



# POWER BLADE™ CHARGER USERS GUIDE



Desktop Configuration



Wall Mount Configuration



All Jaco products are designed, manufactured, assembled, and supported in the United States.



Jaco is certified as a Women's Business Enterprise by the Women's Business Enterprise National Council.

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Have a question? We're here to help.  
Call 800-649-2278 for customer service  
or visit [www.jacoinc.com/support](http://www.jacoinc.com/support)

## Section 1: Power Blade Charger: Part Number and General specification

Part Number: 51-4218

The Power Blade Charger can be placed on a desktop or mounted to a wall (see instructions included in the manual), whichever fits your workflow.

Desktop Mount:

- Overall Size: 17.25" x 6.75" x 8.70"
- Weight: 7.4 lbs / 3.36 kg



Wall Mount:

- Overall Size: 17.25" x 4.0" x 9.26"
- Weight: 6.7 lbs / 3.04 kg



Operating range: 120VAC, 60 HZ, 2.5 Amp Max

Operating Environmental Conditions:

Temperature: +10°C (50°F) to +25°C (77°F)

Relative Humidity: 30% - 65% (without condensation)

Air Pressure: 70 kPa - 106 kPa

Non-operational transport and storage:

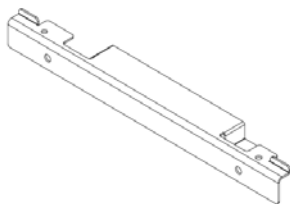
Temperature: -20°C (-4°F) to +60°C (140°F)

Relative Humidity: 20% - 95% (without condensation)

Air Pressure: 50 kPa - 106 kPa

**Power Blade Charger comes as shown and with the following accessories:**

51-4218 Power Blade Charger



50-9751, Wall Mount Bracket  
with two 8-32x3/8" screws











24-0314, AC Power Cord  
Length: 72" +/- 2"



25-0180, Users Guide

## Section 2: Symbol / Abbreviation (Abbr) Information & Product Labeling

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

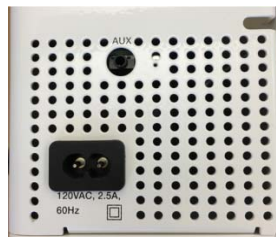
<u>Symbol/Abbr</u>	<u>Meaning</u>
AC	Stands for alternating current
120VAC	Electricity for North American appliances is delivered to home or business electrical outlets at 120VAC (volts alternating current) 60 Hz. (60 cycles/second).
AAMI	Association for the Advancement of Medical Instrumentation (AAMI on product label)
	This symbol indicates that Caution/Warning should be taken.
	This symbol indicates ATTENTION, consult the accompanying documents.
	This symbol indicates Class II Equipment.
	Curtis-Straus BV Certification Mark for Canada and United States (US)
	To indicate the maximum and minimum temperature limits for transport and storage
	To indicate the acceptable upper and lower limit of relative humidity for transport and storage
	To indicate the acceptable upper and lower limit of air pressure for transport and storage
	Slowly lower battery into charger to start charging / Do not throw trash into charger

## Product Labeling

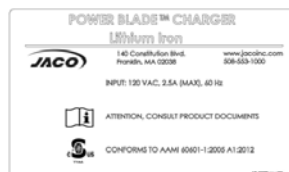
The Power Blade Charger is shipped with a Part Number & Serial Number label for tracking and service assistance. This label is located on the rear inside surface of the back panel. This information is needed when contacting JACO Service.



The Power Blade Charger identifies the AC entry and Auxiliary (AUX) Ports. Both are located on the lower right side of the Power Blade Charger as shown. The Auxiliary Port is a serial port connection to a computer, smartphone or tablet for the display of certain charger and inserted battery information. Use of the Aux Port provides a convenient method for the hospital's IT personnel to view critical charger parameters to ensure that the charger is operating in a normal fashion. Contact JACO Technical Service for more details if needed.



The Power Blade Charger also includes the agency certification label shown. This label will be applied to the inside, rear surface of the Power Blade Charger assembly.



