

***PowerPad***

**e<sub>o</sub>electrovaya**

**Safety and  
Instruction  
Manual**  

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# **Congratulations on purchasing an ELECTROVAYA PowerPad® products!**

This PowerPad is designed to extend the runtime of your portable computer, while significantly enhancing productivity and mobility.

## **PLEASE DIRECT ALL INQUIRIES TO POWERPAD TECHNICAL SUPPORT:**

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PP TechSupport  
Electrovaya  
2645 Royal Windsor Drive  
Mississauga, ON  
Canada, L5J 1K9

Local: 905 855 4610 x 3074  
Toll Free: 800 388 2865  
Fax: 905 822 7953  
E-mail: [pptechsupport@electrovaya.com](mailto:pptechsupport@electrovaya.com)

Website:  
[www.epowerpad.com](http://www.epowerpad.com)

## CONTENTS

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<b>SAFETY INFORMATION</b>	
Important Tips	3
Charging	
Storage & Handling	
Disposal	
<b>IN CASE OF EMERGENCY</b>	4
Fire/Smoke Emissions	
Contact/Ingestion	
<b>GETTING STARTED</b>	5
<b>SPECIFICATIONS</b>	5
<b>RECOMMENDED USE OF THE POWERPAD</b>	6
<b>CONNECTING TO THE PORTABLE COMPUTER</b>	6
<b>UNDERSTANDING THE FUEL GAUGE</b>	7
<b>OPTIMIZING BATTERY LIFE</b>	8
<b>TROUBLE SHOOTING</b>	9
<b>CHARGING THE POWERPAD</b>	9
<b>RECOMMENDED CHARGING PROCEDURE</b>	10
<b>LIMITED WARRANTY CARD</b>	12

## Notice

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**Please read these instructions in entirety before using your PowerPad product. All batteries contain energy and should be used, stored, and disposed of in an appropriate manner.**

Use only with approved portable computers. Approved laptop compatibility list is available at [www.epowerpad.com](http://www.epowerpad.com)

The PowerPad has been shipped in a partially discharged state and will reach full capacity after its first recharge.



**Caution: Misuse or abuse of the PowerPad may result in personal injury or fire.**

**Use your Notebook AC adaptor to charge the PowerPad. A15V/2 amp AC Adaptor is required to charge the PowerPad. If it is below 15V or greater than 24V, contact ElectroVaya to purchase the correct AC Adaptor.**

## SAFETY INFORMATION

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Please read these instructions carefully and save them for future reference. This battery is designed to provide a safe and transportable form of energy when handled under conditions of normal and intended use. It should always be used in a manner consistent with Electrovaya's recommendations and guidelines.

### Important Tips:

- Use only with compatible Smart tips. Compatibility list available at [www.epowerpad.com](http://www.epowerpad.com).
- Do not disassemble the battery.
- Never puncture, drop, crush, throw, hit, open, or modify the battery or casing.
- Do not submerge this product in water.
- Do not expose the battery to heat above 60°C (140°F) or incinerate.
- Do not insert any foreign object into the charging port.
- Keep the battery away from children.
- Always dispose of used batteries in accordance with local regulations.
- If this battery is misused or abused, it can result in personal injury from heat, smoke, fire or explosion.
- Obtain approval of airline or courier company before travelling with or shipping this battery.

### CHARGING

- Use AC adaptors supplied by the manufacturer of your portable computer. The PowerPad requires minimum 15v /2amp AC adaptor. If the power rating of the laptop AC Adaptor below this, please consult Electrovaya Technical support at 1-800-388-2865 x 3074
- Do not charge your PowerPad with an AC adapter that has an output voltage greater than 24 Volts, as this may cause damage to the PowerPad.
- Do not use AC adapters with reversible polarities.
- Do not charge the PowerPad for more than 12 consecutive hours to reduce the risk of overcharging.
- Do not charge the PowerPad on airplanes.

### STORAGE & HANDLING

- Always store the battery in a cool and dry place between 0°C (32 F) and 20°C (70°F), and away from flammable materials.
- The battery should not be heated or exposed to temperatures exceeding 60°C (140°F); exposure may lead to heat, smoke, fire or explosion. If the battery smokes, swells, or emits a strange smell, discontinue use.
- Do not submerge or expose battery to water or any other liquid.

- It is recommended that the battery be kept out of the reach of children.

#### DISPOSAL

- Do not place in fire.
- Do not incinerate.
- This battery should be disposed of in accordance with local regulations.

