MTA WIRING DIAGRAM

AUTOLOADER OPTION

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SYSTEM BLOCK DIAGRAM, PAGE 1

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SYSTEM BLOCK DIAGRAM, PAGE 2

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PAGE 4_SAFETY CIRCUIT

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EMERGENCY STOP SWITCH
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MECHANICAL SAFETY INTERLOCK
DRUM AMP SAFETY INTERLOCK
DRUM BRAKE SAFETY INTERLOCK
SERVICE INTERLOCK OVERRIDE SWITCH
SERVICE INTERLOCK OVERRIDE INDICATORS

SAFETY CIRCUIT CONTINUED
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SAFETY DOOR LOOP
EMERGENCY STOP SWITCH
WRITE LASER SAFETY INTERLOCK
MECHANICAL SAFETY INTERLOCK
DRUM AMP SAFETY INTERLOCK
DRUM BRAKE SAFETY INTERLOCK
SERVICE INTERLOCK OVERRIDE SWITCH
SERVICE INTERLOCK OVERRIDE INDICATORS

POWER ENTRY WIRING
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SERVICE INTERLOCK OVERRIDE SWITCH
SERVICE INTERLOCK OVERRIDE INDICATORS
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EMERGENCY STOP SWITCH
MECHANICAL SAFETY INTERLOCK
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SERVICE INTERLOCK OVERRIDE SWITCH
SERVICE INTERLOCK OVERRIDE INDICATORS
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DRUM MOTOR
DRUM RESISTIVE BRAKE

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UNLOAD TABLE

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PAGE 19_MCU SAFETY INTERFACE BOARD

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SSR MODULE

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PROCESSOR INTERFACE BOARD
PAGE22_PROCESSOR INTERFACE BOARD

PROCESSOR INTERFACE BOARD

MANTA DRUM VACUUM PUMP
PAGE 23_MANTA DRUM VACUUM PUMP

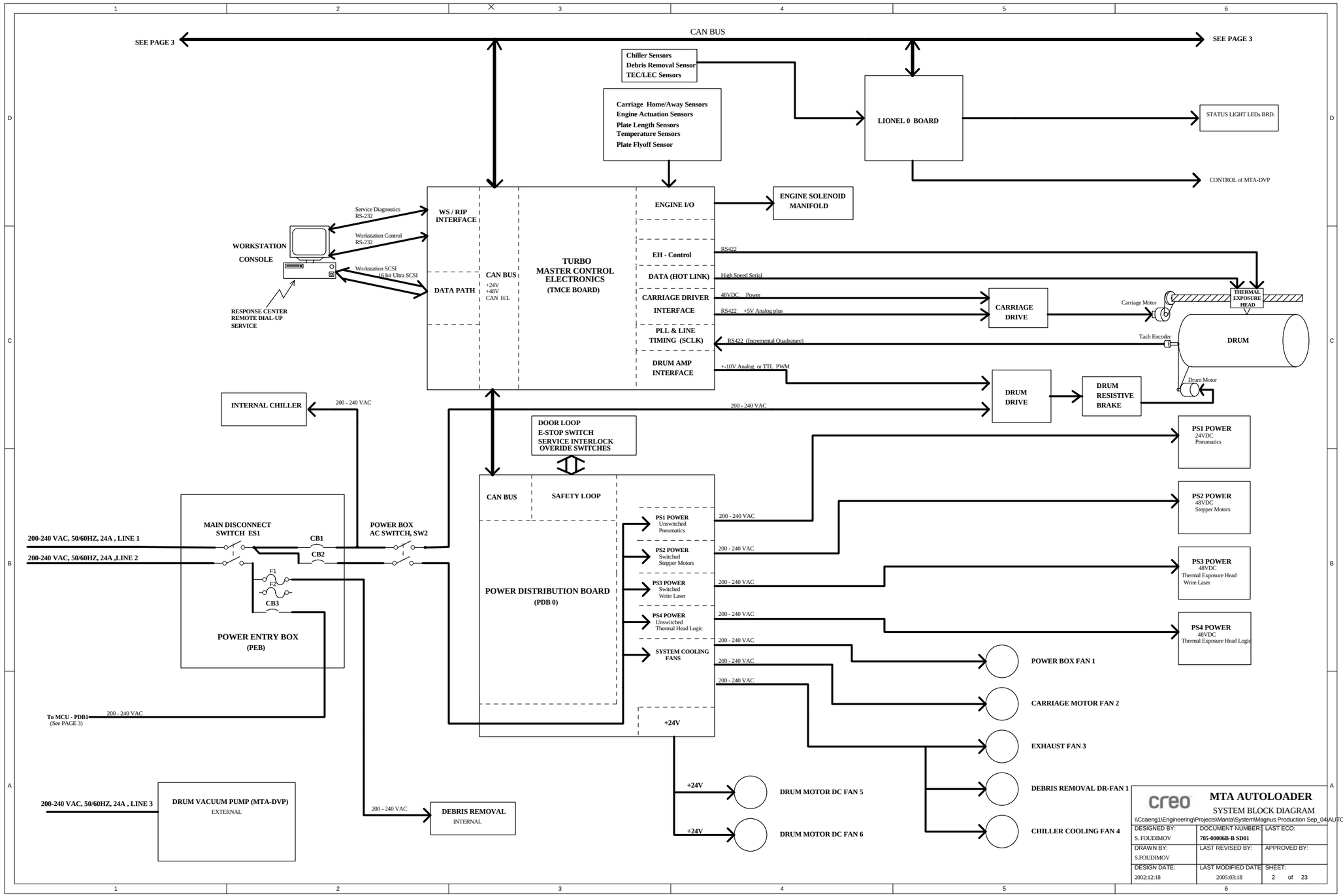
EXTERNAL DRUM VACUUM PUMP

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MTA AUTOLOADER
SYSTEM WIRING DIAGRAM

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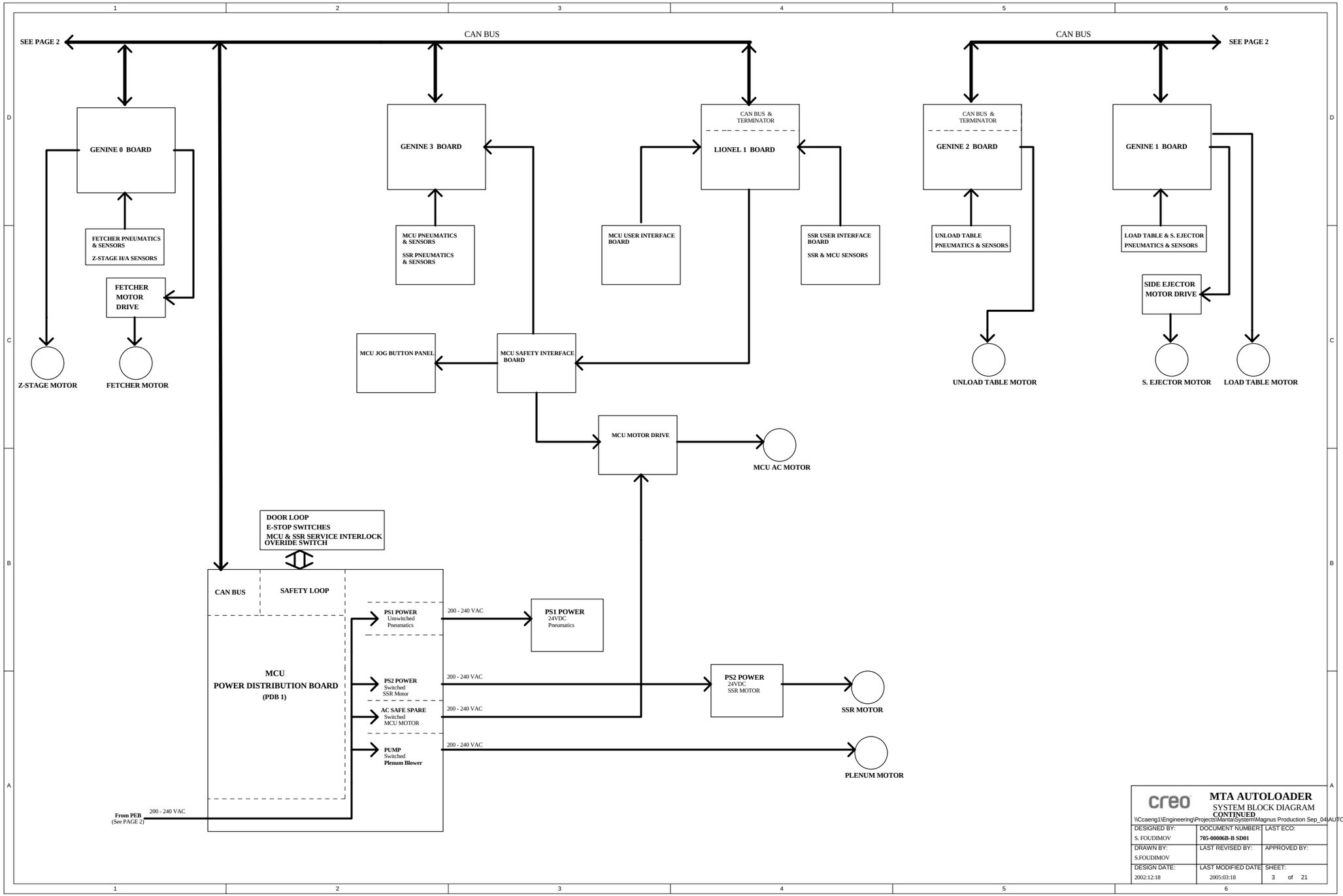
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MTA AUTOLOADER

SYSTEM BLOCK DIAGRAM

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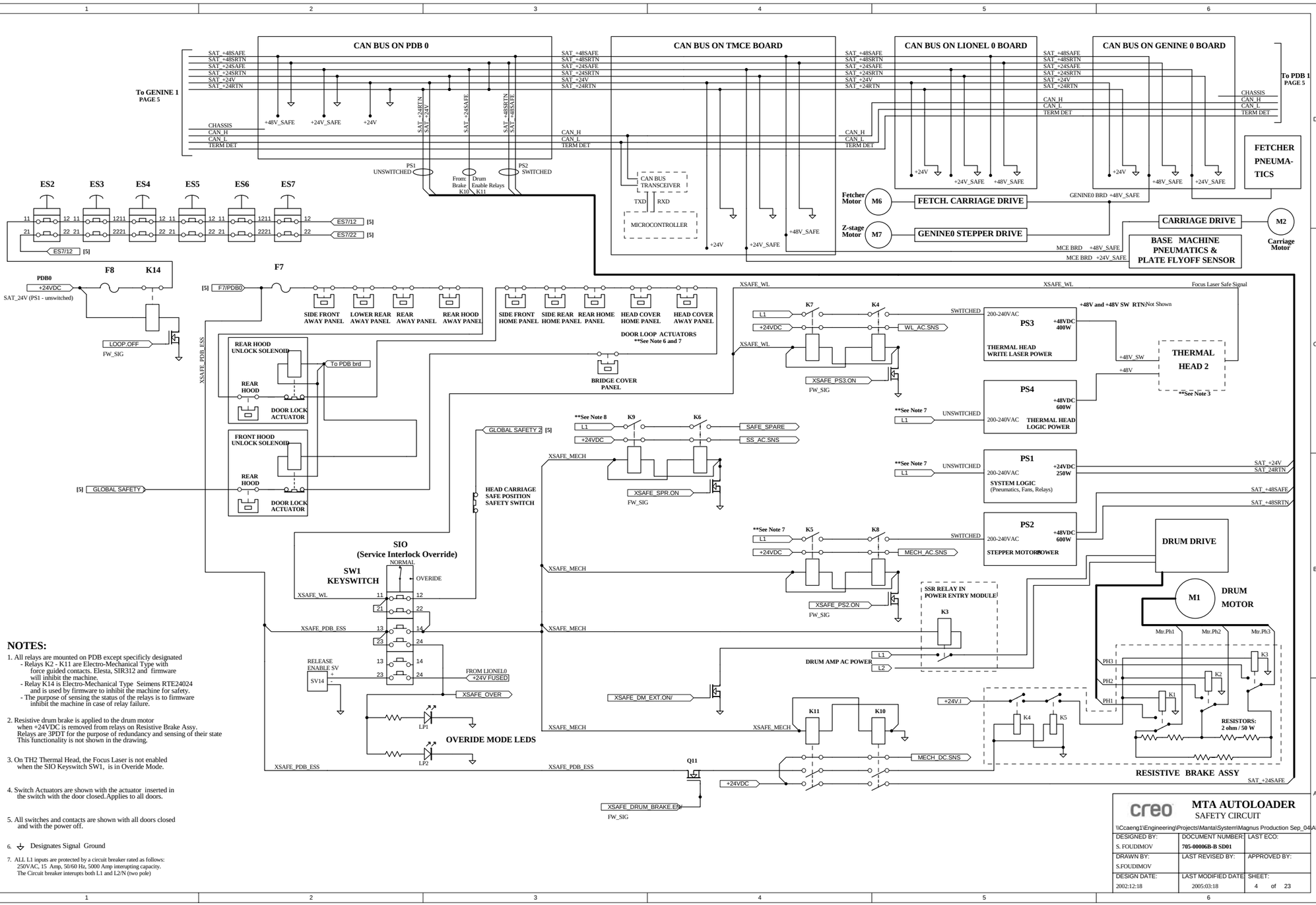


