I N S T A L L   M A N U A L

EQSS Model6253 – OverWatch™ Mid-Size RT Scissors, Silver Control Box, Installation Manual

Failure to follow this installation manual will void warranty

			Skyjack Mid-Size RT Scissors Silver Control Box Installation Manual
REV 1.5	**13/02/2025**	**Model6253 OverWatch™ Installation Manual**	**Document # DO001300**

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DOCUMENT ABSTRACT:
This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch on a Skyjack Mid-Size Rough Terrain Scissor Lift with a Sliver control box

PRODUCT NAME:
Model6253 OverWatch Operator Detection System

REFERENCE DOCUMENTS:
DO0001195 Model6253 OverWatch User Manual

CURRENT DOCUMENT REVISION:
1.5

REVISION INFORMATION:

- 1.1 Initial Document Creation for installation on a Skyjack SJIII RT
- 1.2 Update of wiring installation procedures
- 1.3 Update of document name to define RT scissors with a sliver control box
- 1.4 Inclusion of sensor guard V2 and update of machine configuration instructions
- 1.5 Update to use AS002445 loom to provide cutout into selection switch

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this publication regarding this device's applications and the like, is provided only for your convenience and may be superseded by updates.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

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 5.0mm
6	Metric sockets or spanners
7	Needle nose pliers
8	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

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.	Separate the joystick from the enclosure and drill two **5.2mm** holes to mount the operator sensor in the position shown in the diagram. The distance between the two holes is **61mm**. The angle between the two holes is **45-degrees** measured from the vertical of the metal enclosure.	
2.	**Sensor Mounting Guard V1 (ME001794)** Mount the module in the located position using the wedges, sensor guard, bolts, and washers. The **7.5-degree** angled wedge blocks must be positioned in the correct orientation such that the sensor is **twisting outwards** from the joystick.	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	

3.	**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.**	 OverWatch 7.5 degree Alignment
4.	If the operator control box does not have metal side cover use the supplied bracket ME001813 and M4 nuts and bolts to create a support structure for the operator sensor. Such that the operator is mounted at an angle of **40 degrees.** Use an existing hole 1 on the control box and drill hole 2 to mount the bracket as shown in the image.	
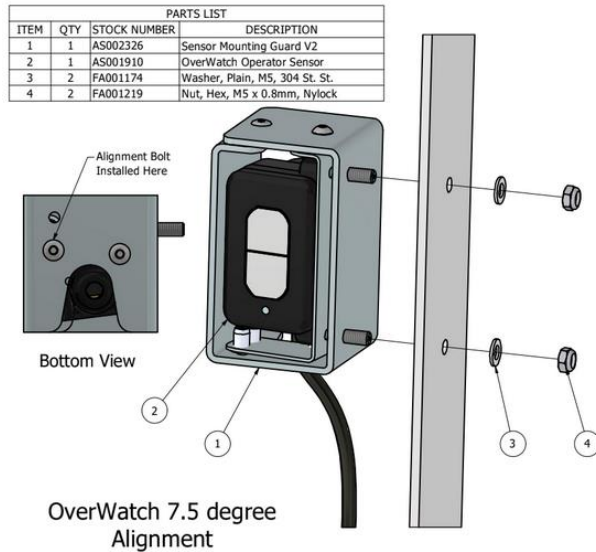
PARTS LIST

