Model 1465 System

ANCHOR WINCH MONITORING

Instruction Manual
WA 105695

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1. General Description

The winch monitor is a microprocessor-controlled load-measuring device.

It allows the operator to continuously monitor load on the rope as well as the length of the rope.

The 1465 also:

- Checks for minimum and maximum load and length. Where these conditions are detected the 1465 activates both visual and audible alarms and a motion-cut output signal.
- Provides intermittent visual and audible warnings when the load or length comes within a defined distance from its minimum or maximum limits.
- Monitors sensors for malfunction and displays an ERROR CODE when a fault has been detected.
- Has all calibration and fault finding tools built-in making fault finding and configuration easy.

This manual describes the operation and calibration of the 1465 winch monitor system.

It is recommended that the rest of the manual be read in conjunction with a working 1465 display.

2. Operating Instructions

The following sections explain how to operate the 1465 and make best use of its capabilities

2.1. Turning on the 1465

Power to the 1465 is from a power supply, either battery or through other means. In some applications a switch may be used to enable the operator to switch the 1465 on/off as required.

As soon as power is applied to the 1465, its display and other indicators should light up and the 1465 should go through its self-test and start-up procedure.

2.2. Turning off the 1465

The 1465 will stop working as soon as the power is removed from it or by switching off any of the switches indicated in 2.1 above or drops below 10VDC.

2.3. Display functions

Definitions:

Minimum and Maximum Load

The load lifted is either more than the maximum allowed load (line-pull or the capacity of the crane/winch) or less than the minimum allowed load. These minimum and maximum values can be changed at calibration/installation through function codes *"Maximum allowed load" and "Minimum allowed load".*

Minimum and Maximum Length

The length of the rope is either more than the maximum allowed rope length or less than the minimum allowed rope length. These minimum and maximum values can be changed at calibration/installation through function codes *"Maximum allowed rope length" and "Minimum allowed rope length".*

Warning Alarms

By using the 1465 menu system (described in Section 2.4.) the Operator can set additional minimum and maximum Load and Length limits that lye inside the limits mentioned above without having to enter calibration mode. These values can also be changed at calibration/instillation through function codes *"Maximum load limit", "Minimum load limit", "Maximum rope length limit" and "Minimum rope length limit".*

Length Reset Function

By pressing the WINCH SELECT button and LIMIT ENTER button simultaneously the length display will be reset to zero. Although the length display will show zero, the calibration data will still be retained. This may be handy if the rope is winched in and the length display needs to reset without having to recalibrate the system.

The 1465 measures load lifted and rope paid out. It also checks for faulty sensors and provides warning alarms. If any of these conditions are detected audible and visual alarms are activated and, in all cases except warning alarms, the motion-cut is also activated.

When the Minimum or Maximum Load condition occurs the 1465:

- Activates motion-cut output signal,
- Sounds a continuous audible alarm,
- Illuminates the RED lamp, and
- Displays the error code 0240 in the top window.

This condition will remain until the load returns into the valid region.

To temporarily disable audible alarms and motion-cut the operator can push the CANCEL\OVERRIDE button on the front panel. Once the load has reached or returned into the valid region the CANCEL\OVERRIDE button must be pushed again to return the display to normal (safe) operation.

When the Minimum or Maximum Length condition occurs the 1465:

- Activates motion-cut output signal,
- Sounds a continuous audible alarm and
- Illuminates the RED lamp.
- Displays the error code E302 and E304 in the top window.

This condition will remain until the rope length returns into the valid region.

To temporarily disable audible alarms and motion-cut the operator can push the CANCEL\OVERRIDE button on the front panel. Once the rope length has returned into the valid region the CANCEL\OVERRIDE button must be pushed again to return the display to normal (safe) operation.

When Maximum Rope Payout Speed is exceeded the 1465:

- Activates motion-cut output signal,
- Sounds a continuous audible alarm and
- Illuminates the RED lamp.
- Displays the error code E301 in the top window.

This condition will remain until the rope payout speed decreases into the valid region.

To temporarily disable audible alarms and motion-cut the operator can push the CANCEL\OVERRIDE button on the front panel. Once the rope length has returned into the valid region the CANCEL\OVERRIDE button must be pushed again to return the display to normal (safe) operation.

When any Warning Alarm condition occurs the 1465:

- Sounds an intermittent audible alarm and
- Flashes the RED lamp.

This condition will remain until either the rope length or the load returns into the valid region.

To temporarily disable audible alarms the operator can push the CANCEL\OVERRIDE button on the front panel. Once the rope length or the load has returned into the valid region the CANCEL\OVERRIDE button must be pushed again to return the display to normal (safe) operation.

The RCI-1465 has 2 display windows:

1. The **top display** shows either the rope length or the maximum allowable load depending on which item has been selected using the Select button.

2. The **bottom display** shows the measured load on the winch.

Both displays have special functions while in calibration mode.

2.4. Menu System

As mentioned in section 2.3, a menu system is implemented to allow the user to view and change the warning alarms without having to enter calibration mode.

Viewing Warning Alarm Settings

The settings for the warning alarms can be viewed by pressing the LIMIT button on the bottom of the front panel. The upper and lower alarm limits will then flash in the bottom display window. The limits displayed correspond to the item that is currently being displayed in the top window. For example, if the Load Limit display is selected and the LIMIT button is pushed the limits for Load will be displayed in the bottom window.

Setting Alarm Limits

By pressing either the UP or DOWN buttons the limit menu will be displayed. Because there are four settable warning alarms, there are four items in the menu.

Display	Meaning
“-LL-”	Low Load Limit
“-HL-“	High Load Limit
“-LH-”	Low Length Limit
“-HH-“	High Length Limit

Once in the menu you can use the UP and DOWN arrows to scroll through the above menu items. Once the correct menu item is selected, press the ENTER button to enable change of the alarm limit. The limit will then be displayed in the bottom window and the UP and DOWN buttons can be used to change this limit value. Press the ENTER button to accept the new limit and the CANCEL\OVERRIDE button to reject the new limit and return back to the menu (and previous limit value). The CANCEL\OVERRIDE button can also be used at any time to exit the menu system.

3. Calibration Instructions

Please note that only ROBWAY trained personnel should attempt the calibration of the 1465. Any misuse of the calibration functions can cause the 1465 to operate incorrectly.

Entering calibration mode and changing calibration data

Procedures in the following sections can only be used while in CALIBRATION MODE. To enter CALIBRATION MODE the CANCEL\OVERRIDE button must held down while the display is switched on. The 1465 will then show F-xx on the display, where xx may be 00 or the last function code used.

Once in calibration mode, all procedures are activated by a FUNCTION CODE. Each FUNCTION CODE enables ONE procedure. A list of available FUNCTION CODES can be found at the end of this manual in the Appendices.

Note that the FUNCTION CODE listing can be different from application to application and therefore the one supplied with this manual must always be used. This can be verified by ensuring the 4 digit number displayed during system start-up matches the last 4 digits of the CHIP NUMBER printed on the CONFIGURATION SHEET and the header of the FUNCTION CODE listing.

