INSTALL MANUAL

EQSS Model6253 – OverWatch™ Haulotte Star 6S/8S

** Failure to follow this installation manual will void warranty **

AUTHORS: Kieren Grogan	AUTHORISED BY: Kieren Grogan	CHECKED BY: Andrew Donegan

DOCUMENT ABSTRACT:
This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch™ on a Haulotte Star 6S/8S vertical mast.

PRODUCT NAME:
Model6253 OverWatch™ Operator Detection System

REFERENCE DOCUMENTS:
DO0001195 Model6253 OverWatch™ User Manual

CURRENT DOCUMENT REVISION:
1.3

REVISION INFORMATION:

- 1.0 Initial Document Creation for installation on a Haulotte star 6S / 8S vertical mast
- 1.1 Update on Operator Sensor mounting instructions and images.
- 1.2 Inclusion of sensor guard V2 mounting instructions
- 1.3 Inclusion of standard settings for 6S and 8S and configuration instructions

Important Information

Information contained in this publication regarding this device's applications and the like, is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that the application or our equipment meets with your specifications.

EQUIPMENT SAFETY SYSTEMS MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESSED OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING, BUT NOT LIMITED TO, IT'S CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE.

Equipment Safety Systems disclaims all liability arising from this information and its use. Use of Equipment Safety Systems' products as critical components in life support systems is not authorised except with express written approval by Equipment Safety Systems. No licenses are conveyed, implicitly or otherwise, under any Equipment Safety Systems intellectual property rights.

This is a class A product certified to AS/NZS CISPR 22:2006. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

N23041

Table of Contents

Preparation

Required Tools

The OverWatch has been designed to be fitted using basic workshop tools. Shown below is a list of tools required to complete the installation

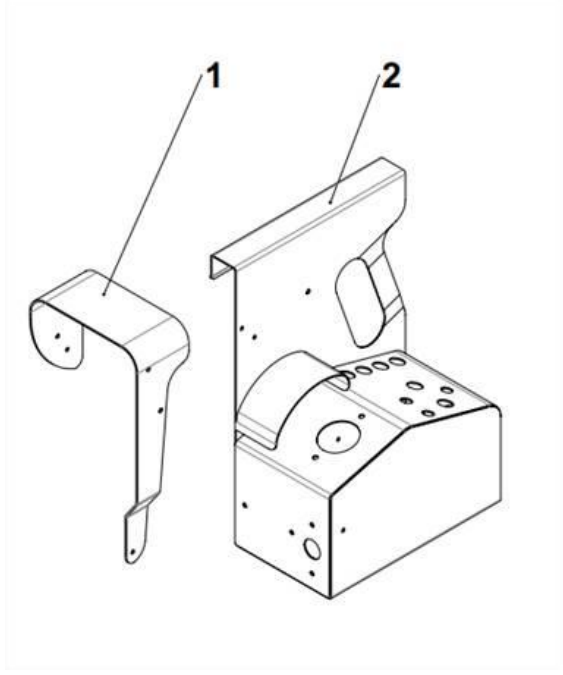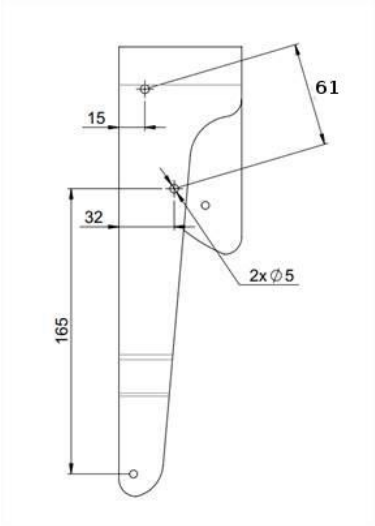| Item	Tool / Description
1	Electric Drill
2	Centre punch
3	Hammer
4	Side Cutters
5	Drill 5.2mm
6	Drill 6.0mm
7	Metric sockets or spanners
8	Needle nose pliers
9	Screw drivers

Installation Time

The suggested time required to install the OverWatch is as detailed below

Task	Estimated Time (Minutes)
Open the operator control box	1
Drilling of all mounting holes for the various components	13
Mechanical assembly	10
Electrical assembly	10
Post installation system tests	10
Close the operator control box	1
Total	**45**

Installation Instructions

Operator Sensor

Step	Description	Diagram
1.	The platform control box has two main components: **1.** Joystick shroud **2.** Control box	
2.	On the joystick shroud drill two **6.00mm** holes 61.00mm apart in the locations shown in the image. The location of these holes is critical for the operator sensor to be mounted at an angle of **30 degrees from the vertical** **Note: The operator sensor must be mounted at an angle of 30 degrees from the vertical, this is critical for correct system operation**	

