



AV&L INSTALLATION GUIDE

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CAB TRACTORS

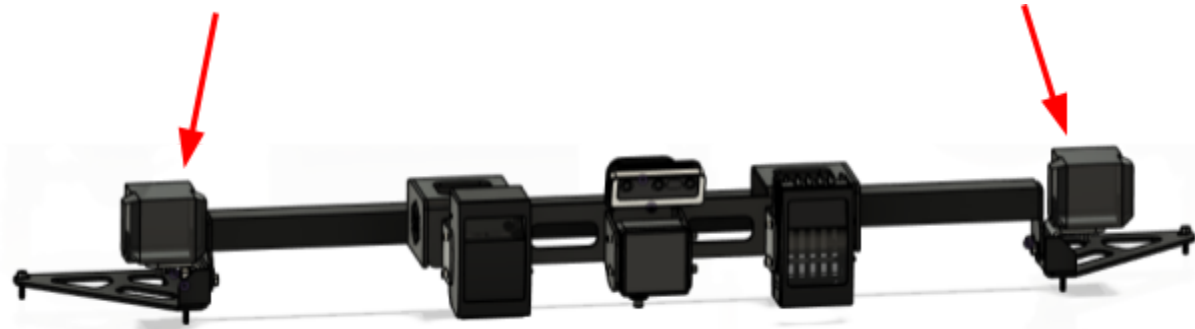
FRONT LIGHTS - JOHN DEERE 5E/6E SERIES CAB

Items per side:

- Light with flashers
- Mounting bracket
- Qty 2 M8-35mm bolts
- Qty 4 M8 nyloc nuts

Installation:

- Replace the two M8x25mm bolts holding the cross bar to the base plates with M8x35mm bolts
- Place the light bracket on the bolts up against weld/press nuts and secure with nyloc nuts
- Lights may be pointed at a slight degree out off center





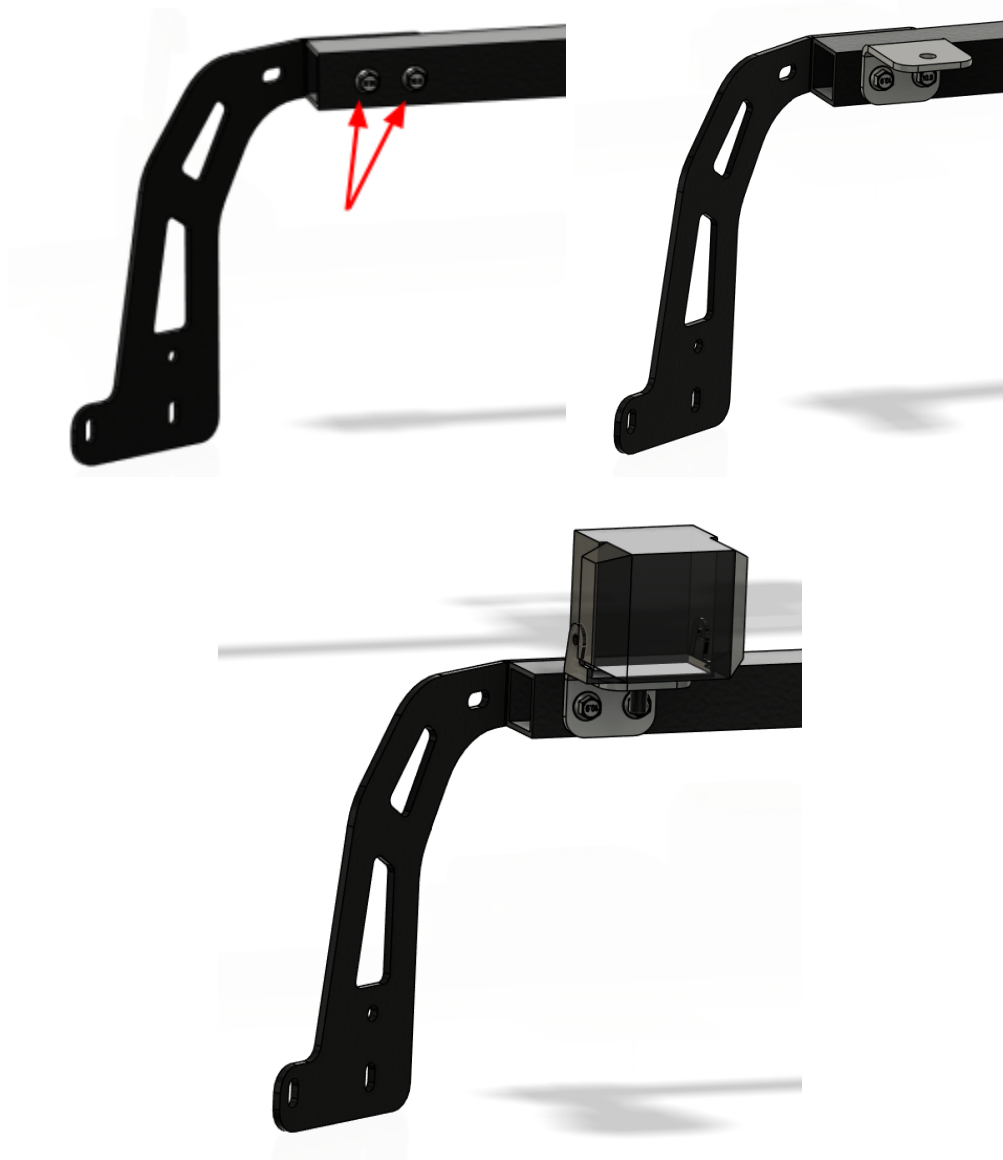
FRONT LIGHTS - KUBOTA CAB

Items per side:

- Light with flashers
- Mounting bracket

Installation:

- Locate and remove the two M8-60mm bolts holding the front cross bar to the mounting ears at the front corner of the cab.
- Using the same bolts, mount the additional light bracket
- Attach the light with flasher to the light bracket



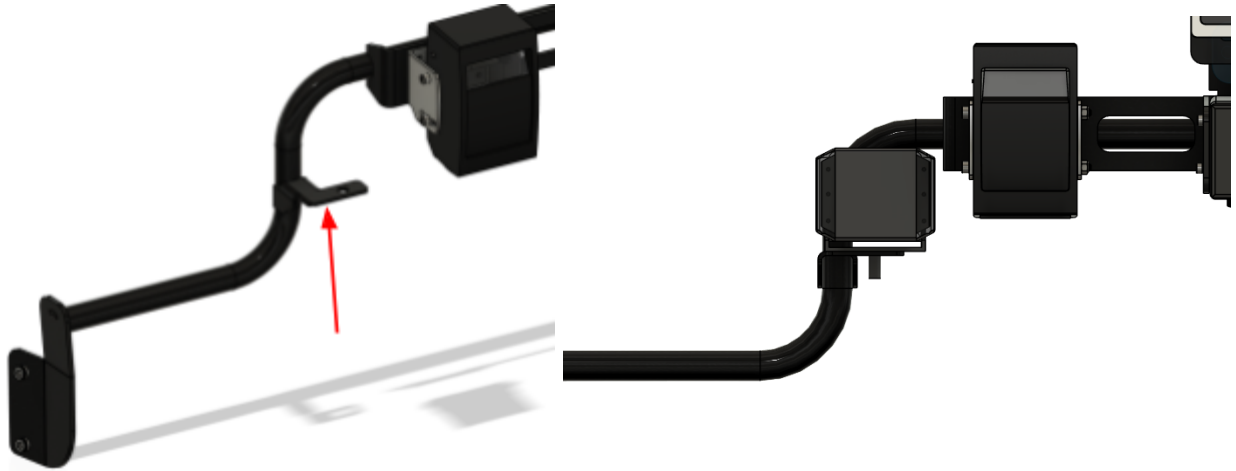
FRONT LIGHTS - JOHN DEERE 5M CAB

Items per side:

- Light with flashers

Installation:

- No additional mount is required, locate the existing tab built into the front cross bar
- Mount the front light with flasher



SIDE LIGHTS- ALL CAB MODELS

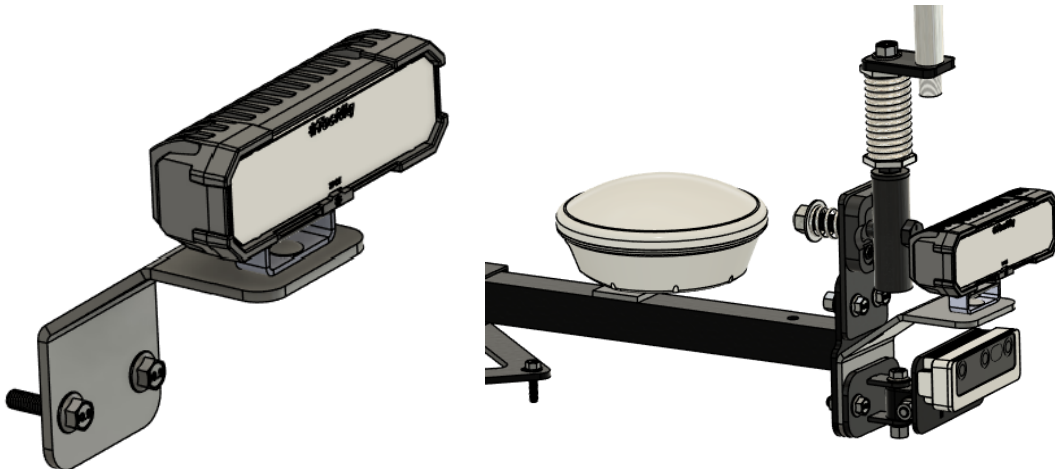
Note: This will be the same for all CAB tractors across platforms

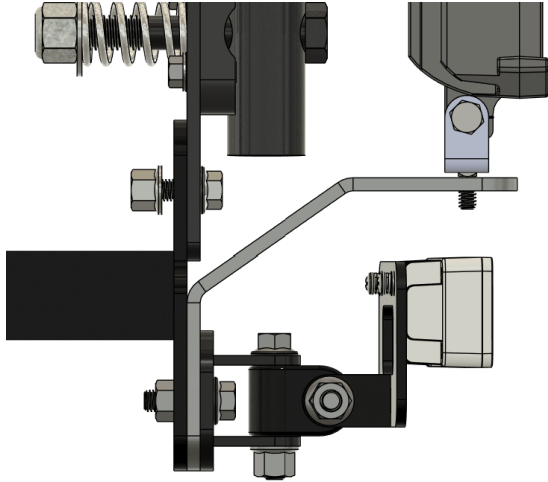
Items per side:

- Qty 2 light without flasher
- Mounting bracket
- Qty 2 M8-35mm bolts

Installation:

- Unbolt the camera mount from the cross bar
- Sandwich the light mount between the cross bar and the camera mount
- Resecure using the provided longer M8-35mm bolts and reuse nyloc nuts





