INSTALL MANUAL

EQSS Model6253 – OverWatch™ Haulotte Compact Slab Scissor

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

			Haulotte Compact Installation Manual
REV 1.2	**30/11/2023**	**Model6253 OverWatch™ Installation Manual**	**Document # DO001252**

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DOCUMENT ABSTRACT:
This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch on a Haulotte Compact Slab Scissor lift.

PRODUCT NAME:
Model6253 OverWatch™ Operator Detection System

REFERENCE DOCUMENTS:
DO0001195 Model6253 OverWatch™ User Manual

CURRENT DOCUMENT REVISION:
1.2

REVISION INFORMATION:

- 1.0 Initial Document Creation for installation on a Haulotte Compact Slab Scissor.
- 1.1 Update to include sensor guard V2 and update of model configuration instructions.
- 1.2 Inclusion of machine harness schematic.

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this publication regarding this device's applications and the like, is provided only for your convenience and may be superseded by updates.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

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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

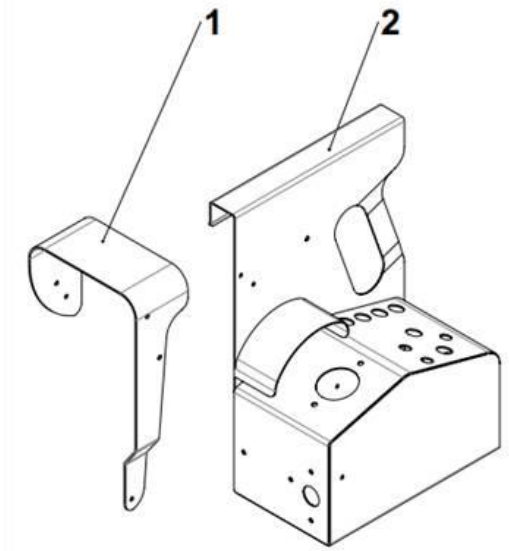| Item	Tool / Description
1	Electric Drill
2	Centre punch
3	Hammer
4	Side Cutters
5	Drill 5.2mm
6	Drill 6.0mm
7	Metric sockets or spanners
8	Needle nose pliers
9	Screw drivers

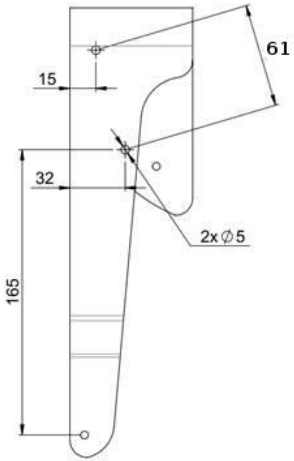## Installation Time

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.	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**	

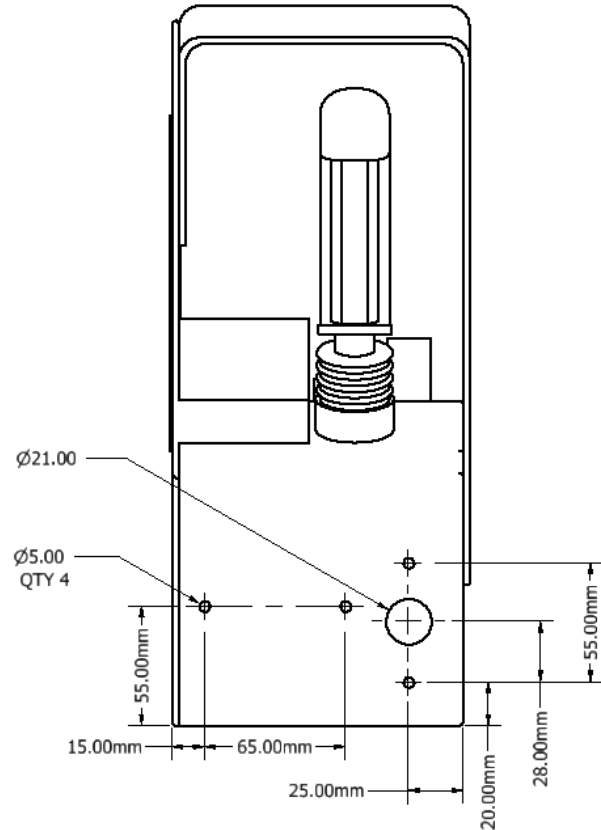| 3.	Remove the bottom cover from control box. And drill the necessary holes as per the adjacent drawing. **2 x 5.00mm holes** spaced 65.00mm apart (ECU Module) **2 x 5.00mm** holes, spaced 55.00mm apart (Cable Gland Guard) **1 x 21.00mm** hole (M20 Cable Gland) ****Warning**** Keep the control box standing 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 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	