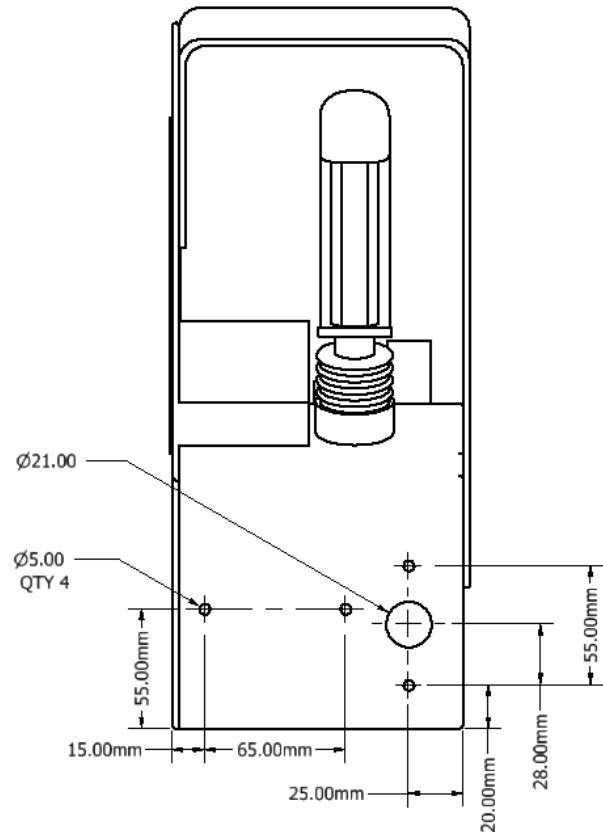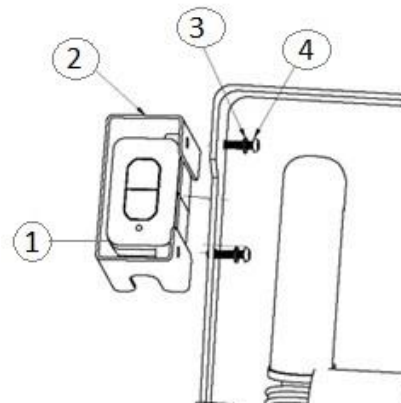|		
3.	Remove the bottom cover from control box. And drill the necessary holes as per the adjacent drawing. **2 x 5.00mm holes** spaced 65.00mm apart (ECU Module) **2 x 5.00mm** holes, spaced 55.00mm apart (Cable Gland Guard) **1 x 21.00mm** hole (M20 Cable Gland) ****Warning**** Keep the control box standing upright during drilling to avoid swarf going in the middle of wiring and electronics. ****Warning**** Clean swarf before going further in the installation.	
4.	**Sensor Mounting Guard V1 (ME001794)** Mount the operator sensor in the **30-degree position** by using the sensor guard, bolts, and washers. Make sure that the sensor is angled at 0 degrees there is no wedges used and there is **no sensor twist** required for this installation. Mount the sensor in position using the sensor guard, M4 washers, and bolts.	**PARTS LIST** | ITEM	QTY	PART NUMBER	DESCRIPTION
---	---	---	---
1	1	AS001910	OverWatch Operator Sensor
2	1	ME001794	OverWatch Operator Sensor Guard
3	2	FA001417	M4 x 12mm security Screw
4	2	FA001235	M4 Plain Washer	

EQUIPMENT SAFETY SYSTEMS
75 Naxos Way, Keysborough 3173 Victoria Australia
P: +61 3 8770 6555   E: support@eqss.com.au

**Haulotte Star 6S/8S
Installation Manual**

| REV 1.3 | 30/11/2023 | Model6253 OverWatch™ Installation Manual | Document # DO001253 |

5.	**Sensor Mounting Guard V2 (AS002326)** This guard (AS002326) supersedes the original V1 design. Attach the guard in position using the M5 nuts and washers. Make sure that the sensor is on the **0-degree** angle, such that it is **not twisted outwards** from the joystick controller. **The 0.0-degree angle is achieved by using the bolt hole as show in the image.**	

PARTS LIST

ITEM	QTY	STOCK NUMBER	DESCRIPTION
1	1	AS002326	Sensor Mounting Guard V2
2	1	AS001910	OverWatch Operator Sensor
3	2	FA001174	Washer, Plain, M5, 304 St. St.
4	2	FA001219	Nut, Hex, M5 x 0.8mm, Nylock