To select a function, use the UP/DOWN arrows to select its code then press the ENTER button. Once a function code is selected and the ENTER key is pressed you can view/change the value for that function.

The current value of the function is used as the starting value. You have the option of using the UP/DOWN arrow keys to change this value or you can press the CANCEL\OVERRIDE or the ENTER keys.

If the CANCEL\OVERRIDE button is pressed the operation will be cancelled and previous calibration value will be retained, the 1465 should return to the F-xx prompt.

If the ENTER key is pressed, however, the last value shown in the window will be accepted and calibration data changed accordingly.

To exit calibration mode press CANCEL /OVERRIDE key when **F-xx** is displayed in the window.

3.1. Correct order of calibration

When calibrating the first time, or complete recalibration is required, the correct order is as follows:

- *Testing/calibrating the load sensor*
- *Testing/calibrating the length sensor*
- *Verifying configuration data*

3.2. Testing/Calibrating the load sensor

NOTE:
The Load Sensor may be pre-calibrated by Robway Crane Safety Systems. The following procedure will only be necessary if on site calibration or re-calibration is required.

Testing load sensor

The 1465 measures the load by converting the load sensor signal to a number in the range of 0 – 1023 (this number is termed “raw counts”).

You can view this number by selecting the *"View uncalibrated transducer 1 input"* function.

The displayed number when little or no tension is placed on the rope must be more than 33 and less than 999 when lifting the maximum possible load.

If the number is less the 33, the 1465 will display an error code of 201, indicating a suspected short circuit. If this happens you should check for short circuits in the wiring from the sensor to the 1465.

If the number displayed is more than 999, the 1465 will display an error code of 201, indicating a suspected open circuit. If this happens you should check for open circuit from the sensor to the 1465 or an overloaded loadcell.

Please also verify that as you load up the winch the displayed number changes BUT always stays within the range of 33 to 999.

Calibrating the load sensor

Calibration of the load sensor consists of calibrating a light load and then calibrating a heavy load.

Calibrating light load

1. Load up the winch with a known light load (5-20% of maximum line pull suggested),
2. Enter calibration mode and select function *"Calibrate light main load",*
3. Use the UP/DOWN keys to ramp the display to the actual load value then press ENTER.

Calibrating heavy load

1. Load up the winch with a known heavy load (70-100% of maximum line pull suggested),
2. Enter calibration mode and select function *"Calibrate heavy main load",*
3. Use the UP/DOWN keys to ramp the display to the actual load value then press ENTER.

Once both light and heavy loads have been calibrated, you must check the accuracy of the load channel. You can do that either by using function "View calibrated main load" or by exiting calibration mode and checking the load displayed in the bottom window.

3.3. Testing/Calibrating the length sensor

NOTE:
The length sensor cannot be pre-calibrated by Robway Crane Safety Systems. Please read the following section very carefully and contact Robway Crane Safety Systems should you encounter any problems.

Testing length sensor

The 1465 measures the length by counting pulses coming from two proximity switches installed on one of the dynamometer sheaves.

The easiest way to check whether or not the length sensor is operational is to look at the length display in normal mode (ie. not in calibration mode) and make sure that the displayed length value changes as you winch in or out. Please note that this number will not be accurate until you have calibrated the length sensor. If an error code of **2000** is shown it means that there is a communication problem between the 1465 and the interface board which is mounted on the side of the dynamometer.

PLEASE NOTE:
Because of the nature of the length sensor, if power is lost from the display and rope is paid out from the winch during this time, when the display is powered up again the length sensor will display the last length that was displayed before the power was lost and therefore the length will be inaccurate.

Calibrating length sensor

Calibration of the length sensor consists of calibrating a short length and then calibrating a long length.

Calibrating short length

1. Winch out the rope to a known distance,
2. Enter calibration mode and select function *"Calibrate short length",*
3. Use the UP/DOWN keys to ramp the display to the actual rope length then press ENTER.

Calibrating long length

1. Winch the rope out to a longer known distance,
2. Enter calibration mode and select function *"Calibrate long length",*
3. Use the UP/DOWN keys to ramp the display to the actual rope length then press ENTER.

Please make sure that you check the accuracy of the length display once the length has been calibrated.

3.4. Verifying configuration data

Once the installation/calibration have been done it will be necessary to check and adjust the configurable options of the 1465.

The installer will have to experiment with some of the values to suit the given application. It is important that the installer takes time to experiment and find the right values to use.

It is recommended that the installer keep a record of what has been done and what effect it had on the operation of the system to have guide to what the next value for a given function should be. This will eliminate a lot of frustration and speed up the process of finding the right value of the function being adjusted. Always note the final values and store in a safe place in case recalibration is required.

Function *"Number of load samples to average"*

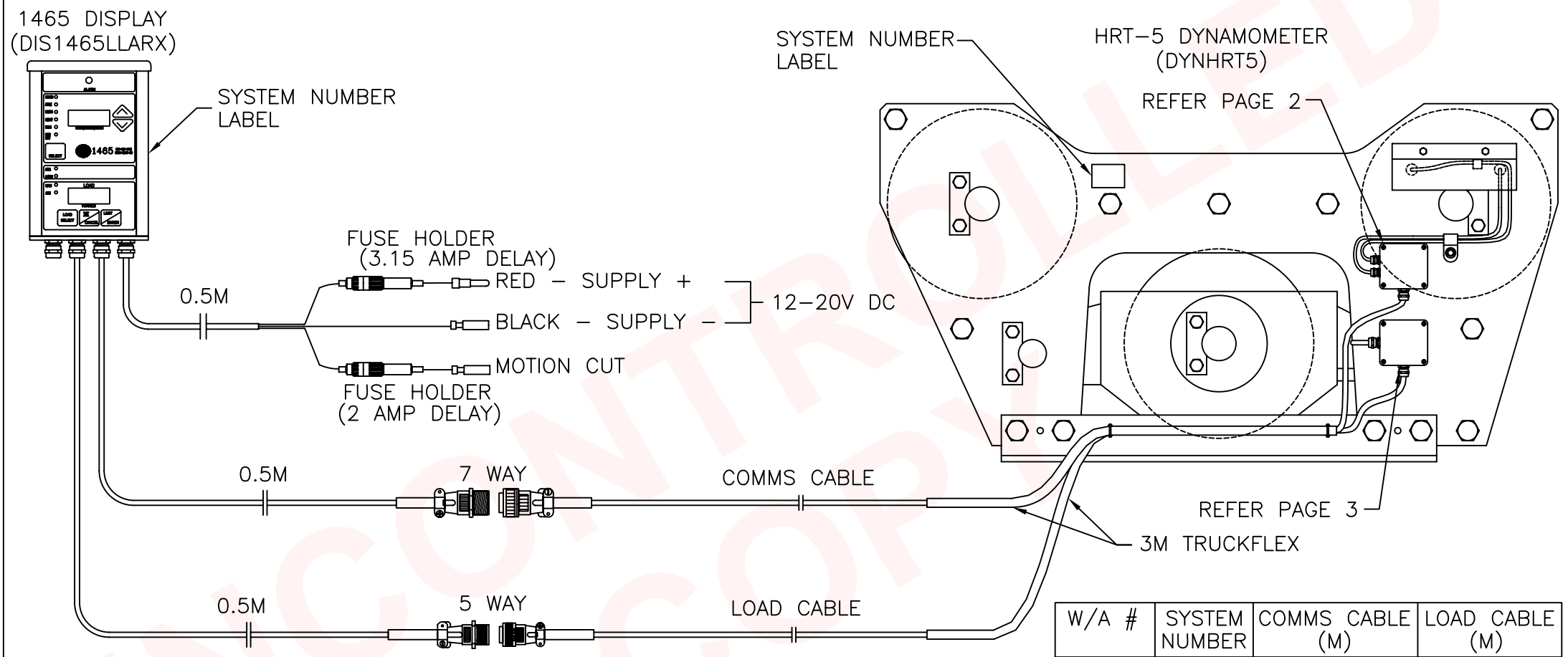
For some applications it might be desirable to "smooth out" the load reading.

