06/06/00 DESIGNED BY: A. POLANSKY CHECKED BY: [] APPROVED BY: []	DATE: 06/06/00 DESIGNED BY: A. POLANSKY CHECKED BY: [] APPROVED BY: []	PROJECT NO. WRG-0036 SHEET NO. 1 OF 1	DATE: 06/06/00 DESIGNED BY: A. POLANSKY CHECKED BY: [] APPROVED BY: []

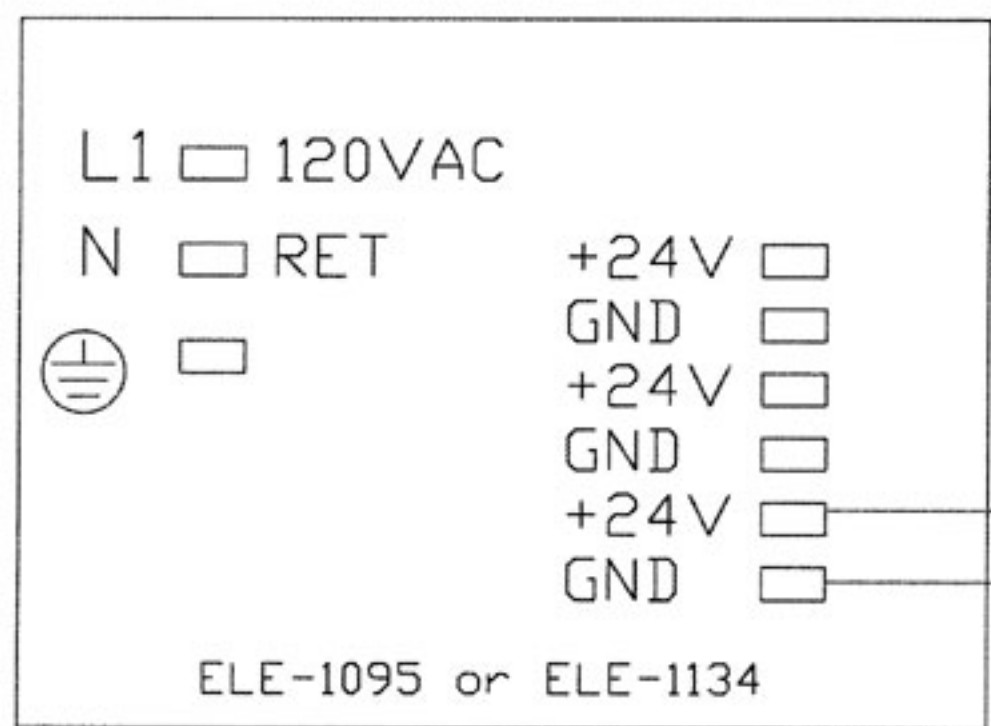
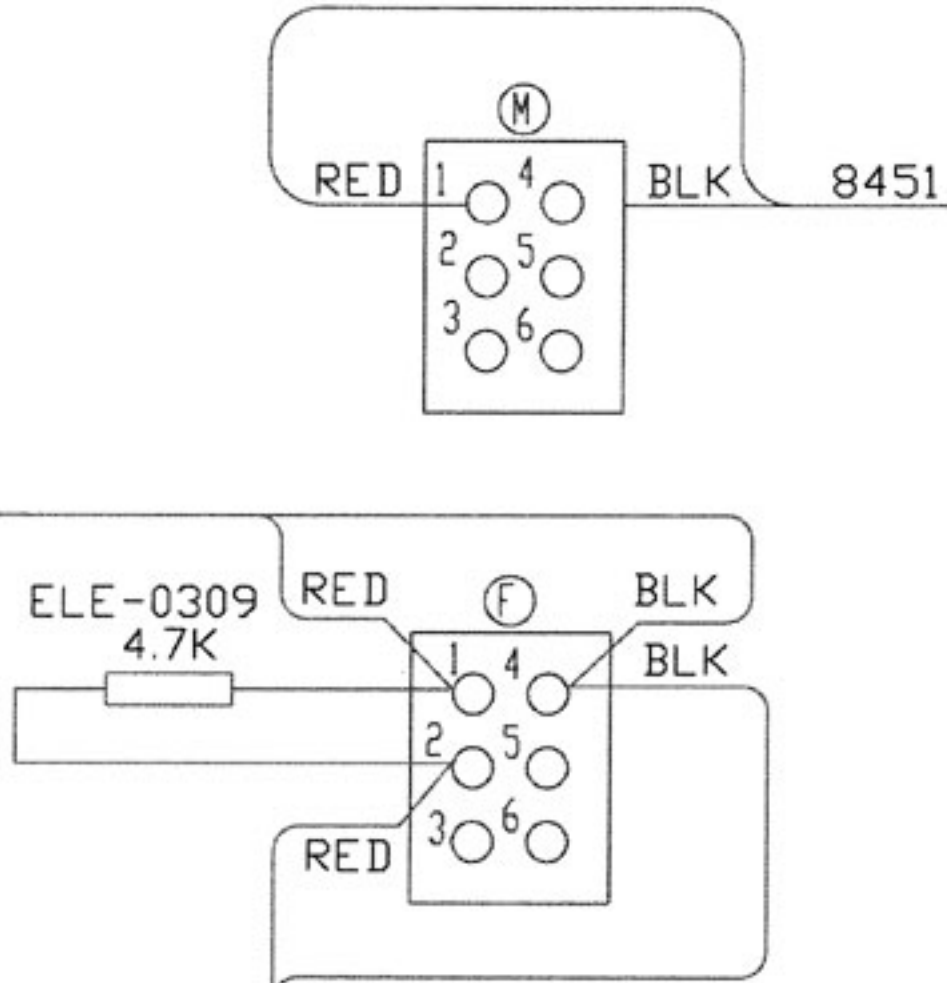
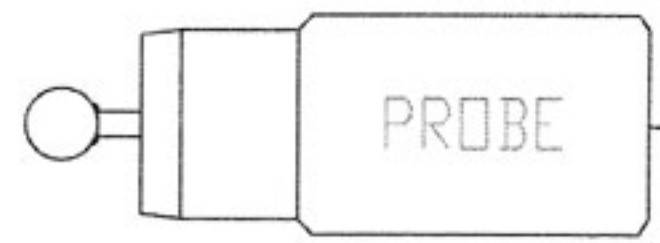
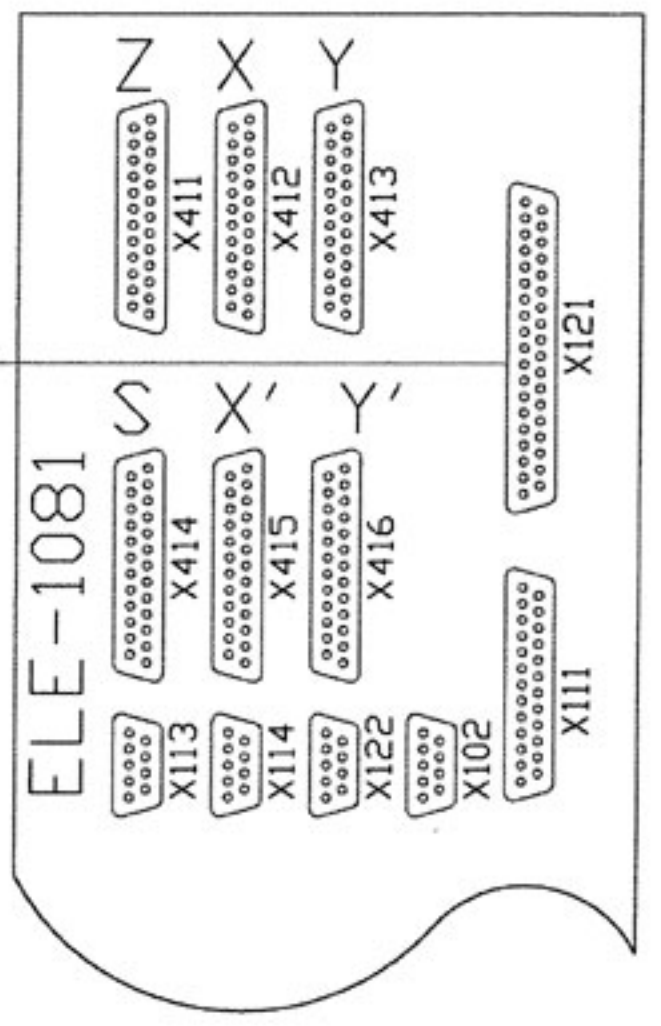
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REV.	DATE	DESCRIPTION	BY
B6 B	09/09/00	2010 BOARD ADDED	
B6 C	09/26/00	POWER SUPPLY REPLACED 2010 BOARD	
D	10/05/00	PART NUMBERS ADDED	



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

SIEMENS 810D

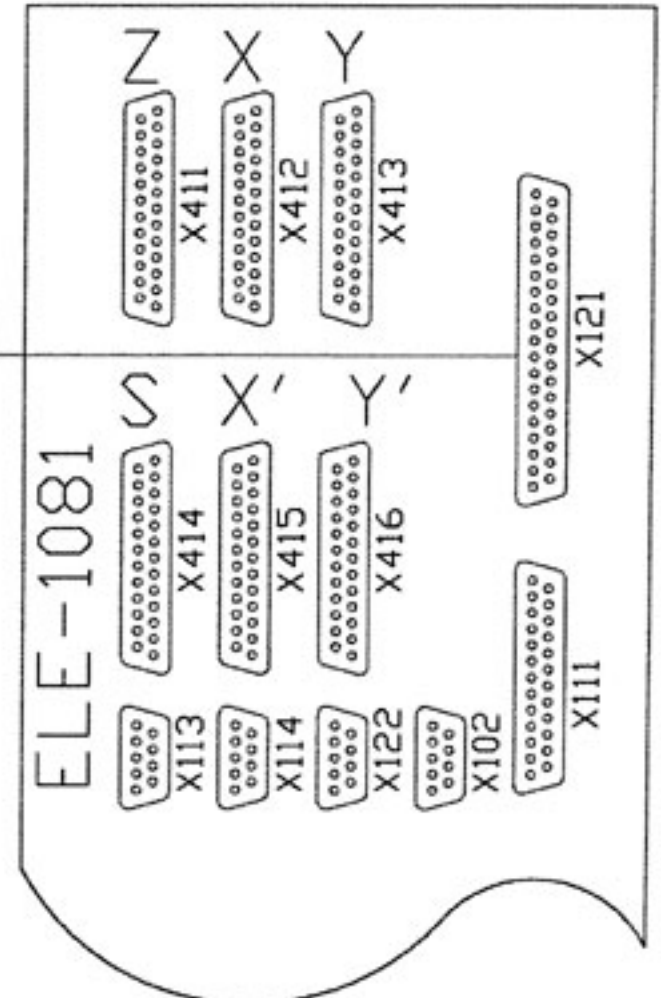


<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS ARE IN MILLIMETERS.</small> <small>SCALE: 1/16" = 1/8" (2.54mm)</small>		<small>THIS DRAWING IS UNCLASSIFIED</small>		Fadal ENGINEERING CO. <small>1000 S. GARDEN ST. SUITE 100</small>	
DATE	05/11/00	APPROVED	DATE	REV	
DRAWN	A. POLONSKY	DESIGNER			
CHECKED		ENGINEERING MANAGER			
TS-27 PROBE SIEMENS WIRING DIAGRAM				REV	D
				DATE	05/11/00
				REV	D
				DATE	05/11/00

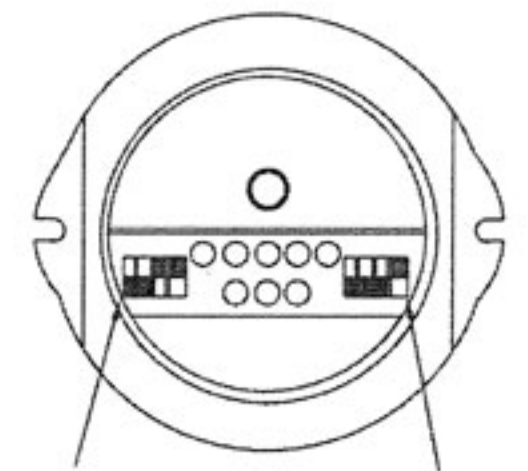
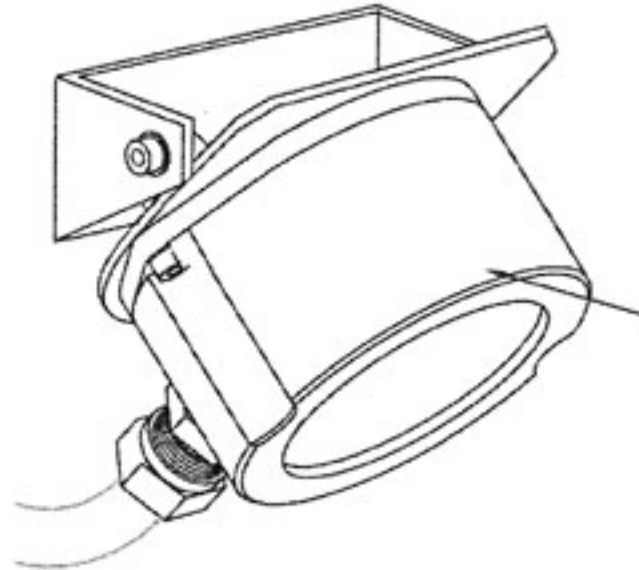
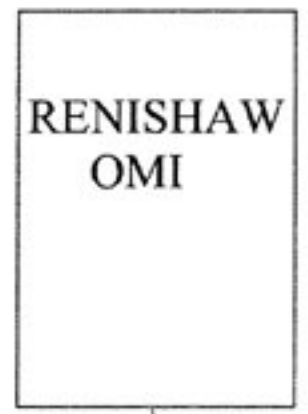
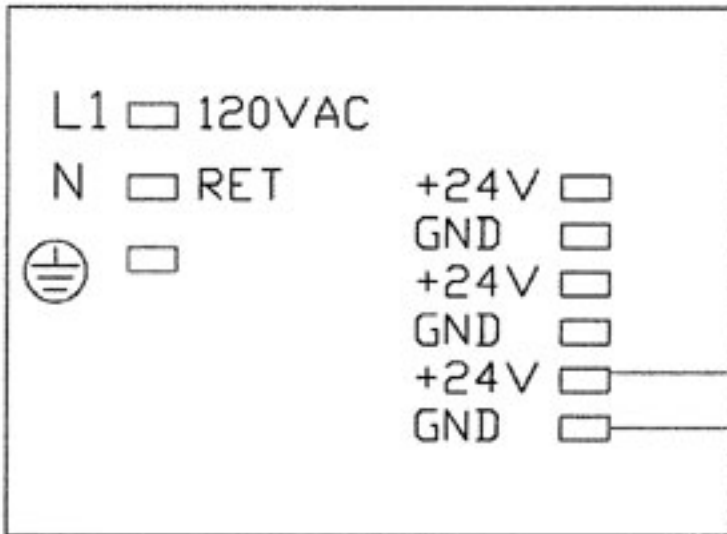
NOTICE: THIS DRAWING OR MATERIAL CONTAINS PROPRIETARY INFORMATION OF ORNORCE & LEVINE, IS SUBMITTED IN CONFIDENCE TO ORNORCE & LEVINE, AND SHALL NOT BE COPIED OR UNAUTHORIZED REPRODUCTION. WILL BE USED ONLY FOR YOUR INFORMATION, AND WILL NOT BE HELD OR OBLIGATED TO ANYONE EXCEPT AS AUTHORIZED BY WRITTEN CONSENT OF ORNORCE & LEVINE.

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

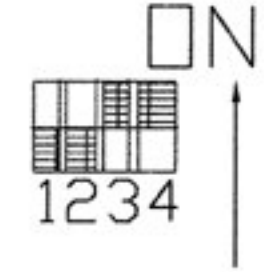
SIEMENS 810D



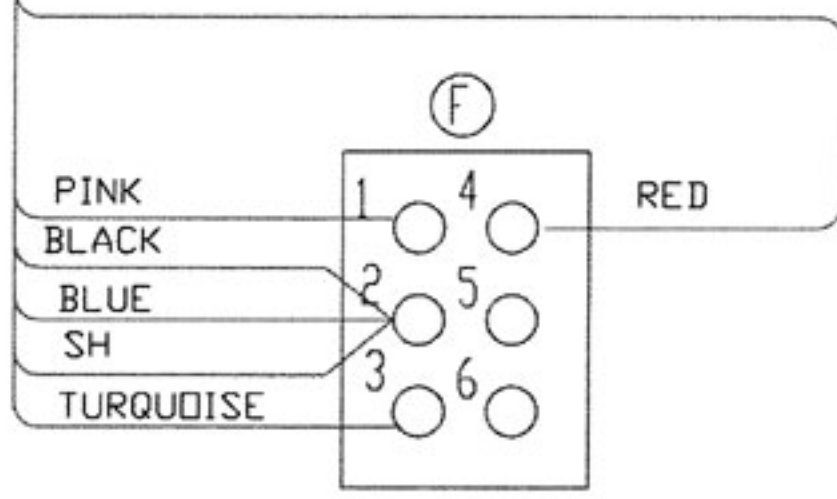
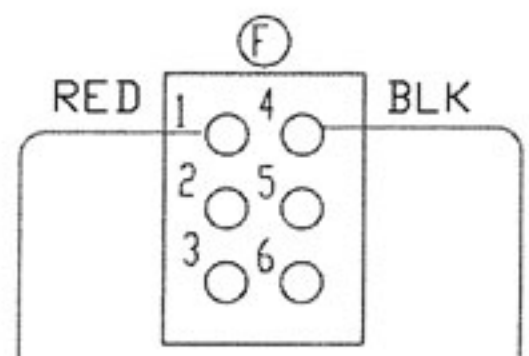
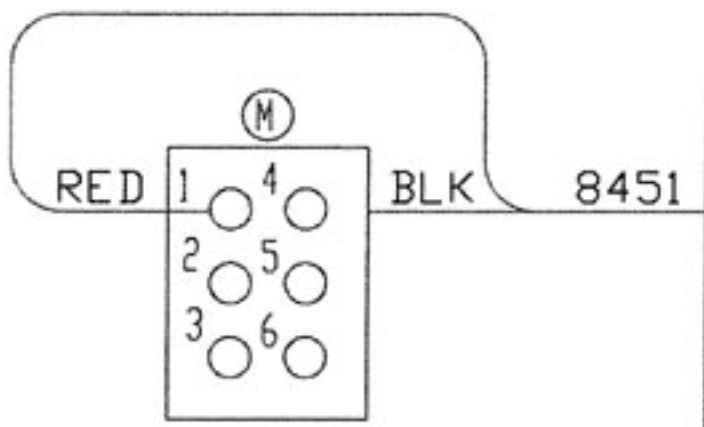
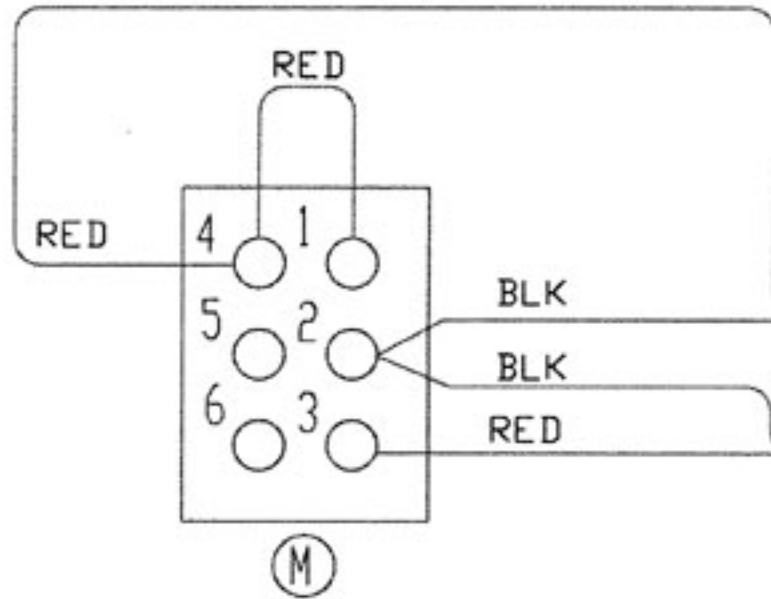
24V POWER SUPPLY



SW1 SW2



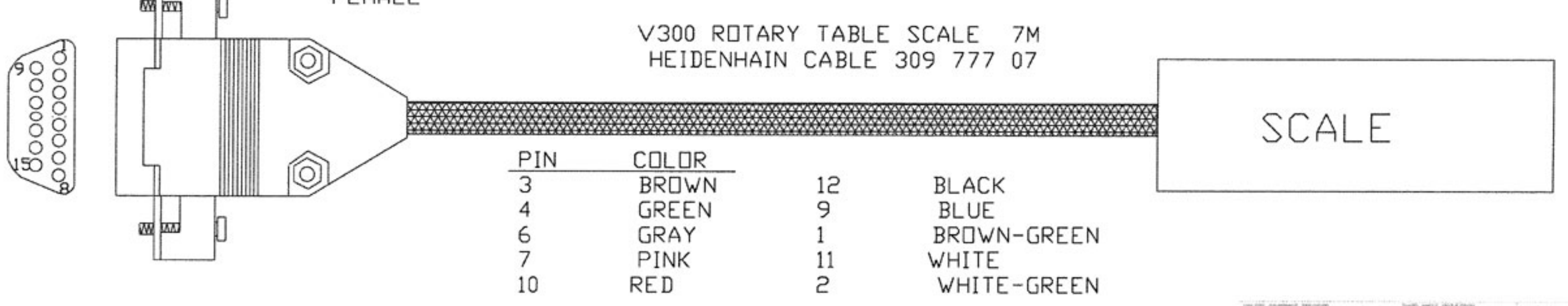
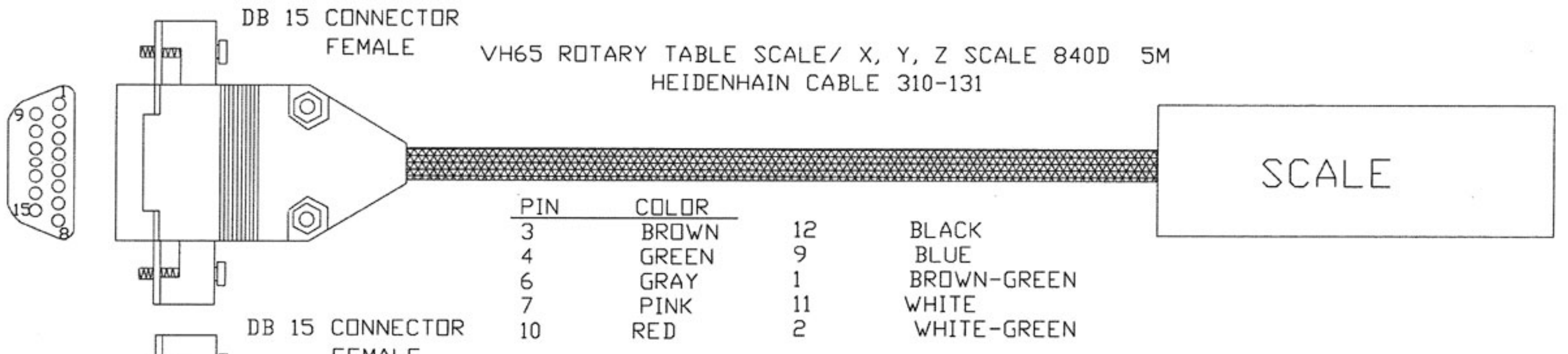
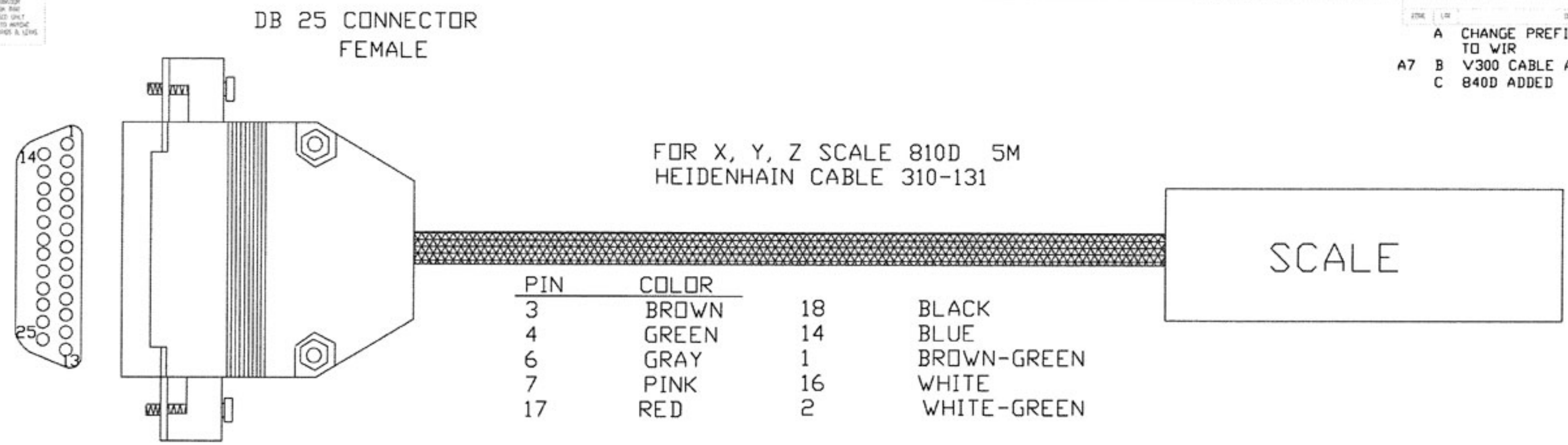
NOTE: SET SW1 TO AUTO START POSITION. - #4
TO GAIN ACCESS TO SW1 REMOVE OMI
WINDOW AND LABEL.



<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS ARE TO UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE TO UNLESS OTHERWISE SPECIFIED.</small>	<small>THIS SHEET PROTECTS THE DESIGNER'S RIGHTS. IT IS THE PROPERTY OF ORNORCE & LEVINE. IT IS TO BE KEPT IN THE ORIGINAL FILE AND NOT REPRODUCED OR COPIED WITHOUT THE WRITTEN CONSENT OF ORNORCE & LEVINE.</small>	Fadal ENGINEERING CO. 1000 W. 10TH ST. SUITE 100 DENVER, CO 80202
APPROVED: DATE: 01/23/00	DRAWN: A. POLONSKY	PROJECT: MP 12 PROBE SIEMENS WIRING DIAGRAM
CHECKED:	ENGINEER:	SHEET NO.: WRG-0031
DESIGNED:	DRAWING NO.:	REV: A
DATE:	SCALE:	SHEET 1 OF 1

NOTE: THE DESIGN OF THESE CONNECTORS REPRESENTS AN APPROXIMATION OF CURRENT PRACTICE. IT IS SUBJECT TO CHANGE WITHOUT NOTICE. THIS DRAWING IS FOR INFORMATION ONLY AND IS NOT TO BE USED AS A BASIS FOR MANUFACTURE OR REPAIR. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE INFORMATION AND FOR OBTAINING THE NECESSARY APPROVALS FOR ANY MODIFICATION OR REVISION.

REV	DATE	DESCRIPTION	BY
A	06/28/00	CHANGE PREFIXES FROM WRG TO WIR	
A7	08/28/00	V300 CABLE ADDED	
C	12/06/00	B40D ADDED	



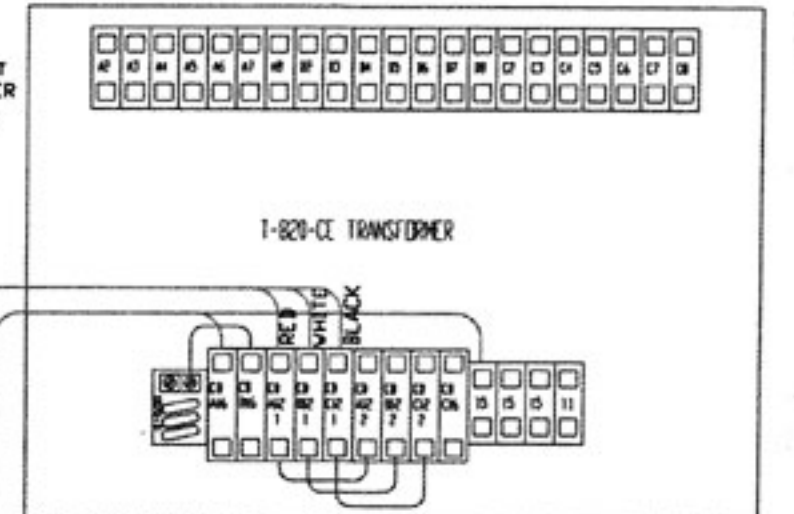
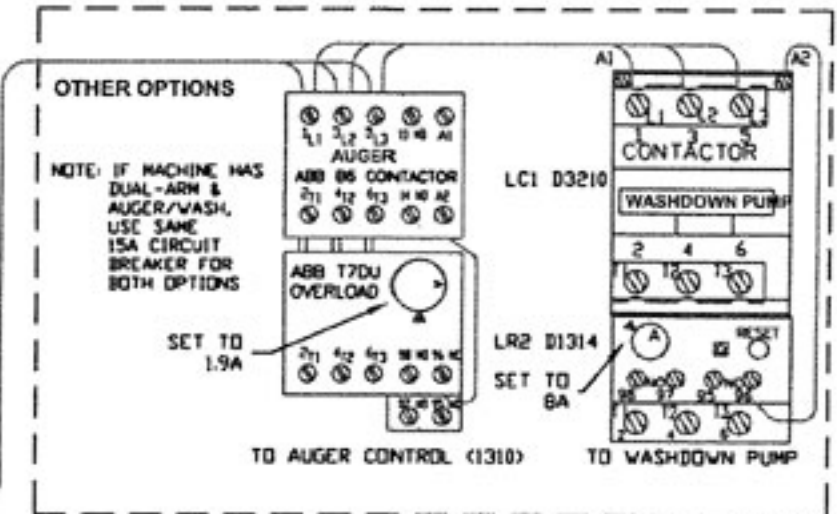
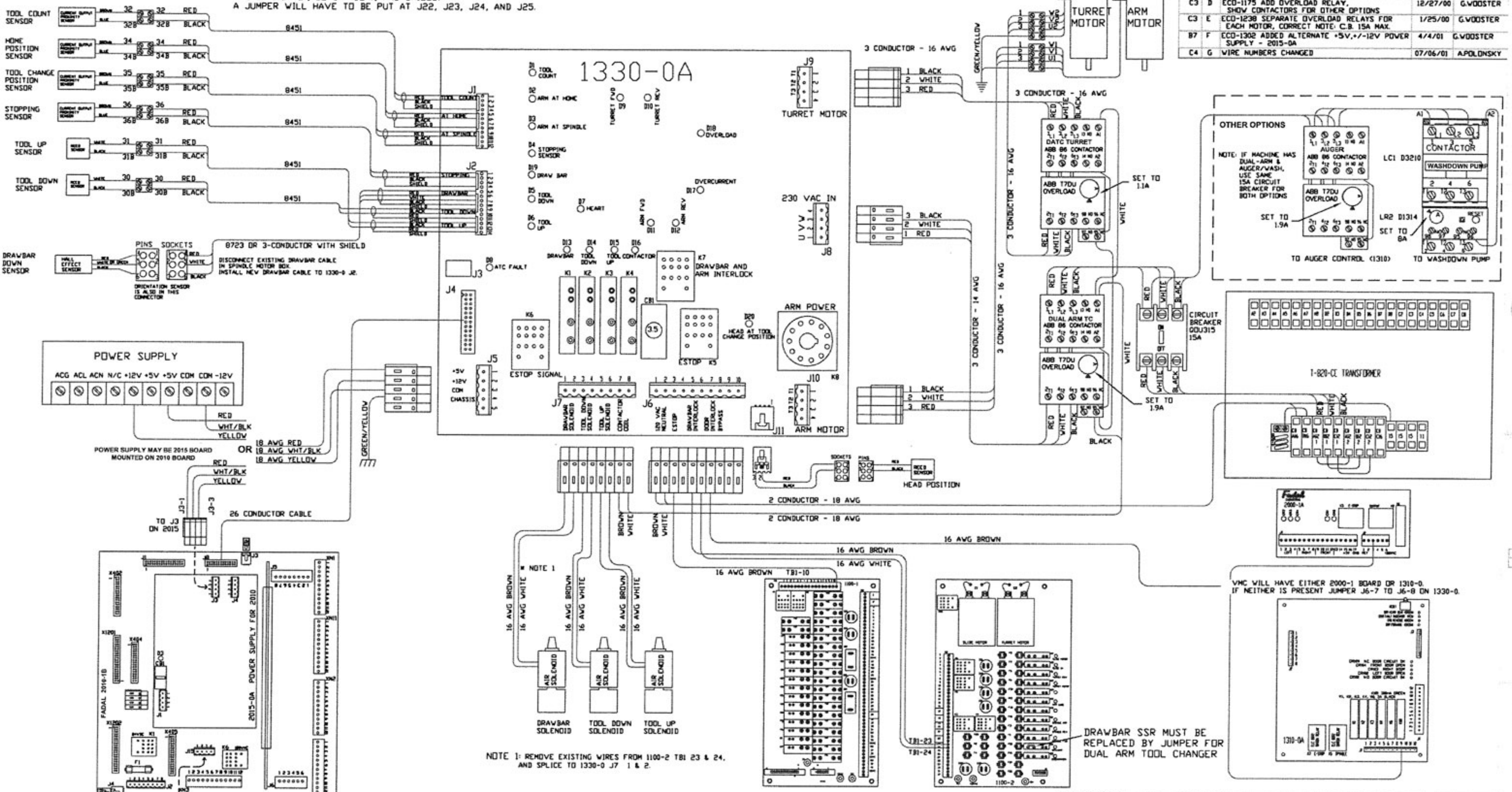
NOTE: OUTER SHIELD CONNECTED TO CONNECTOR HOUSING FOR ALL CABLES

DATE: 11/15/99 DRAWN: A.POLONSKI CHECKED: [] INCHES: [] DIMENSIONS: []		APPROVED: [] DATE: 11/15/99 TITLE: SCALE CABLE SIEMENS 810D/840D PREFIX: WRG-0019C WIR-0019	
Fadal ENGINEERING CO. 2001 10th St. S.W.		SCALE: [] OF []	

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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	ECC-1120 CIRCUIT BREAKER 10A ADDED		
C	10/05/00	ECC-1175 CIRCUIT BREAKER 10A CHANGED TO 15A		
C	12/27/00	ECC-1175 ADD OVERLOAD RELAY. SHOW CONTACTORS FOR OTHER OPTIONS	G.WOOSTER	
C	1/25/00	ECC-1238 SEPARATE OVERLOAD RELAYS FOR EACH MOTOR, CORRECT NOTE. C.B. 15A MAX.	G.WOOSTER	
B	4/4/01	ECC-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

Fadal TOOL CHANGING CO.

DUAL-ARM TOOL CHANGER WIRING DIAGRAM SIEMENS

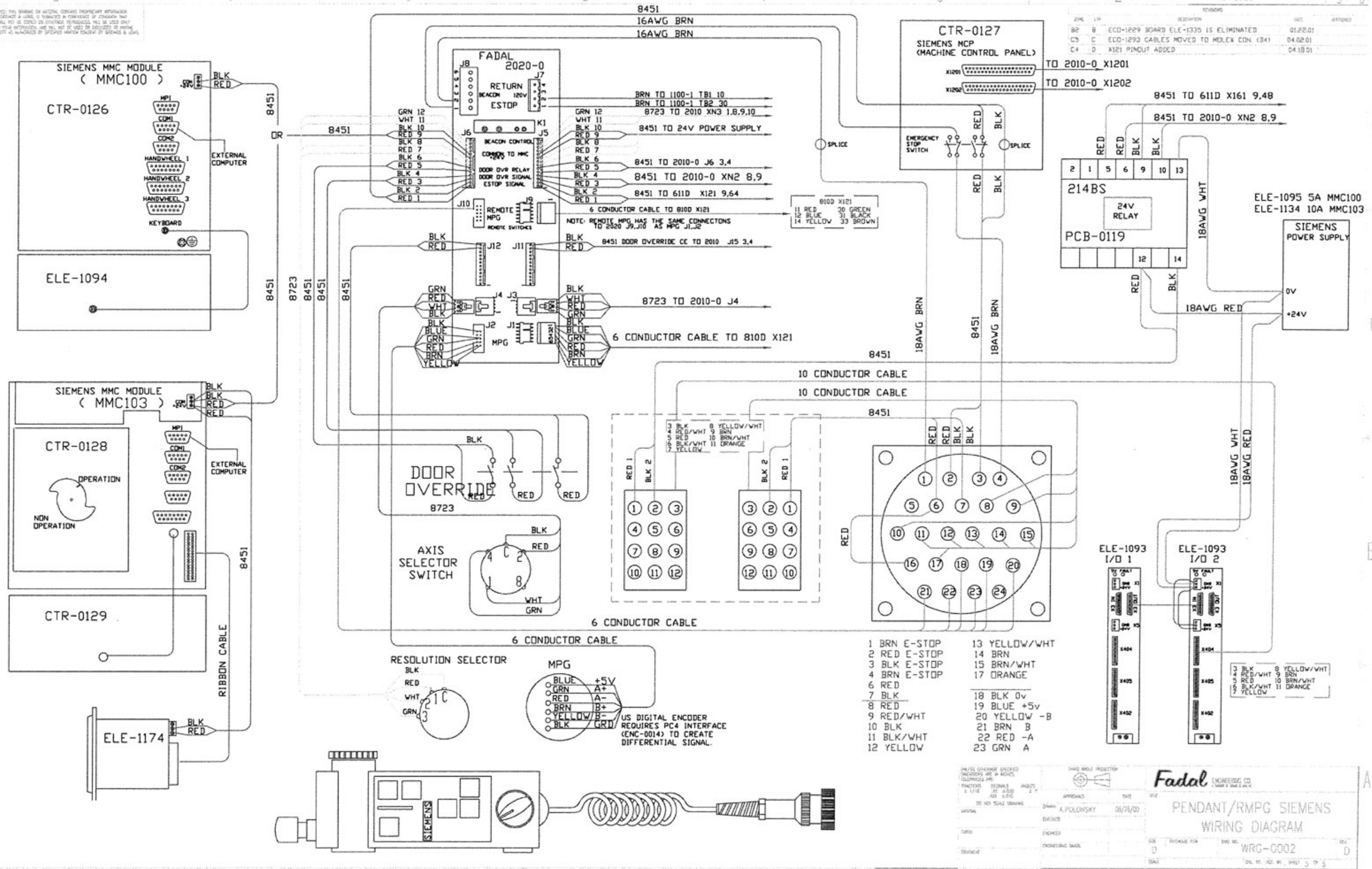
DATE: 07-27-00
 DRAWN: A. POLONSKY
 CHECKED: []
 DESIGNED: []
 APPROVED: []

REV. 01 WRG-0001

2 OF 2

NOTE: THIS DRAWING OR ANY PART THEREOF IS THE PROPERTY OF FADAL. IT IS TO BE USED ONLY IN CONNECTION WITH THE EQUIPMENT SPECIFIED HEREON. IT 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.

REV	DATE	DESCRIPTION	BY	APP'D
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.

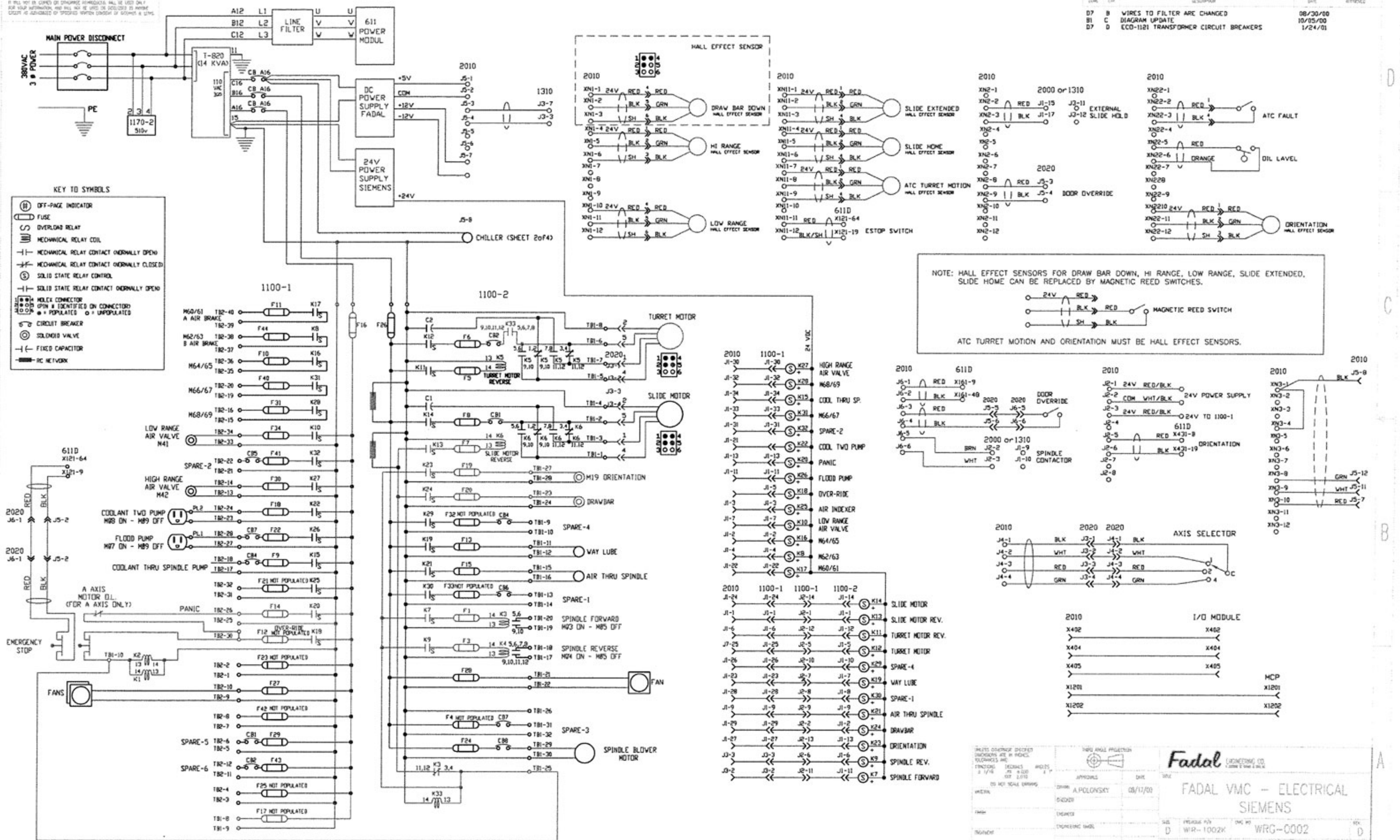
PENDANT/RMPG SIEMENS WIRING DIAGRAM

DATE: 08/28/00
 DRAWN: A.POLONYSKY
 CHECKED: []
 DESIGNED: []
 DATE: []

WIRING NO: WRG-0002
 SHEET: 5 OF 5

NOTE: THIS DRAWING OR ANY PART THEREOF IS THE PROPERTY OF FADAL VMC. IT IS TO BE USED ONLY FOR THE PROJECT AND NOT BE LOANED, REPRODUCED, COPIED, OR IN ANY MANNER DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF FADAL VMC.

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. 100TH ST. BLDG. 10000, BURNING WOODS, MN 55339

FADAL VMC - ELECTRICAL
SIEMENS

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

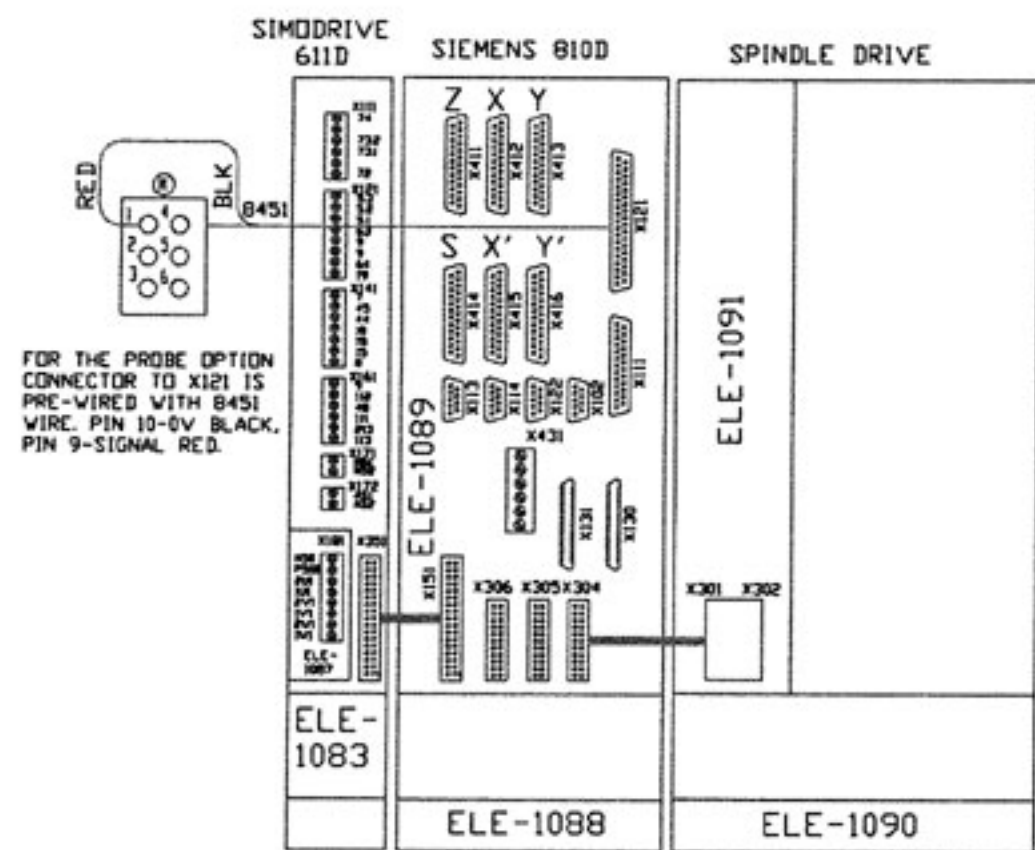
REV. D
WIR-1002K
WRG-0002

REVISIONS

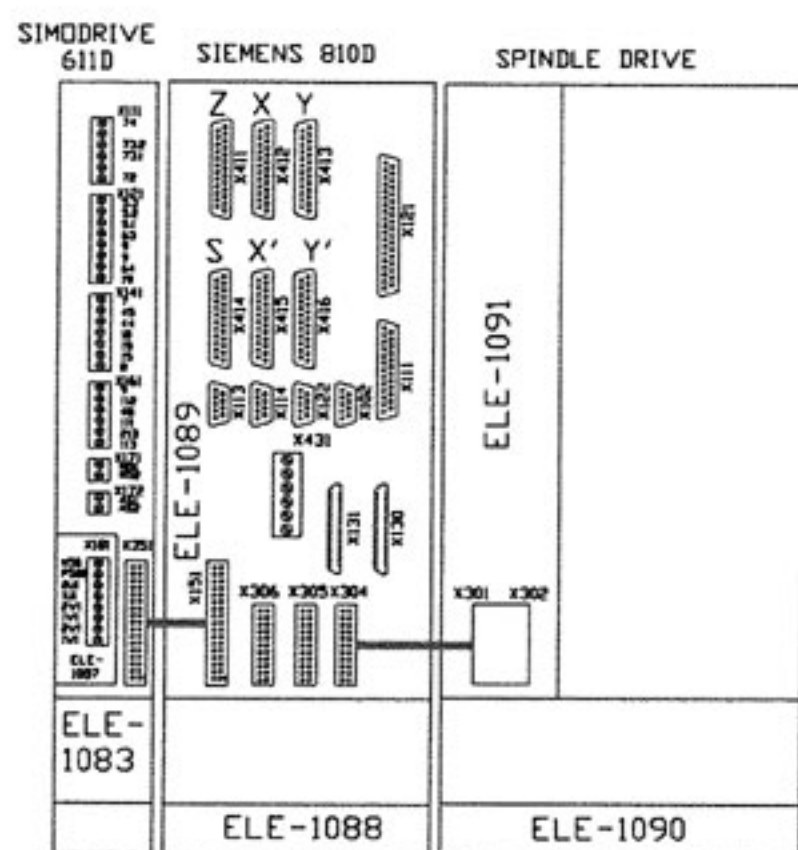
REV	DESCRIPTION	DATE	APPROVED
D8	C PROBE INPUT CHANGED	06/06/00	
	D OPTIONS ADDED	06/22/00	
	F PART NUMBERS ADDED	10/05/00	
	F ELE-1331 CHANGED TO WIR-0791	12/12/00	
	G ADD JUMPER TO X431- 9,663	05/08/01	
A2	H NOTE #3 ADDED	05/24/01	

OPT-0186 VMC 3020
OPT-0233 VMC 4525

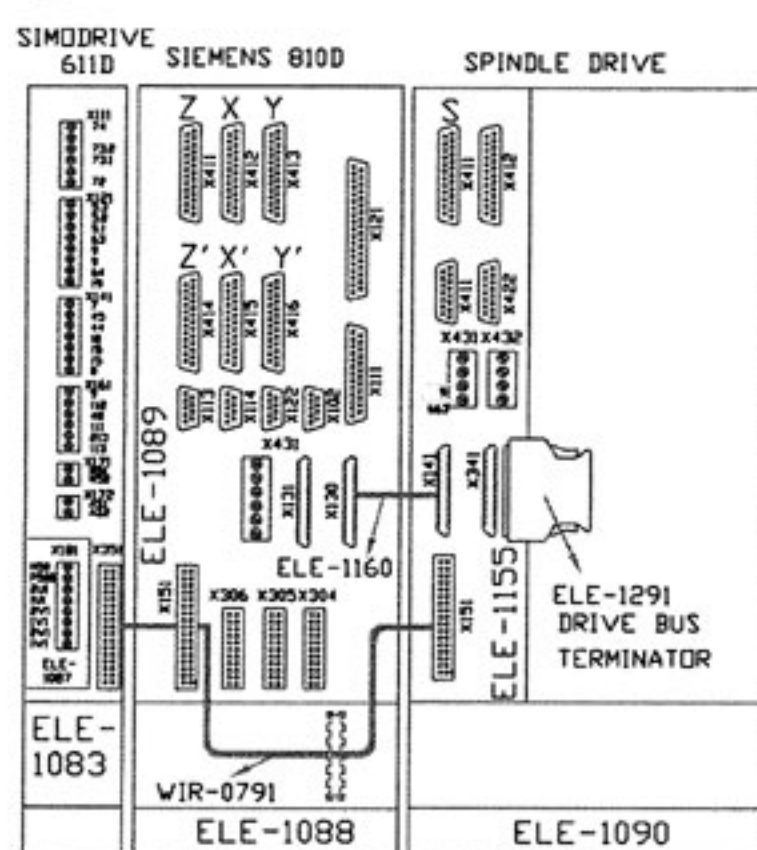
① STANDARD (NO SCALE)



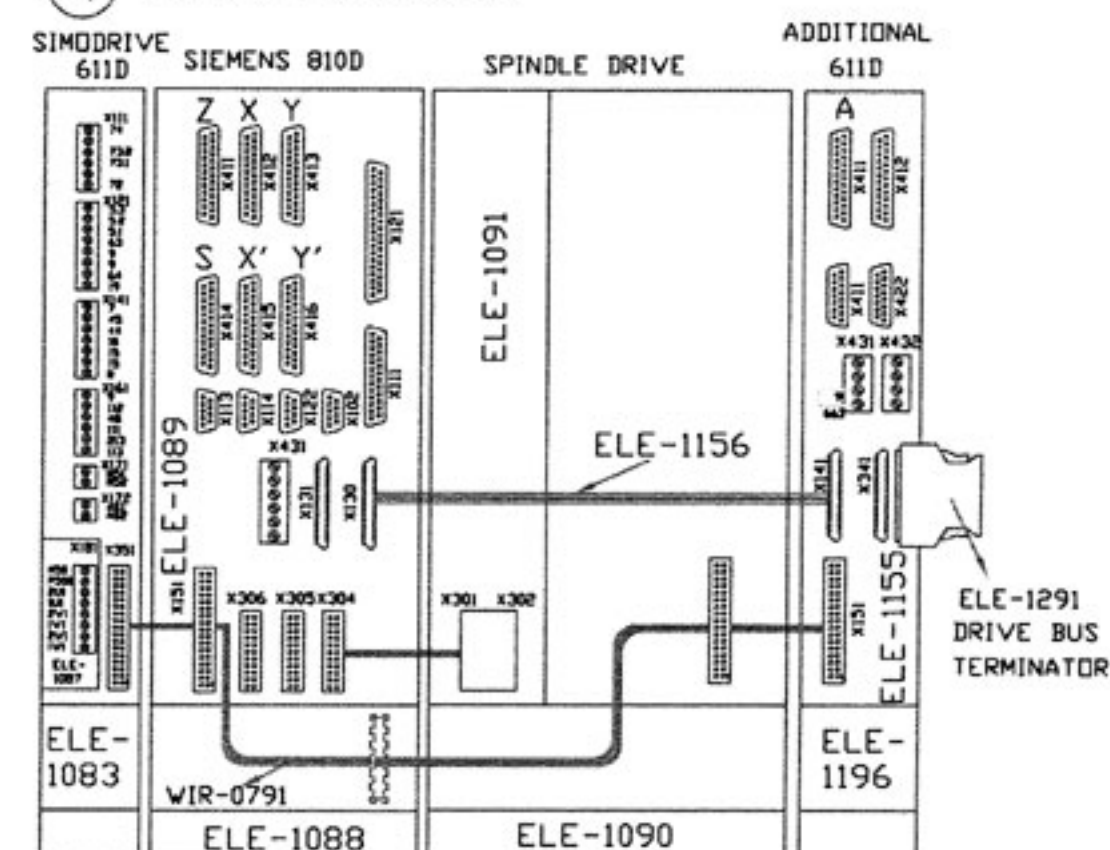
② X, Y, SCALES FOR SIEMENS



③ X,Y,Z SCALES FOR SIEMENS

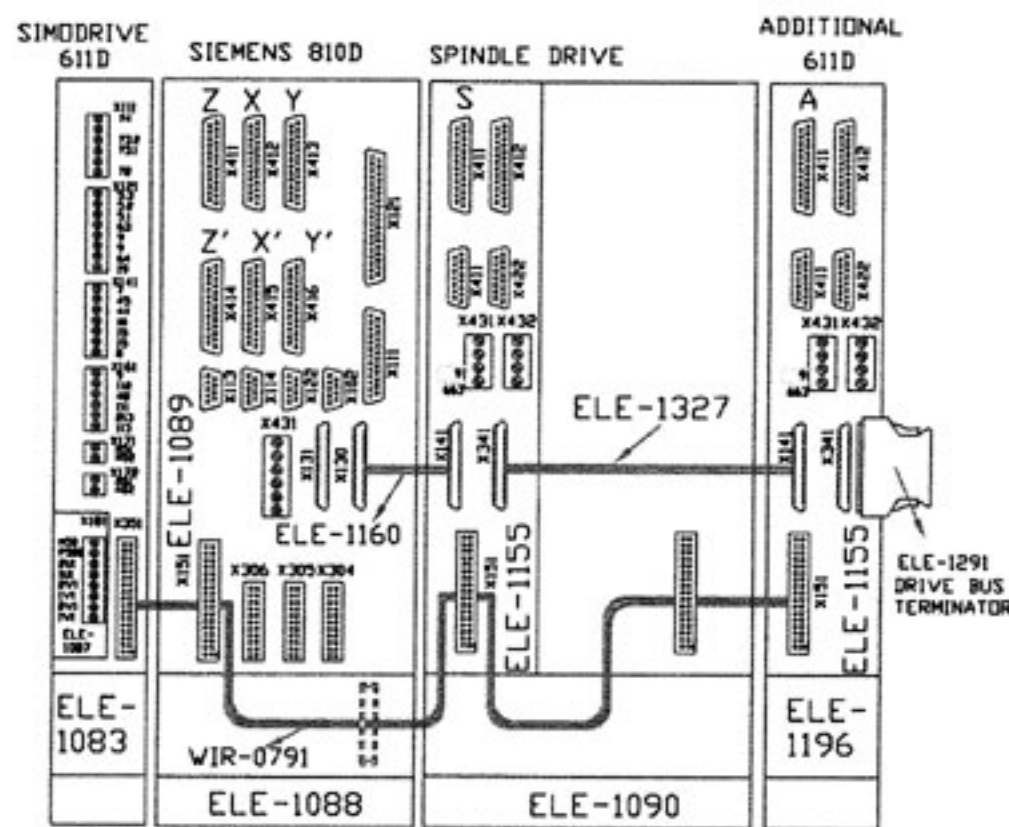


④ A AXIS FOR SIEMENS



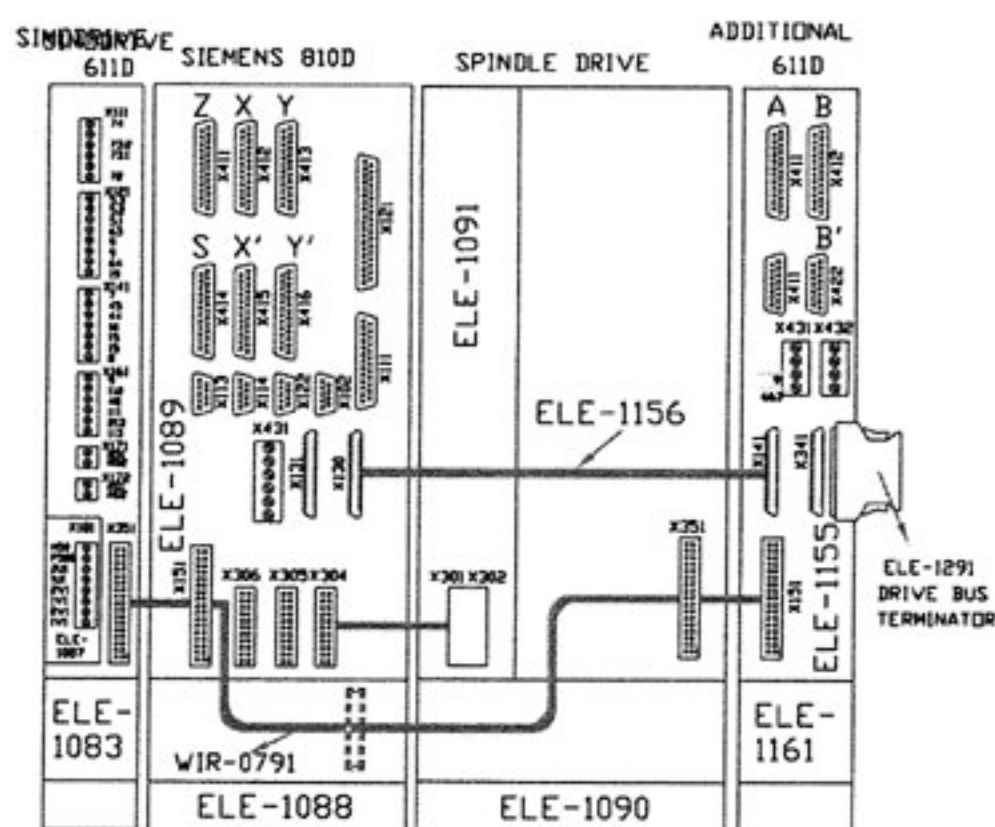
OPT-0197 & OPT-0199

⑤ A AXIS & X, Y, Z SCALE FOR SIEMENS



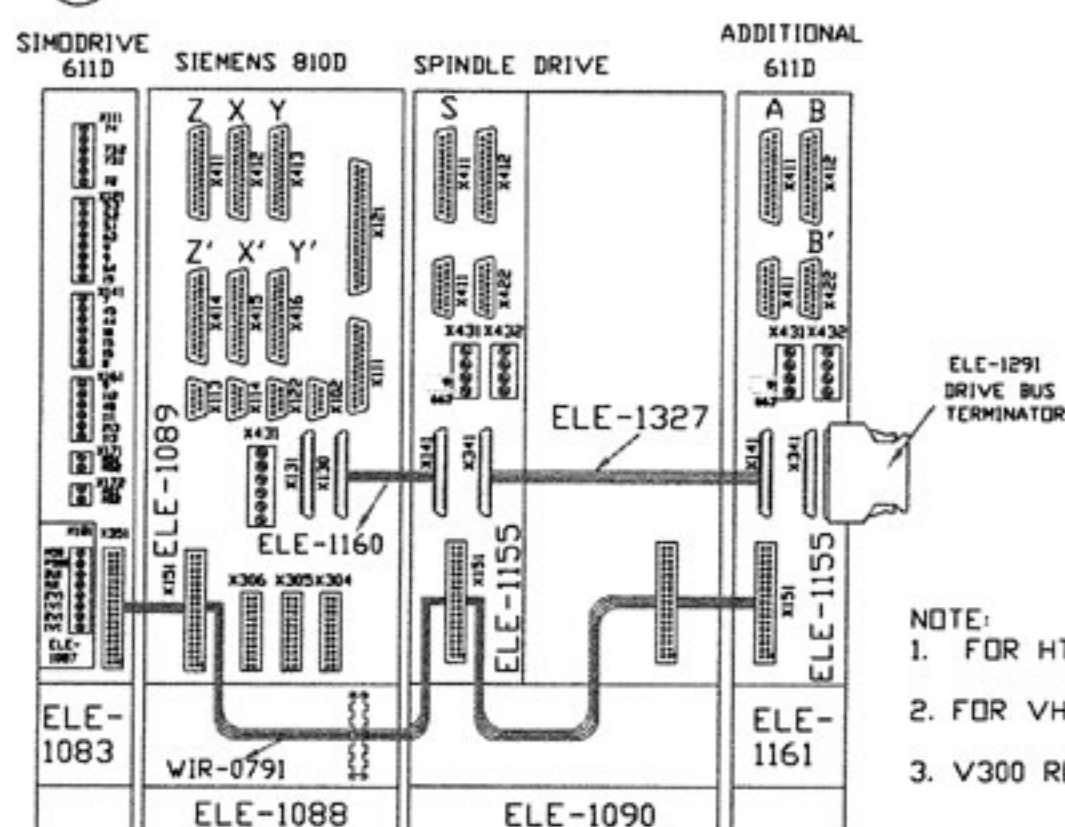
OPT-0200

⑥ A&B AXIS FOR SIEMENS

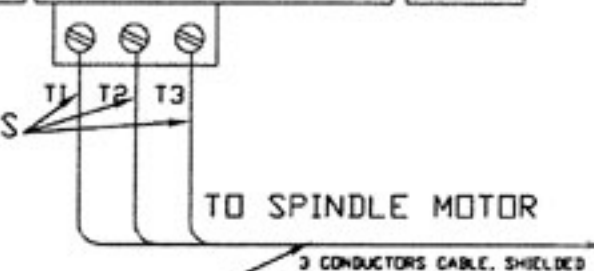


OPT-0197 & OPT-0200

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



INSTALL FERRULES ON THE END OF WIRES



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.

