

RYOBI®

RM480e

ORIGINAL INSTRUCTIONS

Ride-on Mower



Important!

It is essential that you read the instructions in this manual before assembling, operating, and maintaining the product.

Subject to technical modification.

Safety, performance, and dependability have been given top priority in the design of your ride-on mower.

INTENDED USE

The ride-on mower is intended for outdoor use only.

The product is designed for domestic lawn mowing. The cutting blade should rotate approximately parallel to the ground over which it is being wheeled. All four wheels should touch the ground while mowing.

The product is to be used only in domestic application by adults who have received adequate training on the hazards and preventive measure or actions taken while using it.

Do not use the product for any other purpose.

GENERAL PRODUCT SAFETY WARNINGS

⚠ WARNING

Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injury.

Save all warnings and instruction for future reference.

The term “power tool” in the warnings refers to your mains-operated (corded) product or battery-operated (cordless) product.

WORK AREA SAFETY

- **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

- **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified

plugs and matching outlets will reduce risk of electric shock.

- **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

PERSONAL SAFETY

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
- **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
- **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power in unexpected situations.
- **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.
- **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

POWER TOOL USE AND CARE

- **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.

- **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- **Use the power tool, accessories and tool bits, etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
- **Keep handles and grasping surfaces dry, clean, and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

BATTERY TOOL USE AND CARE

- **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
- **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.
- **Do not use a battery pack or tool that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behaviour resulting in fire, explosion or risk of injury.
- **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 130°C may cause explosion.
- **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions.** Charging improperly

or at temperatures outside the specified range may damage the battery and increase the risk of fire.

SERVICE

- **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
- **Never service damaged battery packs.** Service of the battery packs should only be performed by the manufacturer or authorised service providers.

RIDE-ON MOWER SAFETY WARNINGS

- Before use, always visually inspect to ensure that blades, blade bolts, and cutter assembly are not worn or damaged.
- Replace worn or damaged blades and bolts in sets to preserve balance.
- The blade on the product is sharp. Use extreme caution and wear heavy-duty gloves when fitting, replacing, cleaning, or checking bolt security.
- Bring the product to an authorised service centre to replace damaged or unreadable labels.
- Check all nuts, bolts, and screws at frequent intervals for proper tightness to be sure that the product is in safe working condition.
- Frequently check the bagger kit for wear, holes, or deterioration.
- Replace worn or damaged parts before operating the product.
- The product must be started with the user properly seated and behind the steering wheel. Never start the product if:
 - Not all four wheels are on the ground.
 - The side discharge chute is exposed and is not protected by the bagging kit or the mulch cover.
 - Hands and feet of all persons are not clear of the cutting enclosure.
- Do not force the product. It will do the job better and safer at the speed for which it was designed.
- Stop the blade when crossing gravelly surfaces to avoid discharging gravel and rocks. Drive the product slowly and carefully to avoid loss of control.
- Turn on the motor carefully according to instructions, and keep hands and feet away from blades. Do not put hands or feet near or under rotating parts.
- Before and while reversing, look behind and down for small children, bystanders, and pets.
- Be especially careful before and when backing with the bagging kit installed, as it may limit visibility. Always look closely behind and down for small children, bystanders, and pets, and move the mower slowly.
- Never carry children, even when the blades has stopped. They may fall off and be seriously injured or interfere with the safe operation of the product. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the product.
- Never leave a running product unattended. Always engage the parking brake, stop the blades, turn off the product, and remove the start key before dismounting.
- Check the brakes before each use and frequently during use. Adjust and service as required.
- Keep hands and feet away from the cutting area, which is located under the mower deck and inside the side discharge chute. Keep clear of the side discharge chute opening at all times. Do not reach under the mower deck.
- Maintain the product with care. Keep the product in good working condition. Keep blades sharp and guards in place and in working order. To prevent serious personal injury, damage to the product, and to maintain best performance, replace damaged or unevenly worn out blades.
- Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop before cleaning the product, removing the bagging kit, or removing the mulch cover.
- Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop:
 - before leaving the product unattended (including disposal of grass clippings)