MTA AUTOLOADER

SYSTEM BLOCK DIAGRAM
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NOTES:

1. All relays are mounted on PDB except specificly designated
   - Relays K2 - K11 are Electro-Mechanical Type with force guided contacts. Elesta, SIR312 and firmware will inhibit the machine.
   - Relay K14 is Electro-Mechanical Type Seimens RTE24024 and is used by firmware to inhibit the machine for safety.
   - The purpose of sensing the status of the relays is to firmware inhibit the machine in case of relay failure.
2. Resistive drum brake is applied to the drum motor when +24VDC is removed from relays on Resistive Brake Assy. Relays are 3PDT for the purpose of redundancy and sensing of their state This functionality is not shown in the drawing.
3. On TH2 Thermal Head, the Focus Laser is not enabled when the SIO Keyswitch SW1, is in Overide Mode.
4. Switch Actuators are shown with the actuator inserted in the switch with the door closed.Applies to all doors.
5. All switches and contacts are shown with all doors closed and with the power off.
6. ⏚ Designates Signal Ground
7. ALL L1 inputs are protected by a circuit breaker rated as follows: 250VAC, 15 Amp, 50/60 Hz, 5000 Amp interupting capacity. The Circuit breaker interupts both L1 and L2/N (two pole)

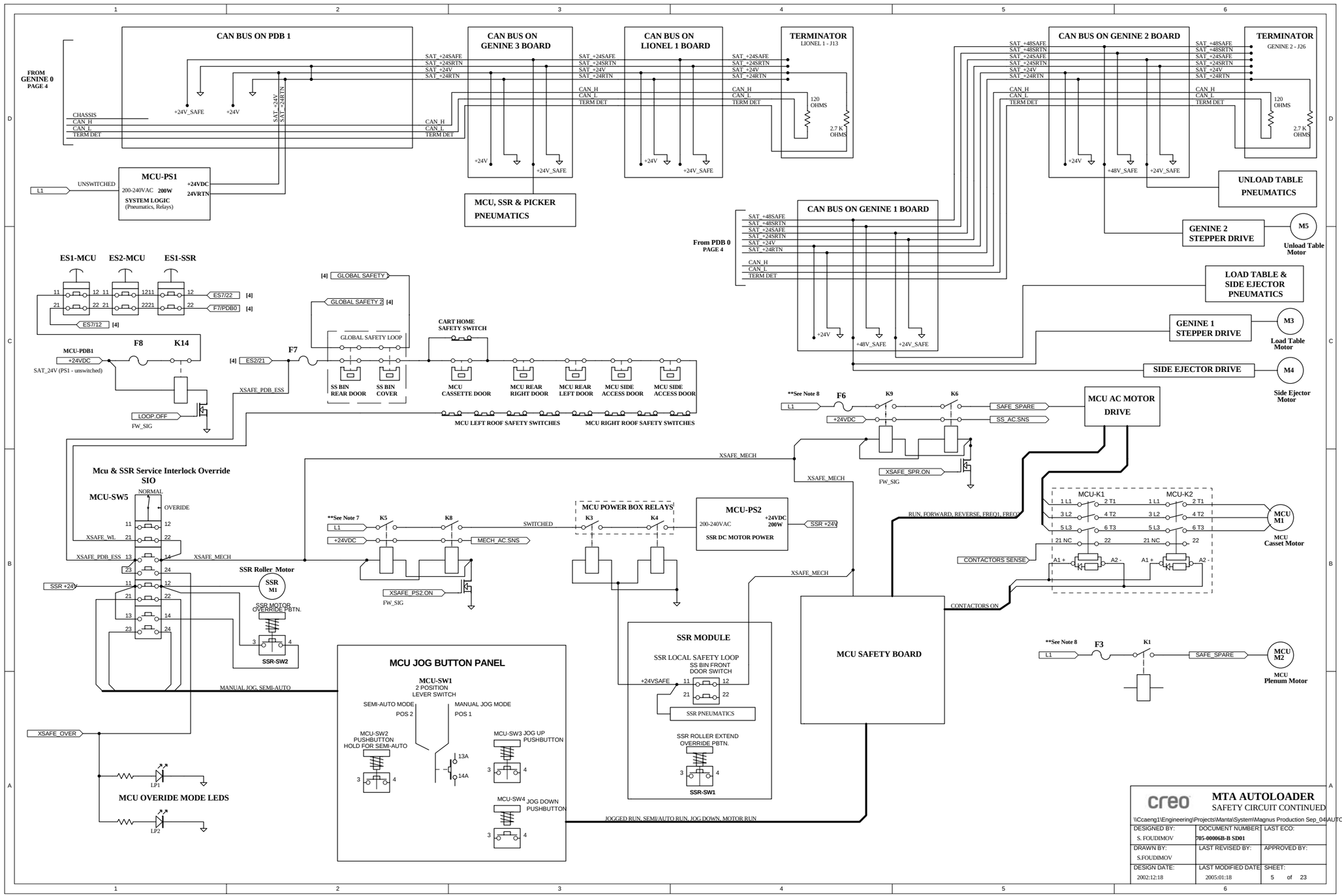
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MTA AUTOLOADER

SAFETY CIRCUIT

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MTA AUTOLOADER
SAFETY CIRCUIT CONTINUED

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POWER ENTRY BOX (PEB) 11-1064A

200-240 VAC, 50/60HZ, 24A , LINE 1

AC Input 1 Plug — L1 BRN 12, L2/N BLU 12, GND G/Y 12

10-9088A (or 220-00437A)

LF1 FILT30A — P, E, N, P', N' — **13-5176**

GND G/Y 12 — **10-9089A** — M5 BOLT ENGINE; M5 BOLT CHASSIS; M5 BOLT CHASSIS; M5 STUD PEB

GND G/Y 12 — 10-9092A — M5 STUD PEB; GND G/Y 12 — M5 STUD PEB

BRN12 — **10-9090A** — **10-5217A**

BLU 12 — 10-9090A — 10-5218A

200-240 VAC, 50/60HZ, 24A , LINE 2

AC Input 2 Plug — L1 BRN 12, L2/N BLU 12, GND G/Y 12

10-9088A (or 220-00437A)

LF2 FILT30A — P, E, N, P', N' — **13-5176**

BRN12 — BLU12

GND G/Y 12 — 10-9092A — M5 STUD PEB; GND G/Y 12 — M5 STUD PEB

CB1 CIRBKR 15A — BRN 12 12 — 11 BRN 14 — BLU 12 22 — 12 BLU 14 — 15-3085

TB1 — 10-5221A

10-5222A — BRN 14 — WHT 14

K1 — 15-3249 RELAY,25A,SOLID STATE — BLK-22 — RED-22

To K2 **[6]** K2 CONTROL

10-9073A — J1 1 2 3 4 — MATE 1X4 — WHT 22, GRN 22, RED 22, BLK 22

10-9068A — To PDB J37 — HEAD COOLER & BLOWER ON/OFF **[7]**

SELV

10-9084A — L1, L2/N, GND — G/Y 14 — M5 STUD PEB

AC POWER to CHILLER — HEAD COOLER AC POWER **[13]**

ES1 EMRGENCY STOP & MAIN SWITCH 25A — **15-3525**

220-00042A — **J3** 1 2 — MATE 1X2 — RED 22, BLK 22

220-00044A — To PDB J44 — DRUM DRIVE AC ON/OFF **[7]**

SELV

K3 — **15-3249** RELAY,25A,SOLID STATE — BLK 22 — RED 22

220-00049A — BRN14 — BRN 14 — BLU 14

10-9075A — L1, L2/N, GND — G/Y 14 — M5 STUD PEB

To SW2-1,3 in POWER BOX — DDRIVE AC POWER - SW2 **[7]**

CB2 CIRBKR 15A — BRN 12 12 — 11 BRN 14 — BLU 12 22 — 21 BLU 14 — 15-3085

10-9077A — L1, L2/N, GND — G/Y 14 — M5 STUD PEB

To SW2-5,7 in POWER BOX — PDB AC POWER - SW2 **[7]**

220-00833A

F1, F2: 10A, 600V, BUSSMANN, Type LP-CC for 60 Hz
F1, F2: 12A, 600V, BUSSMANN, Type LP-CC for 50 Hz
(F1 & F2 replaced the former CB3)
182-00018 for 60 Hz
182-00016 for 50 Hz

F1, F2 FUSEHOLDER, 182-00015

10-9073A — K2 CONTROL **[6]** — BLK 22, RED 22 — K2 — 15-3249 RELAY,25A,SOLID STATE — SELV

220-00834A — BRN 14 — BLK 14 — WHT 14

10-9086B — L1, L2/N, GND — G/Y 14 — M5 STUD PEB

AC POWER to DEBRIS REMOVAL MOTOR — M3 DEBRIS BLOWER AC POWER **[13]**

10-5220A

CB3 (former CB4) CIRBKR 15A — BRN 12 12 — 11 BRN 14 — BLU 12 22 — 21 BLU 14 — 15-3085

220-00352A — L1, L2/N, GND — G/Y 14 — M5 STUD PEB

AC POWER to MCU — MCU AC POWER **[17]**

SW1 NORMAL — (Shown in normal position) OVERIDE

SIO KEYSWITCH (2 POS) 15-3334

15-3067 DUAL NC Contact Block

15-3238 DUAL NO Contact Block

15-3238 DUAL NO Contact Block (For MCU option only)

OVERRIDE MODE LEDS — LP1, LP2 — **10-3721A**, **10-3721A**

+24V RED 22, RTN BLK 22, +24V RED 22, RTN BLK 22

XSAFE_WL, XSAFE_ESS, MCU_OVER, MCU_SAFE, XSAFE_OVER, XSAFE_MECH

YEL 22, BLK 22, RED 22, WHT 22, BLU 22, ORG 22

+24V WHT 22, RTN GRN 22

BRN 22 DOOR LOOP

MINIFIT 2X6 — **10-9083A** — **J2** 1 2 3 4 5 6 7 8 9 10 11 12 — **10-9091B**

RED 22, BRN 22, WHT 22, GRN 22, BLU 22, BLK 22, BLU 22, ORG 22

RED 22, BLK 22 — To RELEASE SV ADAPTOR — RELEASE ADPT 1 **[8]**

To PDB J34, J35, J41 — OVERRIDE SW & LED **[7]**

SELV

MTA AUTOLOADER
POWER ENTRY BOX
WIRING DIAGRAM

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POWER DISTRIBUTION BOARD 0 (PDB 0)