REAR LIGHT- ALL CAB MODELS

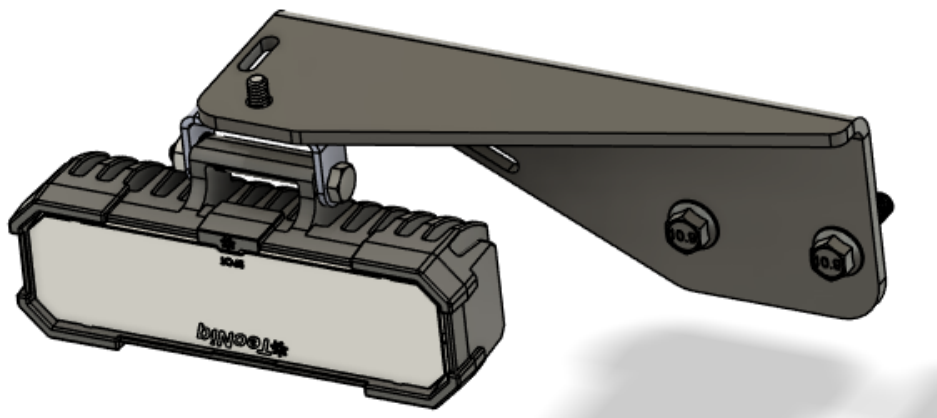
Note: This will be the same for all CAB tractors across platforms

Items per side:

- Light without flashers
- Mounting bracket
- Qty 2 M8-35mm bolts

Installation:

- Unbolt the camera mount from cross bar
- Sandwich the light mount between the cross bar and the camera mount
- Resecure using the provided longer M8x35mm bolts and reuse nyloc nuts
- Install the light without flashers using the provided hardware





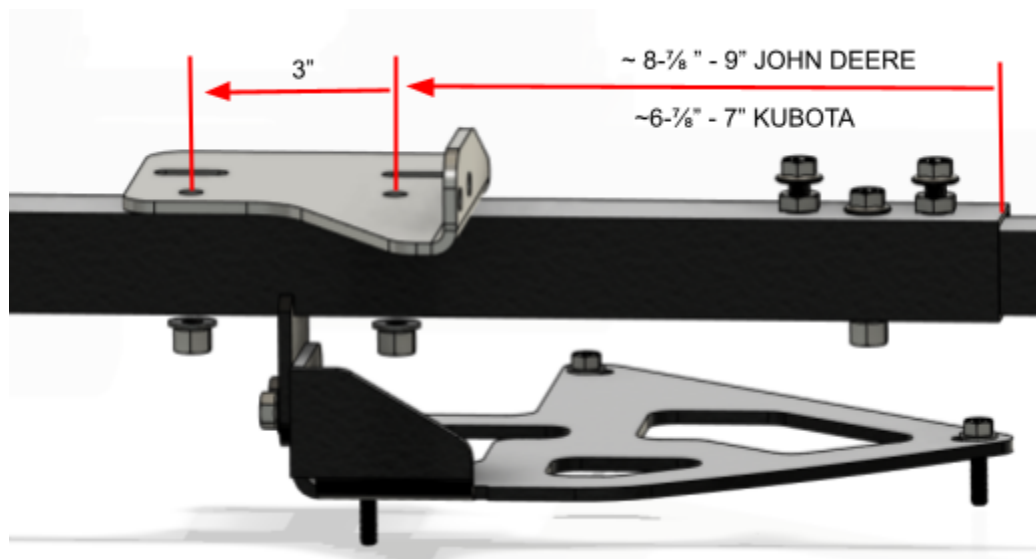
BEACON AND ALARM - ALL CAB MODELS

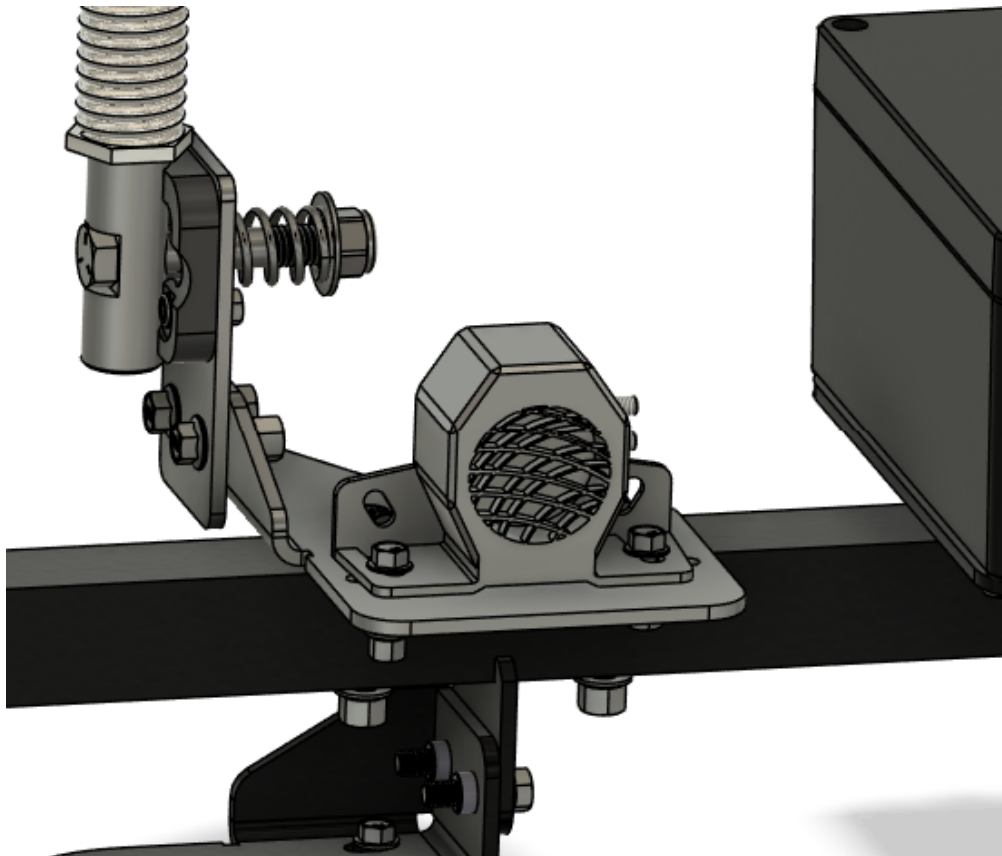
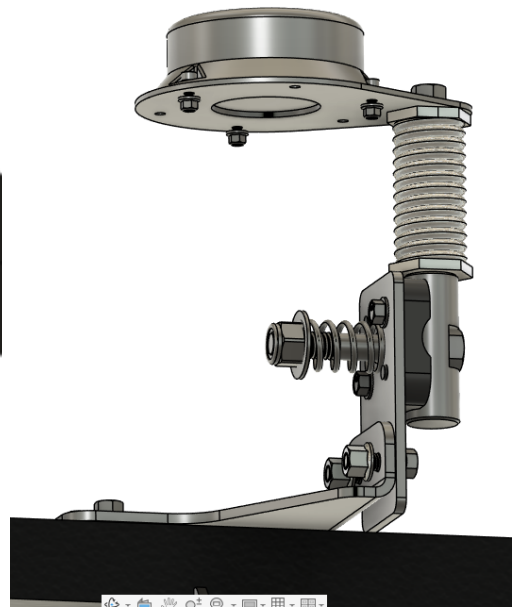
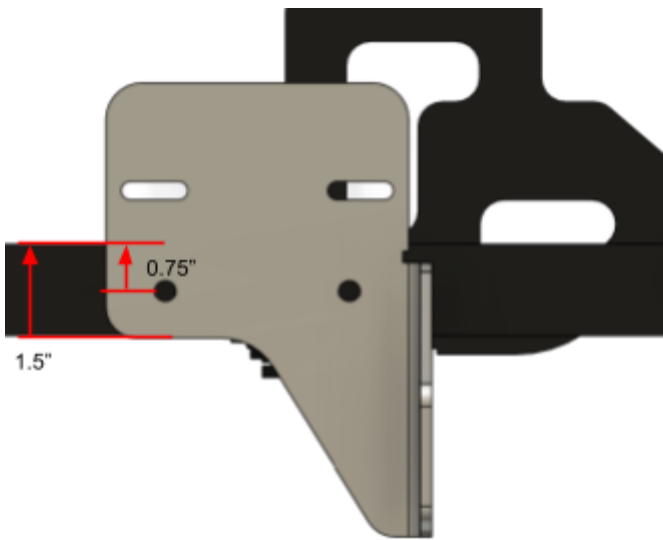
Items:

- Mount with tab
- Breakaway swivel assembly
- Beacon light
- Alarm
- Qty 2 M8-60mm bolts
- Qty 2 M8-25mm bolts
- Qty 4 M8 nyloc nuts
- Qty 3 M4-14mm screws
- Qty 3 M4 nyloc nuts
- Qty 2 M6-20mm bolts
- Qty 2 M6 nyloc nuts

Installation:

- Drill two $\frac{3}{8}$ " holes in the main rear cross tube on the right hand side of the BFE enclosure
- Place bracket with tab on top of bar and secure with M8-60mm bolts
- Attach break away assembly with beacon light
- Attach alarm





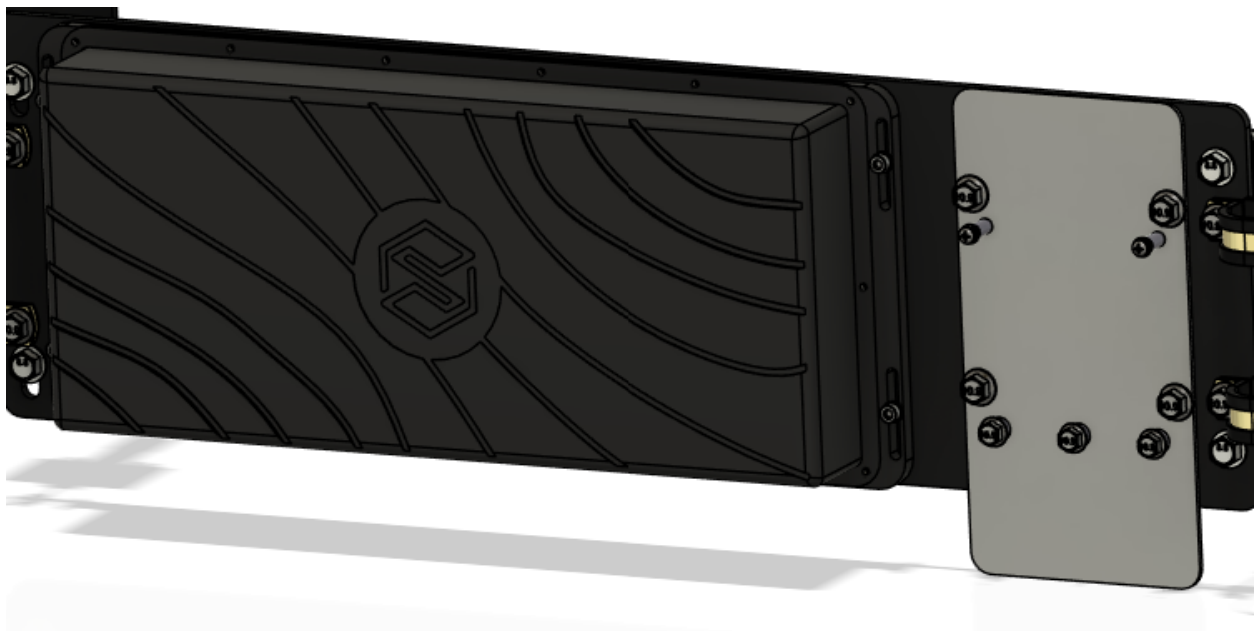
AVL CONTROLLER - ALL JOHN DEERE 5E/6E SERIES CAB

