THERMOFLEX II ELECTRICAL SYSTEM BLOCK DIAGRAM

TRANSFORMER

LINE B

120Vac

DoBlo VACUUM

SENSE

CONTROL

340V-560V 50/60Hz, 16A, 3PHASE
340V-440V 50/60Hz, 16A, 3PHASE

DRUM VACUUM

CONTROL/STATUS

See 10-4141C

GENINE 0

PAGE 8

Tailstock Sense

Drum Hoist Sense/Control

ZStage Home/Away Sense

SCON

TABLE SENSOR

TABLE LOCK

FRONT DOOR LOCK

LIONEL 1

PAGE 9

FRONT DR BUTTON

FRONT DR LIGHT

CONTACTORS

LINEB

240VAC

Exposure Head Power Supply PS4(48V)

CONTACTOR

Exposure Head Power Supply PS3(5.5V)

M3

ZSTAGE STEPPER MOTOR

2:1

WORKSTATION and RIP

User Interface Buttons and LED Lights

SCON

Plate Length Sense

Temperature Sense

Plate Flyoff Sense

CONTROL/STATUS/DATA

Drum Balance Sense

Carriage Home/Away Sense

TFX

PAGE 8

Carriage Leadscrew

200VAC, 50/60Hz, 12A, 1PHASE
OR
230VAC, 50/60Hz, 8A, 1PHASE
OR
120VAC, 50/60Hz, 12A, 1PHASE

Response Centre Dailup

SCSI/TSP, WS(SERIAL), DIAG(SERIAL)

TMCE

PAGE 7

M2

6:1

CONTROL/STATUS/POWER

CARRIAGE AMP

CARRIAGE STEPPER MOTOR

Drum/Mandrel 800RPM

ENCODER

3:1

200-240VAC, 50/60Hz, 12A, 1PHASE

UDRC

LIONEL0

CONTROL/STATUS

SEE 73-3675

CONTROL/STATUS

DRUM AMP

CONTACTOR

CONTACTORS

M1

LINEB

240VAC

BLDC (30Apk)

DRUM MOTOR

DRUM BRAKE

Electromagnetic

MAIN POWER SWITCH

200-240VAC, 50/60Hz, 24A, 1PHASE

CB2 15A

CB1 15A

LINE B

ES1

SCON

Pneumatics Control

CONTROL/STATUS

SAFETY SYSTEM

E-Stop
Door Switches
Hold-to-run Switches
Safety Relays

PAGE 4 and 6

PDB 0

PAGES 5 and 6

240VAC

System Power Supplies PS1(24V), PS2(48V)

24V DC

24V DC

LINE A

240VAC

240VAC

240VAC

FAN4 CARRIAGE MOTOR FAN

FAN5 DRUM MOTOR FAN

FAN6 DRUM BRAKE FAN

L1 A

CONTACTORS

Safety Terminal Connector

SLEEVE OPTION

M5

DRUM HOIST MOTOR

EXTERNAL CHILLER

FAN1

POWER BOX FAN

All notes are on page 2.

Thermoflex II Safety Block Diagram
Page02_EP_Safety_Loop_BD.sch

PAGE 2

SAFETY SYSTEM BLOCK DIAGRAM

Thermoflex II TMCE Wiring
Page07_EP_MCE_Wiring.sch

PAGE 7

TURBOMCE WIRING

Thermoflex II Safety Circuit Diagram
Page03_EP_Safety_Loop_Circuit.sch

PAGE 3

SAFETY SYSTEM CIRCUIT DIAGRAM

Thermoflex II GENINE0 Wiring
Page08_EP_GENINE_Wiring.sch

PAGE 8

GENINE0 WIRING

Thermoflex II Safety Control Module Wiring
Page04_EP_SCM_Wiring.sch

PAGE 4

SAFETY CONTROL MODULE(SCM)

Thermoflex II LIONEL1 Wiring
Page09_EP_LIONEL1_Wiring.sch

PAGE 9

LIONEL1 WIRING

Thermoflex II Safety Loop Wiring
Page05_EP_PDB_Wiring.sch

PAGE 5

PDB0 WIRING (1/2)

Thermoflex II HEAD Wiring
Page10_EP_HEAD_Wiring.sch

PAGE 10

EXPOSURE HEAD WIRING

Thermoflex II PDB Wiring
Page06_EP_Safety_Loop_Wiring.sch

PAGE 6

PDB0 WIRING (2/2) SAFETY SYSTEM WIRING

Thermoflex II DRUM AMP & MOTOR Wiring
Page11_EP_DM-AMP_Wiring.sch

PAGE 11

DRUM AMP & MOTOR WIRING

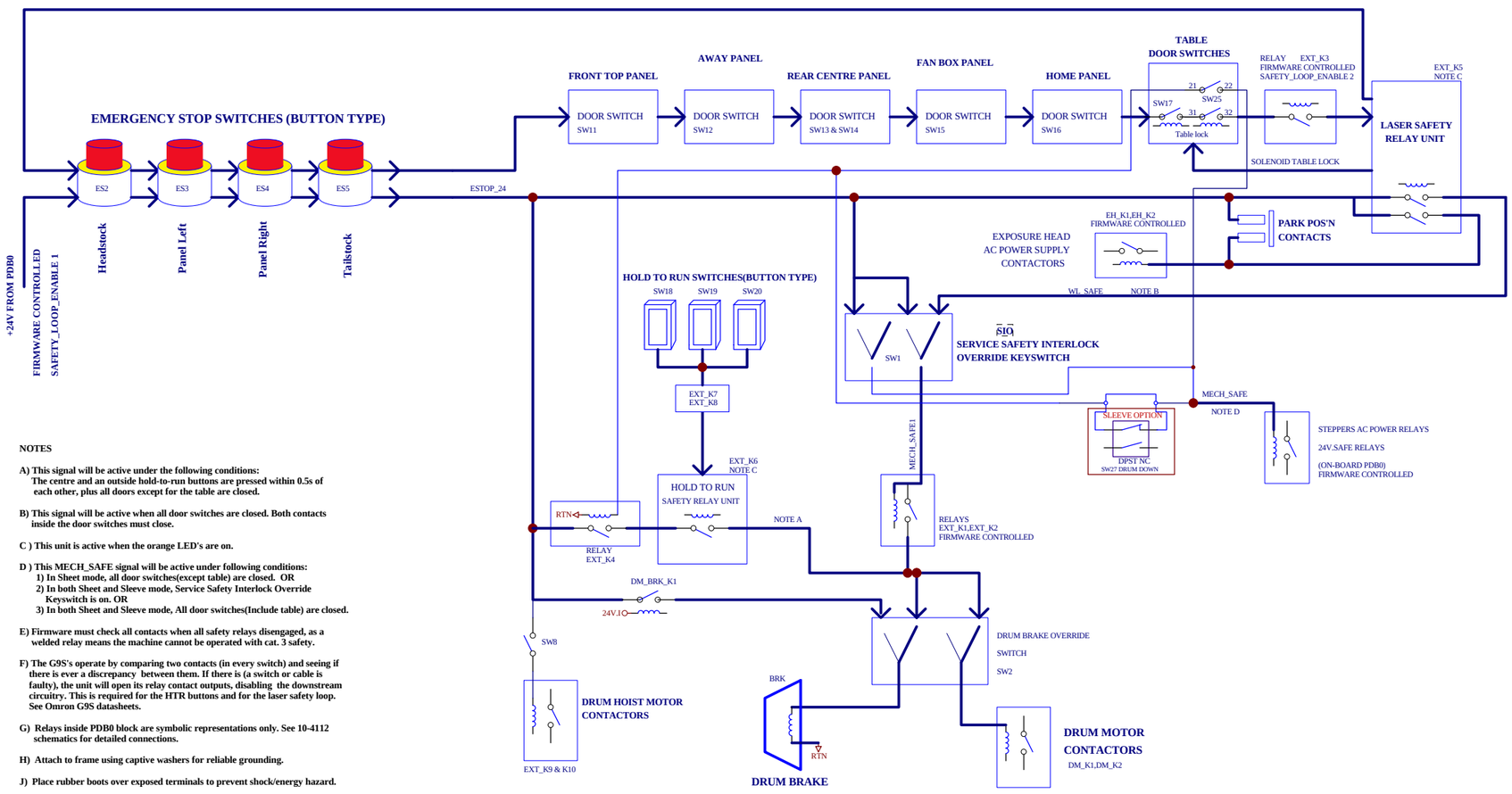
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THERMOFLEX II
SYSTEM BLOCK DIAG.