10-4112 H

BOARD ADDRESS = 0X10h

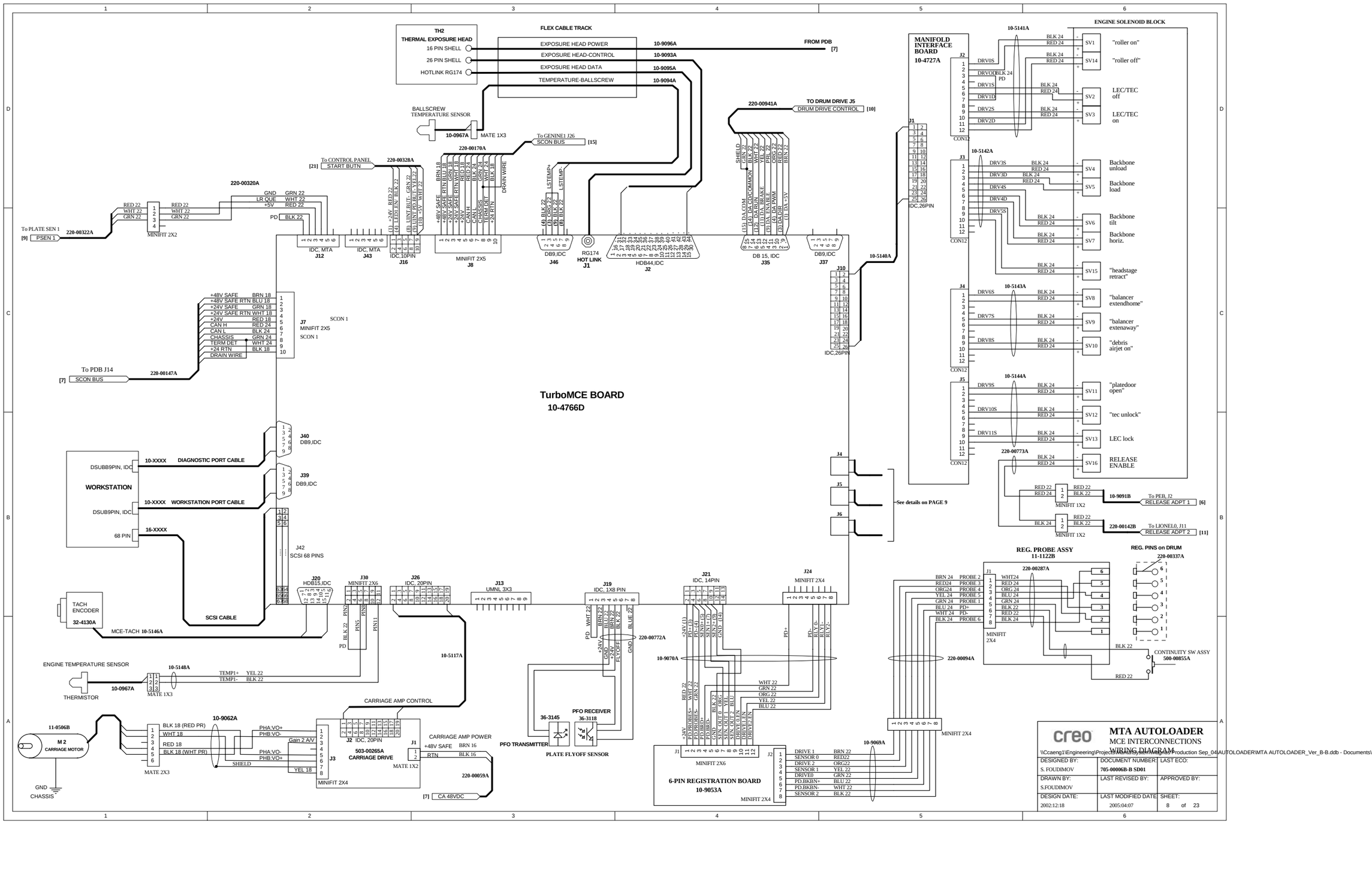
MTA AUTOLOADER

PDB BOARD CONNECTIONS

WIRING DIAGRAM

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TH2
THERMAL EXPOSURE HEAD
16 PIN SHELL
26 PIN SHELL
HOTLINK RG174
FLEX CABLE TRACK
EXPOSURE HEAD POWER
EXPOSURE HEAD-CONTROL
EXPOSURE HEAD DATA
TEMPERATURE-BALLSCREW
10-9096A
10-9093A
10-9095A
10-9094A
FROM PDB [7]
BALLSCREW TEMPERATURE SENSOR
10-0967A
MATE 1X3
To GENINE1 J26
SCON BUS [15]
220-00941A
TO DRUM DRIVE J5
DRUM DRIVE CONTROL [10]
220-00170A
220-00328A
To CONTROL PANEL [21]
START BUTN
220-00320A
To PLATE SEN 1 [9]
PSEN 1
220-00322A
MINIFIT 2X2
IDC, MTA J12
IDC, MTA J43
IDC,10PIN J16
MINIFIT 2X5 J8
DB9,IDC J46
RG174 HOT LINK J1
HDB44,IDC J2
DB 15, IDC J35
DB9,IDC J37
10-5140A
MANIFOLD INTERFACE BOARD 10-4727A
IDC,26PIN
ENGINE SOLENOID BLOCK
10-5141A
10-5142A
10-5143A
10-5144A
"roller on"
"roller off"
LEC/TEC off
LEC/TEC on
Backbone unload
Backbone load
Backbone tilt
Backbone horiz.
"headstage retract"
"balancer extendhome"
"balancer extenaway"
"debris airjet on"
"platedoor open"
"tec unlock"
LEC lock
RELEASE ENABLE
CON12
220-00773A
10-9091B
To PEB, J2
RELEASE ADPT 1 [6]
220-00142B
To LIONEL0, J11
RELEASE ADPT 2 [11]
MINIFIT 1X2
See details on PAGE 9
TurboMCE BOARD
10-4766D
J7 MINIFIT 2X5 SCON 1
220-00147A
To PDB J14
[7] SCON BUS
J40 DB9,IDC
J39 DB9,IDC
DSUBB9PIN, IDC
WORKSTATION
10-XXXX DIAGNOSTIC PORT CABLE
10-XXXX WORKSTATION PORT CABLE
68 PIN
16-XXXX
J42 SCSI 68 PINS
SCSI CABLE
J20 HDB15,IDC
J30 MINIFIT 2X6
J26 IDC, 20PIN
J13 UMNL 3X3
J19 IDC, 1X8 PIN
J21 IDC, 14PIN
J24 MINIFIT 2X4
TACH ENCODER 32-4130A
MCE-TACH 10-5146A
10-5117A
220-00772A
10-9070A
220-00094A
REG. PROBE ASSY 11-1122B
220-00287A
REG. PINS on DRUM
220-00337A
CONTINUITY SW ASSY 500-00855A
ENGINE TEMPERATURE SENSOR
THERMISTOR
10-0967A
10-5148A
MATE 1X3
CARRIAGE AMP CONTROL
10-9062A
11-0506B
M 2 CARRIAGE MOTOR
GND CHASSIS
MATE 2X3
J3 MINIFIT 2X4
J2 IDC, 20PIN
503-00265A CARRIAGE DRIVE
J1 MATE 1X2
CARRIAGE AMP POWER
220-00059A
[7] CA 48VDC
36-3145
PFO TRANSMITTER
PFO RECEIVER 36-3118
PLATE FLYOFF SENSOR
6-PIN REGISTRATION BOARD 10-9053A
10-9069A
MINIFIT 2X4
MINIFIT 2X6
MINIFIT 2X4
MTA AUTOLOADER
MCE INTERCONNECTIONS
WIRING DIAGRAM
\\Ccaeng1\Engineering\Projects\MasterSystemDrawings\Production Sep_04\AUTOLOADER\MTA AUTOLOADER_Ver_B-B.ddb - Documents\PAGE 8_MASTER CONTROL ELEC
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DETAILS OF J4, J5, J6 WIRING FROM PAGE 6

TurboMCE BOARD
10-4766D

J4 DB37M, IDC — **10-5129A**

J5 DB25,IDC — **220-00983A**

J6 DB37F, IDC — **220-00306A**

RLR_DOWN Away Side — 36-3125 — 10-4982A
LED+ RED 22 — RED 24 — TO DSEN1 LED+ (3)
LED- BLK 22 — BLK 24 — TO DSEN1 LED- (22)
COLLECTOR WHT 22 — WHT 24 — TO DSEN1 C (4)
EMITTER GRN 22 — GRN 24 — TO DSEN1 E (23)

RLR_UP Away Side — 36-3125 — 10-4982A
LED+ RED 22 — ORG 24 — TO DSEN2 LED+ (5)
LED- BLK 22 — BRN 24 — TO DSEN2 LED- (24)
COLLECTOR WHT 22 — BLU 24 — TO DSEN2 C (6)
EMITTER GRN 22 — YEL 24 — TO DSEN2 E (25)

LEC_DOWN Away Side — 36-3125 — 10-4982A
LED+ RED 22 — RED 24 — TO DSEN3 LED+ (7)
LED- BLK 22 — BLK 24 — TO DSEN3 LED- (26)
COLLECTOR WHT 22 — WHT 24 — TO DSEN3 C (8)
EMITTER GRN 22 — GRN 24 — TO DSEN3 E (27)

LEC_UP Away Side — 36-3125 — 10-4982A
LED+ RED 22 — ORG 24 — TO DSEN4 LED+ (9)
LED- BLK 22 — BRN 24 — TO DSEN4 LED- (28)
COLLECTOR WHT 22 — BLU 24 — TO DSEN4 C (10)
EMITTER GRN 22 — YEL 24 — TO DSEN4 E (29)

(11) TO DSEN5 LED+ — RED 22 — 10-4982A — 36-3125 — CAR_AWAY
(30) TO DSEN5 LED- — BLK 22 — LED+ / LED- / COLLECTOR / EMITTER
(12) TO DSEN5 C — WHT 22
(31) TO DSEN5 E — GRN 22

(13) TO DSEN6 LED+ — BLU 24 — 10-4733A — 36-3125 — BAL_DETECT Away Side
(32) TO DSEN6 LED- — BLU/BLK 24
(14) TO DSEN6 C — BLU/WHT 24
(33) TO DSEN6 E — BLU/RED 24

(15) TO DSEN 7 LED+ — GRN 24 — 10-4982A — 36-3125 — BAL_EXTEND Away Side
(34) TO DSEN7 LED- — GRN/BLK 24
(16) TO DSEN7 C — GRN/WHT 24
(35) TO DSEN7 E — BLK/WHT 24

(17) TO DSEN8 LED+ — ORG 24 — 10-4982A — 36-3125 — BAL_RETRACT Away Side
(36) TO DSEN8 LED- — ORG/BLK 24
(18) TO DSEN8 C — BLK/RED 24
(37) TO DSEN8 E — ORG/RED 24

10-5065A — RSW1 RSW2 RSW3 RSW4 RSW5 RSW6 RSW7 RSW8 RSW9 RSW10

(1) TO DSEN 0 LED+ — RED 22 — 10-9060A — WHT 22
(20) TO DSEN0 LED- — BLK 22 — RED 22
(2) TO DSEN0 C — WHT 22 — BLK 22
(21) TO DSEN0 E — GRN 22

(1) TO DSEN 18 LED+ — RED 24 — 10-4733A — 36-3125 — BM_FORWARD Away Side
(14) TO DSEN 18 LED- — RED/BLK 24
(2) TO DSEN 18 C — RED/WHT 24
(15) TO DSEN 18 E — RED/GRN 24

(3) TO DSEN 19 LED+ — GRN 24 — 10-4733A — 36-3125 — BM_CENTER BACK Away Side
(16) TO DSEN 19 LED- — GRN/BLK 24
(4) TO DSEN 19 C — GRN/WHT 24
(17) TO DSEN 19 E — BLK/WHT 24

(5) TO DSEN 20 LED+ — WHT 24 — 10-4733A — 36-3125 — BM_CENTER FORWARD Away Side
(18) TO DSEN 20 LED- — WHT/BLK 24
(6) TO DSEN 20 C — WHT/RED 24
(19) TO DSEN 20 E — BLK 24

(7) TO DSEN21 LED+ — BLU 24 — 10-4733A — 36-3125 — BM_ BACK Away Side
(20) TO DSEN21 LED- — BLU/BLK 24
(8) TO DSEN21 C — BLU/WHT 24
(21) TO DSEN21 E — BLU/RED 24

500-00271A START BUTTON 3 — Text Text
RED 22 / BLK 22 / WHT 22 / GRN 22 — WHT 22 / BLK 22 / RED 22

500-00271A START BUTTON 2 — Text Text
BLK 22 / BLK 22 / WHT 22 / GRN 22 — WHT 22 / BLK 22 / RED 22

(9) TO DSEN13 LED+ — RED 22 — 220-00537A — 220-00538A — 220-00539A — 220-00540A
(28) TO DSEN13 LED- — BLK 22
(10) TO DSEN13 C — WHT 22
(29) TO DSEN13 E — GRN 22

K1-ENG 15-3248 — To PDB0- J37 [7] K1-ENG — 10-9068A
1 BLK 22 / 3 BLK 22 / 2 / 4 / 5 / 6 / 8 / 7
RED 22 / BLK 22

CAR_HOME — 10-4982A — 36-3125
CAR_HOME CLEANING — 10-4982A — 36-3125

(11) TO DSEN14 LED+ — RED 22 — 220-00446A
(30) TO DSEN14 LED- — BLK 22
(12) TO DSEN14 C — WHT 22
(31) TO DSEN14 E — GRN 22

LOAD RAMP PLATE SENSOR 1 — 36-3210 — RED 22 / WHT 22 / GRN 22 — 220-00322A — To TMCE J12 ADAPTOR PSEN 1 [8]

LOAD RAMP PLATE SENSOR 2 — 36-3210 — RED 22 / WHT 22 / GRN 22
LOAD RAMP PLATE SENSOR 3 — 36-3210 — RED 22 / WHT 22 / GRN 22
220-00323A — MINIFIT 2X4

TO DSEN16 LED+ (15) / TO DSEN16 C (16) / TO DSEN16 E (35)
ORG 22 — TO DSEN17 LED+ (17)
BLUE 22 — TO DSEN17 C (18)
YEL 22 — TO DSEN17 E (37)

RED 22 / BLK 22 / WHT 22 / GRN 22
TO DSEN9 LED+ (1) / TO DSEN9 LED- (20) / TO DSEN9 C (2) / TO DSEN9 E (21)
To RESISTIVE BRAKES ASSY [8] BRAKE RELAYS SENSE

(13) TO DSEN15 LED+ — ORG 24 — 10-4733A — 36-3125 — BAL_DETECT Home Side
(32) TO DSEN15 LED- — ORG/BLK 24
(14) TO DSEN15 C — BLK/RED 24
(33) TO DSEN15 E — ORG/RED 24