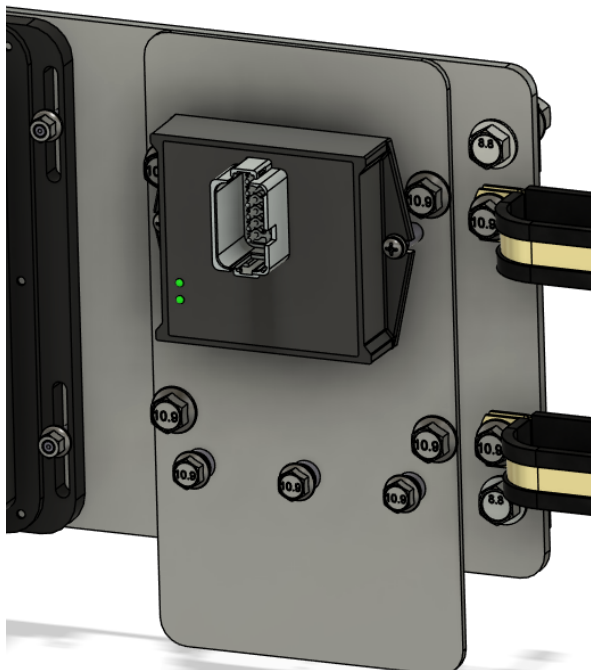
Items:

- Mounting plate
- Qty 2 M4-14mm screws
- Qty 2 M4 washers
- Qty 4 M8-12mm bolts
- Qty 3 M6-10mm bolts
- Qty 3 M6 flat washers

Installation:

- Secure the mounting plate to next to the vPFM autonomy controller on the backside of the cab using the M8-12mm bolts into the existing hole pattern
- Attach the controller using M4-14mm screws
- Insert the M6-10mm bolts as they will be used later while installing the harness
- Note: on a 6E tractor, the controller mount will be to the left of the Autonomy controller





AVL CONTROLLER - KUBOTA CAB

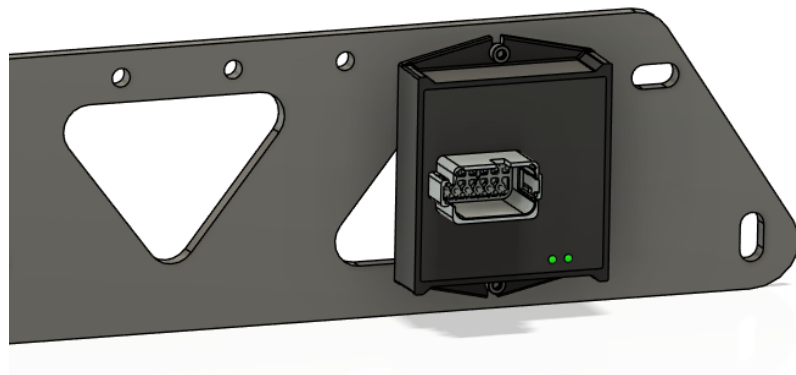
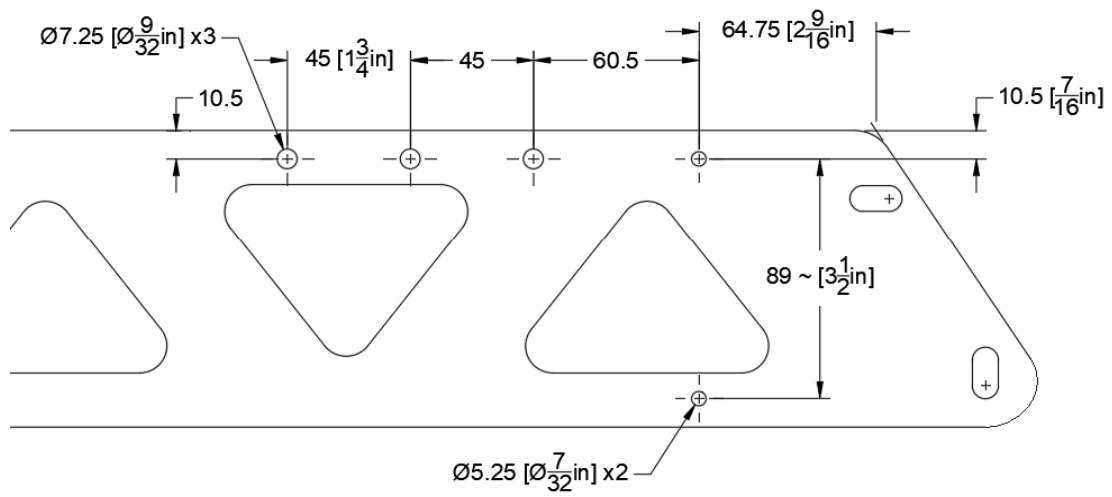
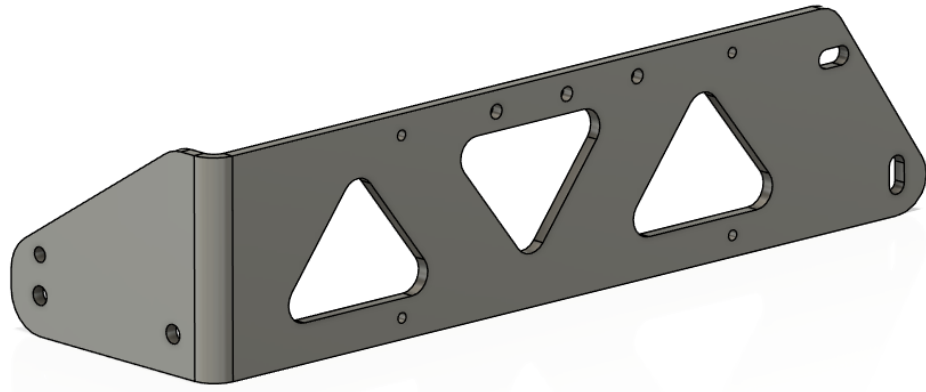
Items:

- Mounting Plate
- Qty 2 M4-25mm screws
- Qty 2 M4 nyloc nuts
- Qty 3 M6-20mm bolts
- Qty 3 M6 nyloc nuts

Installation:

- Locate the SMV relocation bracket. If already installed, it will be located on rear left fender
- If you're adding the AVL kit as a retro kit, you will need to remove the bracket and add mounting holes
- Mount the controller to the bracket with the M4 screws and nuts
- Insert the M6 bolts as they will be used later while installing the harness

- Install the bracket on the tractor



BATTERY DISCONNECT- ALL JOHN DEERE 5E/5M/6E CAB MODELS

Note: If the Sabanto kit was purchased in 2026 or later, the 4 pole disconnect will be standard so you can skip this step of swapping out the older 2 pole disconnect.

Items:

- 4-Pole Battery Disconnect
- Mounting Bracket
- Ring terminals-6AWG M12 Stud

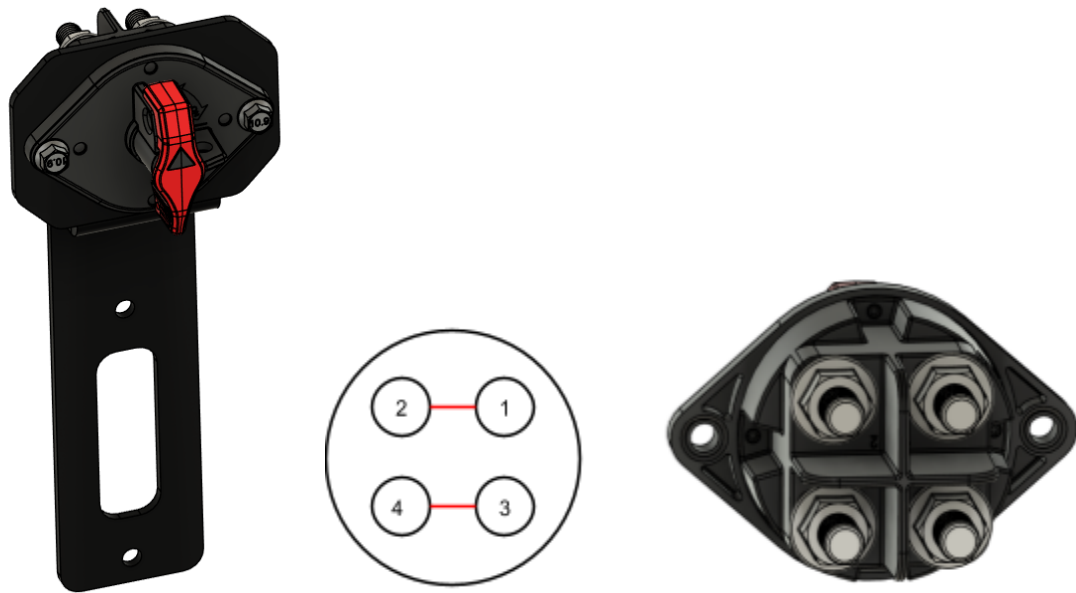
Installation:

- Under the hood, locate the main power/ground harness connected to the battery
- On the harness, find the large fuse holder, open the cap and remove the 30A fuse
- Locate the existing 2-pole disconnect inside the cab behind the seat.
- Remove the plastic cover to access the nuts securing the bracket
- Remove the two M8 nuts to remove bracket
- After sliding the mounting bracket off the bolts, remove the ring terminals from the battery disconnect
- Depending on the platform, installer may be required to put larger ring terminals on the main harness
- Cut off current ring terminals and crimp on larger sized terminals that are provided
- Secure the new/larger 4-pole disconnect to the bracket
- Attach cables to posts on the 4-pole disconnect
- Attach bracket same as the old
- Reinstall the plastic cover

