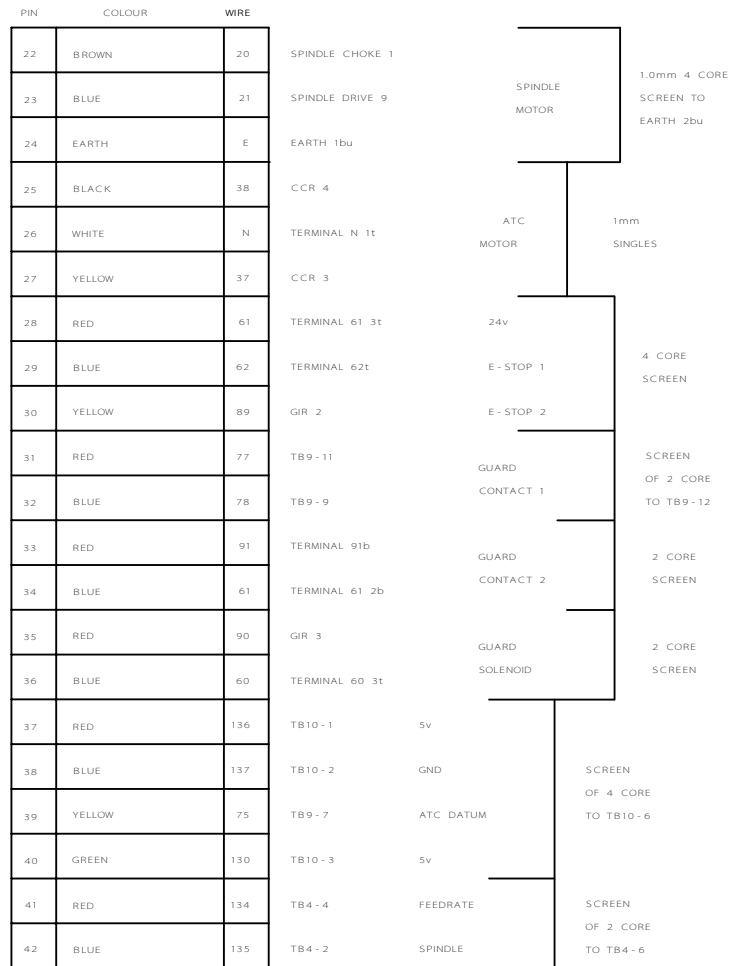
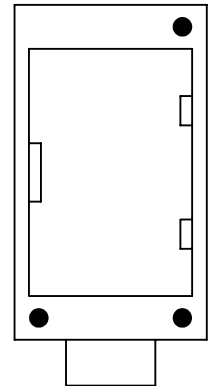


4mm EARTH
EARTH 6t



CABINET END
(FEMALE PINS)



42 WAY HOOD
BI 357 Z
MALE INSERT
BI 357 H
PG29 GLAND
BI 411 J
CODING PINS
BI 356 H
1.5m 32mm
CONDUIT
CABLES
3m LONG

* NOTE
IF MACHINE HAS POWER GUARD
USE GUARD SWITCH CONTACT ON PNEUMATIC CYLINDER
INSTEAD OF GUARD CONTACT 1 SEE SHEETS D3 AND D5

15 WAY CONNECTOR FOR POWER GUARD

A1	BLACK	40
A2	BLACK	41
A3	BLACK	42
A4	BLACK	43
A5	BLACK	44
B1	BLACK	31
B2	RED	77
B3	BLUE	78
B4	RED	105
B5	BLUE	106
C1	RED	108
C2	BLUE	107

CIR (14)		
DBR (14)		
VOR (14)		
GOR (14)		
GCR (14)		
TERMINAL 31 3b		
TB9 - 11	GUARD CLOSED SWITCH	
TB9 - 9	2 CORE SCREEN	
	SCREEN TO TB9 - 12	
TB8 - 2	GUARD OPEN SWITCH	
TB8 - 4	2 CORE SCREEN	
	SCREEN TO TB8 - 1	
TB8 - 12	AIR PRESSURE SWITCH	
	2 CORE SCREEN	
TB8 - 7	(SCREEN NOT EARTHED)	

SOLENOIDS
0.2mm
SINGLES

4 WAY CONNECTOR FOR SPRAYMIST

1	BLACK	10
2	BLACK	N
3		
E	EARTH	E

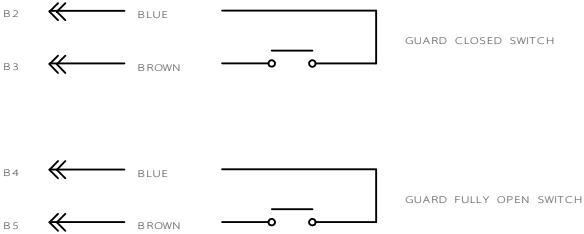
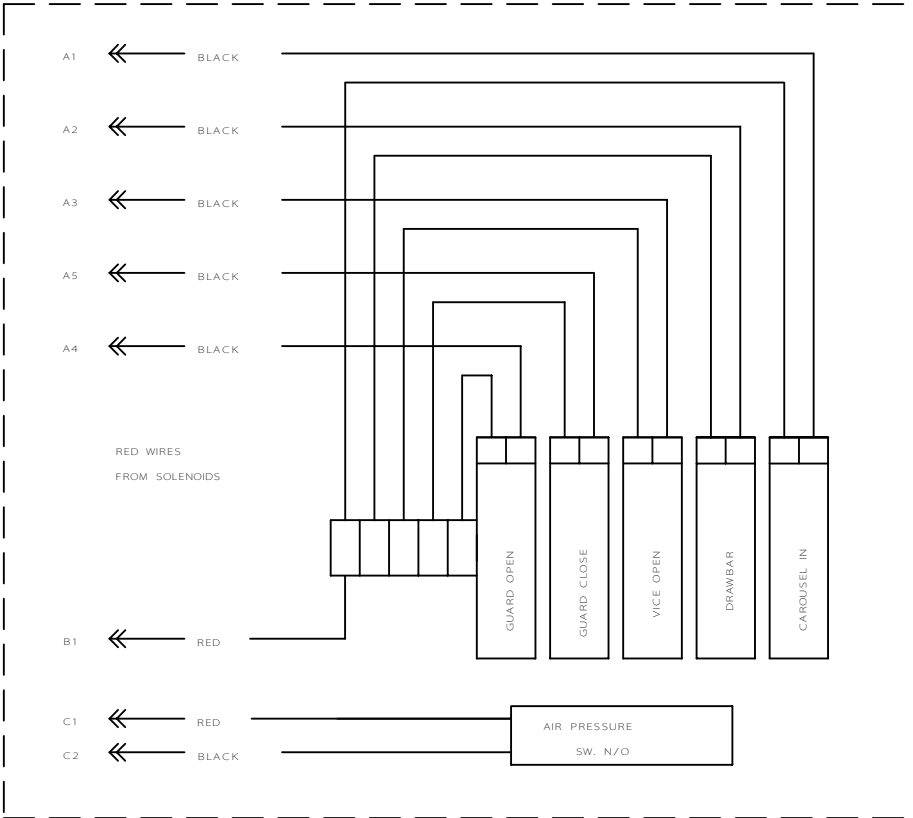
HOUSING	(362 NN)
FEMALE INSERT	(362 SS)
HOOD	(356 N)
MALE INSERT	(362 RR)

