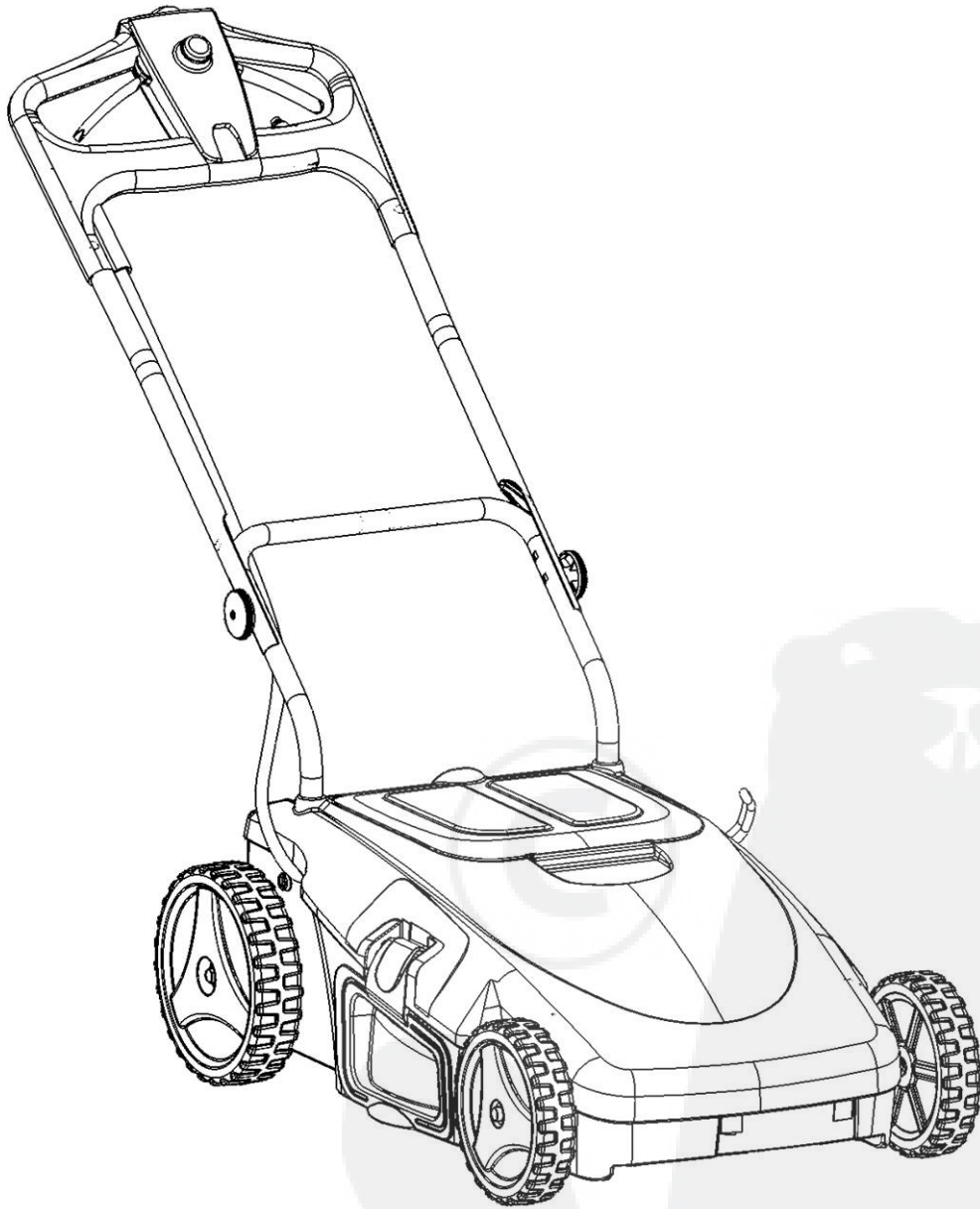




# Cordless Electric Mower *Safety & Operating Instructions*

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Model: ECOMOW470



## **WARNING!**

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Read and understand this manual and all instructions before operating this mower!

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## Chapter 1: Important Safety Considerations

Before using your mower, please spend some time to understand the warning labels to ensure a safe operation.

### Warning Signs

### Definitions



Be alert to the warning signs.



Read the Operating Manuals before operating, inspection, maintaining or cleaning the machine.



Wear boots while working with the machine.



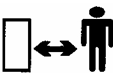
Wear goggles while working with the machine.



Stay alert to the objects that could be thrown out from the machine while working.



Do not put hands or feet into the working machine.  
Do not touch rotating blade.



Make sure that there is no body within the working area of the machine.



Remove battery pack before maintenance, repair or clean.

## Protecting Yourself and Those around You

- Be sure the area is clear of other people before mowing. Never allow children, other bystanders, or pets in your work area when operating the Mower. Stop the machine if anyone enters the area.
- Only allow responsible individuals who have a thorough understanding of these instructions to operate the Mower. Never allow children to operate the machine.
- Before and while pulling the machine backwards, look behind and down for small children and for secure footing. Be sure to shut off the Motor before pulling the machine backwards.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.
- If you are ever unsure about an action you are about to take, please do not do it.

