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EQSS Model6253 – OverWatch™ Skyjack SJ12/16/20E Black Box



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



REV 1.4

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Model6253 OverWatch™ Installation Manual

Document # DO001493

AUTHORS:

Kieren Grogan, Bhavani Kacharapu

AUTHORISED BY:

Kieren Grogan

CHECKED BY:

Kieren Grogan

DOCUMENT ABSTRACT:

This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch on a Skyjack SJ12E/16E/20E Black Box Vertical Mast

PRODUCT NAME:

Model6253 OverWatch Operator Detection System

REFERENCE DOCUMENTS:

DO0001195 Model6253 OverWatch User Manual

CURRENT DOCUMENT REVISION:

1.4

REVISION INFORMATION:

- 1.1 Initial Document Creation for installation on a SJ12E/16E/20E Vertical Mast (Black Box)
- 1.2 Update of installation procedures and inclusion of AS002197 Plug and Play loom drawing
- 1.3 Update of tables with part numbers
- 1.4 Inclusion of sensor guard V2 and update of machine 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in this publication regarding this device's applications and the like, is provided only for your convenience and may be superseded by updates.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.

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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.



Table of Contents

Preparation	5
Required Tools	5
Installation Time	5
Installation Instructions	6
Operator Sensor	6
Control Module	10
Post Installation Configuration	15
Overview	15
Minimum system requirements	15
Wi-Fi Connection & Web Page Access	15
Machine Model Selection	16
Installation Test.....	17
Change Model Configuration	18
System Settings.....	19
Harness Drawing AS002197	20
Replacement Parts.....	21

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 6.5mm
7	Metric sockets or spanners
8	Needle nose pliers
9	Screw drivers
10	Soldering iron

Installation Time

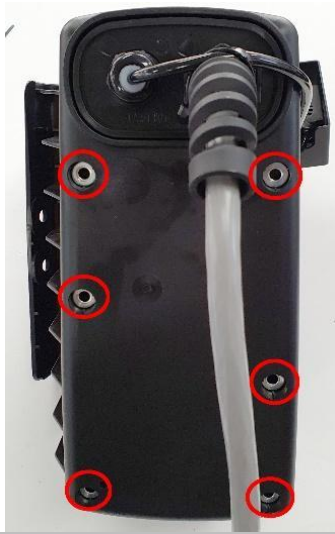
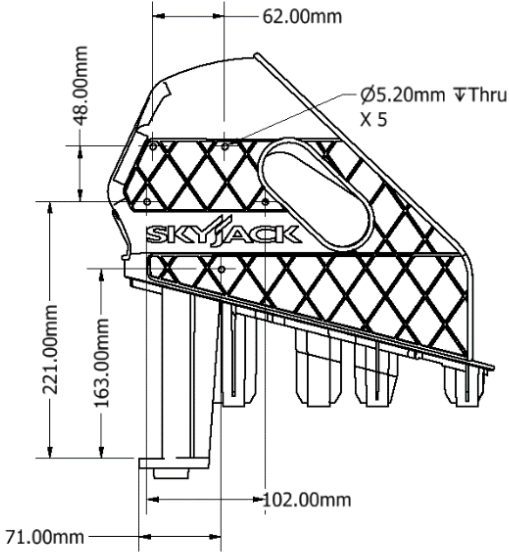
The suggested time required to install the OverWatch is as detailed below.

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

If any decals are damaged during the installation process or if any decals are obstructed following the installation, they should be replaced accordingly.