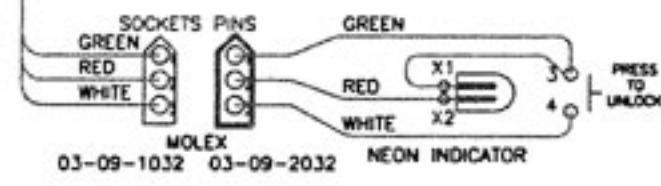
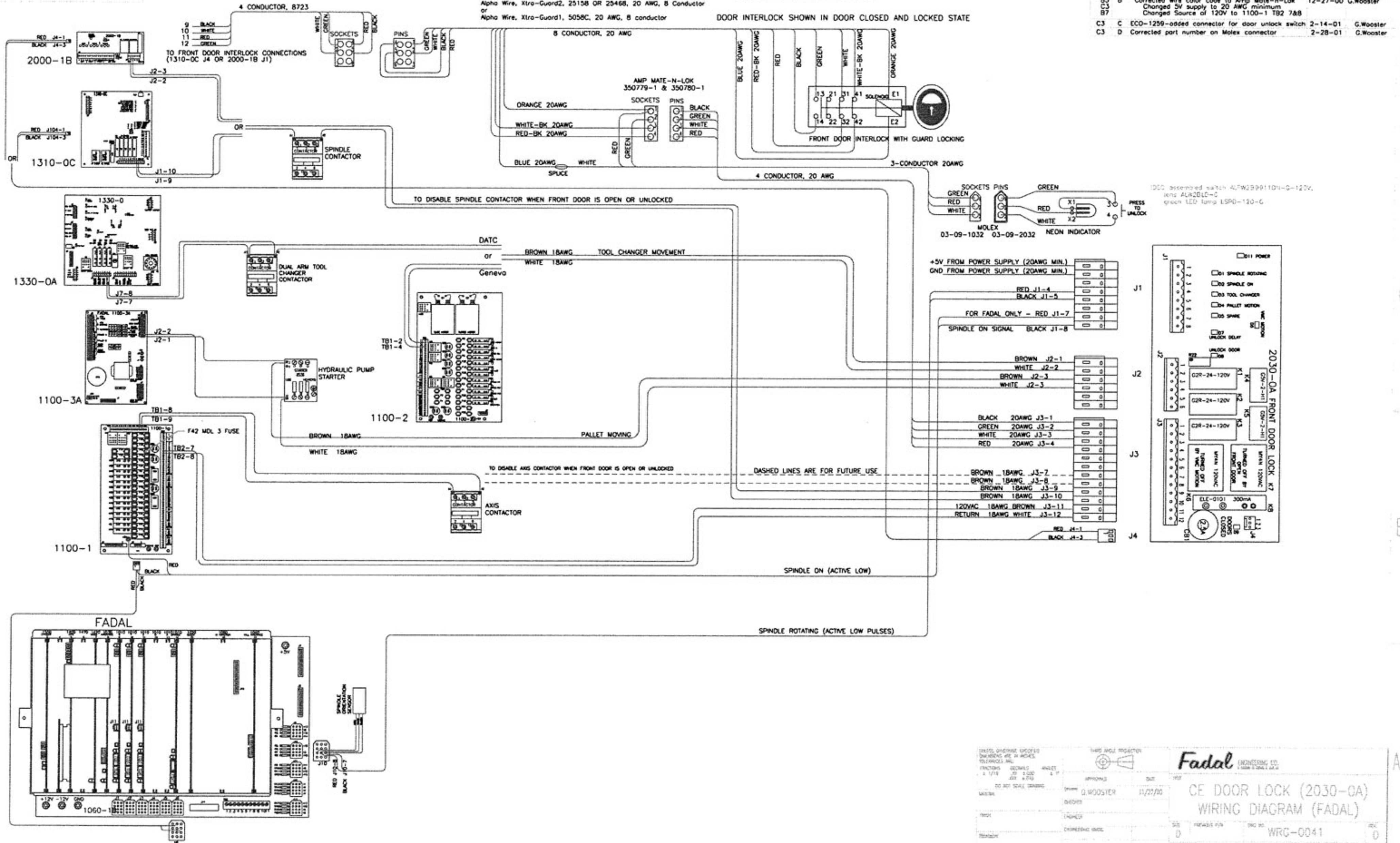
APPROVED: A. POLONSKY DATE: 11/10/99	SIEMENS CONTROL WIRING DIAGRAM
DRAWN: D CHECKED: D	SHEET: 3 OF 5 REV: H

NOTICE: THIS DRAWING OR PARTS, CONTAINS PROTECTIVE INFORMATION OF DEFENSE & IS UNCLASSIFIED IN ACCORDANCE WITH EXECUTIVE ORDER 13526, WHICH IS APPLIED TO THIS INFORMATION, AND YOU, NOT BE USED OR DISCLOSED TO ANYONE EXCEPT AS AUTHORIZED BY WRITING FROM THE SECRETARY OF DEFENSE.

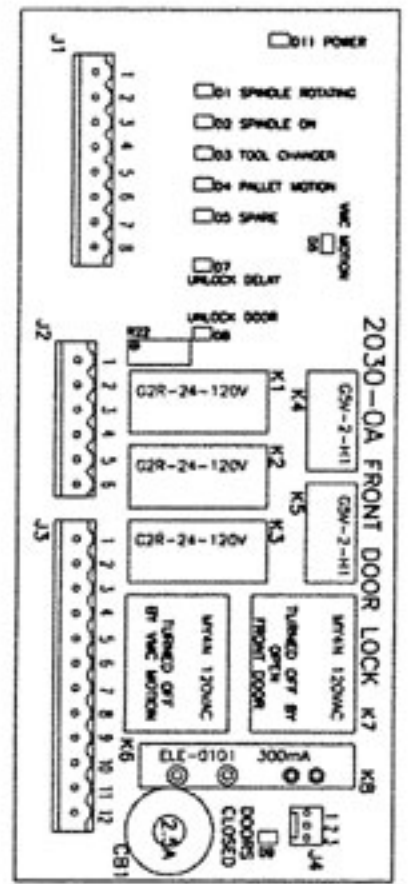
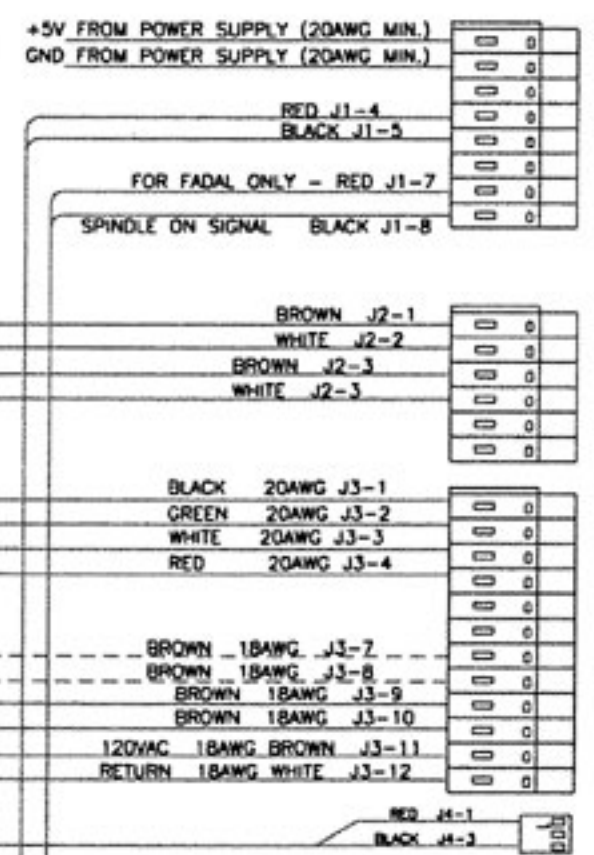
RECOMMENDED CABLE TO INTERLOCK:
 Coral Cable, C0784, 20 AWG, 8 Conductor
 or
 Alpha Wire, Xtra-Guard2, 25158 OR 25468, 20 AWG, 8 Conductor
 or
 Alpha Wire, Xtra-Guard1, 5058C, 20 AWG, 8 conductor

INTERLOCK TERMINAL NUMBERING IS FOR
 LUCAS 1-4-42(A)100
 (also works with Banner S1-LS42UM2)

REV	LR	DESCRIPTION	DATE	APPROVAL
		Initial Release, ECD-1044	11-22-00	G.Wooster
B3	B	Corrected wire color code to Amp Mate-n-Lok	12-27-00	G.Wooster
C3	B7	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 ALW2599110V-0-120V,
 lens ALA20LD-0
 green LED lamp LSP0-120-C



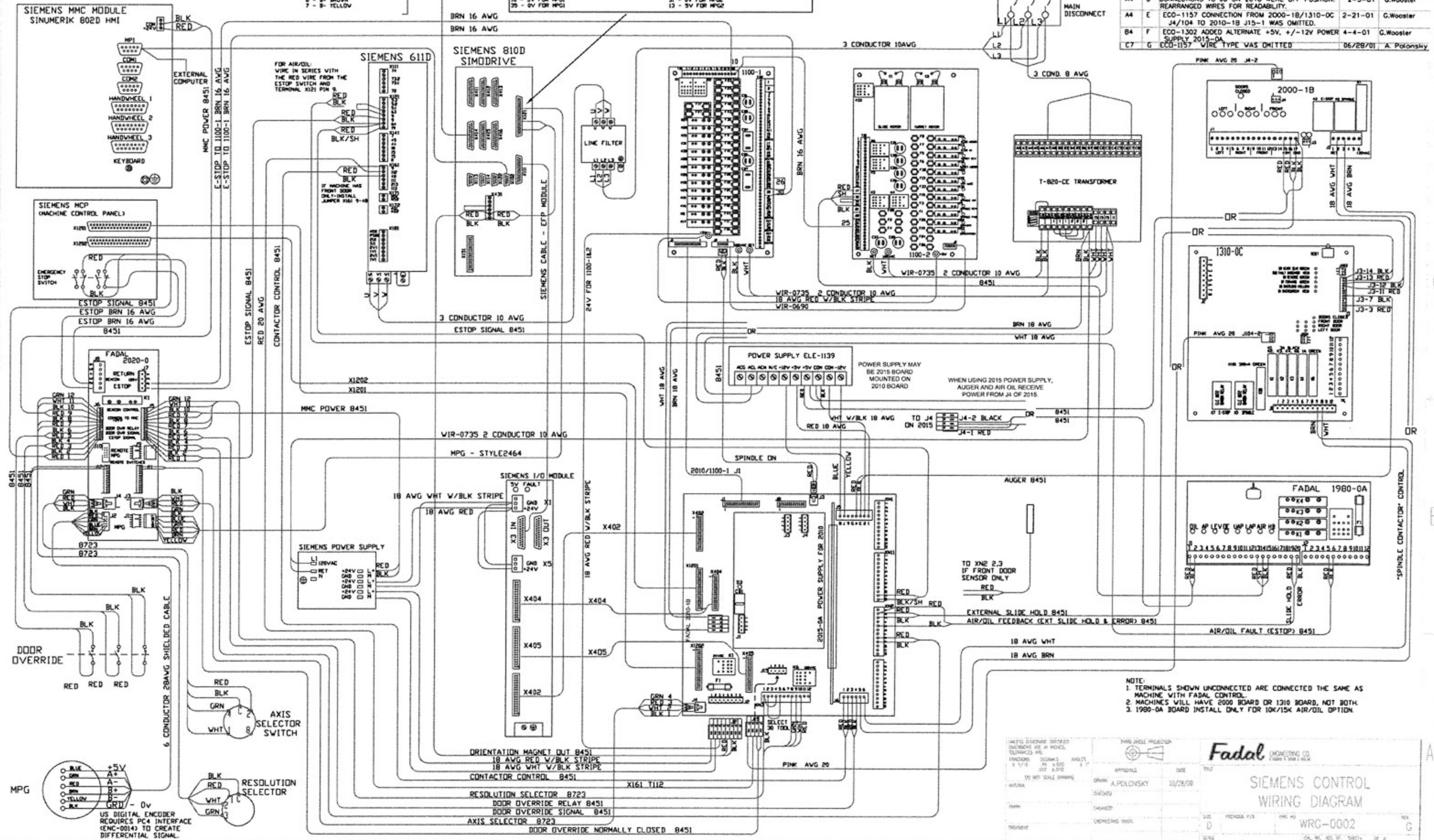
DATE: 11/27/00
 DRAWING NO: WRG-0041
 PROJECT: CE DOOR LOCK (2030-0A)
 SHEET: 1 OF 2

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

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

REV: 01
 DATE: 11/27/00
 DRAWN BY: G. WOOSTER
 CHECKED BY: G. WOOSTER
 DATE: 11/27/00

NOTE: THIS DRAWING IS A GENERAL REPRESENTATION OF CONTACTS AND WIRING. IT IS NOT TO BE USED AS A BASIS FOR THE DESIGN OF ANY ELECTRICAL SYSTEM. THE USER SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY ELECTRICAL SYSTEM.



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/J104 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	

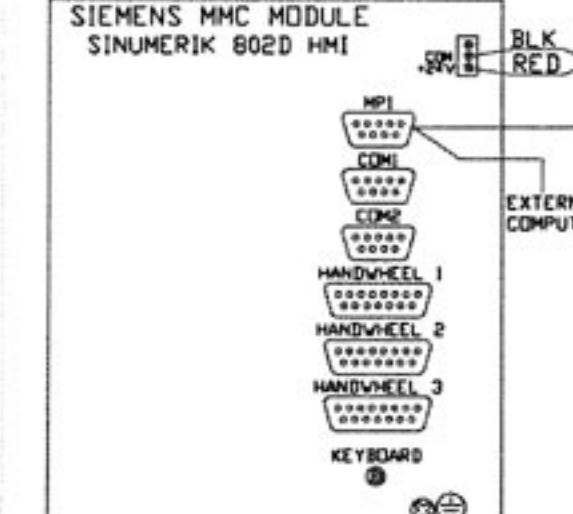
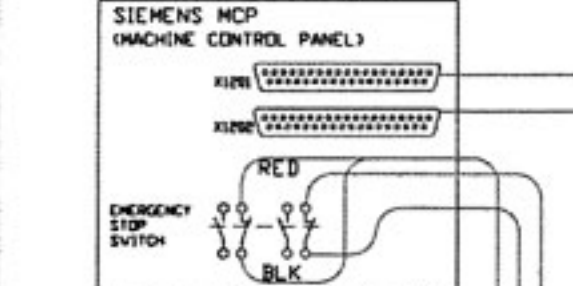
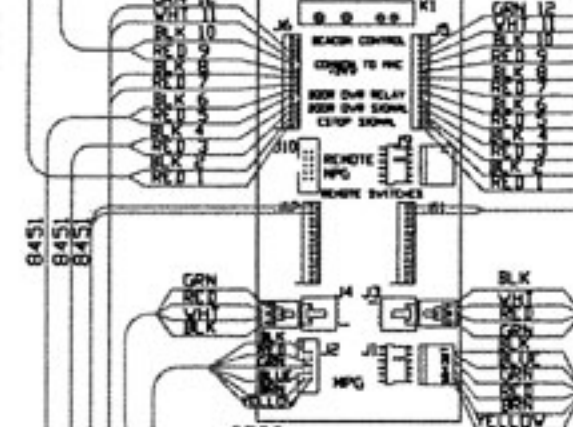
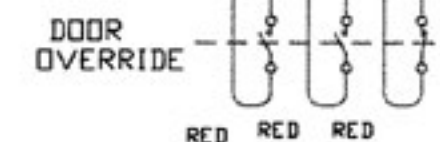
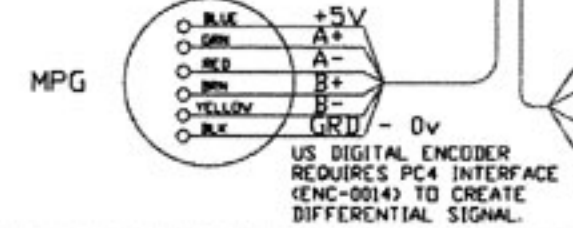
NOTE:
 1. TERMINALS SHOWN UNCONNECTED ARE CONNECTED THE SAME AS MACHINE WITH FADAL CONTROL.
 2. MACHINES WILL HAVE 2000 BOARD OR 1310 BOARD, NOT BOTH.
 3. 1980-0A BOARD INSTALL ONLY FOR 10K/15K AIR/OIL OPTION.

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

Fadal ENGINEERING CO.
 1000 W. 15th St. #100
 Waukegan, IL 60087

SIEMENS CONTROL WIRING DIAGRAM
 WRC-0002

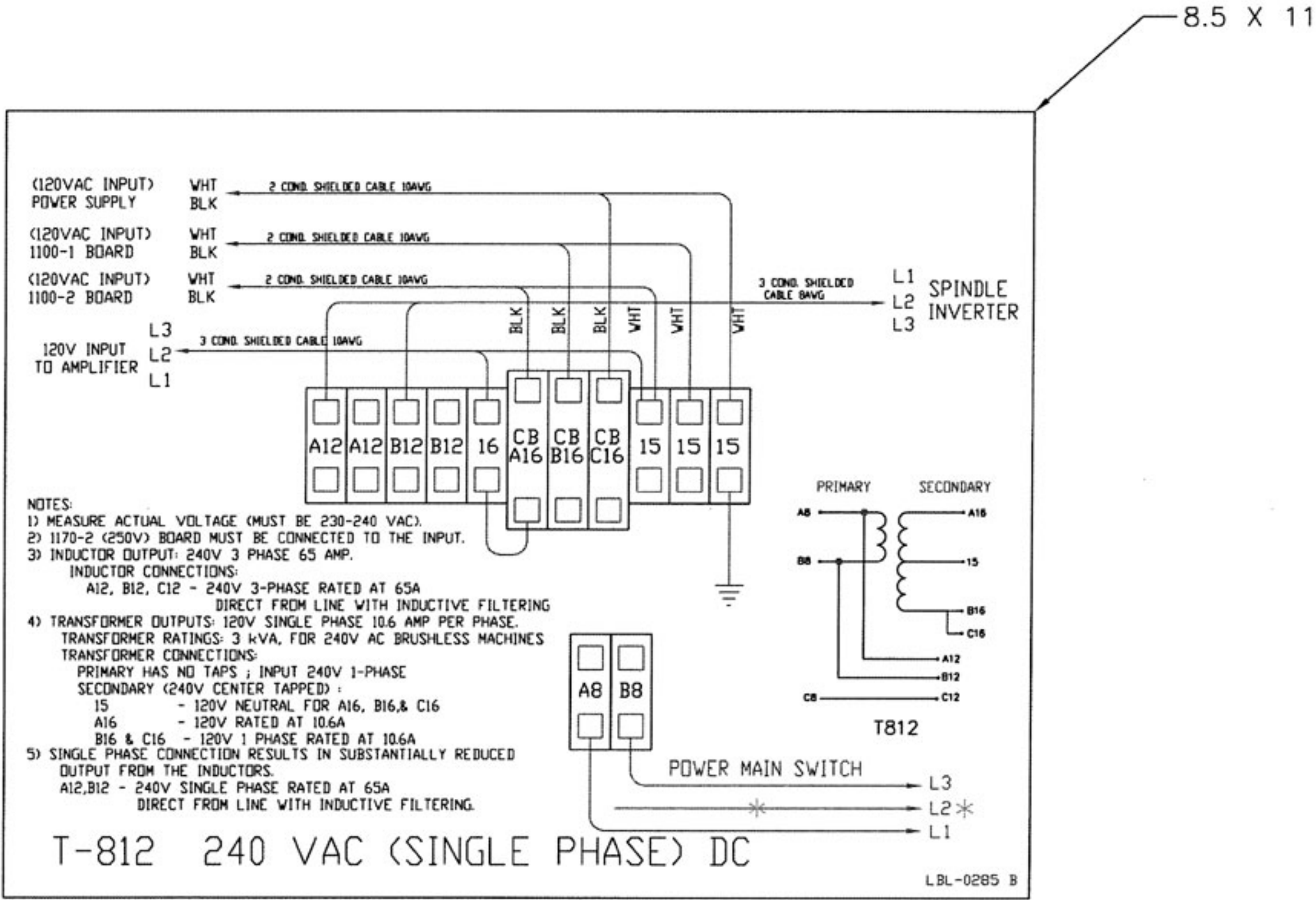
DATE: 10/28/00
 DRAWN: A. POLONSKY
 CHECKED: G. WOOSTER
 APPROVED: G. WOOSTER



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DWG NO. LBL-0285

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

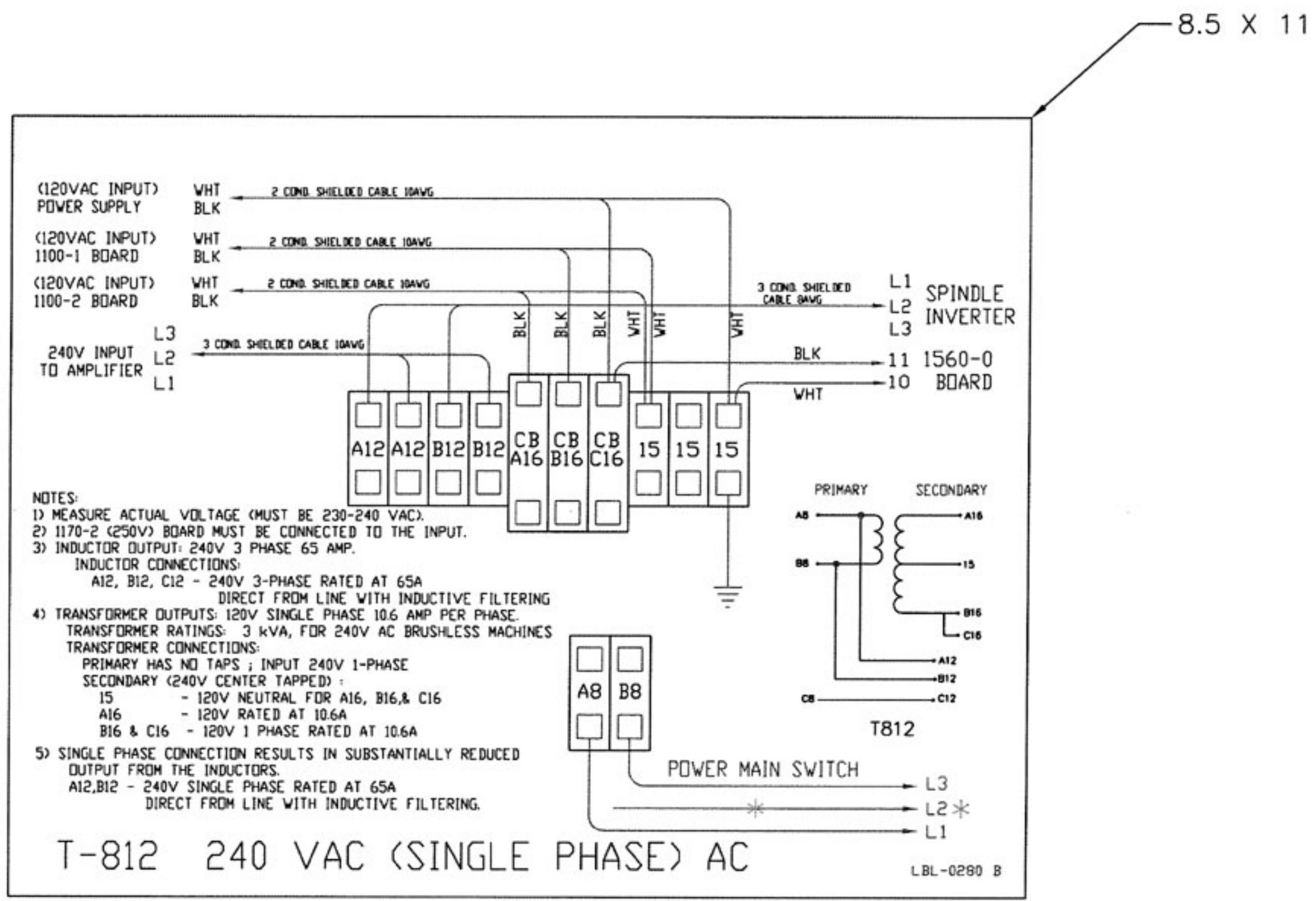


<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, FRACTIONS ARE: 1/16, 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4, 1 1/2, 1 3/4, 2, 2 1/4, 2 1/2, 2 3/4, 3, 3 1/4, 3 1/2, 3 3/4, 4, 4 1/4, 4 1/2, 4 3/4, 5, 5 1/4, 5 1/2, 5 3/4, 6, 6 1/4, 6 1/2, 6 3/4, 7, 7 1/4, 7 1/2, 7 3/4, 8, 8 1/4, 8 1/2, 8 3/4, 9, 9 1/4, 9 1/2, 9 3/4, 10</p> <p>DO NOT SCALE DRAWING</p> <p>ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED</p>	<p>THIRD ANGLE PROJECTION</p> <p>APPROVALS</p> <p>DATE</p> <p>10/20/98</p> <p>DESIGNER</p> <p>D.SEFERIAN</p> <p>CHECKED</p> <p>ENGINEER</p> <p>DRAWING NO.</p> <p>SCALE</p> <p>1/1</p>	<p>Fadal ENGINEERING CO.</p> <p>FILE</p> <p>LABEL, T812, TRANSFORMER</p> <p>240V SINGLE PHASE, DC</p> <p>DWG NO.</p> <p>LBL-0285</p> <p>REV</p> <p>B</p> <p>SHEET</p> <p>1 OF 1</p>
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REV. NO. LBL-0280

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



- 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.

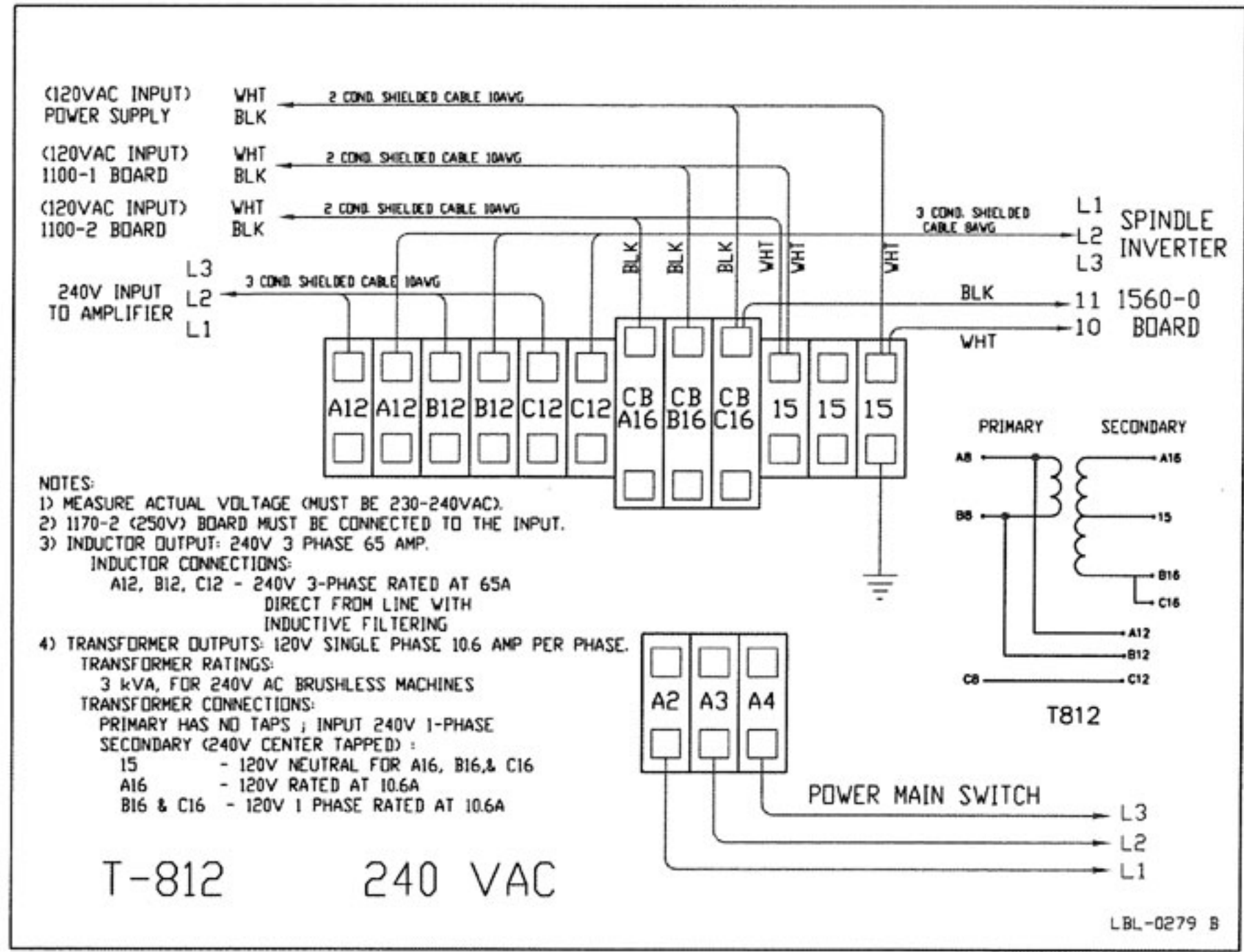
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ARE:</p> <p>DECIMALS ANGLES</p> <p>1/16 .001 30 1.000</p> <p>DO NOT SCALE DRAWING</p> <p>MATERIALS SHALL BE CLEAR POLYESTER UNLESS OTHERWISE SPECIFIED</p>	<p>THIRD ANGLE PROJECTION</p> <p>APPROVALS</p> <p>DATE</p> <p>10/20/98</p>	<p>Fadal ENGINEERING CO.</p> <p>TITLE</p> <p>LABEL, T812, TRANSFORMER</p> <p>240V SINGLE PHASE, AC</p>
<p>DATE</p> <p>10/20/98</p> <p>SCALE</p> <p>1/1</p>	<p>DESIGNER</p> <p>D.SEFERIAN</p> <p>DATE</p> <p>10/20/98</p>	<p>REV. NO.</p> <p>LBL-0280</p> <p>REV. B</p>

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REV. NO. LBL-0279

SH 1 REV B

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



8.5 X 11

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APPROVALS: _____ DATE: _____ DRAWN: D. SEFERIAN 10/20/98 CHECKED: _____ INCHES: _____ ENGINEERING: _____ DESIGNER: _____	

Fadal ENGINEERING CO.
10001 F. ROAD S. BLDG. C

TITLE: LABEL, T812, TRANSFORMER
240 VAC

SHEET: 1/1

DATE: 12/11/00

REV: B

4

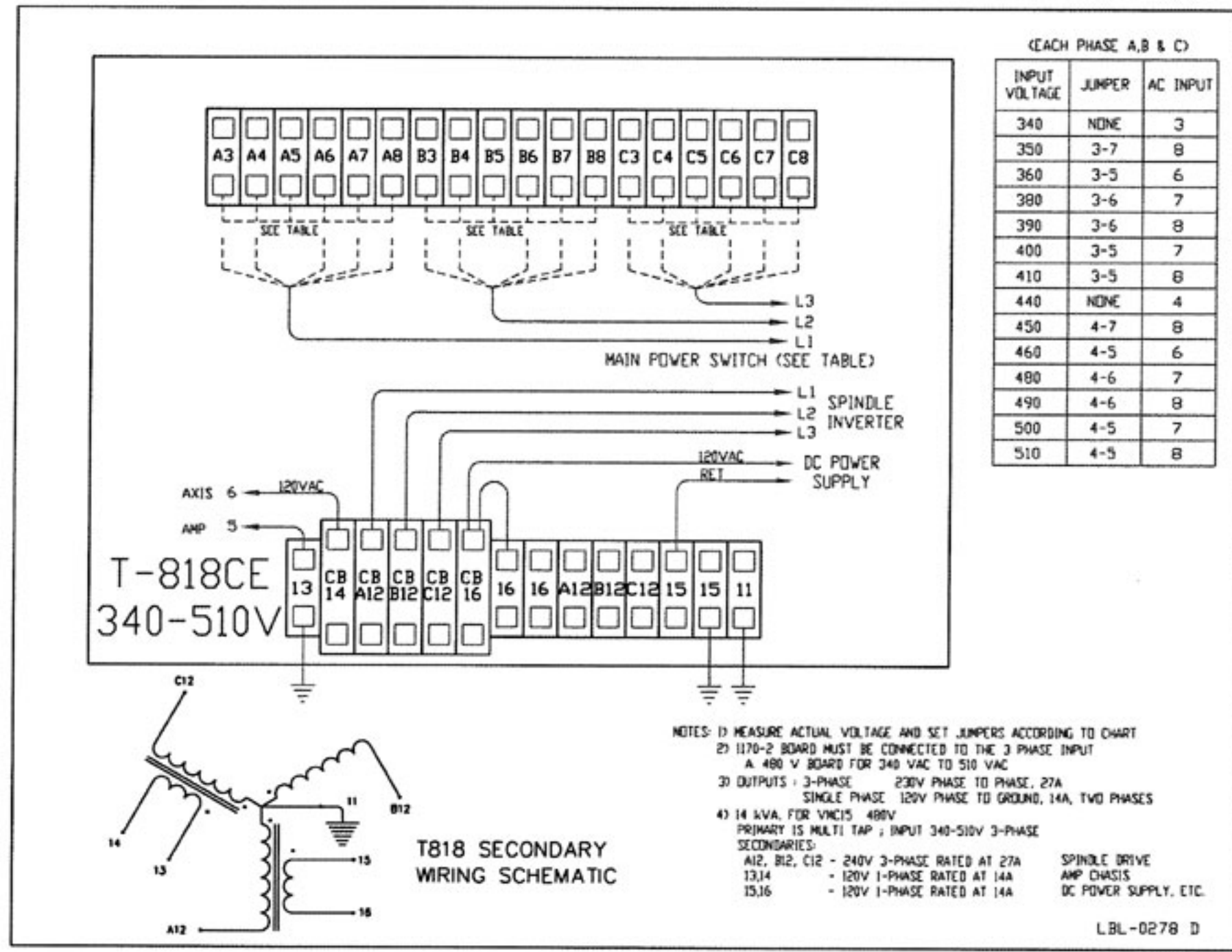
3

2

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

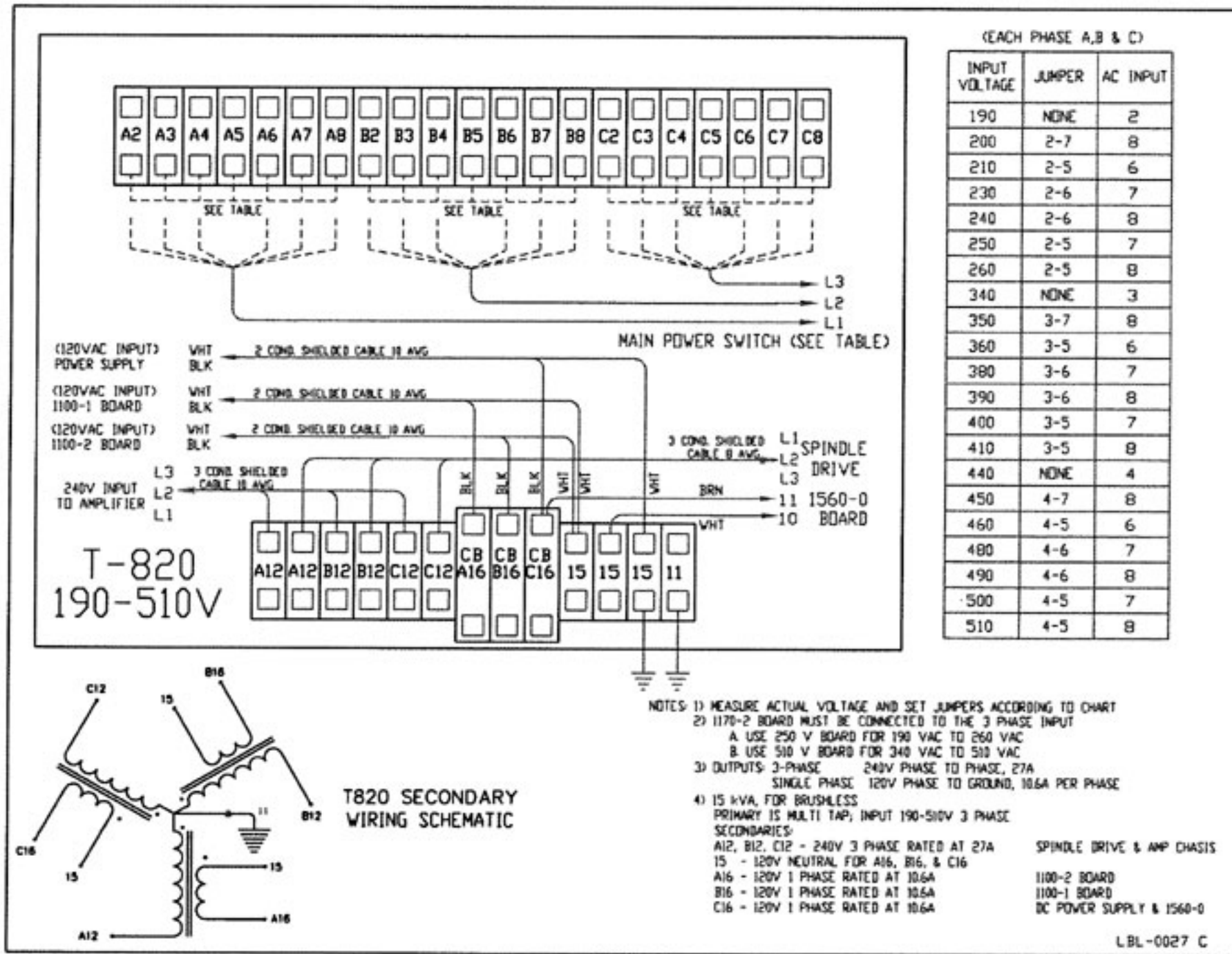


8.5 X 11

ALL DIMENSIONS SPECIFIED UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± 1/16 .005 ±.002 5'	90° ANGLE PROJECTION 	Fadal ENGINEERING CO. <small>1000 S. 10TH ST. SUITE 200, DENVER, CO 80202</small>	
		APPROVALS DESIGNER: D.SEFERIAN CHECKED: _____ ENGINEER: _____ DATE: 10/20/98	TITLE: LABEL, T818CE, TRANSFORMER 340-512 VAC DATE PREPARED: 10/20/98 ENG. NO.: LBL-0278 REV: D
DO NOT SCALE DRAWING MATERIAL: THE CLEAR POLYMER IS RECOMMENDED CONSTRUCTION	SHEET: 1/1 TOTAL SHEETS: 1 OF 1		

NOTE: THIS DRAWING OF ELECTRICAL CONNECTIONS REPRESENTS INFORMATION OF DESIGN & LAYOUT. IT IS SUBJECT TO CHANGE WITHOUT NOTICE AND SHALL NOT BE USED FOR CONSTRUCTION OR REPRODUCTION OF ANY KIND WITHOUT THE WRITTEN PERMISSION OF THE DESIGNER. ANY REVISIONS TO THIS DRAWING SHALL BE INDICATED BY A REVISION TABLE.

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

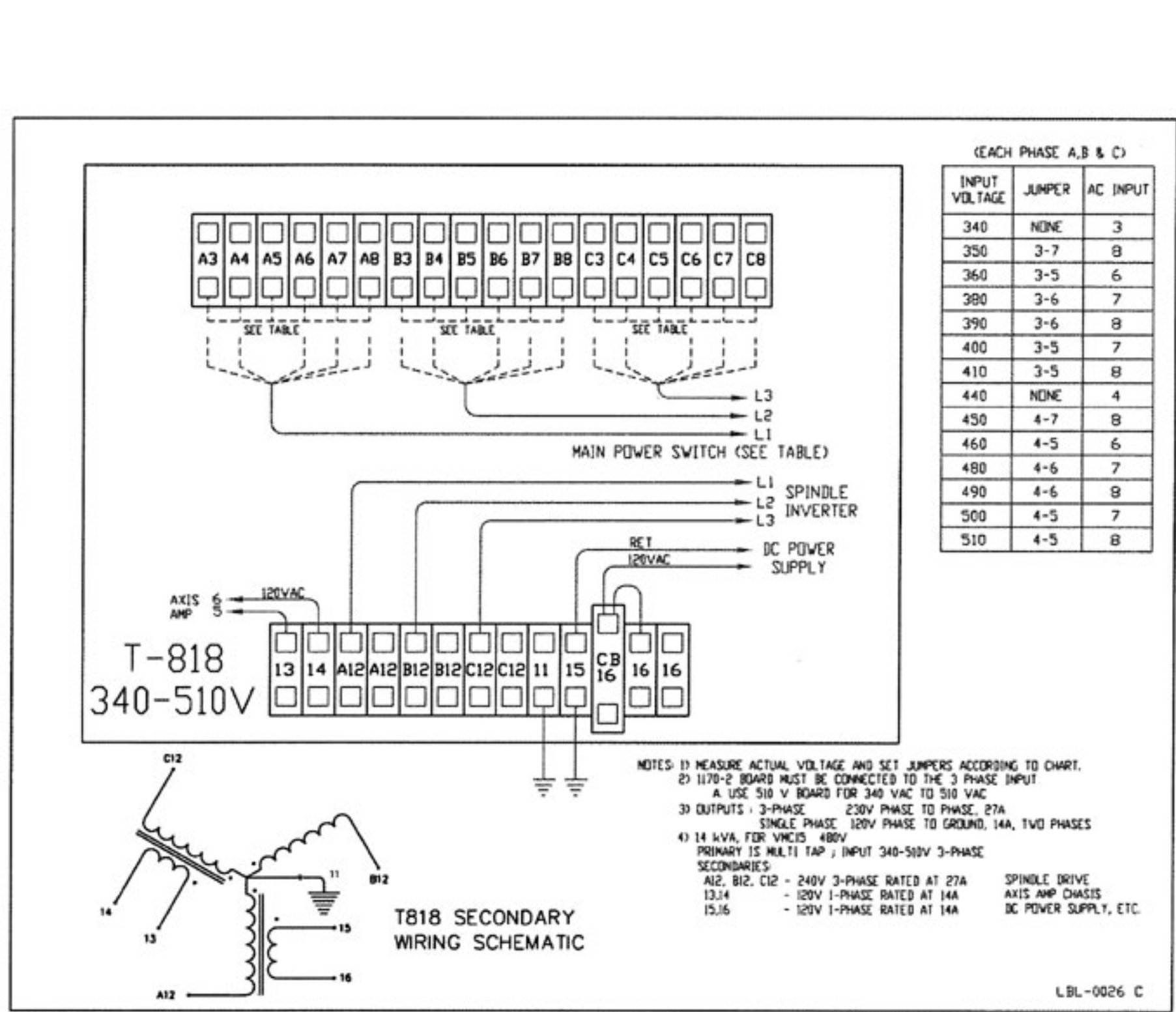


8.5 X 11

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FINISHES DECIMALS ANGLES ± .015 ± .025 ± .015 ± .015 ± .015 DO NOT SCALE DRAWING MATERIALS SHALL BE AS SPECIFIED OR THE BEST AVAILABLE EQUIVALENT FINISH: TREATMENT:	THIRD ANGLE PROJECTION APPROVALS: D. SEFERIAN 10/20/98 CHECKED: ENGINEER: ELECTRICAL SYMBOLS:	Fadal ENGINEERING CO. 1000 W. 10TH ST. SUITE 200 OAKLAND, CA 94612 TITLE: LABEL, T820, TRANSFORMER 190-510V SIZE: C PREVIOUS EDITION: NONE DRG NO.: LBL-0027 REV: C SCALE: 1/1 CAL. WT. NO. RE. SHEET: 1 OF 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

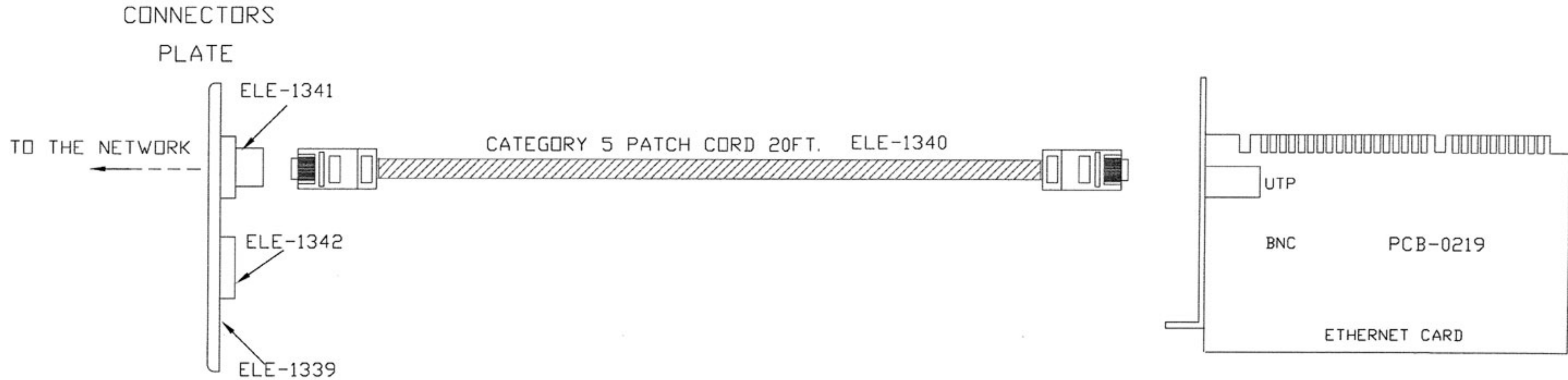


8.5 X 11

QUALITY CONTROL SHEETS DIMENSIONS ARE IN INCHES, UNLESS NOTED OTHERWISE. FRACTIONS DECIMALS ANGLES 1/16 .001 0.001 1/2 .001 .001 90.000 (DO NOT SCALE DRAWING) MATERIAL: USE CLEAR POLYMER OR RECOMMENDED CONSTRUCTION FINISH: TREATMENT:	WHO MADE PRODUCTION 	Fadal ENGINEERING CO. 1000 W. 10TH ST. ST. LOUIS, MO 63103
	APPROVALS: _____ DATE: _____ DRAWN: D.SEFERIAN 10/20/98 CHECKED: _____ DATE: _____ CREATOR: _____	

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

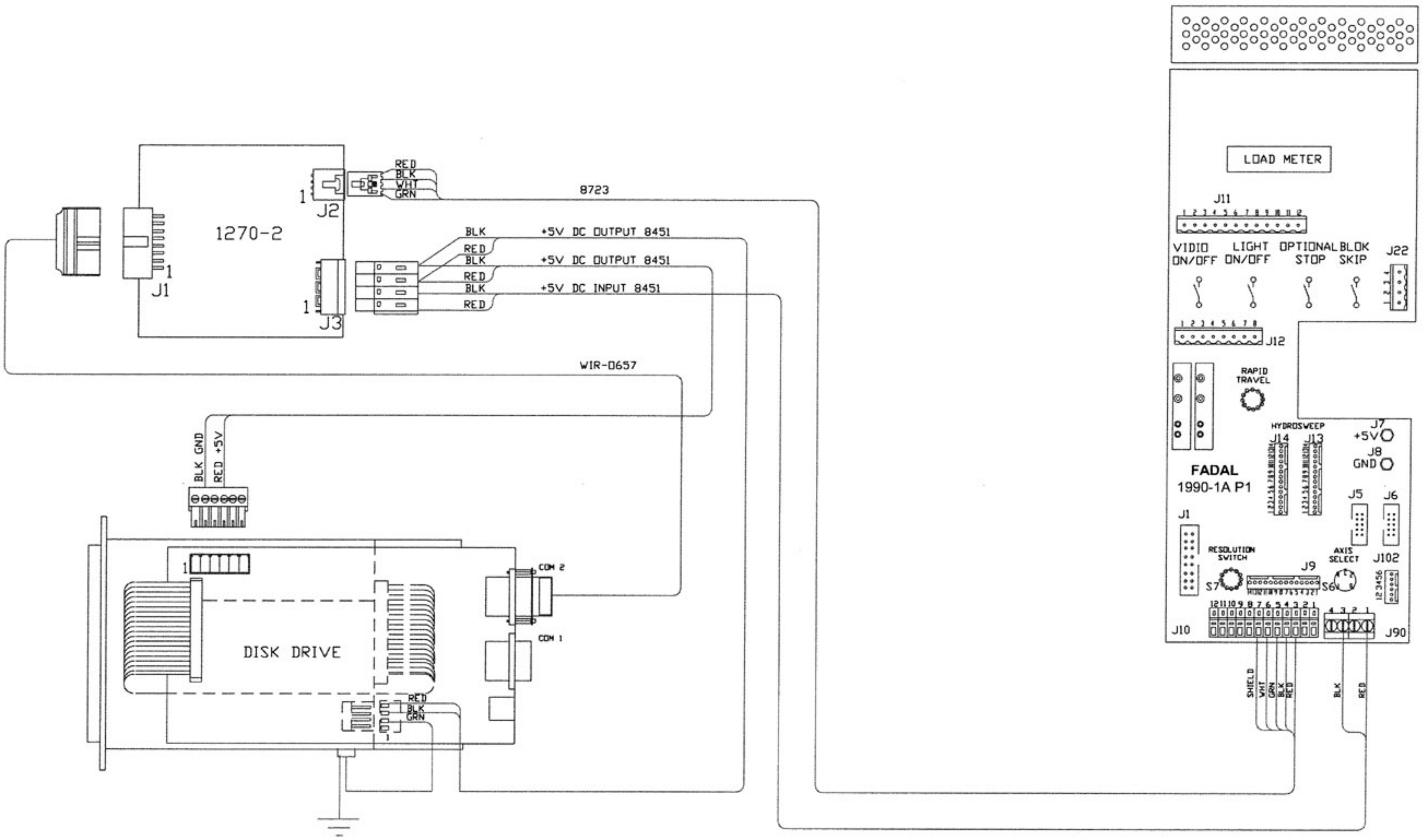


NOTE:

1. Install the Ethernet card into the PC chassis frame in 32MP control.
2. Install the connectors 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: .010, .015, .030 UNFINISHED: .015, .030, .060		<small>DATE AND REVISION</small> 		Fadal ENGINEERING CO. <small>2000 S. 10th St. Waukegan, IL 60087</small>	
<small>APPROVALS</small> DRAWN: A. POLONSKI CHECKED: [] DESIGNED: [] DATE: 10/21/99	<small>DATE</small> 10/21/99	ETHERNET CONNECTION / 32MP WIRING DIAGRAM			
<small>SCALE</small> D	<small>PROJECT NO.</small> WFG-0010	<small>REV.</small> C	<small>DATE, REV., AND BY</small> 03/19/01		

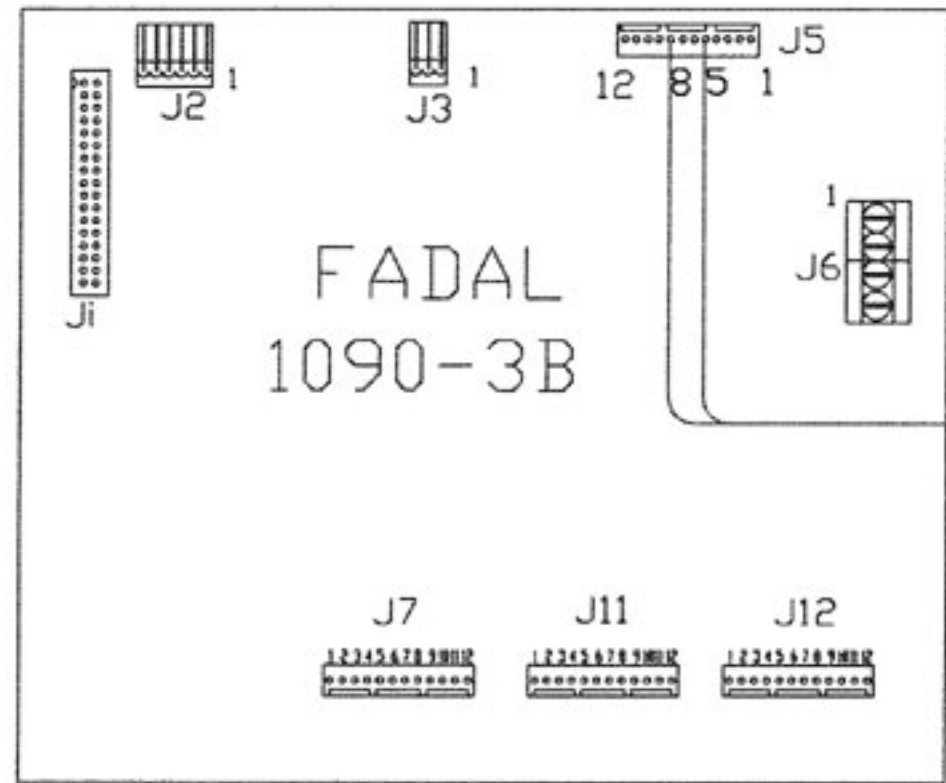
NOTICE: THIS DRAWING OR SECTION, CONTAINS PROPRIETARY INFORMATION OF ORIGINATOR AND IS TRANSMITTED IN CONFIDENCE TO CONTRACTOR AND IS NOT TO BE COPIED OR DISCLOSED EXCEPT AS AUTHORIZED BY WRITTEN AGREEMENT OF ORIGINATOR AND CONTRACTOR.