- before clearing blockages or unclogging the discharge chute
- before checking, cleaning, or working on the product
- before removing the bagging kit or opening the side discharge chute cover
- after striking a foreign object
 - Thoroughly inspect the product for any damage.
 - Replace the blade if it is damaged in any way.
 - Repair any damage before restarting and continuing to operate the product.
- whenever the product starts to vibrate abnormally (check immediately)
 - Inspect for damage, particularly the blades.
 - Replace the blade if it is damaged in any way.
 - Replace or repair any damaged parts.
 - Check for and tighten any loose parts.
- Replace the blade if it is bent or cracked. An unbalanced blade causes vibration that could damage the motor drive unit or cause personal injury. Sharpen a dull blade equally at each end to maintain the balance. Clean the blade thoroughly and check its balance by supporting it horizontally on a thin nail through its center hole. The nail should be in a horizontal position. If either end of the blade rotates downward, remove some metal from the heavy lower end until the blade is balanced. It is balanced when neither end drops.
- The side discharge chute is a spring-loaded guard that covers the side discharge opening on the mower deck and deflects grass clippings and debris away from the operator. Always ensure that the motor is off and the blades have stopped moving before inspecting, moving, cleaning, or performing maintenance on the side discharge chute.
- Always use safety protective devices. Do not use the product without the side discharge chute in place and working properly. The mulch cover should be correctly installed and working properly during mulching operation. The bagging kit should be correctly installed and working properly during bagging operation.
- Never interfere with the intended function of a safety device or reduce the protection provided by a safety device. Check the proper operation of the safety devices regularly.
- Never tamper with safety devices. Check for proper operation regularly.
- Follow the manufacturer's instructions for proper operation and installation of accessories. Only use accessories approved by the manufacturer. The use of other accessories may increase the risk of injury.
- Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it. Never use the product on steep slopes greater than 15°. To determine the angle of your slope, use the slope guide at the back of this manual.
 - Mow up and down, not across the face of slopes.
 - Avoid holes, ruts, bumps, rocks, property stakes, or other hidden objects. Uneven terrain could overturn the product. Tall grass can hide obstacles.
 - Use a slow speed so you will not have to stop suddenly or accidentally accelerate while on a slope.
 - Do not mow on wet grass when on a slope. Tyres may lose traction with the ground and you may lose control of the product.
 - Always keep the direction control switch in the forward position when going down slopes. Do not shift to neutral and coast downhill, which may cause you to lose control of the product.
 - Avoid starting, stopping, or turning on a slope. If the tyres lose traction, disengage the blades and proceed slowly straight down the slope.
 - Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the product to roll over.
 - Use extra care while using the product with the bagging kit or other attachments. Attachments can affect the stability of

the product. Do not use the product on steep slopes greater than 15°.

- Do not try to stabilise the product by putting your foot on the ground.
- Do not use the product near drop-offs, ditches, excessively steep slopes, or embankments. The product could suddenly roll over if a wheel goes over the edge or if the edges caves in and result in death or serious personal injury.
- Never direct discharged material toward anyone. Plan your mowing pattern to avoid discharge of material toward bystanders, roads, sidewalks, windows, and cars. Also, avoid discharging material against a wall or obstruction, which may cause the material to ricochet back toward the operator.
- Never make any adjustments or repairs while the motor is running and the blades are moving. Turn off the power switch and remove the start key.
- Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop before unclogging the side discharge chute or opening. The cutting blades continue to rotate for a few seconds after the motor is turned off. Never place any part of the body in the blade area until you are sure that the blades have stopped rotating.
- Turn off the mower blades when the product is not in use.
- Be aware of possible hazards when not using the product or when changing accessories. Following this rule reduces the risk of electric shock, fire, or serious personal injury.
- Allow only responsible adults, who are familiar with and understand the instructions, to use the product.
- Never carry passengers.
- Never use the product in a closed area.
- Do not mow in reverse unless absolutely necessary. Always look down and behind before and while reversing.
- Slow down before turning.
- Watch for traffic when operating near or crossing roadways.
- Remove the start key from the product before storing, servicing, or changing

accessories. Such preventive safety measures reduce the risk of starting the product accidentally.