## Preparing to Use Your Mower

- Be thoroughly familiar with the controls and proper use of the ECOMOW470 before operating it.
- Inspect the safety devices to determine they are properly installed, in good repair, and operate properly. If the condition or operation of these devices is questionable, they must be repaired or replaced before using the mower.
- Thoroughly inspect the area where the mower is to be used and remove all stones, sticks, wire, dog bones, pet supplies or lawn toys, and other foreign objects which could be thrown by the mower blade. Objects stuck by the lawnmower blade can cause severe injuries. Also note the location of holes, stumps and other possible hazards.
- Mow only in daylight or in good artificial light.
- Keep pets and children away from work area. Never allow children or people unfamiliar with these instructions to use the appliance. Local regulations may restrict the age of the operator.
- The operator or user is responsible for accidents or hazards occurring to other people or their property.
- Never operate the appliance with defective guards, or without safety devices, for example deflectors and/or grass catchers, in place.

## Operating Your Mower Safely

- The length of time a battery pack can hold its charge while mowing a lawn depends upon lawn conditions; tall, thick, or wet grass make the mower work harder and the battery pack discharge faster.
- Before starting the mower, adjust the cutting height accordingly. Tall and thick grass cut at a higher level. Do not force the lawnmower forward in thick grass. The ECOMOW470 Cordless Electric Mower will do better and a safer job when cutting at a steady rate.
- Your mower can operate as a mulch or catcher. Learn how to use the proper blade, and the grass catcher or discharge chute block for the right application.
- Do not operate the mower in the rain
- Always use extreme caution when maneuvering backwards. Always look first to check your footing.
- Mow across slopes, never up or down. Exercise caution when changing directions on slopes. Do not mow steep slopes or other areas where stability or traction is in doubt.
- Stop the motor when crossing over loose materials such as gravel drives, walks or roads. Objects discharged by mower can be hazardous.
- After striking a foreign object or if the mower vibrates abnormally, stop the motor and remove the battery. Inspect the mower for any damage and repair the damage before restarting and operating the lawnmower. Vibration is generally a sign of trouble.
- Stay alert and watch what you are doing. Do not operate the lawnmower when you are tired or under the influence of drugs or alcohol.
- Remove battery when the mower is not in use.
- Allow the motor to cool for at least 5 minutes before storing the mower in any type of tight space or enclosure.
- Do not use the ES 360 Cordless Electric Mower for any job other than those for which it is intended.
- The users should operate the machine with the suggested posture as shown below to prevent from injured caused by this matter.

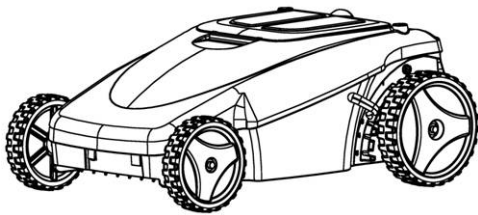
## Handling the Battery Safely

- Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
- Contact your local government for information regarding the collection systems available.
- If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.
- When replacing old appliances with new one, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.

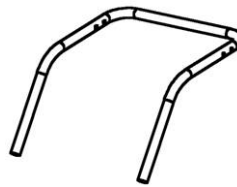
## Chapter 2: Setting Up Your Mower

### Package Contains

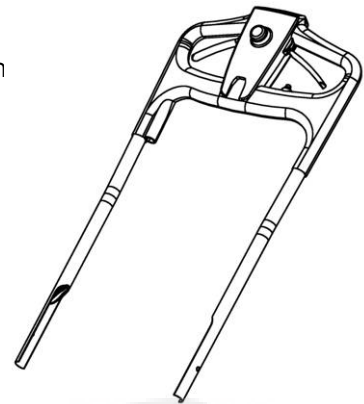
Before beginning the assembly, please check that you have all of the compon



*Mower main body*



*Lower handlebars*



*Upper handlebar*

a



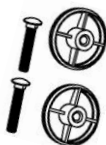
*a. Cable retainers*

b



*b. Lower handlebar screws*

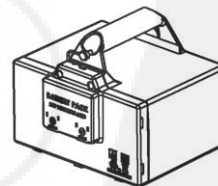
c



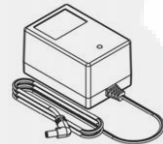
*c. Handlebar connector knobs*



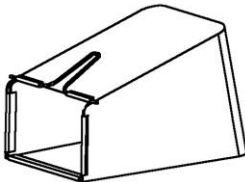
*Safety & operating manual*



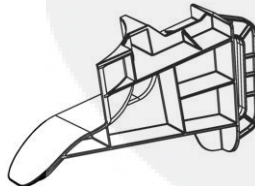
*Battery Pack*



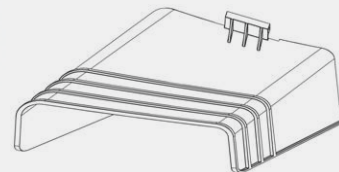
*Battery charger*



*Grass bagger*



*Mulching plug*



*Side discharge chute*

## Assembling Your Mower

### Step 1: Read the *Safety & Operating Instructions* before proceeding

For your safety, it is important to read the information in “Chapter 1: Important Safety Considerations” before you assemble or use the Mower.

To familiarize yourself with the assembly, features, and operation of your Mower, please read the remainder of this manual before proceeding.

### Step 2: Remove the Battery and Charge for the First Use

For your safety, please remove the battery before the assembly process. To remove the battery, please open the battery cover and simply take out the battery (**Figure 1**).

Now refer to Chapter 4 for how to charge the Battery for the first use before continuing the assembling process.

