

EQSS Model6253 – OverWatch™ Haulotte Optimum 8 AC/AE



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



REV 2.9

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Model6253 OverWatch™ Installation Manual

Document # DO001196

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DOCUMENT ABSTRACT:

This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch on a Haulotte Optimum 8 AC scissor lift.

PRODUCT NAME:

Model6253 OverWatch Operator Detection System

REFERENCE DOCUMENTS:

DO0001195 Model6253 OverWatch User Manual

CURRENT DOCUMENT REVISION:

2.9

REVISION INFORMATION:

- 1.1 Initial Document Creation for installation on a Haulotte Optimum 8 AC
- 2.0 Modification of electrical schematics for Drive and Elevate signal connections
- 2.1 Additional instructions for drilling locations, positioning of wedges and sensor guard
- 2.2 Update of connection schematics correction to CNE94 and CNE46
- 2.3 Added check for E-Stop, fastening for cable and wiring/drilling warnings
- 2.4 Update of wiring connections using Plug and Play Loom AS001925
- 2.5 Updated for consistent naming conventions.
- 2.6 Updated Mounting Screw for Cable Gland Guard, Updated Security Screws for Operator Sensor
- 2.7 Updated Power Wire Location to suit newer design of the Optimum 8 AE
- 2.8 Inclusion of sensor guard V2 mounting instructions
- 2.9 Updated for cable gland hole size.

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in this publication regarding this device's applications and the like, is provided only for your convenience and may be superseded by updates.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.

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N23041

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.



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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

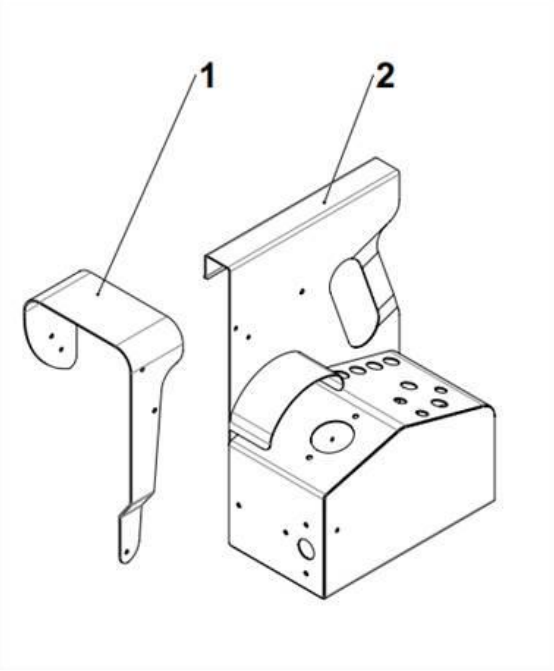
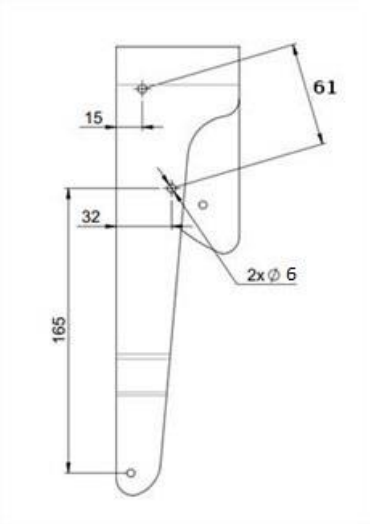
Installation Time

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.	<p>The platform control box has two main components:</p> <ol style="list-style-type: none"> 1. Joystick shroud 2. Control box 	
2.	<p>On the joystick shroud drill two 6.00mm holes 61.00mm apart in the locations shown in the image.</p> <p>The location of these holes is critical for the operator sensor to be mounted at an angle of 30 degrees from the vertical</p> <p>Note: The operator sensor must be mounted at an angle of 30 degrees from the vertical, this is critical for correct system operation</p>	

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)

