

Standen



T3

Can-Bus Operating Instructions

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SYSTEM DESCRIPTION

The electro / hydraulic control system used on the Standen T3 potato harvesters from 2006 is a CAN-Bus system where all the control signals are carried by one pair of wires. The 12 Volt, 30Amp, power supply is taken directly from the tractor battery too the harvester fuses, as the in cab power plugs on some tractors may not be capable of supplying an adequate amperage. Additional wires are used to power the control box, an auxiliary power supply, and to provide a safety stop circuit.

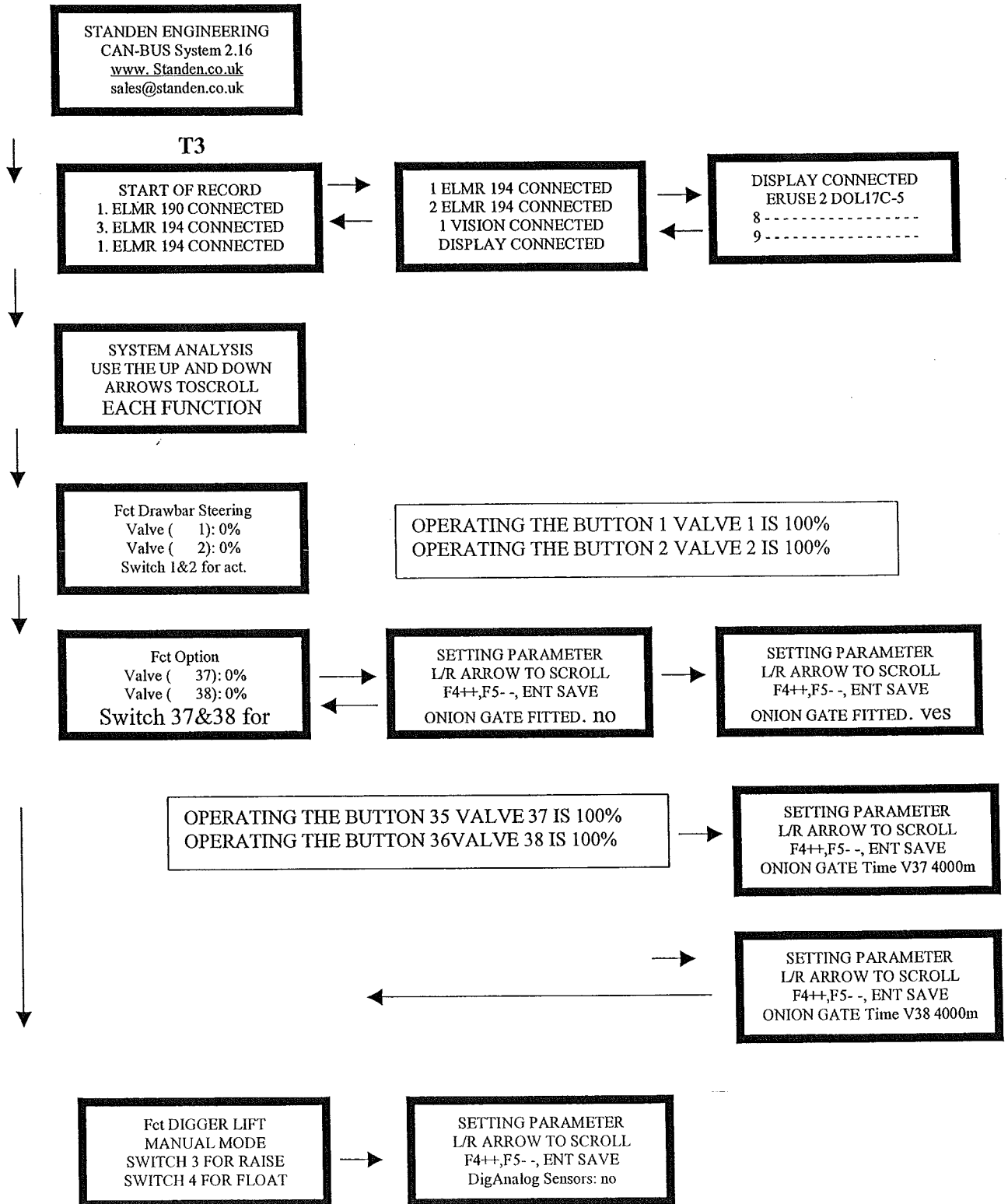
The system comprises of the control fascia, which is connected to the input circuit board. Also in the control box is the service terminal that displays an overall illustration of the system, and allows access to select, and set operating parameters. The terminal display additionally gives access to a system diagnostic menu, which will allow the status of each function to be displayed.

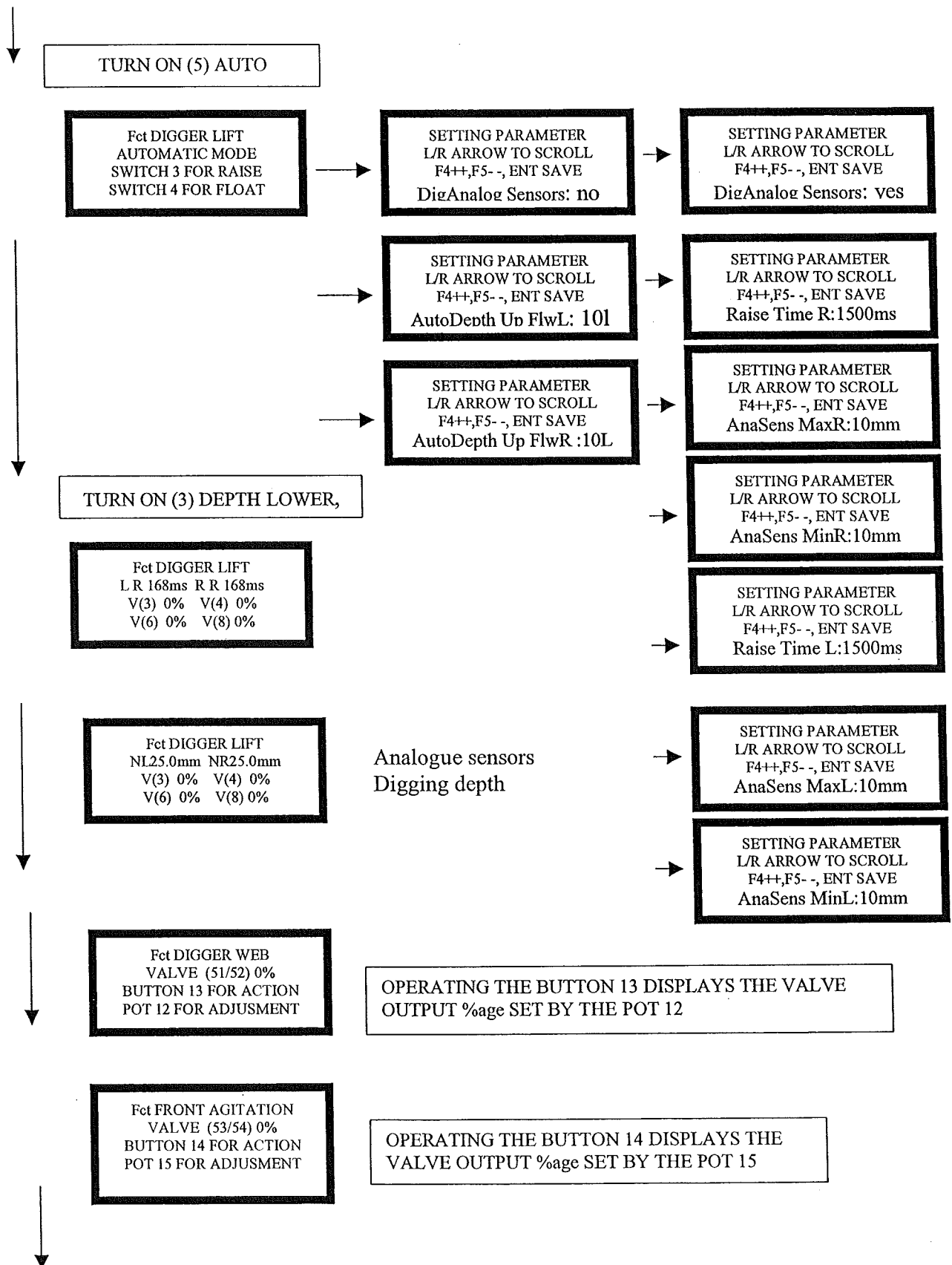
On the harvester the power, and control wires are taken onto a distribution board which allows the connection of the various control sensors, and the fuses which cover all the power outputs. From the distribution board the master processor, and slave modules are connected into the wiring loom which connect all the individual valves.