Remove Battery

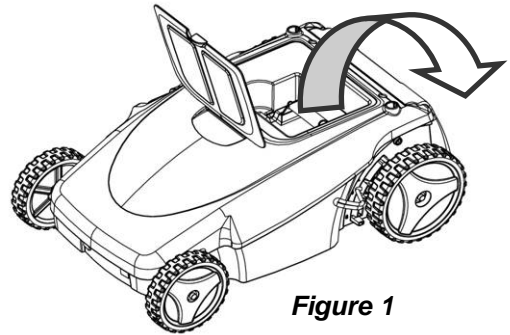


Figure 1

## **! WARNING!**

The battery pack in your mower has been charged at the factory. However, **you must recharge the battery pack and make sure it is fully charged before initial operation of the mower. Failure to do so may cause permanent damage of the battery pack.**

### Step 3: Attach and Adjust the Lower and Upper Handlebars

1. Insert the Lower Handlebar into the holes on the Upper housing.
2. Secure the Lower Handlebar with screws provided in the accessory pack (**Figure 2**).
3. Use the handlebar connector knobs and bolts to tighten the Upper Handlebar (**Figure 3**).
4. Use the two Cable Retainers to hold the main cable in place (**Figure 4**).

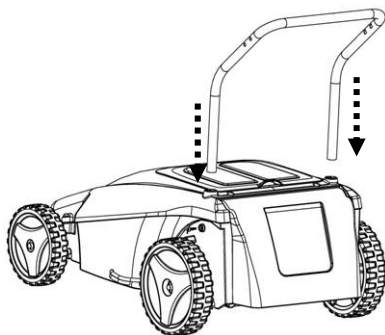


Figure 2

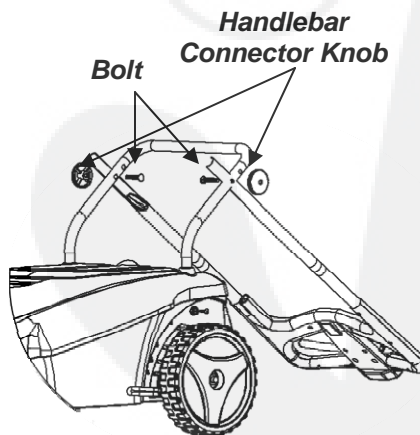


Figure 3

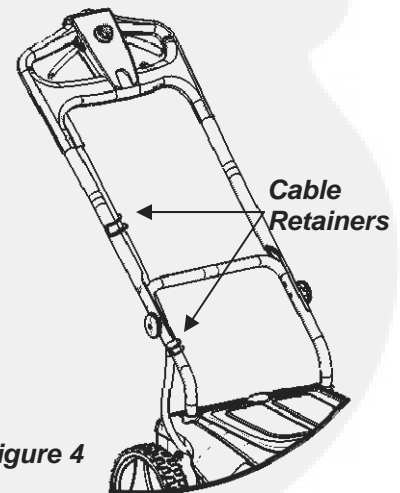
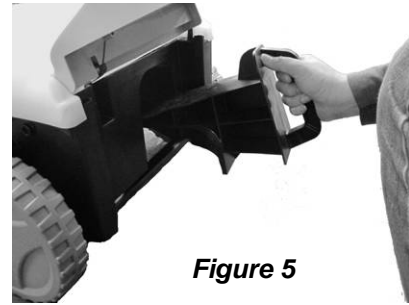


Figure 4

#### Step 4. Attach the Mulching Plug, Rear Bagger, or the Side Discharge Chute

##### Mulching Plug

1. Install the mulching plug as shown in **Figure 5**. Be sure to push the block all the way in until the notch in its bottom is engaged.



**Figure 5**

##### Rear Bagger

1. Raise the hinged discharge guard on the rear of the mower. While keeping the discharge guard raised, insert the grass catcher into the holes on both sides of mower (**Figure 6**).
- 2.
3. Release the discharge guard and press it into the hole on top of the grass catcher to lock the catcher in place.
4. Lock the grass catcher in place by sliding the black tab on the handle over the discharge guard.



**Figure 6**

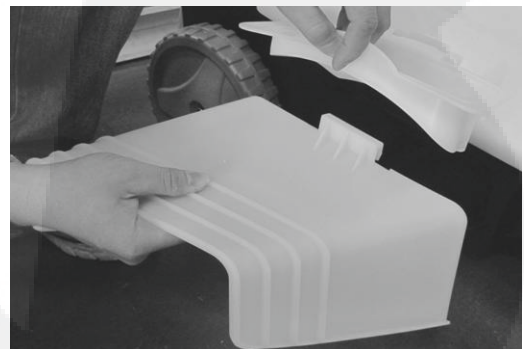
##### *TO REMOVE THE GRASS CATCHER:*

1. Raise the discharge guard, grab the grass catcher by its handle with the other hand, and remove the grass catcher from the mower by lifting it up.
2. Release the discharge guard.

**Important: Check the grass catcher frequently for wear or deterioration.**

##### Side Discharge Chute

1. Raise the side discharge guard on the side of the mower. While keeping the discharge guard raised, hook the side discharge chute onto the slots on the side of mower (**Figure 7**).