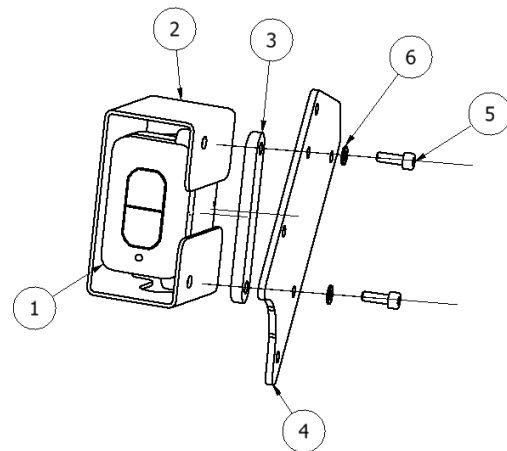
Operator Sensor

Step	Description	Diagram
1.	Remove 6 bolts located at the bottom of the joystick enclosure.	
2.	Drill five X 5.2mm holes in the locations shown in the image.	

3. **Sensor Mounting Guard V1 (ME001794)**
- Install the Operator Sensor onto the mounting plate as shown in the diagram.

The wedge blocks must be orientated such that the sensor **twists away** from the joystick / control box. Such that when the operator is standing in position the sensor is pointing towards the centreline of the operator's body.

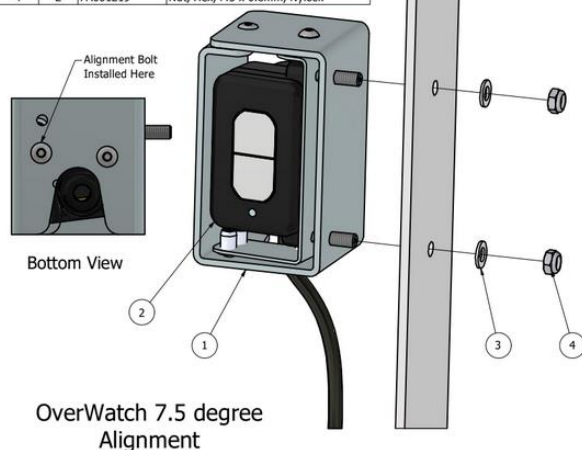
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	AS001910	OverWatch Operator Sensor
2	1	ME001794	OverWatch Operator Sensor Guard
3	1	ME001798	Operator Sensor Alignment Wedge
4	1	ME001810	Operator Sensor Mounting Plate
5	2	FA001417	M4 x 12mm Security screw
6	2	FA001235	M4 Plain Washer



4. **Sensor Mounting Guard V2 (AS002326)**
- This bracket (AS002326) supersedes the original V1 design. Attach the bracket 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.

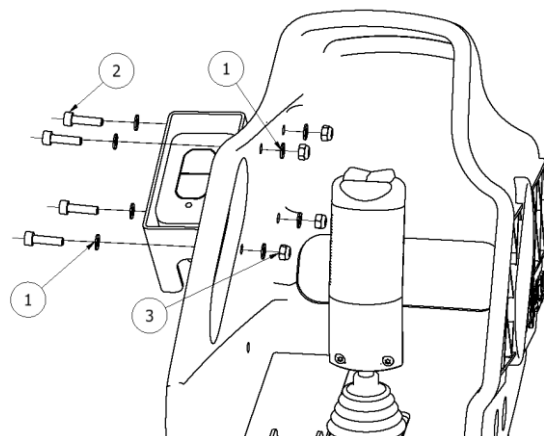
PARTS LIST			
ITEM	QTY	STOCK NUMBER	DESCRIPTION
1	1	AS002326	Sensor Mounting Guard V2
2	1	AS001910	OverWatch Operator Sensor
3	2	FA001174	Washer, Plain, M5, 304 St. St.
4	2	FA001219	Nut, Hex, M5 x 0.8mm, Nylock



5. Drill two **6.5mm** holes to mount the Sensor Mounting Guard V2 (AS002326) to the control box as shown in the image.
- These holes are required to make room for the M5 lock nuts on the mounting plate.