PARTS LIST QUANTITY PART NO. DESCRIPTION		APPROVALS DATE DESIGNED CHECKED DRAWN DATE		Fadal CORPORATION, CO. 1000 S. 10TH ST. MILWAUKEE, WIS. 53211	
DISK DRIVE SYSTEM WIRING DIAGRAM		DRAWN: A. POLONSKY DATE: 01/25/70		DISK DRIVE SYSTEM WIRING DIAGRAM	
PROJECT:		CHECKED:		DISK DRIVE SYSTEM WIRING DIAGRAM WRG-0029	
SHEET NO.		SHEET NO.		SHEET 2 OF 2	

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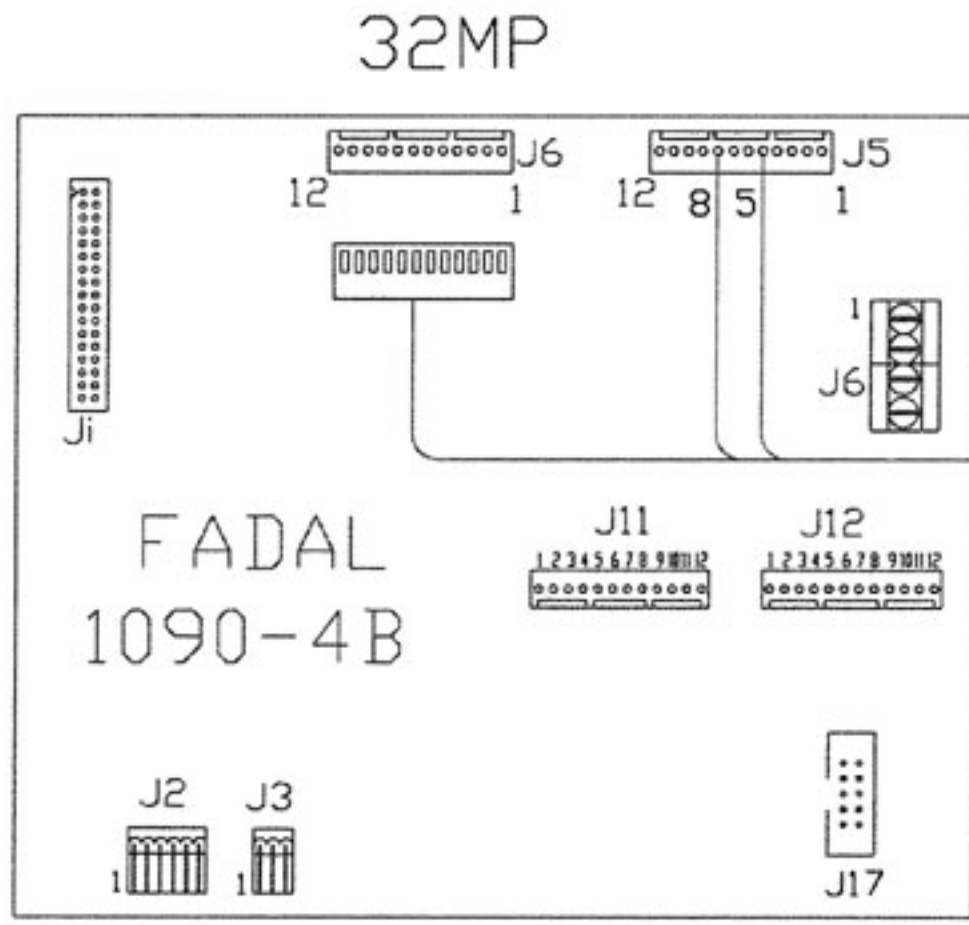
CNC 88/MULTI PROCESSOR



FADAL
1090-3B

RIBBON CABLE

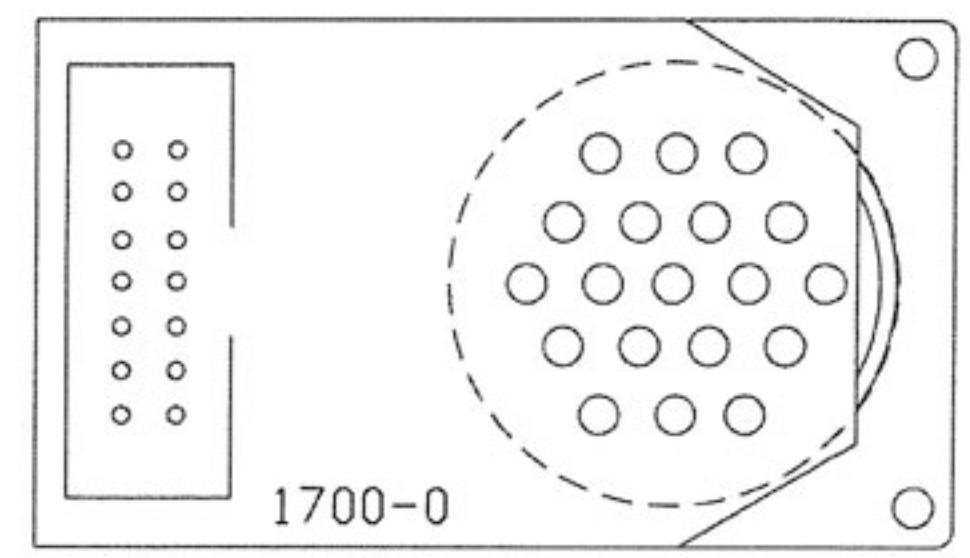
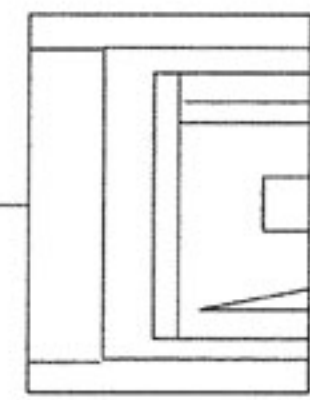
OR



32MP

FADAL
1090-4B

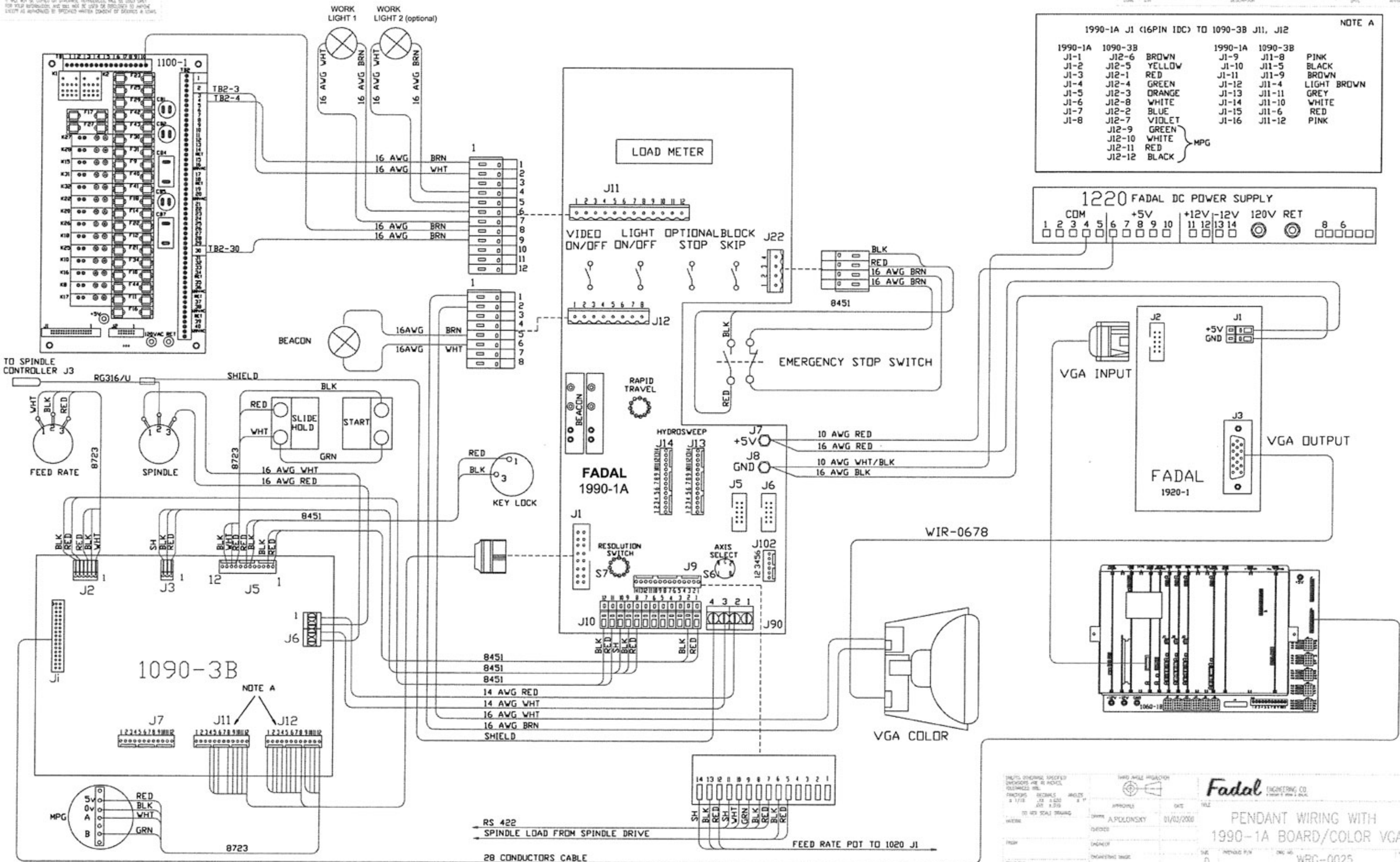
RIBBON CABLE



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: 01/15/00 BY: A. POLONSKY		Fadal ENGINEERING CO. 1000 S. MAIN ST. ARLING, VA 22199	
DO NOT SCALE DRAWING				DRAWN BY: A. POLONSKY		MANUAL PULSE GENERATOR WIRING DIAGRAM	
TITLE:		PROJECT:		SHEET: 1 OF 1		WIRING DIAGRAM SHEET 1 OF 1	

NOTE: THIS DRAWING IS A GENERAL REPRESENTATION OF THE WIRING. THE USER MUST REFER TO THE WIRING MANUAL FOR THE EXACT WIRING CONNECTIONS. THE USER MUST BE SURE TO CHECK THE WIRING CONNECTIONS AGAINST THE WIRING MANUAL BEFORE POWERING UP THE MACHINE TO AVOID DAMAGE TO THE MACHINE OR PERSONAL INJURY.

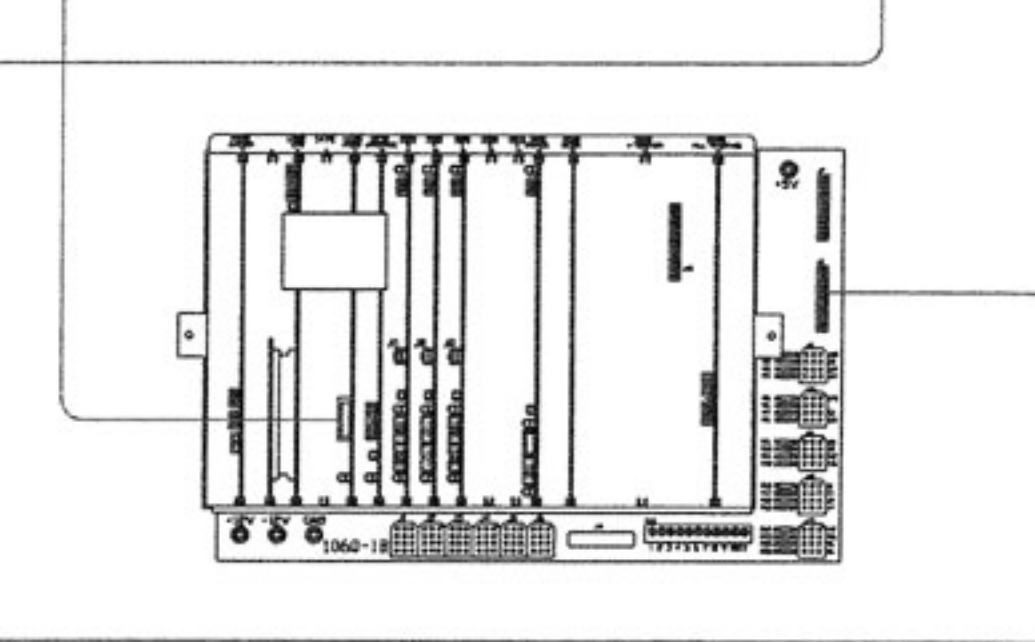
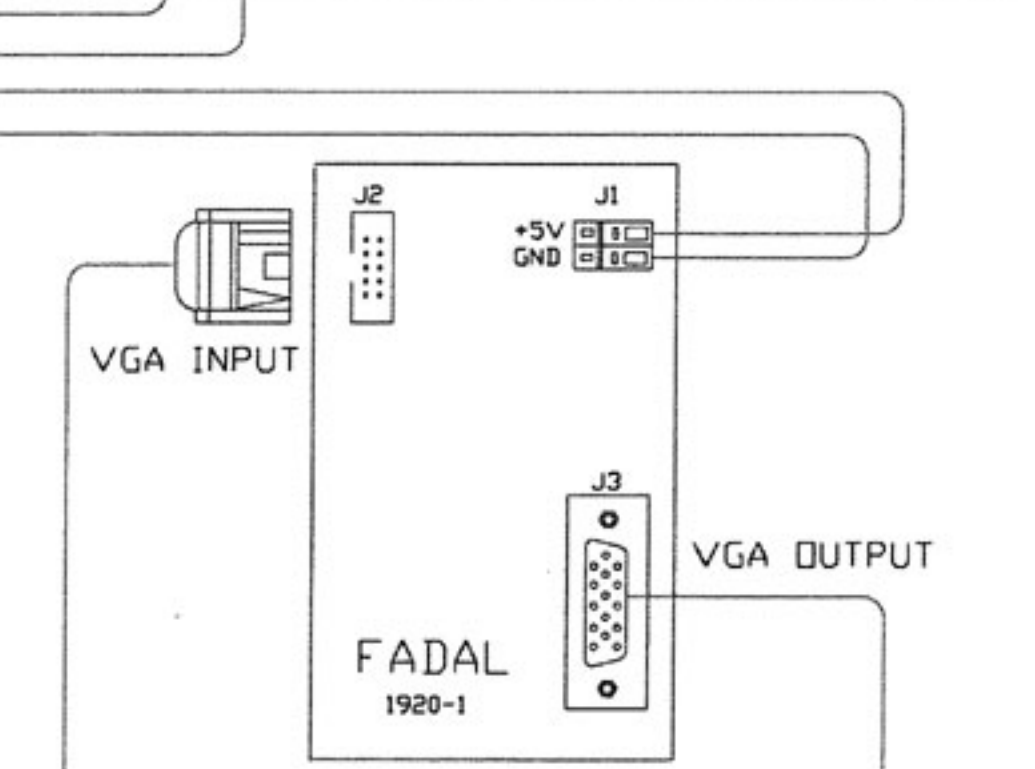
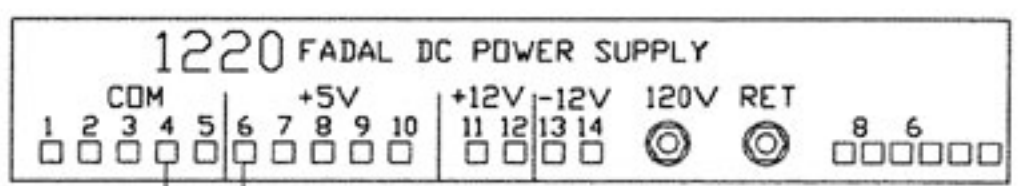


NOTE A

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

1990-1A	1090-3B	Color	1990-1A	1090-3B	Color
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



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

DESIGNED BY: A. POLONSKY

ENGINEERING: [Signature]

SCALE: 1:1

Fadal ENGINEERING CO.

PENDANT WIRING WITH 1990-1A BOARD/COLOR VGA

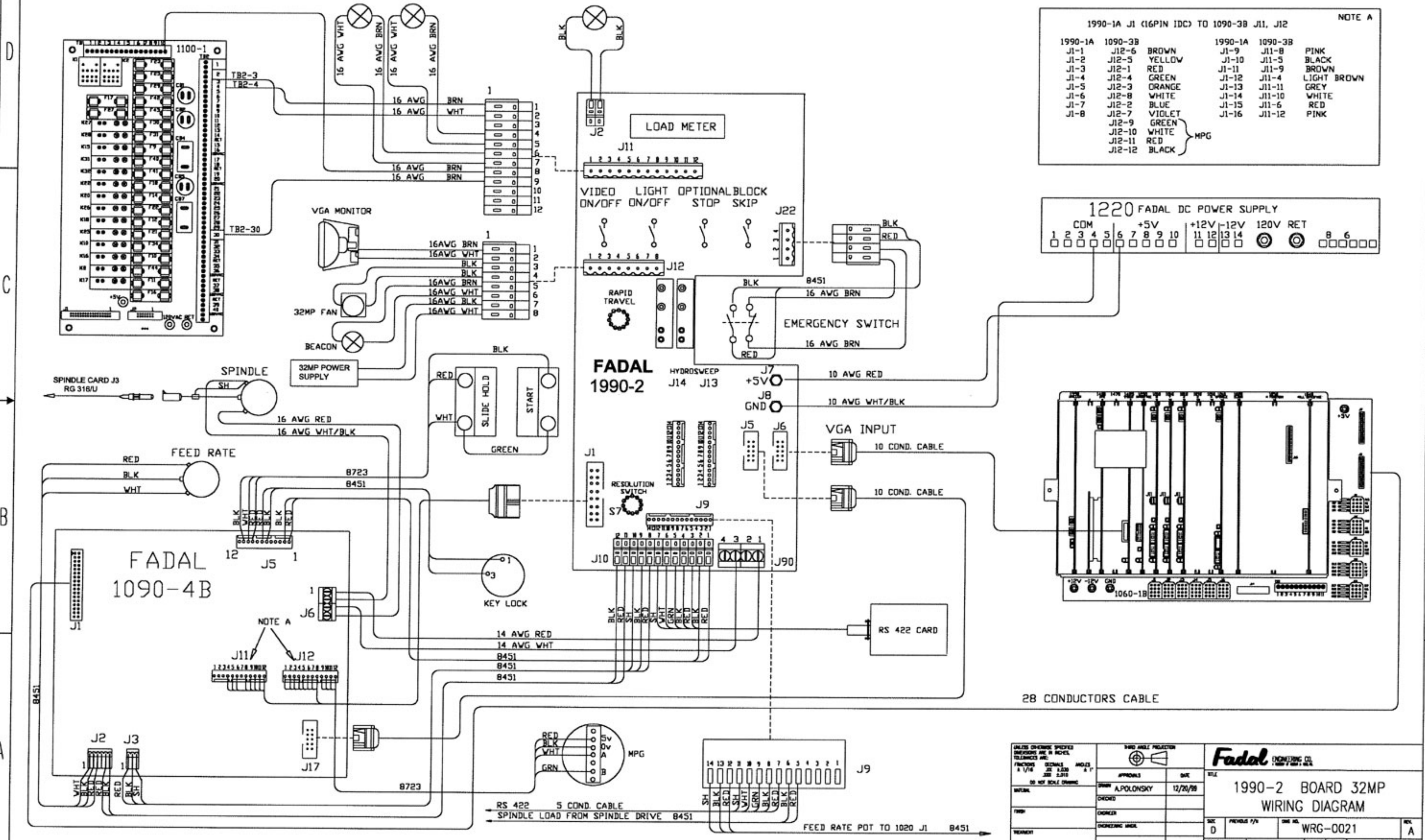
WRC-0025

RS 422 SPINDLE LOAD FROM SPINDLE DRIVE

28 CONDUCTORS CABLE

FEED RATE POT TO 1020 J1

NOTICE: THE DRAWING IS INTENTED TO BE USED AS A GUIDE ONLY. IT IS NOT TO BE USED AS A SUBSTITUTE FOR THE ORIGINAL DRAWING. ANY CHANGES TO THIS DRAWING MUST BE APPROVED BY THE ORIGINAL DRAWING ENGINEER.

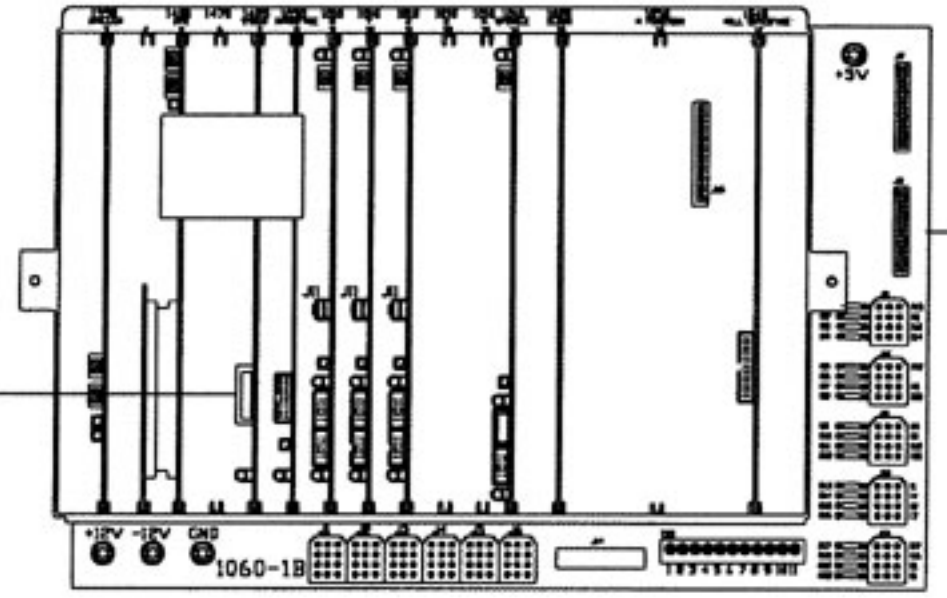
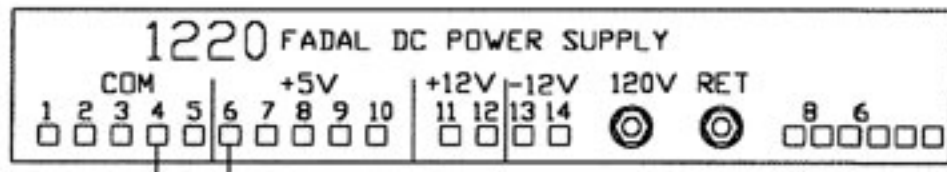


NOTE A

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

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

MPG



<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:</p> <p>FRACTIONS DECIMALS ANGLES</p> <p>± 1/16 ± 0.005 ± 1°</p> <p>DO NOT SCALE DRAWING</p>	<p>APPROVALS</p> <p>DATE</p> <p>12/20/98</p>	<p>Fadal ENGINEERING CO.</p> <p>1990-2 BOARD 32MP WIRING DIAGRAM</p>
<p>DESIGNED BY</p> <p>APOLONSKY</p>	<p>CHECKED</p>	<p>REV. NO. WRG-0021</p> <p>REV. A</p>
<p>DATE</p> <p>12/20/98</p>	<p>SCALE</p>	<p>SHEET 1 OF 1</p>

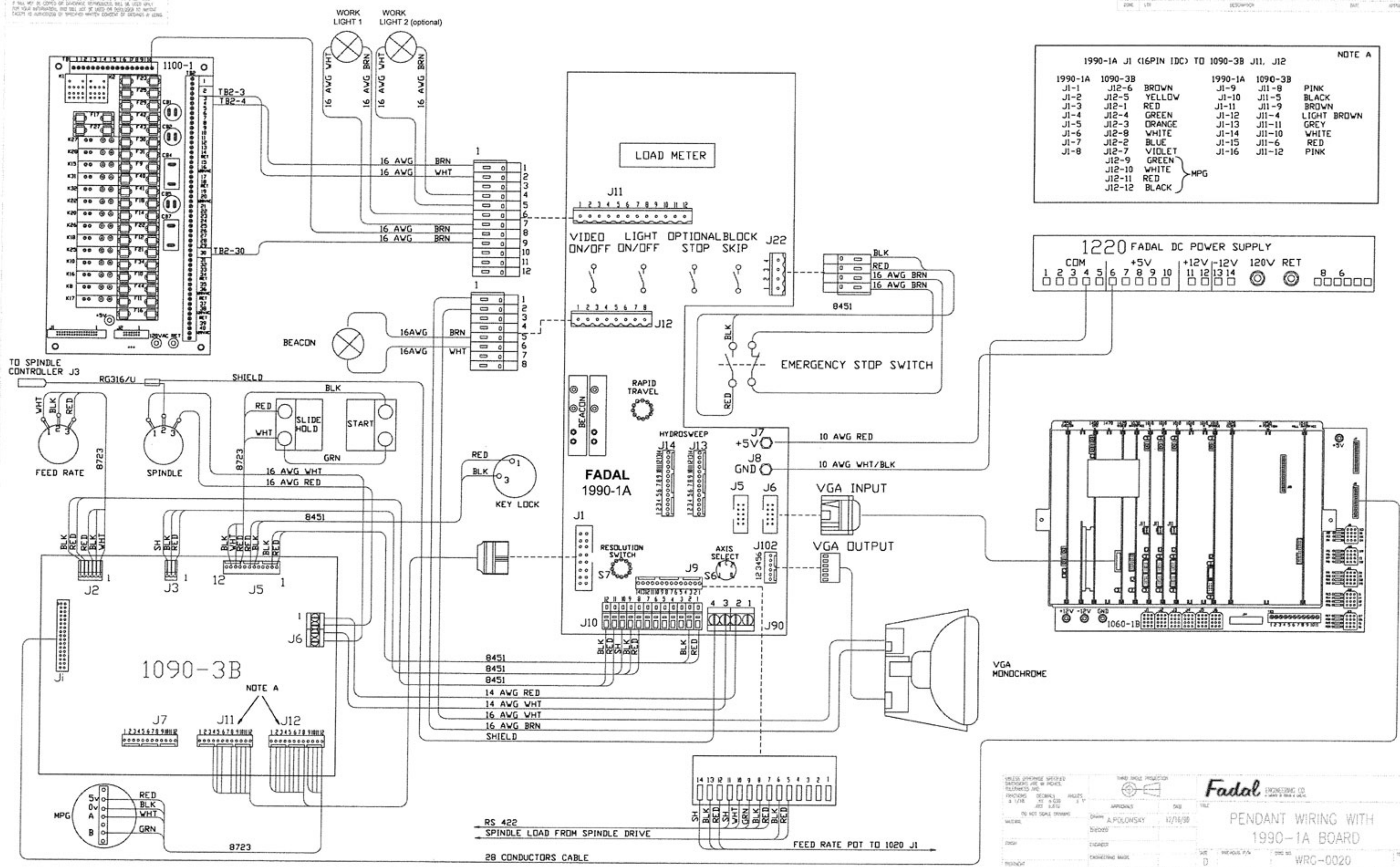
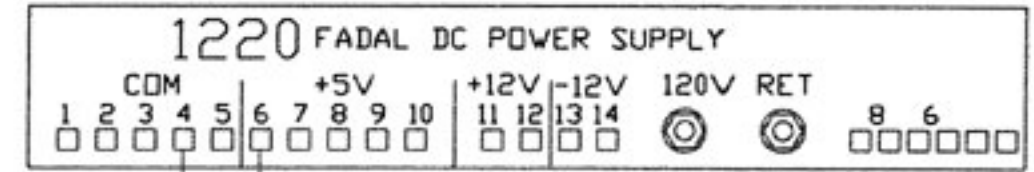
NOTE: THE TOP OF BOARD CONTAINS FREQUENCY INFORMATION OF CABLES & TRAYS IN CONFORMANCE WITH STANDARD 101. THIS MAY BE COPIED OR REPRODUCED IN WHOLE OR IN PART FOR YOUR INFORMATION. THE USE OF THIS INFORMATION TO REPRODUCE OR TRANSMIT IN ANY MANNER IS PROHIBITED.

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



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

FRACTIONS	DECIMALS	ANGLES
± 1/16"	± 0.030"	± 1°
± 1/32"	± 0.015"	

TO NOT SCALE DRAWING

DATE: 12/16/98

APPROVALS: [Signature]

DESIGN: APOLOSKY

DRAWN: [Signature]

DATE: 12/16/98

PROJECT: PENDANT WIRING WITH 1990-1A BOARD

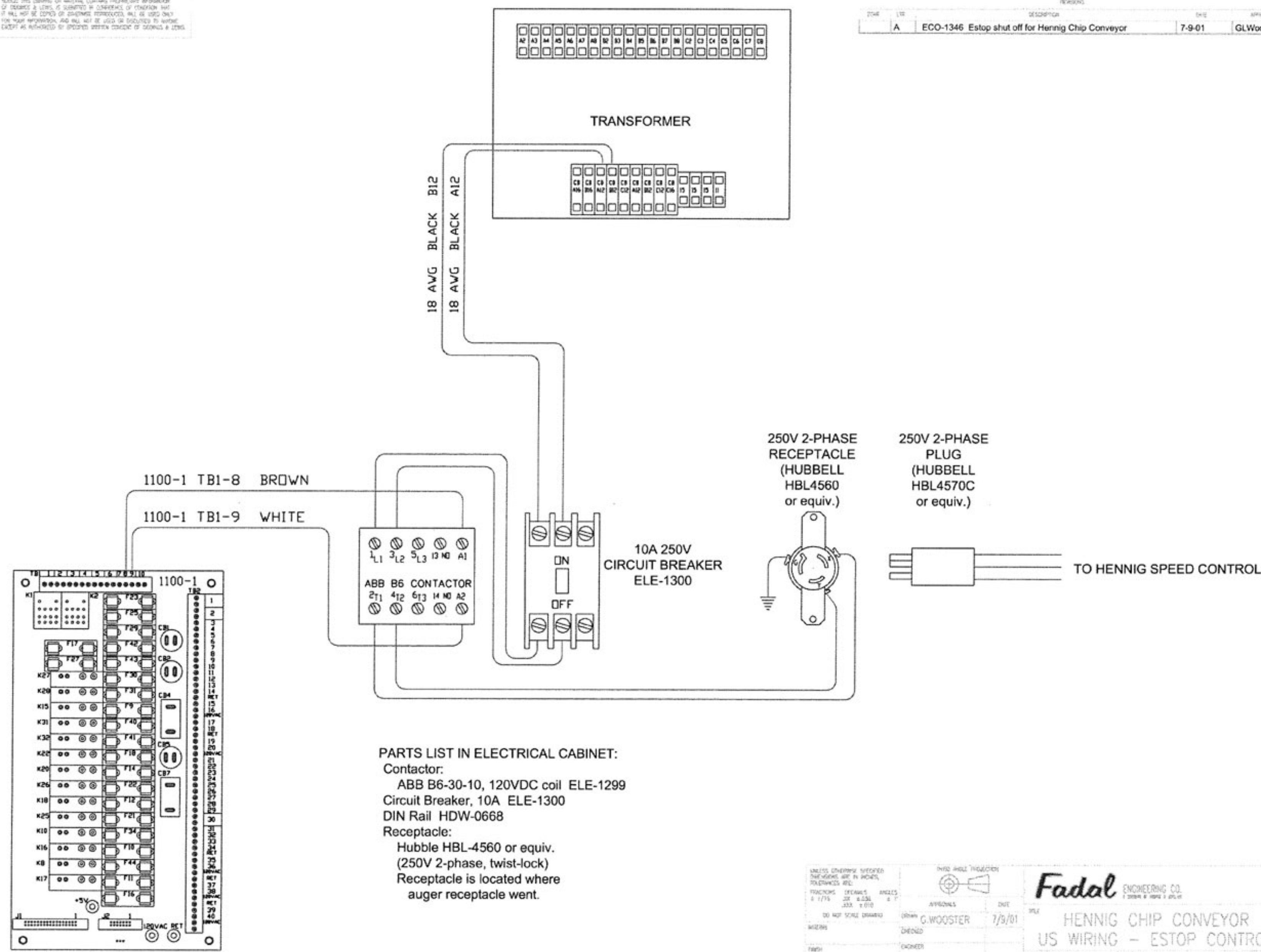
REV: D

WRC-0020

SCALE: 1" = 1"

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DATE	BY	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.

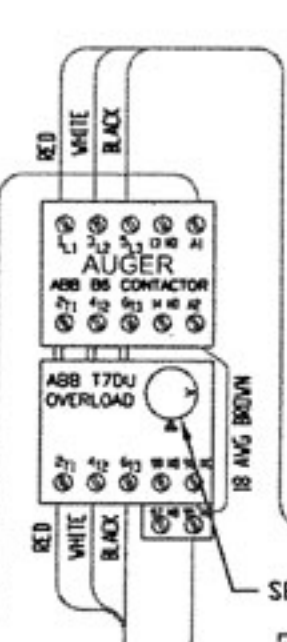
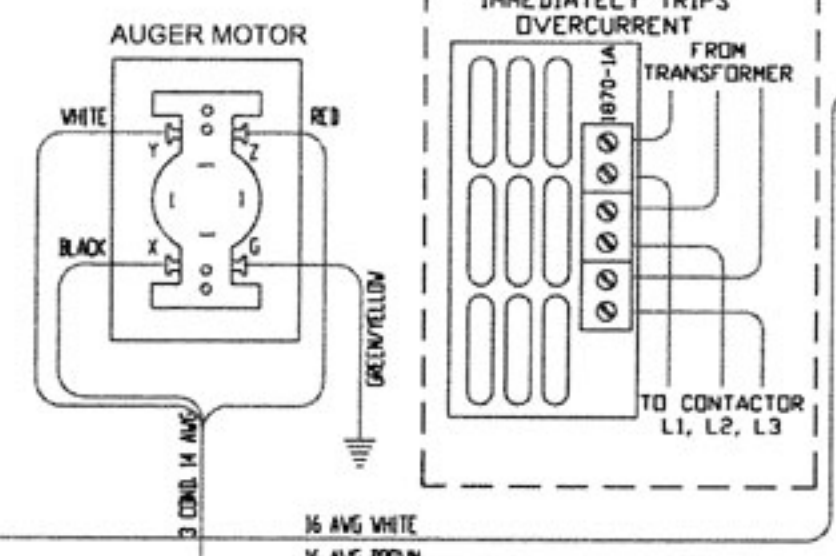
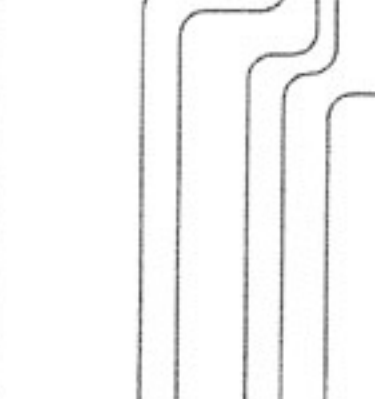
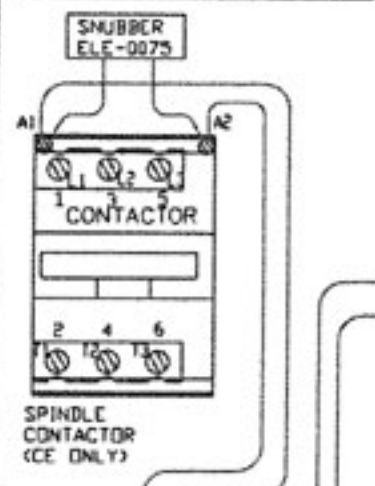
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± 1/32 ± 0.031 ± 1°	DRW. G.WOOSTER CHKD. ENGR/DRG. SHAG	DATE 7/9/01	FILE
DO NOT SCALE DRAWING	APPROVALS	DATE	FILE
			HENNIG CHIP CONVEYOR US WIRING - ESTOP CONTROL
DESIGNER	DATE	SHEET 1/1	DES. NO. WRG-0045 REV. A DR. W. AG. BY SHEET 2 OF 2

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1310 PIN LIST

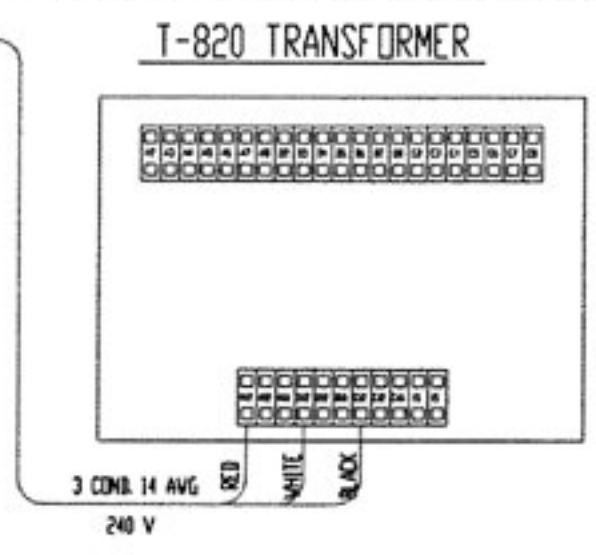
- J1**
 - 1. 120 VAC (INPUT)
 - 2. PUMP
 - 3. VALVE #1
 - 4. VALVE #2
 - 5. VALVE #3
 - 6. 120V RETURN (INPUT)
 - 7. E-STOP (INPUT)
 - 8. CONTACTOR FOR AUGER
 - 9. CONTACTOR FOR SPINDLE
 - 10. RETURN FOR SPINDLE CONTACTOR
 - 11. RETURN FOR AUGER CONTACTOR AND PUMP STARTER
 - 12. RETURN FOR VALVE COILS
- 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-0101 SPINDLE RELAY

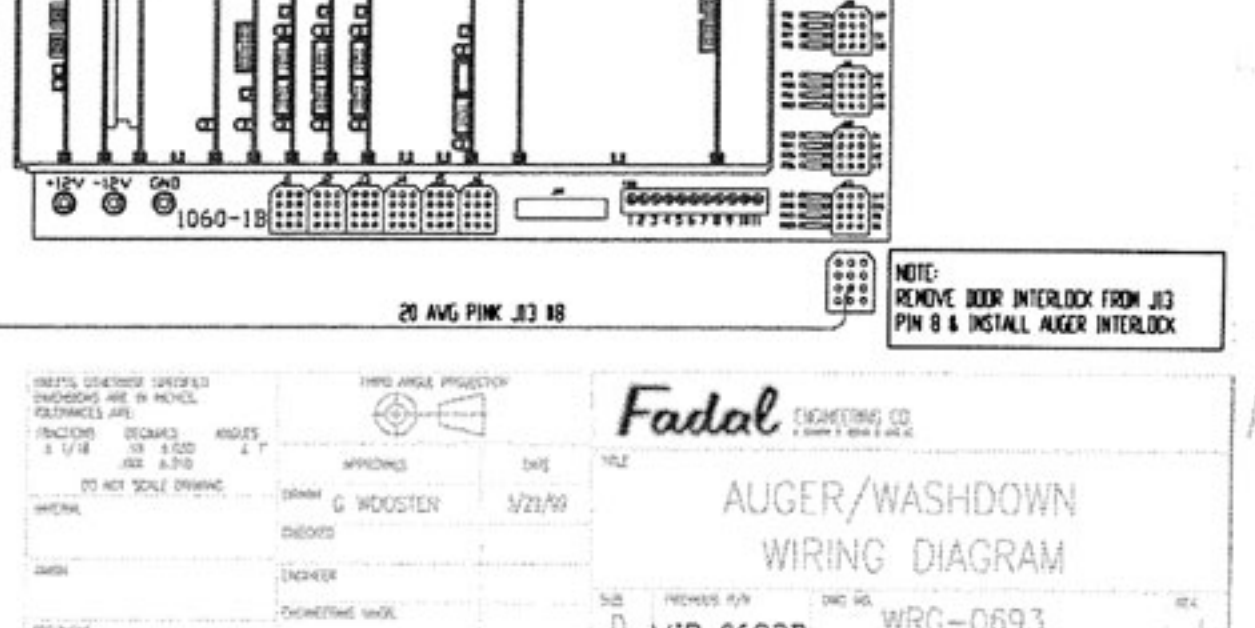
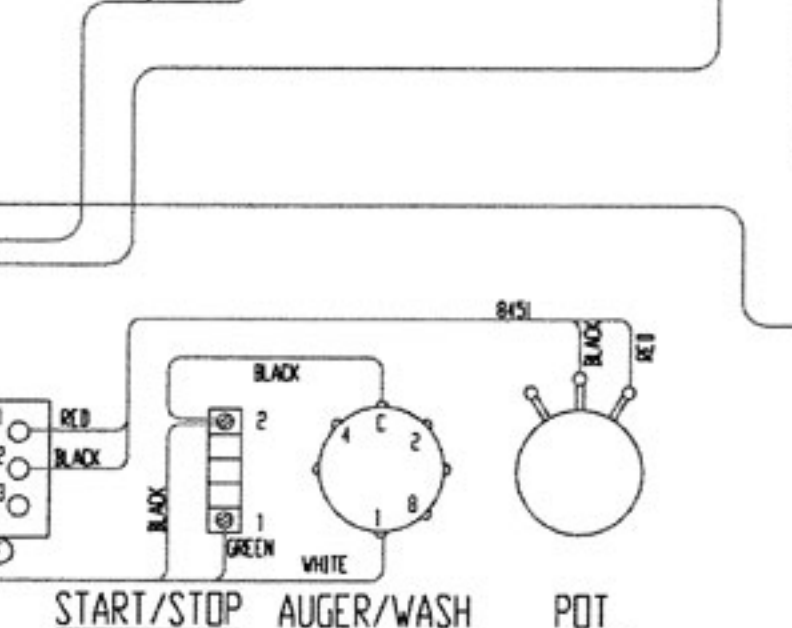
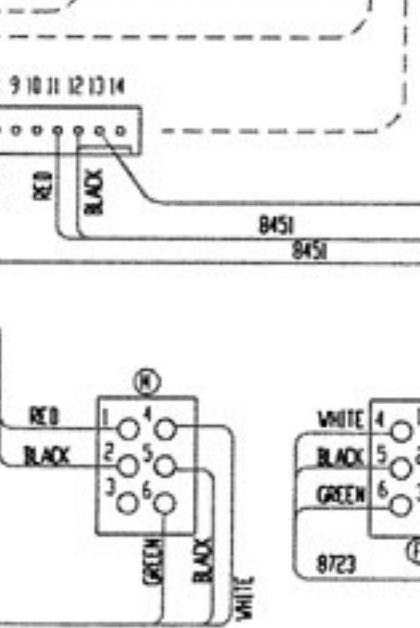
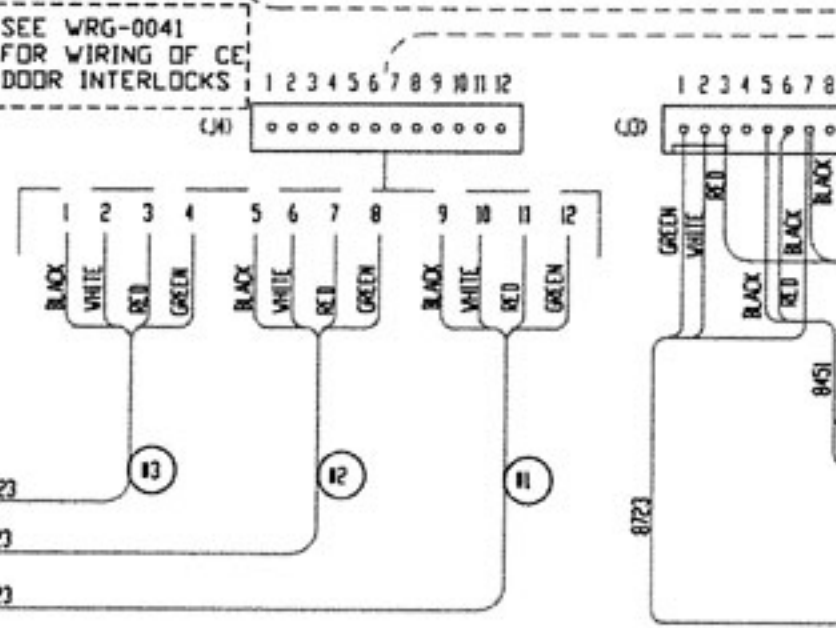
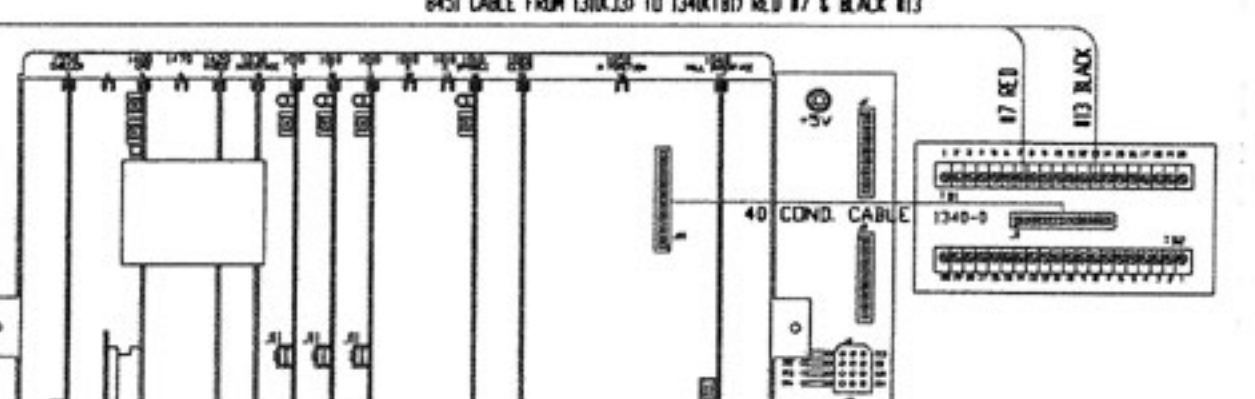
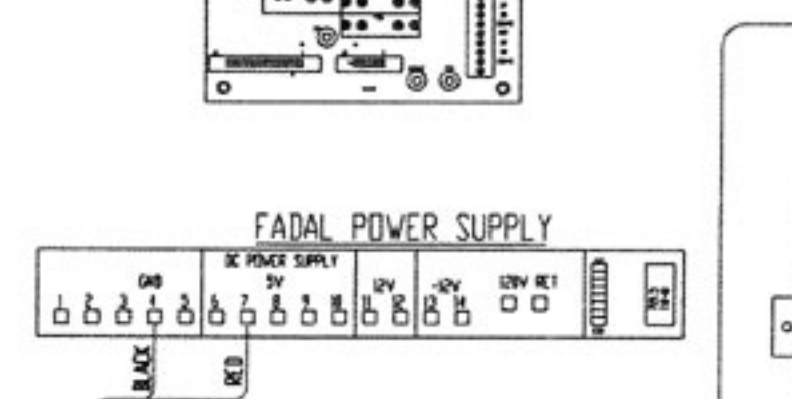
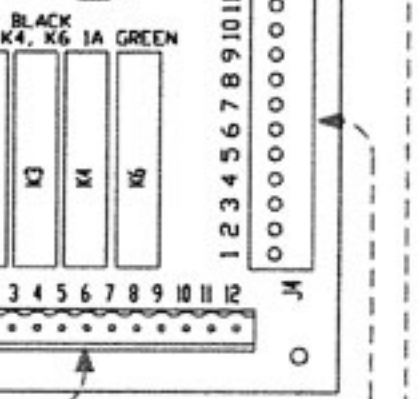
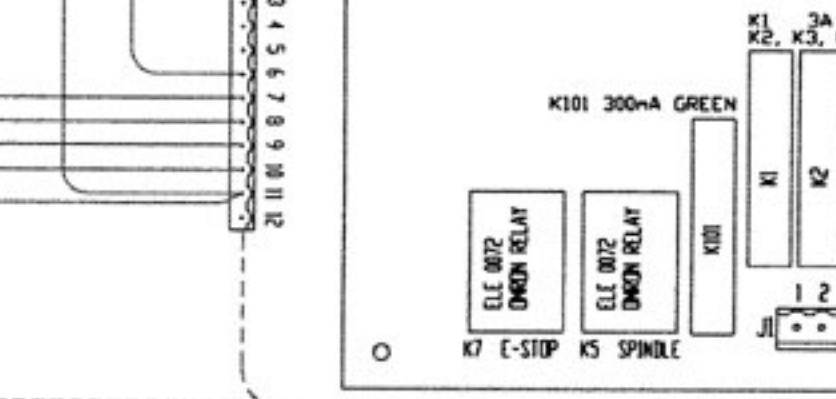
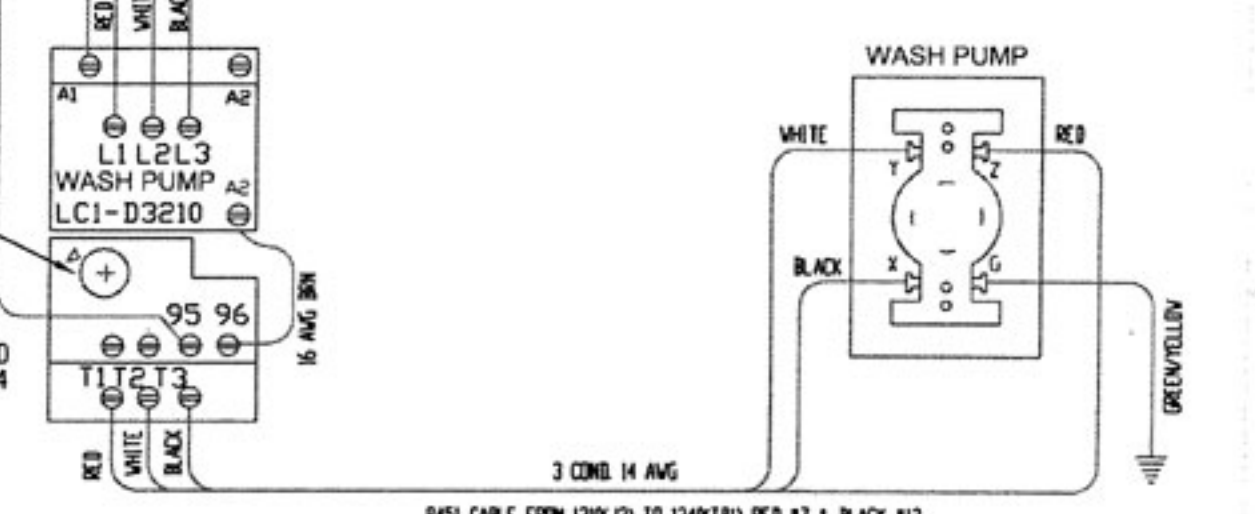
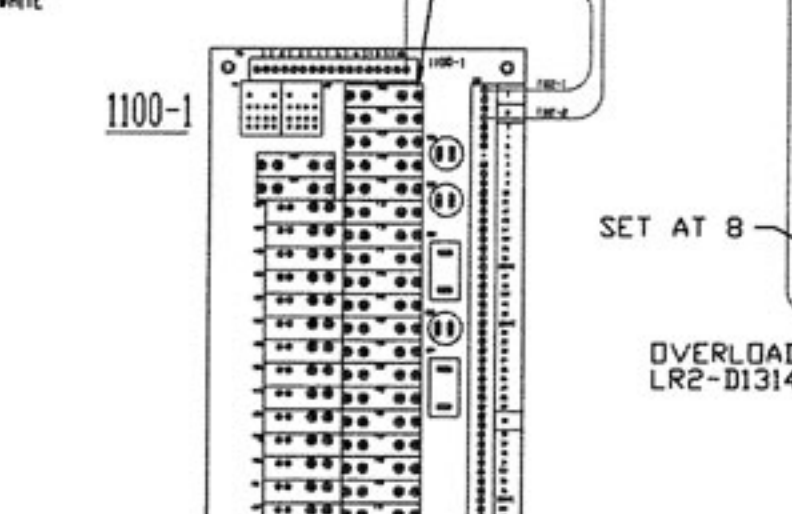
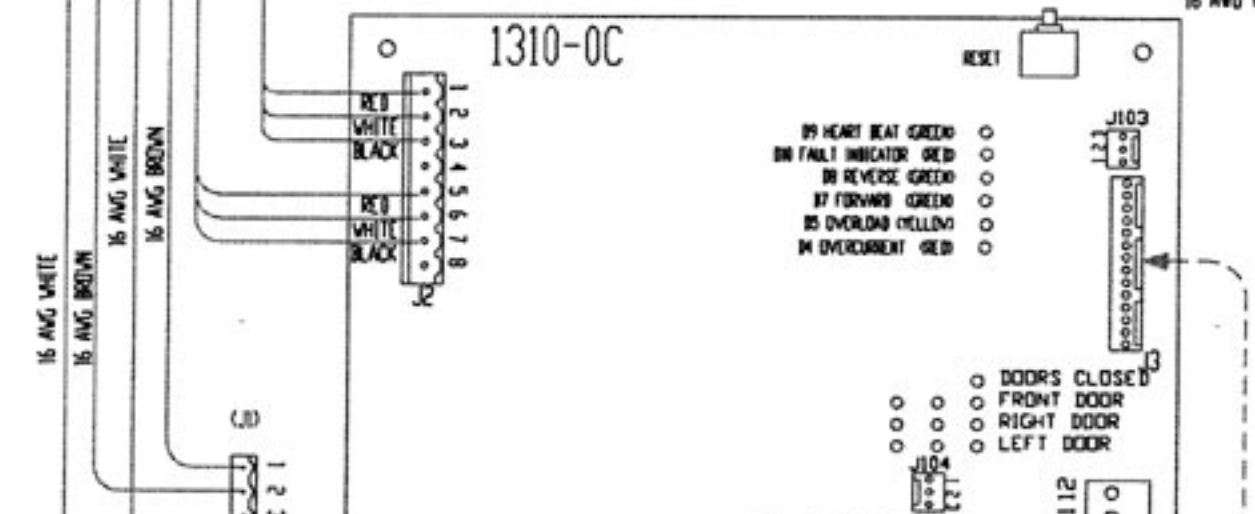
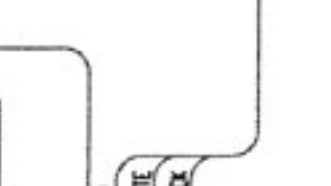
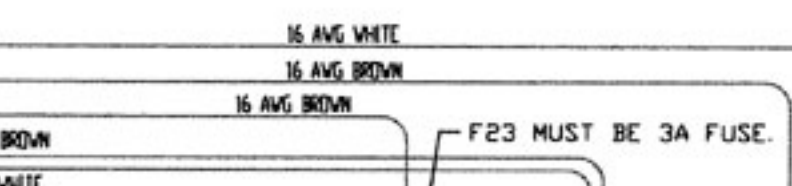
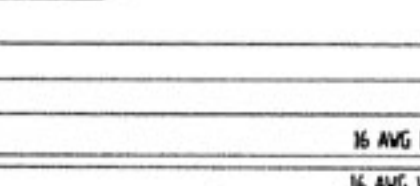
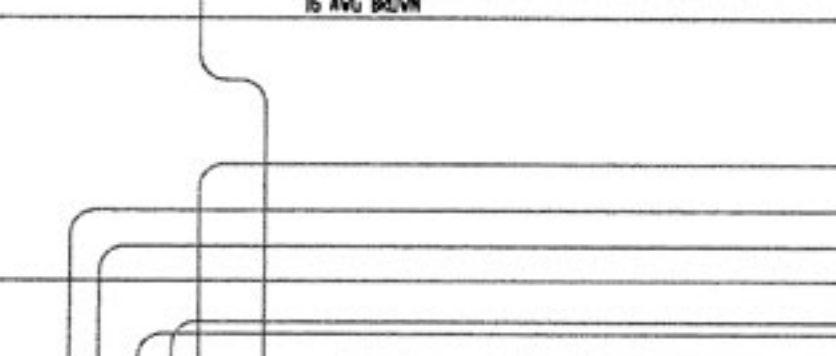


CIRCUIT BREAKER 15A QDU315
(IF MORE THAN 15A IS REQUIRED BECAUSE DATC, PALLET CHANGER, AND COOLANT THRU ARE ADDED, THEN A SECOND CIRCUIT BREAKER WILL BE NEEDED.)