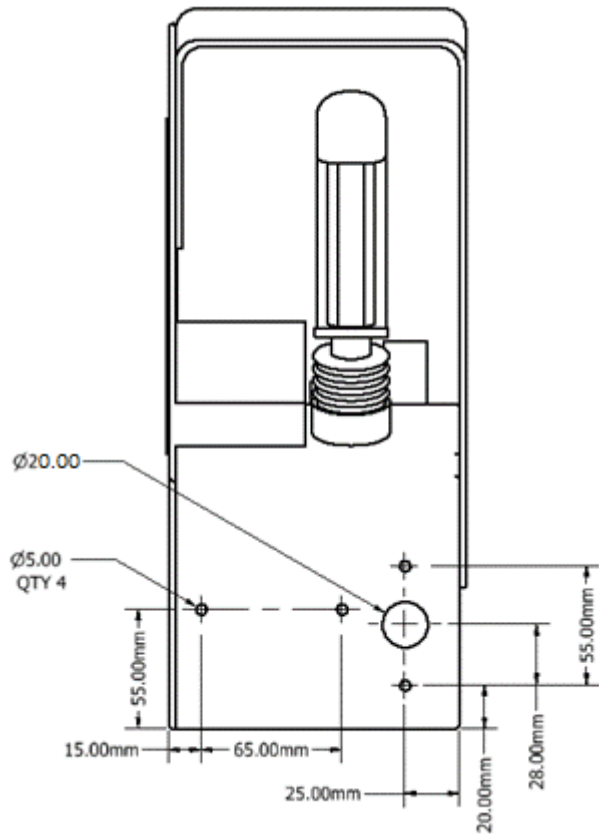
1 x 20.00mm hole (M20 Cable Gland)

****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.

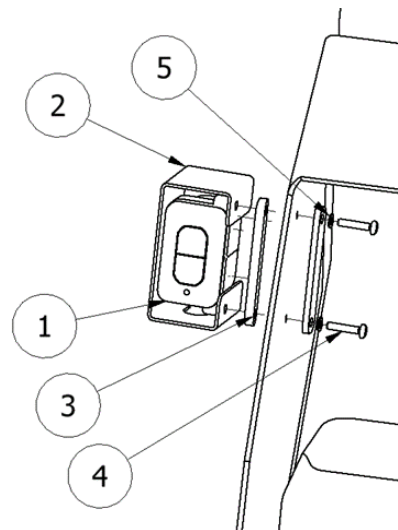


4. **Sensor Mounting Guard V1 (ME001794)**

Mount the operator sensor in the **30-degree position** by using the wedges, sensor guard, bolts, and washers.

The orientation of the wedge blocks is critical for the correct positioning of the operator sensor. Make sure that the sensor is angled, such that it is **twisted outwards** from the joystick controller. Mount the sensor in position using the positioning wedges, 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	ME001798	Operator Sensor Alignment Wedge
4	2	FA001422	M4 x 20mm Security Screw
5	2	FA001235	M4 Plain Washer

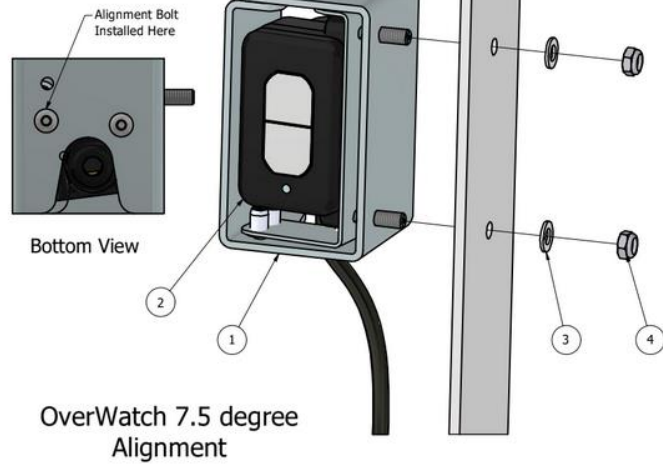


5. **Sensor Mounting Guard V2 (AS002326)**

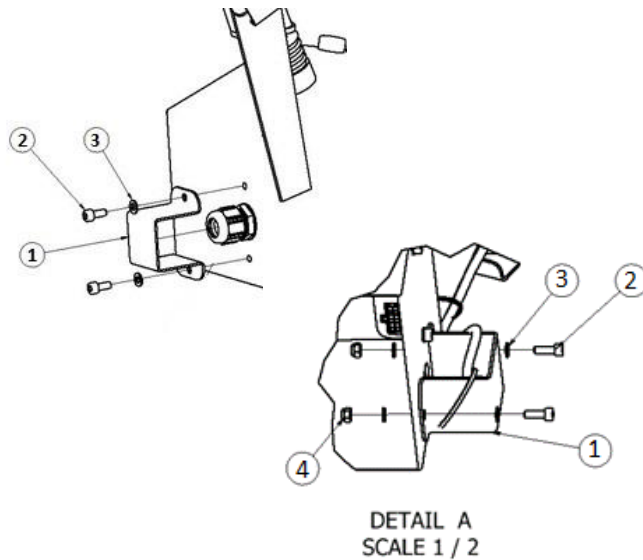
This guard (AS002326) supersedes the original V1 design. Attach the guard in position using the M5 nuts and washers. Make sure that the sensor is on the 7.5-degree angle, such that it is twisted outwards from the joystick controller.

