PRINTRONIX AUTO ID

PrintCart User's Manual

251755-001 K

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The Print Cart Battery Warranty is one year and may be reduced or waived subject to:

- Excessive continuous operation above 25°C
- Charge depletion below 30%, and where excessive discharge may result in: (1) Battery being unable to retain charge, (2) Battery enclosure heating and swelling
- Failure to replace batteries in pairs
- Fire, freezing, misuse, abuse, neglect physical damage or any act of nature

Communication Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Class A est conform à la norme NMB-003 du Canada.

Emergency Disconnect Procedure

In an electrical emergency disconnect the AC input line cord from any external power source and disconnect the AC output line cords from any equipment powered by the cart.

Unterbrechung der Stromversorgung im Notfall

Bei einem Notfall im Bereich der Elektro-Installation die Spannungsversorgungskabel von allen externen Spannungsquellen sowie die Spannungsversorgungskabel von allen über das Cart mit Spannung versorgten Geräten abziehen.

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1 *Quick Start and Setup*

Quick Start

Unpacking

WARNING **Removing the cart from the pallet requires strength. Two people are recommended for the task.**

1. Place the pallet on a flat, level surface, leaving enough room to roll the PrintCart off the pallet.
2. Remove the two cardboard protective shipping sleeves and put aside.
3. Remove the plastic wrap and shipping bag from the PrintCart.

IMPORTANT **Make sure the PrintCart caster brake is set.**

4. Cut the bands holding the unloading ramps.
5. Lift and remove the ramps off the locating pins.
6. Reverse the ramps and engage the locating pin in the angled blocks on the end of the pallet. See Figure 1.

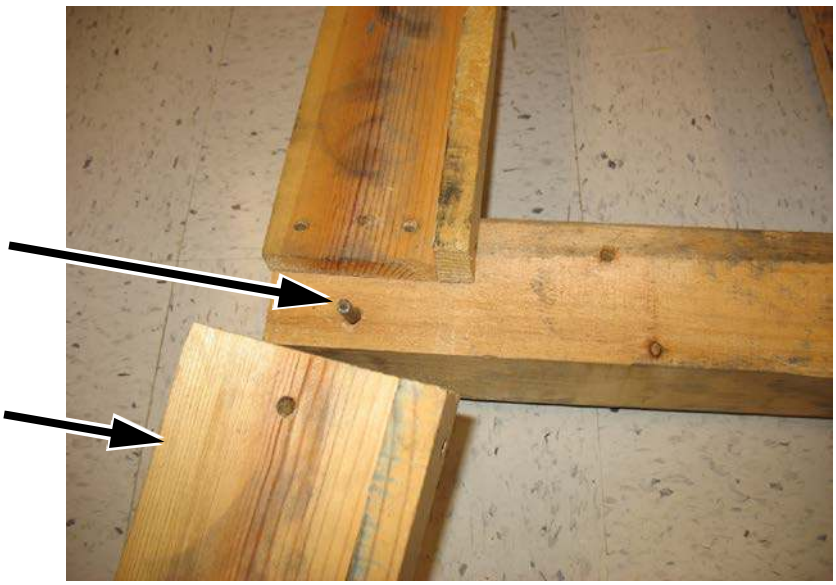


Figure 1. Reversing the Ramps and Engaging the Locating Pin

7. Set the caster brake on the PrintCart.
8. Cut the shipping restraint tie wraps on all turnbuckles.
9. Insert a screwdriver through the center of each turnbuckle housing and loosen the turnbuckle until you can remove the hook from the eyelet.
10. Unhook the opposite end from the PrintCart frame. See Figure 2.

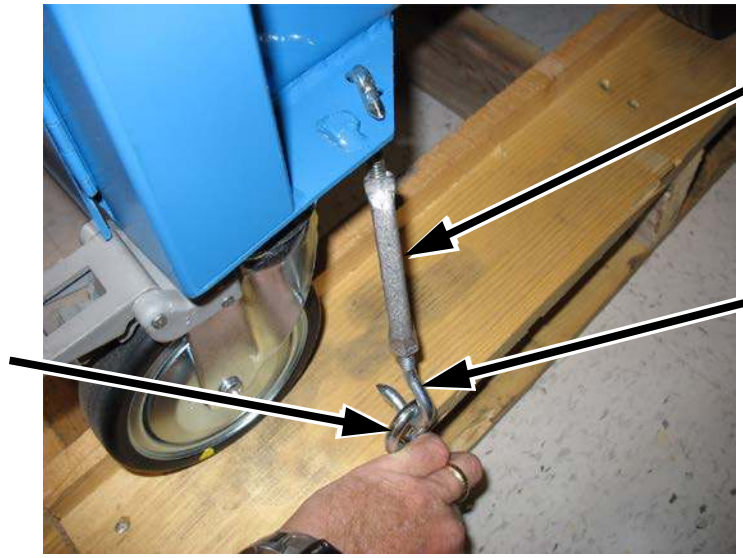


Figure 2. Loosening the Turnbuckle from its Housing

11. On the opposite side of the PrintCart, repeat steps 9 and 10 to completely disengage the shipping restraints.
12. Release the caster brake. Grasp the hand grips and pull the PrintCart down the unloading ramps to the work surface.

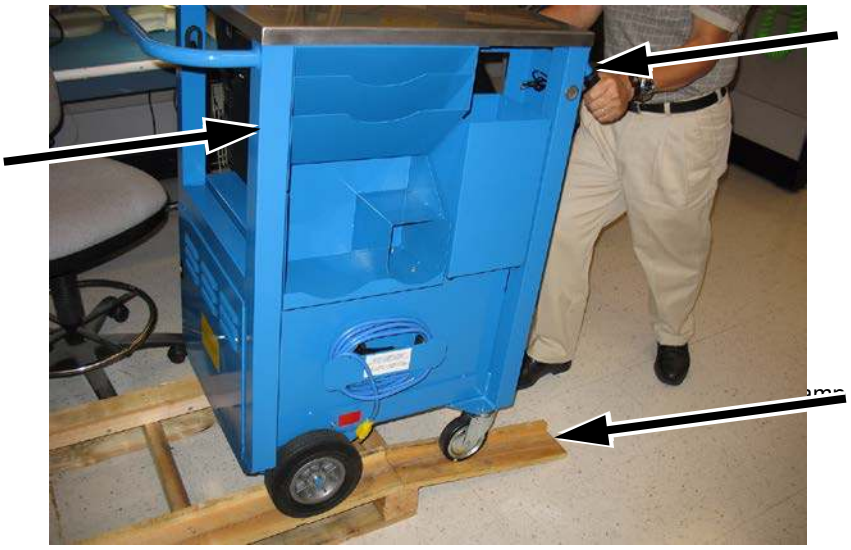


Figure 3. Moving the PrintCart to the Work Surface

13. Replace the unloading ramps on the pallet and store the pallet and turnbuckles for future use.

Safety Inspection

1. Inspect the PrintCart for damage that may have occurred during shipment.
2. Open the battery access door located below the two hand grips and verify that the batteries are securely restrained, and the cable connections are tight.
3. Open the Power Module access door and verify that the inverter/charger is held securely in place. If any components have loosened during shipment, secure them before applying AC power to the PrintCart.

Equipment Setup

Mechanical Installation

NOTE: If applicable, first install the terminal (monitor) to the PrintCart. Access to the underside of the work surface will be restricted after printer installation.

Terminal (Monitor) Installation

1. Follow the manufacturer's installation instructions to install the wireless terminal (monitor).

   The PrintCart is equipped with a central mounting rail under the stainless-steel work surface. This mount is predrilled with 2 rows of 5/16" holes on 1-inch centers. The size and spacing coincides with the hole pattern that mates with the Symbol VRC 8900 series terminals bracket; it may fit several others. The right-most row of holes is centered on the PrintCart frame. The left-most row of holes is centered between the left edge and the barcode scanner storage slot on the right front of the PrintCart.
2. If the utility drawer is installed, remove the drawer by fully extending the drawer and disconnecting the slide latch. This will provide access to the mounting rail and provide additional overhead clearance.
3. Remove the middle slide screw from each side of the drawer. Lift the left slide release lever and push down on the right slide release lever to remove the drawer from the slide.
4. Determine the appropriate mounting location and suitability of the desired mounting bracket.
5. Find the holes (minimum of 2) that will properly position the terminal and mark them on the underside.
6. Use the predrilled mounting rail as a template and then drill up through the top work surface using a power hand drill from below.
7. Secure the bracket to the PrintCart according to the manufacturer's instructions.

Printer Installation

1. Set the wheel lock on the caster wheel to prevent the PrintCart from moving.
2. Lift the spring-loaded handle located on the side of the slide out shelf and pull the shelf out over the side of the PrintCart to the fully extended position.

NOTE: The slide out shelf clicks into place when it is fully extended.

IMPORTANT **On Printronix thermal printers, the four rubber pads on the bottom of the printer must be removed.**

3. Tip the printer onto the left side (side with power compartment cover) and unscrew the rubber pads. If necessary, use pliers to improve grip.
4. Install the four black rubber vibration mounts that are provided with the PrintCart.
5. Tip the printer back upright.

WARNING **The next step requires two people; one person to support the printer, and the other to align the mounts.**

6. Carefully lift the printer and set it on the slide out shelf, aligning the threaded vibration mounts with the holes in the shelf. The printer's control panel should face the back of the PrintCart with the hand grips.
7. Secure the printer to the shelf using the four supplied lock nuts.
8. Lift the spring-loaded handle and slide the shelf back under the top work surface of the PrintCart. It should click into a retracted and safely locked position.

Electrical Installation

The electrical cable for the PrintCart equipment is routed through the right front leg into the power module compartment.

Printer Hook-Up

The printer power cable is preinstalled in the PrintCart.

1. Connect the power cable to the printer. Make sure the cord is slightly slack to provide a small service loop during movement of the slide out shelf.
2. Test the service loop length by extending the printer shelf and verify that enough slack is available.
3. Bundle and secure any excess cord in the power module compartment.

Terminal (Monitor) Hook-Up

1. Install the power supply for the terminal (monitor) in the pocket provided behind the two-slot notebook holder. See Figure 4.

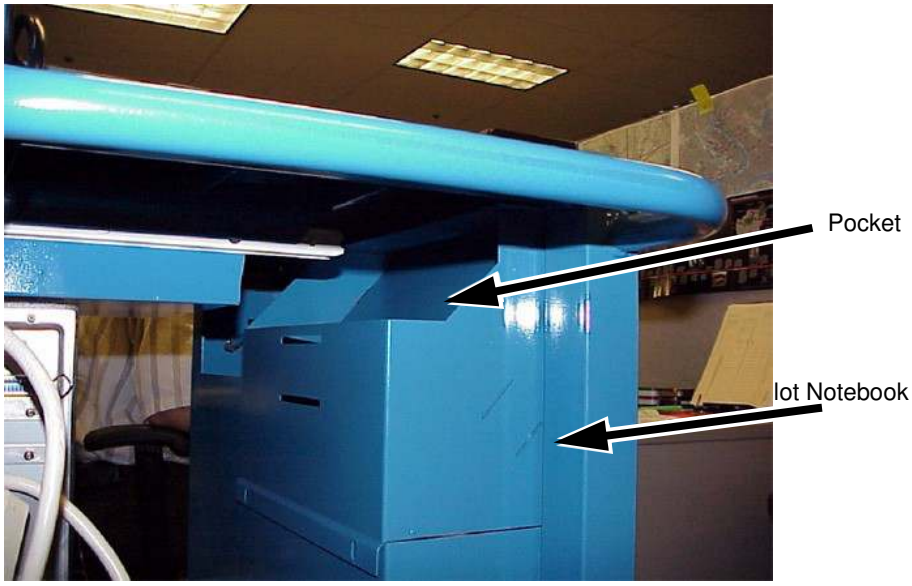


Figure 4. Installing Power to the Terminal (Monitor)

If the notebook holder is not included with the PrintCart, then:

1. Place the terminal (monitor) power supply in the power module compartment to the left of the inverter/charger.
2. Connect an AC power cord to the power supply and connect it to the AC receptacle by routing it down through the right front leg into the power module compartment.
3. Bundle and secure any excess cord.
4. Route the DC power cable from the terminal (monitor) to the power supply and secure all excess cable length (terminal P/S pocket behind the notebook holder).

Startup

Make sure all PrintCart customer equipment (printer. terminal (monitor), etc.) has been installed and power cords have been routed and connected to the power module AC receptacles.

1. Check that the customer equipment power switches are in the OFF (0) position. The PrintCart is now prepared for start-up.
2. Open the battery access door (hand grip end) and connect the main inverter power/battery cable to the connector at the top of the batteries.
3. Open the power module access door (loop handle end) and locate the inverter operating switch on the upper-right of the inverter.
4. Slide the switch left to the “AUTO/INVERT” position. The inverter will begin producing power as indicated by the yellow mode indicator on the inverter.

