BUILT WITH THE BEAUTY OF METAL

ULTRALITE 500 Series

Onboard power for full-shift uptime

25-0186 Rev 02

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Have a question? We're here to help.

Call us at 1-800-649-2278 or visit jacoinc.com/support

JACO Inc. 140 Constitution Blvd, Franklin MA, USA

500 Series, Model & Part Numbers

Model: 510, Laptop Cart

Part Numbers:

510-L500, Laptop 500Wh, LiFePO4 Power

510-L250, Laptop 250Wh, LiFePO4 Power

510-NP, Laptop Non-Power Cart

Model: 520, PC & LCD Cart

Part Numbers:

520-L500, LCD 500Wh, LiFePO4 Power

520-L250, LCD 250Wh, LiFePO4 Power

520-NP, LCD, Non-Power Cart

Symbol Information

The following symbols are used within this Users Guide and / or on the JACO product.

Symbol	Meaning
	This symbol indicates that Caution should be taken.
	This symbol indicates ATTENTION, consult the accompanying documents

Product Labeling

All 500 Series Mobile Carts & Battery Power System

The 500 Series Mobile Cart and optional Battery Power System are shipped with a P/N & Serial Number labels for tracking and service assistance. On the Mobile Cart, this label is located on the rear surface of the Top Assembly, under the rear handle. For the Battery Power System, the label is located on the Inverter/Charger Electronics Enclosure. TO access this label information, remove the Cart work surface, computer or laptop if one is installed in the Cart and lift the tray that supports the PC or laptop. The Battery Power System information label is located in the center of the enclosure as shown below. The information on the labels is needed when contacting JACO Technical Service.

General Mobile Cart Specification

***Work Surface Height*:**	30.5" to 46.5"
***Keyboard Height*:**	25" to 41"
***Work Surface*:**	**510 Cart** - 20" x 16.5" (Laptop opening 16.5" x 2.75") **520 Cart**- 20" x 16" Optional 20" x 18"
***Internal Laptop or PC Storage*:**	**510 & 520 Carts -** 16" x 12" x 2.6"
***Casters*:**	5" Single Wheel, Front Locking
***Wheel Base*:**	16" x 13" x16"
***Cart Weight*:** (without options)	**510 Cart** - 60 lbs **520 Cart** - 65 lbs, includes base counter weight Additional weight may be added based on Cart configuration & options
***Battery Power*:**	Lithium Iron Phosphate (LiFePO4) Single Battery JPS250 – 27 lbs Dual Battery JPS500 – 34 lbs

Safety Recommendations and Warnings

WARNING: As with any mobile cart, caution must be taken when pushing the cart through elevator doorways and over thresholds. It is recommended that you lower the work surface to waist high and position the cart so that only one wheel contacts the threshold at a time. This will help keep the momentum of the cart moving forward and provide a safe transition.

WARNING: If your JACO Mobile Cart has a Drawer System option, limit weight per drawer to 2 lbs max, close drawers when moving and do not transport at more than a 5 degree slope.

WARNING: Your JACO Cart Battery System is designed to operate as a system. Use only JACO provided LiFePO4 battery packs, Use of any non-approved Battery Pack, Controller or Charger may result in damage and un-safe conditions.

WARNING: The JACO Battery Pack contains lithium battery cells and as with all batteries, have specific shipping restrictions that must be addressed. Please contact JACO Customer Service for assistance before shipping any JACO product. *It is the Shippers responsibility to follow all Federal & State regulations when shipping lithium batteries.*

WARNING: Do not open or dismantle the JACO Battery System, note that there are no serviceable parts. This equipment must be serviced by trained personnel.

Additional JACO Battery System important information:

* Use only in the applications intended.
* Unplug the Power System from AC power to clean or if it is not working properly.
* Do not short-circuit the battery assemblies
* Do not expose the battery assemblies to heat or fire and avoid storage in direct sunlight
* Do not subject battery assemblies to mechanical shock
* In the event of battery leakage, do not allow the liquid to come in contact with the skin or eyes, if contact has been made, wash the affected area with water, seek medical advice.
* Always keep Battery System clean and dry.
* Observe the plus (+) and minus (-) markings on the battery packs and equipment.
* For disposing or recycling battery packs, all Federal & State regulations must be followed.
* Always refer to this manual for instructions, warnings and proper use.
* If your Mobile Cart/Power System will not be used for several months or longer, it is recommended that you charge the battery packs to full level before storing the Cart in a cool dry location.