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.



REV	DATE	DESCRIPTION	BY	CHKD
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-0989 ECO-0993 CIRCUIT BREAKER 15A ADDED TO WASHDOWN RELAYS ELE-0747 AND FUSE BLOCK ELE-370 CHANGED TO CONTACTOR 2HP AND CIRCUIT BREAKER 10A		
C2	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



Fadal (INCORPORATED) CO.

AUGER/WASHDOWN WIRING DIAGRAM

WIRING: G. WOOSTER
DATE: 1/21/99

REV: D
WIR-0693B
WIR-0693

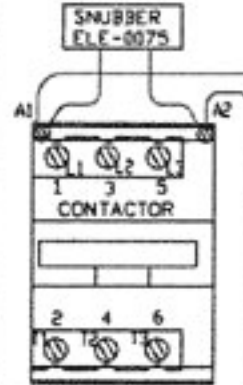
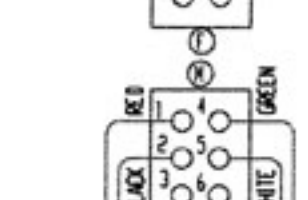
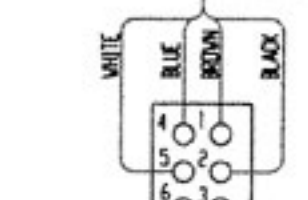
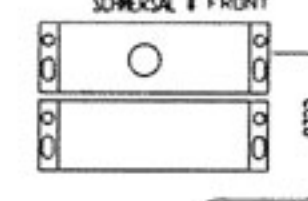
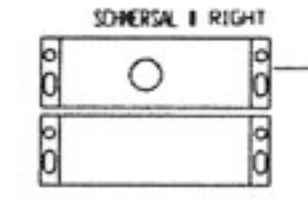
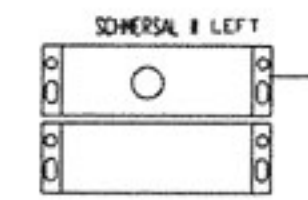
SCALE: 1/1

NOTE: THE COMPANY OR MANUFACTURER'S IDENTIFICATION OF PARTS IS SHOWN IN PARENTHESES OR IN SMALL LETTERS. IT WILL NOT BE LISTED ON THIS DRAWING UNLESS IT IS USED FOR IDENTIFICATION PURPOSES. THE COMPANY OR MANUFACTURER'S IDENTIFICATION IS SHOWN IN SMALL LETTERS ON THE PARTS LIST.

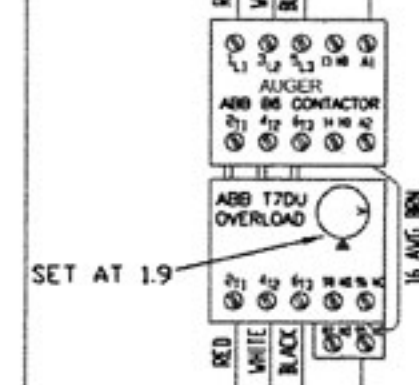
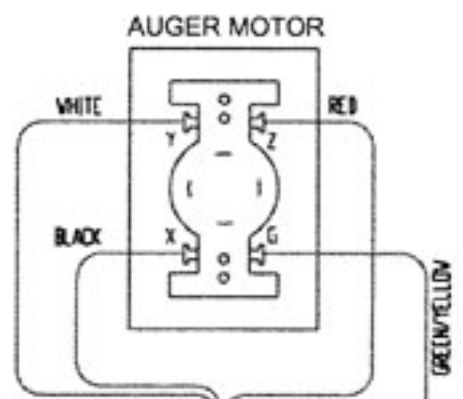
1310 PIN LIST

- 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)

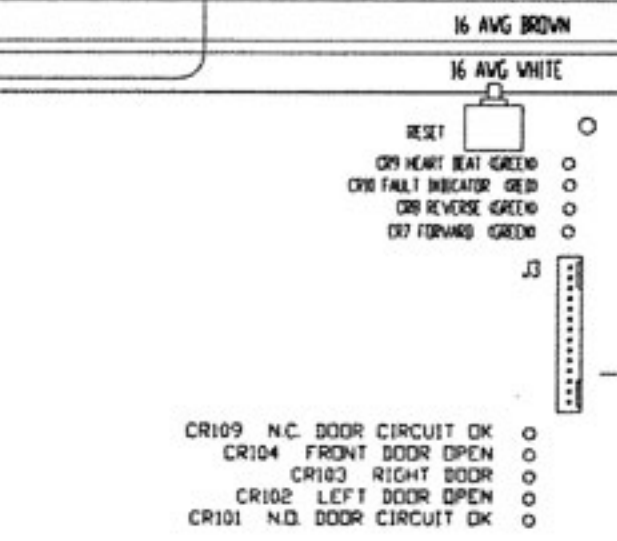
- K1 - SSR ELE-0070 TURN ON PUMP.
- K2 - SSR ELE-0070 VALVE 1.
- K3 - SSR ELE-0070 VALVE 2.
- K4 - SSR ELE-0070 VALVE 3.
- K6 - SSR ELE-0070 3 POLE RELAY 240V.
- K101 - SSR ELE-001 SPINDLE RELAY



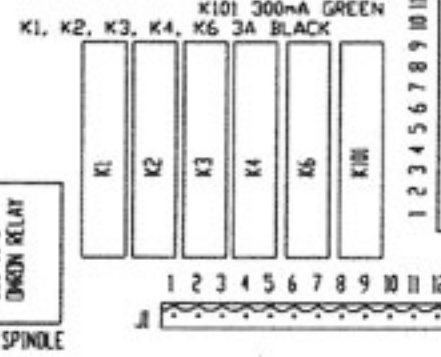
SPINDLE CONTACTOR (SEE ONLY)



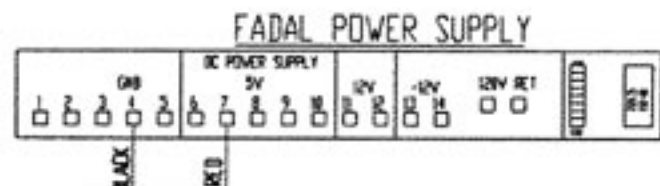
NOTE: IF MACHINE HAS ALSO HAS PALLET CHANGER AND DUAL ARM TOOL CHANGER THEN A SECOND 15 A CIRCUIT BREAKER WILL BE REQUIRED. UL LIMIT FOR BRANCH MOTOR PROTECTION IS 15 A.



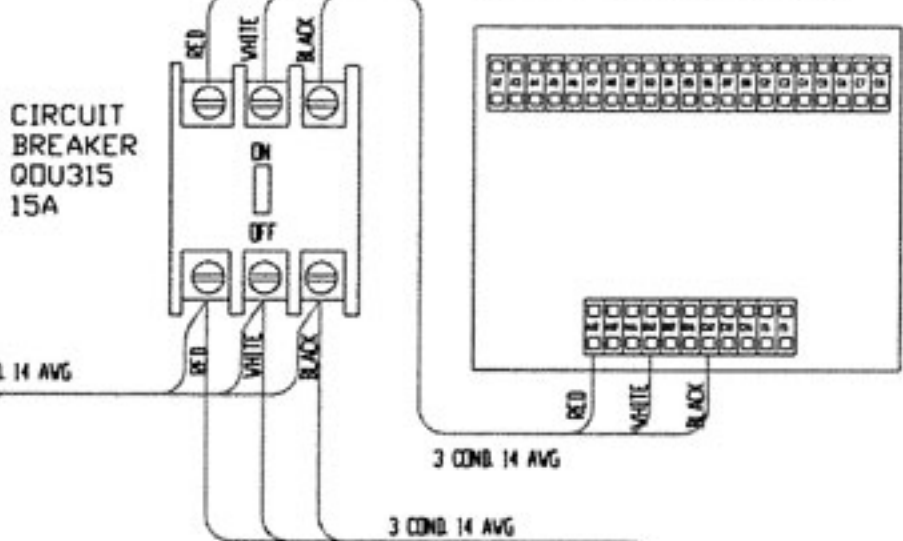
- CR109 N.C. DOOR CIRCUIT OK
- CR104 FRONT DOOR OPEN
- CR103 RIGHT DOOR
- CR102 LEFT DOOR OPEN
- CR101 N.D. DOOR CIRCUIT OK



K7 E-STOP
K5 SPINDLE



T-820 TRANSFORMER



3 COND. 14 AVG

3 COND. 14 AVG

16 AVG WHITE
16 AVG BROWN

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
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16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

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	G.VOOSTER	
C3,05		CHANGED CONTACTORS		

TO 1100-1 TB2
24
23

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
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16 AVG BROWN
16 AVG WHITE

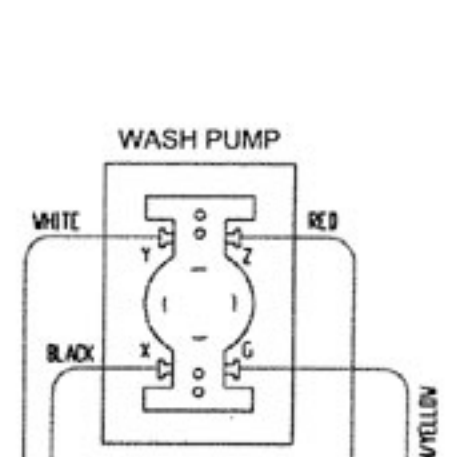
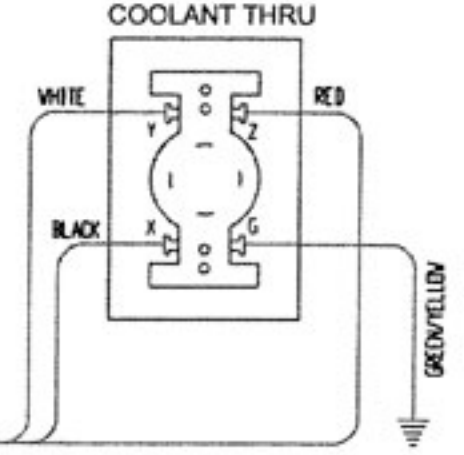
16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

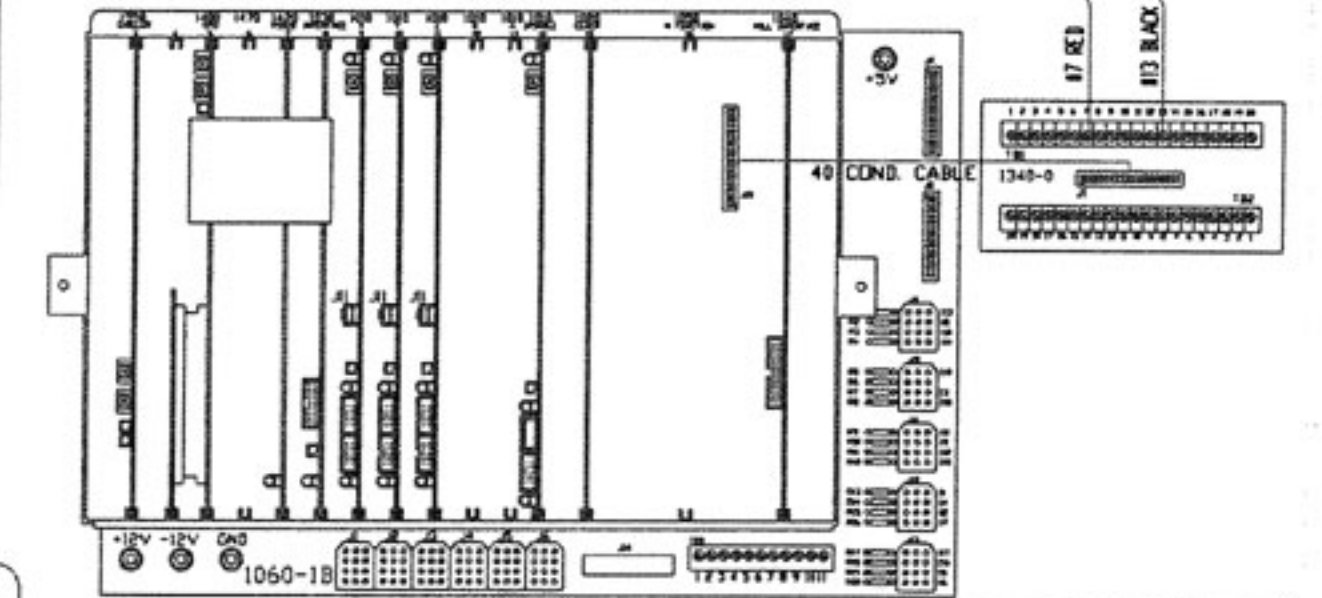
16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE

16 AVG BROWN
16 AVG WHITE



8451 CABLE FROM 1310-0A TO 1340-0A RED #7 & BLACK #13



20 AVG PINK #3 B8

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

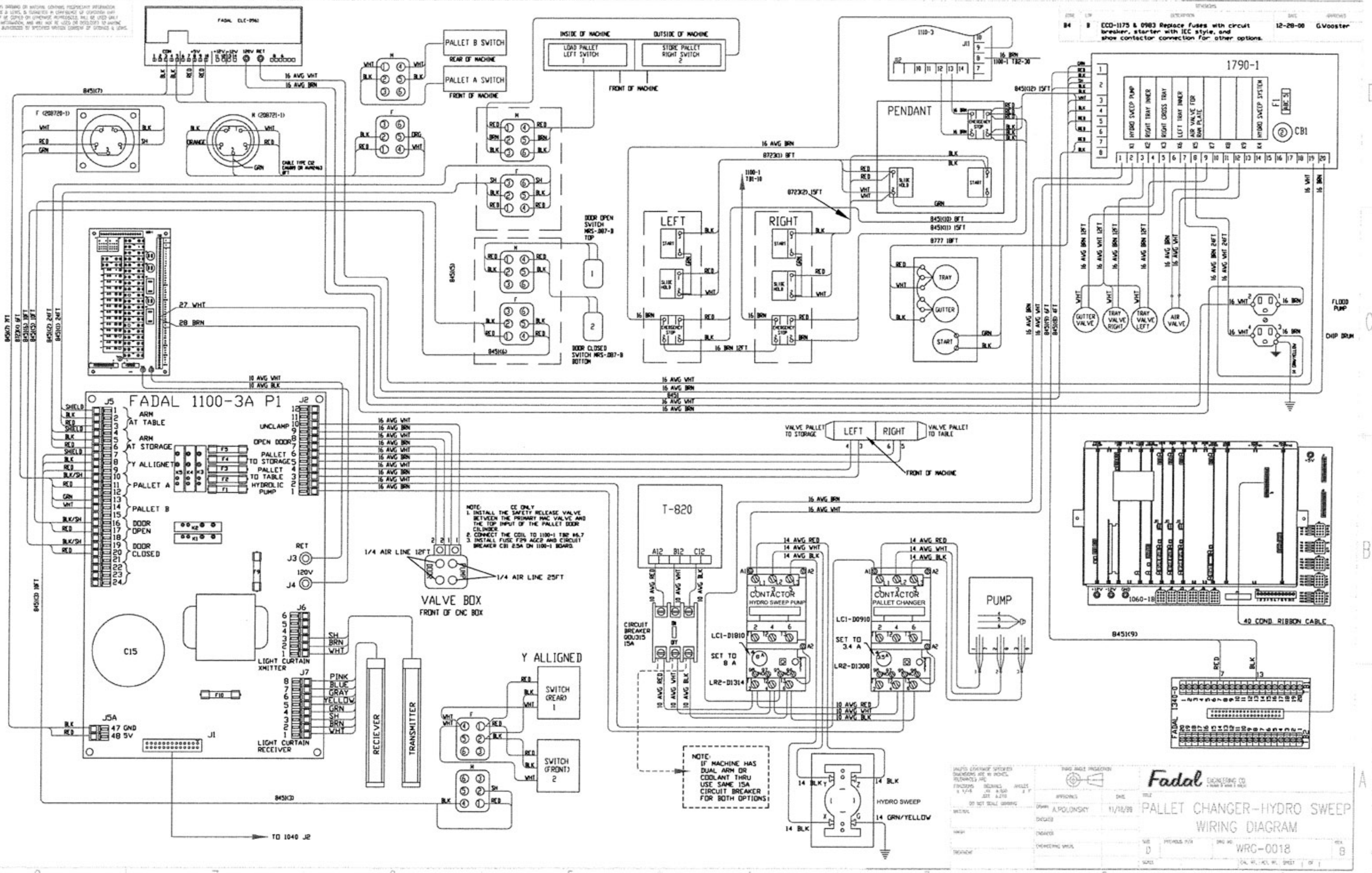
DATE: 07/25/00
DRAWN: A. POLYANSKY
CHECKED: []
DESIGNED: []
ENGINEERING: []

Fadal ENGINEERING CO.
AUGER/WASHDOWN/COOL THRU WIRING DIAGRAM

REV: 0
SCALE: 1/1
DATE: 07/25/00
CAL. NO. 101.001.001

NOTE: THIS DRAWING OR ANYTHING CONTAINED THEREIN IS UNCLASSIFIED AND IS NOT BEING CONTROLLED BY THE EXPORT ADMINISTRATION. IT IS NOT TO BE CONTROLLED BY THE EXPORT ADMINISTRATION. IT IS NOT TO BE CONTROLLED BY THE EXPORT ADMINISTRATION. IT IS NOT TO BE CONTROLLED BY THE EXPORT ADMINISTRATION.

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



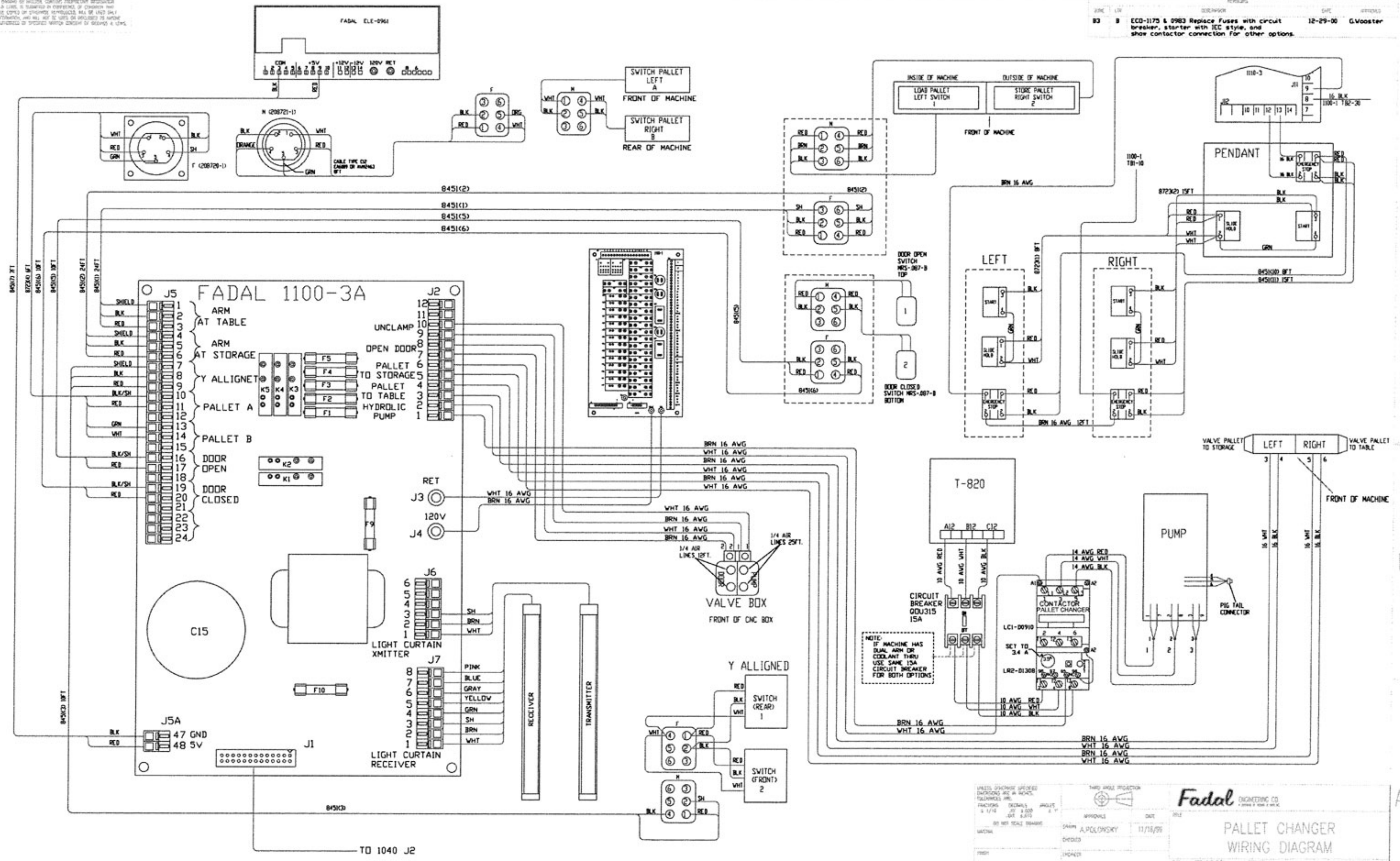
NOTE: CC ONLY
 1. INSTALL THE SAFETY RELEASE VALVE BETWEEN THE PRIMARY MAC VALVE AND THE TOP INPUT OF THE PALLET DOOR CYLINDER.
 2. CONNECT THE COIL TO 1100-1 TRM #6,7
 3. INSTALL FUSE FOR AG22 AND CIRCUIT BREAKER CBI 2.5A ON 1100-1 BOARD.

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

<p>Fadal CHECKING CO. 10000 10th St. N. Minneapolis, MN 55412</p>	
<p>DATE: 11/18/99 DRAWN: A. POLONSKY CHECKED: [] APPROVED: []</p>	<p>PALLET CHANGER-HYDRO SWEEP WIRING DIAGRAM</p>
<p>NO. 10 REV. 8</p>	<p>WRG-0018</p>

NOTE: THIS RANGE OF MACHINES CONTAINS PRECISION MECHANICAL
 OF DESIGN & CONSTRUCTION IS GUARANTEED IN CONFORMANCE WITH THE
 & WILL NOT BE LIABLE FOR ANY DEFECTS OR REPAIRS. THIS IS APPLICABLE ONLY
 FOR THIS AUTOMATIC AND WILL NOT BE USED OR APPLIED TO ANY OTHER
 EXCEPT AS AUTHORIZED BY SPECIFIC WRITER DESIGN OF BROWN & CALDWELL.

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



<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ARE DECIMALS 1/16 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1 1 1/4 1 1/2 1 3/4 2 2 1/4 2 1/2 3 3 1/4 3 1/2 4 4 1/4 4 1/2 5 5 1/4 5 1/2 6 6 1/4 6 1/2 7 7 1/4 7 1/2 8 8 1/4 8 1/2 9 9 1/4 9 1/2 10 10 1/4 10 1/2 11 11 1/4 11 1/2 12 12 1/4 12 1/2 13 13 1/4 13 1/2 14 14 1/4 14 1/2 15 15 1/4 15 1/2 16 16 1/4 16 1/2 17 17 1/4 17 1/2 18 18 1/4 18 1/2 19 19 1/4 19 1/2 20 20 1/4 20 1/2 21 21 1/4 21 1/2 22 22 1/4 22 1/2 23 23 1/4 23 1/2 24</p>		<p>THIRD ANGLE PROJECTION</p>	
<p>APPROVED: <i>[Signature]</i> DATE: 11/18/99</p>		<p>DESIGNED: A. POLONSKY</p>	
<p>DATE: 11/18/99</p>		<p>PROJECT: PALLET CHANGER</p>	
<p>BY: W. T. CALDWELL</p>		<p>SCALE: 1/16" = 1"</p>	
<p>DATE: 11/18/99</p>		<p>REV: 8</p>	
<p>DATE: 11/18/99</p>		<p>REV: 8</p>	

Fadal ENGINEERING CO.
 1000 N. 10TH ST. W. WYOMING, NEB. 68101

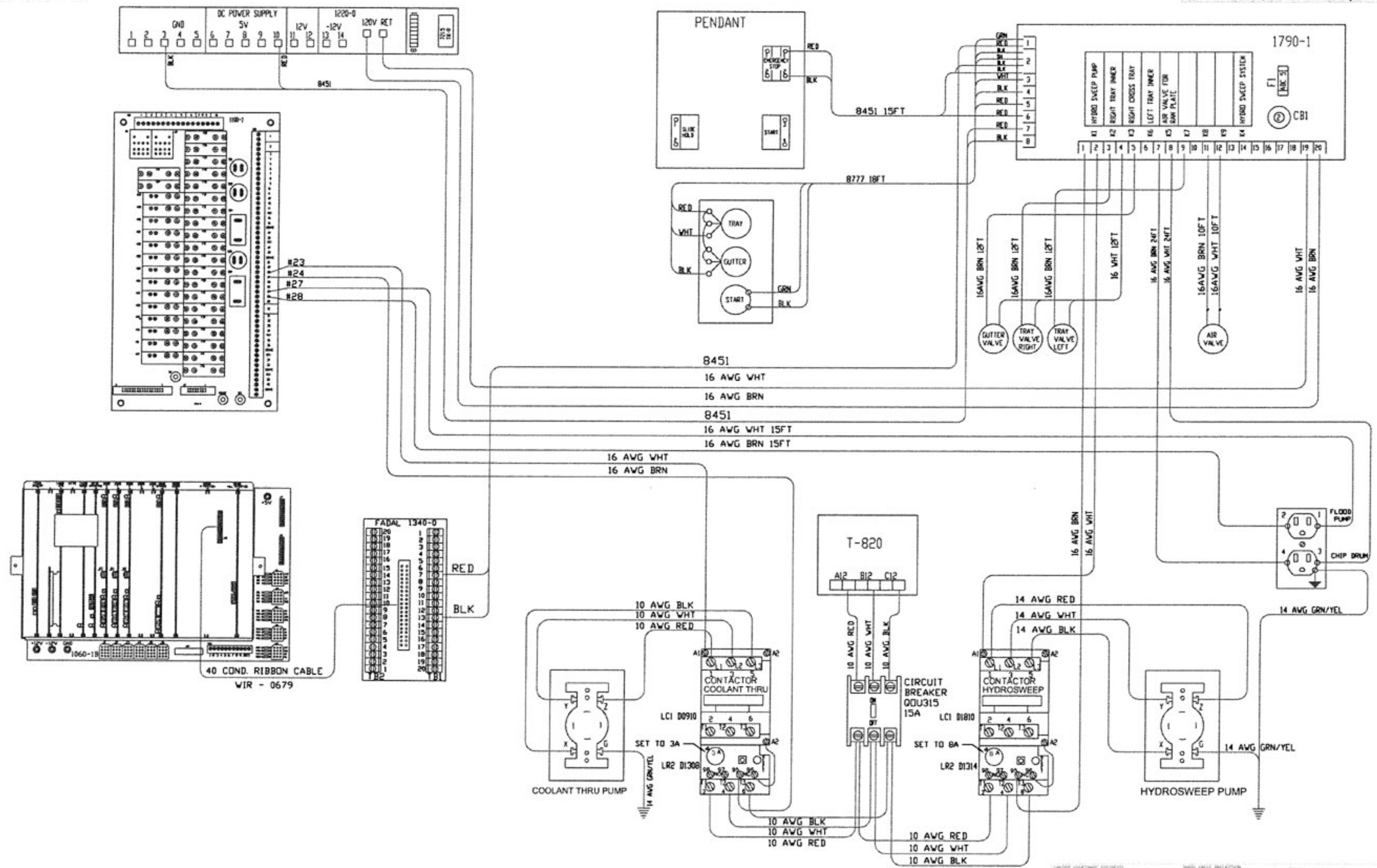
PALLET CHANGER WIRING DIAGRAM

WRC-0017

TO 1040 J2

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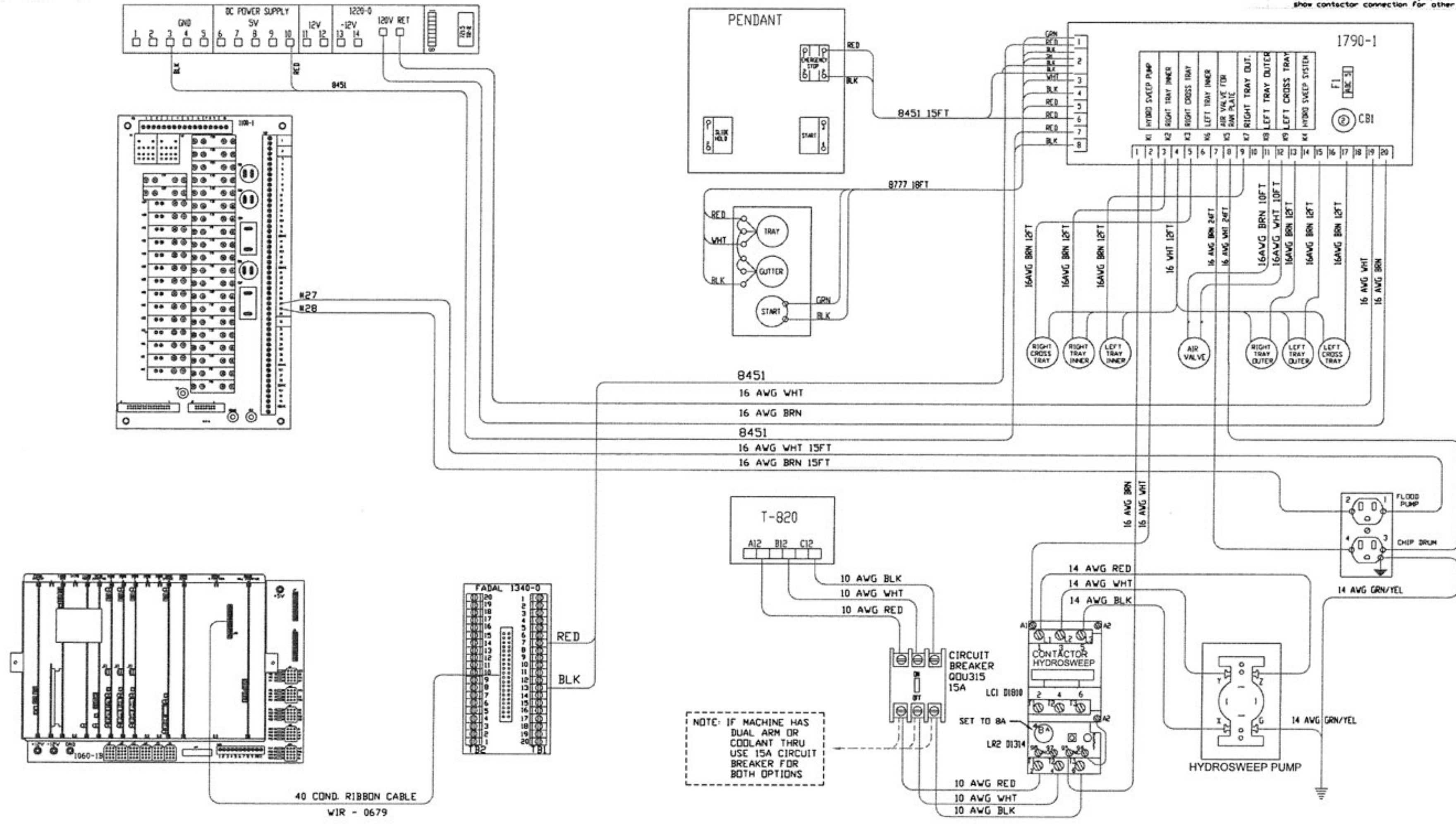
REV. 1
 ECD-1175 & 0983 Replace fuses with circuit breaker, starter with IEC style
 12-28-00 GVooster



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE TO 1/16" FRACTIONS TO 3/32"		THIS AREA PROTECTED APPROVED: A. POLONSKY DATE: 10/25/99	
TO NOT SCALE DRAWING DRAWN: A. POLONSKY CHECKED: [] DESIGNED: [] ENGINEERING: []		Fadal ENGINEERING CO. HYDRO SWEEP / COOLANT THRU WIRING DIAGRAM	
TITLE: HYDRO SWEEP / COOLANT THRU WIRING DIAGRAM		DWG NO: WRG-0013	

NOTES: THE DRAWING IS SUBJECT TO CHANGE WITHOUT NOTICE. ANY CHANGES WILL BE INDICATED BY A REVISION. THIS DRAWING IS THE PROPERTY OF FADAL ENGINEERING CO. 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. ANY UNAUTHORIZED REPRODUCTION OR TRANSMISSION IS STRICTLY PROHIBITED. CONTACT FADAL ENGINEERING CO. FOR MORE INFORMATION.

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

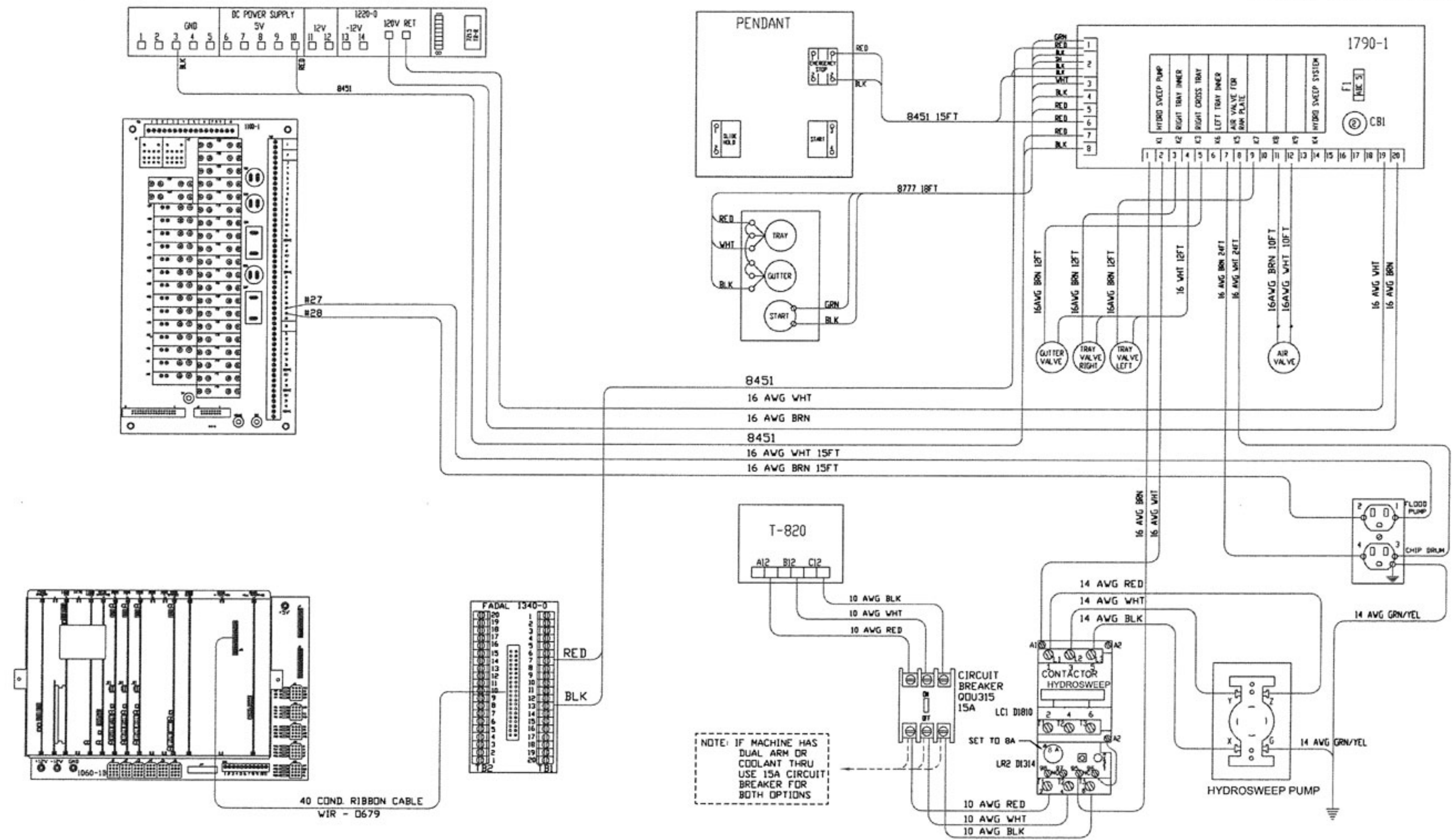


NOTE: INSTALL EPROM VERSION 6.4 ON 1790-1 BOARD.

<p>DRILL OVERSIZE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:</p>		<p>FADAL ENGINEERING CO. 12715 75TH AVE FORT COLLINS, CO 80526</p>	
<p>DATE: 10/28/99 DRAWN: A.P.OLOVSKY CHECKED: G.UTS INCHES: 1/16 DECIMALS: .001 FRACTIONS: 1/16 DECIMALS: .001 FRACTIONS: 1/16</p>	<p>PROJECT: HYDRO SWEEP DATE: 10/28/99</p>	<p>Fadal ENGINEERING CO. HYDRO SWEEP 6 VALVES WIRING DIAGRAM / 8030</p>	
<p>SCALE: 1" = 1'-0"</p>	<p>REV: D</p>	<p>REV: 0</p>	<p>REV: B</p>

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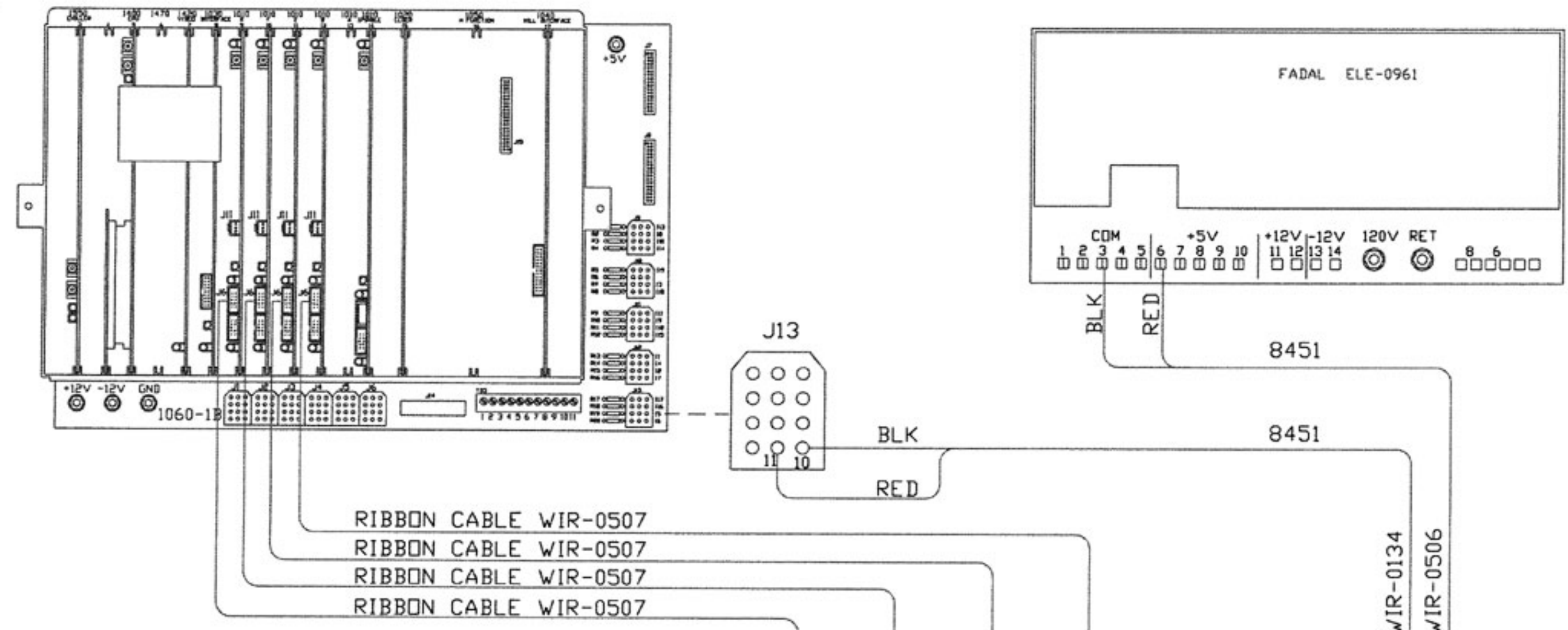
REV.	DATE	DESCRIPTION	APPROVED
B4	12-28-00	Replace fuses with circuit breaker, starter with IEC style, and show contactor connection for other options.	G. Vooster



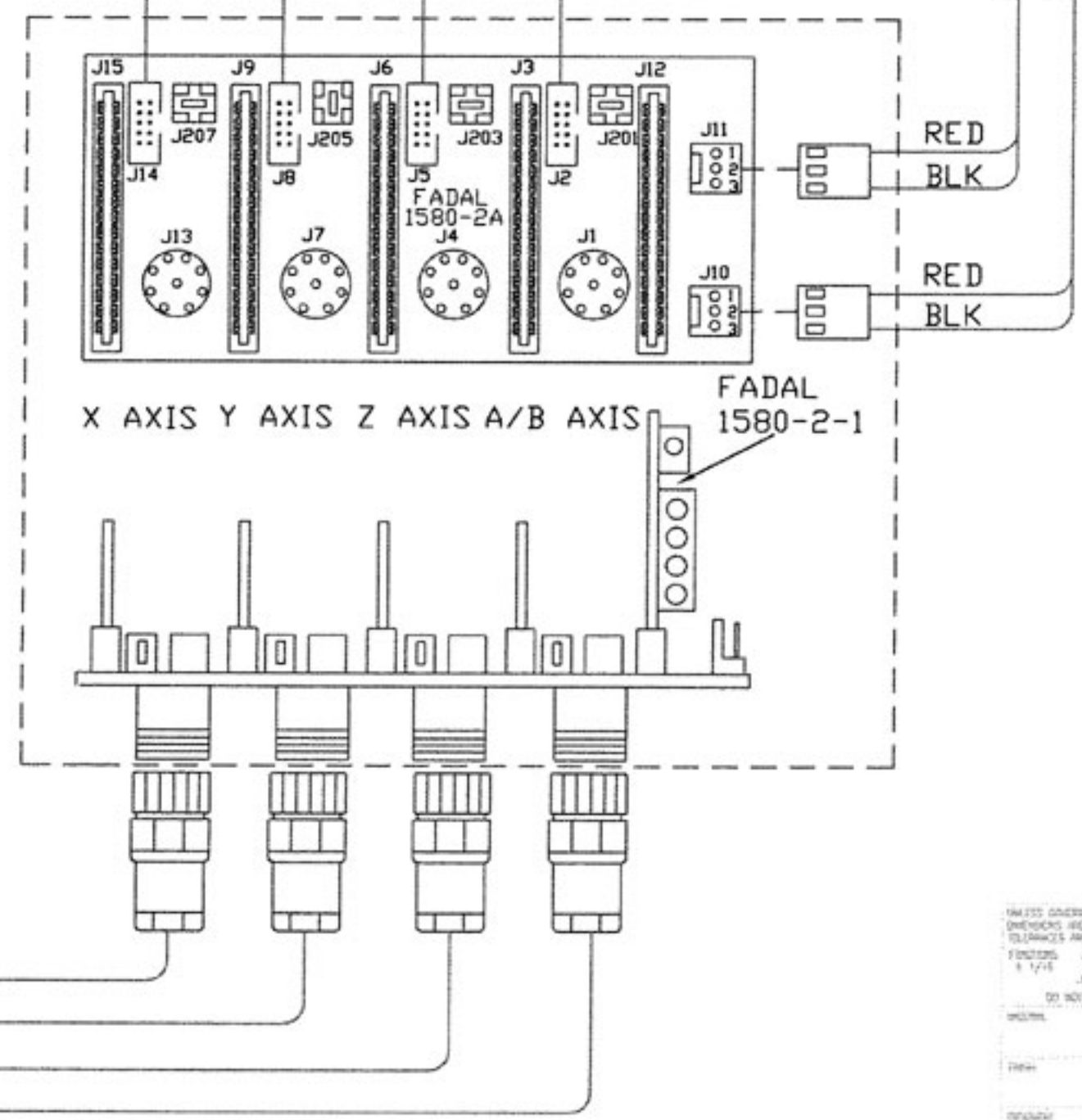
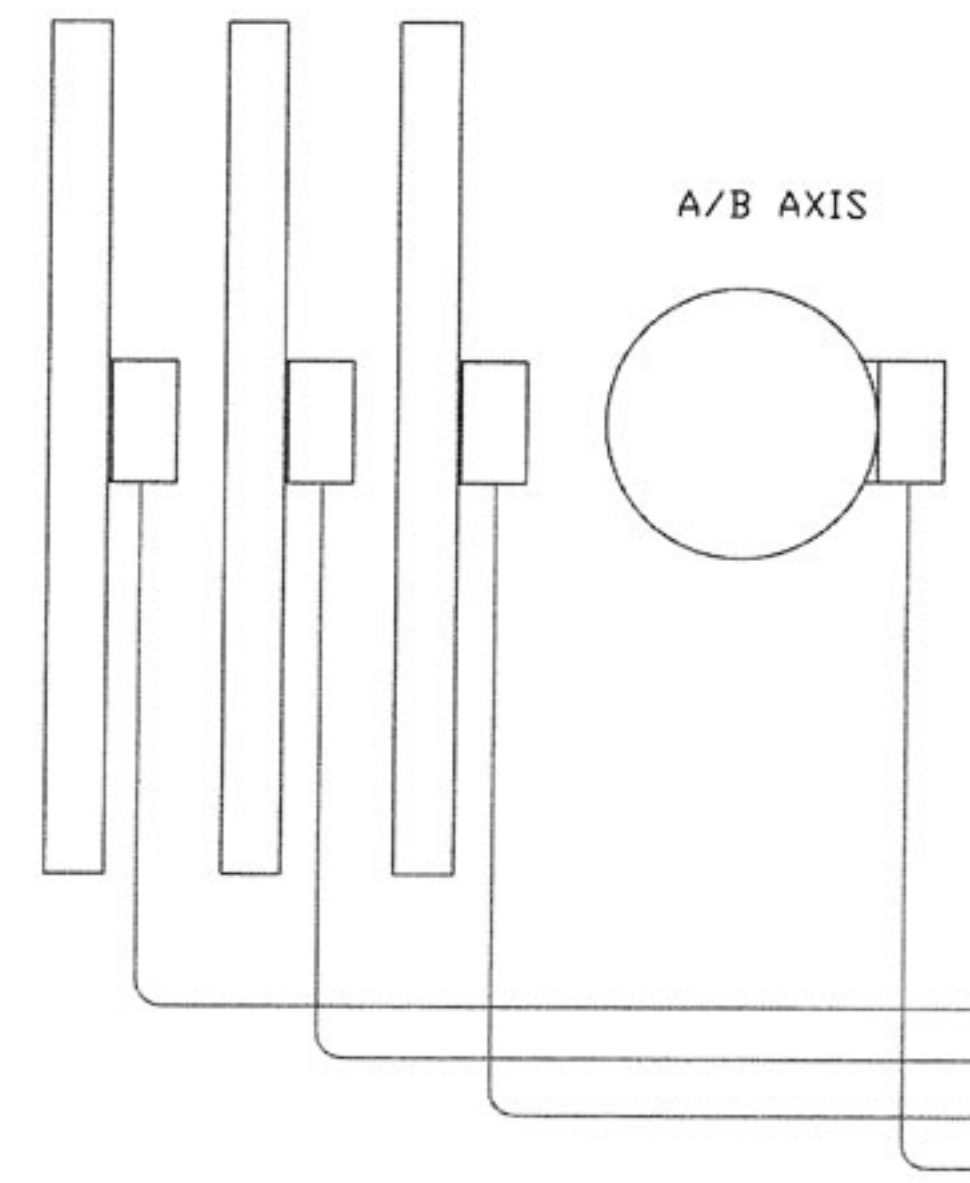
NOTE: INSTALL EPROM VERSION 5.4 ON 1790-1 BOARD.