ADDITIONAL BATTERY SAFETY WARNINGS

⚠ WARNING

To reduce the risk of fire, personal injury, and product damage due to short circuit, never immerse the tool, battery pack, or charger in fluid or allow fluid to flow inside them. Corrosive or conductive fluids, such as seawater, certain industrial chemicals, and bleach or bleach-containing products, etc., can cause a short circuit.

⚠ WARNING

The battery contains acid. If acid comes in contact with skin or clothing, flush immediately with water. If liquid comes in contact with eyes, seek medical help immediately.

⚠ WARNING

Risk of fire, explosion, or burns. Do not disassemble, expose to heat above 60°C, or incinerate the battery pack.

TRANSPORTATION AND STORAGE

- Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop. Allow the product to cool down before storing or transporting.
- Remove all foreign materials from the product. Store the product in a cool, dry, and well-ventilated place that is inaccessible to children. Remove the start key and store it in a separate location out of the reach of children.
- Keep the product away from corrosive agents, such as garden chemicals and de-icing salts. Do not store the product outdoors.
- Use extra care when loading or unloading the product into a trailer or truck. Step on the brake pedal as needed to control the speed. The product will freely roll if it

is moved on an inclined surface without stepping on the brake pedal or engaging the parking brake. When loading or unloading the product, do not exceed the maximum recommended operation angle of 15°.

⚠ WARNING

Use extreme caution when lifting or tilting the product for maintenance, cleaning, storage, or transportation. The blade is sharp. Keep all body parts away from the blade while it is exposed.

TRANSPORTING LEAD-ACID BATTERIES

Transport the battery in accordance with local and national provisions and regulations.

Follow all special requirements on packaging and labelling when transporting batteries by a third party. Ensure that no batteries can come in contact with other batteries or conductive materials while in transport by protecting exposed connectors with insulating, non-conductive caps or tape. Do not transport batteries that are cracked or leaking. Check with the forwarding company for further advice.

TOWING SAFETY WARNINGS

- Use common sense when towing equipment. Too heavy of a load while on a slope is dangerous. Tyres can lose traction with the ground and cause you to lose control of the product.
- Follow the manufacturer's recommendations for wheel weights or counterweights.
- Total towed weight must not exceed the maximum towing load of 226.8 kg.
- Do not attach towed equipment except at the approved hitch point.
- Never allow children or others on the towed equipment.
- The stopping distance increases with speed and weight of load being towed. Travel slowly and allow extra time and distance to stop.
- Do not turn sharply when towing. Use additional caution when turning or operating under adverse surface conditions. Use care when reversing.

MAINTENANCE

⚠ WARNING

Use only original manufacturer's replacement parts, accessories, and attachments. Failure to do so can cause possible injury, can contribute to poor performance, and may void your warranty.

⚠ WARNING

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. Have the product serviced by an authorised service centre only.

- Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop before servicing, cleaning, or performing any maintenance task.
- You may make adjustments and repairs described here. For other repairs, have the product serviced by an authorised service centre only.
- Service on the product and the charger must be performed by qualified repair personnel only. Service or maintenance performed by unqualified personnel could result in injury to the user or damage to the product.
- Replace worn or damaged parts for safety.
- After each use, clean the plastic parts with a soft, dry cloth. Any part that is damaged should be properly repaired or replaced by an authorised service centre.
- Keep product free of grass, leaves, or other debris build up.
- Do not spray with a garden hose to clean the product. Use an air moving device, such as a compressor or leaf blower to clean the product.
- Check all nuts, bolts, and screws at frequent intervals for proper tightness to ensure that the product is in safe working condition.
- Be careful during adjustment of the product to prevent entrapment of the fingers between moving blades and fixed parts of the product.