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

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5.	Make sure the operator sensor cable runs clear to the joystick enclosure and tighten the M20 gland to seal the cable entry point as shown in the image.	
6.	Drill a **20mm** hole to run the operator sensor M20 cable gland and drill two **5.2mm** holes for the cable gland guard.	
7.	Install the cable gland in the location by using the M4 screws, nuts and washers as shown in the image. Use two P-clips to secure the operator sensor cable.	
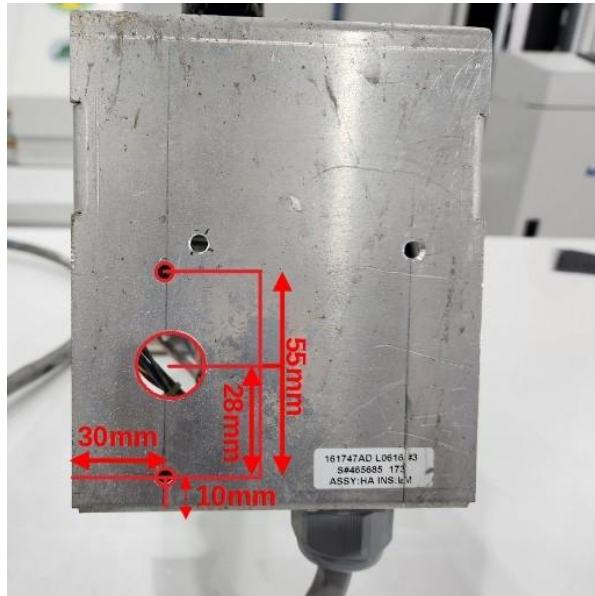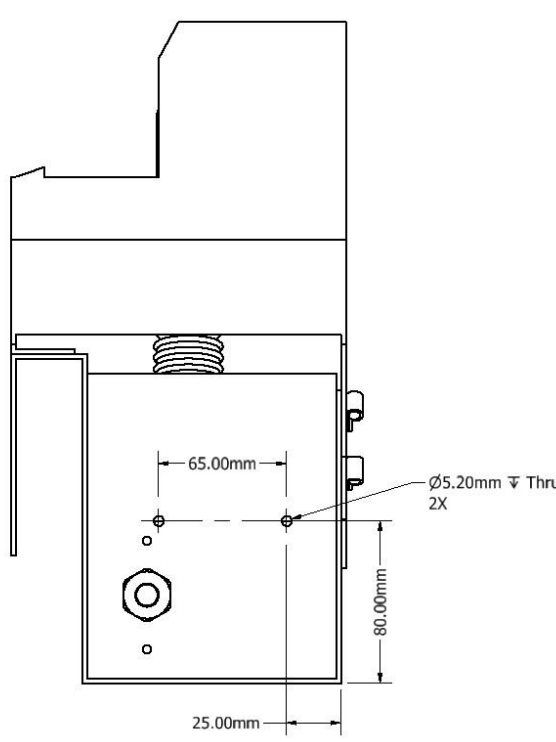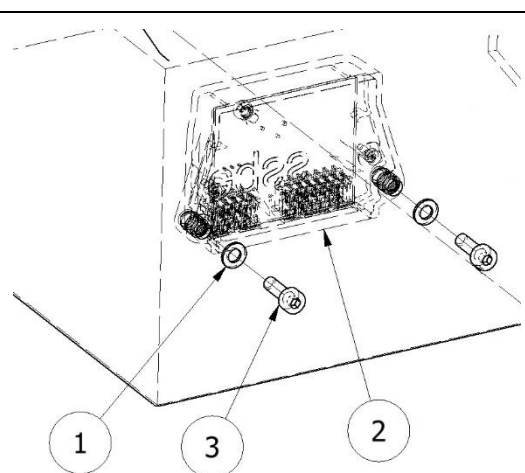
Control Module

Step	Description	Diagram
1.	Drill two **5.2mm** holes to mount the ECU as shown in the image.	
2.	Mount the ECU module by using the bolts, and washers.	