PANEL END

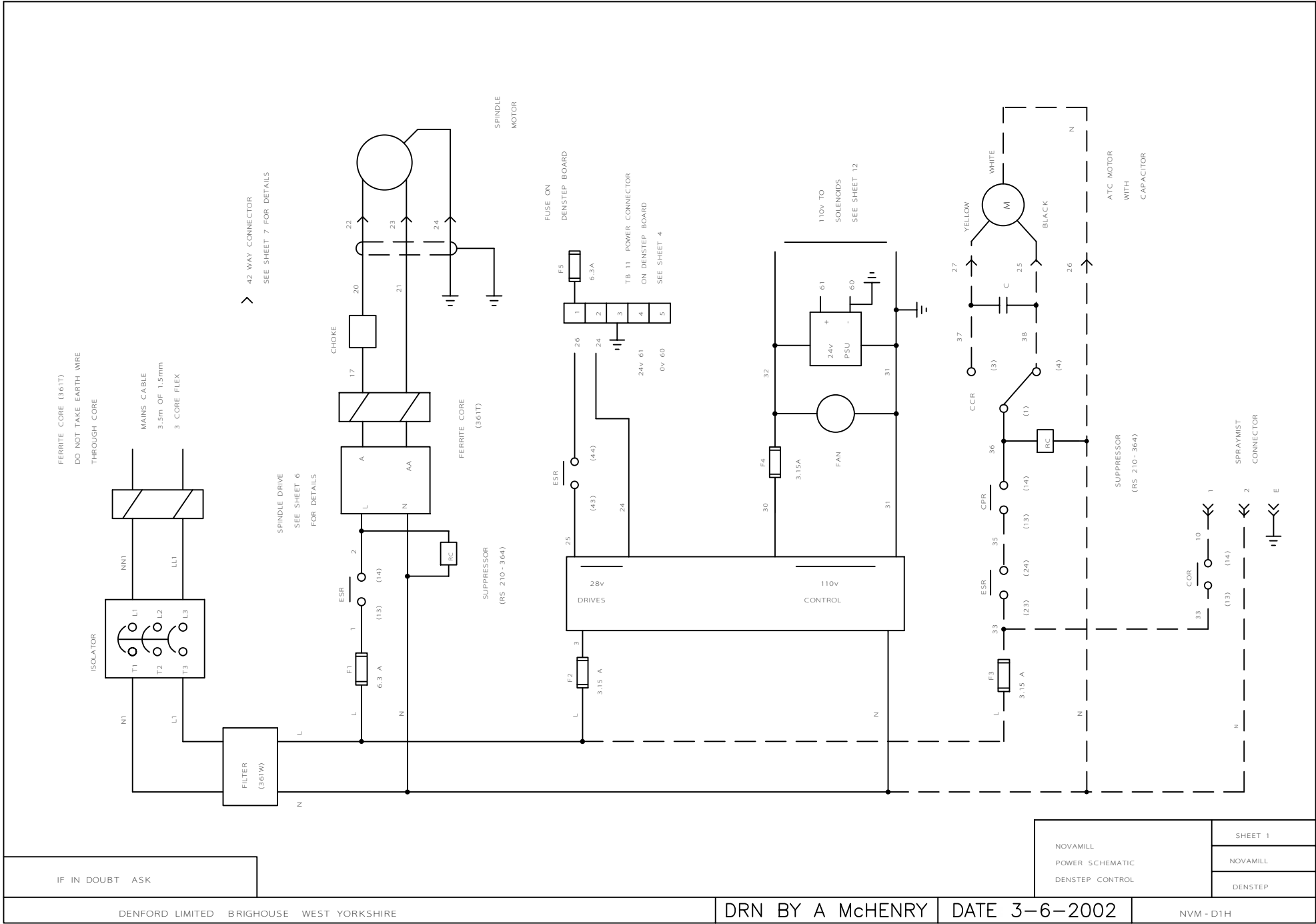
HOOD	(356 HC)
INSERT	(356 HB)
(FEMALE PINS)	
REDUCER	(356 HE)
PG11 CONDUIT	(411 B)
2 GLANDS	(411 E)
LOCKNUT	(411 N)

MACHINE END

HOUSING	(356 HD)
INSERT	(356 HA)
(MALE PINS)	



NOTE:
IF POWER GUARD IS FITTED
THE TWO SWITCHES IN THE PNEUMATIC CYLINDER
ARE USED INSTEAD OF THE USUAL GUARD SWITCHES



IF IN DOUBT ASK

DENFORD LIMITED BRIGHOUSE LIMITED

DRN BY	A McHENRY
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DATE 3-6-2002