OverWatch 0.0 degree Alignment
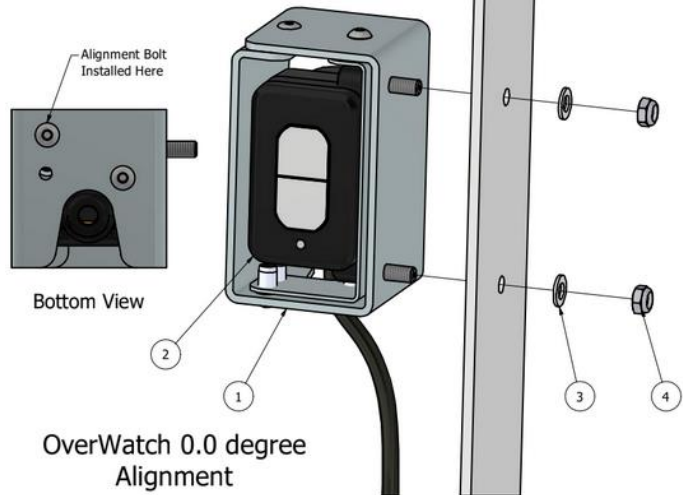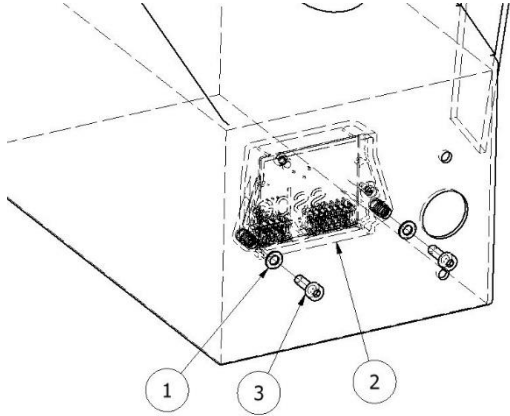
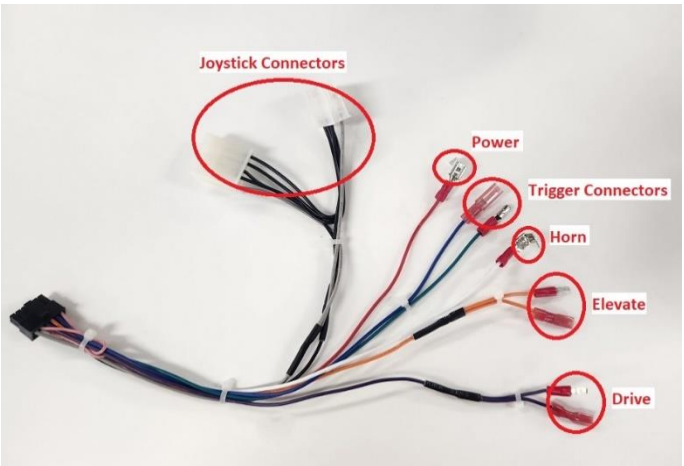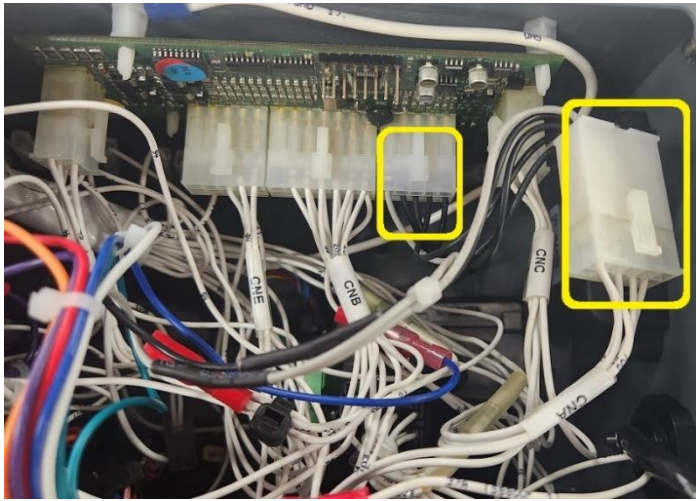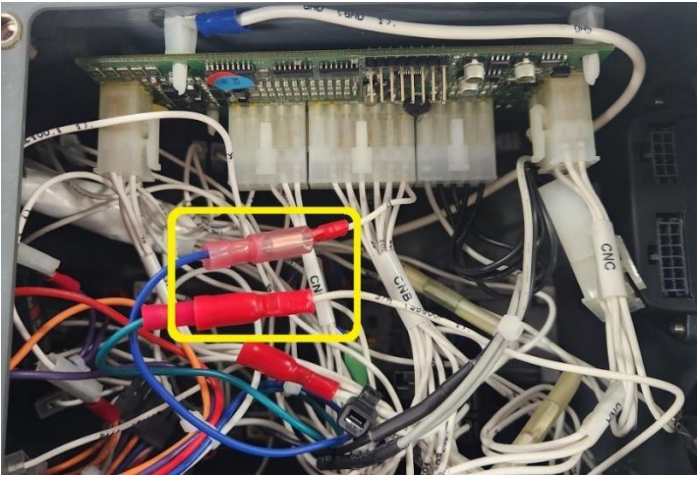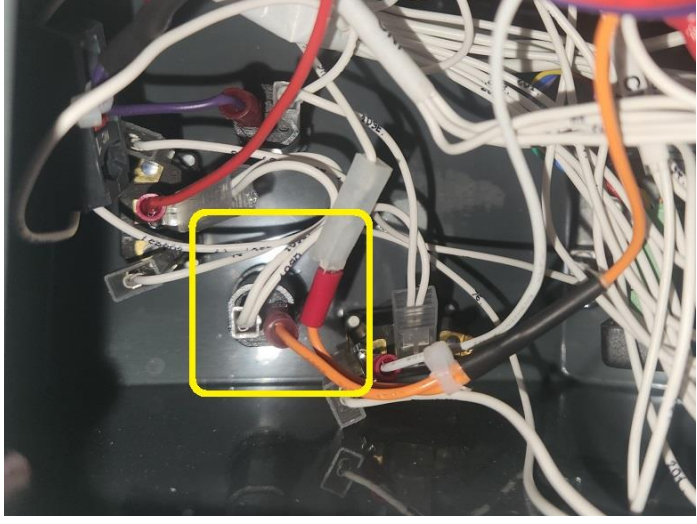| 6.	Install the cable gland and cable gland guard in the pre-drilled holes.	

DETAIL A
SCALE 1 / 2
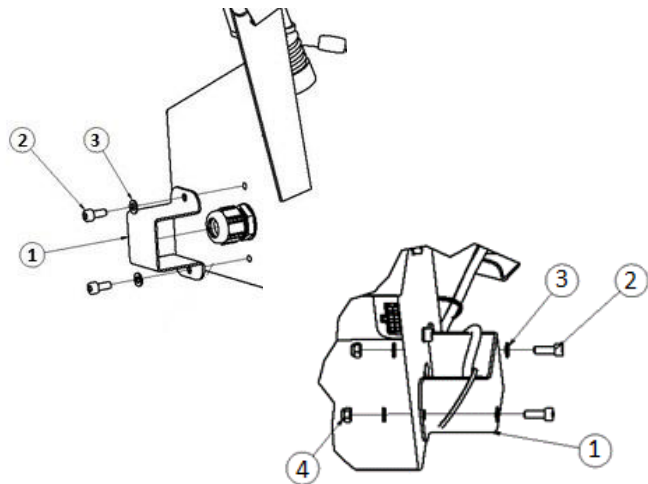
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ME001793	Cable Gland Guard
2	2	FA001211	M4 x 12mm Socket Head Screw
3	4	FA001235	M4 Plain Washer
4	2	FA001223	M4 Nylock Nut

