



Battery-Powered Mower

NEUTON 24-Volt Charger Instructions Booklet

Dear Neuton Owner,

In order for you to get the most out of your Neuton Mower, we recently reviewed and revised our battery-charging instructions. In the following pages, please find the type of charger you have and follow the revised instructions for optimal battery performance.

Happy Mowing!

Tom Hughes

President, Neuton Power Equipment

Battery Charging
UPDATE
April 2010

Section 1 – NEUTON 24-Volt Battery Instructions

Conventions used in these Instructions

WARNING!

This indicates a hazardous situation, which, if not avoided, *could result in death or serious injury.*

NOTICE

This information is important in the proper use of your mower. Failure to follow this instruction could result in damage to your machine or property.

TIP

This is a helpful hint to guide you in getting the most out of your NEUTON Battery and Charger.

NOTE: *This information may be helpful to you in using your Battery and Charger.*

Neuton Power Equipment reserves the right to discontinue, change, and improve its products at any time without notice or obligation to the purchaser. The descriptions and specifications contained in these instructions were in effect at the end of printing. Some illustrations may not be applicable to your machine.

The Battery



- Under normal conditions, the Battery charge should last for approximately forty-five (45) to sixty (60) minutes per use with a fully charged Battery. The length of time depends on the length, density, and dampness of the grass, cutting height setting, current Battery charge level, and ongoing Battery care/charging. If the Battery does not provide a forty-five (45) minute run time, it does not mean that your Battery is defective. If you generally intend to use your Mower for a longer duration, Neuton Power Equipment recommends that you purchase an extra Battery. Whereby, you could have a second fully charged Battery ready so you can continue mowing.
- It may take up to five (5) charging and discharging cycles before your Battery provides maximum life.
- A Battery may last much longer if you charge it as soon as it noticeably starts to lose power. Do not force the Battery to discharge to the extent that the machine will no longer operate. You should never try to coax a little more power out of your Battery. Recharge the Battery as soon as possible after each use according to your charger's unique and specific instructions outlined in the following documents.

Handling the Battery Safely

WARNING!

- Never charge the lawn mower Battery in the rain or in wet conditions.
- Use only an approved 24-Volt Neuton Charger to charge the Battery. Make sure that the Neuton Charger output Voltage printed on the Charger label matches the Voltage of your Battery. Use of a different charger may not allow the Battery to fully recharge and may cause a fire or explosion. Use of a non-approved Neuton Charger will void your warranty.
- Exercise care in handling the Battery in order not to short-circuit it with conducting materials such as rings, bracelets, and keys. When short-circuited, the Battery or conductor may overheat and cause burns.
- Never attempt to alter or open the Battery. Opening your Battery will void your warranty and could result in an unsafe condition or risk of personal injury. Use normal household voltage (110 Volts) when charging the Battery. Plug the charger directly into the electrical outlet.
- Never attempt to replace the individual Battery cells inside the Battery. Mixing fresh and discharged Batteries could increase internal cell pressure and rupture the discharged Battery. Improper wiring within the Battery could result in leakage or explosion.
- Never dispose of Batteries in a fire, as the Battery cells may explode. Never open or mutilate the Battery. Released electrolyte (battery acid) is corrosive and will cause damage to eyes, skin, or clothes. Battery acid is toxic if swallowed or if you inhale the fumes.

NOTICE

Please dispose of used Batteries responsibly, according to your local hazardous materials regulations. Never throw away used Batteries in your household trash.

Please dispose of your used Batteries responsibly by recycling them. We have partnered with East Penn Manufacturing, one of the leading producers of lead-acid batteries in the U.S., to recycle your Battery when it reaches the end of its life. East Penn has nearly 100 distribution centers throughout the U.S. and Canada that will accept your Battery for recycling. East Penn will separate and reuse everything in your old Battery: the plastic cover, the lead, and even the Battery acid using a patented process. To find the location of the East Penn distribution center nearest you, visit <http://www.dekabatteries.com>.

You can also visit the Web site of Earth 911 for more information [www.earth911.org]. Once there, click the Household tab at the top of the page and then enter your zip code. The site lists recycling centers located near you. You can also visit our website www.neutonpower.com and click on "Customer Service" to find distribution centers across the country that will accept your Battery for 100% recycling of the plastic, lead, and acid.

For a fee, you can recycle your Batteries with the International Metals Reclamation Company. Visit them at www.inmetco.com and click Services; or contact them at:


INMETCO, P.O. Box 720, 245 Portersville Road, Ellwood City, PA 16117, (724) 758-2825; fax (724) 758-2845


To learn more about hazardous waste recycling, visit the Web site for Battery Council International [www.batterycouncil.org] or for the Environmental Protection Agency [www.epa.gov].