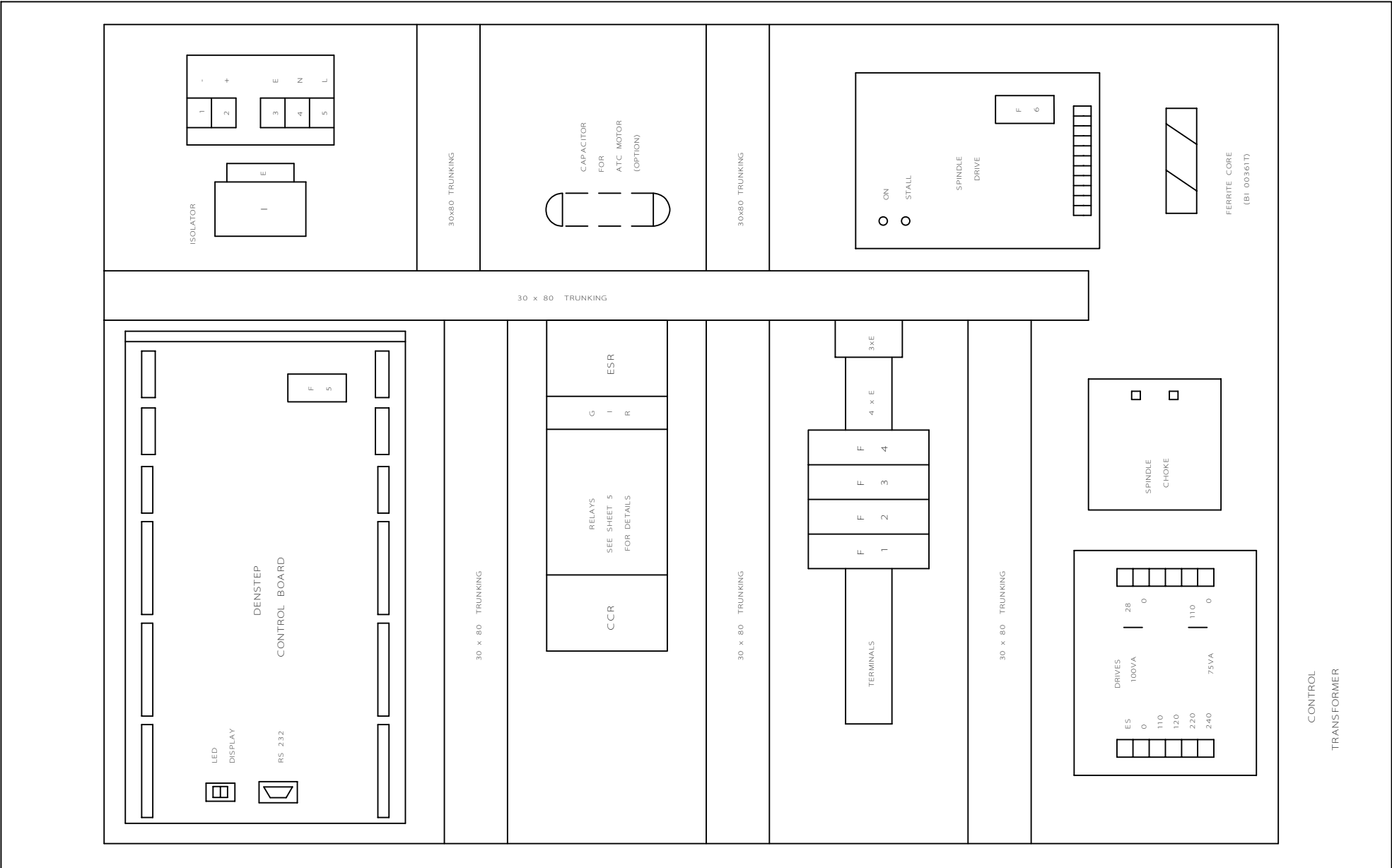
NVM - D2D

NOVAMILL
PANEL
LAYOUT

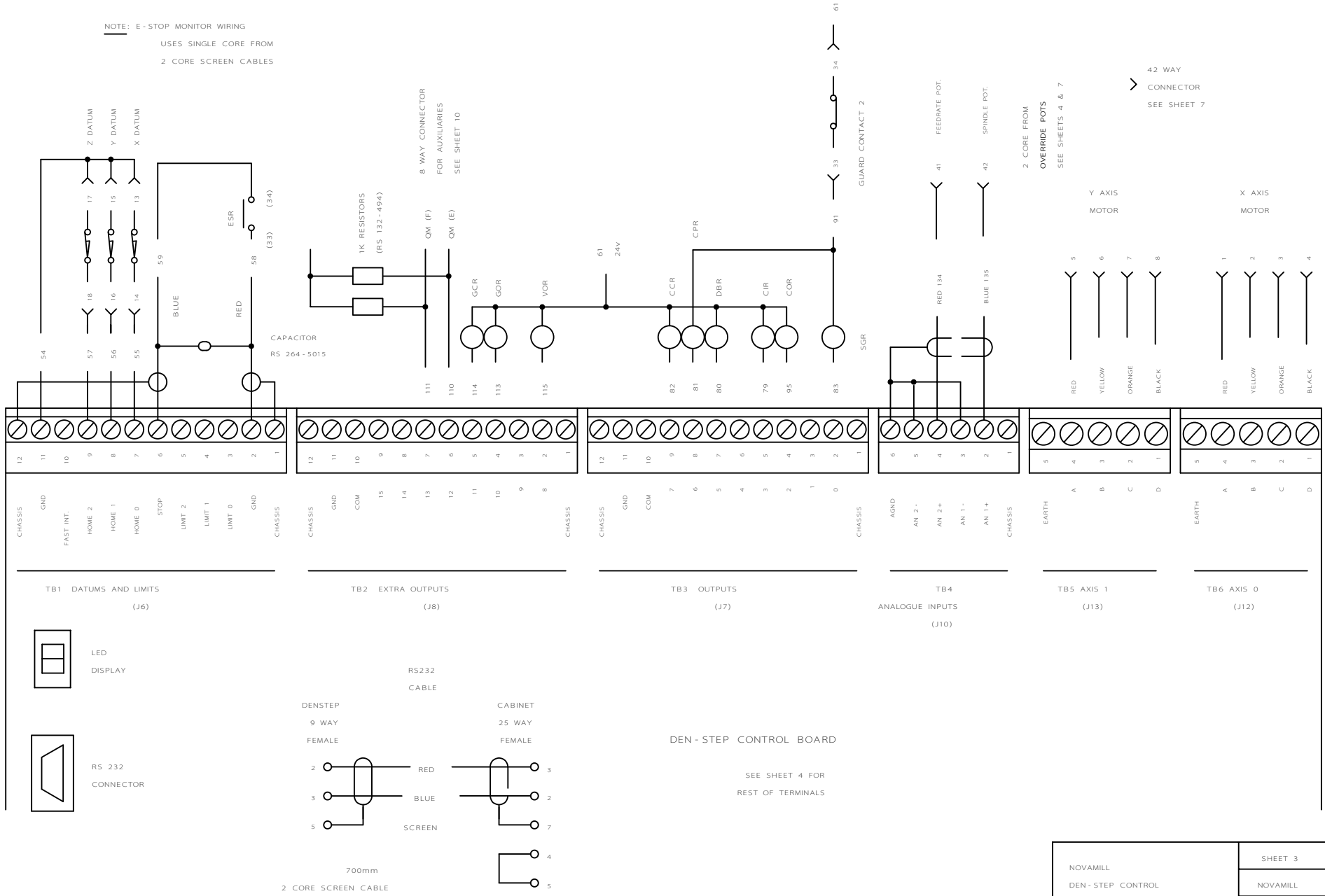
NOVAMILL

DENSTER

D3D



NOTE: E-STOP MONITOR WIRING
 USES SINGLE CORE FROM
 2 CORE SCREEN CABLES



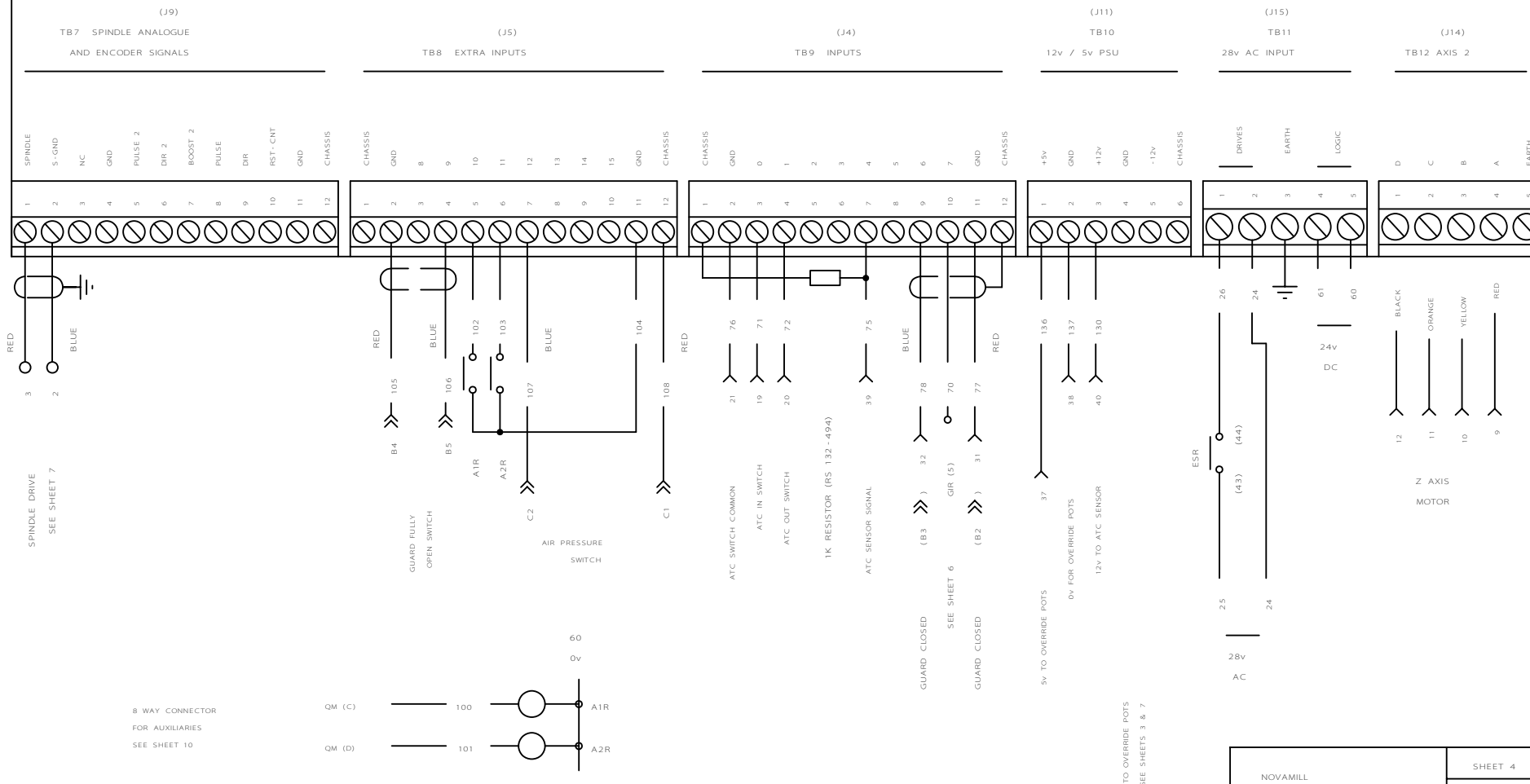
DEN - STEP CONTROL BOARD

SEE SHEET 3 FOR
REST OF TERMINALS

42 WAY
CONNECTOR
SEE SHEET 7

15 WAY
CONNECTOR
SEE SHEET 12

F6
6.3A

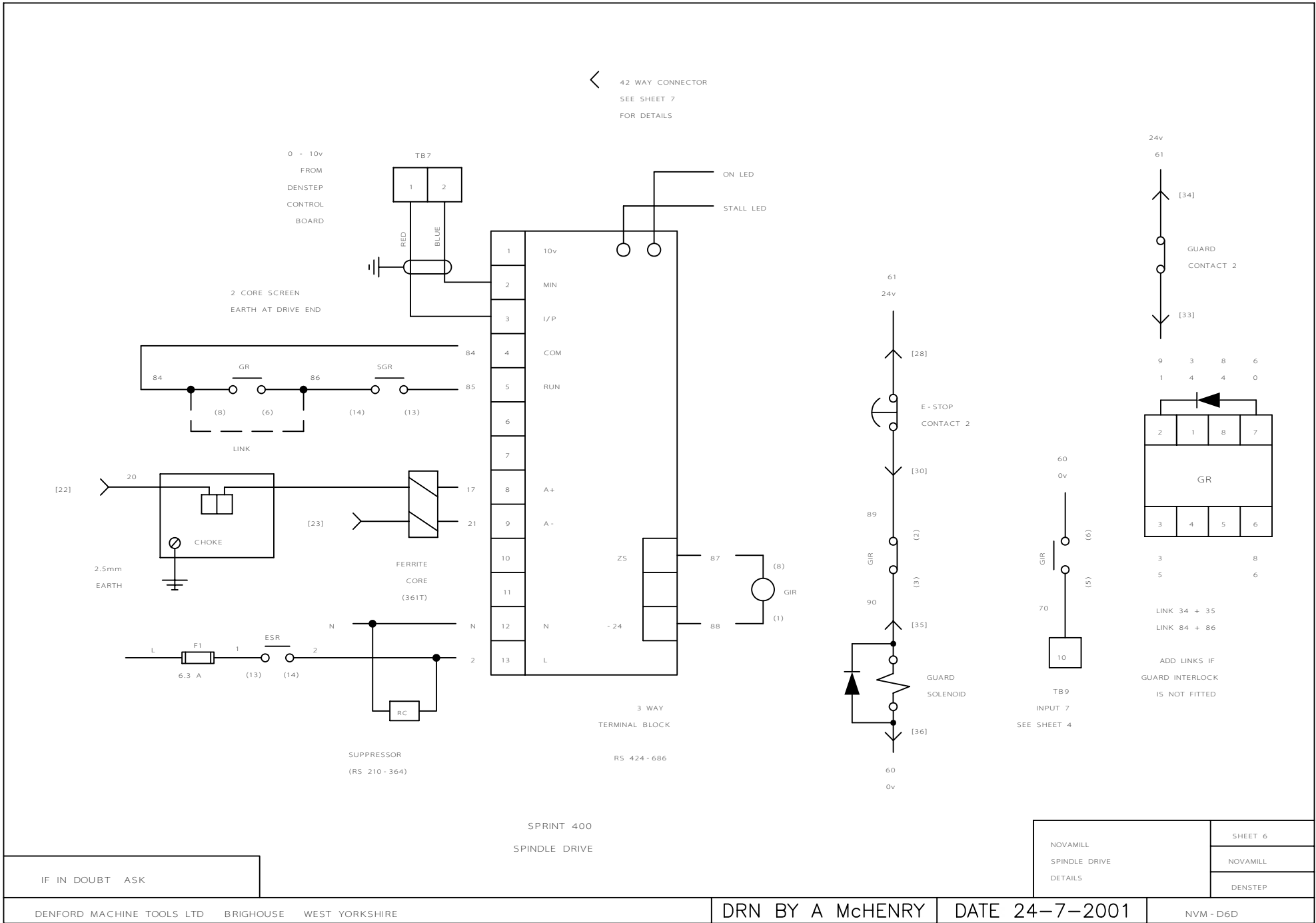


8 WAY CONNECTOR
FOR AUXILIARIES
SEE SHEET 10



NOVAMILL
DENSTEP CONTROL
BOARD DETAILS

SHEET 4
NOVAMILL
DENSTEP



42 WAY SOCKET CONNECTIONS

PIN	COLOUR	WIRE
1	RED	
2	YELLOW	
3	ORANGE	
4	BLACK	
5	RED	
6	YELLOW	
7	ORANGE	
8	BLACK	
9	RED	
10	YELLOW	