Control Module

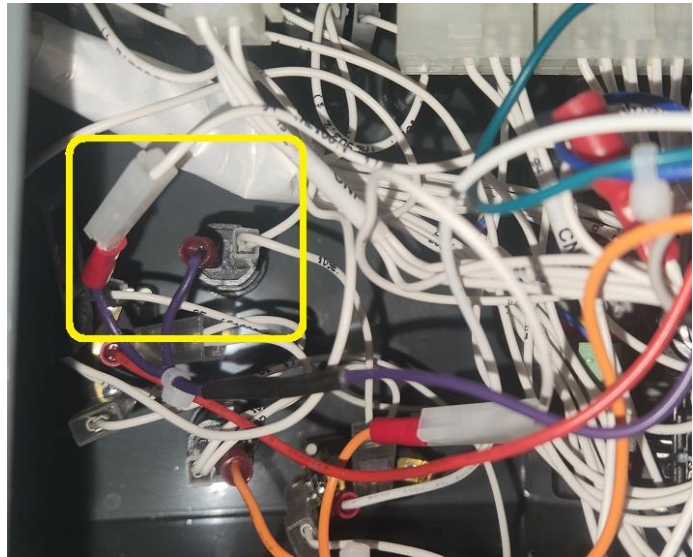| Step	Description	Diagram
1.	Using the M4 bolts and washers, mount the ECU inside the joystick enclosure. Ensure connectors are facing downwards.	 **PARTS LIST** <table><tr><td>ITEM</td><td>QTY</td><td>STOCK NUMBER</td><td>DESCRIPTION</td></tr><tr><td>1</td><td>4</td><td>FA001235</td><td>Washer, Plain, M4, 304 St. St.</td></tr><tr><td>2</td><td>1</td><td>AS001916</td><td>OverWatch™ ECU Module</td></tr><tr><td>3</td><td>2</td><td>FA001211</td><td>Socket Head Cap Screw, M4 x 0.7 x 12mm</td></tr></table>
2.	Wiring connections are made with **AS002004** harness.	

3.	**Joystick Connection:** Disconnect the 7-pin connector (**CNA**) from the PCB and install the OverWatch harness connection in series. **Warning: Check that the CN-A plug is connected to CN-A and not to CN-E (as the connectors are the same)**	
4.	**Trigger Connection:** Disconnect the bullet connection between the wires **37** and **37A**. Install the OverWatch harness bullet connectors in series. The blue wire will go to the male connector (**wire 37**) and the green wire will go to the female connector (**wire 37A**).	
5.	**Elevate Connection:** At the back of the elevate light, disconnect the connector with wire ID **46** and install the OverWatch orange wire in between the **wire 46** and the elevate light as shown in the image. **Note: Check that the connectors are tight, use needle nose pliers to squeeze the connection if necessary**	