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 Cap Screw

3.	Wiring connections are made with the **AS002445** harness.	
4.	**Joystick Connection:** Disconnect the 9-Pin connector from the joystick and install the OverWatch harness in series.	
5.	**Horn Connection:** At the back of the horn push button, install the OverWatch white wires to the terminals **3 and 4** as shown in the image.	
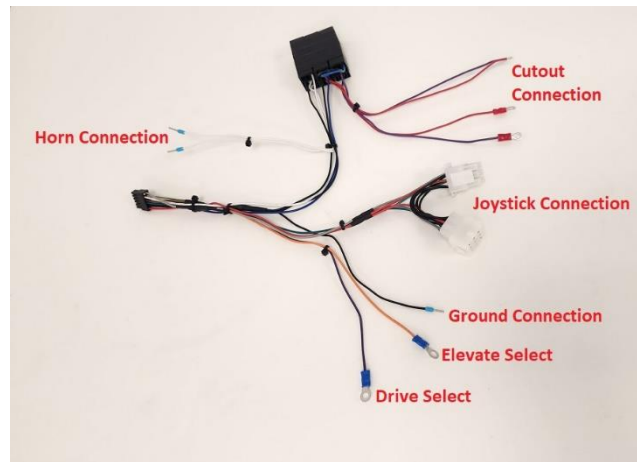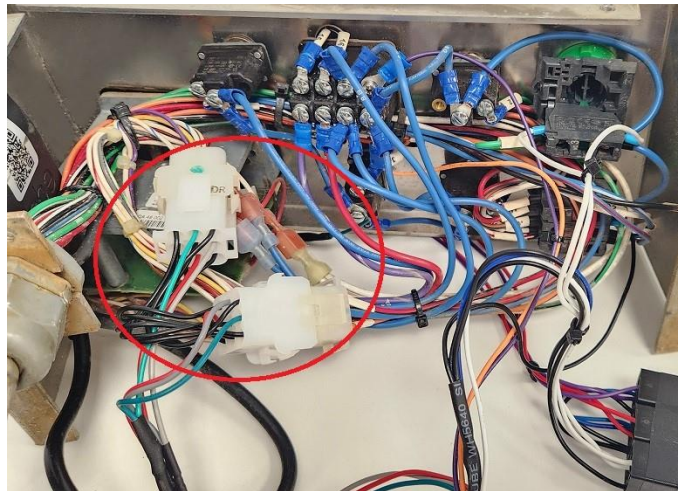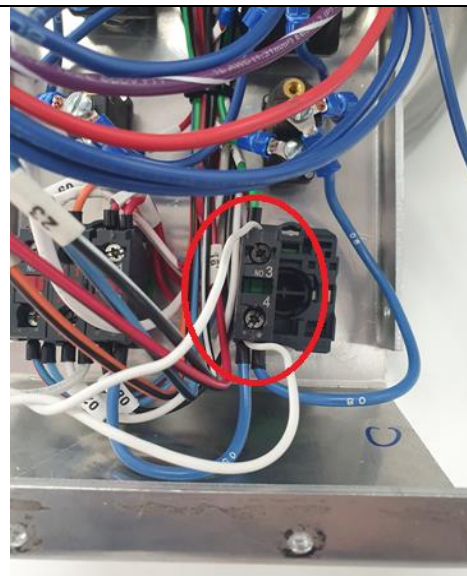
6.	**Elevate Connection:** At the back of the Drive/Elevate switch: 1. Identify the switch block with the power wire ID **08**. 2. Install the **orange** wire from the OverWatch harness to the switch block terminal as shown in image.	
7.	**Drive Connection:** At the back of the Drive/Elevate switch: On the same switch block with the power wire **ID 08**, install the **purple** wire from the OverWatch harness to the switch block terminal as shown in image.	
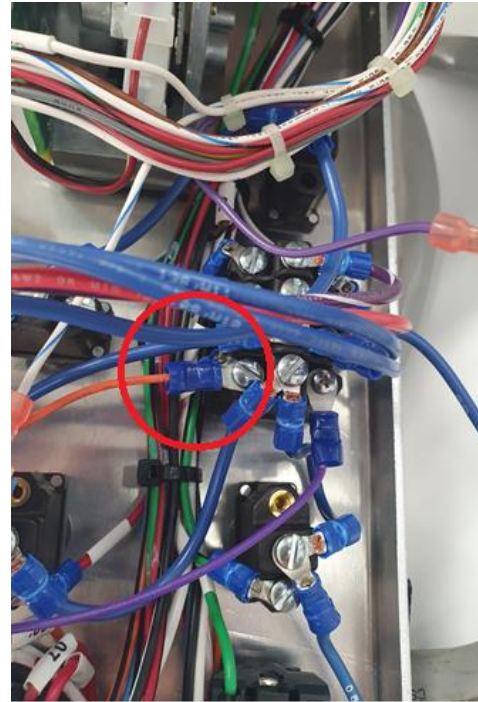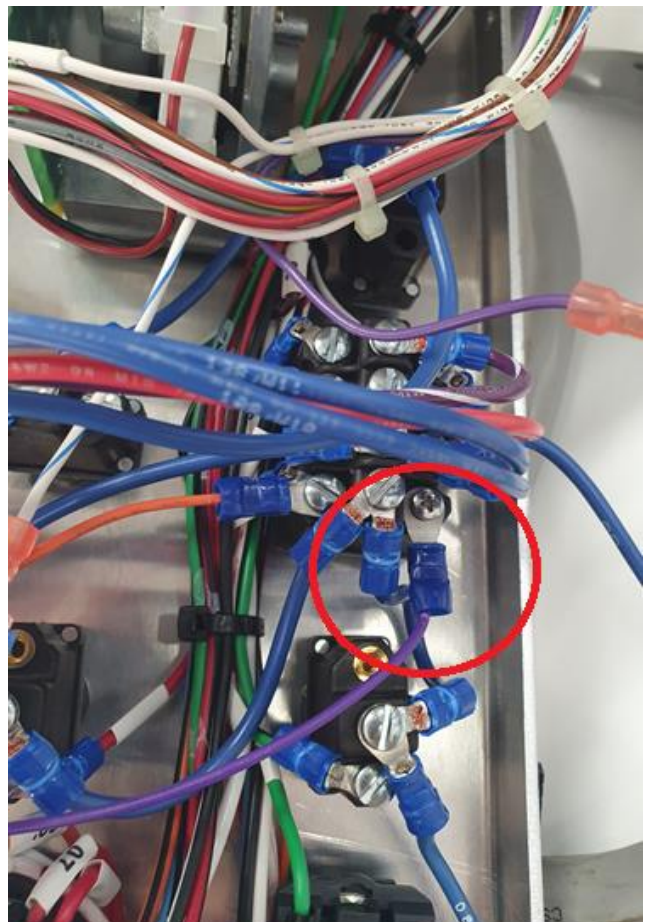
8.	**Ground Connection:** Install the **black** wire from the OverWatch harness with the wire **ID 02** on the switch block as shown in the image.	