Slowly lower battery into charger to engage charger. Dropping or aggressively inserting battery could cause damage to the connectors / Do not throw trash into the charger bays.

**SLOWLY LOWER  
BATTERY**



### Section 3: Safety Recommendations, Cautions and Warnings



- Always refer to this manual for instructions, warnings and proper use
- Retain this Users Guide and all original literature for future reference.
- Use Power Blade Charger only for its intended purpose
- Locate the Power Blade Charger in a safe, out of the way location which should be free from direct patient contact, free of clutter and away from all liquids.
- Always keep Power Blade Charger clean and dry
- Unplug the Power Blade Charger from AC power to clean or if it is not working properly
- If there is any indication that components are unsafe or need replacing unplug Power Blade Charger from AC power and call Jaco support
- In the event of battery leakage, do not allow the liquid to meet the skin or eyes, if contact has been made, wash the affected area with water, seek medical advice.
- For disposing or recycling Power Blade Charger, all Federal & State regulations must be followed

#### Essential Performance:

The JACO Inc. 51-4218 Power Blade Charger has NO ESSENTIAL PERFORMANCE related to unacceptable risk that might occur with the products failure causing harm to the patient or operator.

### Section 4: Power Blade Charger: Installation, Input/output Connections, Use, Care & Maintenance



The Power Blade Charger can be placed on a desktop or installed on the wall for convenient point of use access. With either installation, the Power Blade Charger MUST be positioned vertically, with the Power Blade Battery Packs entering from the top. Unit will not function if positioned in any other direction.



The Power Blade Charger comes with a 6-foot-long AC power line cord. Do not substitute. If this cord needs replacement contact Jaco Support



When selecting a location for the Power Blade Charger, allow for adequate room to access the AC power input for connecting to power as well as disconnecting from power if the Power Blade Charger needs service. Make sure that the included power cord is within reach of a standard 120VAC outlet and keep the side vents clear and free of obstructions. Also make sure that you leave enough room to insert and remove the Power Blade Battery Packs.

This is only a general guideline and cannot, as such, represent all requirements and precautions. Anyone using this material assumes all liability and is expressly responsible for wall mounting safety. A licensed professional must approve the location and method of attachment to the building structure and confirm they are consistent with all building codes and regulations.



\*Minimal nominal static weight considerations: Power Blade charger loaded with two Power Blade Batteries is approx 20 lbs. Recommend using minimum size 1/4-20 fastener (w/ anchor if need be) during installation by licensed professional.



Do not block side vents. Leave minimum of 4" clearance on each side to allow for proper ventilation.



Do not stack. Allow proper top access in place of installation to allow for proper insertion and removal of the batteries.



## Desktop Placement

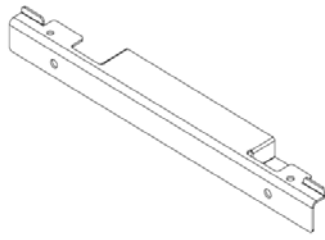
The Power Blade Charger is designed to be placed on a desktop surface for convenience and portability. No assembly is required, the Power Blade Charger is shipped with the base plate attached. When selecting a location, you must adhere to the caution notifications above and place the Power Blade Charger in a safe, out of the way location which should be free of clutter and away from all liquids.

## Wall Mounting

The Power Blade Charger is designed to allow wall mounting. When mounted to a wall, the Power Blade Charger unit does not exceed 4" in depth as required by most State and local fire codes however, it is the responsibility of the installer to verify compliance. It is recommended that you find a safe location free from other wall mounted devices, equipment, free of clutter and away from all liquids. The location must be within reach of a standard 120VAC wall outlet.

Before installing the Power Blade Charger on the wall, the bottom base plate must be removed. To remove this plate simply tip the unit on its side and remove the 4 screws shown below using a #2 Phillips screwdriver.





