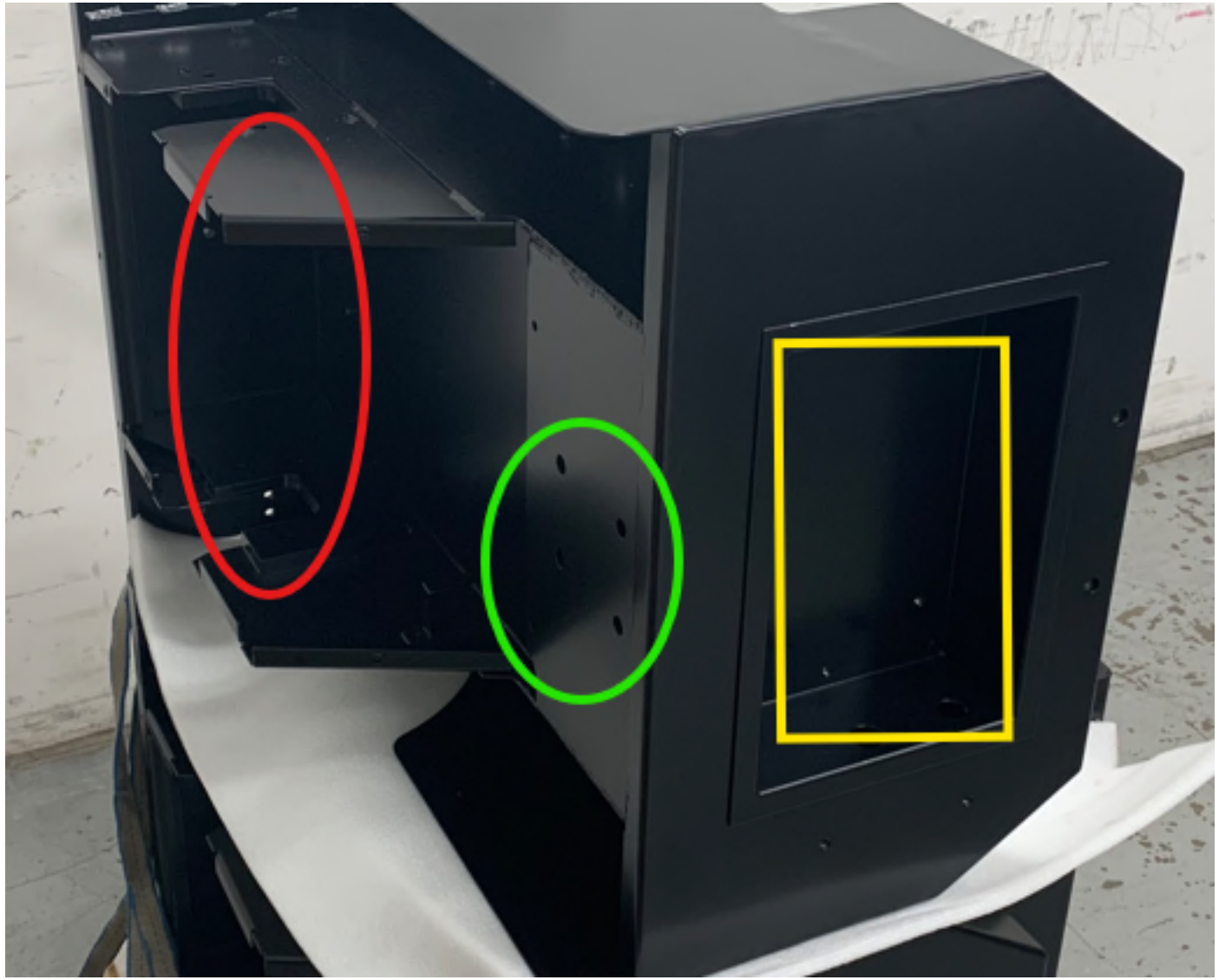
GATEKEEPER SYSTEMS

CartManager

Basics

CartManager

Frame

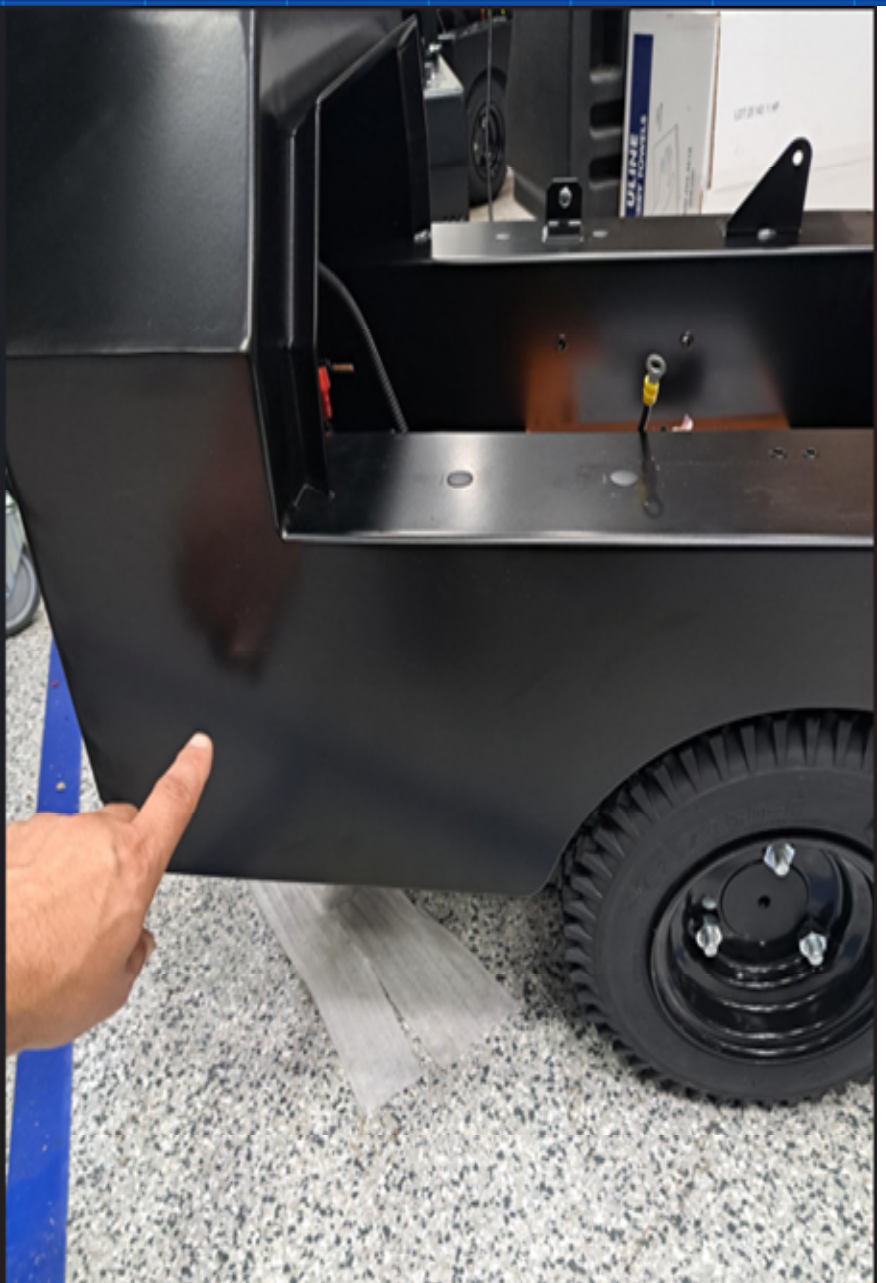


- This is a base frame weldment before anything is placed inside.
- For orientation purposes.
- The red circle is where the transaxle will go.
- The yellow square is where the charger will go.
- The green circle is where the swivel caster will go.