* Retain this Users Guide and all original literature for future reference.

***NOTE**: Material Safety Data Sheets (MSDS) are available as needed, contact JACO Support for more information.*

Proper Operation, Care & Maintenance

JACO products are designed and manufactured to provide years of operation. Take care to use the product as intended and keep clean for best overall performance.

Most of the surfaces of your JACO product are finished using a durable, antimicrobial powder coat finish. It is recommended that the surface areas that are in contact with day to day use be cleaned regularly. Always review the cleaning products that are being used and verify that it is safe to use on the powder coat finish. In general, a solution or wipe that is no more than 10% bleach, such as most germicidal wipes used in hospitals, will be acceptable but it is recommended that you consult with JACO Customer Service if you are not sure it is safe to use.

Your JACO Mobile Cart does not require any scheduled maintenance however it is good practice to clean the casters and check that the Cart height adjustment is operating correctly at least once a year. Please contact JACO Customer Service as needed for more information in maintaining your JACO Mobile Carts.
Keep the inside computer bay area clean and clutter free. If cleaning of the inside bay is needed, make sure the computer or laptop is removed and use a damp (not saturated), less than 10% bleach wipe. Allow ample drying time.

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JACO INC. 140 CONSTITUTION BLVD, FRANKLIN MA, USA

Basic Mobile Cart Integration & Operation

Unpacking & Assembly:

Your JACO Mobile Cart is delivered on a pallet and unpacking is a two person task, please plan accourdingly. Use caution when removing and additional containers that may have shipped on top of the Mobile Cart pack. Once unpacked, there will be minimal assembly required depending on the Mobile Cart model and options you have ordered. Due to the shipping container, the optional LCD (520 Cart Model) and optional Scanner Mounts, are not able to be attached at our factory. Instructions for assembly are below.

Changing the Height Position:

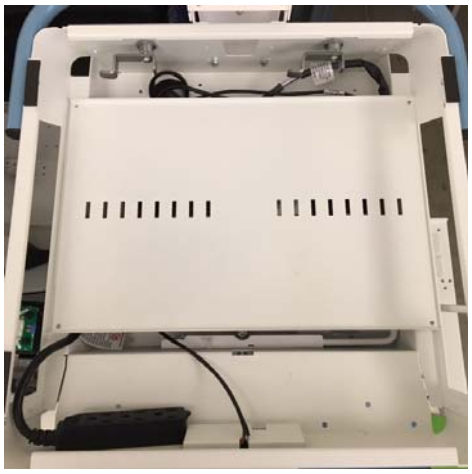
Your JACO Mobile Cart is height adjustable for proper ergonomics when used in a standing or sitting position. To change the height, place the palms of your hands on the left and right sides of the work surface and on the right side, squeeze the release lever by pulling it upward. This will free the internal locking piston and will allow you to pull the Cart top up or push it down and offers a total of 16” of travel. Release the lever when the cart is in the desired position.

Installing your computer system:

The JACO 500 Series Mobile Cart will support most PCs, Thin Clients, Laptops and All-In-One computer/LCD systems however not all systems will fit into the top bay and some systems may require too much power to operate using our optional battery power system. It is best to review what computer system you will be using with your local JACO Sales Representative to make sure you will not have any fit or power up issues.

To install your PC or Laptop, unlock both key-locks at the rear of the top assembly as shown in the photo below. Both locks must be opened before the top work surface can be pulled forward and removed from the Cart.

Once the work surface is removed, the open bay area (shown on left below) is available for installing your computer or laptop. Route all cables needed for proper operation before installing the work surface and locking in place for security. Shown below is an example of a PC properly installed with all cables routed neatly and organized. If using a laptop computer, simply open, place the laptop on the internal tray and allow the display to protrude through the opening in the work surface.



Additional tips for proper computer installation:

SFF and Thin Client: insert inside the top bay so that the on/off power button is facing the side opening. This will allow easy on/off of the unit when needed.

Laptop: Open the laptop, place inside the top bay. The work surface on the JACO 510 model Laptop Cart

has a large opening that the laptop display will fit through as you install the work surface to the Cart.

All-In-One: The unit must have a 75mm or 100mm VESA pattern on the rear surface to mount to the JACO 520 model Mobile Cart. The hardware to mount the All-In-One is provided.