11	ORANGE	
12	BLACK	
13	RED	54
14	YELLOW	55
15	RED	54
16	YELLOW	56
17	RED	54
18	YELLOW	57
19	RED	71
20	BLUE	72
21	YELLOW	76

X AXIS
MOTOR

Y AXIS
MOTOR

Z AXIS
MOTOR

X DATUM
SWITCH

Y DATUM
SWITCH

Z DATUM
SWITCH

ATC IN

ATC OUT

COMMON FOR
ATC DATUM
AND SWITCHES

0.5mm
SINGLES

0.5mm
SINGLES

0.5mm
SINGLES

0.2mm
SINGLES

0.2mm
SINGLES

0.2mm
SINGLES

4 CORE
SCREEN

PIN	COLOUR	WIRE
22	BROWN	20
23	BLUE	21
24	EARTH	E
25	BLACK	38
26	WHITE	N
27	YELLOW	37
28	RED	61
29	BLUE	62
30	YELLOW	89
31	RED	77
32	BLUE	78
33	RED	91
34	BLUE	61
35	RED	90
36	BLUE	60
37	RED	136
38	BLUE	137
39	YELLOW	75
40	GREEN	130
41	RED	134
42	BLUE	135

SPINDLE
MOTOR

ATC
MOTOR

24v

E - STOP 1

E - STOP 2

GUARD
