

**EVOTORQUE<sup>®</sup> BATTERY CHARGER  
(EBC 60352)**



# SAFETY MESSAGES

Norbar provides safety messages to cover reasonable situations that may be encountered when operating, servicing or repairing cordless tools. It is the responsibility of operators and servicing technicians to be knowledgeable about the procedures, tools and materials used and to satisfy themselves that the procedures, tools and materials will not compromise their safety, that of others in the workplace or the tool.

**Read these instructions carefully before using battery charger. Read all cautionary marking on battery, charger and all tools or products that use the batteries.**

## IMPORTANT SAFETY INSTRUCTIONS

**DANGER—TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS.**

1. This manual contains important safety and operating instructions for the Norbar (EBC 60352) Charger.
2. Before using battery charger, read all instructions and cautionary markings on battery charger, battery and product using battery.
3. **CAUTION**—To reduce risk of injury, charge only Norbar EBP Series type rechargeable batteries. Other types of batteries may burst causing personal injury and damage.
4. Do not expose charger to rain, moisture or snow.
5. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock or injury to persons.
6. To reduce risk of damage to cord, pull by the plug rather than the cord when disconnecting the charger.
7. Make sure cord is located so that it will not be stepped on, tripped over or otherwise subjected to damage or stress.
8. Do not operate the charger with damaged cord - replace it immediately.
9. Do not operate charger if it has received a sharp blow, been dropped or otherwise damaged in any way; take it to a qualified service person.
10. Do not disassemble charger; take it to a qualified service person when service or repair

is required. Incorrect reassembly may result in a risk of electric shock or fire.

11. To reduce risk of electric shock, unplug charger before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
12. The appliance can be used by children aged from 16 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
13. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
14. Do not recharge non-rechargeable batteries.
15. Never attempt to connect two chargers together.
16. Have your charger serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the charger is maintained.
17. For the location of the nearest Norbar repair centre, please call customer service +44 (0) 1295 753600.
18. To reduce risk of battery explosion, follow these instructions.
19. Never smoke or allow an open spark or flame in the vicinity of the battery or engine.
20. Never charge a frozen battery.
21. Do not operate charger in a closed-in area or restrict ventilation in any way.
22. Do not use an extension cord unless absolutely necessary. If an extension cord must be used, make sure that the:
  - Pins on the plug of the extension cord are the same number, size and shape of those of the plug on the charger.
  - Extension cord is properly wired and in good electrical condition.
  - Wire size is large enough for AC ampere rating of charger as follows:

Charger	Cord Length	Wire Size
100 - 120 Volt	25 feet / 50 feet / 100 feet	18 AWG
220 - 240 Volt	50 meters / 75 meters	0.75 mm / 1.00 mm

Recommended Extension Cord Length

# SAVE THESE INSTRUCTIONS

## Safety Instructions for Battery

### WARNING



Risk of explosion or fire.

- **Do not store the tool and battery in locations where the temperature may reach or exceed 49°C (120°F).**
- **EBC 60352 chargers will not charge battery when temperature is below 0°C (32°F) or above 45°C (113°F).**
- **Do not incinerate the battery, even if severely damaged or completely exhausted. The battery may explode in fire.**
- **Cover the battery pack terminals with heavy adhesive tape after removing the battery pack.**
- **Do not attempt to destroy or disassemble the battery pack or remove any of its components.**
- **Do not charge using an engine generator or DC power source.**

Explosion or flames can cause injury.



Risk of electric shock.

- **Do not disassemble the battery.**
- **Do not short circuit the battery.**
- **Charge battery pack only with the charger provided.**
- **Disconnect battery pack when not in use, before servicing and when changing accessories.**
- **Do not charge using an engine generator or DC power source.**

Electric shock or fire can cause injury.



Risk of burn.

- **Battery leakage may occur under conditions of extreme usage or temperature.**
- **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.**

Burns can cause injury.

## Safety Rules for Battery Disposal

The **RBRC™** seal on the battery contained in this product indicates that **Norbar** is voluntarily participating in an industry program to collect and recycle these batteries at the end of their useful life.



Norbar's involvement in this program is part of its commitment to protecting our environment and conserving our natural resources.

### FCC Regulations

This device complies with Part 15, Subpart B of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.



### WARNING



Risk of explosion or fire.

**Do not throw away used batteries!** Placing spent batteries into the general waste may be **ILLEGAL**. Where possible contact **RBRC™** to dispose of the battery. Alternatively dispose of the battery following local regulations. If in doubt contact a Norbar authorized repair centre for recycling information. Explosion or flames can cause injury.



Risk of burn.

