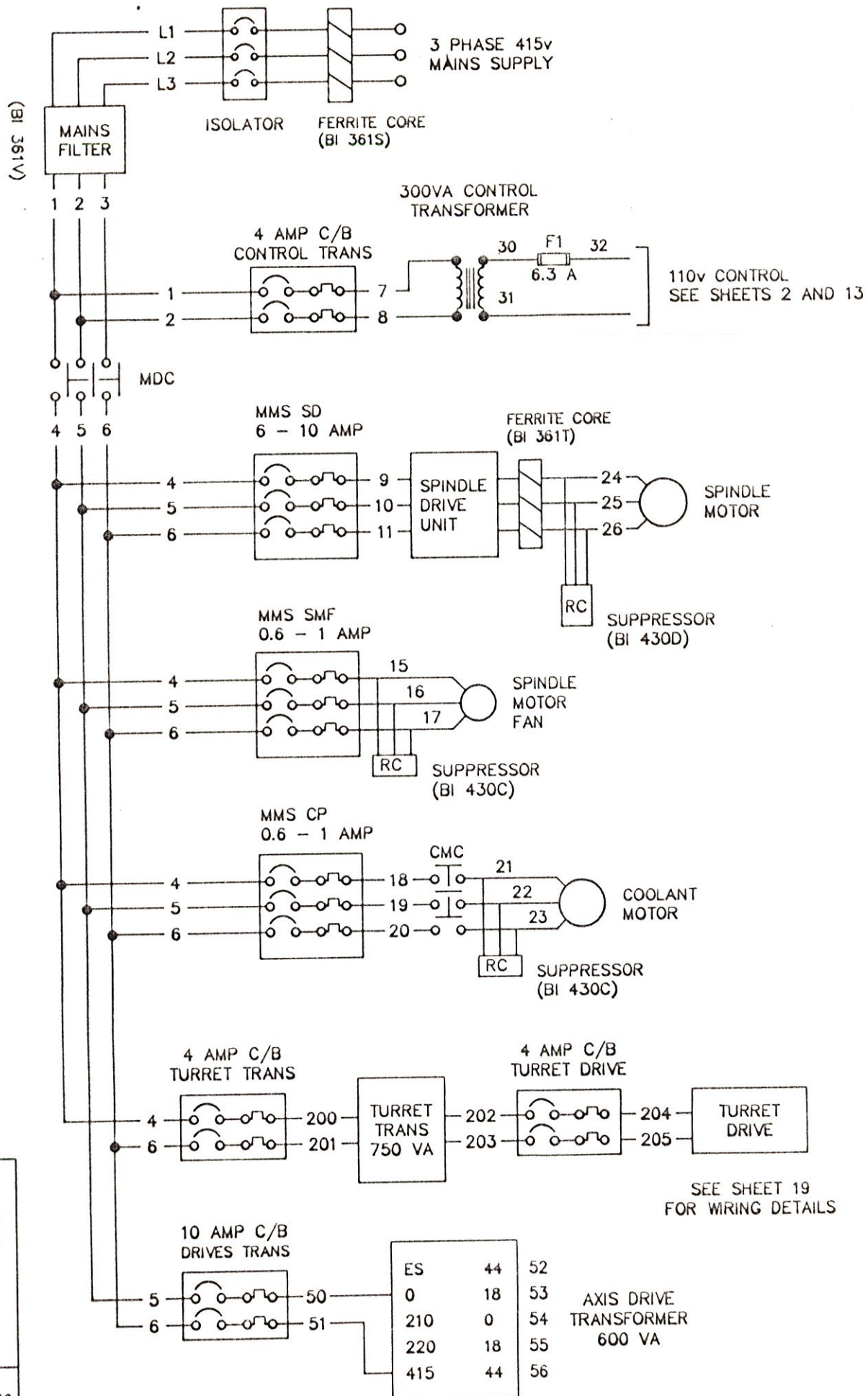
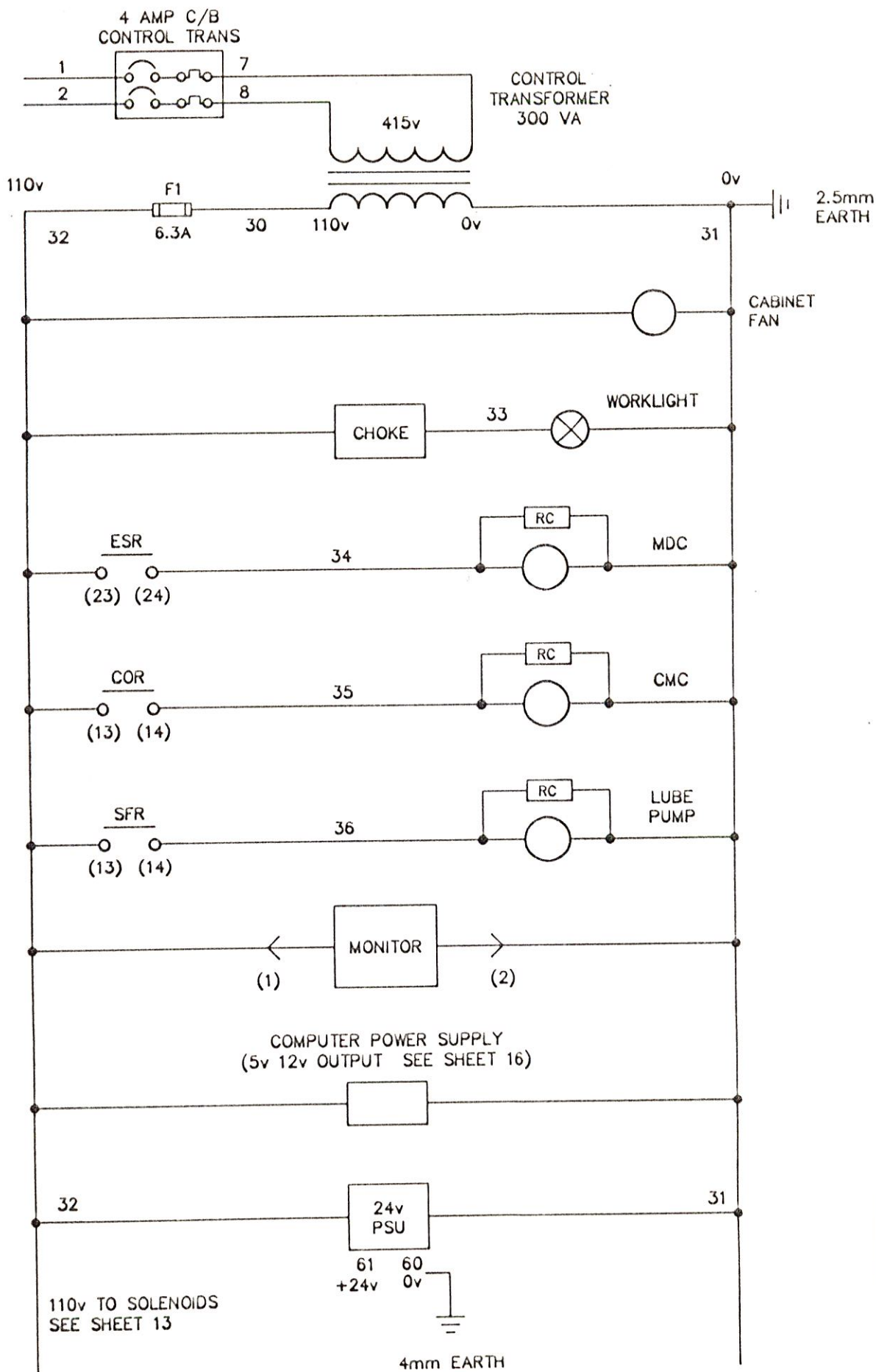


TU150 E
POWER SCHEMATIC
DW 8 TURRET

SHEET 1
[TU150E]