CONTACT 1

GUARD
CONTACT 2

GUARD
SOLENOID

5v

0v

ATC DATUM

12v

FEEDRATE

SPINDLE

1.5mm
4 CORE
SCREEN *

1mm
SINGLES

4 CORE
SCREEN

2 CORE
SCREEN *

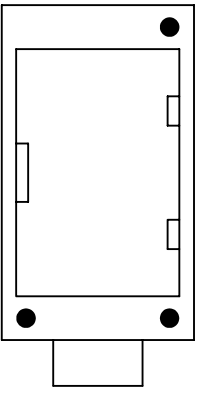
2 CORE
SCREEN

2 CORE
SCREEN

4 CORE
SCREEN *

2 CORE
SCREEN *

CABINET END
(FEMALE PINS)



42 WAY HOOD
BI 357 Z

MALE INSERT
BI 357 H

PG29 GLAND
BI 411 J

CODING PINS
BI 356 H

1.5m PG29 FLEX

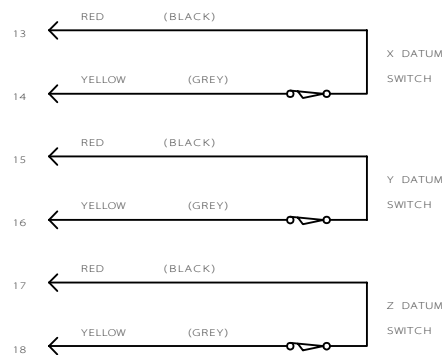
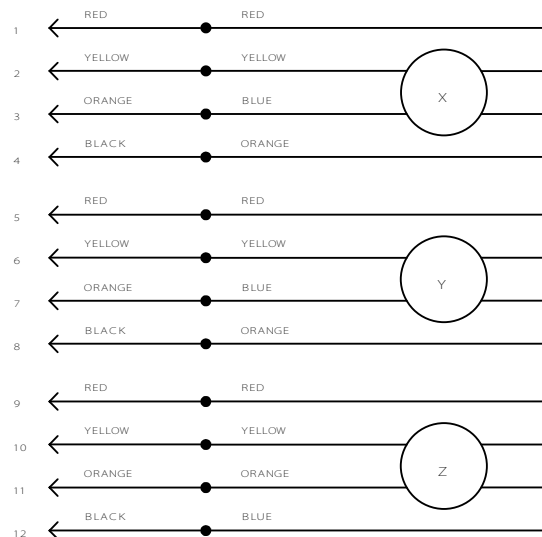
CABLES
3m LONG

* TAKE SCREEN TO EARTH

4.0mm EARTH

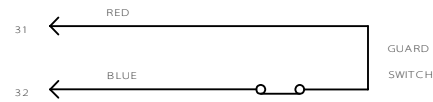
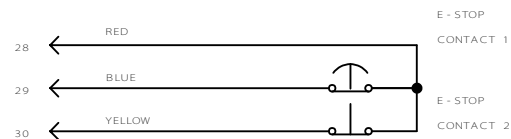
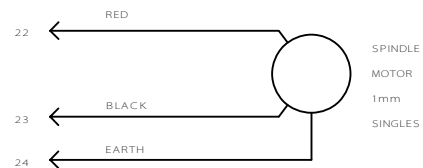
NOVAMILL
42 WAY SOCKET
DETAILS