9.	**Cutout Connections - Switch Block:** Locate the **Purple-A** wire and **Red-B** wire on the back of the mode selection switch. 1. Remove the two Skyjack **Purple-A** and **Red-B** wires from the switch block by unscrewing the connections 2. Replace the **Purple** and **Red** wires like for like from the OverWatch harness cutout connections	 Remove Original Purple and Red Wires Replace Purple and Red Wires with the OverWatch Cutout Wires
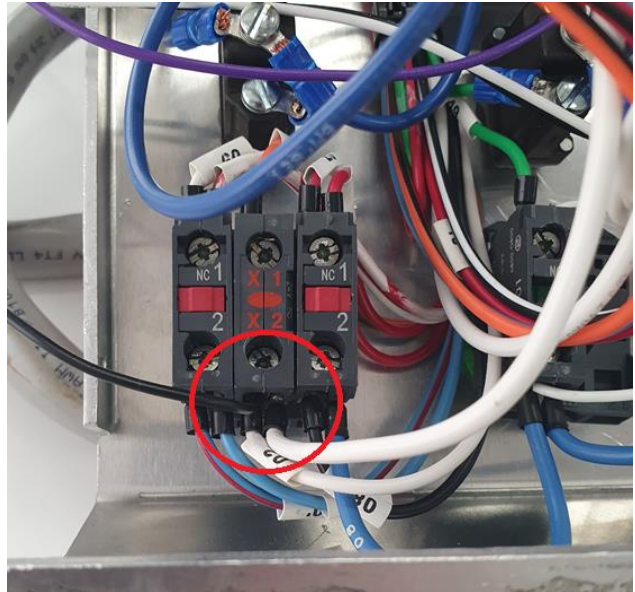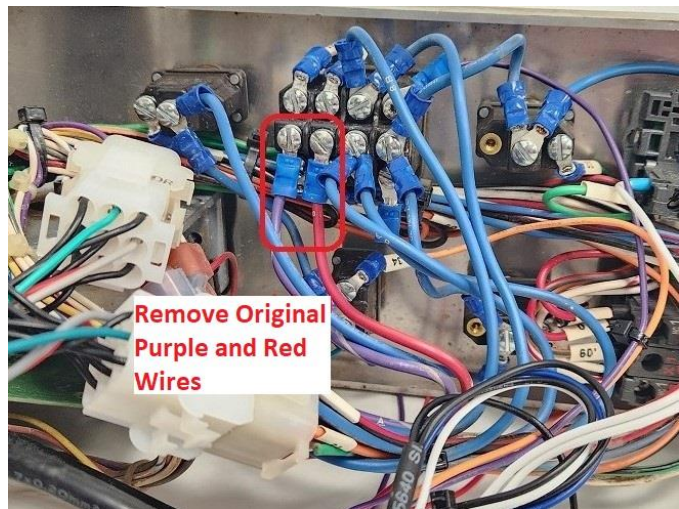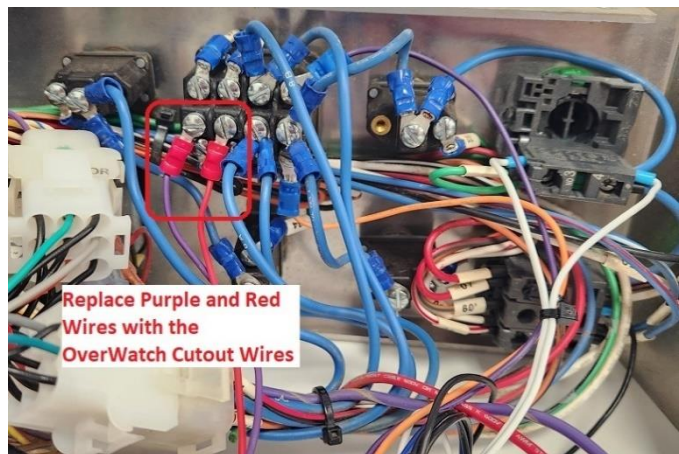
10.	**Cutout Connections – Soldering:** Locate the **Purple-A** wire and **Red-B** wire previously removed from the switch block and remove the crimped ring terminals. Solder the Skyjack **Purple** and **Red** wires to the Overwatch **Purple** and **Red** wires, use the supplied heat shrink to seal the connections. **Make sure to use the supplied heat shrink around the solder connections.**	
11.	**Finalisation:** Connect the 8-Pin connector from the operator sensor and the 12-Pin connector from the OverWatch harness, into the ECU. Finalise the harness installation by using the supplied zip ties to neatly secure the cables inside the box, pay attention to the relay block to make sure it is secured and tight. Reassemble the enclosure and mount the operator sensor.	
12.	**Reassembly:** Re-assemble the joystick back into the enclosure. Use two existing screws for the P-clips and make sure to tighten the M20 cable gland as shown in the image.	
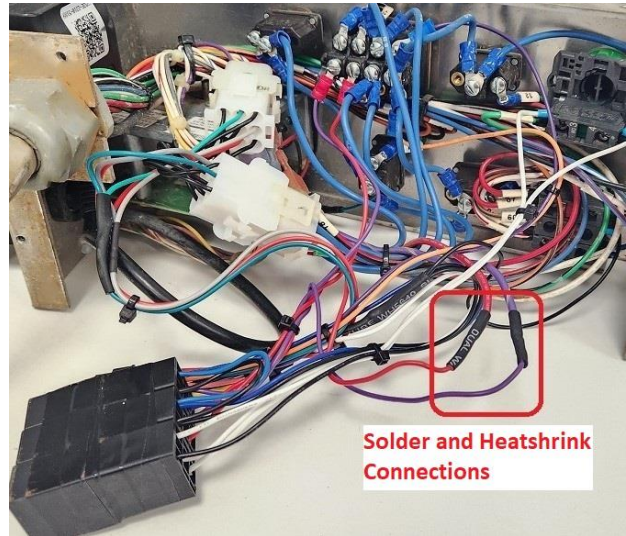
Post Installation Configuration