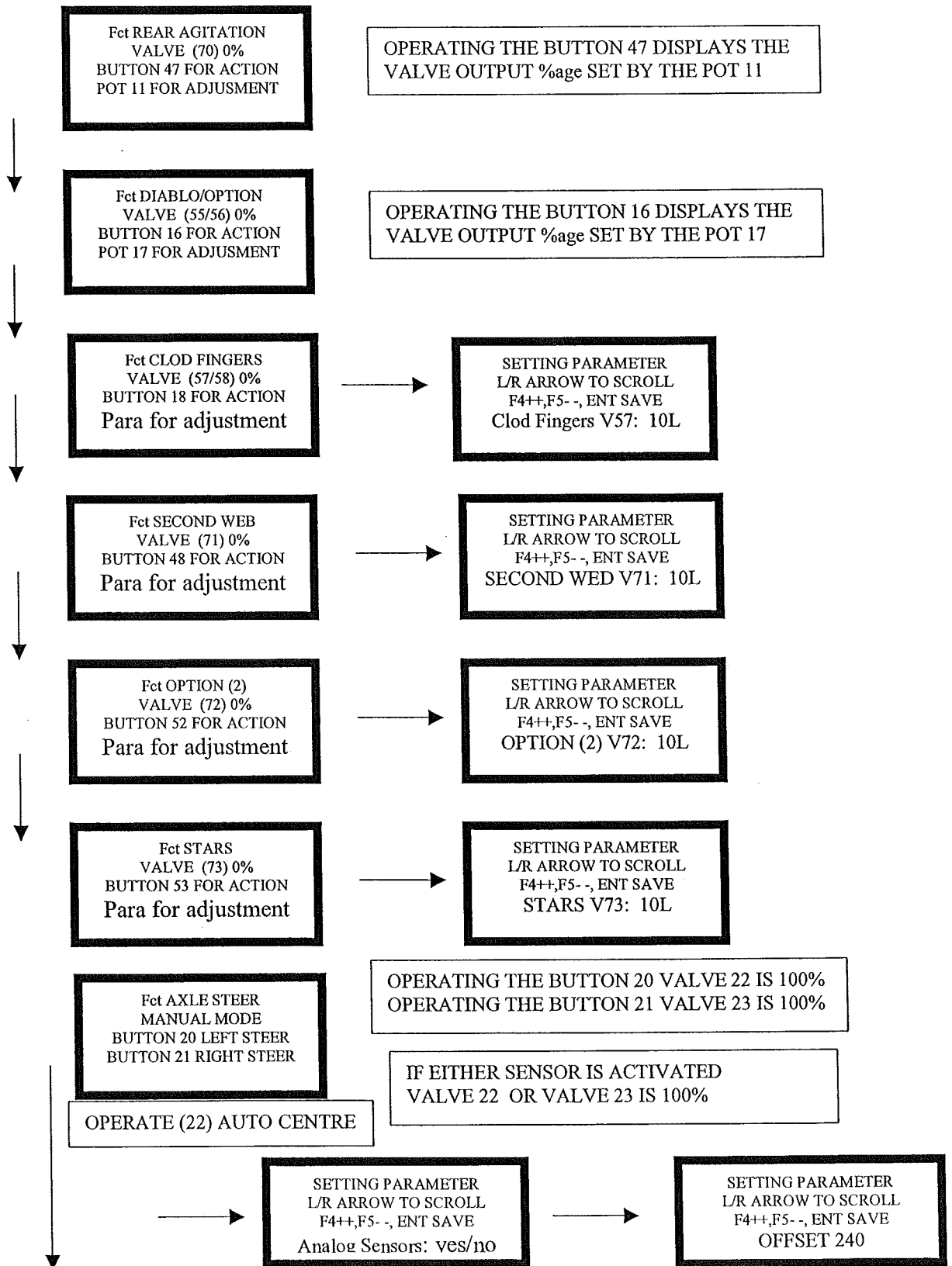
The switching installed on the control panel is designed to cover all build options, and depending on the specification of the machine some functions will not be active.

