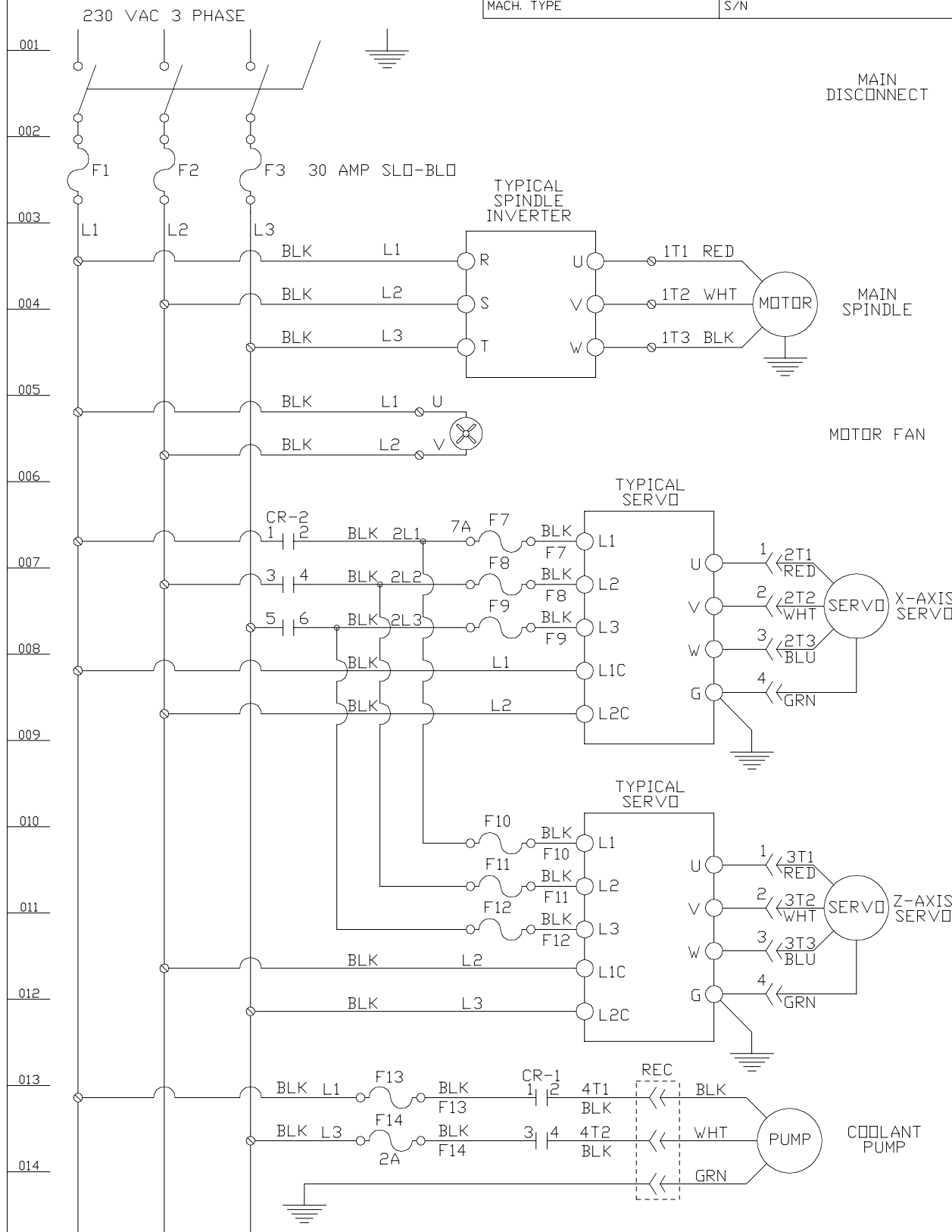


EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
			MACH. TYPE	S/N		



001 230 VAC 3 PHASE

002

003

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012

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014

015 L1 BLK L2 BLK L3 BLK

CONTINUED SHEET 2 LINES 17 & 18

THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES

NAME	DATE	NAME	DATE
DRAWN G.W.M.	5-26-00	ENG. E.S.H.	5-30-00
CHK'D		APP'D E.S.H.	6-15-00

TITLE FAGOR 8050 ELECTRICAL SCHEMATICS

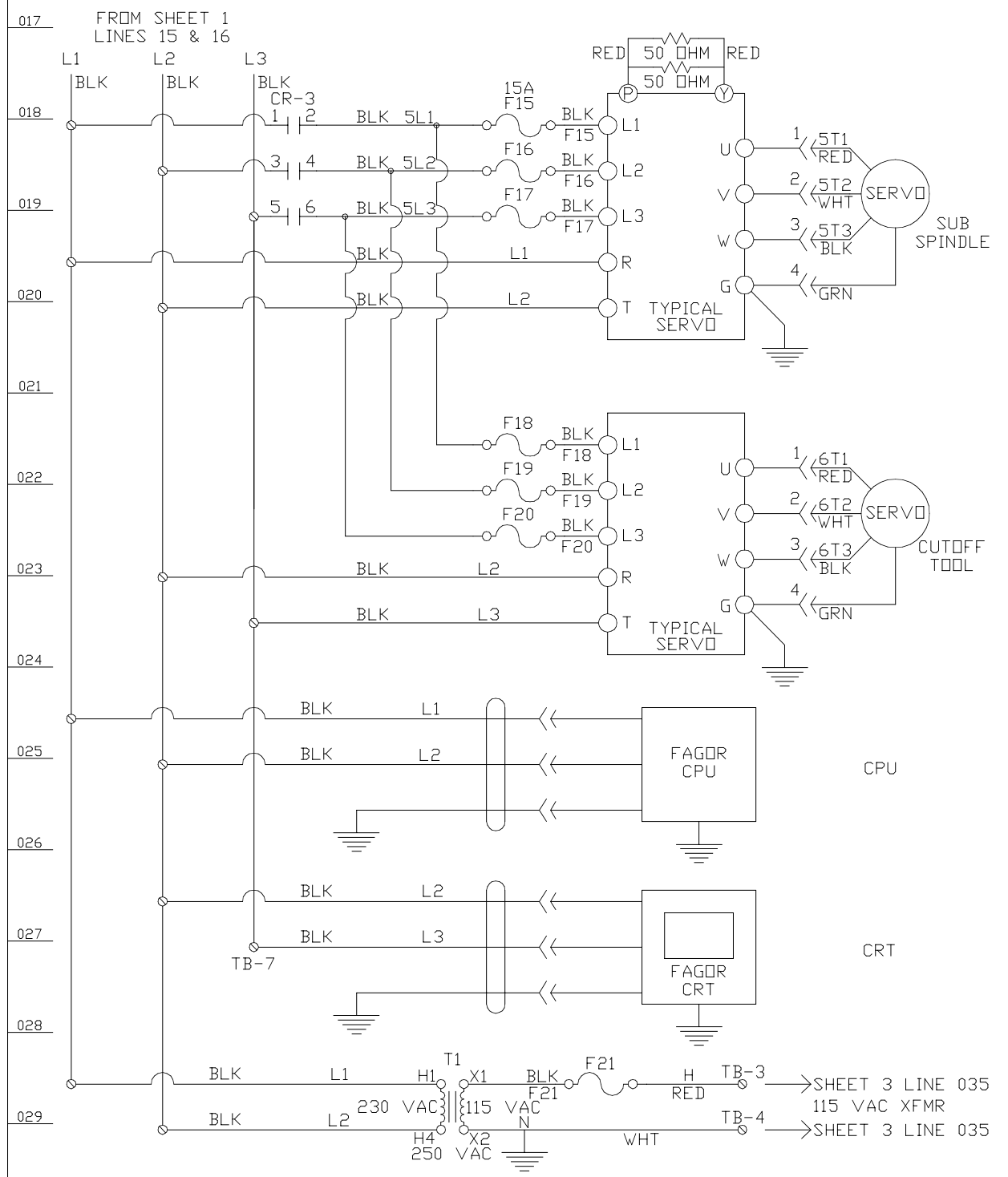
638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860

CMS COMPACT MANUFACTURING SYSTEMS

CAD DWG SIZE B E1-8050-01

SCALE: NONE REF. DWG. SHEET 1 OF 16

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED



031 THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES

NAME	DATE	NAME	DATE
DRAWN G.W.M.	5-26-00	ENG. E.S.H.	5-30-00
CHK'D		APP'D E.S.H.	6-15-00

032 TITLE FAGOR 8050 ELECTRICAL SCHEMATICS

CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860

COMPACT MANUFACTURING SYSTEMS

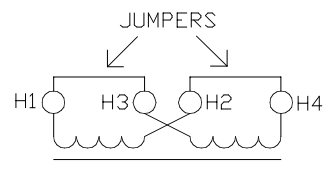
CAD DWG SIZE B E1-8050-01A

SCALE: NONE REF. DVG. SHEET 2 OF 16

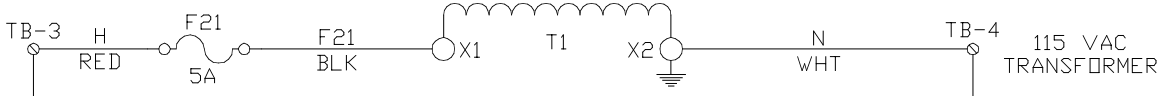
EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

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041



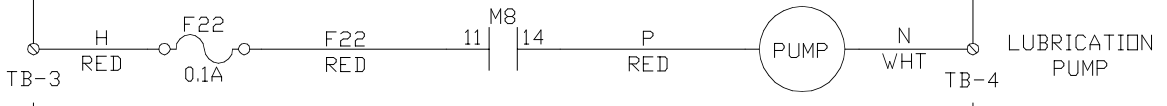
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043