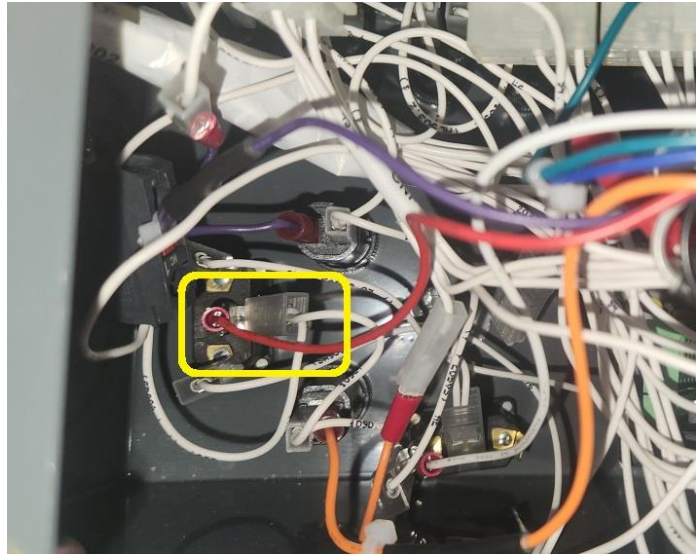| 6.	**Drive Connection:** At the back of the drive light, disconnect the connector with wire ID **94** and install the OverWatch purple wire in between the **wire 94** and the drive light as shown in the image. **Note: Check that the connectors are tight, use needle nose pliers to squeeze the connection if necessary**	
7.	**Horn Connection:** At the back of the horn switch, disconnect the connector with wire ID **34** and install the white wire from the OverWatch harness inline using the spade connector.	
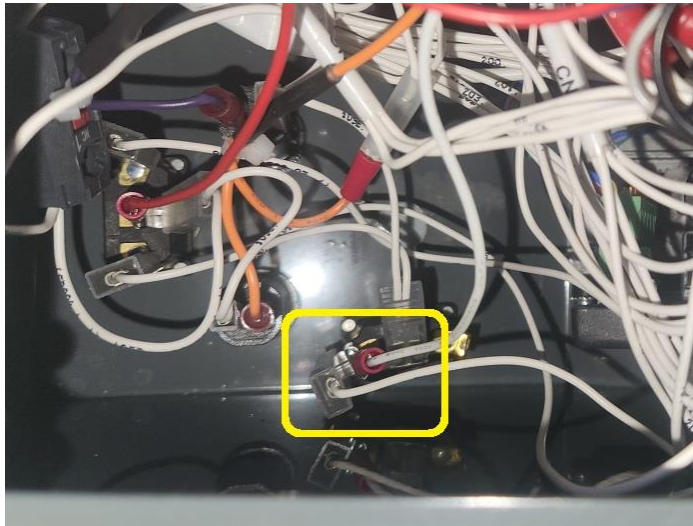
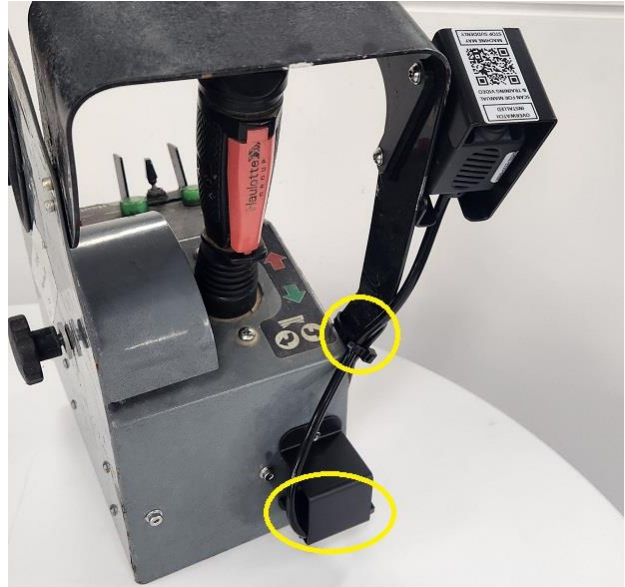| 8.	**Power Connection:** Disconnect the connector with wire ID **109(b)** located on the middle of the **drive/lift** switch and install the red wire from the OverWatch harness inline using the spade connector. **Note: If the Overwatch harness does not have the spade connector but instead a fork connector on the red wire. Power can also be taken from Terminal 1 of the E-stop.**	
9.	Connect the 8-pin connector from the operator sensor, and the 12-pin connector from the harness into the ECU. Install the cover back onto the bottom of the joystick enclosure.	
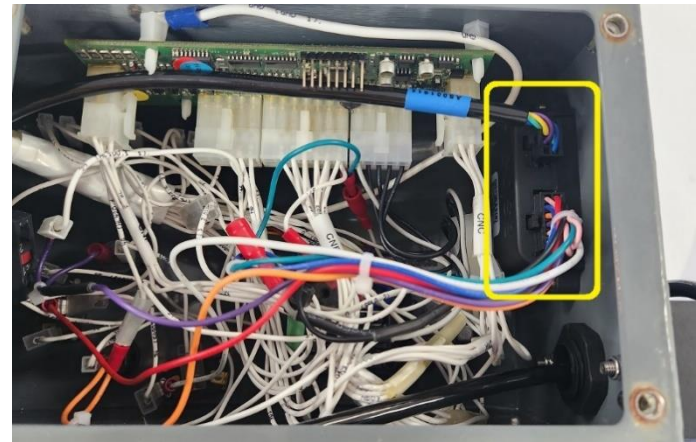
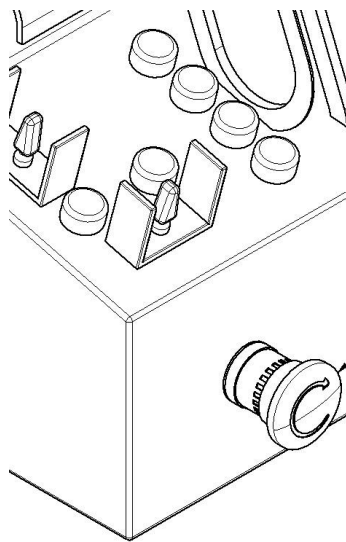| 10.	Run the operator sensor cable as shown in the image and secure the cable by using two cable ties.	
11.	After installation, power the machine for platform controls and press the emergency stop. While the emergency stop is active the OverWatch should be switched off. If the OverWatch remains powered, check that the correct side of E-Stop has been used for the OverWatch power.	 OverWatch™ should not be powered when Emergency Stop has been activated.

Post Installation Configuration

Overview

After the system has been installed it must be configured with the parameters to suit the machine. Follow the instructions below to configure the OverWatch.

Minimum system requirements

Any smart phone, tablet or laptop that meets the following requirements:

- The device can connect to a Wi-Fi access point
- The device has an up to date web browser installed. Firefox, Chrome or Safari are recommended.