The 7.5-degree twist is achieved by rotating the sensor inside the assembly and 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

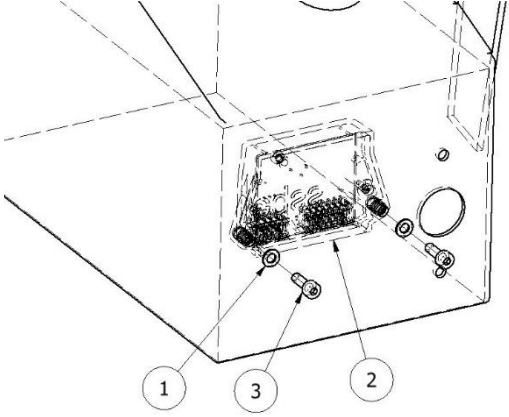
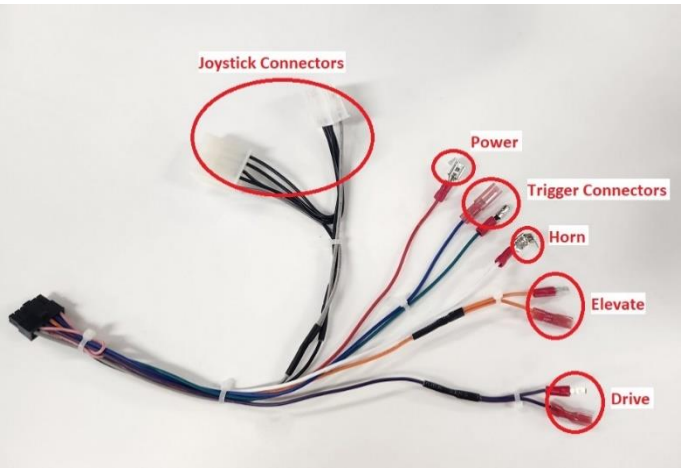


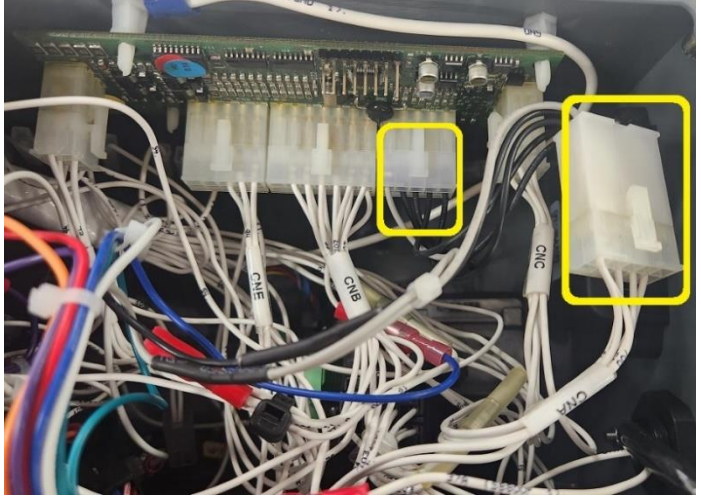
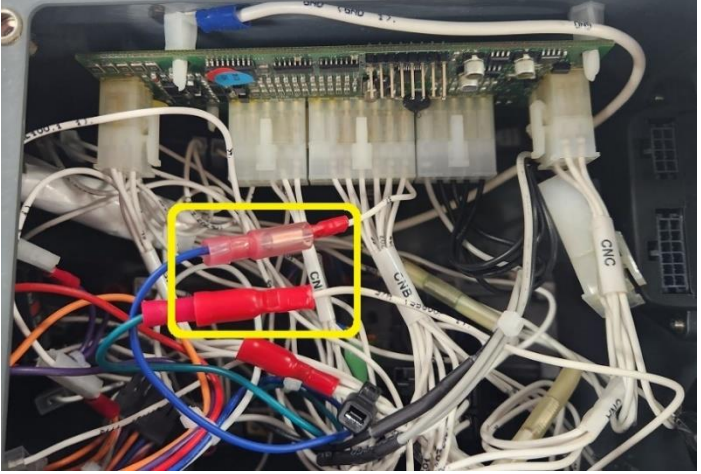
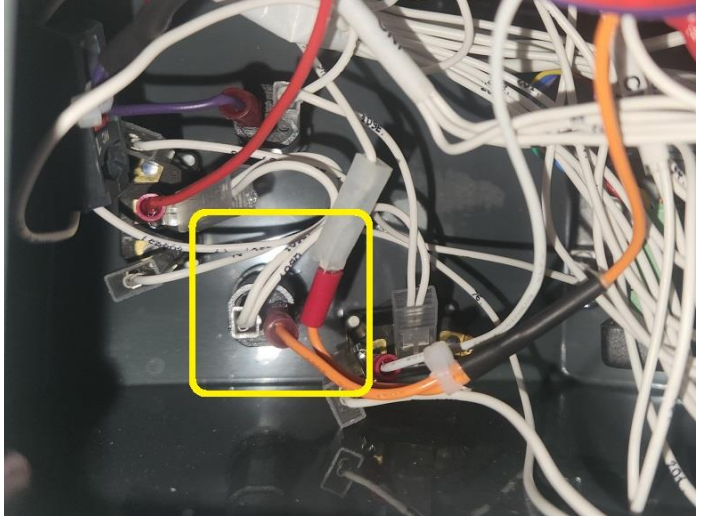
6. Install the cable gland and cable gland guard in the pre-drilled holes.

