

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

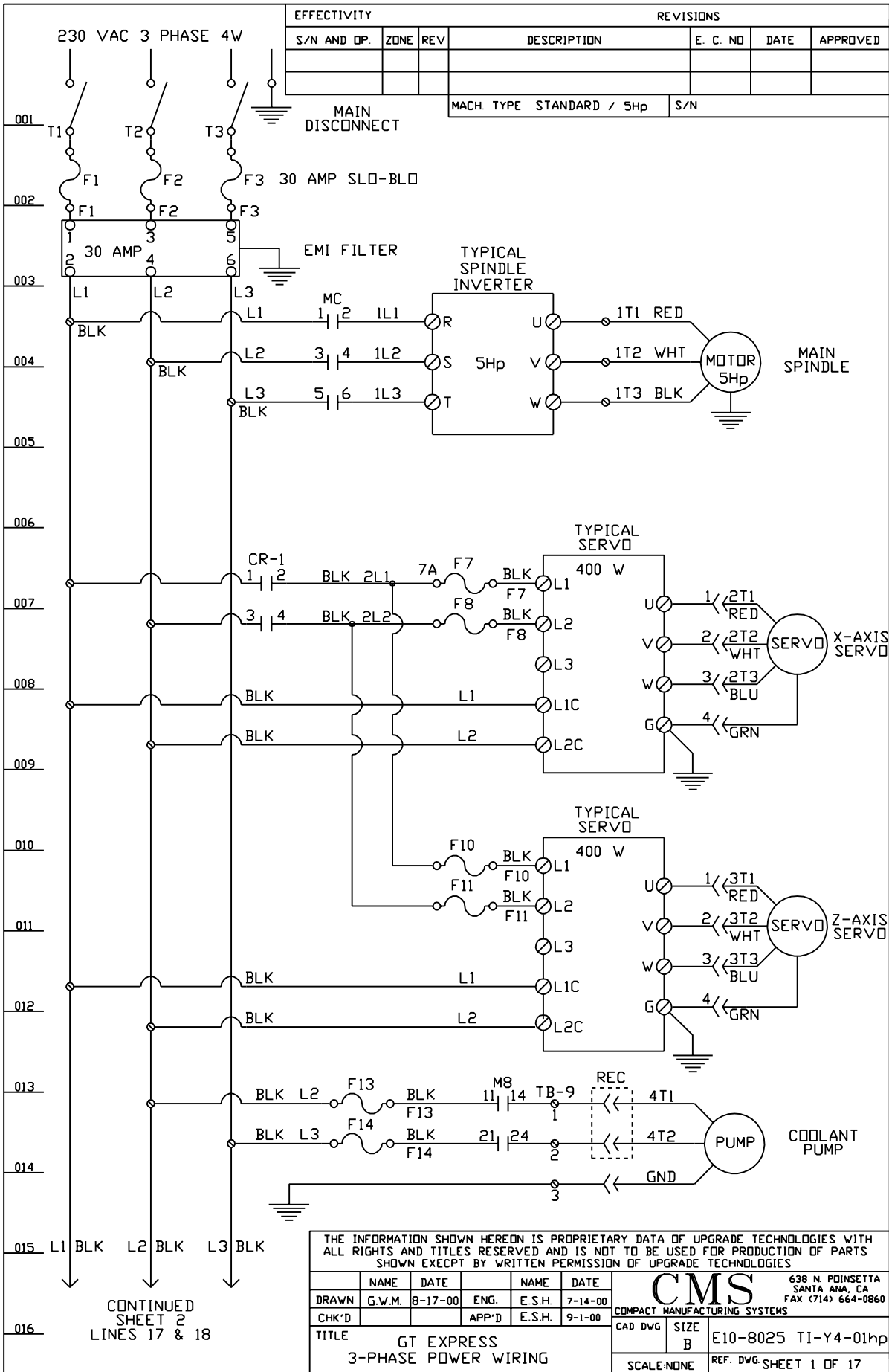
THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES

NAME	DATE	NAME	DATE
DRAWN G.W.M.	8-17-00	ENG. E.S.H.	7-14-00
CHK'D		APP'D E.S.H.	9-1-00

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

TITLE	GT EXPRESS 3-PHASE POWER WIRING	CAD DWG	SIZE B	E10-8025 TI-011
SCALE	NONE	REF. DWG	SHEET 1 OF 17	

CONTINUED
SHEET 2
LINES 17 & 18



EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
MACH. TYPE STANDARD / 5hp			S/N			

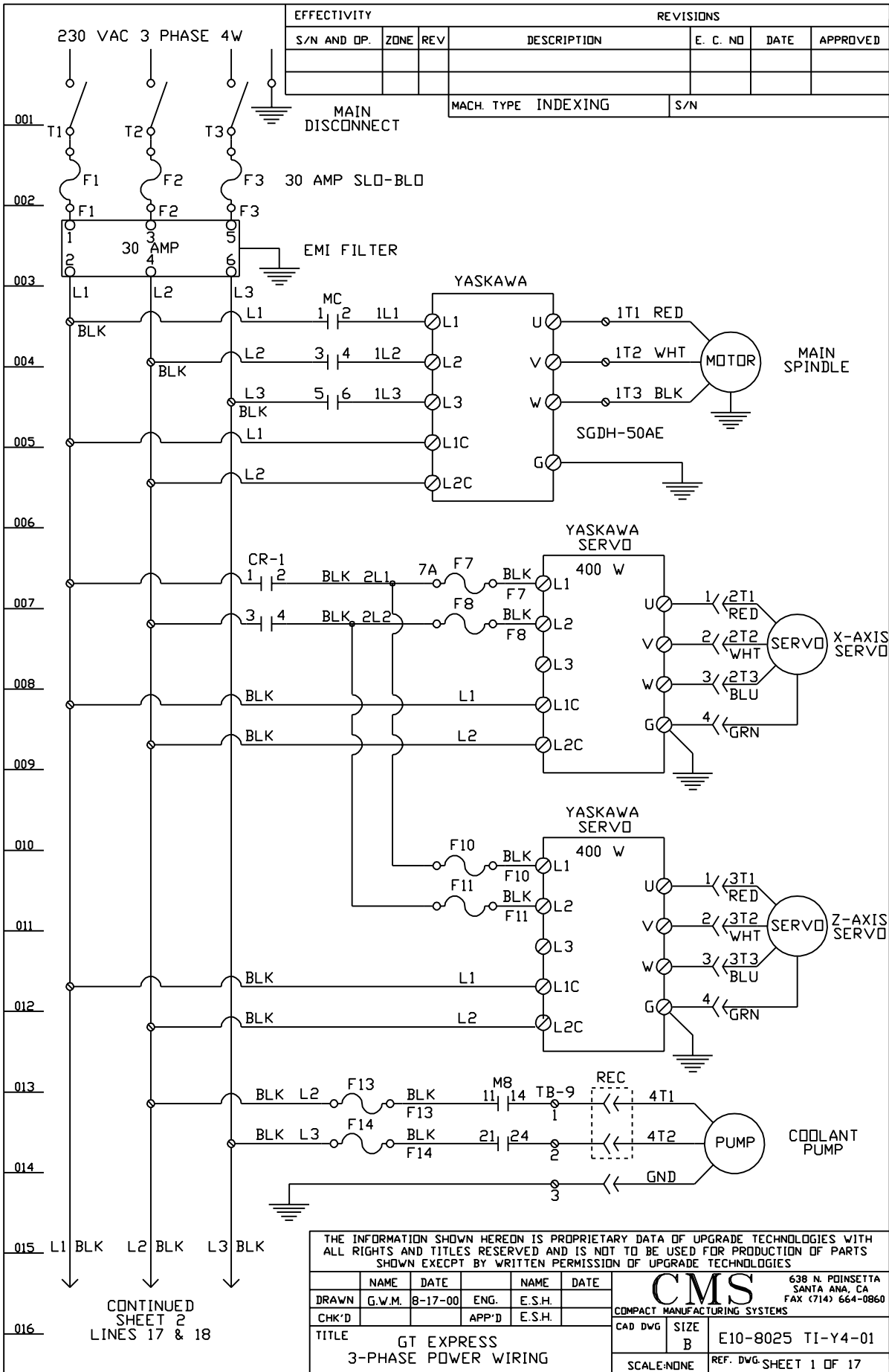
THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES

NAME	DATE	NAME	DATE
DRAWN G.W.M.	8-17-00	ENG. E.S.H.	7-14-00
CHK'D		APP'D E.S.H.	9-1-00

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

TITLE	GT EXPRESS 3-PHASE POWER WIRING	CAD DWG	SIZE B	E10-8025 TI-Y4-01hp
SCALE	NONE	REF. DWG SHEET 1 OF 17		

CONTINUED SHEET 2 LINES 17 & 18

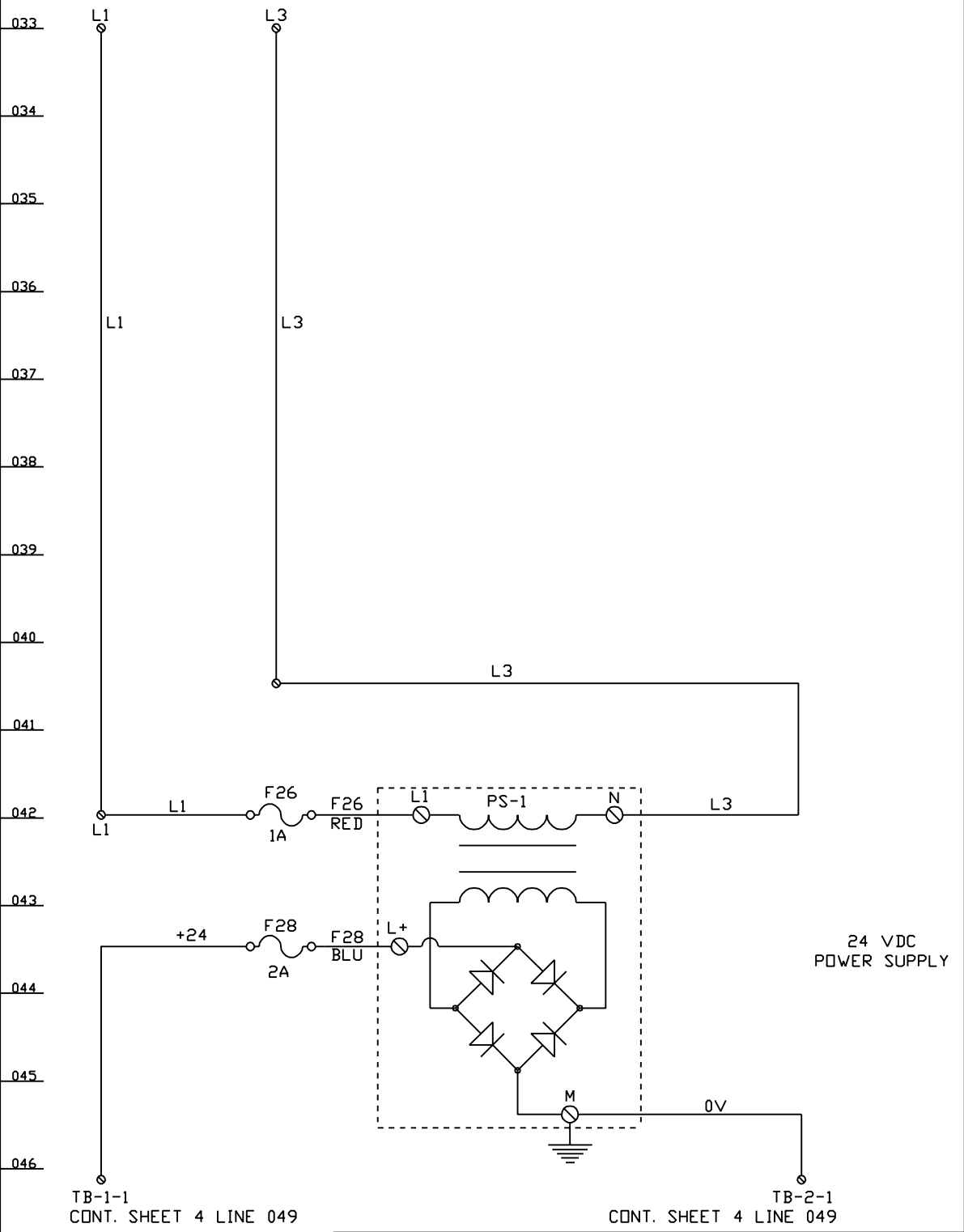


EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
MACH. TYPE INDEXING				S/N		

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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M. 8-17-00	ENG.	E.S.H.	COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D	E.S.H.	CAD DWG	SIZE B
TITLE				SCALE: NONE	REF. DWG: SHEET 1 OF 17
GT EXPRESS 3-PHASE POWER WIRING					E10-8025 TI-Y4-01