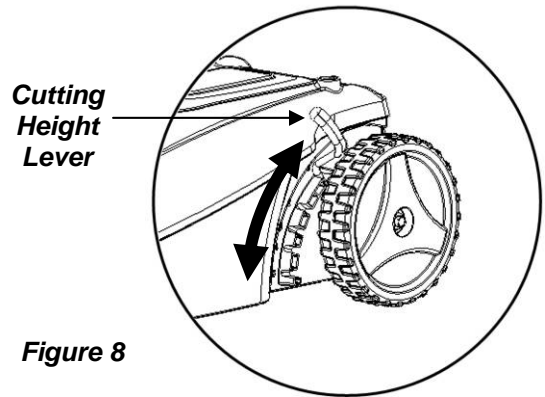


**Figure 7**

**Step 5: Adjust the Cutting Height**

Using the Cutting Height Lever located at the side of the rear left wheel (**Figure 8**), adjust the Cutting Height so that you cut off only one (1) to two (2) inches of grass at a time.

Each position adjusts the Mower's Blade level to a different Cutting Height. Pushing the Cutting Height Lever towards Position 1 cuts more grass (which leaves your grass shorter); pushing the Lever towards Position 5 cuts less grass (leaving your grass longer).

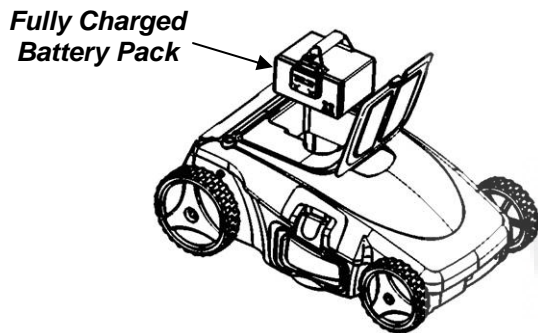


**Figure 8**

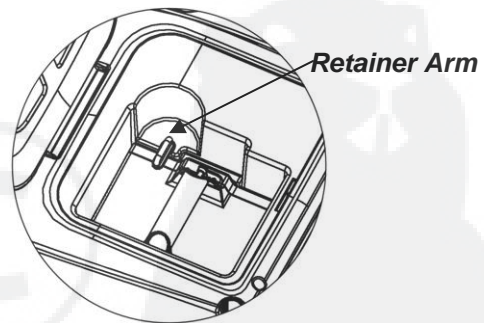
Lever Position	Cutting Height
1	7 mm
2	6 mm
3	5 mm
4	4 mm
5	3 mm

**Step 6: Insert the Battery after being fully Charged**

1. When your first charge is completed, insert the battery to the mower. Orient the Battery as shown in **Figure 9**.
2. After confirming the correct orientation of the Battery, insert the Battery fully into the Battery compartment.
3. Turn the Battery Retainer Arm back over on top of the Battery to secure it in place (**Figure 10**).



**Figure 9**



**Figure 10**

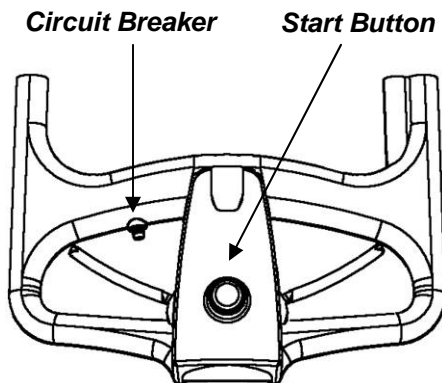
## ECOMOW470 Cordless Electric Mower Specifications

Weight with Battery	29kg (64lbs), <i>with battery</i> 20kg (44lbs), <i>without battery</i>
Dimensions	Length (deck with bag): 132cm Length (deck without bag): 90cm Length (overall): 144cm Width: 55cm Height (to handlebar): 104cm
Cutting Width	470cm (19")
Cutting Height	3.8cm (1.5") to 7.6cm (3")
Height Adjustment	5 positions
Wheels Front	200mm (7.9")
Wheels Rear	240mm (9.4")
Discharge Options	Bag/Mulch/Side discharge
Rear Bag	1.33 bushel or 12.4 gallons (47lit)
Battery	24V/14Ah, sealed lead acid battery
Battery Energy	336 Watt-Hours
Battery Weight	9 kg (20 lbs)
Run Time	45-60 minutes
Recharge Time	12 hours
Battery Warranty	1 year
Motor	750Watts, 24V/31A permanent magnet DC motor
RPM	3650 min-1
Noise	under 80 decibels
Sound pressure level at ear	?? dB(A)
Sound power level	?? dB(A)
Guarantee sound power level	?? dB(A)
Vibration Level (Max.)	?? m/s <sup>2</sup>
Safety Standard	CE

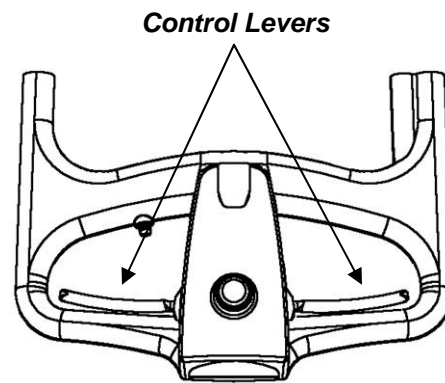


## **Chapter 3: Operating Your Mower**

1. To start the mower press the start button first, then squeeze the control levers (**Figure 11**). Release the start button when the motor starts and continue to hold the control levers (**Figure 12**).
2. Continue to hold the control levers against the handlebar for as long as you want the motor to run. Releasing the control levers will immediately shut off the motor and the blade will stop within 3 seconds.