S:\Projects\WideWeb_Sleeve\Electronics\Wiring_Diagrams\EP\AutomotionAmp\Sleeve_EP_Doblo_Wiring.ddb - Documents\Page01_EP_Wiring_Diagram.prj

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DEC 04 2001	MAR. 18, 2005	1 of 11

THERMOFLEX II SAFETY SYSTEM BLOCK DIAGRAM



NOTES

A) This signal will be active under the following conditions:
The centre and an outside hold-to-run buttons are pressed within 0.5s of each other, plus all doors except for the table are closed.

B) This signal will be active when all door switches are closed. Both contacts inside the door switches must close.

C) This unit is active when the orange LED's are on.

D) This MECH_SAFE signal will be active under following conditions:
1) In Sheet mode, all door switches(except table) are closed. OR
2) In both Sheet and Sleeve mode, Service Safety Interlock Override Keyswitch is on. OR
3) In both Sheet and Sleeve mode, All door switches(Include table) are closed.

E) Firmware must check all contacts when all safety relays disengaged, as a welded relay means the machine cannot be operated with cat. 3 safety.

F) The G9S's operate by comparing two contacts (in every switch) and seeing if there is ever a discrepancy between them. If there is (a switch or cable is faulty), the unit will open its relay contact outputs, disabling the downstream circuitry. This is required for the HTR buttons and for the laser safety loop. See Omron G9S datasheets.

G) Relays inside PDB0 block are symbolic representations only. See 10-4112 schematics for detailed connections.

H) Attach to frame using captive washers for reliable grounding.

J) Place rubber boots over exposed terminals to prevent shock/energy hazard.

K) Service Override Tool 15-3526

L) Both PS1 and PS2 are adjustable power supplies(Creo Part # 13-5094), make sure PS1 is set at 24V and PS2 is set at 48V, before put them into machine's Power Box and make connections.

M) TFX logic power is on the WL safety loop because of the focus laser.

N) Unused connector blocked with mating connector secured with tie-ups.

(SEE PAGE 5 FOR DETAILED WIRING)

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THERMOFLEX II SAFETY SYSTEM BLOCK DIAG.

S:\Projects\WideWeb_Sleeve\Electronics\Wiring_Diagrams\EP\Automation\Amp\Sleeve_EP_Doblo_Wiring.ddb - Documents\Page02_EP_Safety_Loop_BD.sch

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MAIN POWER SWITCH

MAINS
LINE1 200-240VAC

LF1 EMI FILTER 30A
CB1 15A
CB2 15A
ES1
L1_A
L1_B

EMERGENCY STOP SWITCHES

ESTOP (RED) ESTOP (RED) ESTOP (RED) ESTOP (RED)
ES2 HEADSTOCK
ES3 FRONT LEFT
ES4 FRONT RIGHT
ES5 TAILSTOCK
SAFETY_LOOP_ENABLE 1
SAFETY_LOOP_ENABLE 2

DOOR SWITCHES

SHOWN WITH ALL DOORS CLOSED
FRONT TOP PANEL SW11
AWAY PANEL SW12
REAR & FAN BOX PANELS SW13,SW14,SW15
HOME PANEL SW16
TABLE HOME SIDE SW17
TABLE AWAY SIDE SW25
FRONT_DOOR
AWAY_DOOR
REAR_DOOR
TABLE_DOOR

ESTOP_24V
TABLE_LOCK
HOME_DOOR
SOL_LOCK+
WL_SAFE3
EXT_K3
OMRON G9SA-321-T075
EXT_K5
Loop Sense
Delay
Park Pos'n SENSE
EH_CON_SENSE-
EH_CON_SENSE+
WL_SAFE1
WL_SAFE2
EH_K1
EH_K2
EH_CON

SAFETY OVERRIDE KEYSWITCH (2 POS)

SW1
SAFE_OVER
MECH_SAFE1

HOLD-TO-RUN BUTTONS

LEFT SW18
RIGHT SW20
CENTRE SW19
OMRON G9SA-TH301
Loop Sense
Contact Sense
EXT_K6
EXT_K7
EXT_K8
RELAY-DPDT
HTR_IN
EXT_K4
SLEEVE OPTION
DPST NC
SW27 DRUM DOWN
DRUM_DOWN
MECH_SAFE
EXT_K1
EXT_K2
DM_ON-
MECH_EXT_CON_SENSE-
DM_SAFE1
DM_SAFE2
DM_CON_SENS+
DM_CON_SENS-

BRAKE OVERRIDE SWITCH

SW TOGGLE SW2
DM_ON1
DM_ON2
BRAKE_24V
DM_BRK_K1
SW8
BRK
DRUM BRAKE MECHANICAL BRAKE (MATRIX 1EB45)
EXT_K9 & K10
SLEEVE OPTION
DRUM HOIST MOTOR M5
Note N

DRUM AMP (30Apk)
DM_K1
DM_K2
DM_K3
DM_PWR
M1 DRUM MOTOR
DM_CON_SENS-

POWER DISTRIBUTION BRD. (PDB0)

Single pt. ground
EH.ON
PS2.ON
MECH_SAFE
K5
K8
K11
K10
PS2_REL_SENSE
24VSAFE_REL_SENSE
+24V.SAFE
+48V.SAFE

PS4 48V 3A 13-4832
EH_LOG_PWR_48V
EH_LOG_PWR_48VRTN
PS3_K1
PS3 5.5V 7.5A 13-4975
EH_LAS_PWR
PS3_ON
PS1 24V 13-5094
PS2 (48V FOR STEPPERS) 13-5094

TURBOMCE
CARRIAGE AMP
CARRIAGE MOTOR M2
PLATE FLYOFF TRANSMITTER
SAFETY SWITCHED PNEUMATICS
GENINE 0
ZSTAGE MTR. DRV.
ZSTAGE MOTOR M3
LIONEL1

SPARE1 Q2
LOOP.OFF/
DOOR_LOCK1.OFF/
NOTE G
POWER DISTRIBUTION BRD. (PDB0)

DA.ON
POWER DISTRIBUTION BRD. (PDB0)

All notes are on page 2.

(SEE PAGE 5 FOR DETAILED WIRING)

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THERMOFLEX II SAFETY SYSTEM CIRCUIT DIAG.