IF IN DOUBT ASK

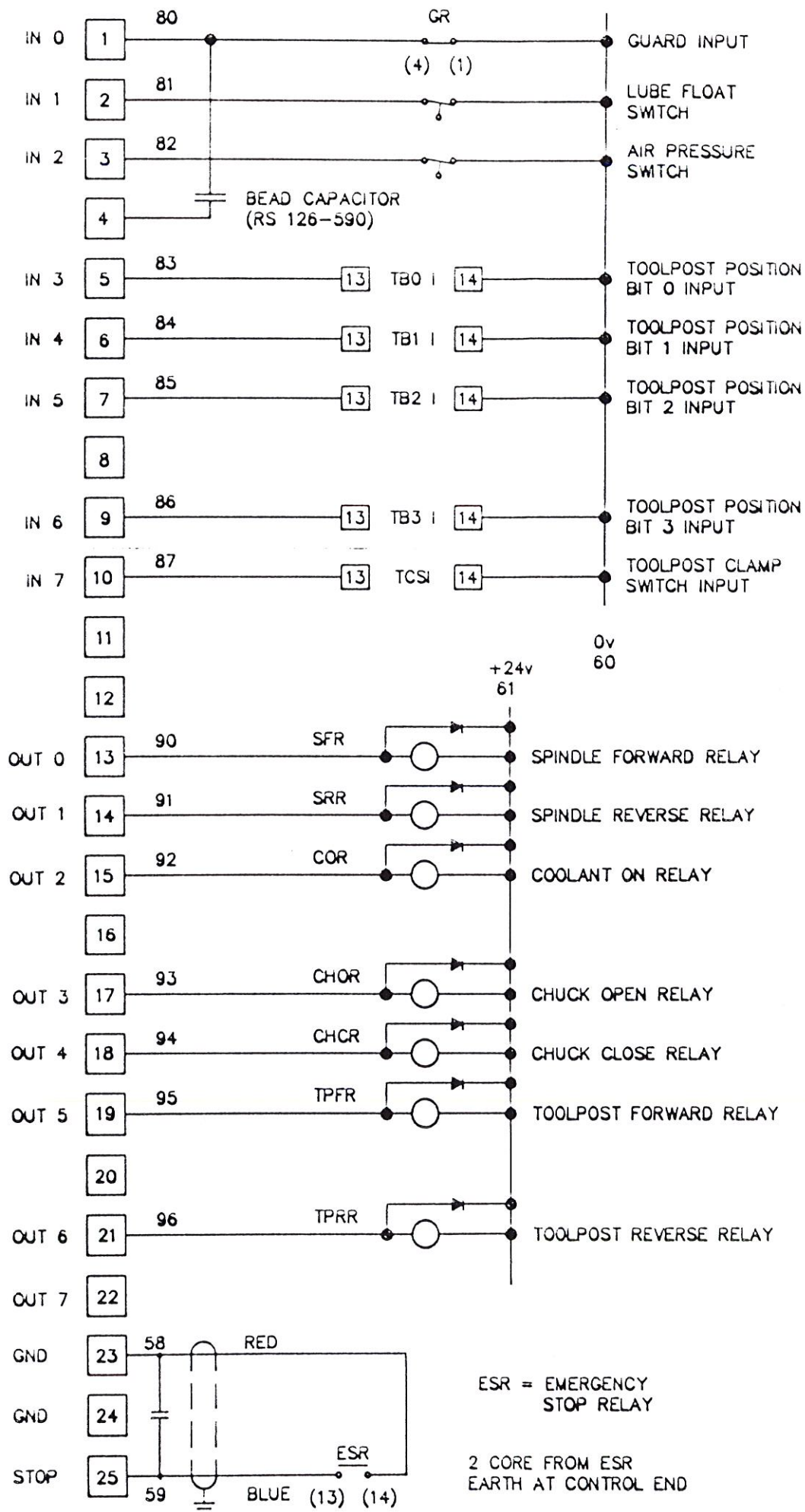


TU150 E
110v SCHEMATIC
DM 8 TOOLPOST

SHEET 2
[TU150E]

IF IN DOUBT ASK

50 WAY INTERFACE UNIT STANDARD I/O

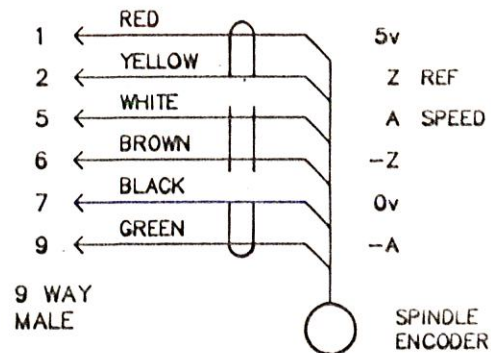
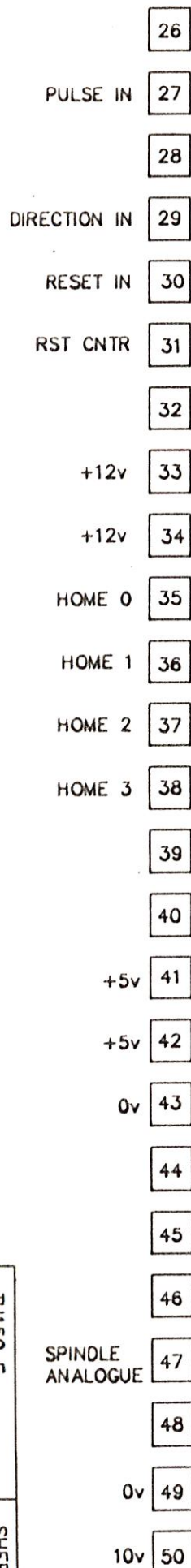


IF IN DOUBT ASK

TU150 E
STANDARD I/O
1 - 25
DM 8 TOOLPOST

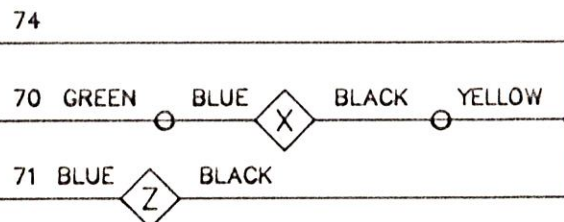
SHEET 3
[TU150 E]

50 WAY INTERFACE UNIT STANDARD I/O

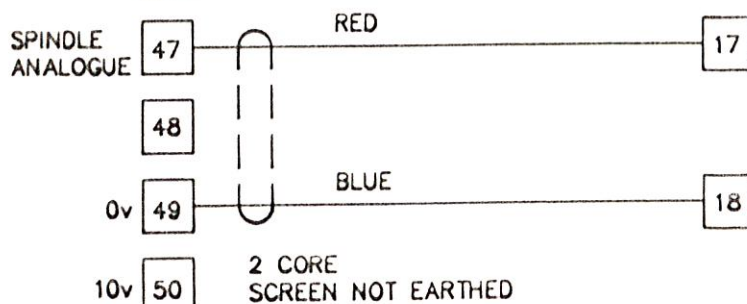


8 CORE SCREEN FROM SPINDLE ENCODER TO RACK P14

SEE SHEET 16 FOR DETAILS



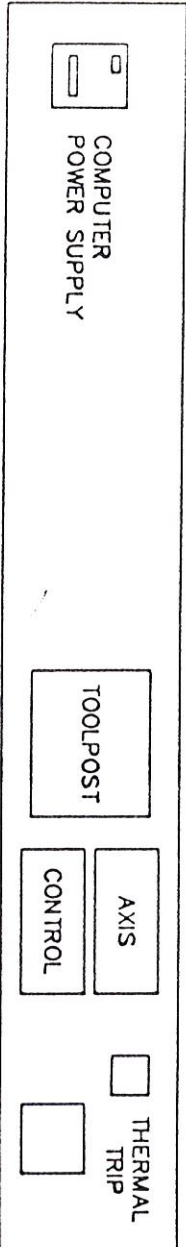
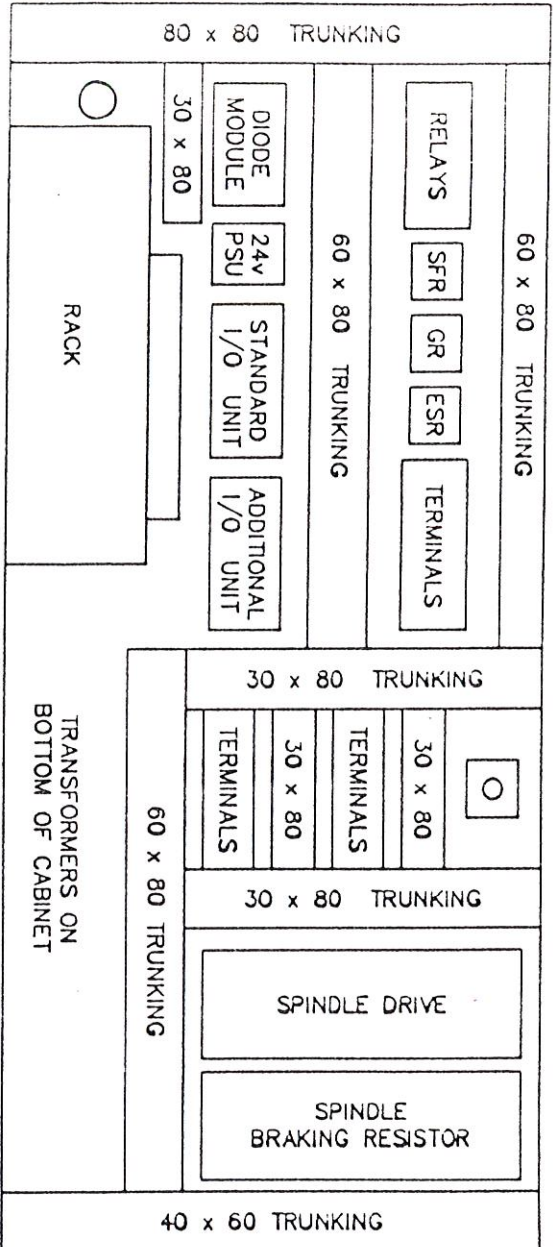
TERMINALS IN SADDLE CONNECTION BOX SEE SHEET 15



SPINDLE DRIVE TERMINALS SEE SHEET 12

IF IN DOUBT ASK

IF IN DOUBT ASK



MAINS
TERMINALS

TRANSFORMER DETAILS
SHEET 18

DOOR PANEL WIRING
SHEET 17

RACK DETAILS
SHEET 16

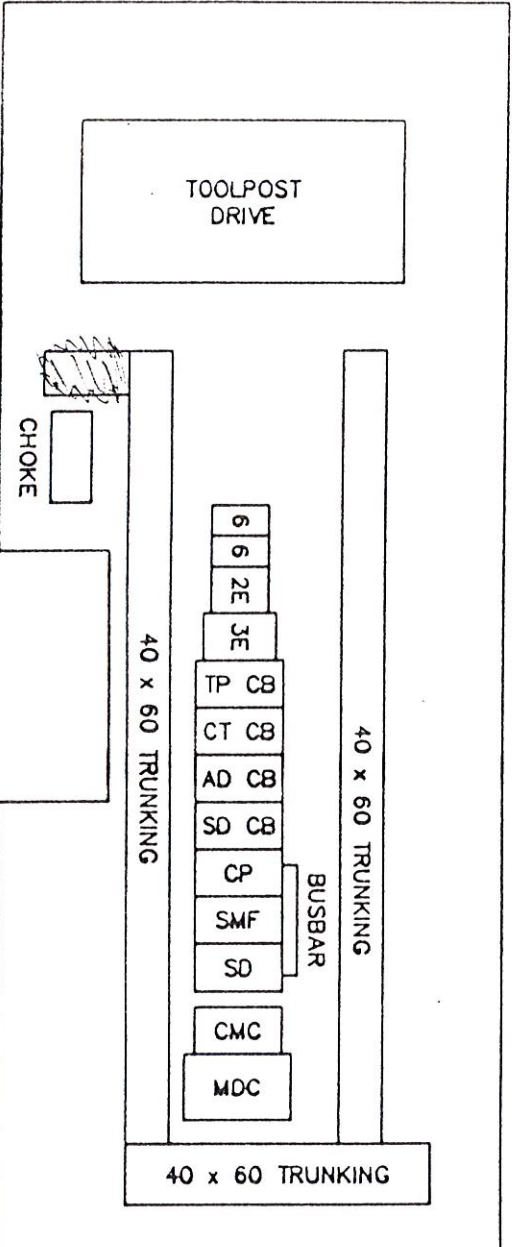
SPINDLE DRIVE DETAILS
SHEET 12

COMPUTER LEAD WIRING
SHEET 11

ADDITIONAL I/O
SHEET 7

RELAY AND
TERMINAL DETAILS
SHEET 6

STANDARD I/O
SHEETS 3 AND 4



TU150 E PANEL LAYOUT DM 8 TOOLPOST	
SHEET 5 [TU150E]	