**Figure 11**



**Figure 12**

### **The Circuit Breaker**

The purpose of the Circuit Breaker is to protect the motor from overheating. When the built-in circuit breaker is tripped, the black button on top of the safety key will pop up. Before attempting to restart, wait about 30 seconds and push the black button all the way down for it to engage. Any time the circuit is tripped you'll need to restart the button on the Circuit Breaker.

#### **! WARNING!**

1. **Repeated starting, stopping and restarting the electric motor within a few seconds can generate a great deal of heat and could cause a potential permanent damage to the motor. DO NOT attempt to do this.**
2. Switch on the motor according to instructions and with feet well away from the blades.
3. The operator presence control bar is a safety device. Do not tamper with it.
4. Do not tilt appliance when switching on the motor, except if the appliance has to be tilted for starting. In this case, do not tilt it more than absolutely necessary and lift only the part which is away from the operator. Always ensure that both hands are in the operating position before returning the appliance to the ground.
5. Walk, never run.
6. Never pick up or carry an appliance while the motor is running.
7. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.

## **Chapter 4: Charging and Caring for the Battery**

**Before charging the battery pack, read all instructions and cautionary markings in this manual and on your mower. Do not operate your mower until you have read and understood all instructions and the battery pack has been fully charged.**

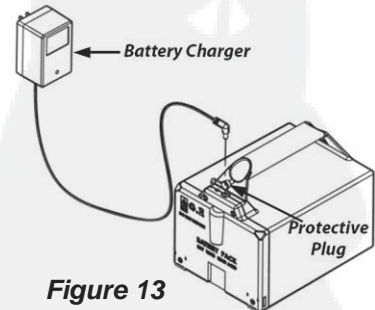
1. Always charge the battery pack indoors in a garage or other covered area where it will be dry and protected from the weather.
2. Only charge the battery pack when the temperature is at least 0°C but not more than 40°C. Charging in lower temperatures can be harmful to the battery pack.
3. Always keep mower & battery pack away from warmer, heat sources (stoves, radiators, open flames, etc), and hazardous chemicals.
4. Never attempt to charge your battery pack with a charger other than an ECOMOW470 Cordless Electric Mower charger. The charger is specifically designed to give optimal performance of you ECOMOW470 Cordless Electric Mower's battery pack. Never use the charger with any other product. Never operate the charger if it is damaged. If the cord or the charger unit has been damaged replace it or have it repaired.
5. Make sure the electrical power supply is normal households voltage (240 volts).
6. Plug the charger directly into an electrical outlet. Always disconnect the cords from the electrical outlet (wall outlet) and from the charger by pulling the plug, not the cord.
7. If an extension cord is used for the charger, use a heavy-duty extension cord of a type "suitable for outdoor use" (though you should never charge the mower in the open outdoors).

### **! WARNING!**

1. **The battery pack in your mower has been charged at the factory. However, you must recharge the battery pack and make sure it is fully charged before initial operation of the mower. Failure to do so may cause permanent damage of the battery pack.**

## **Charging procedures**

1. Remove the Protective Plug from the Charger Receptacle on the Battery and plug in the round Charger Connector (**Figure 13**).
2. Connect the charger to battery.
3. Plug in the charger to power source. The RED light on the Battery will light up indicating a connection between the Battery and the Charger and the RED light on the Charger will light indicating that the Battery is charging.
4. When LED turns GREEN, the charging is completed. Unplug the charger.
5. Repeat the above steps for every recharging cycle. **Unplug the charger from the AC power supply and connect again to start every new charging cycle.**



### **! WARNING!**

1. **The RED LED on the BATTERY** only indicates that the battery is receiving power from the charger during charging. **It is NOT used to indicate when charging is completed and WILL NOT TURN GREEN.** If this LED does not light up, **DO NOT charge the battery further.** Contact our customer service immediately.
2. Ensure that batteries are charged using the correct charger recommended by the manufacturer.
3. Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery.
4. If mower is not in use for a while, it is also recommended to recharge the battery pack for at least 12 hours once every three months. This will ensure a long battery life.

## **Chapter 5: Caring and Servicing Your Mower**

### **WARNING!**

1. Never make adjustments or repairs with the Motor running. Always stop the Motor, wait for the Blade to stop moving, and remove the Battery to prevent accidental starting.
  2. Never tamper with safety devices. Check their proper operation regularly.
  3. Never attempt to make wheel-height adjustments while the Motor is running.
  4. Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow the Blade to throw objects. Check components frequently, and replace them with the manufacturers recommended parts when necessary.
  5. Check the Blade and Motor mounting bolts at frequent intervals for proper tightness. Use only authorized NEUTON replacement parts.
- 

## **Mowing & Lawn Care Tips**

- For best results, mow at steady pace. If you try to walk too quickly, especially in tall grass, the quality of the cut may not be uniform.
- Mow often as needed so that you are only cutting 25mm – 50mm of grass each mowing session. Cutting more 50mm may reduce the charge life of the battery.
- For the healthiest lawn, avoid removing more than one third of the leaf blade during any one mowing session. When more than one third of the blade is removed, the grass plant produces less food for it and therefore becomes weaker and more susceptible to disease and insect damage.
- Keep your mower blade sharp! A sharp mower blade cuts the grass quickly and cleanly, using less of the mower's power, which conserves battery pack life. For best results, inspect the blade often and have an extra, sharp blade ready to install as a replacement while the dull blade is being sharpened.
- Under normal use of the mower, it is suggested that the blade be replaced with a new one every two years of use.
- Alternate the mowing pattern on your lawn frequently. By changing the pattern and direction of the cut, you'll improve the health and appearance of your lawn.
- Following the same mowing pattern cause soil compaction and turf wear from the mower wheels.
- Mow across slopes; never up or down.