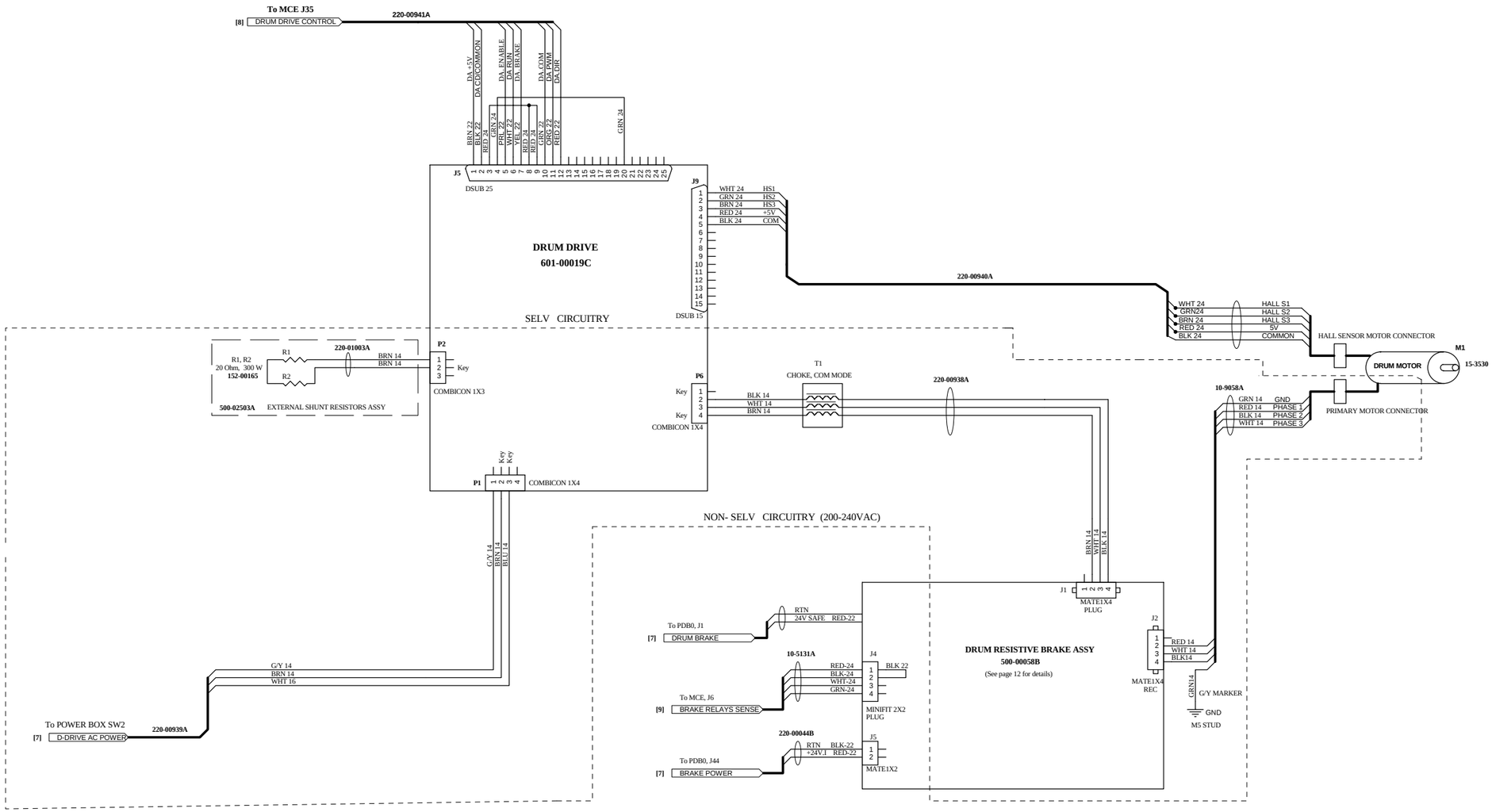
(3) TO DSEN10 LED+ — BLU 24 — 10-4982A — 36-3125 — BAL_EXTEND Home Side
(22) TO DSEN10 LED- — BLU/BLK 24
(4) TO DSEN10 C — BLU/WHT 24
(23) TO DSEN10 E — BLU/RED 24

(5) TO DSEN 11 LED+ — GRN 24 — 10-4982A — 36-3125 — BAL_RETRACT Home Side
(24) TO DSEN11 LED- — GRN/BLK 24
(6) TO DSEN11 C — GRN/WHT 24
(25) TO DSEN11 E — BLK/WHT 24

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MTA AUTOLOADER
MCE DIGITAL SENSORS
WIRING DIAGRAM
\\Ccaeng1\Engineering\Projects\MTA\Systems\Production Sep_04\AUTOLOADER\MTA AUTOLOADER_Ver_B-B.ddb - Documents\PAGE 9_MCE DIGITAL SENSORS

DESIGNED BY: S. FOUDIMOV	DOCUMENT NUMBER: **705-00006B-B SD01**	LAST ECO:
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DESIGN DATE: 2002:12:18	LAST MODIFIED DATE: 2005:04:07	SHEET: 9 of 23



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MTA AUTOLOADER

DRUM DRIVER & MOTOR WIRING DIAGRAM

\\Ccaeng1\Engineering\Projects\MTA\MTA Software\Production Sep_04\AUTOLOADER\MTA AUTOLOADER_Ver_B-B.ddb - Documents\PAGE 10_DRUM AMPLIFIER & MO

DESIGNED BY:	DOCUMENT NUMBER:	LAST ECO:
S. FOUDIMOV	**705-00006B-B SD01**	
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
S.FOUDIMOV		
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
2002:12:18	2005:06:07	10 of 23

NOTE: INSTALL POLYSWITCH F2, F5, F6 ON THE LIONEL BOARD

LIONEL BOARD 0
10-4801B
Board Address = 0x40h

SCON1

J9 — SCON2 — 2X5 MINIFIT JR

+48V SAFE	BRN 18
+48V SAFE RTN	BLU 18
+24V SAFE	GRN 18
+24V SAFE RTN	WHT 18
+24V	RED 18
CAN H	RED 24
CAN L	BLK 24
CHASSIS	GRN 24
TERM DET	WHT 24
+24 RTN	BLK 18
DRAIN WIRE	

To PDB J13 **[7]** SCON BUS — **10-5138A**

J7 — DIG_IN2 — IDC_20PIN

J21 — 2X3 MINI-MATE

CHILLER PRESSURE SWITCH **172-00045** (NO, C, PS)

220-00411B

RED 22	RED-22	TO DSEN9. LED+	(1)
BLK 22	HWT-22	TO DSEN9.C	(2)
BLK 22	GRN-22	TO DSEN9.E	(3)
	BLK-22	TO DSEN9. LED-	(4)
	RED-22	DSEN10.C	(6)
	BLK-22	DSEN10.E	(7)

MATE1X4

10-9085A

RED-22	TO DSEN11 LED+		(9)
WHT-22	TO DSEN11 C		(10)
GRN-22	TO DSEN11 E		(11)
BLK-22	TO DSEN11 LED-		(12)
ORG-22	TO DSEN12 LED+		(13)
BLU-22	TO DSEN12 C		(14)
YEL-22	TO DSEN12 E		(15)
BRN-22	TO DSEN12 LED-		(16)
RED-22	TO DSEN13 LED+		(17)
WHT-22	TO DSEN13 C		(18)
GRN-22	TO DSEN13 E		(19)
BLK-22	TO DSEN13 LED-		(20)
ORG-22	TO DSEN14 LED+		(21)
BLU-22	TO DSEN14 C		(22)
YEL-22	TO DSEN14 E		(23)
BRN-22	TO DSEN14 LED-		(24)

J8 — DIG_IN3 — HDR 2X15

To DEBRIS REMOVAL **[13]** DEBRIS REMOVAL SENSORS

36-3125 / **10-4982A** / **220-00145A**

TEC_LOCK	LED+	RED 22	RED 24	TO DSEN11 LED+	(9)
	LED-	BLK 22	BLK 24	TO DSEN11 LED-	(12)
	COLLECTOR	WHT 22	WHT 24	TO DSEN11 C	(10)
	EMITTER	GRN 22	GRN 24	TO DSEN11 E	(11)
TEC_UNLOCK	LED+	RED 22	ORG 24	TO DSEN12 LED+	(13)
	LED-	BLK 22	BRN 24	TO DSEN12 LED-	(16)
	COLLECTOR	WHT 22	BLU 24	TO DSEN12 C	(14)
	EMITTER	GRN 22	YEL 24	TO DSEN12 E	(15)

MINIFIT 2X4

36-3125 / **10-4982A** / **220-00146A**

LEC_LOCK	LED+	RED 22	RED 24	TO DSEN13 LED+	(17)
	LED-	BLK 22	BLK 24	TO DSEN13 LED-	(20)
	COLLECTOR	WHT 22	WHT 24	TO DSEN13 C	(18)
	EMITTER	GRN 22	GRN 24	TO DSEN13 E	(19)
LEC_UNLOCK	LED+	RED 22	ORG 24	TO DSEN14 LED+	(21)
	LED-	BLK 22	BRN 24	TO DSEN14 LED-	(24)
	COLLECTOR	WHT 22	BLU 24	TO DSEN14 C	(22)
	EMITTER	GRN 22	YEL 24	TO DSEN14 E	(23)

MINIFIT 2X4

MINIFIT 2X4 PWM_OUT2 — J1 — HDR 2X15

J16 AN_2 1X6 MTA

J17 AN_1 1X6 MTA

RED 22 +24V; ORG 22 +24V; BRN 22 PWM4; PWM1; WHT 22 PWM2; GRN 22 PWM3; BLU 22 PWM5; BLK 22 PWM6

518-00552A — To DRUM VACUUM PUMP — DRUM_VAC. PUMP CONTROL **[23]**

J13 — SCON 1 — MINIFIT 2X8 CAN

SAT +48SAFE	
SAT +48SRTN	
SAT +24SAFE	
SAT +24SRTN	
SAT +24V	
BRD_LOC+	
BRD_LOC1-	
BRD_LOC3-	
CAN_H	
CAN_L	
CHASSIS	
TERM_DET	
SAT +24RTN	
BRD_LOC+	
BRD_LOC0-	
BRD_LOC2-	

220-00169A — To GENINE 0 J24 — SCON BUS **[14]**

J5 — PWM_OUT1 — MINIFIT 2X3 REC

J2 — SOL_DRV1 — SAMTEC, 2X8

BLK 22		
PD		
ACT 3	BLK-22	
+24 V	RED-22	
ACT 4	GRN-22	
+24 V	WHT-22	
ACT 5	BRN-22	
+24 V	ORG-22	
ACT 6	BLU-22	
ACT 7	YEL-22	

220-00141A — MINIFIT 2X4

BLK 22	
RED 22	
WHT 22	
GRN 22	

220-00142B — To RELEASE SV ADAPTOR — RELEASE ADPT 2 **[8]**

(1) +24V RED-22; (12) RTN BLK-22

J11 — IDC, 14PIN

(5)	EREG.SEN0+	RED-22	
(6)	EREG.SEN0-	BLK-22	
(7)	EREG.SEN1+	ORG-22	
(8)	EREG.SEN1-	GRN-22	
(9)	EREG.SEN2+	WHT-22	
(10)	EREG.SEN2-	BRN-22	

MINIFIT 2X3

ORG 22; BLU-22

220-00363A

220-00566A — DRUM VACUUM

RED 22	+24VDC	
WHT 22	4-20mA Out	
GRN 22	GND	
BLU 22	PD+	
BRN 22	PD-	

PSEB BOARD **10-4581A** — MTA 1X6

220-00413A

RED 22	+24V	
BLK 22	GRN LEDs	
WHT 22	BLUE LEDs	
GRN 22	YEL LEDs	
ORG-22	PD+	
BLU-22	PD-	

MINIFIT 2X3

J1 — **STATUS LIGHT LEDS BRD** **10-9063A** **(Will be replaced with 503-09063B)** — 1ROW IDC

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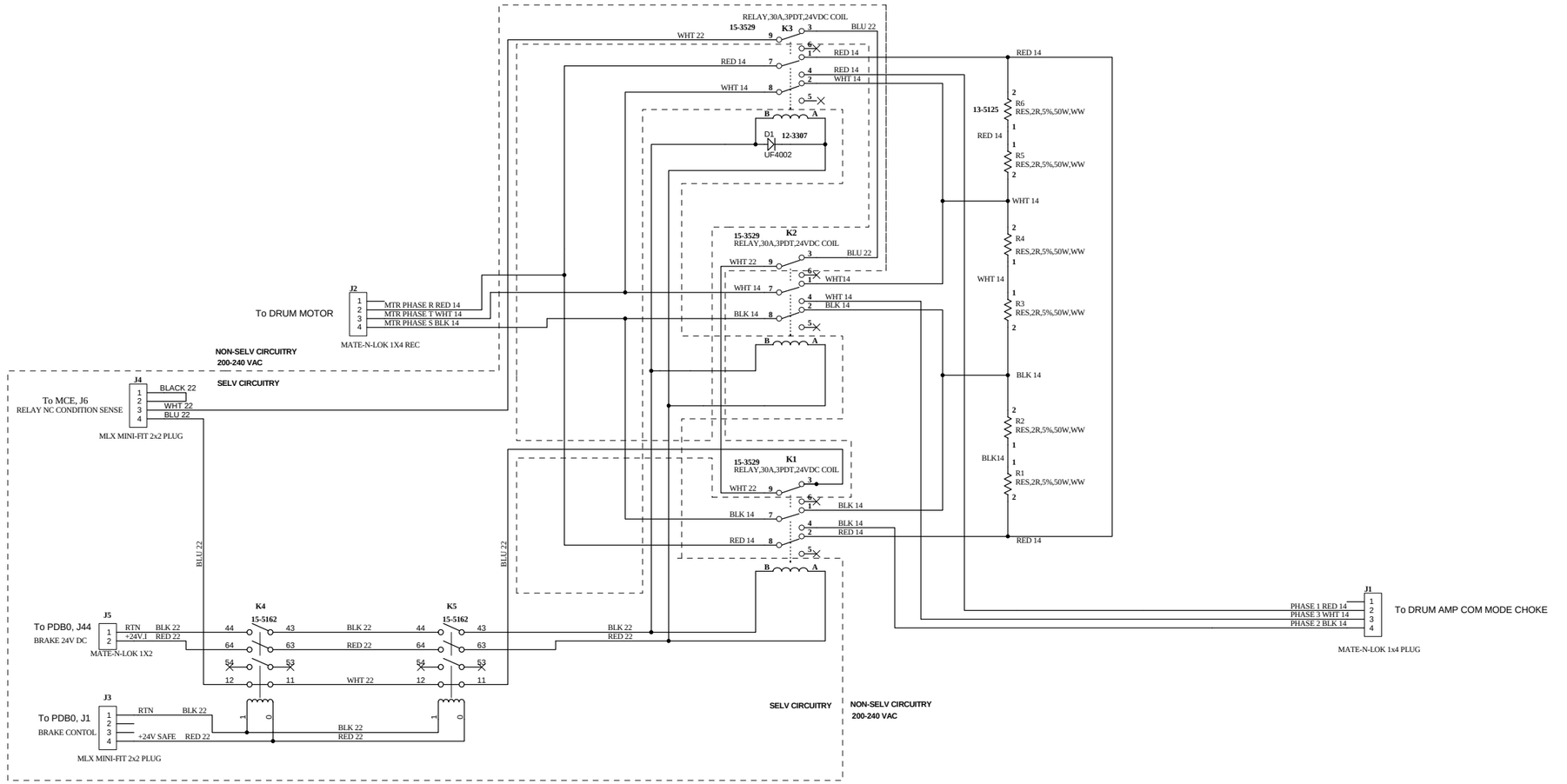
MTA AUTOLOADER
LIONEL BOARD
WIRING DIAGRAM