Section 2 – NEUTON 24-Volt Trickle Charger Instructions

Model: 14134-00022
Shipped beginning in March 2004

NEUTON
PLUG IN CLASS 2 TRANSFORMER

 LISTED
MODEL NO: 14134-00022
INPUT : 120V 60Hz 35W
OUTPUT: 24VDC 1000mA



This power unit is intended to be correctly orientated in a vertical or floor mount position



WARNING!

- Do not store, or charge the Battery near children, pets or close to a source of heat, sparks, open flame, or on the floor as it may be damp or subject to accidental flooding. In addition, never expose the Battery to abnormal shaking or shocks.
- Charge the battery in a well ventilated area.
- Regularly inspect the external appearance of the Battery and never use, or charge a Battery that shows cracks, changes in shape, leaks, or is obviously damaged. If the battery becomes hot to the touch during charging, this may also be a sign of a damaged battery.
- Never attempt to alter or open the Battery as this will void your batteries warranty. Use normal household voltage (110 Volts) when charging the Battery. Plug the Charger directly into the electrical outlet.
- Regularly inspect the Charger Receptacle of the Battery and never use, or charge a Battery that has visible damage or debris within the Charger Receptacle. If there is debris present, please use caution to remove the debris. Do not remove the debris with any metallic objects, damp or flammable items, or items that may become lodged in the Charger Receptacle as this may cause a fire, or explosion of the Battery. If you observe damage to the Charger Receptacle, please discontinue use immediately.
- Risk of electric shock; do not touch the non-insulated portion of the output connector or the non-insulated Battery terminal(s).
- Use the NEUTON 24-Volt Charger only with the NEUTON 24-Volt Battery. Use of other Chargers or the Neuton 24-Volt Charger with other types of Batteries may result in bursting of the Battery, which could cause personal injury and property damage.

Optimal Charging Instructions

You MUST charge the Battery for before you use the Mower for the first time. If you do not charge it before using the Mower, the Battery's charging capacity will decrease. Once you use the Battery, regardless of the level of depletion, you must recharge the Battery completely, immediately after use. The following instructions cover the usage of the Charger to provide the optimal life and performance of your Battery.

NOTICE

The optimal ambient temperature for charging of the Battery is between +32°F (0°C) and +104°F (+40°C) and the optimal ambient temperature for storage of the Battery is between +5°F (-15°C) and +104°F (+40°C).

NOTE: Always charge the Battery out of the Mower.

1. Remove the Protective Plug from the Charger Receptacle on the Battery and plug in the round Charger Connector.
2. Plug the Charger into a standard 110-Volt wall outlet. The RED light on the Battery will illuminate indicating a connection between the Battery and the Charger and that the Battery is charging.
3. After twenty (20) to thirty (30) hours the battery should be completely recharged. The LED on the Battery will not turn off or change colors.

NOTE: The amount of time needed to completely recharge the battery depends on the level of discharge during use. If you used the battery for the full forty-five (45) to sixty (60) minutes, or have drained the battery to the point where the machine will no longer operate, it will take almost the full thirty (30) hours to recharge the battery completely.

4. Remove the charger from the battery and from your standard 110-Volt wall outlet and place both the Battery and the Charger in a **DRY** environment for storage until you need them again.

NOTE: For the first five (5) hours, the Charger may be warm to the touch. This is normal and does not indicate a problem.



Off Season Charging & Storage

At the end of your mowing season, remove the Battery from the machine and follow the charging procedures as outlined above. Once charging is complete, remove the Charger from the Battery and from your standard 110-Volt wall outlet. Store the Battery in a **DRY** environment with temperatures between +5°F (-15°C) and +104°F (+40°C) unplugged from the Charger and separate from the Mower. Every one (1) to two (2) months thereafter and just prior to the first mowing of the season, you should completely charge the Battery again for optimal performance and life.

WARNING!

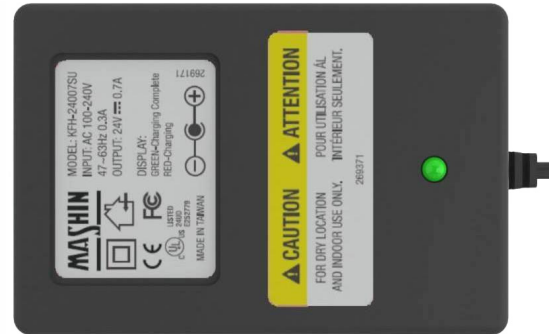
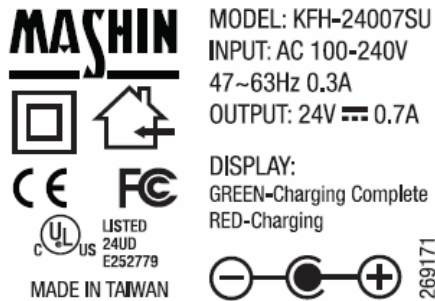
Periodically inspect the Cord on the Charger unit for damage. If damage occurs, discontinue use of the Charger immediately and visit our website at www.neutonpower.com or call Neuton Power Equipment Toll Free at: **1-866-NEUTON1 (638-8661)** for a replacement Charger. Do not abuse the Cord. Never carry the Charger by the Cord. Always pull the Charger – and not the Cord – when disconnecting the Charger from the electrical outlet (wall outlet). Always pull the Charger Connector – and not the Cord – when disconnecting the Charger from the Charging Receptacle on the Battery after charging. When using an extension Cord with your Charger, use a heavy-duty extension Cord of a type “suitable for outdoor use” (although you should never charge the Battery in the open outdoors).