5. Close and secure the power module access (loop handle end) door.

Inverter and battery status are indicated on the LED display panel located at the back of the PrintCart adjacent to the left-hand grip. The batteries in a new PrintCart arrive nearly fully charged. Battery state of charge “gas gauge” shows all LED’s lit, (2 red, 2 yellow, and 2 green). If all of the battery status LED’s are not lit, charge the PrintCart prior to use.

Power is available when the inverter is in the auto position; the equipment may now be switched on. If the connected equipment does not receive power, perform the following:

- **120V units**

  Examine the GFCI duplex outlet to the left of the inverter. If the trip indicator lamp located on the right side of the GFCI is illuminated, the GFCI has faulted. Reset the GFCI by depressing the RESET button between the two outlets.

- **230V units**

  Examine the “Load C/B” (load circuit breaker) located above the inverter output receptacles. If it extends beyond the mounting more than a couple of millimeters, it has faulted. Reset the load circuit breaker by pressing it in.

Operating Limitations

When the cart is not in service, leave it plugged in an AC wall outlet to maintain battery charge. Otherwise, charge the cart battery every 90 days.

CAUTION **Recharge the batteries as soon as possible after use. Failure to quickly recharge batteries can result in permanent battery damage. Batteries left in a discharged state for extended periods may be so damaged that they will not accept a charge and recharging them could be dangerous. Any attempt to recharge partially discharged batteries left for an extended time requires frequent supervision to ensure that venting or excessive heating does not occur.**

Do not charge a fully discharged battery at a rate greater than 1/10 of the amp-hour capacity. This cart is equipped with fail safe controls to prevent full discharge. If the batteries become fully discharged, possibly due to long term inactivity, switch the inverter/charger to slow charging mode to revive them. Slow charging prevents further damage to the battery and reduces the risk of battery out-gassing or destructive heating if the battery is damaged beyond recovery.

120V/60Hz Models

Eight switches are located on the top center of the RV750ULHW inverter/ charger front panel. The far-left switch is for charge rate. The down (default) position is fast (45A) charge; the up position is slow (11A) charge. Use the UP position to recharge fully discharged batteries. If the batteries accept a full charge without excessive heating or out-gassing, the capacity selector can be returned to the full (default) 45A charge setting.

230V/50Hz Models

A red button labeled “Sleeping Mode” is located on the right side of the charger (blue device at the bottom of the power module). Depressing this button reduces the charge rate to approximately 1/3 the normal rate. If the batteries accept a full charge without excessive heating or out-gassing, the sleep mode button can be returned to the full or out position.

WARNING **If the batteries become excessively hot or emit a detectable odor, the batteries are damaged beyond repair and are dangerous to use. Stop charging immediately. Remove the batteries from service and dispose of them according to local regulations.**

Do not charge the batteries at a rate greater than 1/4 of their amp-hour capacity. For example, a 100 amp-hour battery should be charged no faster than 25 amps (or a pair of 100 amp-hour batteries no faster than 50A).
The charger on this cart provides the maximum recommended charge rate for the batteries with which it is equipped.

CAUTION **Do not use additional or larger chargers to speed recharging.**
Permanent battery damage will occur and the potential for catastrophic failure is high.

Before connecting or disconnecting the batteries, turn off battery powered electrical equipment and disconnect both the main DC disconnect and display power cable.

Make sure that battery terminal covers are in place to prevent accidental shorts between the battery and surrounding frame or equipment.

Use insulated tools to service any power connections that cannot be disconnected from battery power.

2 *PrintCart*

Overview

The PrintCart is a wireless, cordless work platform capable of transporting several pieces of electrically powered equipment to a work site. On site, the PrintCart can operate indefinitely when plugged into AC line power or for an extended period (depending on equipment) on battery power. The PrintCart is designed to support continuous operation of all connected equipment without shutting down.

PrintCart Levels

The PrintCart contains three separate levels:

Bottom Level

The bottom level is the power compartment, which houses the power storage (batteries), power conversion equipment (inverter/charger), and the electrical safety devices that ensure safe PrintCart operation.

Middle Level

The middle level contains the printer, storage of materials and trash bin. The printer shelf is mounted on slides that permit a thermal printer to extend out the right side of the PrintCart for loading media and ribbon. To the left of the printer shelf is an optional refuse bin, notebook holder, or a media storage bin. Above the printer is an optional utility drawer.

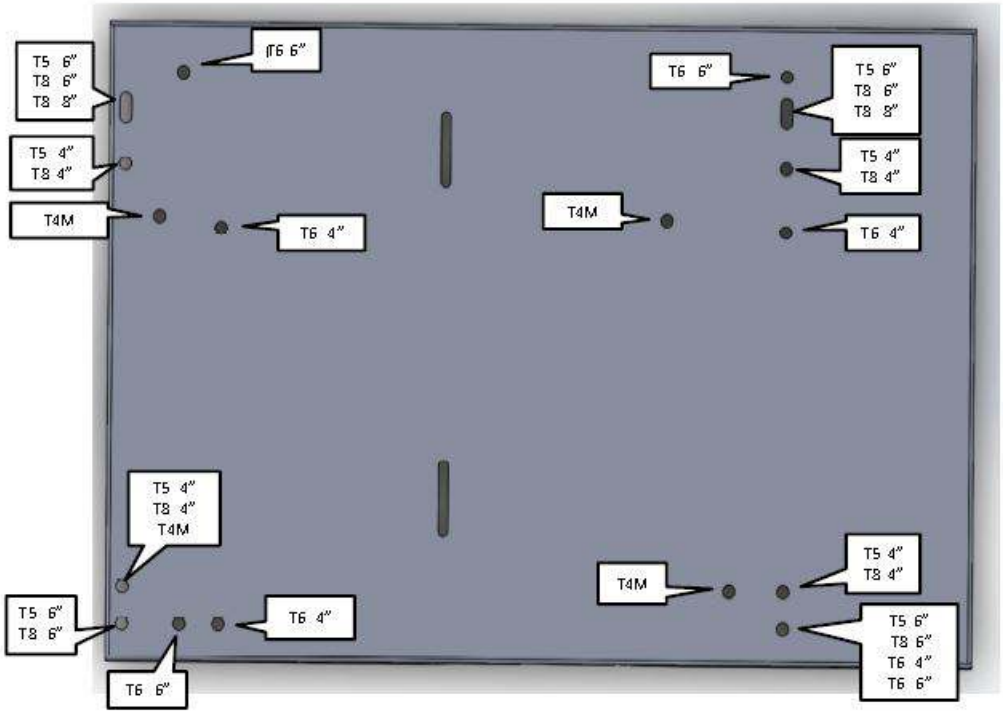
Top Level

The top level has a stainless-steel work area which supports an electronic wireless terminal (monitor) or an optional barcode scanner storage slot.

The power compartment is enclosed and secured with a latch or screw to prevent accidental access. It contains two sealed lead acid deep cycle batteries for electricity storage. Power is provided by a combination device called an inverter/charger (120VAC model) or separate inverter and charger (230VAC model). Inversion is the process of using the 12 Volt direct current stored in the batteries and converting it to a suitable alternating current at a voltage and frequency for operating equipment mounted on the PrintCart. The PrintCart operating voltage can be 120 volts AC @ 60 Hertz (North American standard) or 230 volts AC at 50 Hertz (European standard). Operating voltage is specified at the time of order and can be changed by swapping out the Power Module.

The battery charge function is performed in the Power Module (inverter/charger). When AC line power is applied, the inverter charger automatically transfers (switches) power directly to the PrintCart equipment and begins charging the batteries. The charger provides power to the batteries in three separate stages to optimize the storage capacity and battery life.

The PrintCart is designed to support a thermal printer on the slide-out shelf, which includes mounting holes for Printronix printers (see template below for printer model locations). In addition, the PrintCart package includes mounting isolators for the T8000. If mounting a T6000 Model Printer, the isolator kit it is an orderable option, contact your sales representative.



(Reference: Printer Mounting Hole Locations)

The top work area can be used for any application but is intended for use with a wireless terminal (monitor) and/or a barcode scanner bin. The barcode scanner storage bin can be mounted on the right front of the work surface. On the rear left is a display panel with an integral controller. The display panel has a set of battery charge status LEDs that report the battery state of charge (SoC). It also has a set of LEDs which displays the inverter/charger mode status.

Additionally, there are visual warnings and an alarm to alert the user to recharge the batteries. The built-in controller monitors power consumption and signals the user when the batteries need recharging. The controller provides progressive alarms to the user. There is a visual warning period to permit completion of the current task, progressing to a shorter shutdown audible alarm period. This indicates that the PrintCart will soon enter automatic shutdown if not connected to AC line power for recharging.