SHEET 7
NOVAMILL
DENSTEP

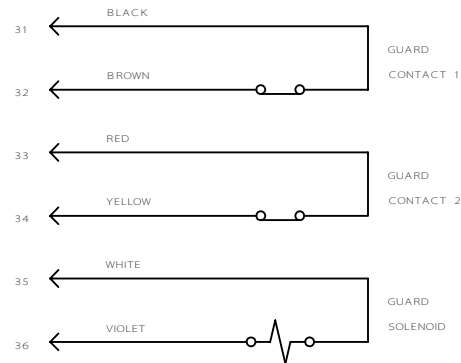


(GREY,BLACK)
ALTERNATE
SWITCH WIRING

NOTE IF POWER GUARD IS
FITTED USE THE SWITCHES
WHICH ARE PART OF THE
PNEUMATIC CYLINDER
SEE SHEET 11

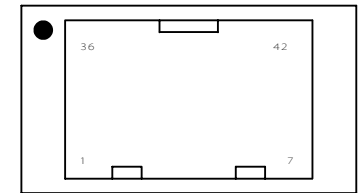


IF GUARD INTERLOCK FITTED
CONNECT AS SHOWN BELOW

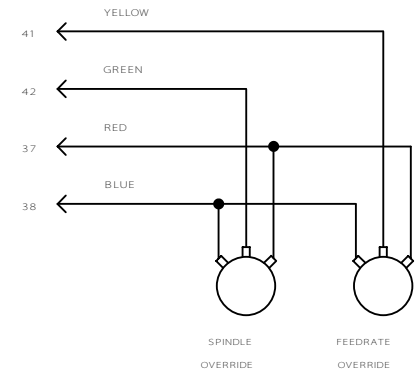


8 CORE SCREEN
FROM GUARD INTERLOCK

42 WAY HOUSING
MALE PINS (357F)



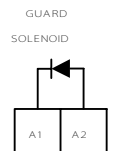
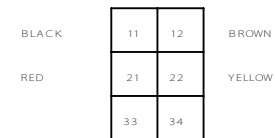
INSERT (357H)
CODING PINS (356H)



INTERLOCK GUARD SWITCH
WITH SOLENOID

(REMOVE LINK 12 - 41)

GUARD
SWITCH
CONTACTS



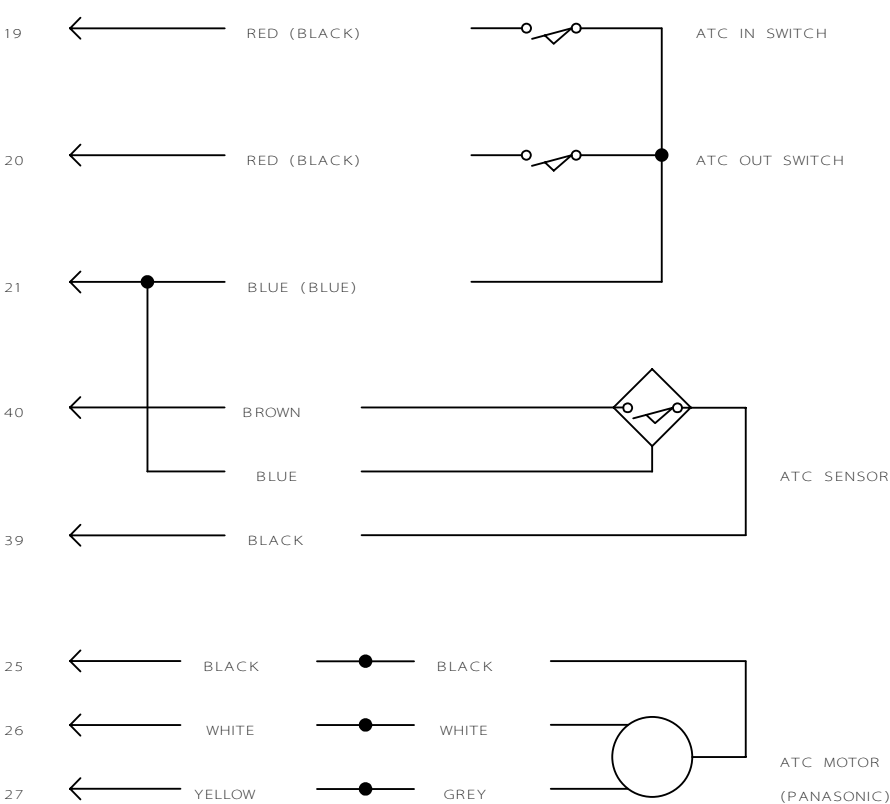
WHITE VIOLET

NOVAMILL
MOTOR AND
SWITCH
WIRING

SHEET 8
NOVAMILL
DENSTEP

IF IN DOUBT ASK

< 42 WAY CONNECTOR
SEE SHEET 7 FOR DETAILS



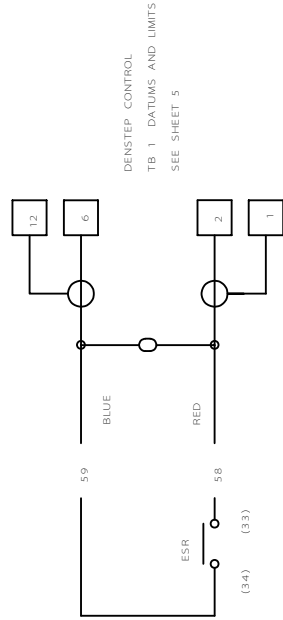
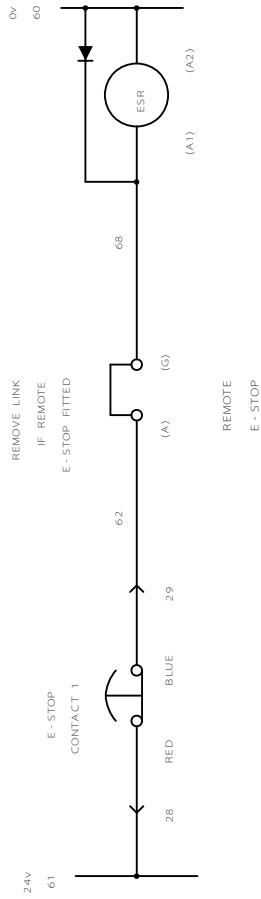
(BLACK,BLUE)
ALTERNATE
SWITCH WIRING