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
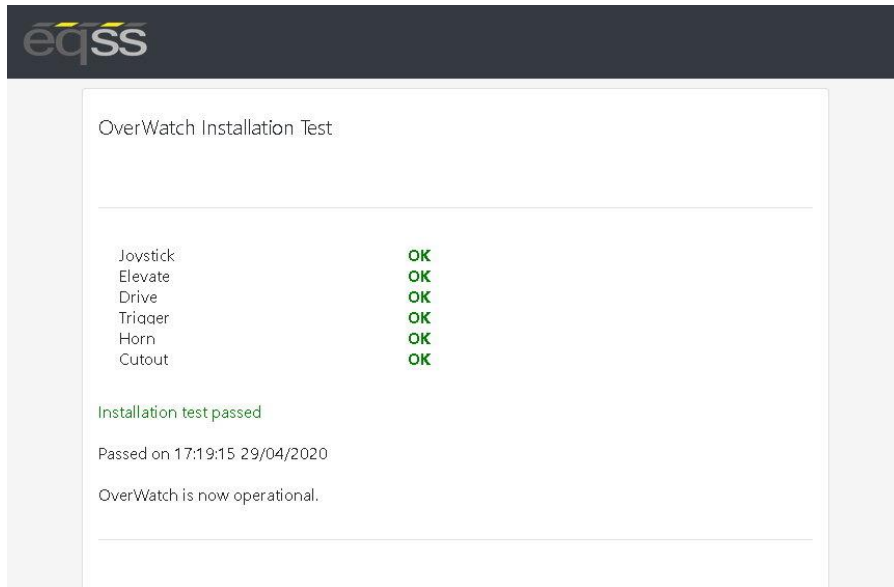
Installation Test