PrintCart Layout

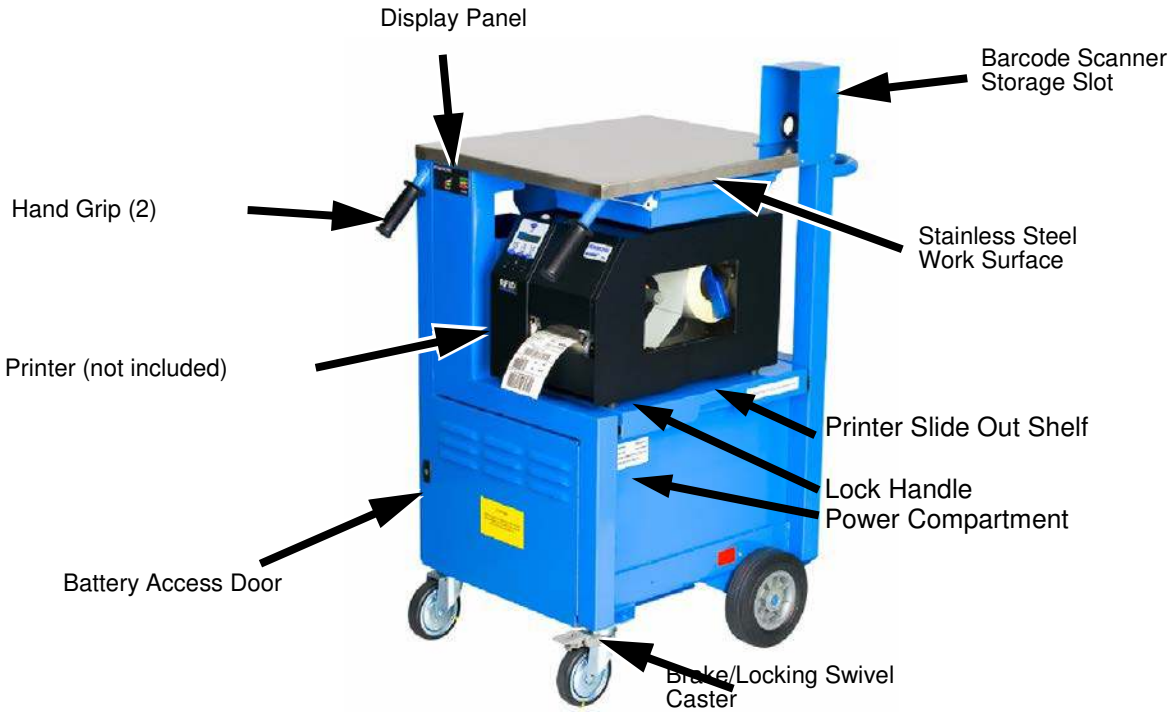


Figure 5. Rear Right View of the PrintCart

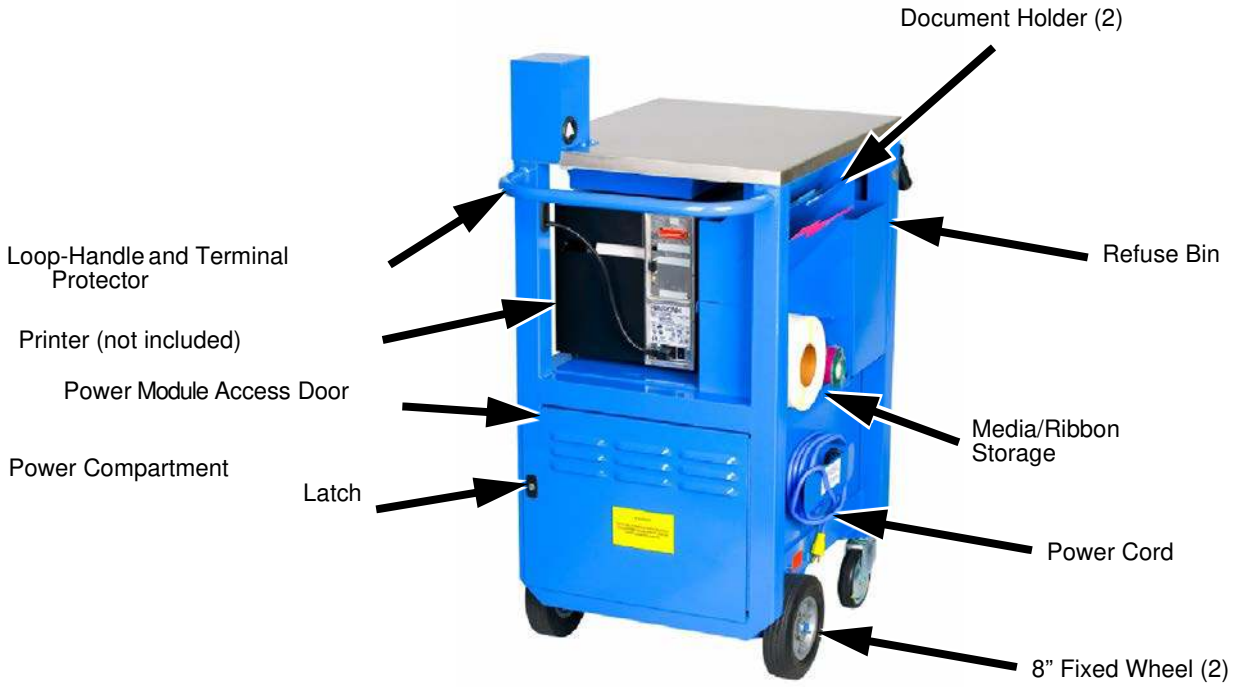


Figure 6. Front Left View of the PrintCart

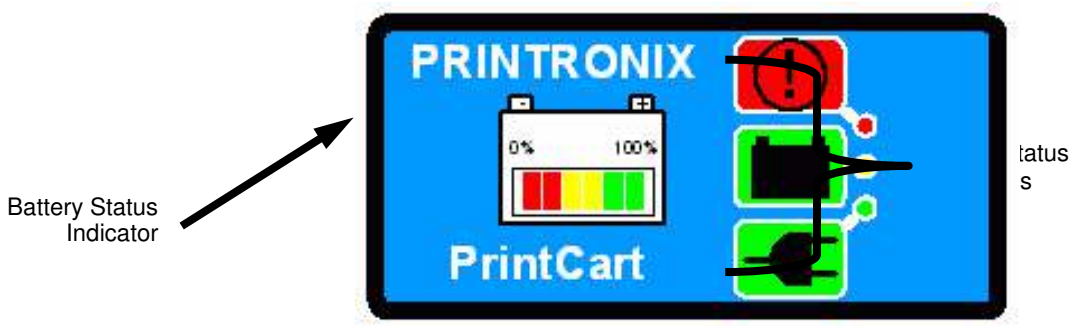


Figure 7. Display Panel

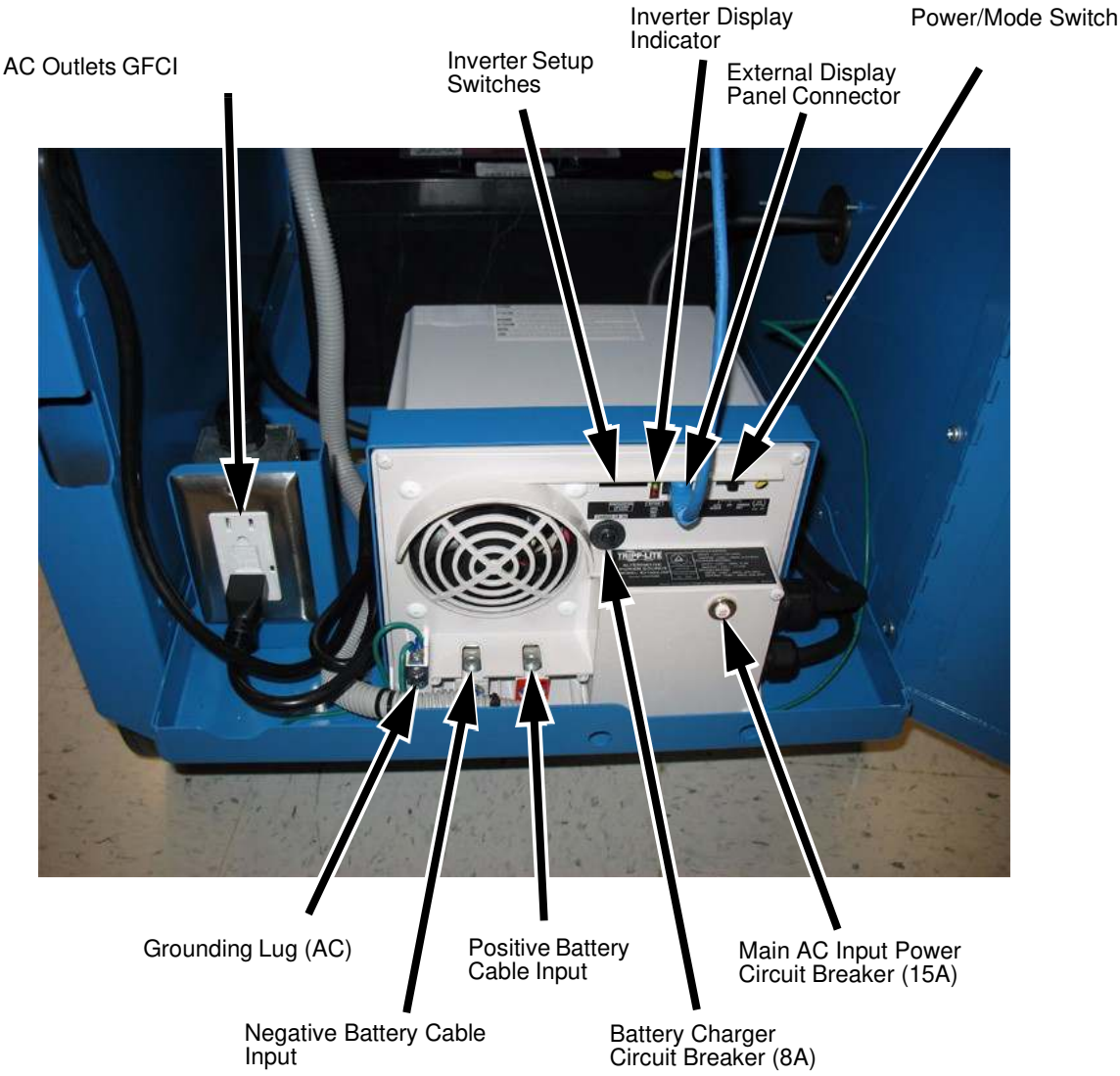


Figure 8. Power Module (Inverter/Charger) Features and Safety Devices (120V PrintCart)

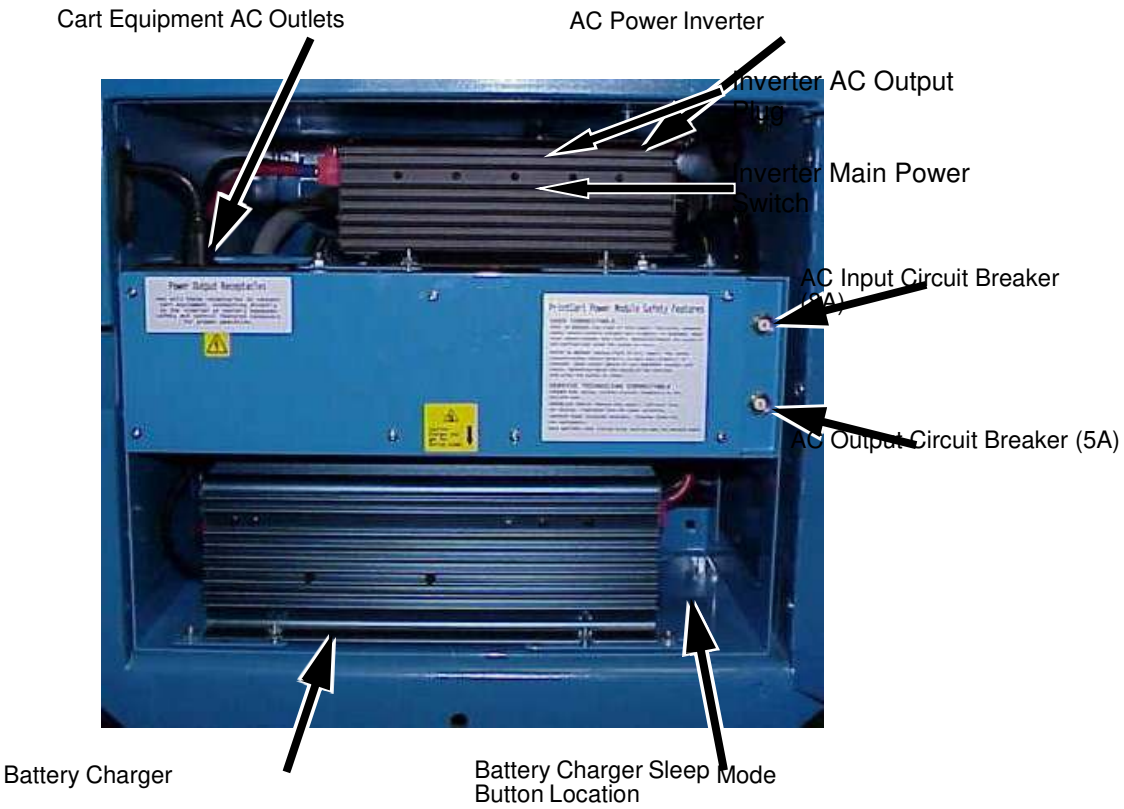


Figure 9. Power Module (Inverter/Charger) Features and Safety Devices (230V PrintCart)

3 *Operation*

AC Line Power Operation

When the AC line cord is connected to a wall receptacle, AC line power is transferred by an Automatic Transfer Switch (ATS) directly to the cart equipment. There is a short delay in applying line power (approximately 20 seconds for the 120V and 8 seconds for the 230V) to permit the plug to be secured in the receptacle. The transfer happens quickly so operation of the connected equipment is not interrupted.

NOTE: There is no need to power the PrintCart equipment off when either connecting or disconnecting from AC line power.

When operating on AC line power, the green mode indicator (line power) on the display panel illuminates.

The charger begins to charge the batteries after the ATS transfers line power to the PrintCart. The charger is a three-stage device designed for optimal battery charging.

- Stage 1 – when the charging cycle starts, the charger provides maximum rated charge until the battery reaches approximately 75% capacity. Completely charging the battery before reusing the PrintCart provides good PrintCart longevity.
- Stage 2 – the charge rate is reduced from full capacity to 10% capacity to charge the last 25% of the battery. Completion of second stage charging only slightly improves short term operating longevity but greatly improves long term battery life.
- Stage 3 – when the battery is fully charged, a trickle charge is applied to keep the battery at full capacity.

The time required for a recharge depends on the state of discharge, the size of the battery bank, and the charger's capacity. The PrintCart controller prevents the batteries from discharging more than 70% of their energy (Depth of Discharge or DoD); this reduces the risk of permanent battery damage.
Maximum recharge times for the PrintCart are listed in Table 1 on page 22. When the charging begins, the charger will indicate battery state improvement through the State of Charge (SoC) LEDs but displays differently between 120V and 230V models.

- 120V – as charging progresses, yellow and green bars illuminate individually with each 10-15% increase in charge state.
- 230V – the two red bars light when the charger is in Stage 1 (30-75% charge). When the charger enters Stage 2 (76-98% charge), the two yellow lights also illuminate. The two green lights illuminate together when the charger enters Stage 3 (greater than 98% charge). When all SoC lamps are illuminated, the PrintCart is fully charged.

  When battery power is available to the PrintCart, the Battery Power mode indicator (yellow) illuminates. When the PrintCart is connected to AC line power, the AC Line Power mode indicator (green) illuminates.

Make sure the source of AC power is through a modern 3-prong grounded outlet and is a reliable service capable of delivering the required current. Normal and maximum current specifications are listed in Appendix A on page 47. Table 1 below, details the maximum recharge time.

Table 1. PrintCart Charge Time

Battery Type	Maximum (Hours)	Typical (Hours)
2x100 Ah	4.7	3.7

The Power Module line cord design uses a short PrintCart cord connected to an extension cord. The two are plugged together inside a cord connector locking device. This method provides an easy, user level repair to encourage maintenance. The cord can be replaced with a variety of cords if they meet the original specification and are not longer than 25 feet. See “Spare Parts” on page 51 for cord requirements.

IMPORTANT **Using a cord or series of cords longer than 25 feet may result in power loss. This could affect operation of either the PrintCart equipment or power system.**

Battery Power Operation

When the PrintCart is unplugged from the AC outlet, the power system automatically switches equipment to inverter power via the automatic transfer switch (ATS).

NOTE: The PrintCart equipment does not have to be turned off and there will be no significant power interruption to the equipment.

The Battery Power mode indicator (yellow) on the display indicates that the batteries are now providing power. When running in Battery Power mode, the battery system is no longer being charged.

Display Panel

Colored LEDs on the display panel shows operational status. The display is arranged in two sections: battery indicator (state of charge) on the left and power status (operating mode) on the right.