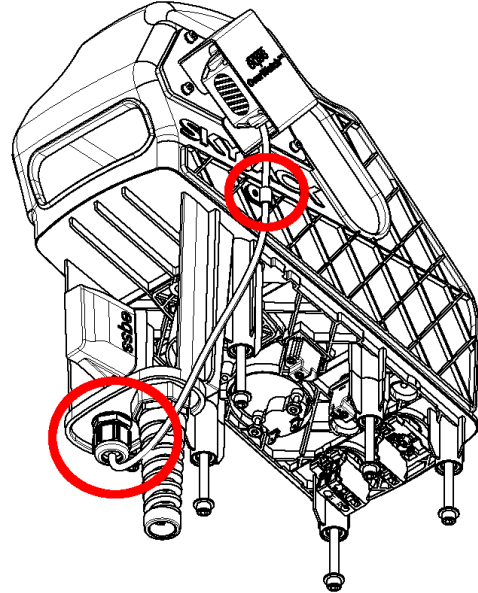
6. Mount the operator sensor mounting plate to the side of the control box using the nuts, bolts, and washes, as shown in the image.



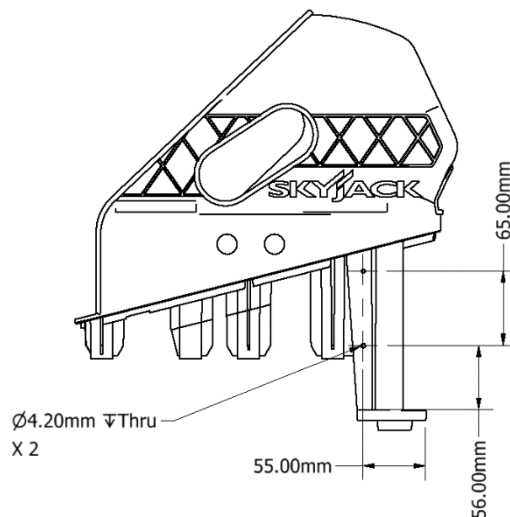
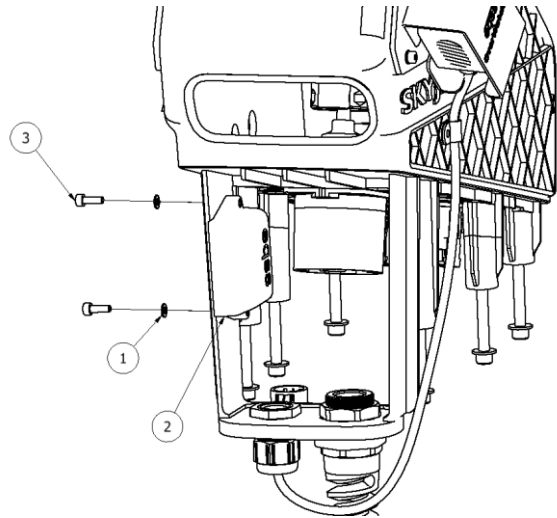
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	FA001235	M4 Plain Washer
2	4	FA001188	M4 x 16mm Socket Head Cap Screw
3	4	FA001223	M4 Nylock Nut

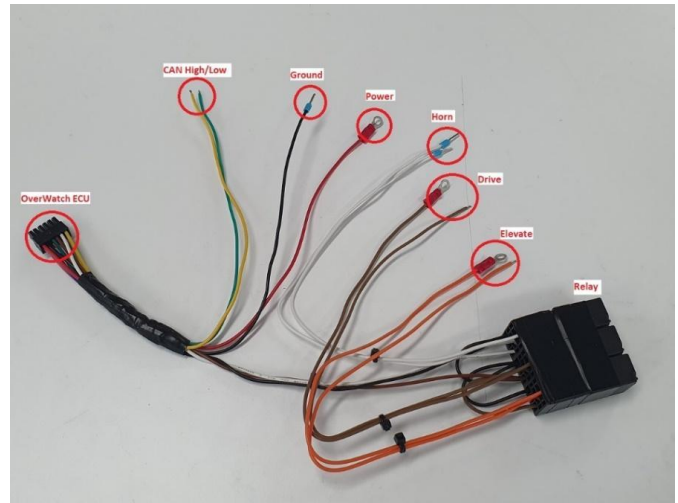
7. Install the cable gland and run the operator sensor cable as shown in the image.
- Use a P-clip to secure the operator sensor cable.