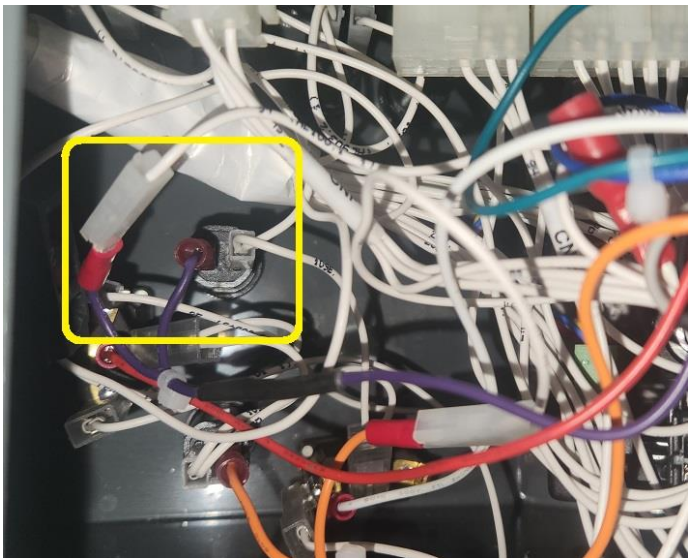
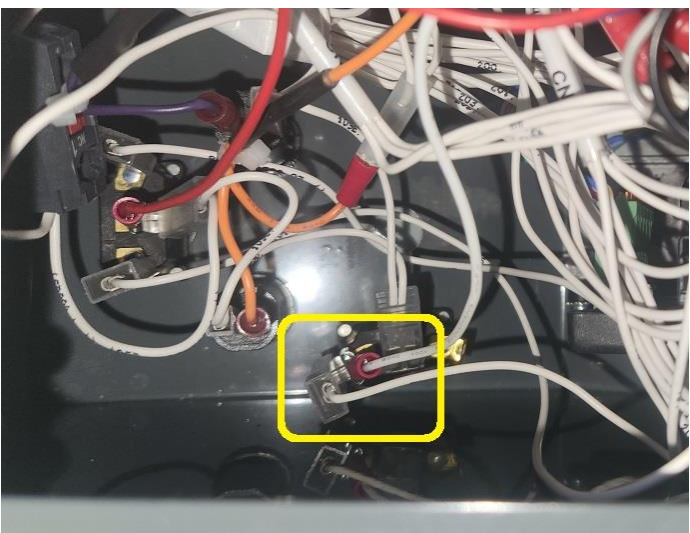


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ME001793	Cable Gland Guard
2	2	FA001211	M4 x 12mm Socket Head Screw
3	4	FA001235	M4 Plain Washer
4	2	FA001223	M4 Nylock Nut