To prevent the 1465 from detecting false errors the installer should activate the averaging function of the 1465 to smooth out the load reading.

A value of zero disables averaging while a number from 1 to 20 will average that many number of load readings.

Please note that the larger the number the more stable the load reading will be, however, it will also effect the RESPONSE time of the system to potential minimum or maximum load or length conditions. The installer must find a compromise value which gives good response time and smooth operation. A starting value of “5” is recommended.

Appendices



W/A #	SYSTEM NUMBER	COMMS CABLE (M)	LOAD CABLE (M)
706463	1	75	75
706464	2	75	75
706465	3	95	95
706466	4	95	95
706467	5	120	120
706468	6	120	120
706469	7	160	160
706470	8	160	160

REV	DATE	DESCRIPTION OF CHANGE	APPR'D

TOL: X. +/- 1
X.X +/- 0.2
X.XX AS STATED

DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE STATED

DRAWN	APPROVED	PART OF ASSY
C. HOBBY	M. OBST	–
24/06/98	09/07/98	

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PART No: –

PROJECT: W/A #706463-70

TITLE: CLOUGH OFFSHORE WINCH MONITORING SYSTEM GENERAL ARRANGEMENT

SCALE N/A

SHEET 1 OF 3

DRAWING No: DWG 1660

FILE No: 166001AA.DWG

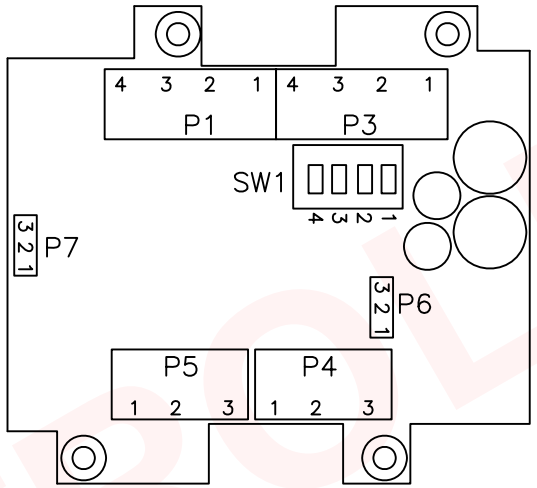
REV 1.0

SHAFT ENCODER SUPPLY AND COMMS			
P1 PIN NO.	P3 PIN NO.	COLOUR	DESCRIPTION
1	1	RED	SUPPLY +
2	2	BLACK	SUPPLY –
3	3	WHITE	RS 485 +
4	4	GREEN	RS 485 –
–	–	SCREEN	TERMINATE IN GLAND

THE HDR ADDRESS CAN BE CHANGED VIA "SW1" LOCATED ON ENCODER PCB. SPECIAL CIRCUMSTANCES ONLY. DEFAULT SW1 – 1, 2 & 3 OFF 4 ON.

PROX SWITCH TYPE SELECTOR	
PROXIMITY TYPE	P7 PATCH
NPN	1&2
PNP	2&3

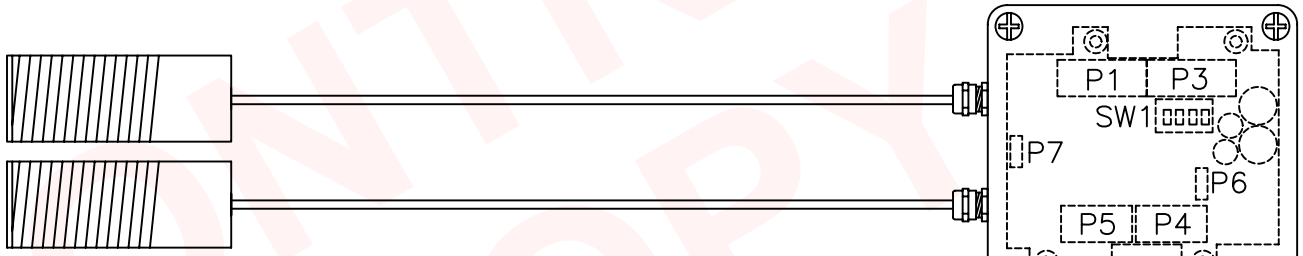
SHAFT ENCODER BOARD LAYOUT



PROX SWITCH SUPPLY VOLTAGE	
SUPPLY TYPE	P6 PATCH
+5V	1&2
SUPPLY +	2&3

PROXIMITY SWITCH INPUT 1	
P4 PIN NO.	DESCRIPTION
1	SWITCH SUPPLY –
2	SWITCH INPUT
3	SWITCH SUPPLY +

PROXIMITY SWITCH INPUT 2	
P5 PIN NO.	DESCRIPTION
1	SWITCH SUPPLY –
2	SWITCH INPUT
3	SWITCH SUPPLY +



PROXIMITY SWITCHES
PNP 10 – 30V
(SWIPROX06)

SHAFT ENCODER BOX

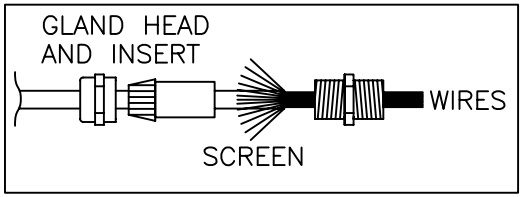
ENSURE THAT THE SCREEN IS TERMINATED IN THE GLAND AS SHOWN BELOW

SHAFT ENCODER CONNECTOR DETAIL		
7 PIN	COLOUR	DESCRIPTION
A	RED	SUPPLY +
B	BLACK	SUPPLY –
C	GREEN	RS 485 +
D	WHITE	RS 485 –
SHELL	SCREEN	SCREEN

7–WAY PLUG

COMMS CABLE

TO DISPLAY (REFER TO PAGE 1)