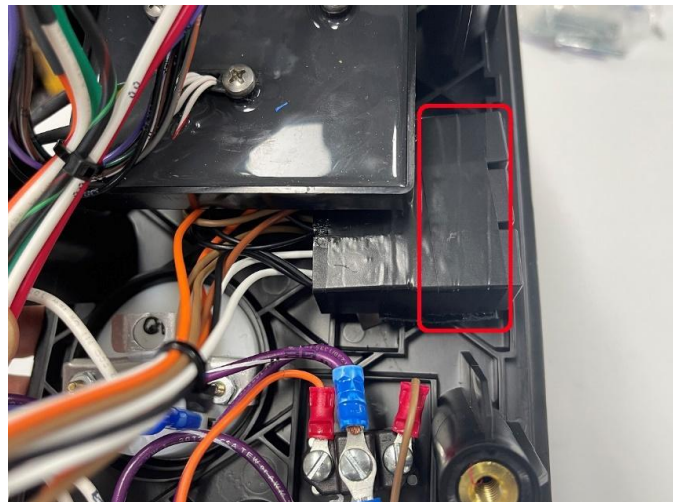
Control Module

Step	Description	Diagram																				
1.	Drill two 4.2mm holes to mount the ECU as shown in the image.																					
2.	Mount the ECU module using the bolts, and washers.	 <table><tr><th colspan="4">PARTS LIST</th></tr><tr><th>ITEM</th><th>QTY</th><th>PART NUMBER</th><th>DESCRIPTION</th></tr><tr><td>1</td><td>2</td><td>FA001235</td><td>M4 Plain Washer</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>M4 x 12mm Socket Head Screw</td></tr></table>	PARTS LIST				ITEM	QTY	PART NUMBER	DESCRIPTION	1	2	FA001235	M4 Plain Washer	2	1	AS001916	OverWatch ECU Module	3	2	FA001211	M4 x 12mm Socket Head Screw
PARTS LIST																						
ITEM	QTY	PART NUMBER	DESCRIPTION																			
1	2	FA001235	M4 Plain Washer																			
2	1	AS001916	OverWatch ECU Module																			
3	2	FA001211	M4 x 12mm Socket Head Screw																			

3. Wiring connections are made with the **AS002197** harness.



4. Place the relay inside the control box using the adhesive Velcro tape as shown in the image.



5.

Elevate/Drive:

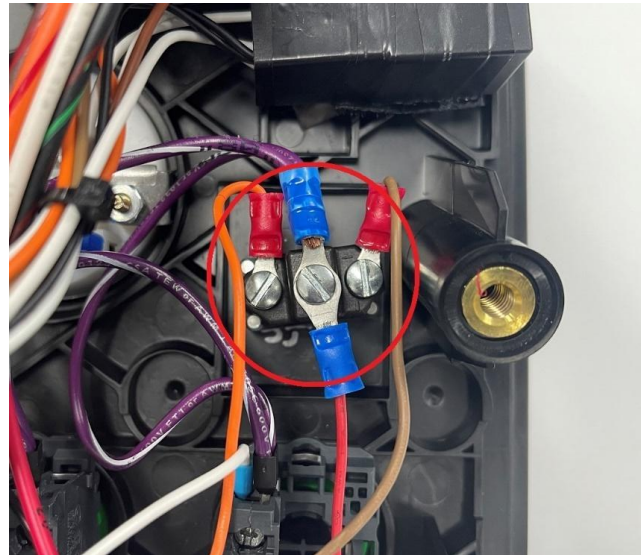
Remove the original **brown** and **orange** wires from the back of the Drive/Elevate mode selection switch.