Old 2-pole battery disconnect



New 4-pole battery disconnect



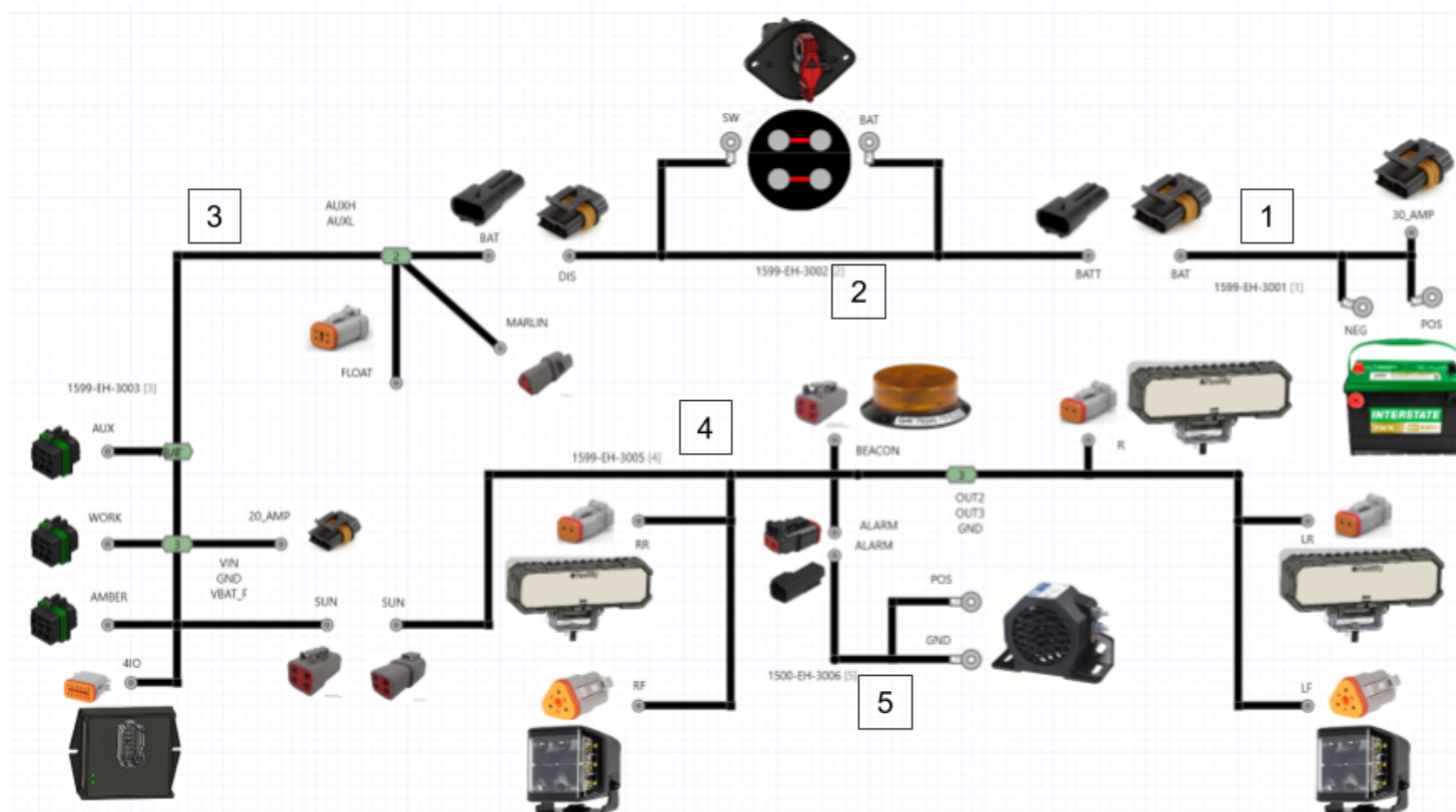
Alarm +/- post location



WIRING - JD E/M SERIES CAB DIAGRAM CONTENTS

ID	Part Number	Description
1	1599-EH-3001	Aux Power Harness
2	1599-EH-3002	DPST Disconnect Harness
3	1599-EH-3003	AVL Marlin Interface Harness
4	1599-EH-3005	CAB Roof Audio/Light Harness
5	1599-EH-3006	Alarm Harness

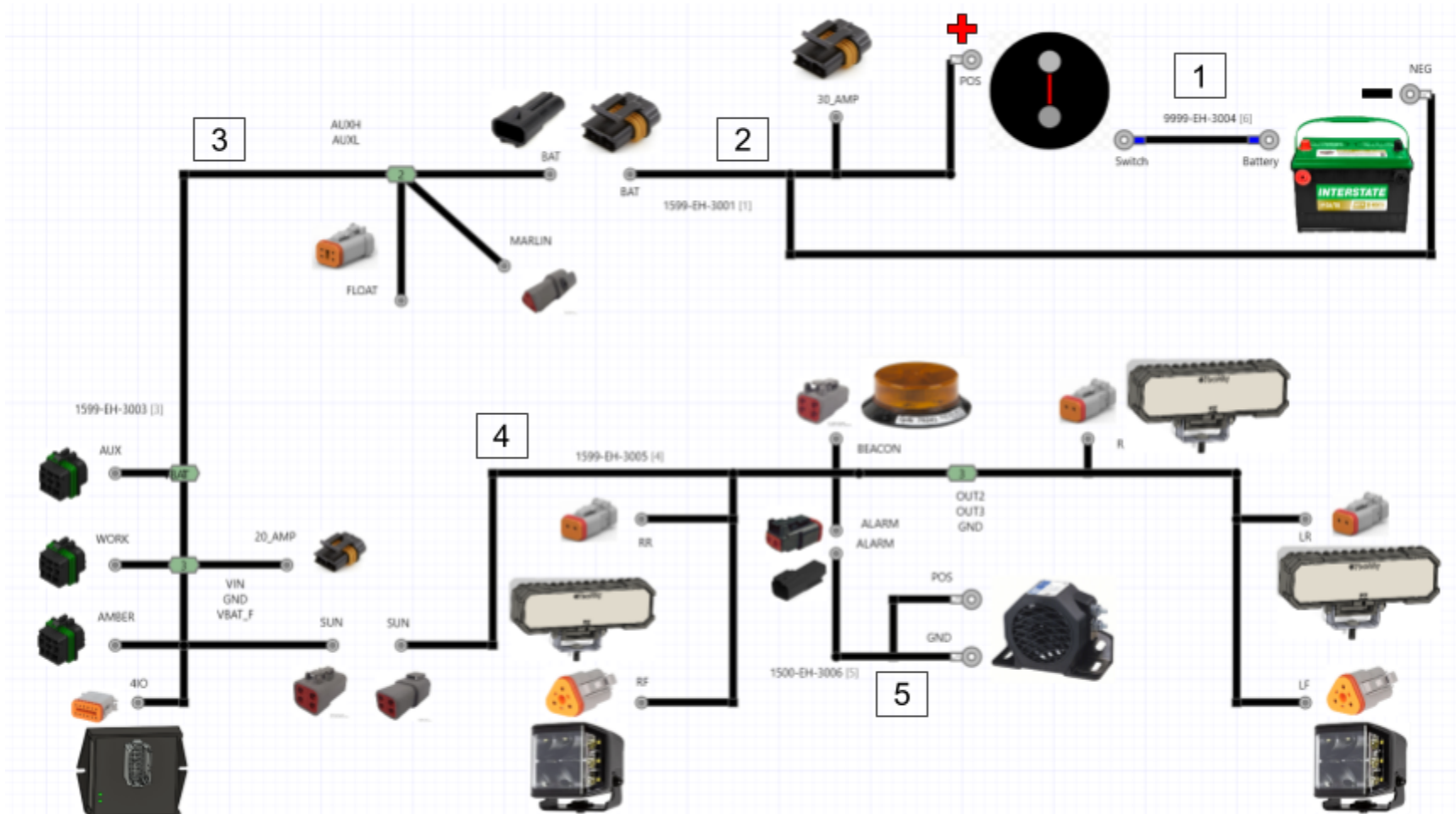
WIRING - JD E/M SERIES CAB DIAGRAM



WIRING - KUBOTA M5 CAB DIAGRAM CONTENTS

ID	Part Number	Description
1	9999-EH-3004	Kubota M8-M8 Battery Jumper Cable
2	1599-EH-3001	Aux Power Harness
3	1599-EH-3003	AVL Marlin Interface Harness
4	1599-EH-3005	CAB Roof Audio/Light Harness
5	1599-EH-3006	Alarm Harness

WIRING - KUBOTA M5 CAB DIAGRAM



ROPS AND OOS TRACTORS

FRONT & SIDE LIGHTS - w/o CANOPY

Items per side:

- Qty 1 Light without flashers
- Qty 1 Light with flashers
- Mounting bracket
- Qty 2 M8-35mm bolts

Installation:

- Unbolt the camera mount from cross bar
- Sandwich the light mount between the cross bar and the camera mount
- Resecure using the provided longer M8-35mm bolts and reuse nyloc nuts
- Mount the light with the flasher on the side to the front of the tractor
- Mount the light without flashers to the rearward side of the mounting bracket facing the side of the vehicle



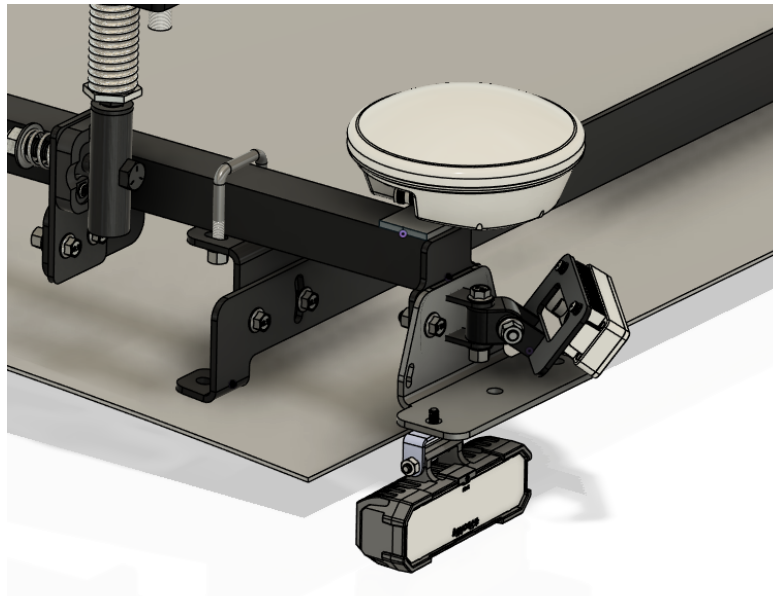
FRONT & SIDE LIGHTS - with CANOPY

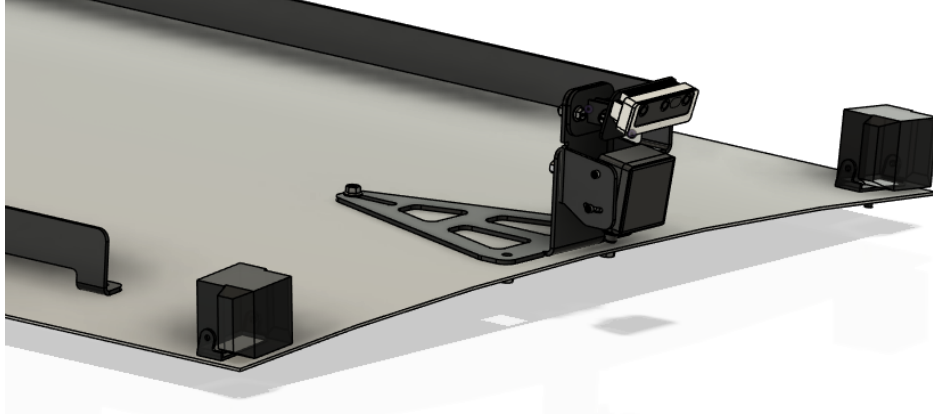
Items per side:

- Qty 1 Light without flashers
- Qty 1 Light with flashers
- Mounting bracket
- Qty 2 M8x35mm bolts

Installation:

- Unbolt the side camera mount from cross bar
- Sandwich the light mount between the cross bar and camera
- Resecure using the provided longer M8-35mm bolts and reuse nyloc nuts
- Mount ONLY the light without flashers to the rearward side of the mounting bracket facing the side of the vehicle
- With canopy installs, you will be required to drill one hole in the front corner of each side of the canopy to bolt front lights with flashers directly to the canopy





REAR LIGHT - ALL ROPS/OOS MODELS

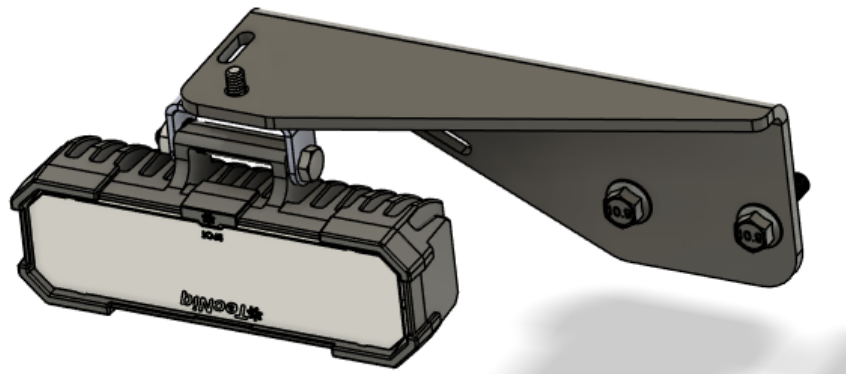
Note: This will be the same for all ROPS/OOS tractors across platforms