\\Ccaeng1\Engineering\Projects\MTA\Systems\Mass Production Sep_04\AUTOLOADER\MTA AUTOLOADER_Ver_B-B.ddb - Documents\PAGE 11_LIONEL BOARD WIRING

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DRUM RESISTIVE BRAKE ASSEMBLY 500-00058B

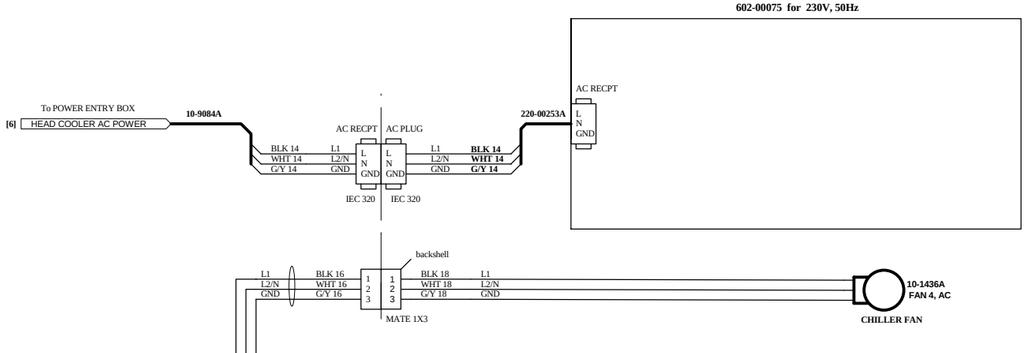
(See page 10 for details)



creo	**MTA AUTOLOADER** DRUM RESISTIVE BRAKE WIRING DIAGRAM	
\\Ccaeng1\Engineering\Projects\MTA\System\Release Production Sep_04\AUTOLOADER\MTA AUTOLOADER_Ver_B-B.ddb - Documents\PAGE 12_DRUM RESISTIVE BRAKE		
DESIGNED BY: S. FOUDIMOV	DOCUMENT NUMBER: **705-00006B-B SD01**	LAST ECO:
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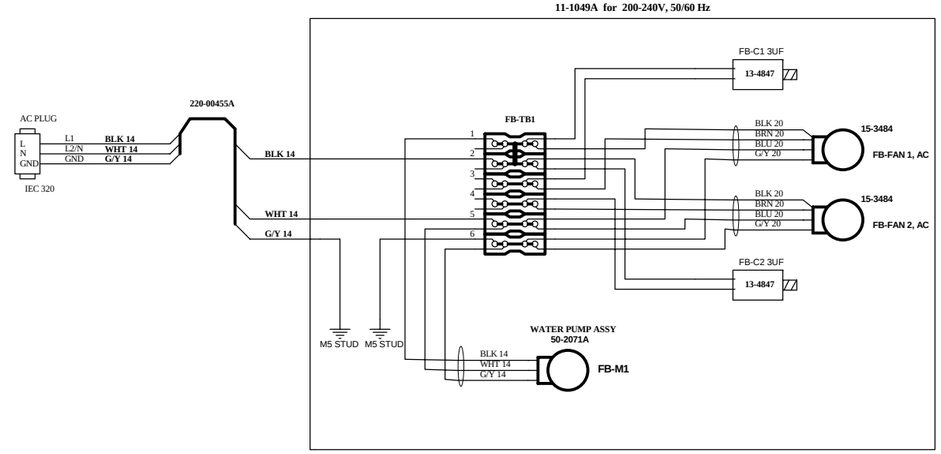
INTERNAL CHILLER

602-00076 for 200-230V, 60Hz or 200V, 50Hz
602-00075 for 230V, 50Hz



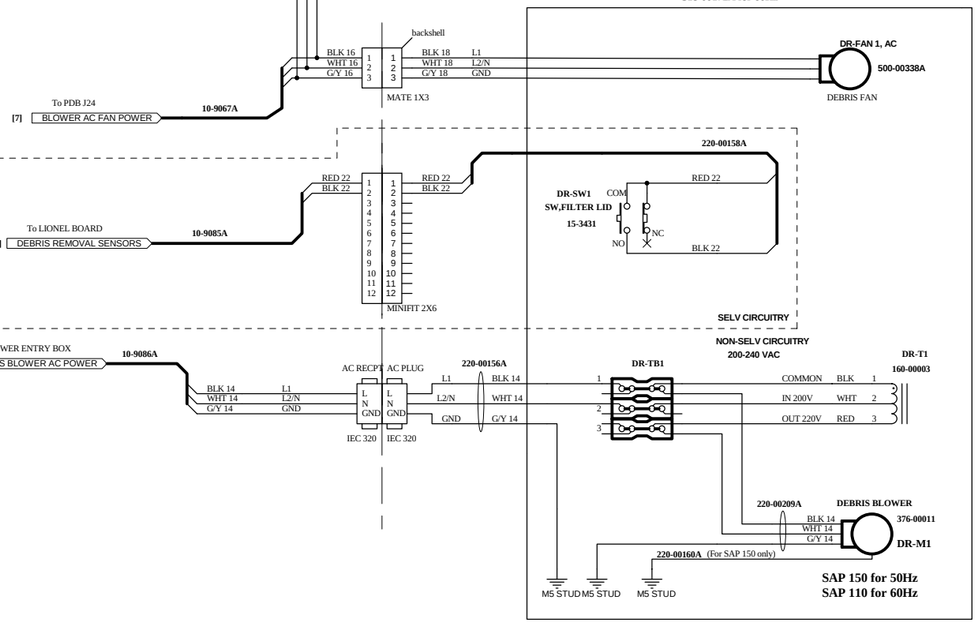
INTERNAL HEAT EXCHANGER (FAN BOX) ASSY

11-1049A for 200-240V, 50/60 Hz



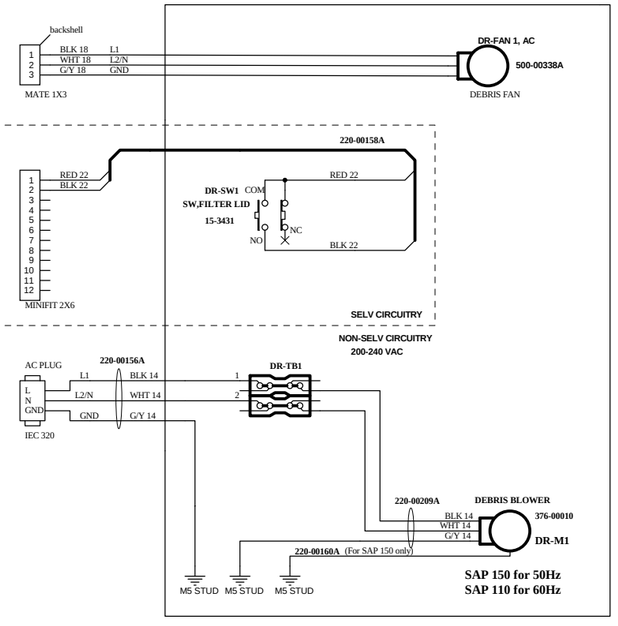
INTERNAL DEBRIS REMOVAL ASSY

200-208V INPUT POWER ONLY
518-00171A for 50Hz
518-00172A for 60Hz



INTERNAL DEBRIS REMOVAL ASSY

220-240V INPUT POWER ONLY
518-00639A for 50Hz
518-00640A for 60Hz



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MTA AUTOLOADER
HEAD COOLER & DEBRIS WIRING DIAGRAM

\\Ccaeng1\Engineering\Projects\Manta\System\Magnus Production Sep_04\AUTOLOADER\MTA AUTOLOADER_Ver_B-B.ddb - Documents\PAGE13_INTERNAL HEAD COOLE

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DESIGN DATE: 2002:12:18	LAST MODIFIED DATE: 2005:04:08	SHEET: 13 of 23

GENINE BOARD 0

10-4227D

BOARD ADDRESS = 0X30h

HEAD STAGE_HOME — 36-3125 — 10-4982A
HEAD STAGE_AWAY — 36-3125 — 10-4982A
FETCHER PRESSURE — PRESSURE SENSE BOARD 10-4887A — MTA 1X6
SS VACUUM — PSEB BOARD 10-4581A — MTA 1X6
220-00225A — 220-00227A (Add 220–00432A for L-R config.) — 220-00226A
MINIFIT 2X5 — MINIFIT 2X5
220-00543A
J3 MTA 1X6 ANALOG0
J1 MTA 1X6 ANALOG1
J20 2X6 HDR HA-1
J11 UMNL 2X3 TEMP — UNUSED
J13 DB9F RS232 PORT — UNUSED
J26 MINIFIT 2X8 CAN SCON1
J24 MINIFIT 2X5 CAN SCON2
220-00325A — To BULKHEAD MOD#2 SCON BUS [21]
MINIFIT 2X4
220-00435A
220-00169A — To LIONEL0 J13 SCON BUS [11]
MINIFIT 2X2 — 500-01662A M 7 184-00038 HEAD STAGE MOTOR
220-00544A
500-01641A — R1, R2 152-00097 RES,100R,1%,.25W,WW
J25 UMNL 2X4 STPR-DRIVE — UNML 2X4
MINIFIT 2X3
(Add 220-00431A for L-R config.)
MINIFIT 2X6
220-00236A
FETCHER SOLENOID BLOCK
MANIFOLD INTERFACE BOARD 10-4727A
J2 — 220-00193A — CON12
J3 — 220-00194A — CON12
J1 — IDC,26PIN
SV1 "fetcher cups up"
SV2 "fetcher vac on"
SV3 Fetcher SS picker down
SV4 "fetcher ss icup up"
SV5 Fetcher SS ocup up
SV6 Fetcher SS ocup down
SV7 "fetcher SS vac on"
SV8 "fetcher SS ejector on"
SV9 "fetcher platereject on"
220-00201A — SOL-DRV1 — J21 — 2X13 HDR
FETCHER FETCHER_HOME — 36-3125 — 10-4982A
FETCHER_AWAY — 36-3125 — 10-4982A
220-00192A
J14 2X6 HDR HA-0
220-00230A
J17 2X10 HDR STPR-CNTL
FETCHER MOTOR 11-0851B — M 6 — GND CHASSIS — MATE 2X3
220-00191A — SHIELD
J2 IDC, 20PIN — 503-00265A CARRIAGE DRIVE — J3 MINIFIT 2X4
J1 +48V SAFE RTN — MATE 1X2
220-00190A
J27 MINIFIT 2X3 STPR-PWR
220-00231A
J4 2X10 HDR DIGITAL-IN2
(Add 220-00430A for L-R config.)
MINIFIT 2X5
220-00229A
J2 2X15 HDR DIGITAL-IN3
J10 2X7 HDR DIGITAL-IN 1
J5 2X17 HDR DIGITAL-IN4
J18 2X8 HDR SOL-DRV0
220-00232A
220-00517A
To EXTERNAL DEVICE INTERFACE BRD. J6 — EXTERNAL DEVICE OUTPUT INTERFACE [22]
220-00516A — To EXTERNAL DEVICE INTERFACE BRD. J5 — DUAL PROCESSOR INTERFACE [22]
220-00515A — To EXTERNAL DEVICE INTERFACE BRD. J4 — SINGLE PROCESSOR INTERFACE [22]
WEDGE MASTER UP — 36-3125 — 10-4982A
220-00228A
PLATE-ON-FETCHER — 36-3210
PVAC VACUUM — 172-00021
FETCHER SAFE HOME — 36-3125 — 10-4982A
FETCHER SAFE AWAY — 36-3125 — 10-4982A

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MTA AUTOLOADER

FETCHER

WIRING DIAGRAM

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DESIGNED BY: S. FOUDIMOV	DOCUMENT NUMBER: **705-00006B-B SD01**	LAST ECO:
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GENINE BOARD 1

10-4227D

BOARD ADDRESS = 0X31h

(ADD 220-00425A FOR L-R CONFIG.)