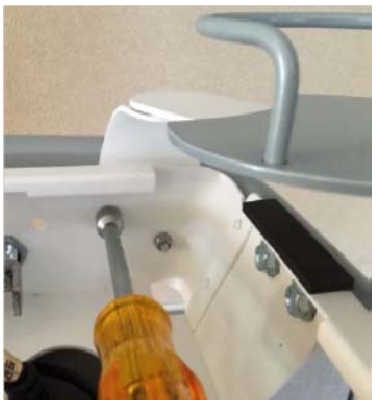
It is highly recommended that you use either the Velcro wrap strap or Velcro adhesive patches included with all Mobile Carts inside the accessories kit to hold the PC, Thin Client, or Laptop in place inside the Mobile Cart top assembly.

Installing the Monitor:

To attach the LCD to the stand. A Phillips Head screwdriver or, if added security is needed for the LCD, a Torx Head driver is needed to attached the LCD to the VESA Stand. Both Phillips and Torx screws are provided. It is recommended that one person hold the LCD while a 2nd person inserts the hardware. Make sure all 4 screws are installed and tightened properly.

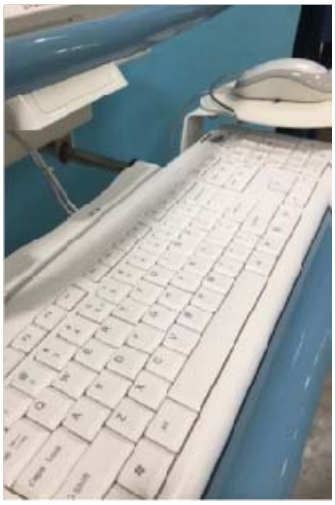
With the monitor and stand installed on the Cart, the LCD power and signal cables can be installed. Route both cables down through the cable management area of the stand as shown to the left. Pull the cables into the Top Assembly and attach to the PC or laptop computer that will be installed later.

Installing Scanner Mounts:



If you have ordered a Scanner Holder option, you may need to install this as well. Remove the top work surface by unlocking the 2 key locks at the rear Top Assembly and pulling the work surface forward. The scanner mount will attach using 2 nuts as shown. Use an 11/32” nut driver to tighten.

Installing Keyboard and Mouse onto the Cart:



When ordering your JACO Cart you have the option of including an integrated mouse and keyboard. If you are adding your own mouse and keyboard, they can be integrated as follows. It is most important that the wires are routed out of the way of the sliding keyboard tray. With each JACO Mobile Cart we include an accessory kit that provides ty-wraps and Velcro pads along with other helpful items for proper cable management. Use the Velcro pads to fasten the keyboard to the keyboard tray and use the ty-wraps to secure the cables.

Optional JACO Patented Trac™ Wheel Steering:

The optional Trac Wheel is designed to add true steering to the JACO Mobile Cart. With 4 swivel casters, keeping the Mobile Cart moving in one direction may be challenging as the momentum of the Cart will want to continue in the direction of motion. The Trac option can be engaged by stepping down on the green post at the bottom front of the Cart. This activates a traction wheel that will give you control over the direction of the Cart. To disengage Trac, step down on the black post.

Keyboard Light:

The front keyboard is standard on all 500 Series Mobile Carts. Located at the front center of the Cart top assembly, the switch to turn the light on and off is located on the bottom surface of the battery status module as shown on the left below. Slide the switch forward or backward to turn the light on and off.

If you have ordered any one of the optional Touch Pad Electronic Locking Drawer Systems, the keyboard light option is included and is integrated into the touch pad located at the front center of the Cart, see below right. To turn this keyboard light on/off, press the light bulb icon button located on the far right on the touch pad. Press again and the light will go off. After approximately 20 minutes, the light will automatically turn off. The light can be turned back on immediately if needed. For this keyboard light to function, you must connect the internal USB cable to the computer system within the Mobile Cart. The USB connection to the computer system is to provide the power needed for the keyboard light.

Slide Switch Keyboard Light

Touch Pad Access, Keyboard Light

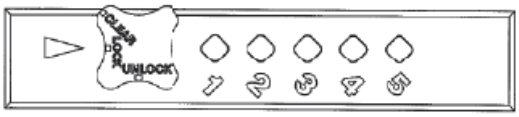
Optional Locking Drawer Operation:

Optional storage systems for the JACO 500 Series include Non-Locking, Push Button-Locking and Touch-Pad Electronic-Locking drawers are available in single 3” high, single 7” high, dual 3” high as well as triple 3” high drawers.