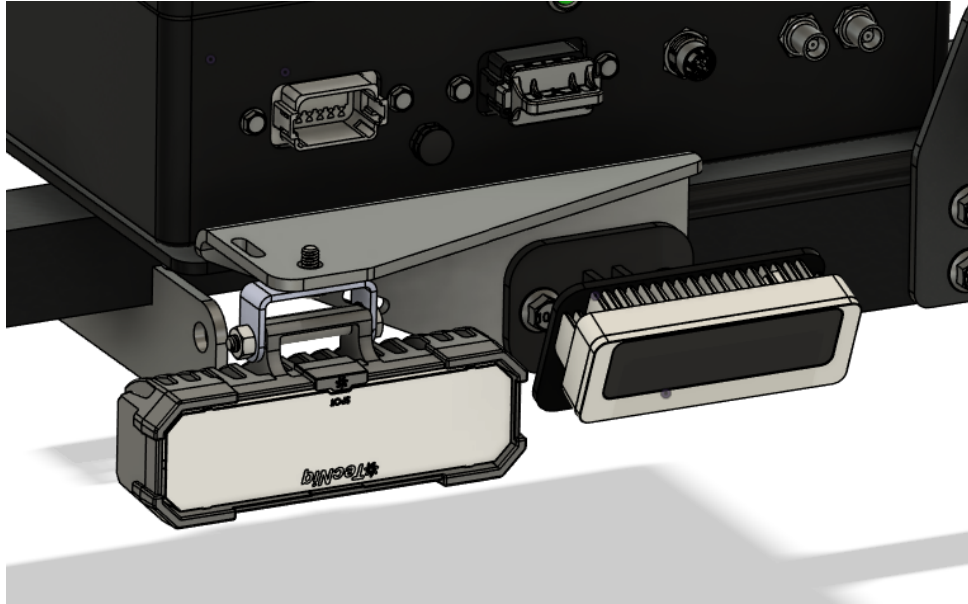
Items per side:

- Light without flashers
- Mount
- Qty 2 M8-35mm bolts

Installation:

- Unbolt the camera mount from cross bar
- Sandwich the light mount between the cross bar and the camera mount
- Resecure using the provided longer M8-35mm bolts and reuse nyloc nuts
- Install the light without flashers using the provided hardware





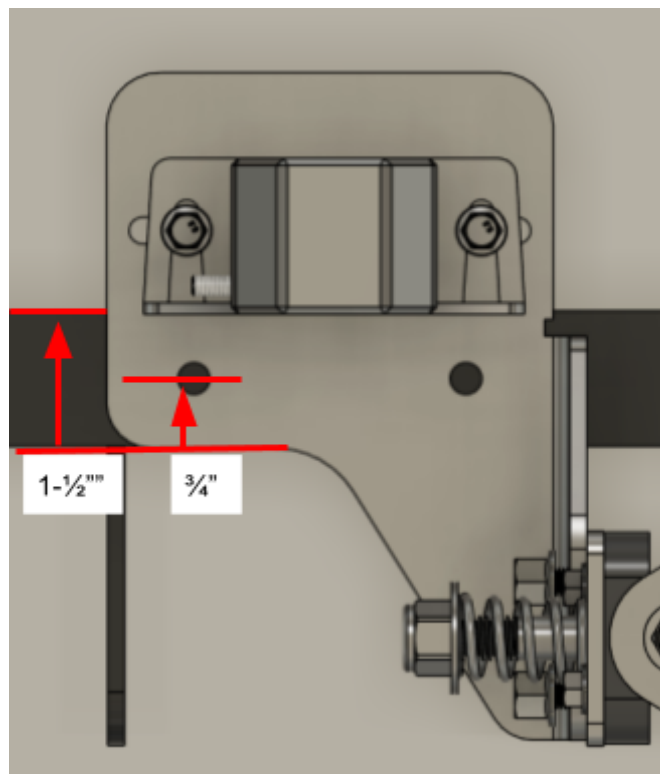
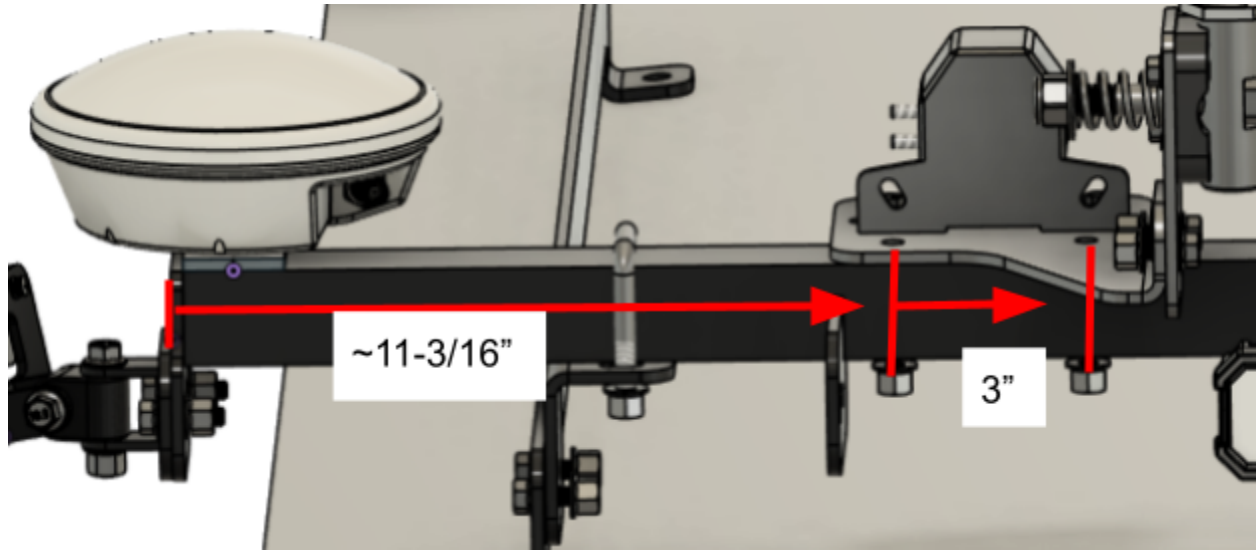
BEACON AND ALARM - ALL ROPS/OOS MODELS

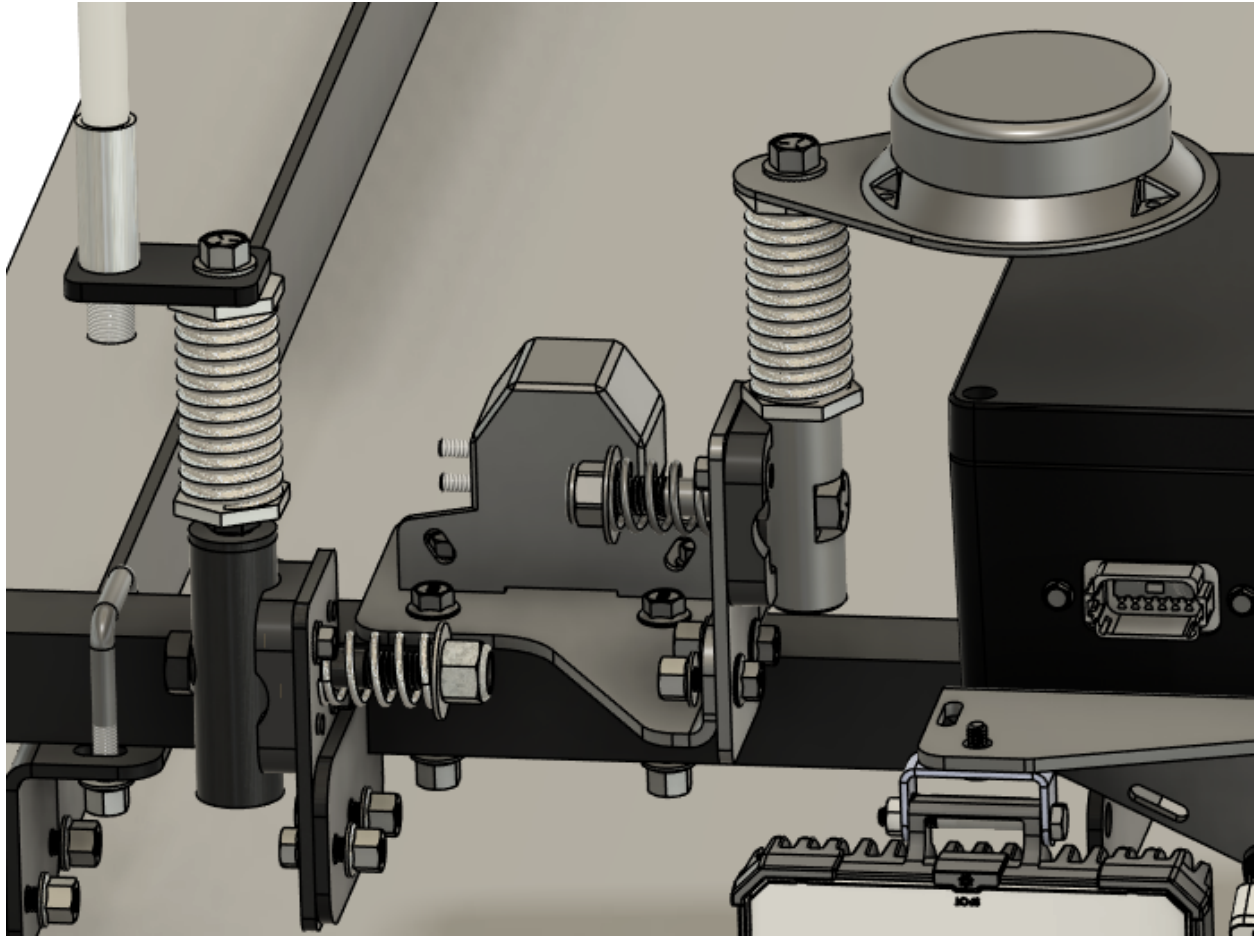
Items:

- Mount with tab
- Breakaway swivel assembly
- Beacon light
- Alarm
- Qty 2 M8 - 60mm bolts
- Qty 2 M8 - 25mm bolts
- Qty 4 M8 nyloc nuts
- Qty 3 M4-14mm screws
- Qty 3 M4 nyloc nuts
- Qty 2 M6-20mm bolts
- Qty 2 M6 nyloc nuts

Installation:

- Drill two $\frac{3}{8}$ " holes in the main rear cross tube on the left side of the vehicle
- Place the bracket with tab on top of bar and secure with M8-60mm bolts
- Attach break away assembly with beacon light
- Attach alarm





AVL CONTROLLER - ALL JOHN DEERE 5090E,5100E, & 5M OOS

Items:

- Mounting plate
- AVL Controller
- Qty 2 M4-14mm screws
- Qty 2 M4 washers
- Qty 4 M6-20mm bolts
- Qty 4 M6 nyloc nuts
- Qty 3 M6-10mm bolts
- Qty 3 M6 flat washers

Installation:

- Locate the 6 through holes on the vPFM plate located between the ROPS
- Secure the Mounting plate on the vPFM plate facing the drivers seat using the M6 - 20mm bolts and nuts
- Attach the AVL controller using M4 screws
- Insert the M6 bolts as they will be used later while installing the harness