### INCASE OF EMERGENCY

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#### FIRE/SMOKE EMISSION

- Batteries contain flammable/combustible material that may be ignited, explode, release toxic materials, cause burns or give off gases when heated or in contact with sparks or flames.
- In the event of fire, vapor release, and/or smoke emissions, evacuate the immediate area of all unnecessary personnel.

#### CONTACT/INGESTION

- Elements within the battery may cause skin burns, eye burns and respiratory tract burns if in contact with any of these tissue membranes.
- In the event that the electrolyte inside the battery comes into contact with the skin or eyes, flush area immediately. Seek immediate medical attention.



- For contact with skin, wash the affected area with soap and water. Dry gently with towel. Seek immediate medical attention.
- If fumes are inhaled, leave the immediate area. If not breathing, give artificial resuscitation. If breathing, give oxygen. Seek immediate medical attention.
- If battery material is ingested, give one or two full glasses of water to dilute material. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

## GETTING STARTED

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1. Read this Safety and Instruction Manual in its entirety prior to using your PowerPad.
2. Ensure your PowerPad package contains both the PowerPad and the PowerPad connection cable.
3. Use an approved AC adapter to charge the PowerPad until fully charged. Charging time will vary by PowerPad model. See *"Charging the PowerPad"*. P.9 & 10.
4. Connect the PowerPad connection cable to both the PowerPad and your portable computer. See *"Connecting to the Portable Computer"*. P.6
5. Optimize your portable computer's Power Management Settings. See *"Optimizing Battery Life"*. P.8
6. You are now ready to use your PowerPad product. See *"Recommended Use of the PowerPad" and "Safety Information"*.P.3
7. Periodically monitor remaining battery capacity by depressing the fuel gauge button. See *"Understanding the Fuel Gauge"*. P.7
8. When the charge level shown on the fuel gauge is less than 10%, recharge the PowerPad. You may recharge more frequently if desired. See *"Understanding the Fuel Gauge"*. P.7
9. *Although rechargeable, the battery has a limited life span. Replace the battery when the runtime between charger diminishes*

## SPECIFICATIONS

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	PowerPad®95	PowerPad®130	PowerPad®160
Maximum Capacity	95 Wh	130 Wh	160 Wh
Run-time	Up to 3 times more	Up to 4 times more	Up to 6 times more
Charge-time	80% charge in less than 3 hours with approved AC adapters	80% charge in less than 4 hours with approved AC adapters	80% charge in less than 6 hours with approved AC adapters
Dimensions	270mmx210mmx17mm	270mmx210mmx17mm	270mmx210mmx26mm
Weight	850g	960g	1440g
Casing	Rugged ABS Plastic case	Rugged ABS Plastic case	Rugged ABS Plastic case
Operating Temperature	0°(32°) to 60° (140°)	0° (32°) to 60° (140°)	0° (32°) to 60° (140°)

\* Charge times may be longer than specified during the first few charge cycles.

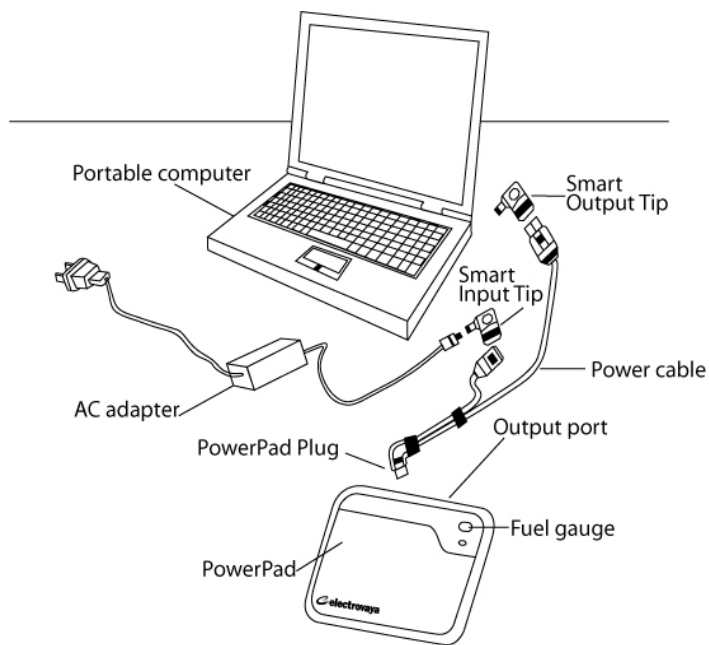
## RECOMMENDED USE OF THE POWERPAD

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The PowerPad is designed to work with portable computers and is not intended for any other use. The PowerPad must be attached to the portable computer using only the PowerPad connection cable provided.