044



045

TO SHEET 4
LINE 050

TO SHEET 4
LINE 050

046

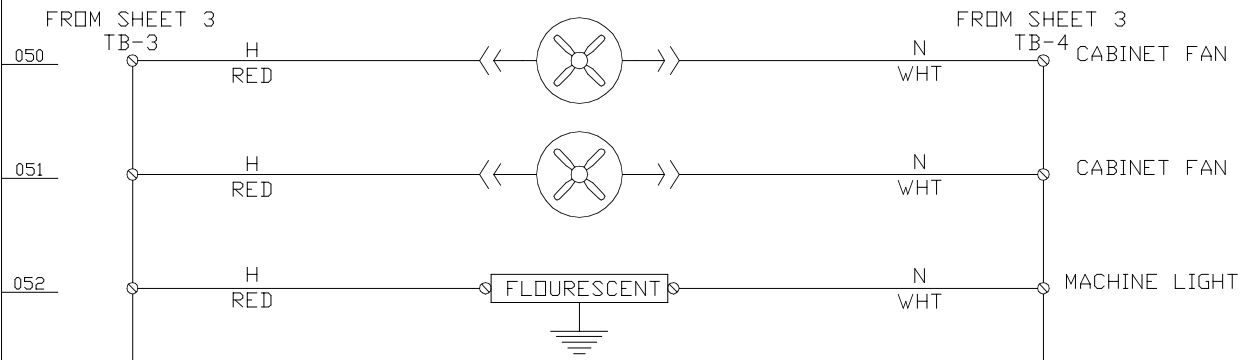
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THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES							
	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D			APP'D	E.S.H.	6-15-00	CAD DWG	SIZE B
TITLE						SCALE: NONE	REF. DVG. SHEET 3 OF 16
FAGOR 8050 ELECTRICAL SCHEMATICS						E1-8050-02	

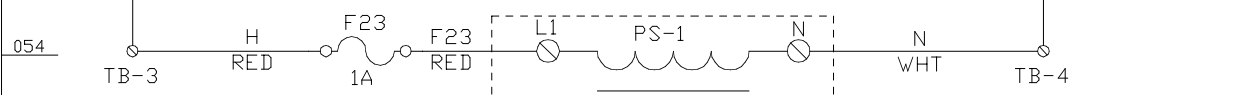
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EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

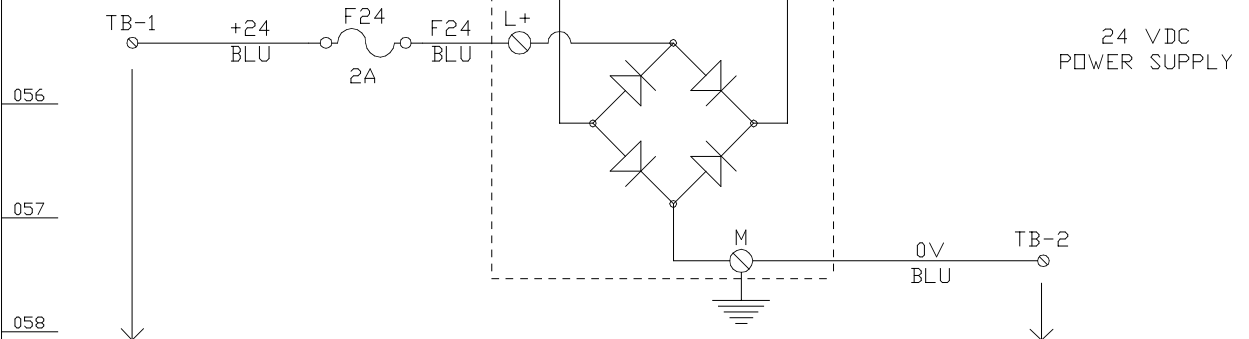
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053



055



056

057

TO SHEET 5
LINE 065

TO SHEET 5
LINE 065

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060

061

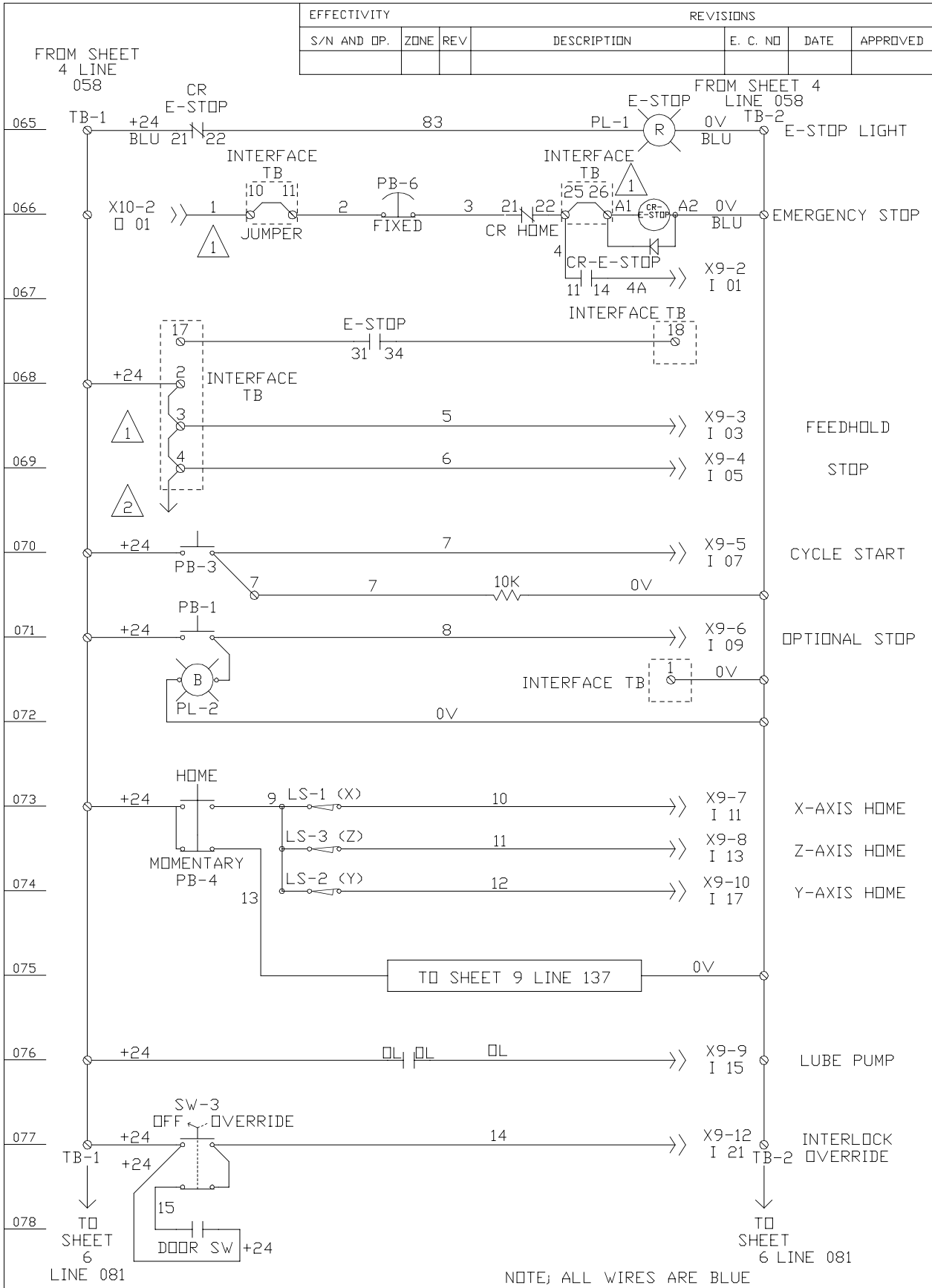
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063

064

THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES							
	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D			APP'D	E.S.H.	6-15-00	CAD DWG	SIZE B
TITLE						E1-8050-02A	
FAGOR 8050 ELECTRICAL SCHEMATICS						SCALE: NONE	REF. DVG. SHEET 4 OF 16