AVL CONTROLLER - ALL JOHN DEERE 5075E OOS

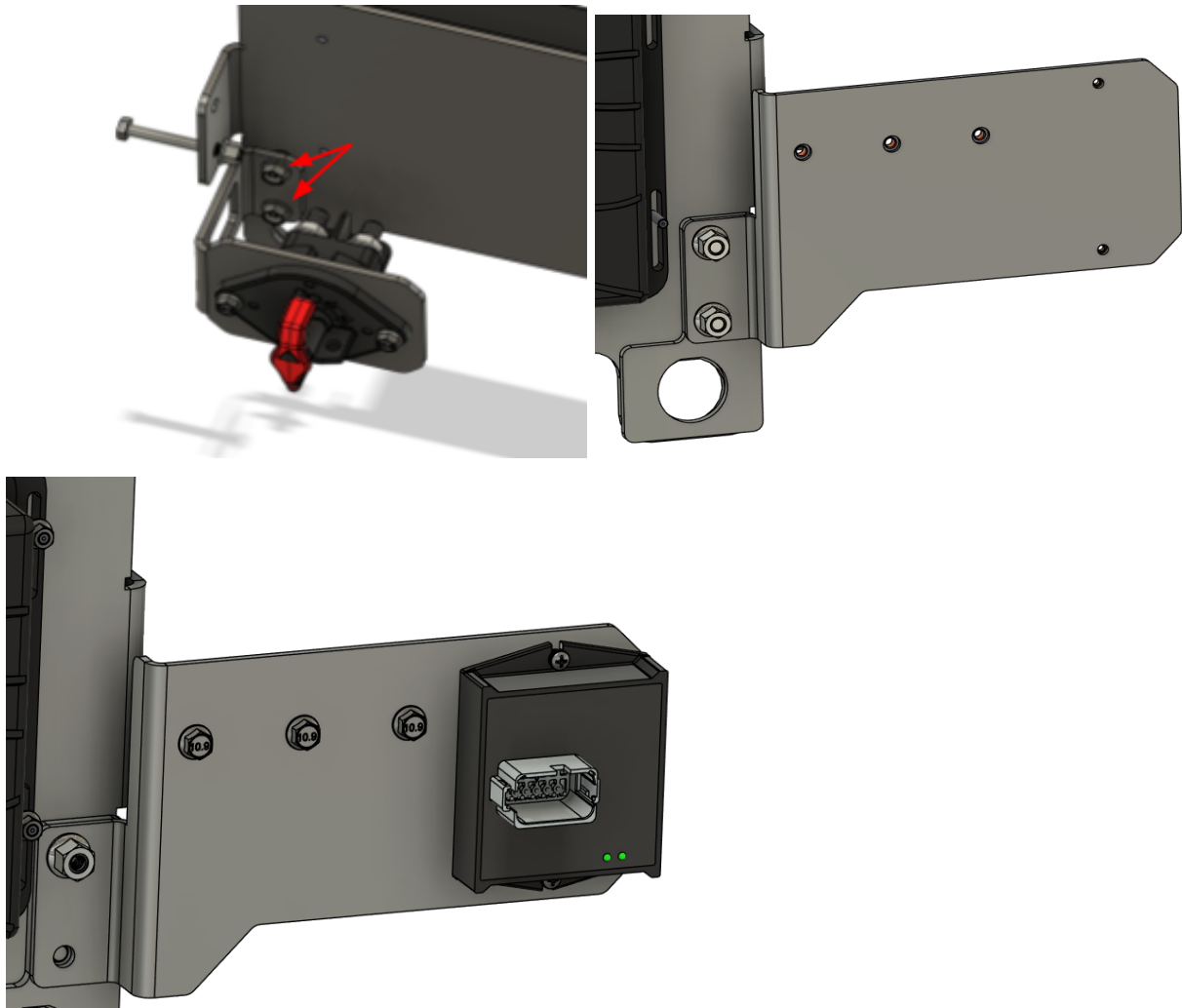
Items:

- Mounting plate
- AVL controller
- Qty 2 M4-18mm screws 9999-HA-1292
- Qty 2 M4 washers 9999-HA-1013
- Qty 3 M6-10mm bolts
- Qty 2 M8-35mm bolts
- Qty 2 M8 nyloc nuts

Installation:

- Locate the two M8 bolts attaching the battery disconnect bracket
- Remove the shorter bolts and replace with the longer 35mm bolts
- Mount the Mounting plate on the back side of the vPFM plate facing the rear of the vehicle using the same M8 bolts holding the battery disconnect on the front side of the vPFM plate

- Secure with M8 nyloc nuts
- Mount the controller with the M4 bolts
- Insert the M6 bolts in the open 3 holes as these will be used when installing the harness



AVL CONTROLLER - KUBOTA ROPS

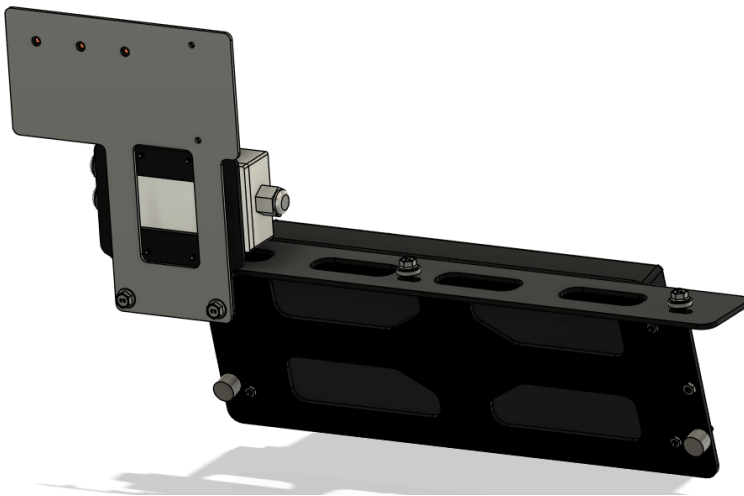
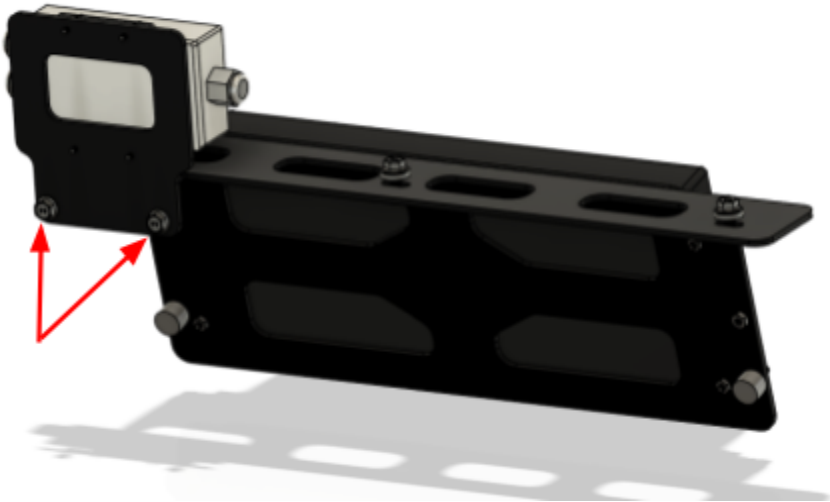
Items:

- Mounting plate
- AVL controller
- Qty 2 M4-10mm screws
- Qty 3 M6-20mm bolts
- Qty 2 M8-30MM bolts

Installation:

- Locate the two bolts used to mount the vPFM and POE splitter at the base of the ROPS on the left hand side of tractor
- Remove the bolts

- Attach the AVL controller bracket and use the longer provided bolts
- Mount the AVL controller on the bracket using the M4-14 bolts
- Insert the M6-20 bolts as these will be used when installing the harness



BATTERY DISCONNECT- ALL JOHN DEERE 5E/5M/6E OOS MODELS

Note: If the Sabanto kit was purchased in 2026 or later, the 4 pole disconnect will be standard so you can skip this step of swapping out the older 2 pole disconnect.. Not requiring and swapping with the older 2 pole disconnect.

Items:

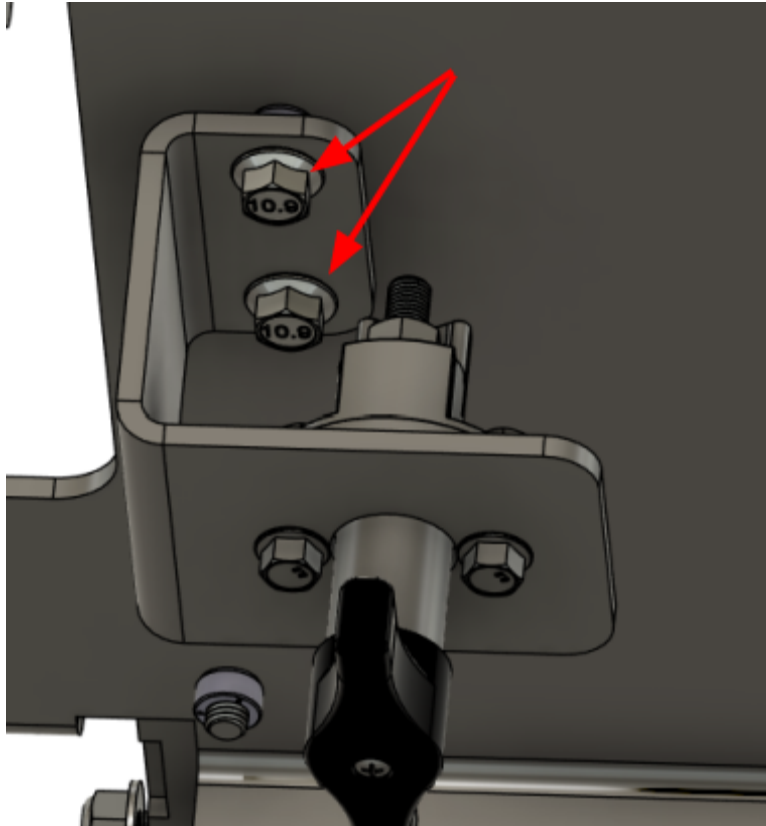
- 4-Pole Battery Disconnect
- Mounting Bracket
- Bolts/Hardware
 - M8x30mm
 - M8 nyloc nuts
- Ring terminals-6AWG M12 Stud

Installation:

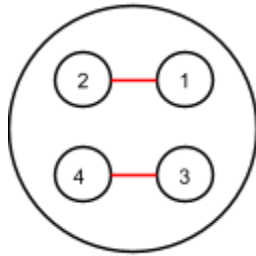
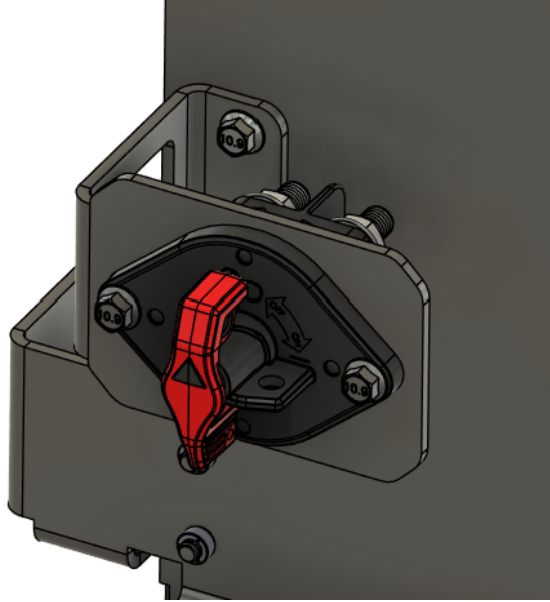
- Under the hood, locate the main power/ground harness connected to the battery
- On the harness, find the large fuse holder, open the cap and remove the 30A fuse
- Locate the existing 2-pole battery disconnect on the front side of the vPFM mounting plate that sits between the ROPS bars
- Remove the battery cables from the back side of the 2-pole disconnect
- Remove the 2-pole battery disconnect by the two M6 nuts on the back tab of the mounting bracket
- Remove the ring terminals on the cables that were connected to the disconnect
- Cut off current ring terminals and crimp on larger sized terminals that are provided
- Attach cables to new larger 4-pole disconnect
- Attach the mounting bracket to the vPFM plate