REV	DATE	DESCRIPTION OF CHANGE	APPR'D

TOL: X. +/– 1
X.X +/– 0.2
X.XX AS STATED

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24/06/98	09/07/98	

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PART No: –

PROJECT: W/A #706463–70

TITLE: CLOUGH OFFSHORE WINCH MONITORING SYSTEM GENERAL ARRANGEMENT

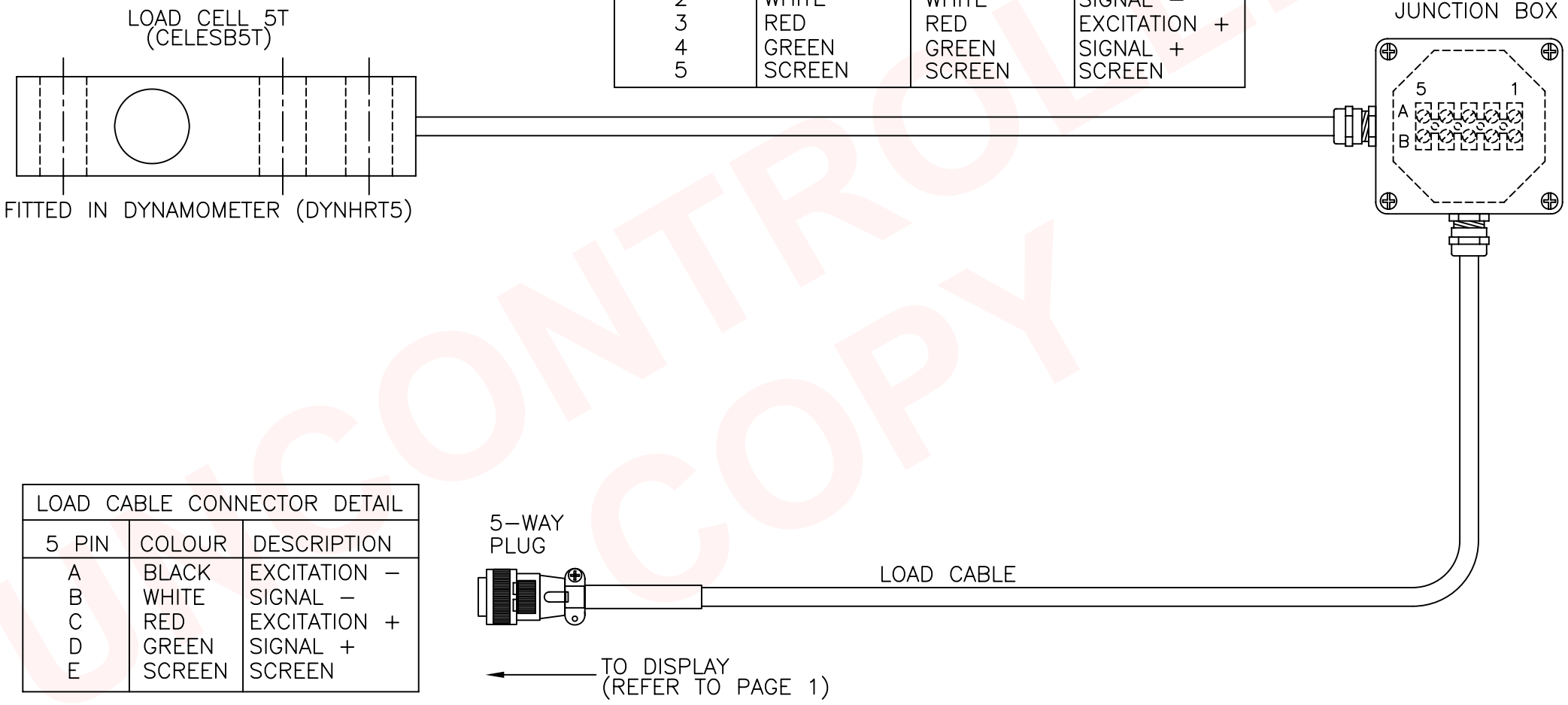
SCALE N/A

SHEET 2 OF 3

DRAWING No: DWG 1660

FILE No: 166001AA.DWG

REV 1.0



LOAD CELL JUNCTION BOX CONNECTION DETAIL			
TERMINAL	COLOUR A L/CELL SIDE	COLOUR B DISPLAY SIDE	DESCRIPTION
1	BLACK	BLACK	EXCITATION −
2	WHITE	WHITE	SIGNAL −
3	RED	RED	EXCITATION +
4	GREEN	GREEN	SIGNAL +
5	SCREEN	SCREEN	SCREEN

LOAD CABLE CONNECTOR DETAIL		
5 PIN	COLOUR	DESCRIPTION
A	BLACK	EXCITATION −
B	WHITE	SIGNAL −
C	RED	EXCITATION +
D	GREEN	SIGNAL +
E	SCREEN	SCREEN