220- 00255A

36-3205 BAUMER SLIP SHEET UNDER PLATE SENSOR FZAM18N6460/S14

BRN 22, BLU 22, BLK 22 — MINIFIT 2X2

15-3359 K1

RED 22, GRY 22, BLK 22, GRN 22, WHT 22

220-00248A

(1) +24V, (2) ES 0, (3) ES 0, (33) GND

J10 2X7 HDR DIG_IN 1

To TMCE J8 [8] SCON BUS

220-00170A

SAT +48SAFE, SAT +48SRTN, SAT +24SAFE, SAT +24SRTN, SAT +24V, SAT +5V, BRD_LOC1-, BRD_LOC1+, CHASSIS, CAN_H, TERM_RTN, CAN_L, BRD_LOC2+, BRD_LOC2-, RED22

J3 MTA 1X6 ANALOG0

J26 MINIFIT 2X8 CAN SCON1

220-00171B

SAT +48SAFE, SAT +48SRTN, SAT +24SAFE, SAT +24SRTN, SAT +24V, CAN_H, CAN_L, CHASSIS, TERM_RTN, SAT +24RTN

J24 MINIFIT 2X5 CAN SCON2

To GENINE2 J24 [16] SCON BUS

J25 UMNL 2X4 STPR-DRIVE

PHA+ RED 22, PHB- BLK 22 (WHITE PAIR), PD+ GRN 22, PHA- BLK 22(RED PAIR), PHB+ WHT 22, Chassis, PD- GRN 22

220-00184A

Shield — MINIFIT 2X2: PHA+ BLK, PHA- GRN, PHB- BLU, PHB+ RED

500-00717A M 3 LOAD CARRIAGE MOTOR

LOAD CARRIAGE_HOME

36-3125 — LED+, LED-, COLLECTOR, EMITTER — 10-4982A — RED 22, BLK 22, WHT 22, GRN 22 — MINIFIT 2X2

RED 24, BLK 24, WHT 24, GRN 24 — TO HOME.1 LED+ (1), TO HOME.1 LED- (4), TO HOME.1 C (2), TO HOME1. E (3)

220-00195A — J20 2X6 HDR HA-1

PD+ BLK 22 (10), PD- (11)

LOAD CARRIAGE_AWAY

36-3125 — 10-4982A — MINIFIT 2X2

RED 24, BLK 24, WHT 24, GRN 24 — TO AWAY.1 LED+ (5), TO AWAY.1 LED- (8), TO AWAY.1 C (6), TO AWAY.1 E (7)

SIDE EJECTOR_HOME

36-3125 — 10-4982A — MINIFIT 2X2

RED 24, BLK 24, WHT 24, GRN 24 — TO HOME.0 LED+ (1), TO HOME.0 LED- (4), TO HOME.0 C (2), TO HOME0. E (3)

220-00196A — J14 2X6 HDR HA-0

PD+ BLK 22 (10), PD- (12)

SIDE EJECTOR_AWAY

36-3125 — 10-4982A — MINIFIT 2X2

RED 24, BLK 24, WHT 24, GRN 24 — TO AWAY.0 LED+ (5), TO AWAY.0 LED- (8), TO AWAY.0 C (6), TO AWAY.0 E (7)

220-00187A — J17 STPR-CNTL — 2X10 HDR

SIDE EJECTOR MOTOR 11-0851B — M 4 — GND CHASSIS

BLK 18 (RED PR), WHT 18, RED 18, BLK 18 (WHT PR) — MATE 2X3

220-00186A — PHA:VO+, PHB:VO-, Gain 2 A/V, PHA:VO-, PHB:VO+, SHIELD, YEL 18

J2 IDC, 20PIN — 503-00265A CARRIAGE DRIVE — J3 MINIFIT 2X4

J1 MATE 1X2 — +48V SAFE, RTN — 220-00188A — BRN 16, BLK 16

J27 STEPPER POWER — PD, BLK22

J5 2X17 HDR DIGITAL-IN4 — J2 2X15 HDR DIGITAL-IN3 — J4 2X10 HDR DIGITAL-IN2

220-00249B — 220-00250A — 220-00251B

MANIFOLD INTERFACE BOARD 10-4727A

J21 — SOL-DRV1 — 2X13 HDR — 220-00185A — J1 IDC,26PIN

J2 CON12 — 220-00197A — ACT8+, ACT9+, ACT10+, ACT11+, ACT12+, ACT13+, +24V, BLK-22, RED-22

J3 CON12 — 220-00198A — ACT14+, ACT15+, ACT16+, ACT17+, ACT18+, ACT19+, +24V, BLK-22, RED-22

J4 CON12 — 220-00483A — ACT20+, ACT22+, +24V, BLK-22, RED-22

J5 CON12

LOAD TABLE SOLENOID BLOCK

SV1 Loadtable centercups up/n
SV2 Loadtable centercups dn/n
SV3 Loadtable leftrightcups up/n
SV4 Loadtable leftrightcups dn/n
SV5 "loadtable centercups vac on"
SV6 "loadtable leftcups vac on"
SV7 "loadtable rightcups vac on"
SV8 "ejector pusher1 down"
SV9 Unloadtable tilt/stop
SV10 "loadtable centering unlock"
SV11 "loadtable wiffle lock"
SV12 Unloadtable untilt/stop
SV13 "loadtable platestop up"
SV14 "loadtable pullout lock"

LOAD TABLE CLOSED 1 (LOCATED CLOSER TO DRUM)

36-3210 — RED 22, WHT 22, GRN 22 — TO DSEN16 LED+ (1), TO DSEN16 C (2), TO DSEN16 E (3)

LOAD TABLE CLOSED 2 (LOCATED FARTHER FROM DRUM)

36-3210 — RED 22, WHT 22, GRN 22 — TO DSEN17 LED+ (5), TO DSEN17 C (6), TO DSEN17 E (7)

LOADER VAC CUPS CENTER

172-00021 — RED 22 — TO DSEN9.C (2); BLK 22 — TO DSEN9.E (3)

LOADER VAC CUPS LEFT

172-00021 — ORG 22 — TO DSEN10.C (6); BRN 22 — TO DSEN10.E (7)

LOADER VAC CUPS RIGHT

172-00021 — YEL 22 — TO DSEN11.C (10); WHT 22 — TO DSEN 11.E (11)

SIDE BRIDGE IN POSITION

36-3210 — RED 22, WHT 22, GRN 22 — TO DSEN 4 LED+ (1), TO DSEN 4 C (2), TO DSEN 4 E (3)

PLATE ON PROCESSOR

36-3210 — 220-00364A — P? MINIFIT 2X2 — RED 22, WHT 22, GRN 22 — TO DSEN 5 LED+ (5), TO DSEN 5 C (6), TO DSEN 5 E (7)

UNLOAD TABLE_TILT

36-3210 — RED 22, WHT 22, GRN 22 — TO DSEN19 LED+ (13), TO DSEN19 C (14), TO DSEN19 E (15)

UNLOAD TABLE_HORIZONTAL

36-3210 — RED 22, WHT 22, GRN 22 — TO DSEN20 LED+ (17), TO DSEN20 C (18), TO DSEN20 E (19)

ACCESS PANEL CLOSED SW 15-3355 — 220-00426A — (ADD 220-00436A FOR L-R CONFIG.) — MINIFIT 1X2 — RED 22, BLK 22 — TO DSEN21.C (22), TO DSEN21.E (23)

PLATE STOP UP

36-3125 — 10-4982A — LED+, LED-, COLLECTOR, EMITTER — RED 22, BLK 22, WHT 22, GRN 22

PLATE STOP DOWN

36-3125 — 10-4982A

220-00482A — MINIFIT 2X4

RED 22, BLK 22, WHT 22, GRN 22, ORG 22, BRN 22, BLU 22, YEL 22 — TO DSEN12 LED+ (13), TO DSEN12 LED- (16), TO DSEN12 C (14), TO DSEN12 E (15), TO DSEN13 LED+ (17), TO DSEN13 LED- (20), TO DSEN13 C (18), TO DSEN13 E (19)

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MTA AUTOLOADER

LOAD TABLE & SIDE EJECTOR WIRING DIAGRAM

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S.FOUDIMOV		
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
2002:12:18	2005:04:19	15 of 23

GENINE BOARD 2

10-4227D

BOARD ADDRESS = 0X32h

220-00171B To GENINE1 J24 SCON BUS [15]

220-00168A

J1 MTA 1X6 ANALOG1

J3 MTA 1X6 ANALOG0

J11 UMNL 2X3 TEMP

J13 DB9F RS232 PORT

J26 MINIFIT 2X8 CAN SCON1

J24 MINIFIT 2X5 CAN SCON2

J6 MTA 1X6 ANALOG2

J25 UMNL 2X4 STPR-DRIVE

PHA- RED 22
PHB- BLK 22 (WHITE PAIR)
PD+ GRN 22
PHA+ BLK 22 (RED PAIR)
PHB+ WHT 22
Chassis
PD- GRN 22
Shield

220-00172A

MINIFIT 2X2

PHA+ BLK
PHA- GRN
PHB- BLU
PHB+ RED

500-00717A

M 5

UNLOAD CARRIAGE MOTOR

220-00189A

J20 2X6 HDR HA-1

PD+ BLK 22 (10)
PD- (11)

36-3125 10-4733A

UNLOAD CARRIAGE_HOME1

LED+ RED 22 — RED 22 — TO HOME.1 LED+ (1)
LED- BLK 22 — BLK 22 — TO HOME.1 LED- (4)
COLLECTOR WHT 22 — WHT 22 — TO HOME.1 C (2)
EMITTER GRN 22 — GRN 22 — TO HOME1. E (3)

36-3125 10-4733A

UNLOAD CARRIAGE_AWAY1

LED+ RED 22 — RED 22 — TO AWAY.1 LED+ (5)
LED- BLK 22 — BLK 22 — TO AWAY.1 LED- (8)
COLLECTOR WHT 22 — WHT 22 — TO AWAY.1 C (6)
EMITTER GRN 22 — GRN 22 — TO AWAY.1 E (7)

220-00245A

J5 DIGITAL-IN4 2X17 HDR

36-3125 10-4982A

PLATE ROTATOR_HOME

LED+ RED 22 — RED 24 — TO DSEN16 LED+ (1)
LED- BLK 22 — BLK 24 — TO DSEN16 LED- (4)
COLLECTOR WHT 22 — WHT 24 — TO DSEN16 C (2)
EMITTER GRN 22 — GRN 24 — TO DSEN16 E (3)

36-3210

PLATE ROTATOR VACUUM CAPS_ DOWN

ORG 24 — TO DSEN17 LED+ (5)
RED-WHT 24 — TO DSEN17 C (6)
BLK-WHT24 — TO DSEN17 E (7)

36-3210

UNLOADER VACUUM CAPS LEFT_DOWN

RED-BLK 24 — TO DSEN18 LED+ (9)
GRN-WHT 24 — TO DSEN18 C (10)
ORG-BLK 24 — TO DSEN18 E (11)

36-3210

UNLOADER VACUUM CAPS RIGHT_DOWN

RED 24 — TO DSEN19 LED+ (13)
WHT 24 — TO DSEN19 C (14)
GRN 24 — TO DSEN19 E (15)

172-00021

To PLATE ROTATOR VACUUM LINE

BLU 24 — TO DSEN21.C (22)
ORG 24 — TO DSEN21.E (23)

172-00021

To UNLOADER VACUUM LINE LEFT CUPS

RED-WHT 24 — TO DSEN22.C (26)
BLK-WHT 24 — TO DSEN22.E (27)

172-00021

To PLATE ROTATOR VACUUM LINE RIGHT CUPS

BLU-BLK 24 — TO DSEN23.C (30)
ORG-BLK 24 — TO DSEN 23.E (31)

J2 DIGITAL-IN3 2X15 HDR

J14 2X6 HDR HA-0

J10 2X7 HDR DIGITAL-IN1

J18 SOL-DRV0 2X8 HDR

ACT0+ BLK 22
ACT1+
ACT2+
+24V RED 22
ACT3+ BLK 22
+24V RED 22
ACT4+ BLK 22
+24V RED 22
ACT5+ BLK 22
+24V RED 22
ACT6+ BLK 22
+24V RED 22

220-00182A

UNLOAD TABLE MANIFOLD

SV1 "unloadtable centercups rotate"
SV2 "unloadtable centercups up"
SV3 "unloadtable centercups vac on"
SV4 "unloadtable leftrightcups up"
SV5 "unloadtable leftrightcups vac on"

J21 SOL-DRV1 2X13 HDR

220-00246A

36-3125 10-4733A

UNLOAD CARRIAGE @ ROTATOR

LED+ RED 22 — RED 22 — TO DSEN9 LED+ (1)
LED- BLK 22 — BLK 22 — TO DSEN9 LED- (4)
COLLECTOR WHT 22 — WHT 22 — TO DSEN9 C (2)
EMITTER GRN 22 — GRN 22 — TO DSEN9 E (3)

36-3210

MANUAL BYPASS PLATE SENSOR 1

RED 22 — TO DSEN10 LED+ (5)
WHT 22 — TO DSEN10 C (6)
GRN 22 — TO DSEN10 E (7)

36-3210

MANUAL BYPASS PLATE SENSOR 2

RED 22 — TO DSEN11 LED+ (9)
WHT 22 — TO DSEN11 C (10)
GRN 22 — TO DSEN11 E (11)

36-3210

MANUAL BYPASS PLATE SENSOR 3

RED 22 — TO DSEN12 LED+ (13)
WHT 22 — TO DSEN12 C (14)
GRN 22 — TO DSEN12 E (15)