## **Cleaning**

- Remove battery pack.
- Use a damp or sponge, with a mild soap or detergent if necessary, to clean the mower.
- Do not use water or solvents for cleaning. Clean out any clippings that have accumulated on the underside of the deck and in the discharge chute. A soft nylon brush or non-metallic scrubbing pad may be used. Do not use a wire brush.
- You may use water to clean the grass catcher. It is important for proper grass collection that the grass bag is clean and that its mesh holes are not clogged. Allow the grass catcher to dry before use. A wet grass catcher will clog quickly and hamper the grass collection.

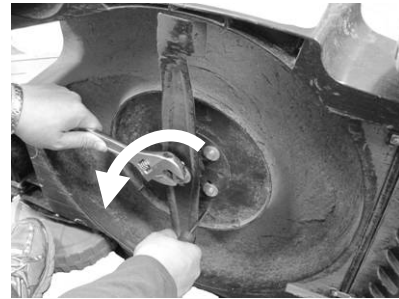
## Removing and Attaching Blade

### **WARNING!**

Always check the blade for sharpness, damage, and tightness before and after each use. Replace the blade promptly if it has been bent or damaged.

#### Removing the blade:

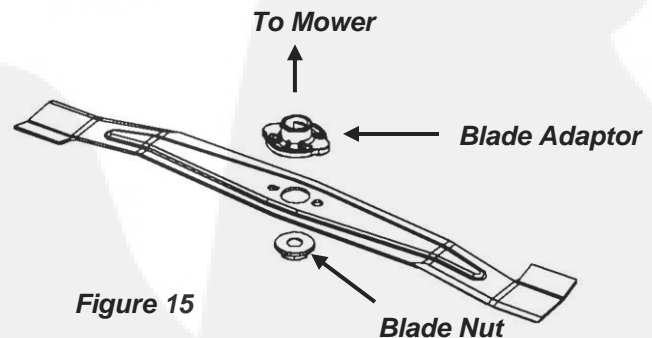
1. **Remove battery.**
2. Wear heavy gloves to protect hands from cuts and bruises. Turn the mower on its right side (the side opposite the height adjustment lever) to expose blade.
3. Loosen the 19mm BLADE NUT with an ordinary socket wrench, or similar (**Figure 14**). The blade nut turns counterclockwise to loosen. Hold the steel hex adapter steady with a screw driver to prevent the motor shaft from turning, while loosening the blade nut with the other hand.
4. Remove BLADE NUT, BLADE, AND BLADE ADAPTER.



**Figure 14**

#### Attaching the blade:

1. To replace a sharpened blade or to install a new blade, reverse steps 1 through to 4 under the instructions for removing blade. Be sure to replace all parts exactly as before removed (**Figure 15**). Observe the correct orientation of the blade.
2. Tighten the blade nut firmly.



**Figure 15**

## Blade Sharpening and Balancing

When the Blade is dull, the cut ends of the grass end up ragged and may turn brown soon after mowing. A dull blade also causes the Battery to discharge faster. When this occurs, sharpen the Blade (assuming the Blade is otherwise in good condition).

### Tools and Supplies Needed:

- Fine-Toothed File or NEUTON Blade Sharpener (optional)
  - Safety Glasses
  - Vise
1. Remove the Blade (see “Removing and Attaching the Blade”).
  2. Secure the Blade in a sturdy Vise and while wearing Safety Glasses, carefully file the Cutting Edges of the Blade using even strokes. Be sure to file both sides and both ends equally.

## Battery Disposal

Please dispose of used batteries responsibly, according to your local hazardous materials regulations. The logo (**Figure 16**) is being indicated on the battery pack.