Wi-Fi Connection & Web Page Access

To enable the Wi-Fi connection on the OverWatch to complete the configuration follow the steps below.
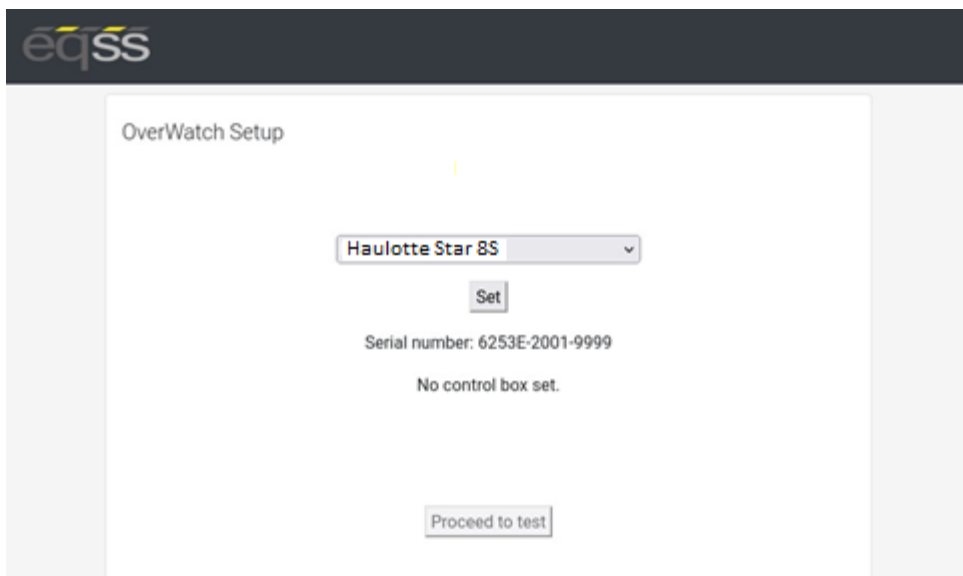
1. Power down the platform control box with the ESTOP
2. Wait 5 seconds
3. Power up the platform control box with the ESTOP
4. While standing **in front of the operator sensor**, switch on the OverWatch
5. As the welcome chime starts to play, cover the sensor. The LED will flash white then black to acknowledge.
6. Remove your hand from the sensor. The LED will flash white then black to acknowledge.
7. After covering then uncovering the sensor this way 2 more times, "Wi-Fi On" will be announced
8. On your Wi-Fi enabled device (laptop, tablet, smartphone, etc), show the available wireless networks
9. Select the wireless network (starts with "overwatch") to connect to the OverWatch
10. When prompted, enter the **password 12345678**
11. Open your preferred web browser (Chrome, Firefox, Safari)

Enter the following into the address bar http://192.168.4.1 to open the OverWatch main page

REV 1.3	**30/11/2023**	**Model6253 OverWatch™ Installation Manual**	**Document # DO001253**

EQUIPMENT SAFETY SYSTEMS
75 Naxos Way, Keysborough 3173 Victoria Australia
P: +61 3 8770 6555   E: support@eqss.com.au
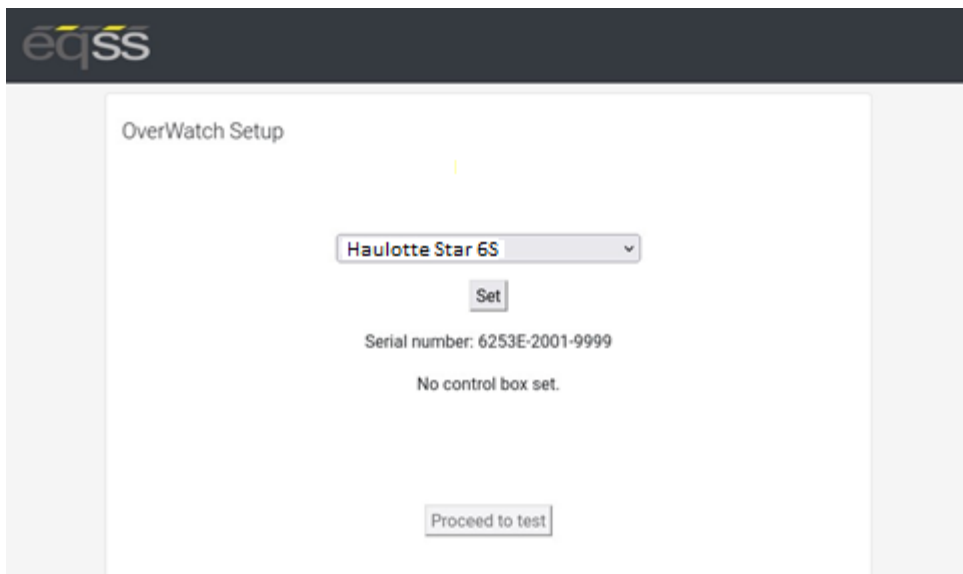
**Haulotte Star 6S/8S
Installation Manual**

Machine Model Selection

Follow the instructions below to configure the OverWatch.

1. Select the Setup option depending if the machine is **a 6S or 8S - Select the correct model.**

2. If there is a password field at the bottom of the page, follow the instructions in Change Model Configuration to obtain the password and enter the password field

3. Select the EWP Model from the drop-down list and click Set

4. Click on Proceed to test to begin the installation test

EQUIPMENT SAFETY SYSTEMS
75 Naxos Way, Keysborough 3173 Victoria Australia
P: +61 3 8770 6555   E: support@eqss.com.au