Charger Troubleshooting Table

PROBLEM	CORRECTIVE ACTION
<p><i>The Battery LED does not turn RED when the Charger is connected</i></p>	<p>⇒ Unplug the Battery Charger from your standard 110-Volt wall outlet and from the Charger Receptacle on the Battery. Inspect the Battery Charger for any visible signs of damage to the body and the cord. If you observe damage to the Battery Charger, please discontinue use.</p> <hr/> <p> WARNING!</p> <p>Use of a damaged Battery Charger may cause a short circuit and the potential for a fire.</p> <hr/> <p>⇒ Inspect the Charger Receptacle on the Battery for any signs of visible damage or debris. If there is debris present, please use caution to remove the debris.</p> <hr/> <p> WARNING!</p> <p>Do not remove the debris with any metallic objects, damp or flammable items, or items that may become lodged in the Charger Receptacle as this may cause a fire, or explosion of the Battery. If you observe damage to the Charger Receptacle, please discontinue use.</p> <hr/> <p>TIP ⇒ Use a vacuum equipped with a non-metallic nozzle to remove debris from the Charger Receptacle on the Battery.</p> <p>NOTE: <i>You can damage the Charger Receptacle by excessive force. It should not take a great amount of force to insert the round Charger Connector. Please do not force the round Charger Connector into the Charging Receptacle on the Battery.</i></p> <p>⇒ Verify your Standard 110-Volt wall outlet is functioning correctly by plugging a lamp or other electrical device into the same socket on the wall outlet you are intending to use.</p>

Section 3 – NEUTON 24-Volt CE 5.4 ASO Charger Instructions

Model: KFH-24007SU
Shipped beginning in February 2010



! WARNING!

- Do not store, or charge the Battery near children, pets or close to a source of heat, sparks, open flame, or on the floor as it may be damp or subject to accidental flooding. In addition, never expose the Battery to abnormal shaking or shocks.
- Charge the battery in a well ventilated area.
- Regularly inspect the external appearance of the Battery and never use, or charge a Battery that shows cracks, changes in shape, leaks, or is obviously damaged. If the battery becomes hot to the touch during charging, this may also be a sign of a damaged battery.
- Never attempt to alter or open the Battery as this will void your batteries warranty. Use normal household voltage (110 Volts) when charging the Battery. Plug the Charger directly into the electrical outlet.
- Regularly inspect the Charger Receptacle of the Battery and never use, or charge a Battery that has visible damage or debris within the Charger Receptacle. If there is debris present, please use caution to remove the debris. Do not remove the debris with any metallic objects, damp or flammable items, or items that may become lodged in the Charger Receptacle as this may cause a fire, or explosion of the Battery. If you observe damage to the Charger Receptacle, please discontinue use immediately.
- Risk of electric shock; do not touch the non-insulated portion of the output connector or the non-insulated Battery terminal(s).
- Use the NEUTON 24-Volt Charger only with the NEUTON 24-Volt Battery. Use of other Chargers or the Neuton 24-Volt Charger with other types of Batteries may result in bursting of the Battery, which could cause personal injury and property damage.

Optimal Charging Instructions

You **MUST** charge the Battery before you use the Mower for the first time. If you do not charge it before using the Mower, the Battery's capacity will decrease. Once you use the Battery, regardless of the level of depletion, you must recharge the Battery completely, immediately after use. The following instructions cover the usage of the Charger to provide the optimal life and performance of your Battery.

NOTICE

The optimal ambient temperature for charging of the Battery is between +32°F (0°C) and +104°F (+40°C) and the optimal ambient temperature for storage of the Battery is between +5°F (-15°C) and +104°F (+40°C).

NOTE: Always charge the Battery out of the Mower.