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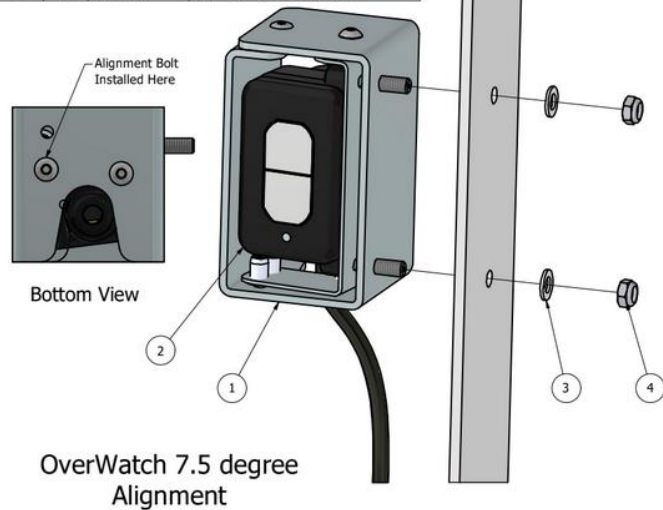| REV 1.2 | 30/11/2023 | Model6253 OverWatch™ Installation Manual | Document # DO001252 |
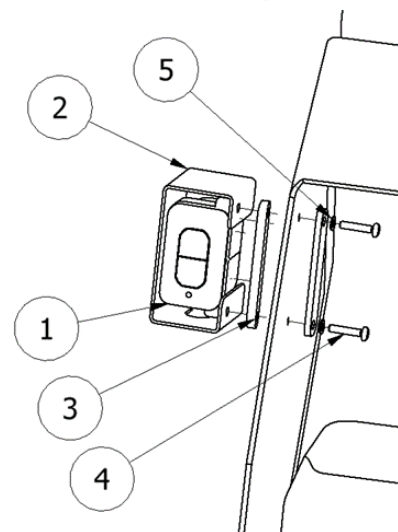
5.	**Sensor Mounting Guard V2 (AS002326)** This guard (AS002326) supersedes the original V1 design. Attach the guard in position using the M5 nuts and washers. Make sure