Figure 16

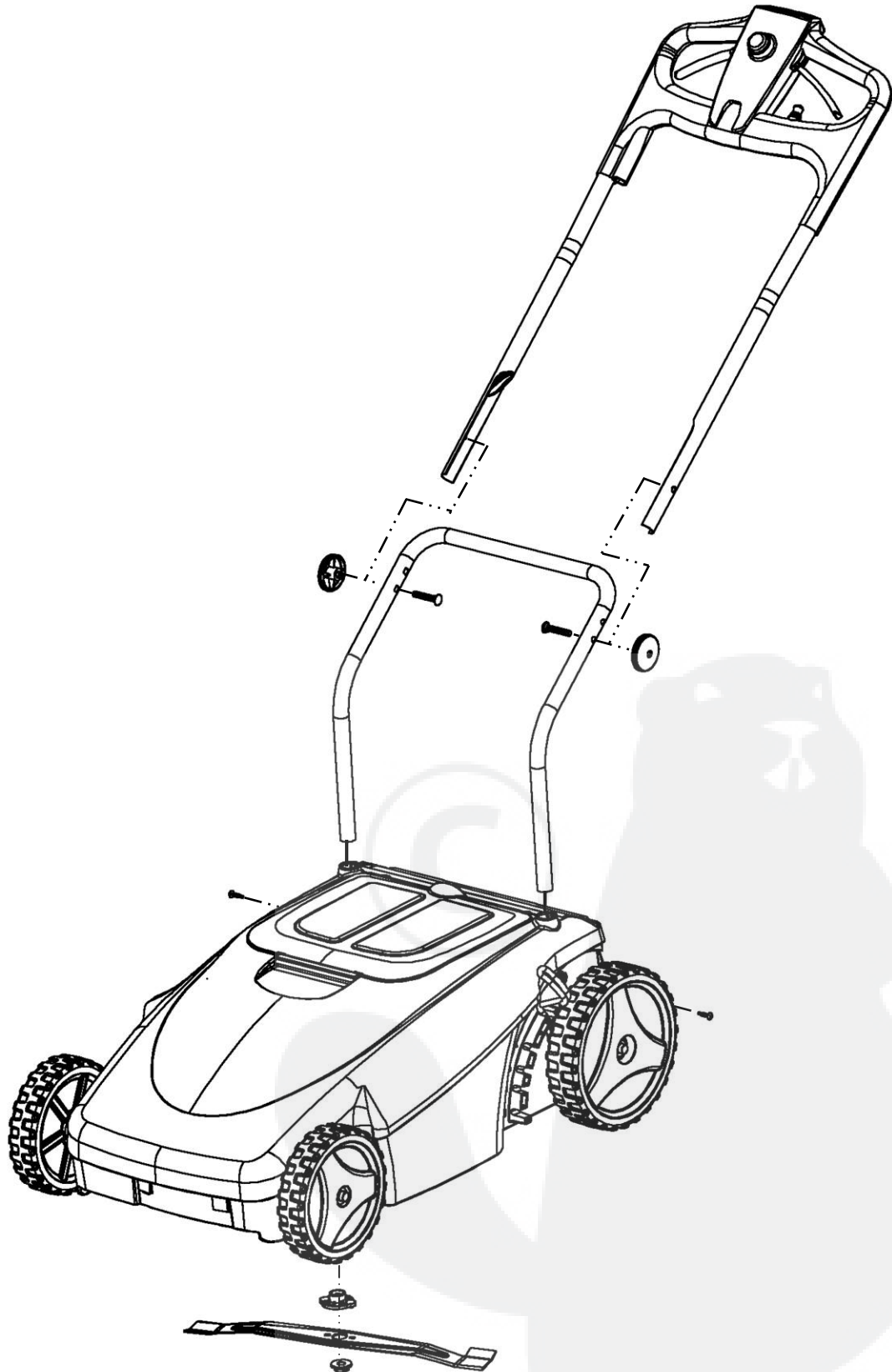
## Chapter 6: Troubleshooting Tips

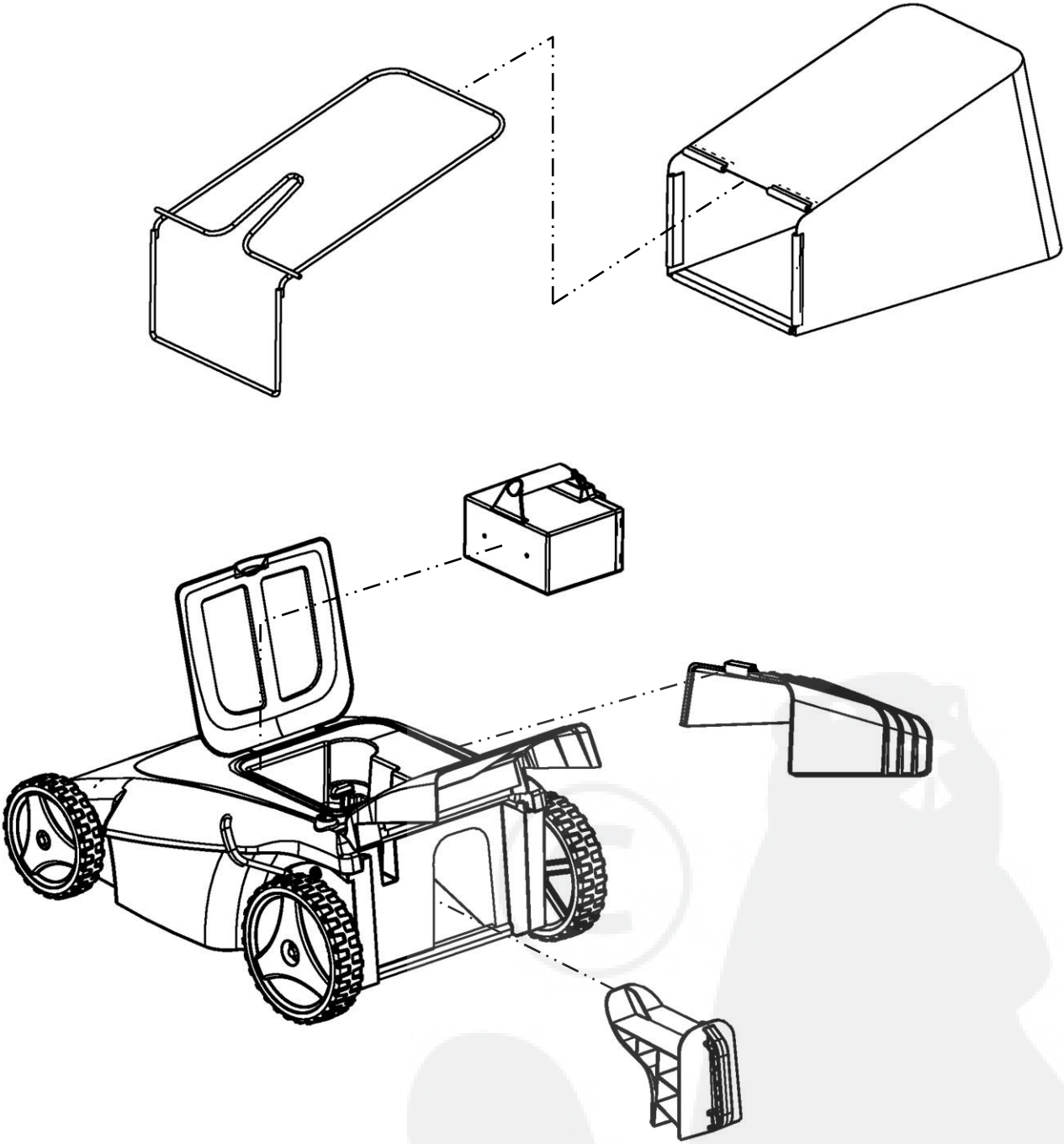
<b>Problem</b>	<b>Corrective Actions</b>
1. Mower does not start when pressing the control lever.	A. Remove battery, turn mower over on side and check the blade is not obstructed. B. Is battery fully charged? Plug charger and check lights.
2. Mower stops while mowing (for reason other than releasing the operator presence control bar).	A. Motor may have over-loaded, the circuit breaker inside safety key has cut off power to protect motor. B. Mower is trying to cut too much grass. Raise it to higher cutting height and try to start again. C. Battery power has been completely depleted, red light lights up and mower will shut off soon. D. The safety button may not be fully engaged, reset it and try again. Please refer Fig 11.
3. Mower vibrates excessively or makes excessive noise.	A. Remove battery. Turn mower over to see if blade is properly tightened. B. Also check if blade has been bent, damaged or worn out. Replace if necessary.
4. Mower is hard to push	A. Remove battery, turn mower over and check if all wheels rotate freely and check them for damage. B. Mower is trying to cut too much grass. Raise cutting height.
5. Mower runs but cutting performance is unsatisfactory and / or there is loss of power	A. Was the battery pack fully charged at the start? B. Remove battery. Turn mower over and check if: <ul style="list-style-type: none"> <li>-Blade is sharp?</li> <li>-Blade is bent, loose or damaged?</li> <li>-Deck and / or discharge chute and / or grass catcher are clogged?</li> </ul>

## ECOMOW470 Cordless Electric Mower- Safety & Operating Instructions

	<p>C. Cutting height may be set too low, causing heavy strain on motor by trying to cut too much grass. Raise to a higher cutting position.</p>
6. Mower motor will not stop when operator presence control bar is released.	<p>A. The motor may have a defective relay. Remove the battery to shut off the motor.</p>
7. Mower does not finish cutting the lawn on a single charge any more.	<p>A. Was the battery fully charged at the start?                  B. After some time, usually at least several years, the battery pack will need to be replaced.                  C. The blade may be dull, sharpen the blades.</p>