36-3125 10-4982A

UT FRONT PLATE DEFLECTOR

LED+ RED 22 — RED 22 — TO DSEN13 LED+ (17)
LED- BLK 22 — BLK 22 — TO DSEN13 LED- (20)
COLLECTOR WHT 22 — WHT 22 — TO DSEN13 C (18)
EMITTER GRN 22 — GRN 22 — TO DSEN13 E (19)

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MTA AUTOLOADER

UNLOAD TABLE WIRING DIAGRAM

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DESIGNED BY: S. FOUDIMOV	DOCUMENT NUMBER: 705-00006B-B SD01	LAST ECO:
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DESIGN DATE: 2002:12:18	LAST MODIFIED DATE: 2005:04:25	SHEET: 16 of 23

POWER DISTRIBUTION BOARD 1 (PDB 1)

10-4112 H

BOARD ADDRESS = 0X11h

SELV CIRCURY

NON-SELV CIRCURY
200-240 VAC

SW12 & SW13 - GLOBAL SAFETY LOOP

K3, K4 - LOCAL SSR SAFETY LOOP

MCU SERVICE OVERRIDE PANEL
500-01150A

MTA AUTOLOADER

MCU PDB1 BOARD WIRING DIAGRAM

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DESIGN DATE: 2002:12:18	LAST MODIFIED DATE: 2005:04:15	SHEET: 17 of 23

GENINE BOARD 3

10-4227D

BOARD ADDRESS = 0X33h

PICKER PRESSURE
PRESSURE SENSE BOARD
10-4887A
MTA 1X6
220-00288A
RED 22 WHT 22 +24VDC 4-20mA Out
GRN 22 BLU 22 BRN 22 GND PD+ PD-

13-5062 BAUMER SLIP SHEET SENSOR OZDM 16P1901
220-00357A BRN 22 WHT 22 BLU 22
220-00354A RED 22 WHT 22 GRN 22
MCU-K5
15-3359
RED 22 BLK 22 ACT5+ +24V
To GENINE3 J18 [18] SS SENSOR POWER 220-00290A

To PLATE W. SENSOR ADAPTOR [18] +24V 220-00837A
RED 22 WHT 22 +24V +24V
MINIFIT 1X2
220-00295B
RED 22 (1) WHT 22 (2) PD (3) BLK 22 (4)

CART PARK
15-3457 SW6
RED 22 BLK 22
220-00438B
MINIFIT 2X4
RED 22 EREG.SEN0+ (5)
ORG 22 EREG.SEN0- (6)
YEL 22 EREG.SEN1+ (7)
GRN 22 EREG.SEN1- (8)
WHT 22 EREG.SEN2+ (9)
BLU 22 EREG.SEN2- (10)
BRN 22 EREG.SEN3+ (11)
BLK 22 EREG.SEN3- (12)
To CART HOME SW5 [17] CART HOME DETEC
RED 22 BLK 22

J10
IDC, 14PIN
J5
DIGITAL-IN4
2X17 HDR
J2 DIGITAL-IN3
2X15 HDR
J4 2X10 HDR DIGITAL-IN2

220-00296B
36-3125 LED+ LED- COLLECTOR EMITTER
10-4982A RED 22 BLK 22 WHT 22 GRN 22
CASSETTE DOOR OPENED
RED 22 BLK 22 WHT 22 GRN 22
TO DSEN16 LED+ (1) TO DSEN16 LED- (4) TO DSEN16 C (2) TO DSEN16 E (3)
RED 22 BLK 22 TO DSEN17 C (6) TO DSEN17 E (7)
[17] CASSETTE DOOR DETECT

36-3210 CASSETTE LOCK
RED 22 WHT 22 GRN 22 TO DSEN18 LED+ (9) TO DSEN18 C (10) TO DSEN18 E (11)
36-3210 CASSETTE EJECT
RED 22 WHT 22 GRN 22 TO DSEN19 LED+ (13) TO DSEN19 C (14) TO DSEN19 E (15)
36-3210 CASSETTE LOCKED ON CHARRIOT 1
RED 22 WHT 22 GRN 22 TO DSEN20 LED+ (17) TO DSEN20 C (18) TO DSEN20 E (19)
36-3210 CASSETTE LOCKED ON CHARRIOT 2
RED 22 WHT 22 GRN 22 TO DSEN21 LED+ (21) TO DSEN21.C (22) TO DSEN21.E (23)
36-3210 LOCK EJECT CYLINDER IN
RED 22 WHT 22 GRN 22 TO DSEN22 LED+ (25) TO DSEN22 C (26) TO DSEN22 E (27)
RED 22 BLK 22 TO DSEN23 C (30) TO DSEN23 E (31)
To SHATTER SWITCH - SW 14 [17] SHATTER SW DETECT

220-00297B
36-3210 CASS POS 1
RED 22 WHT 22 GRN 22 TO DSEN9 LED+ (1) TO DSEN9 C (2) TO DSEN9 E (3)
36-3210 CASS POS 2
RED 22 WHT 22 GRN 22 TO DSEN10 LED+ (5) TO DSEN10 C (6) TO DSEN10 E (7)
36-3210 CASS POS 3
RED 22 WHT 22 GRN 22 TO DSEN11 LED+ (9) TO DSEN11 C (10) TO DSEN11 E (11)
36-3210 CASS POS 4
RED 22 WHT 22 GRN 22 TO DSEN12 LED+ (13) TO DSEN12 C (14) TO DSEN12 E (15)
36-3210 CASS LOAD/UNLOAD POS
RED 22 WHT 22 GRN 22 TO DSEN13 LED+ (17) TO DSEN13 C (18) TO DSEN13 E (19)
36-3210 CASS LOCK/EJECT POS
RED 22 WHT 22 GRN 22 TO DSEN14 LED+ (21) TO DSEN14 C (22) TO DSEN14 E (23)
To GENINE 3, J10 [18] +24V
BLK 22 GRN 22 TO DSEN15 C (26) TO DSEN15 E (27)
MINIFIT 1X2
RED 22 WHT 22

220-00298A
P-CUP ARM UP
36-3210 RED 22 WHT 22 GRN 22 TO DSEN 4 LED+ (1) TO DSEN 4 C (2) TO DSEN 4 E (3)
P-CUP SLIDER RETRACT
36-3210 RED 22 WHT 22 GRN 22 TO DSEN 5 LED+ (5) TO DSEN 5 C (6) TO DSEN 5 E (7)
P-CUPS MOTION DOWN 10-9048A
36-3209 LED+ LED- COLLECTOR EMITTER GRY 24 WHT 24 GRN 24
RED 22 TO DSEN6 LED+ (9) WHT 22 TO DSEN6 C (10) GRN 22 TO DSEN6 E (11)
SS MIRROR EXTENDED 10-4982A
36-3125 LED+ LED- COLLECTOR EMITTER RED 22 BLK 22 WHT 22 GRN 22
RED 22 TO DSEN 7 LED+ (13) BLK 22 TO DSEN7 LED- (16) WHT 22 TO DSEN 7 C (14) GRN 22 TO DSEN 7 E (15)
CASS PICK POS
36-3210 RED 22 WHT 22 GRN 22 TO DSEN8 LED+ (17) TO DSEN8 C (18) TO DSEN8 E (19)
220-00837A RED 22 GRN 22 BLK 22 WHT 22
BRN 22 PINK 22 BLUE 22 BLK 22 NC
PLATE WIDTH SENSOR 10-4652A
36-3200
MINIFIT 2X2

To PDB1 J14 [17] SCON BUS
220-XXXXA
SAT +48SAFE SAT +48SRTN SAT +24SAFE SAT +24SRTN SAT +24V BRD LOC1+ BRD LOC1- CAN H CHASSIS TERM RET CAN L SAT +24RTN BRD LOC+ BRD LOC- BRD LOC2+ BRD LOC2-
RED22
J26 MINIFIT 2X8 CAN SCON1
UNUSED UNUSED
J11 UMNL 2X3 TEMP
J13 DB9F RS232 PORT
220-00289A
To LIONEL1 J9 SCON BUS [21]
J24 MINIFIT 2X5 CAN SCON2

J6 MTA 1X6 ANALOG2
J3 MTA 1X6 ANALOG0
J1 MTA 1X6 ANALOG1
WHT 22 SIG
GRN 22 GND PD
BLK 22

PICKER MANIFOLD
SV1 "picker down"
SV2 "picker slider in"
SV3 "picker pcups on"
SV4 "picker pcups on"
J18 SOL-DRV0 2X8 HDR
ACT0+ BLK 22 +24V RED 22
ACT1+ BRN 22 +24V ORG 22
ACT2+ BLU 22 +24V VIO 22
ACT3+ GRN 22 +24V YEL 24
ACT4+ GRY 24 +24V WHT 24
ACT5+ BLK 22 +24V RED 22
220-00290A
220-00456A
MINIFIT 2X5
To RELAY K5 SS SENSOR POWER [18]

[17] CART & DOOR SV
220-00282A
BLK 22 RED 22 GRN 22 WHT 22
220-00419A
MINIFIT 2X2
MCU MANIFOLD
SV1 "cassette door open"
SV7 "cassette cartpin up"
SV2 Cassette casslock
SV3 Cassette casseject
SV4 "plenum separator on"
SV5 "plenum float high"
SV6 "plenum ssmirror out"
J21 SOL-DRV1 2X13 HDR
220-00291A
MANIFOLD INTERFACE BOARD 10-4727A
J2 ACT8+ +24V ACT9+ +24V ACT10+ +24V ACT11+ +24V ACT12+ +24V ACT13+ +24V
BLK-24 RED-24 BLK-24 RED-24 BLK-24 RED-24 BLK-24 RED-24 BLK 24
220-00292A
J1 CON12
DC,26PIN
J3 ACT14+ +24V ACT15+ +24V ACT16+ +24V ACT17+ +24V ACT18+ +24V ACT19+ +24V
BLK-24 BLK-24 BLK 24 BLK 24 RED-24
220-00293A
BLK 22 BRN 22 BLU 22 WHT 22 RED 22
220-00285A
To SSR BULKHED SSR MANIFOLD [20]
MINIFIT 2X3
J4 ACT20+ +24V ACT22+ +24V ACT24+ +24V
BLK 22 WHT 22 GRN 22 RED-22
220-00294A
To MCU SAFETY INTERFACE BOARD J3 MCU SAFETY CONTROL [20]
J5 ACT26+ +24V ACT28+ +24V ACT30+ +24V

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MCU SERVICE OVERRIDE PANEL
500-01150A

MCU-SW1
2 POSITION
LEVER SWITCH
15-3536

LEFT - SEMI-AUTO MODE
POS 2

RIGHT - MANUAL JOG MODE
POS 1

15-3238

MCU-SW2
PUSHBUTTON
HOLD FOR SEMI-AUTO
15-3446
15-3447
15-3448

MCU-SW3
PUSHBUTTON
JOG UP

MCU-SW4
PUSHBUTTON
JOG DOWN

220-00421A

To MCU OVERRIDE SW.
[17] SEMI-AUTO BTN

To MCU OVERRIDE SW.
[17] MANUAL JOG BUTN

MODES OF OPERATION:

JOG MODE:

PUT OVERRIDE SWITCH IN OVERRIDE POSITION.
PUT LEVER SWITCH IN POS. 1
TO MOVE FORKS UP - PRESS AND HOLD PUSHBUTTON MCU-SW3
TO MOVE FORKS DOWN - PRESS AND

SEMI-AUTOMATIC MODE:

PUT OVERRIDE SWITCH IN OVERRIDE POSITION.
PUT LEVER SWITCH IN POS. 2
PRESS AND HOLD MCU-SW2 WHILE REGULAR AUTOMATIC OPERATION

UPPER & LOWER LIMIT SWITCHES

15-3457
UPPER LIM SWITCH
220-00315A
SW2
SW3
LOWER LIM SWITCH
15-3457

J1
2X2 MINIFITJR

220-00421A
J4
RED 24 — +24VSAFE
WHT 24 — JOG MODE
GRN 24 — ACT20+(MOTOR RUN)
YEL 24 — SEMI/AUTO RUN
ORG 24 — JOGGED RUN
BLK 24 — JOG DOWN
SERV PNL SW OVR
GND

MCU SAFETY INTERFACE BOARD
10-4697C

SELV CIRCUITRY

NON-SELV CIRCUITRY

J2
220-00311A
INVERTER CONTROL
N/O CONTACT1
N/O CONTACT2
FREQ 1 (FAST)
FREQ 2 (SLOW)
+15V DC
REVERSE
FORWARD
DC COMMON
CONT REL (RUN)
2X6 MINIFIT

15-3422
MCU MOTOR DRIVE
KEBCO INVERTER
RED 22 — 1 N/O CONTACT
WHT 22 — 2
GRN 22 — 3 SW COMMON
BLK 22 — 4 FREQ 1 (FAST)
BRN 22 — 5 FREQ2 (SLOW)
6 DC COMMON
7
8
9
10
YEL 22 — 11 15VDC
BLU 22 — 12 REVERSE
ORG 22 — 13 FORWARD
GREY 22 — 14 CONT REL (RUN)

DIRECTION
UP
DOWN
K2 RTE24024
D4 UF4002

RUN
K1 RTE24024
D1 UF4002

DIR DOWN ISOLATION
K3 RTE24024
D2 UF4002

SPEED SLOW
K4 RTE24024
D3 UF4002

MOTOR RUN
SENS ISOLATION
R1 1K
U1A ILQ30

220-00294A
J3
RED 22 — 24V SAFE
BLK 22 — ACT20+(MOTOR RUN)
WHT 22 — ACT22+(DIR DOWN)
GRN 22 — ACT24+(FREQ SLOW)
SENS 13.E (MOTOR RUN)
SENS 13.C (MOTOR RUN)
SENS14.C(SFTY LOOP)
SENS14.E(SFTY LOOP)
GND
2X5 MINIFITJR