Haulotte Star 6S/8S
Installation Manual

Installation Test

After the model configuration has been set or updated an Installation Test must be performed. This will ensure the installation has been correctly performed and the OverWatch is functioning correctly. Follow the instructions on the web page to complete the Installation Test.
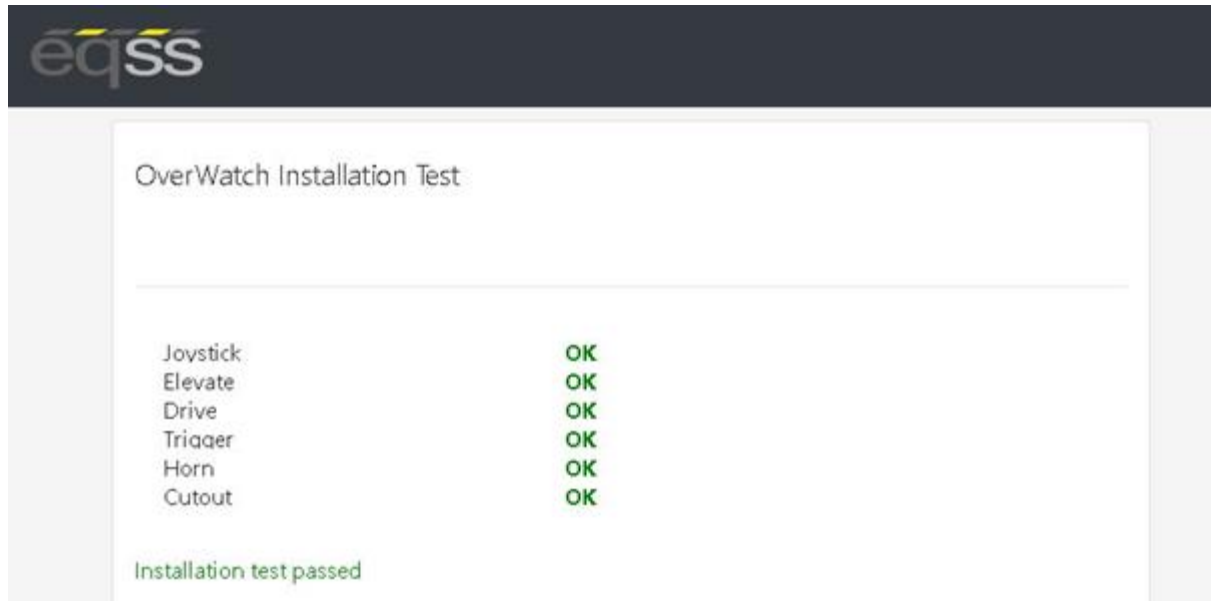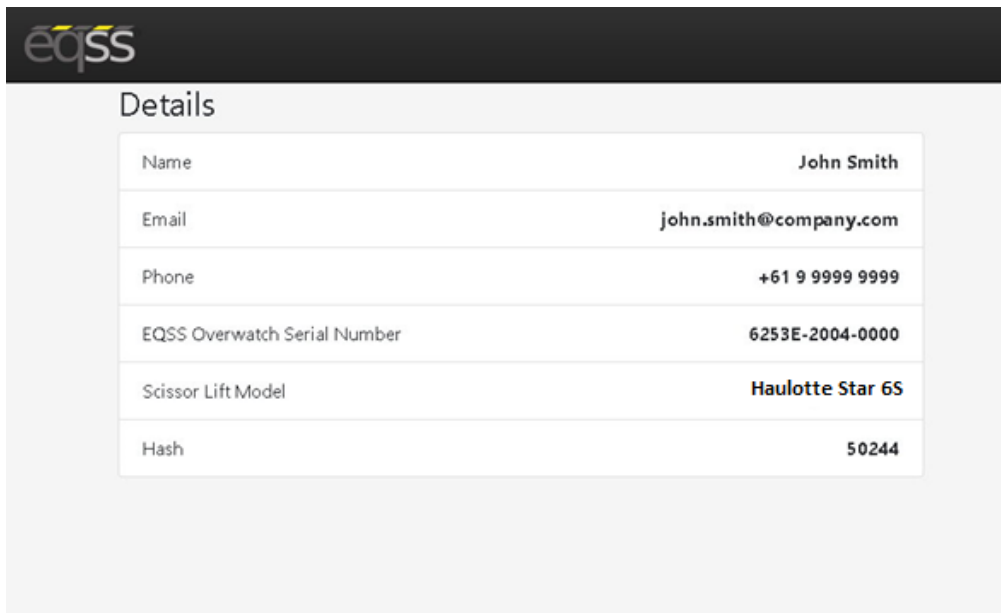
Change Model Configuration

To reconfigure the OverWatch for a different model requires an authorisation password. The authorisation password is generated from the EQSS website. The EQSS website requires a login username and password, contact EQSS for these details.

Follow the instructions below to obtain an authorisation password. It is important to note that each ECU has a unique serial number and a unique password.

1. Open your web browser and enter the following into the address bar http://www.eqss.com.au/overwatch to open the Login page

2. Enter your username and password

3. Enter the EUC serial number which is shown on the setup page or on the ECU serial number sticker, also enter the owner and model details of the EWP and then click Generate Hash

4. The generated Hash code or password can be used to change the model configuration.

System Settings

Default Parameters

The OverWatch is configured with the following default parameters.

Setting Name	Description	Default
max_safe_velocity	This is the velocity threshold for the cutout in cm/s for drive mode.	95
max_safe_displacement	This is the maximum permitted distance in cm the operator may be away from the calibration position in drive mode.	50
max_safe_velocity_elevate	This is the velocity threshold for the cutout in cm/s for elevate mode.	75
max_safe_displacement_elevate	This is the maximum permitted distance in cm the operator may be away from the calibration position in elevate mode.	50
fwddispadj	The proportion of the calibration distance toward the sensor permitted to the operator.	0.35
fwdveloadj	The coefficient to apply to the maximum allowable velocity when the movement of the operator is toward the sensor.	1.0
zone_obstruction	If the lidar sensor reading is below this, the lidar is considered to be obstructed (with paint or thick coat of dust) and the system is cutout until the obstruction is cleared.	5
zone_minimum	The minimum calibration distance. If the operator is closer to the sensor than this "operator zone" will be announced.	25 (6S) 30 (8S)
zone_maximum	The maximum calibration distance. If the operator is further from the sensor than this "operator zone" will be announced.	75
adc_elevate_threshold	Threshold value for the elevate ADC input.	2200
adc_drive_threshold	Threshold value for the drive ADC input.	2200
adc_trigger_threshold	Threshold value for the trigger ADC input.	2000
adc_joystick_fwd_threshold	Forward threshold value for the joystick ADC input.	1500
adc_joystick_bwd_threshold	Backward threshold value for the joystick ADC input.	1400
throttle_time	Period after the trigger is pressed (ms) during which initial velocity reading is computed.	500
driving_state_timeout	Mode selection switch timeout (ms)	7000