Wall Mount Bracket  
with two 8-32x3/8" screws



Power Blade Charger

The Wall Mount Bracket shown above is required to mount the Power Blade Charger to any wall surface. Once the mounting location is selected, hold the Wall Mount Bracket in position using a level. It is recommended that the top of the bracket be placed at 37" from the floor for best overall access. The bracket must be mounted first, leveled and both mounting holes must be used. If mounting to a studded wall construction, it is recommended that at least one of the two Wall Mount Bracket holes anchor to a stud, if no stud is available then appropriate wall anchor hardware compatible with wall structure and mounting hardware must be used such as toggle bolts that will expand behind the wall.



Reference caution notes at beginning of this section regarding proper mounting hardware

Do not attach the power cord until all steps are completed. Once the Wall Mount Bracket is in place, install the Power Blade Charger (remove the base plate if applicable) by placing the unit so that the tabs on the Wall Mount Bracket insert into the slots on the bottom of the Power Blade Charger. With the Power Blade Charger held in place, mark the two top hole locations then remove the Power Blade Charger. Prepare the two top mount hole locations using same type of hardware used to mount the Wall Mount Bracket. Install the Power Blade Charger again and secure to the wall using two screw in the top-hole locations.





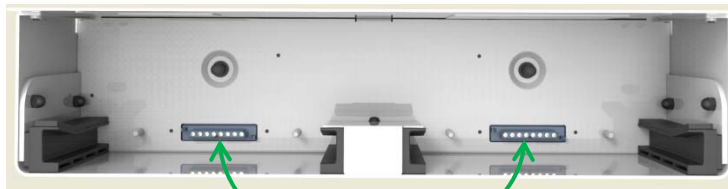
Next, install the 2 bottom screws (supplied with unit), one per end of the Wall Mount Bracket, securing the Power Blade Charger to the Bracket as shown. Make sure all hardware is tight and that the unit is secure. The last step is to plug the Power Blade Charger into a standard 120VAC outlet for operation.



An installed wall mounted Power Blade Charger should be inspected periodically by licensed professional. Inspect mounting hardware and attachments for any conditions that may decrease the structural integrity. Immediately replace worn or damaged components

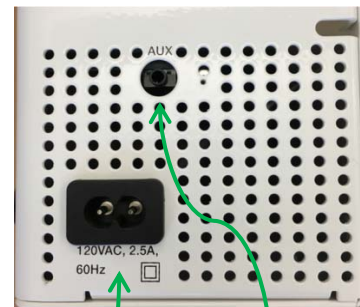
**Input/output Connections: Note: use only for stated connection:**

View shown is looking down into Power Blade Charger



Connections for Power Blade Battery Pack

View shown from right side of Power Blade Charger



AC Power Input Port

Auxiliary Port

**Use:**



Charger is solely designed for use with JACO Power Blade Battery Pack and no other use is acceptable. If unit or removable power cord show signs concerning wear or damage contact Jaco for guidance and information on any required replacement parts.

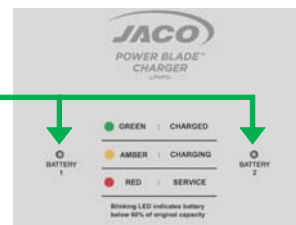
Once the Power Blade Charger is placed and plugged into a 120VAC outlet, you can charge the Power Blade Battery Packs by grasping the integrated battery handle and slowly inserting into the charger. The guides allow the Power Blade Battery Packs to align and engage as they are lowered into position. Push down to ensure proper connection is made. To remove, pull upward on the handle and slide the Power Blade Battery Pack out. If the Power Blade Charger is used on a table top or desk (not wall mounted), you will need to hold the bottom of the Power Blade Charger while removing the Power Blade Battery Packs.



The total time to charge a discharged Power Blade Battery Pack will be 2 hours or less, depending on how much it was discharged before inserting into the Power Blade Charger. Charging two Power Blade Battery Packs at the same time does not impact the charge time, both will charge in approximately 2 hours. Charge time may change as the battery ages.

### LED Indicators Charger Status:

THE SINGLE LED FOR EACH CHARGER BAY WILL CHANGE COLOR ACCORDINGLY



Located on the front of the Power Blade Charger, the charge status for each Power Blade Battery Pack (when inserted) is noted as follows...