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.
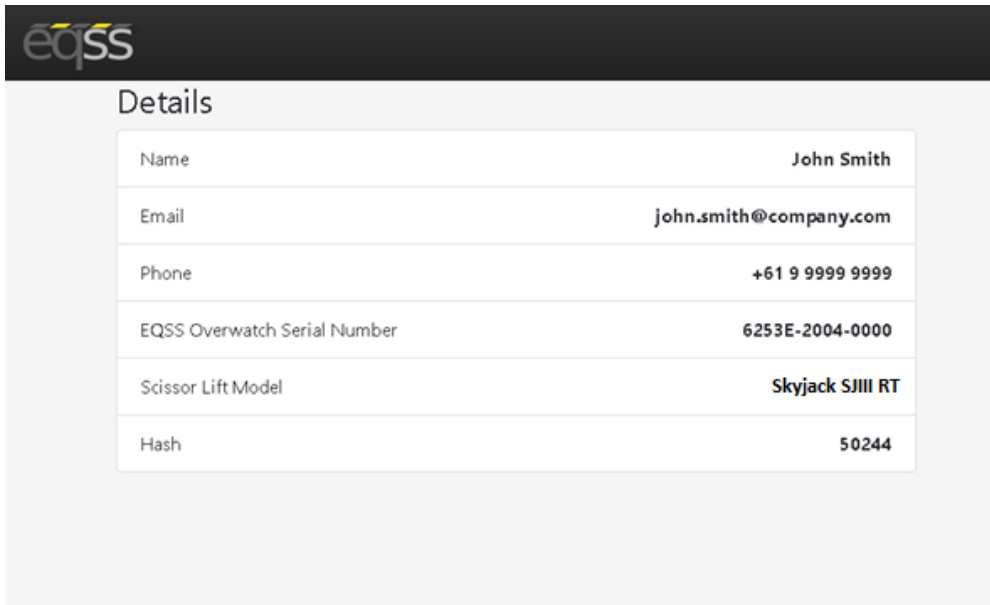
Change Model Configuration

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 ECU 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.	0.7
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.	900
adc_drive_threshold	Threshold value for the drive ADC input.	900
adc_trigger_threshold	Threshold value for the trigger ADC input.	900
adc_joystick_fwd_threshold	Forward threshold value for the joystick ADC input.	100
adc_joystick_bwd_threshold	Backward threshold value for the joystick ADC input.	200
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

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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
tigger_polarity	Direction of signal logic	high
joystick_polarity	Direction of signal logic	low
driving_state_input	Direct or timer based	direct

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Harness Drawing AS002445

Revisions

Rev.	Date	Author	Description
1	11/02/2025	Bhavani Kacharapu	Initial

Final Assembly Photo: https://drive.google.com/file/d/1hc98SCgFV-iQzSUDXRzQBLmPtXYeLOY/view

Bill of Materials

Id	Description	Part Number	Quantity
1	Molex, Microfit-3.0, 12 Way, Female	CN001316	1
2	MATE-N-LOK, 9 Way, 3 Row, Female, 1-480706-0	CN001317	1
3	MATE-N-LOK, 9 Way, 3 Row, Male, 1-480707-0	CN001340	1
4	Automotive Relay Socket	CN001335	3
5	MATE-N-LOK, SOCKET	CN001327	9
6	MATE-N-LOK, PIN	CN001328	9
7	Micro-Fit 3.0, Female Terminals, 0430300001	CN001331	11
8	Relay Socket Terminal, 6.3mm	CN001359	6
9	Relay Socket Terminal, 4.8mm	CN001336	8
10	Ferrule 0.75mm	CN001144	2
11	Ferrul 0.5mm	CN001143	3
12	SPDT 30A Horn Relay 12V	SW001081	3
13	Resistor, Axial, 6.8K	RE001108	1
14	Resistor, Axial, 1.8K	RE001229	1
15	Lug Ring Terminal Crimp Connector 4mm Blue	CN001112	2
16	Lug Ring Terminal Crimp Connector 4mm Red	CN001178	2
17	HC0049, 20AWG, White	CB001055	880 mm
18	HC0049, 20AWG, Red	CB001054	730 mm
19	HC0049, 20AWG, Black	CB001048	1400 mm
20	HC0049, 20AWG, Green	CB001050	330 mm
21	HC0049, 20AWG, Brown	CB001077	50 mm
22	HC0049, 20AWG, Pink	CB001052	50 mm
23	HC0049, 20AWG, Blue	CB001049	300 mm
24	HC0049, 20AWG, Orange	CB001051	310 mm
25	HC0049, 20AWG, Violet	CB001057	710 mm
26	HC0049, 20AWG, Grey	CB001053	340 mm
27	HC0049, 20AWG, Yellow/Green	CB001100	50 mm