- Mower blades are sharp. Wrap the blades or wear gloves, and use extra caution when servicing.
- When servicing the blades, be aware that even though the power source is turned off, the blades can still be moved.
- The blade on the product is sharp. Use extreme caution and wear heavy-duty gloves when fitting, replacing, cleaning, or checking bolt security.
- Replace damaged blades and bolts in sets to preserve balance.
- The blade bolts must be adequately tightened.

CLEARING BLOCKAGES

- Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop.
- Always wear heavy-duty gloves when checking or clearing a blockage.
- The blades are sharp and the blockage itself could be a sharp object.
- Remove the bagging kit, check for and carefully clear obstructions.
- Check and carefully clear the side discharge chute for blockages.
- If any blockages are found, remove carefully. Remember the blade may move during cleaning.

RESIDUAL RISKS

Even when the product is used as prescribed, it is still impossible to completely eliminate certain residual risk factors. The following hazards may arise during use, and the operator should pay special attention to avoid the following:

- injury from contact with the blades
- injury caused by thrown objects

WHAT'S IN THE BOX

- Ride-on mower x 1
- Mulch cover x 1
- Start keys x 3
- Charger x 1
- Bumper x 1
- Operator's manual x 1

- Cutting blade x 2
- Blade insulator x 2
- Blade spacer x 2
- Blade nut x 2

SYMBOLS ON THE PRODUCT



Safety alert.



Read and understand all instructions before operating the product. Follow all warnings and safety instructions.



Wear eye protection.



Do not operate the product on inclines greater than 15°. Mow up and down slopes, not across.



Do not expose the product to rain or damp condition.



Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.



Keep hands and feet away from the blade and cutting area.



Do not reach hands or feet under the mower deck.

Never carry children or anyone, even when the blades are off.



Always look down and behind you before and during backing and make sure children, bystanders, and pets are clear of the area.



Never carry children or anyone, even when the blades are off.



Always look down and behind you before and during backing and make sure children, bystanders, and pets are clear of the area.



Keep all bystanders, especially children and pets, at least 30 m away from the operating area.



Beware of thrown or flying objects. Thrown objects can ricochet and result in personal injury or property damage. Never direct discharged material toward anyone.



Non-spillable. Battery must be recycled.



Guaranteed sound power level



Regulatory Compliance Mark (RCM). Product meets applicable regulatory requirements.



The product can be operated in reverse with blades engaged when the RMO button is pushed and the red button light is on. Always look down and behind you before and when maneuvering in reverse. Mowing in reverse is not recommended.



Pull up the blade engagement knob to activate the blades. Press the blade engagement knob down to stop the blades.



Cruise control allows the product to remain at a constant speed without the operator having to maintain pressure on the accelerator pedal. Refer to the "Setting the cruise control" section.



For indoor use only



Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice.

SYMBOLS IN THIS MANUAL



Parts or accessories sold separately



Note



Warning

The following signal words and meanings are intended to explain the levels of risk associated with this product:

DANGER

Indicates an imminently hazardous situation, which, if not avoided, will result in death, or serious injury.

WARNING

Indicates a potentially hazardous situation, which, if not avoided, could result in death, or serious injury.