TO MCU MANIFOLD INT. BRD (J4)
[18] MCU SAFETY CONTROL

GRN 22
WHT 22
BLK 22
MINIFIT 2X2

To MCU LIONEL1 (J8)
[21] MCU SAFETY SENSING
220-00280A

24V OK
DS1
LED,GRN
R3 2K2

DIRECTION SIGNAL
PULLED LOW = DOWN

RUN SIGNAL
CONTROLLED BY F/W
AND K6, K7. ACTIVE LOW

SAFETY LOOP OK
DS2 LED,YEL
D8 UF4002
R4 2K2

J5
RED 22 — CONTACTOR COIL+
BLK 22 — GND
2X3 M'nL

To MCU CONTACTOR COILS
[17] CONTACTORS ON
220-00279A

AUTO/JOG SIGNAL SELECTOR 1
DIR DOWN REQ
SPEED SLOW REQ

J8 1X2 M'nL — RED 22 — 24V SAFE
J9 1X2 M'nL
J6 1X2 M'nL
J7 1X2 M'nL
J10 1X2 M'nL — CONTACTOR COIL+

D5 UF4002
K5 RTE24024

AUTO/JOG SIGNAL SELECTOR2
K6 RTE24024
D6 UF4002

RUN SIGNAL CONTACTOR
RUN REQ
K7 RTE24024
D7 UF4002

U2A ILQ30
R2 1K8

K5, K6 ENERGIZED WHEN LEVER SWITCH SET TO JOG MODE

RELAY ENERGIZED WHEN MCU SAFETY LOOP IS OK

EMERGENCY STOP SWITCH
ES1-MCU 15-3474
ES2-MCU 15-3474
ES3-SSR 15-3474
220-00317A
220-00417A
220-00418A
RED 22
BLK 22

To PDB1 (J42)
[17] PDB1 ESTOP
220-00452A

To MCU BULKHEAD MOD#2 (10)
[21] ES3-SSR
220-00452A

To MCU BULKHEAD MOD#2 (11)
[21] ESTOP1 FOM MCU
220-00452A

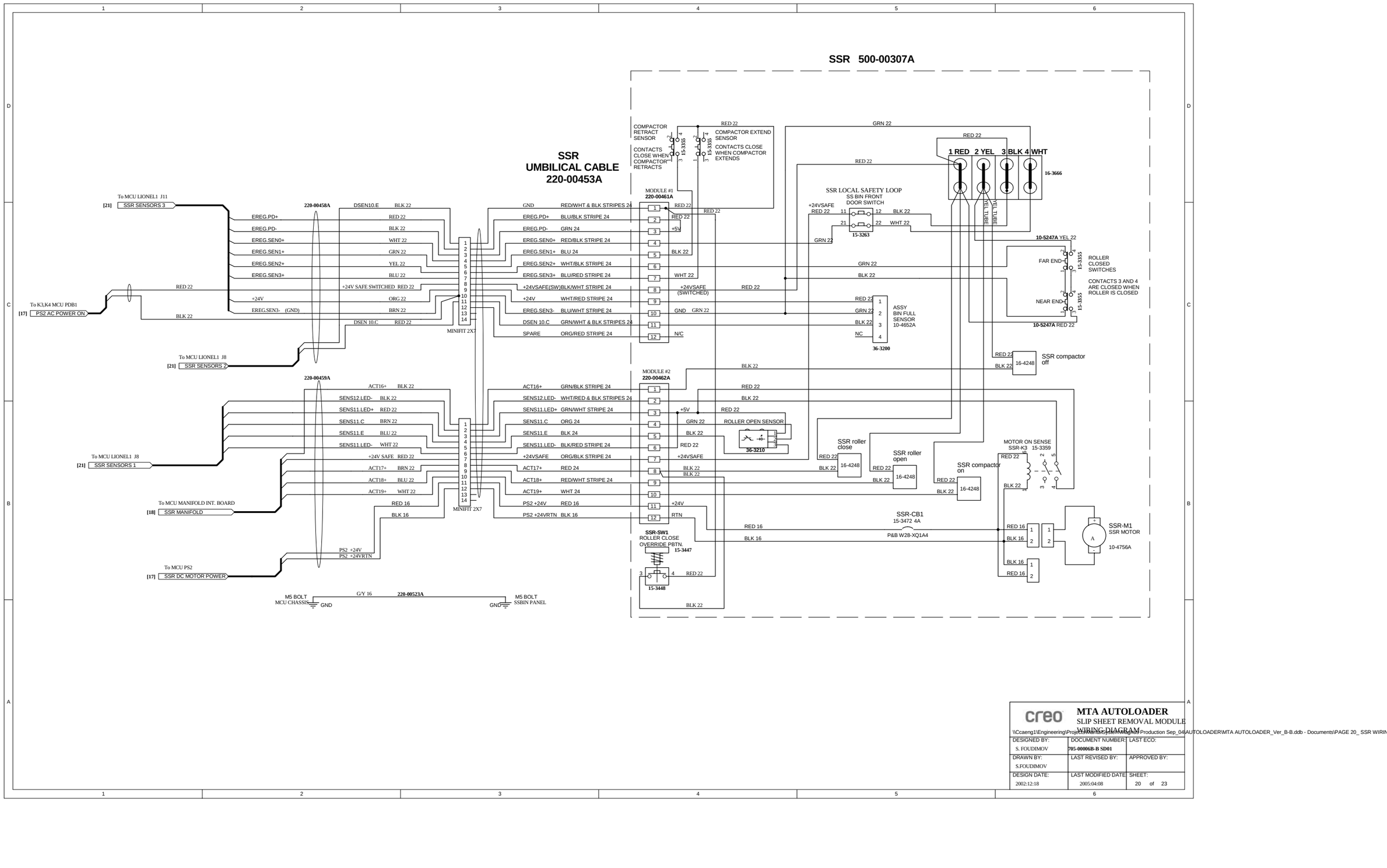
To MCU BULKHEAD (12)
[21] ESTOP3 FROM SSR
220-00452A

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MTA AUTOLOADER
MCU SAFETY INTERFACE BOARD
WIRING DIAGRAM

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MTA AUTOLOADER
SLIP SHEET REMOVAL MODULE
WIRING DIAGRAM

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S.FOUDIMOV		
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2002:12:18	2005:04:08	20 of 23

NOTE: INSTALL POLYSWITCH F2, F5, F6 ON THE LIONEL BOARD

CL PLUG 220-00477A

LIONEL BOARD 1
10-4801B
Board Address = 0x41h

MCU-MACHINE UMBILICAL CABLE 220-00451A

MACHINE BULKHEAD

SSR USER INTERFACE BOARD 503-00101A

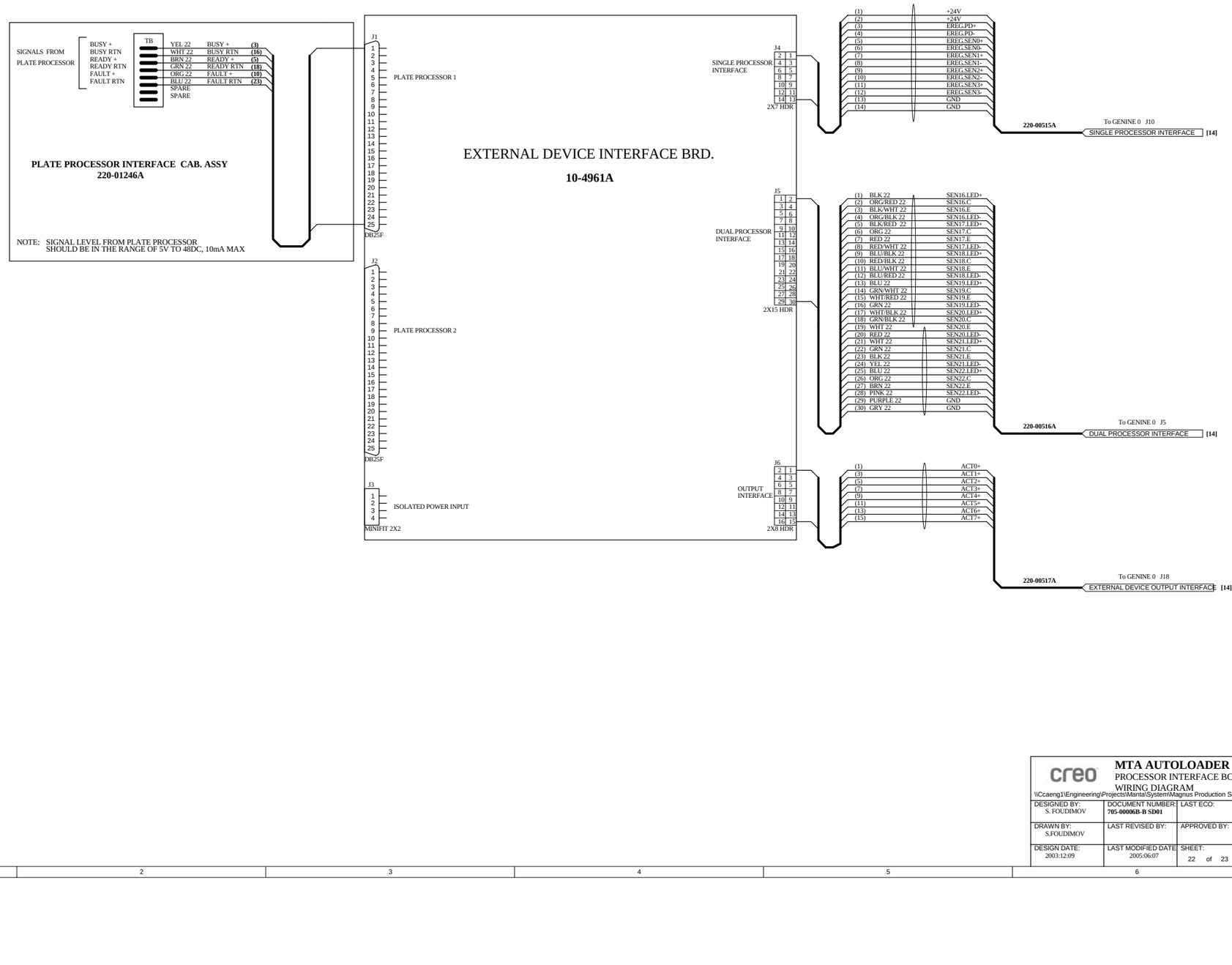
MCU USER INTERFACE BOARD 503-00102A

CONTROL PANEL, SHOULDER AWAY PANEL

SHOULDER HOME PANEL

MTA AUTOLOADER
MCU LIONEL 1
WIRING DIAGRAM
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DRAWN BY:	LAST REVISED BY:	APPROVED BY:
S.FOUDIMOV		
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MTA AUTOLOADER
PROCESSOR INTERFACE BOARD
WIRING DIAGRAM

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MTA DRUM VACUUM PUMP ASSY (MTA-DVP) 518-01555B

200 - 240 VAC NON-SELV CIRCUITRY

SELV CIRCUITRY

200-240 VAC, 50/60HZ, 12A

AC Input 3 Plug

L1 BRN 12
L2/N BLU 12
GND G/Y 12

10-9088A (or 220-00437A)

GND G/Y 12

MS STUD

10-9092A

MS STUD

GND G/Y 12

LF1
FILT30A
P
E
N
P'
N'

13-5176

BRN 12

BLU 12

F1, F2: 12A, 600V, BUSSMANN, Type LP-CC for 60 Hz
F1, F2: 15A, 600V, BUSSMANN, Type LP-CC for 50 Hz

182-00016 for 60 Hz
182-00021 for 50 Hz

F1

F2

F1, F2 FUSEHOLDER, 182-00015

BRN 14

BLU 14

TB1

1
2
3
4

13-4847
C1 3UF

220-00836A

MS STUD

G/Y 14

MS STUD

BRN 14

BLU 14

G/Y 14

BLK 20
BRN 20
BLU 20
G/Y 20

FAN 1 10-4143A

BLK 22 PWM 2
RED 22 +24V

220-00610A

RELAY,25A,SOLID STATE
15-3249

4
5

K1

1
2

220-00609A

BRN 14
BLU 14
G/Y 14

DRUM VACUUM PUMP MOTOR

M 1

220-00836A

MS STUD

1 RED 22
2 BRN 22
3
4 WHT 22 PWM 2
5 GRN 22 PWM 3
6 BLU 22 PWM 5
7 ORG 22 +24V
8

MINIFIT 2X4

220-00611A

To LIONEL 0 (J1)

DRUM VAC. PUMP CONTROL [11]

BLK 22
RED 22

THERMOSTAT 60 C
170-00024

RESET MANUALLY
AT TEMP BELOW 42 C

creo

MTA AUTOLOADER
DRUM VACUUM PUMP
WIRING DIAGRAM

\\Ccaeng1\Engineering\Projects\MANUFacturing\Current Production Sep_04\AUTOLOADER\MTA AUTOLOADER_Ver_B-B.ddb - Documents\PAGE 23_MANTA DRUM VACUUM

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