that the sensor is on the 7.5-degree angle, such that it is twisted outwards from the joystick controller. **The 7.5-degree twist is 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 | OverWatch 7.5 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	
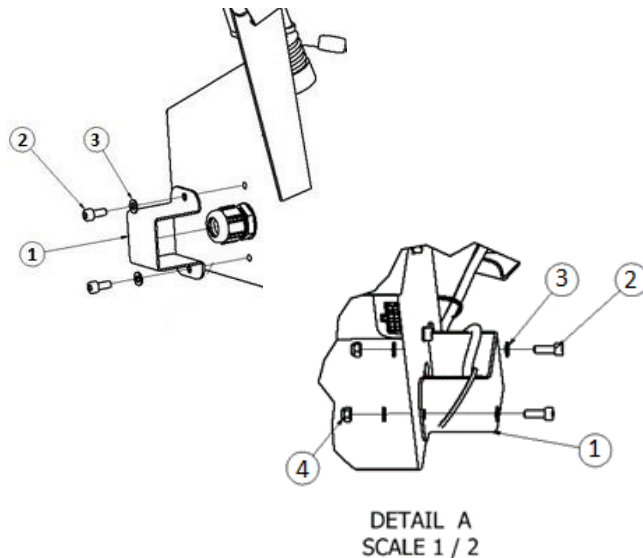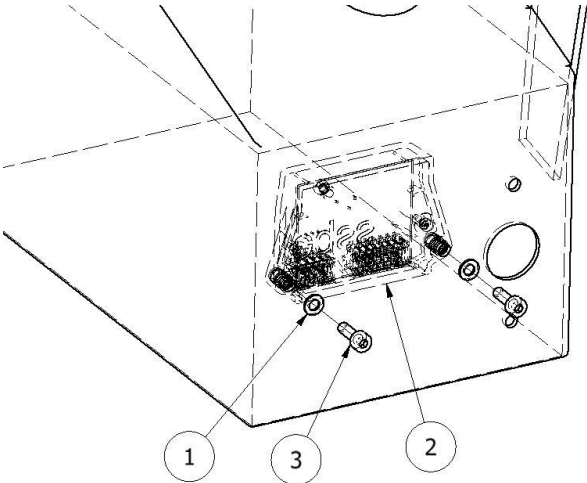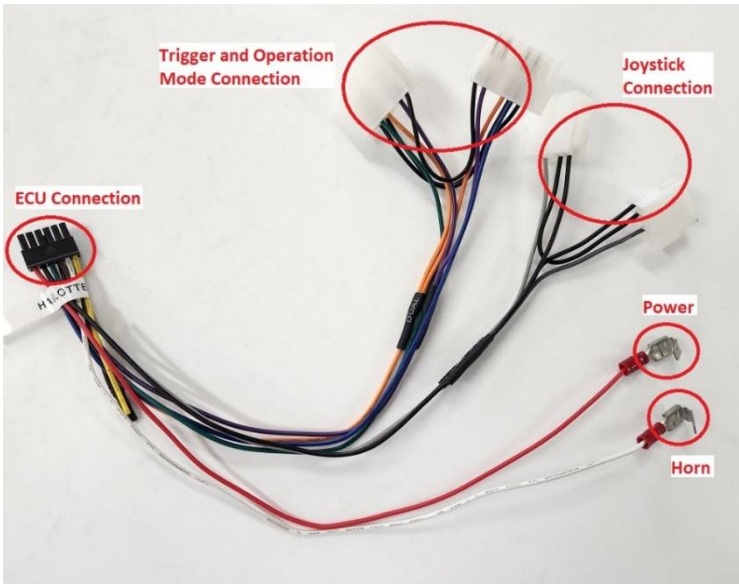
Control Module