Push Button Drawer

Non-Lock or Electronic Lock Drawer

Default combination and instruction to open the optional Push Button Drawer – First turn the knob to the left to clear the lock then press #2 and #4 buttons at the same time then press the #3 button. Next turn the knob to the right and holding the knob in this position, pull the drawer open. The combination can be changed, follow the instruction sheet provided with the Cart.



Default combination and instruction to open the Touch Pad e-locking Drawer – Use the default combination 4, 1, 2, 3, then press the Unlock Button, pull the drawer open. This combination can be changed as needed and offers up to 64 unique 4-digit access codes. To change the pass code, press the numbers 3, 1, 2 then the unlock button, you will hear a "beep" indicating that a new 4-digit code can be entered. If you enter an unacceptable code, such as 1, 1, 1, 1, you will hear a "buzz" noise indicating the code is not changed. When entering an acceptable new code, you will hear two short "beeps" indicating that the code is now changed.

If for some reason the electronic pass code system were to fail, there is a rescue key lock located at the back of the drawer system as shown below. Insert, turn and hold key in the unlocked position to allow the drawers to be opened when by-passing the electronic drawer lock system. The by-pass key is not the same key used to access the Top Assembly. The rescue keys are included in the Cart accessory kit which is placed inside the Mobile Cart Top Assembly housing.

Rescue key access on back of drawer/cabinet assembly

NOTE: *See page 5 of this manual for important safety information regarding the drawer option.*

Battery Power System Overview:

The JACO Battery Power Systems are designed specifically for the JACO Mobile Carts. In many cases this system is backward compatible with older model carts that have existing JACO power system. Contact JACO Customer Service for more details.

JACO offers a 2 different power system options. The JPS250 is a one battery pack power system and JPS500 integrates two battery packs for extended run time. Both options are Lithium Iron Phosphate, also known as LiFePO4 or LFP.

The JACO LiFePO4 Battery systems are shipped fully integrated into the Mobile Cart. They are designed as two separate components, connected by a DC cable that runs through the Cart Post. This cable connects the LiFePO4 battery packs, located in the Cart Base, to the Electronics Box or Inverter/Charger assembly which is located in the Cart Top Assembly.

Electronics Box input/output connections are show below. Make sure that you only use JACO approved devices and connections with the JACO Battery System

Frontal view

1. AC Input
2. On/Off AC Outlet Switch
3. AC Outlet (2)

Rear view

4. Cooling Fan*
5. E-Locking power
6. Power model selector
7. DC power (to battery)
8. USB (Firmware update)
9. LED display

* The Cooling Fan (item #4 above) will power on whenever the unit is plugged in for recharge. The fan will run from a continuous, slow idle speed, to full speed, in order to minimize fan noise in response to rising internal temperatures. The fan will also power on whenever the On/Off AC Outlet Switch (item #2 above) is in the ON position regardless of recharging status.

Battery Power System Set-up:

The JACO Battery System is shipped in "cut-off" mode to prevent power drain during shipping. Follow the steps below to activate the power system and calibrate the status LED readout properly.

1. **Integrate your PC or Laptop** – After your Mobile Cart is unpacked and ready to go, you should take the time to properly install the computer system (details on page 7 above)

   It is critical that as you integrate a PC or Laptop into the JACO 500 Series Cart with Battery Power that you do not block the air vents on the battery inverter/charger assembly that resides within the Cart top assembly. The PC or Laptop must sit on the divider plate as shown below on the right. Rout all cables neatly and use the ty-wraps and Velcro pads provided in the Cart Accessory kit.

Top Assembly with Inverter/Charger Assembly

Top Assembly with Integrated PC

2. **Wake-up the Battery System** – Plug the recharge power cord that is hanging from the back of the Mobile Cart into any standard 120VAC wall outlet to "Activate" the Battery Power System.

3. **Unplug the power cord** – This step is needed as you need to let the battery system drain completely so that the status LED readout will be properly calibrated.

4. **Turn on power to the AC Outlets** – Push the AC Switch shown as item 2 on page 12, to the ON position to provide power to the AC outlets. This switch can be accessed from the left side of the Cart Top Assembly as shown below.