Push Button

- This is also referred to as the association button.
- This is what pairs the remote to the digital throttle.
- This is located near the charger AC cord plugin on the charger.
- The nut holding the push button in place is a 7/8.

Horn



- Horn bracket is located inside the frame.
- This will be between the transaxle housing and outer frame.
- The wire pairing and connecter placement does not matter.
- The bolt head is a 7/16.

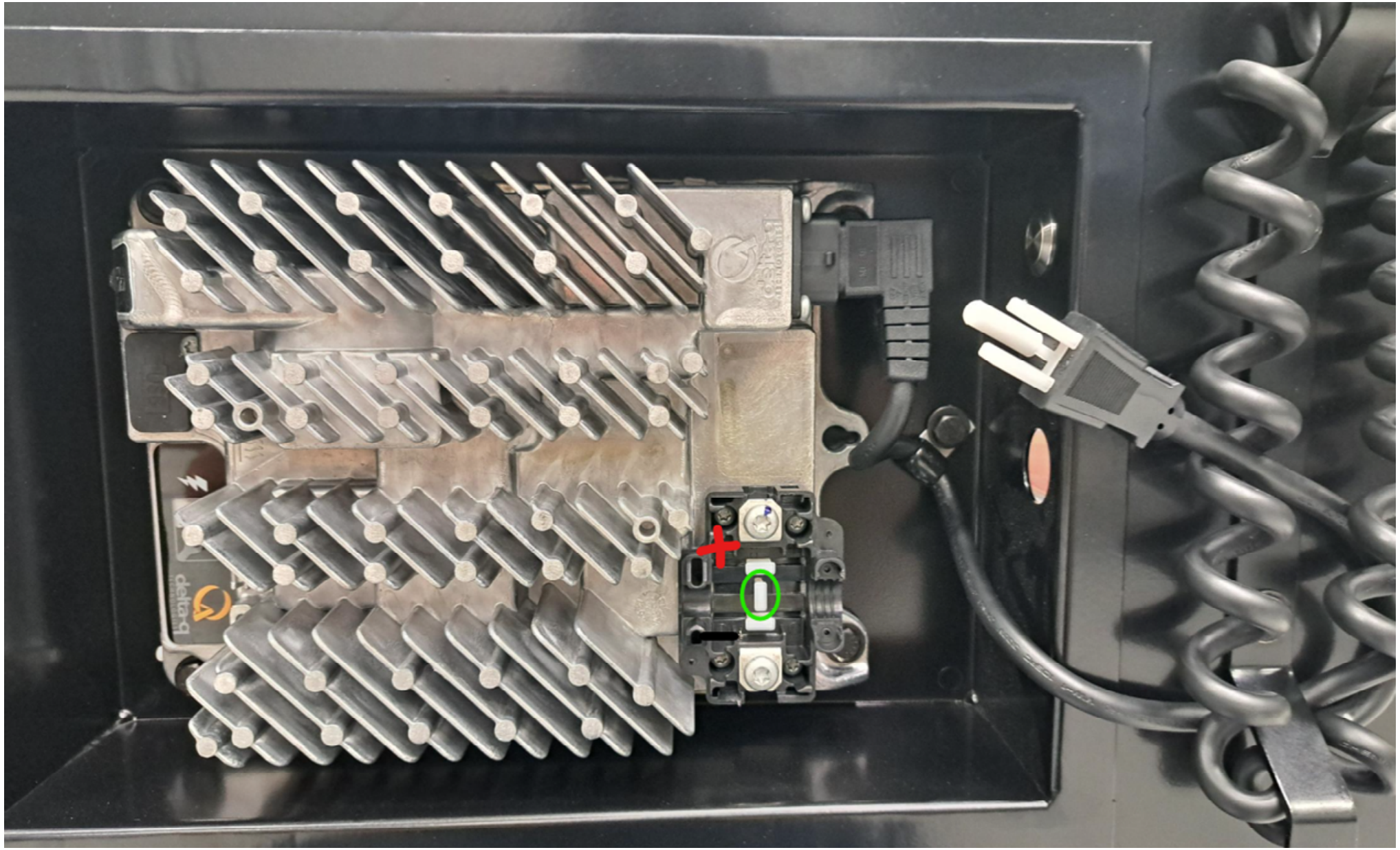
Charger

This is placed in the rear of the machine below the handle assembly.

The 2 battery leads go with positive on top and negative on bottom with the power wire on the vertical tab (green circle) in center.

Star tools are needed for these cables and the cover box.

The bolts that hold the charger in place and the power cord bracket are 7/16.