DENFORD LIMITED BRIGHOUSE WEST YORKSHIRE

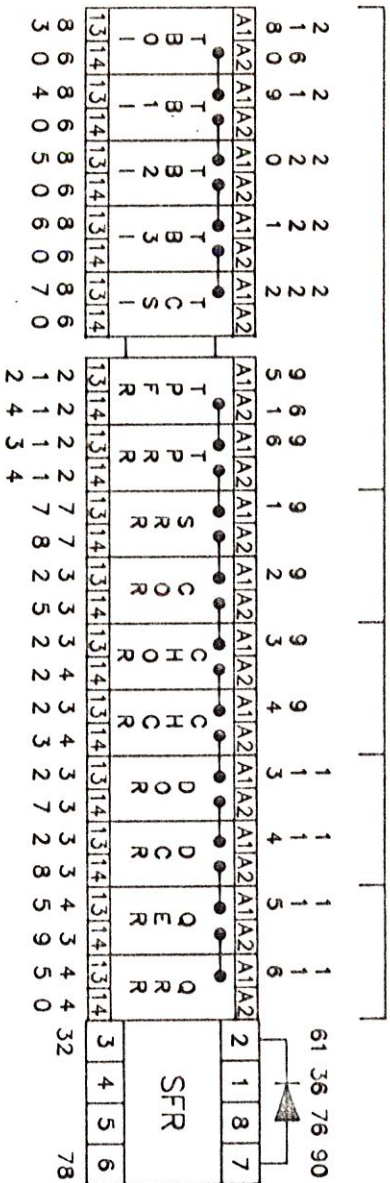
DRN BY A McHENRY

DATE 27-1-97

AC8-05

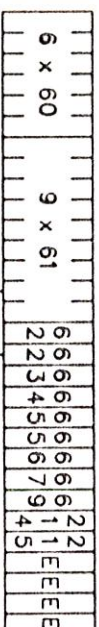
RELAYS FOR DM8 TOOLPOST

STANDARD RELAYS POWER CHUCK RELAYS POWER DOOR RELAYS TAILSTOCK RELAYS



SINGLE TERMINAL SEPARATING RELAYS

26 TERMINALS AND 4 EARTHS



LINK (0.5mm GREY)