5. **Allow time to Calibrate** – The status gauge readout at the front top of the Mobile Cart, as shown below, needs to learn or calibrate as the power system charges from fully drained to fully charged. Leave the Mobile Cart plugged into the wall outlet until all 5 status LEDs are showing green indicating that the batteries are fully charged. This step could take up to 4 hours but it is best to allow the charge to continue over night when possible.

Battery Power System Maintenance:

There are **NO** serviceable parts within the JACO Power System. Should the Power System fail, review the Troubleshooting section of this User Guide and if applicable, follow the steps provided. Please contact JACO Customer Support as needed to resolve the issue.

Battery Power System Specification:

Model: JPS250 or JPS500

Battery: Lithium Iron Phosphate also known as LiFePO4 and LFP

AC Input: 100vac to 240vac

Input Current: 3.5 amps

Frequency: 47 to 63 Hz

Output Voltage: 120VAC /60Hz standard

Output Current: 1.5A @ 120VAC continuous

Output Power: 180 watts continuous

Operating Temperature: 32 to +95 Degrees Fahrenheit

Non-Operating Temperature: 0 to 120 Degrees Fahrenheit

Electronics Box (Inverter/Charger Unit) Dimensions: 10.6”(L) x 9.65” (W) x 2.2” (H)

Agency Certification: The JACO Battery Power System, Inverter/Charger Assembly has been tested and approved to the following agency certifications - IEC 60601-1/A2: 1995 & IEC60950-1:2005

JACO CartCare Suite Power Monitoring Software:

When either battery power system is ordered with your JACO 500 Series Mobile Cart, you will also receive a copy of our JACO CartCare Suite Software. The CartCare software will help users and IT with power system management. The software displays the battery charge status as well as battery alerts onto the Mobile Cart LCD or Laptop display to help remind users of the battery power's status, and encourages users to plug the Mobile Cart into wall AC power to charge when the batteries are running low. Below is a brief review of the three main software packages that aid the users in managing the Cart's power demand.

JACO CartCare Services: The Services software acts as hub that resides on the Cart's computer and communicates with the power system, CartCare Client, and Fleet Manager.

JACO CartCare Client: The CartCare Client software resides on the Cart's computer that receives power system data from the CartCare Services for onscreen display.

JACO Fleet Manager: The Fleet Manager software is usually installed on a server. It displays all carts and their status within the facility.

The current software release can be obtained from our website at http://www.jacoinc.com/support/downloads

Additional information and instructions are included with the download above, contact JACO Customer Support if you have any issues or questions.

Power System Troubleshooting:

No Power Condition – "My power system is not providing power to the LCD and PC".

1 - Check to make sure that the PC and LCD are plugged into the AC power outlet on the JACO Power Inverter. You may be using a short tri-plug cable that is provided. Also make sure that the Outlet Power Switch is in the ON position as shown below.

2 – If you still do not have power to your PC and LCD, disconnect the PC from the JACO Power Inverter and plug directly into a known good AC wall outlet. This will help determine if the issue is with the JACO Power Inverter or the PC power adaptor itself.

3 – If the PC powers up normally when plugged into a wall outlet, disconnect and plug back into the JACO Power Inverter. If not, you may have an issue with the PC power adaptor. Contact the PC manufacturer for a replacement.

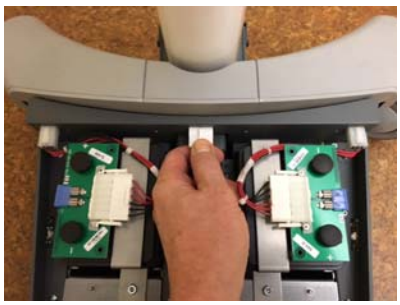
4 – Plug the JACO Mobile Cart power cord into a known good AC wall outlet.

- Does the front status LEDs panel turn on?
- Does the JACO Power Inverter fan turn on?
- Does the PC and LCD power on?

If yes to all above, no need to continue. If the issue is not resolved, go to next step to reset the JACO Power Inverter.

5 – JACO Power Inverter Reset steps.