CONTINUED
SHEET 2
LINES 17 & 18

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

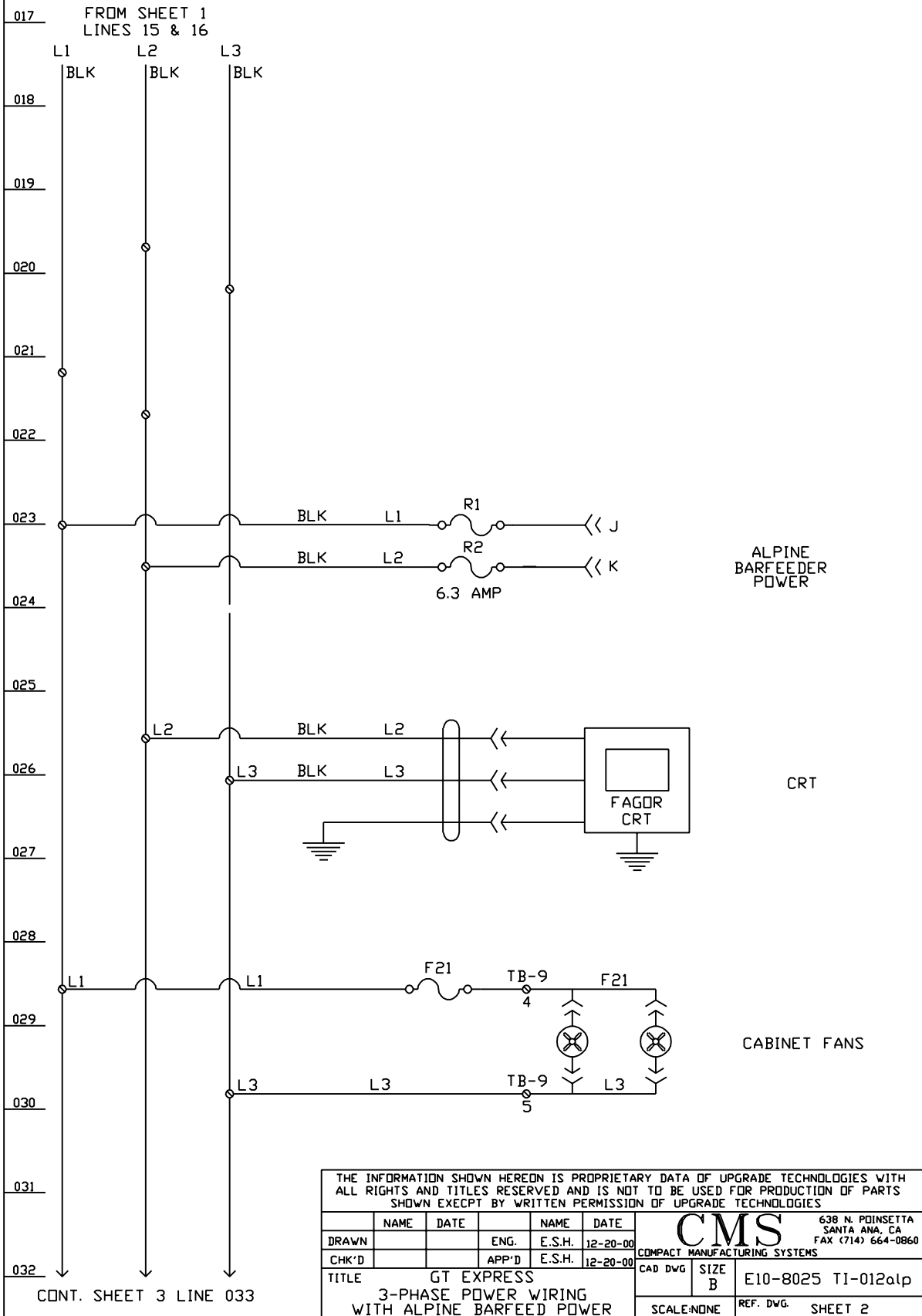


TB-1-1
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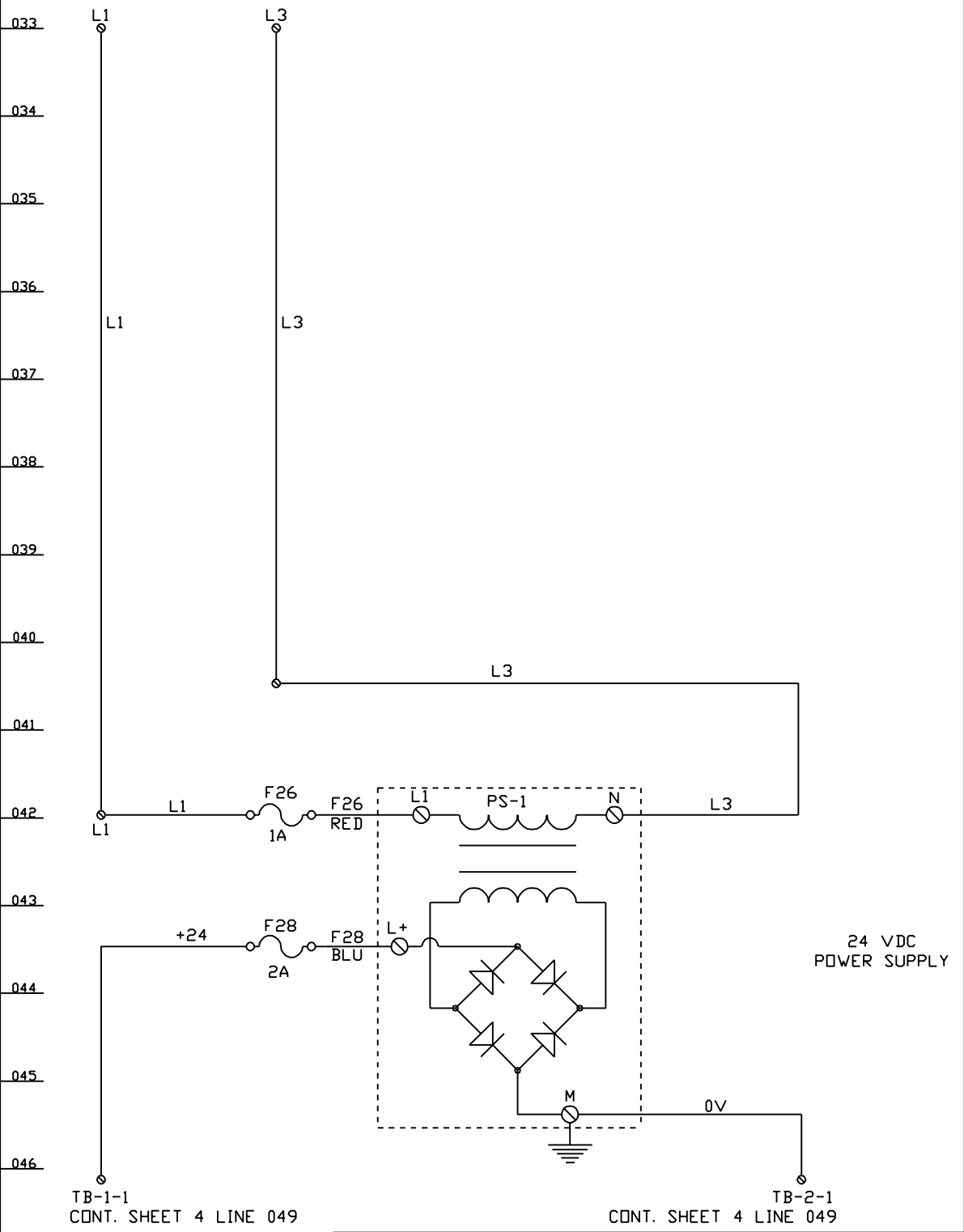
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THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
NAME	DATE	NAME	DATE	638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN G.W.M.	B-18-00	ENG. E.S.H.	7-14-00	CMS COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D E.S.H.	9-1-00		
TITLE			GT EXPRESS 3-PHASE WIRING	CAD DWG	SIZE B
				SCALE: NONE	REF. DWG: SHEET 3 OF 17

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
		A	ADDED BARFEED POWER		12-1-00	E.S.H.



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

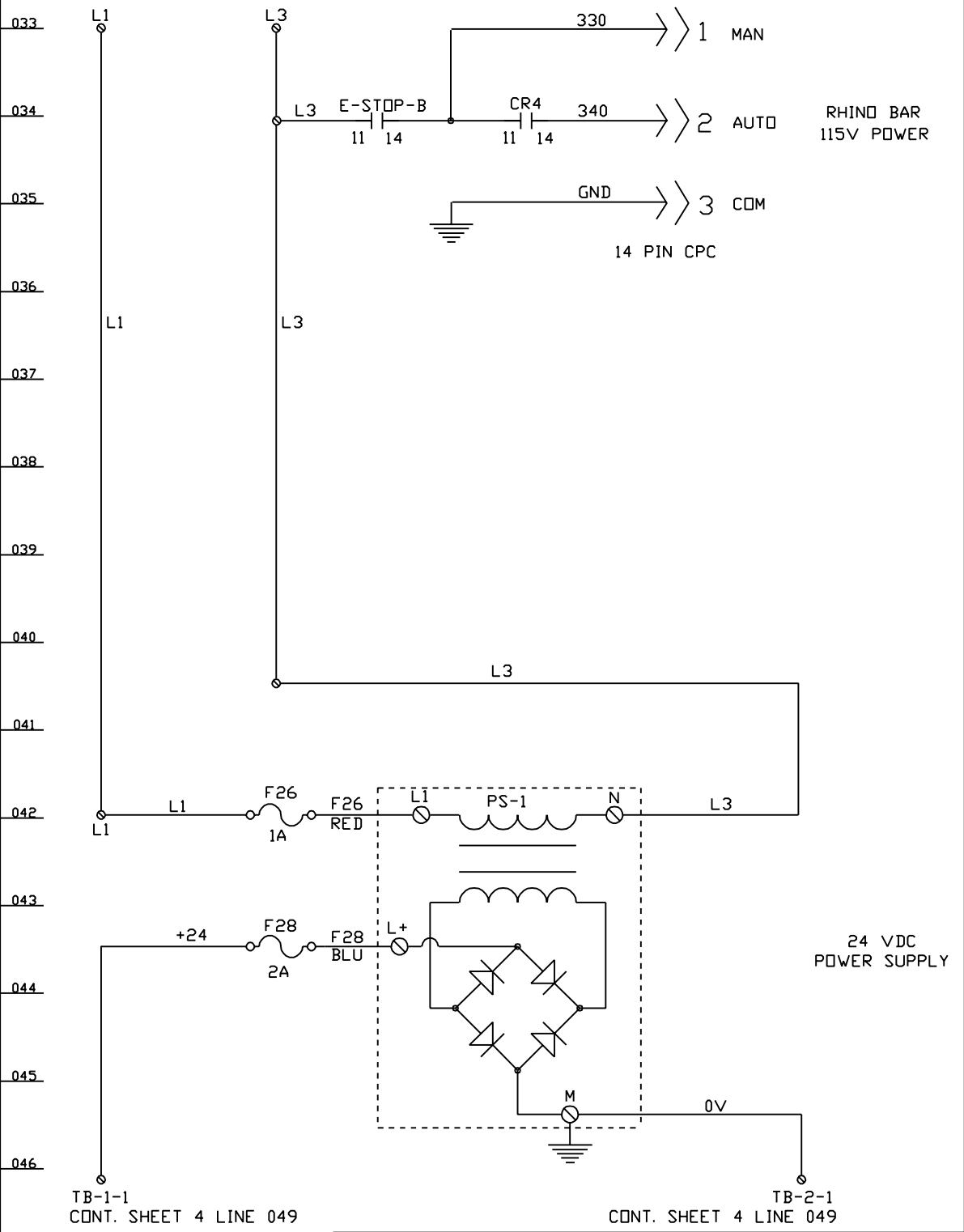


TB-1-1
CONT. SHEET 4 LINE 049

TB-2-1
CONT. SHEET 4 LINE 049

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.	B-18-00	ENG. E.S.H.	7-14-00	CMS COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D E.S.H.	9-1-00		
TITLE			SIZE	E10-8025 T1-013	
GT EXPRESS 3-PHASE WIRING			B	REF. DWG. SHEET 3 OF 17	
			SCALE: NONE		

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



TB-1-1
CONT. SHEET 4 LINE 049

CONT. SHEET 4 LINE 049

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

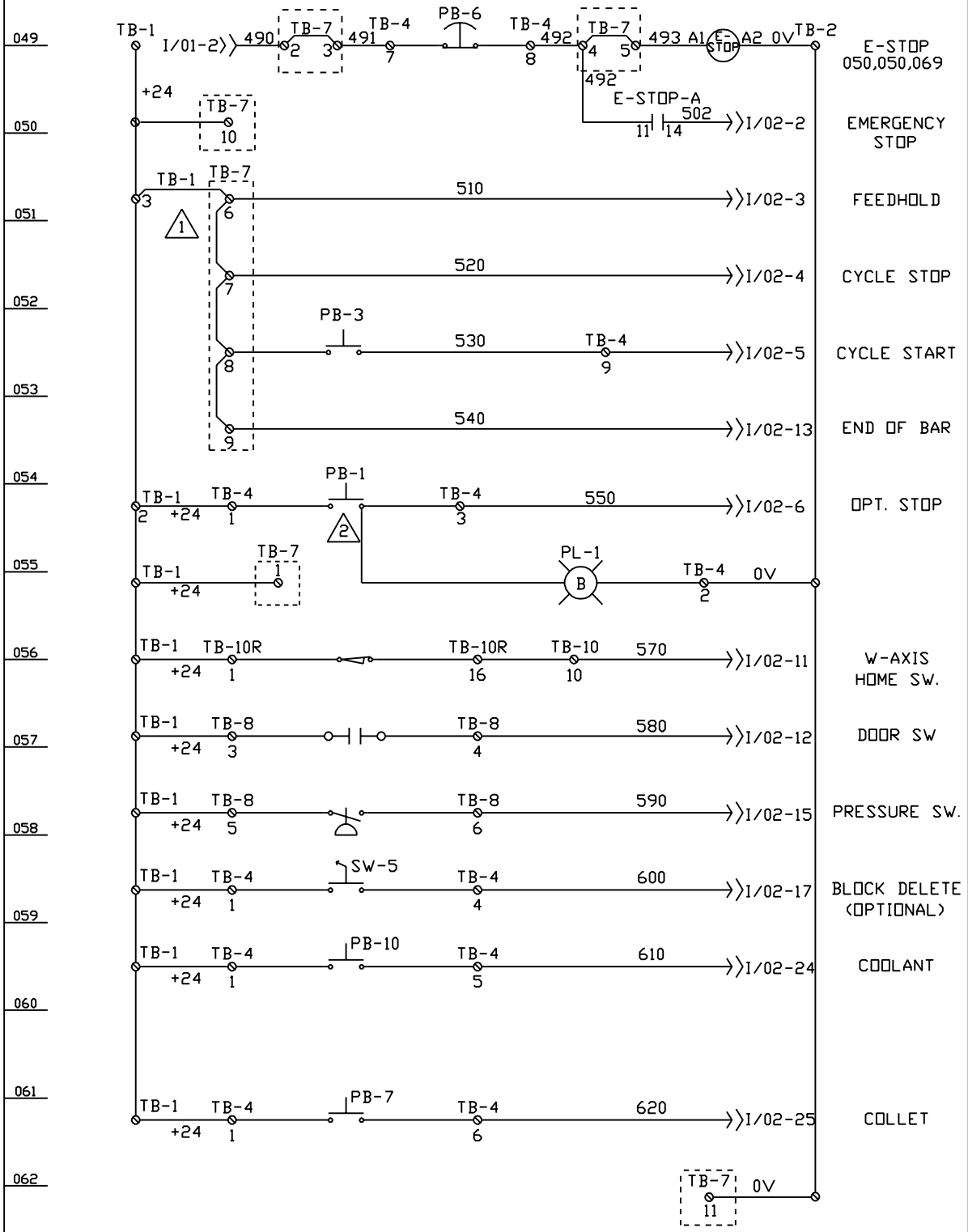
NAME	DATE	NAME	DATE
DRAWN G.W.M.	B-18-00	ENG. E.S.H.	12-1-00
CHK'D		APP'D E.S.H.	12-1-00



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

TITLE	GT EXPRESS 3-PHASE WIRING WITH RHINO BARFEED	CAD DWG	SIZE B	E10-8025 TI-013RB
SCALE	NONE	REF. DWG	SHEET 3 OF 17	

047
048

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
#F2742		A	CHANGED BARFEED WIRING		10-31-00	ESH



- 063  JUMPER BARS
- 064  MAINTAINED N.O. CONTACT

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NAME	DATE	NAME	DATE
DRAWN G.W.M.	8-17-00	ENG. E.S.H.	7-14-00
CHK'D		APP'D E.S.H.	9-1-00

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

COMPACT MANUFACTURING SYSTEMS

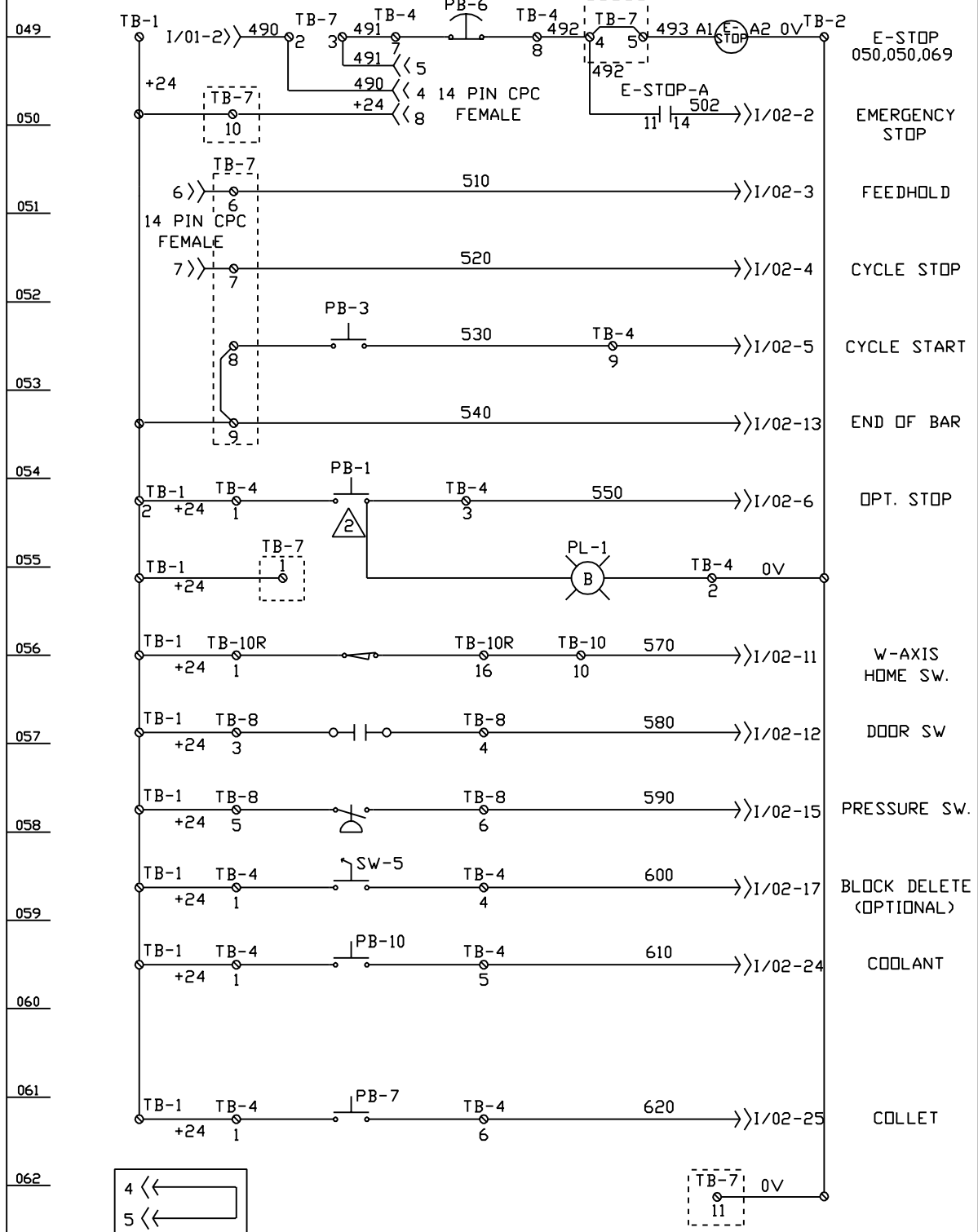
CAD DWG SIZE B E10-8025 TI-031

TITLE GT EXPRESS 24 VDC INPUTS

SCALE: NONE REF. DWG. SHEET 4 OF 17

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
#F2742		A	CHANGED BARFEED WIRING		10-31-00	ESH