Connect the **orange** and **brown** wires from the relay and **red** wire (Power) from the OverWatch harness to the back of the Drive/Elevate mode selection switch using the lug connections.

Brown – Terminal # 1

Red – Terminal # 2

Orange – Terminal # 3



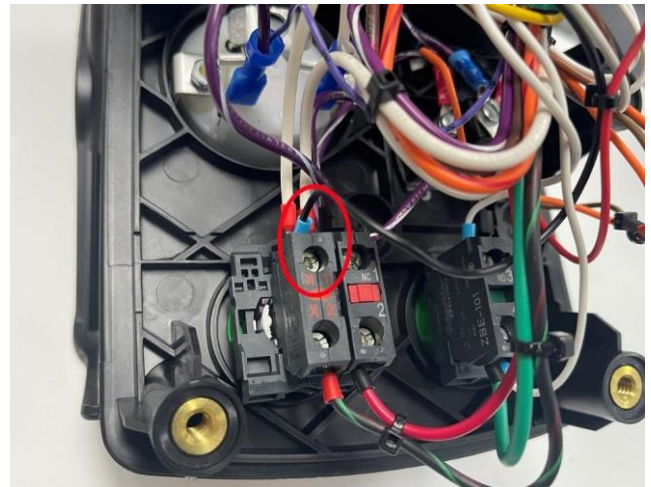
6.

Solder the removed original **brown** and **orange** wires to the bare **brown** and **orange** wires from the relay as shown in the image.

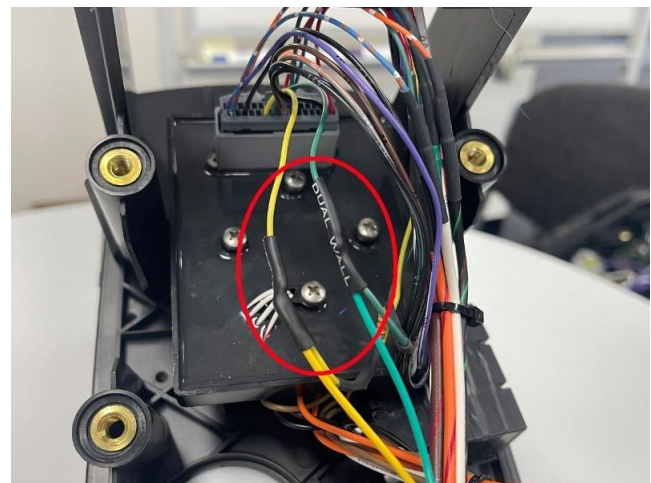
Use heat shrink to secure the soldering joints.



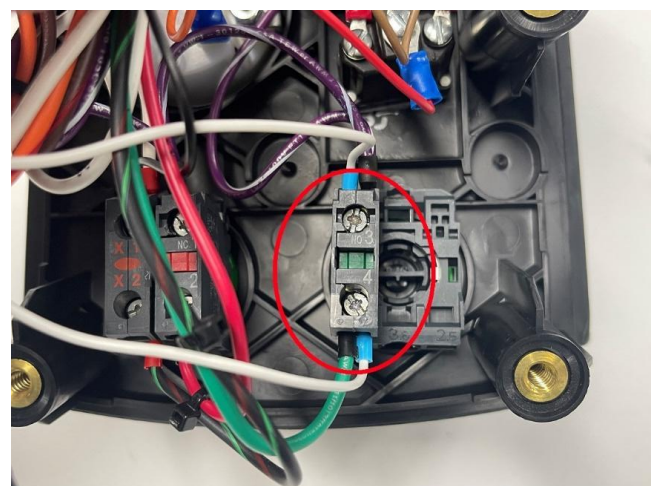
7. **Ground Connection:**
Connect the **black** wire from the OverWatch harness to screw position **X1** on the E-Stop switch



8. **CAN High and Low Connection:**
Splice the **Yellow** and **Green** wires from the OverWatch harness into the Yellow and Green wires from the joystick controller.
Use heat shrink to secure the soldering joints.