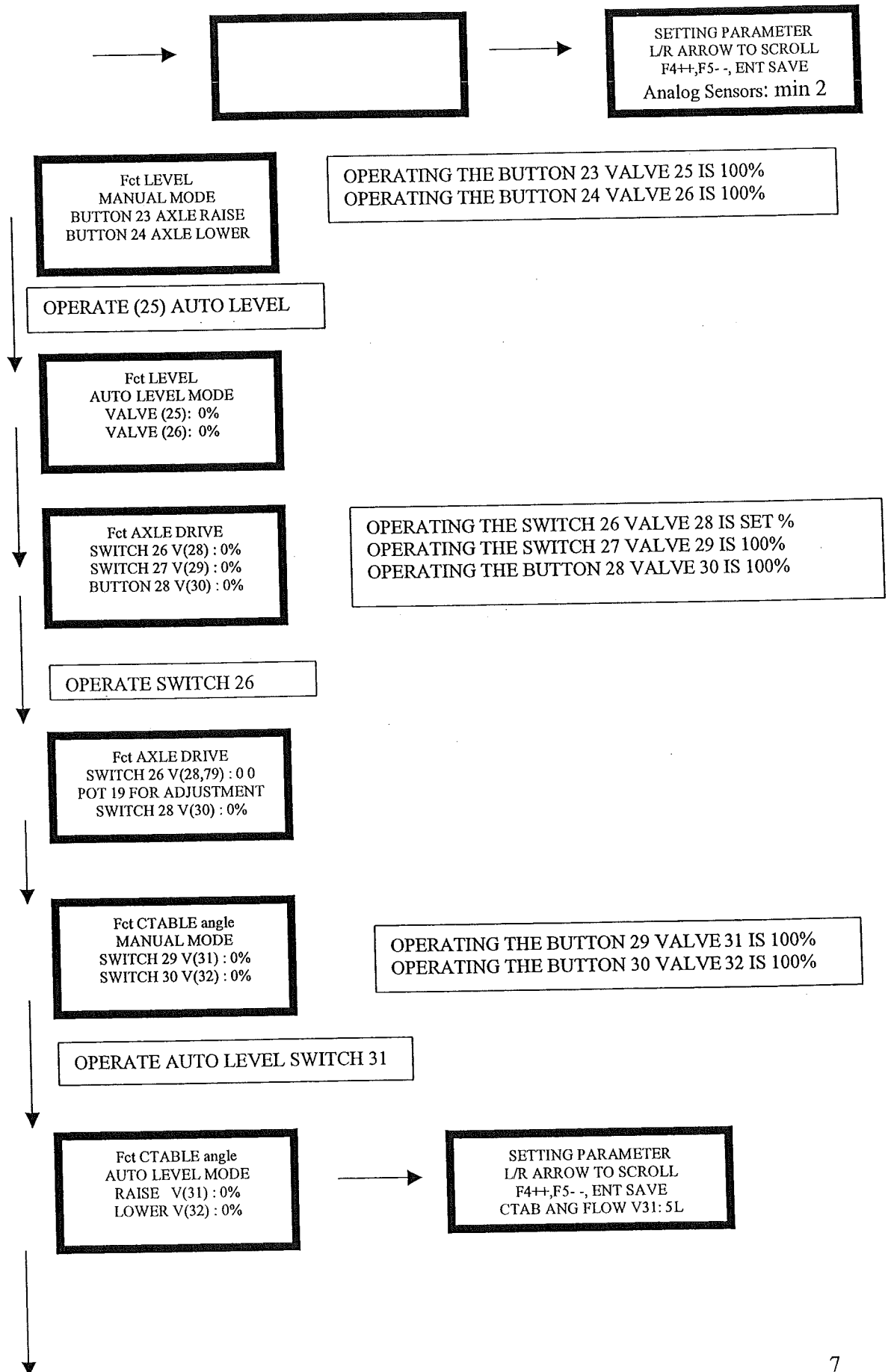
THE MAIN DISPLAY SCREEN

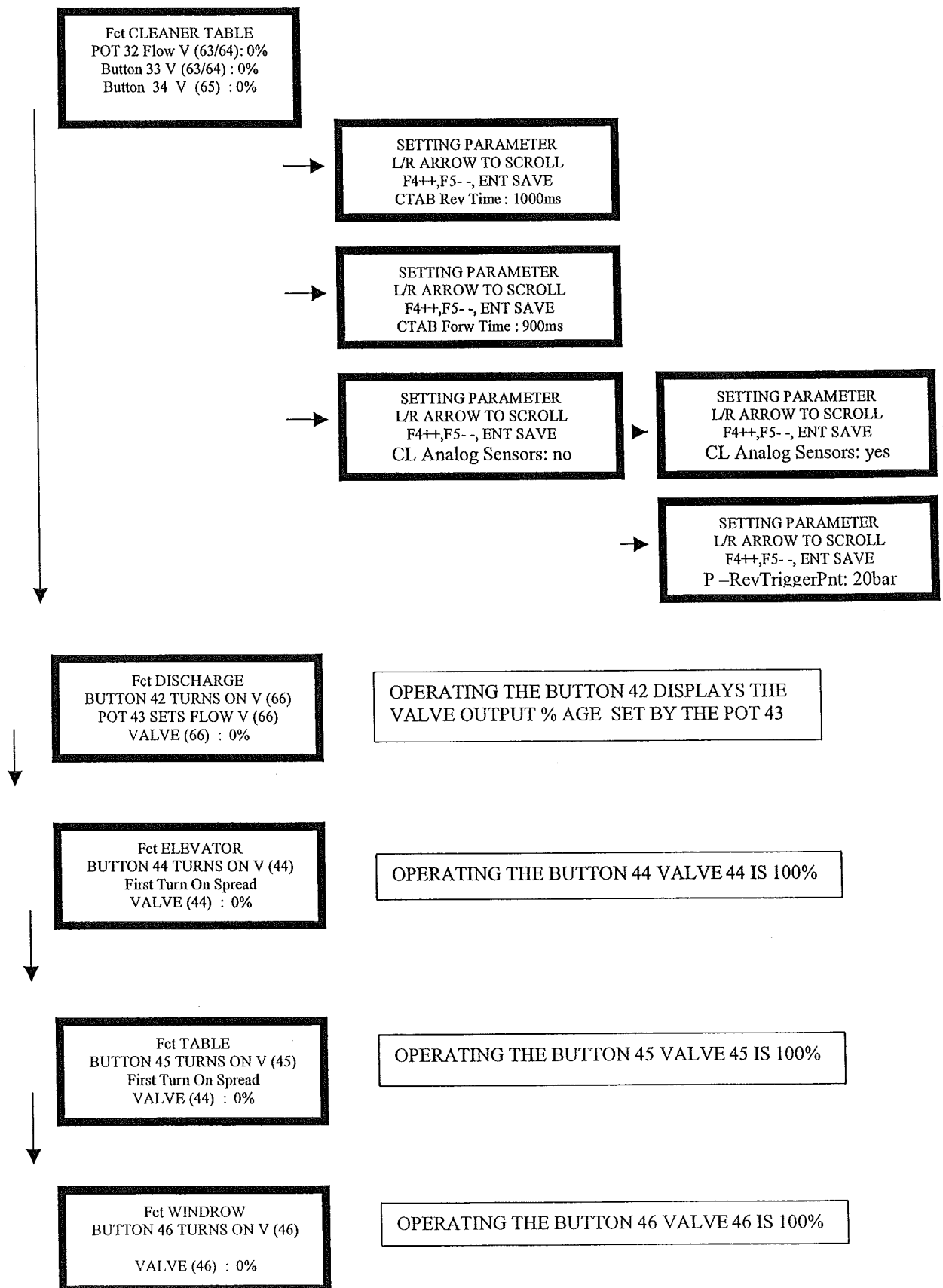
The display screen on the control panel service terminal allows the machine to be set for operating with the possible build options, and to set various parameters to suit the operator.

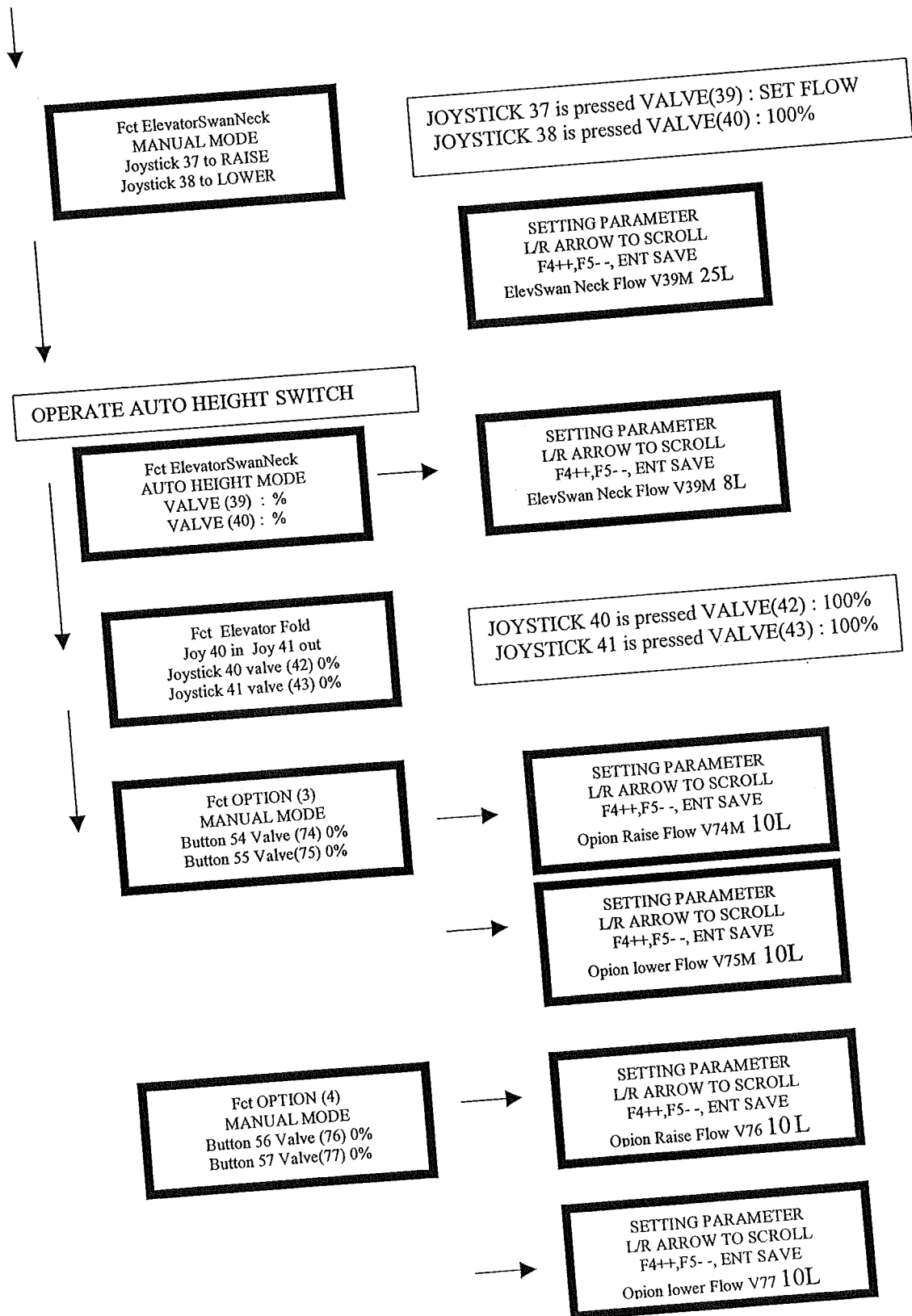














TEACH IN Auto Start
F4 : START RECORDING
F5 : STOP RECORDING
ESC : Cancel Recording

The 'AUTO START' function will remember the sequence of functions carried out between pressing F4, and F5. Pressing 'PROGRAMME START' will repeat this sequence. Pressing 'F4', then directly pressing 'F5' will clear the saved sequence.

TEACH IN Auto Stop
F4 : START RECORDING
F5 : STOP RECORDING
ESC : Cancel Recording

The 'AUTO STOP' function will remember the sequence of functions carried out between pressing F4, and F5. Pressing 'PROGRAMME STOP' will repeat this sequence. Pressing ' ', and then pressing 'F5' will clear the saved sequence.