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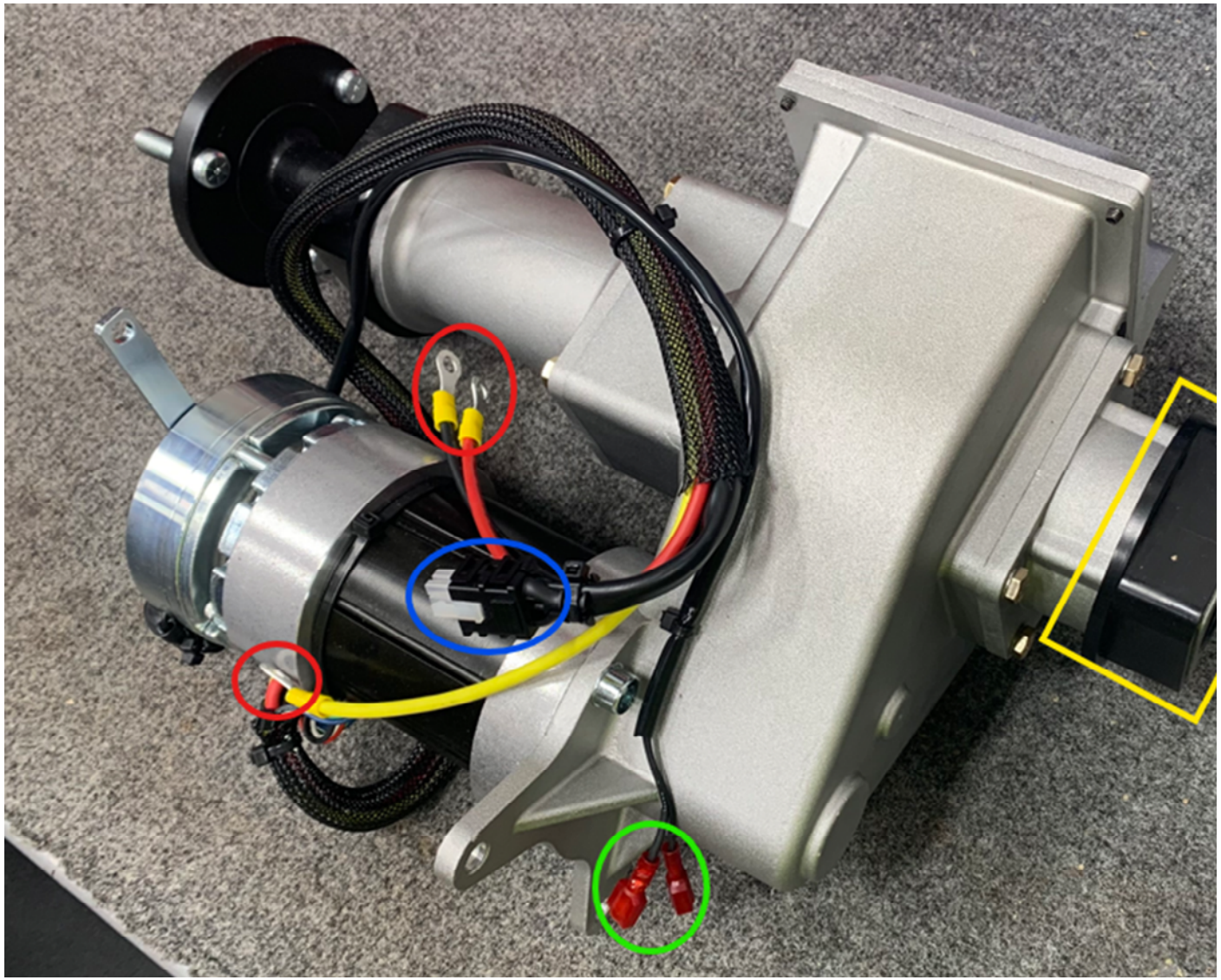
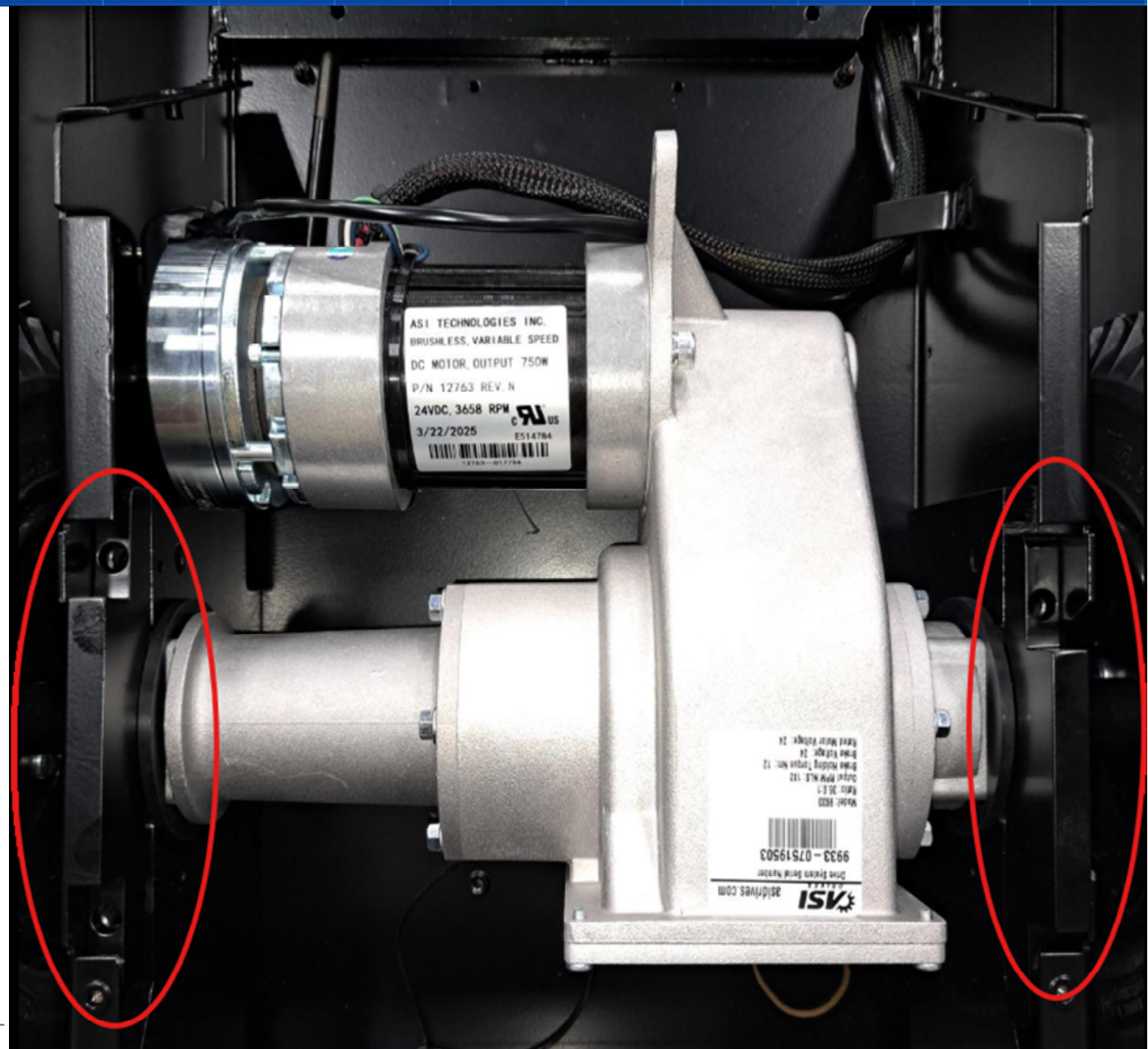
Transaxle



- This is the 24V Transaxle for the Ultra CM.
- The red circles indicate the 3 motor wire leads.
- The blue circle indicates the J1 plug.
- The green circles indicate the 2 brake wire leads.
- The yellow square indicates the rubber gaskets. This is where the motor mounts will be installed on both sides inside of frame assembly.

Moter mount support & Wire location

- The red circles are the motor mounts.
- They are secured with 4 bolts with medium Loctite.
- These bolts are a 3/16 allen. Best to use a 3/16 allen socket.
- Drive 1st bolt halfway then the 2nd bolt halfway then finish 1st then 2nd this will prevent cross threading. Do the same in reverse to remove the bolts.
- Wires should look like picture.