CAUTION

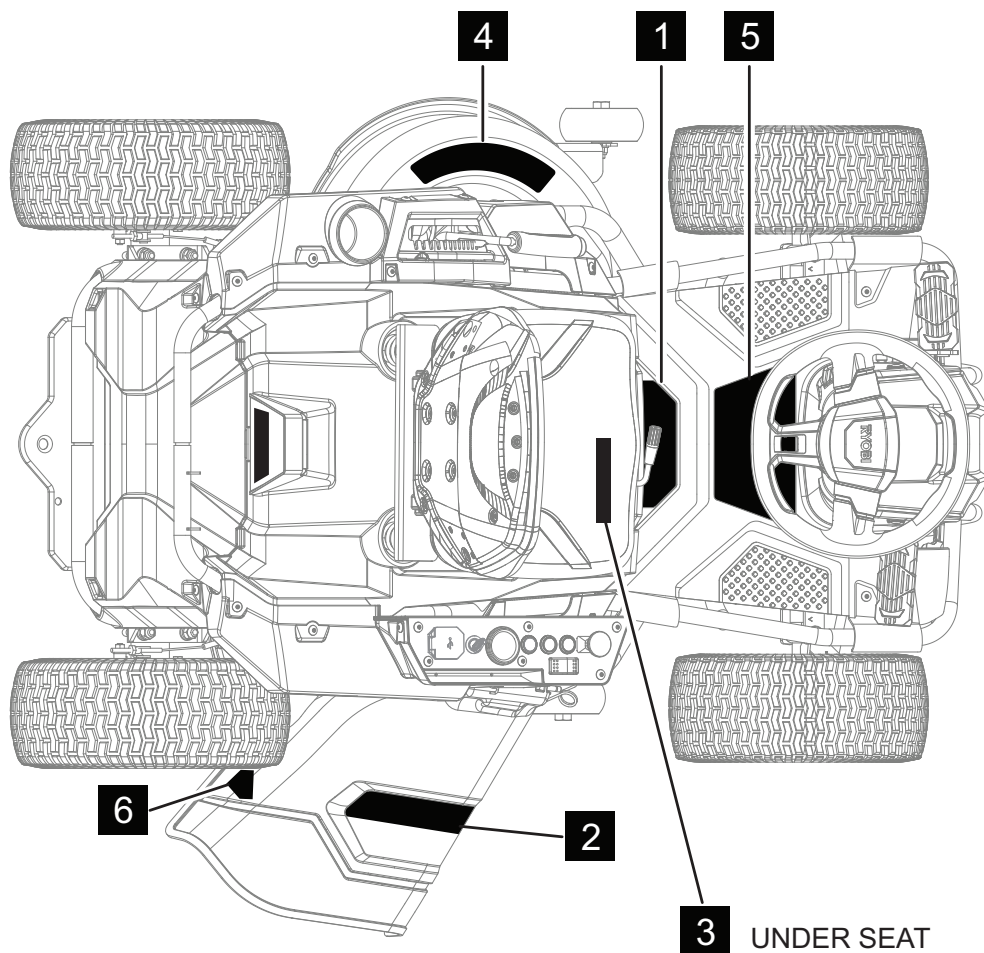
Indicates a potentially hazardous situation, which, if not avoided, may result in minor, or moderate injury.

CAUTION

(Without Safety Alert Symbol) Indicates a situation that may result in property damage.

SAFETY LABELS

The following labels are found on the product. For your safety, review and understand all of the labels before starting the product. If any of the labels come off the product or become hard to read, contact an authorised service centre for replacement.



SAFETY LABELS

The following labels are found on the product. For your safety, review and understand all of the labels before starting the product. If any of the labels come off the product or become hard to read, contact an authorised service centre for replacement.

1

⚠ WARNING

- Keep all safety devices, guards, shields, and switches in place and in working order.
- Know location and function of all controls.
- Before leaving operator's position, disengage blades, engage parking brake, shut off, and remove key.
- Keep hands and feet away from rotating parts.



Remove any objects from the mowing area that can be thrown by the blades.



Charge indoors only, do not expose to rain or damp conditions

BRAKE PEDAL

- Push pedal to **ENGAGE BRAKE** and **DISENGAGE Drive Motor**



PARKING BRAKE

- Push **BRAKE pedal DOWN (P)** and raise red handle
- Press **BRAKE pedal down to DISENGAGE**



BLADE ENGAGEMENT / ACTUATION

ENGAGE

- **LIFT the BLADE ENGAGEMENT button "UP"** (large RED button)

DISENGAGE

- **PRESS the BLADE ENGAGEMENT button "DOWN"** (large RED button)

NOTE: Leaving seat or turning key to "OFF" will also reset the **BLADE ENGAGEMENT button to "OFF."** Must reset prior to use.