- Unplug the JACO Cart power cord from the wall outlet.
- Remove the Base Shroud to expose the Lithium Iron Phosphate battery packs. Depending on the model of JACO Mobile Cart that you have, you will need either a blade screwdriver or a Phillips screwdriver. To remove the Shroud, turn the hardware ¼ turn counterclockwise until the fastener snaps out.
- Unplug the batteries from the connector board as shown below. Depending on the battery system that was ordered, you may only have one battery. Wait for about one full minute before reconnecting.



- Plug the JACO Mobile Cart power cord into a known good AC wall outlet.

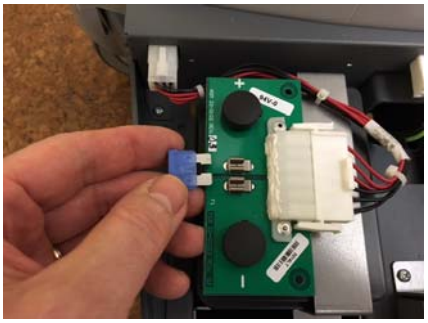
  - Does the front status LEDs panel turn on?

  - Does the JACO Power Inverter fan turn on?

  - Does the PC and LCD power on?

If yes to all above, no need to continue. If not, go to next step.

6 – Check the battery fuse located on each battery pack as shown below.



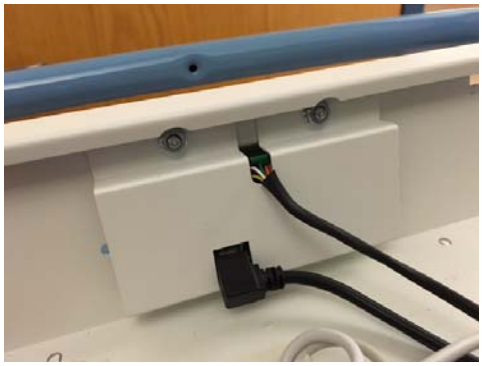
Remove the fuse and review for possible break. You will be able to see if the internal connection is still in place or if it has disconnected. If you have a dual battery system, check both fuses.

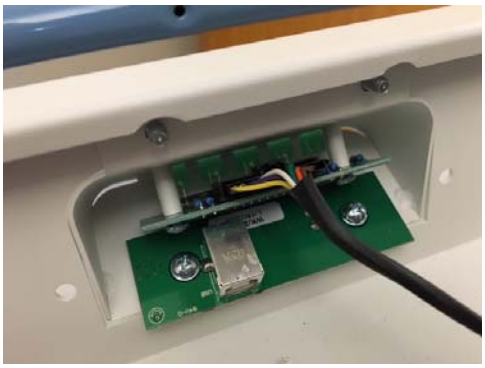
If the connection inside the fuse is not broken, the issue is with the JACO Power Inverter assembly and you will need to contact JACO Customer Support to address replacement. Please see page 3 for locating the correct information that will be needed to start the replacement process.

If one or both fuses show a break, they will need to be replaced. Contact JACO Customer Support for details.

No Front Status LED Condition – "My power system is providing power to the LCD and PC but I do not have any front status LED indication showing".

1 – Check the Status LED Cable making sure that it is connected properly as shown. You will need to remove the protective cover inside the Cart top assembly. First remove the Cart work surface and then, using an 11/32" nut driver, remove the protective cover shown below.





If not seated correctly, position and reconnect. If the front status is still not working, check the other end of the cable connection as shown below. You may need to remove the internal PC to get access to the power inverter. Follow the cable from the front status enclosure and make sure that it is seated properly. Disconnect and reconnect if needed.

If you now see front status LED readout, the issue has been resolved, if not, please continue to next step.

2 – If you have a known good JACO Mobile Cart, use the status cable from this Cart and exchange for the cable in the Cart that does not show front status LEDs.

3 – If this fixes the issue, contact JACO Support for a replacement cable, if not, continue to next step.

4 – Using the same known good JACO Mobile Cart, use the front status enclosure from this Cart to check the Cart that is not showing front status readout. You can remove the status enclosure by removing the top work surface and using an 11/32” nut driver and then push the front status enclosure inward until it is free of the top assembly. Some JACO Cart models may require a Phillips screwdriver for removing this status enclosure. If the replacement status enclosure works on both Carts, contact JACO Support to process a replacement front status enclosure. If not, return the status enclosure to the original Cart and proceed to the next step.

5 – Reset the Inverter as explained in step 5 on page 17. If the front status LEDs are not working after following the steps above, contact JACO Support for further assistance and replacement details.