Old 2-Pole disconnect





New 4-pole disconnect



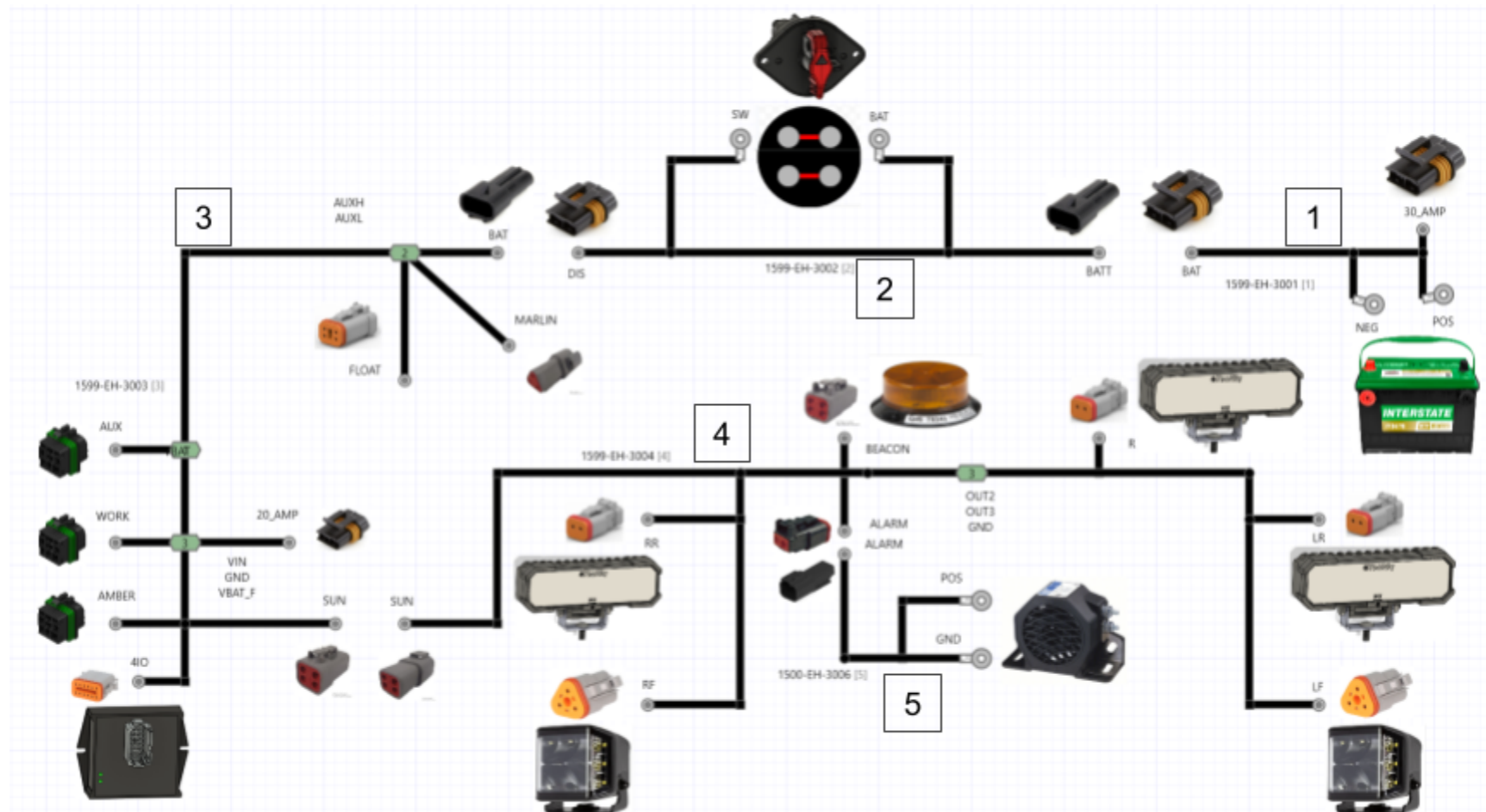
Alarm +/- post location



WIRING - JD OOS DIAGRAM CONTENTS

ID	Part Number	Description
1	1599-EH-3001	Aux Power Harness
2	1599-EH-3002	DPST Disconnect Harness
3	1599-EH-3003	AVL Marlin Interface Harness
4	1599-EH-3004	ROPs Roof Audio/Light Harness
5	1599-EH-3006	Alarm Harness

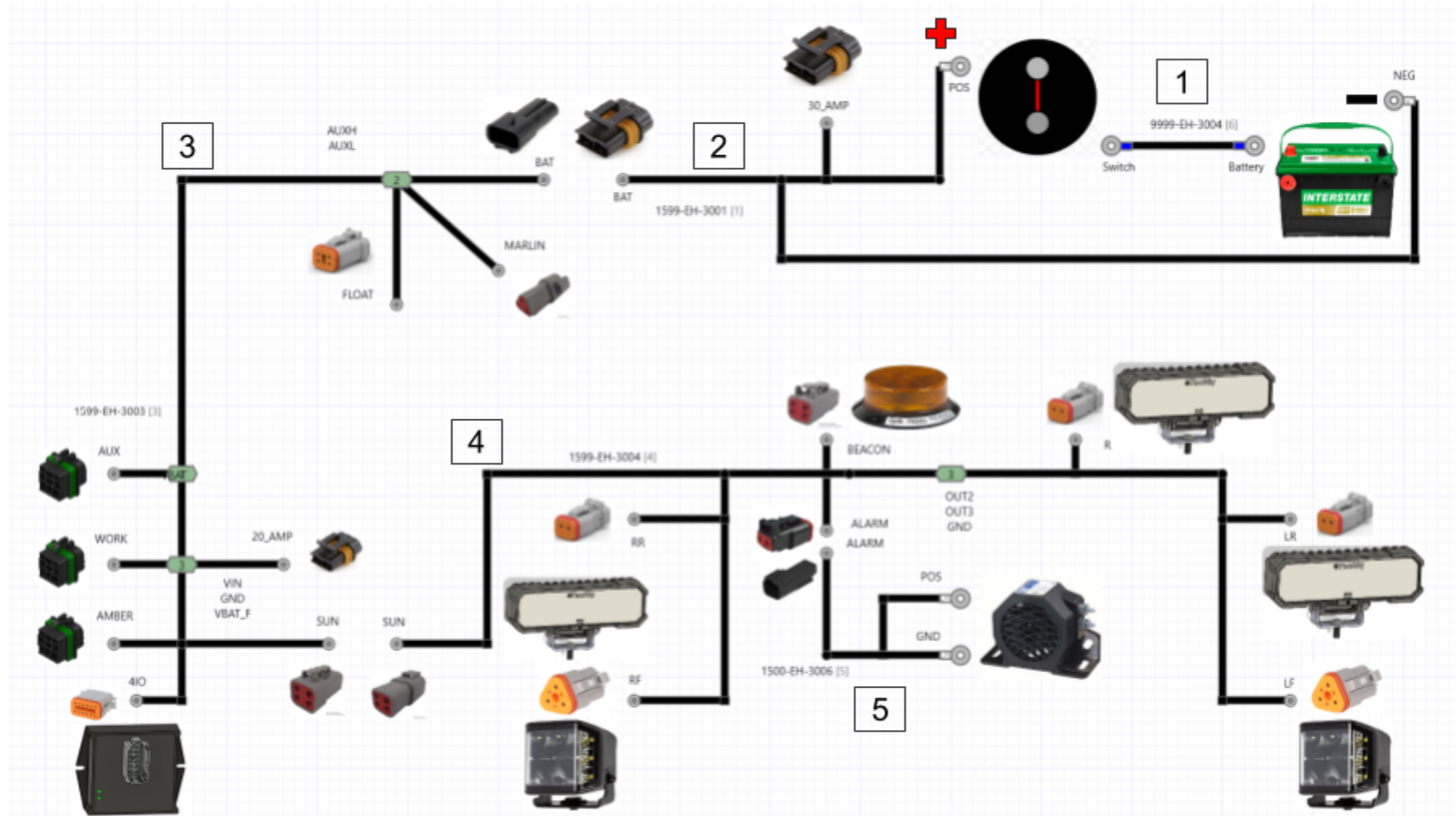
WIRING - JD OOS DIAGRAM



WIRING - KUBOTA ROPS DIAGRAM CONTENTS

ID	Part Number	Description
1	9999-EH-3004	Kubota M8-M8 Battery Jumper Cable
2	1599-EH-3001	Aux Power Harness
3	1599-EH-3003	AVL Marlin Interface Harness
4	1599-EH-3004	ROPs Roof Audio/Light Harness
5	1599-EH-3006	Alarm Harness