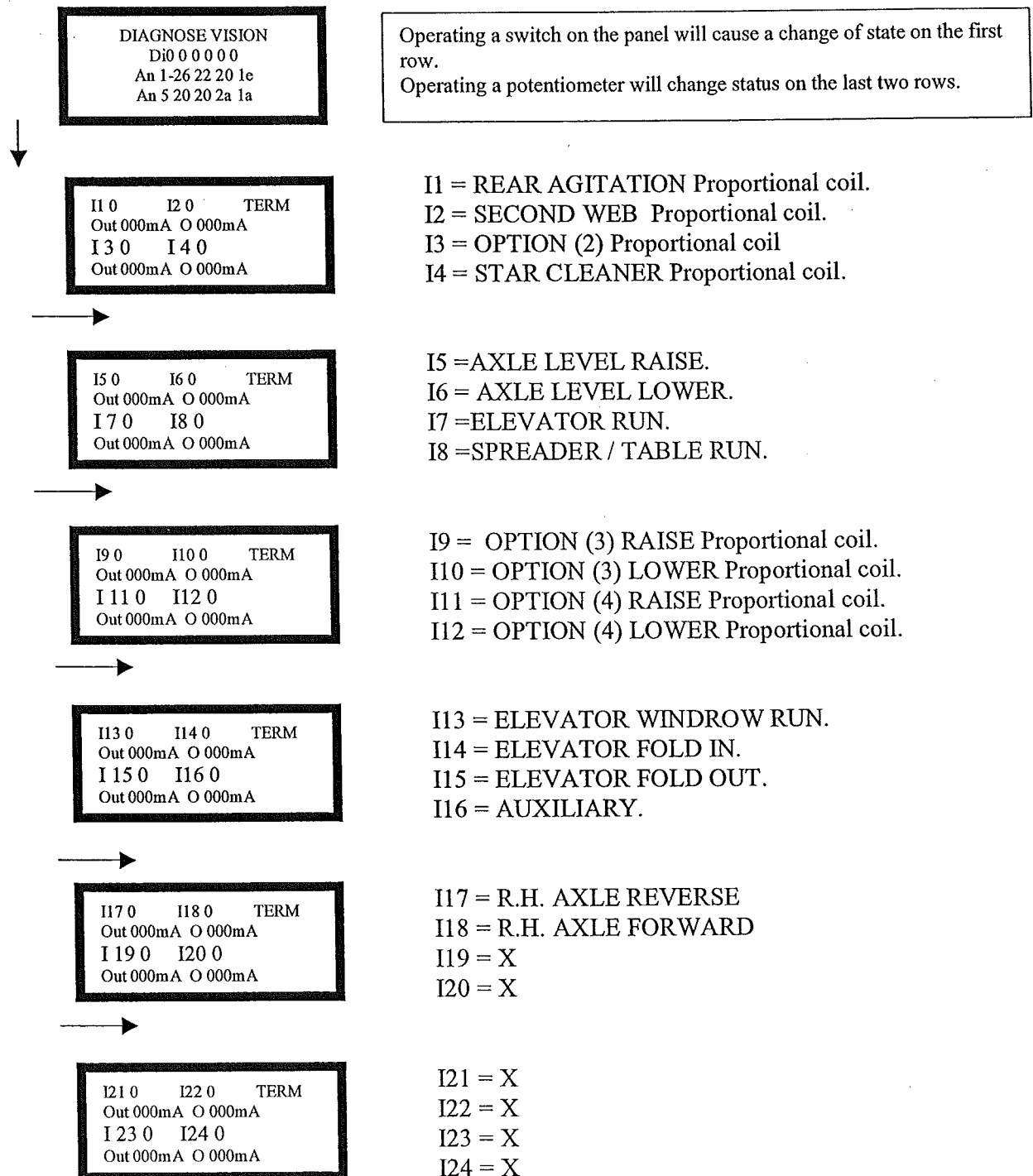
STANDEN ENGINEERING
CAN-BUS System 2.16
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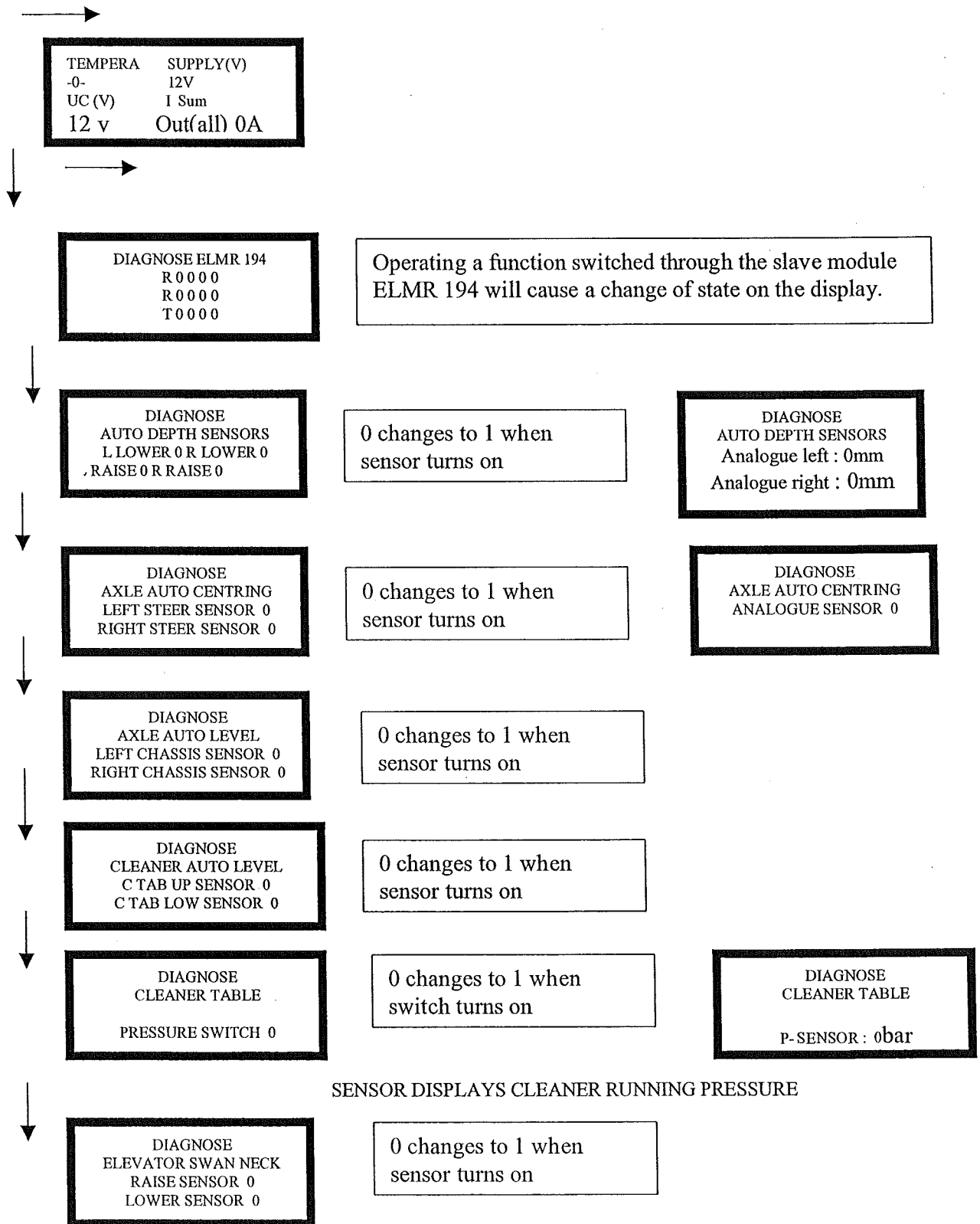
THE SYSTEM DIAGNOSTIC MENU