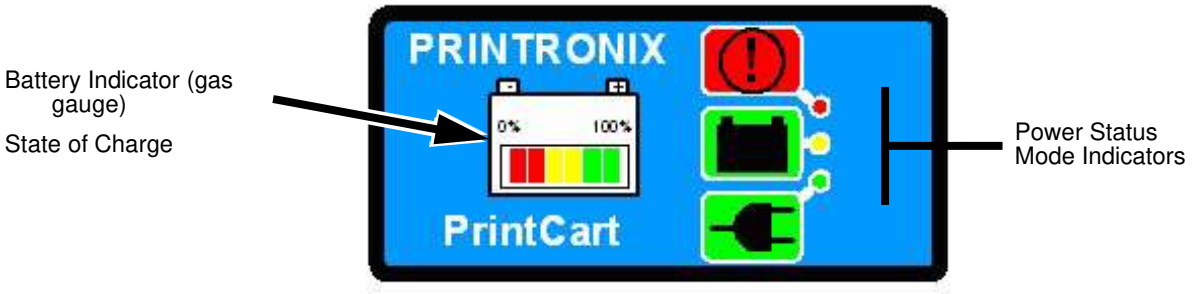


Figure 10. Display Panel Layout Indicator Colors

NOTE: All power status mode indicators will not display simultaneously.

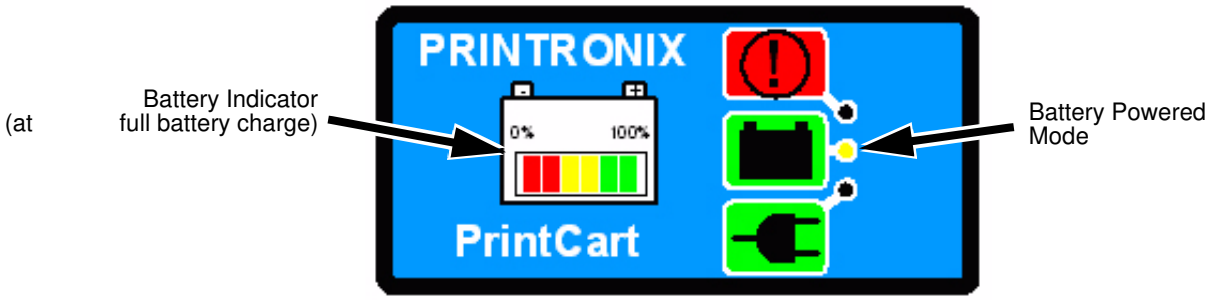


Figure 11. Operating in Battery Powered Mode with a Full Battery Charge

NOTE: The yellow LED illuminates in Battery Power mode with a full battery charge.

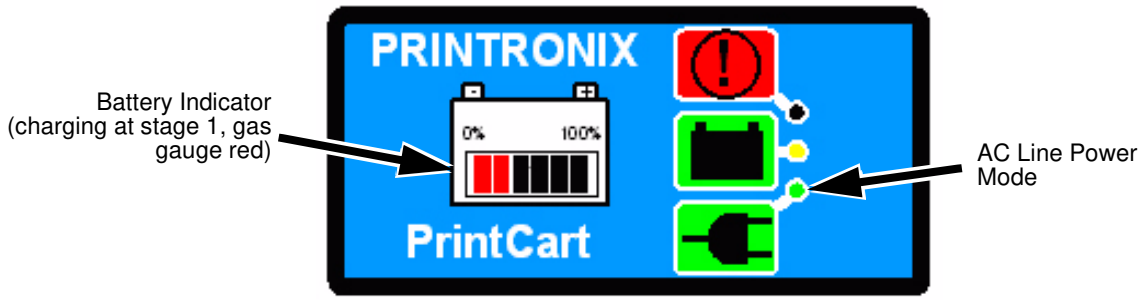


Figure 12. Operating in Unrestricted, AC Line Power Mode

NOTE: In unrestricted, AC Line Power mode, the green LED is illuminated. Battery power is available if line power is disconnected.

Figure 13. Discharged Batteries, Operating on Inverter

NOTE: When the batteries are discharged, the Warning Timer activates (flashing red gas gauge LEDs).

An illuminated Fault Mode LED indicates that the charger or the inverter is not operating correctly. A fault will not prevent the cart from operating in AC Line Power Mode, but it WILL NOT operate correctly in Battery Power Mode. Stop operation and report the problem to supervisors and maintenance personnel immediately for corrective action.

Implement the following restrictions to protect the batteries:

- Battery discharge is limited to 70% (as low as 30% state of charge).

  When the SoC (State of Charge) reaches the discharge trigger at 40% (2 red LEDs) a Warning Timer starts, and the state of charge indicator flashes slowly. The Warning Timer default is 20 minutes, during which time the cart will continue to operate.

  When the Warning Timer expires, the Shutdown Timer starts. The state of charge indicator begins flashing more rapidly and an audible beep sounds. The Shutdown Timer default is 10 minutes, during which time the cart should no longer be used and should be plugged in as soon as possible. Failure to begin charging prior to expiration of the Shutdown Timer will result in a loss (cutoff) of all AC power to the cart equipment.

- A minimum amount of battery recharge must occur prior to permitting the cart to return to cordless operation.

  If the battery discharge trigger is activated, this is an indicator that the discharge was significant. The recharge that follows must restore approximately half the charge before the cart can be used in cordless (Battery Power Mode) again.

  Power shutdown control is achieved through the Warning and Shutdown Timers. Once activated, the timers can only be stopped by plugging the cart into an AC wall outlet. A stopped timer will restart any time the cart is unplugged provided that the charge level has not been raised enough to be reset. The reset level for the 120V cart is 60% (2 red and 1 yellow). The reset level for the 230V cart is 75% (2 red and 2 yellow). The SoC (State of Charge) indicator continues to flash during charging to indicate that the discharge floor was reached, and the timers have yet to be reset.

If the cart is unplugged prior to the reset, the timer-controlled shutdown will resume from its previous activation and shut down the cart when the remaining time expires. If both timers have previously expired, the cart will shut down immediately.

- If the FAULT (red) mode LED illuminates, this indicates there is a power irregularity.

  120V: if lit, the inverter is providing power in excess of its continuous duty rating, it will overheat if allowed to continue for an extended period of time, even though this is still a safe operating condition. If flashing, the inverter has shut down due to overheating.

  230V: if lit, either the charger or the inverter is not outputting power when it should. It is also possible for the fault light to illuminate for a short time if the charger is working but the batteries are significantly discharged.

- A fault does not prevent the cart equipment from operating in AC Line Power Mode. However, the cart will not operate on battery power and should be removed from operation and reported to supervisors and maintenance personnel immediately for corrective action.

Gaining Access to the Printer

The printer is mounted on a slide out shelf to provide quick access for media and ribbon replacement or for servicing (cleaning or troubleshooting).

Sliding the Printer Shelf to the Service Position

1. Locate the lock handle under the center of the shelf on the right side of the PrintCart, see Figure 5, on page 16.
2. Make sure there is enough slack in the printer power cord to permit 10 inches of sideways movement.
3. Pull up on the spring-loaded lock handle and slide the shelf with the printer out of the right side of the PrintCart until the shelf locks in the full outboard position.

NOTE **You will hear a click indicating the shelf has reached the full outboard position. The shelf will not slide back in unless the lock handle is pressed again.**

Loading Media or Ribbon

1. Lift open the printer media cover and follow the ribbon and media loading instructions illustrated on the inside of the cover.

WARNING **The media cover will only open to approximately 90 degrees. Initiate care while performing this task to minimize personal injury.**

2. When printer servicing is completed, close the media cover, depress and hold the lock handle and slide the printer back to its retracted position.

NOTE **You will hear a click indicating the shelf is safely locked back in the retracted position.**

3. Make sure the power cord does not become tangled.
4. Place the printer back Online.

PrintCart Features

Wheel Brake/Lock

The PrintCart is equipped with a wheel brake/lock on one of the rear casters. When applied, the brake prevents the wheel from rotating and the lock prevents the caster from pivoting. Set this brake when using the PrintCart on a non-level surface or loading ramp. This feature is standard on all PrintCarts.

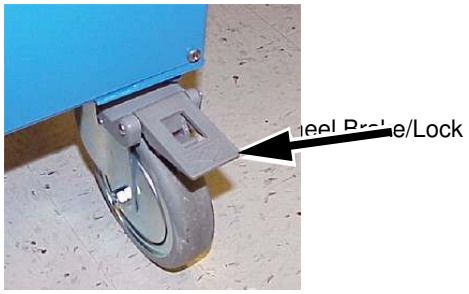


Figure 14. PrintCart Wheel Break/Lock

PrintCart Accessories (Optional)

Refuse Bin

A factory or field installable waste container is available on the left side of the PrintCart near the back. To dump the container, tilt it out and down far enough to permit dumping of contents.

CAUTION **Do not pour liquid into this container as it is not liquid tight. The liquid could enter the power compartment and cause damage.**

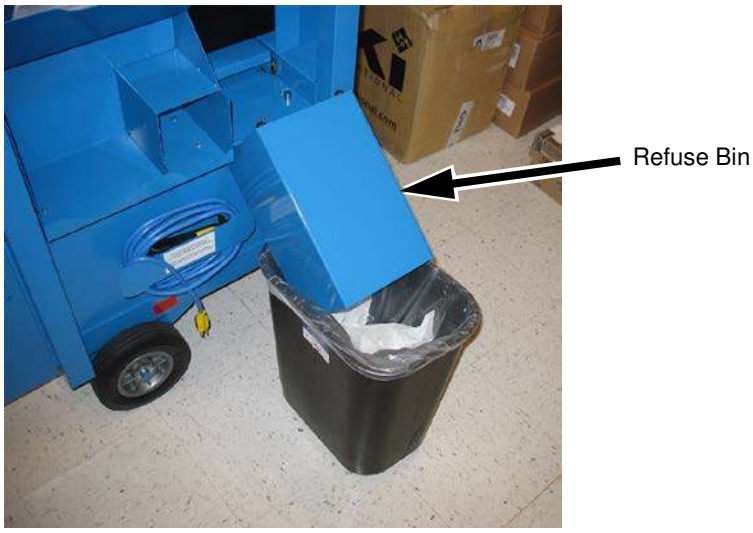


Figure 15. Dumping the Refuse Bin

Document Holders

A factory or field installable dual document/notebook holder allows local storage of documents. The holders are recessed to prevent damage when the PrintCart is moved close to other objects.

Media Storage Compartment

A media storage compartment is either factory or field installable. It allows the storage of one printer ribbon up to 6 3/4" wide and 4" in diameter, and one roll of media up to 6 3/4" wide and 8" in diameter.

See Figure 16 below.

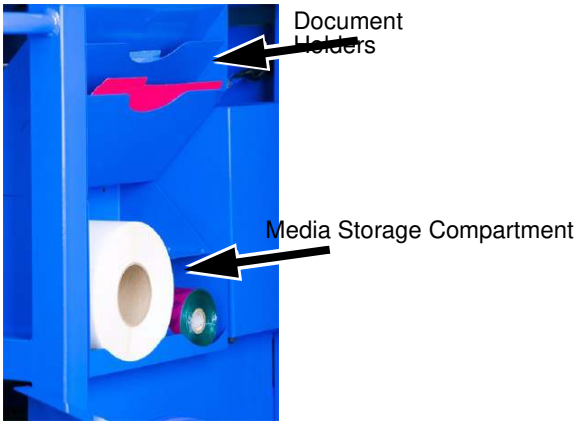


Figure 16. Dual Document Holders and Media Storage Compartment

Barcode Scanner Storage Slot

A barcode scanner storage slot is available as a factory or field installable option to prevent the scanner from accidentally falling off the PrintCart.

Utility Drawer

A utility drawer is available as a factory or field installable option to store up to 8 1/2 x 11" size paper as well as other small items. This allows the top work surface to be kept clutter free.

See Figure 17 below.