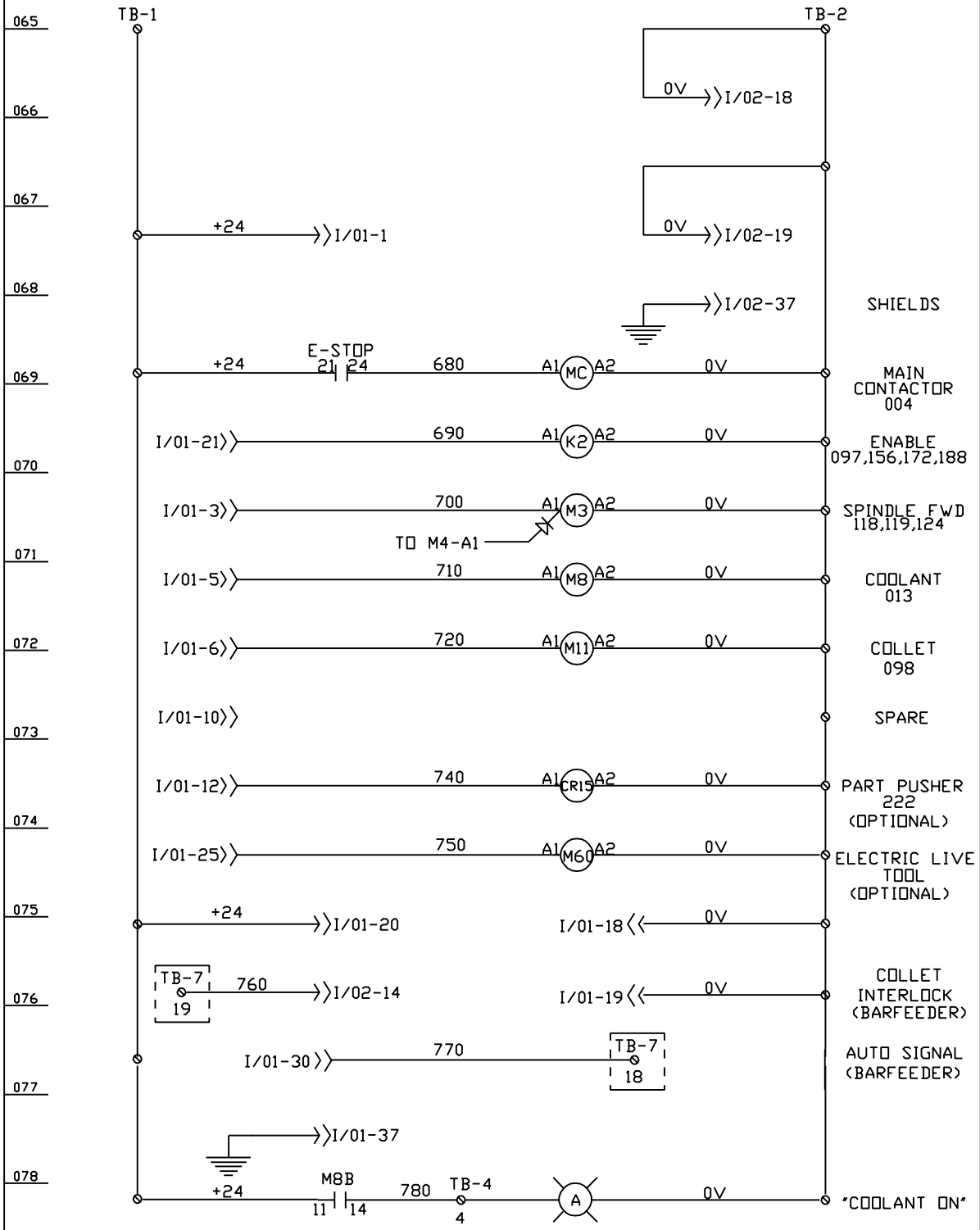
MAINTAINED N.O. CONTACT



4	<<	
5	<<	
6	<<	
7	<<	
8	<<	
14 PIN CPC MALE PLUG		

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NAME	DATE	NAME	DATE	638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M. 8-17-00	ENG.	E.S.H. 12-1-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D	E.S.H. 12-1-00	CAD DWG	SIZE B
TITLE				SCALE: NONE	E10-8025 TI-031RB
GT EXPRESS 24 VDC INPUTS WITH RHINO BARFEED				REF. DWG. SHEET 4 OF 17	

EFFECTIVITY				REVISIONS		
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
#F2743		A	ADDED M60 RELAY		10-27-00	ESH



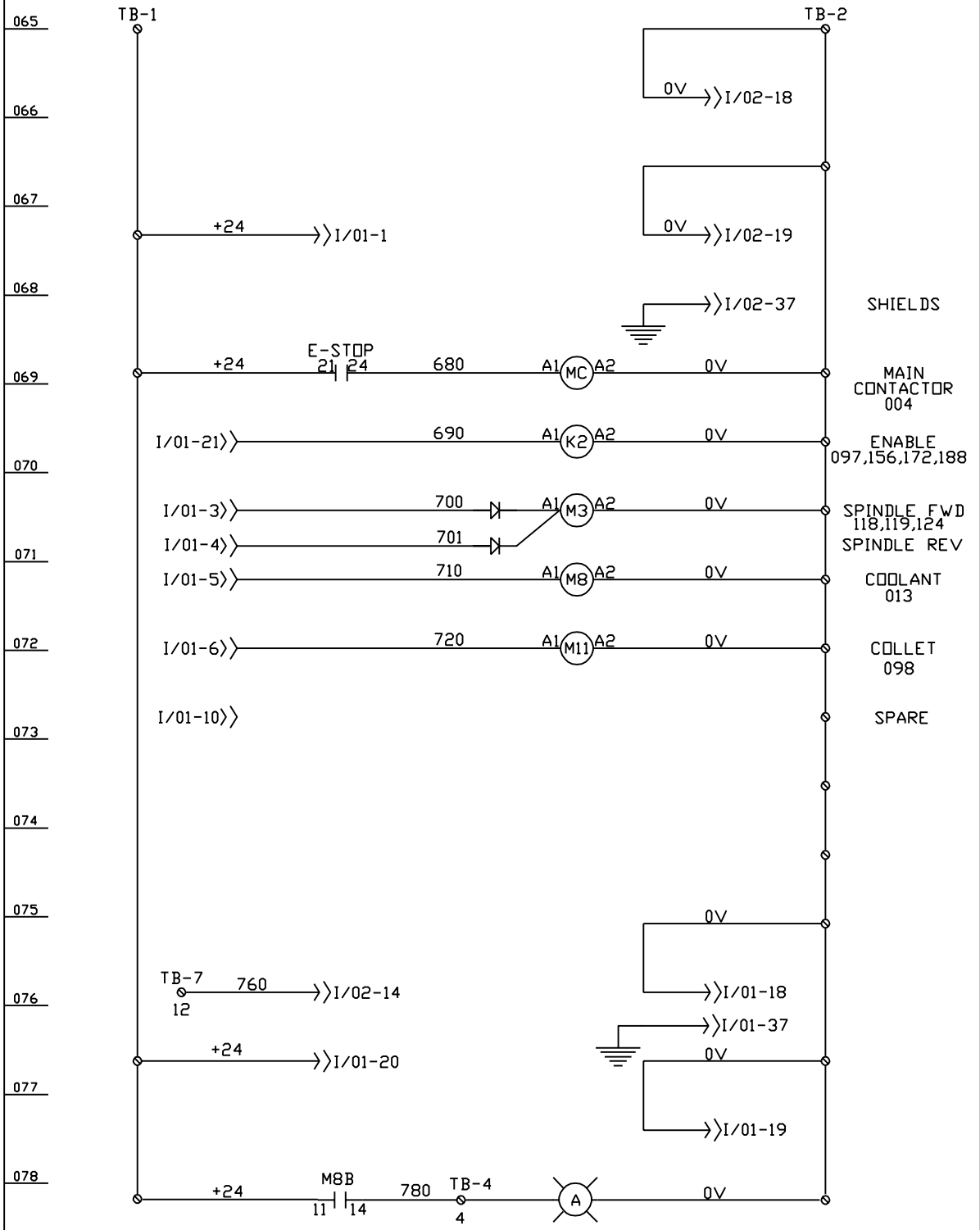
THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES

NAME	DATE	NAME	DATE
DRAWN G.W.M.	8-19-00	ENG. E.S.H.	7-14-00
CHK'D		APP'D E.S.H.	9-1-00

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

TITLE	GT EXPRESS 24 VDC OUTPUTS	CAD DWG	SIZE B	E10-8025 TI-041
		SCALE: NONE	REF. DWG. SHEET 5 OF 17	

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
#F2743		A	ADDED M60 RELAY		10-27-00	ESH
#F2732		B	ADDED DIODE TO M3 RELAY		11-15-00	ESH

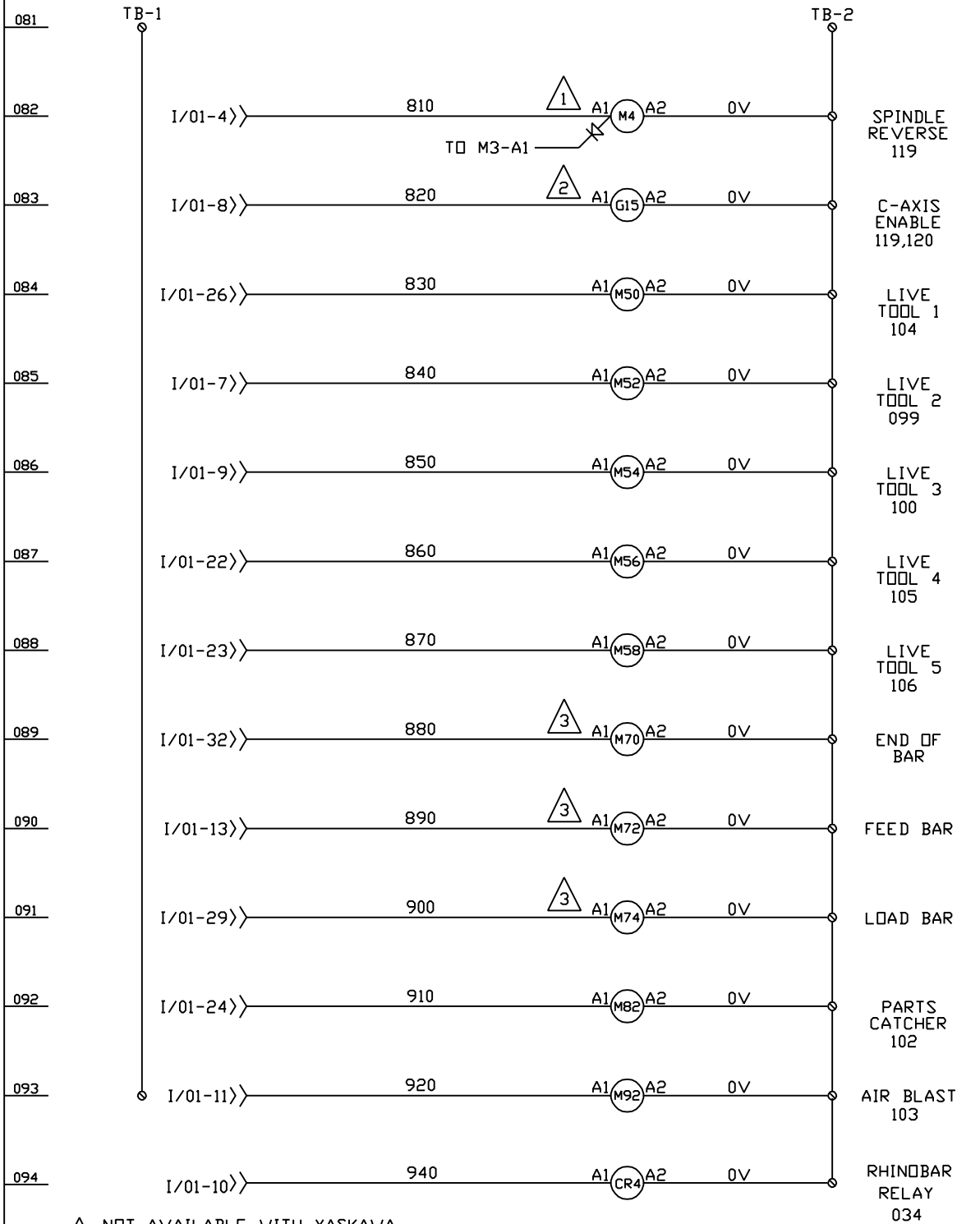


NOTE* THIS DRAWING IS FOR YASKAWA INDEXING MACHINES ONLY!

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NAME	DATE	NAME	DATE	 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	E.S.H. 11-15-00	ENG.	E.S.H. 11-15-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D	E.S.H.	CAD DWG	SIZE B
TITLE				E10-8025-TI-041b	
GT EXPRESS 24 VDC OUTPUTS FOR INDEXING MACHINE				SCALE: NONE	REF. DWG. SHEET 5b OF 17

OPTIONAL ONLY

EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
		A	ADDED CR-4 FOR RHINOBAR		12-1-00	E.S.H.



1 NOT AVAILABLE WITH YASKAWA SPINDLE DRIVES

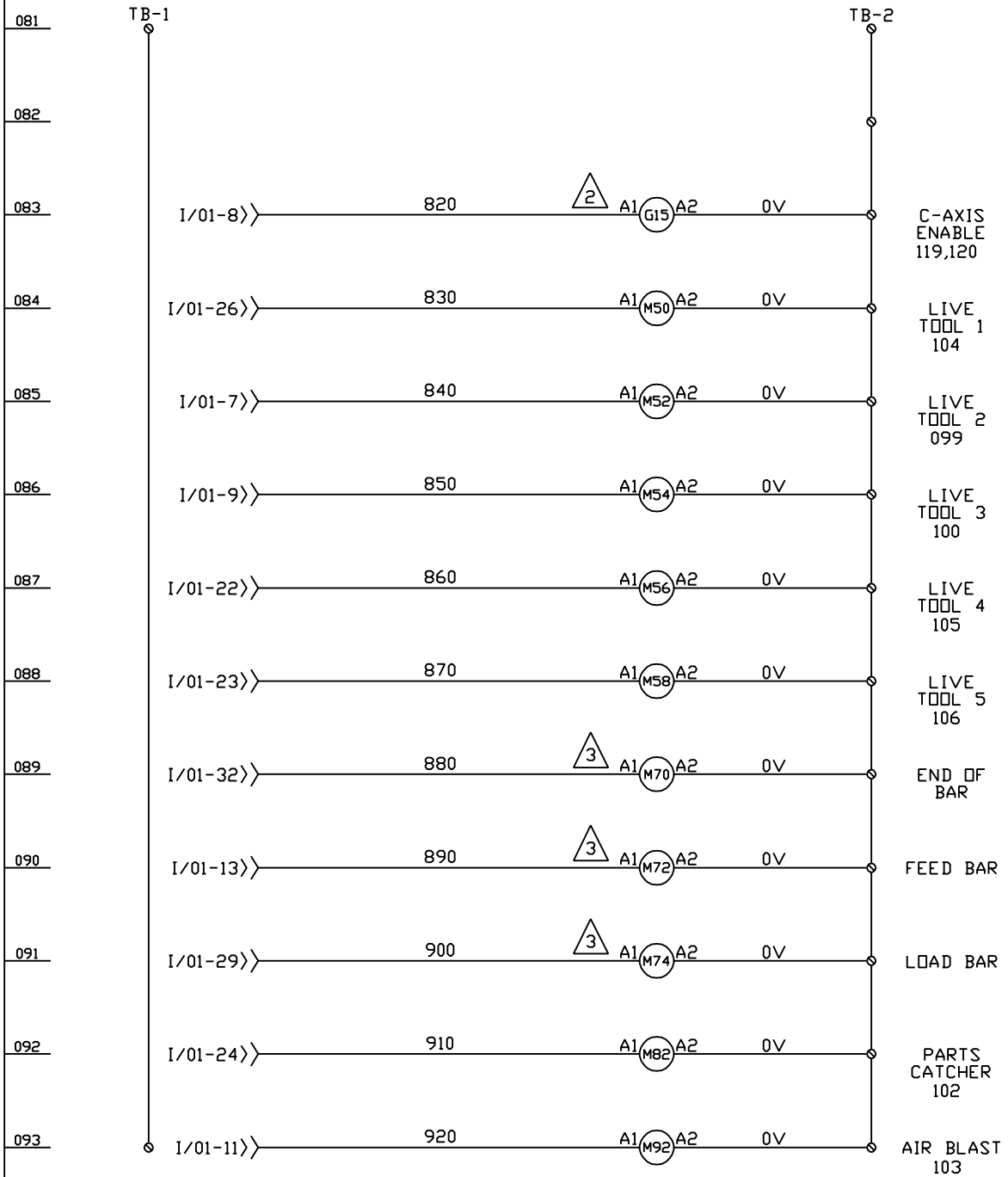
2 USED WITH C-AXIS MACHINES

3 BARFEEDER FUNCTIONS

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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
DRAWN	G.W.M.	8-19-00	ENG.	E.S.H.	7-14-00		
CHK'D			APP'D	E.S.H.	9-1-00	CAD DWG	SIZE B
TITLE						SCALE: NONE	REF. DWG: SHEET 6 OF 17
GT EXPRESS						E10-8025 TI-042	
24 VDC OUTPUTS/OPTIONS							

OPTIONAL ONLY

EFFECTIVITY				REVISIONS		
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
F2732		A	DELETED M4 RELAY		11-15-00	E.S.H.