It is recommended that the PowerPad be used in conjunction with the portable computer's internal battery. This will ensure a backup of power and a seamless transfer of power supply from the PowerPad to the internal battery, in the event of a full discharge or accidental disconnection. In this situation, it may be possible to charge your computer's battery through the recharge port of the connection cable while the PowerPad is in use. The runtime of the PowerPad will be reduced. It is recommended that the internal battery be charged separately from the PowerPad to achieve optimal performance.

The optimal operating temperature is between 20°C (70°F) and 40°C (110°F). It is recommended that the PowerPad not be exposed to direct sunlight, or to temperatures less than 0°C (32°F). When exposed to temperatures below 0°C (32°F) and above 60°C (140°F), the PowerPad will not operate; however, when the PowerPad returns to a temperature between 0°C (32°F) and 60°C (140°F) the PowerPad will again be operable.



Connecting to the Portable Computer

## UNDERSTANDING THE FUEL GAUGE

The PowerPad uses a comprehensive fuel-gauge system to indicate its charging/discharging state. The fuel gauge is displayed on the LCM and the fuel gauge button is found on the top face of the PowerPad.

The fuel gauge displays the following information:

<p>A</p>	<p>0%: The PowerPad has been fully discharged and should be recharged.</p>
<p>B</p>	<p>1-20%: The PowerPad is 1% to 20% charged.</p>
<p>C</p>	<p>21-40%: The PowerPad is 21% to 40% charged.</p>
<p>D</p>	<p>41-60%: The PowerPad is 41% to 60% charged.</p>
<p>E</p>	<p>61-80%: The PowerPad is 61% to 80% charged.</p>
<p>F</p>	<p>81-100%: The PowerPad is 81% to 100% charged.</p>

Messages	Error Conditions and Actions
1. Charging	Charging mode AC adapter doesn't match Smart Tip output voltage
2. Discharging	Discharging mode Bypassing mode
3. SOH	Battery's state of health
4. Error V	Input error Adapter voltage <14V ---> <i>Disable charge/bypass, No lock, Shut down pack after adaptor is removed</i>
5. Discharging USB	No cable, no Smart Tip, only 5V USB enabled

6. Confirm?	Confirm new Smart Tip voltage.
7. Error U	Cell imbalance $V_x - V_y \geq 500\text{mV}$ ---> <i>Lock! Shutdown pack</i> $V_x - V_y \geq 300\text{mV}$ ---> <i>No Lock! Shutdown pack</i> $V_{\text{pack}} < 11.2\text{V}$ ---> <i>Lock! Shutdown pack</i>
8. Error Tc	Cell over temperature error $T_{\text{cell}} \geq 60^\circ$ ---> <i>Disable charge/discharge till it drops to 50°</i>
9. Error Tb	Booster over temperature > $T_{\text{pcbA}} \geq 100^\circ$ ---> <i>Disable charge/discharge till it drops to 80°</i>
10. Electrovaya	Pack start up Low battery capacity (< 10%) Pack locked
11. OFF	Shown after button press 3 seconds
12. Error USB	Over current on USB error $\text{USB\_OVERLOAD} == \text{HIGH}$ ---> <i>Disable discharge on USB port till the pin becomes Low</i>
13. Error IC	Charge over current error $I_{\text{charge}} > 5\text{A}/10 \text{ sec}$ ---> <i>Lock! Shutdown pack</i>
14. Error Oc	Discharge over current error $I_{\text{discharge}} > 12\text{A}/10\text{sec}$ or $P_{\text{out output}} > 100\text{W}/10 \text{ sec}$ ---> <i>No Lock, Shutdown pack</i>
15. Error Ov	Pack voltage over 17V error $V_{\text{pack}} \geq 17\text{V}$ ---> <i>Lock! Shutdown pack</i>
16. Locked	Pack locked
17. Please charge	Battery capacity
18. No Smart Tip	No Smart Tip plug Connected

## **OPTIMIZING BATTERY LIFE**

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1. Charge the PowerPad immediately.
2. When not in use for a month or more, charge the PowerPad prior to storing. Monitor the PowerPad during storage, and if needed, recharge to maintain capacity.
3. After a period of time, the PowerPad will lose its ability to perform at maximum capacity and will need to be replaced. This is normal for all batteries

## TROUBLE SHOOTING

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Under abnormal operating conditions, such as extreme temperature conditions, the PowerPad will not charge or discharge.