- **Do not attempt to disassemble the battery or remove any component projecting from the battery terminals.**
- **Prior to recycling, protect exposed terminals with heavy insulating tape to prevent shorting.**

Fire can cause injury.

# SAVE THESE INSTRUCTIONS

## Battery Charger Safety Messages

### WARNING



Risk of electric shock and fire.

- **Do not insert battery pack into charger if case is cracked or damaged.** Electric shock and fire can cause injury.
- **To reduce the risk of electric shock, this power cord (for USA version) has a polarized plug, (one blade is wider than the other.) This plug will fit in on a polarized outlet only one way. If the plug does not fit fully into the outlet, reverse the plug; if it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.**
- **Use the EBC 60352 charger only with the EBP Series rechargeable battery packs; Charging of any other types of batteries may cause batteries to burst, causing injury and damage.**
- **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
- **Never attempt to connect two chargers together.**
- **Do not expose charger to rain or snow.**
- **Pull by plug rather than cord when disconnecting charger.**
- **Be sure the cord is not stepped on, tripped over, damaged or stressed.**



Risk of explosion.

**Wear safety goggles, user and bystander.**  
Explosion can cause eye injury.



Improper use of power tools and accessories can cause broken tools. **Before using charger, read all instructions and cautionary markings on the charger, battery and product using battery.**  
Broken tools can cause injury.

## FUNCTIONAL DESCRIPTION

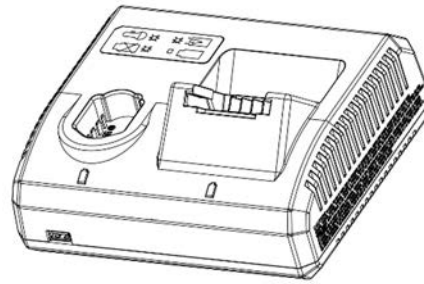


Figure 1: Battery Charger

## SPECIFICATIONS



The equipment described in these specifications has been tested in accordance with applicable Underwriters Laboratories standards.

















### Battery Charger Specifications (Norbar EBC 60352)

Input.....	100 – 240 VAC, 50/60 Hz
Output.....	Battery 18 VDC 5 A Battery 7.2 / 14.4 VDC 3 A USB 5 VDC 0.5 A
Weight.....	0.95 kg (2.11 lb)
Charging Temperature Range.....	0°C (32°F) to 45°C (113°F)

NOTE: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

# SAVE THESE INSTRUCTIONS

## Symbology

	REFER TO OPERATOR'S MANUAL
	WEAR EYE PROTECTION
<b>V</b>	VOLTS
	DIRECT CURRENT
	CE MARK
	CANADIAN - UNITED STATES UNDERWRITERS LABORATORY
	FCC FEDERAL COMMUNICATIONS COMMISSION
	JAPAN ELECTRICAL SAFETY TÜV RHEINLAND
	DOUBLE INSULATION
<b>BFP</b>	BACK FEED PROTECTION
	RECYCLE BATTERY PROPERLY
	DO NOT PLACE IN GENERAL WASTE.
	CALIFORNIA - TITLE 20 COMPLIANT
	KOREA CERTIFICATION
	UKCA (UK CONFORMITY ASSESSED) MARKING
	RCM (REGULATORY COMPLIANCE MARK)

## Battery Pack Specifications (Norbar EBP 60334)







Type.....Lithium-Ion  
 Voltage.....18 VDC (3.6 V x 5 cells)  
 Weight.....0.75 kg (1.65 lb)  
 Charge Time.....70 min (approximately)  
 Life.....1,000 cycles (Note: 1 cycle = 1 charge and 1 discharge)  
 Capacity.....5.0 Ah  
 Discharge Temperature Range.....20°C (-4°F) to 60°C (140°F)

## OPERATION

### AC Cord and Plug Requirement

- Cord rating
  - 120 V, 10 A, Type: SPT-2, 18 AWG (for use with 100 - 120 VAC, for use with UL or JIS plug)
  - 240 V, 2.5 A, Type: H03VVH2-F, 2 x 0.75 mm or equivalent (for use with 220 – 240 VAC, for use with VDE, BS, SAA or Kor plug only)
- Cord length: min.1.8 m (6 feet); max. 6.1 m (20 feet) including output cord.
- Cord type: must comply with requirement set out by the safety approval / certification Organization of each country of use.