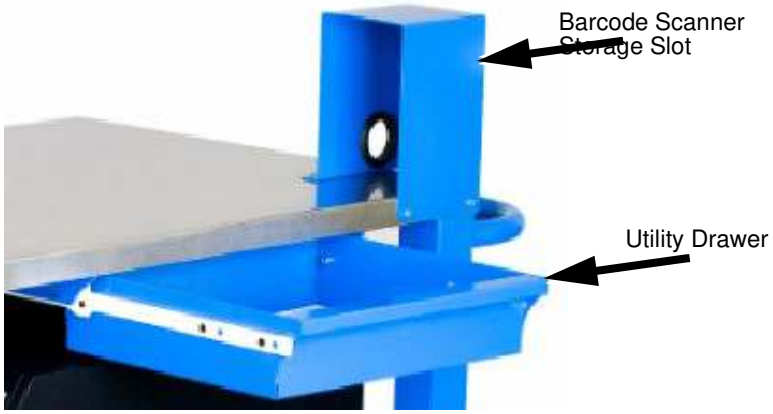


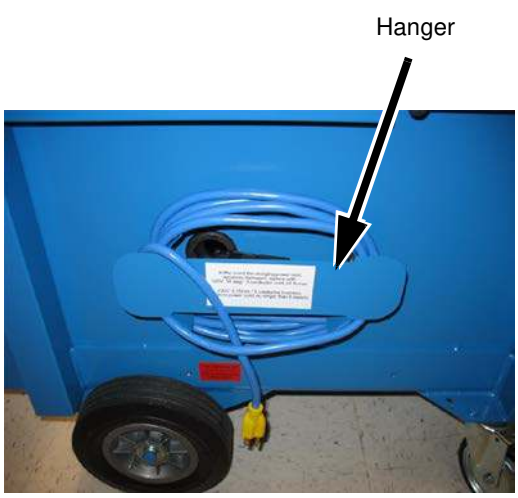
Figure 17. Barcode Scanner Storage Slot and Utility Drawer

Power Module Line Cord and Extension Cord

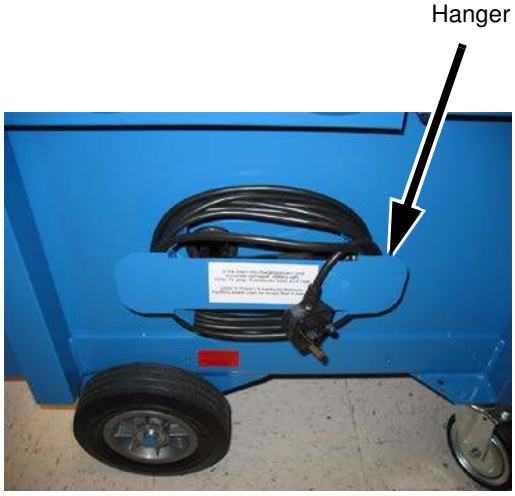
An extension cord is wrapped on a hanger on the right side of the power compartment, see Figure 18 below. A short Power Module line cord exits the power compartment through a hole with a rubber grommet around it, in the center of the cord hanger. The line cord is intentionally not long enough to reach either a wall receptacle or the floor. A PrintCart can be rendered inoperative due to power cord damage resulting from driving over the plug or pulling the cord to disconnect it from an AC wall receptacle.

To operate the PrintCart, an external extension cord must be attached (one is supplied and installed). The 120V PrintCart is supplied with a heavy gauge (14 AWG) cord approximately 10 feet long. The 230V PrintCart is supplied with a 4.3 m (3 wire, 2mm) standard business machine power cable. An extension from the inverter input provides an IEC 320 receptacle for connection of the business machine cable. Choosing the appropriate business machine plug type at time of order accommodates differing plug types.

The appropriate extension cord is attached to the PrintCart Power Module line cord and secured with a connector lock. The locked connectors are stored inside the cord hanger. When the AC extension cord is not being used, wind it around the hanger. This prevents the cord from becoming a trip hazard or damaged by getting stepped on or driven over. The cord hanger has extended flanges to ensure the cord will not unwind during transport. The cord hanger is not intended to carry more than 25 feet of cable.



120V NEMA 5-15 Plug and 10 ft. Extension Cable



230V - 4.2M UK Business Machine Cable

Figure 18. Power Cable

4 *Troubleshooting*

Safety

During any troubleshooting activities that require access to the power compartment, you must disconnect the input AC power cord from any external AC outlet and set the 120V inverter main power switch to the OFF (center) position or the 230V inverter to the OFF (0) position. This removes the presence of any high voltage AC power. Always work on a level, dry area with the caster brake set to prevent accidental PrintCart movement.

IMPORTANT **Allow only trained personnel access to the power compartment.**
Gestatten Sie nur geschulten und befugten Mitarbeitern den Zugang zum Stromversorgungsfach.

WARNING **This product contains lead-acid batteries. Special care must be taken when handling batteries.**

- **Batteries contain toxic materials; handle batteries with care.**
- **Do not puncture, disassemble or incinerate batteries.**
- **Charge batteries in a well-ventilated area away from ignition sources.**
- **Prevent positive and negative terminals from contacting each other (short circuit). Shorting terminals causes permanent battery damage and can result in a fire or serious personal injury.**
- **Do not remove or lift the battery by its output leads. Move or lift the battery by picking up its case or by using the integrated handles.**
- **Dispose of batteries in accordance to local regulations. Lead acid batteries may not be disposed of in household or industrial waste containers. Disposal through hazardous waste facilities/services is required to avoid ecological harm from battery materials. Severe penalties may result from improper or illegal disposal.**

WARNUNG **Dieses Produkt enthält Bleiakkus. Beim Umgang mit Batterien ist besondere Sorgfalt geboten.**

- **Akkus enthalten Giftstoffe und sind daher besonders sorgfältig zu handhaben.**
- **Akkus keinesfalls zerstören, zerlegen oder verbrennen.**
- **Akkus in einem gut belüfteten Raum und nicht in der Nähe von Zündquellen laden.**

- **Der Kontakt zwischen positiven und negativen Anschlüsse ist unbedingt zu vermeiden (Kurzschluss). Kurzschlüsse können Akkus dauerhaft schädigen und einen Brand oder Verletzungen verursachen.**
- **Den Akku keinesfalls an den Ausgangsleitungen fassen, um ihn zu entfernen oder anzuheben. Fassen Sie den Akku stets am Gehäuse oder an den integrierten Griffen.**
- **Akkus den lokalen Vorschriften entsprechend entsorgen. Bleiakkus keinesfalls im Hausmüll oder in Behältern für Industrieabfälle, sondern zur Vermeidung von Umweltbelastungen als Sondermüll entsorgen. Für unsachgemäße und illegale Entsorgung können empfindliche Strafen verhängt werden.**

California Proposition 65

WARNING **Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer or birth defects or other reproductive harm. Wash your hands thoroughly after handling batteries.**

PrintCart Safety Features

The PrintCart is equipped with numerous electrical safety devices to interrupt electrical power should electrical malfunctions or overloads occur. These devices are designed to protect the operator as well as the power compartment equipment. They can be accessed through the front or rear access doors by using a screw driver.

NOTE: Access to the power compartment should be limited to specifically trained and authorized personnel only.

The 12VDC battery input to the inverter is protected with a 100-amp flat lug type input fuse. It is bolted to the battery tray on top of the batteries and is covered by a snap on plastic cover which must remain in place when the service disconnect is connected. The fuse has no visible indicator of its condition, and this condition must be confirmed with an electronic meter.

The 12VDC power to the upper display/control panel is provided through a two wire, 16 Gauge cable bolted directly to the outer battery terminals. This cable includes an automotive type ATC blade fuse holder (with 2 Amp fuse) adjacent to the positive battery terminal to protect the display panel circuit.

CAUTION **Prior to accessing the display panel, unplug the quick disconnect to prevent any electrical shorts during access.**

The AC input is protected by two circuit breakers, both mounted on the inverter. There is a breaker for the charger portion of the inverter/charger subsystem located immediately to the right of the inverter fan shroud (same for 120V and 230V models). It is 8 Amperes for 120V charger and 3/5 Amperes for the 230V charger. The second breaker differs in capacity, location, and purpose between the 120V and 230V units, as follows:

- For the 120V PrintCart input, there is a 15 ampere main circuit breaker mounted on the inverter connector panel. It controls all input power to the PrintCart and when tripped, interrupts both charger power and pass- through (ATS) power.
- For the 230V PrintCart input, there is no main breaker. There are separate breakers for the charger and transfer power. The transfer breaker is 4/6 Amperes and is located to the right of the charger breaker. In this case, if either breaker trips, the other branch remains powered.

Troubleshooting Guide

Table 3. Troubleshooting Problems

Symptom		Possible Cause	Corrective Action
Primary	**Secondary**		
No AC output regardless of presence or absence of AC input.	All display panel indicator lights are off.	Main DC cable is disconnected from battery (120V & 230V Cart).	Connect main DC cable to battery.
		DC power cable is unplugged from Relay PCBA (230V Cart).	Connect DC input to Relay PCBA (230V Cart).
		Relay PCBA blade fuse is open (230V Cart).	Check and replace the right most 1A blade fuses on Relay PCBA.
		Batteries are completely discharged or unserviceable (120V & 230V Cart).	Charge batteries with an external battery charger for 20 minutes (230V Cart). Switch onboard charger to sleep mode by depressing the red square button on the right side of the charger This lowers the charging rate to reduce the hazard of charging unserviceable batteries. Reconnect to AC line power. If a full recharge solves the problem, deactivate sleep mode.
		Defective Relay or Display PCBA (230V Cart).	Replace PCBA (230V Cart).

Table 3. Troubleshooting Problems (Cont'd)

Symptom		Possible Cause	Corrective Action
No AC output in battery mode. AC input is not present.	1. Battery mode LED (yellow) is off. 2. Battery State of Charge (SoC) is red and flashing.	Batteries are below shutdown threshold and have shut off inverter power to prevent battery damage.	Plug in and recharge until battery meter no longer flashes or until a full charge is achieved (preferred).
No AC output in battery mode. AC input is not present. (Cont'd)	1. Battery mode LED (yellow) is off. 2. Battery charge is greater than 2 red. 3. Fault mode LED (red) is flashing.	Inverter output is unplugged.	Plug output cord into inverter (right side of top equipment on power module).
		Inverter is switched off.	Switch inverter on (right side of top equipment on power module).
		Inverter fuse is open, or inverter has failed.	Evaluate potential cause of overload and remove. Replace inverter (fuse not replaceable).
	1. Battery mode LED (yellow) is on. 2. Battery charge is ok.	Equipment power cords are not connected to power module AC outlet.	Connect power cords to the power module outlets.
		Output circuit breaker is tripped (bottom push button breaker).	Disconnect load and reset output circuit breaker by pressing it back in. Reconnect and switch loads on, one at a time.

Table 3. Troubleshooting Problems (Cont'd)

Symptom		Possible Cause	Corrective Action
AC input is connected but not shown as available.	1. AC Line mode LED (green) is off. 2. Charger is not operating.	Input circuit breaker is tripped (top push button breaker).	Disconnect load and reset input circuit breaker by pressing it back in. If charger operates, reconnect and switch loads on one at a time.
		AC Power is not present in wall socket.	Test presence of power in wall socket with another piece of equipment or meter.
		Input extension cord has broken internally.	Replace input extension cord.
		Input extension has separated from cart input cord inside the cord wrap.	Inspect cord coupling and ensure securing clip is in place and functional.
		Relay or display PCBA is defective.	Replace PCBA.
AC input is connected and available, but the charger is not charging.	1. AC Line mode LED (green) is on. 2. Fault mode LED (red) is flashing. 3. Charger fan is not operating.	Charger is switched off.	Turn on the charger switch on the left side of the charger (lower piece of equipment).
		Charger fuse is open.	Replace charger fuse on left of charger (round black projection).
		Charger is inoperative.	Replace charger.

5 Maintenance

Power Equipment Access

Access to the power equipment is through doors on the front and rear of the PrintCart. Inside the power compartment, the power system is divided into two separate replaceable trays. The battery tray contains two batteries. The power module tray contains the inverter/charger, a GFCI duplex outlet (120V version), and a battery quick disconnect cable to the battery tray. These trays can be removed independently and are held in place by a set of restraining bolts located on the outside of the PrintCart, above the 8” wheels.

NOTE: It is not necessary to move the equipment trays inside the frame to access the power equipment for inspecting or resetting safety devices (breakers or GFCI). Simply open both access doors and all devices are visible and readily accessible.

If greater access is needed, such as for servicing equipment or replacing batteries, the trays can be completely removed by following the Power Module instructions detailed below.

Ensure the screws joining the two trays have been removed. Some factory configurations may be shipped with the Power Module Tray bolted to the Battery Tray; they must be removed as a single unit and the mating bolts removed before the trays can be handled separately. To remove the tray as a single unit, disconnect the Power Module Tray side as indicated below, but do not remove it. Prepare the Power Module Tray and remove the entire unit as indicated in the Battery Tray removal process (see “Battery Tray Removal” on page 39).

NOTE: It is not necessary for the trays to be joined for proper operation and they may be replaced in the PrintCart as separate units.

Power Module Tray Removal

1. If applicable, make sure the mating screws joining the two trays are removed.
2. If the PrintCart is plugged into an AC outlet, disconnect the plug from the outlet.
3. Open the front access door on the, below the loop handle.
4. Place the inverter/charger Power/Mode switch located on the front of the inverter (120V Cart) or to the right side of the inverter (230V Cart) to the off position.
5. Disconnect the PrintCart equipment power cords either in the GFCI (120V) or in the face of the inverter (230V).
6. Disconnect the blue inverter display data cable from the inverter.

7. Loosen the AC grounding lug and remove the green grounding wire that runs to the PrintCart frame.
8. Open the rear door, (below the two hand grips), of the PrintCart and unplug the battery main quick disconnect see Figure 19.
9. Disconnect the AC input cord according to the model you have.