NOTE* THIS DRAWING IS FOR INDEXING MACHINES ONLY!

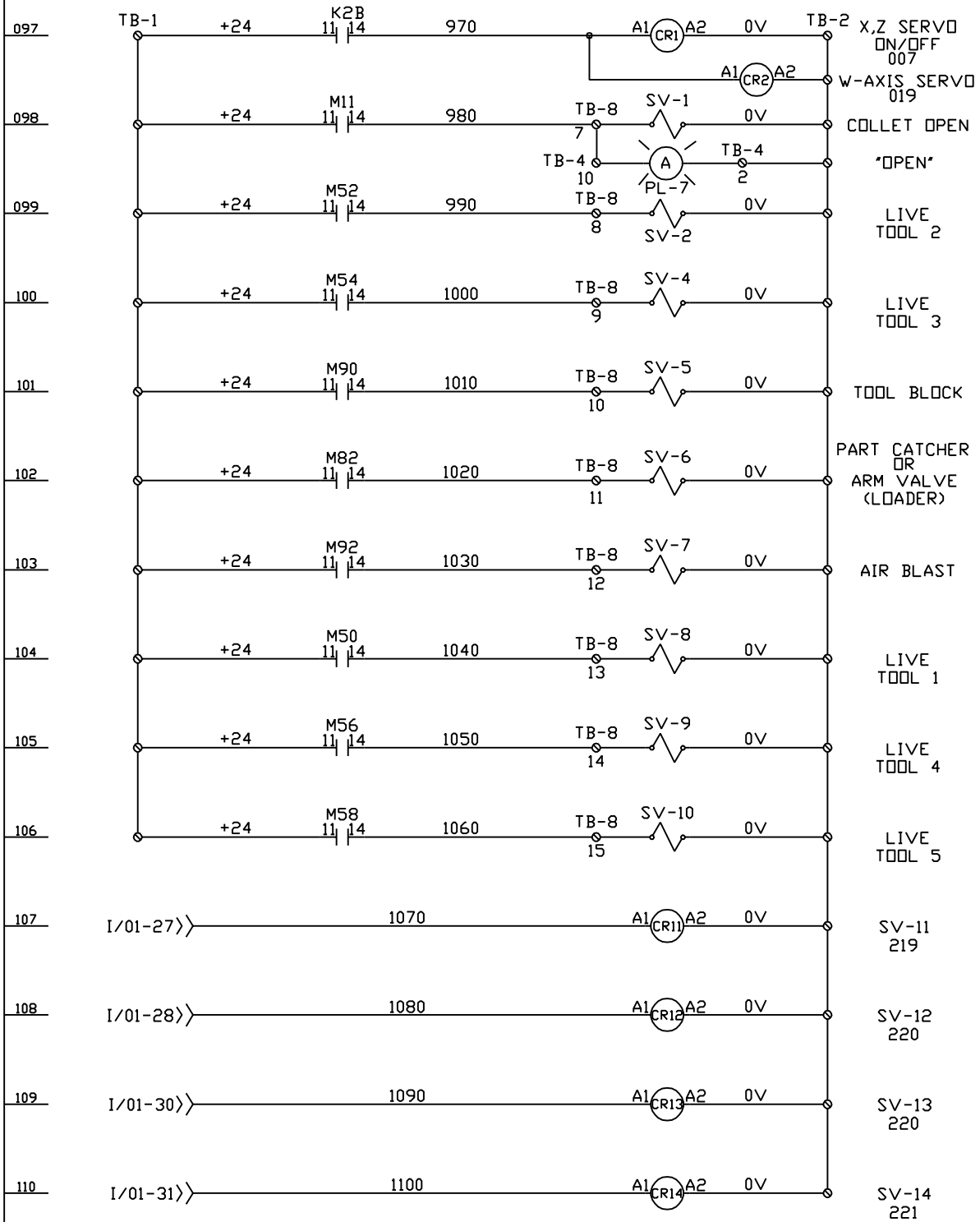
1 USED WITH YASKAWA 50AE SERVO FOR SPINDLE

2 USED WITH C-AXIS MACHINES

3 BARFEEDER FUNCTIONS

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	NAME	DATE		NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M.	8-19-00	ENG.	E.S.H.	7-4-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D			APP'D	E.S.H.	9-1-00	CAD DWG	SIZE B
TITLE						SCALE: NONE	REF. DWG: SHEET 666 OF 17
GT EXPRESS							E10-8025 TI-042I
24 VDC OUTPUTS/OPTIONS							
FOR INDEXING MACHINES ONLY							

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



111	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									
112	NAME	DATE	NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS					
	DRAWN	G.W.M. 8-20-00	ENG.	E.S.H. 7-15-00						
	CHK'D		APP'D	E.S.H. 9-2-00	CAD DWG					
	TITLE				SIZE					
	GT EXPRESS				B					
	24 VDC OUTPUTS/OPTIONS				E10-8025 TI-043					
	SCALE: NONE				REF. DWG. SHEET 7 OF 17					

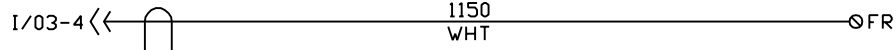
EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED

MAGNETEK SPINDLE DRIVE

113

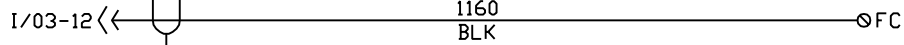
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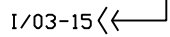


ANALOG
SIGNAL IN

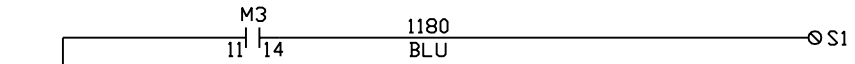
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117

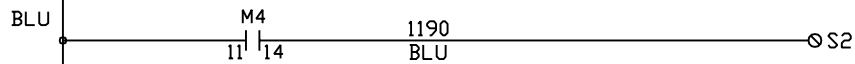


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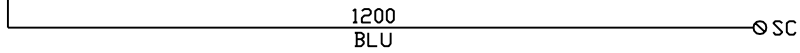
FORWARD

119



REVERSE

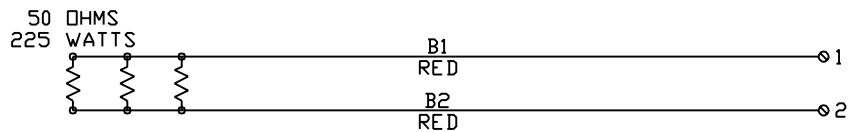
120



SIGNAL
COMMON

121

122



BRAKE

123

124

125

126

127

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NAME	DATE	NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M. 8-20-00	ENG.	E.S.H. 7-15-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D	E.S.H. 9-2-00	CAD DWG	SIZE B
TITLE				SCALE: NONE	REF. DWG. SHEET 8 OF 17
GT EXPRESS MAGNETEK SPINDLE DRIVE					

128

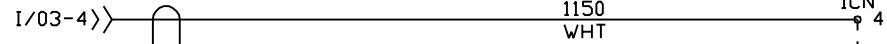
EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED

BALDOR SPINDLE DRIVE
C-AXIS ONLY

113

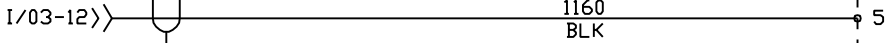
114

115



SPINDLE SIGNAL

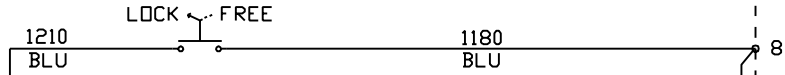
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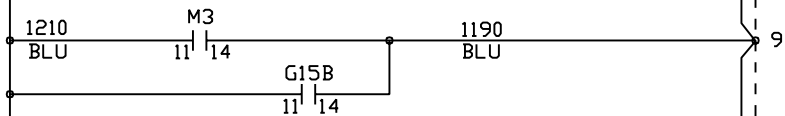


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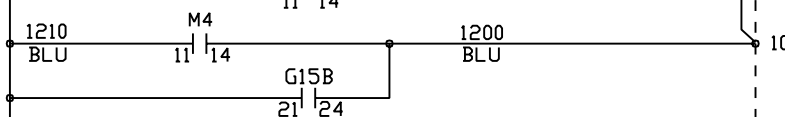
SPINDLE LOCK/FREE

119



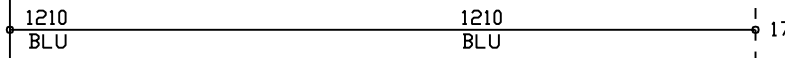
FORWARD

120



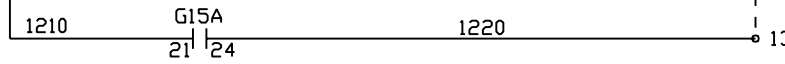
REVERSE

121



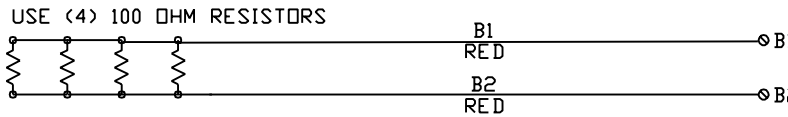
SIGNAL COMMON

122



SPEED

123



BRAKE

124

CABLE COLOR CODE				TB#
ENCODER CHANNEL	PINOUT	CABLE COLOR	RESOLVER SIGNAL	
A	A	GREY	SIN +	23
A-	H	VIOLET	SIN -	24
B	B	YELLOW	COS +	25
B-	J	ORANGE	COS -	26
Z (OR C)	C	BLUE		27
Z-(OR C-)	K	GREEN		28
+VDC	D	WHITE	REF HIGH	29
SHIELD	E	SHIELD	SHIELD	30
CIRCUIT GND	F	BLACK	REF LOW	30
CASE GND	G			

125

126

127

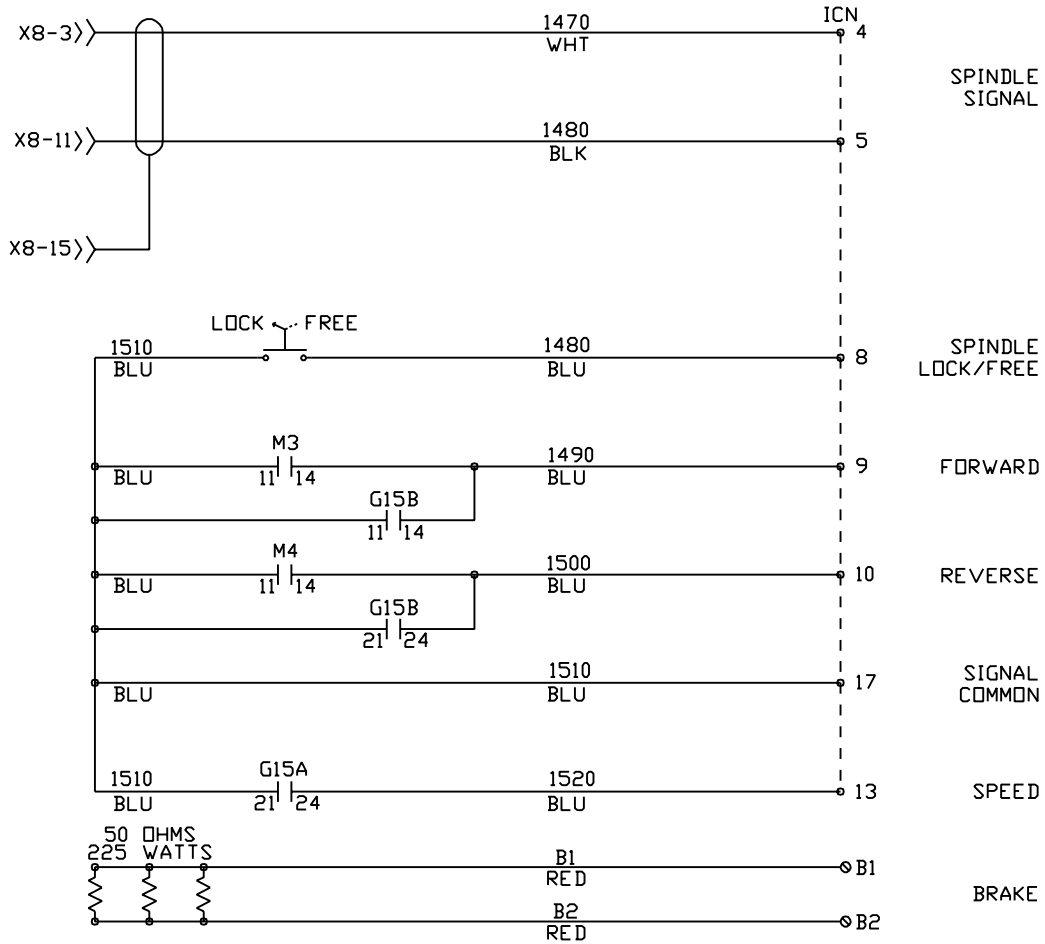
128

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NAME	DATE	NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860
DRAWN G.W.M.	8-22-00	ENG. E.S.H.		
CHK'D		APP'D E.S.H.		COMPACT MANUFACTURING SYSTEMS
TITLE			CAD DWG	SIZE B
GT EXPRESS BALDOR C-AXIS DRIVE				E10-8025 T1-B10
			SCALE: NONE	REF. DWG. SHEET 8 OF 17

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

BALDOR SPINDLE DRIVE
C-AXIS ONLY
FOR 8055



CABLE COLOR CODE				TB#
ENCODER CHANNEL	PINOUT	CABLE COLOR	RESOLVER SIGNAL	
A	A	GREY	SIN +	23
A-	H	VIOLET	SIN -	24
B	B	YELLOW	COS +	25
B-	J	ORANGE	COS -	26
Z (OR C)	C	BLUE		27
Z-(OR C-)	K	GREEN		28
+VDC	D	WHITE	REF HIGH	29
SHIELD	E	SHIELD	SHIELD	30
CIRCUIT GND	F	BLACK	REF LOW	30
CASE GND	G			

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NAME	DATE	NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860
DRAWN E.S.H.	12-8-00	ENG. E.S.H.	12-8-00	
CHK'D		APP'D E.S.H.	12-8-00	COMPACT MANUFACTURING SYSTEMS
TITLE				CAD DWG
GT-XPRESS-8055 BALDOR C-AXIS DRIVE				SIZE B
SCALE: NONE				E10-8055-B10
				REF. DWG. SHEET 8 OF 17