WIRING - KUBOTA ROPS DIAGRAM



RETRO-FIT HARNESS

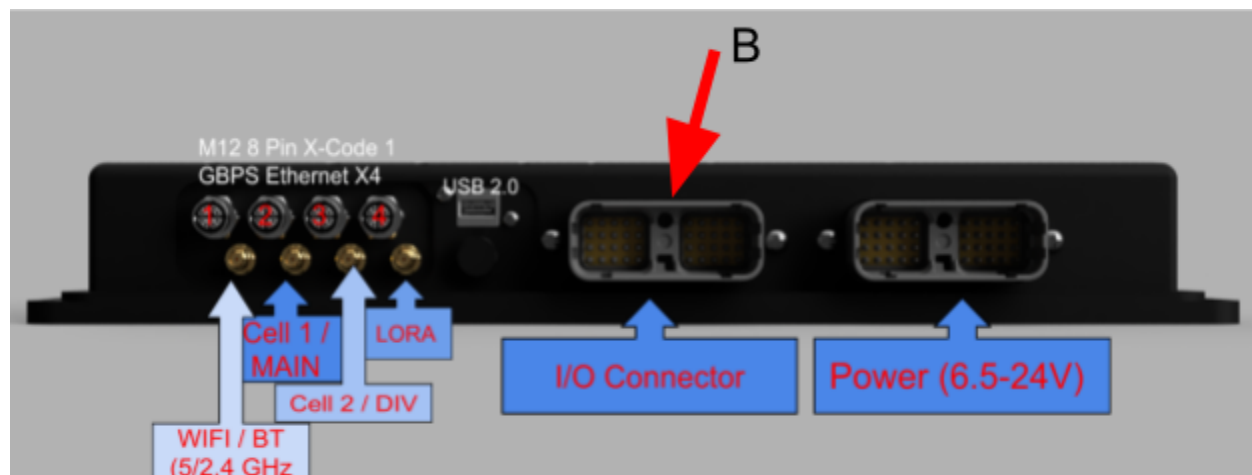
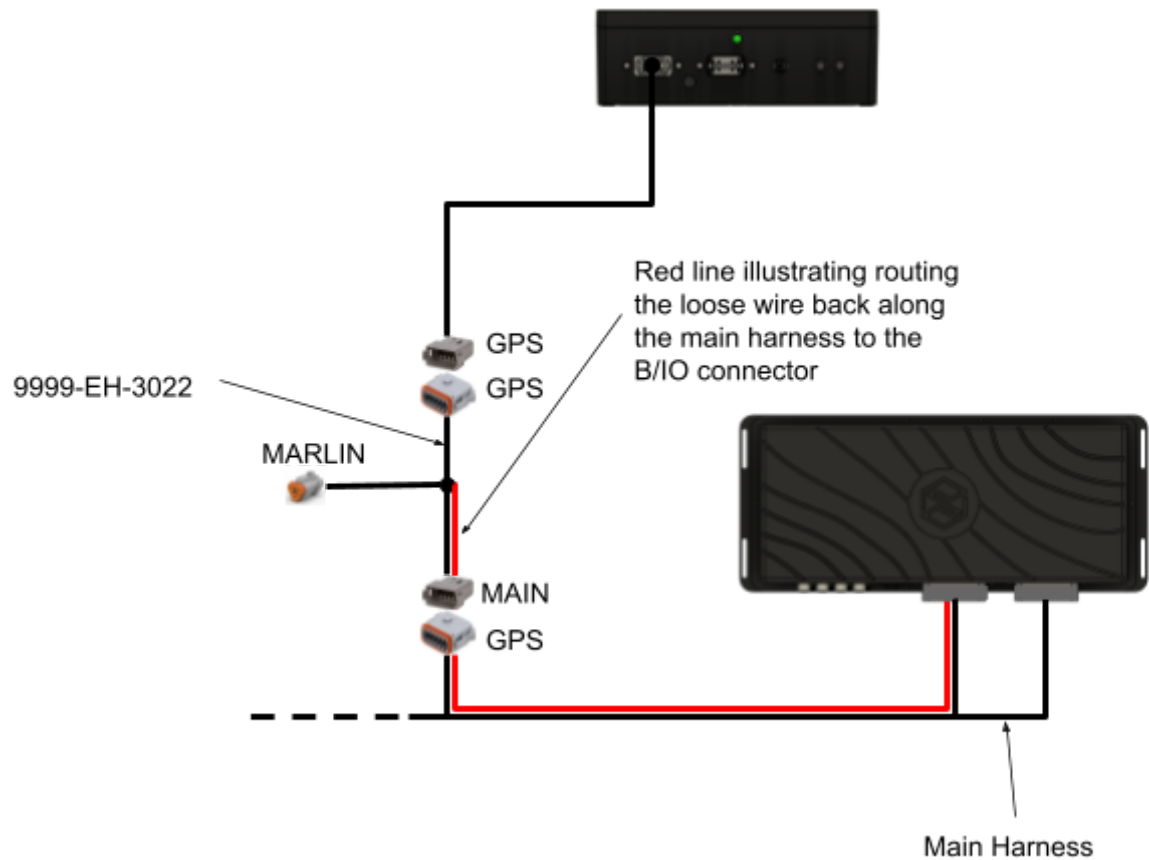
- All instructions above remain the same for the given tractor platform
- One extra step is necessary if you are adding the AV&L kit to an older autonomy kit that did not come with it initially
- It is required to install one additional wiring harness for the system to control the AV&L kit to the autonomy system
- **THE RETRO-FIT HARNESS IS REQUIRED IF**
 - The main vehicle harness is one of the revisions, listed in the table below.
 - The connector labeled “MARLIN” is not present on the main vehicle harness; (look for it near the GPS connector)
 - You cannot find the revision label on your main harness AND have located the “MARLIN” connector
 - If the wire color routed into cavity C of the MARLIN connector is PURPLE, you **MUST ADD** the retro harness
 - If the wire color routed into cavity C of the MARLIN connector is GREY, you **DO NOT need** to add the retro harness
- Additional harness PN: 9999-EH-3022
- Installation instructions:
 - **TURN THE MAIN BATTERY DISCONNECT SWITCH TO OFF**
 - Locate the GPS connector coming off of the main harness
 - Insert 9999-EH-3022 between the existing GPS and MAIN harness
 - The 9999-EH-3022 has a single wire branch, with a DTM socket contact crimped on the end of it.
 - Route this single wire along the main harness bundle, to the 40-cavity (B) connector for the vPFM. The 40-cavity, B-connector is closest to the PFM device’s ethernet and SMA connectors.
 - Disconnect the 40-cavity (B) connector from the PFM
 - Insert the socket contact, on the end of the single wire, into cavity 20 of the 40-cavity (B) connector.
 - Make sure the pin is fully seated
 - Gently pull on the wire to make sure it remains in the connector

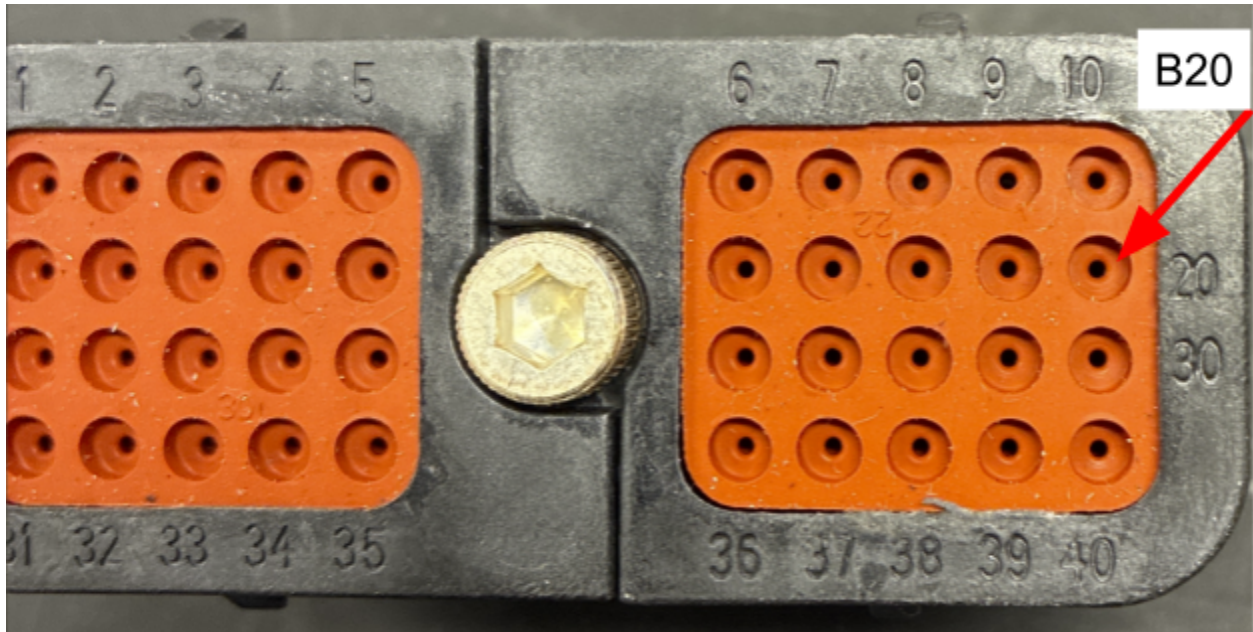
- Connect the “MARLIN” connector from 1599-EH-3003 to this additional connector from 9999-EH-3022

Machine Harness Revision Table

Tractor Model	MAIN VEHICLE Harness - PN	Revision of MAIN VEHICLE when Retro Harness IS required
Kubota M5-091/M5-111 ROPS	0102-EH-3001	A-E
Kubota M5-091/M5-111 Cab	0103-EH-3001	A-E
John Deere 5090E/5100E Cab	0801-EH-3001	A-F
John Deere 5090E/5100E ROPS	0802-EH-3001	A-B
John Deere 5075E Cab	0803-EH-3001	A
John Deere 5075E ROPS	0804-EH-3001	A-B
John Deere 5000M Cab	0805-EH-3001	A-B
John Deere 6000E Cab	0806-EH-3001	A-B
John Deere 5000M ROPS	0807-EH-3001	A-C

Retro Harness Install Diagram

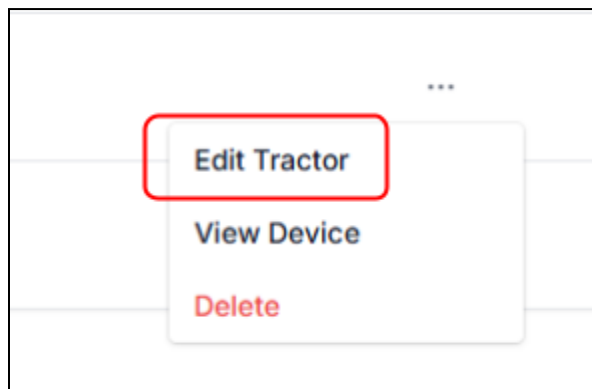




CONNECTING THE AVL KIT TO AUTONOMY SYSTEM

- Connecting the AVL hardware
 - Locate the female “MARLIN” connector off the 1599-EH-3003 harness
 - Locate the male “MARLIN” connector coming off the main harness
 - If you are retrofitting the AVL system to your existing autonomy system OR you cannot locate the “MARLIN” connector on your main harness, please see the “RETRO FIT HARNESS” section of this document
 - Connect the male and female “MARLIN” connectors
- Now the AVL kit must be connected via software through vMC
 - The **minimum** software version required for AVL operation is vOS 1.20
 - SW version can be found on the device page
 - Perform an update if needed
 - In vMC locate the vehicle in the “Vehicles” or “Equipment” page
 - Tap the three dots to select “Edit Tractor”
 - Under the “Components” tab select “+Add Components”
 - Under Type, select “AVL Kit”
 - Hit the “ADD” button
 - Hit the “SAVE” button at the bottom right hand corner of the screen
 - Navigate to another page then come back to the components page and verify the AVL component was added

Equipment						
Search				Type: All	Status: All	New Equipment
NAME/TYPE	MAKE/MODEL	ATTACHED TO	JOB	STATUS		
3 Gang Roller Roller	Homemade Norm Homemade Norm	-	-	Offline	...	>
Brillon Grass Dry	Brillon Sip	-	-	Offline	...	>
New Dry Spreader Granular Applicator	River Valley Red Frame	-	-	Offline	...	>
Old Dry Spreader Granular Applicator	River Valley River Valley	-	-	Offline	...	>
Pegasus Mower	Trinax S4	-	-	Offline	...	>
Sod Dawg Tractor	John Deere G1554	Vulcan	Mowing	Online	...	>
Vulcan Mower	Trinax Vulcan	Sod Dawg	-	Offline	...	>



Sod Dawg

Edit Tractor

Information

Components

Nickname*
Use a friendly name when referring to this tractor.

Make / Model*
Where this tractor comes from.

Serial Number*
The serial number of the tractor.

Protective Structure*
The tractor's protective structure.

Edit Tractor

Information

Components

Infrared Sensors

Sensor IFM Q3M

Radar

IFM R20000

+ Add Component

Add Component

Please select the type below

You will be adding a component to **Sod Dawg's** configuration.

Type

Select an option

Radars

Cameras

Avl Kit

Remote Valves

Infrared Sensors

Add Component

Please select the type below

You will be adding a component to **Sod Dawg's** configuration.

Type

Avl Kit

Model

Sabanto V2

Add

Edit Tractor

InformationComponents

Infrared Sensors

Sensor IFM O3M

Radars

IFM R20200

Avl Kit

Sabanto V2

+ Add Component

PreviousSave