CRUISE CONTROL

CRUISE

ACTIVATE

- **PRESS "CRUISE" button** to activate continuous speed mode in forward

DEACTIVATE CRUISE

- **PRESS accelerator pedal forward, press brake or push "CRUISE" button**



2

⚠ DANGER

Risk of injury. Keep hands and feet away from rotating blades. Make sure mower and blades are stopped before placing hands or feet near blades. Do not operate mower unless chute deflector or entire grass catcher is in its proper place. Do not put hands or feet under or into mower when motor is running. Before mowing, clear area of objects that may be thrown by the blade.



3

RYOBI

48V --- 270kg; IPX1
Type 2

RM480e

Drive speed max: 3.35m/s Cutting rating power: 1500W
Blade RPM 110: 3550/min Drive rating power: 1200W

Techtronic Industries Australia Pty Ltd

Techtronic Industries N.Z. Limited

Ryobi Australia Help line: 1300 697 9624

Ryobi New Zealand Help line: 0508 697 9624 www.ryobi.com.au www.ryobi.co.nz



S/N: _____

Made in P.R.C.

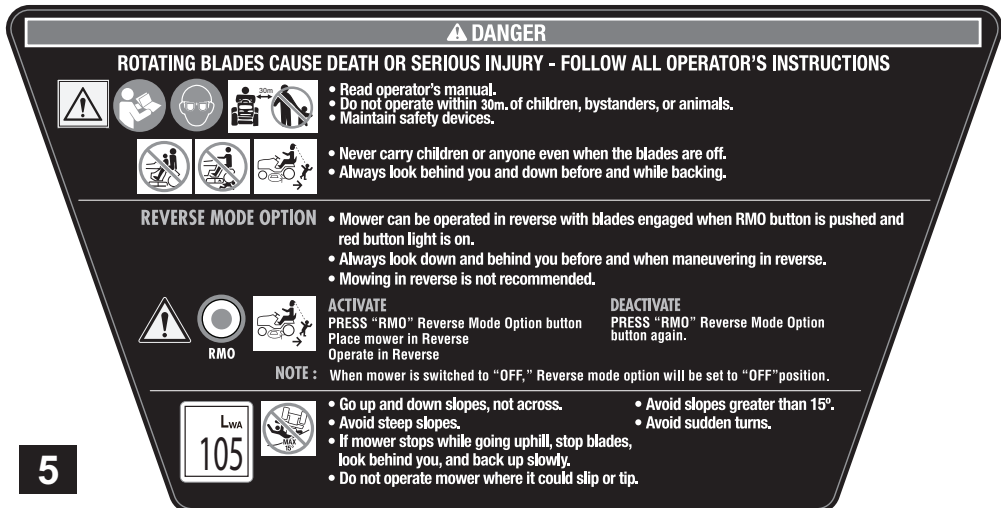
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4



5



6



ASSEMBLY

⚠ WARNING

To reduce the risk of injury, read and understand the assembly section of this manual before attempting to assemble the product. Save this guide for future reference.

ASSEMBLY SAFETY RULES

⚠ WARNING

Strictly adhere to all torque wrench tightening specifications. Failure to do so could cause serious personal injury.

All information, illustrations, photographs, and specifications contained in this manual are based on the latest product information available at the time of publication. Due to improvements or other changes, there may be some discrepancies in this manual. We reserve the right to make product changes at any time, without notice and without incurring any obligation to make the same or similar changes to any products previously built or sold.

- Any person attempting to assemble the product must have proper training and experience. Read this manual carefully and follow all assembly procedures in this manual.
- All assembly must be completed with the product on a level surface.