Step	Description	Diagram
1.	Using the M4 bolts and washers, mount the ECU inside the joystick enclosure. Ensure connectors are facing downwards.	**PARTS LIST** 	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 the **AS001974** harness.	

3.	**Trigger, drive and elevate connection:** Disconnect the 7-pin connector from the circuit board and Install the OverWatch harness connector in series.	
4.	**Joystick Connection:** Disconnect the 5-pin connector from the circuit board and Install the OverWatch harness connector in series.	
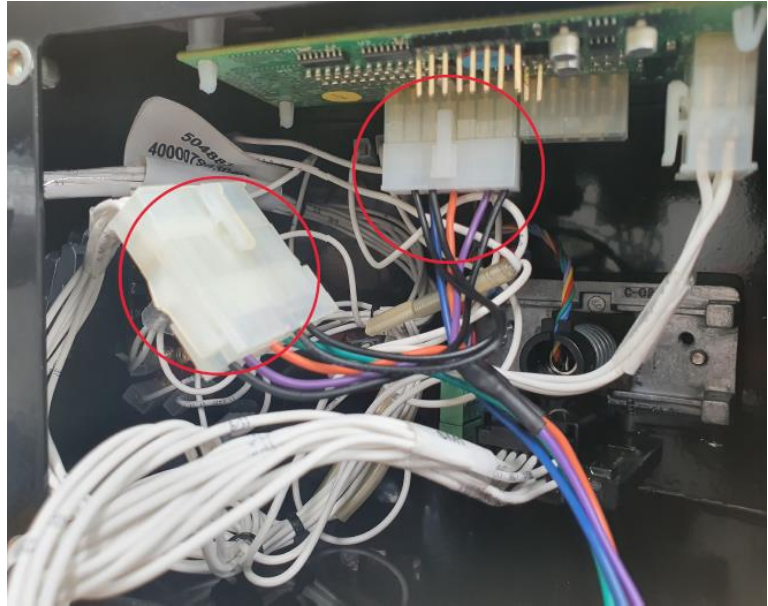
5.	**Power Connection:** At the back of the drive/elevate selection switch locate wire **ID 11**. install the OverWatch red power wire using the piggy back spade connector **Note: Check that the connection is tight, use needle nose pliers to squeeze the connection if necessary**	
6.	**Horn Connection:** At the back of the horn switch locate wire **ID 36**. install the OverWatch white horn wire using the piggy back spade connector **Note: Check that the connection is tight, use needle nose pliers to squeeze the connection if necessary**	

7.	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.	
8.	Route the operator sensor cable as shown in the image and secure the cable using cable ties.	 Use a Cable-Tie to fasten the cable to the platform control guard plate. Use a Cable-Tie to fasten the cable to the bottom of the cable gland cover.
9.	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.
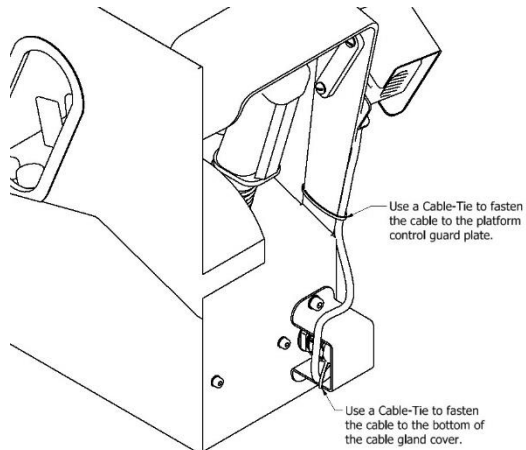
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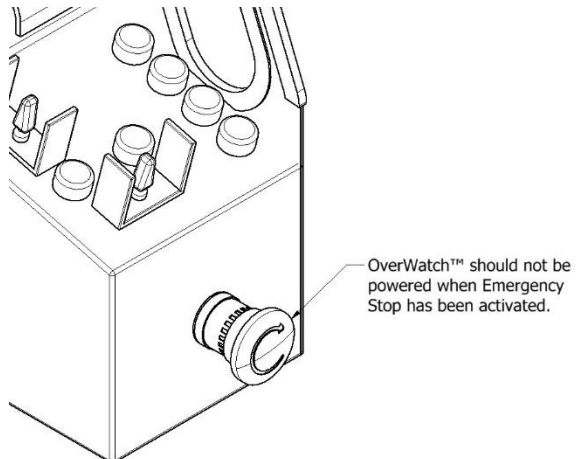
Post Installation Configuration