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED



△ JUMPER CONTINUED ON SHEET 6 LINE

△ REMOVE JUMPER WHEN USING A BAR FEEDER

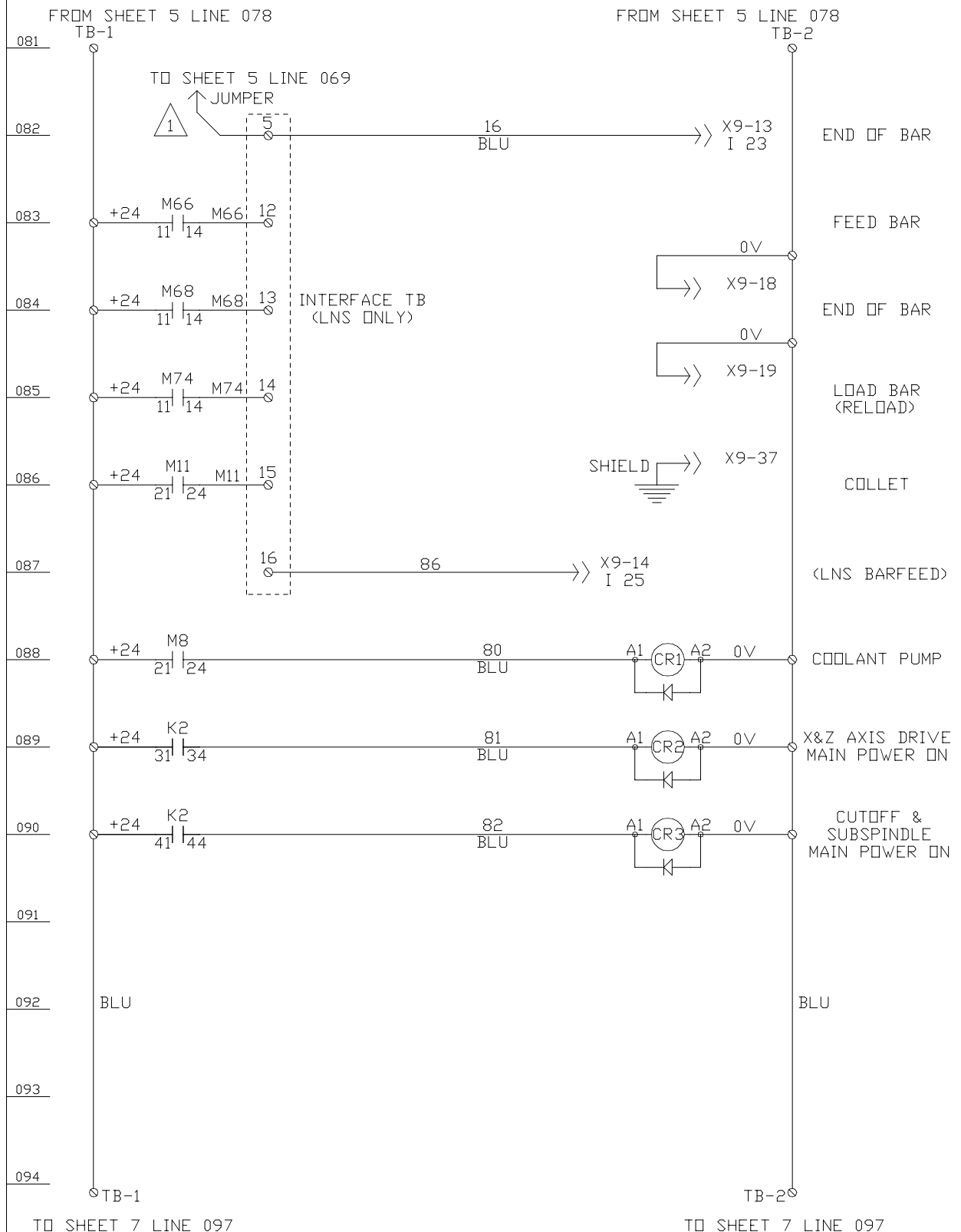
NOTE; ALL WIRES ARE BLUE

THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00
CHK'D			APP'D	E.S.H.	6-15-00
TITLE			FAGOR 8050 ELECTRICAL SCHEMATICS		
SCALE: NONE		REF. DVG. SHEET 5 OF 16			

CMS
 638 N. POINSETTA
 SANTA ANA, CA
 FAX (714) 664-0860
 COMPACT MANUFACTURING SYSTEMS

E1-8050-03

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED

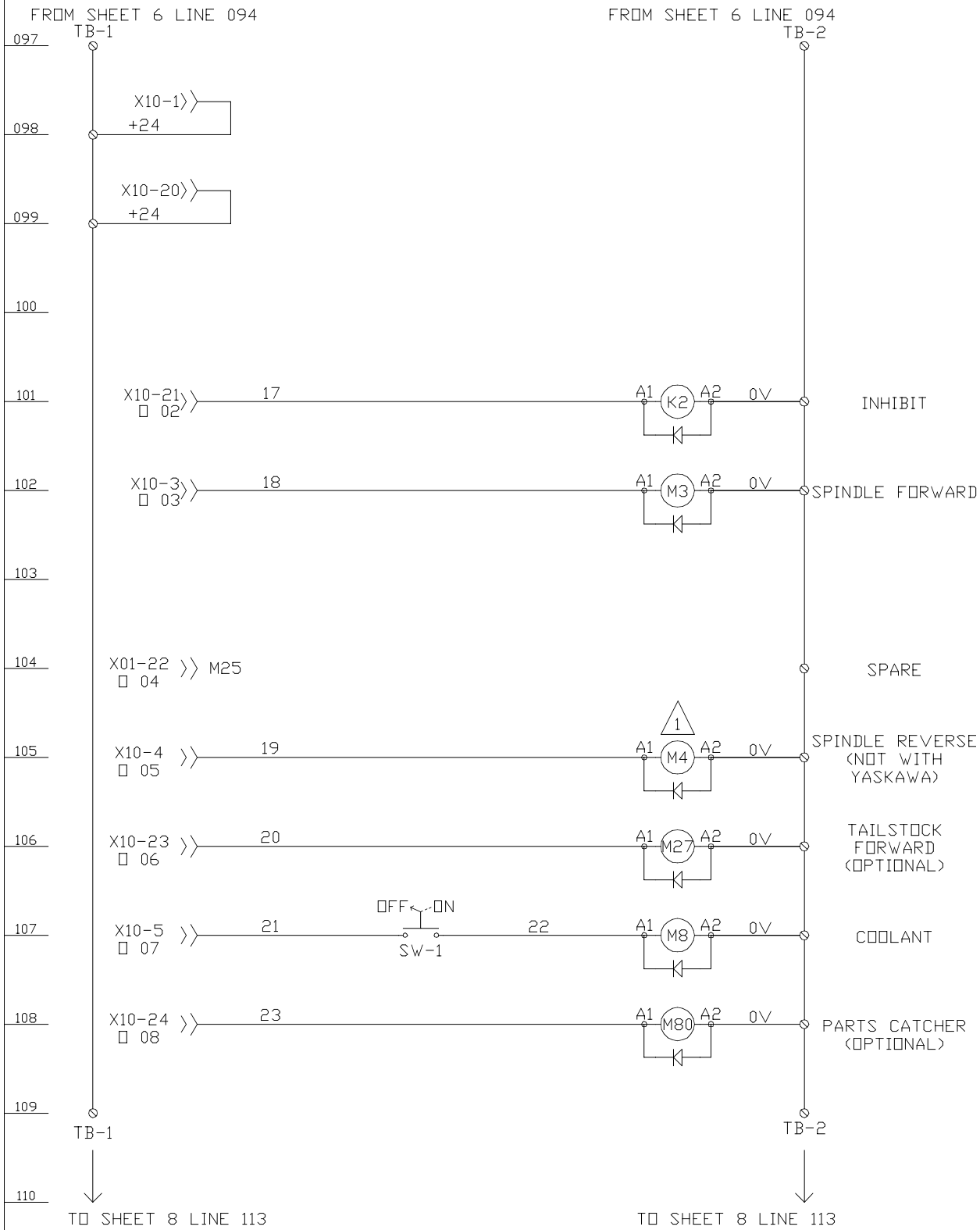


1 REMOVE JUMPER WHEN USING A BAR FEEDER

THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00
CHK'D			APP'D	E.S.H.	6-15-00
TITLE			FAGOR 8050 ELECTRICAL SCHEMATICS		
CAD DWG		SIZE	E1-8050-03A		
SCALE: NONE		REF. DWG.	SHEET 6 OF 16		

CMS
 638 N. POINSETTA
 SANTA ANA, CA
 FAX (714) 664-0860
 COMPACT MANUFACTURING SYSTEMS

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED



1 NOT NEEDED WITH YASKAWA INVERTER

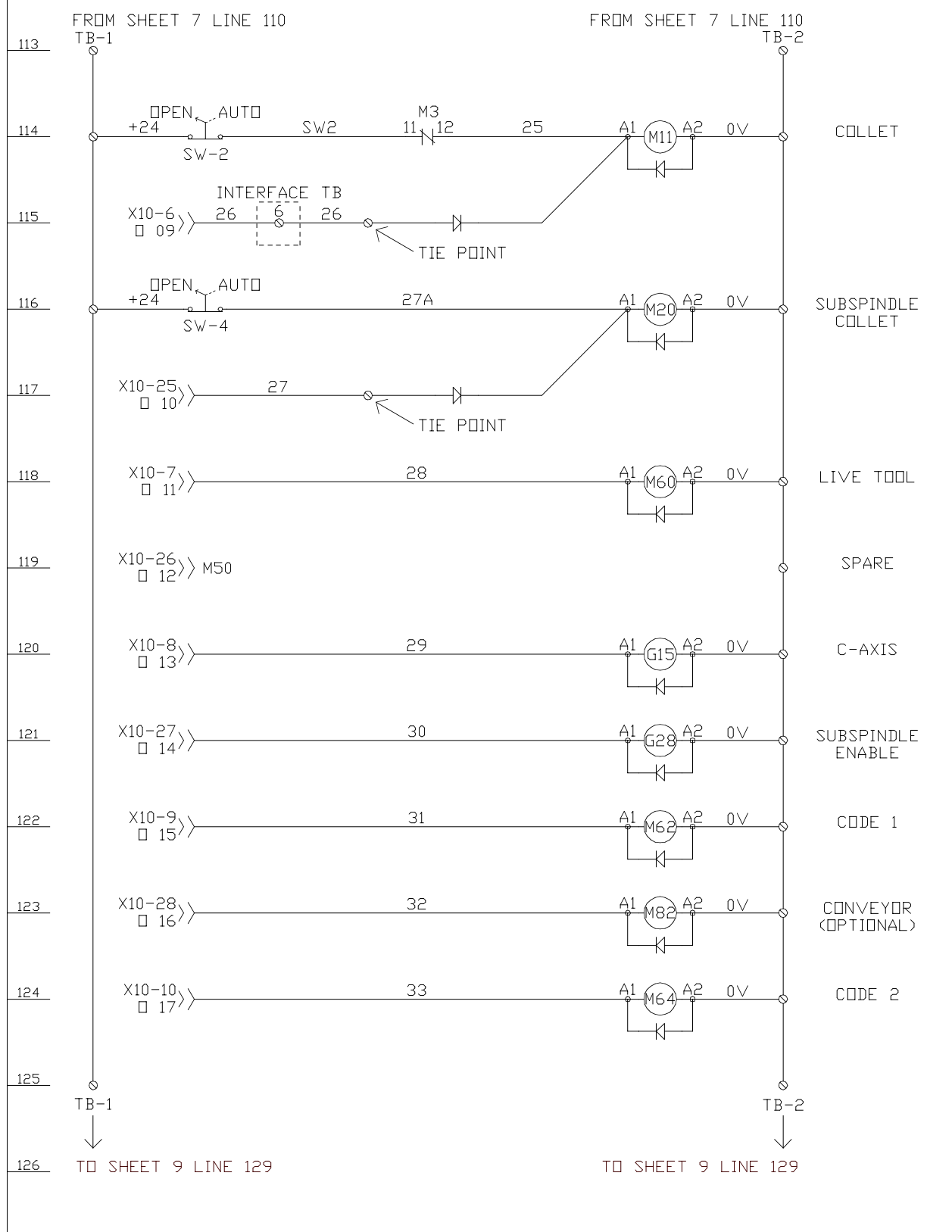
THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00
CHK'D			APP'D	E.S.H.	6-15-00
TITLE			FAGOR 8050 ELECTRICAL SCHEMATICS		
CAD DWG		SIZE	E1-8050-04		
SCALE: NONE		REF. DWG.	SHEET 7 OF 16		