Problem	Solution
If charge level is equal or less than 10%	Plug an AC adaptor in to the PowerPad
Error USB	Confirm device USB output voltage (5V/1A). Restart the power pad.
“Discharging USB “	Plug cable
Only show “Charging “ without voltage showing	Check Smart Tip output and AC adapter voltage. Ensure this match.
“Error Tb/Tc “ message on LCM	These are error conditions. Need to unplug and wait till PowerPad cools down.
“Error V“ message on LCM	This is error condition. Check AC adapter and ST output voltage.
“Error U/IC/Oc/Ov/ “ message on LCM	These are error conditions. PowerPad will be locked.
Locked	Return to Electrovaya for inspection. Do not attempt to open the PowerPad.
Confirm?	Select matching your PC’s Smart Tip, then, press button for 1 sec.
NO SMART TIP	Plug correct Smart Tip

### Important Note :

- The user cannot switch off the PowerPad in “Charging” mode.
- While LCM doesn’t show “ DISCHARGING” or “CHARGING” under these two conditions.
  - PowerPad is fully charged.
  - AC adapter not compatible.Now PowerPad is only in Bypass Mode not charging.

## CHARGING THE POWERPAD

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DO NOT charge or recharge the PowerPad in airplanes.

In order to optimize your charge time, it is recommended that the PowerPad not be charged while connected to the portable computer. If charged while connected to the portable computer, charge time will take significantly longer than when disconnected from the portable computer.

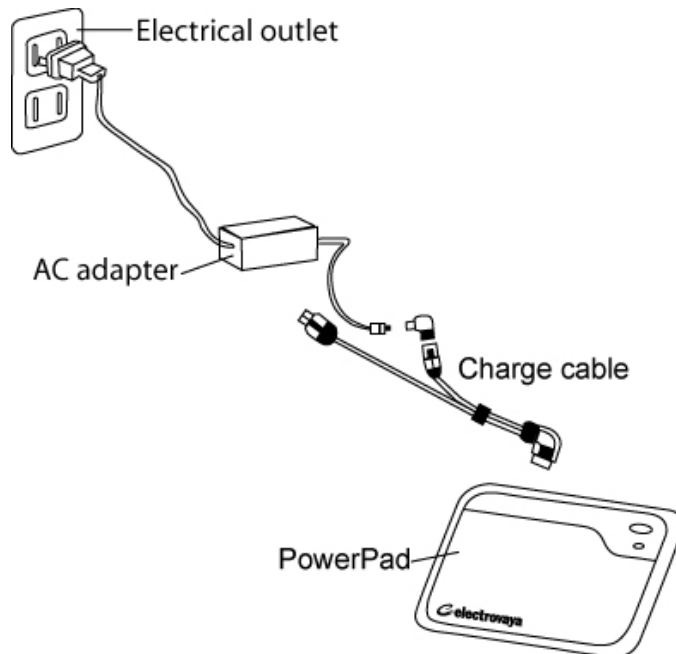
Do not charge your PowerPad with an AC adapter with an output voltage greater than 24 Volts or less than 15V, as this may damage the PowerPad.

## RECOMMENDED CHARGING PROCEDURE

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1. Disconnect the PowerPad connection cable from the computer for the fastest charge.
2. Insert the AC adapter into the recharge port of the connection cable. Use only AC adapters supplied by the manufacturer of your portable computer. Please consult our website at [www.electrovaya.com](http://www.electrovaya.com) for a complete list of compatible brands and models of portable computers.
3. Connect the AC adapter into an electrical wall-outlet.

### Charging the PowerPad



# Thank you for purchasing the **ELECTROVAYA** **PowerPad® products!**

We appreciate your feedback, and would like to hear from you!  
Please direct all comments/product feedback to  
[customerservice@electrovaya.com](mailto:customerservice@electrovaya.com)

## **PLEASE DIRECT ALL INQUIRIES TO POWERPAD TECHNICAL SUPPORT:**

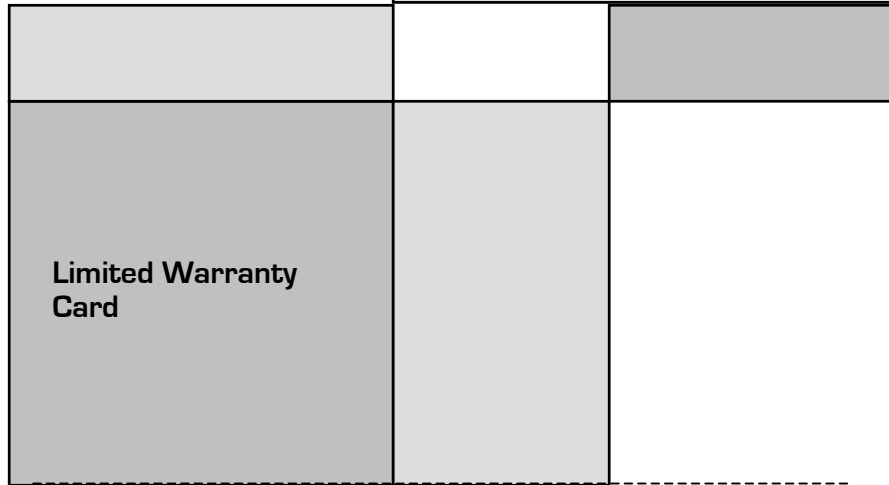
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PP TechSupport  
Electrovaya  
2645 Royal Windsor Drive  
Mississauga, ON  
Canada, L5J 1K9