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

BALDOR SPINDLE DRIVE INDEXING

113

114

115

I/03-4 >>

1150
WHT

ICN 4

SPINDLE
SIGNAL

116

I/03-12 >>

1160
BLK

5

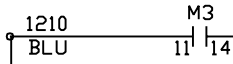
117

I/03-15 >>

118

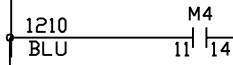
SPINDLE
LOCK/FREE

119

1190
BLU

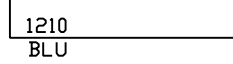
FORWARD

120

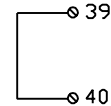
1200
BLU

REVERSE

121

1210
BLUSIGNAL
COMMON

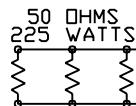
122



JUMPER

123

124

B1
RED
B2
RED

BRAKE

125

126

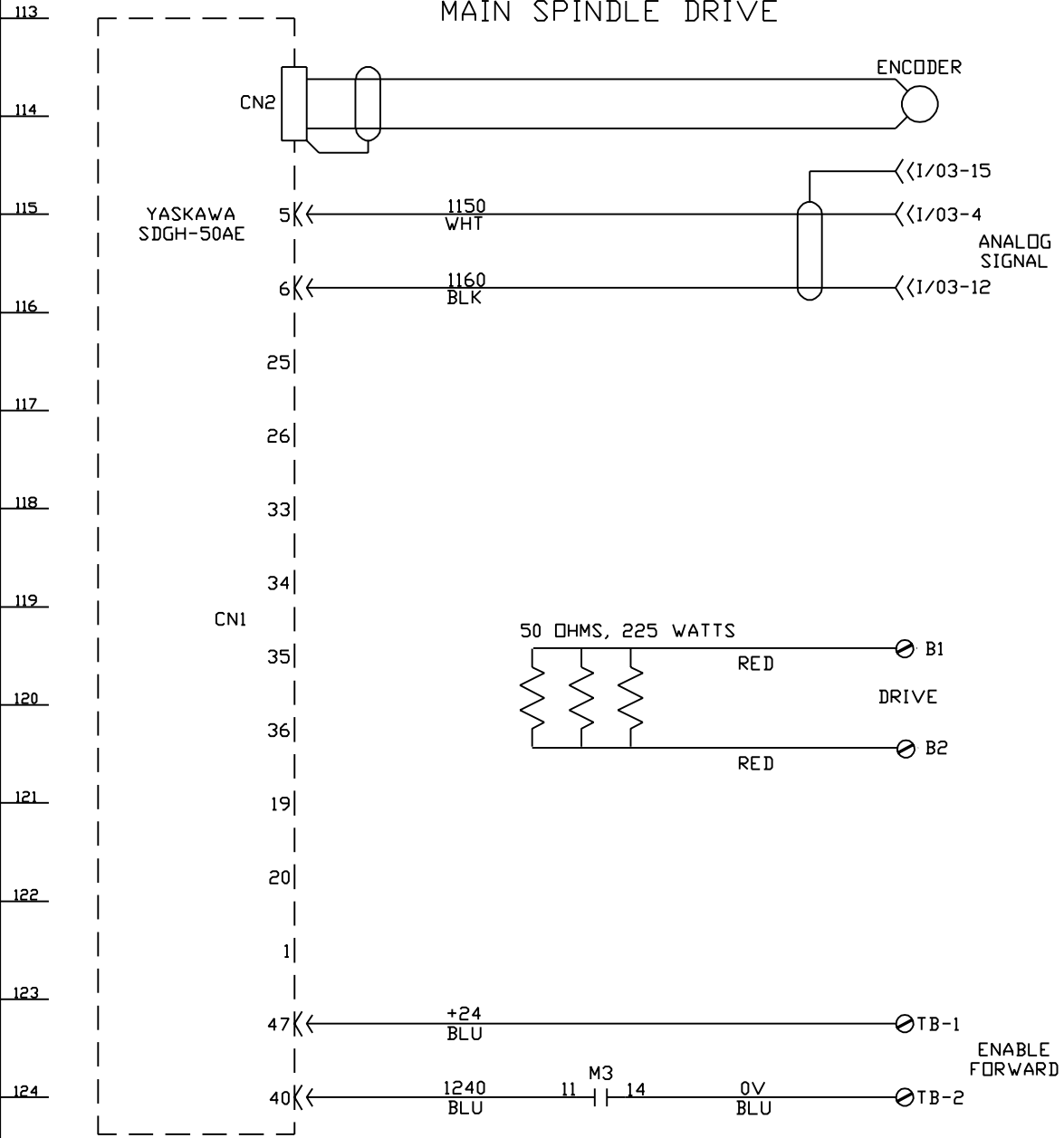
127

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	E.S.H.	11-1-00	ENG.	E.S.H.	11-1-00
CHK'D			APP'D	E.S.H.	11-1-00
TITLE			CAD DWG		SIZE
GT EXPRESS BALDOR INDEXING DRIVE					B
			SCALE: NONE		
					E10-8025-T1-B10-1
					REF. DWG. SHEET 8 OF 17

128

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

MAIN SPINDLE DRIVE

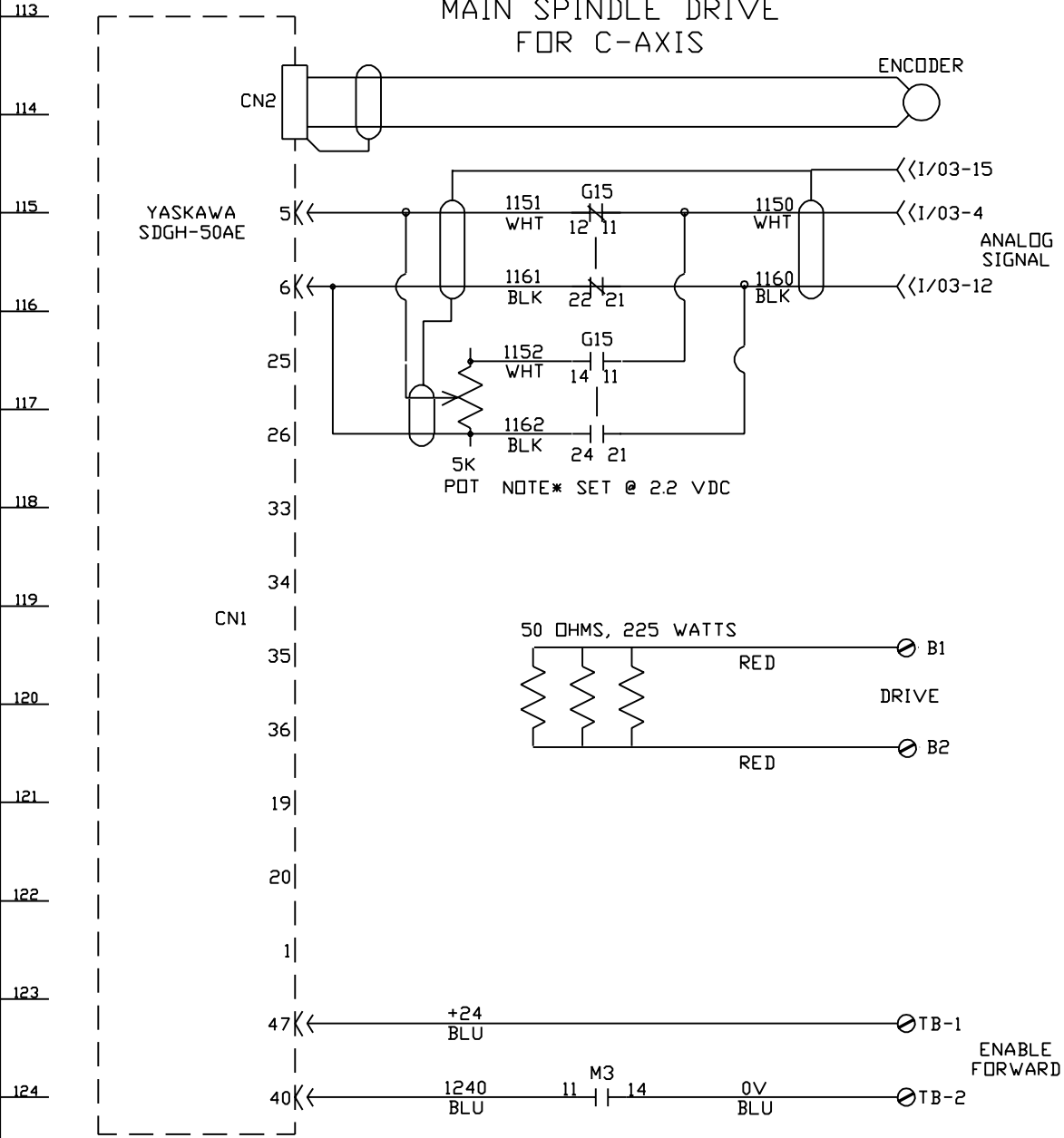


YASKAWA SERVO SDGH-50AE USED AS
INDEXING SPINDLE DRIVE

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
DRAWN	G.W.M.	8-21-00	ENG.	E.S.H.	
CHK'D			APP'D	E.S.H.	
TITLE			<div style="text-align: right;"> 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 </div>		
GT EXPRESS YASKAWA SPINDLE DRIVE			CAD DWG	SIZE B	E10-8025 TI-Y-06
			SCALE: NONE	REF. DWG: SHEET 8 OF 17	

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

MAIN SPINDLE DRIVE FOR 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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS		
DRAWN		ENG.	E.S.H.			
CHK'D		APP'D	E.S.H.	12-20-00	CAD DWG	SIZE B
TITLE				SCALE: NONE	REF. DWG. SHEET 8	
GT EXPRESS YASKAWA SPINDLE DRIVE FOR C-AXIS					E10-8025 T1-Y10	

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

129

GT-EXPRESS C-AXIS ENCODER

130

131

FAGOR ENCODER S/SW

132

SIGNAL	COLOR	15-PIN MALE D-SUB
+5V POWER SUPPLY	YELLOW	9
0V POWER SUPPLY	WHITE	11
-5V POWER SUPPLY	BLUE	13
A	GREEN	7
B	PURPLE	8
Io	BLACK	5
GND	SHIELD	15

133

134

135

136

137

138

139

140

141

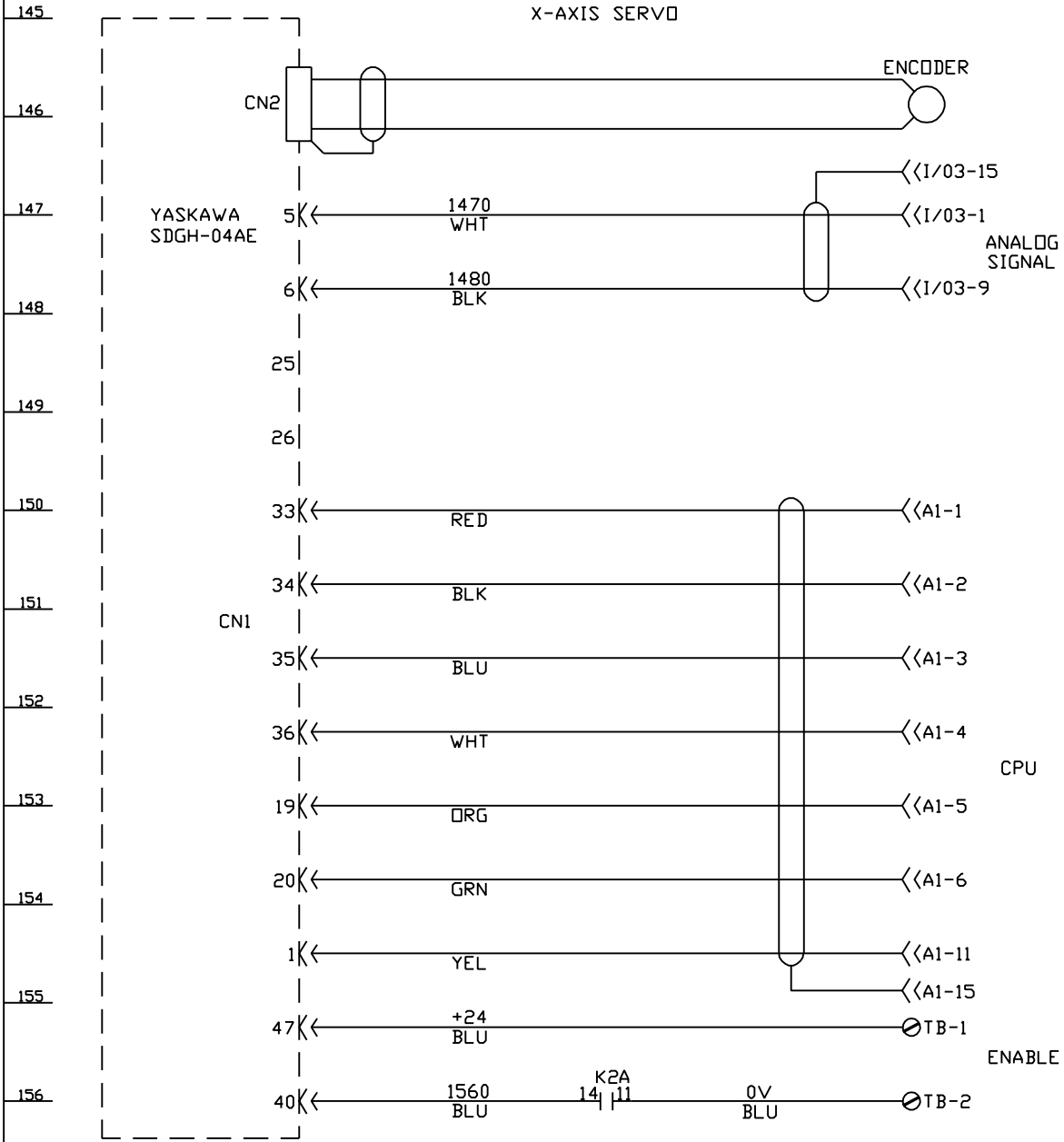
142

143

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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860
DRAWN	G.W.M.	8-22-00	ENG.	E.S.H.	7-15-00	
CHK'D			APP'D	E.S.H.	9-2-00	COMPACT MANUFACTURING SYSTEMS
TITLE				CAD DWG	SIZE	E10-8025 TI-70-C
GT EXPRESS C-AXIS ENCODER				SCALE: NONE	REF. DWG: SHEET 9 OF 17	

144

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

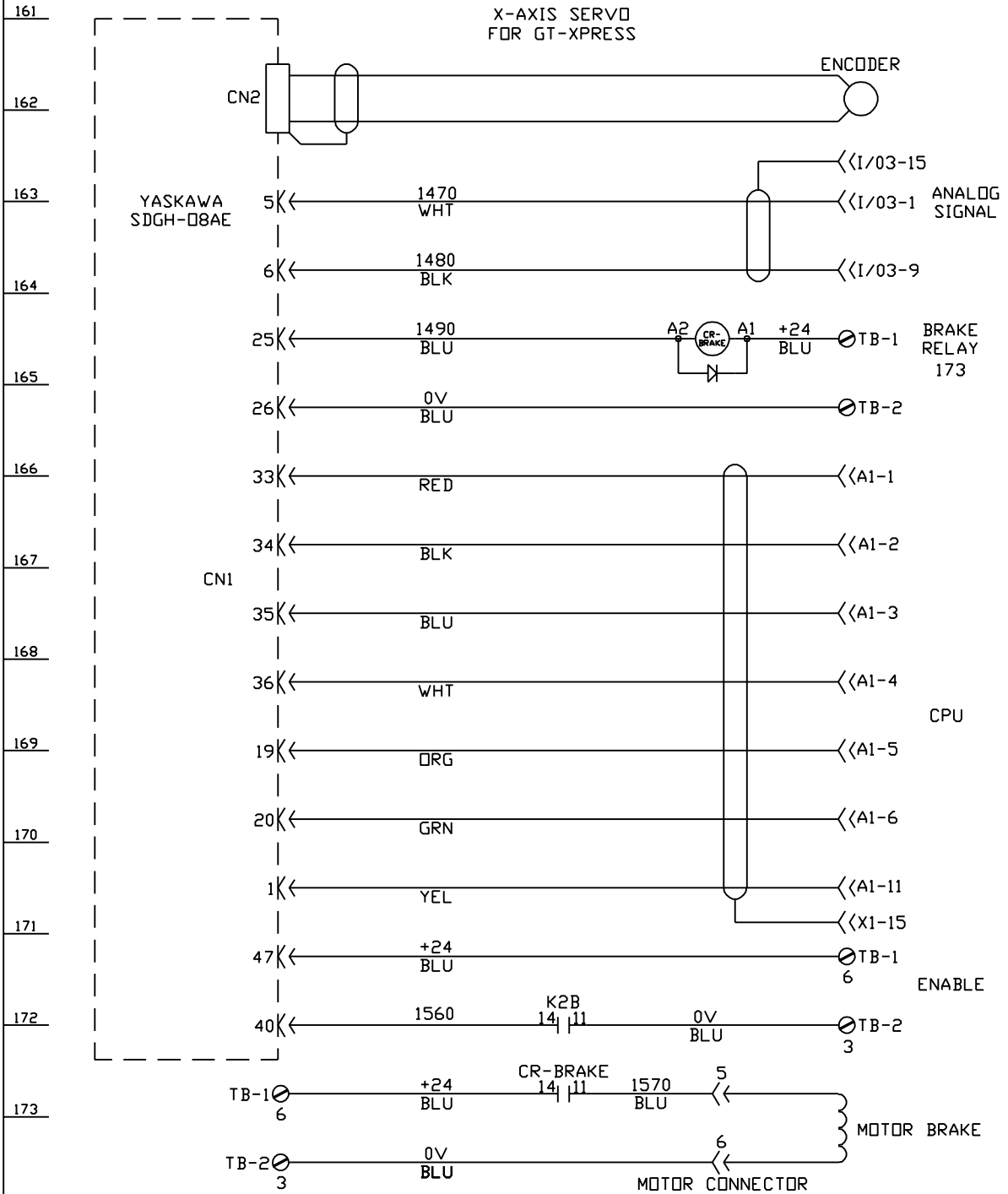


THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	8-22-00	ENG.	E.S.H.	7-15-00
CHK'D			APP'D	E.S.H.	9-2-00
TITLE			GT EXPRESS X-AXIS SERVO		
CAD DWG		SIZE	E10-8025 TI-4-07		
SCALE: NONE		B	REF. DWG. SHEET 10 OF 17		