Wire Lists

C2_JM [2, 5]

From	To	Conductor	Color	Notes
C2_JM.1	C3_JF.1	W2.Black		Link-1
C2_JM.2	S3_VCC	W25.Red	Red	VCC
C2_JM.3	C3_JF.3	W4.Black		Link-3
C2_JM.4	C3_JF.4	W21.Black		Link-4
C2_JM.5	C3_JF.5	W29.Black		Link-5
C2_JM.6	S5_JOY2	W7.Gray	Gray	Joystick Male
C2_JM.7	C3_JF.7	W26.Black		Link-7
C2_JM.8	S6_TR_Input	W31.Green	Green	Trigger Input
C2_JM.9	C3_JF.9	W23.Black		Link-9

C3_JF [3, 6]

From	To	Conductor	Color	Notes
C3_JF.1	C2_JM.1	W2.Black		Link-1
C3_JF.2	S3_VCC	W25.Red	Red	VCC
C3_JF.3	C2_JM.3	W4.Black		Link-3
C3_JF.4	C2_JM.4	W21.Black		Link-4
C3_JF.5	C2_JM.5	W29.Black		Link-5
C3_JF.6	S5_JOY2	W6.Gray	Gray	Joystick Female
C3_JF.7	C2_JM.7	W26.Black		Link-7
C3_JF.8	S6_TR_Input	W32.Green	Green	Trigger Input
C3_JF.9	C2_JM.9	W23.Black		Link-9

From	To	Conductor	Color	Notes
S3_VCC	C2_JM.1	W10.Red	Red	VCC
S3_VCC	S1_GND1	W25.Red	Red	VCC
S3_VCC	C3_JF.2	W12.Red	Red	VCC
S5_JOY2	C2_JM.6	W7.Gray	Gray	Joystick Male
S5_JOY2	C3_JF.6	W6.Gray	Gray	Joystick Female
S5_JOY2	R1_6K8.NEG	W11.Gray	Gray	Joystick-IN

F3_Gnd [11]

From	To	Conductor	Color	Notes
F3_Gnd	S1_GND1	W27.Black		GND

S6_TR_Input

From	To	Conductor	Color	Notes
S6_TR_Input	C1_OW.3	W30.Green	Green	Trigger Input
S6_TR_Input	C2_JM.8	W31.Green	Green	Trigger Input
S6_TR_Input	C3_JF.8	W32.Green	Green	Trigger Input

C5_RLY_ELV_COUT [16]

From	To	Conductor	Color	Notes
C5_RLY_ELV_COUT.30	LW1	W33.Red	Red	ELV_COM
C5_RLY_ELV_COUT.85	C1_OW.8	W16.Blue	Blue	Aux Output
C5_RLY_ELV_COUT.86	C6_RLY_DR_Cutout.86	W35.Blue	Blue	Aux_Output
C5_RLY_ELV_COUT.86	C6_RLY_DR_Cutout.86	W36.Black		RLY_GND
C5_RLY_ELV_COUT.86	S1_GND1	W28.Black		GND
C5_RLY_ELV_COUT.87	RT3_ELV_COUT	W34.Red	Red	ELV_COUT

C6_RLY_DR_Cutout [4, 8, 9]

From	To	Conductor	Color	Notes
C6_RLY_DR_Cutout.30	LW2	W37.Violet	Violet	DRV_COM
C6_RLY_DR_Cutout.85	C5_RLY_ELV_COUT.85	W35.Blue	Blue	Aux_Output
C6_RLY_DR_Cutout.86	C5_RLY_ELV_COUT.86	W36.Black		RLY_GND
C6_RLY_DR_Cutout.87	RT4_DRV_COUT	W38.Violet	Violet	DRV_COUT

LW (RT3_ELV_COUT / RT4_DRV_COUT)