CMS

638 N. POINSETTA
SANTA ANA, CA
FAX (714) 664-0860

COMPACT MANUFACTURING SYSTEMS

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED



THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00
CHK'D			APP'D	E.S.H.	6-15-00
TITLE			FAGOR 8050 ELECTRICAL SCHEMATICS		
CAD DWG		SIZE	E1-8050-04A		
SCALE: NONE		REF. DWG.	SHEET 8 OF 16		

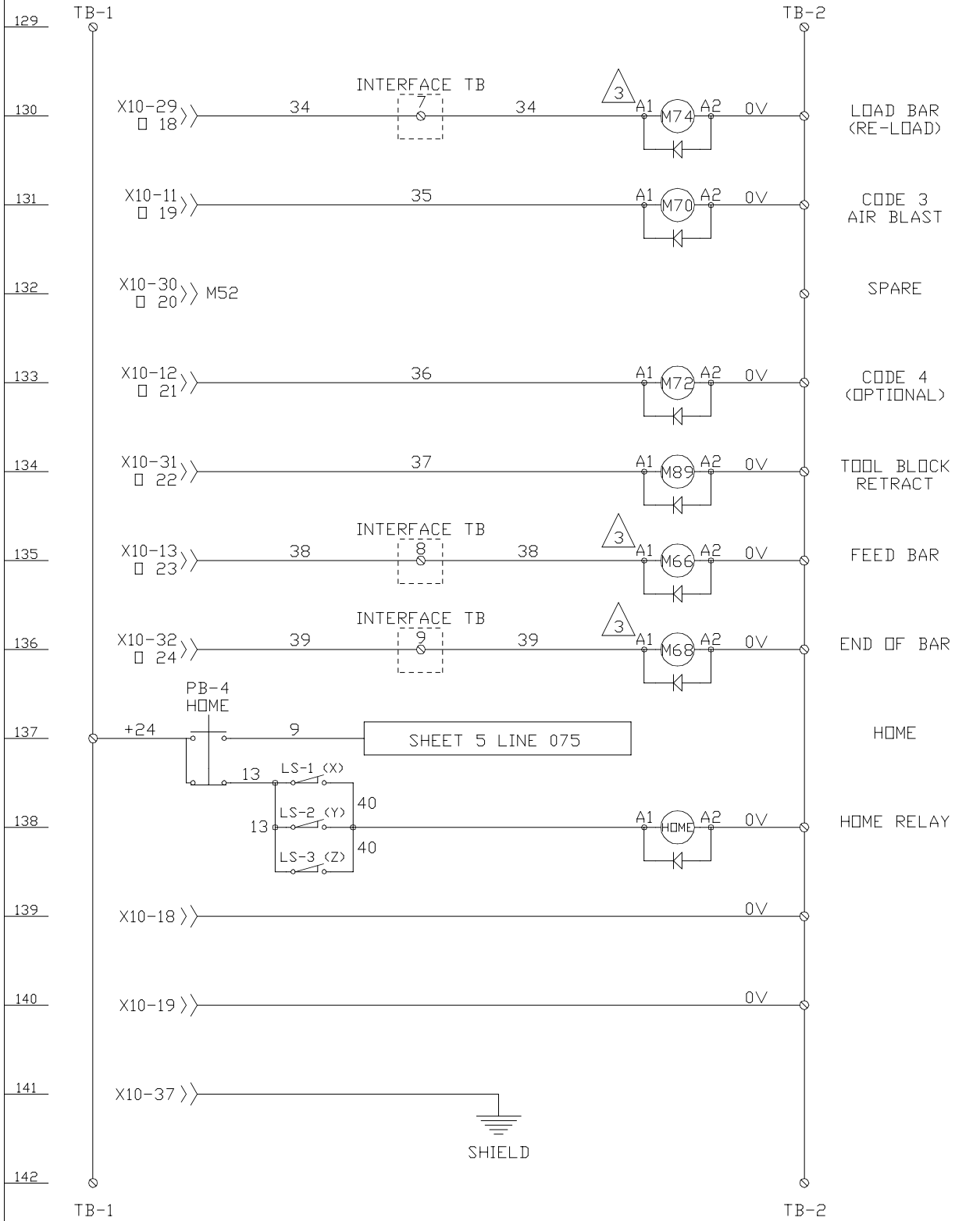
CMS
 638 N. POINSETTA
 SANTA ANA, CA
 FAX (714) 664-0860
 COMPACT MANUFACTURING SYSTEMS


3 RELAY IS REQUIRED ONLY WHEN USING A BAR FEEDER

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED

FROM SHEET 8 LINE 126

FROM SHEET 8 LINE 126



THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00
CHK'D			APP'D	E.S.H.	6-15-00
TITLE			 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860		
FAGOR 8050			COMPACT MANUFACTURING SYSTEMS		
ELECTRICAL SCHEMATICS			CAD DWG	SIZE B	E1-8050-04B
			SCALE: NONE	REF. DWG. SHEET 9 OF 16	

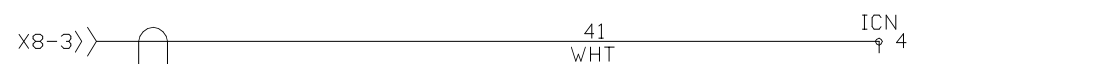
EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED

145

BALDOR SPINDLE DRIVE

146

147



SPINDLE SIGNAL

148

149

150



SPINDLE LOCK/FREE

151



FORWARD

152



REVERSE

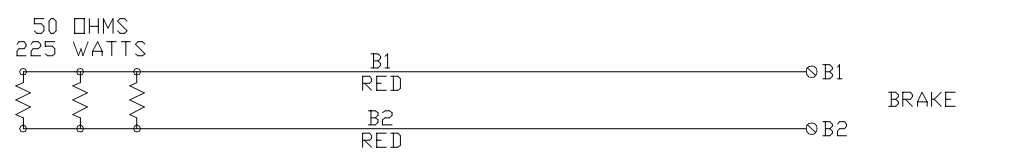
153



SIGNAL COMMON

BALDOR CONTROL BOARD

154



BRAKE

156

157

158

159

THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES									
	NAME	DATE		NAME	DATE	638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860			
DRAWN	G.W.M.	6-8-00	ENG.	E.S.H.	5-30-00	COMPACT MANUFACTURING SYSTEMS			
CHK'D			APP'D	E.S.H.	6-15-00	CAD DWG	SIZE B	E1-8050-B-06	
TITLE FAGOR 8050 ELECTRICAL SCHEMATICS						SCALE: NONE	REF. DWG. SHEET 10 OF 16		

160

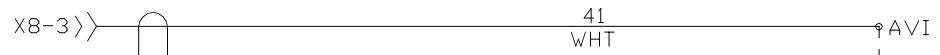
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S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

145

DELTA SPINDLE DRIVE

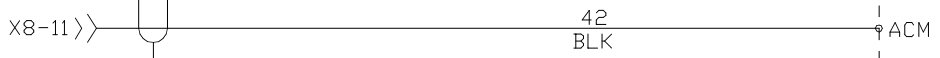
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147



SPINDLE SIGNAL

148



149

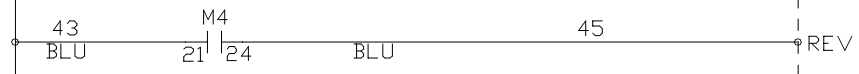


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FORWARD

151



REVERSE

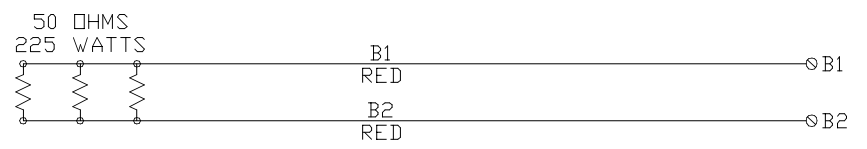
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SIGNAL COMMON