REQUIRED TOOLS

The following tools are needed for assembly:

- Torque wrench
- Tyre pressure gauge
- Socket wrench
 - 12 mm socket
 - 14 mm socket
 - 6 mm hex bit

UNPACKING

- Remove the bolts securing the corner and side braces to the bottom frame, then lift the braces to remove them.
- Cut the nylon straps securing the front and rear wheel axles to the frame.
- Remove the boxes containing loose parts, assembly hardware, and documentation.
- Remove and set aside all accessible packaging and wrap from the unit and parts. Do not discard the packing material until you have carefully inspected and satisfactorily operated the product.

⚠ WARNING

If any parts on the "Loose parts list" section are already assembled to the product when you unpack it, verify the part is assembled correctly, is properly tightened, and is torqued correctly (where applicable) before proceeding to the next assembly step. The use of a product that may have been improperly assembled could result in serious personal injury.

- Inspect the product carefully to ensure that no breakage or damage occurred during shipping.
- If any parts are damaged or missing, contact an authorised service centre.

NOTE: The product should be assembled while positioned on the bottom frame. Once assembly is complete, raise the cutting deck to its maximum height, then position a ramp next to the bottom frame, and slowly and carefully drive the product off the frame.

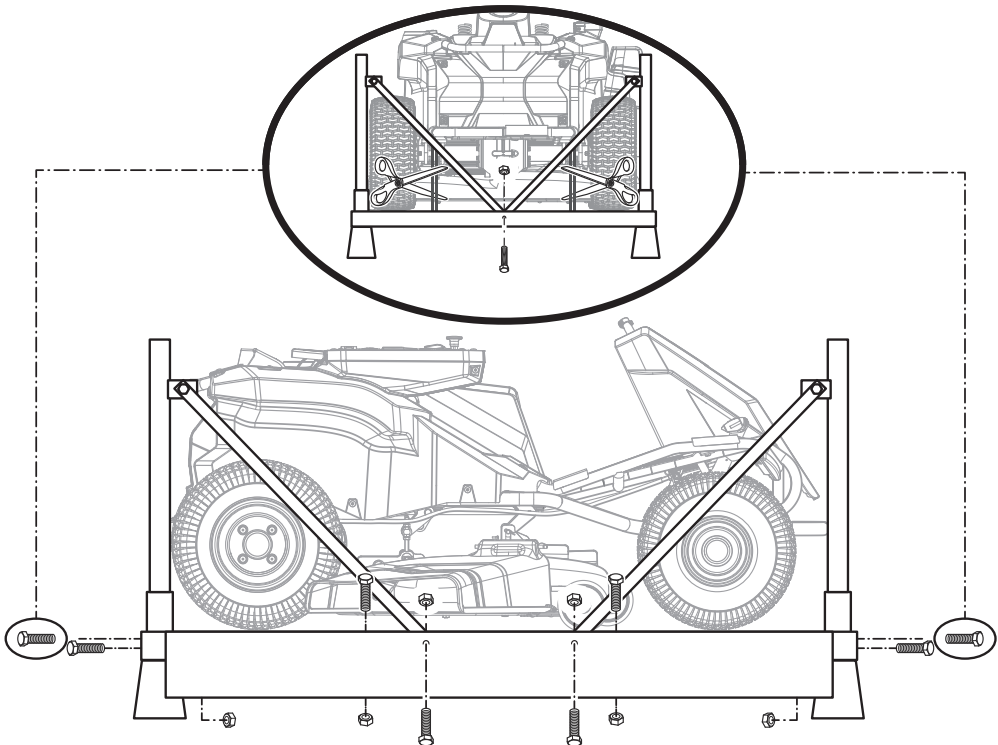
ASSEMBLY

⚠ WARNING

Use care when driving the product off of the frame, and step on the brake pedal as needed to control the speed. The mower freely rolls if it is moved on an inclined surface without stepping on the brake pedal or engaging the parking brake. Failure to follow these instructions can result in loss of control and result in death, serious personal injury, or property damage.

⚠ WARNING

If no ramp is available, slowly and carefully drive the product off the frame in reverse while looking down and behind. Driving the mower off the frame in the forward direction without a ramp can cause damage to the cutting deck.