REV	DATE	DESCRIPTION OF CHANGE	APPR'D

TOL: X. +/− 1
X.X +/− 0.2
X.XX AS STATED

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24/06/98	09/07/98	

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PART No: −

PROJECT: W/A #706463−70

TITLE: CLOUGH OFFSHORE WINCH MONITORING SYSTEM GENERAL ARRANGEMENT

SCALE N/A

SHEET 3 OF 3

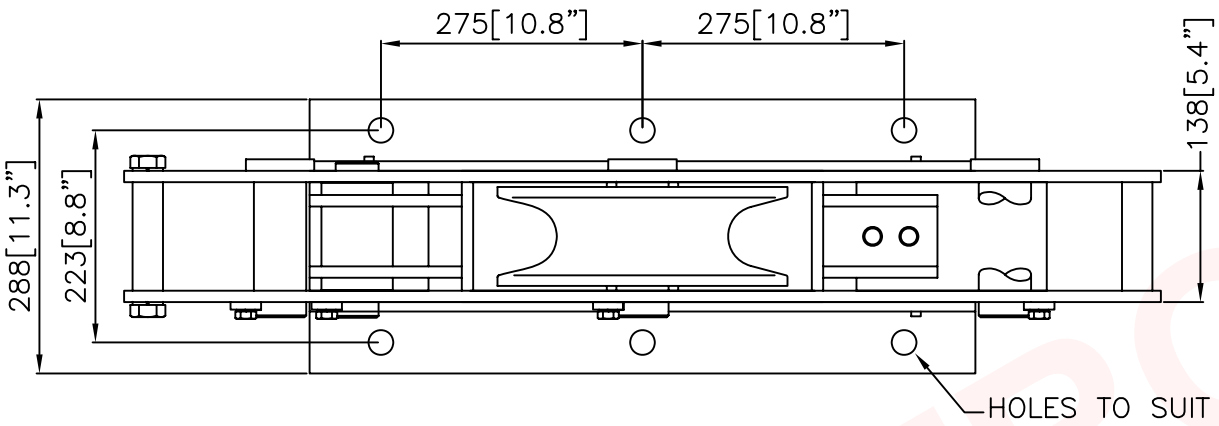
DRAWING No: DWG 1660

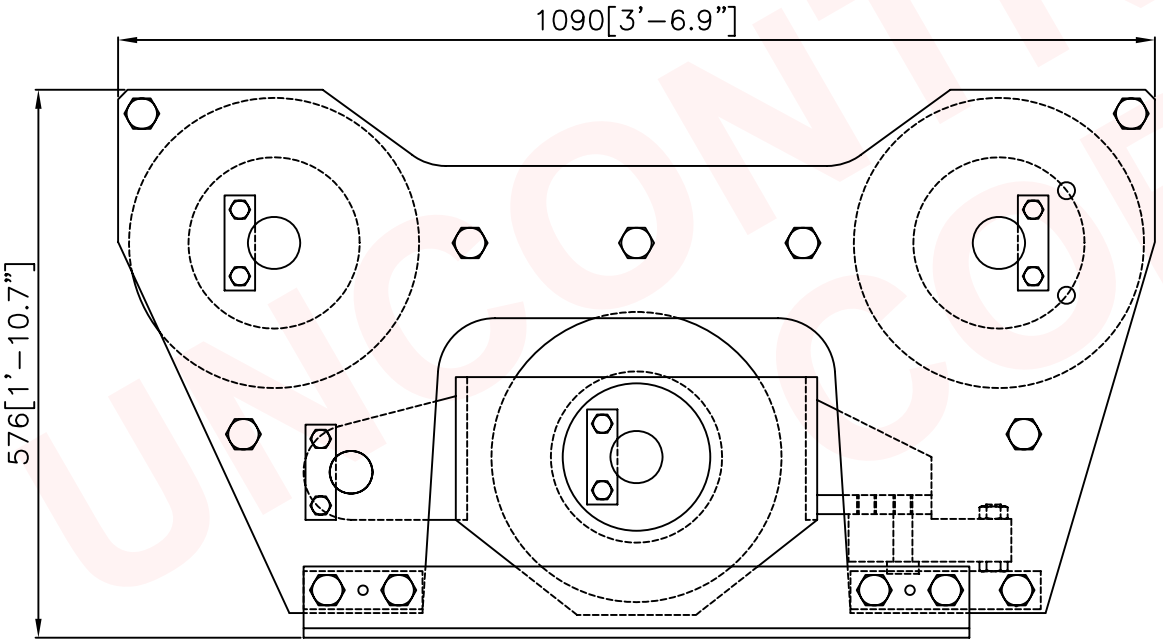
FILE No: 166001AA.DWG

REV 1.0

3RD ANGLE

PLAN VIEW
TOP SHEAVES & SPACERS OMITTED





SHEAVES AVAILABLE IN EITHER STEEL OR NYLOTRON TO SUIT THE FOLLOWING ROPE DIAMETERS

STEEL SHEAVES

1.25"; 1.5"; 1.75"; 2"; 2.25"; 2.5"; 2.75"; 3"; 3.25"; 3.5"

NYLOTRON SHEAVES

1.25"; 1.5"; 1.75"; 2"; 2.25"; 2.5"; 2.75"; 3"; 3.25"; 3.5"

REV	DATE	DESCRIPTION OF CHANGE	APPR'D
1.1	05/11/98	REFER TO DR#564	M.O.

TOL: X. +/- 1
X.X +/- 0.2
X.XX AS STATED

DO NOT SCALE DRAWING
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05/06/98	22/06/98	

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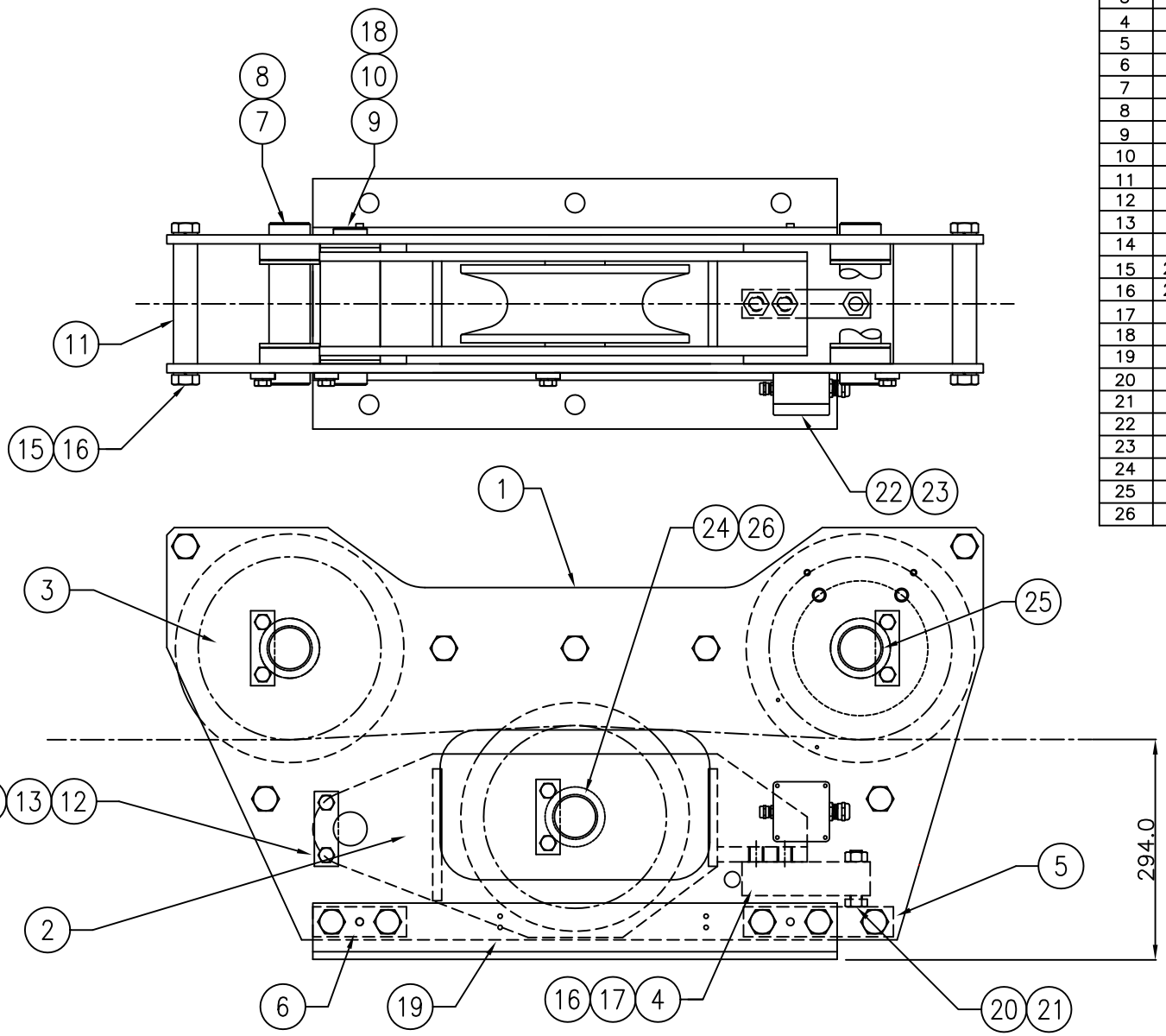
PART No: DYNHRT5
PROJECT: HRT-5 DYNO
TITLE: DIMENSIONAL DETAIL
SCALE N/A
SHEET 1 OF 1
DRAWING No: DWG 1649
FILE No: 164901AB.DWG
REV 1.1