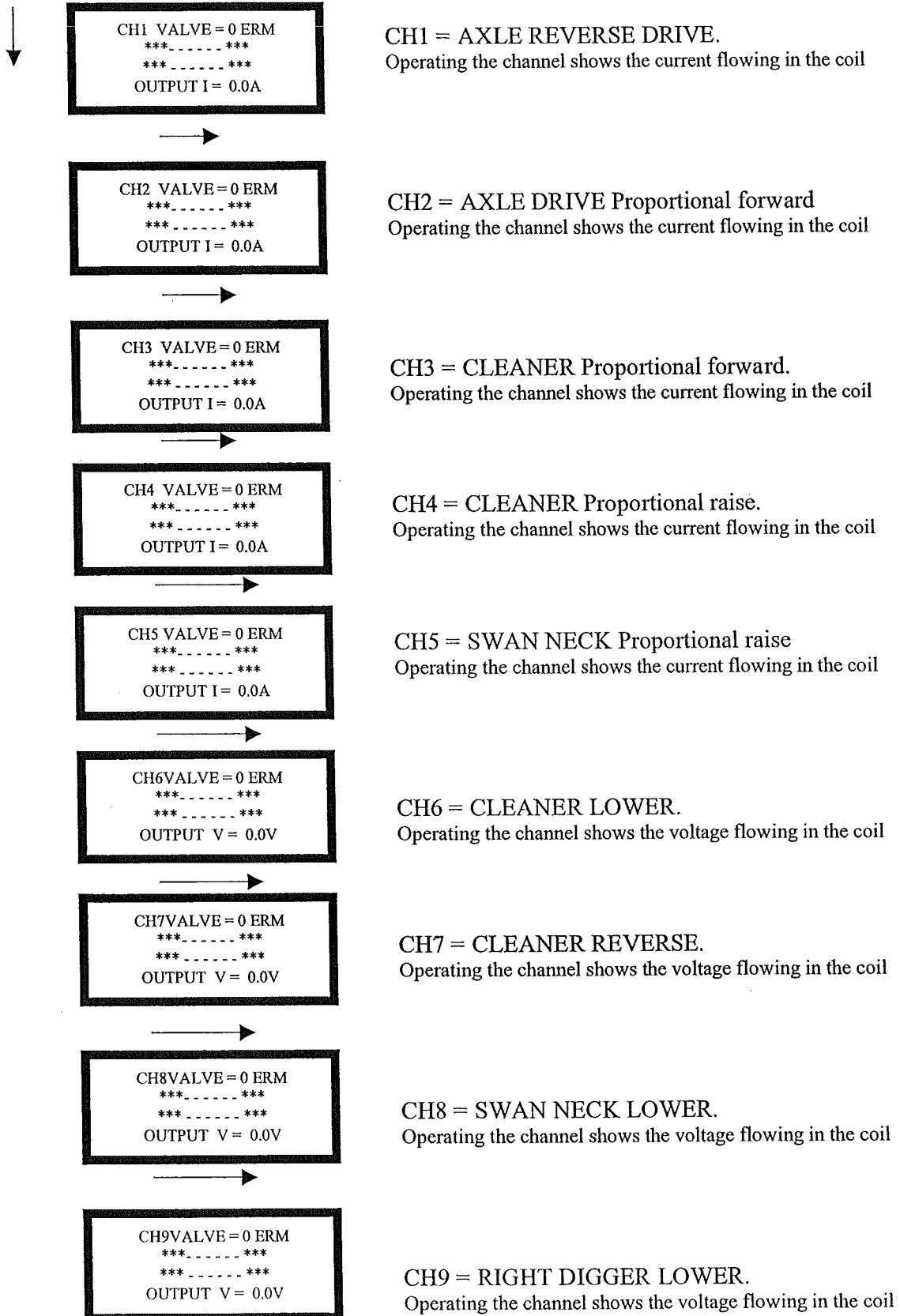
The display screen on the control panel service terminal allows you to view, and investigate each input, and output to check for faults in the control system.

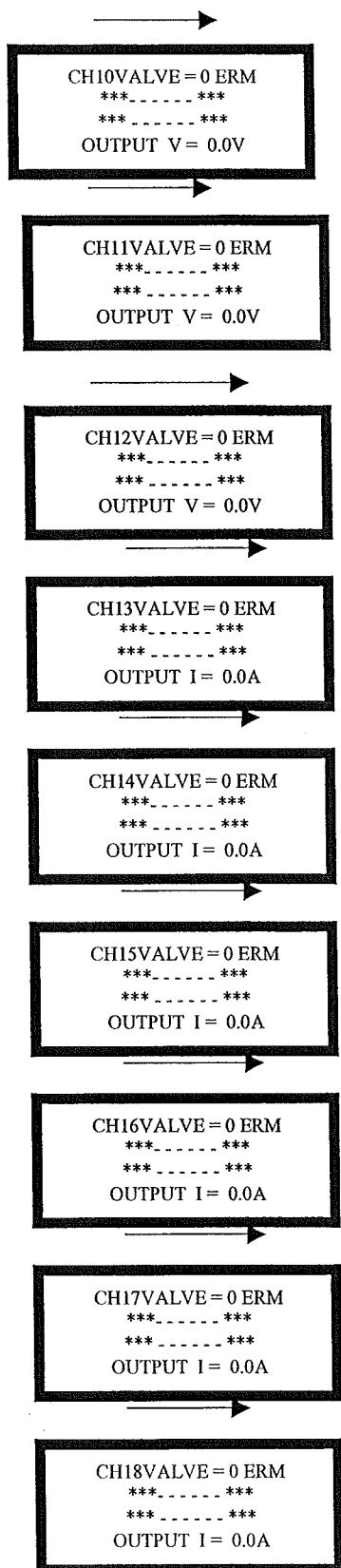
To access the diagnostic channel; on the service terminal press 'F3' + 'F2'

The screens displayed are as follows.









CH10 = AXLE STEER LEFT.
Operating the channel shows the voltage flowing in the coil

CH11 = AXLE STEER RIGHT.
Operating the channel shows the voltage flowing in the coil

CH12 = AXLE HIGH POWER.
Operating the channel shows the voltage flowing in the coil

CH13 = LEFT DIGGER Proportional raise.
Operating the channel shows the current flowing in the coil

CH14 = RIGHT DIGGER Proportional raise.
Operating the channel shows the current flowing in the coil

CH15 = DIGGER WEB Proportional coil.
Operating the channel shows the current flowing in the coil

CH16 = AGITATOR Proportional coil.
Operating the channel shows the current flowing in the coil

CH17 = DIABLO Proportional coil.
Operating the channel shows the current flowing in the coil

CH18 = CLOD FINGER Proportional coil.
Operating the channel shows the current flowing in the coil

→

```

CH19VALVE=0 ERM
***-----***
***-----***
OUTPUT I= 0.0A
  
```

CH19 = DISCHARGE ELEV Proportional coil.
Operating the channel shows the current flowing in the coil

→

```

CH20VALVE=0 ERM
***-----***
***-----***
OUTPUT I= 0.0A
  
```

CH20 = DRAWBAR LEFT COIL.
Operating the channel shows the current flowing in the coil

→

```

CH21VALVE=0 ERM
***-----***
***-----***
OUTPUT I= 0.0A
  
```

CH21 = DRAWBAR RIGHT COIL.
Operating the channel shows the current flowing in the coil

→

```

CH22VALVE=0 ERM
***-----***
***-----***
OUTPUT I= 0.0A
  
```

CH22 = OPTION (1) RAISE.
Operating the channel shows the current flowing in the coil

→

```

CH23VALVE=0 ERM
***-----***
***-----***
OUTPUT I= 0.0A
  
```

CH23 = OPTION (1) LOWER.
Operating the channel shows the current flowing in the coil

→

```

CH24VALVE=0 ERM
***-----***
***-----***
OUTPUT I= 0.0A
  
```

CH24 = LEFT DIGGER LOWER COIL.
Operating the channel shows the current flowing in the coil

```

DIAGNOSE
REMOTE SWITCH 34.0
SOUNDER SWITCH.0
  
```

```

DIAGNOSE
AXLE DRIVE SENSOR
DIN 16
RIGHT HAND WHEEL
  
```

Exit menu display by 'F3' + 'F2'.

SETTING, AND OPERATING INSTRUCTIONS.

In the event of a fault occurring which requires the main processor module to be replaced, or if the version of the operating software is upgraded, or reloaded then it is necessary to reset the default parameters of the system. After resetting the defaults the parameters can be reset to suit the operating requirements.

TO SET DEFAULT PARAMETERS.

Turn on the system.

On the service terminal display enter by pressing F1 + ENTER.

Step down through the levels with the Down arrow to 'STORE DEFAULT GENERAL'

Set the password to '6', then press 'ENTER'

Exiting the level with 'F1' + 'ENTER' sets the defaults.