DELTA CONTROL BOARD

153




BRAKE

156

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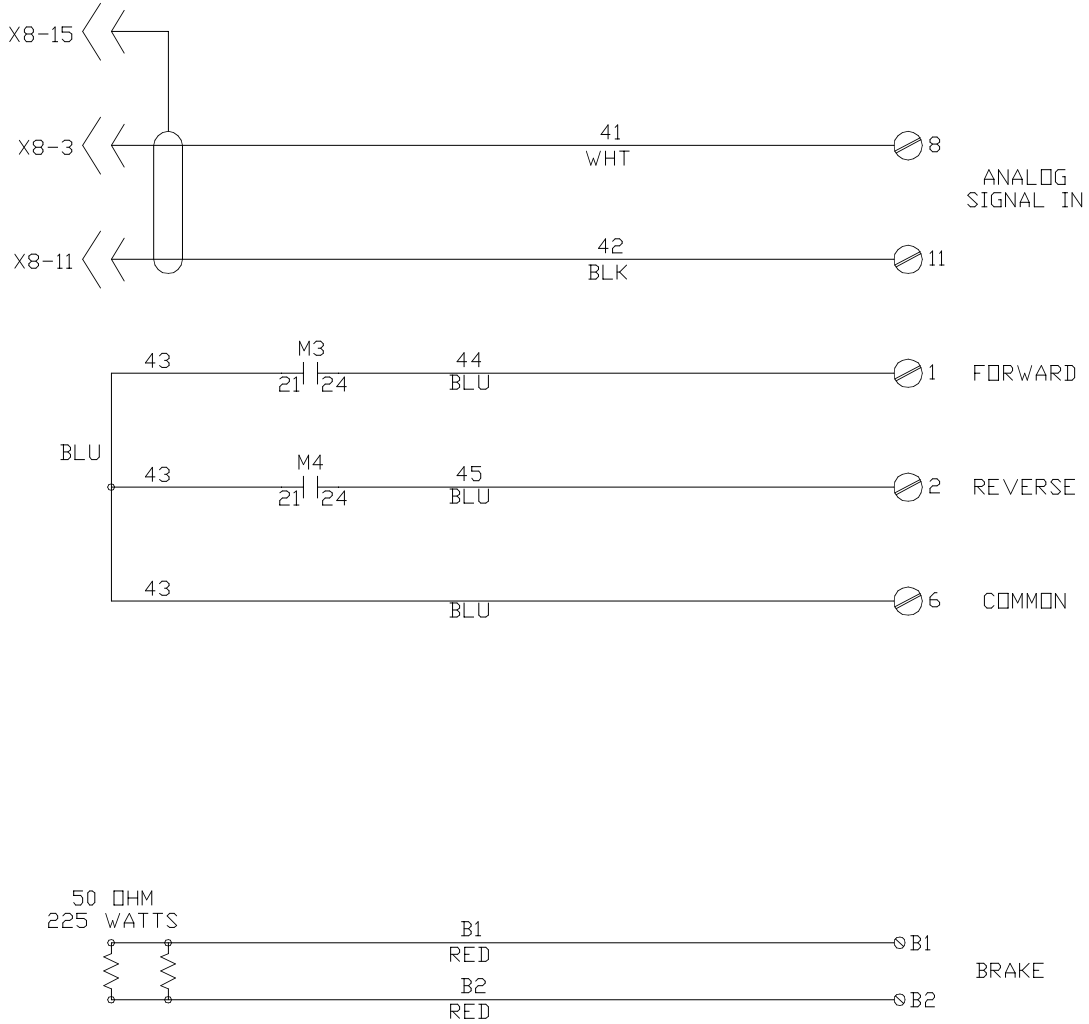
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	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860			
DRAWN	G.W.M.	6-8-00	ENG.	E.S.H.	5-30-00				
CHK'D			APP'D	E.S.H.	6-15-00				
TITLE						CAD DWG	SIZE	E1-8050-D-06	
FAGOR 8050						SCALE	B	REF. DWG. SHEET 10 OF 16	
ELECTRICAL SCHEMATICS						NONE			

160

EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

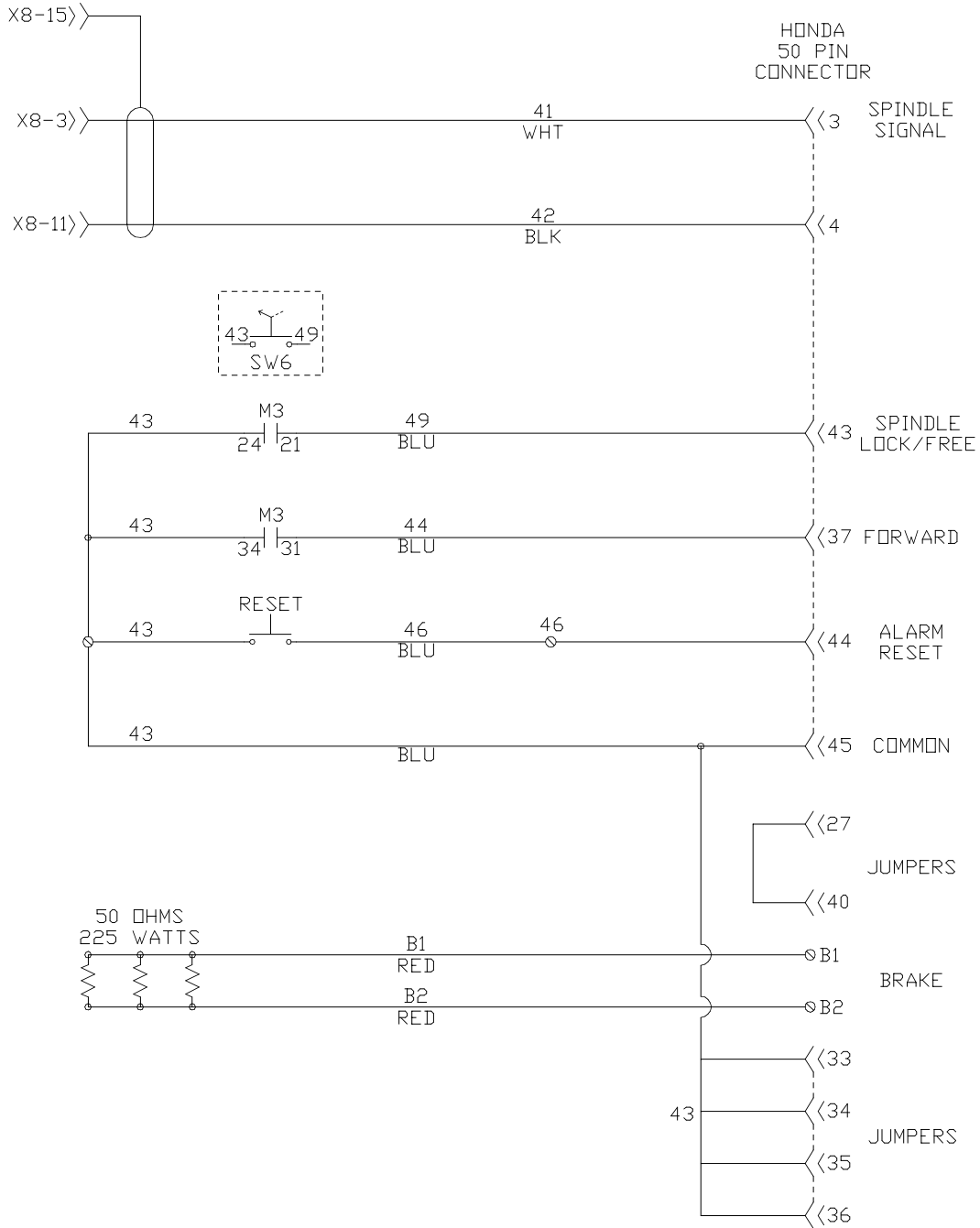
EMS SPINDLE DRIVE



THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES							
	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	6-7-00	ENG.	E.S.H.	5-30-00		
CHK'D			APP'D	E.S.H.	6-15-00	COMPACT MANUFACTURING SYSTEMS	
TITLE				CAD DWG		SIZE	E1-8050-E-06
FAGOR 8050 ELECTRICAL SCHEMATICS						B	
SCALE: NONE						REF. DWG. SHEET 10 OF 16	