3RD ANGLE

PLAN VIEW
TOP SHEAVES & SPACERS OMITTED



ITEM	QTY	MATERIAL/DESCRIPTION	DWG No.	STOCK CODE
1	2	SIDE PLATE	DWG0055	–
2	1	LEVER ARM	DWG0059	–
3	3	SHEAVE ASSEMBLY	DWG0050/51	–
4	1	LOAD CELL	–	CELESB5P
5	1	BLOCK – LOAD SPACER	DWG0816	–
6	1	BLOCK – SPACER	DWG0817	–
7	2	END SHEAVE PIN	DWG0056	–
8	6	80 OD X 57 ID X 5MM BRASS WASHER	–	–
9	1	LEVER PIN	DWG0814	–
10	1	80 OD X 52 ID X 5MM BRASS WASHER	–	–
11	7	ROUND SPACER	DWG0815	–
12	4	LOCKING PLATE	DWG0818	–
13	8	M12X20 HEX HEAD SCREW S/S	–	–
14	8	M12 SPRING WASHER S/S	–	WASSPM12S
15	24	M20X40 HEX HEAD SCREW S/S	–	SCRM2040SS
16	26	M20 FLAT WASHER S/S	–	WASFM20S
17	2	M20X75 HEX BOLT	–	BOLM2075SS
18	1	GREASE NIPPLE H29 (1/8"BSP)	–	–
19	2	SIDE BRACKET	DWG0629	–
20	1	M18X80 LOADING BOLT	DWG2252	SCRSETM1880SS
21	1	M18 HEX NUT	–	NUTHM18SS
22	1	JUNCTION BOX	DWG1843	ASSYJB1843
23	2	M4X20 PAN HEAD SCREW S/S	–	SCRM420PSS
24	1	CENTRE SHEAVE PIN	DWG2912	PINS2912
25	4	BRONZE WASHER 80mmODx60IDx6.5TH	DWG4232	–
26	2	BRONZE WASHER 80mmODx60IDx3TH	DWG4232	–

SHEAVES AVAILABLE IN EITHER STEEL OR NYLOTRON TO SUIT THE FOLLOWING ROPE DIAMETERS

STEEL SHEAVES – DWG No. DWG0050

1.25"; 1.5"; 1.75"; 2"; 2.25"; 2.5"; 2.75"; 3"; 3.25"; 3.5"

NYLOTRON SHEAVES – DWG No. DWG0051

1.25"; 1.5"; 1.75"; 2"; 2.25"; 2.5"; 2.75"; 3"; 3.25"; 3.5"

REV	DATE	DESCRIPTION OF CHANGE	APPR'D
1.1	04/06/98	REFER TO DR#496	M.O.
1.2	22/09/00	REFER TO DR#512	D.P.
1.3	15/02/01	REFER TO DR#774	M.G.
1.4	02/10/01	REFER TO DR#826	M.G.
1.5	28/05/03	REFER TO PR#110	G.H.
1.6	23/04/10	REFER TO PCR#300	J.HART

TOL: X. +/– 1
X.X +/– 0.2
X.XX AS STATED

DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE STATED

DRAWN	APPROVED
F. LOCKER	M. OBST
21/09/95	21/09/95

PART OF ASSY: –

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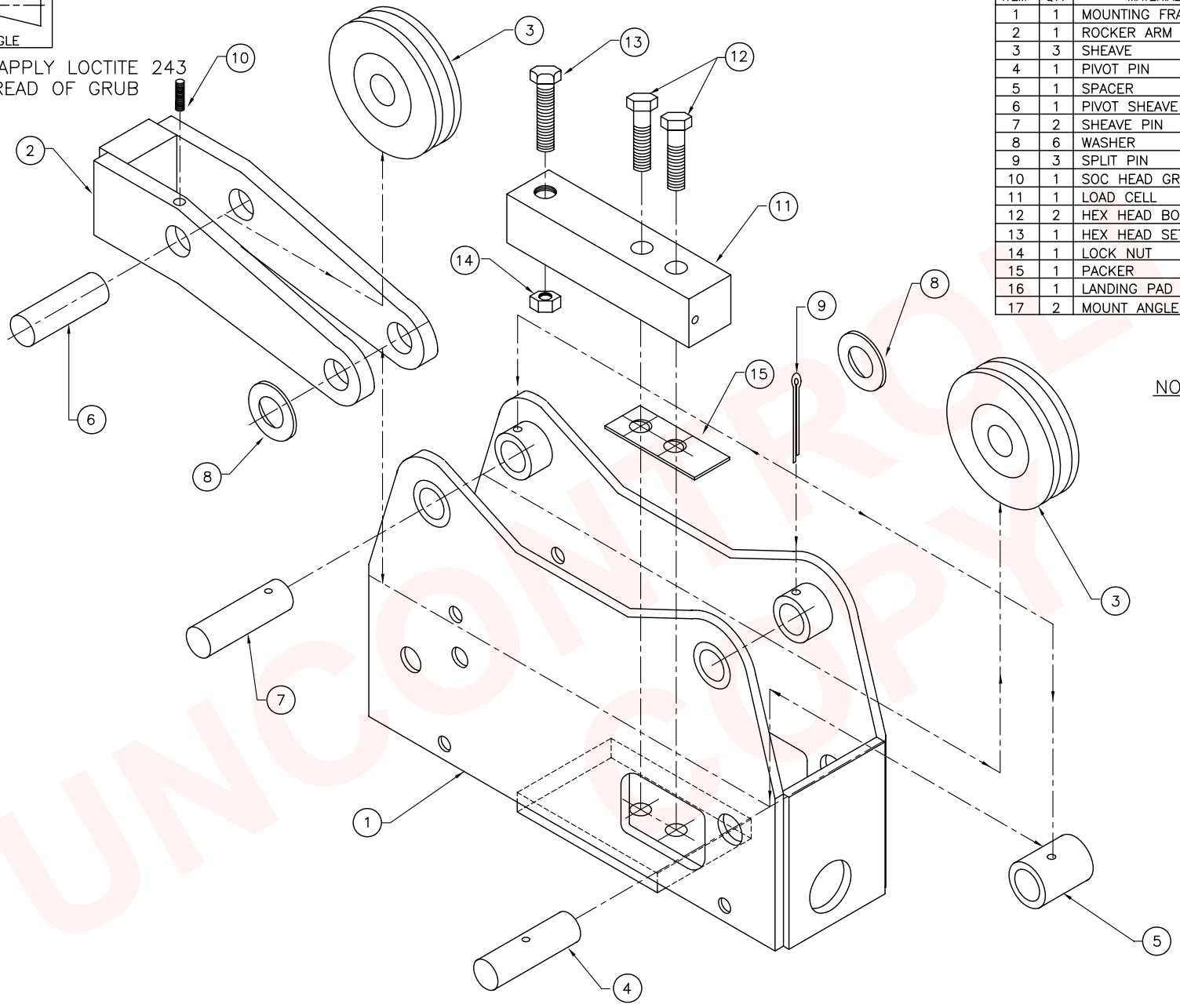
FX: +61 8 8352 1684

PART No: DYNHRT5
PROJECT: HRT–5 DYNO
TITLE: GENERAL ARRANGEMENT
SCALE N/A
SHEET 1 OF 1
DRAWING No: DWG 0058
FILE No: 005801AG.DWG
REV 1.6

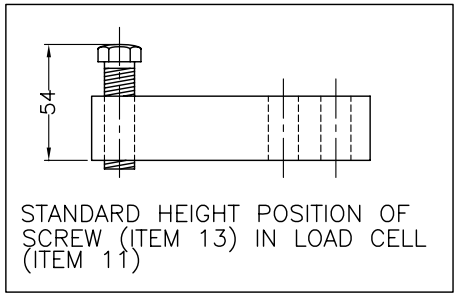
3RD ANGLE

NOTE: APPLY LOCTITE 243 TO THREAD OF GRUB SCREW.