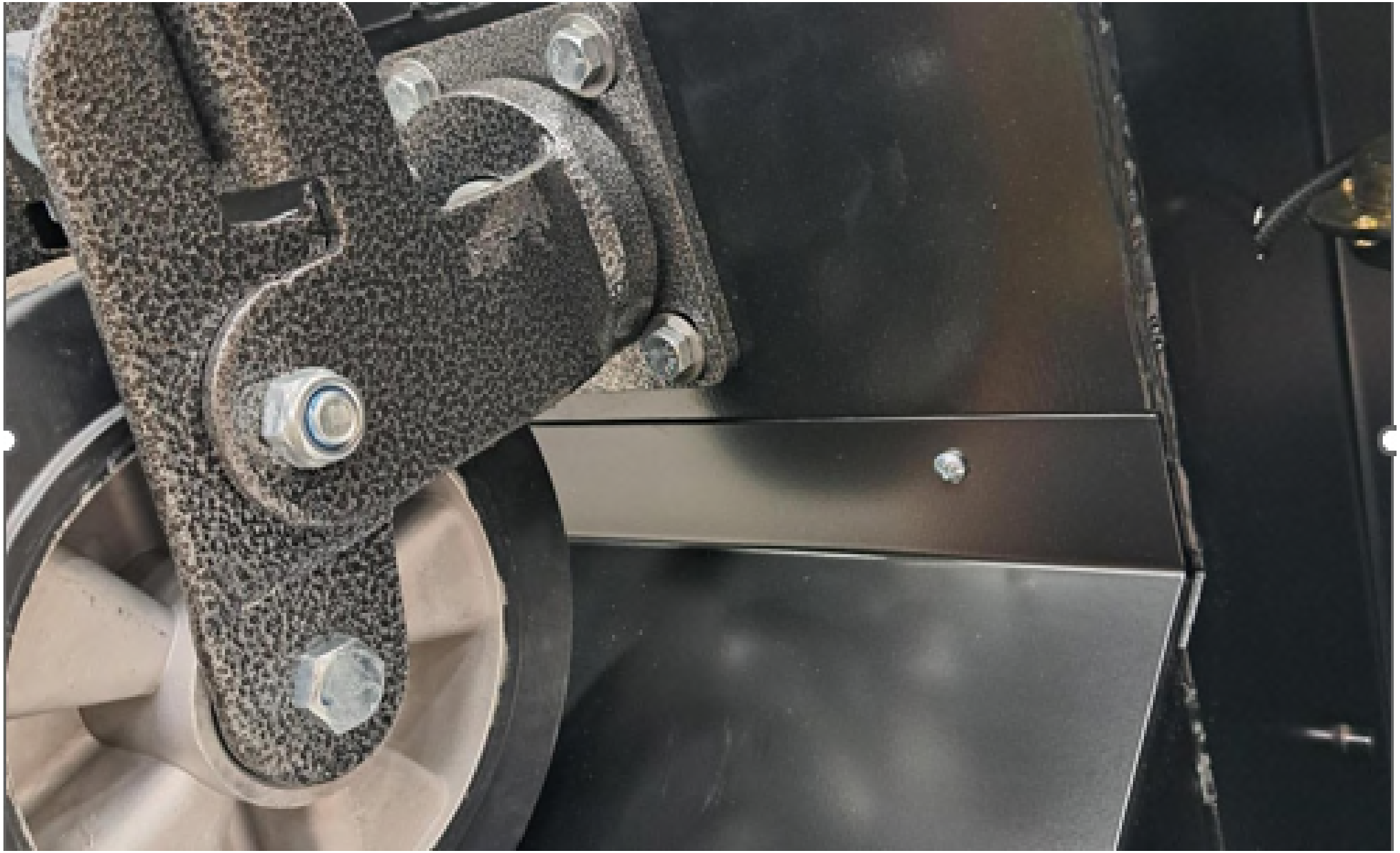
Tires

- Standard tires go on with no orientation.
- Ag tires go on with tread pointing to the charger.
- The lug nuts size is 3/4 .

Caster

The swivel caster is under the machine in the rear.

These bolt heads are 14mm.



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Skid plate & Ball knob

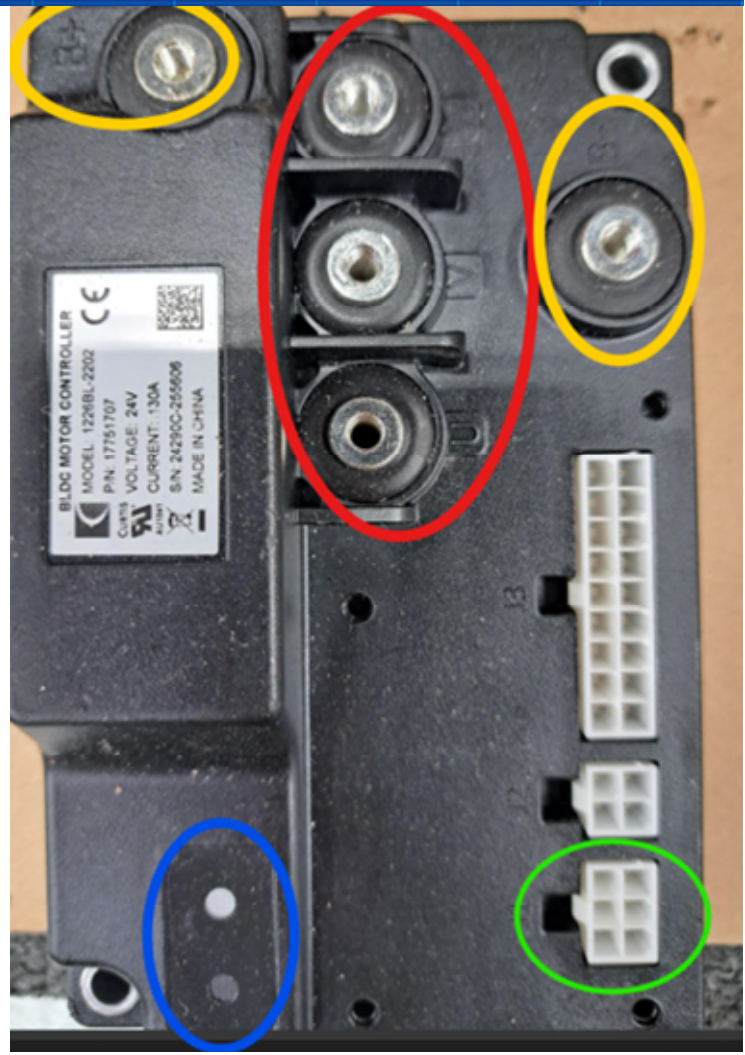
- The skid plate is located under the machine to protect the transaxle.
- The skid plate is held in place by 9 phillips head screws.
- The red circle is the ball knob.
- The ball knob is seated and secured by a 1/2 nut.

Electric panel cover

- The panel cover is behind the battery's and has the error code sheet outside and on the inside the wiring diagram.
- Behind the panel is the electronic panel with the fuses and motor controller.
- The panel also covers the access hole for the motor brake and motor leads.
- This is held down with 2 phillip screws.
- You will want a long screwdriver or extension bit for drill.