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SELV
NON-SELV

SLEEVE OPTION--EXTERNAL, PRODUCTION HUB

REC PLUG
PANEL MOUNT
220-00408A
CB4 182-00019 7A
LF3 162-00003 FILTER
378-00005 VACUUM MOTOR
M6 120Vac
BRN 14 120V
BLU 14 0V
G/Y 14 GND
BRN 14
BLK 16
BLK 16
GND
G/Y 14
500-01446A VACUUM VALVE HUB ASSEMBLY
M6 SCREW ON THE HUB
M6 SCREWS ON THE HUB
220-00565A

CB3 15-3215 6A
BRN 14
RED 18
GND
G/Y 14
BLU 14
TB2 16-3665
TB1 13-4726
ORG 18 120V 3
GRY 18 104V 2
BLK 18
WHT 18 0V 1
VIO 18
BRN 18 120V 6
104V 5
0V 4
7 0V
8 120V
YEL 14
1380VA
RED 14
YEL 14 120V
RED 14 0V
M6 STUD Transformer Box
M6 STUD Transformer Box
GND G/Y 14
BLU 14 0V
BRN 14 120V
BRN 14 120V
15-3249 DBL_VAC_K1
Note J
G/Y 14
GND
M6 STUD Transformer Box
+24V
RNT
DBL_VAC_DRV [9]
220-00407A
SLEEVE OPTION-- INSIDE FAN BOX

FROM MCE J7 [7] SCON1
10-5195A
10-9063A LED BOARD
J1
PLUG
RED 22 +24V
ORG 22
WHT(RED PAIR) 22
WHT(ORG PAIR) 22
REC/PLUG
GRN
BLU
YEL
220-00134A
REC/PLUG
TO 10-5175A [8]
10-5167A
R1 120K
R3 2K
10-4339A
TO EXT_K3 [6]
RED 18
GRN 22
BLU_LEDS-
YEL_LEDS-
RED 22
+24V_RED 22
BLU 22
WHT 22
SAT_+48SAFE
SAT_-48SRTN
SAT_+24SAFE
SAT_-24SRTN
SAT_+24V
CAN_H
CAN_L
CHASSIS
TERM_DET
SAT_+24RTN
BRD_LOC1-
BRD_LOC2-
BRD_LOC3-
BRD_LOC4-
BRD_LOC5-
BRD_LOC6-
(7) RED 22 +24V1
(9) BLU 22 +24V2
(1) +24V
(2)GRN LEDS-
(4)
(6)
(8)+24V
(5)
(3)
J13 MINIFIT 2X5 CAN SCON1
J14 MINIFIT 2X8 CAN SCON2
J37 UMNL2X8 SPARE
+24V RTN
+24V
+48V SAFE
+48V SAFE RTN
J10 MOLEX 1X3
J6 MOLEX 2X3
GND
+24V
+48V
GND
J4 MATE 1X4
Key
L1A
L2A/N
GND
BRN OR BLK 14
BLU OR WHT 14
G/Y 14
10-5209A
10-5205A
+24VRTN BLK 14
+24V RED 14
10-5206A
+48V.SAFE BRN 16
+48V.SAFE.RTN BLK 16
10-5210A
G/Y 14
M6 BOLT EBOX FRAME
M6 BOLT POWER SUPPLY TRAY
FEED THROUGH FILTER
PS2
POWER SUPPLY SWITCHED 200-240V 13-5094 (Adjust to 48V)
Notes J, L
48V S
48V R
RED 14
BLK 14
220-00063A
PS1
POWER SUPPLY UNSWITCHED 200-240V 13-5094 (Adjust to 24V)
Notes J,L
24V S
24V R
RED 14
BLK 14
10-5208A
10-5161A
220-00136A
220-00138A
REC PLUG
RED 18
BLK 18
M & L
PLUG REC
RED 22
BLK 22
M & L
10-4521A FAN6 15-3382
DRUM BRK FAN
10-4521A FAN4 15-3382
CARRIAGE MTR FAN
FAN5 376-00001
DRUM MTR FAN
220-00023A
Finger guard 18-3357
PLUG
50-2388A
DEHUMIDIFIER

10-4112H
POWER DISTRIBUTION BOARD 0 (PDB0)
SCON BOARD ADDRESS = 0X10
NOTE G

K5,K8 9A Max, Note C
K4,K7 9A Max, Note C
K2,K3 9A Max, Note C
F/W CTRL
L1A
J5 MATE 1X4
J3 MATE 1X4 PS3
J2 MATE1X5 DA_PWR
NC
Key

VAC FUSE
10-4841A JUMPER
BLK 14
J43 MATE1X2
K15 SSR
L1A
F/W CTRL
MATE2X3 VACUUM PUMP
J26
BRN 14
BLU 14
G/Y 14
L1A
L2A/N
GND
10-5170A
EXTERNAL CHILLER 518-00369A(NA) 518-00370A(EU)
INLET
PLUG
PLUG REC
216-00041
C20
IEC 320 C19
IEC 320 C20 C19
FAN1 15-3191
POWER BOX FAN
10-1436A
B2.L1A BLU 18
B2.L2A/N BLK 18
GND G/Y 18
REC PLUG
M & L
10-5264A
BRN 18 L1A
BLU 18 L2A/N
G/Y 18 GND
J24
K13 SSR
MATE3X3 FANS
J27 L1A
GND
AMPINERGY1X3 AC INPUT
L1A BRN 14
L2A/N BLU 14
GND G/Y 14
F6 6.3A
K6,K9 9A Max, Note C
SAFE SPARE
J15 MATE1X5
L3N
NC

10-5187A
HOIST [8]
TO HOIST LIMIT SWITCHES AND GENINE0
HOIST.ON- BLK 22
RED 22
BLK 22
EXT_K9 15-3213
EXT_K10 15-3213
C3 6uF
L1 BLK 14
L1A BLK 14
L2A/N WHT 14
GND GRN 14
RED 14
BLK 14
WHT 14
GRN 14
G/Y MARK
N/C
Back Shell
10-5263A
PLUG REC
SLEEVE OPTION 220-00038A
RED 16
WHT 16
BLK 16
G/Y 16
M5
DRUM HOIST MOTOR
Back Shell
M&L 2 x 3
Note N
NON-SELV (240VAC)
SELV

220-00564A
ATTACHED MAINS POWER CORD

16-4452
CSA/UL SJT, 12/3AWG 250V, 25A and VDE/HAR HOSVV-F, 3X4.0mm, 250V, 32A

NA PLUG: 16-4560 L6-30P LOCKING, RATED 30A, 250V
EURO PLUG: 16-4024 IEC 309, RATED 32A, 250V

POWER ENTRY BOX

Line Plug
220-00075A(NA,JP) OR 220-00203A(EU)
L1 BRN 12
L2/N BLU 12
GND G/Y 12
LF1 30A 13-5176
L1 LOAD1
GND
L2/N LOAD2
Notes H, J
G/Y 12
GND
M6 STUD
M6 STUD
10-5196A
15-3085 X 2 (Note F)
CB1 15A
CB2 15A
BRN 12
BLU 12
BRN 12
BLU 12
10-5198A
MAIN PWR SWITCH BOX
50-2556A ES1
SW 4POLE ROTARY NOTE K
BRN 14 T1
BLU 14 T2
BRN 14 T3
BLU 14 T4
L1 L1A
L2
L3
L4
G/Y 14 GND
G/Y 14 GND
M6 STUD
M6 STUD
10-5192A
TB1
BRN 14
L2A/N
BLU 14
G/Y 14
L1B BRN 14
BLU 14
L2B/N
G/Y 14 GND
L1B BRN 14
L2B/N BLU 14
G/Y 14 GND
10-5211A
L1B BRN 14
L2B/N BLU 14
GND G/Y 14
EH_AC [10] EH_K1,K2
10-5263A
L1A BLK 14
L2A/N WHT 14
GND GRN 14
G/Y MARK
LF2 13-5027 (Optional)
L1 LOAD1
GND 16A
L2/N LOAD2
Notes H, J
TO DRUM AMP
L1B & L2B/N [11]
10-5198A OR 220-00546A
10-5197A
BRN 14
DM_K3
15-3249
Note J
L1B BRN 14
L2B/N BLU 14
G/Y 14 GND
BRN 14
BLU 14
G/Y 14
RNT
+24V
FROM TMCE J10 SOL_DRV
[7] DM_K3
BLK 22
RED 22
220-00216A
NON-SELV (240VAC)
SELV

All notes are on page 2.