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.
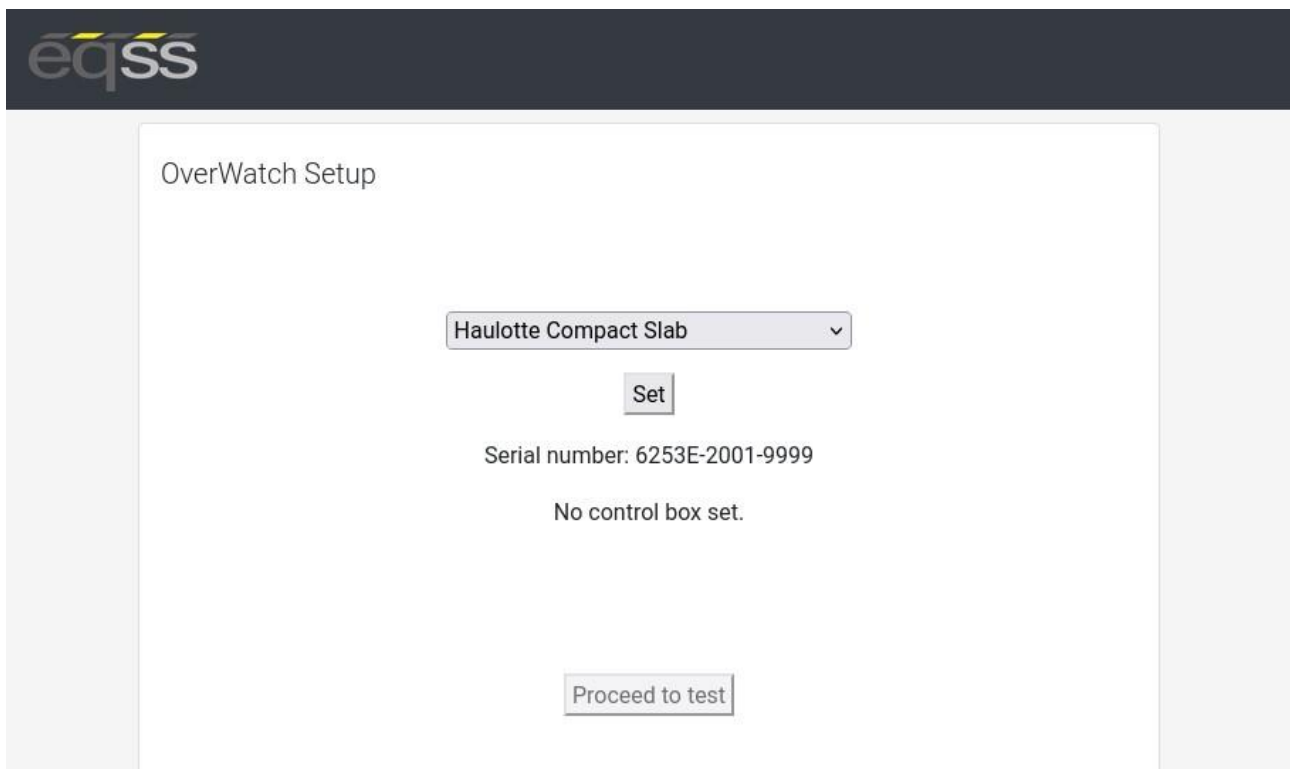
1. Power down the platform control box with the ESTOP
2. Wait 5 seconds
3. Power up the platform control box with the ESTOP
4. While standing **in front of the operator sensor**, switch on the OverWatch
5. As the welcome chime starts to play, cover the sensor. The LED will flash white then black to acknowledge.
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