Motor controller

- The red circle is for the motor leads, and they are labeled W (black), V (yellow), U (red).
- The green circle is for the J1 plug.
- The yellow circles are for the battery leads and are labeled as B+ and B-.
- The blue circle will have a flashing yellow light when there is no external errors.
- If there is an external error the error code can be read off of this and it is easier than reading digital throttle.
- The lead wire bolts are 5/16.
- The motor controller held to panel with phillip screws in the top right and bottom left corner.



Fuse blocks & Fuses

- There are 2 fuse blocks on the panel.
- The 80amp fuse holder and fuse.
- The 2amp fuse block and fuses.
- It is best to view the 2amp fuses as 1234 like in the picture.

Motor brake wiring

The red circle is where the brake wires are located.

The 2 motor brake lead wires connect to the main harness as shown by the green circle.

The wire pairing does not matter.

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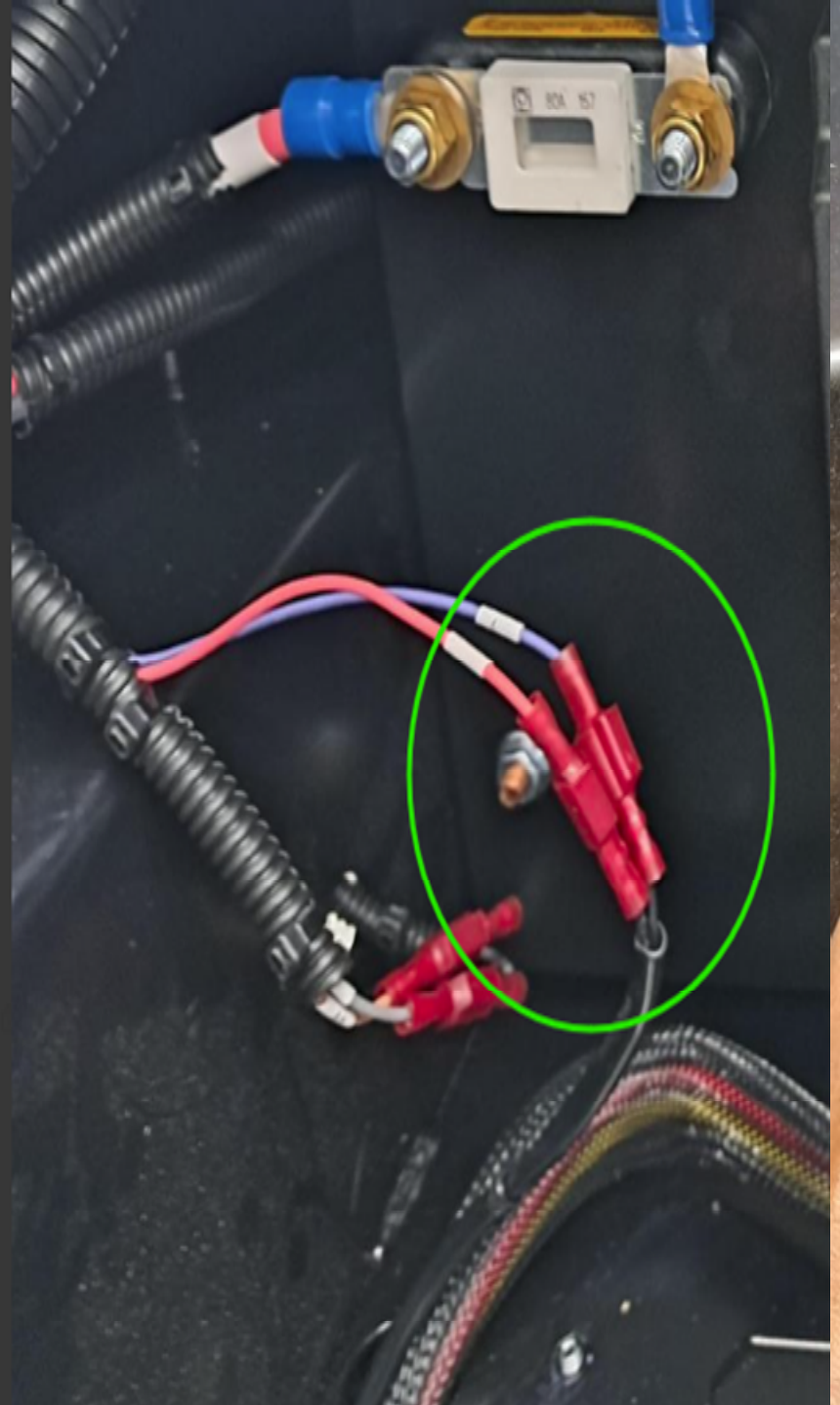
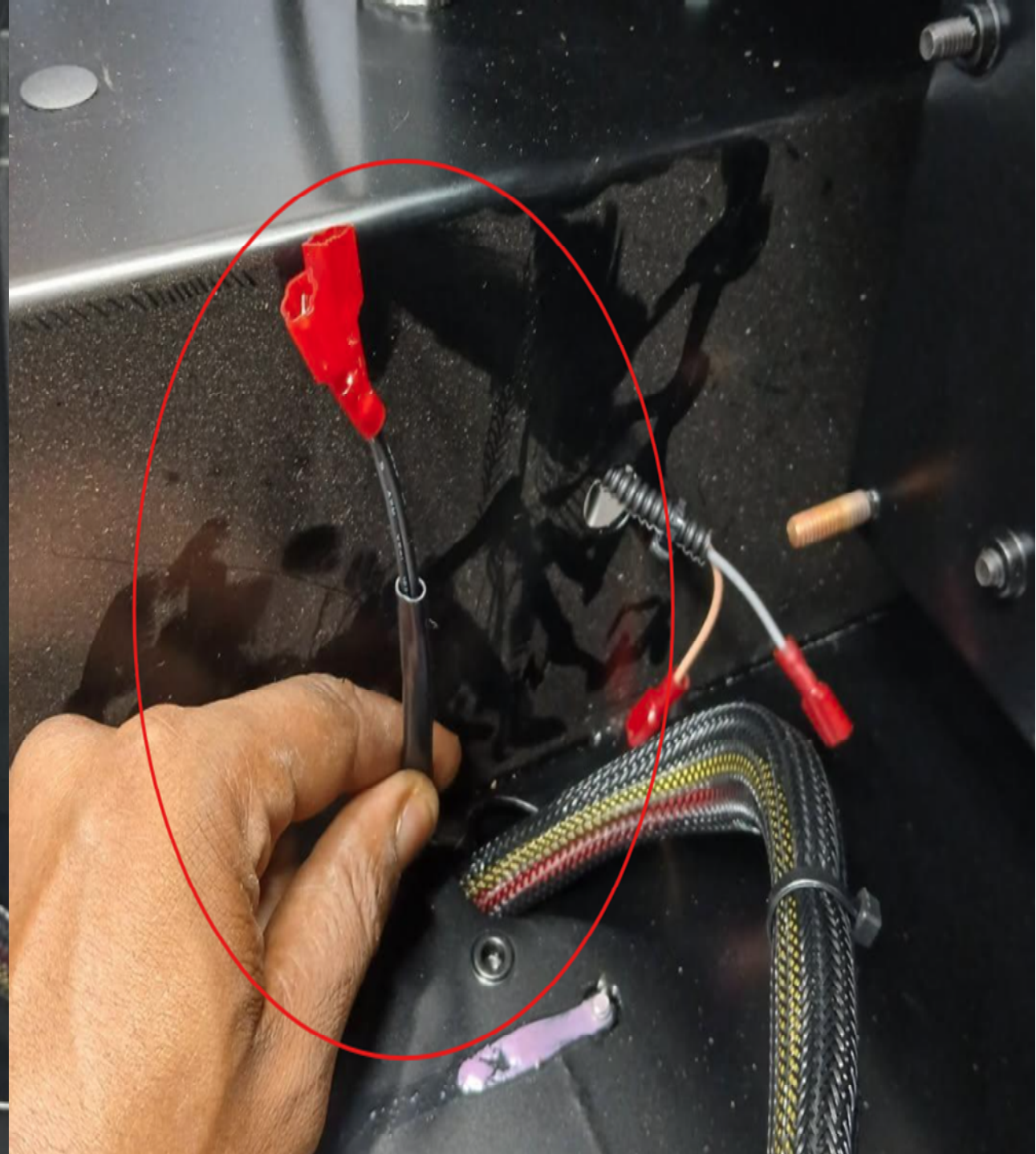