Again enter the display with 'F1' + 'ENTER'

Step down through the levels with the Down arrow to 'STORE DEFAULT CHANNEL'

Set the password to '6', then press 'ENTER'

Exiting the level with 'F1' + 'ENTER' sets the defaults.

Turn off the system.

Turn on the system, check, and reset the system parameters to suit the machine by scrolling through the display screen on the control box using the down arrow, and the left/right arrows to select options, as shown on the parameter list.

The default parameters set above will configure the system for a standard vision machine, which uses the ELMR194 basic slave module, and fitted with 'analogue depth sensors.

For a T3 which uses the larger ELMR196 slave module the system parameters have to be set as follows.

Turn on the system.

On the service terminal display enter by pressing F1 + ENTER.

Step down through the levels with the Down arrow to 'SETUP LEVEL 2 GENERAL'

Set the password to '6', then press 'ENTER'

Step down through the levels with the Down arrow to 'ELMR 194 Number 1'

Change the number '1' for ELMR194 too '3' to identify the ELMR196 on the system press 'ENTER'.

Scroll down to STATUS 1 screen set value to '16' (this identifies T3)

Exiting the level with 'F1'+ 'ENTER' sets the defaults.

Again enter the display with 'F1' + 'ENTER'

Step down through the levels with the Down arrow to 'STORE DEFAULT SLAVE'

Set the password to '6', then press 'ENTER'

Exiting the level with 'F1'+ 'ENTER' pressed together sets the defaults for the ELMR196.

Turn off the system.

SET DEFAULT VALUES

These values are all adjustable from the main display screens. Follow the instructions on the screen using 'F4' to increase values, and 'F5' to decrease values. Revised values must saved with the 'ENTER' key to be effective.

When the 'ENTER' button is pressed, and the 4 green lights above the display screen flash on the revised parameter value shown on the screen is saved as the working value.

PARAMETERS WITH DIRECT ACCESS

1	PAR1	Analg/OnionGat: Digger Analog: Value = 1 Onion Gate: Value = 2 Cleaner Analog: Value = 4
2	PAR2	CTabAngFlowV31: Cleaner Table Angle Flow Valve(31) [ltr]
3	PAR3	CTabRev. Time Cleaner Table Reverse Time [ms]
4	PAR4	CTabForw Time Cleaner Table Forward Time [ms]
5	PAR5	ElevSwanFloV39A Elevator Swan Neck Flow Valve(39) Automatic Mode [ltr]
6	PAR6	OnionGaTimeV37 Onion Gate Time for Valve(37) [ms]
7	PAR7	OnionGaTimeV38 Onion Gate Time for Valve(38) [ms]
8	PAR8	AutoDpthUpFlwL Auto Depth Raise Flow Left Valve(3) [ltr]
9	PAR9	AutoDpthUpFlwR Auto Depth Raise Flow Right Valve(4) [ltr]
10	PAR10	p-RevTrggerPnt Pressure Reverse Trigger Point [bar]
11	PAR11	RaiseTimeR Raise Time Right [ms]
12	PAR12	RaiseTimeL Raise Time Left [ms]
13	PAR13	AnaSensMaxR Analog Sensor Max Band Right [mm] (relative)
14	PAR14	AnaSensMinR Analog Sensor Min Band Right [mm] (relative)
15	PAR15	AnaSensMaxL Analog Sensor Max Band Left [mm] (relative)
16	PAR16	AnaSensMinL Analog Sensor Min Band Left [mm] (relative)
17	PAR17	ClodFingersV57 Clod Fingers Valve 57 [ltr]

18	PAR18	ElevSwanFloV39M Elevator Swan Neck Flow Valve(39) Manual Mode [ltr]
19	PAR19	ScndWebV71 Second Web Valve 71 [ltr]
20	PAR20	Option0V72 Option0 Valve 72 [ltr]
21	PAR21	StarsV73 Stars Valve 73 [ltr]
22	PAR22	Option1RaiseV74 Option1 Raise Valve 74 [ltr]
23	PAR23	Option1LowerV75 Option1 Lower Valve 75 [ltr]
24	PAR24	Option2RaiseV76 Option2 Raise Valve 76 [ltr]
25	PAR25	Option2LowerV77 Option2 Lower Valve 77 [ltr]

The preset values will need to be varied to suit the operation of each machine; before revising programmes, or resetting defaults, note any variations to allow them to be re-entered.

TO FLASH (LOAD) THE PROGRAMME.

With the control system connected together, turn of the system at the control box.

Remove the cover from the junction box, and connect the P.C. to the CAN – CPC port on the distribution board.

Turn off the ‘Flash switch’ on the distribution board.

Turn on the system at the control box.

Select ‘Flash with local ID on the P.C. screen.

When prompted on the screen turn on the ‘Flash switch’

Wait for the programme to reload.

Turn off the system, disconnect the P.C., and replace the distribution box cover.

After loading the programme it is necessary to set the ‘Default Parameters’

LIMITING, AND OVERIDING DEFAULT VALUES.

During operation it may be necessary to vary defaulted parameters for example to limit the maximum speed of a motor circuit. To be able to select the relevant channel it is necessary to refer to the list of functions to find the allocated channel number.

On the service terminal display enter by pressing F1 + ENTER.

Step down through the levels with the Down arrow to level '3',

Set the password to '6', then press 'ENTER'

Select the required channel with the left/right arrows;

Scroll to the parameter with the up/down arrows

e.g.(the maximum, and minimum coil current limits are shown as follows;

Imin = 750Ma (minimum coil current)

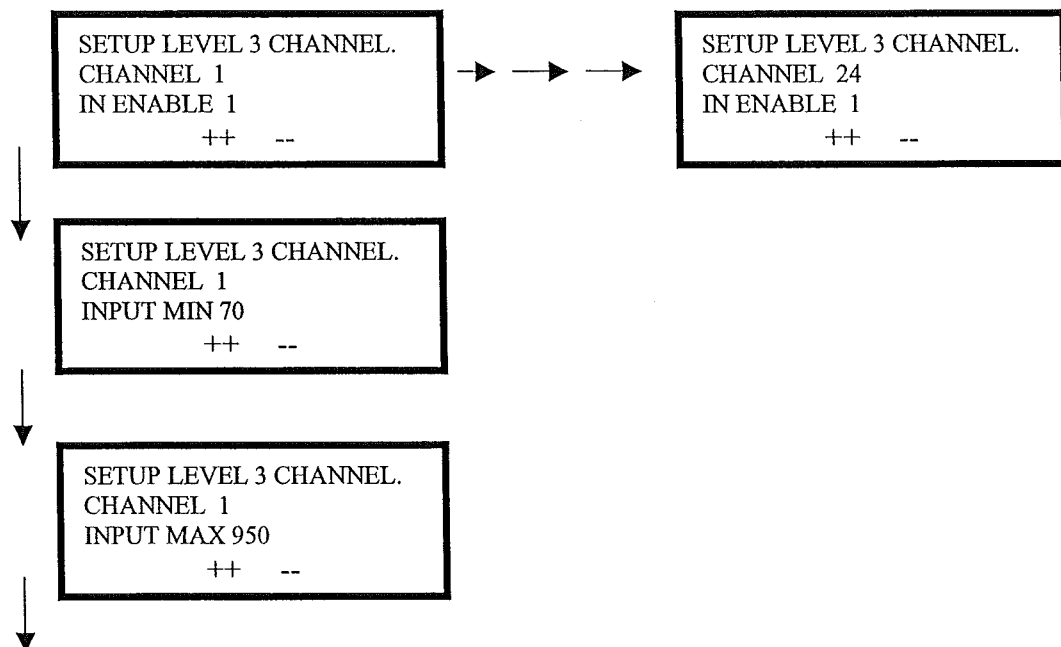
Imax = 1650Ma (maximum coil current)

If these values are altered press 'ENTER' to save the revised value.

Pressing 'ESC' exits without saving changes.

Exiting the level with 'F1'+ 'ENTER' sets the defaults.

CHANNEL '3' DEFAULT SCREENS



SETUP LEVEL 3 CHANNEL.
CHANNEL 1
I MIN 750 Ma
++ --



SETUP LEVEL 3 CHANNEL.
CHANNEL 1
I MAX 1650 Ma
++ --

REDUCING 'I MAX' ON A PROPORTIONAL COIL WILL
ALLOW A MAXIMUM SPEED TO BE LIMITED, THIS
CANNOT BE OVERRIDDEN DIRECTLY WITHOUT
ACCESSING THIS LEVEL 3 CHANNEL.