Employ a plug in shape and ratings according to the alternate voltage and matched with AC outlet to be used. Refer to the following table:

PLUG TYPE	PLUG RATING	INPUT VOLTAGE	POWER PLUG SHAPE
UL	5 A, 125 VAC	AC 120 V, 60 Hz	
VDE	2.5 A, 250 VAC	AC 230 V, 50 Hz	
SAA	7.5 A, 250 VAC	AC 220 - 240 V, 50 Hz	
BS	3 A, 250 VAC	AC 220 - 240 V, 50 Hz	
KOR	2.5 A, 250 VAC	AC 220 V, 50 Hz	
JIS	7 A, 125 VAC	AC 100 V, 60 Hz	

## Battery Charging

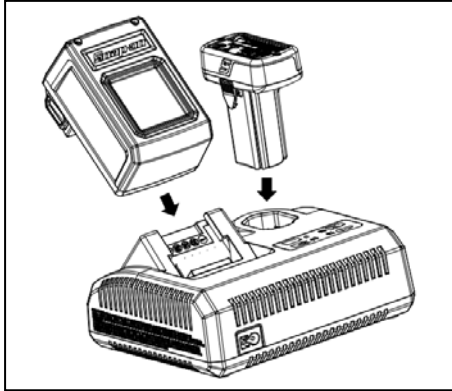


Figure 2: Inserting the Battery Pack into the Charger

1. If charger is supplied with a separate charger cord, plug cord into charger.
2. Plug the other end of charger into the AC power source.
3. Insert battery pack in charger. Press lightly on battery pack until it stops. The charger is equipped with one LED for the 14.2 V battery and one LED for the 18 V battery. When the battery makes contact, the matching LED starts flashing green until the battery is completely charged. The matching LED then will stay on solid indicating a fully-charged condition.
4. Certain built-in safety protections may lock the charger off. If no charger light illuminates, remove the battery and unplug the charger for 10 minutes. Plug the charger back in and insert a known good battery. If no light comes on the charger is faulty and must be replaced.
5. The charger will not charge if the battery pack is too hot or too cold. The charger will show a flashing yellow LED and wait until the battery temperature is between 0°C (32°F) and 45°C (113°F) to begin fast charging.
6. Standard fast charging time is 30 minutes. Charger may take longer than 30 minutes. The charge cycle may be longer if the battery has been left in a low state of charge for an extended period of time. When the charge is complete, all 4 green LED's stay illuminated.
7. A flashing red LED indicates the battery is faulty and the charger will not charge. Remove the battery from the charger and replace the battery.
8. The charger has one USB port; its output current is 0.5 A and output voltage is 5 VDC. Do not connect to an appliance requiring over 0.5 A.

## BATTERY PACK

### Battery Pack Protection

To maximize performance and battery life, the Lithium-Ion battery is protected by safety circuits in the tool and the charger. They monitor battery voltage, discharge/charge amperage and temperature.

### Cold Weather Operation

The Lithium-Ion battery can be used in temperatures down to -20°C (-4°F). When the battery pack is very cold, run the tool at no load to warm the battery and then use the tool normally.

### Hot Weather Operation

If the Lithium-Ion battery temperature reaches 45°C (113°F), the protection circuit will turn off the battery. Once the battery has cooled down, the charger will resume normal operation.

### Storage

Do not expose your battery pack to water or rain; this could damage the battery pack. Fully charge the battery before placing it in storage. For optimum life, store the Lithium-Ion batteries at room temperature away from moisture. Permanent capacity loss can result if batteries are stored for a long period at high temperature.

# SAVE THESE INSTRUCTIONS

# MAINTENANCE

## Service

Service of a charger requires extreme care and knowledge. Service should be performed only by a qualified service technician.

- Always check charger for damaged parts before use.
- Replace or repair damaged parts before use. Check broken parts, mounting and any other conditions that may alter operation.
- Have damaged parts properly repaired or replaced by an Authorised Service Centre.
- Maintain chargers. Keep chargers dry, clean and free of oil and grease for better and safer performance.
- For location of the nearest Norbar repair centre, call Norbar customer service at +44 (0) 1295 753600.
- When charging or discharging a Lithium-Ion battery over a short period of time, the internal temperature of the battery pack increases substantially. This is normal.
- Under ideal working conditions the useful life of a Lithium Ion battery pack is around 1,000 charge/discharge cycles. Improper care and maintenance shortens battery life and the amount of time the battery holds a charge.
- Use only with Norbar charging equipment that specifies a EBP Series battery pack.
- Avoid short-circuiting the battery pack. Permanent damage to the pack can occur from high current discharge.

## WARNING

- Unplug charger from outlet before starting the disassembly procedure.
- Remove the battery pack from the tool before starting the disassembly procedure. Short-circuiting the battery pack can cause fire or personal injury.
- Use safety equipment. Always wear eye protection.

# SAVE THESE INSTRUCTIONS

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