- **SOLID GREEN** LED = READY, Battery Fully Charged and OK for use.
- **BLINKING GREEN** LED = READY, Battery Fully Charged and OK for normal use however, capacity below 60% of original capacity and suggest replacement.
- **SOLID AMBER** LED = CHARGING
- **BLINKING AMBER** LED = CHARGING, Battery OK for normal use however, capacity below 60% of original capacity and suggest replacement.
- **RED** LED = SERVICE, Faulty battery or charger
- **BLINKING RED** LED = SERVICE, improper installation orientation, Unit internal over-temp protection

**Note:** Reference trouble shooting section for necessary / suggested LED display actions

## Care and Maintenance:



Before starting any maintenance or cleaning, disconnect the Power Blade Charger from the AC wall outlet.

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.

It is recommended that the Power Blade Charger be in a clean environment free of direct patient contact, liquids, dirt and dust and a max room temperature of 77°F (25°C). The Power Blade Charger should be reviewed weekly for proper care and cleaning. The bays should be used only for the charging of the JACO Power Blade Battery Packs, any other use may cause damage and will void the warranty.

When cleaning the outside of the Power Blade Charger, a dry cloth will be effective for removing dust or light dirt. If needed, a standard hospital grade germicidal wipe can be used. It is recommended that the wipe contain no more than 10% bleach to prevent possible damage to the powder coat metal surfaces.



**Caution:** Sharp points on internal guide pins inside battery bays

Inspect the inside bays of the Power Blade Charger weekly. To do so remove the Power Blade Battery Packs to inspect the connections. Remove material that may have accidentally dropped into the Power Blade Charger.

There should be no reason to clean the inside bay areas but if required, make sure the Power Blade Charger unit is unplugged and a damp (not saturated), less than 10% bleach wipe is used, allow ample drying time. Do Not spray liquid cleaners into the bay area.

If the inside connectors pins do become dirty, do not insert any objects into the contacts. Use compressed air to blow out the build-up ensuring proper contact and operation.

For more information concerning best cleaning practices, call 800-649-2278 for customer service or visit [www.jacoinc.com/support](http://www.jacoinc.com/support)

## Section 5: Troubleshooting Guideline

Observing LED indicators reference steps as directed below before calling Jaco support. LED indicators are unique for each individual battery bay, so errors could appear in either bay separately or both bays simultaneously

- a) Amber Blinking LED Indicator(s): Reason: Unit is not plugged into wall outlet or connected to AC power
  - \* Plug charger into wall outlet
  - \* Check AC power cord connection on side of charger
  
- b) Red blinking LED Indicators(s): Reason: Unit mounted incorrectly (both battery bays blinking)
  - \* Check charger position. Power Blade Charger MUST be positioned vertically, with the Power Blade Battery Packs entering from the top
  
- c) Red Solid LED Indicator(s): Reason: Damaged Battery OR Unit internal over-temp protection activated
  - \* Remove batteries from charger and unplug charger from AC power. Plug in after 30 seconds. Review potential causes below:
    - > Inspect the pins on the battery for any damage or breakage. If signs of damage remove the battery from service.
    - > Review location of charger to ensure that proper ventilation is being given to unit.

## Section 6: End of Serviceable Life of Product & Agency Classification / Recognition

### End of Serviceable Life of Product

Jaco Inc. intended service life for this product is 7 years. When it has been deemed the product has reached the end of its serviceable life, it must be disposed of properly and according to local laws and regulations. Contact your local agencies for proper disposal and recycling options. Product can be returned to Jaco for proper disposal with prior written approval from Jaco Inc. Customer responsible for all expenses related to shipping, packaging, liability, etc... If there are any questions or concerns, contact Jaco Inc.

## **51-4218, Power Blade Charger Agency Approvals**

### **Safety:**

IEC 60601, 3rd Edition (60601-1:2005 A1:2012)

IEC 60601-1

EN/ISO 14971

### **Electromagnetic Compatibility:**

IEC 60601-1-2:2007 (Third Edition)

### **Isolation:**

Means of isolation provided by on-board power supply.