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED

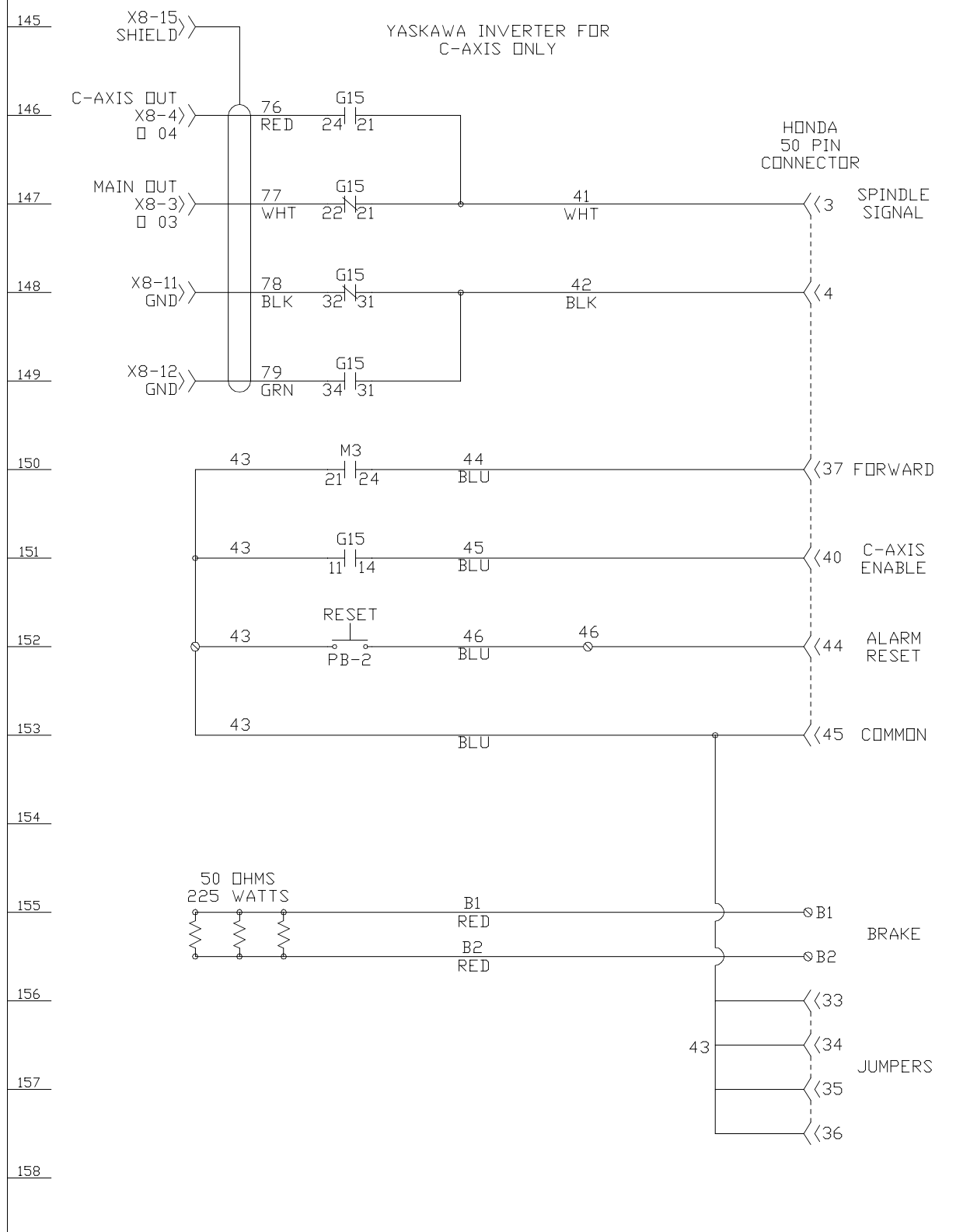
YASKAWA INVERTER FOR INDEXING - NO C-AXIS



THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES

	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	5-31-00	ENG.	E.S.H.	5-30-00		
CHK'D			APP'D	E.S.H.	6-15-00		
TITLE						CAD DWG	SIZE
FAGOR 8050							B
ELECTRICAL SCHEMATICS						SCALE: NONE	REF. DWG. SHEET 10 OF 16

EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

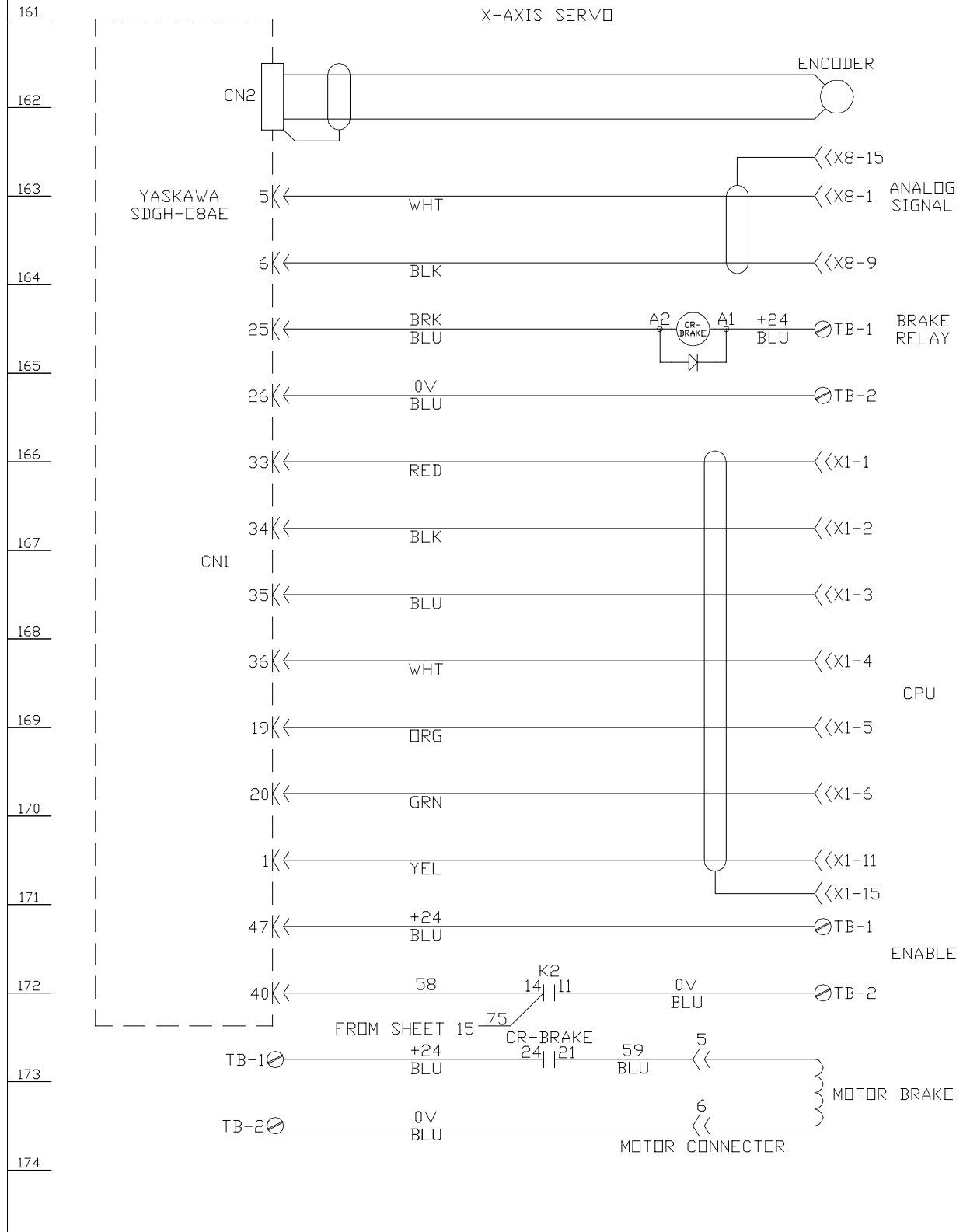


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	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	5-31-00	ENG.	E.S.H.	5-30-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D			APP'D	E.S.H.	6-15-00	CAD DWG	SIZE B
TITLE						SCALE: NONE	REF. DWG. SHEET 10 OF 16
FAGOR 8050						E1-8050-Y-10	
ELECTRICAL SCHEMATICS							

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160

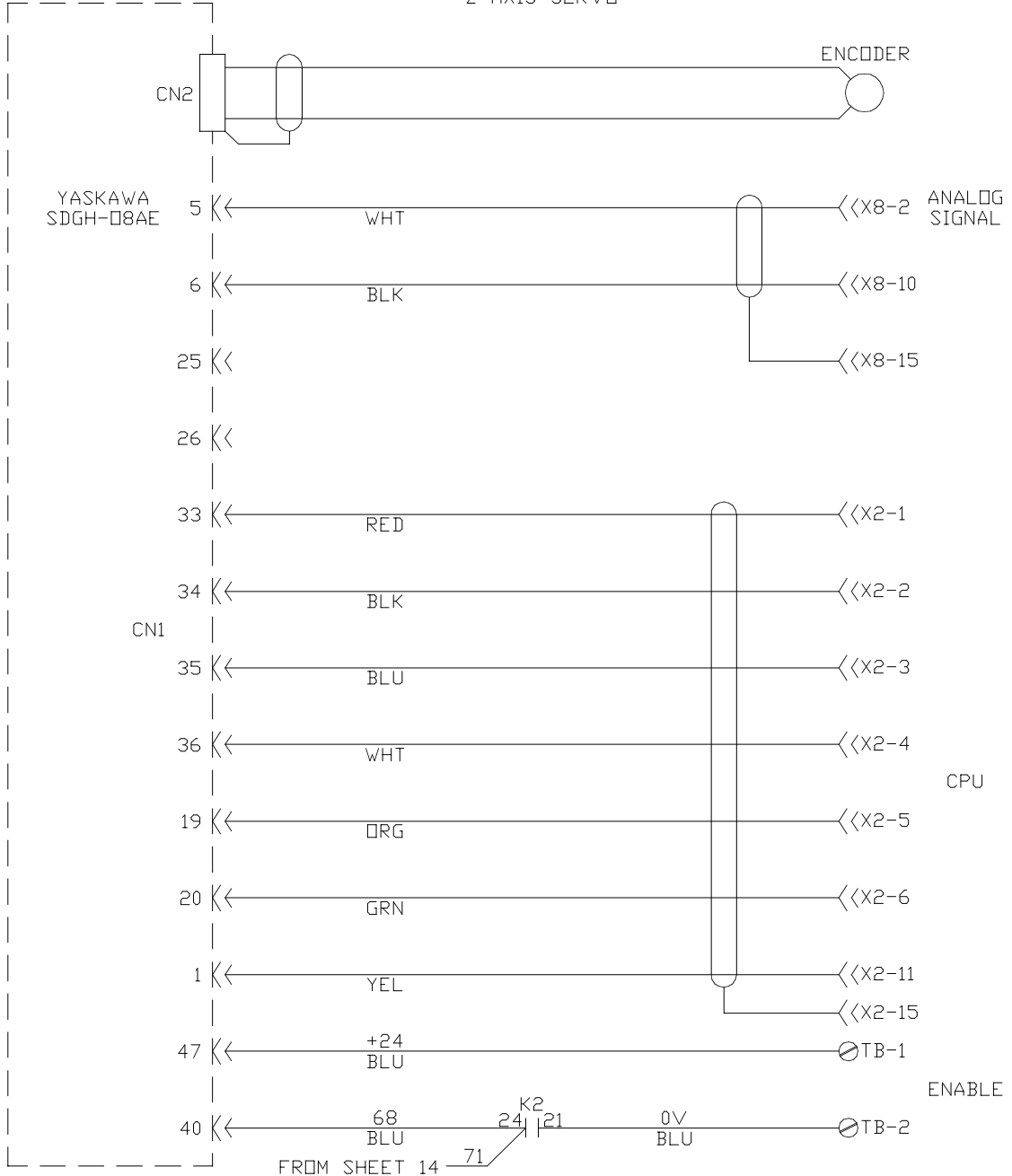
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S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	