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

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.
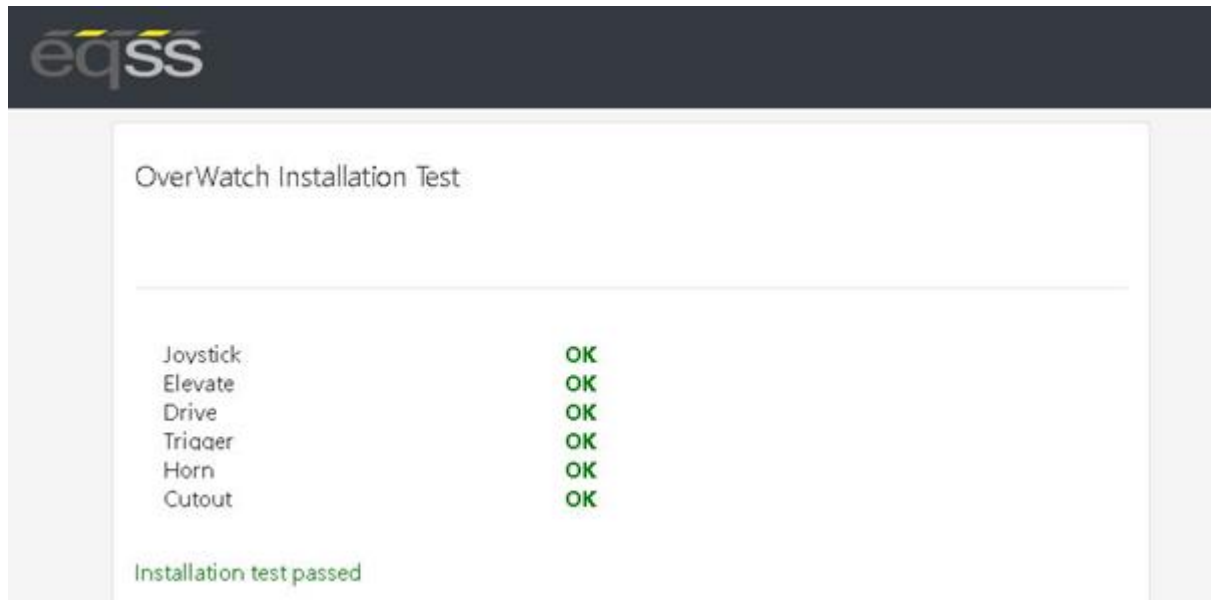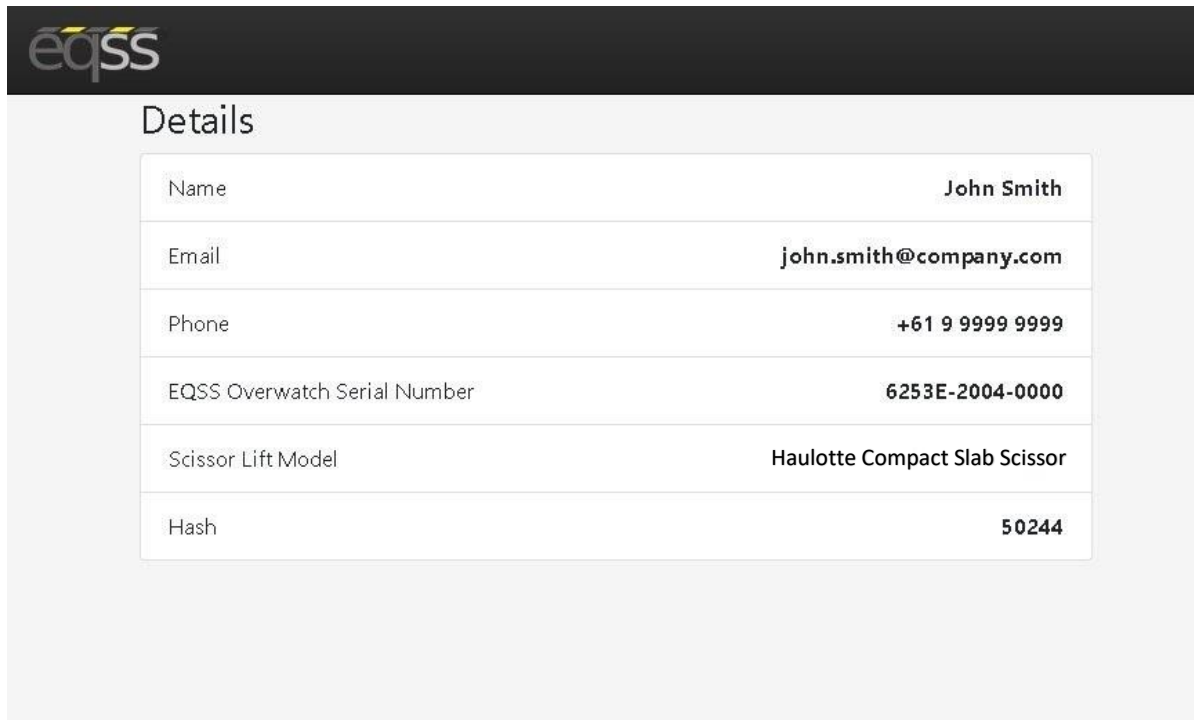
Change Model Configuration

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.