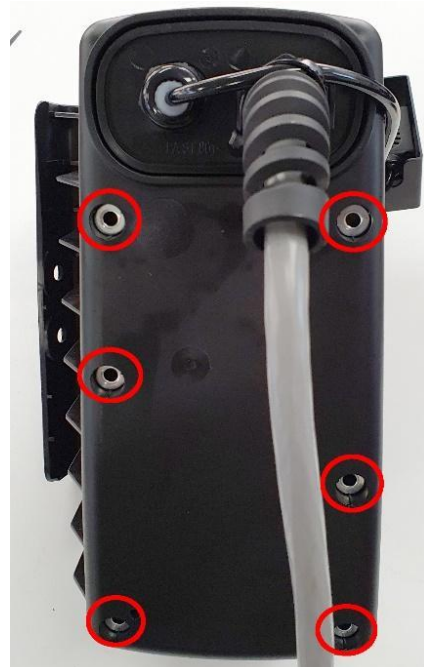
9. **Horn Connection:**
At the back of the horn push button, install OverWatch white wires to the terminal **3 and 4** as shown in the image.



10. Connect the 8-pin connector from the operator sensor and the 12-pin connector from the harness to the OverWatch ECU module
- Use cable ties to combine the cables neatly together.



11. Reassemble the control box by using the 6 bolts taken out earlier and secure the operator sensor cable by using a cable tie.



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

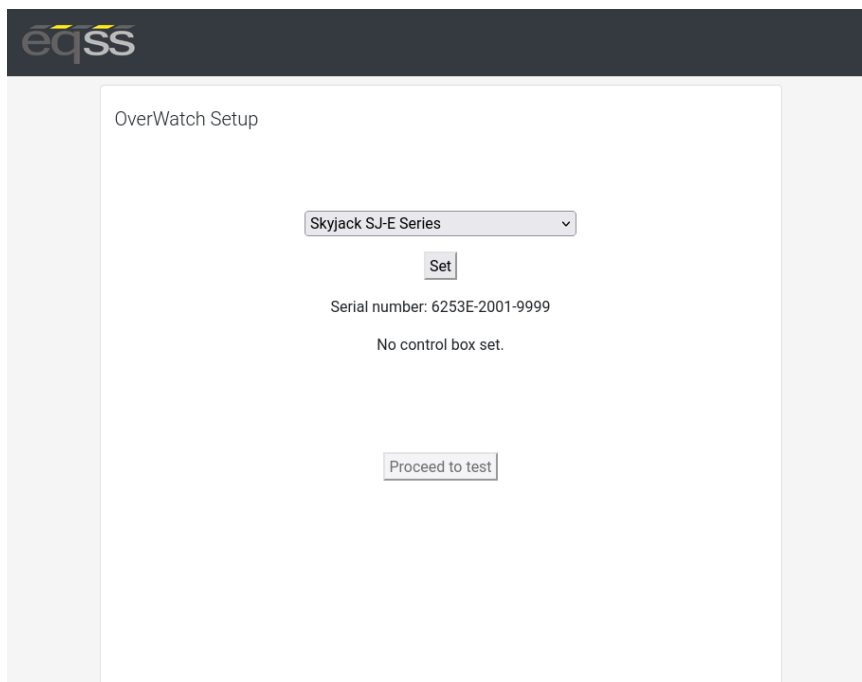
To enable the Wi-Fi connection on the OverWatch to complete the configuration follow the steps below.