Control Module

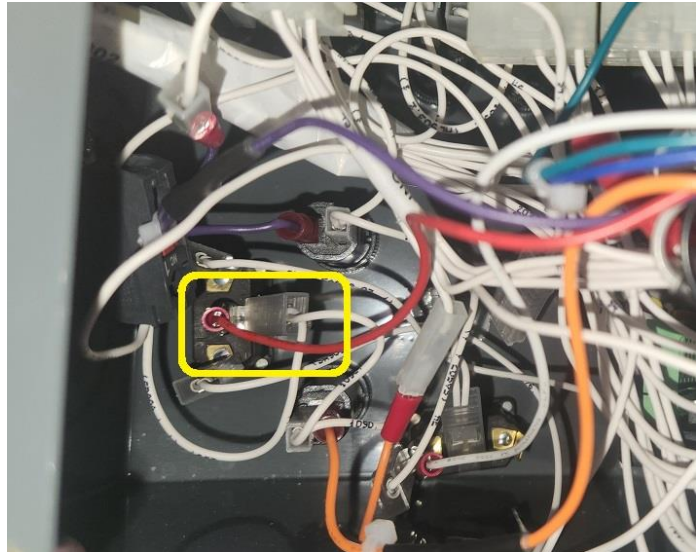
Step	Description	Diagram																				
1.	Using the M4 bolts and washers, mount the ECU inside the joystick enclosure. Ensure connectors are facing downwards.	 <table border="1" data-bbox="724 904 1377 1061"> <thead> <tr> <th colspan="4">PARTS LIST</th> </tr> <tr> <th>ITEM</th> <th>QTY</th> <th>STOCK NUMBER</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <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> </tbody> </table>	PARTS LIST				ITEM	QTY	STOCK NUMBER	DESCRIPTION	1	4	FA001235	Washer, Plain, M4, 304 St. St.	2	1	AS001916	OverWatch™ ECU Module	3	2	FA001211	Socket Head Cap Screw, M4 x 0.7 x 12mm
PARTS LIST																						
ITEM	QTY	STOCK NUMBER	DESCRIPTION																			
1	4	FA001235	Washer, Plain, M4, 304 St. St.																			
2	1	AS001916	OverWatch™ ECU Module																			
3	2	FA001211	Socket Head Cap Screw, M4 x 0.7 x 12mm																			
2.	Wiring connections are made with AS002004 harness.																					

<p>3.</p>	<p>Joystick Connection:</p> <p>Disconnect the 7-pin connector (CNA) from the PCB and install the OverWatch harness connection in series.</p> <p>Warning: Check that the CN-A plug is connected to CN-A and not to CN-E (as the connectors are the same)</p>	
<p>4.</p>	<p>Trigger Connection:</p> <p>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).</p>	
<p>5.</p>	<p>Elevate Connection:</p> <p>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.</p> <p>Note: Check that the connectors are tight, use needle nose pliers to squeeze the connection if necessary</p>	

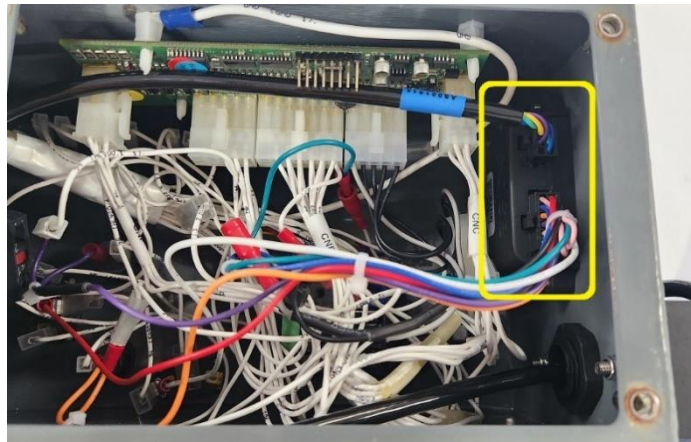
<p>6.</p>	<p>Drive Connection:</p> <p>At the back of the drive light, disconnect the connector with wire ID 94 and install the OverWatch purple wire in between the wire 94 and the drive light as shown in the image.</p> <p>Note: Check that the connectors are tight, use needle nose pliers to squeeze the connection if necessary</p>	
<p>7.</p>	<p>Horn Connection:</p> <p>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.</p>	

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.