Polarity and Input Style

The table below describes each setting

Setting Name	Description	Default
joystick_drive_forward	Direction of joystick to move machine forward	forward
joystick_elevate_upward	Direction of joystick to move machine upwards	forward
elevate_polarity	Direction of signal logic	low
drive_polarity	Direction of signal logic	low
trigger_polarity	Direction of signal logic	high
joystick_polarity	Direction of signal logic	high
driving_state_input	Direct or timer based	direct

Harness Drawing AS002004
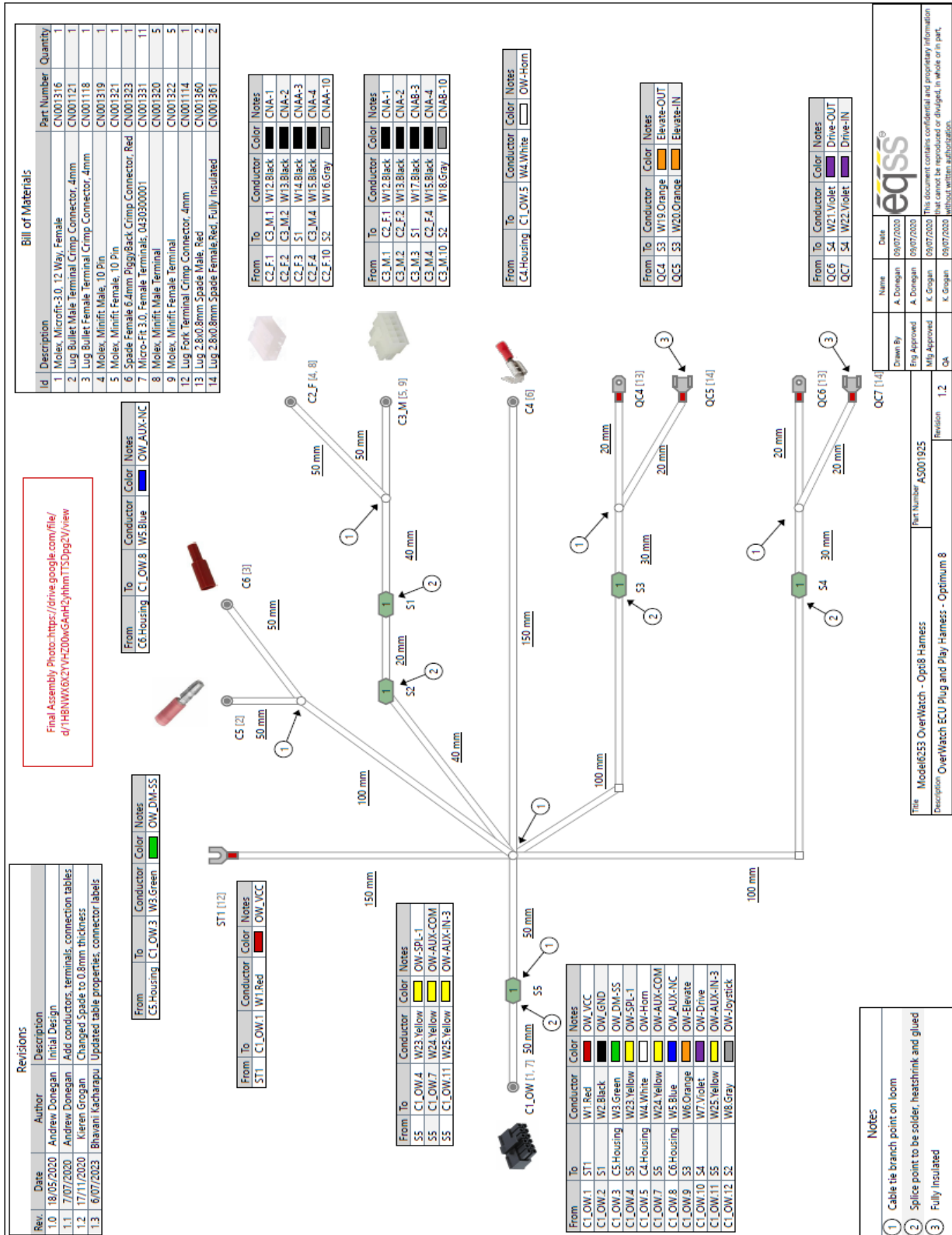
Replacement Parts

Replacement parts for this OverWatch kit are available from EQSS, please email sales@eqss.com.au

Shown below are the part numbers for the major components included in this model specific kit.

Part Number	Description
AS002003	OverWatch - Complete kit Haulotte 6S/8S Vertical Mast
AS001910	OverWatch - Operator Sensor with M20 gland
AS001916	OverWatch - Electronic Control Unit (ECU)
AS002004	OverWatch - Haulotte 6S/8S Harness
AS002326	OverWatch - Sensor Guard V2