MODULE CONNECTIONS, & WIRE IDENTIFICATIONS

The wiring connections, and channel allocations for the system are listed in following tables.

The pin numbers refer to the multi-plug connections on the modules.

The cable numbers refer to the continuity numbers on the cables in the loom.

The output channel numbers for the 190 module relate to the identification numbers displayed on the Diagnostic screens.

Description	Plug Number	Button / LED Number	Description	Channel	Channel
	ESMR 193	of the terminal		ELMR190	ELMR196
Digital In 1.1	X30.1	35	OPTION LOWER	CH 23	
Digital In 1.2	X30.26	36	OPTION RAISE	CH 22	
Digital In 1.3	X30.2	2	DRAWBAR RIGHT	CH 21	
Digital In 1.4	X30.27	1	DRAWBAR LEFT	CH 20	
Digital In 1.5	X30.3	21	AXLE STEER RIGHT	CH 11	
Digital In 1.6	X30.28	22	STEERING AUTO CENTRE		
Digital In 1.7	X30.4	20	AXLE STEER LEFT	CH 10	
Digital In 1.8	X30.29	23	AXLE LEVEL RAISE		SL CH 5
UB Out	X30.5	Common signal for the buttons			
Ground Out	X30.30				
Digital In 2.1	X30.6	24	AXLE LEVEL LOWER		SL CH 6
Digital In 2.2	X30.31	29	TABLE RAISE	CH 4	
Digital In 2.3	X30.7	30	TABLE LOWER	CH 6	
Digital In 2.4	X30.32	34	TABLE MANUAL REVERSE	CH 7	
Digital In 2.5	X30.8	39	ELEV AUTO HEIGHT ON/OFF		
Digital In 2.6	X30.33	5	AUTO DEPTH ON/OFF		
Digital In 2.7	X30.9	25	AUTO LEVEL ON/OFF		
Digital In 2.8	X30.34	33	TABLE ON/OFF	CH 3	
UB Out	X30.10	Common signal for the buttons			
Ground Out	X30.35				
Digital In 3.1	X30.11	31	TABLE AUTO LEVEL ON/OFF		
Digital In 3.2	X30.36	44	ELEVATOR ON/OFF		SL CH 7
Digital In 3.3	X30.12	45	SPREADER ON		SL CH 8
Digital In 3.4	X30.37	46	ELEVATOR WINDROW		SL CH 13
Digital In 3.5	X30.13	42	DISCHARGE ON/OFF	CH 19	
Digital In 3.6	X30.38	16	DIABLO ON/OFF	CH 17	
Digital In 3.7	X30.14	18	CLOD FINGERS ON/OFF	CH 18	
Digital In 3.8	X30.39	13	DIGGER WEB ON	CH 15	
UB Out	X30.15	Common signal for the buttons			
Ground Out	X30.40				
Digital Out 1.1	X30.44	25	AUTO LEVEL ON		
Digital Out 1.2	X30.19	28	AXLE DRIVE HIGH POWER		
Digital Out 1.3	X30.43	14	FRONT AGITATION		
Digital Out 1.4	X30.18	42	DISCHARGE ON		
Digital Out 1.5	X30.42	16	DIABLO ON		
Digital Out 1.6	X30.17	18	CLOD FINGERS ON		
Digital Out 1.7	X30.41	13	DIGGER WEB ON		
Digital Out 1.8	X30.16				
UB Out	X30.20	Supply Button / LED			

	X30.45				
Digital Out 2.1	X30.24	5	AUTO DEPTH ON		
Digital Out 2.2	X30.49	39	AUTO HEIGHT ON		
Digital Out 2.3	X30.23	45	SPREADER ON		
Digital Out 2.4	X30.48	46	WINDROW ON		
Digital Out 2.5	X30.22	31	TABLE AUTO LEVEL ON		
Digital Out 2.6	X30.47	44	ELEVATOR ON		
Digital Out 2.7	X30.21				
Digital Out 2.8	X30.46	33	SPREADER/TABLE ON		
UB Out	X30.25	Supply Button / LED			
	X30.50				
Description	Plug Number	Button / LED Number	Description		
	ESMR 193	of the terminal			
Digital In 11.1	X40.1	37	SWAN NECK LOWER	CH8	
Digital In 11.2	X40.26	38	SWAN NECK RAISE	CH5	
Digital In 11.3	X40.2	40	ELEVATOR IN		SL CH 14
Digital In 11.4	X40.27	41	ELEVATOR OUT		SL CH 15
Digital In 11.5	X40.3	27	AXLE DRIVE REVERSE	CH1	
Digital In 11.6	X40.28	26	AXLE DRIVE FORWARD	CH2	
Digital In 11.7	X40.4	3	DIGGER SHARE RAISE	CH13/14	
Digital In 11.8	X40.29	4	DIGGER SHARE LOWER	CH 9/24	
UB Out	X40.5	Common signal for the buttons			
Ground Out	X40.30				
Digital In 12.1	X40.6	14	FIRST AGITATION ON	CH 16	
Digital In 12.2	X40.31	28	AXLE HIGH POWER	CH12	
Digital In 12.3	X40.7	47	REAR AGITATION		SL CH 1
Digital In 12.4	X40.32	48	SECOND WEB		SL CH 2
Digital In 12.5	X40.8	52	OPTION 2		SL CH 3
Digital In 12.6	X40.33	53	FIRST STARS		SL CH 4
Digital In 12.7	X40.9	54	OPTION 3 RAISE		SL CH 9
Digital In 12.8	X40.34	55	OPTION 3 LOWER		SL CH 10
UB Out	X40.10	Common signal for the buttons			
Ground Out	X40.35				
Digital In 13.1	X40.11	50	PROGRAMME START		
Digital In 13.2	X40.36	49	PROGRAMME STOP		
Digital In 13.3	X40.12	51	AUX		SL CH 16
Digital In 13.4	X40.37	56	OPTION 4 RAISE		SL CH 11
Digital In 13.5	X40.13	57	OPTION 4 LOWER		SL CH 12
Digital In 13.6	X40.38		L.H. DEPTH CUT OUT		
Digital In 13.7	X40.14		R.H. DEPTH CUT OUT		

Digital In 13.8	X40.39				
UB Out	X40.15	Common signal for the buttons			
Ground Out	X40.40				
Digital Out 11.1	X40.44				
Digital Out 11.2	X40.19				
Digital Out 11.3	X40.43				
Digital Out 11.4	X40.18	34	MANUAL REVERSE		
Digital Out 11.5	X40.42	51	AUX ON		
Digital Out 11.6	X40.17	SOUNDER RELAY			
Digital Out 11.7	X40.41	47	REAR AGITAION		
Digital Out 11.8	X40.16	48	SECOND WEB		
UB Out	X40.20	Supply Button / LED			
	X40.45				
Digital Out 12.1	X40.24	52	OPTION		
Digital Out 12.2	X40.49	53	FIRST STARS		
Digital Out 12.3	X40.23	27	AXLE REVERSE		
Digital Out 12.4	X40.48	26	AXLE FORWARD		
Digital Out 12.5	X40.22	7	DIGGER LEFT LOWER		
Digital Out 12.6	X40.47	8	DIGGER RIGHT RAISE		
Digital Out 12.7	X40.21	9	DIGGER RIGHT LOWER		
Digital Out 12.8	X40.46	6	ELEV DIGGER LEFT RAISE		
UB Out	X40.25	Supply Button / LED			
	X40.50				
Description	Plug Number	Button / LED Number	Description		
	ESMR 193	of the terminal			
Analog In 1	X20.13	12	potentiometer -DIGGER WEB		
Analog In 2	X20.14	11	potentiometer 2 ND AGITATION		
Analog In 3	X20.15	19	potentiometer -AXLE SPEED		
Analog In 4	X20.16	43	potentiometer -ELEVATOR		
Analog In 5	X20.5	15	potentiometer 1ST AGITATION		
Analog In 6	X20.6	10	potentiometer -DEPTH		
Analog In 7	X20.7	17	potentiometer -DIABLO		
Analog In 8	X20.8	32	potentiometer -TABLE/STARS		
Uref Out	X20.4				
GRDref Out	X20.12				