1. Remove the Protective Plug from the Charger Receptacle on the Battery and plug in the round Charger Connector.
2. Plug the Charger into a standard 110-Volt wall outlet. The RED light on the Battery will illuminate indicating a connection between the Battery and the Charger. The LED light on the Charger will quickly change from GREEN to RED indicating that the Battery is charging.
3. The NEUTON ASO Charger will automatically turn itself off when charging is complete, which will be between eight (8) and fourteen (14) hours for a completely discharged Battery. A Battery that may not be completely discharged may take a shorter amount of time to completely charge. Once charging is complete, the LED on the Charger will change from RED to GREEN and the RED LED on the Battery will turn OFF indicating that the Battery is fully charged and is ready for use.
4. **Once charging is complete, you must remove the Charger from the outlet and store it in a DRY environment until you need to charge the Battery again. You must unplug the charger and wait at least 30 seconds to reset it before charging another battery.**

NOTE: For the first five (5) hours, the Charger may be warm to the touch. This is normal and does not indicate a problem.




Off Season Charging & Storage

At the end of your mowing season, remove the Battery from the machine and follow the charging procedures as outlined above. Once charging is complete, remove the Charger from the Battery and from your standard 110-Volt wall outlet. Store the Battery in a **DRY** environment with temperatures between +5°F (-15°C) and +104°F (+40°C) unplugged from the Charger and separate from the Mower. Every one (1) to two (2) months thereafter and just prior to the first mowing of the season, you should completely charge the Battery again for optimal performance and life.

WARNING!

Periodically inspect the Cord on the Charger unit for damage. If damage occurs, discontinue use of the Charger immediately and visit our website at www.neutonpower.com or call Neuton Power Equipment Toll Free at: **1-866-NEUTON1 (638-8661)** for a replacement Charger. Do not abuse the Cord. Never carry the Charger by the Cord. Always pull the Charger – and not the Cord – when disconnecting the Charger from the electrical outlet (wall outlet). Always pull the Charger Connector – and not the Cord – when disconnecting the Charger from the Charging Receptacle on the Battery after charging. When using an extension Cord with your Charger, use a heavy-duty extension Cord of a type “suitable for outdoor use” (although you should never charge the Battery in the open outdoors).

Charger Troubleshooting Table

PROBLEM	CORRECTIVE ACTION
<p>The Battery Charger LED is flashing RED and GREEN.</p>	<p>⇒ Unplug the Battery Charger from your standard 110-Volt wall outlet and from the Charger Receptacle on the Battery. Inspect the Battery Charger for any visible signs of damage to the body and the cord. If you observe damage to the Battery Charger, please discontinue use.</p> <hr/> <p> WARNING!</p> <p>Use of a damaged Battery Charger may cause a short circuit and the potential for a fire.</p> <hr/> <p>⇒ Inspect the Charger Receptacle on the Battery for any signs of visible damage or debris. If there is debris present, please use caution to remove the debris.</p> <hr/> <p> WARNING!</p> <p>Do not remove the debris with any metallic objects, damp or flammable items, or items that may become lodged in the Charger Receptacle as this may cause a fire, or explosion of the Battery. If you observe damage to the Charger Receptacle, please discontinue use.</p> <hr/> <p>TIP ⇒ Use a vacuum equipped with a non-metallic nozzle to remove debris from the Charger Receptacle on the Battery.</p> <p>⇒ If the Battery Charger, Cord, and Charger Receptacle are undamaged, please wait 30 seconds to allow the Charger to reset itself. Plug the round Charger Connector back into the Charger Receptacle on the Battery and make sure that it is fully depressed into the Receptacle. Plug the Battery Charger into a standard 110-Volt wall outlet. The LED on the Battery Charger and the LED on the Battery should turn RED. If the Battery Charger LED begins to flash again between RED and GREEN, please check that you have followed all of the steps outlined here. If the Battery Charger LED continues to flash between RED and GREEN, please discontinue use.</p> <p>NOTE: You can damage the Charger Receptacle by excessive force. It should not take a great amount of force to insert the round Charger Connector. Please do not force the round Charger Connector into the Charging Receptacle on the Battery.</p>
<p>The Battery Charger LED does not come on when plugged into a standard 110-Volt wall outlet.</p>	<p>⇒ Unplug the Battery Charger from your standard 110-Volt wall outlet and from the Charger Receptacle on the Battery. Inspect the Battery Charger for any visible signs of damage to the body and the cord. If you observe damage to the Battery Charger, please discontinue use.</p> <hr/> <p> WARNING!</p> <p>Use of a damaged Battery Charger may cause a short circuit and the potential for a fire.</p> <hr/> <p>⇒ Verify your Standard 110-Volt wall outlet is functioning correctly by plugging a lamp or other electrical device into the same socket on the wall outlet you are intending to use.</p>

Notes:

Neuton Power Equipment

75 MEIGS ROAD, VERGENNES, VERMONT 05491

www.neutonpower.com

©2010 Neuton Power Equipment 272831