4mm EARTH

2 2 2 2
2 2 1 1
1 0 9 8

D C B A

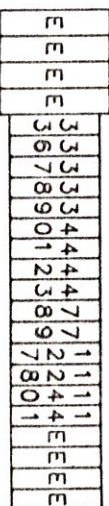
DIODE MODULE

8 7 6 5 4 3 2 1
2 2 2 2 2 2 2 2
3 2 2 2 2 2 2 2
0 9 8 7 6 5 4 3

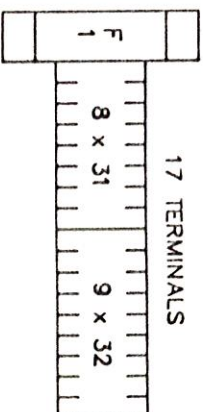
24V PSU

3 3
2 1

15 TERMINALS AND 8 EARTHS



17 TERMINALS

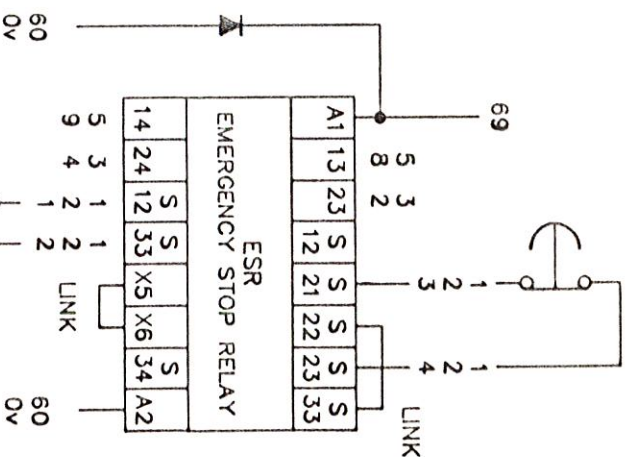


32

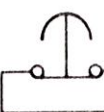
F1 6.3A

110V CONTROL

E-STOP CONTACT 2



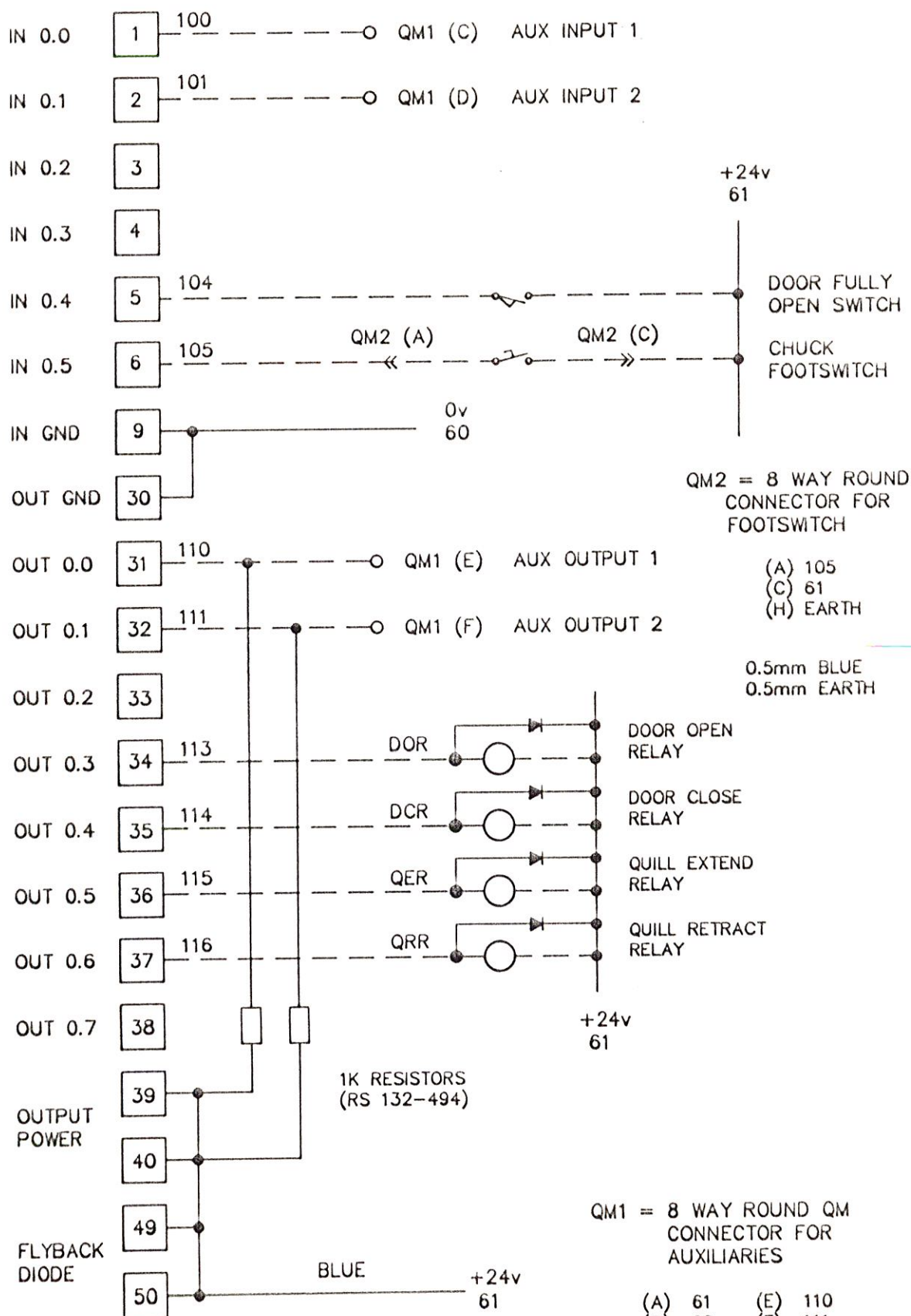
E-STOP CONTACT 1



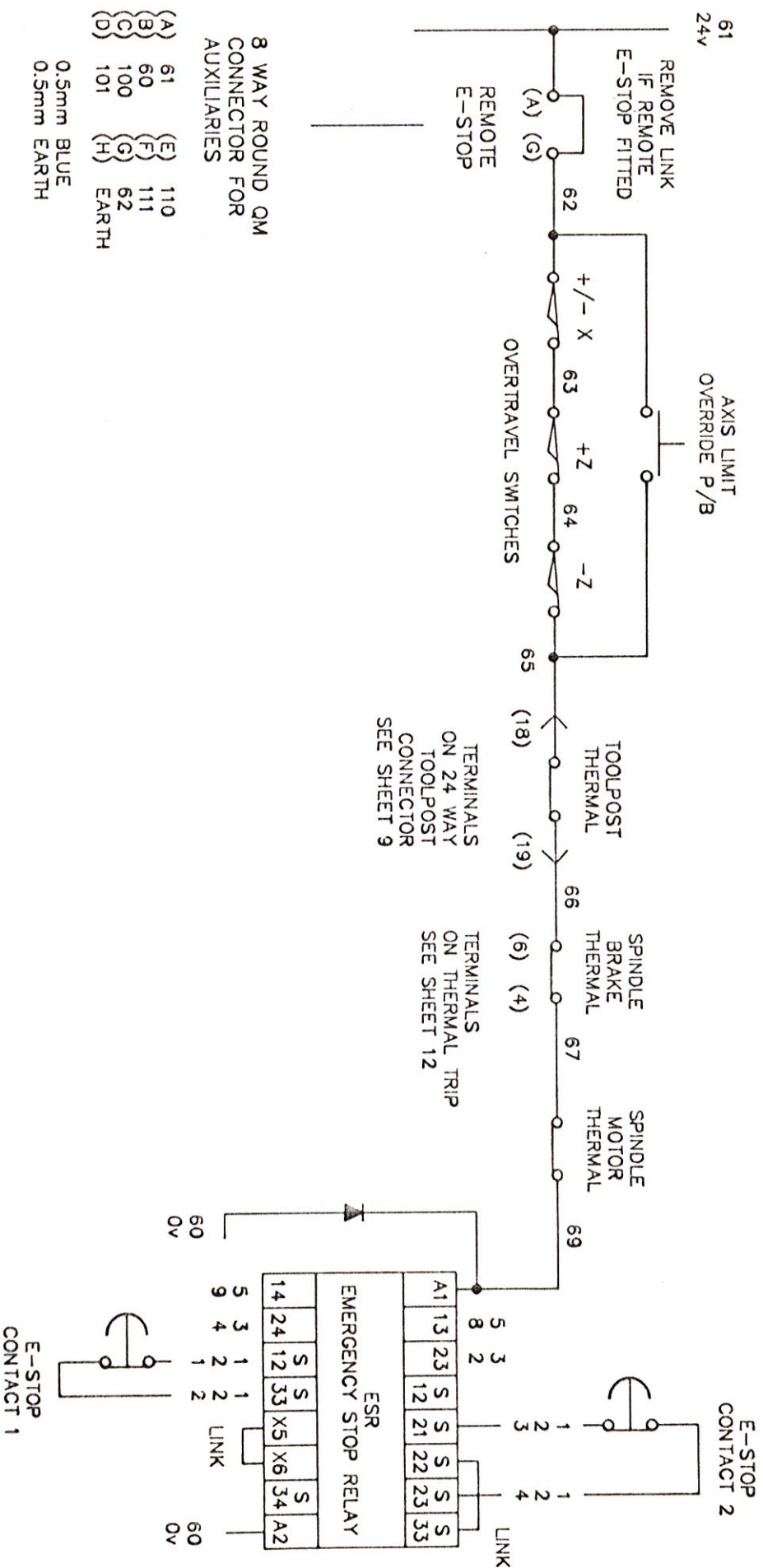
TU150 E
TERMINAL AND
RELAY WIRING

SHEET 6

[TU150E]