8. Mower grass catcher is collecting grass poorly.	<p>A. Grass catcher is full. Empty the grass catcher and clean it if necessary.                  B. Grass is too long, or mower is cutting too low.                  C. The mower is moving too fast, slow down.                  D. The discharge chute may be clogged, remove the battery, turn mower over and remove any debris.                  E. Is the correct blade installed? Is the right side of the blade facing up?</p>
9. Mower is not running.	<p>A. When the mower stops running, the green indicator light is out. And when the mower is moving, the green indicator light is on.</p> <ol style="list-style-type: none"> <li>a. Make sure the battery and copper conductor are well connected and without any insulation in between.</li> <li>b. Make sure that the mower is not operated with high temperature caused by the resistance the mower has encountered. If so, remove the battery or wait about 3 to 5 minutes for the temperature to cool down.</li> <li>c. Check if the battery is defected to cause the unstable voltage. Replace the battery and retest again.</li> </ol> <p>B. If the indicator light is green on the status of either the circuit is shut off or the motor is on.</p> <ol style="list-style-type: none"> <li>a. Make sure Security button or Control lever is in a good connecting and conducting condition.</li> <li>b. Make sure that the Mower/Auxiliary switch is in a good connecting and conducting condition.</li> <li>c. Make sure that the 4Pin power cord is well connected with the 4Pin plug.</li> </ol>
11. The braking system is not validated.	<p>A. Circuit is cut off while the control lever is still squeezed.</p> <ol style="list-style-type: none"> <li>a. Make sure the battery and copper conductor are well connected and without any insulation in between.</li> </ol> <p>B. Mower is running without brake.</p> <ol style="list-style-type: none"> <li>a. Make sure that switch is still in good condition and brake wire is not cut off.</li> </ol>

**Chapter 7: Schematic Diagrams**









**CE Declaration of Conformity**

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**ECOMOW470 Cordless Electric Mower**

is in compliance with the specification of the Machinery Directive and subsequent modifications,

**2006/42/EC**

**Joe Teng, Director of Sales Department**

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