ITEM	QTY	MATERIAL/DESCRIPTION	DWG No.	STOCK CODE (STANDARD)	STOCK CODE (MARINE S/S)
1	1	MOUNTING FRAME	DWG0885	FRADYNO1	FRAHRT3MMSS
2	1	ROCKER ARM	DWG0880	ROC3MM	ROC3MMSS
3	3	SHEAVE	DWG0892	SHEH3MM####	–
4	1	PIVOT PIN	DWG0882	SHAHRT01	–
5	1	SPACER	DWG0883	SPAHRT08	SPAHRT3MMSS
6	1	PIVOT SHEAVE PIN	DWG0881	SHAHRT03	–
7	2	SHEAVE PIN	DWG0882	SHAHRT02	–
8	6	WASHER	–	WAS20F	–
9	3	SPLIT PIN	–	PINCOTT03	–
10	1	SOC HEAD GRUB SCREW M6X20	–	SCRM620SG	–
11	1	LOAD CELL	–	CELBTD5P	–
12	2	HEX HEAD BOLT	–	BOL1213HHZP	–
13	1	HEX HEAD SET SCREW	DWG0287	SCR122CZP	–
14	1	LOCK NUT	–	NUT12HLZP	–
15	1	PACKER	DWG0884	PACHRT01	–
16	1	LANDING PAD	DWG0887	PADHRT01	–
17	2	MOUNT ANGLE BRACKET	DWG0886	BRAMHRT3MMU	BRAMHRT3MMSS

NOTE: ITEMS 16 & 17 ARE NOT SHOWN ON DRAWING



STANDARD HEIGHT POSITION OF SCREW (ITEM 13) IN LOAD CELL (ITEM 11)

STANDARD – DYNHRT3MM
MARINE S/S – DYNHRT3MMSS

REV	DATE	DESCRIPTION OF CHANGE	APPR'D
1.2	11/01/96	REFER TO DR#125	M. OBST
1.3	11/02/97	REFER TO DR#229	M. OBST
1.4	28/05/98	REFER TO DR#451	M. OBST
1.5	29/03/99	REFER TO DR#551	D.P.
1.6	27/01/05	REFER TO DR#345	G.C.
1.7	01/08/05	REFER TO DR#409	S.C.

TOL: X. +/– 1
X.X +/– 0.2
X.XX AS STATED

DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED

DRAWN	APPROVED	PART OF ASSY
ER	M. OBST	–
07/10/89	20/11/95	

ROBWAY SAFETY SYSTEMS PTY LTD
32 WEST THEBARTON RD
THEBARTON 5031
SOUTH AUSTRALIA
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FAX +61 8 352 1684

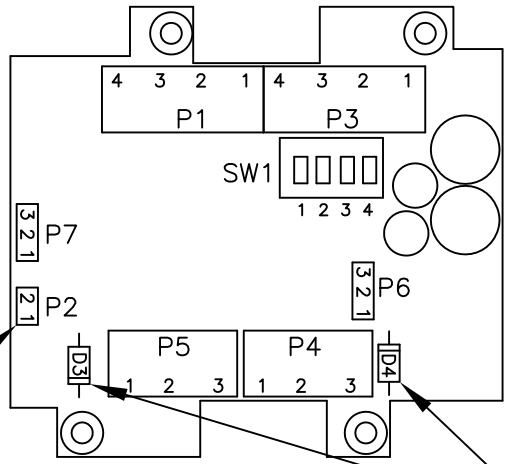
PART No: SEE ABOVE
PROJECT: HRT–3MM DYNO
TITLE: GENERAL ARRANGEMENT
SCALE N/A
SHEET 1 OF 1
DRAWING No: DWG 0875
FILE No: 087501AH.DWG
REV 1.7

SHAFT ENCODER BOARD LAYOUT

SHAFT ENCODER SUPPLY AND COMMS				
P1 PIN NO.	P3 PIN NO.	COLOUR	DESCRIPTION	ONLY 1502
1	1	RED	SUPPLY +	RED
2	2	BLACK	SUPPLY –	BLACK
3	3	GREEN	RS 485 +	YELLOW
4	4	WHITE	RS 485 –	GREEN
–	–	SCREEN	TERMINATE IN GLAND	SCREEN

THE HDR ADDRESS CAN BE CHANGED VIA "SW1" LOCATED ON ENCODER PCB. REFER TO SOFTWARE CONFIGURATION SHEETS FOR DIP SWITCH POSITIONS

PROX SWITCH TYPE SELECTOR	
PROXIMITY TYPE	P7 PATCH
NPN	1&2
PNP	2&3



P2 PATCH (RS485 TERMINATION) ALWAYS LOADED

PROX SWITCH SUPPLY VOLTAGE	
SUPPLY TYPE	P6 PATCH
+5V	1&2
SUPPLY +	2&3

PROXIMITY SWITCH INPUT 1		
P4 PIN NO.	DESCRIPTION	COLOR
1	SWITCH SUPPLY –	BLUE
2	SWITCH INPUT	BLACK
3	SWITCH SUPPLY +	BROWN

PROXIMITY SWITCH INPUT 2		
P5 PIN NO.	DESCRIPTION	COLOR
1	SWITCH SUPPLY –	BLUE
2	SWITCH INPUT	BLACK
3	SWITCH SUPPLY +	BROWN

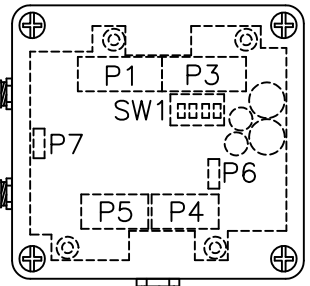
ENSURE 5.1v ZENER DIODES ARE USED ON POSITION D3 & D4.

SWITCH(SW1) SETTINGS:

FOR RCI–1550 SW1 ON 1 2 3 4

FOR 1440SP SW1 ON 1 2 3 4

PROXIMITY SWITCHES PNP 10 – 30V (SWIPROX06)



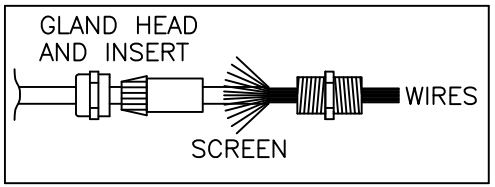
ENCODER BOX

COMMS CABLE WIRING DETAIL	
COLOUR	DESCRIPTION
RED	SUPPLY +
BLACK/BLUE	SUPPLY –
GREEN	RS 485 +
WHITE/YELLOW	RS 485 –
SCREEN	SCREEN

ENSURE THAT THE SCREEN IS TERMINATED IN THE GLAND AS SHOWN BELOW

COMMS CABLE

TO DISPLAY/CONTROL UNIT



REV	DATE	DESCRIPTION OF CHANGE	APPR'D
1.1	11/05/01	REFER TO DR#787	A.C.
1.2	18/03/01	REFER TO DR#842	A.C.
1.3	07/01/2011	REFER TO PCR#333	A.A.