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THERMOFLEX II PDB 0 WIRING DIAG.

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POWER DISTRIBUTION BOARD
10-4112H
BOARD ADDRESS = 0X10

NOTE G

SAFETY CONTROL MODULE
11-1120A
(SEE PAGE 4 FOR DETAILED WIRING)

HOLD TO RUN BUTTONS

FRONT AWAY ES3 RED ESTOP 15-3474 172-00003
HEADSTOCK ES2 RED ESTOP 15-3474 172-00003
FRONT HOME ES4 RED ESTOP 15-3474 172-00003
TAILSTOCK ES5 RED ESTOP 15-3474 172-00003

J1 MINIFIT 2X2 DRUM BRAKE
J11 MINIFIT 2X2 BRAKE_OVER
ESTOP SW
MECH.SAFE
+24V.SAFE
K11,K10 RELAY*
K14 RELAY
F8
F7
2_LOOP_IN
F/W CTRL
ESS_SENSE
GND.LOG
+24V

J42
J40 MINIFIT 2X4 DOOR ZONE 1
J39 MINIFIT 2X4 DOOR ZONE 2
J31 MINIFIT 2X4 DOOR ZONE 3
J30 MINIFIT 2X4 DOOR ZONE 4

10-5267A FRONT TOP PANEL SW11 AWAY PANEL SW12
REC/PLUG MINI-FIT
DOOR_FRONT1+ RED 18
DOOR_FRONT1- BLK 18
DOOR_AWAY1+ RED 18
DOOR_AWAY1- BLK 18
TO 220-00054B DOOR FRONT- [9]

10-5268A REAR PANEL 1 SW13 REAR PANEL 2 SW14 FAN BOX PANEL SW15 HOME PANEL SW16
15-3263
DOOR_REAR1+ RED 22
DOOR_REAR1- RED 22
DOOR_HOME1+ RED 22
DOOR_HOME1- BLK 22
DOOR_TABLE1- BLK 18
DOOR_TABLE1+ RED 22

10-5213A/220-00079A (PARTIAL)
TABLE FLEXTRACK: 11-1123A
TABLE HOME SIDE SW SW17
172-00031
E1 E2
SW25 172-00031
10-5214B
10-5213A Partial
10-5272A (PARTIAL)
10-5167A PARTIAL
EXT_K3 15-3359
(5) FROM PDB(0) J37
+24V RED 22
SPR1 BLK 22
DPST NC SW27 DRUM DOWN
TO 10-5188A
220-00472A
SLEEVE OPTION
N/C

10-5272A (PARTIAL)
PLUG J1 MINIFIT 2 X 4

J41
SAFE_OVER BLK 18
10-5265A
J6 MINIFIT 2 X 8
SAFE_EXT
WL_SAFE3
RTN
MECH_SAFE
+24V
EH_ON-
DM_ON-
MECH_EXT_CON_SENS-
DM_CON_SENS-
EH_CON_SENS-
J44 MINIFIT 2X7

WL_SAFE2 RED 18
ESTOP_24 RED 18
SW1 15-3334 SERVICE INTERLOCK OVERRIDE KEYSWITCH(SIO) (2 POS)
ESTOP_24 [8] TO HOIST SW

J32 HEAD SAFETY CTRL
J35 J34 J28 J29
RTN.LOG
F/W CTRL PDB K16
TABLE_LOCK+ RED 18
MLX1X2
LP2 LAMP
LP1 LAMP 10-3721A x2
MECH HAZARD OVERRIDE LAMPS

J2 PLUG MINIFIT
HTR_DET+ RED 22
HTR_DET- BLK 22
J3 PLUG M & L 1 X 3
+24V RED 22
HTR_CTR BLK(RED PAIR) 22
HTR_SIDE WHT 22

10-5173A
HTR_SENS [7] TO MCE J5
10-5166A
HTR_DOWN+ BRN 22
HTR_DOWN- BLU 22
HTR_UP+ RED 22
HTR_UP- BLK 22
MINITFIT JR.
10-5177A
WHT 22 HTR_DOWN+
RED 22 HTR_UP+
BLK 22 HTR_DOWN-

10-5162A
J4 PLUG MINIFIT 2 x 3
DM_BRK_K1
SAF_DM_BRK_ENABLE- [7] TO 10-5165B (TMCE J10)
220-00403A
24V.I RED 22
SW2 15-3536 SW TOGGLE
DM_SAFE1 RED 18
DM_SAFE2 BLK 18
ESTOP_24 GRN 18
BRAKE OVERRIDE SWITCH
MINIFIT PLUG REC
10-5269A BRK DRUM BRAKE SA-43496 HUB STD
RTN BLK 18
24V BLK 18
DM_ON2 BLK 18
DM_ON1 WHT 18
BRAKE 24V

J5 PLUG M & L 1 X 6
220-00026A REC PLUG MINI FIT
220-00025A
PARK POSITION CONTACT BOARD 17-5249B
(16-4570 Socket)
(16-4583 Probe)
RED 18
BLK(R-PAIR) 18
WHT 18
BLK(W-PAIR) 18
GRN 18
BLK(G-PAIR) 18
BLU 18
BLK(B-PAIR) 18

BRKOVR+ RED 22
BRKOVR- BLK 22

TO MCE J4 [7] EH_PARK_POS_SENSE
10-5199A REC PLUG MINI-FIT

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THERMOFLEX II SAFETY SYSTEM WIRING DIAG.