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

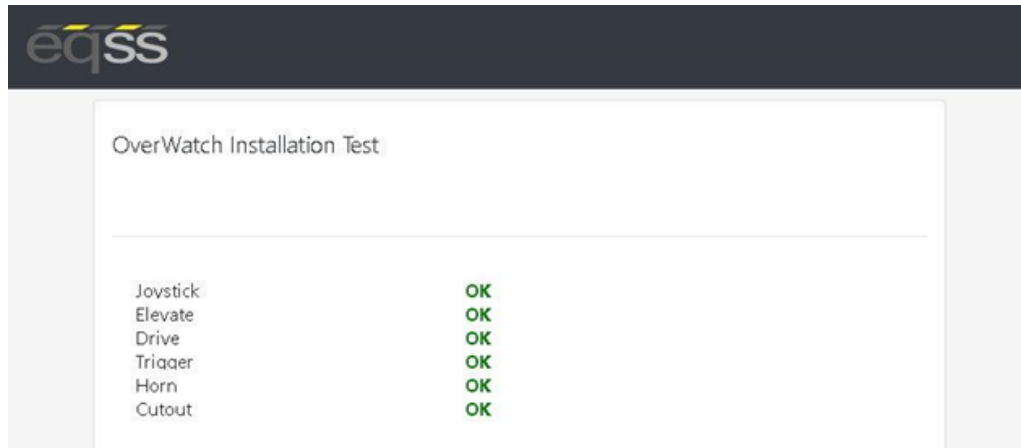
Follow the instructions below to configure the OverWatch.

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



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.

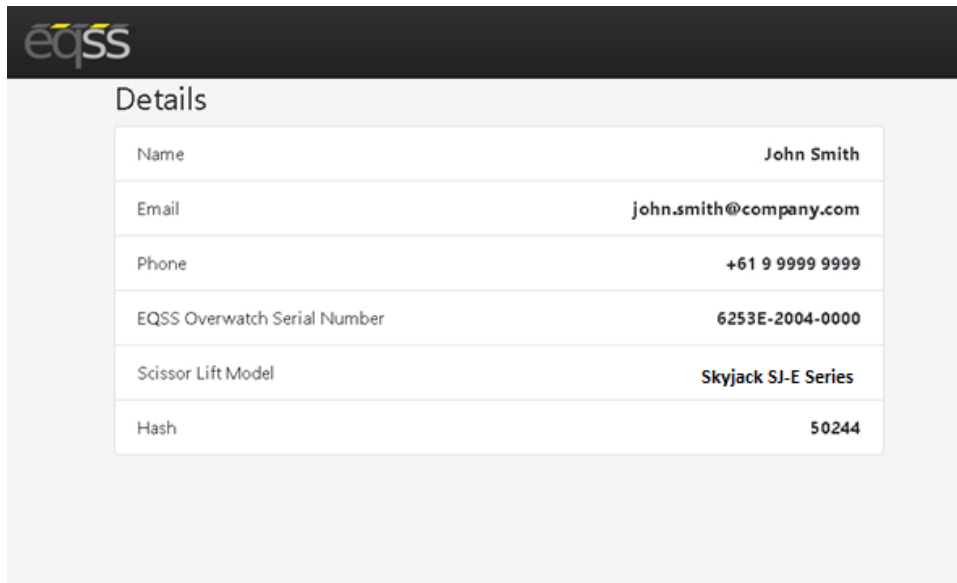


Change Model Configuration

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 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.