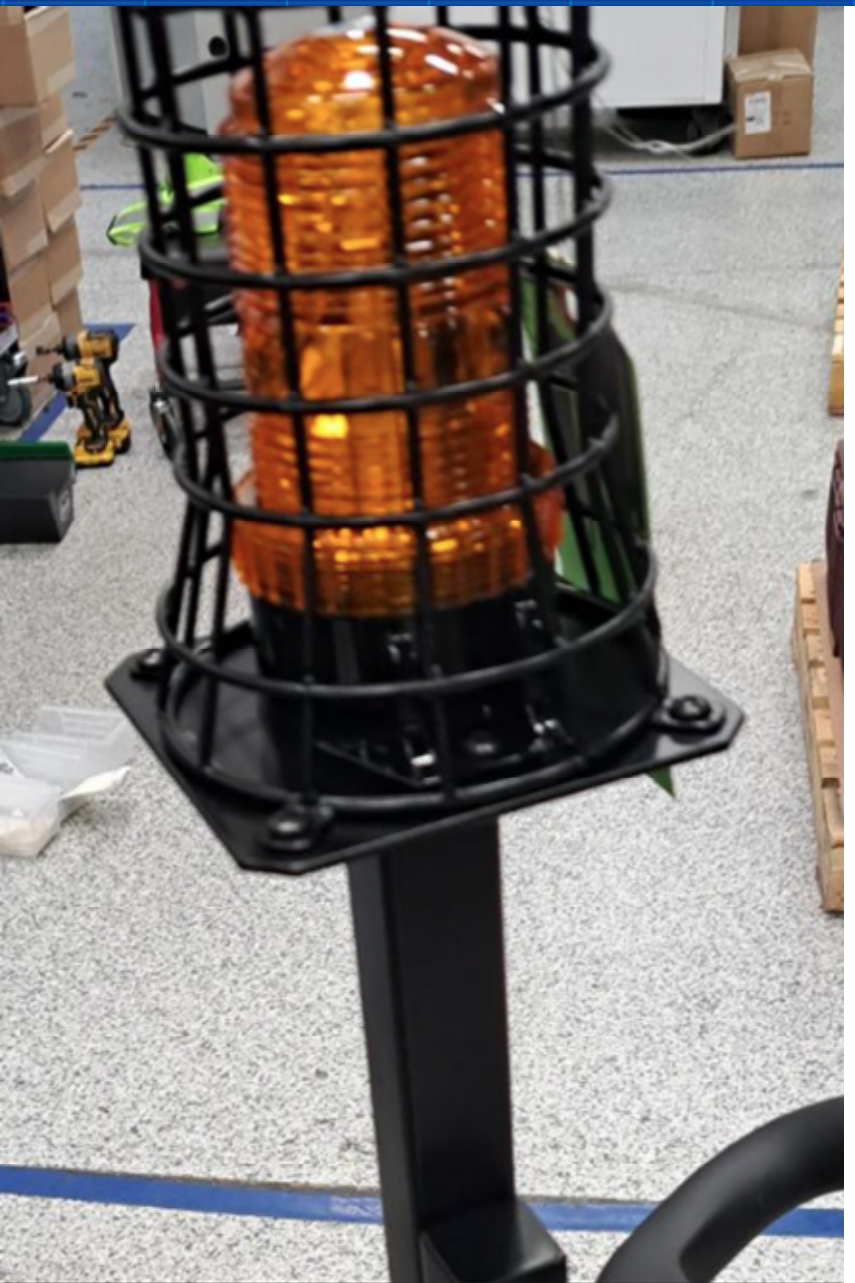
Neck assembly

- Neck assembly has the digital throttle, strobe light, top throttle assembly, and the neck harness.
- The main harness and neck harness is connected by a twist locking molex connector.
- The neck is mounted with 4 bolts that are 14mm.

Neck cover front plate & Digital throttle

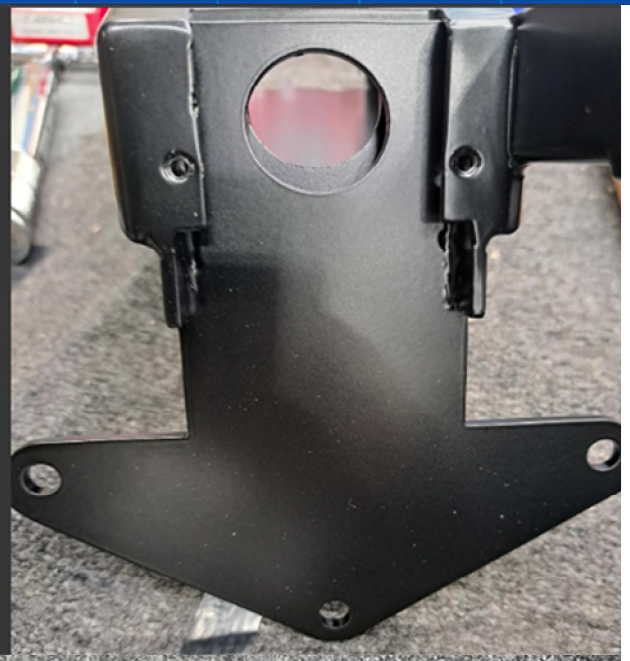
- This plate covers the harness and is where the digital throttle is attached.
- The digital throttle has 2 multi pin plugs from the harness to plug in. Then is mounted to the front plate with 4 phillip screws.
- The front plate is mounted with 4 phillip screws on the front and 2 phillip screws on the top by the light pole.

Light pole, Strobe light & Light guard



- The light pole is inserted into the neck assembly and attached by 2 bellivile washer’s and a 1 1/8 nut.
- The light guard is attached around the strobe light with 4 Phillip screws.
- The Strobe light is held on by 2 phillip screws. Once removed the light can be lifted to pull the wires out of the light pole and the connectors can be separated.