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

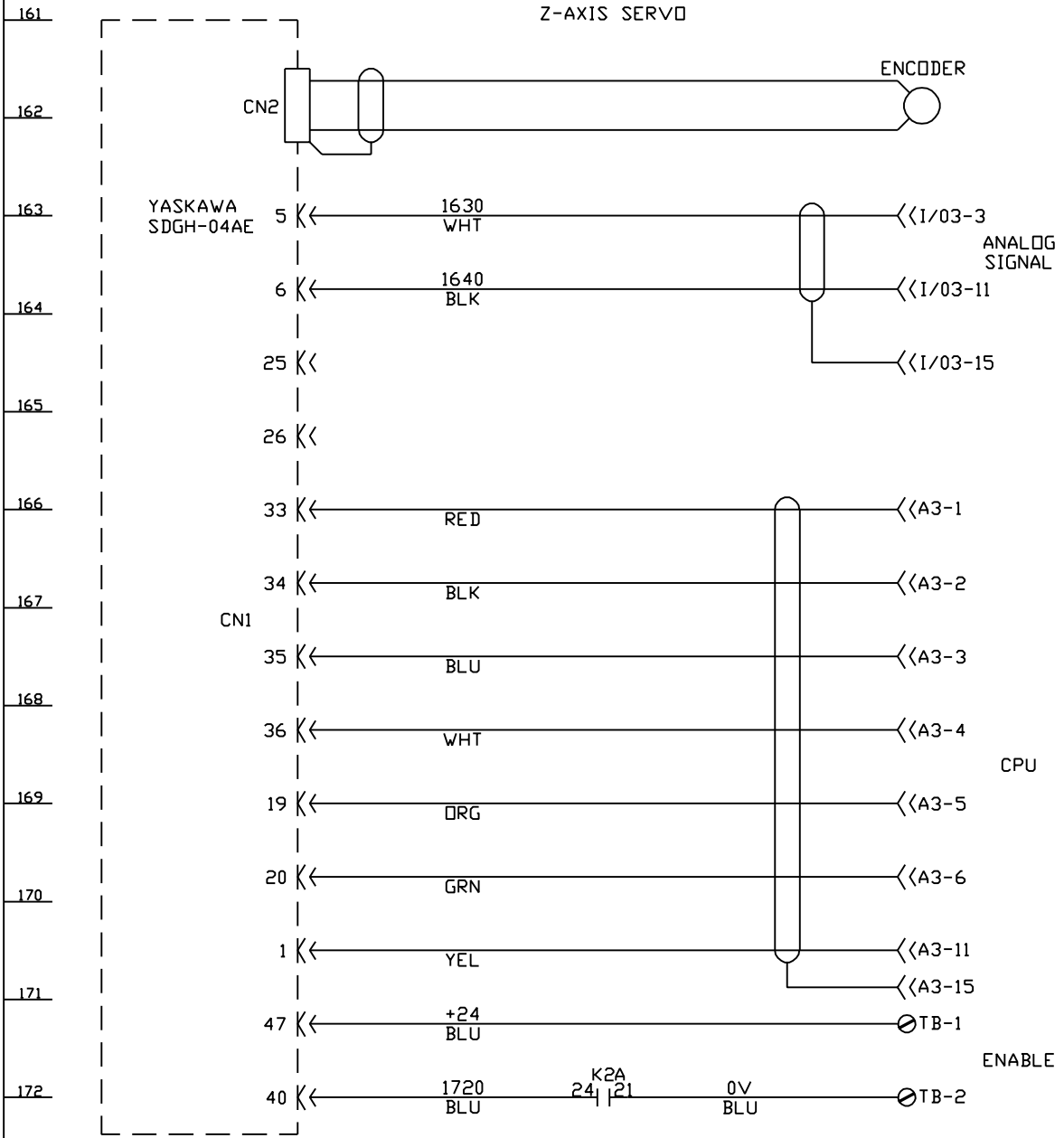
COMPACT MANUFACTURING SYSTEMS

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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
DRAWN		ENG.	E.S.H. 12-26-00		
CHK'D		APP'D	E.S.H. 12-26-00	CAD DWG	SIZE B
TITLE				SCALE: NONE	REF. DWG. SHEET 10
GT EXPRESS X-AXIS SERVO WIRING					E10-8025 TI-4-07-800w

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

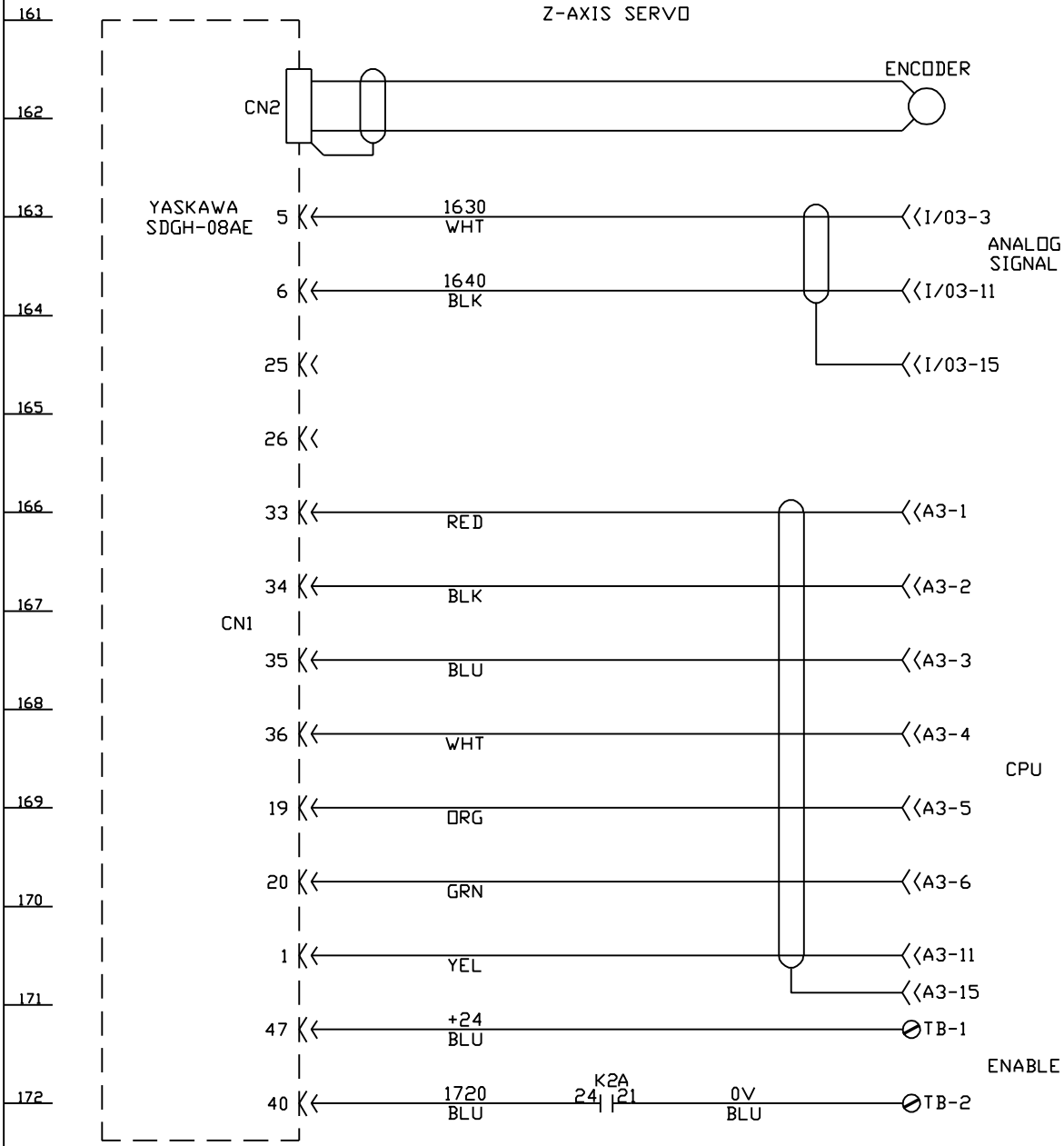


THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	8-23-00	ENG.	E.S.H.	
CHK'D			APP'D	E.S.H.	
TITLE			GT EXPRESS Z-AXIS SERVO DRIVE		
CAD DWG		SIZE B	E10-8025 TI-4-09		
SCALE: NONE		REF. DWG. SHEET 11 OF 17			

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

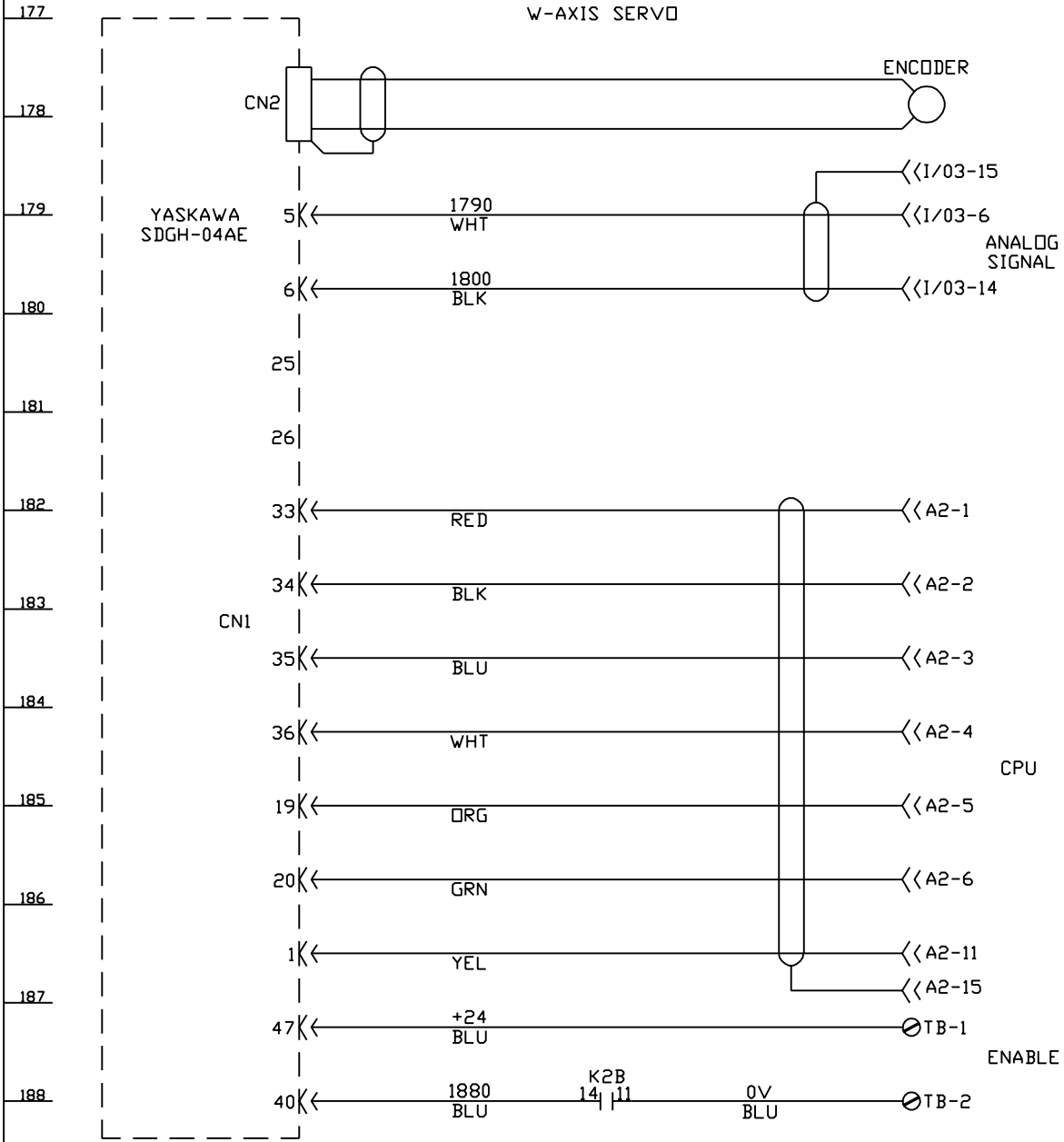
COMPACT MANUFACTURING SYSTEMS

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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN		ENG.	E.S.H.	12-26-00	COMPACT MANUFACTURING SYSTEMS
CHK'D		APP'D	E.S.H.	12-26-00	CAD DWG
TITLE				SIZE	REF. DWG.
GT EXPRESS				B	E10-8025-TI 4-09-800w
Z-AXIS SERVO DRIVE				SCALE: NONE	SHHET 11

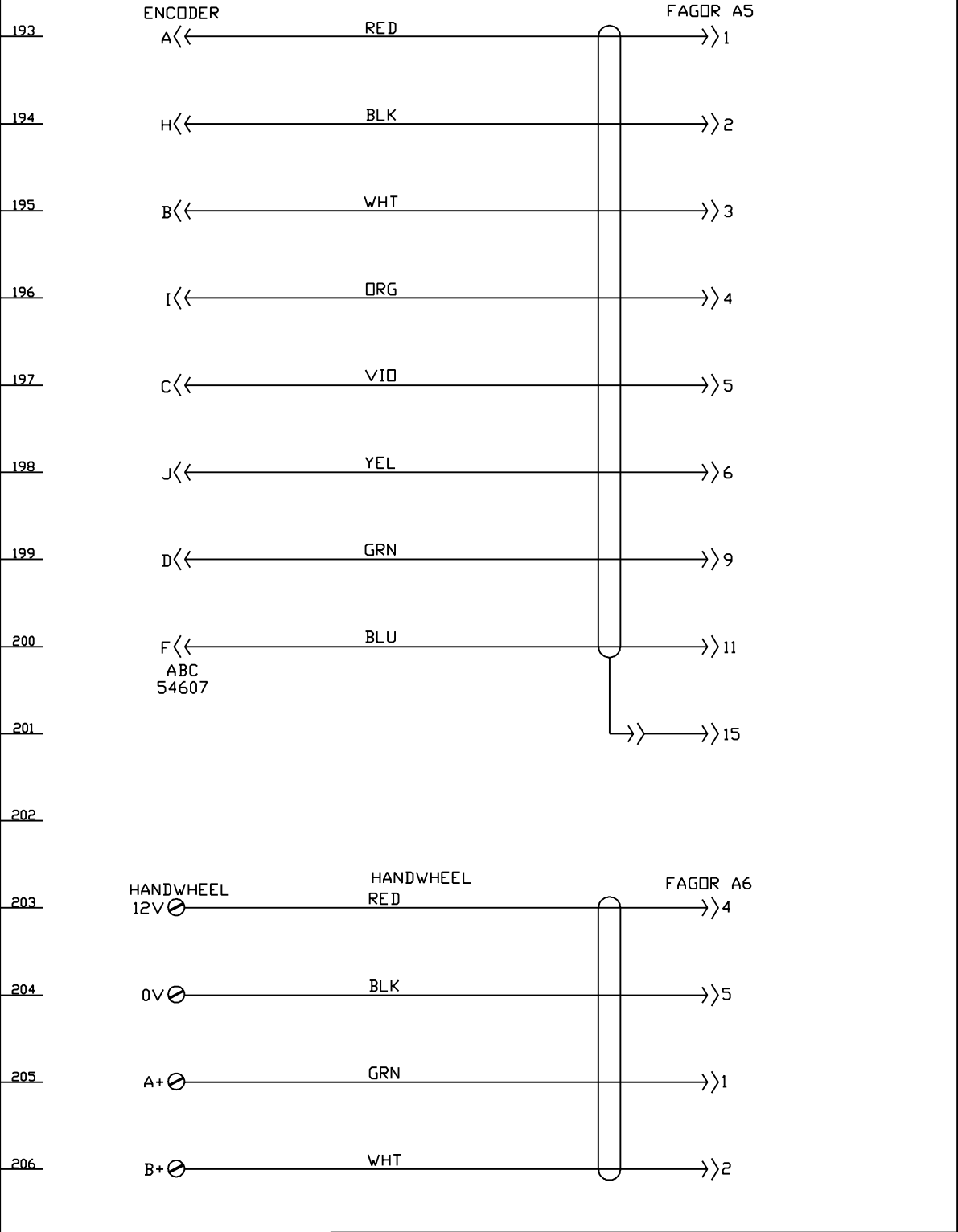
EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED



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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M. 9-8-00	ENG.	E.S.H.	COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D	E.S.H.	CAD DWG	SIZE B
TITLE				E10-8025	TI-Y-11
GT EXPRESS W-AXIS SERVO DRIVE				SCALE: NONE	REF. DWG. SHEET 12 OF 17

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

800T MAIN SPINDLE ENCODER

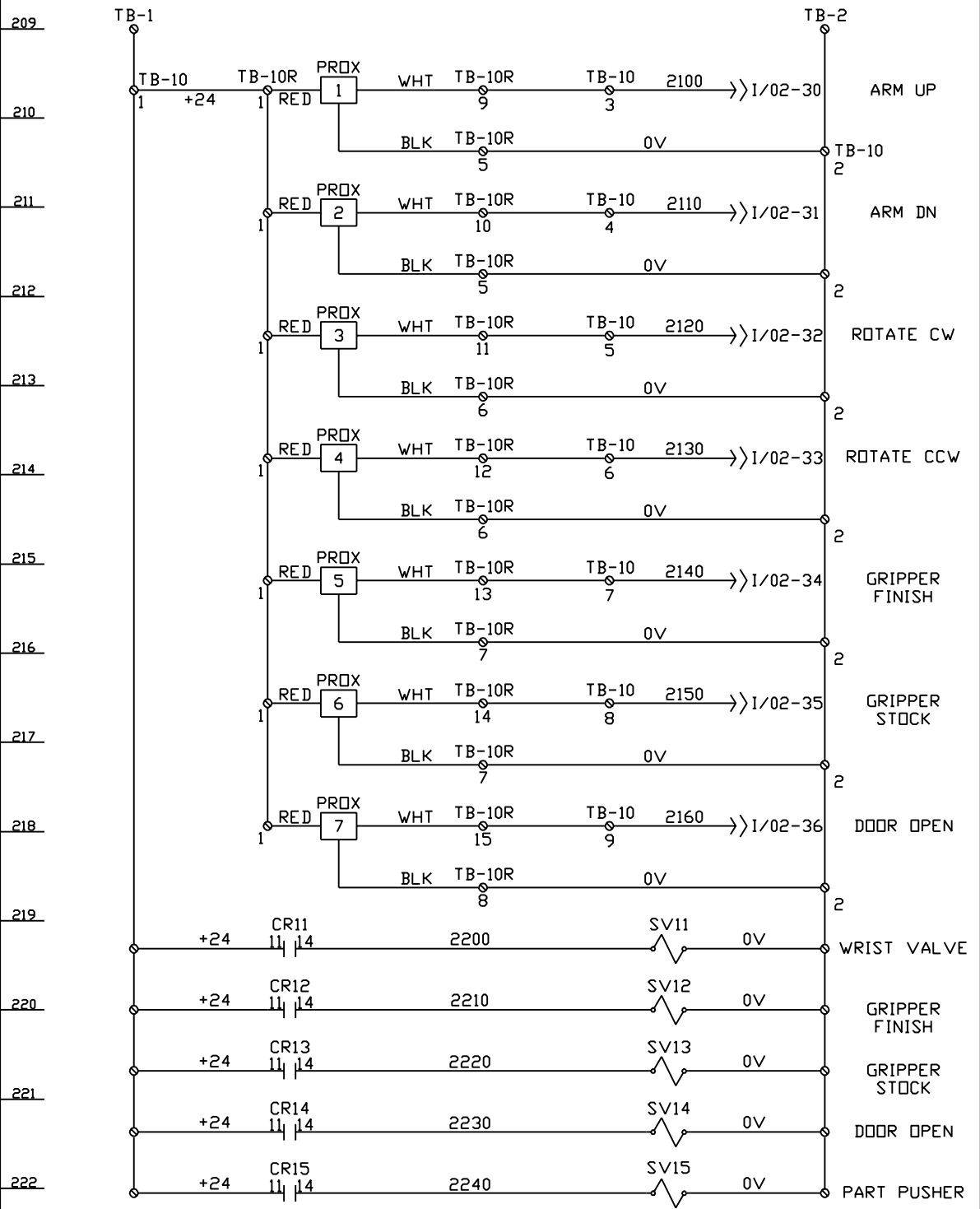


THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES							
	NAME	DATE		NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
DRAWN	G.W.M.	B-24-00	ENG.	E.S.H.			
CHK'D			APP'D	E.S.H.		CAD DWG	SIZE
TITLE						B	E10-8025 TI-71
GT EXPRESS SPINDLE ENCODER & HANDWHEEL						SCALE: NONE	REF. DWG SHEET 13 OF 17

207

208

EFFECTIVITY			REVISIONS			
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. 8-27-00	ENG.	E.S.H.		
CHK'D		APP'D	E.S.H.	CAD DWG	SIZE B
TITLE				SCALE: NONE	REF. DWG. SHEET 14 OF 17
GT EXPRESS AUTO-LOADER					E10-8025 TI-130

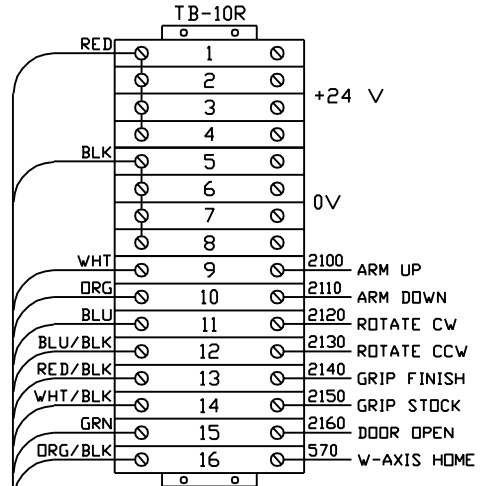
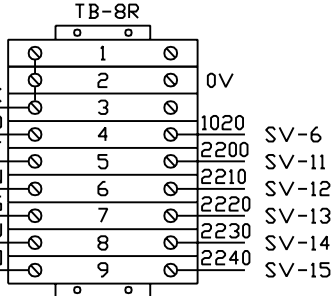
223
224

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

GT EXPRESS
REMOTE CABLE ASSEMBLY

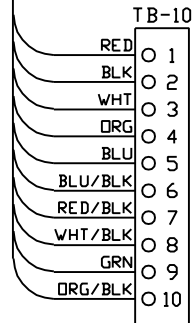
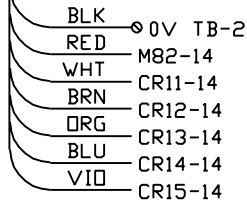
225
226
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240

AUTO LOADER
REMOTE JIC BOX



VALVE CABLE
7 FEET LONG 9 COND.
20 AWG

PROX CABLE
5 FEET LONG
15 COND. 24 AWG



PANEL

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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
DRAWN	G.W.M. 9-18-00	ENG.	E.S.H.		
CHK'D		APP'D	E.S.H.		
TITLE GT EXPRESS AUTO LOADER REMOTE CABLE				CAD DWG	SIZE B
				SCALE: NONE	REF. DWG. SHEET 15 OF 17
				E10-8025 TI-13	

EFFECTIVITY				REVISIONS		
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
#F2742		A	CHANGED JUMPERS		10-31-00	ESH

FOR SMW ONLY

242

243

244

245

246

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248

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250

251

252

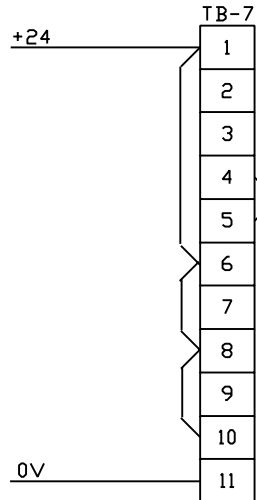
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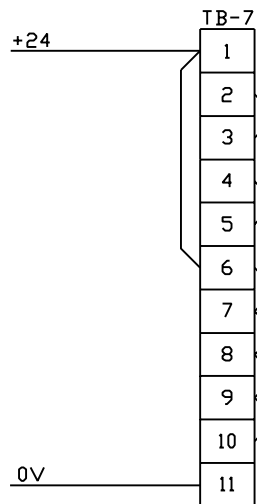
255

256

257



BARFEED JUMPERS
WHEN USING SMW
BARFEED



BARFEED JUMPERS
WHEN NOT USING
BARFEEDER

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	NAME	DATE		NAME	DATE
DRAWN	G.W.M.	8-30-00	ENG.	E.S.H.	
CHK'D			APP'D	E.S.H.	
TITLE			GT EXPRESS BARFEED JUMPERS		
CAD DWG		SIZE	E10-8025 TI-SMW-BF		
SCALE: NONE		REF. DWG. SHEET 16 OF 17			

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

FOR ALPINE ONLY

242

243

244

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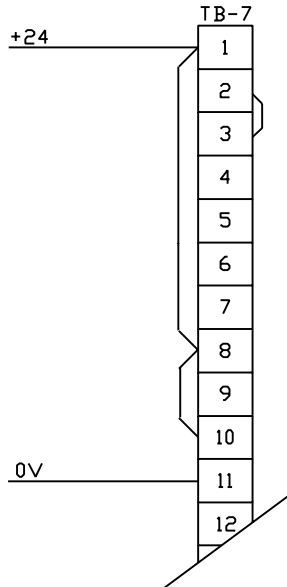
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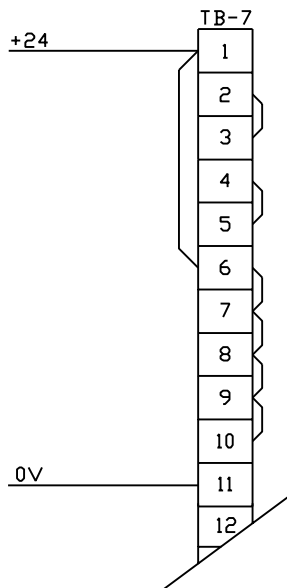
255

256

257



BARFEED JUMPERS
WHEN USING ALPINE
BARFEED



BARFEED JUMPERS
WHEN NOT USING
BARFEEDER

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											
DRAWN		NAME		DATE		NAME		DATE		CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D		E.S.H. 12-20-00		E.S.H. 12-20-00		E.S.H. 12-20-00			
TITLE						CAD DWG		SIZE		REF. DWG.	
GT EXPRESS ALPINE BARFEED JUMPERS						B		E10-8025 TI-ALP-BF		SCALE: NONE SHEET 16	

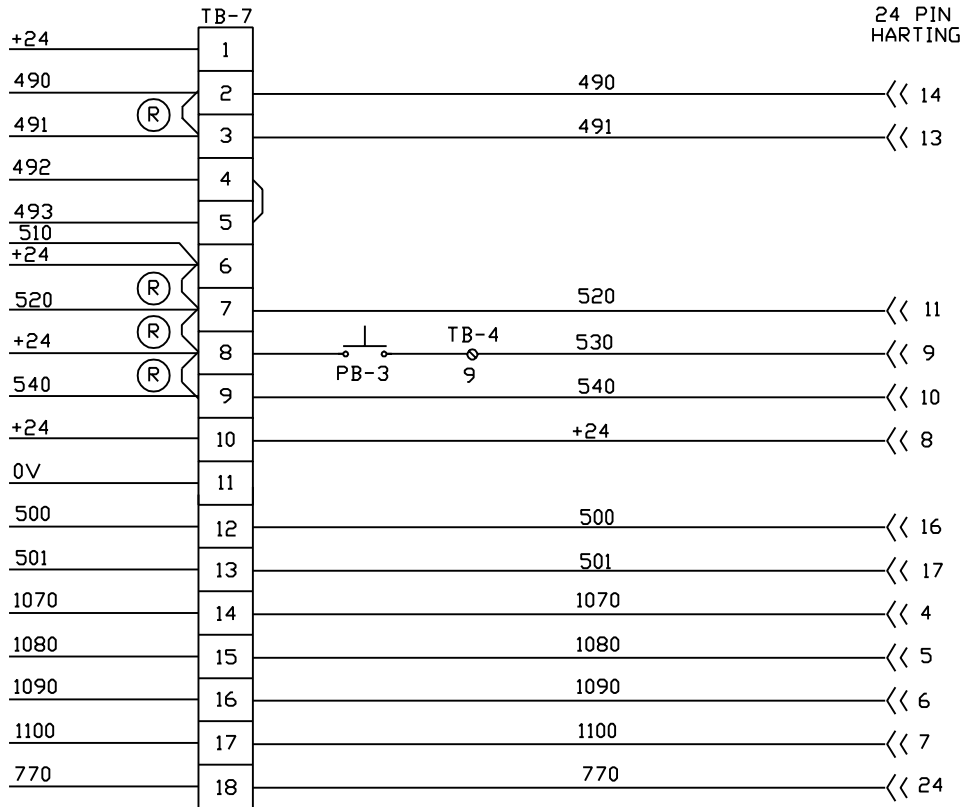
EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
#F2742		A	CHANGED JUMPERS		10-31-00	ESH

242

243

ATTENTION!

FOR IEMCA BARFEEDER



252

253

LATHE WIRING

CONNECTOR WIRING
USE 20AWG BLUE

254

REMOVE JUMPERS LABELED (R) WHEN USING BARFEEDER!!!