SHEET 9

NOVAMILL

NOVAMILL ATC WIRING

ESR EMERGENCY STOP RELAY
42 WAY CONNECTOR
SEE SHEET 7



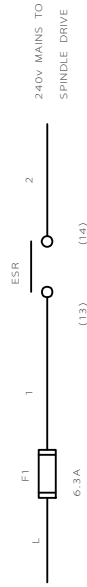
BEAD CAPACITOR
RS 126-590

QM1 = 8 WAY ROUND QM
CONNECTOR FOR
AUXILIARIES

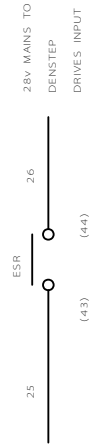
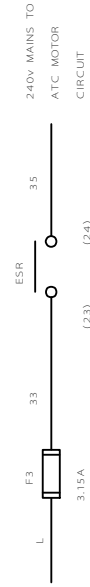
REMOTE
E-STOP (A) 62
0V (B) 60
INPUT 1 (C) 100
INPUT 2 (D) 101
(E) 110 OUTPUT 1
(F) 111 OUTPUT 2
(G) 68 REMOTE E-STOP
(H) EARTH

0.5mm BLUE
0.5mm EARTH

NOTE: E-STOP MONITOR WIRING
USES SINGLE CORE FROM
2. CORE SCREEN CABLES

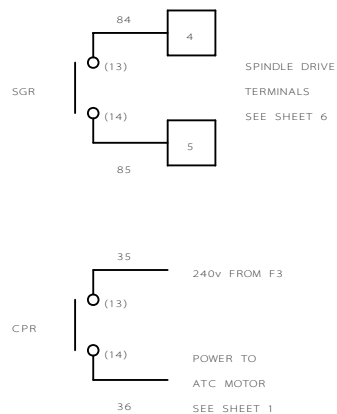
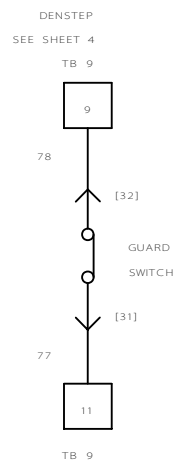


SEE SHEET 1
FOR POWER SCHEMATIC

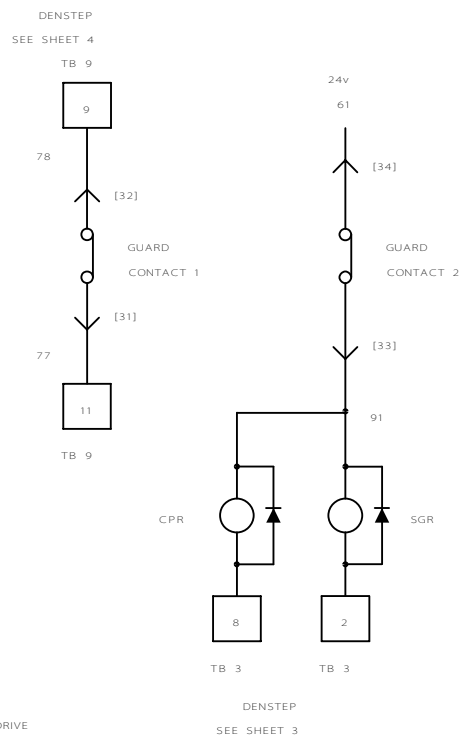


NOVAMILL EMERGENCY STOP CIRCUIT	SHEET 10
	NOVAMILL
	DENSTEP

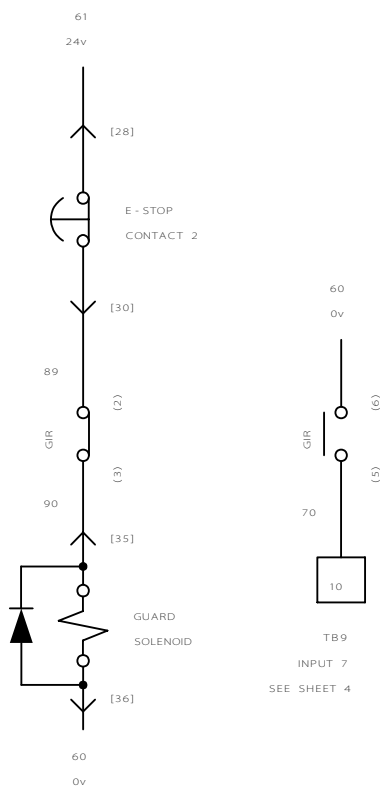
STANDARD
GUARD SWITCH



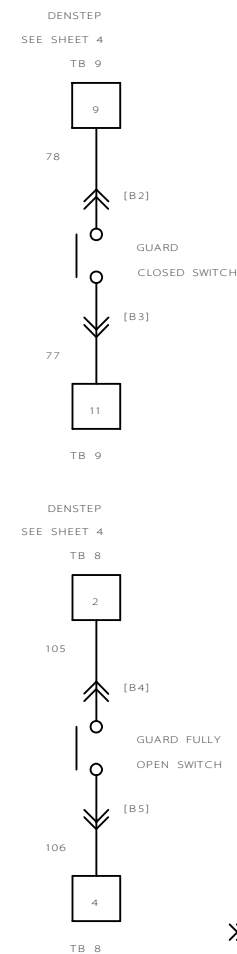
CE BADGING WITH GUARDMASTER (OPTION)



< 42 WAY CONNECTOR DETAILS
SEE SHEET 7



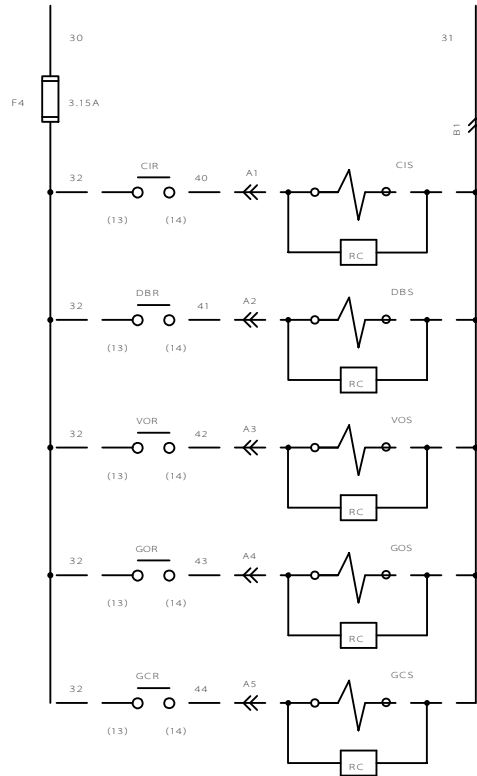
POWER GUARD SWITCH WIRING (OPTION)