<p>UNITS DRIVER SPEC'D DIMENSIONS SEE IN MODEL DIMENSIONS ARE IN INCHES UNLESS NOTED SCALE 1/4" = 1"</p>		<p>DATE 10/28/99 DRAWN A. POLONSKY CHECKED DESIGNED</p>		<p>Fadal ENGINEERING CO. HYDRO SWEEP 3 VALVES WIRING DIAGRAM WRG-0011</p>	
DATE	REV.	SCALE	DRG NO.	REV.	DATE
0	0	1/4" = 1"	001	B	10/28/99

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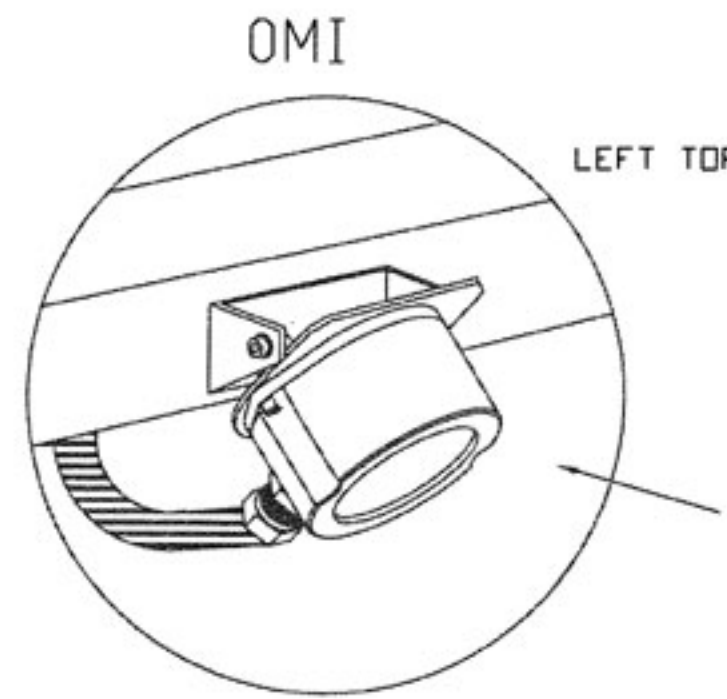


HEIDENHAIN SCALE
 X AXIS Y AXIS Z AXIS

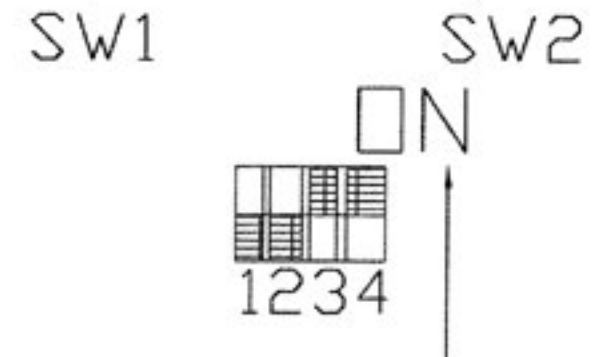
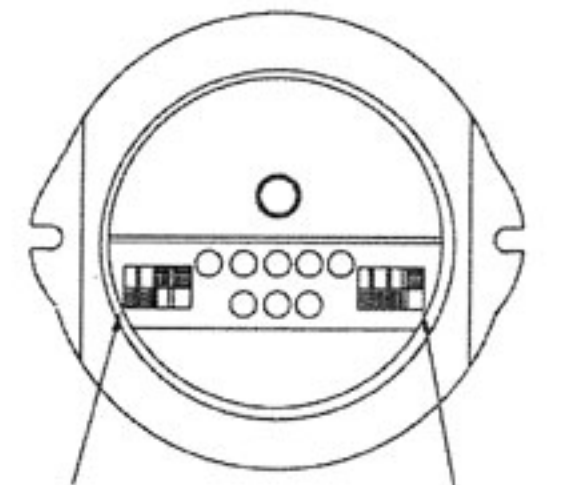
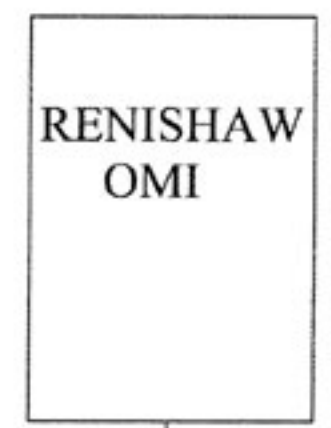


UNITS: DECIMALS DIMENSIONS: INCHES TOLERANCES: AS SHOWN FINISH: UNLESS SPECIFIED TO NOT SCALE DRAWING		DIM: 1/16 DECIMALS: 0.0005 ANGLES: 0.0001 HOLE POSITION: ±0.005 SURF. FINISH: R0.8 UNLESS SPECIFIED		Fadal ENGINEERING CO. 2500 S. HIGHWAY 100 MOUNTAIN VIEW, CA 94039	
DRAWN: A. POLONSKY CHECKED: [] DATE: -1/14/88	TITLE: SCALE WIRING DIAGRAM	PART NO.: WRG-0027	REV: A	SCALE: 1" = 1"	

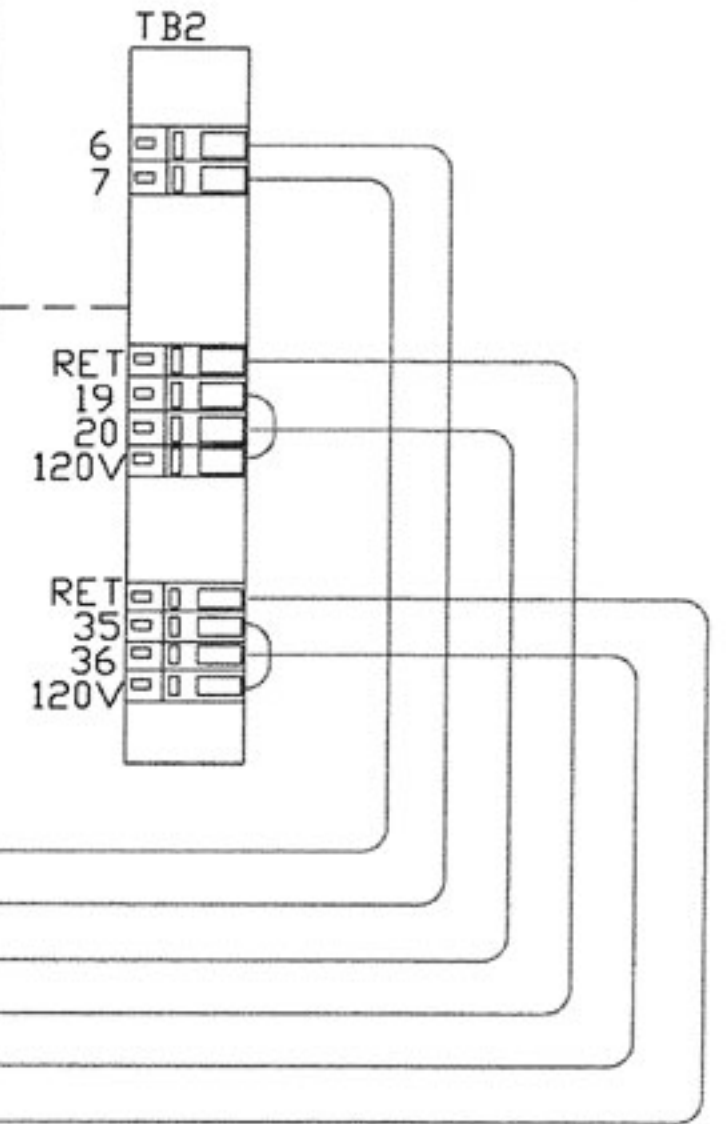
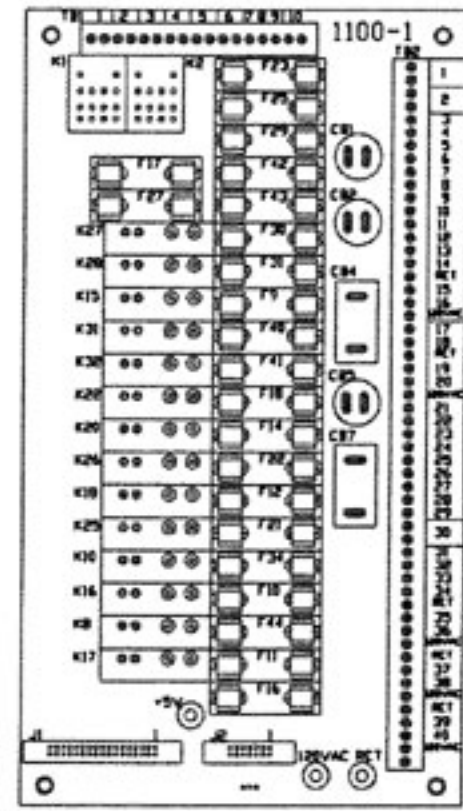
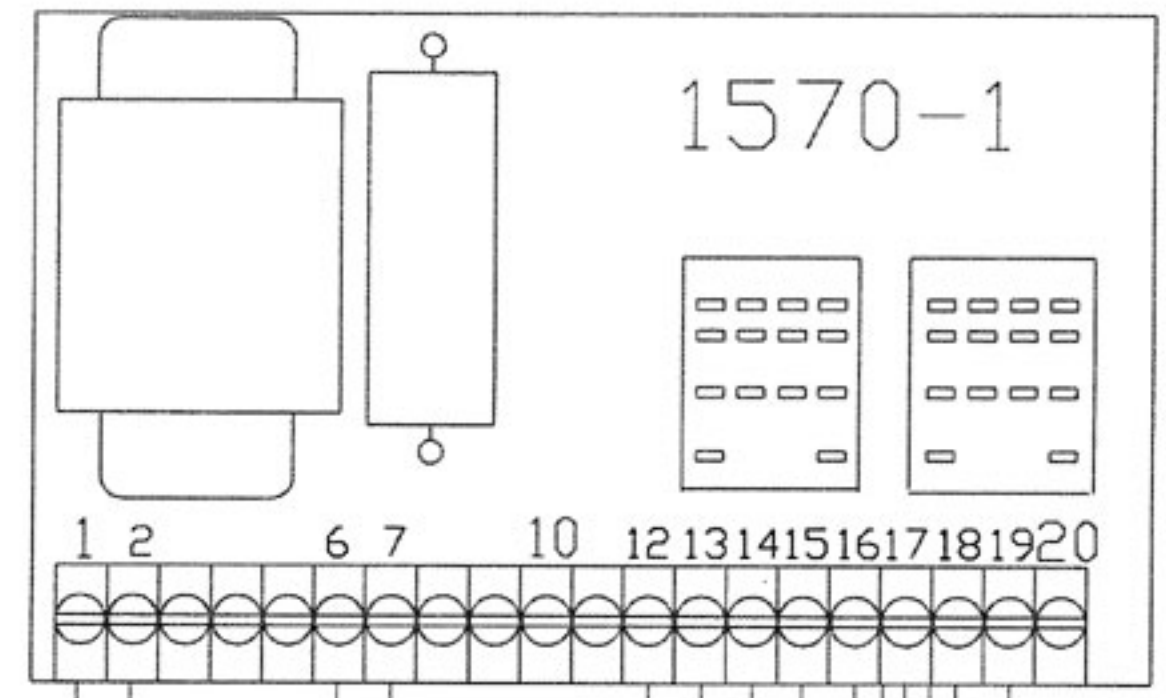
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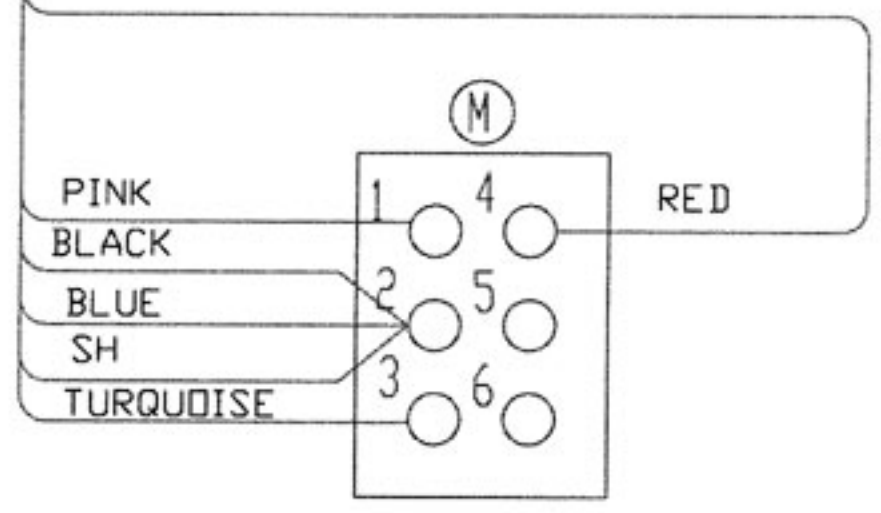
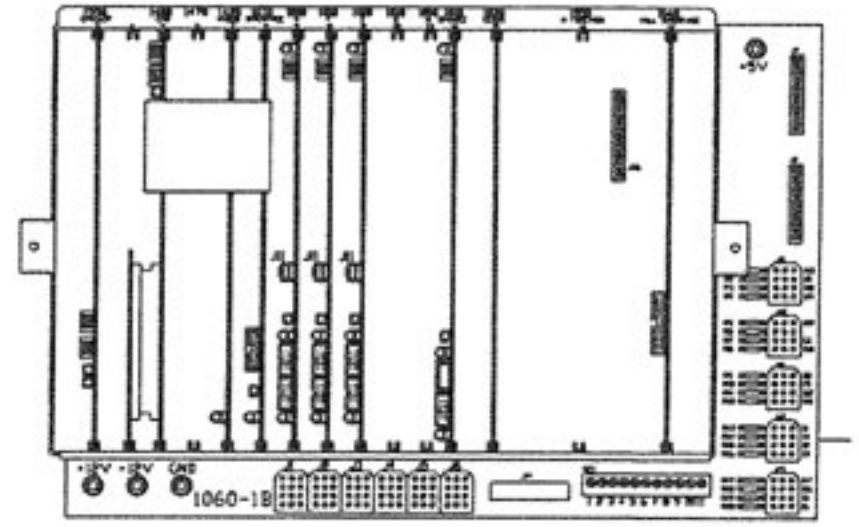
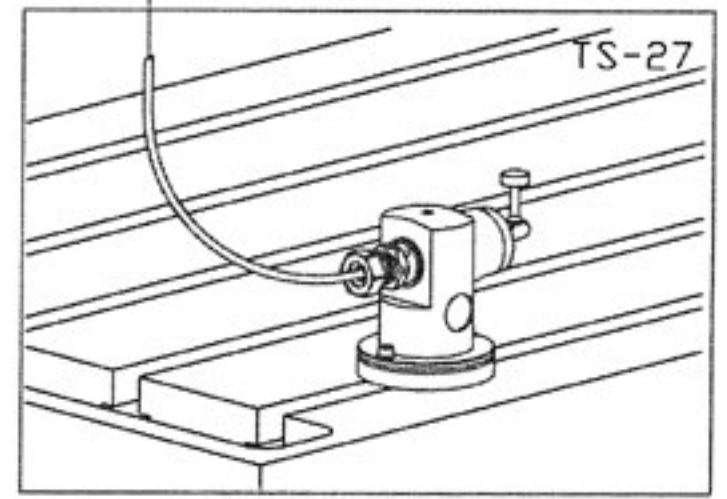
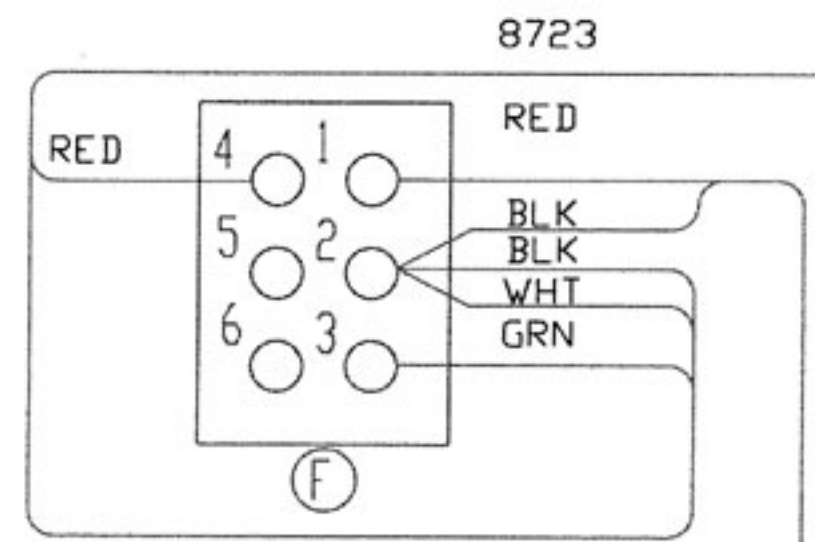
LEFT TOP PANEL



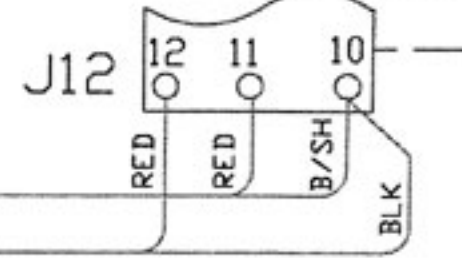
NOTE: 1. SET SW1 TO THE AUTO START POSITION - #4 ON.
TO GAIN ACCESS TO SW1 REMOVE OMI WINDOW AND LABEL.
2. INSTALL FOLLOWING ELEMENTS ON 1100-1 BOARD:
FUSES AGC-2 - F10, F29, F40.
SOLID STATE RELAYS (BLACK) - K16, K31.
CIRCUIT BREAKER 2.5A - CB1
3. TO ACTIVATE THE PROBES USE THE FOLLOWING COMMANDS:
MP12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



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

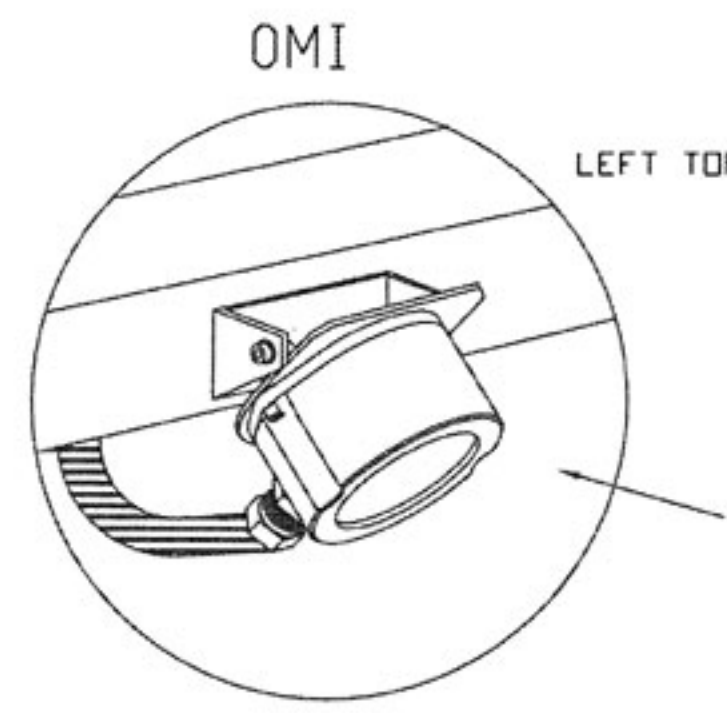


8451
8451



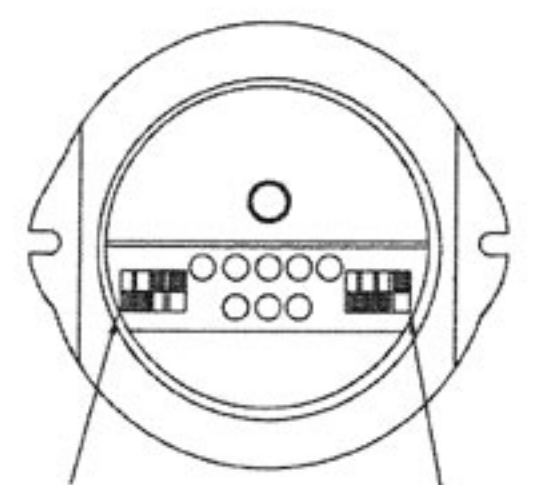
DRG'S OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FINISHES: SURFACES: ANGLES: 45° 3/16" TO 2.000" .0015" .001" TO 3/16" .001"		THIRD ANGLE PROJECTION 		Fadal CORPORATION 1000 S. 10TH ST. MILWAUKEE, WI 53215	
DO NOT SCALE DRAWING DESIGNED BY: A. POLONSKY DATE: 10/26/79 DRAWN BY: D. DODD CHECKED BY: D. DODD DATE: 10/26/79 DESIGNED BY: D. DODD DATE: 10/26/79	MP12 OMI & TS27 WIRING DIAGRAM		SHEET NO. 0 TOTAL SHEETS 1	WRC-0009 REV. A	SCALE: 1" = 1"

NOTE: THE TYPING OF MACHINE LISTINGS THROUGHOUT THIS DOCUMENT IS SUBJECT TO CORRECTION OF ERRORS. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE ACCURACY OF THE INFORMATION AND NOT TO RELY ON IT WITHOUT CHECKING THE ORIGINAL SOURCE. CORRECTIONS SHOULD BE REPORTED TO THE ORIGINAL SOURCE.

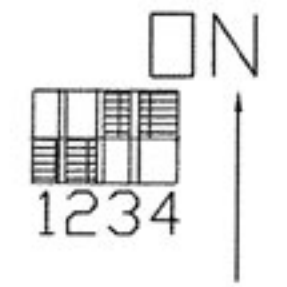


LEFT TOP PANEL

RENISHAW OMI

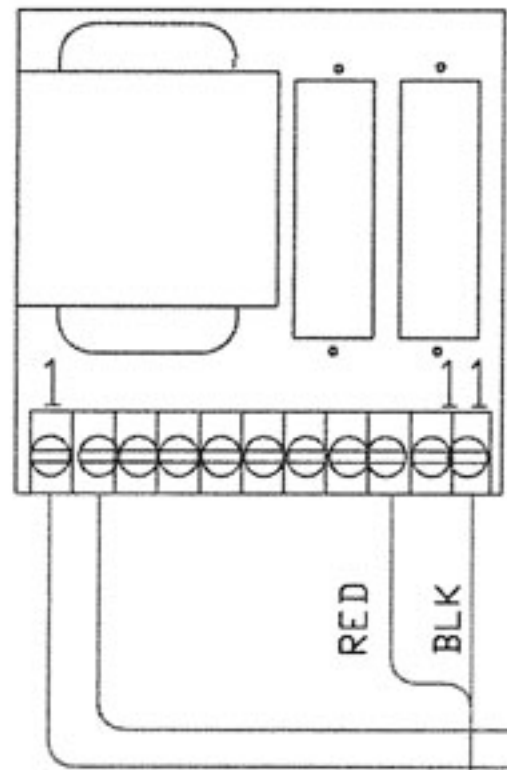


SW1 SW2

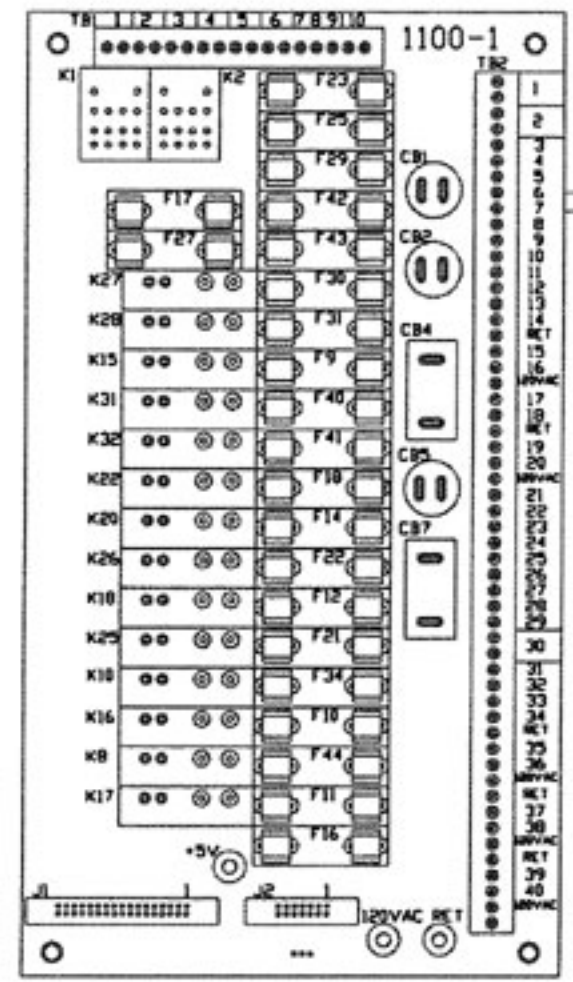


NOTE: SET SW1 TO AUTO START POSITION. - #4 TO GAIN ACCESS TO SW1 REMOVE OMI WINDOW AND LABEL.

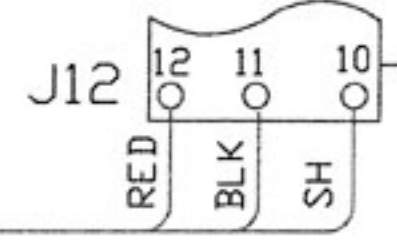
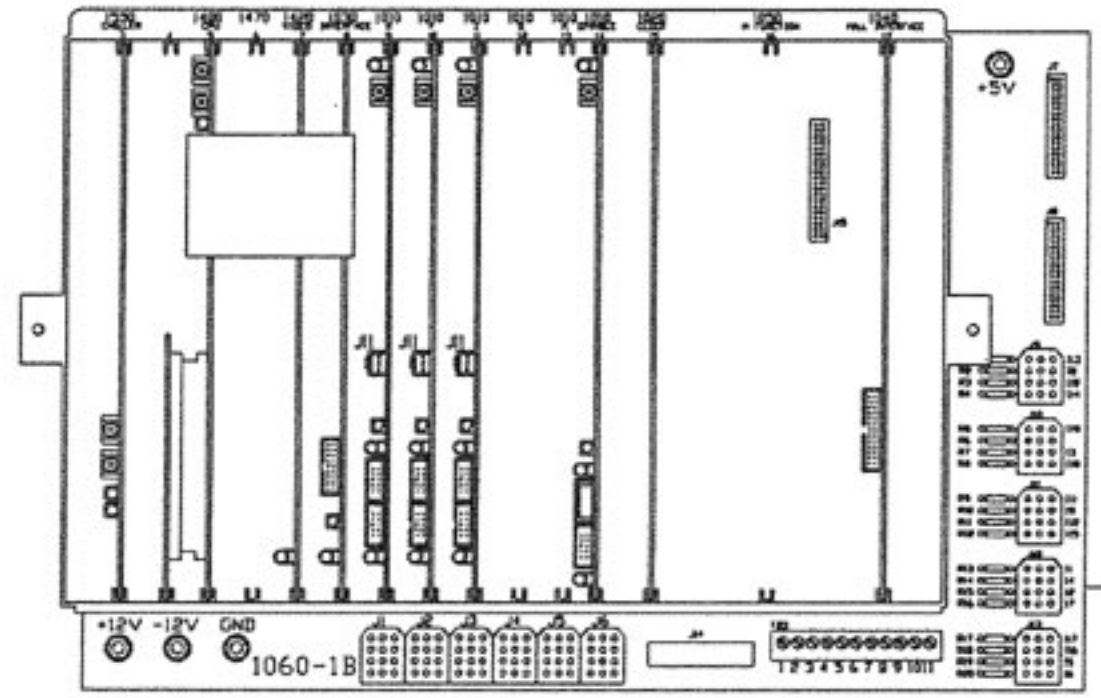
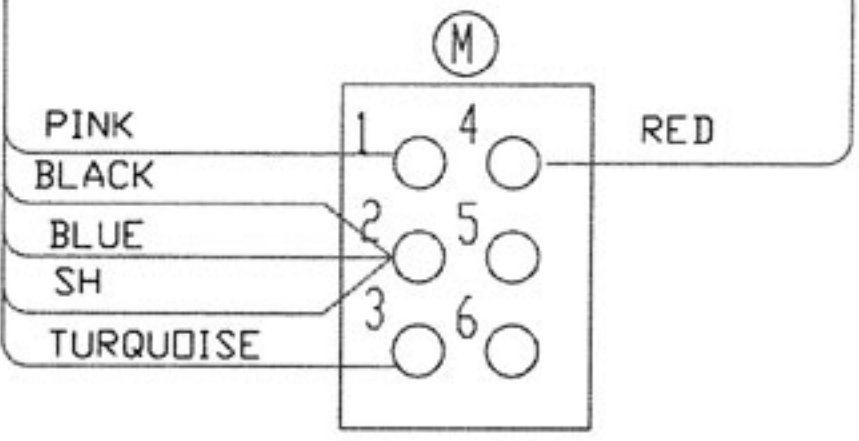
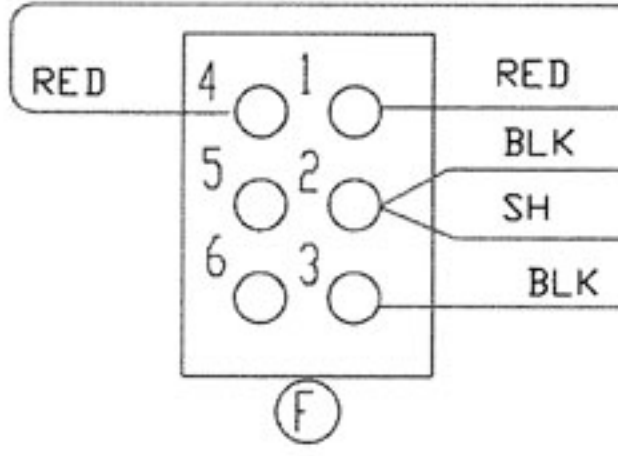
24V POWER SUPPLY



16AWG BRN
16AWG WHT



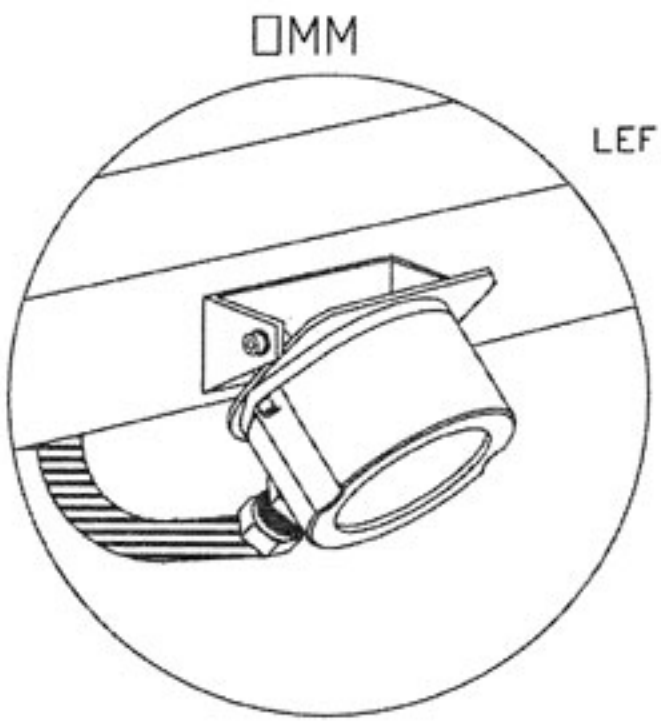
NOTE: INSTALL FUSE F 29 AGC-2, CIRCUIT BREAKER CB1 2.5A



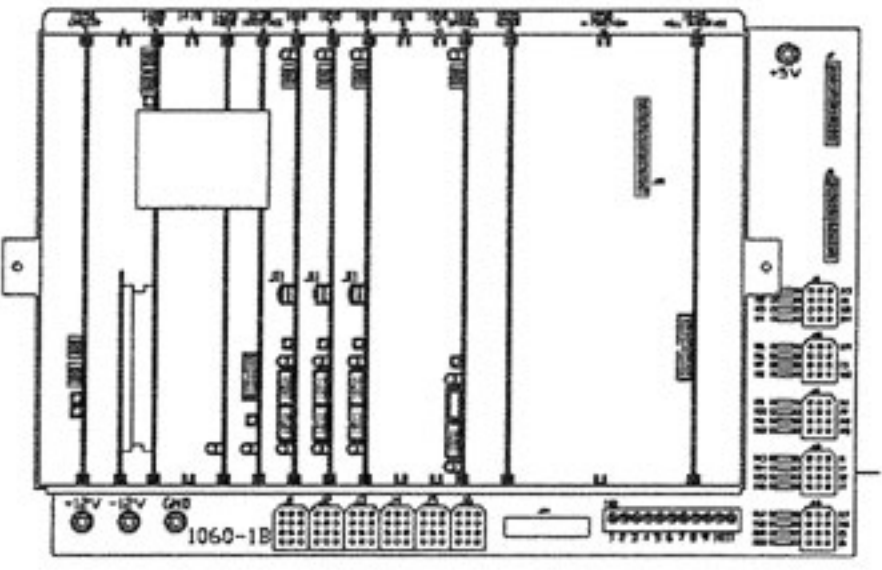
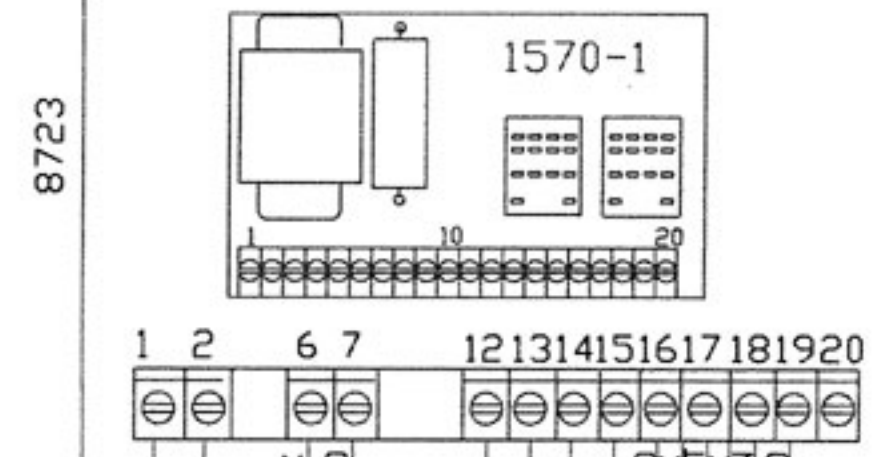
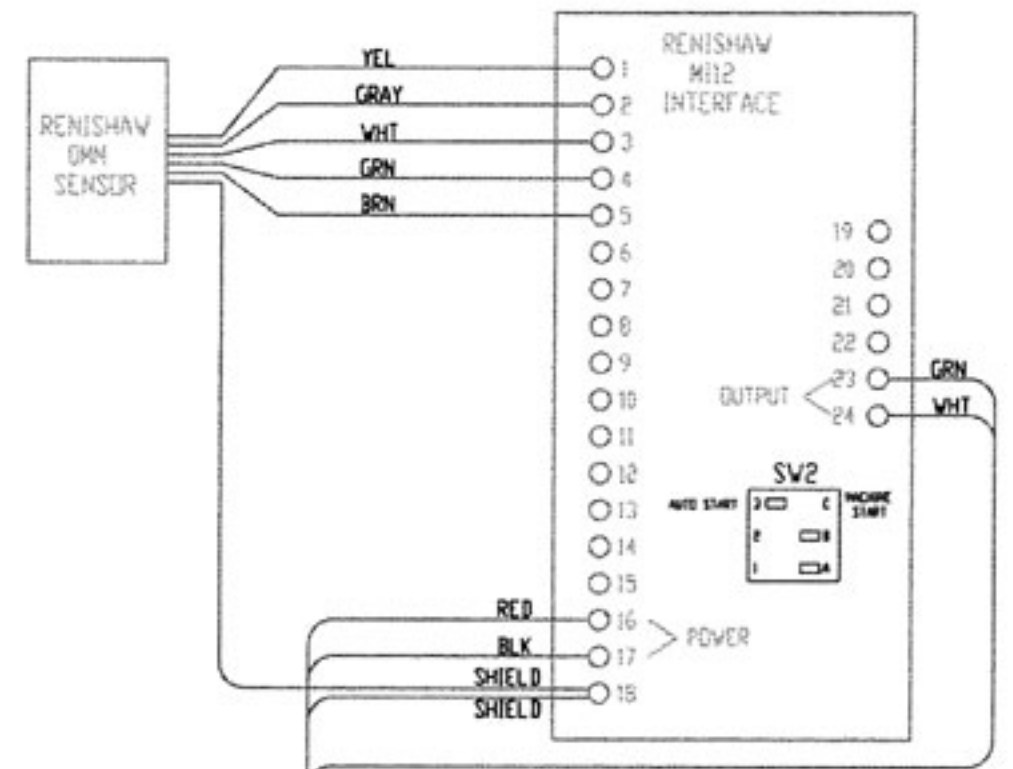
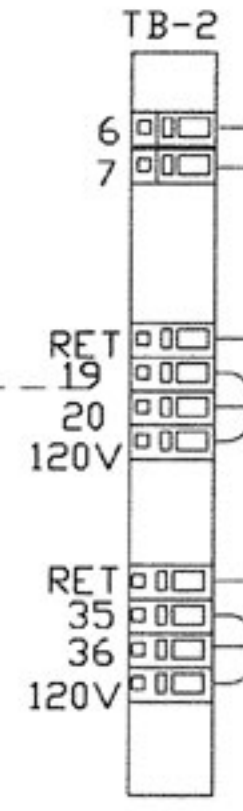
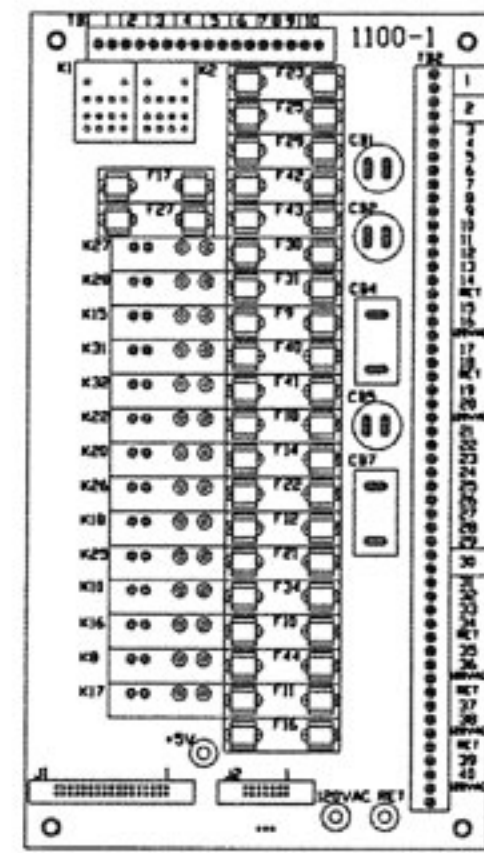
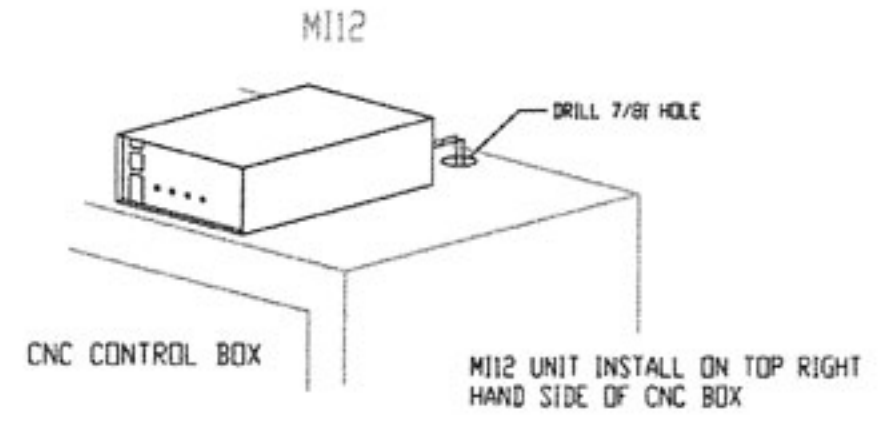
ALWAYS GROUND UNTESTED TERMINALS AND WIRING. DIMENSIONS ARE IN INCHES. DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS ARE IN MILLIMETERS.		Fadal ENGINEERING CO. 1000 S. MAIN ST. #100 RICHMOND, VA 23134	
DRAWN A. POLLOWSKY	DATE 10/28/99	TITLE MP12 OMI WIRING DIAGRAM	REV A
CHECKED DATE	DESIGNED DATE	PREVIOUS P/N WRC-0008	SHEET 1 OF 1

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

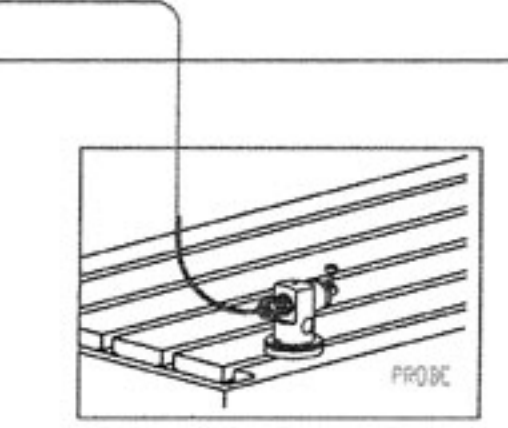


LEFT TOP PANEL



- 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

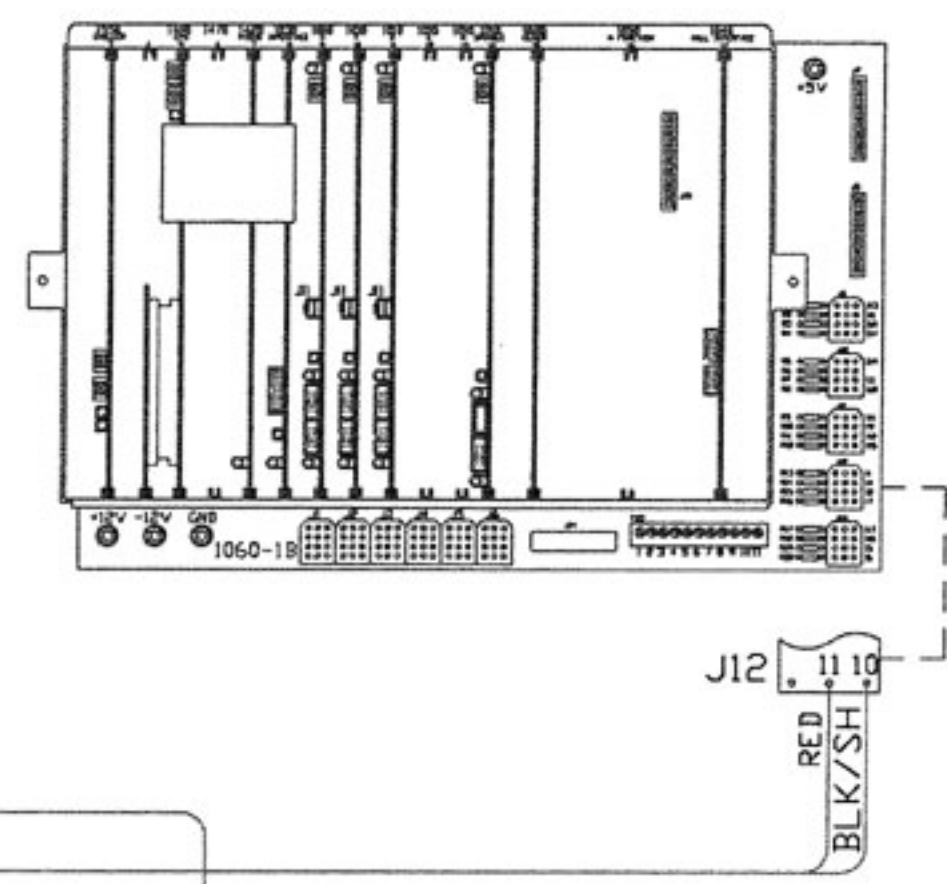
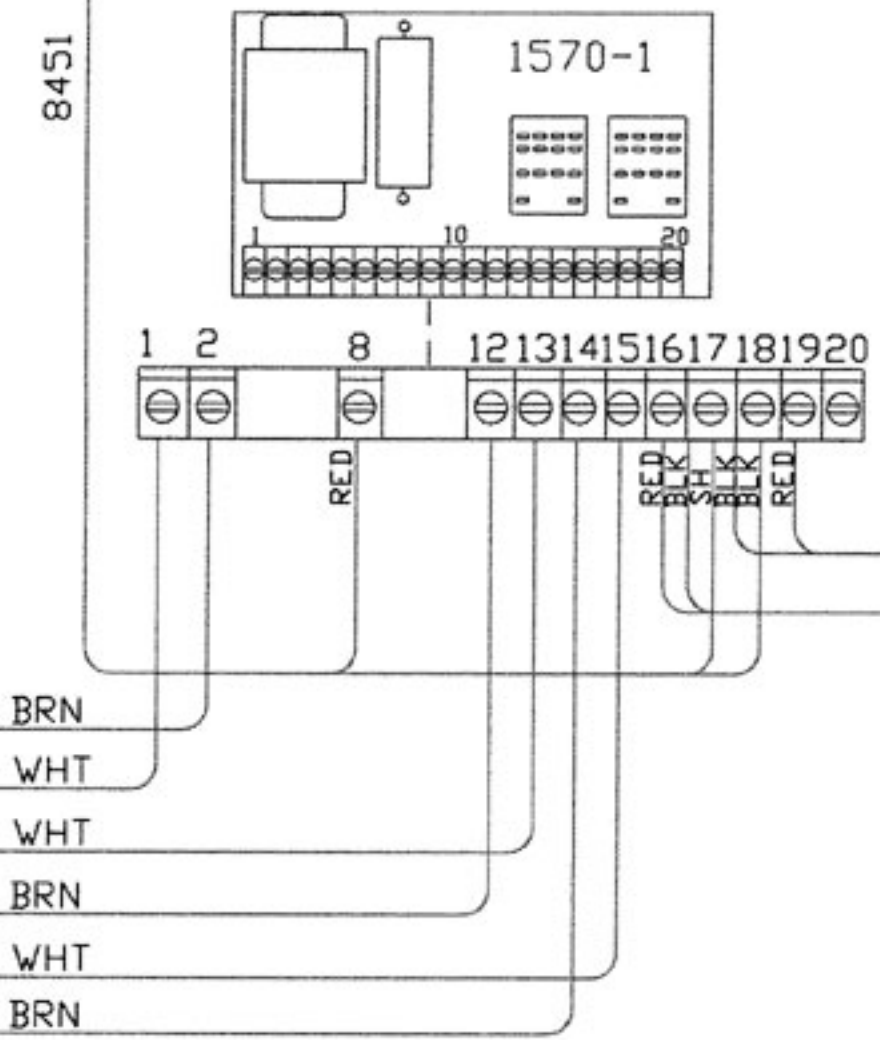
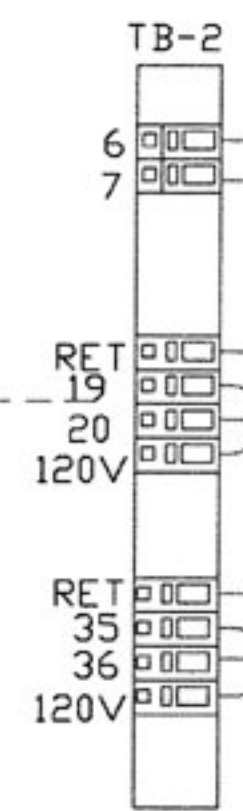
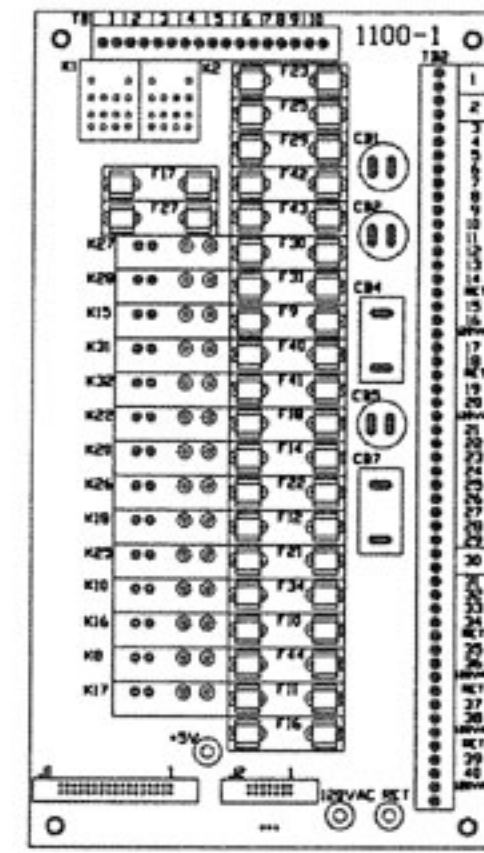
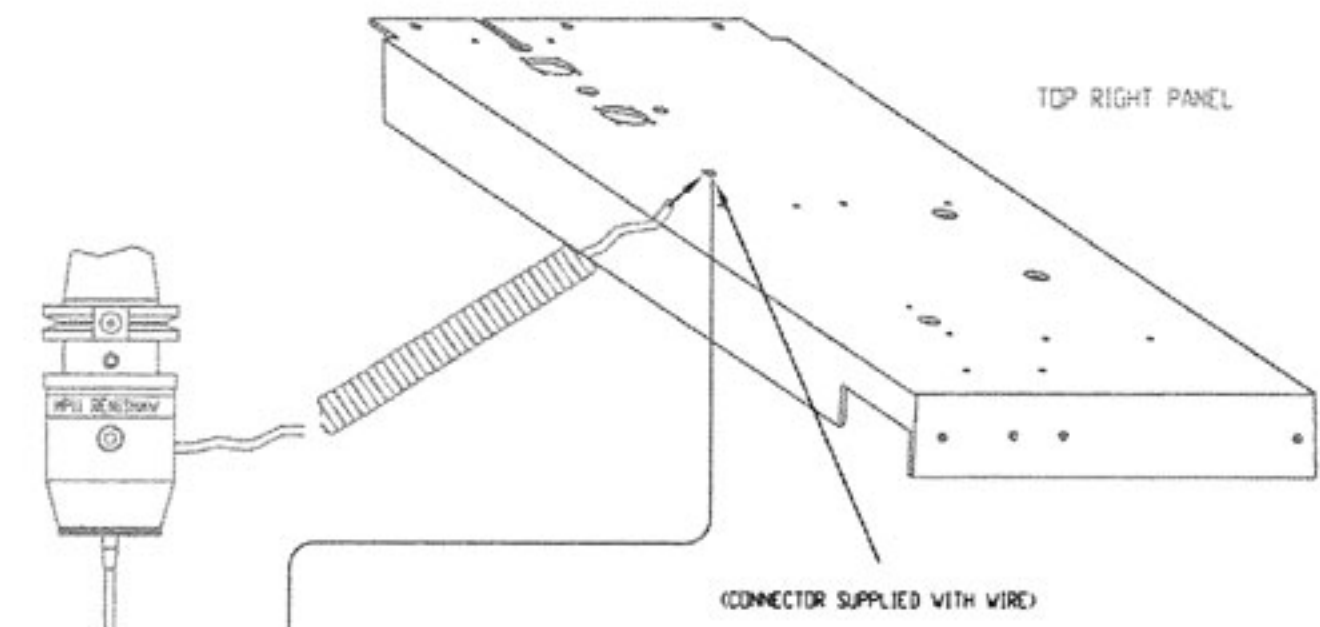
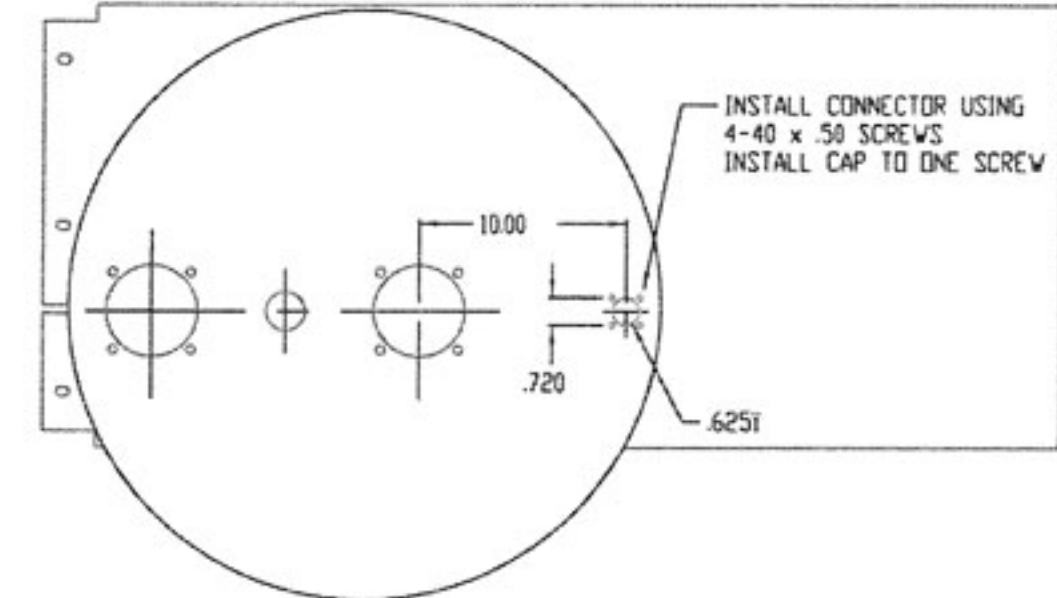


DATE: 10/20/98 DRAWN: A. POLONSKY CHECKED: [] APPROVED: [] TITLE: MP12/TS27 & 1570-1 BOARD WIRING DIAGRAM SHEET NO: 1 OF 1 REV: 8		Fadal WIRING CO. WRC-0007
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NOTE: THIS DRAWING OR ANY PART THEREOF IS UNCLASSIFIED UNLESS INDICATED OTHERWISE. IT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. IT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. IT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE.

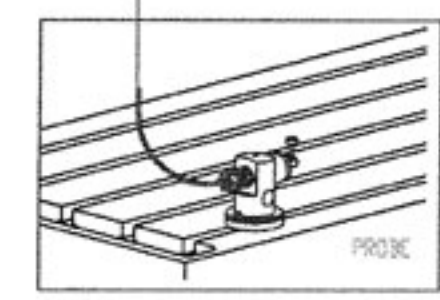
MP11/TS27 PROBE WITH FADAL 3 PROBE INTERFACE BOARD 1570-1

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.