Details	
Name	John Smith
Email	john.smith@company.com
Phone	+61 9 9999 9999
EQSS Overwatch Serial Number	6253E-2004-0000
Scissor Lift Model	Haulotte Compact Slab Scissor
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.	1600
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	high
drive_polarity	Direction of signal logic	high
trigger_polarity	Direction of signal logic	high
joystick_polarity	Direction of signal logic	high
driving_state_input	Direct or timer based	direct

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Harness Drawing AS001974

Bill of Materials

Id	Description	Part Number	Quantity
1	Molex, Microfit-3.0, 12 Way, Female	CN001316	1
2	Molex, Minifit Male, 10 Pin	CN001319	1
3	Molex, Minifit Female, 10 Pin	CN001321	1
4	Spade Female 6.4mm PiggyBack Crimp Connector, Red	CN001323	2
5	Molex, Mini-Fit Jr, Plug, 14 Pos. 0039013143	CN001373	1
6	Molex, Mini-Fit Jr. Receptacle, 14 Pos. 0039012140	CN001374	1
7	Micro-Fit 3.0, Female Terminals, 0430300001	CN001331	12
8	Molex, Minifit Male Terminal	CN001320	24
9	Molex, Minifit Female Terminal	CN001322	22
10	HC0049, 20AWG, Yellow/Green	CB001100	50 mm
11	HC0049, 20AWG, Brown	CB001077	50 mm
12	HC0049, 20AWG, Pink	CB001052	50 mm

C2_JOY_F [2, 8]

From	To	Conductor	Color	Gauge	From Contact PN
C2_JOY_F.6	S1_GND	W14.Black		20 AWG	CN001320
C2_JOY_F.7	C3_JOY_M.7	W12.Black		20 AWG	CN001320
C2_JOY_F.9	S2_VCC	W16.Gray		20 AWG	CN001320

C3_JOY_M [3, 9]

From	To	Conductor	Color	Gauge	From Contact PN
C3_JOY_M.6	S1_GND	W13.Black		20 AWG	CN001322
C3_JOY_M.7	C2_JOY_F.7	W22.Violet		20 AWG	CN001322
C3_JOY_M.9	W9.Black	W18.Gray		20 AWG	CN001322

C4_F [5, 8]

From	To	Conductor	Color	Gauge	From Contact PN
C4_F.1	C5_M.1	W13.Black		20 AWG	CN001320
C4_F.2	S4_DRV	W7.Violet		20 AWG	CN001320
C4_F.4	S3_ELV	W19.Orange		20 AWG	CN001320
C4_F.5	C1_OW.3	W3.Green		20 AWG	CN001320
C4_F.12	C5_M.12	W15.Black		20 AWG	CN001320
C4_F.13	C5_M.13	W9.Black		20 AWG	CN001320

C5_M [6, 9]

From	To	Conductor	Color	Gauge	From Contact PN
C5_M.1	C4_F.1	W13.Black		20 AWG	CN001322
C5_M.2	S4_DRV	W7.Violet		20 AWG	CN001322
C5_M.4	S3_ELV	W20.Orange		20 AWG	CN001322
C5_M.5	C1_OW.8	W5.Blue		20 AWG	CN001322
C5_M.12	C4_F.12	W15.Black		20 AWG	CN001322
C5_M.13	C4_F.13	W9.Black		20 AWG	CN001322

C6_Horn [4]

From	To	Conductor	Color	Gauge	Notes
C6_Horn.Housing	C1_OW.5	W4.White		20 AWG	OW-Horn