50 WAY ADDITIONAL I/O
CONNECTOR FOR OPTIONS

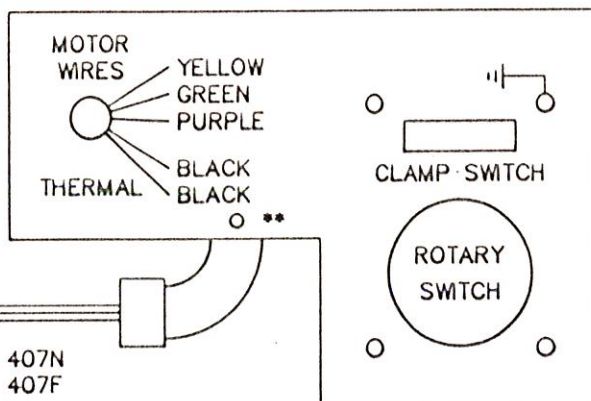
IF IN DOUBT ASK



CABLES 1.5m LONG
STRIP INSULATION BACK 10mm
AND TIN CORES

SPL 20 ADAPTAFLEX
680mm

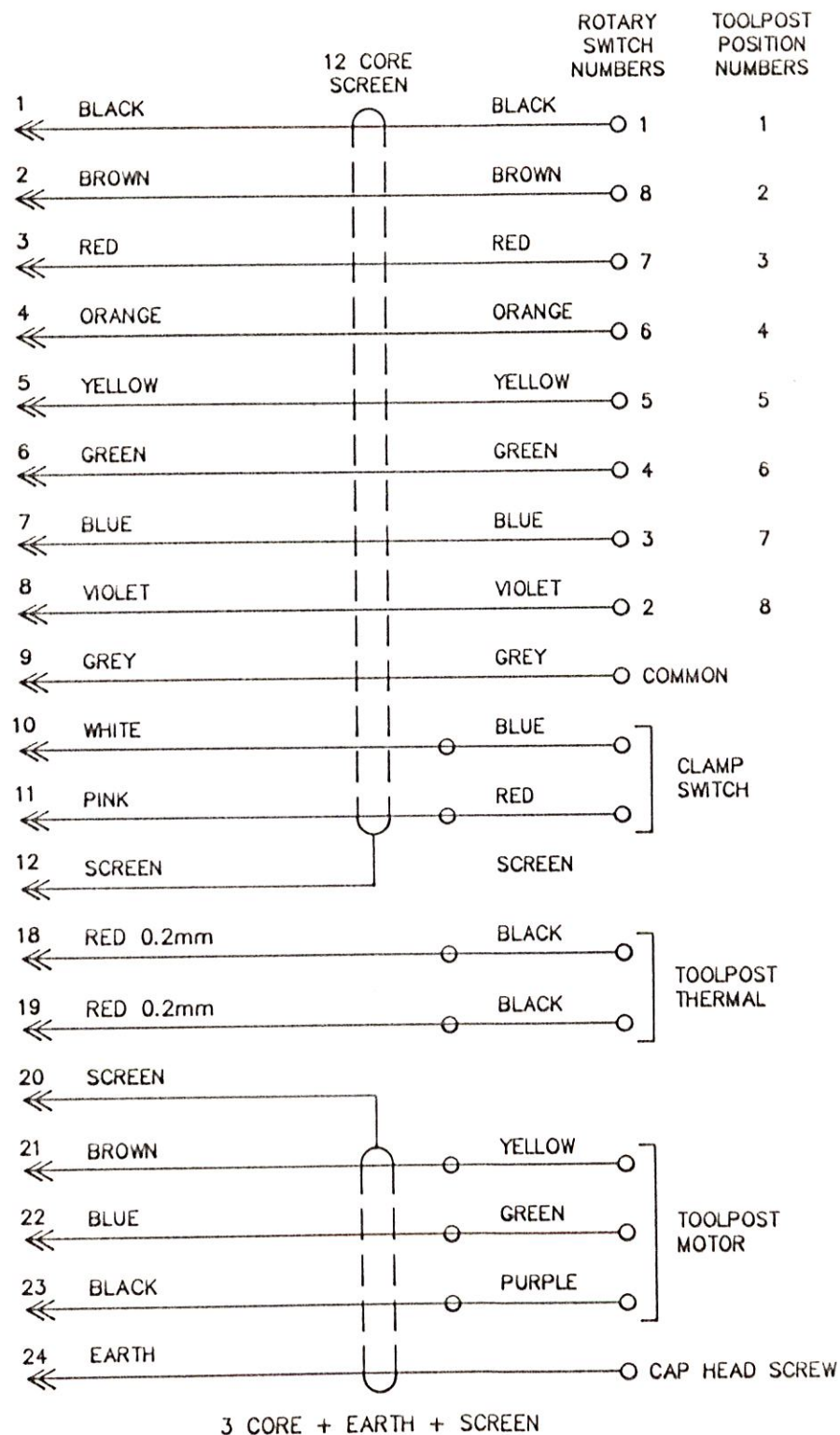
1 GLAND BI 407N
1 ELBOW BI 407F



** FIT
GRUB SCREW
TO LOCK GLAND

24 WAY QM
CONNECTOR

SEE SHEET 13
FOR TOOLPOST
CONTROL
DETAILS



IF IN DOUBT ASK

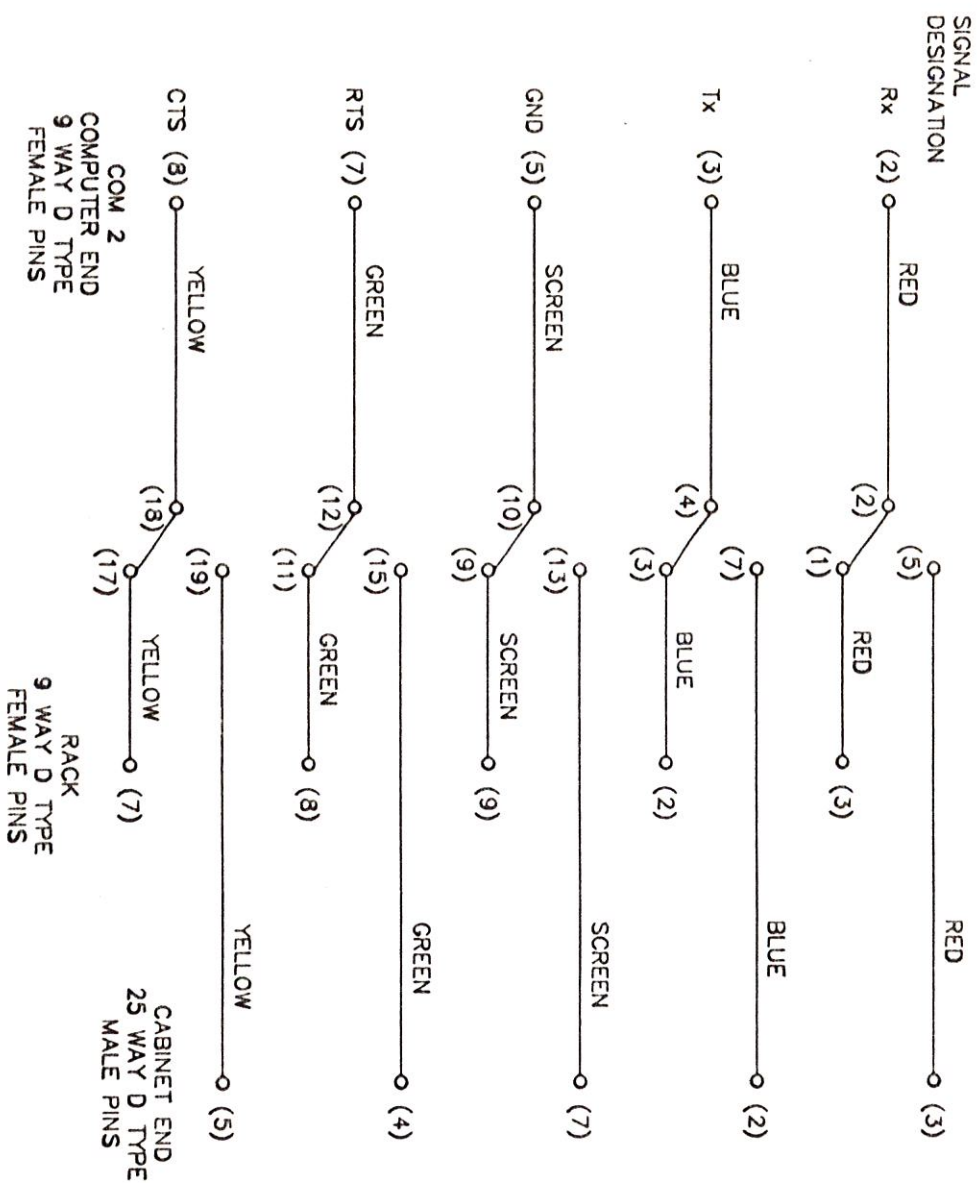
TU150 E
DENFORD DM8
TOOLPOST
WIRING DETAILS

SHEET 9

[TU150E]