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SEP 01, 2001	MAR. 18, 2005	6 of 11

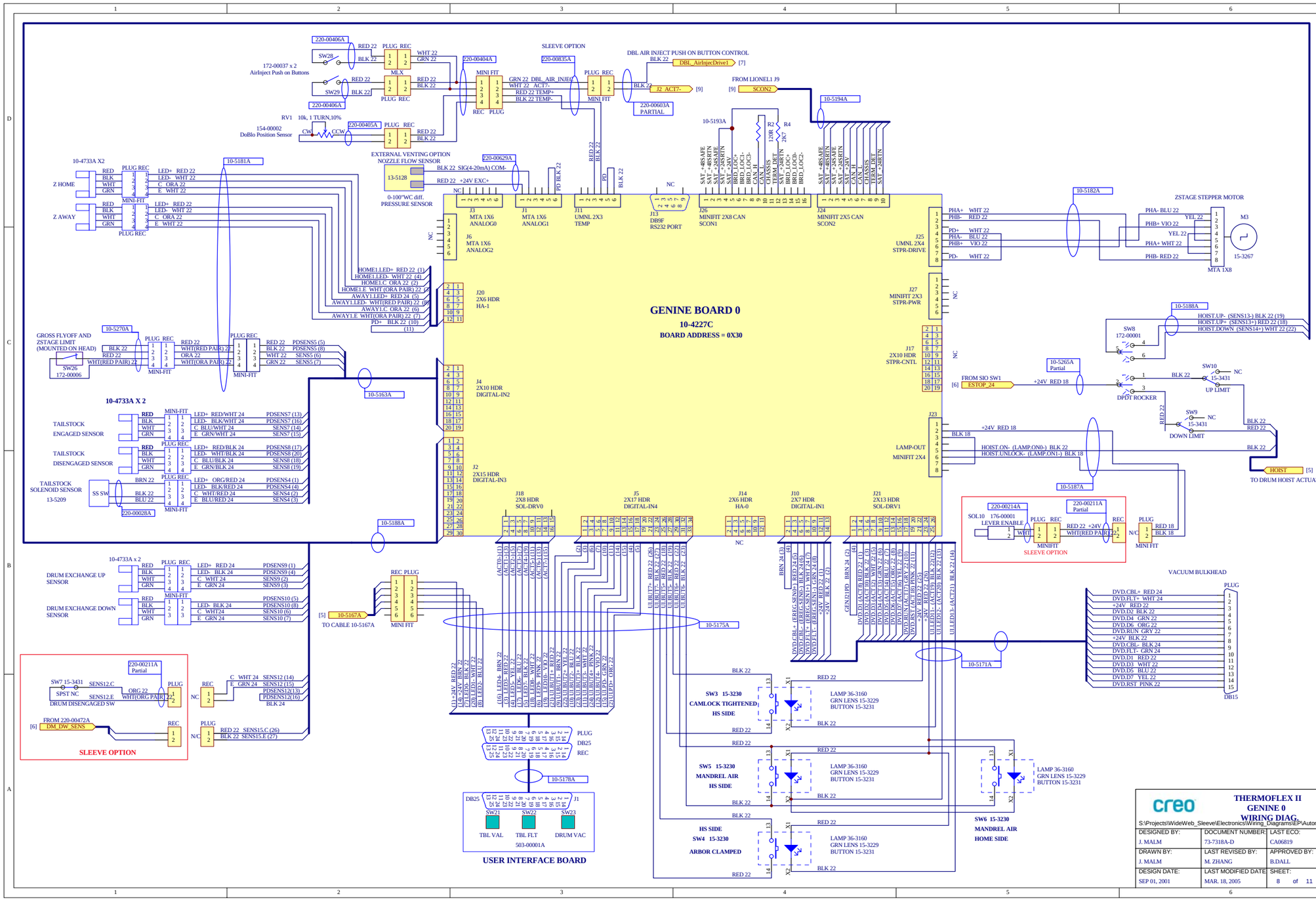
TURBOMCE BOARD
10-4766D

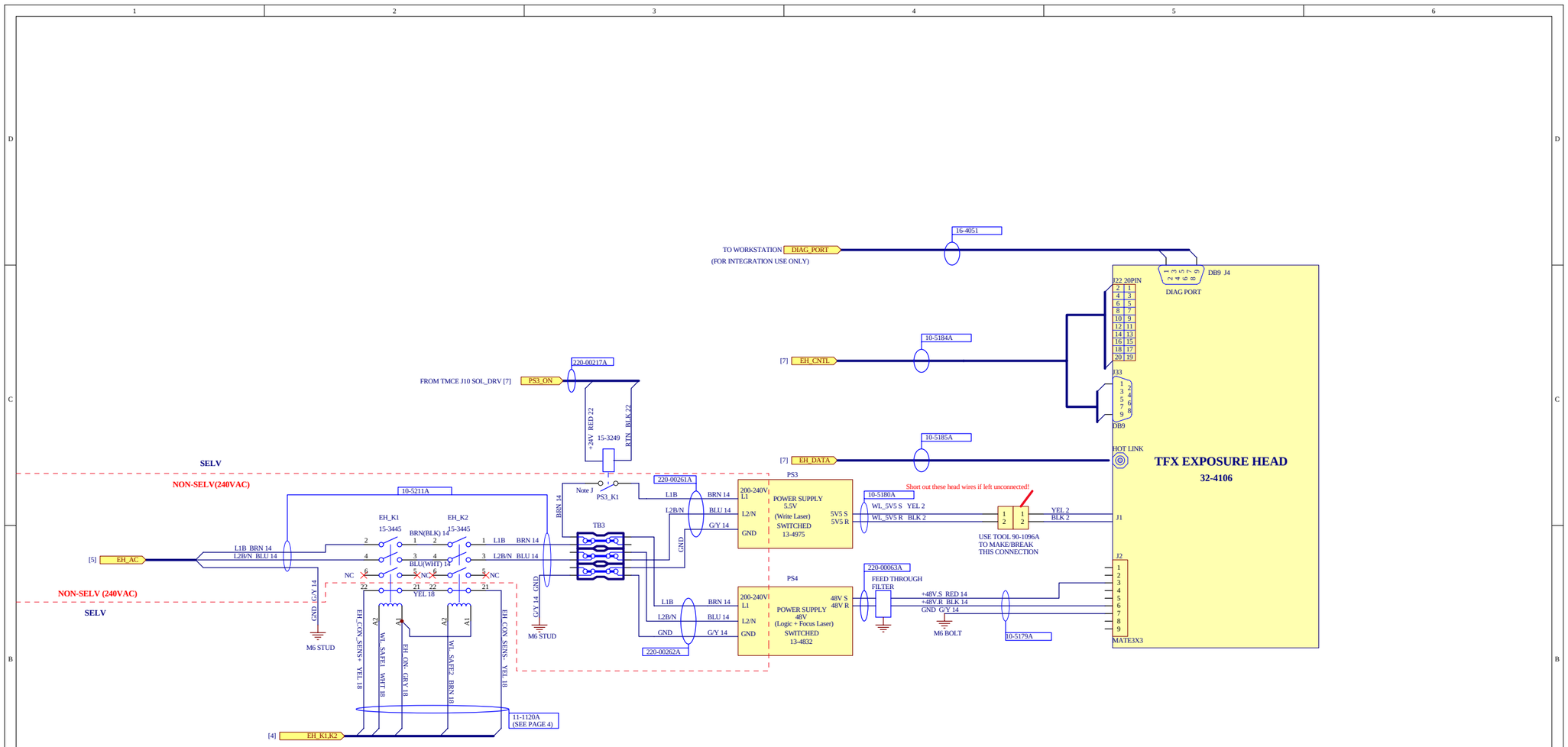
DRUM ENCODER
ENC1
34-3307
507-00019A
220-00027A
HDB15M HDB15F
FROM PDB J14 [4]
TO LIONEL1 J13 [9]
SCON1
SCON2
10-5195A
10-5194A
ENGINE TEMP
THERMISTOR
RT1
10-0967A
REC PLUG
M&L
10-5164A
EH_DATA
EH_CNTL
[10] TO EXPOSURE HEAD
[10] TO EXPOSURE HEAD
10-5185A
10-5184A
10-5202A OR 220-00548A
DA_CTRL [11]
TO DRUM AMP
FERRITE 13-4807 (X2)
WS_COMM 16-3460
DIAG_COMM 16-3460
SCSI 16-3503
N/C
J39 WS_COMM DB9F
J38 J42 DB9F WS_SCSI
J40 DB9F
J20 HDB15F DRUM_ENC
J8 MINIFIT 2X5 CAN SCON2
J7 MINIFIT 2X5 CAN SCON1
J30 MINIFIT 2X6 TEMP
J1 SMB EH_DATA
J2 HDB44,IDC EH_CNTL
J35 DB15F DRUM_AMP
SAT +48SAFE
SAT -48SRTN
SAT +24SAFE
SAT -24SRTN
SAT +24V
CAN_H
CAN_L
CHASSIS
TERM_DET
SAT +24RTN
PD_TEMP- BLK 22
ENG_TEMP+ YEL22
ENG_TEMP- BLK 22
FERRITE 13-3602
(or J44 for BRISQUE)
MANIFOLD 50-2743A
SOLENOID 55-0771 X 4
10-5172B
TABLE FLT ON
TLSTK LOCK OFF
MANDR AIR ON
DBL AIRINJECT ON
SOL1
SOL2
SOL3
SOL4
REC PLUG
+24V RED 22 (1)
TBL_FLT- BLK 22 (3)
+24V
TSTK_LCK- BRN 22 (4)
+24V
GRN 22 (2)
RED 22
MDRL_AIR- BLU22(5)
DBL AIRINJECT YEL 22 (6)
MINI-FIT
WHT 22
BUZ BLK 22 (7)
220-00603A PARTIAL
[8] DBL_AirInjectDrive1
BLK 22
PLUG REC
J16 2X5 HDR USR_IF
BUZZER 137-00001 Mounting brkt: 252-01511A
24V RED 26
RTN BLK 26
220-00177A
PLUG REC
MINI-FIT
24V.1
RED 22 (1)
RED 22 (2)
TO 10-5165B [7]
24V.1
J21 2X7 HDR REG
PFO TRANSMITTER
S1 36-3145
+24V.SAFE BRN 22
RTN BLU 22
950nm
10-5169A
J3 MINIFIT 1X2 PFO_E
PFO DETECTOR
S2 36-3118
+24V BRN 22
FLYOFF BLK 22
RTN BLU 22
BLK 22
J19 1X8 HDR PFO-S
10-5168A
10-5213A (PARTIAL)
220-00079A (PARTIAL)
PLUG REC
RED 24
WHT(RED PAIR) 24
ORG 24
WHT(ORG PAIR) 24
NC
MINI FIT
MINIFIT JR.
PD.LR BLK 24
+5V RED 24
LR.QUE/ WHT24
RTN BLK 24
BLK 22
10-5214B [6]
SW27-11 [6]
J12 MTA 1X6 LTPS
BS_TEMP J 46 DB9M
J10 2X13 HDR SOL_DRV
J26 HDR 2X10IDC CA_CTRL
J13 MINIMATE3X3 CA_PWR
J5 DB25F DIN_SPR
J37 DB9F
J24 MINIFIT 2X4 RLY_DRV
GRN 22
RELAY0+ RED 22
RELAY1+ RED 22
RELAY2+ WHT 22
RELAY0- BLK 22
RELAY1- BLK 22
RELAY2- GRN 22
10-5166A
MANIFOLDS 50-2743A
SOL5
L TABLE VAC ON
SOL6
R TABLE VAC ON
SOLENOID 55-0771 X 2
UDRC OPTION
NOZZLE FLOW SENSOR