S1_GND

From	To	Conductor	Color	Gauge
S2_VCC	C1_OW.12	W8.Gray		20 AWG
S2_VCC	C2_JOY_F.9	W16.Gray		20 AWG
S2_VCC	C3_JOY_M.9	W18.Gray		20 AWG

S2_VCC

From	To	Conductor	Color	Gauge
S1_GND	C1_OW.2	W2.Black		20 AWG
S1_GND	C2_JOY_F.6	W14.Black		20 AWG
S1_GND	C3_JOY_M.6	W17.Black		20 AWG

S3_ELV

From	To	Conductor	Color	Gauge
S4_DRV	C1_OW.9	W6.Orange		20 AWG
S4_DRV	C4_F.4	W19.Orange		20 AWG
S4_DRV	C5_M.4	W20.Orange		20 AWG

S4_DRV

From	To	Conductor	Color	Gauge
S4_DRV	C1_OW.10	W21.Violet		20 AWG
S4_DRV	C4_F.2	W22.Violet		20 AWG
S4_DRV	C5_M.2	W7.Violet		20 AWG

C7_VCC [4]

From	To	Conductor	Color	Gauge	Notes
C7_VCC.Housing	C1_OW.1	W1.Red		20 AWG	OW_Power

S5_END

From	To	Conductor	Color	Gauge	From Contact PN	Notes
S5_END	C1_OW.4	W11.Brown		20 AWG		OW_Power
S5_END	C1_OW.7	W25.Pink		20 AWG		
S5_END	C1_OW.11	W10.Yellow-Green		20 AWG		

C1_OW [1, 7]

From	To	Conductor	Color	Gauge	From Contact PN	Notes
C1_OW.1	C7_VCC.Housing	W1.Red		20 AWG	CN001331	OW_Power
C1_OW.2	S1_GND	W2.Black		20 AWG	CN001331	OW_GND
C1_OW.3	C4_F.5	W3.Green		20 AWG	CN001331	OW_TRIG_IN
C1_OW.4	S5_END	W11.Brown		20 AWG	CN001331	OW-SPL-1
C1_OW.5	C6_Horn.Housing	W4.White		20 AWG	CN001331	OW-Horn
C1_OW.7	W25.Pink	W25.Pink		20 AWG	CN001331	OW-AUX-COM
C1_OW.8	C5_M.5	W5.Blue		20 AWG	CN001331	OW_TRIG_OUT
C1_OW.9	S3_ELV	W6.Orange		20 AWG	CN001331	OW_ELV
C1_OW.10	S4_DRV	W21.Violet		20 AWG	CN001331	OW_DRV
C1_OW.11	S5_END	W10.Yellow-Green		20 AWG	CN001331	OW-AUX-IN-3
C1_OW.12	S2_VCC	W8.Gray		20 AWG	CN001331	OW-Joystick

Final Assembly Photo:https://drive.google.com/file/d/1tedMTKvzVwwxchpo0H0nZZNnVcgndnj/view

Revisions

Rev.	Date	Author	Description
1.0	28/04/2021	Truong Bui	Initial Design
1.1	15/08/2023	Bhavani Kacharapu	Labeled connectors. Added cable ties and final assembly photo.

Notes

1. Cable tie branch point on loom
2. Splice point to be solder, heatshrink and glued
3. Fully insulated

Title: Model6253 OverWatch Harness - Haulotte Compact
Description: OverWatch Harness - Haulotte Compact
Part Number: AS001974
Revision: 1.1   1:1

	Name	Date
Drawn By	T.Bui	28/04/2021
Eng Approved	K.Grogan	28/04/2021
Mfg Approved	T.Bui	28/04/2021
QA	T.Bui	28/04/2021

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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
AS001973	OverWatch - Complete kit Haulotte Compact
AS001910	OverWatch - Operator Sensor with M20 gland
AS001916	OverWatch - Electronic Control Unit (ECU)
AS001974	OverWatch - Haulotte Compact Harness
AS002326	OverWatch - Sensor Guard V2