255

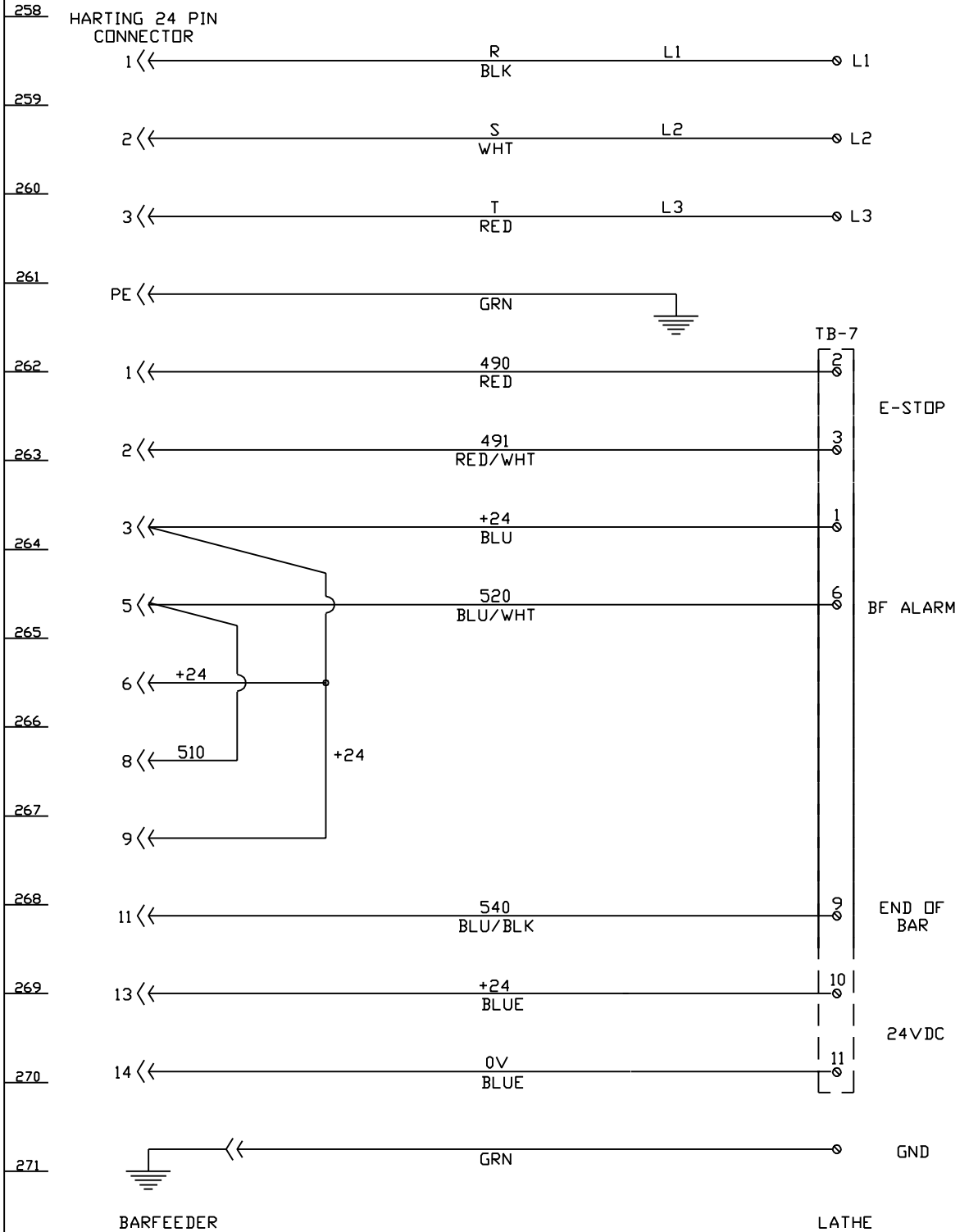
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THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
NAME	DATE	NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS	
DRAWN	G.W.M. 8-30-00	ENG.	E.S.H.		
CHK'D		APP'D	E.S.H.	CAD DWG	SIZE B
TITLE				E10-8025 TI-SMW-BF	
GT EXPRESS BARFEED JUMPERS				SCALE: NONE	REF. DWG. SHEET 16 OF 17

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EFFECTIVITY			REVISIONS			
S/N AND OP.	ZONE	REV	DESCRIPTION	E. C. NO	DATE	APPROVED
#F2742		A	CHANGED 110V TO 24VDC PINS 10,11		10-31-00	ESH

SMW BARFEED INTERFACE



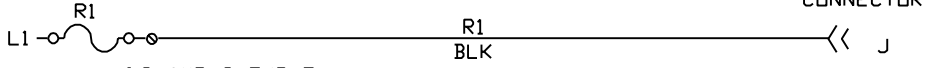
THE INFORMATION SHOWN HEREON IS PROPRIETARY DATA OF UPGRADE TECHNOLOGIES WITH ALL RIGHTS AND TITLES RESERVED AND IS NOT TO BE USED FOR PRODUCTION OF PARTS SHOWN EXCEPT BY WRITTEN PERMISSION OF UPGRADE TECHNOLOGIES					
NAME	DATE	NAME	DATE	638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN G.W.M.	9-5-00	ENG. E.S.H.			
CHK'D		APP'D	E.S.H.	COMPACT MANUFACTURING SYSTEMS	
TITLE			CAD DWG	SIZE B	E10-8025 TI-S1
GT EXPRESS SMW BARFEED INTERFACE			SCALE: NONE	REF. DWG. SHEET 17 OF 17	

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

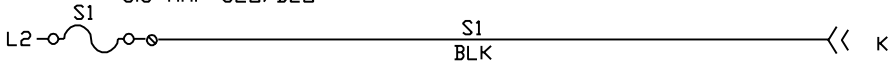
ALPINE BARFEED INTERFACE

258

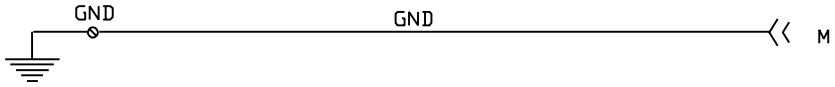
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260



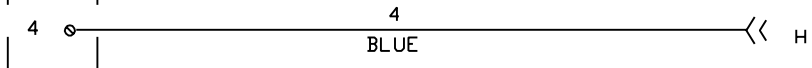
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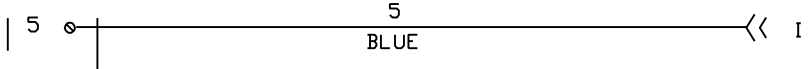
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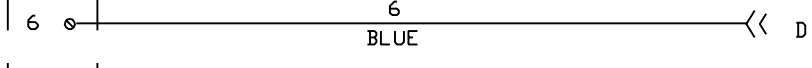
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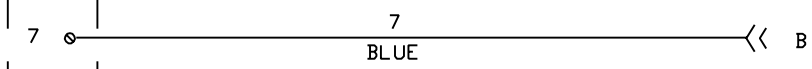
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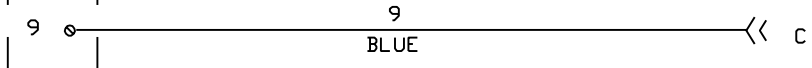
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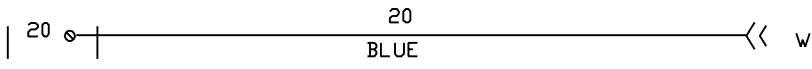
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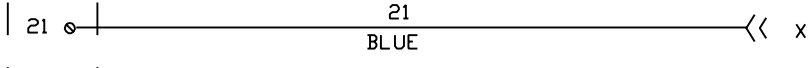
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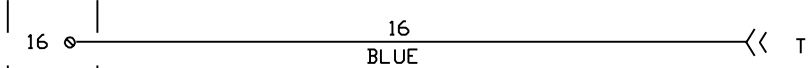
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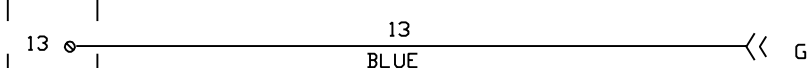
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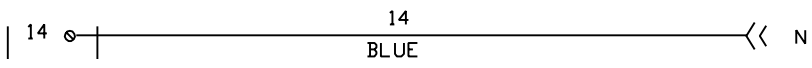
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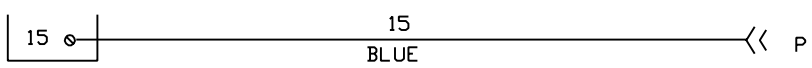
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272



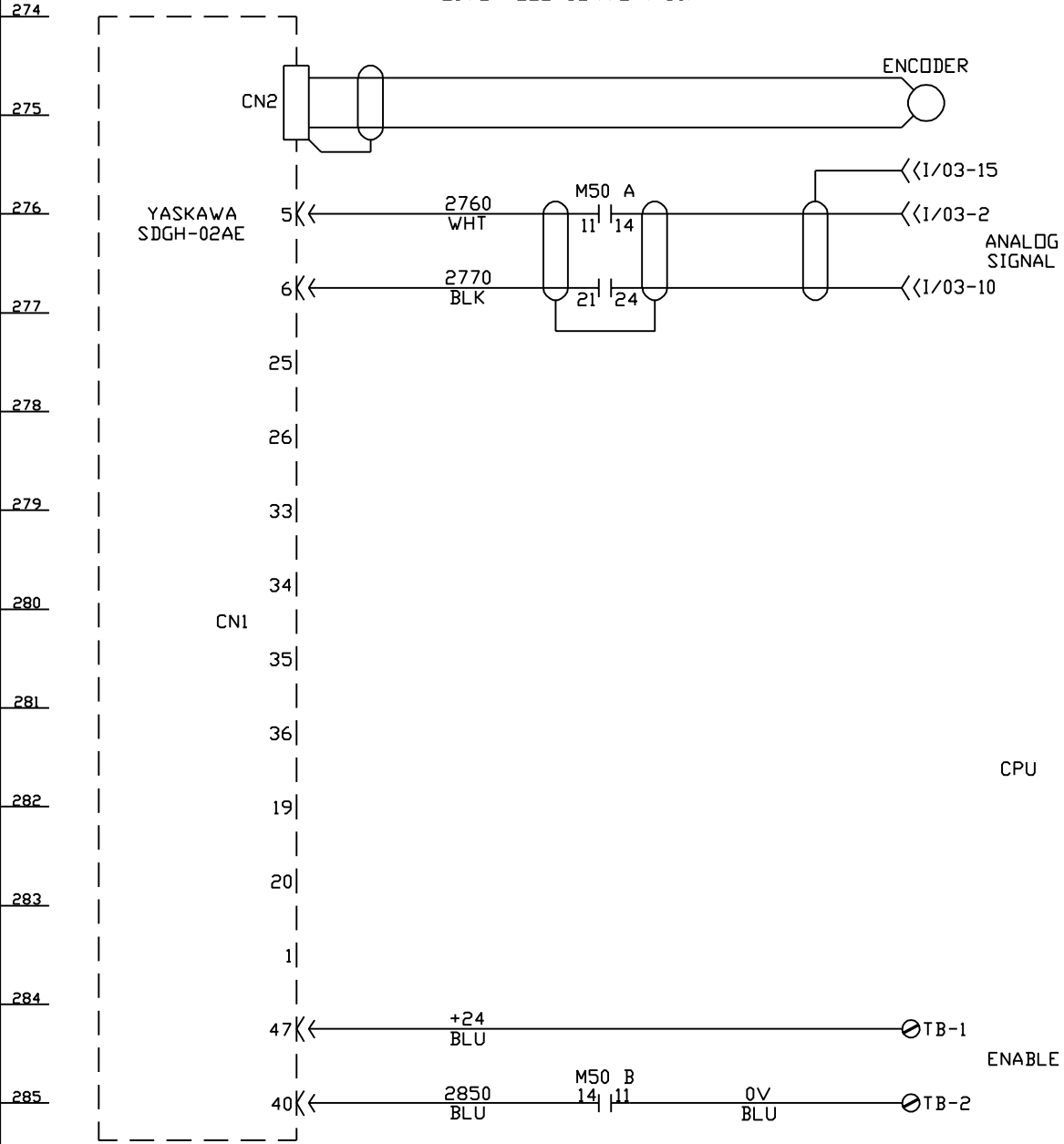
273



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	NAME	DATE		NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS
DRAWN			ENG.	E.S.H.	12-20-00	
CHK'D			APP'D	E.S.H.	12-20-00	CAD DWG
TITLE				SIZE	E10-8025 T1-S2	
GT EXPRESS ALPINE BARFEED INTERFACE				B	REF. DWG. SHEET 17	
SCALE: NONE						

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

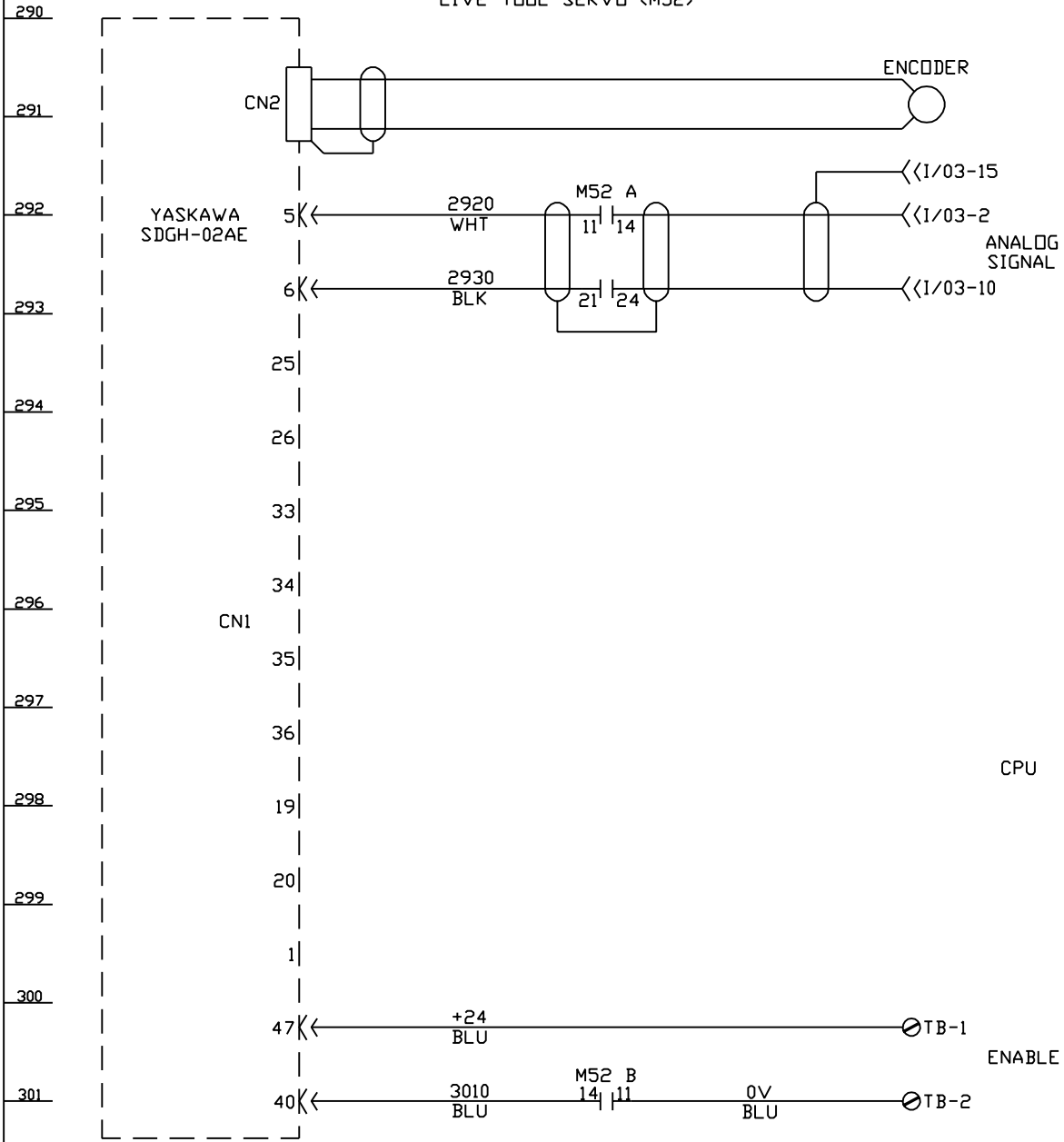
LIVE TOOL SERVO (M50)



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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M. 10-24-00	ENG.	E.S.H. 10-23-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D	E.S.H.	CAD DWG	SIZE B
TITLE				SCALE: NONE	REF. DWG. SHEET 18 OF 19
GT EXPRESS LIVE TOOL SERVO (M50)				E10-8025 TI-4-LTS-1	

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

LIVE TOOL SERVO (M52)



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	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860	
DRAWN	G.W.M. 10-24-00	ENG.	E.S.H. 10-23-00	COMPACT MANUFACTURING SYSTEMS	
CHK'D		APP'D	E.S.H.	CAD DWG	SIZE B
TITLE				SCALE: NONE	REF. DWG. SHEET 19 OF 19
GT EXPRESS LIVE TOOL SERVO (M52)					E10-8025 TI-4-LTS-2

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

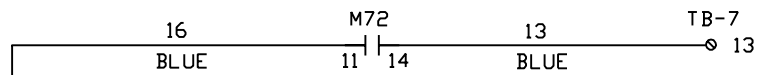
306

ALPINE RELAY WIRING

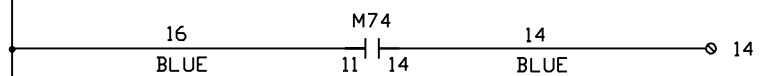
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308

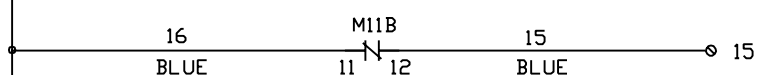
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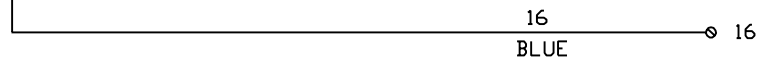
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	NAME	DATE		NAME	DATE	CMS 638 N. POINSETTA SANTA ANA, CA FAX (714) 664-0860 COMPACT MANUFACTURING SYSTEMS
DRAWN			ENG.	E.S.H.	12-20-00	
CHK'D			APP'D	E.S.H.	12-20-00	CAD DWG
TITLE				SIZE	E10-8025 TI-04alp	
GT EXPRESS ALPINE RELAY WIRING				B	REF. DWG. SHEET 20	
				SCALE: NONE		

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