	CABLE	CABLE	FUNCTION	OUTPUT	SENSOR	FASCIA	DIST
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MR190							
PIN No	COLOUR	No		CHANNEL	INPUT	SWITCH	BOARD
1	BLUE	EARTH 1	FUSED EARTH				1
2	BLACK	20	AXLE STEER LEFT COIL	CH 10		20	
3	BLACK	28	AXLE HIGH POWER	CH 12		28	
4	RED	RX	SERIAL CON				4RX
5	BLUE	TX	SERIAL CON				5TX
6	PURPLE	106	ANALOGUE DEPTH SENSOR LEFT		AIN 1		109/30
7	PURPLE	108	ANALOGUE STEER SENSOR		AIN3		
8	PURPLE	161	WHEEL POSITION DIGITAL SENSOR		AIN5		
9			PRESSURE TRANSDUCER		AIN7		
10	BLACK	4	LEFT DIGGER LOWER COIL	CH 24		4	
11	BLACK	1	DRAWBAR LEFT COIL	CH 20		1	
12	PURPLE	7	DIGITAL LEFT DIGGER LOWER SENSOR		DIN 2		7
13	PURPLE	9	DIGITAL RIGHT DIGGER LOWER SENSOR		DIN 4		9
14	PURPLE	23	DIGITAL RIGHT STEER SENSOR		DIN 6		23
15	PURPLE	32	AUTO CLEANER LOWER SENSOR		DIN 8		32
16	PURPLE	26	AUTO AXLE LEVEL LOWER SENSOR		DIN 10		26
17	PURPLE	62	PRESSURE SWITCH // REMOTE MAN REV		DIN 12		62
18	PURPLE	40	AUTO HEIGHT RAISE SENSOR		DIN 14		40
19	PURPLE		WHEEL POSITION SENSOR		DIN 16		
20	RED	3	RIGHT DIGGER PROPORTIONAL RAISE	CH 14		3	
21	RED	14	AGITATOR PROPORTIONAL COIL	CH 16		14	
22	RED	18	CLOD FINGER PROPORTIONAL COIL	CH 18		18	
23	BROWN	84	REFERENCE SUPPLY VOLTAGE 8.5V				23
24	BLACK	4	RIGHT DIGGER LOWER COIL	CH 9		4	
25	BLACK	21	AXLE STEER RIGHT COIL	CH 11		21	
26	BLUE	CAN LOW	CAN BUS SIGNAL				X1.6/2
27	RED	CAN HIGH	CAN BUS SIGNAL				X1.6/1
28	BROWN	POSITIVE	12VOLT FEED				28
29	PURPLE	107	ANALOGUE DIGGER SENSOR RIGHT		AIN 2		107/29
30	PURPLE	109			AIN4		
31	PURPLE	162	PRESSURE TRANSDUCER		AIN 6		62/17
32			BRAKE LIGHT SIGNAL		AIN 8		
33							
34	PURPLE	6	DIGITAL LEFT DIGGER RAISE SENSOR		DIN 1		6
35	PURPLE	8	DIGITAL RIGHT DIGGER RAISE SENSOR		DIN 3		8
36	PURPLE	22	DIGITAL LEFT STEER SENSOR		DIN 5		22
37	PURPLE	31	AUTO CLEANER RAISE SENSOR		DIN 7		31
38	PURPLE	25	AUTO AXLE LEVEL RAISE SENSOR		DIN 9		25
39	PURPLE	61	DIGITAL PRESSURE SWITCH		DIN 11		61
40	PURPLE	39	AUTO HEIGHT LOWER SENSOR		DIN 13		39
41	PURPLE	56	SOUNDER SWITCH INPUT		DIN 15		
42	RED	3	LEFT DIGGER PROPORTIONAL RAISE	CH 13		3	

43	RED	13	DIGGER WEB PROPORTIONAL COIL	CH 15		13	
44	RED	16	DIABLO PROPORTIONAL COIL	CH 17		16	
45	RED	42	DISCHARGE PROPORTIONAL COIL	CH 19		42	
46	BLACK	27	LEFT HAND AXLE DRIVE REVERSE COIL	CH 1		27	
47	BLACK	26	LEFT HAND AXLE DRIVE FORWARD COIL	CH 2		26	
48	RED	33	CLEANER FORWARD PROPORTIONAL COIL	CH 3		33	
49	RED	29	CLEANER RAISE COIL	CH 4		29	
50	BLACK	2	DRAWBAR RIGHT COIL	CH 21		2	
51	BLACK	35	OPTION VALVE 1 RAISE COIL(WEB SPLIT)	CH 22		35	
52	BLACK	36	OPTION VALVE 1 LOWER COIL(WEB SPLIT)	CH 23		36	
53							
54	BROWN	POSITIVE	12VOLT FEED				54
55	BLUE	EARTH	0VOLT (FUSED 1 A)				55
56	BROWN	POSITIVE	12VOLT FEED				56
57	BROWN	POSITIVE	12VOLT FEED				57
58	BROWN	POSITIVE	12VOLT FEED				58
59	BROWN	POSITIVE	12VOLT FEED				59
60	BROWN	POSITIVE	12VOLT FEED				60
61	BLACK	30	CLEANER LOWER COIL	CH 6		30	
62	BLACK	34	CLEANER REVERSE COIL	CH 7		34	
63	BLACK	37	SWAN NECK LOWER COIL	CH 8		37	
64	RED	38	SWAN NECK PROPORTIONAL RAISE COIL	CH 5		38	
65	BLUE	EARTH	0VOLT				65
66	BLUE	EARTH	0VOLT				66
67	BLUE	EARTH	0VOLT				67
68	BLUE	EARTH	0VOLT				68

ELMR196	CABLE	CABLE	FUNCTION	OUTPUT	SWITCH
PIN No	COLOUR	No		CHANNEL	NUMBER
1	BROWN	POSITIVE	12 VOLT FEED		
2	BLACK	23	AXLE LEVEL RAISE COIL	SLAVE CH 5	23
3	BLACK	24	AXLE LEVEL LOWER COIL	SLAVE CH 6	24
4	BLACK	44	ELEVATOR RUN COIL	SLAVE CH 7	44
5	BLACK	45	SPREADER/TABLE RUN COIL	SLAVE CH 8	45
6					
7					
8					
9					
10	BLACK	46	ELEVATOR WINDROW COIL	SLAVE CH 13	46
11	BLACK	40	ELEVATOR FOLD IN COIL	SLAVE CH 14	40
12	BLACK	41	ELEVATOR FOLD OUT COIL	SLAVE CH 15	41
13	BLACK	51	SPARE (AUX)	SLAVE CH 16	51

14	BROWN	POSITIVE	12 VOLT FEED		
15	BROWN	POSITIVE	12 VOLT FEED		
16	BLUE	EARTH	0 VOLT		
17	BLUE	EARTH	0 VOLT		
18	BLACK	48	SECOND WEB PROPORTIONAL COIL	SLAVE CH 2	48
19	RED	53	STAR CLEANER PROPORTIONAL COIL	SLAVE CH 4	53
20		271	RIGHT HAND AXLE FORWARD	SLAVE CH 18	27
21					
22	BLACK	54	OPTION 3 RAISE PROPORTIONAL COIL	SLAVE CH 9	54
23	BLACK	55	OPTION 3 LOWER PROPORTIONAL COIL	SLAVE CH 10	55
24	RED	56	OPTION 4 RAISE PROPORTIONAL COIL	SLAVE CH 11	56
25	RED	57	OPTION 4 LOWER PROPORTIONAL COIL	SLAVE CH 12	57
26	BLUE	CAN LOW -	CAN BUS SIGNAL IN		
27	RED	CAN HIGH +	CAN BUS SIGNAL IN		
28	BROWN	POSITIVE	12 VOLT FEED		
29	BROWN	POSITIVE	12 VOLT FEED		
30	BLUE	EARTH	0 VOLT		
31	BLUE	EARTH	0 VOLT		
32	RED	47	REAR AGITATION PROPORTIONAL COIL	SLAVE CH 1	47
33	RED	52	OPTION VALVE 2 PROP COIL/2 ND STARS	SLAVE CH 3	52
34		261	LEFT HAND AXLE FORWARD	SLAVE CH 17	26
35					
36	BROWN	POSITIVE	FUSED 12 VOLT FEED		
37					
38					
39					
40	BLUE	CAN LOW -	CAN BUS SIGNAL OUT		
41	RED	CAN HIGH +	CAN BUS SIGNAL OUT		
42	BROWN	POSITIVE	12VOLT FEED		