TOL: X. +/– 1
X.X +/– 0.2
X.XX AS STATED

DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE STATED

DRAWN	APPROVED	PART OF ASSY
C. HOBBY	D. PLANTHABER	–
26/07/99	26/07/99	

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SOUTH AUSTRALIA
PHONE +61 8 352 6055
FAX +61 8 352 1684

PART No:	PROJECT:
–	–

TITLE: GENERAL ARRANGEMENT (2 SWITCHES) WINCH PAYOUT MONITORING SYSTEM

SCALE N/A

SHEET 1 OF 1

DRAWING No:	FILE No:	REV
2047	204701AD.DWG	1.3

RCI SYSTEM CONFIGURATION SHEET

Crane Model **WINCH MONITOR** Chip Number **94836**
Function Code List **94836.FCN**

SYSTEM TYPE SUPPLIED

DISPLAY MODEL	1465 – multipoint load calibration

[ ] Hoist Rope [ ] Loadmoment [X] Single Winch [ ] Twin winch [ ] Live Mast [ ] A-Frame
[ ] Strut Boom [ ] Telescopic [X] Other

LOAD CELL POSITION

[X] Dyno [ ] Hoist Rope Deadend [ ] Pendants [ ] Luff Rope Deadend [ ] Other

CRANE CONFIGURATION

	Supplied	*Changed To*		
MAXIMUM ALLOWED LOAD	**60.0**		**T**	**[F-15]**
MINIMUM ALLOWED LOAD	**50.0**		**T**	**[F-16]**
MAXIMUM FALLS FOR WINCH	**4**			**[F-17]**
MAXIMUM ALLOWED ROPE LENGTH	**80.0**		**M**	**[F-18]**
MINIMUM ALLOWED ROPE LENGTH	**60.0**		**M**	**[F-19]**
MAXIMUM LOAD LIMIT	**58.0**		**T**	**[F-20]**
MINIMUM LOAD LIMIT	**52.0**		**T**	**[F-21]**
MAXIMUM ROPE LENGTH LIMIT	**75.0**		**M**	**[F-22]**
MINIMUM ROPE LENGTH LIMIT	**65.0**		**M**	**[F-23]**
MAXIMUM ROPE SPEED LIMIT	**250.0**		**M**	**[F-24]**
SAMPLE HOLD TIME	**20.0**		**Sec**	**[F-25]**

Direction Switch Configuration

Number of direction switches used **N/A**

Input	*Description*

Slew Switch Configuration

Number of slew switches used **N/A**

Input	*Description*

Additional Outputs

Output	*Description*

SPECIAL NOTE

This system has been prepared using information available at time of order and MUST BE VERIFIED on site at time of commissioning.

ROBWAY MUST BE ADVISED of any changes to the user configurable options carried out on site.
As we have no control or means of verifying the correctness of on site data inputs we accordingly disclaim any responsibility for malfunctions or accidents arising from incorrectly entered data.

Notifications of changes should be sent to

ROBWAY SAFETY SYSTEMS
Fax: +61-8-352-1684 *Phone: +61-8-352-6055*

PO BOX 756
COWANDILLA, AUSTRALIA, 5033

Prepared

By ***YZ*** *For* ***Jacks Winches***

Date ***2007-11-29***

1465 CALIBRATION PROCEDURE FOR WINCH-MONITOR SYSTEMS WITH USER CONFIGURABLE OPTIONS – SIX POINT CALIBRATION

1. Press and hold **CANCEL** while switching on the **1465** display. Wait until the 1465 finishes its self-test and the display shows F-00,
2. Use **UP/DOWN** keys to select function then press **ENTER** to accept,
3. Use **UP/DOWN** keys to set new value then press **ENTER** to accept,
4. Repeat steps 2 and 3 for any other functions if required,
5. Select **F-00** or press **CANCEL** to exit calibration mode.

NOTE

Once in calibration mode you may use CANCEL key to cancel any function.

CALIBRATION NOTE

1. When calibrate rope tension (load), Calibrate light load (F-03) and heavy load (F-08) first. Then if necessary do the mid points (F-04 to F-07). The calibration can be corrupted if not follow the order.

2. When calibrate payout length, Calibrate short length (F-11) first then do long length (F-12). Because the raw count of the payout will be reset to zero where calibrating the short length (F-11).

To reset the payout length to the calibrated short length, Press both <Winch Select> and <Limit/Enter> Buttons together. The raw counts of the payout will be set to zero. The display will show the payout calibration value at zero raw count.

FUNCTION CODES

WARNING

THE FOLLOWING FUNCTIONS SHOULD ONLY BE USED BY ROBWAY TRAINED PERSONNEL. MISUSE OF THESE FUNCTIONS MAY CAUSE THE DISPLAY TO FUNCTION INCORRECTLY

F-00	EXIT CALIBRATION MODE
F-01	VIEW UNCALIBRATED MAIN LOAD SIGNAL
F-02	VIEW CALIBRATED MAIN LOAD/FALL
F-03	CALIBRATE LIGHT MAIN LOAD
F-04	CALIBRATE MID POINT 1 MAIN LOAD
F-05	CALIBRATE MID POINT 2 MAIN LOAD
F-06	CALIBRATE MID POINT 3 MAIN LOAD
F-07	CALIBRATE MID POINT 4 MAIN LOAD
F-08	CALIBRATE HEAVY MAIN LOAD
F-09	VIEW UNCALIBRATED LENGTH
F-10	VIEW CALIBRATED LENGTH
F-11	CALIBRATE SHORT LENGTH
F-12	CALIBRATE LONG LENGTH
F-13	NUMBER OF LOAD SAMPLES TO AVERAGE
F-14	*CLEAR ALL CALIBRATION DATA (USE EXTREME CAUTION)*
F-15	MAXIMUM ALLOWED LOAD
F-16	MINIMUM ALLOWED LOAD
F-17	MAXIMUM FALLS FOR WINCH
F-18	MAXIMUM ALLOWED ROPE LENGTH
F-19	MINIMUM ALLOWED ROPE LENGTH
F-20	MAXIMUM LOAD LIMIT
F-21	MINIMUM LOAD LIMIT
F-22	MAXIMUM ROPE LENGTH LIMIT
F-23	MINIMUM ROPE LENGTH LIMIT
F-24	MAXIMUM ROPE SPEED LIMIT
F-25	SAMPLE HOLD TIME (*SECONDS*)

CALIBRATION NOTE

1. When calibrate rope tension (load), Calibrate light load (F-03) and heavy load (F-08) first. Then if necessary do the mid points (F-04 to F-07). The calibration can be corrupted if not follow the order.

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