PRESSURE SENSOR 0-100"WC diff.
13-5128
REC
DSEN18.C (CS_CD+) BRN 22
+24V RED 22
+24V BRN 22
RXD_WHT 22 (FS_RXD)
RELAY0+ (FS_RLY+) RED 22
DSEN19.C (FS_STAT1+) RED 22
NOZ_EXC+ RED 22
RTN_BLK 22
DSEN18.C (CS_CD-) BLU 22
CS_RLY1- GRN 22
CS_RLY2- WHT 22
TXD (FS_TXD) RED 22
RELAY0- (FS_RLY-) BLK 22
DSEN21.E (FS_STAT1-) BLK 22
NOZ_COM- BLK 22
DB15
TO UDRC
TO 10-5165A [7]
EXTERNAL CHILLER CONTROL
10-5165B
10-5183A
10-0967A
RT2
THERMISTOR LEADSCREW TEMP (ON CARRIAGE)
M&L
SOL8.2
SOL9.2
SOL7.1
SOLENOID 55-0771 X 3
HEAD AIROET ON
AY DRM BAL ON
HM DRM BAL ON
SAFETY CONTROLLED MANIFOLDS
DRV6S BLK 22
+24V1 RED 22
DRV7S BLK 22
+24V1 RED 22
220-00216A
DM_K3 [5]
PS3_K1 [10]
220-00217A
24V.1 [7]
FROM 10-5172B
220-00403A
DM_BRK_K1 [6]
10-5200A
10-5201A
J1 M&L
CM_PWR
CARRIAGE AMP 503C01525B
J2 HDR 2X10IDC CA_CTRL
J3 UMNL 2X4 CM_DRIVE
PHA+ RED 18
PHB- BLK(WHT PR) 18
PD+ GRN 18
PHA- BLK(RED PR) 18
PHB+ WHT 18
CHASSIS_DRAIN
PD- BLK (GRN PR) 18
10-5160A
M2 CARRIAGE STEPPER MOTOR
184-00012B
HTR_SENS [6] TO SAFETY SYSTEM AND CABLE 10-5177A
10-5199A
J4 DB37F DIN_AS
J6 DB37M DIN_HS
Z.APRX 36-3141
Z.HS.COLLISION 36-3141
220-000153A
220-000154A
MINI-FIT REC_PLUG
RED 22
ORG 22
WHT 22
PLUG_REC
LED+ RED 24
LED- BLK 24
C WHT 24
E GRN 24
LED+ RED/BLK 24
LED- BLU/BLK 24
C WHT/BLK 24
E GRN/BLK 24
LED+ RED/WHT 24
LED- BLU/WHT 24
C WHT/WHT 24
E GRN/WHT 24
DRUM BALANCER
AWAY SIDE
10-4733A x4
CARRIAGE AWAY
EXT.
RETR.
WT. DET
RED
BLK
WHT
GRN
REC_PLUG
EH_PARK_POS_SENSE
FROM CONTACT BOARD [6]
220-00129A
220-00130A
10-5203A
MINI-FIT 2X8
PLUG_REC
RED 26
WHT(RED PAIR) 26
ORG 26
WHT(ORG PAIR) 26
YEL 26
WHT(YEL PAIR) 26
GRN 26
WHT(GRN PAIR) 26
BLU 26
WHT(BLU PAIR) 26
VIO 26
WHT(VIO PAIR) 26
GRY 26
WHT(GRY PAIR) 26
MINI-FIT 2X8
10-4733A
CARRIAGE HOME
MINI-FIT 2X3
DRUM BALANCER HOME SIDE
TSK LOK
WT DET.
(1) DSEN9
(20) DSEN9
(2) DSEN9
(21) DSEN9
(3) DSEN10
(22) DSEN10
(4) DSEN10
(23) DSEN10
(5) DSEN11
(24) DSEN11
(6) DSEN11
(25) DSEN11
(13) DSEN15
(32) DSEN15
(14) DSEN15
(33) DSEN15
(11) DSEN14
(30) DSEN14
(12) DSEN14
(31) DSEN14
(7) DSEN3
(26) DSEN3
(8) DSEN3
(27) DSEN3
(9) DSEN6
(28) DSEN6
(10) DSEN6
(29) DSEN6
(15) DSEN5
(34) DSEN5
(16) DSEN5
(35) DSEN5
(17) DSEN5
(36) DSEN5
(37) DSEN5.C RED 24
(18) DSEN5.E BLK 24
(19) DSEN5.E GRN 24

THERMOFLEX II TURBOMCE WIRING DIAG.