From	To	Conductor	Color	Notes
LW1	RT3_ELV_COUT	W33.Red	Red	ELV_COM
RT3_ELV_COUT	C5_RLY_ELV_COUT.87	W34.Red	Red	ELV_COUT
LW2	RT4_DRV_COUT	W37.Violet	Violet	DRV_COM
RT4_DRV_COUT	C6_RLY_DR_Cutout.87	W38.Violet	Violet	DRV_COUT

C4_RLY_Horn [4, 8, 9]

From	To	Conductor	Color	Notes
C4_RLY_Horn.30	F2_HRN_B	W24.White		Horn_B
C4_RLY_Horn.85	C1_OW.5	W19.White		Horn
C4_RLY_Horn.86	S1_GND1	W5.Black		RLY_GND
C4_RLY_Horn.87	F1_HRN_A	W14.White		Horn_A

From	To	Conductor	Color	Notes
F1_HRN_A	C4_RLY_Horn.87	W14.White		Horn_A
F2_HRN_B	C4_RLY_Horn.30	W24.White		Horn_B

F2_HRN_B [10] / F1_HRN_A [10]

R / S junction tables

From	To	Conductor	Color	Notes
R1_6K8.NEG	S5_JOY2	W11.Gray	Gray	Joystick-IN
R1_6K8.POS	S1_GND1	W8.Gray	Gray	R1-LINK
R2_1K8.NEG	S1_GND1	W3.Black		GND
R2_1K8.POS	S4_JOY1	W9.Gray	Gray	R2-LINK

From	To	Conductor	Color	Notes
S1_GND1	C1_OW.2	W22.Black		GND
S1_GND1	C4_RLY_Horn.86	W5.Black		GND
S1_GND1	C5_RLY_ELV_COUT.86	W28.Black		GND
S1_GND1	F3_Gnd	W27.Black		GND
S2_END	R2_1K8.NEG	W3.Black		GND
S2_END	C1_OW.4	W13.Brown	Brown	AUX-COM
S2_END	C1_OW.7	W15.Pink	Pink	OW-SPL-1
S4_JOY1	C1_OW.11	W20.Gray	Gray	Joystick Signal
S4_JOY1	R1_6K8.POS	W8.Gray	Gray	R1-LINK
S4_JOY1	R2_1K8.POS	W9.Gray	Gray	R2-LINK

C1_OW [1, 7]

From	To	Conductor	Color	Notes
C1_OW.1	S3_VCC	W10.Red	Red	VCC
C1_OW.2	S1_GND1	W22.Black		GND
C1_OW.3	S6_TR_Input	W30.Green	Green	Trigger Input
C1_OW.4	S2_END	W13.Brown	Brown	OW-SPL-1
C1_OW.5	C4_RLY_Horn.85	W19.White		Horn
C1_OW.7	S2_END	W15.Pink	Pink	Aux Output
C1_OW.8	C5_RLY_ELV_COUT.85	W16.Blue	Blue	Elevate
C1_OW.9	RT2_ELV	W17.Orange	Orange	Drive
C1_OW.10	RT1_DRV	W18.Violet	Violet	AUX-IN-3
C1_OW.11	S2_END	W1.Yellow-Green	Yellow-Green	Joystick Signal
C1_OW.12	S4_JOY1	W20.Gray	Gray	

RT1_DRV [15] / RT2_ELV [15]

From	To	Conductor	Color	Notes
RT1_DRV	C1_OW.10	W18.Violet	Violet	Drive
RT2_ELV	C1_OW.9	W17.Orange	Orange	Elevate

Wire Harness — OverWatch Harness - Skyjack SJ III RT Silver Box – R1V1

	Name	Date	
Drawn By	Bhavani	12/02/25	
Eng Approved	Kireen	12/02/25	
Mfg Approved	Bhavani	12/02/25	
QA	Kireen	12/02/25	

Part Number AS002445   Revision 1.0

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Notes

① Cable Tie
② Heat shrink all splice points

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
AS001985	OverWatch - Complete kit for Skyjack SJ-III RT series
AS001910	OverWatch - Operator sensor with M20 gland
AS001916	OverWatch - Electronic Control Unit (ECU)
AS002445	OverWatch – Skyjack SJ-III RT series harness
AS002326	OverWatch - Sensor guard V2
ME001813	OverWatch - Sensor mounting bracket (45 Degree)