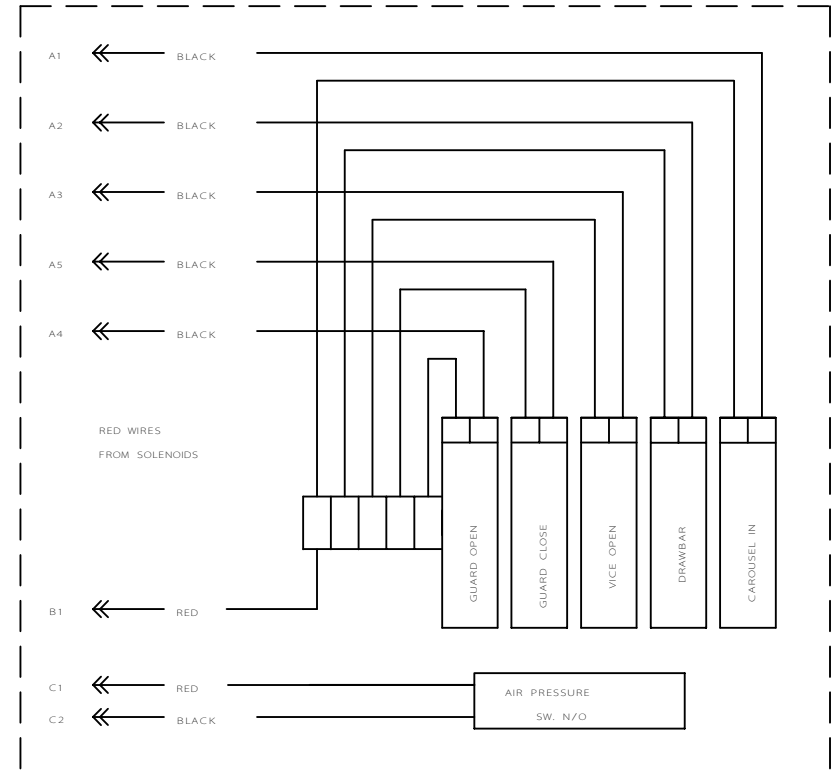
NOVAMILL
GUARD INTERLOCK
CIRCUIT

SHEET 11
NOVAMILL
DENSTEP

110v FROM CONTROL TRANSFORMER
SEE SHEET 1



PIN	COLOUR	WIRE	SOLENOIDS
A1	BLACK	40	CAROUSEL IN
A2	BLACK	41	DRAWBAR
A3	BLACK	42	VICE OPEN
A4	BLACK	43	GUARD OPEN
A5	BLACK	44	GUARD CLOSE
B1	BLACK	31	COMMON
B2	RED	77	GUARD CLOSED SWITCH
B3	BLUE	78	
B4	RED	105	GUARD FULLY OPEN SWITCH
B5	BLUE	106	
C1	RED	108	AIR PRESSURE SWITCH
C2	BLUE	107	
C3			
C4			
C5			



4 WAY CONNECTOR FOR SPRAYMIST

1	BLACK	10
2	BLACK	N
3		
E	EARTH	E

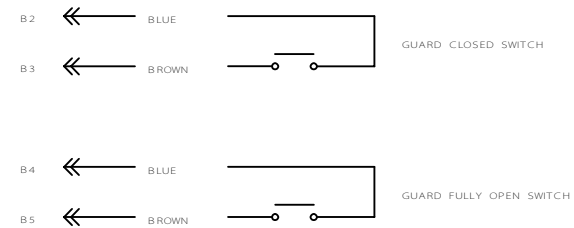
HOUSING (362 NN)
FEMALE INSERT (362 SS)
HOOD (356 N)
MALE INSERT (362 RR)

PANEL END

HOOD (356 HC)
INSERT (356 HB)
(FEMALE PINS)
REDUCER (356 HE)
PG11 CONDUIT (411 B)
2 GLANDS (411 E)
LOCKNUT (411 N)

MACHINE END

HOUSING (356 HD)
INSERT (356 HA)
(MALE PINS)



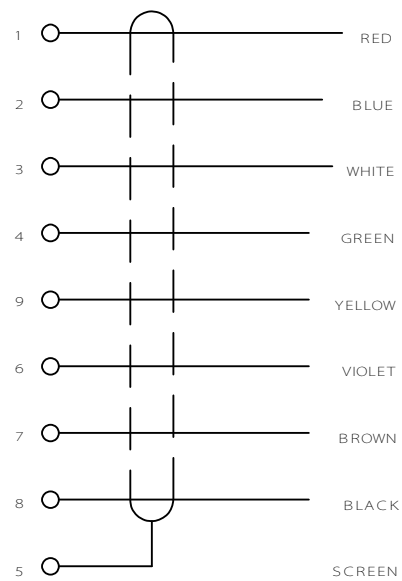
NOTE:
IF POWER GUARD IS FITTED
THE TWO SWITCHES IN THE PNEUMATIC CYLINDER
ARE USED INSTEAD OF THE USUAL GUARD SWITCHES

NOVAMILL SOLENOID AND SPRAYMIST OPTIONS	SHEET 12
	NOVAMILL
	DENSTEP

IF IN DOUBT ASK

DENSTEP

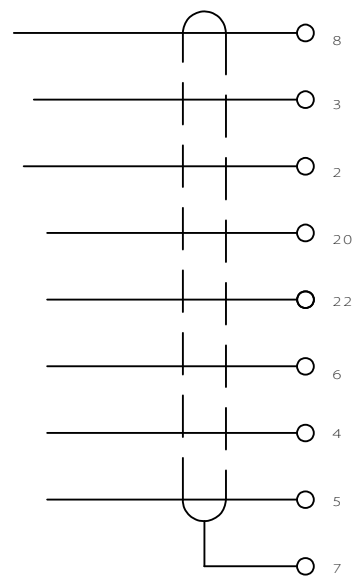
9 WAY
FEMALE D TYPE
(INSERT RS 472 - 843)
(BACKSHELL RS 469 - 566)



8 CORE SCREEN
700mm

CABINET

25 WAY
FEMALE D TYPE
(INSERT RS 470 - 904)



NOVAMILL
RS 232
CONNECTION

NOVAMILL

DENFORD LIMITED

DATE 30 - 8 - 2001

DRN BY A MCHENRY

RS 232