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DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
SEP 01, 2001	MAR. 18, 2005	7 of 11


GENINE BOARD 0
10-4227C
BOARD ADDRESS = 0X30
USER INTERFACE BOARD
503-00001A
SLEEVE OPTION
SLEEVE OPTION
SLEEVE OPTION
10-4733A X 2
10-4733A X2
10-4733A x 2
SW3 15-3230
CAMLOCK TIGHTENED
HS SIDE
SW5 15-3230
MANDREL AIR
HS SIDE
SW4 15-3230
ARBOR CLAMPED
SW6 15-3230
MANDREL AIR
HOME SIDE
LAMP 36-3160
GRN LENS 15-3229
BUTTON 15-3231
ZSTAGE STEPPER MOTOR
VACUUM BULKHEAD
DBL AIR INJECT PUSH ON BUTTON CONTROL
SLEEVE OPTION
FROM LIONEL1 J9
FROM SIO SW1
TO DRUM HOIST ACTUATOR
TO CABLE 10-5167A
DBL_AirInjectDrive1
SCON2
ESTOP_24
DM_DW_SENS
HOIST
UP LIMIT
DOWN LIMIT
DPDT ROCKER
TAILSTOCK ENGAGED SENSOR
TAILSTOCK DISENGAGED SENSOR
TAILSTOCK SOLENOID SENSOR
DRUM EXCHANGE UP SENSOR
DRUM EXCHANGE DOWN SENSOR
DRUM DISENGAGED SW
GROSS FLYOFF AND ZSTAGE LIMIT (MOUNTED ON HEAD)
AirInject Push on Buttons
DoBlo Position Sensor
EXTERNAL VENTING OPTION
NOZZLE FLOW SENSOR
0-100"WC diff. PRESSURE SENSOR
Z HOME
Z AWAY
LAMP-OUT MINIFIT 2X4
J1 MTA 1X6 ANALOG1
J2 2X15 HDR DIGITAL-IN3
J3 MTA 1X6 ANALOG0
J4 2X10 HDR DIGITAL-IN2
J5 2X17 HDR DIGITAL-IN4
J6 MTA 1X6 ANALOG2
J10 2X7 HDR DIGITAL-IN1
J11 UMNL 2X3 TEMP
J13 DB9F RS232 PORT
J14 2X6 HDR HA-0
J17 2X10 HDR STPR-CNTL
J18 2X8 HDR SOL-DRV0
J20 2X6 HDR HA-1
J21 2X13 HDR SOL-DRV1
J23 LAMP-OUT MINIFIT 2X4
J24 MINIFIT 2X5 CAN SCON2
J25 UMNL 2X4 STPR-DRIVE
J26 MINIFIT 2X8 CAN SCON1
J27 MINIFIT 2X3 STPR-PWR
THERMOFLEX II
GENINE 0
WIRING DIAG.
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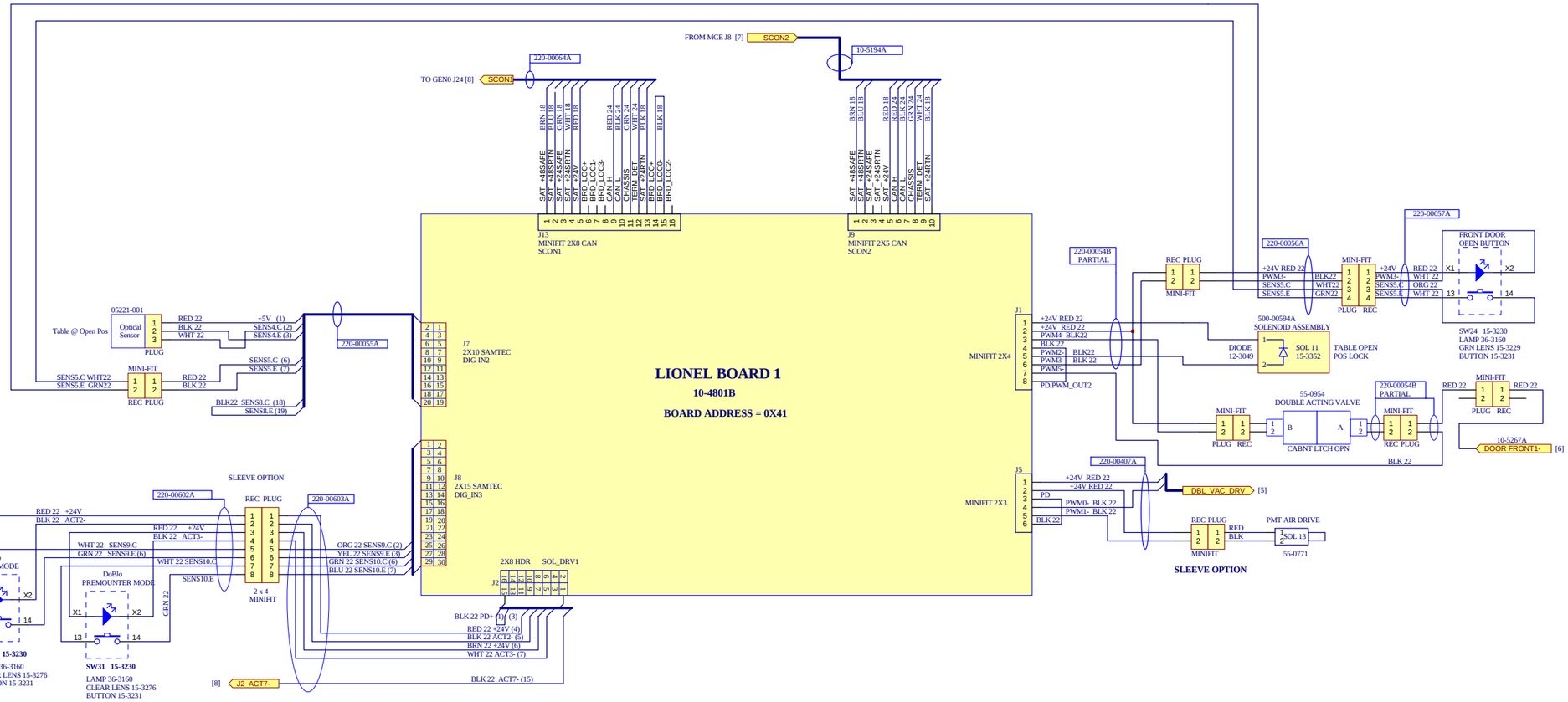


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THERMOFLEX II
EXPOSURE HEAD
WIRING DIAG.

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THERMOFLEX II
LIONEL1
WIRING DIAG.