IF IN DOUBT ASK

RS 232
CHANGE OVER
KEYSWITCH



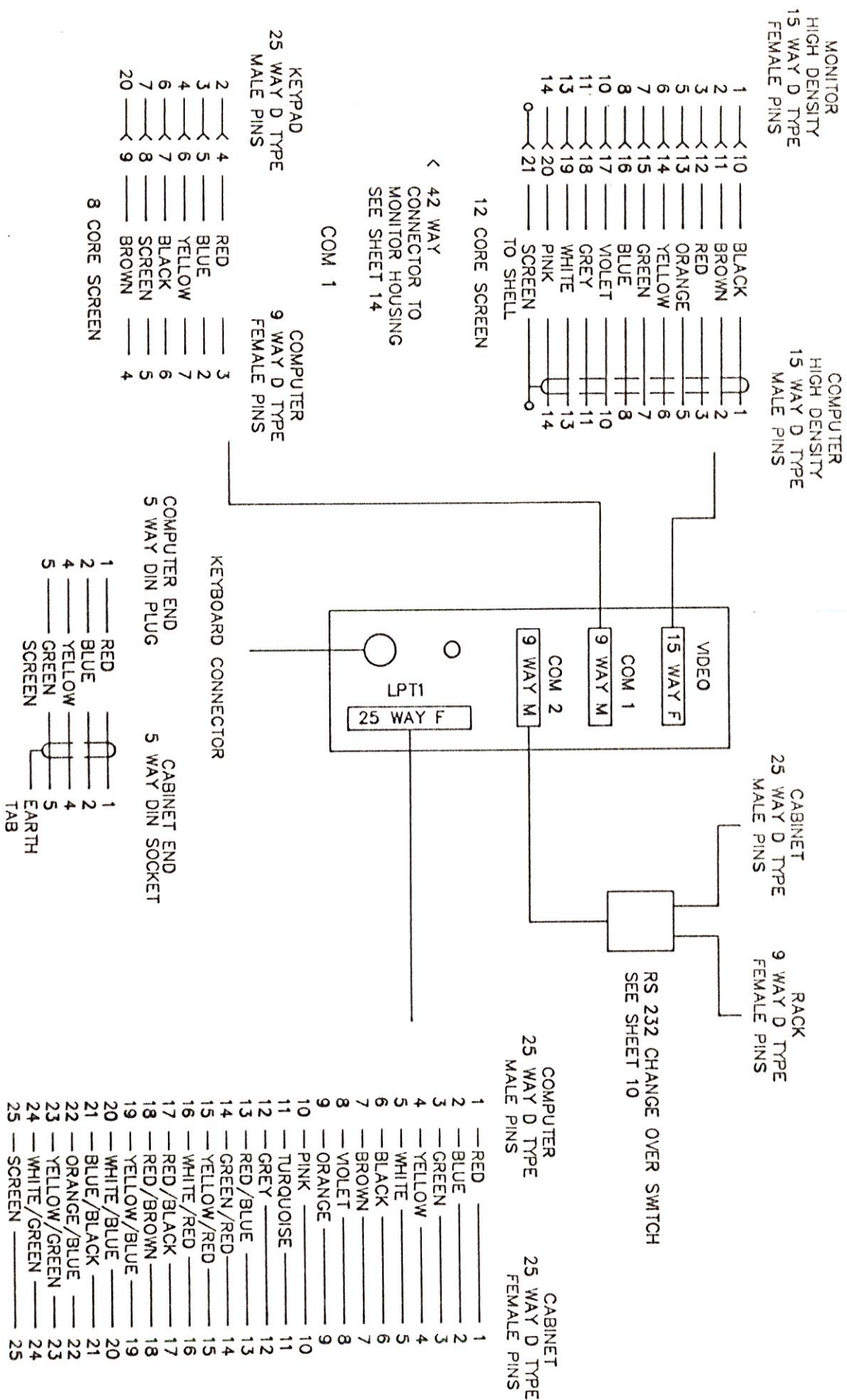
CHECK THAT SWITCH
HAS LINKS FITTED

PINS
2 - 6
4 - 8
10 - 14
12 - 16

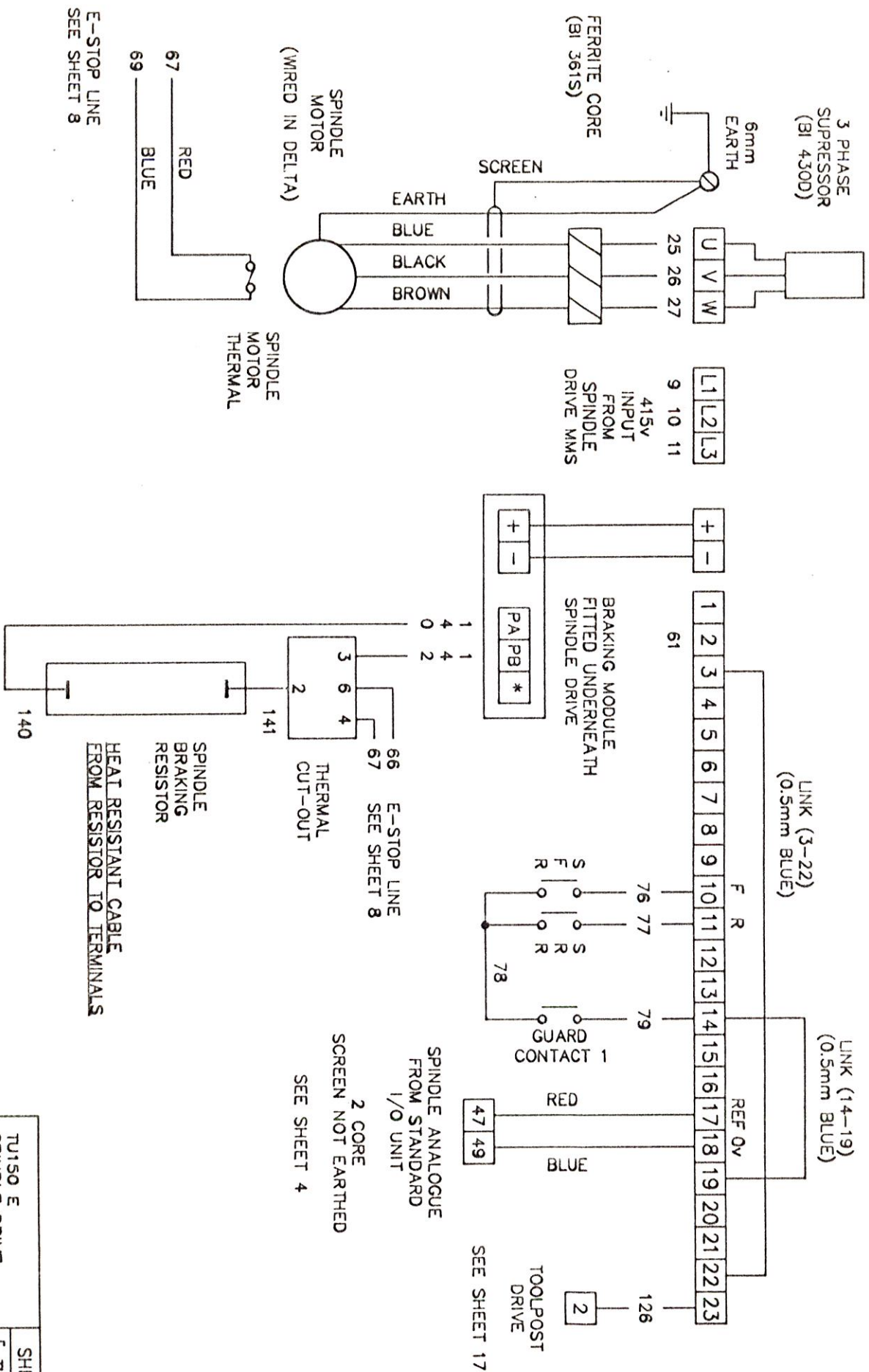
TU150 E
RS 232
CHANGE OVER
SWITCH

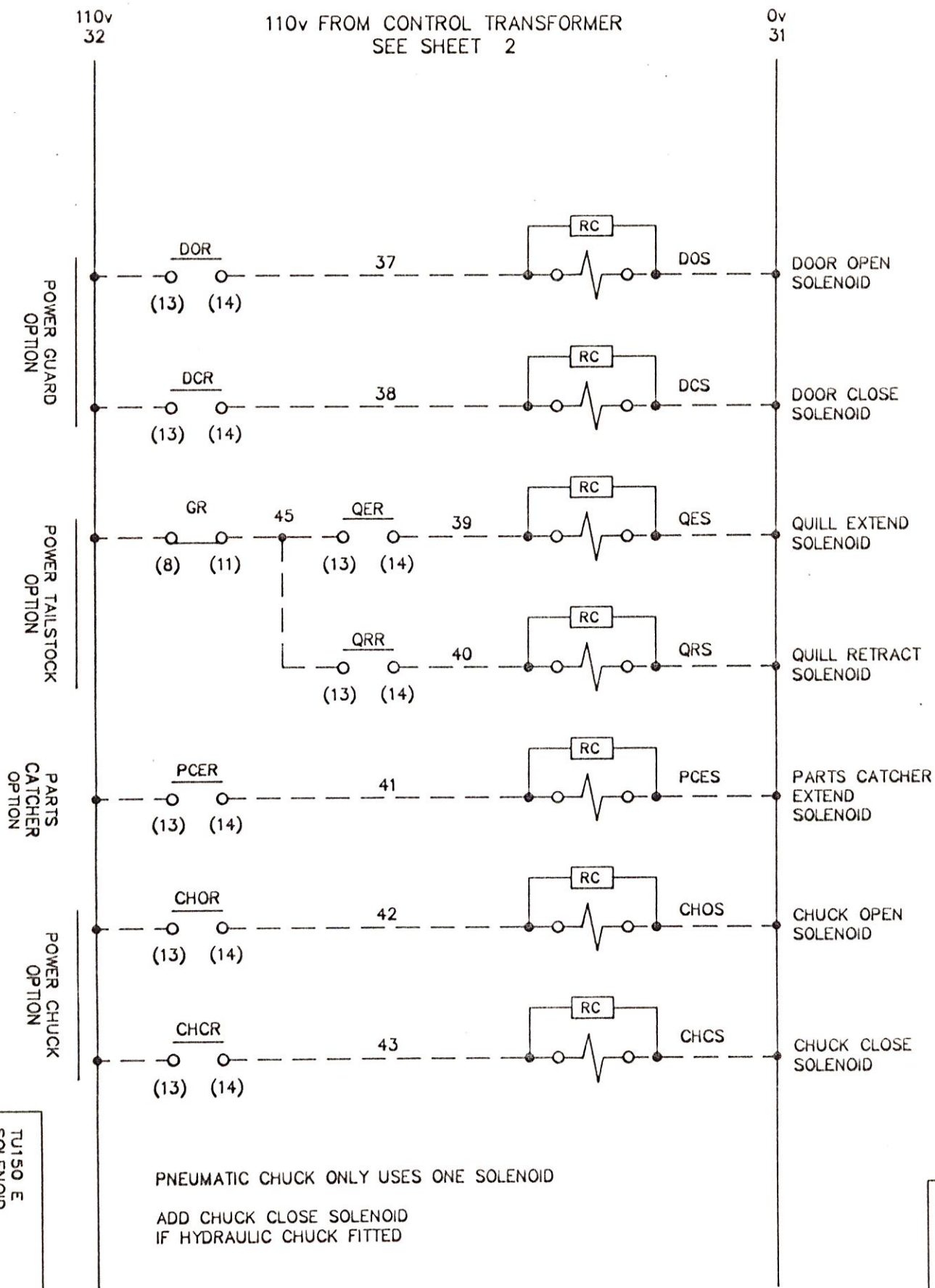
SHEET 10
[TU150E]

IF IN DOUBT ASK



IF IN DOUBT ASK



TU150 E
SOLENOID
WIRINGSHEET 13
[TU150E]

IF IN DOUBT ASK

* 8 CORE SCREEN 4 CORE AND 2 CORES
TO PUSHBUTTONS TO MAIN PANEL

PIN	COLOUR	WIRE	
1	BROWN	32	
2	BLUE	31	MONITOR POWER
3	EARTH	E	
4	RED	(2)	
5	BLUE	(3)	
6	YELLOW	(4)	
7	BLACK	(6)	KEYPAD
8	BROWN	(20)	
9	SCREEN	(7)	
10	BLACK	(1)	
11	BROWN	(2)	
12	RED	(3)	
13	ORANGE	(5)	
14	YELLOW	(6)	
15	GREEN	(7)	MONITOR SIGNALS
16	BLUE	(8)	
17	VIOLET	(10)	
18	GREY	(11)	
19	WHITE	(13)	
20	PINK	(14)	
21	SCREEN		

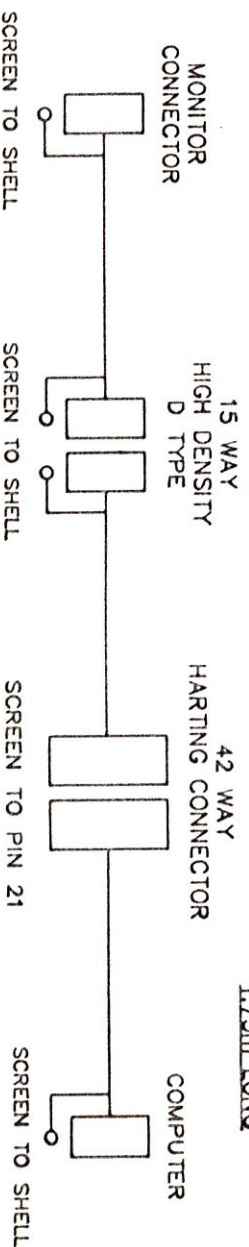
SCREEN TO SHELL

PIN	COLOUR	WIRE	
22	BLACK*	RED	121
23	BROWN*	BLUE	122
24	RED*	RED	123
25	YELLOW*	BLUE	124
26	GREEN*	RED	127
27	BLUE*	BLUE	128
28	VIOLET*	YELLOW	62
29	WHITE*	GREEN	65
30	RED		136
31	BLUE		137
32	YELLOW		134
33	GREEN		135