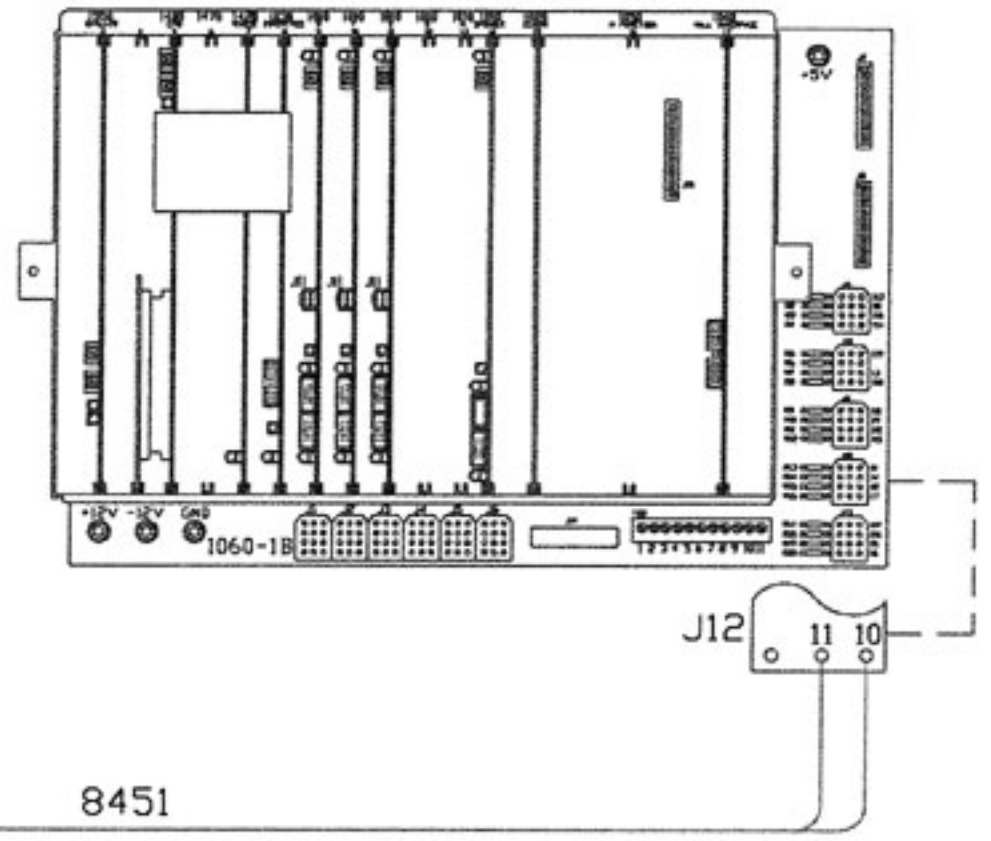
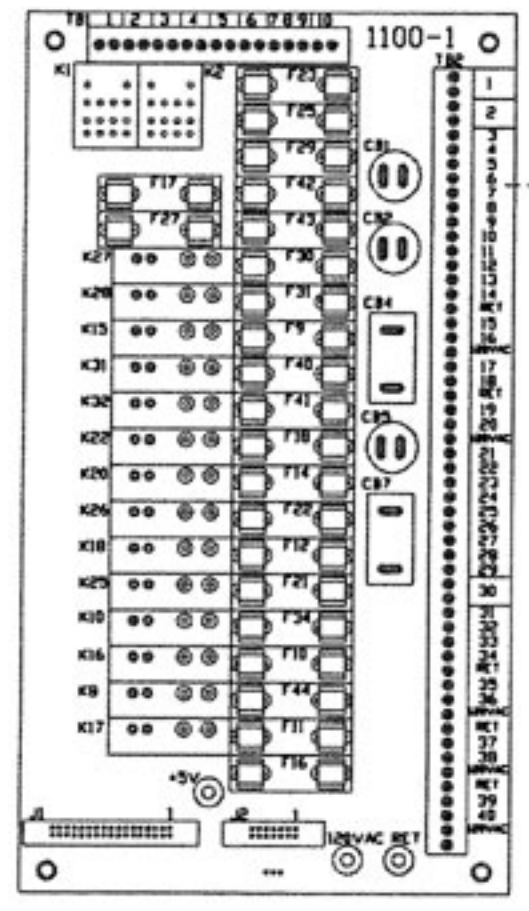
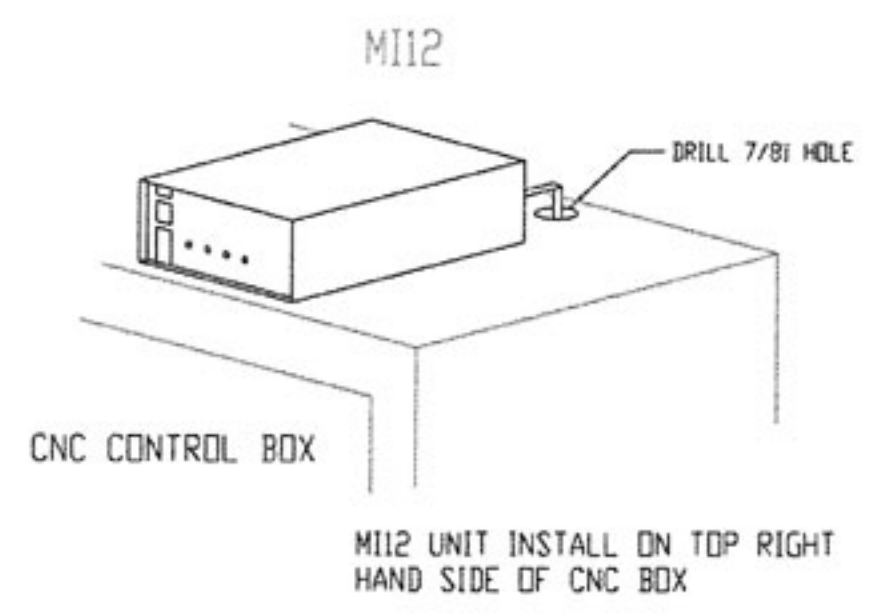
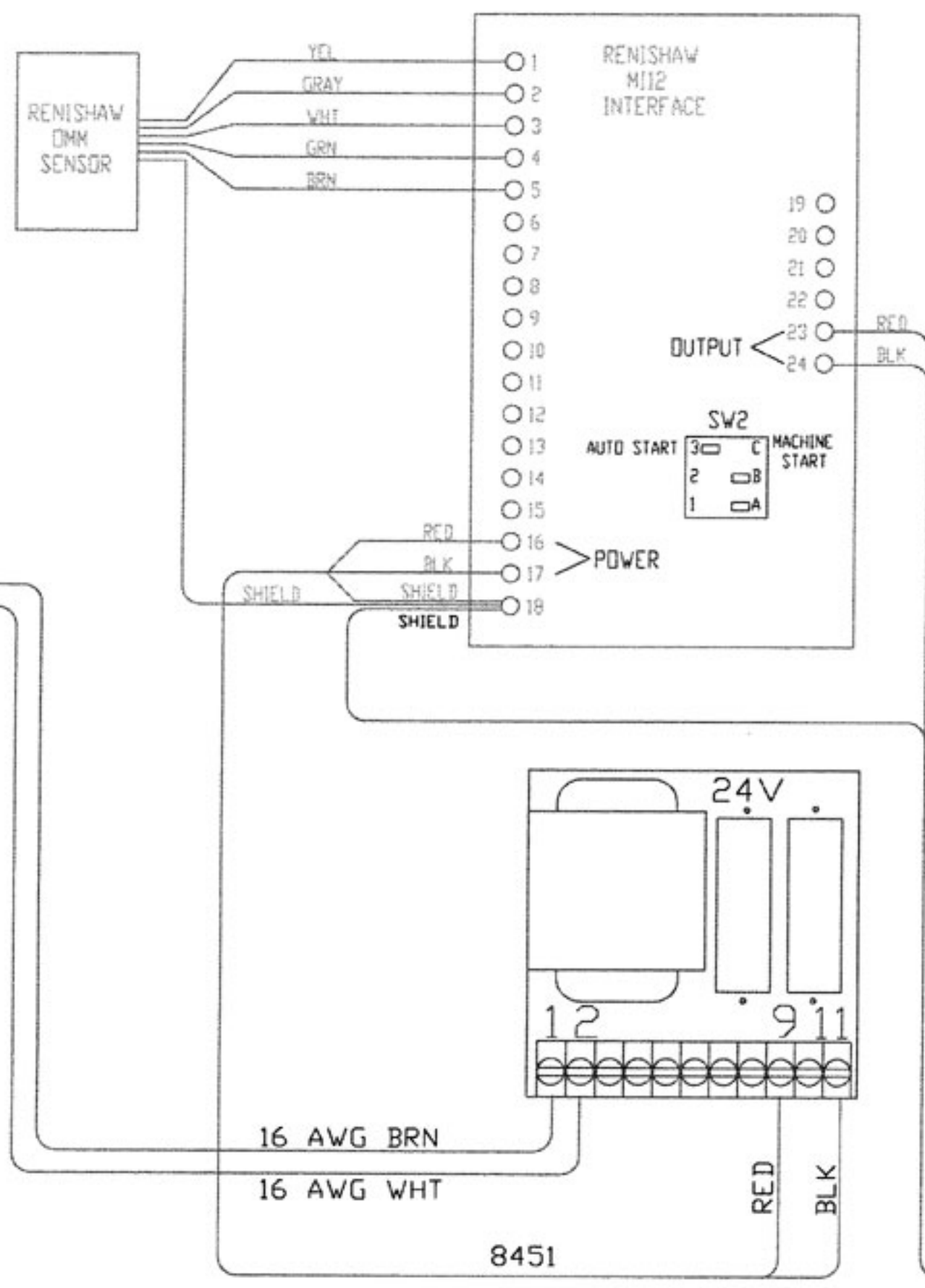
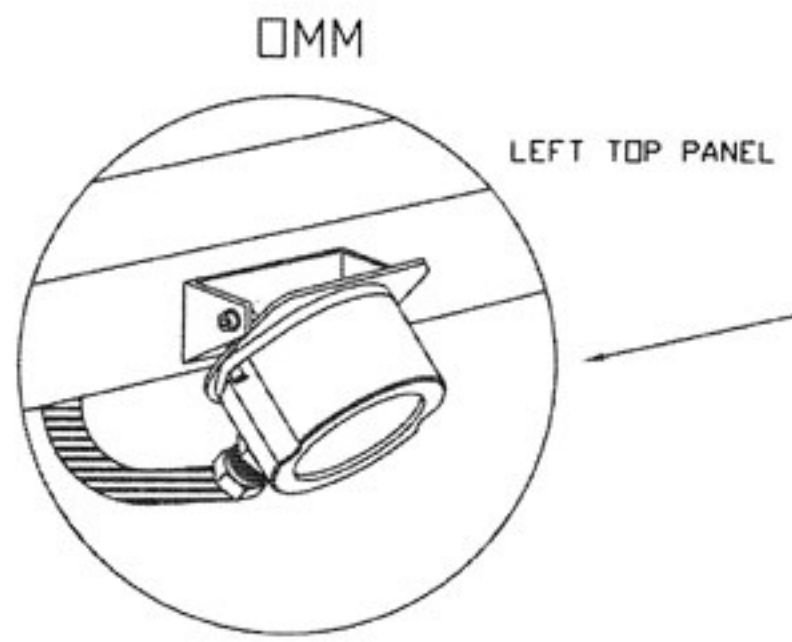
- 16AWG BRN
- 16AWG WHT
- 16AWG WHT
- 16AWG BRN
- 16AWG WHT
- 16AWG BRN



<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ARE 1/16 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1 1 1/4 1 1/2 1 3/4 2 2 1/4 2 1/2 3 3 1/4 3 1/2 4 4 1/4 4 1/2 5 5 1/4 5 1/2 6 6 1/4 6 1/2 7 7 1/4 7 1/2 8 8 1/4 8 1/2 9 9 1/4 9 1/2 10 10 1/4 10 1/2 11 11 1/4 11 1/2 12 12 1/4 12 1/2 13 13 1/4 13 1/2 14 14 1/4 14 1/2 15 15 1/4 15 1/2 16 16 1/4 16 1/2 17 17 1/4 17 1/2 18 18 1/4 18 1/2 19 19 1/4 19 1/2 20 20 1/4 20 1/2 21 21 1/4 21 1/2 22 22 1/4 22 1/2 23 23 1/4 23 1/2 24 24 1/4 24 1/2 25 25 1/4 25 1/2 26 26 1/4 26 1/2 27 27 1/4 27 1/2 28 28 1/4 28 1/2 29 29 1/4 29 1/2 30 30 1/4 30 1/2 31 31 1/4 31 1/2 32 32 1/4 32 1/2 33 33 1/4 33 1/2 34 34 1/4 34 1/2 35 35 1/4 35 1/2 36 36 1/4 36 1/2 37 37 1/4 37 1/2 38 38 1/4 38 1/2 39 39 1/4 39 1/2 40 40 1/4 40 1/2 41 41 1/4 41 1/2 42 42 1/4 42 1/2 43 43 1/4 43 1/2 44 44 1/4 44 1/2 45 45 1/4 45 1/2 46 46 1/4 46 1/2 47 47 1/4 47 1/2 48 48 1/4 48 1/2 49 49 1/4 49 1/2 50 50 1/4 50 1/2 51 51 1/4 51 1/2 52 52 1/4 52 1/2 53 53 1/4 53 1/2 54 54 1/4 54 1/2 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1/2 162 162 1/4 162 1/2 163 163 1/4 163 1/2 164 164 1/4 164 1/2 165 165 1/4 165 1/2 166 166 1/4 166 1/2 167 167 1/4 167 1/2 168 168 1/4 168 1/2 169 169 1/4 169 1/2 170 170 1/4 170 1/2 171 171 1/4 171 1/2 172 172 1/4 172 1/2 173 173 1/4 173 1/2 174 174 1/4 174 1/2 175 175 1/4 175 1/2 176 176 1/4 176 1/2 177 177 1/4 177 1/2 178 178 1/4 178 1/2 179 179 1/4 179 1/2 180 180 1/4 180 1/2 181 181 1/4 181 1/2 182 182 1/4 182 1/2 183 183 1/4 183 1/2 184 184 1/4 184 1/2 185 185 1/4 185 1/2 186 186 1/4 186 1/2 187 187 1/4 187 1/2 188 188 1/4 188 1/2 189 189 1/4 189 1/2 190 190 1/4 190 1/2 191 191 1/4 191 1/2 192 192 1/4 192 1/2 193 193 1/4 193 1/2 194 194 1/4 194 1/2 195 195 1/4 195 1/2 196 196 1/4 196 1/2 197 197 1/4 197 1/2 198 198 1/4 198 1/2 199 199 1/4 199 1/2 200 200 1/4 200 1/2 201 201 1/4 201 1/2 202 202 1/4 202 1/2 203 203 1/4 203 1/2 204 204 1/4 204 1/2 205 205 1/4 205 1/2 206 206 1/4 206 1/2 207 207 1/4 207 1/2 208 208 1/4 208 1/2 209 209 1/4 209 1/2 210 210 1/4 210 1/2 211 211 1/4 211 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1/2 512 512 1/4 512 1/2 513 513 1/4 513 1/2 514 514 1/4 514 1/2 515 515 1/4 515 1/2 516 516 1/4 516 1/2 517 517 1/4 517 1/2 518 518 1/4 518 1/2 519 519 1/4 519 1/2 520 520 1/4 520 1/2 521 521 1/4 521 1/2 522 522 1/4 522 1/2 523 523 1/4 523 1/2 524 524 1/4 524 1/2 525 525 1/4 525 1/2 526 526 1/4 526 1/2 527 527 1/4 527 1/2 528 528 1/4 528 1/2 529 529 1/4 529 1/2 530 530 1/4 530 1/2 531 531 1/4 531 1/2 532 532 1/4 532 1/2 533 533 1/4 533 1/2 534 534 1/4 534 1/2 535 535 1/4 535 1/2 536 536 1/4 536 1/2 537 537 1/4 537 1/2 538 538 1/4 538 1/2 539 539 1/4 539 1/2 540 540 1/4 540 1/2 541 541 1/4 541 1/2 542 542 1/4 542 1/2 543 543 1/4 543 1/2 544 544 1/4 544 1/2 545 545 1/4 545 1/2 546 546 1/4 546 1/2 547 547 1/4 547 1/2 548 548 1/4 548 1/2 549 549 1/4 549 1/2 550 550 1/4 550 1/2 551 551 1/4 551 1/2 552 552 1/4 552 1/2 553 553 1/4 553 1/2 554 554 1/4 554 1/2 555 555 1/4 555 1/2 556 556 1/4 556 1/2 557 557 1/4 557 1/2 558 558 1/4 558 1/2 559 559 1/4 559 1/2 560 560 1/4 560 1/2 561 561 1/4 561 1/2 562 562 1/4 562 1/2 563 563 1/4 563 1/2 564 564 1/4 564 1/2 565 565 1/4 565 1/2 566 566 1/4 566 1/2 567 567 1/4 567 1/2 5</p>

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MP12 RENISHAW PROBE WITH FADAL 24V POWER SUPPLY



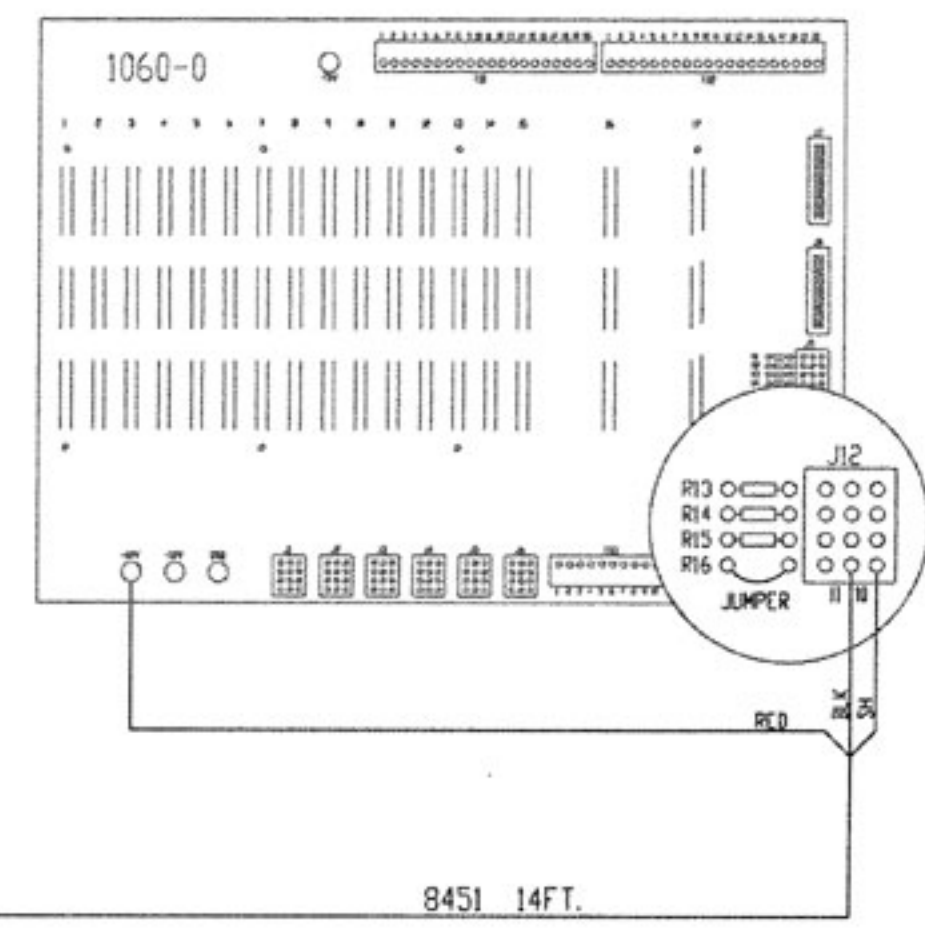
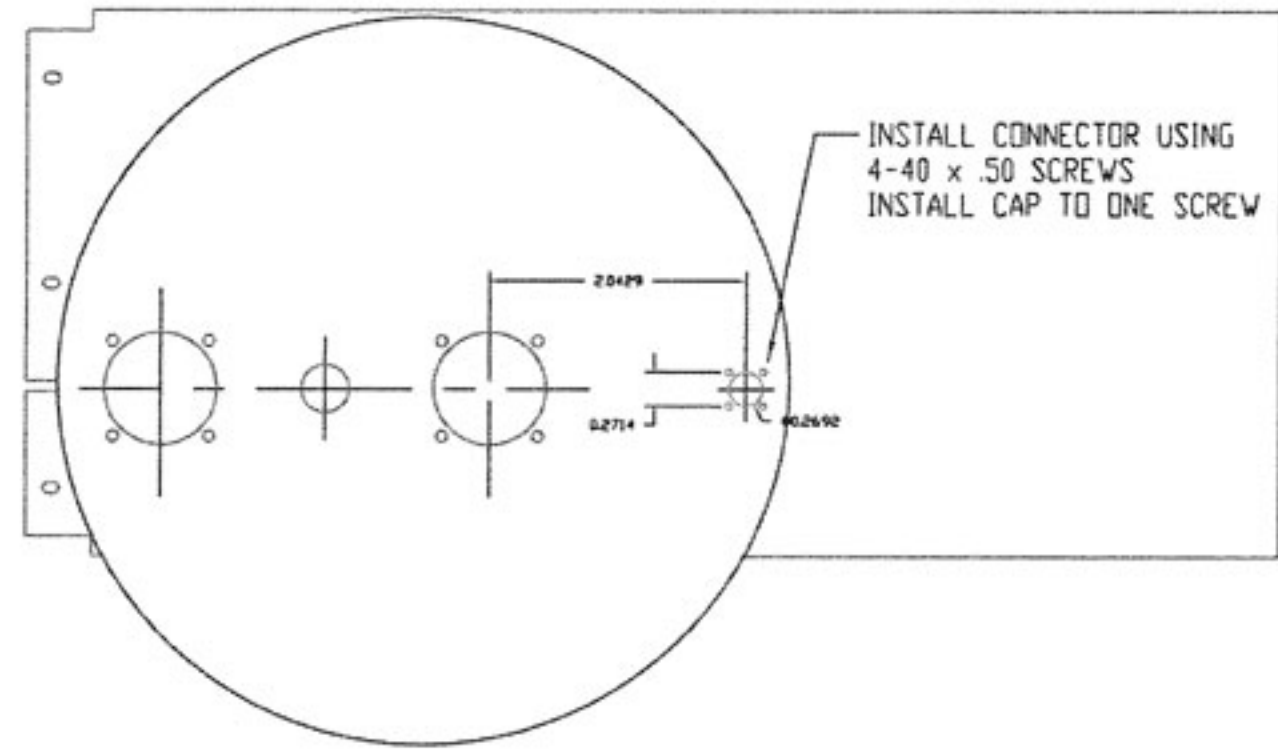
- NOTE:**
1. INSTALL FUSE F29 AGC 2 AND CIRCUIT BREAKER CB1 2.5A ON 1100-1 BOARD.
 2. SET SWITCH SW2 (#3) IN MI12 INTERFACE UNIT TO THE AUTO START POSITION.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE FRACTIONS DECIMALS ANGLES		Fadal ENGINEERING CO. 1000 S. 10TH ST. SUITE 100 MILWAUKEE, WI 53214	
DATE	APPROVALS	DATE	REV.
DESIGN	A. POLONSKY		
DRAWN			
CHECKED			
ENGINEERING			
PROJECT		REV. NO.	REV.
		D	A
		PREVIOUS P/N	WRG-0005
		DATE	

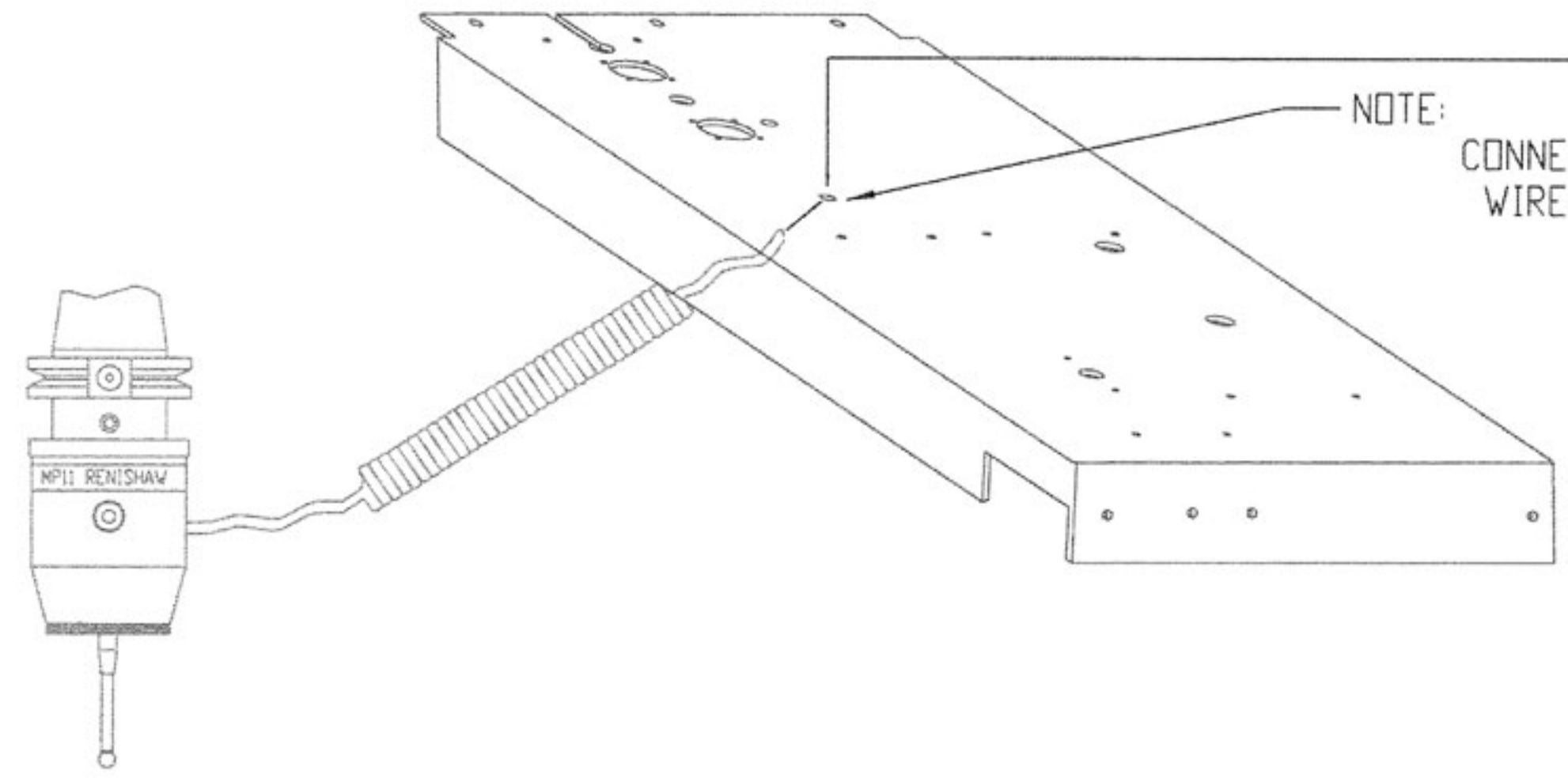
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MP11 PROBE

TOP RIGHT PANEL

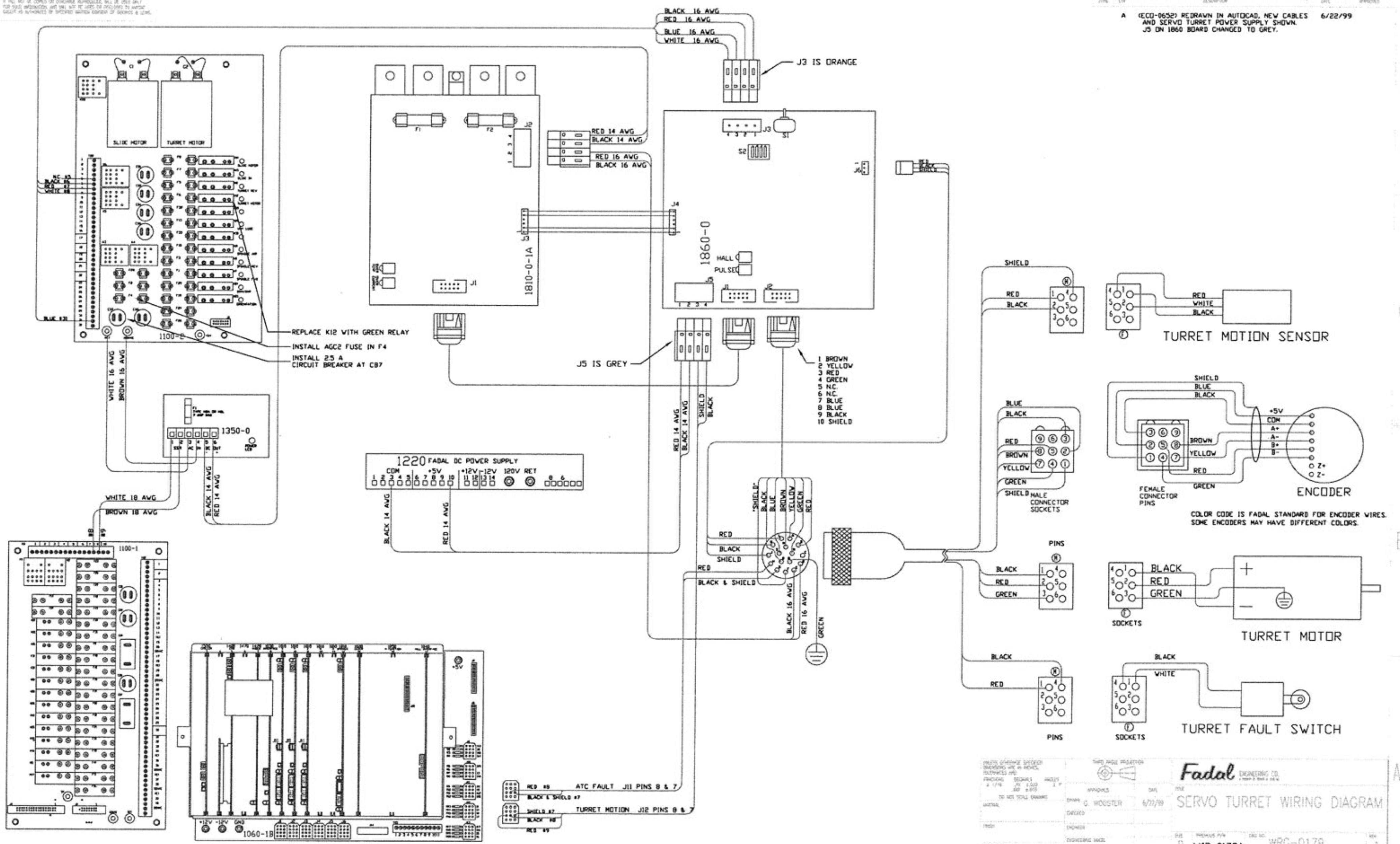


NOTE:
CONNECTOR SUPPLIED WITH
WIRE HARNESS



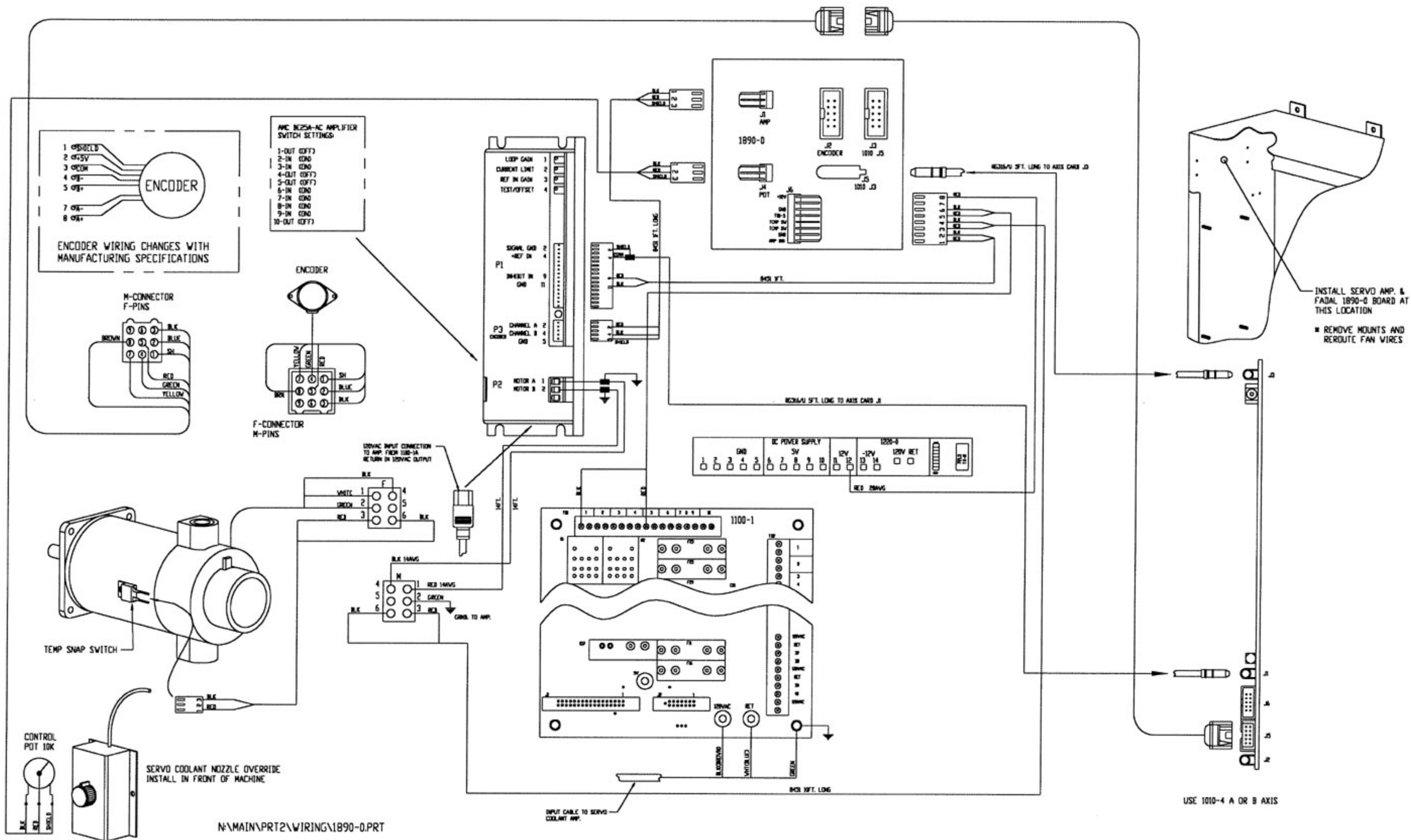
THIS DRAWING SHOWS DIMENSIONS ARE IN INCHES. DIMENSIONS ARE IN MILLIMETERS. DATE: 10/07/99.		Fadal ENGINEERING CO.	
DRAWN: A. POLONSKY CHECKED: [] DATE: 10/23/99	APPROVED: [] DATE: []	MP11 PROBE WIRING DIAGRAM	
TITLE: WIRING DIAGRAM	SHEET NO: D	PART NO: WRC-0004	REV: A

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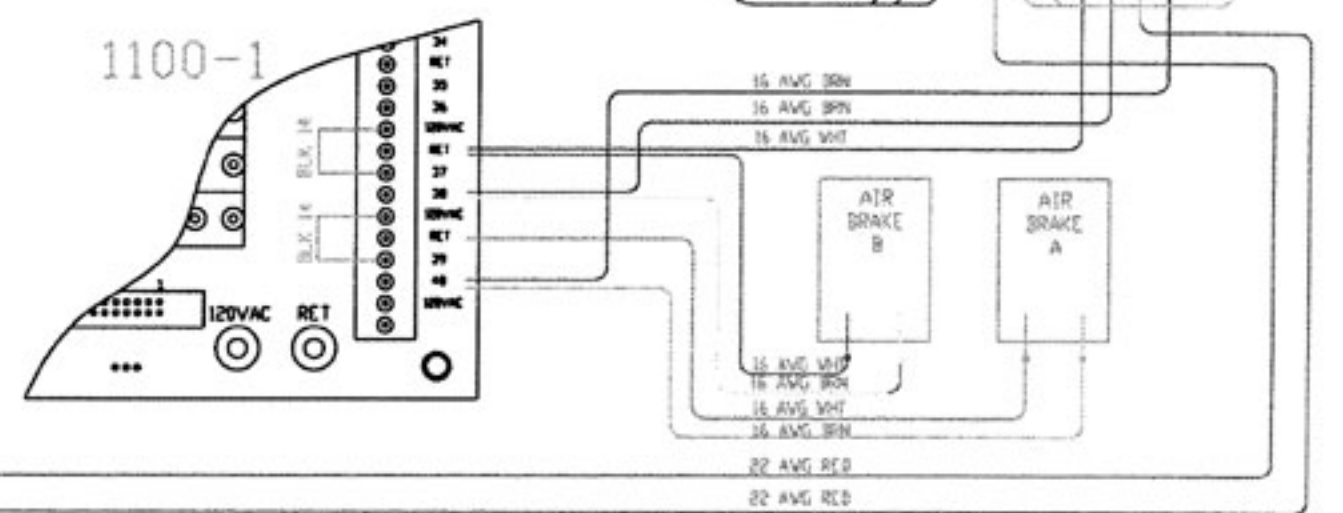
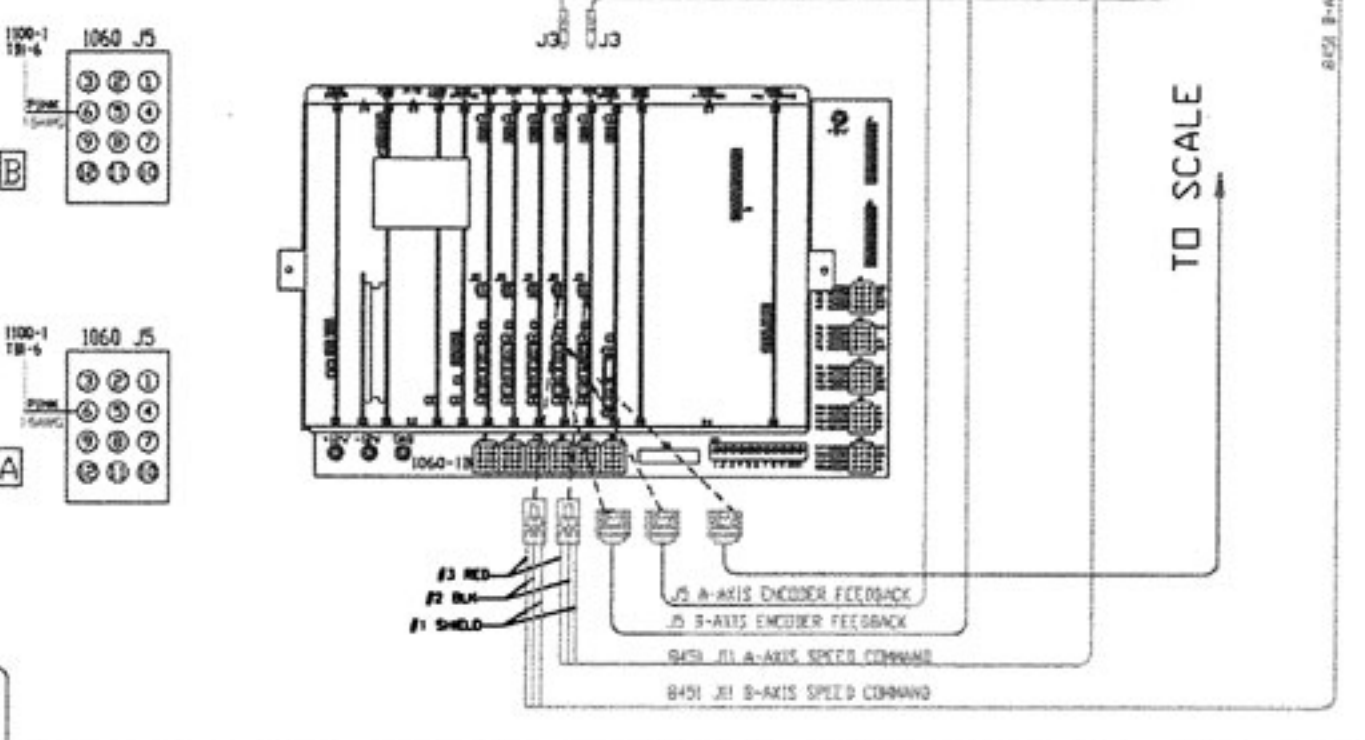
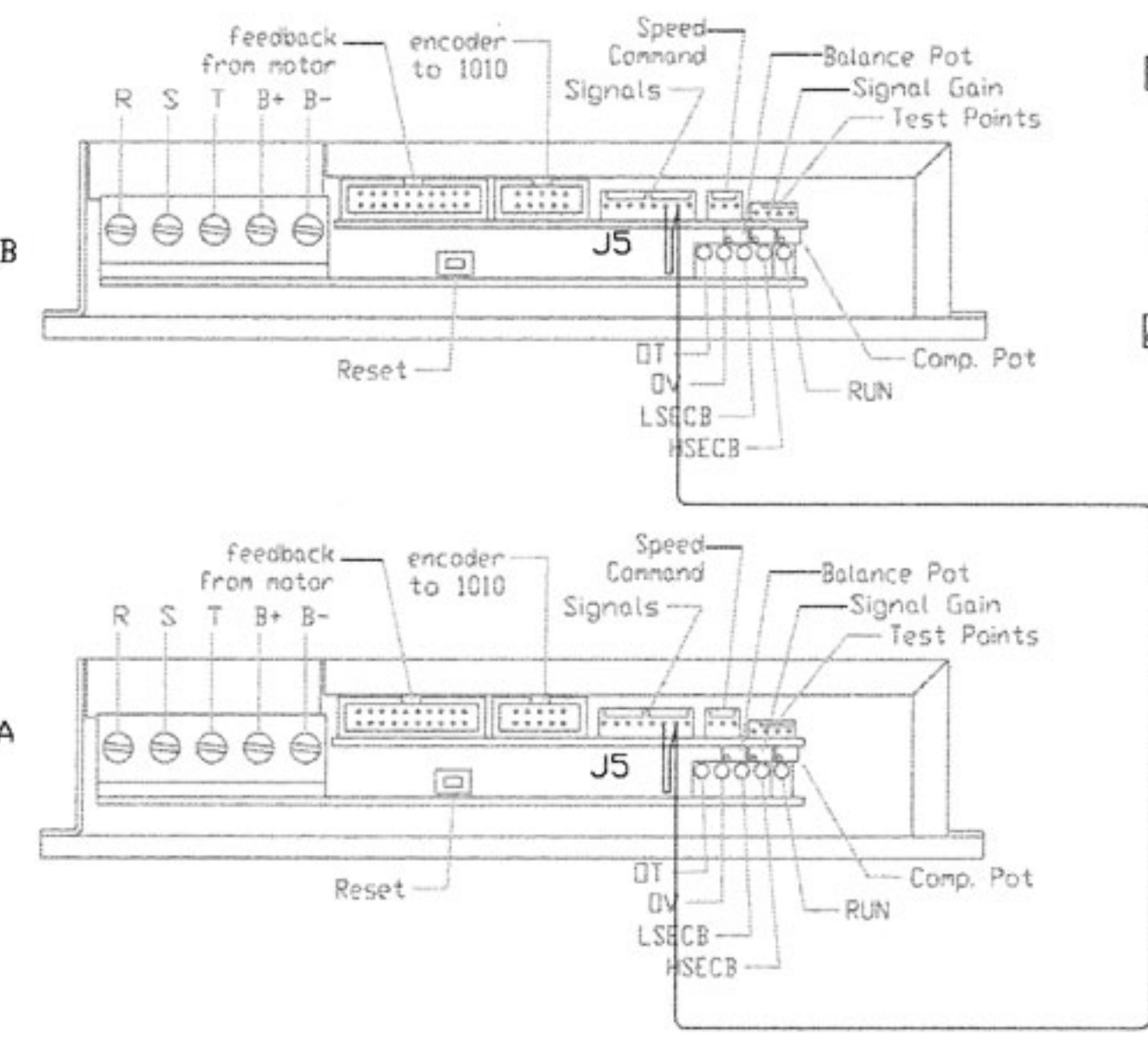
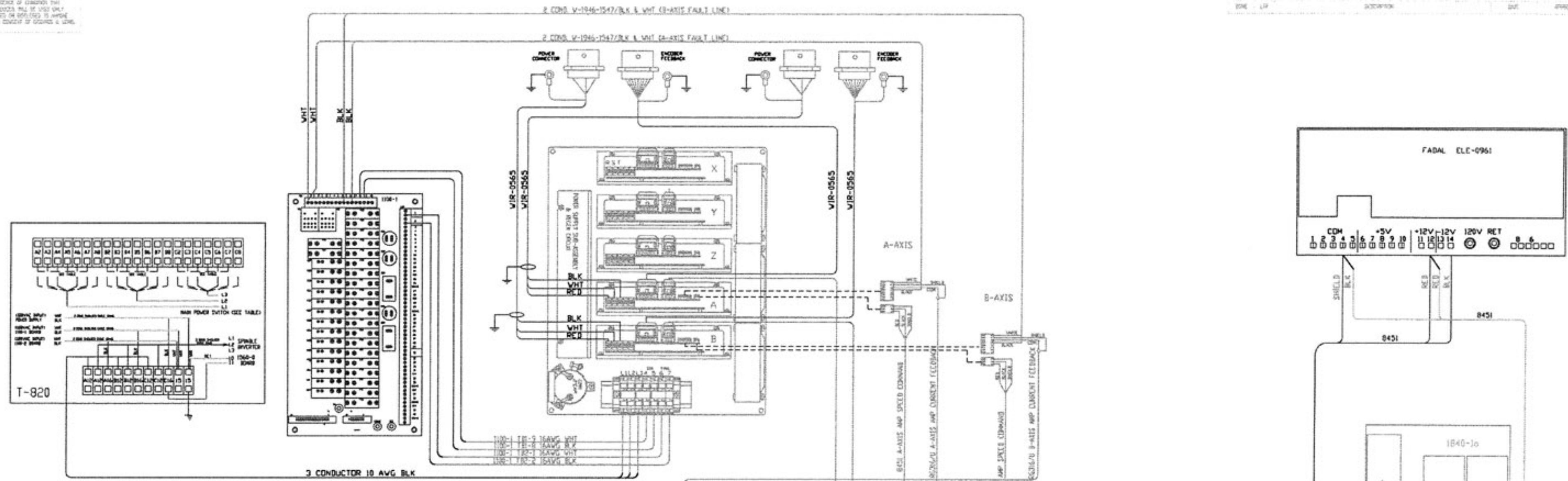


WIRE GAUGE SPEED DRAWING USE IN PINS FOLLOWED J12 PROVISION SIGNALS ANALOG 2 P 2 1/16 .002 .015 2 P	THREE PHASE PROTECTOR 	Fadal DESIGNING CO. 1700 S. 10TH & 54th
APPROVED G. WOOSTER 6/22/99	DATE 6/22/99	FILE SERVO TURRET WIRING DIAGRAM
DRAWN G. WOOSTER	CHECKED G. WOOSTER	REV 0 WIR-0179A WRC-0179 1/1 1 OF 2

SERVO COOLANT WIRING DIAGRAM(4607-200)



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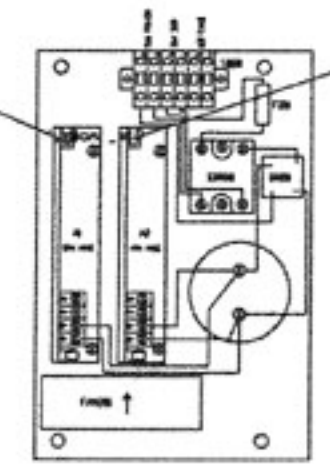
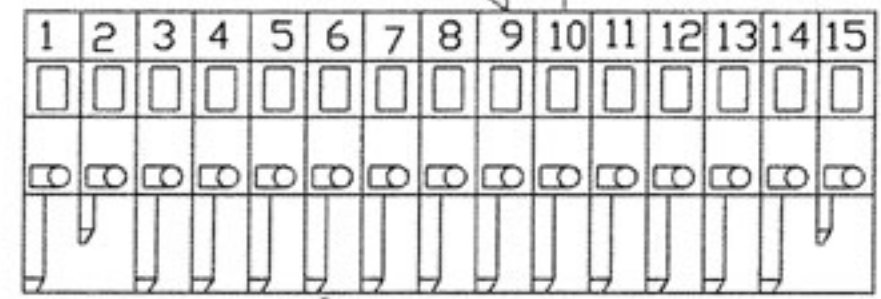
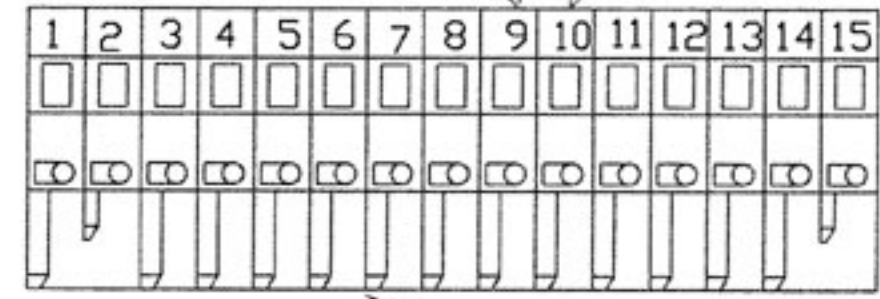
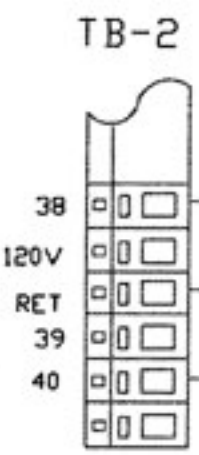
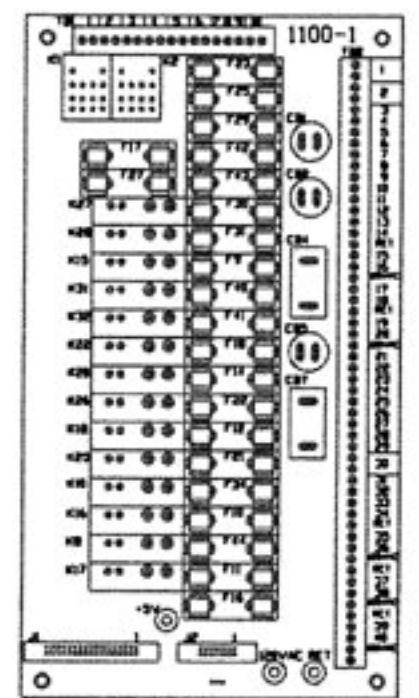
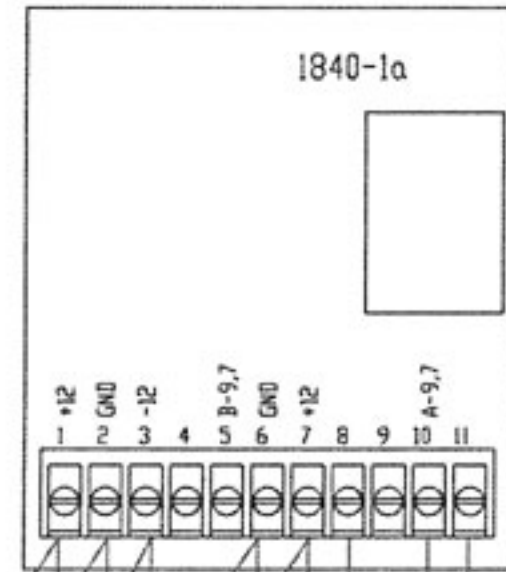
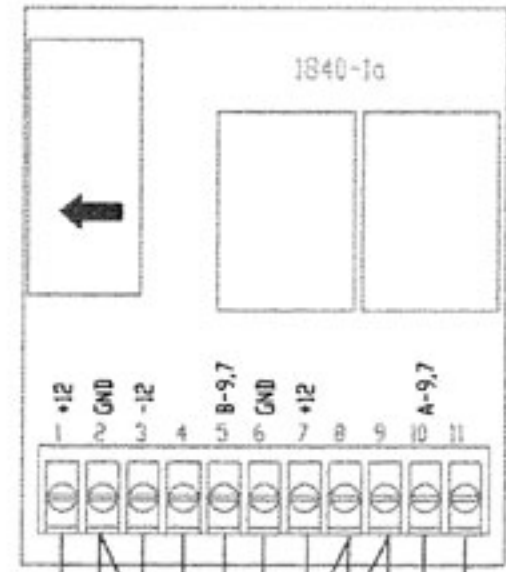
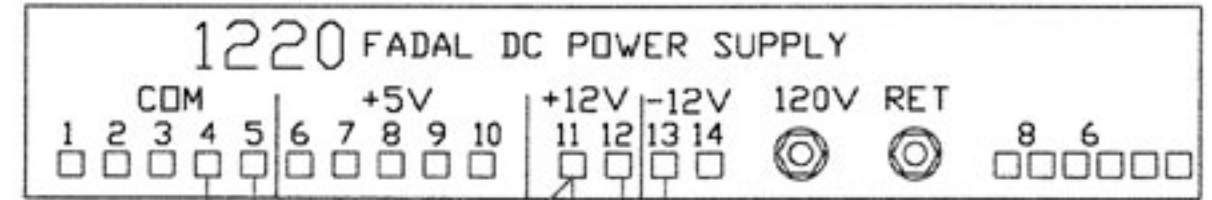
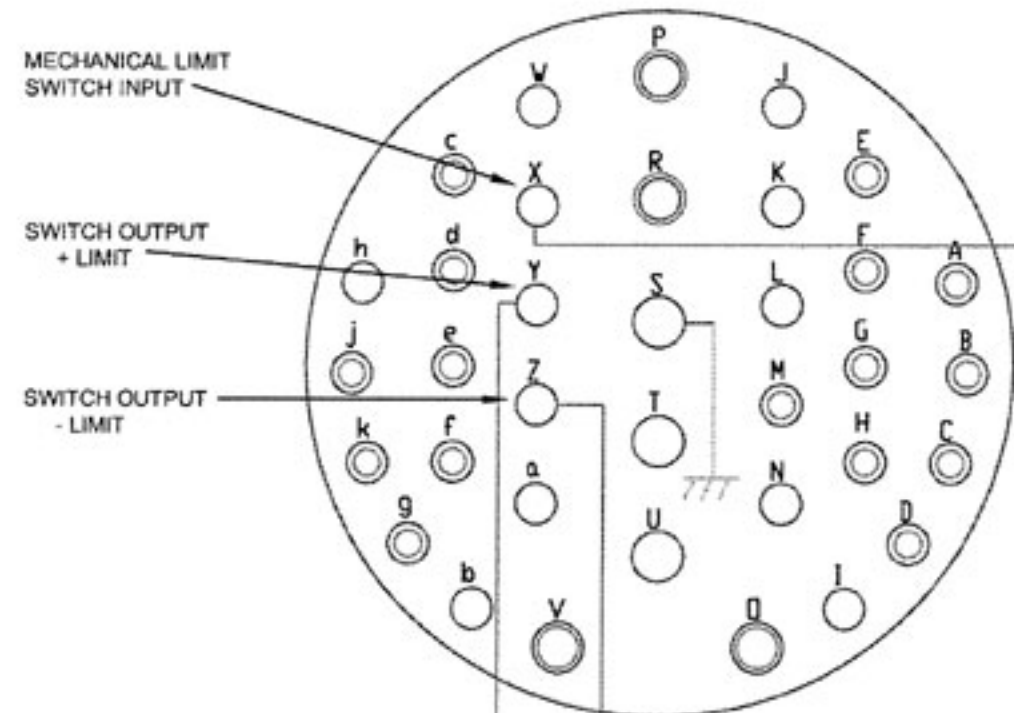


- NOTE:
1. INSTALL FUSES F11, F44 (AGC2) AND SOLID STATE RELAYS K17, K08 (BLACK) ON 1100-1 BOARD.
 2. USE GLENTEK AMPLIFIER AMP-0041.
 3. INSTALL JUMPERS ON 4th & 5th AXIS AMPLIFIERS INJ5 BETWEEN +LIMIT & -LIMIT (22 AWG RED).

DATE: 11/23/98 DRAWN: A. POLONSKY CHECKED: [] DESIGNED: [] ENGINEER: [] DRAWING NO.: WRC-0016 SCALE: 1/1" = 1'-0"		FADAL ENGINEERING CO. 1000 S. 10TH ST. #100 DENVER, CO 80202 TEL: 303.733.1111 FAX: 303.733.1112	
PROJECT: AC 4TH & 5TH AXIS WIRING DIAGRAM SHEET NO.: 1 OF 1		DATE: 11/23/98 DRAWN: A. POLONSKY CHECKED: [] DESIGNED: [] ENGINEER: [] DRAWING NO.: WRC-0016 SCALE: 1/1" = 1'-0"	

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

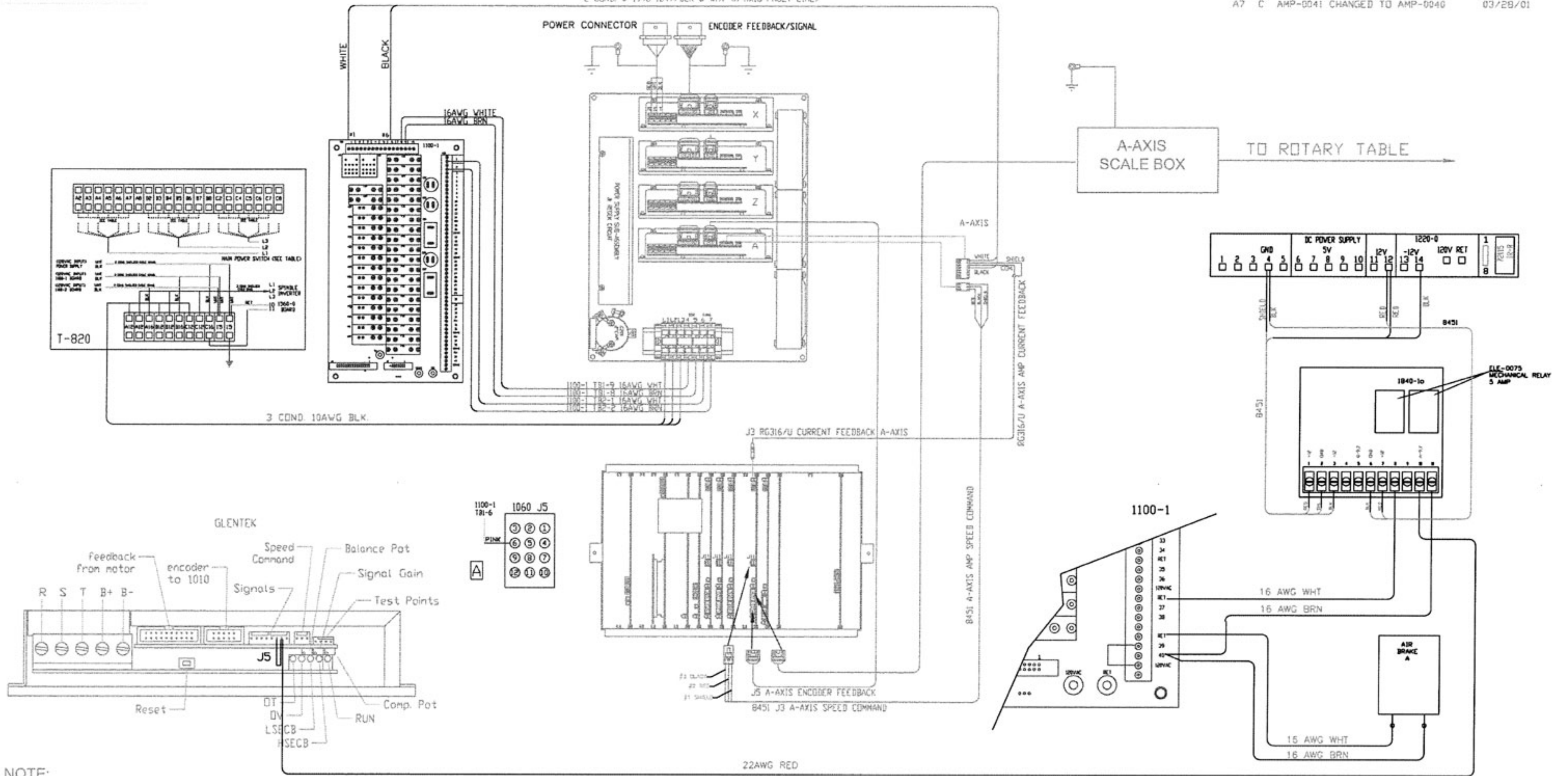


(METRIC DIMENSIONS GIVEN) DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS 1/16 1/8 3/16 1/4 5/16 3/8 7/16 1/2 5/8 3/4 7/8 1		(DO NOT SCALE DRAWING)		APPROVALS DRAWN A. POLONSKY CHECKED D. [unclear] ENGINEER [unclear] DATE 10/28/79		TITLE 4th/5th AXIS WITH LIMIT SWITCH 1840-1 BOARD WIRING DIAGRAM PART NO. WRG-0015 REV. A	
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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		

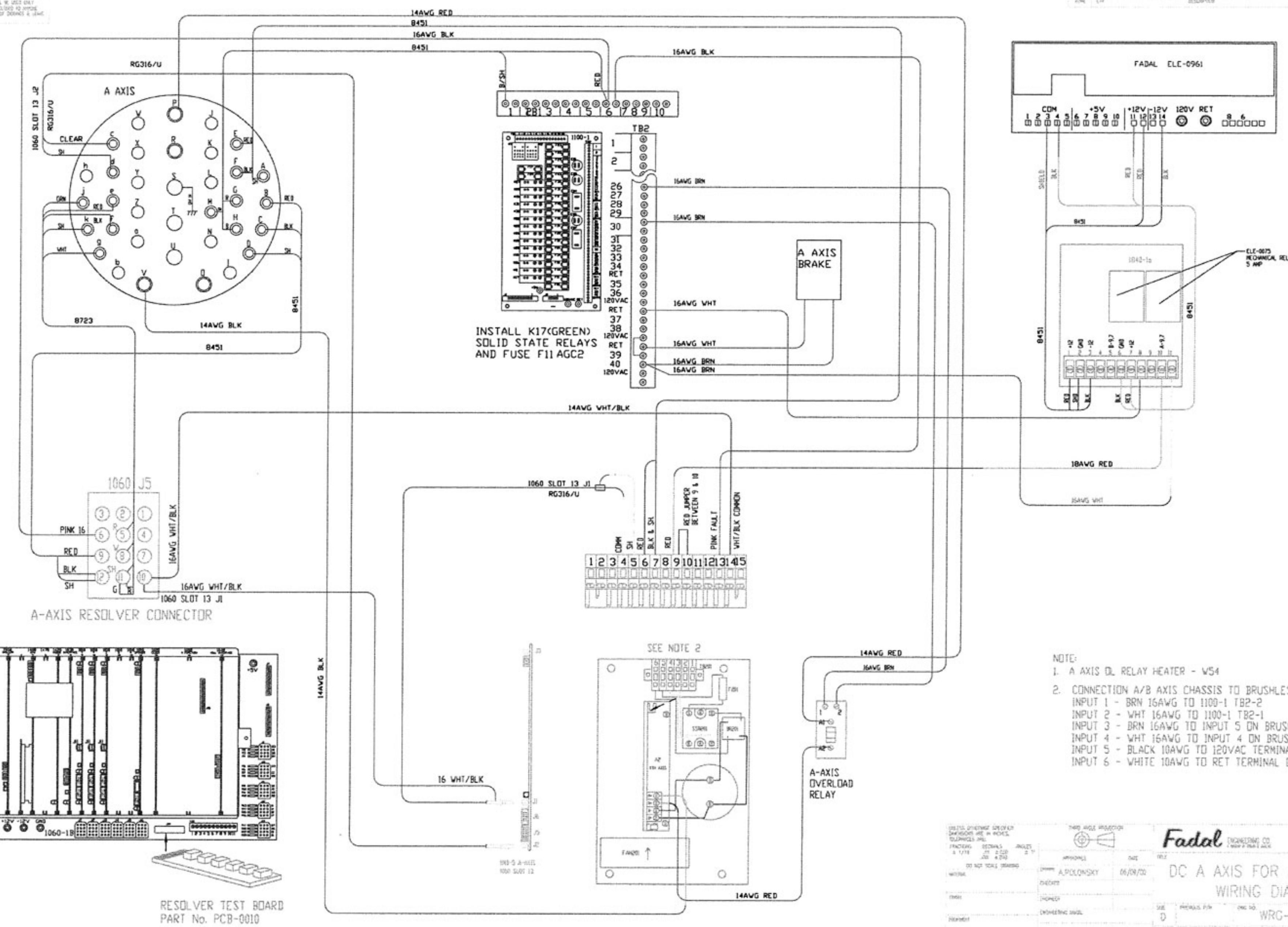
2 COND. W-1946-1547/BLK & WHT (A-AXIS FAULT LINE)



- 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.