Top throttle assembly



- The top throttle assembly is mounted on the top of the neck assembly by 3 allen screws 6mm.
- The top throttle assembly is held together by 4 allen screws 5/32.
- When removing the 4 screws to separate the top throttle assembly it will loosen the tension on the E-Stop spring and it will jump out.
- The E-Stop is the big red button on the back of handle assembly.
- The on/off switch is on the right-hand side of the handle assembly.

Batteries

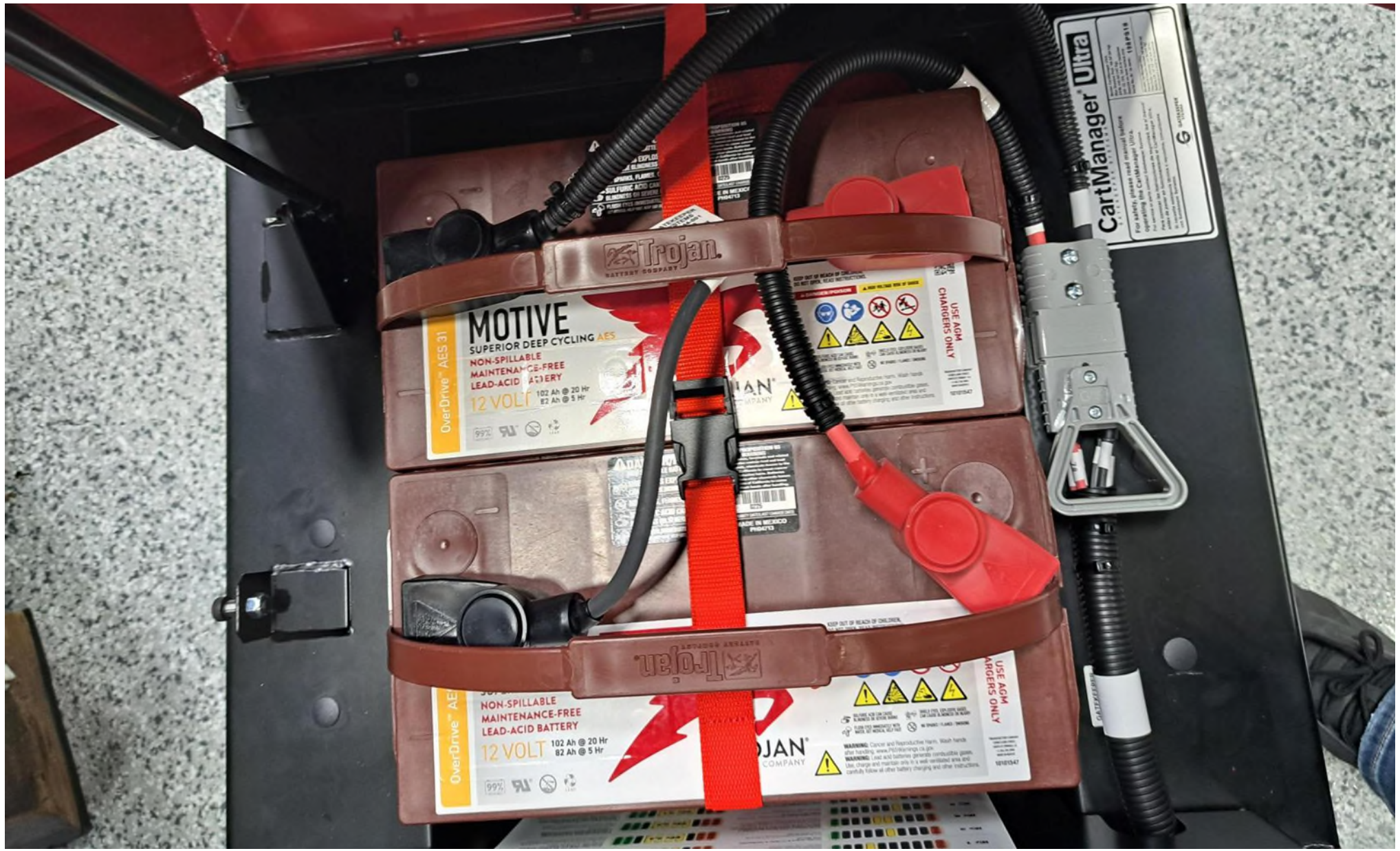
There are 2 maroon trojan 12v batteries per ultra unit.

Battery 1 is jumped to battery 2 with a jumper wire from positive of battery 1 to negative of battery 2.

The negative from the quick disconnect goes to battery 1.

The positive from the quick disconnect goes to battery 2.

The battery nuts are 9/16.



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Hinge, Hood & Shock spring

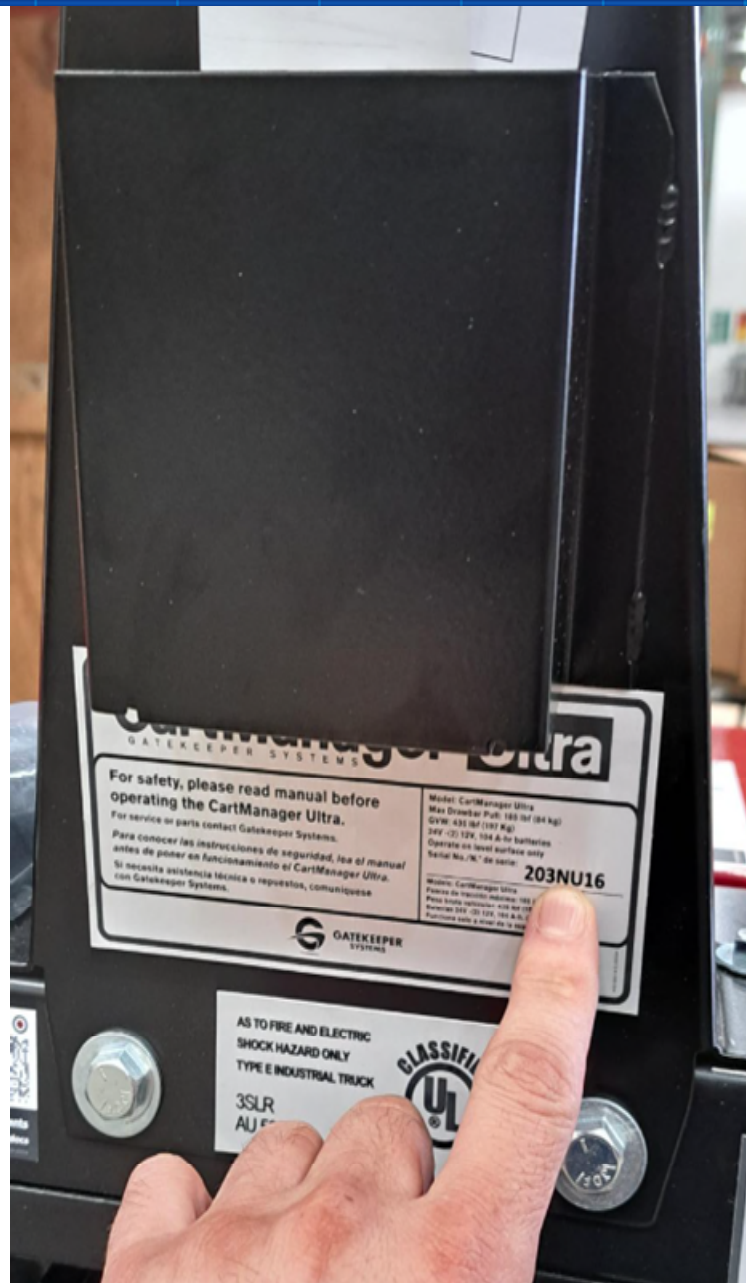
The hood is attached to the frame via the hinge.