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DEC.17, 2002	MAR. 18, 2005	9 of 11

SAFETY CONTROL MODULE
11-1120A

J1 REC — 2 x 4 MINIFIT
TO CABLE 10-5272A [6]
1 RED 18 ESTOP_24
2 BLK 18 DOOR HOME1-
3 BLK 18
4 YEL 18
5 YEL 18
6 BLK 18
7 RED 18 TABLE LOCK+
8 BLK 18 RTN

J6 REC — 2 X 8 MINI-FIT
TO CABLE 10-5165A [6]
1 WL_SAFE3
2 RTN
3 MECH_SAFE1
4 RTN
5 +24V
6 +24V
7 +24V
8 ESTOP_24
9 EH_ON- GRY 18
10 RTN BLK 18
11 DM_ON- GRY 18
12 RTN BLK 18
13 MECH_EXT_CON_SENS- YEL 18
14 DM_CON_SENS- YEL 18
15 EH_CON_SENS- YEL 18
16 TABLE_LOCK+ RED 18

J2 REC — MINIFIT
HTR DET+ RED 18
HTR DET- BLK 18
TO CABLE 10-5166A [7]

J3 REC — 1 x 3 M&L
+24V RED 18
HTR CTR BLK 18
HTR SIDE WHT 18
TO CABLE 10-5173A [6]

J4 REC — 2 x 3 MINIFIT
TO CABLE 10-5162A [6]
1 DM_ON2 BLK 18
2 DM_ON1 WHT 18
3 RTN BLK 18
4 DM SAFE1 WHT 18
5 DM SAFE2 BRN 18
6 ESTOP_24 RED 18

J5 REC — 1 x 6 M&L
TO CABLE 220-00025A [6]
1 ESTOP_24 RED 18
2 ESTOP_24 RED 18
3 EH_CON_SENS- ORG 18
4 WL_SAFE1 WHT 18
5 WL_SAFE2 BRN 18
6 EH_CON_SENS+ YEL 18

EXT_K3 15-3359 — EXT_K4 15-3359 — EXT_K5 RELAY, GRA-321-T075 15-3539 — EXT_K6 G9EA-THD01 15-3540 — EXT_K7 15-3248 — EXT_K8 15-3248

10-5167A PARTIAL
(5) FROM PDB(0) J37
+24V RED 22
SPR1 BLK 22
HTR_IN GRY 18
RTN BLK 18
RNT BLK 22
TABLE_LOCK+ RED 18
DM_CON_SENS-
DM_CON_SENS+
DM_ON1 WHT 18
DM_ON2 BRN 18
RTN BLK 18
EH_CON_SENS- YEL 18
EH_CON_SENS+ YEL 18
WL_SAFE1 WHT 18
WL_SAFE2 BRN 18
EH_ON- GRY 18
MECH_SAFE_BRN 18
DM_ON- GRY 18
RTN BLK 18
MECH_EXT_CON_SENS- YEL 18
DM_CON_SENS- YEL 18
ESTOP_24 RED 18

EXT_K1 15-5162 — EXT_K2 15-5162

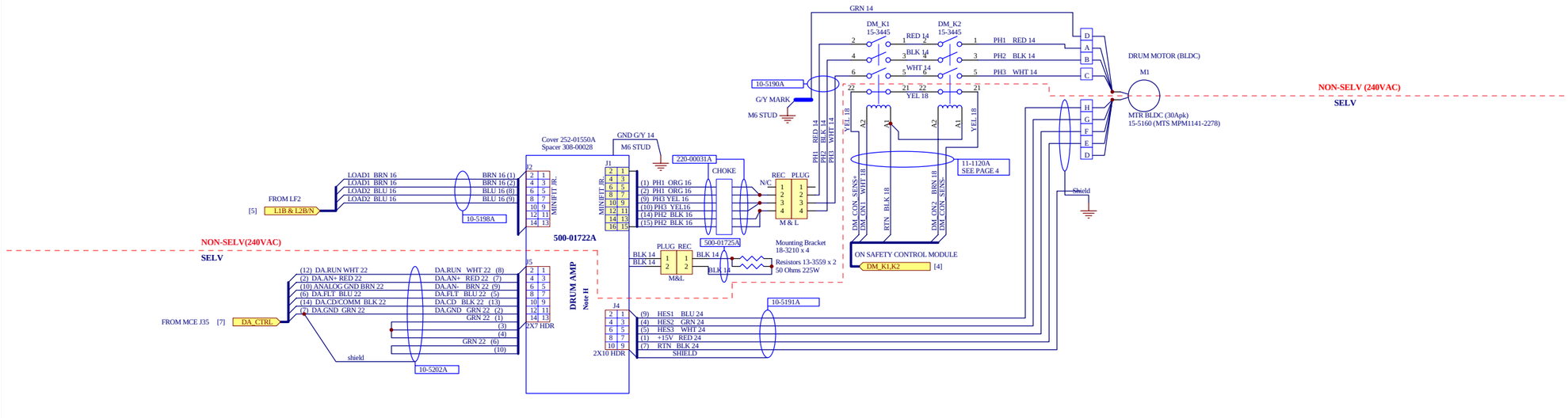
SELV
NON-SELV(240VAC)
10-5190A
PH1 RED 14
PH2 BLK 14
PH3 WHT 14
FROM 10-5190A [5]
DM_K1 15-3445 — DM_K2 15-3445
DRUM MOTOR(BLDC)
NON-SELV(240VAC)
SELV

EH_K1 15-3445 — EH_K2 15-3445
NON-SELV(240VAC)
BRN(BLK) 14
BLU(WHT) 14
BRN 14
LIB BRN 14
FROM 10-5211A [10]
NON-SELV(240VAC)
SELV

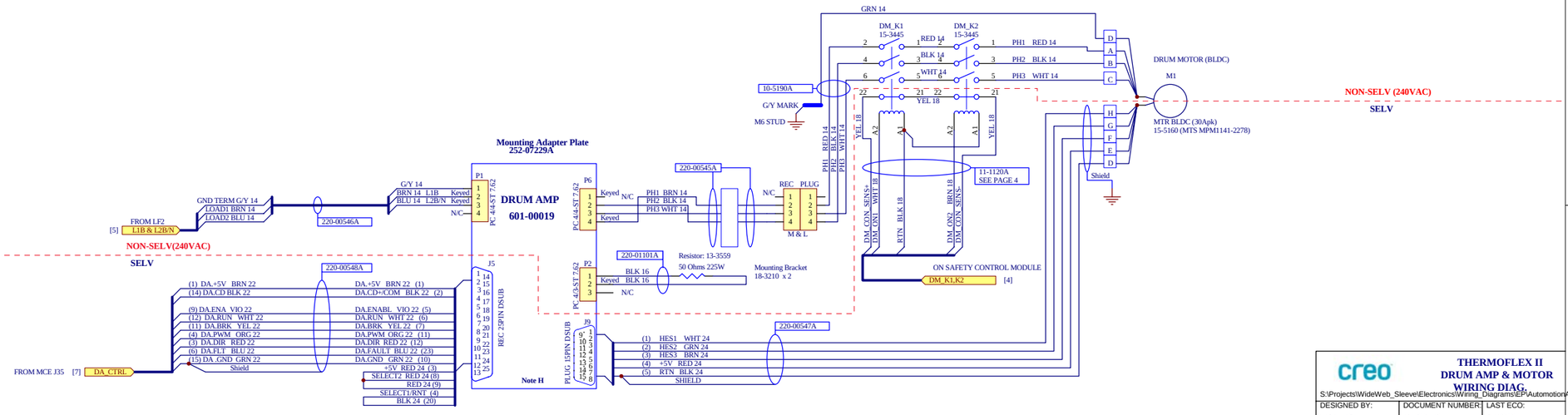
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THERMOFLEX II
SAF CTRL MODULE
WIRING DIAG.
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CREO DRUM DRIVER WIRING



AUTOMOTION DRUM AMP WIRING



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