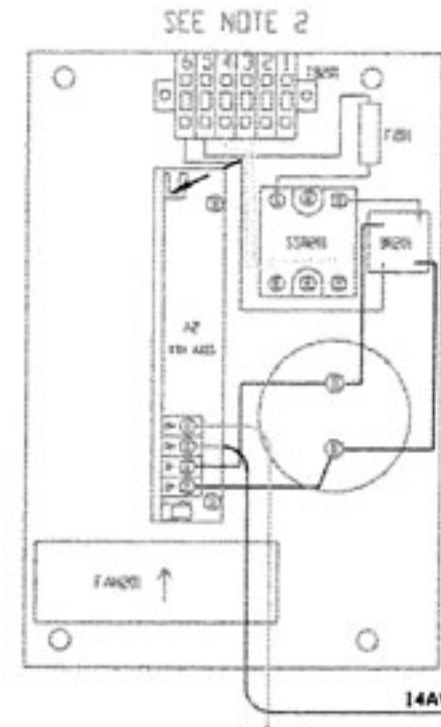
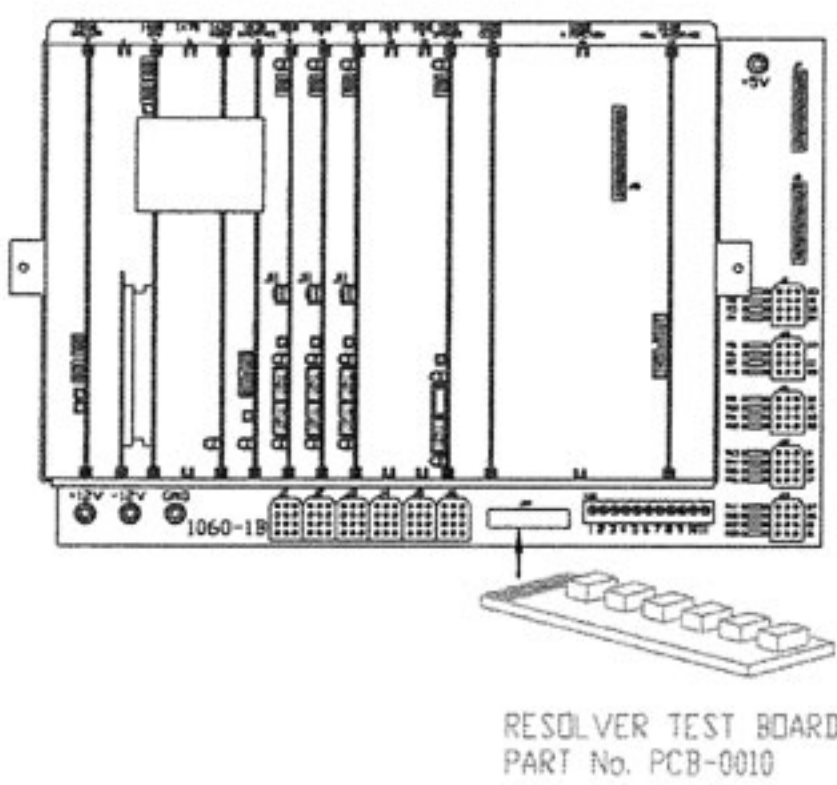
<p>DO NOT SCALE DRAWING</p> <p>APPROVED: A. POLOVSKY</p> <p>DATE: 10/25/99</p>		<p>Fadal DESIGNING CO.</p> <p>AC 4TH AXIS STD./ SLANT 98</p> <p>WIRING DIAGRAM</p>	
<p>REV: 1</p> <p>DATE: 03/28/01</p> <p>BY: A7</p>	<p>REV: 1</p> <p>DATE: 09/19/00</p> <p>BY: AB</p>	<p>REV: 1</p> <p>DATE: 03/28/01</p> <p>BY: A7</p>	<p>REV: 1</p> <p>DATE: 09/19/00</p> <p>BY: AB</p>

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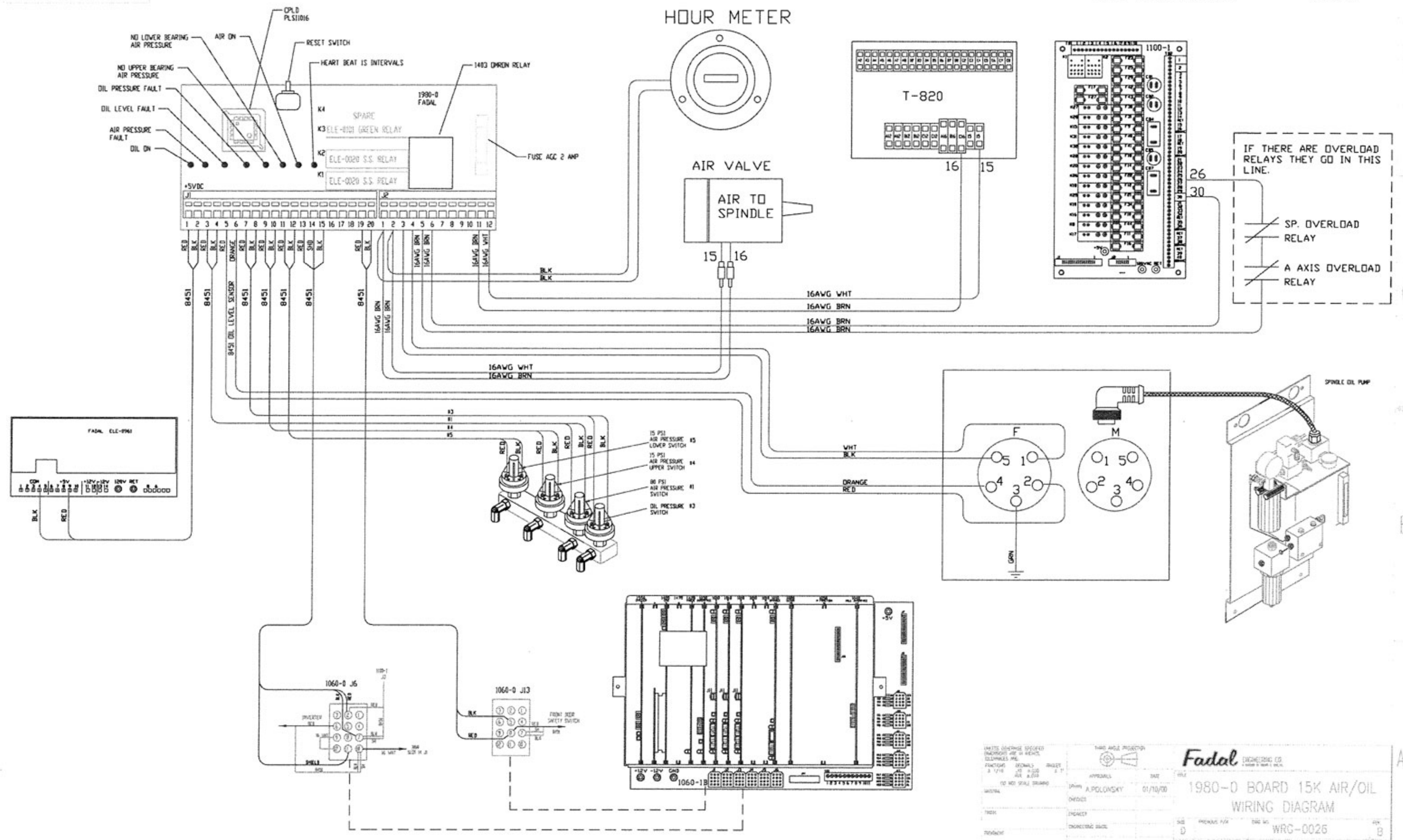
INSTALL K17(GREEN)
SOLID STATE RELAYS
AND FUSE F11 AGC2

- 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



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TITLE: DC A AXIS FOR AC MACHINE WIRING DIAGRAM	DATE: 6/28/02	DRAWN BY: A. POLONSKY	CHECKED BY: J. WILSON
PART NO.: WRG-0034	REV: A	SHEET NO.: 1 OF 1	SCALE:

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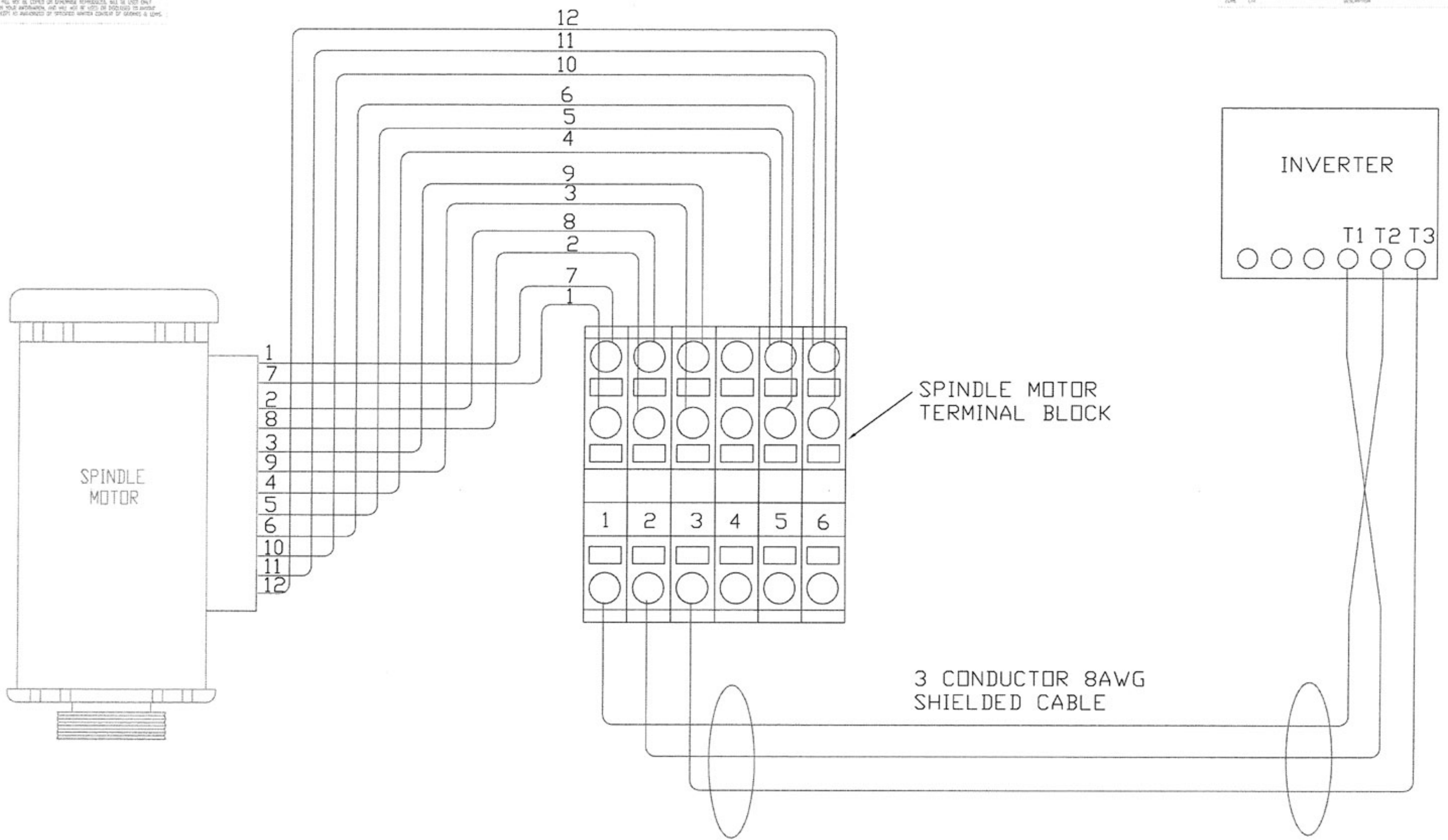
IF THERE ARE OVERLOAD RELAYS THEY GO IN THIS LINE.

SP. OVERLOAD RELAY

A AXIS OVERLOAD RELAY

UNITS (OVERSEAS SPECIFIC) MAGNETIC AIR IN REELS ILLUMINATED PNL FACTORY SIGNALS A 1/16 1/2 1/4 1/8 1/32	DATE 01/10/00	REV. B
Fadal ENGINEERING CO. 1000 N. 10TH ST. W. WYOMING, NEB. 68101		
1980-0 BOARD 15K AIR/OIL WIRING DIAGRAM		
DESIGNER A. POLONSKY	DATE 01/10/00	REV. B
INCHES CONVENTIONAL SCALE	SHEET NO. D	REV. NO. WRG-0026
REVISED	SCALE	TOTAL NO. SHEETS 1 OF 1

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SPINDLE MOTOR TERMINAL BLOCK

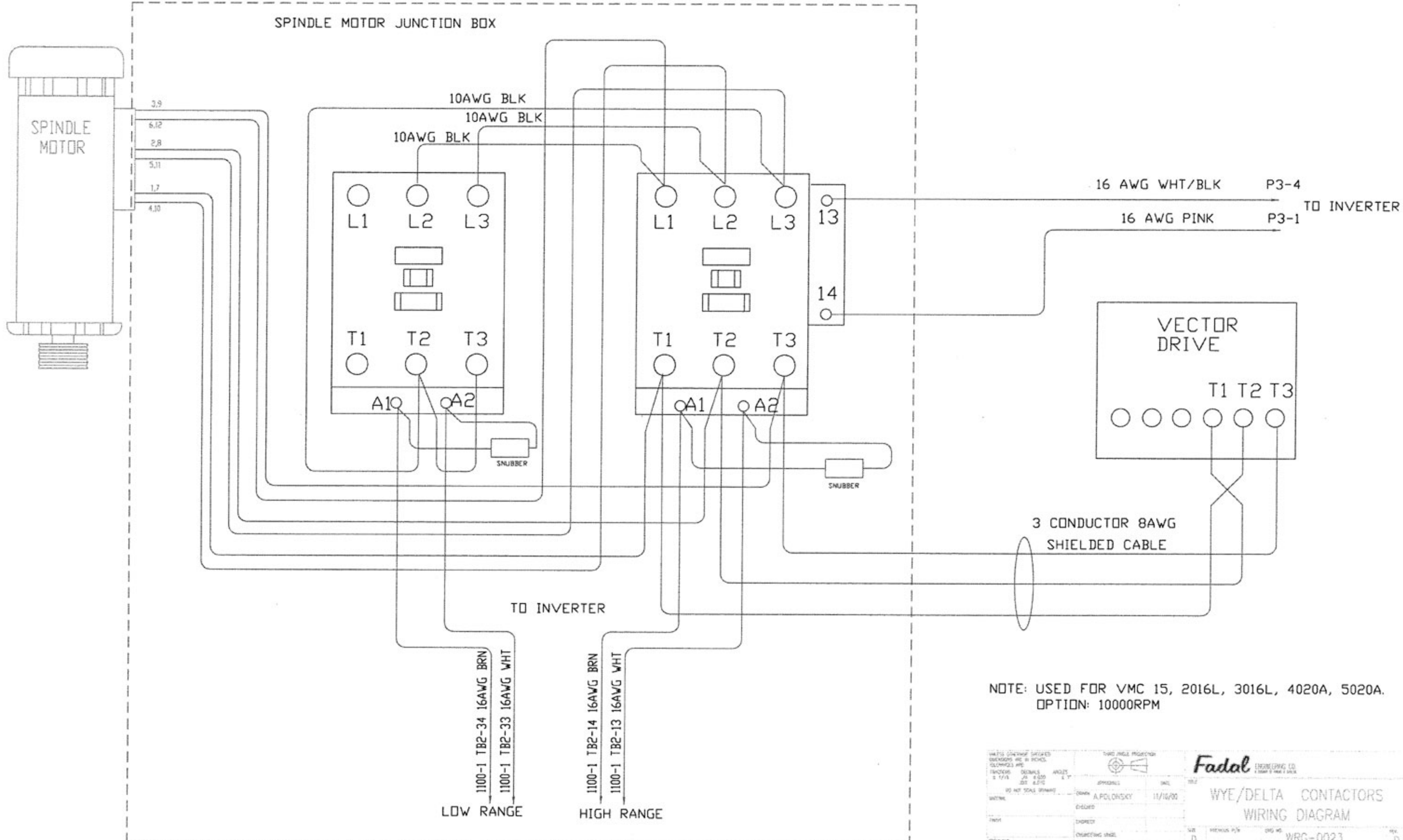
3 CONDUCTOR 8AWG SHIELDED CABLE

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

DRG NO. WRG-0024 REV. 1 A		Fadal ENGINEERING CO. <small>EST. 1988</small>	
DATE: 12/11/09 DRAWN: A. POLONSKI CHECKED:	DATE: 12/11/09 APPROVALS:	SPINDLE MOTOR CONNECTION WIRING DIAGRAM	
TITLE:	DESIGNED:	SHEET NO.: D TOTAL SHEETS: 1 OF 1	DRG NO.: WRG-0024 REV.: A

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REV	DESCRIPTION	DATE	BY	CHK
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

<p>DATE: 11/10/00 DRAWN BY: A.POL/DROSKY CHECKED BY: [] APPROVED BY: []</p>	<p>THIRD ANGLE PROJECTION </p>	<p>Fadal ENGINEERING CO. WYE/DELTA CONTACTORS WIRING DIAGRAM</p>
<p>PROJECT: [] DRAWING NO: WRG-0023 SHEET NO: 1 OF 1</p>	<p>DATE: 11/10/00</p>	<p>REV: D</p>

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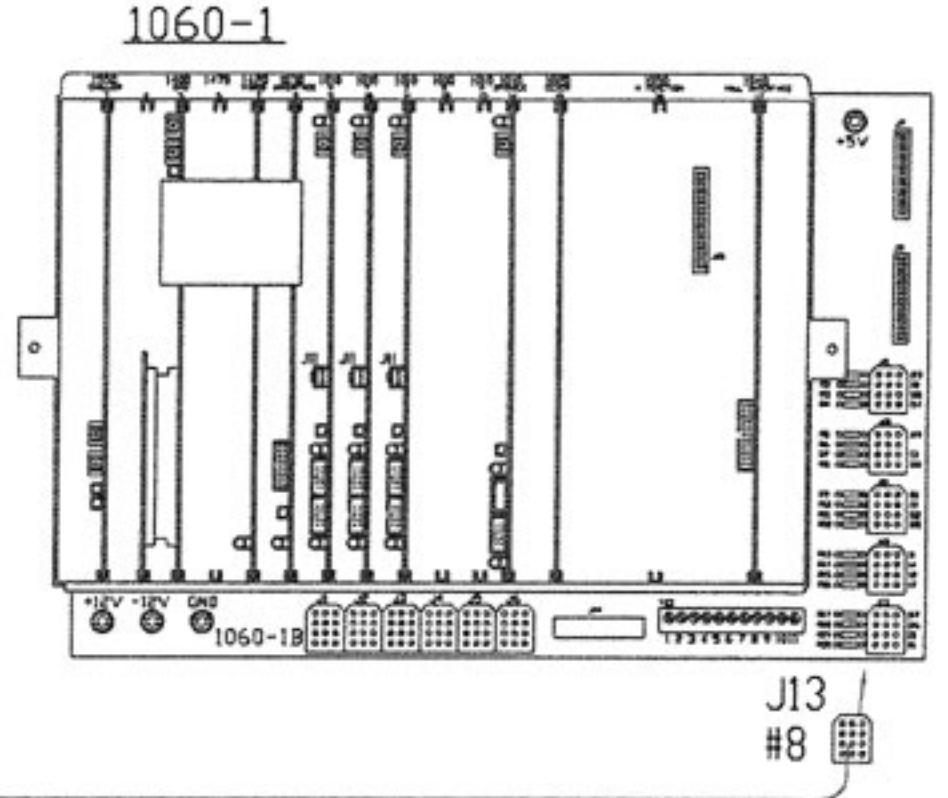
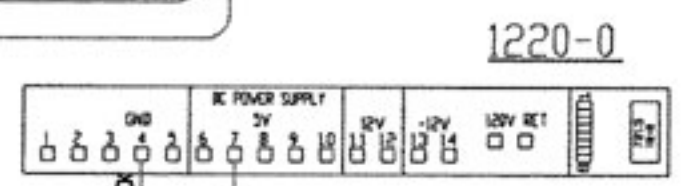
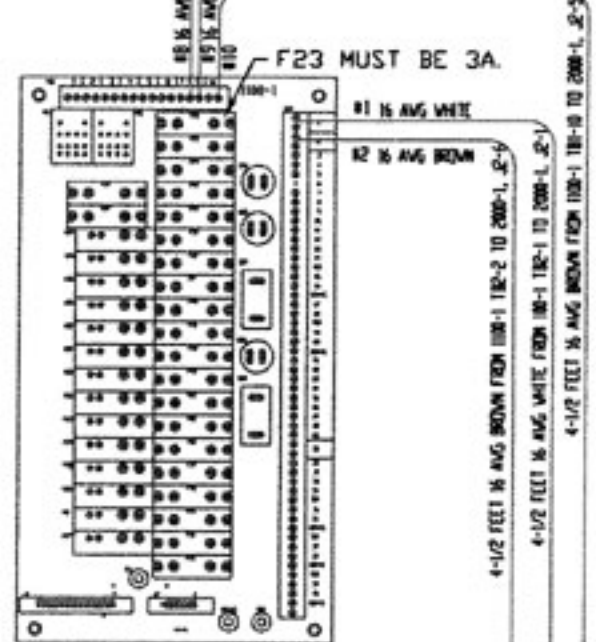
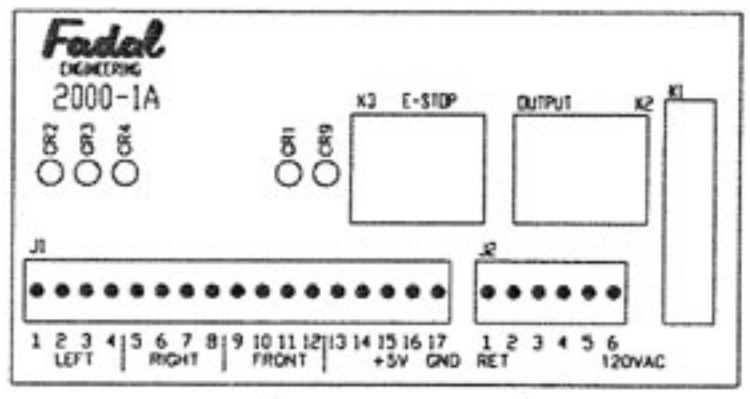
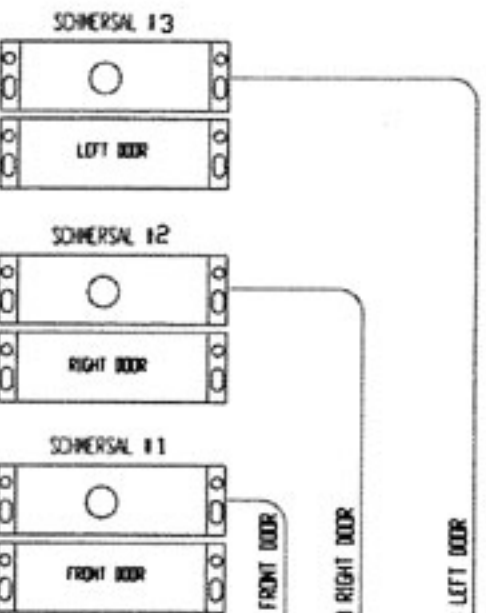
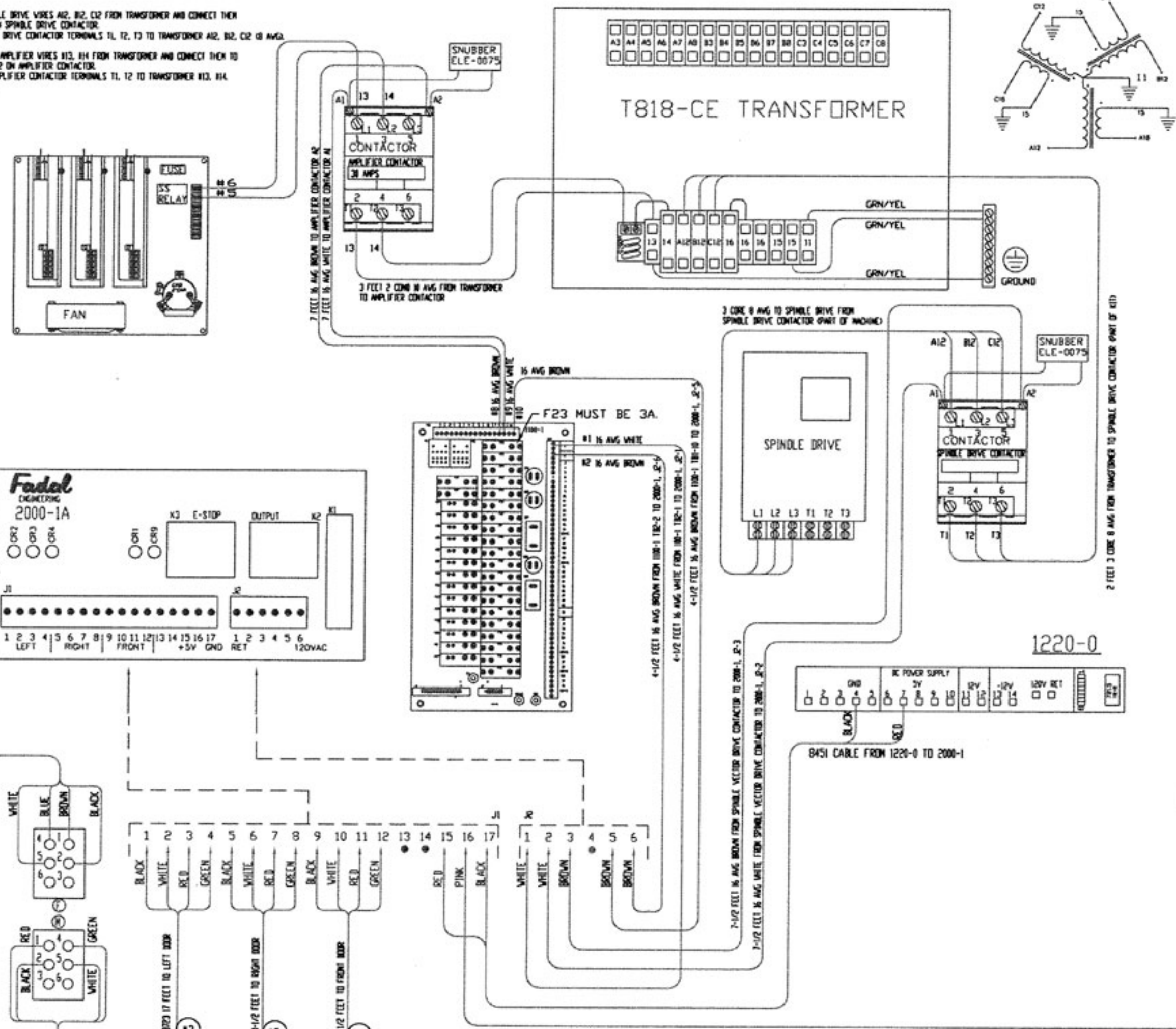
- A. WIRE COLOR CODE CHANGED. 120 VAC IS BROWN, DC SIGNAL IS GRAY. 12/4/98
- B. CHANGED 2000-1 TO 2000-1A BOARD. 2000-1 PIN LIST CORRECTED. 12/29/98
- C. (ECO-0652) 1100-1 F23 CHANGED TO 3A. UPDATED TRANSFORMER. ADDED SNUBBERS. WIRE COLOR CODE CHANGED, DC SIGNAL IS PINK. 6/24/99

2000-1 PIN LIST

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

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

NOTE:
 1. DISCONNECT SPINDLE DRIVE WIRES A12, B12, C12 FROM TRANSFORMER AND CONNECT THEM TO L1, L2, L3 ON SPINDLE DRIVE CONTACTOR.
 2. CONNECT SPINDLE DRIVE CONTACTOR TERMINALS T1, T2, T3 TO TRANSFORMER A12, B12, C12 (B AWG PART OF KIT).
 3. DISCONNECT AXIS AMPLIFIER WIRES #13, #14 FROM TRANSFORMER AND CONNECT THEM TO TERMINALS L1, L2 ON AMPLIFIER CONTACTOR.
 4. 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 AWG PINK J13 #8

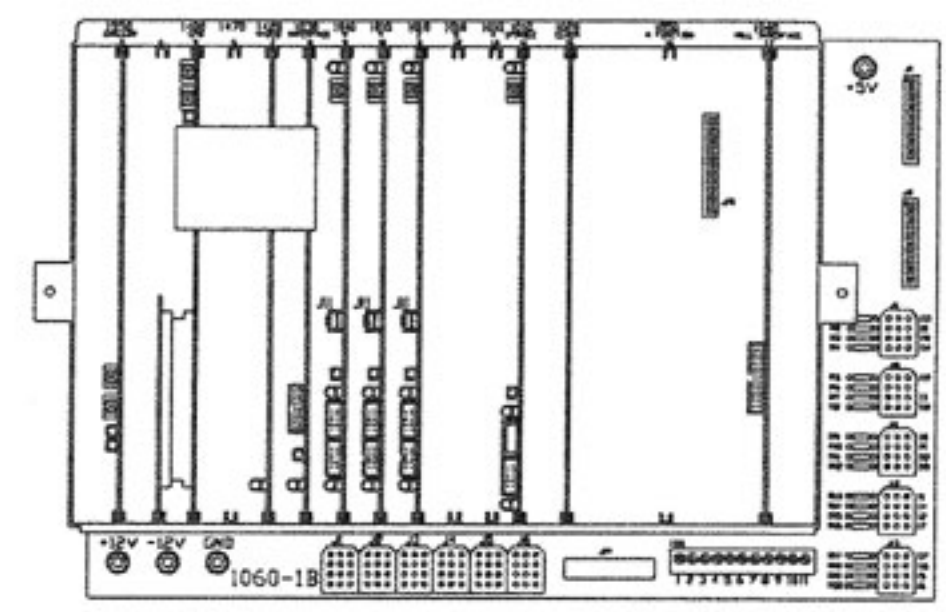
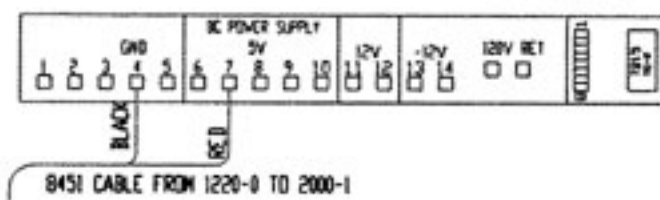
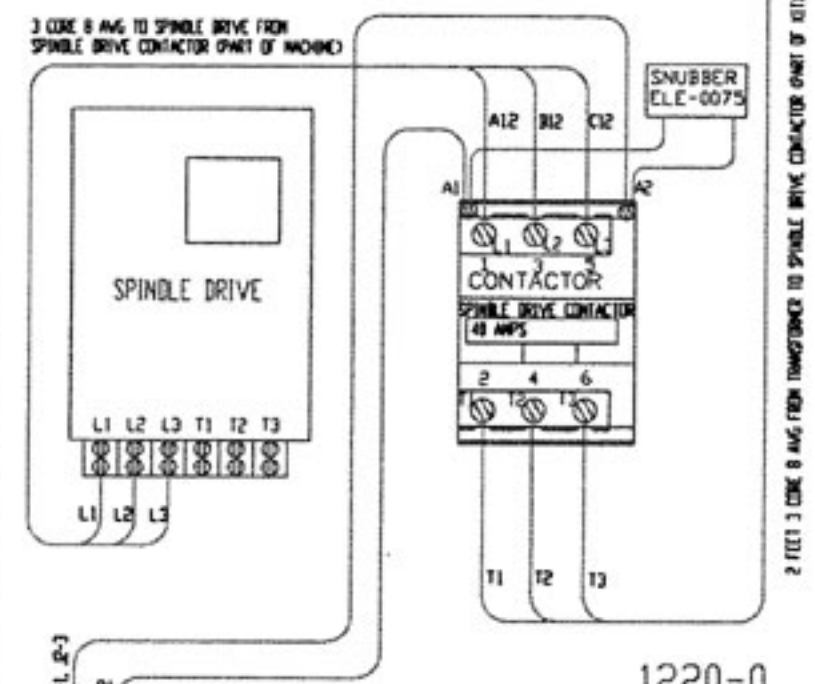
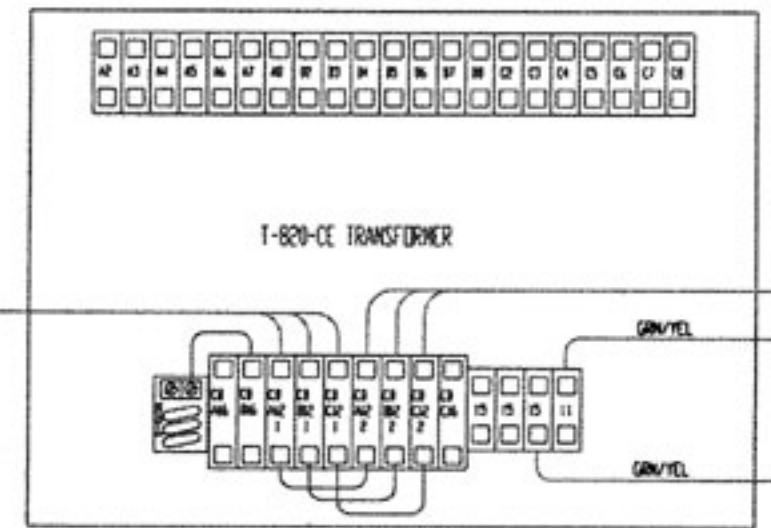
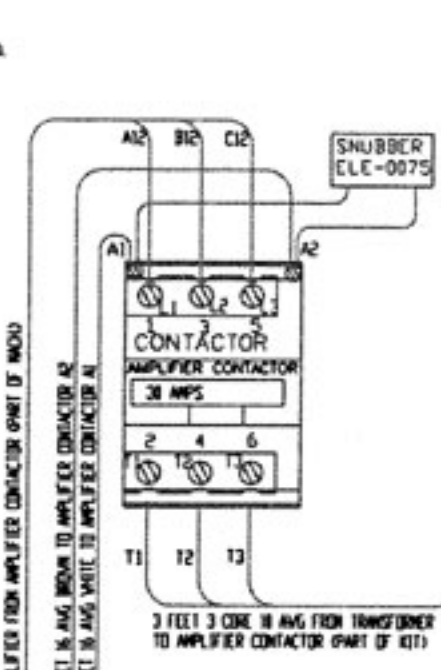
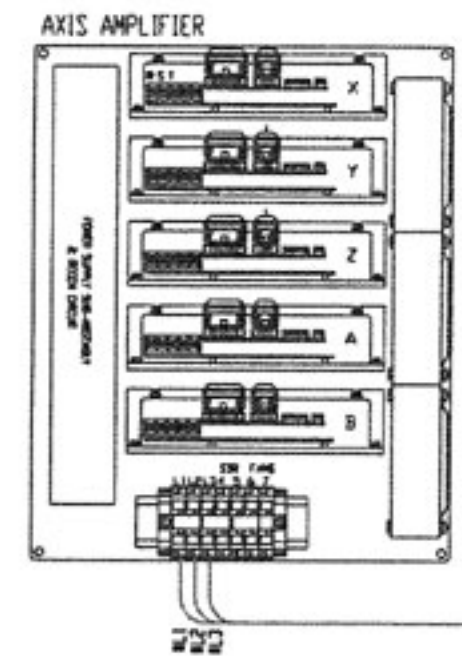
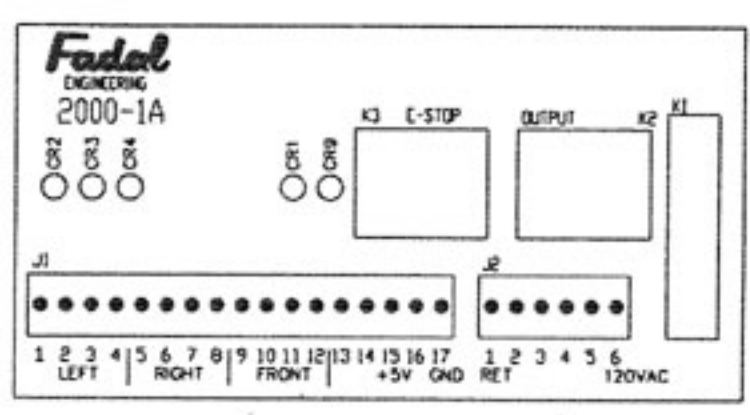
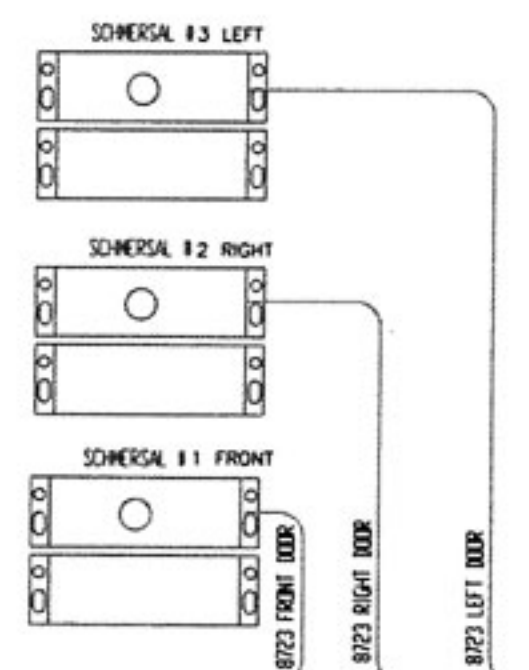
<p>DATE: 11/9/98 DRAWN: G. WOOSTER CHECKED: [] DESIGNED: [] QUANTIFYING: []</p>		<p>DATE: 11/9/98 TITLE: CE DOOR INTERLOCK WIRING DIAGRAM DC MACHINE</p>	
<p>REV: 1 D WIR-0696C</p>		<p>REV: 1 WRC-0696</p>	

NOTES: THIS DRAWING IS A GENERAL GUIDE. THE USER MUST REFER TO THE MANUFACTURER'S LITERATURE FOR SPECIFICATIONS AND WIRING DIAGRAMS. THE USER MUST BE AWARE OF THE FACT THAT THE WIRING OF THIS SYSTEM IS SUBJECT TO CHANGE WITHOUT NOTICE. THE USER MUST BE AWARE OF THE FACT THAT THE WIRING OF THIS SYSTEM IS SUBJECT TO CHANGE WITHOUT NOTICE.

2000-1 PIN LIST

- J1**
- LEFT DOOR
 - 1. DOOR SWITCH (BLACK)
 - 2. DOOR SWITCH (WHITE)
 - 3. DOOR SWITCH (RED)
 - 4. DOOR SWITCH (GREEN)
- RIGHT DOOR
 - 5. DOOR SWITCH (BLACK)
 - 6. DOOR SWITCH (WHITE)
 - 7. DOOR SWITCH (RED)
 - 8. DOOR SWITCH (GREEN)
- FRONT DOOR
 - 9. DOOR SWITCH (BLACK)
 - 10. DOOR SWITCH (WHITE)
 - 11. DOOR SWITCH (RED)
 - 12. DOOR SWITCH (GREEN)
 - 13.
 - 14.
 - 15. +5V
 - 16. REMOTE SLIDE HOLD
 - 17. GROUND
- J2**
- 1. TB2-1 (WHITE)
- 2. CONTACTOR (WHITE)
- 3. CONTACTOR (BROWN)
- 4.
- 5. TB1-10 (BROWN)
- 6. TB2-2 (BROWN)

- NOTE:**
1. DISCONNECT SPINDLE DRIVE WIRES A12, B12, C12 FROM TRANSFORMER AND CONNECT THEM TO L1, L2, L3 ON SPINDLE DRIVE CONTACTOR (ON SLANT 98 DISCONNECT FROM SPINDLE DRIVE.)
 2. CONNECT SPINDLE DRIVE CONTACTOR TERMINALS T1, T2, T3 TO TRANSFORMER A12, B12, C12 (8 AWG. PART OF KIT)
 3. DISCONNECT AXIS AMPLIFIER WIRES A12, B12, C12 FROM TRANSFORMER AND CONNECT THEM TO TERMINALS L1, L2, L3 ON AMPLIFIER CONTACTOR (ON SLANT 98 DISCONNECT FROM AXIS AMPLIFIER.)
 4. CONNECT AXIS AMPLIFIER CONTACTOR TERMINALS T1, T2, T3 TO TRANSFORMER A12, B12, C12 (PART OF KIT)



REMOVE EXISTING WIRES AND INSTALL 20 AWG PINK J13 #8

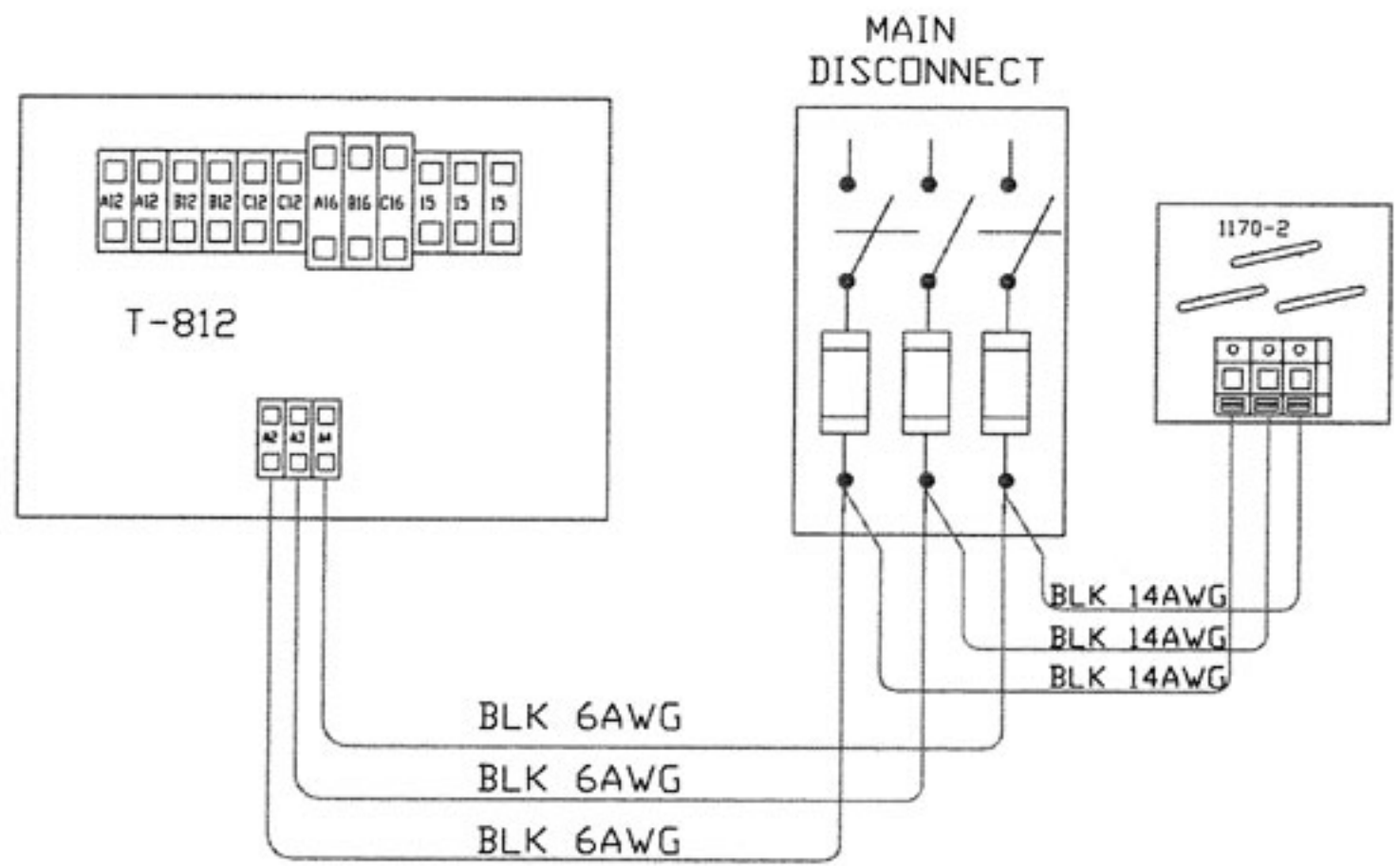
- A. WIRE COLOR CODE CHANGED. 120VAC IS BROWN, DC SIGNAL IS GRAY. 12/4/98
- B. CHANGED 2000-1 TO 2000-1A BOARD. 2000-1 PIN LIST CORRECTED. NOTE CHANGED TO INCLUDE SLANT 98 VARIATIONS (ECO-0552) 1100-1 F23 CHANGED TO 3A. UPDATED TRANSFORMER. ADDED SNUBBERS. WIRE COLOR CODE CHANGED. DC SIGNAL IS PINK. 12/29/98
- C. 6/24/99

⊙ CONNECTOR HAS PINS
⊙ CONNECTOR HAS SOCKETS

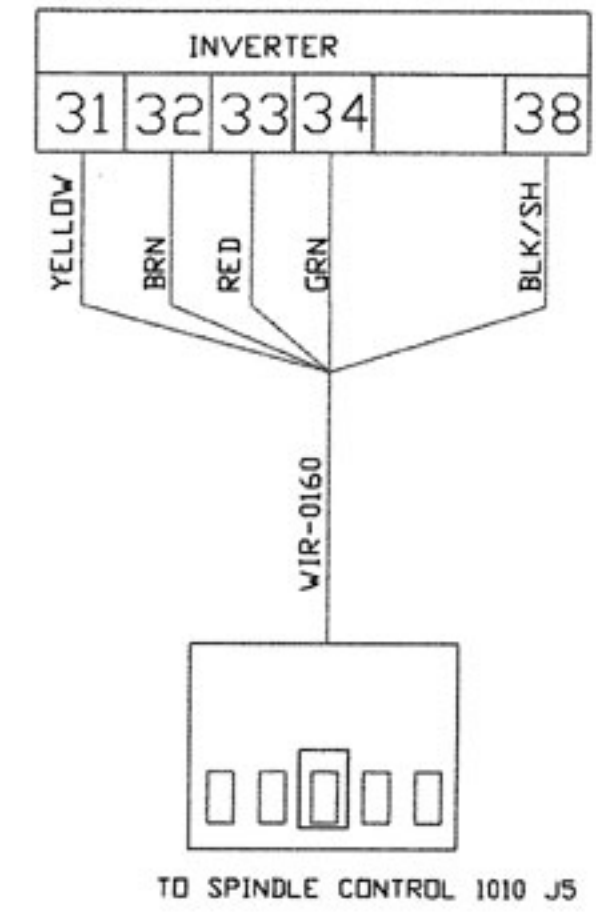
<p>APPROVALS</p> <p>DATE: 11/8/98</p> <p>BY: G. WOOSTER</p>		<p>Fadal ENGINEERING CO.</p> <p>CE DOOR INTERLOCK WIRING DIAGRAM AC BRUSHLESS</p>	
<p>PROJECT: WIR-0696C</p> <p>DATE: 11/8/98</p>		<p>WIR-0696</p> <p>1 OF 3</p>	

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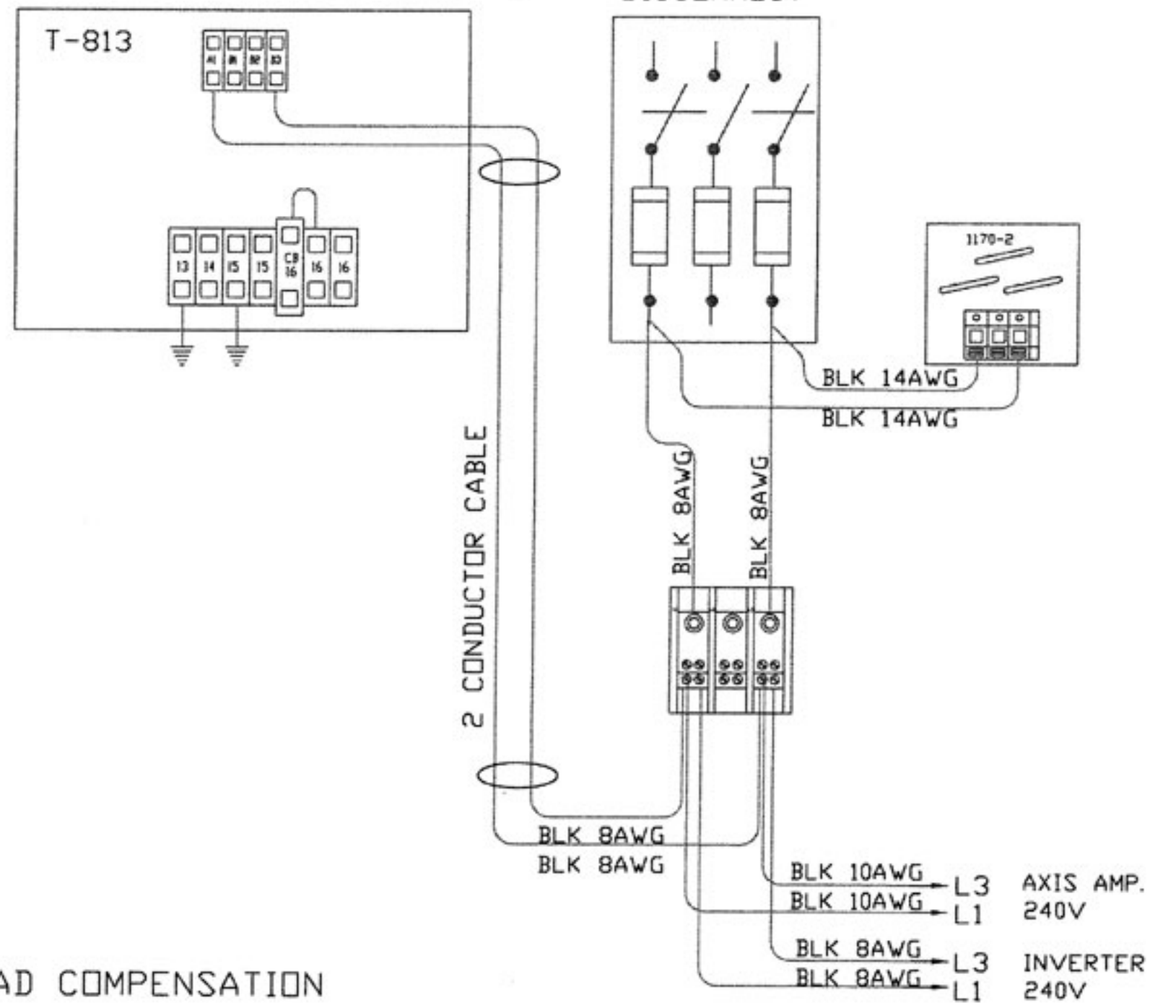
VERY HIGH TORQUE
240V ONLY