## ATTACHMENT (7....)

# JACO Inc. manufacturer's declaration of Electromagnetic compatibility (EMC) for the product Power Blade™ Charger

WARNING: The use of cables, power supplies, accessories other than those specified by the manufacturer may result in increased emission and/or decreased immunity.

cable and accessories	length	reference	reference
Cable	72 IN +/- 2 IN	JACO P/N: 24-0314, AC LineCord Cable	Manufacturer: QUAIL REF: 1057.072S
Cable (alternate)	72 IN +/- 2 IN	JACO P/N: 24-0314, AC LineCord Cable	Manufacturer: United Universal Industries REF: 02-2661
Cable (secondary alternate)	72 IN +/- 2 IN	JACO P/N: 24-0314, AC LineCord Cable	Manufacturer: QUAIL REF: 1062.072

Operate the product in a place with a maximum distance to electrical and magnetic interfering transmitters. If operation of the product close to other devices or together in a stack is necessary, observe the correct function of the system.

Guidance and manufacturer's declaration - electromagnetic emissions		
The Power Blade™ Charger is intended for use in the electromagnetic environment specified below. The customer or the user of the Power Blade™ Charger should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Power Blade™ Charger uses RF energy only for its internal functions. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The Power Blade™ Charger is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	


#### Manufacturer's declaration – Electromagnetic Immunity I

The Power Blade™ Charger is suitable for use in a specific electromagnetic environment. The customer and/or the user of the Power Blade™ Charger should assure that it is used in an electromagnetic environment as described below.

IMMUNITY test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floor should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %
Electrical fast transient/bursts IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial and/or hospital environment
Voltage dips, short interruptions and voltage variations on power supply input lines IEC61000-4-11	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% UT (30% dip in UT) for 25 cycles <5% UT (>95% dip in UT) for 5 sec	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% UT (30% dip in UT) for 25 cycles <5% UT (>95% dip in UT) for 5 sec	Mains power quality should be that of a typical commercial and/or hospital environment. If the user of the Power Blade™ Charger requires continued operation during power mains interruptions, it is recommended that the Power Blade™ Charger be powered from an uninterruptible power supply or a battery.
Power frequency(50/60 Hz) magnetic field IEC 61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Note: UT is the mains (AC) voltage before apply test levels

# JACO Inc. manufacturer's declaration of Electromagnetic compatibility (EMC) for the product Power Blade™ Charger

Guidance and manufacturer's declaration – electromagnetic immunity			
The Power Blade™ Charger is intended for use in the electromagnetic environment specified below. The customer or the user of the Power Blade™ Charger should assure that it is used in such an environment.			
IMMUNITY test	IEC 60601 TEST LEVEL	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6  Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz  3 V/m 80 MHz to 2,5 GHz	3 Vrms  3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the Power Blade™ Charger, including cables, than the recommended separation distance calculated from the equation applicable to the freq. of the transmitter.  Recommended separation distance $d = 1,2 \cdot (P^{.5})$ $d = 1,2 \cdot (P^{.5})$ 80 MHz to 800 MHz $d = 2,3 \cdot (P^{.5})$ 800 MHz to 2,5 GHz  where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).  Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey * should be less than the compliance level in each frequency range **.  Interference may occur in the vicinity of equipment marked with the following symbol:  
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.			
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
* Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Power Blade™ Charger is used exceeds the applicable RF compliance level above, the Power Blade™ Charger should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Power Blade™ Charger.			
** Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.			

# JACO Inc. manufacturer's declaration of Electromagnetic compatibility (EMC) for the product Power Blade™ Charger

Recommended separation distances between portable and mobile RF communications equipment and the Power Blade™ Charger			
The Power Blade™ Charger is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Power Blade™ Charger can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Power Blade™ Charger as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 1,2 \cdot (P^{.5})$	800MHz to 2,5 GHz $d = 1,2 \cdot (P^{.5})$	800MHz to 2,5 GHz $d = 2,3 \cdot (P^{.5})$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23
<p>For transmitters rated at a maximum output power not listed above, the recommended separation distance <math>d</math> in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.</p> <p>NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.</p> <p>NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			