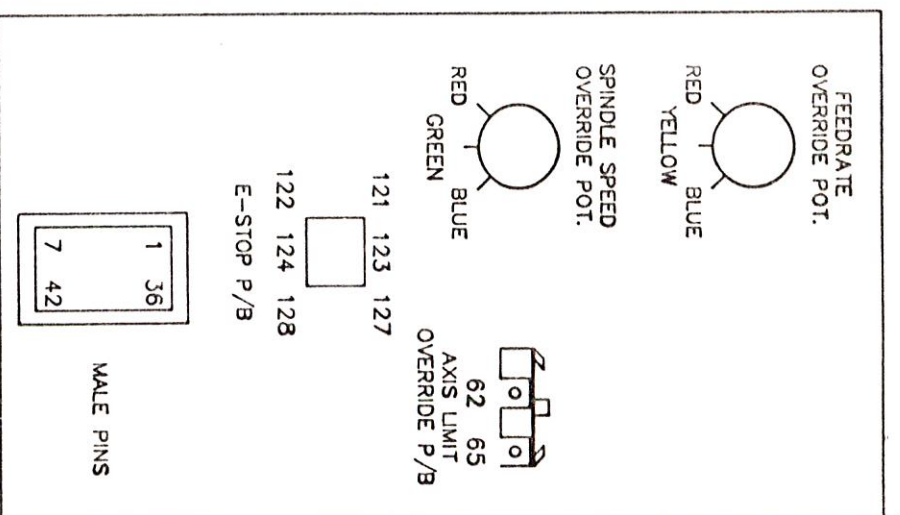
PINS 34 - 42
ARE NOT USED

4mm EARTH

12 CORE
SCREEN



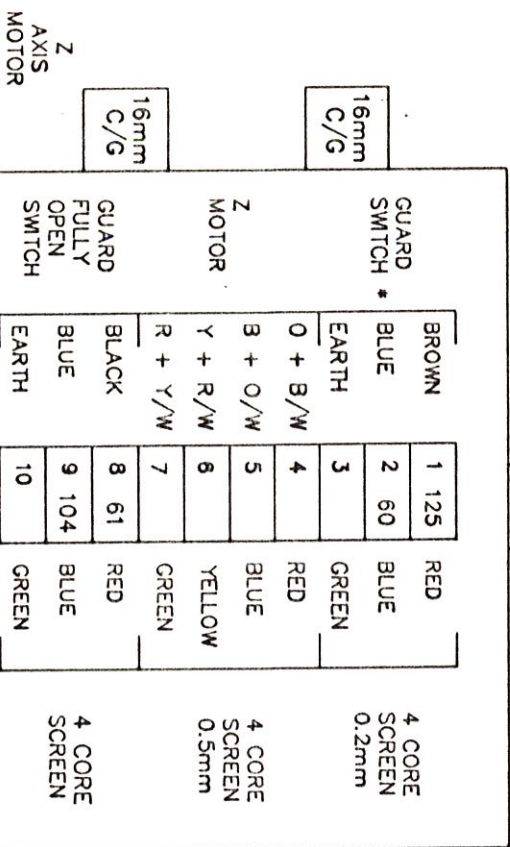
FLEX TO PANEL
1.75m LONG



IF IN DOUBT ASK

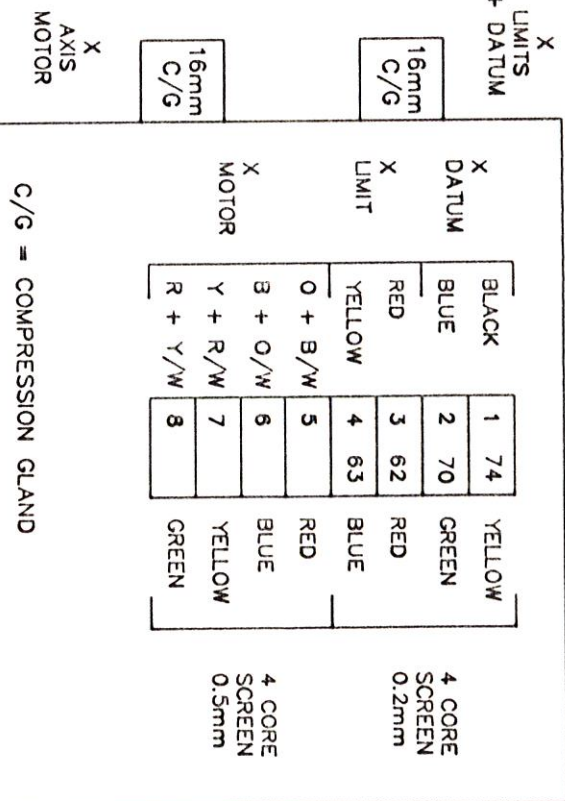
HEADSTOCK CONNECTION BOX

25mm
C/G WIRING TO
PANEL



SADDLE CONNECTION BOX

X
LIMITS
+ DATUM



WIRING TO PANEL

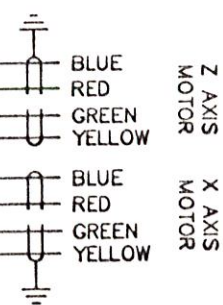
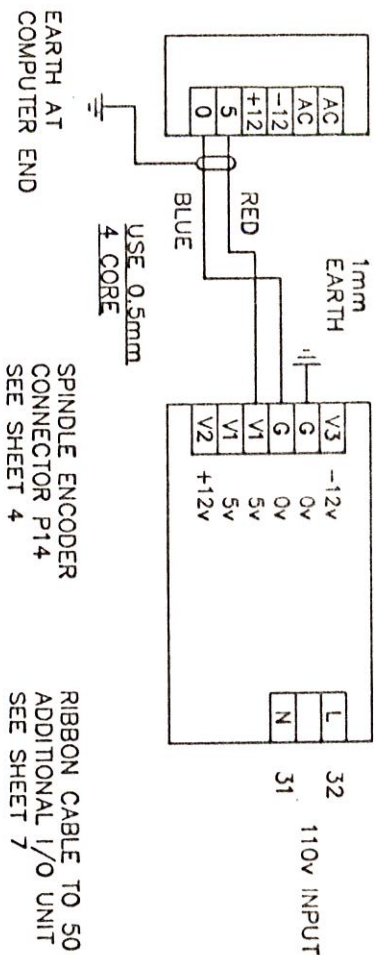
- O + B/W ORANGE + BLACK/WHITE
- B + O/W BLACK + ORANGE/WHITE
- Y + R/W YELLOW + RED/WHITE
- R + Y/W RED + YELLOW/WHITE

NOTE *
IF GUARD INTERLOCK IS FITTED
THE GUARD SWITCH WIRING IS NOT USED
SEE SHEET 21 FOR DETAILS

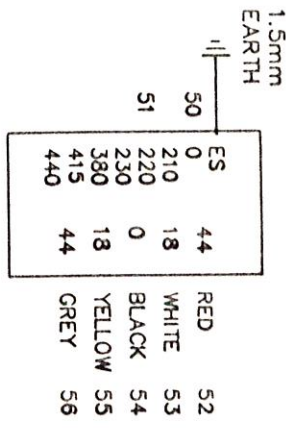
IF IN DOUBT ASK

POWER CONNECTOR
FOR COMPUTER

COMPUTER POWER SUPPLY
MOUNTED ON BOTTOM OF CABINET



AXIS DRIVE
TRANSFORMER



RIBBON CABLE TO
50 WAY INTERFACE UNIT
SEE SHEETS 3 AND 4

CONTROL HEADER

60 WAY HEADER

P14

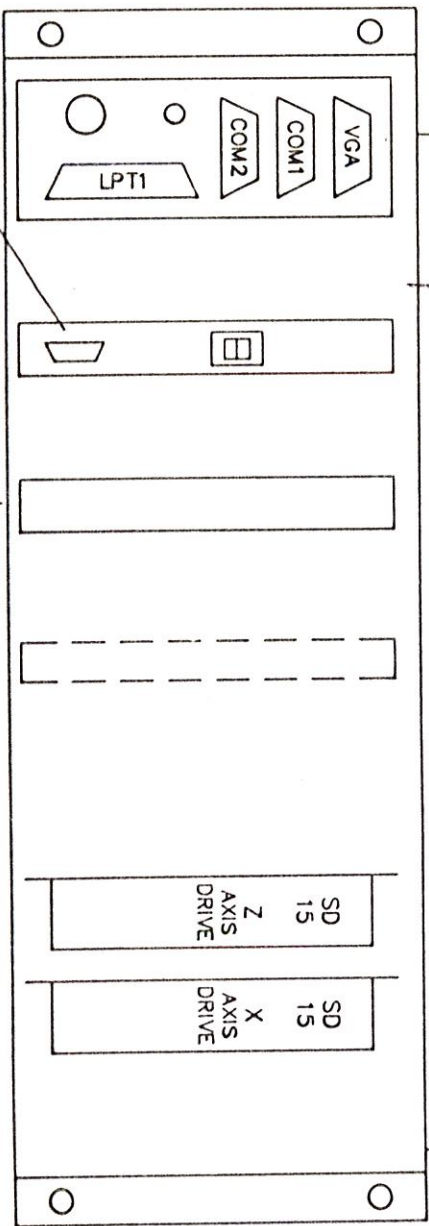
P13

F1 5 A
F2 5 A
F3 2 A
24V DC
61 60
15 44 18 0 18 44

4 CORE FROM
MONITOR HOUSING
SEE SHEET 14

RACK
COMPUTER
NUMBER
(BI 432N)

COMPUTER
CONNECTIONS
SEE SHEETS 10 AND 11



RS 232 9 WAY
D TYPE CONNECTOR
MALE

CUSTOM
CARD
(BI 432N/C)

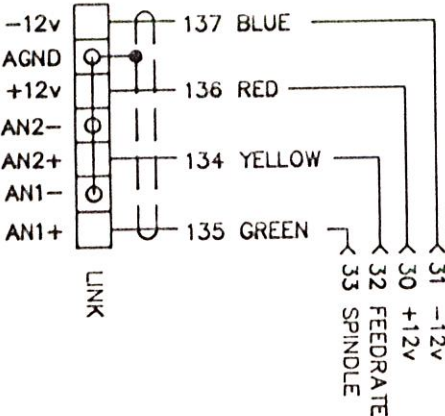
EUROSTEP
CONTROLLER
(BI 432N/E)

ADDITIONAL
I/O CARD
(OPTIONAL)
(BI 432M/24)

SD15 STEPPER DRIVE
(BI 339Z)

FUSES ON RACK
F1 +36V SUPPLY TO STEPPER DRIVES
F2 -36V SUPPLY TO STEPPER DRIVES
F3 15V SUPPLY TO
4th AXIS STEPPER DRIVE

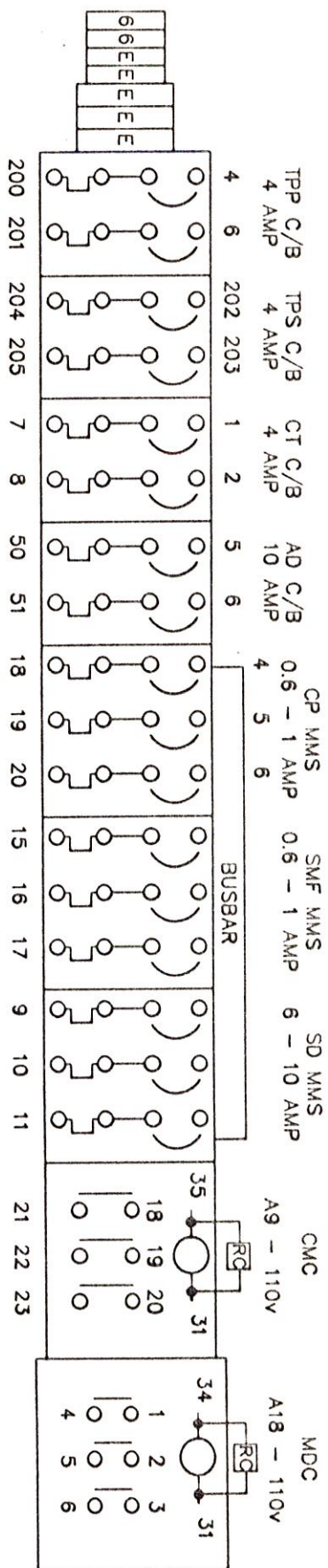
P13 CONNECTOR FOR
OVERRIDE POTS



TU150 E
RACK DETAILS

SHEET 16
[TU150E]