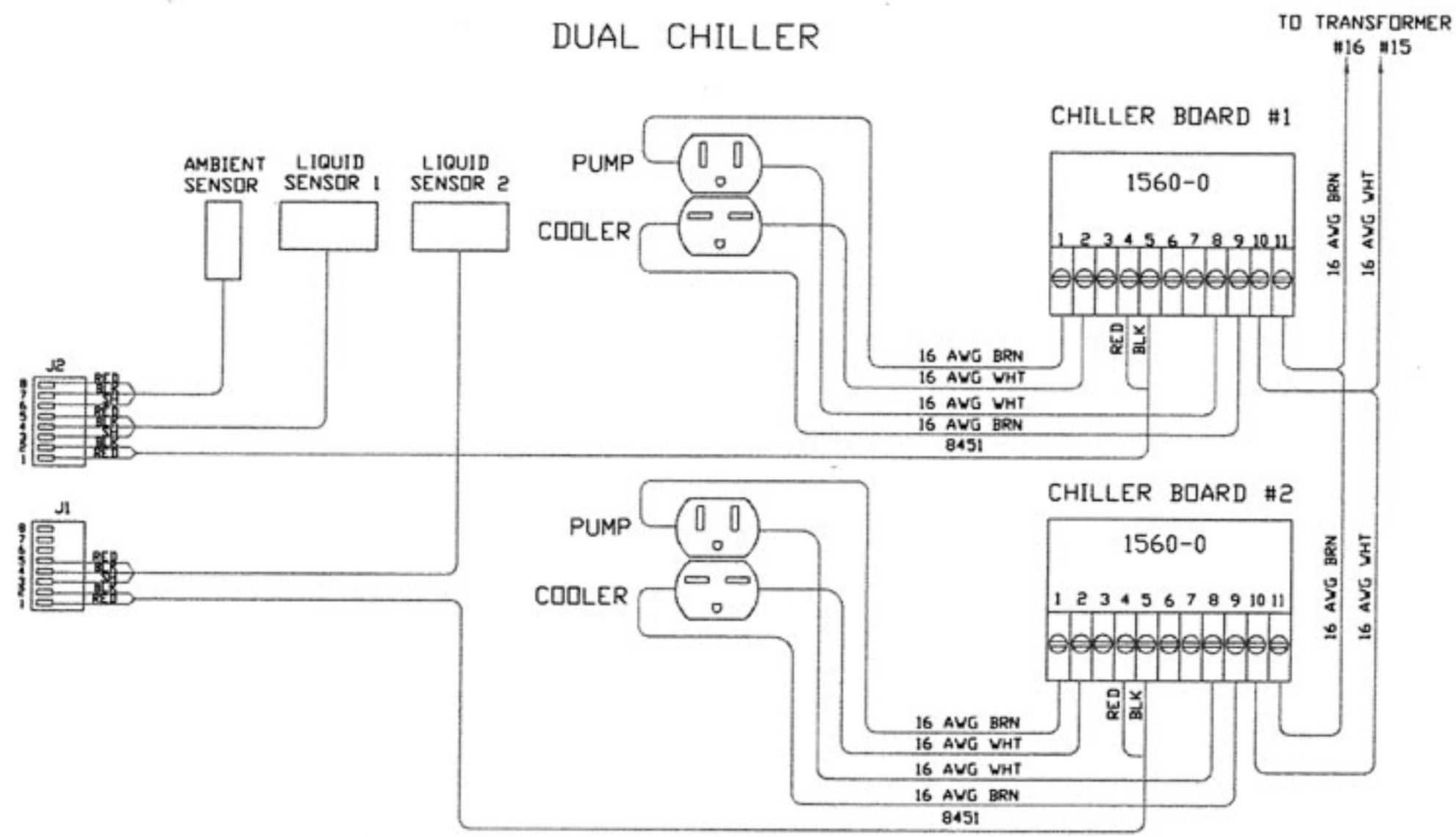
RIGID TAPPING



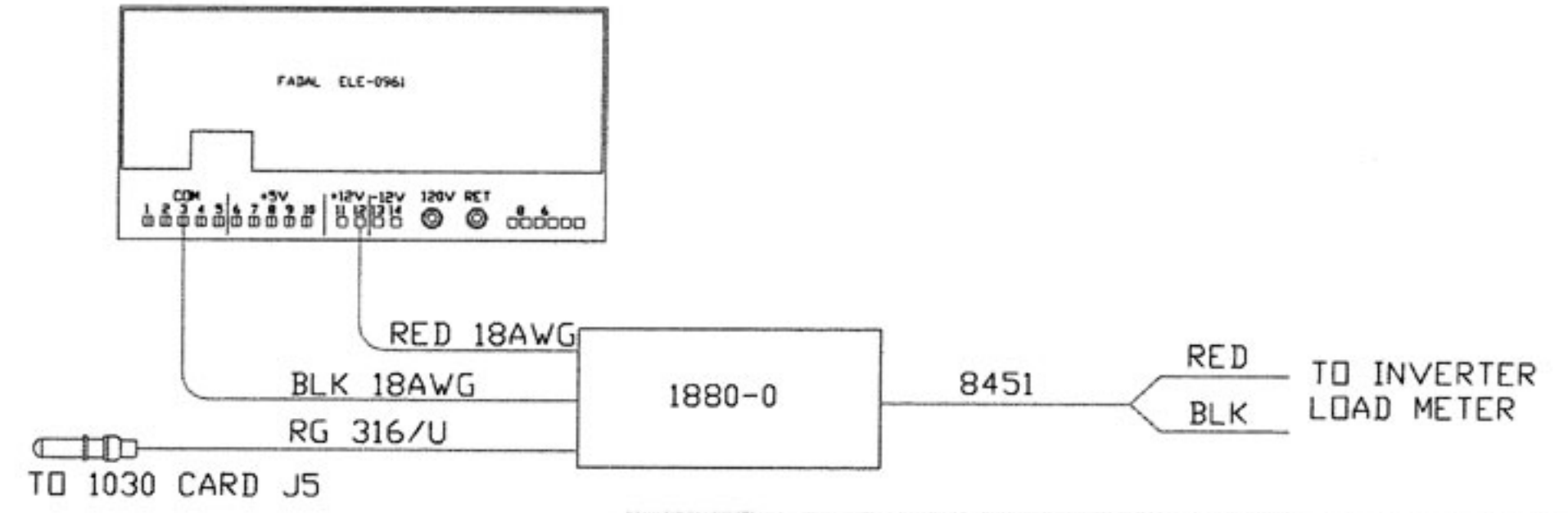
SINGLE PHASE
240V ONLY



DUAL CHILLER

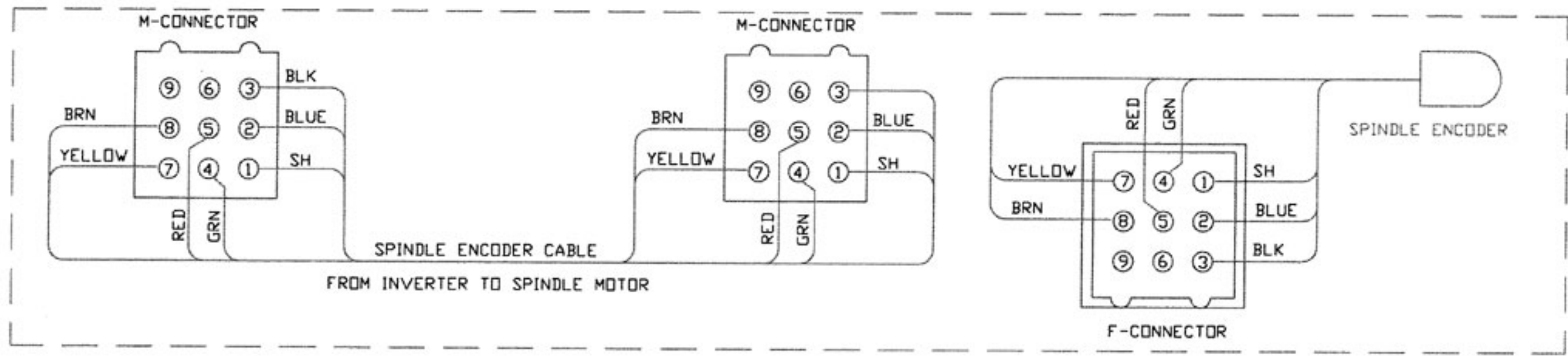
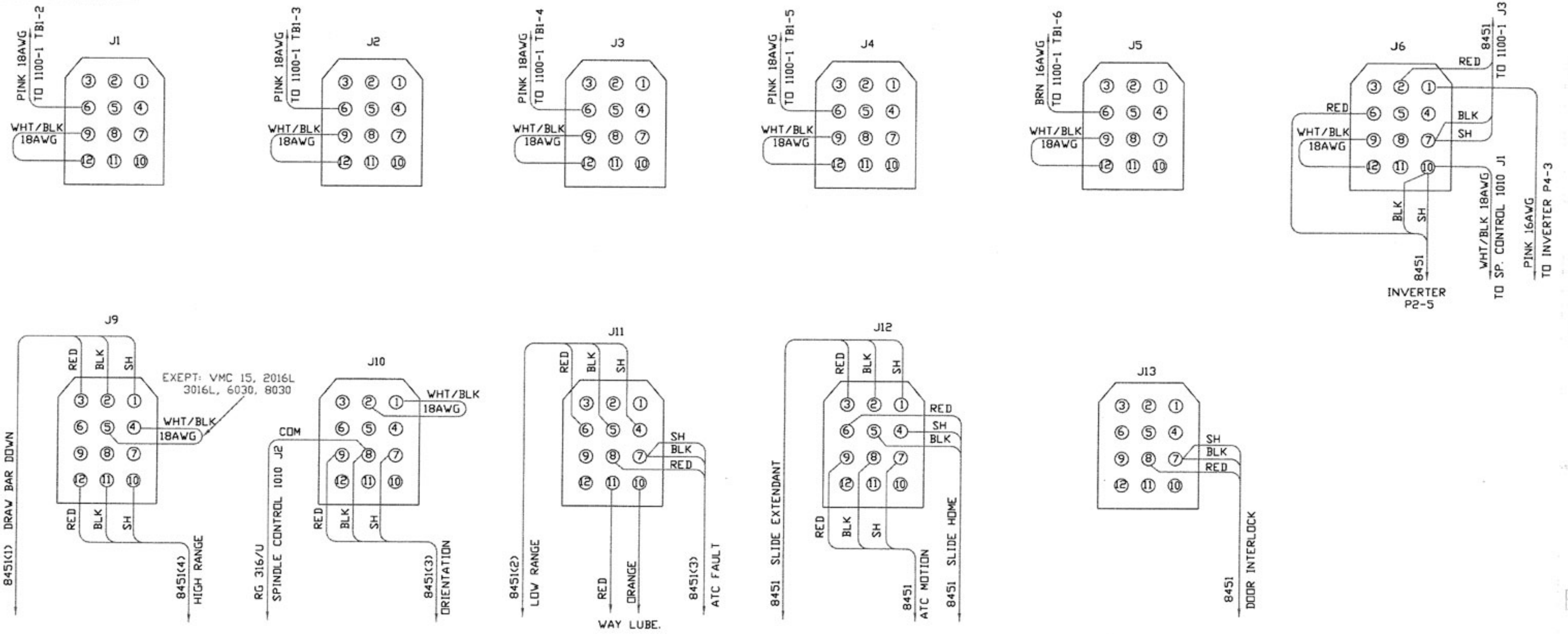


TOOL LOAD COMPENSATION



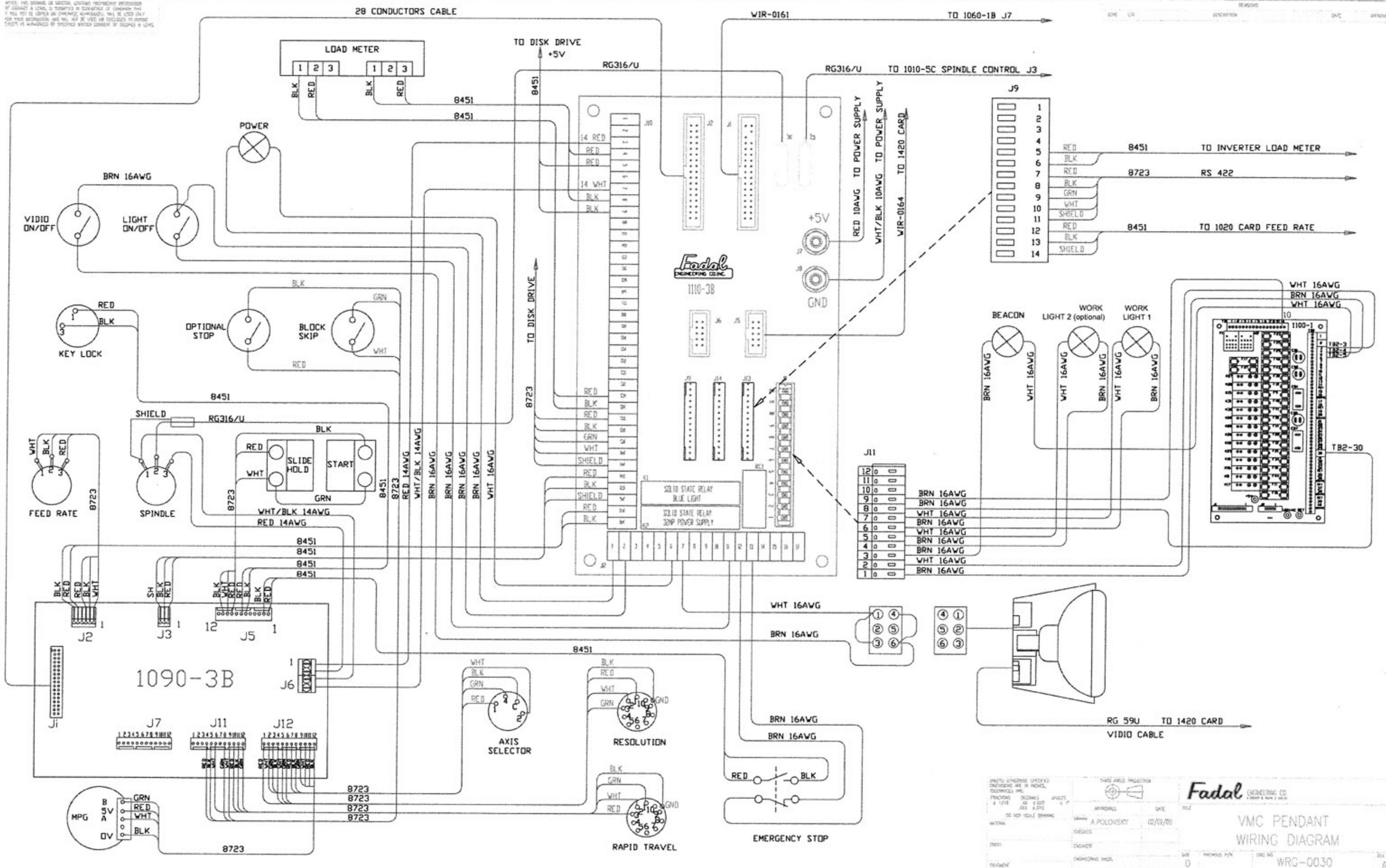
DESIGNED BY	DATE	REV
APPROVED BY	DATE	REV
CHECKED BY	DATE	REV
DRAWN BY	DATE	REV
INSTRUMENTED BY	DATE	REV
TESTED BY	DATE	REV
<p>Fadal ENGINEERING CO.</p> <p>VMC AC BRUSHLESS (OPTIONS) WIRING DIAGRAM</p> <p>REV. NO. WRC-0030</p>		

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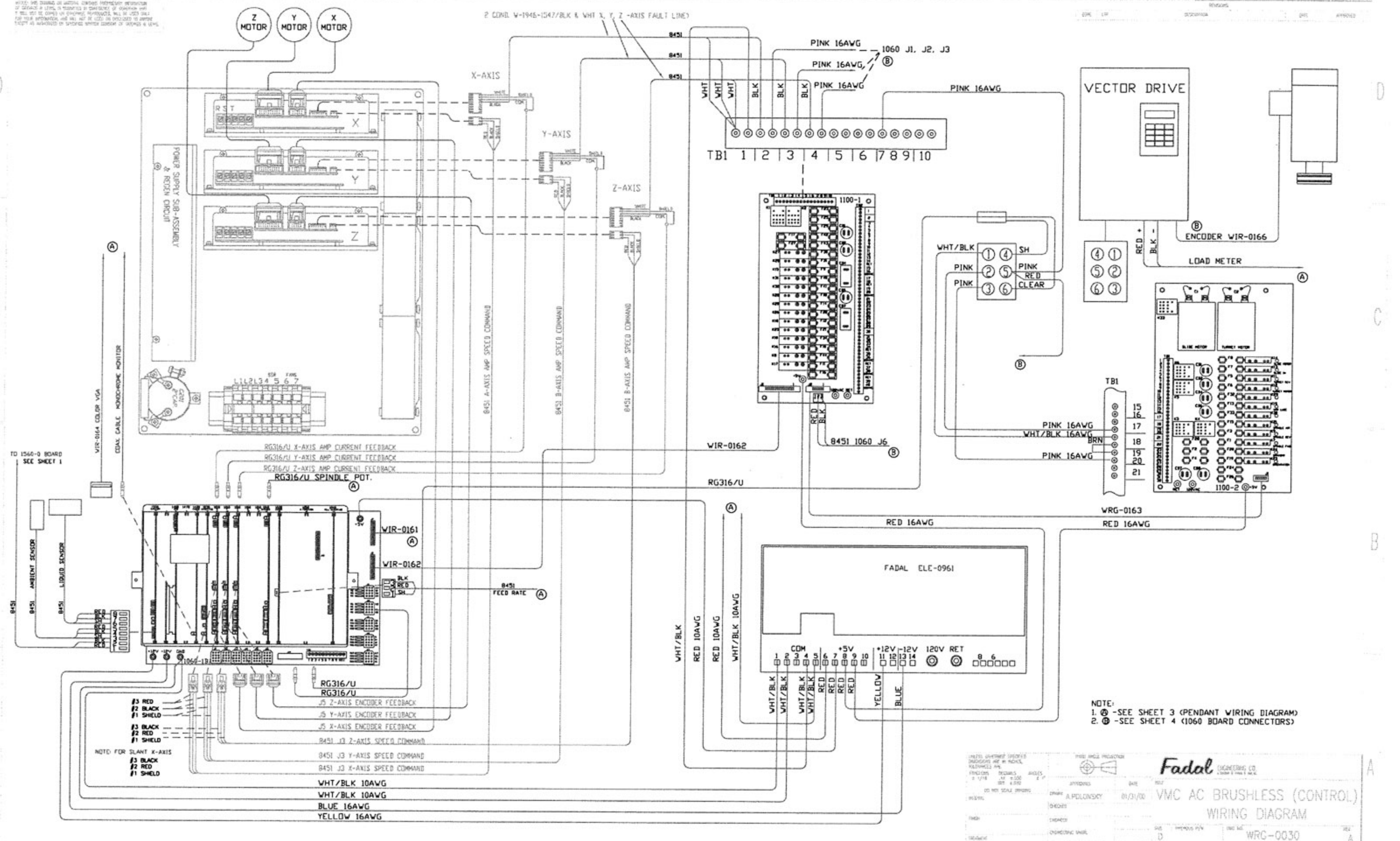
DESIGNED BY: A. POLONSKY CHECKED BY: [] DATE: 02/08/00 TITLE: VMC AC BRUSHLESS (CONNECTORS) WIRING DIAGRAM PART NO.: WRG-0030 SCALE: 1:1	<p>Fadal ENGINEERING LTD.</p> <p>VMC AC BRUSHLESS (CONNECTORS) WIRING DIAGRAM</p> <p>WRG-0030</p>
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FADAL ENGINEERING CO. 1110-38 1110-38		DATE: 02/02/80 DRAWN BY: A. POLONSKY CHECKED BY: [] APPROVED BY: []	
PROJECT: VMC PENDANT WIRING DIAGRAM SHEETS: 3 OF 5 SCALE: AS SHOWN		TITLE: VMC PENDANT WIRING DIAGRAM WRC-0030 REV. 3 A	

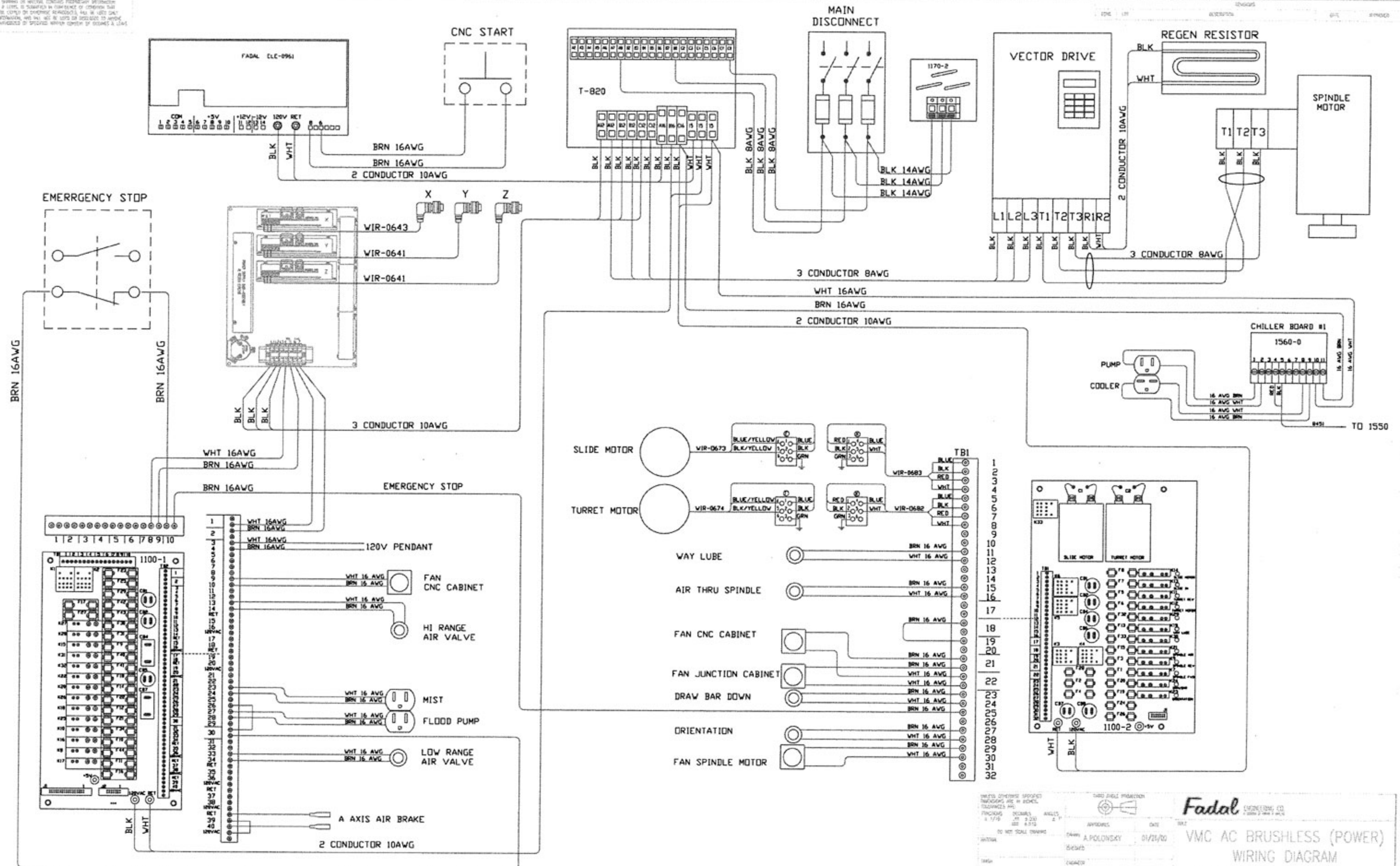
NOTE: THIS DRAWING IS AN ELECTRICAL CONNECTION DIAGRAM. IT IS NOT TO BE USED AS A GUIDE FOR THE CONSTRUCTION OF THE MACHINE. THE USER SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF THE MACHINE. THE USER SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF THE MACHINE.



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

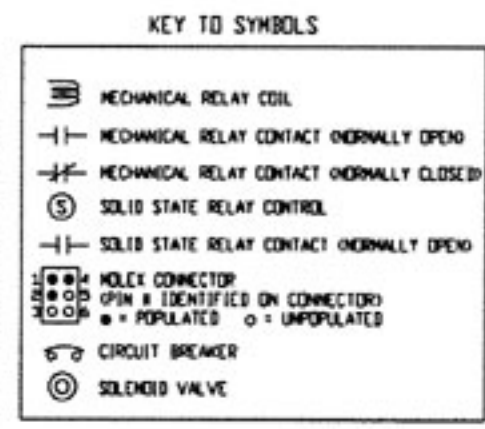
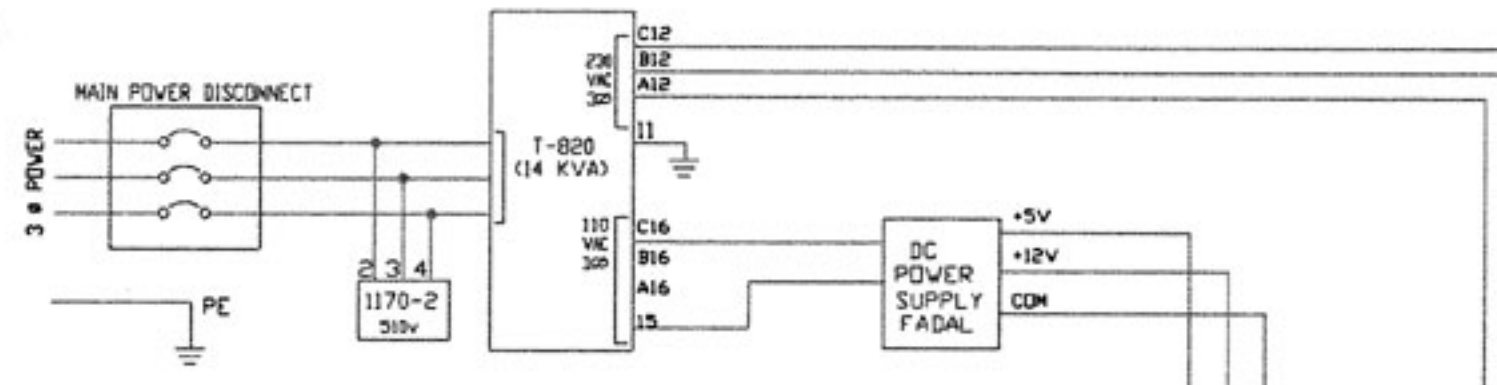
<p>Fadal ENGINEERING CO.</p> <p>VMC AC BRUSHLESS (CONTROL) WIRING DIAGRAM</p>	
<p>DATE: 01/31/00 DRAWN: A. PELOUSKY CHECKED: [] DESIGNED: [] APPROVED: []</p>	<p>DATE: 01/31/00 REV. 1 WRC-0030</p>

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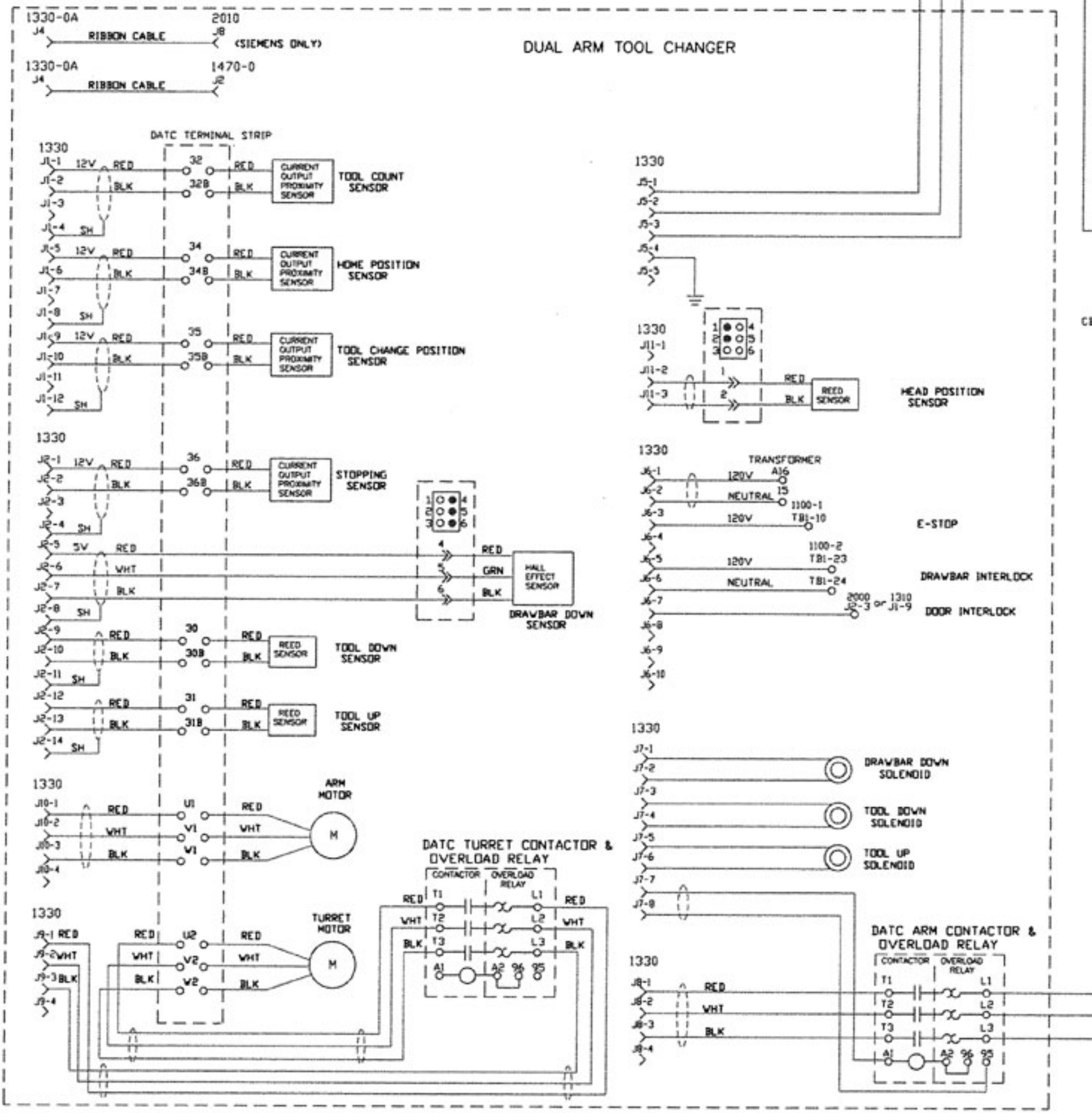


<p>DATE: 01/21/00 DRAWN: A. POLONDAY CHECKED: [] ENGINEER: []</p>		<p>DATE: 01/21/00 BY: []</p>	
<p>PROJECT: VMC AC BRUSHLESS (POWER)</p>		<p>WIRING DIAGRAM</p>	
<p>WRC-0030</p>		<p>1 A</p>	

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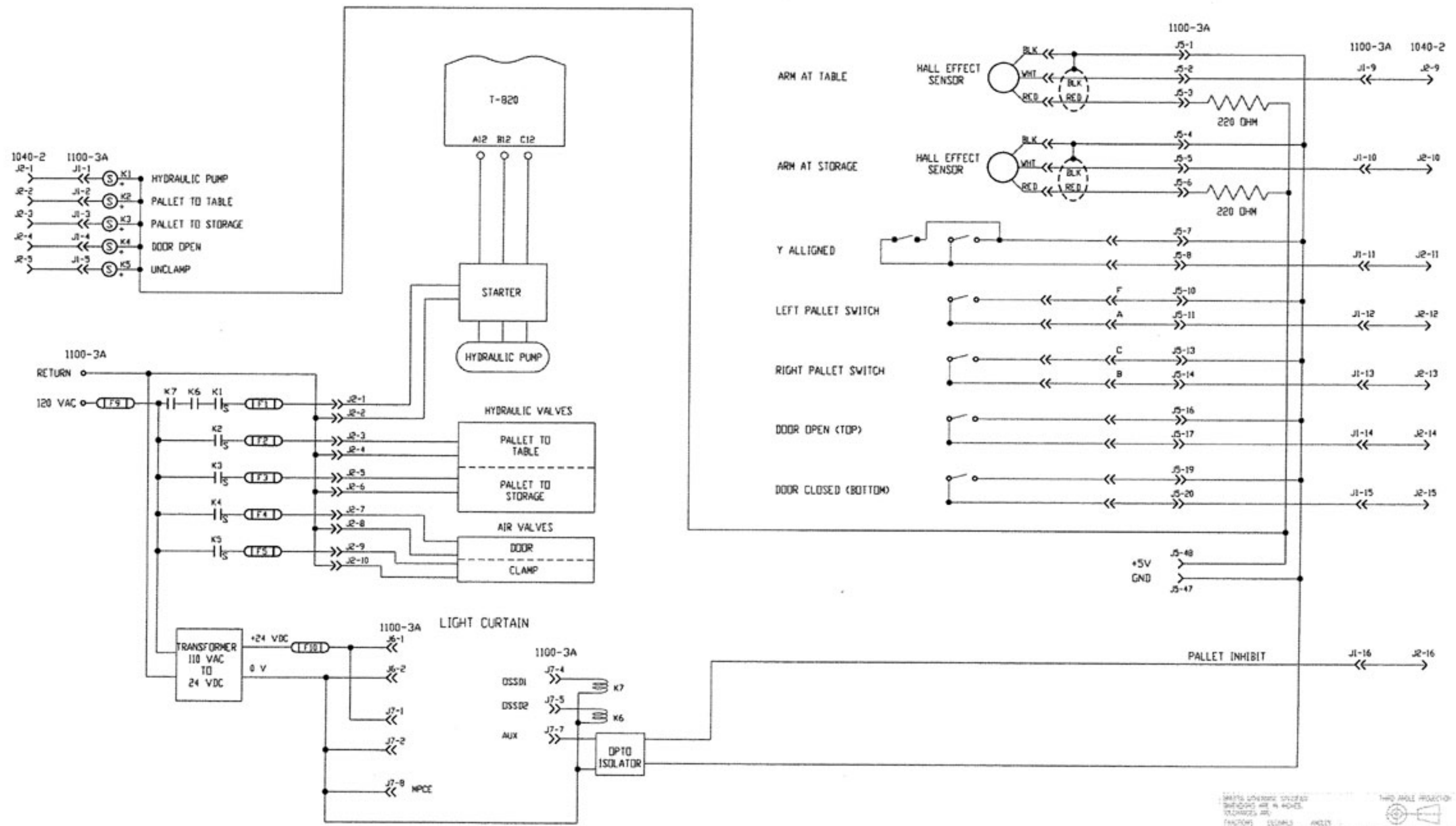


REV	DATE	DESCRIPTION	BY	APP'D
C5	B	ECO-1175 DATC AND AUGER 3-PHASE FROM SAME CIRCUIT BREAKER.	01/01/01	C.WOOSTER
A8	B	ADD OVERLOAD RELAY TO DATC CONTACTOR		
B2	B	ECO-1207 ADD OVERLOAD RELAY TO AUGER CONTACTOR. ALSO CORRECTED PINOUT OF MOLEX CONNECTOR.		
C3				
A7	C	ECO-1238 ADD CONTACTOR & OL RELAY TO DATC TURRET	05/07/01	
B3		ECO-1114 VALVES #1, 2, 3 AND WIRES REMOVED		



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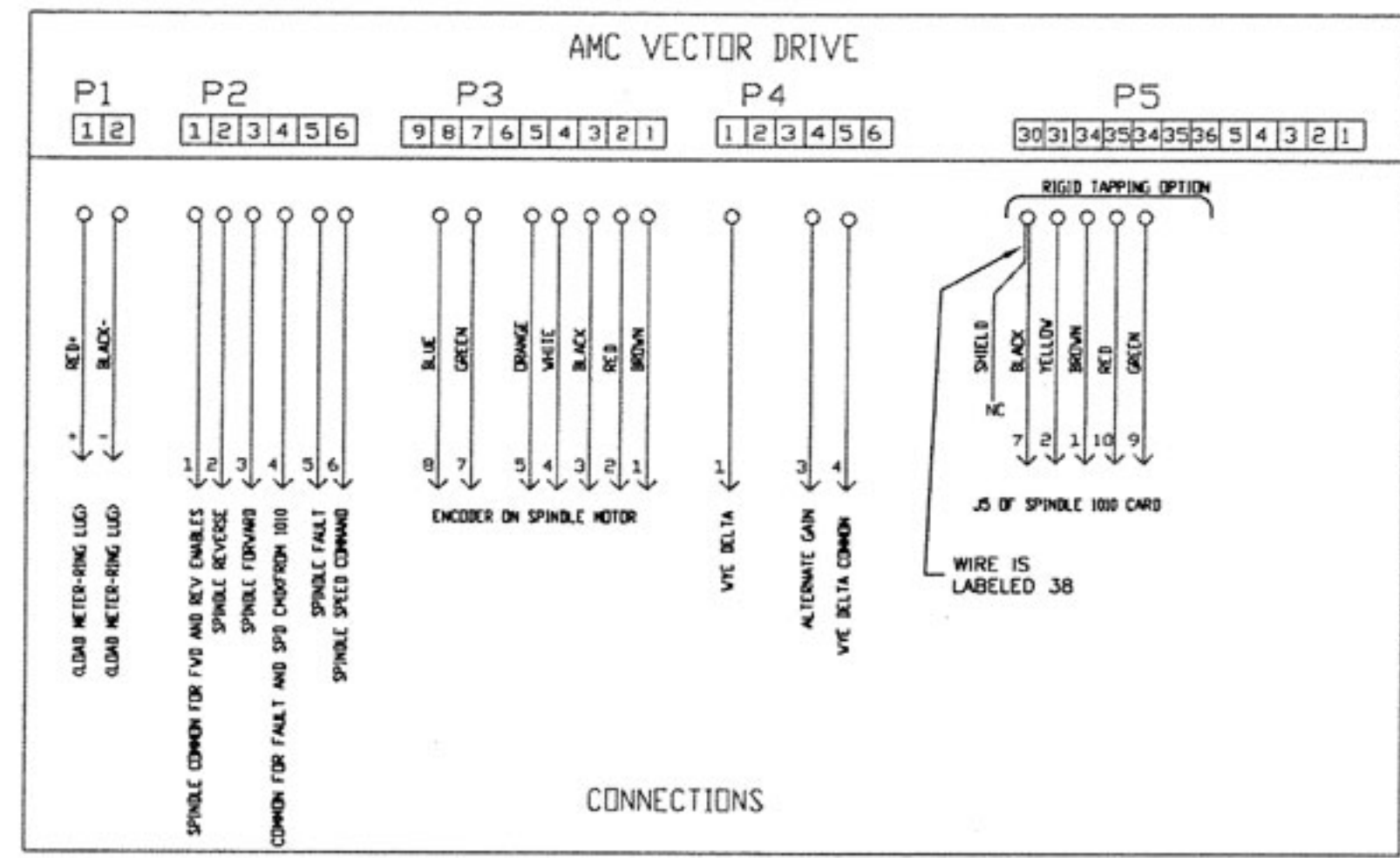
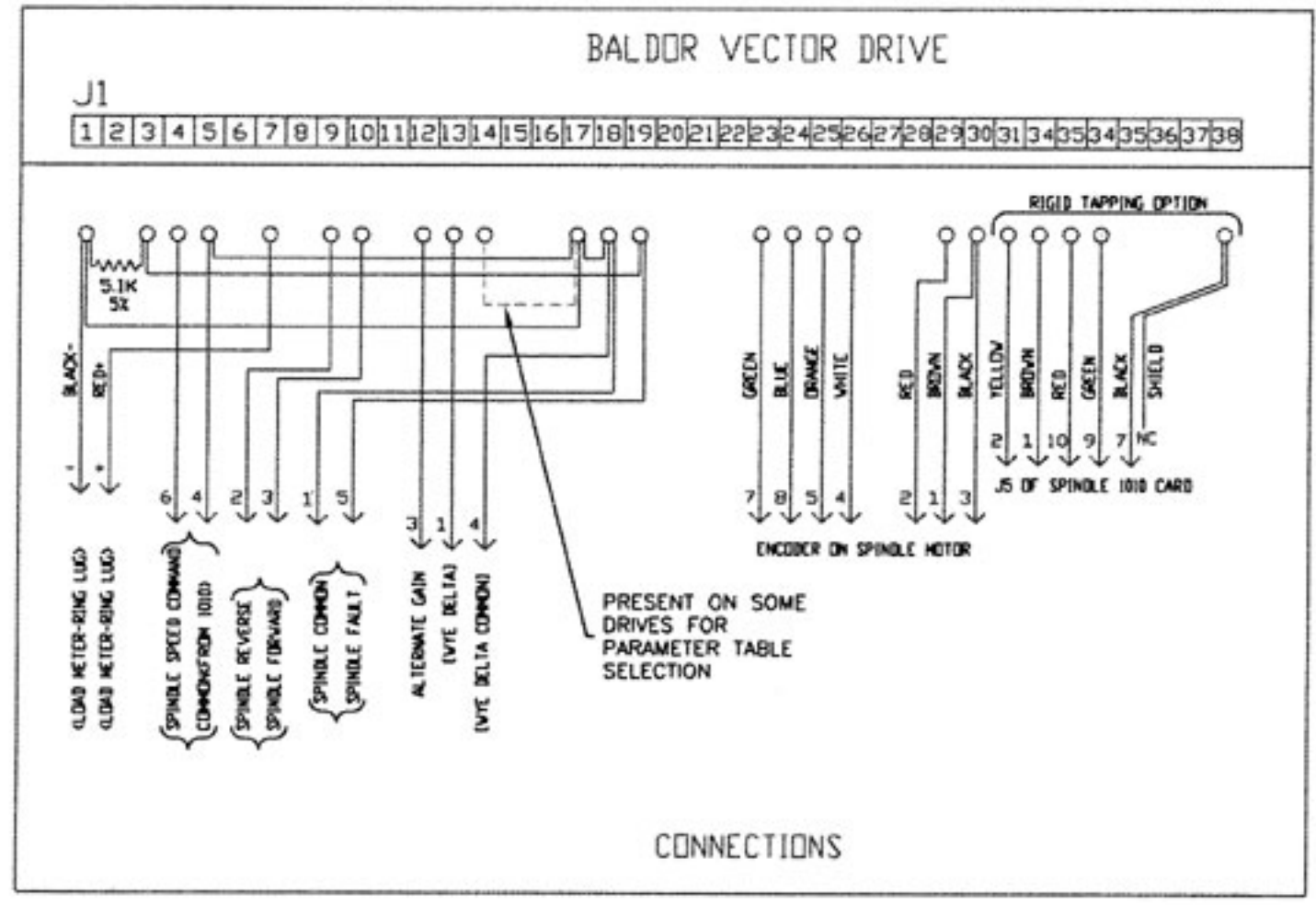
REV	DATE	DESCRIPTION	BY	CHKD
J	10/27/98	ALL SHEETS UPDATED AND REVISED FOR CE		
K	2/15/00	UPDATED AND REVISED FOR 1100-3A AND NEW LIGHT CURTAIN (ECO-0708)		G. Vooster



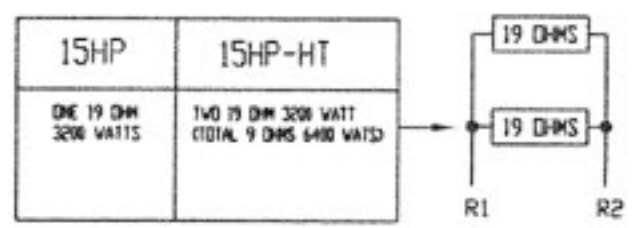
<p>DATE: 10/27/98 DRAWN: G. VOOSTER CHECKED: G. VOOSTER PROJECT: FADAL VMC - ELECTRICAL PALLET CHANGER</p>		<p>REV: 0 DATE: 2/15/00 BY: G. VOOSTER CHECKED: G. VOOSTER</p>	
<p>PROJECT: FADAL VMC - ELECTRICAL PALLET CHANGER</p>		<p>REV: 0 DATE: 2/15/00 BY: G. VOOSTER CHECKED: G. VOOSTER</p>	

Fadal ENGINEERING LTD.
FADAL VMC - ELECTRICAL PALLET CHANGER
 WRG-1002
 SHEET 5 OF 5

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SPINDLE DRIVE BRAKE DESCRIPTION



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:

FRACTIONS	DECIMALS	ANGLES
1/16	0.0150	1/2°
3/16	0.0025	

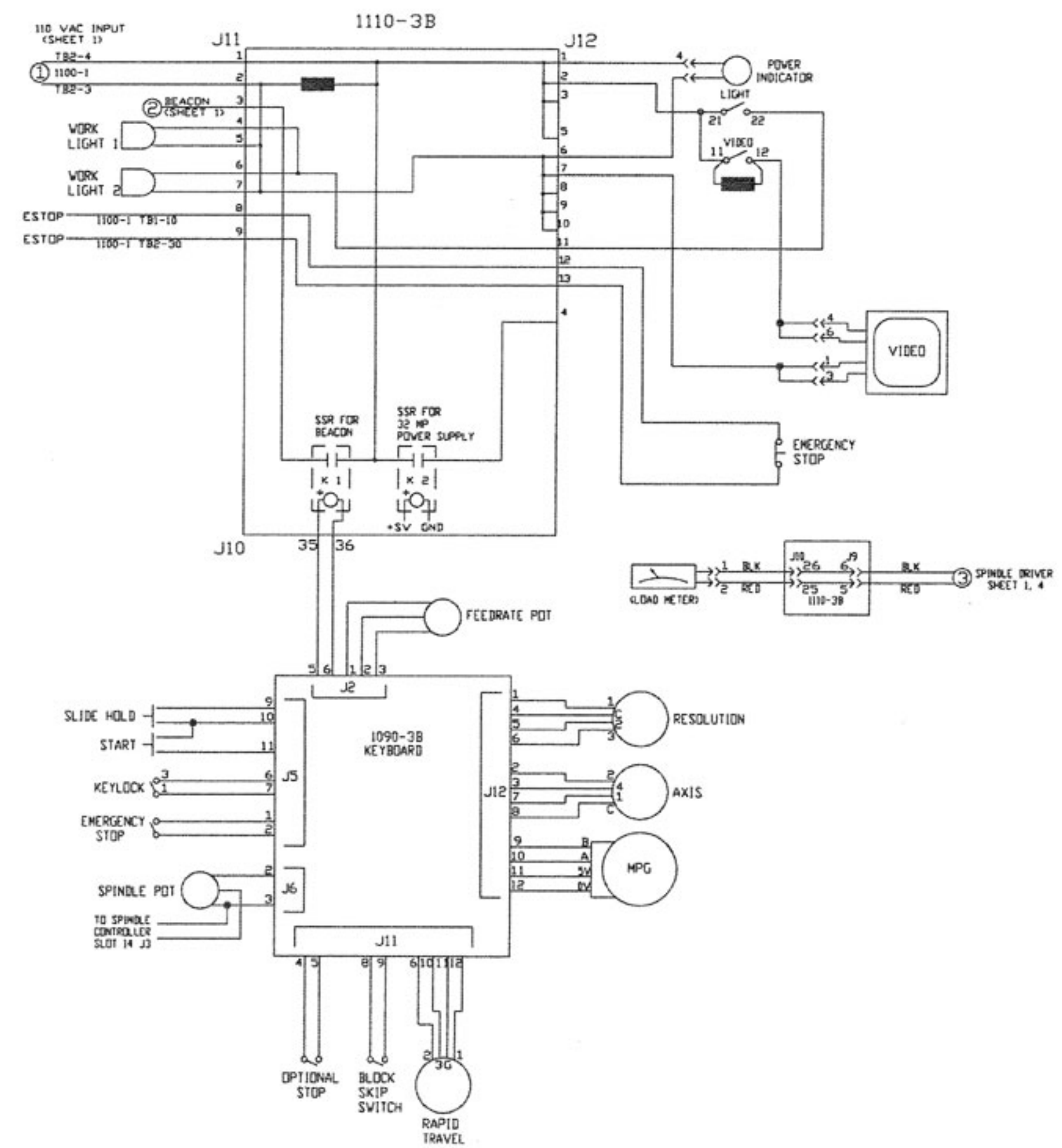
DO NOT SCALE DRAWING

DATE: 10/11/06
 APPROVED: G. WOOSTER
 DESIGNED: []
 ENGINEER: []
 CHECKED: []
 DRAWING NO.: WRG-1002J

Fadal ENGINEERING CO.
 FADAL VMC - ELECTRICAL SPINDLE DRIVE CONNECTIONS

REV. NO. WRG-1002
 SHEET 4 OF 5

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CHECKED BY: G. WOOSTER DATE: 10/77/88		Fadal ENGINEERING CO. 2000 S. MAIN ST. LANSING, MI 48206	
DRAWN BY: G. WOOSTER DATE: 10/77/88		FADAL VMC - ELECTRICAL BASIC PENDANT	
PART NO.: WRG-1002J REV.: 0		REV.: 0 WRG-1002	

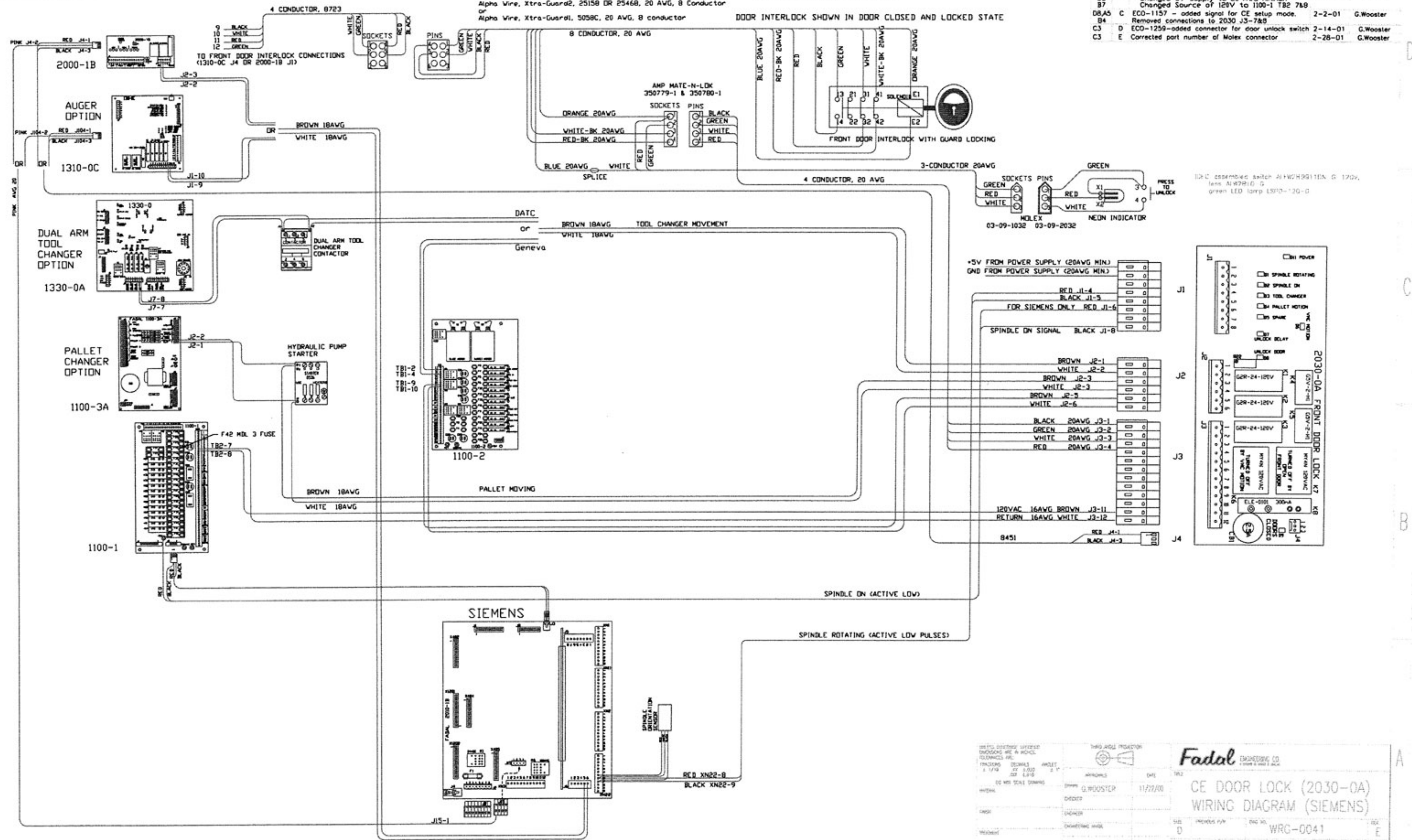
NOTE: THIS DRAWING IS A GENERAL WIRING DIAGRAM AND DOES NOT REPRESENT THE EXACT WIRING OF ANY PARTICULAR MACHINE. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY THE WIRING OF HIS MACHINE AGAINST THIS DRAWING AND TO MAKE ANY NECESSARY CHANGES TO HIS MACHINE TO CORRECT ANY DISCREPANCIES. THE USER SHALL BE RESPONSIBLE FOR ANY DAMAGE TO HIS MACHINE OR TO ANY OTHER PERSON OR PROPERTY CAUSED BY HIS FAILURE TO DO SO.

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

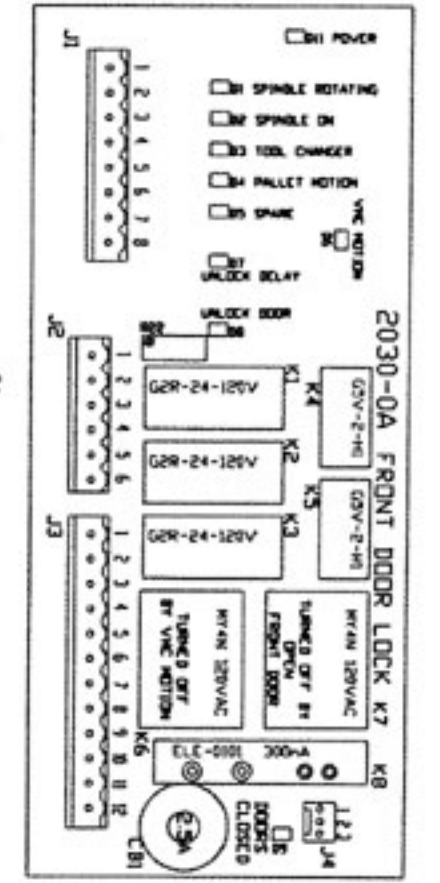
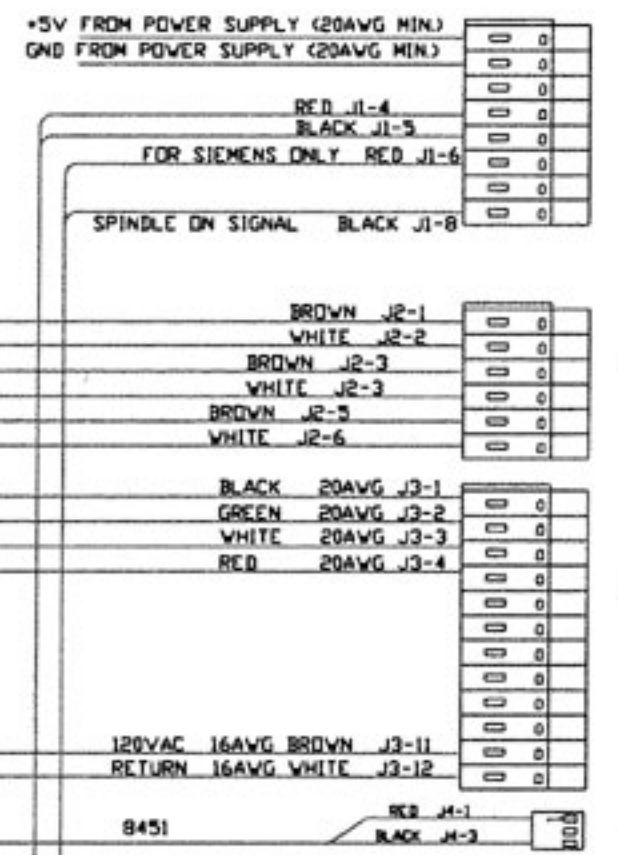
INTERLOCK TERMINAL NUMBERING IS FOR
 Euchner TP3-4121A110PG
 (also works with Banner SI-LS42UMSI)

DOOR INTERLOCK SHOWN IN DOOR CLOSED AND LOCKED STATE

REV	DATE	DESCRIPTION	BY	APPROVED
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 G 170V, 1 amp A1W2P1G G green LED lamp E57D-120-0



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DATE: 11/22/00
 DRAWN BY: G.WOOSTER
 CHECKED BY: G.WOOSTER
 APPROVED BY: G.WOOSTER

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

REV: 0
 WRC-0041
 SHEET: 2 OF 2