   120V PrintCart

   a. Unwind the extension cord and expose the plug locking connector stored inside the cord wrap.

   b. Raise and disconnect the coupled plugs.

   c. Push the plug through the grommet hole, back into the power compartment.

   d. Pull the short input cord and wrap it over the inverter, taking care to secure it firmly.

   230V PrintCart

   a. Unplug the IEC 320 input plug from the front of the inverter and position the cable away from the power module.

10. Remove the two restraining bolts located on each side of the PrintCart that hold the power module tray.

    NOTE: PROCEED TO THE NEXT STEP WITH CAUTION, AND BE PREPARED TO SUPPORT APPROXIMATELY 25 LBS OF TRAY.

11. Slide the power module tray out the front door far enough to get a good grip on it, then pull it out the remaining distance and lift the unit from the PrintCart.

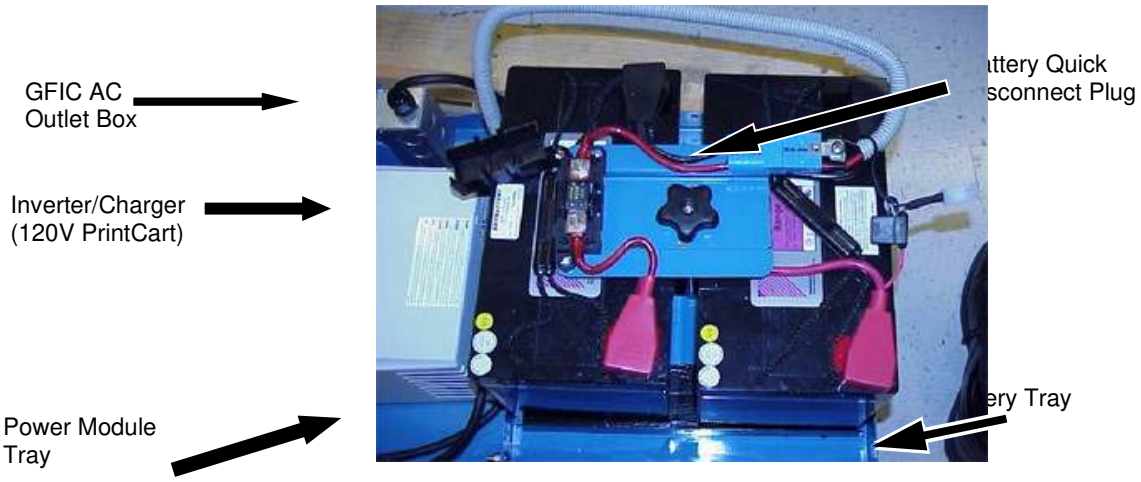


Figure 19. Power Module & Battery Trays

Battery Tray Removal

WARNING **DISCONNECT THE PRINTCART FROM THE AC OUTLET PRIOR TO PROCEEDING WITH THE NEXT STEPS**

1. Open the front access door, located below the loop handle.
2. Shut off the inverter/charger Power/Mode switch located on the front of the inverter (120V), or the inverter switch at the right side (230V).
3. Open the rear access door, disconnect the main battery quick disconnect cable, and place it in the bottom of the tray next to the base of the battery.
4. Disconnect the display panel power cord quick disconnect cable and place it in the bottom of the tray next to the base of the battery.
5. Remove the two side restraining bolts that hold the battery tray in place. These are located on the side of the PrintCart frame.
6. Obtain a pallet jack and center one leg of the jack approximately 18 inches inward under the battery tray.
7. Carefully lift the tray about ¼ inch and slowly pull back on the jack to remove the tray from the PrintCart frame. If the tray does not move easily, adjust the pallet jack or degree of lift and pull back once more.

WARNING **EXERCISE CARE WHEN REMOVING THE BATTERY AND TRAY AS THE WEIGHT IS BETWEEN 150 AND 230 LBS (DEPENDING ON BATTERIES USED).**

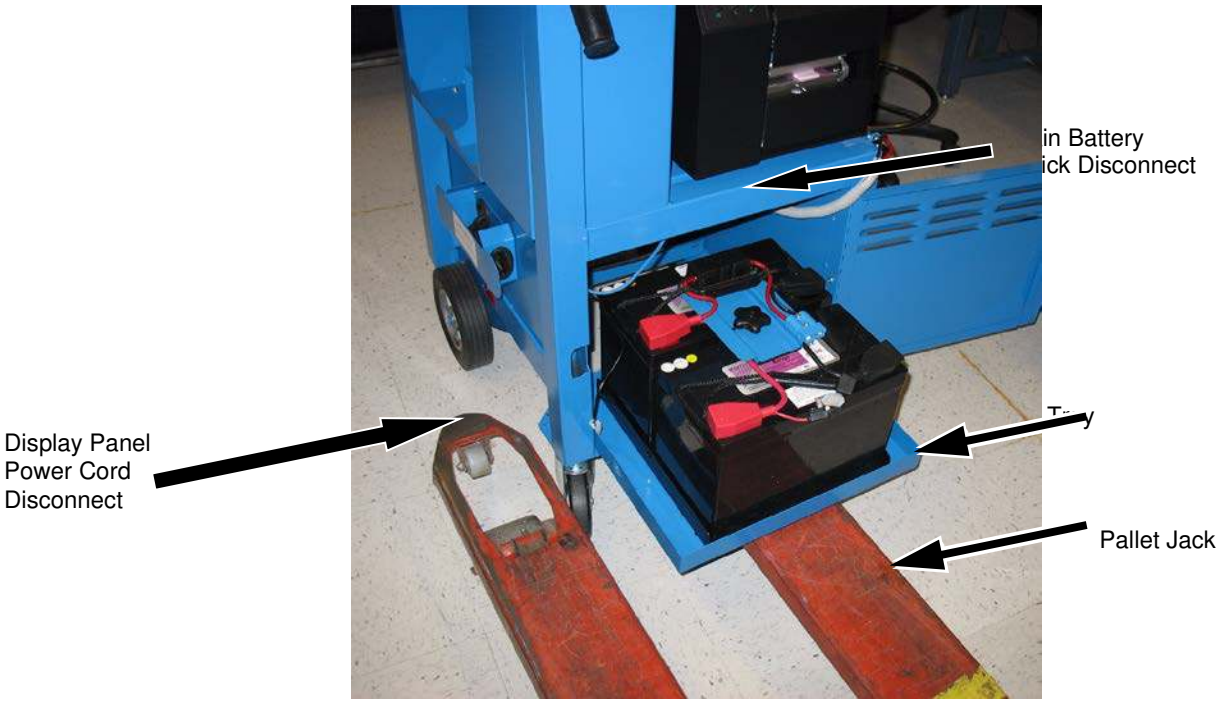


Figure 20. Battery Tray

Serviceability Inspection

WARNING **ONLY TRAINED PERSONNEL SHOULD PERFORM THIS INSPECTION OR ANY NEEDED MAINTENANCE.**

ANY TIME THE POWER COMPARTMENT IS ACCESSED, DISCONNECT THE AC LINE POWER CORD FROM AC POWER AND SET THE INVERTER TO THE OFF POSITION.

Periodically open the power compartment and inspect the internal components for signs of loose connections, excessive dirt and/or dust buildup, or any other condition that is out of the ordinary. Clean the cooling fan intake and exhaust ports on the inverter every six months. Other ventilation features should also be serviced now.

Battery Scope and Replacement

WARNING **BECAUSE OF THE HIGH ELECTRICAL ENERGY AND POTENTIAL FOR FLAMMABLE GASES ASSOCIATED WITH LEAD ACID BATTERIES, USE EXTREME CARE WHEN SERVICING THE BATTERIES. MAINTENANCE MUST BE DONE IN A WELL-VENTILATED AREA BY A TRAINED SERVICE TECHNICIAN. THE SERVICE TECHNICIAN MUST WEAR SAFETY GLASSES, LEATHER GLOVES, AND STEEL-TOED BOOTS OR SHOES.**

Batteries should perform well for a minimum of 3 years (600 charge/discharge cycles of 70%). Batteries will slowly lose some of their charging capacity over time. This should be noticeable but will not affect normal PrintCart operations. Battery replacement is only required when batteries fail to hold sufficient charge to support normal PrintCart operations.

When the batteries begin to fail, both batteries will not necessarily fail together but the failure of one battery will eventually cause the failure of the other. Once a significant amount of degradation in performance has been reached, one battery has already failed and has probably damaged the remaining battery enough that it cannot recover. For this reason, both batteries must be replaced at the same time. Both replacement batteries must also be identical in capacity, and preferably be made by the same supplier, conforming to the standards established in Appendix A, Electrical Specifications, on page 48. Adherence to these requirements will ensure that you do not compromise safety and performance standards.

Before replacement of the batteries is started, remove the Battery Tray (Sub-Pallet) per the instructions on page 39 and place it on a suitable work surface.

WARNING **DO NOT WORK ON THE BATTERY TRAY WHILE IT IS RESTING ON THE PALLET JACK FORK.**

Replacing Batteries

CAUTION **EXERCISE CARE AND DEMONSTRATE PROPER LIFTING PROCEDURES**

1. Unplug the Main Battery Quick Disconnect, see Figure 21 on page 42.
2. Lift the protective covers on the battery (-) terminals and remove the hardware holding the cables in place, (retain hardware), see Figure 21 on page 42.
3. Perform the same operation on the battery (+) terminals, (retain hardware).
4. Loosen and remove the battery clamp knob, see Figure 21 on page 42.
5. Lift the clamp plate, cables, fuse and disconnects from the battery tray as a single unit.
6. Ensure the tray is fully supported all around, then remove both batteries from the tray, one at a time and set them aside for disposal.
7. Obtain a new set of batteries and place them into the same position on the tray as the old batteries. Be sure and observe that the polarity of the battery terminals is correct.

   If the batteries are a different length, adjust the bottom tray brackets to the appropriate width to keep both batteries centered. If the batteries are a different height, loosen the lock nut at the base of the thread rod and raise or lower the thread rod to make the top approximately 1/2" to 3/4" higher than the top of the battery.
8. Replace the clamp plate and secure the center knob so it is tightly snug.
9. Re-install the battery terminal wiring (red to (+) positive terminal and black to (–) negative terminal) and secure with the retained hardware.

WARNING **Reversing battery polarity on the interconnect cables could result in damage to the cables and batteries and can also cause an explosion. Make sure that the terminal covers are also in place and adequately cover the terminal hardware.**

10. Re-install the battery tray into the PrintCart frame.
11. Install the restraining bolts on both sides of the PrintCart to secure the tray in place, if daily battery exchange is not practiced for PrintCart operation. Before installing the screws, use the tip of the screwdriver to insure the hole in the battery tray is aligned with the threaded hole in the cart frame.
12. Re-connect the LED display power cord and the main battery disconnect.
13. Close and secure the rear door.

This completes the battery replacement procedure. Be sure to fully charge the new batteries before using them.

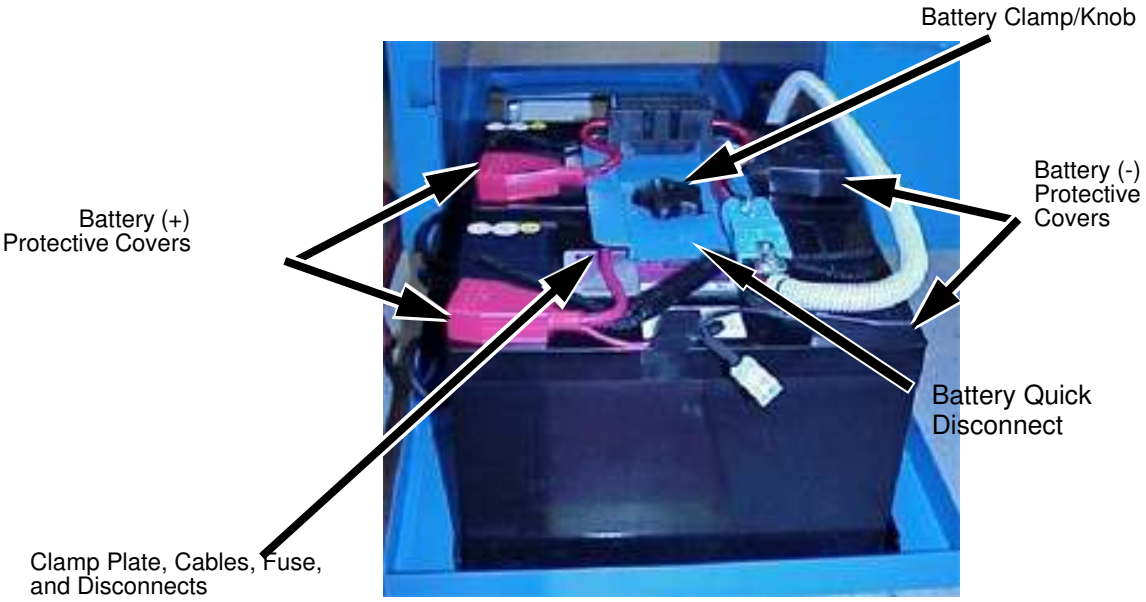


Figure 21. Replacing the Batteries

Inverter Replacement (230V PrintCart)

Note: Only the 230 V Cart supports replacement of just the inverter. If more than the inverter is suspected of failure, replace the 230 VAC Power Module. The 120V Cart has an integral inverter/charger unit. Failure of this unit requires replacement of the 120VAC Power Module.