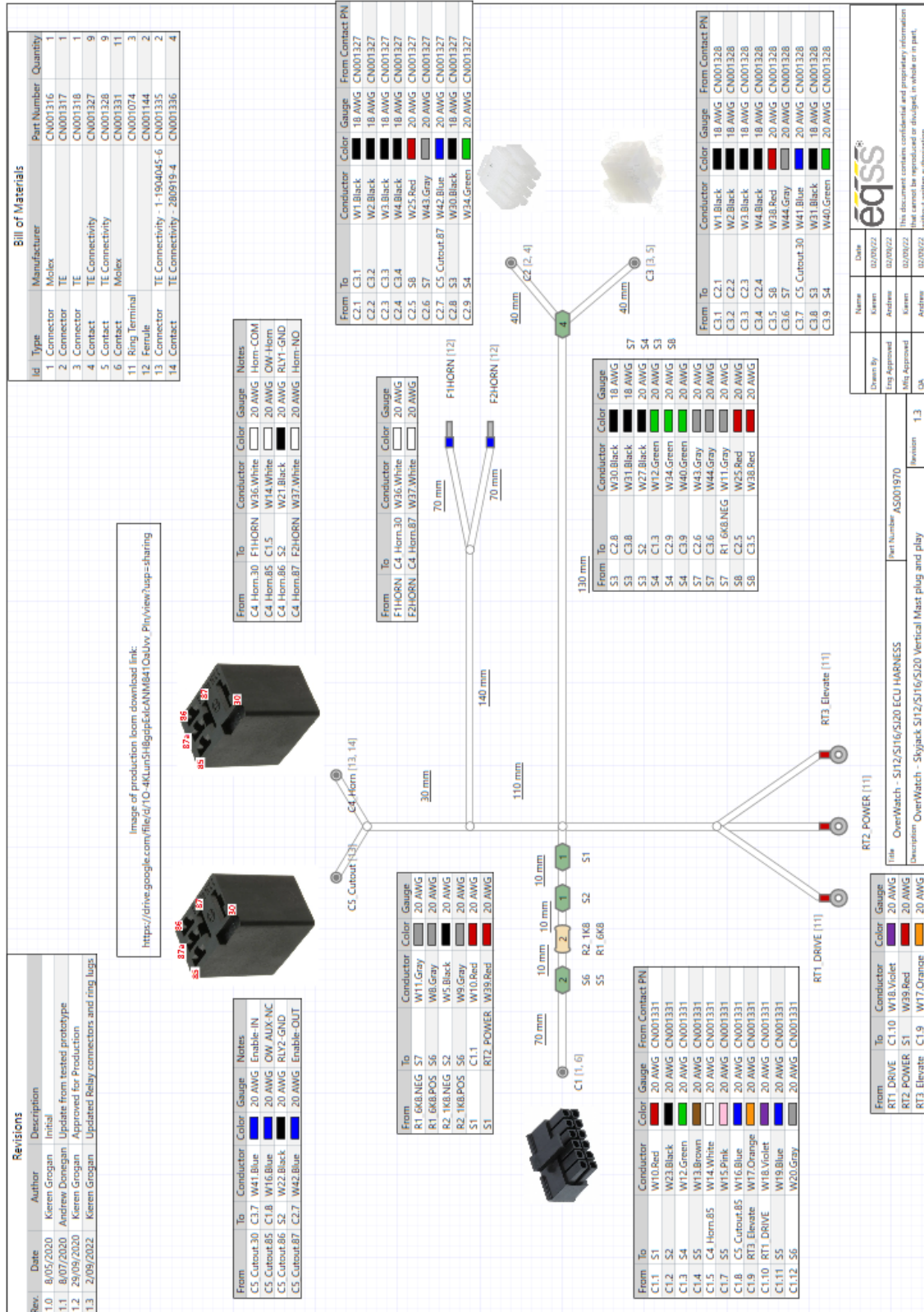


Details	
Name	John Smith
Email	john.smith@company.com
Phone	+61 9 9999 9999
EQSS Overwatch Serial Number	6253E-2004-0000
Scissor Lift Model	Skyjack SJ-E Series
Hash	50244

System Settings

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
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.	15
zone_maximum	The maximum calibration distance. If the operator is further from the sensor than this “operator zone” will be announced.	120
throttle_time	Period after the trigger is pressed (ms) during which initial velocity reading is computed.	2000

Harness Drawing AS002197



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
AS002204	OverWatch - Complete kit for Skyjack SJ-E series
AS002039	OverWatch - Operator sensor with M20 gland
AS002157	OverWatch - Electronic Control Unit (ECU)
AS002197	OverWatch - Skyjack SJ-E series harness
AS002326	OverWatch - Sensor guard V2
ME001810	OverWatch - Sensor mounting plate