Local: 905 855 4610 x 3074  
Toll Free: 800 388 2865  
Fax: 905 822 7953  
E-mail: [pptechsupport@electrovaya.com](mailto:pptechsupport@electrovaya.com)

Website:  
[www.epowerpad.com](http://www.epowerpad.com)

***PowerPad®***



**Limited Warranty  
Card**

PLACE CORRECT  
POSTAGE HERE

Customer Service  
Electrovaya  
2645 Royal Windsor Drive,  
Mississauga, Ontario,  
Canada, L5J 1K9

## LIMITED WARRANTY

Electrovaya ("Electrovaya") warrants to the original purchaser ("Customer") this PowerPad product and its components ("Product") to be in good working order under normal use and maintenance for a period ("Warranty Period") of twelve (12) months from the date of purchase for the battery component and six (6) months from the date of purchase for any other components. During the Warranty Period, should the product, in Electrovaya's sole opinion, malfunction due to any defect in material and/or workmanship, the Customer's sole remedy and Electrovaya's sole liability shall be, at Electrovaya's option, to either repair or replace the malfunctioning Product with a similar product at no charge or reimburse the purchase payment, provided that the malfunctioning Product is returned, with proof of purchase in the form of the Customer's original copy of the sales receipt, within the Warranty Period to the address specified hereon (the "Limited Warranty"). If a replacement or repair product is issued, the Limited Warranty will apply to the replacement or repair product with any remaining, applicable Warranty Period continuing to run from the date of the original purchase. The Limited Warranty shall only be available to the Customer and not to any product that has been transferred and no longer owned by the Customer.

This Limited Warranty is void if Electrovaya determines that the Product has been serviced by anyone other than Electrovaya, or one of its authorized service centers, or if the Product is damaged from accident, misuse, misapplication, abusive operation, improper use and/or insufficient care or has been operated outside the parameters of the Safety and Instruction manual. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES, REPRESENTATIONS OR CONDITIONS OTHER THAN THOSE STATED IN THIS LIMITED WARRANTY. This Limited Warranty is made in lieu of all other warranties, representations or conditions, whether expressed or implied, including without limitation, merchantability or fitness for a specific purpose. Some jurisdictions do not allow limitations on implied warranties, representations or conditions, so the above limitations may not apply to the Customer. The remedy set forth herein shall be the sole, exclusive remedy with respect to the Product. No person is authorized to make any other warranty or representation concerning the performance of the Product or extend, or enlarge the Limited Warranty contained herein.

Under no circumstances will Electrovaya be liable for any direct, indirect, special incidental or consequential damages (even if Electrovaya is notified of the possibility of such damages) including, but not limited to, any loss of revenue, loss of profit, or loss of data whether based upon any alleged breach of warranty, representation or condition, contract, or any other conduct including negligence (intentional or otherwise), giving rise to such claim. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to the Customer. Electrovaya shall not be liable for any claims made by a third party or made by the Customer for a third party. This Limited Warranty is not transferable. No suit or action shall be brought against Electrovaya more than one year after the accrual of the cause of action. This Limited Warranty gives the Customer specific legal rights and the Customer may also have other rights, which vary from jurisdiction to jurisdiction.

### Electrovaya Limited Warranty Registration Form

For Assistance Call:  
1-800-388-2865

Visit our Website  
[www.epowerpad.com](http://www.epowerpad.com)

To activate your Limited warranty, please complete form and return it to us by mail. Your limited warranty is depending upon completion and return of this Limited Warranty Registration Form within 30 days after purchase.

#### Registration Form

Mr.  Mrs.  Ms

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Zip/Postal Code: \_\_\_\_\_

Phone Number: Business (     ) \_\_\_\_\_

Home (     ) \_\_\_\_\_

Email: \_\_\_\_\_

Purchase Location: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Price Paid: \_\_\_\_\_

Computer Brand/Models: \_\_\_\_\_

Serial#: \_\_\_\_\_

(Please a make copy for your records)