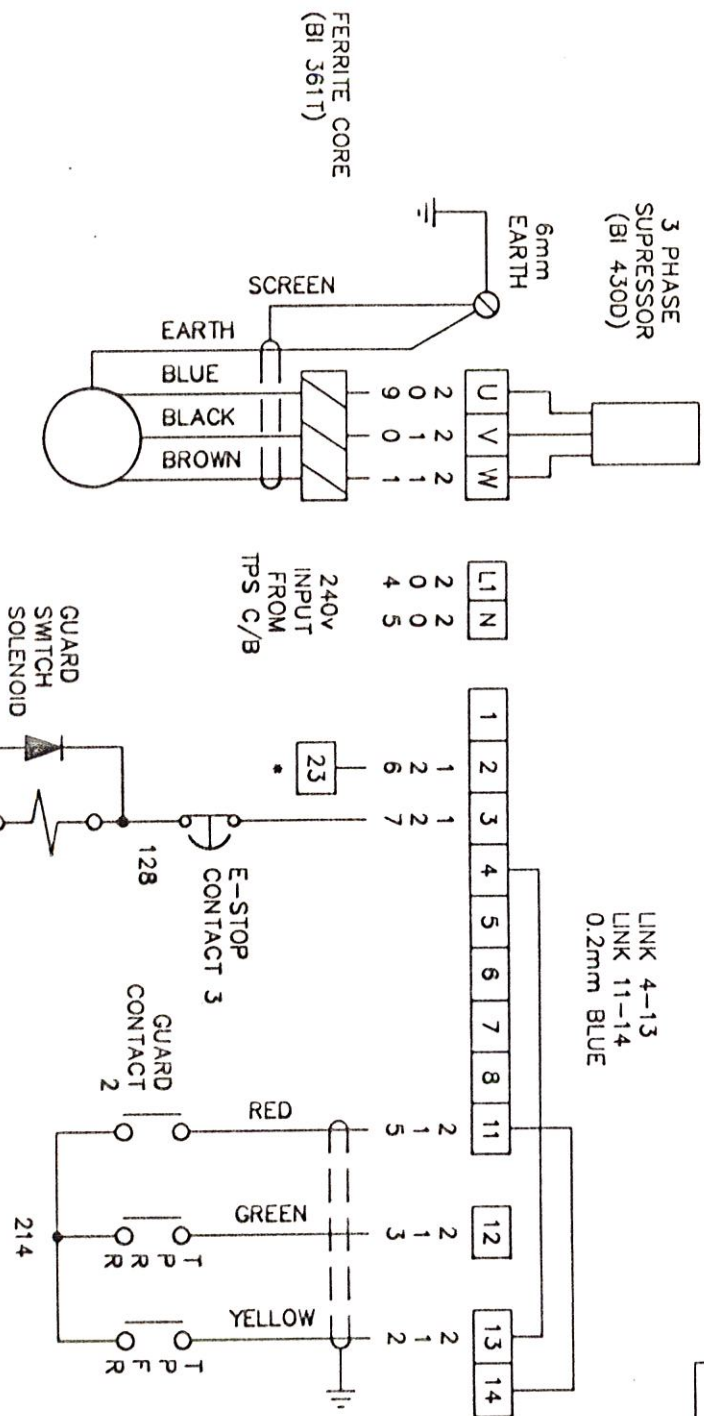
IF IN DOUBT ASK



UNDER CMC UNDER MDC

3 PHASE SUPPRESSORS (BI 430C)

LINK 4-13
LINK 11-14
0.2mm BLUE



TERMINAL ON SPINDLE DRIVE
SEE SHEETS 12 AND 21
FOR DETAILS

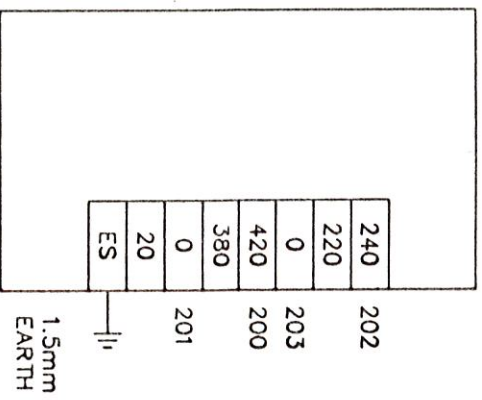
TU150 E
DOOR PANEL WIRING
DM 8 TOOLPOST

SHEET 17

[TU150E]

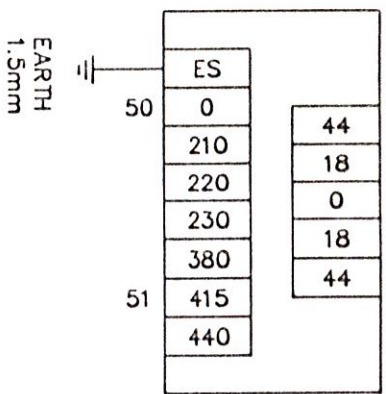
IF IN DOUBT ASK

TOOLPOST DRIVE
TRANSFORMER
750 VA
(BI 374X)

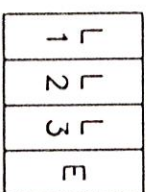


- | | |
|--------|----|
| RED | 52 |
| WHITE | 53 |
| BLACK | 54 |
| YELLOW | 55 |
| GREY | 56 |

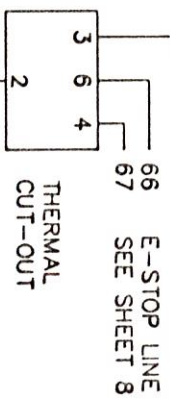
AXIS DRIVE
TRANSFORMER
600 VA
(BI 374J)



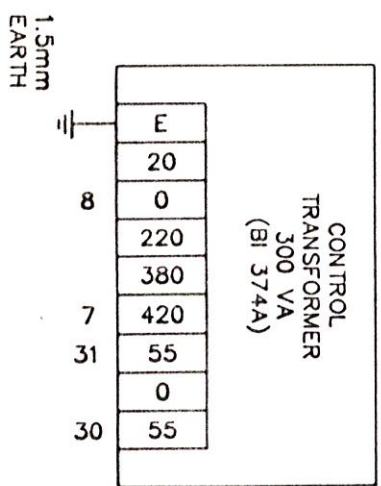
MAINS TERMINALS



FROM SPINDLE DRIVE
SEE SHEET 12



FROM BRAKING RESISTOR
SEE SHEET 12



Q3 24 WAY
CONNECTOR
FOR TOOLPOST



IF IN DOUBT ASK

VIEW FROM BACK
OF CASTING

X
LIMIT
X
D
ATUM
SENSOR



* NOTE *
IF GUARD INTERLOCK FITTED
WIRE GUARD SWITCH AS SHEET 21

SADDLE CONNECTION BOX

X D ATUM	BLACK	1	74	YELLOW
X LIMIT	BLUE	2	70	GREEN
	RED	3	62	RED
	YELLOW	4	63	BLUE
	O + B/W	5		RED
X MOTOR	B + O/W	6		BLUE
	Y + R/W	7		YELLOW
	R + Y/W	8		GREEN

4 CORE
SCREEN
0.2mm

4 CORE
SCREEN
0.5mm

HEADSTOCK CONNECTION BOX

GUARD SWITCH	BROWN	1	125	RED
	BLUE	2	61	BLUE
	EARTH	3		GREEN
	O + B/W	4		RED
	B + O/W	5		BLUE
Z MOTOR	Y + R/W	6		YELLOW
	R + Y/W	7		GREEN
GUARD FULLY OPEN SWITCH	BLACK	8	61	RED
	BLUE	9	104	BLUE

4 CORE
SCREEN
0.2mm

4 CORE
SCREEN
0.5mm

2 CORE
SCREEN

Z +	63	RED
LIMIT	64	BLUE

Z
D
ATUM
SENSOR



BLUE 71
BLACK 74

Z -	64	RED
LIMIT	65	BLUE

2 CORE
SCREEN
0.2mm

82 BROWN	AIR PRESSURE SWITCH
60 BLUE	N/C WHEN NO AIR CONNECTED

COOLANT PUMP

BLUE 21
BLACK 22
BROWN 23
EARTH E
1mm FLEX

(415V SUPPLY) WIRE IN STAR
(220V SUPPLY) WIRE IN DELTA

WORKLIGHT

BLACK 31
BLACK 33
EARTH E
0.5mm SINGLES

LUBE PUMP

BLACK 31
BLACK 36
EARTH E
1mm FLEX

LUBE FLOAT SWITCH

RED 81
BLUE 60
2 CORE SCREEN

SPINDLE MOTOR (WIRE IN DELTA)
1mm BLACK 4 CORE SCREEN

SPINDLE MOTOR FAN
1mm 4 CORE FLEX
(415V SUPPLY) WIRE IN STAR
(220V SUPPLY) WIRE IN DELTA

SPINDLE MOTOR THERMAL
2 CORE SCREEN

TU150 E LIMIT SWITCH AND MOTOR WIRING	SHEET 20 [TU150E]
---	------------------------

IF IN DOUBT ASK

SPINDLE DRIVE
SEE SHEET 12
FOR DETAILS

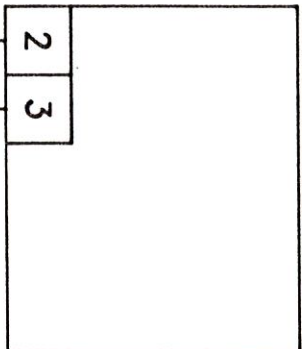
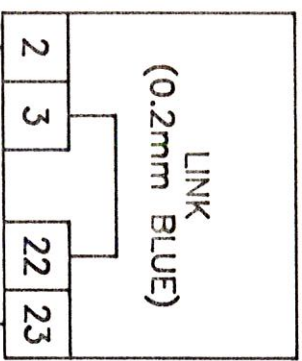
TOOLPOST DRIVE
SEE SHEET 17
FOR DETAILS

GUARD INTERLOCK
WITH SOLENOID

(REMOVE LINK 12 - 41)

GUARD
SWITCH
CONTACTS

78	BLACK	11	12	BROWN	79
214	RED	21	22	YELLOW	215
61	GREEN	33	34	BLUE	125



61
24v

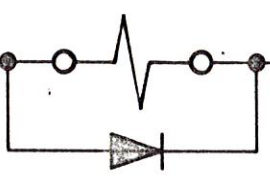
126

127

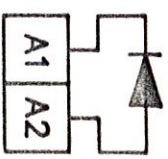


128

GUARD
SOLENOID



GUARD
SOLENOID



128 60

R B
E L
D U
E

TU150 E
GUARD INTERLOCK
DETAILS .

SHEET 21

[TU150E]

DENFORD LIMITED

DATE 30-1-97

DRN BY A McHENRY

AC8-21