<p>10.</p>	<p>Run the operator sensor cable as shown in the image and secure the cable by using two cable ties.</p>	
<p>11.</p>	<p>After installation, power the machine for platform controls and press the emergency stop.</p> <p>While the emergency stop is active the OverWatch should be switched off.</p> <p>If the OverWatch remains powered, check that the correct side of E-Stop has been used for the OverWatch power.</p>	<p>OverWatch™ should not be powered when Emergency Stop has been activated.</p>

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

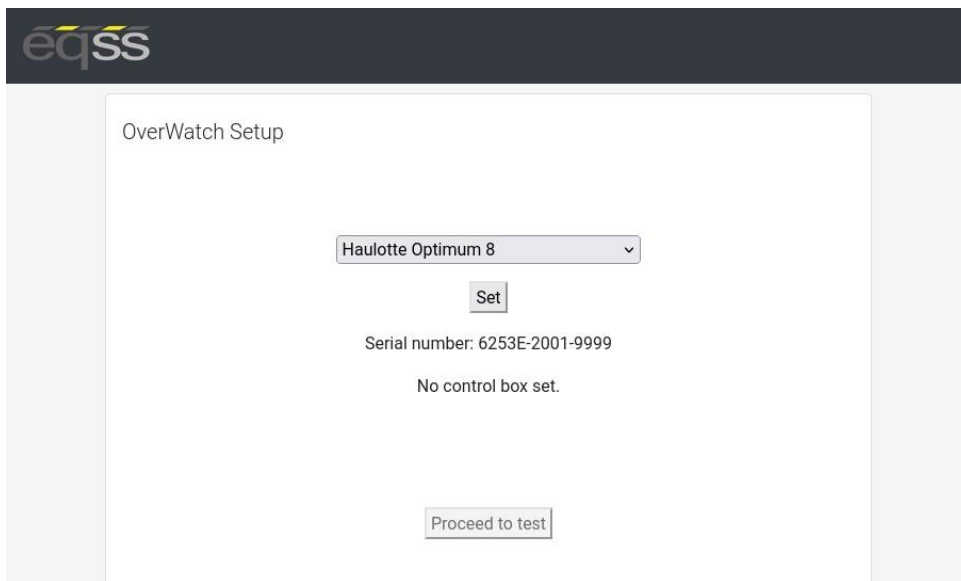
To enable the Wi-Fi connection on the OverWatch to complete the configuration follow the steps below.

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)
12. Enter the following into the address bar <http://192.168.4.1> to open the OverWatch main page

Machine Model Selection

Follow the instructions below to configure the OverWatch.

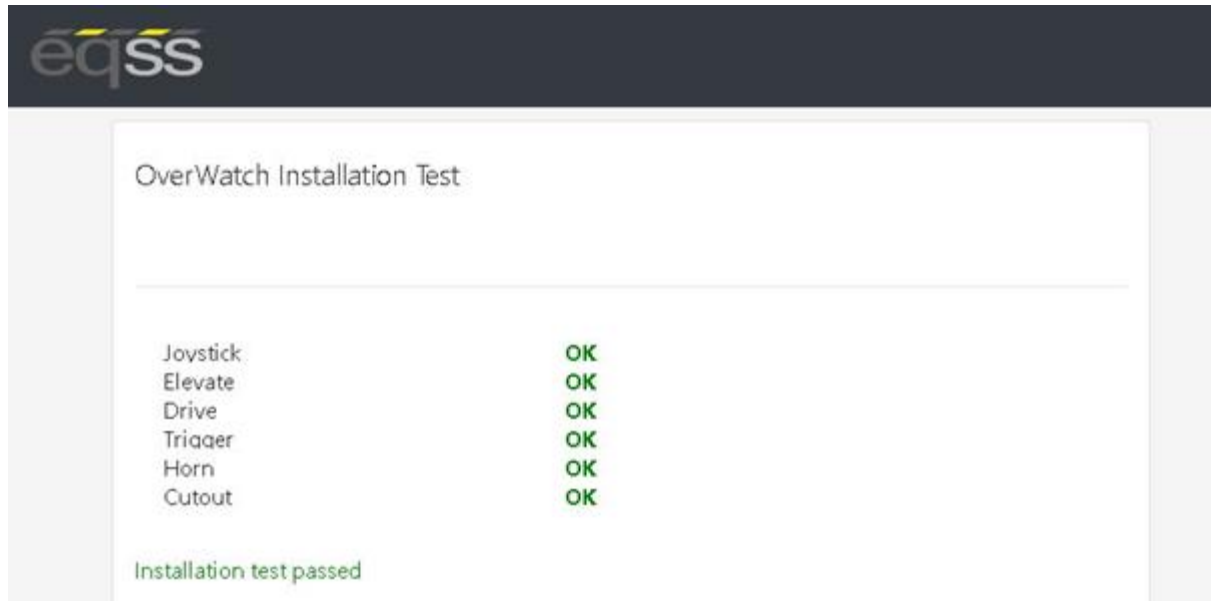
1. Select the Setup option
2. If there is a password field at the bottom of the page, follow the instructions in Change Model Configuration to obtain the password and enter the password field
3. Select the EWP Model from the drop-down list and click Set
4. Click on Proceed to test to begin the installation test