Make sure other causes for power failure are eliminated before replacing the inverter, (see Table 3, Troubleshooting Problems on page 33). Simple inspection may prevent unnecessary replacements.

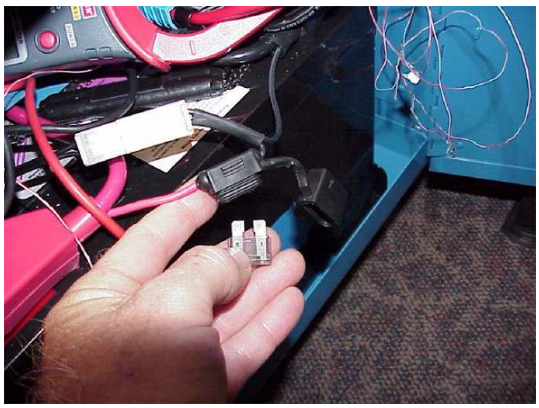


Figure 22. Inverter Replacement

Fuse Replacement

There are two fuses on the PrintCart:

- Display Panel Fuse – located between the outermost battery terminals in an in-line fuse holder.
- Main Fuse – located on top of the battery clamp plate inside a black plastic housing.

Note: An open fuse means an abnormal situation exists in the power system. Excessive equipment loading, or possible short circuits may exist. Carefully examine all components and wiring in the system for damage before replacing a fuse to prevent a re-occurrence of the failure.

Display Fuse

1. Open the rubber fuse holder and pull the blown fuse out.
2. Replace only with an identical blade fuse:
    - 2 Amp ATC (120V Cart)
    - 1 Amp ATC (230V Cart).
3. Close the rubber fuse holder after replacement.

Main Fuse

1. Switch the inverter OFF.
2. Unplug the DC power service disconnect on top of the battery clamp plate.
3. Unplug the LED display power cord disconnect.
4. Using a pallet jack or subpallet carrier, remove the battery pack.
5. Lift the snap-on cover on the front until it opens.
6. Loosen and remove both M8 nuts (use a 13 mm or 1/2-inch open end wrench) and carefully lift the fuse from the threaded terminal posts.
7. Install the new fuse onto the studs.
8. Reverse the above procedure to reinstall connections.

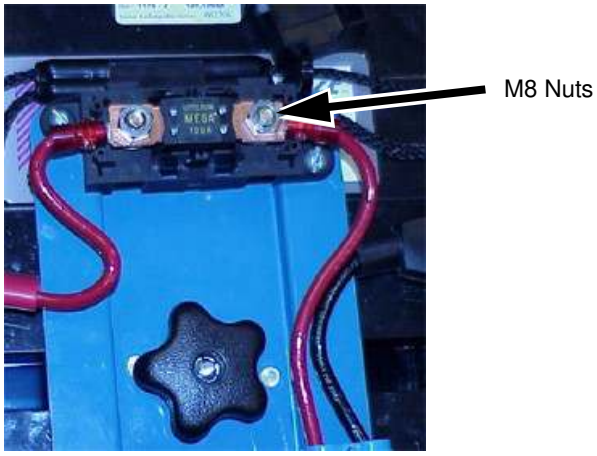


Figure 23. Replacing the Main DC Power Fuse

Power Cord Replacement

The AC line cord (power cord) is designed to be user replaceable. The connection between the external extension cord and the Power Module inverter input cord is located in the cord hanger on the side of the PrintCart.

Removal:

1. Completely unwrap the extension cord from the storage hanger.
2. Lift the plug connector out of the hanger recess.
3. Remove the cord connector lock and disconnect the two cords.

Installation:

1. Obtain a proper replacement extension cord and reverse this procedure to reinstall.

The 120VAC and 230VAC PrintCarts have different connector styles. The 120VAC PrintCart uses a NEMA 5-15 connector (see Figure 24). The 230VAC PrintCart uses an IEC-320 connector (see Figure 25).
The IEC 320 connector allows a variety of business machine power cables to be used depending on the connector the user requires.

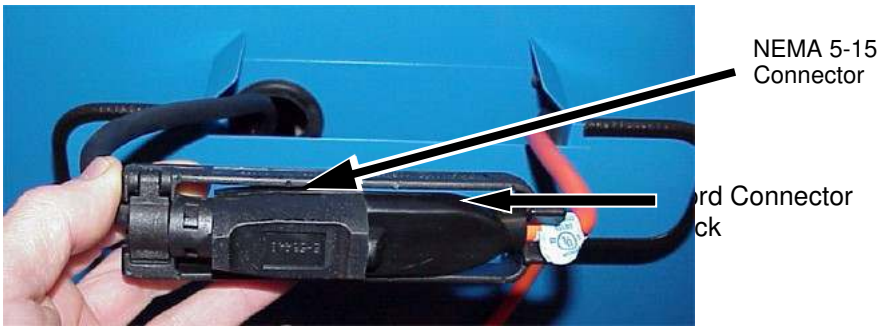


Figure 24. NEMA 5-15 Connector

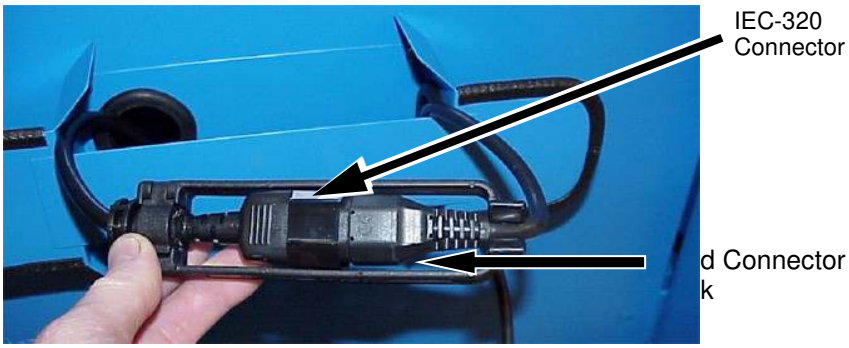


Figure 25. IEC-320 Connector

Wheel Replacement

Caster Wheels

Removal

Recommended replacement caster wheels are specified in the repair parts section (see “Spare Parts” on page 51).

2. Prevent the PrintCart from rolling by placing a 3/4 inch (approximately 19 mm) thick board behind the fixed wheel.
3. Elevate and support the entire end of the PrintCart, lifting the caster end approximately 1 inch off the ground.
4. Remove the three 5/16 Nylock retaining nuts (use a ½-inch open end wrench).
5. Remove the caster wheel.

Installation

1. Install the new caster by reversing the above process.
2. Make sure the nuts are tight.
3. Replace any Nylock nuts if the nylon locking element is too worn to provide retention.

Casters are available in various brands and styles. If the replacement is a different brand than the original, it may be necessary to replace both since caster mount heights vary enough to cause the PrintCart to rock.

Fixed Wheels

Removal

Recommended replacement wheels are specified in the repair parts section (see “Spare Parts” on page 51).

1. Engage the caster wheel lock.
2. Lift and support the entire end of the PrintCart so the wheel is raised approximately 1 inch off the ground.
3. Remove the external snap ring and thrust washer from the end of the axle.
4. Remove the wheel.

Installation

Install the new wheel(s) by reversing the above process.

The wheel is a commonly available style with an 8-inch outer diameter and a 5/8 inch bore. The hub is offset. Local replacements may be available that fit this requirement. If the replacement is not identical to the original, it may be necessary to replace both to ensure that the PrintCart does not rock.

Hand Grip Replacement

1. Remove the hand grips by placing your fingertips on the innermost shoulder of the grip and pulling it straight off the steel handle.

   Hint: Should the grip not release, insert a small flat screwdriver blade under the grip to loosen it and stretch the grip away from the steel handle.
2. Twist the grip while pulling it off.
3. Install the new grip onto the handle by pushing on the end of the grip only. Hint: If the grip is too tight, apply a small amount of a mild solution, consisting of soap and water.

A Specifications

Physical Specifications

Characteristic	North American (120V/60 Hz)	European (230V/50Hz)
Operating		
Height (SS top/barcode storage)	40 in./47 in. (101.6 cm/119.4 cm)	
Width (frame/wheels)	21 in./22 in. (53.3 cm/55.9 cm)	
Length (SS top/handles)	25 in./36 in. (63.5 cm/91.5 cm)	
Weight (without printer or terminal)	280 LBS (127 kg)	
Printer Shelf Load Capacity	70 LBS (32 kg)	
Work Surface	Stainless Steel 21 in. (53.3 cm) wide x 25 in. (63.5 cm) long	
Printer Slide-Out Shelf	Painted Steel 14 in. (35.6 cm) wide x 20.25 in. (51.4 cm) length with predrilled mounting for T6 and T5000r/T8 printers. Includes shock mounts	
Printer Shelf Extension	11 in. (27.9 cm)	
Wheels	2 - 5 in. (12.7 cm) caster, one locking (front) 2 - 8 in. (20.3 cm) fixed wheel (rear)	

Electrical Specifications

Characteristic	North American (120V/60 Hz)	European (230V/50Hz)
Battery Capacity 2 x 100 Amp-hour	Recharge time to recover 60+% charge	
	3.2 HR	4.0 HR
Battery Type	Sealed Lead Acid, Absorbed Glass Mat (AGM)	
Inverter/Charger Type	RV750ULHW	APSX600
AC Inverter Output	120V/60 Hz/750 w	230V/50 Hz/600 w
12VDC Charger Capacity	45A	45A
Input Current (Maximum)	15A (@ 120VAC)	8A (@ 230VAC)
Input Plug	NEMA 5-15 male 3-prong plug (fixed)	User selectable (IEC 320 male socket connector)
Output Receptacle	2 - NEMA 5-15 on GFCI	2 - IEC 320 female
Warning Timer (Visual Display) - working time prior to shutdown alarm	20 minutes	
Shutdown Timer (Audible Alarm) - delay prior to shutdown	10 minutes	

B *Wiring Schematics*

120V/60Hz

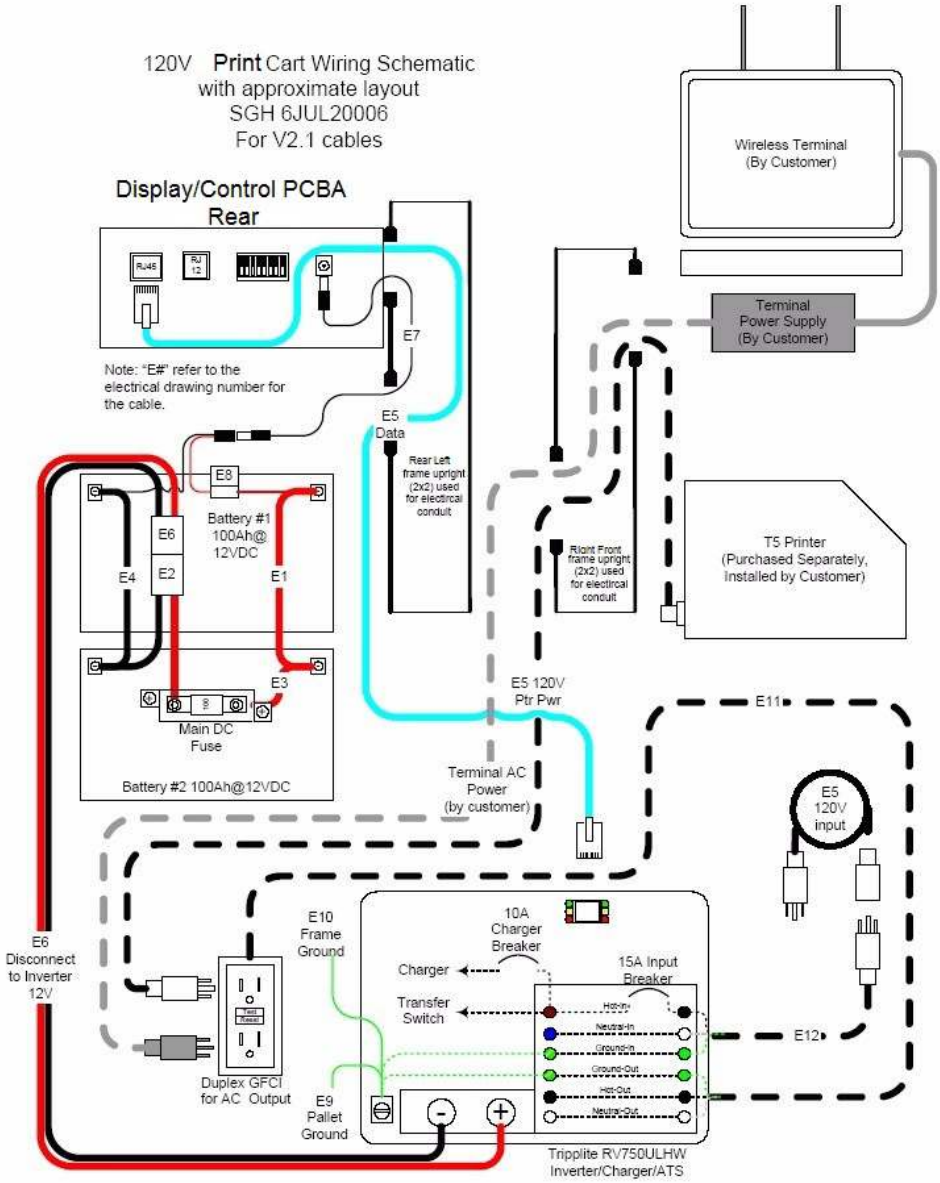


Figure 26. Wiring Schematic for North American Models (120V/60Hz)