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	NAME	DATE		NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00		
CHK'D			APP'D	E.S.H.	6-15-00		
TITLE				FAGOR 8050		CAD DWG	
ELECTRICAL SCHEMATICS				SIZE		E1-8050-4-07	
				SCALE: NONE		REF. DVG. SHEET 11 OF 16	

EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

Z-AXIS SERVO

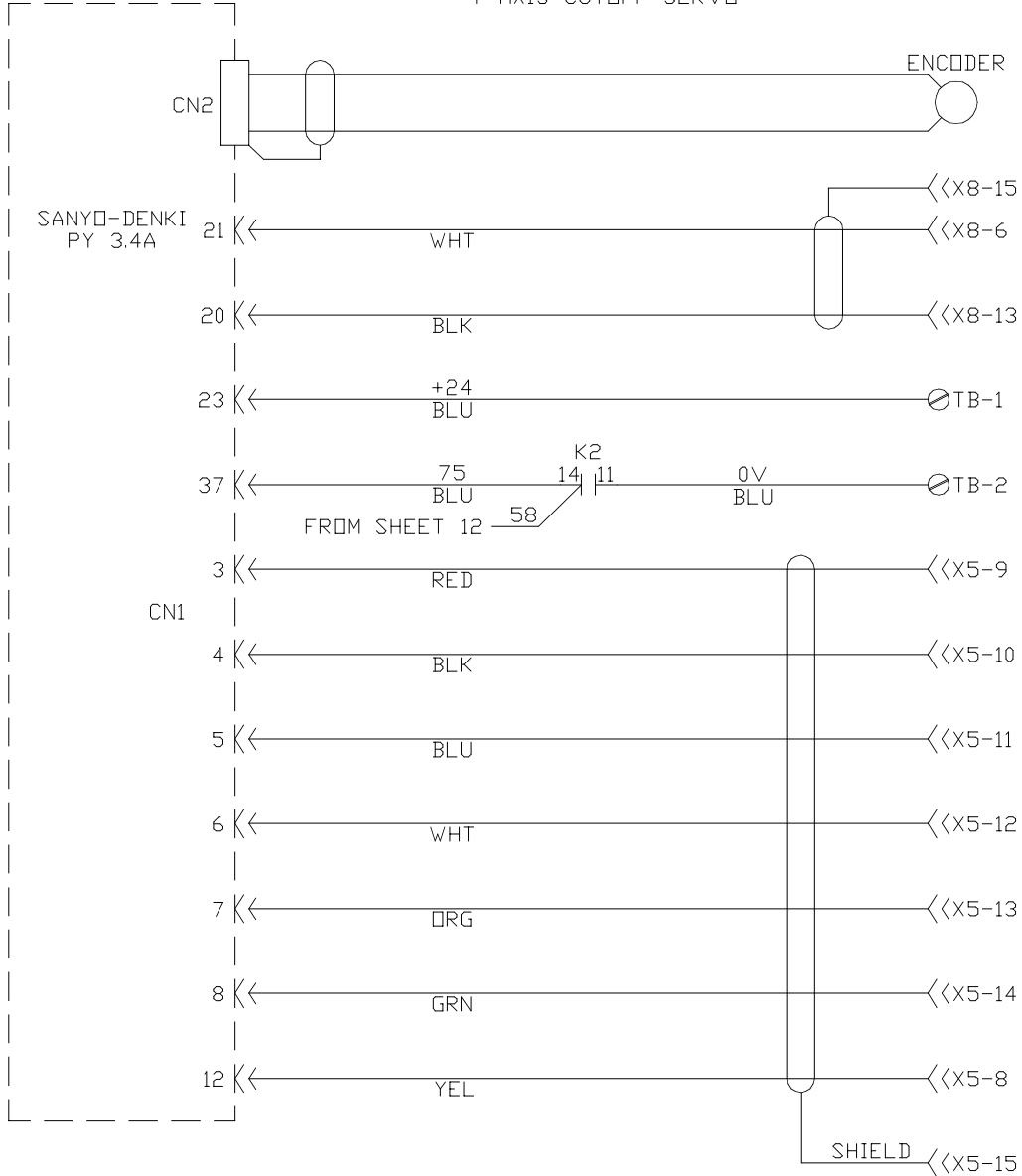



THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES							
	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D			APP'D	E.S.H.	6-15-00	CAD DWG	SIZE B
TITLE						E1-8050-4-09	
FAGOR 8050 ELECTRICAL SCHEMATICS						SCALE: NONE	REF. DWG. SHEET 12 OF 16

EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

Y-AXIS CUTOFF SERVO

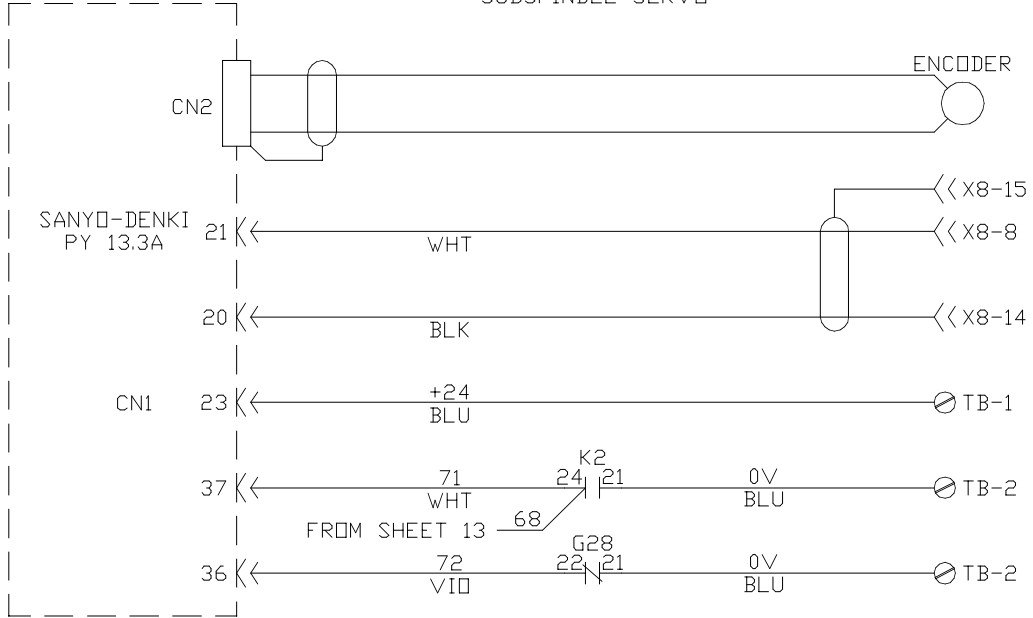
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	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D			APP'D	E.S.H.	6-15-00	CAD DWG	SIZE
TITLE						B	E1-8050-5-08
FAGOR 8050 ELECTRICAL SCHEMATICS						SCALE: NONE	REF. DWG. SHEET 13 OF 16

EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

SUBSPINDLE SERVO



THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES								
	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860		
DRAWN	G.W.M.	5-26-00	ENG.	E.S.H.	5-30-00		COMPACT MANUFACTURING SYSTEMS	
CHK'D			APP'D	E.S.H.	6-15-00			CAD DWG
TITLE				FAGOR 8050		SIZE	E1-8050-5-14	
ELECTRICAL SCHEMATICS						B		
SCALE: NONE						REF. DWG.	SHEET 14 OF 16	

EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

225

ALPINE INTERFACE WIRING

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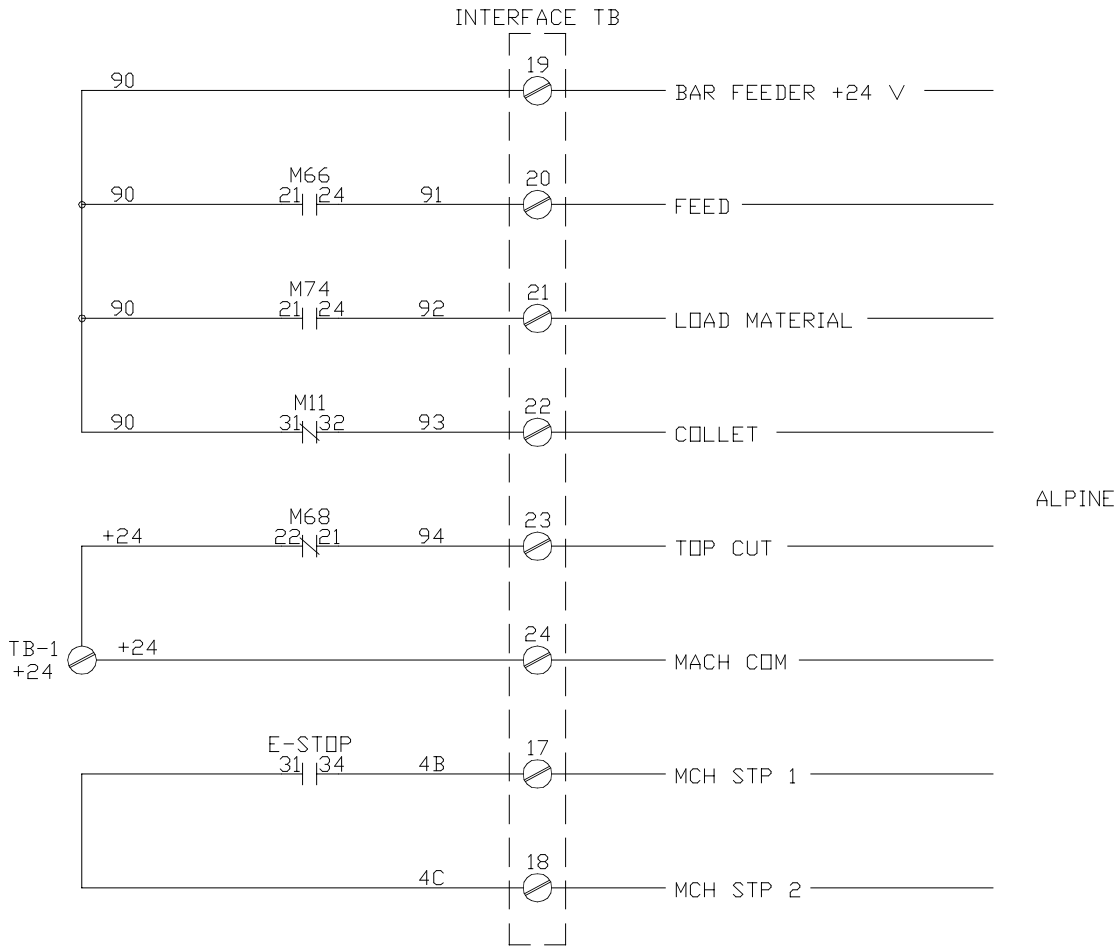
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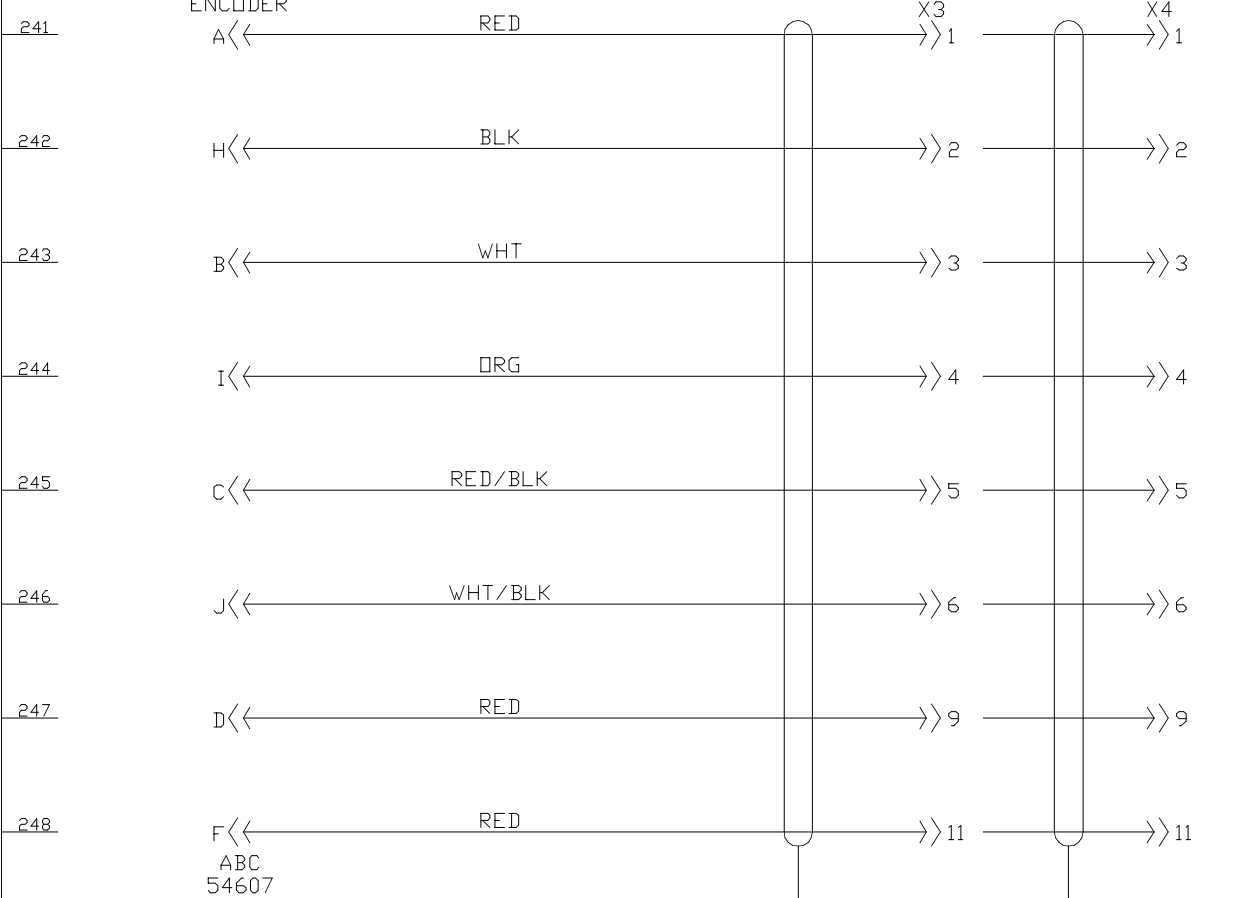


ALPINE

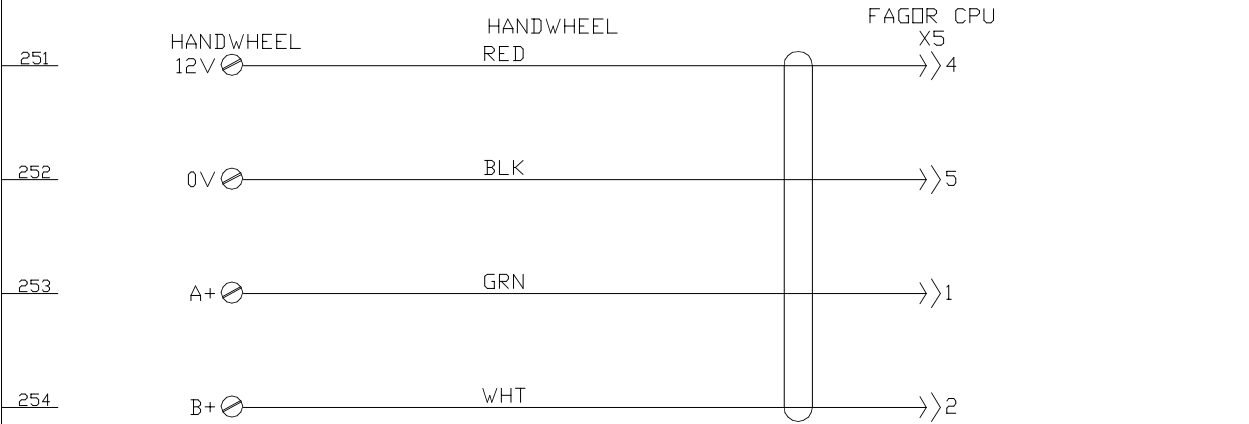
THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES									
	NAME	DATE		NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860			
DRAWN	G.W.M.	6-5-00	ENG.	E.S.H.	5-30-00	COMPACT MANUFACTURING SYSTEMS			
CHK'D			APP'D	E.S.H.	6-15-00	CAD DWG	SIZE	E7-8050-13	
TITLE						SCALE	REF. DWG.	SHEET 15 OF 16	
FAGOR 8050						NONE			
ELECTRICAL SCHEMATICS									

EFFECTIVITY				REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED	

8050 MAIN SPINDLE ENCODER FAGOR CPU



249 NOTE; THE X4 CONNECTOR IS FOR C AXIS ONLY. X3 AND X4 ARE WIRED TO THE SAME PINS ON THE ENCODER CABLE



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	NAME	DATE		NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
DRAWN	G.W.M.	6-22-00	ENG.	E.S.H.	6-22-00		
CHK'D			APP'D	E.S.H.	6-22-00	CAD DWG	SIZE
TITLE						B	E1-8050-70
SPINDLE ENCODER & HANDWHEEL						SCALE: NONE	REF. DWG. SHEET 16 OF 16