The screenshot shows the 'OverWatch Setup' web interface. At the top left is the 'eqss' logo. The main content area is titled 'OverWatch Setup'. It features a dropdown menu with 'Haulotte Optimum 8' selected. Below the dropdown is a 'Set' button. Underneath the button, the text reads 'Serial number: 6253E-2001-9999' and 'No control box set.' At the bottom of the form is a 'Proceed to test' button.

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.

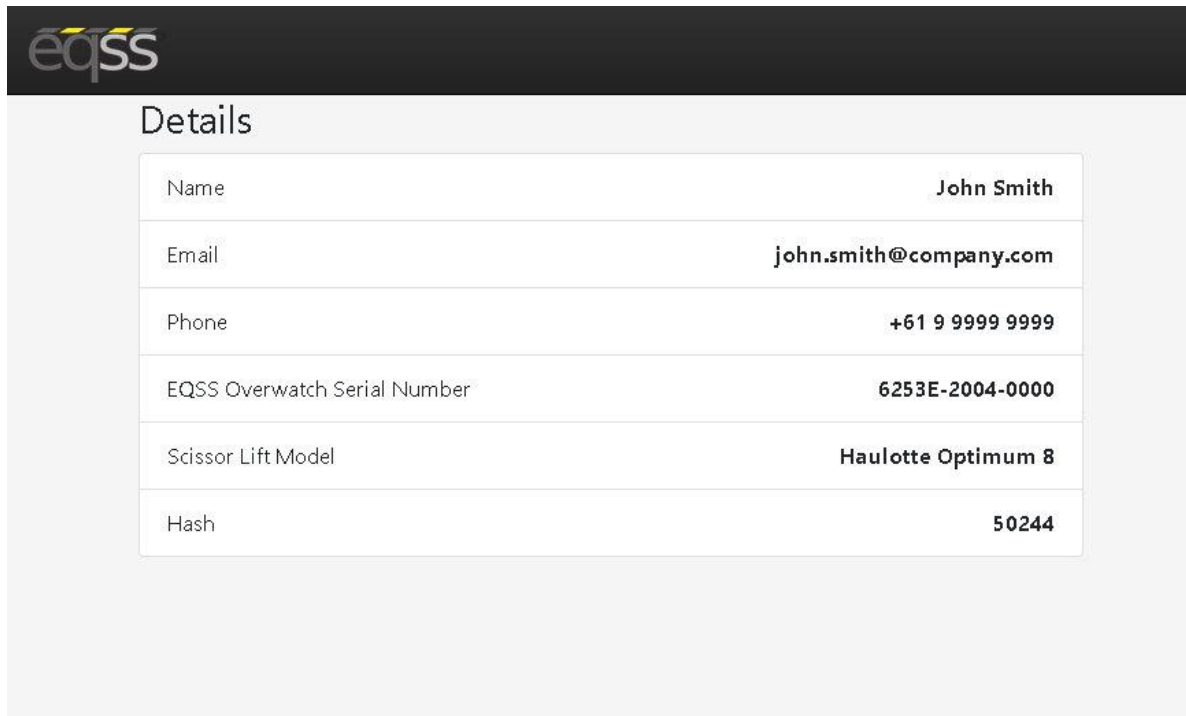


Change Model Configuration

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.



The screenshot shows the 'Details' page of the EQSS website. It features a table with the following information:

eqss	
Name	John Smith
Email	john.smith@company.com
Phone	+61 9 9999 9999
EQSS Overwatch Serial Number	6253E-2004-0000
Scissor Lift Model	Haulotte Optimum 8
Hash	50244

System Settings

Default Parameters

The OverWatch is configured with the following default parameters.