230V/50Hz

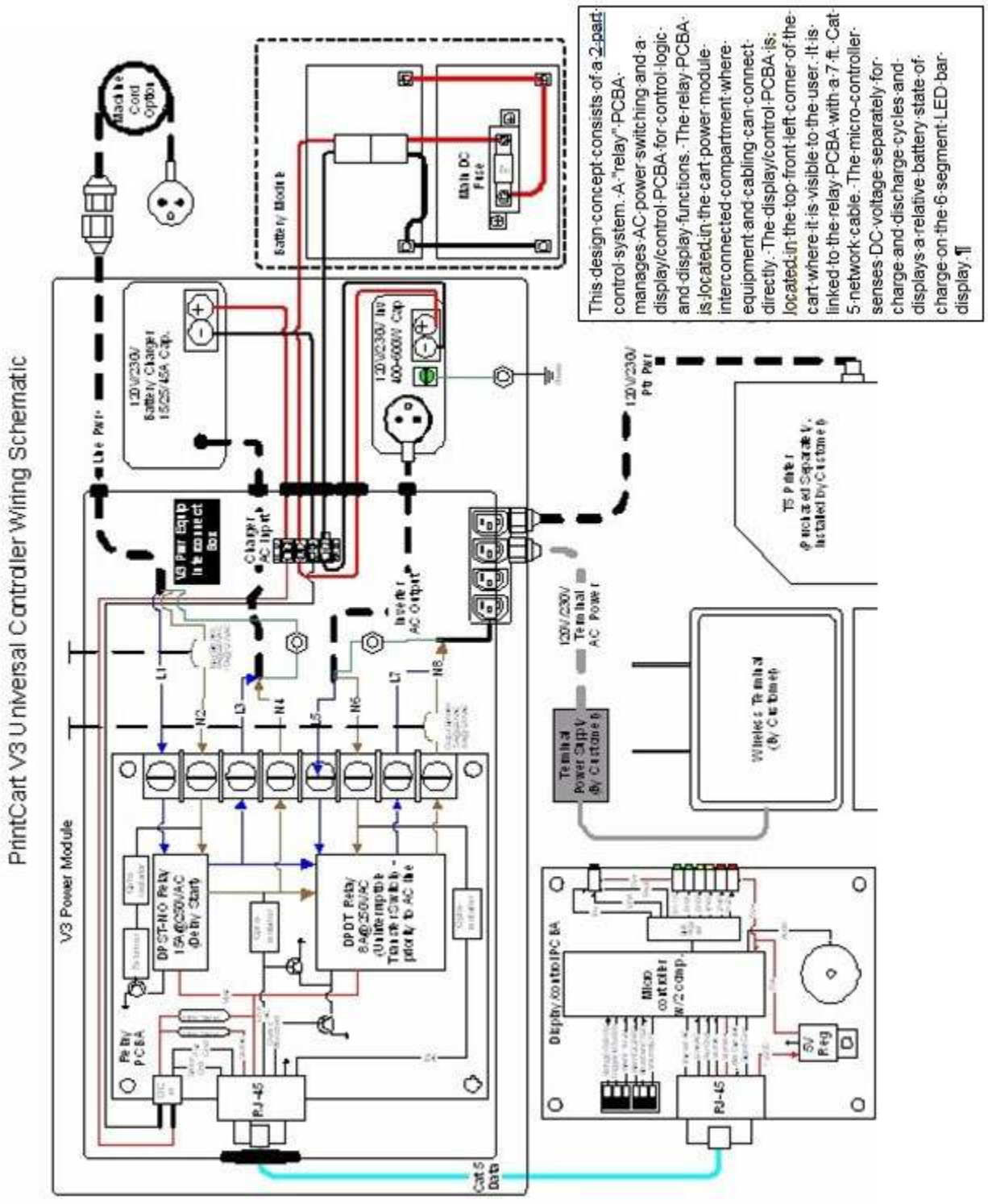


Figure 27. Wiring Schematic for European Models (230V/50Hz)

C *Spare Parts*

Description	Capacity/Style	PrintCart Type	Printronix PN
Power Module (120 VAC)	750W Inverter/45A Charger	120VAC 60 Hz Cart	253444-901
Power Module (230 VAC)	600W PSW Inverter/45A Charger	230VAC 50Hz Cart	253079-901
Display/Control PCBA (120V)	Display/Control Panel PCBA	120VAC 60 Hz Cart	256532-901
Display/Control PCBA (230V)	Display/Control Panel PCBA	230VAC 50Hz Cart	256532-902
Main DC Fuse	100 Amp/Bolt thru Tab	120V & 230V Cart	205296-001
Display Fuse (120VAC)	2 Amp/ATC Blade	120VAC 60 Hz Cart	205297-001
Display Fuse (230VAC)	1 Amp/ATC Blade	230VAC 50Hz Cart	211014-001
Input Breaker (230VAC)	15 Amp/ Push to Reset	230VAC 50Hz Cart	211054-001
Output Breaker (230VAC)	5A, 230V/ Push to Reset	230VAC 50Hz Cart	211040-001
Input Breaker (230VAC)	8A, 230V/ Push to Reset	230VAC 50Hz Cart	211041-001
Cable, Control Panel Battery Lead & 2A Fuse Holder	12 VDC	120VAC 60 Hz Cart	253603-001
Cable, Network, 7 FT	Power Module to Display PCBA	120V & 230V Cart	205359-001
Cable Kit, Battery Module	Battery #1 to Battery #2	120V & 230V Cart	253581-001
Cable Kit, 12VDC Disconnect	Battery #1 to Power Module	230VAC 50Hz Cart	253589-001
Battery Module Subassembly	Battery Tray & Hold Down Bracket	120V & 230V Cart	253440-001
Power Cord, 10 FT (120VAC)	14 GA/3 Wire, NEMA 5-15 Plug	120VAC 60 Hz Cart	205426-001
Power Cord, UK, Detachable	6A, 230VAC, UK, 3 Prong	230VAC 50Hz Cart	102512-007
Power Cord, Shuko, Detachable (230VAC)	6A, 230VAC, UK, 3 Prong	230VAC 50Hz Cart	102512-004
F/Kit, Utility Drawer Slides (2)	75 Pound Max Rating/Slide	120V & 230V Cart	205408-901
F/Kit, Printer Shelf Slides (2)	75 Pound Max Rating/Slide	120V & 230V Cart	205383-901
Printer Shelf, Pullout	Blue (incl all hardware & 2 Slides)	120V & 230V Cart	253435-001
Caster w/Lock, 5 Inch (1)	300 Pound Capacity	120V & 230V Cart	205299-001
Caster, 5 Inch (1)	300 Pound Capacity	120V & 230V Cart	205300-001
Wheel, Offset, 8 Inch (1)	400 LB/5/8” ID w/Bearing	120V & 230V Cart	205301-001
Battery Charger, 45 AMP,12V,220V,50 HZ	Battery Charger, 45 AMP,12V,220V,50 HZ	230VAC 50Hz Cart	205327-001
Battery Charger, 25 AMP,12V,220V,50 HZ	Battery Charger, 25 AMP,12V,220V,50 HZ	230VAC 50Hz Cart	205328-001
Inverter, SMLX, PSW,600W,220V,50HZ	Inverter, SMLX, PSW,600W,220V,50HZ	230VAC 50Hz Cart	205334-001

C *Spare Parts – Cont'd*

Handle Grip, Rubber	Fits 1 Inch OD Cart Handle	120V & 230V Cart	205339-001
Slide, Drawer, 1/2"W,9.5" EXT	Slide, Drawer, 1/2"W,9.5" EX	120V & 230V Cart	205408-001
Battery Module, 200 Ah, 12V	2 100 Ah Batteries, Tray, Hold Down Bracket, Cable Kit, Fuse Holders, 100A & 2A Fuse	120V & 230V Cart	254040-001
Knob, Battery Clamp	5/16-18, Star Nylock	120V & 230V Cart	205385-001
Overlay, PrintCart Display, Universal	Overlay, PrintCart Display, Universal	120V & 230V Cart	253160-001
Cable Kit, V2, Power Module	Cable Kit, V2, Power Module	120VAC 60Hz Cart	253584-001
Sleeve, Shipping	Sleeve, Shipping	120V & 230V Cart	253698-001
Battery Charger, Spare, 45A, 230V/50HZ	Battery Charger, Spare, 45A, 230V/50HZ	120V & 230V Cart	253799-001
Reship Kit	Reship Kit	120V & 230V Cart	256021-001
PCBA, 230V Relay Card	PCBA, 230V Relay Card	230VAC 50Hz Cart	256534-901
Bracket Assy, Battery Hold Down	Bracket Assy, Battery Hold Down	120V & 230V Cart	258424-001
Battery Replacement Kit, 12V, 2PK	Battery Replacement Kit, 12V, 2PK	120V & 230V Cart	258450-001
Field Kit, Shelf Extension, T8X08	Field Kit, Shelf Extension, T8X08	120V & 230V Cart	P220194-901

D *Glossary*

AC	Alternating Current, current that reverses direction periodically. The output of the inverter system or a wall receptacle is AC power.
AGM	Absorbed Glass Mat, the type of sealed lead acid battery used in the PrintCart. The electrolyte in the battery is absorbed into a fiberglass sheet in proximity to the lead plates.
Amp	Ampere, a measure of electrical current. One coulomb of charge per second equals 1 Amp.
Amp-Hour	A term used to describe the charge storage capacity of a battery. For example, a 100 amp-hour battery should be able to deliver a current of 10 amps for 10 hours or 5 amps for 20 hours, etc.
Battery	An electro-chemical storage device that stores electrical charge.
Charger	An electrical device that supplies electrical current, used to replace the charge in batteries.
Circuit Breaker	An electronic device designed to open or break a circuit when the current flowing through the device exceeds a specified amount, and which can be reset to allow current to flow.
Coulomb	A unit of electrical charge equal to the quantity of electricity transferred by a current of 1 Amp in 1 second.
Current	The amount of electrical charge flowing through a wire or circuit per unit time. It is measured in Amperes.
DC	Direct Current, current that flows in a single direction.
Depth of Discharge	A term used to describe the percentage amount of the total charge that has been drained from a battery. For example, if the depth of discharge of a battery is 70%, that means that 70% of the total charge has been drained leaving approx. 30% remaining in the battery.

Electrolyte	An ionic solution, usually distilled water and sulfuric acid, that enables the flow of electrons in a battery from the negative plate to the positive plate.
Fuse	An electrical device designed to melt, break, or open when electrical current flowing through it exceeds the specified amount. Its purpose is to protect electrical circuitry from damage caused by excessive current flow.
Inverter	An electrical device that converts direct current (DC) into alternating current (AC).
LED	Light Emitting Diode. Used in the PrintCart display.
Load	A descriptive term used to represent a piece of equipment or anything that requires or draws electrical power to operate.
OEM	Original Equipment Manufacturer.
Power	The mathematical product of Voltage x Current. Expressed in the units of Watts.
State of Charge (SoC)	A term used to describe the percentage of total charge that remains in a battery. For example, if the state of charge in a battery is 70%, it means that 70% of the total charge capacity is still present in the battery and roughly 30% has been drained.
Volt	A unit of electrical potential or electromotive force. The PrintCart electrical system is based on 12-volt batteries.

E *Contact Information*

Printronix Auto ID Customer Support Center

IMPORTANT **Please have the following information available prior to calling the Printronix Auto ID Customer Support Center:**

- Model number
- Serial number (located on the back of the printer)
- Installed options (i.e., interface and host type if applicable to the problem)
- Configuration printout:
- Thermal Printer
  See “Printing A Configuration” in the *Quick Setup Guide*
- Is the problem with a new install or an existing printer?
- Description of the problem (be specific)
- Good and bad pictures that clearly show the problem (faxing of these pictures may be required)

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