The hinge is attached with 12 phillip screws. There is 6 on the frame side and 6 on the hood side.

The hood is also attached to the frame with a shock spring. The nuts on the spring are 13mm.

Serial number sticker

- This is located next to the quick disconnect in most cases. It could also be located under the remote pouch.
- The serial number will look something like this 123AB45.
- This can be used to tell what type of machine it is and the age of the machine. 123 is the sequential number off the line.
- The first letter is the year; the second letter is the month.
- The last number will be the model. 1,3,4,5,6,7,8,9,11,12,13 XD. 2,10,15 XD+. 14 SX. 16,18 Ultra.



Remote

- The Ultra remote has 6 buttons and a LED screen to display error codes.
- This will be in 1 of 2 places. Under the hood next to the batteries or on the back of the handle assembly in the remote pouch.
- The red button is the off button.
- The green button is the on button and the pairing button.
- The turtle button is slow speed.
- The rabbit button is fast speed.
- The screen button display error codes and DT information.
- What looks like a play button with a block in front is the horn button.

Pairing the remote and Operation

Turn the machine on and wait for the light on the digital throttle to scroll 1 at a time from left to right.

All buttons that follow need to be pressed then released. On the remote press the red button , the green button, the push button on the machine and then the green button on the remote again. There should be 3 flashing red lights on the remote after the last green button press.

The horn button can be pressed to verify if connected.

Once remote is paired, turn the machine on and wait for the light on the digital throttle to scroll 1 at a time from left to right then press the green button. All lights should display on the DT and the machine is ready. If not, then an error code is now on display.

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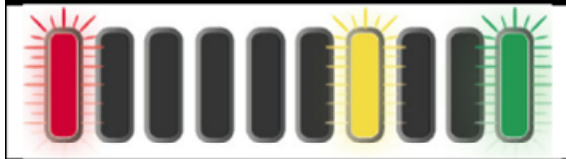
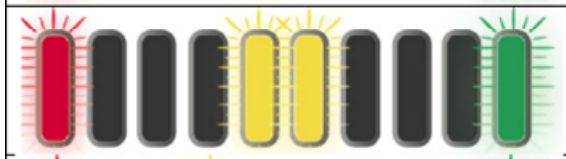
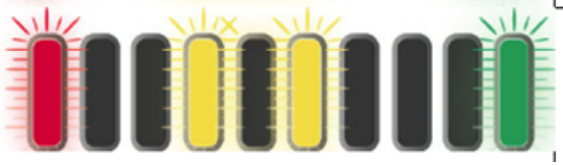
Error codes

- On the panel cover has the list of error codes.
- It is split into 2 sections.
- Internal errors on the left side.
- External error on the right side.
- Internal errors can usually easily be read on the digital throttle unless it is missing an LED. The remote can used to see the error as well by pressing the TV button on the remote.
- External errors can be tricky to read from the digital throttle. The external error will be a series of flash's that need to be counted in the proper order. These codes can be read off the motor controller on the bottom left. The red flash on the controller is the first digit on the error sheet and then the yellow flash is the 2nd digit on the error sheet.

Color Bars	Remote Error Code	Description	Corrective Action
	iEr 1	Applied manual Throttle before power switch.	• Return throttle to neutral position. • Power cycle.
	iEr 2	Throttle Output Error	• Refer to CartManager® User Manual
	iEr 6	Low battery voltage	• Charge battery. • Test/analyze battery to ensure it's in good condition. If not, replace.
	iEr 8	Early Rabbit button/release button.	• Cycle power.
	iEr 7	Early Turtle button/release button	
	iEr 4	Applied reverse throttle before power connection.	
	iEr 5	Remote communication	• Contact Gatekeeper.

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- Currently there are a couple or error codes not on this list. 2,1 and 2,1. Both are motor controller failures.

The left most red, right most green and all four yellow LEDs will flash in a pattern depicting a specific error. The pattern is slow flashes, then fast flashes, followed by a long pause. For example, the last Flash Pattern on the bottom of the Flash Pattern column at right (8, 4) will flash 8 times slow, then 4 times fast, followed by a long pause.

Color Bars	Flash Pattern	Remote Error Code*	Description	Corrective Action
	1, 2	EER 1,2	Under voltage Cutback.	• Check battery voltage, cables and connections. Check main fuse and look for shorts.
	1, 3	EER 1, 3	Overvoltage Cutback	• Check Battery Voltage
	1, 4	EER 1, 4	Temperature below -40° F or C or higher than 167°F/75°C	• Move from extreme temperature area. • Cycle power.
	2, 3	EER 2, 3	Stalled Motor	• Check/repair crimps and wiring from motor to J1 connector at controller. • Cycle power.
	2, 4	EER 2, 4	Motor open (break in electrical connectivity.	• Verify motor is connected to controller U, V, W & J1. Check motor wiring and crimps. • Cycle power.
	2, 5	EER 2, 5	Brake fault or excessive motor current draw	• Check brake wiring and connections.
	3, 1	EER 3, 1	Brake failed to set or Emergency Stop is Active	• Release emergency stop switch then cycle power. • Push brake lever in then power cycle. • Check brake wiring.
	3, 2	EER 3, 2	Emergency Stop active	• Release emergency stop switch then power cycle.
	4, 1	EER 4, 1	Voltage supply failure at controller	• Check for cross wiring at J1 connector of the controller or damage to J2.
	4, 3	EER 4, 3	Controller Fault	• Cycle power. If not corrected, replace controller.
	4, 4	EER 4, 4		
	8, 3	EER 8, 3		
	8, 4	EER 8, 4		

* Remote Error Code is the code that appears on the CartManager®2 Remote.

Removing a Transaxle

- First thing you want to do when working with any of the electronic components is remove the battery power at the quick disconnect.
- Remove the batteries.
- Next thing to do is remove the motor leads from the motor controller.
- Then remove the brake motor leads from the harness.
- Remove the cradles and eyebolt. The cradle bolt is 14mm and the eyebolt nut is 9/16.
- Lift machine from handle place onto nose.
- Place something under nose to keep from scratching machine.
- Then remove ball knob, skid plate, tires, wires, motor mounts then transaxle will come out.

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