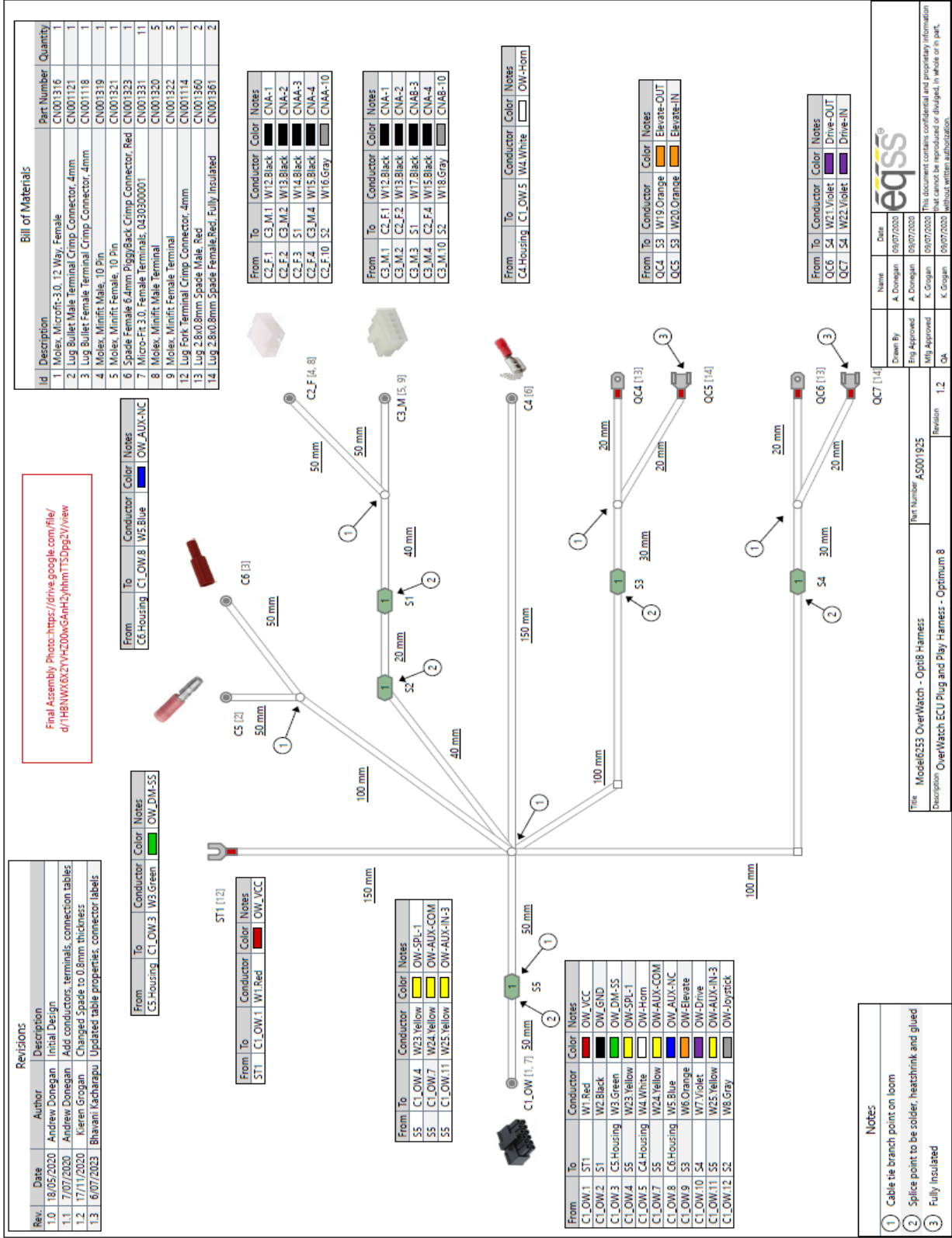
Setting Name	Description	Default
max_safe_velocity	This is the velocity threshold for the cutout in cm/s for drive mode.	95
max_safe_displacement	This is the maximum permitted distance in cm the operator may be away from the calibration position in drive mode.	50
max_safe_velocity_elevate	This is the 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.	0.7
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.	17
zone_maximum	The maximum calibration distance. If the operator is further from the sensor than this "operator zone" will be announced.	120
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 Optimum8 AC/AE
AS001910	OverWatch - Operator Sensor with M20 gland
AS001916	OverWatch - Electronic Control Unit (ECU)
AS002004	OverWatch - Haulotte Optimum8 AC/AE Harness
AS002326	OverWatch - Sensor Guard V2