ASSEMBLY

LOOSE PARTS LIST

1. Seat assembly with safety interlock cable x 1
2. Steering column assembly
Upper steering shaft x 1
Bolts x 2
Steering column x 1
Steering column cover x 1
Flange washers x 2
Spring x 1
Steering wheel hub x 1
Steering wheel x 1
Flat washer x 1
Flange nut x 1
Steering wheel cover x 1
3. Charger x 1
4. Bumper x 1
5. Keys x 3
6. Operator's manual (not shown)

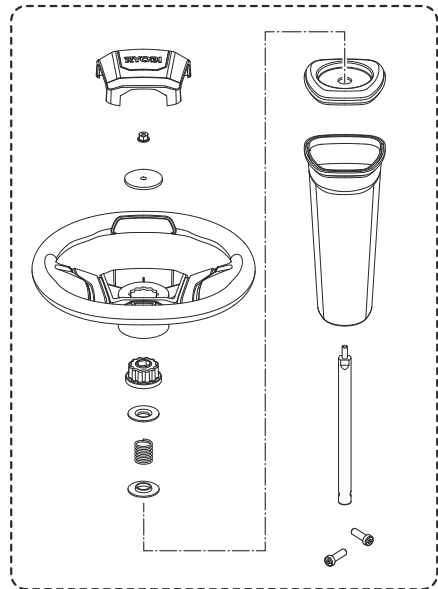
⚠ WARNING

If any parts are damaged or missing do not assemble the product until the parts are replaced with new original manufacturer's parts. Assembling the product with damaged, missing, or incorrect parts could result in serious personal injury.

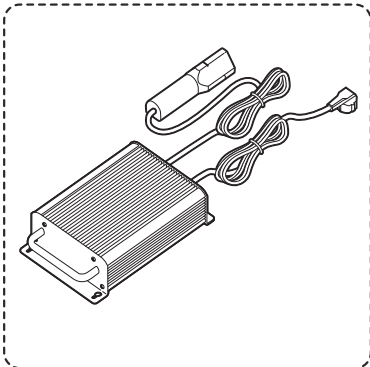
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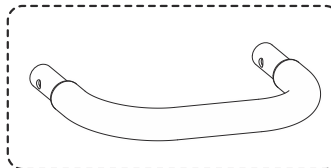
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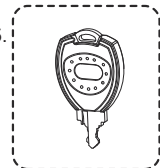
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5.



ASSEMBLY

⚠ WARNING

Strictly adhere to all torque wrench tightening specifications. Failure to do so could cause serious personal injury.

⚠ WARNING

Do not attempt to modify the product or create accessories not recommended for use with the product. Any such alteration or modification is a misuse and could result in a hazardous condition leading to possible serious personal injury.

⚠ WARNING

To prevent accidental starting that could cause serious personal injury, always remove the start key from the product when assembling the parts.

CONNECTING THE BATTERY

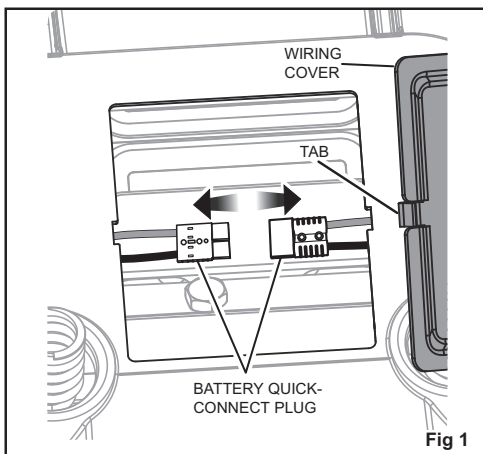
See fig. 1

When shipped from the factory, the mower's batteries are disconnected.

To connect:

1. Press the tabs on the wiring cover, and lift the cover to remove it.
2. Connect the two ends of the battery quick-connect plug together.

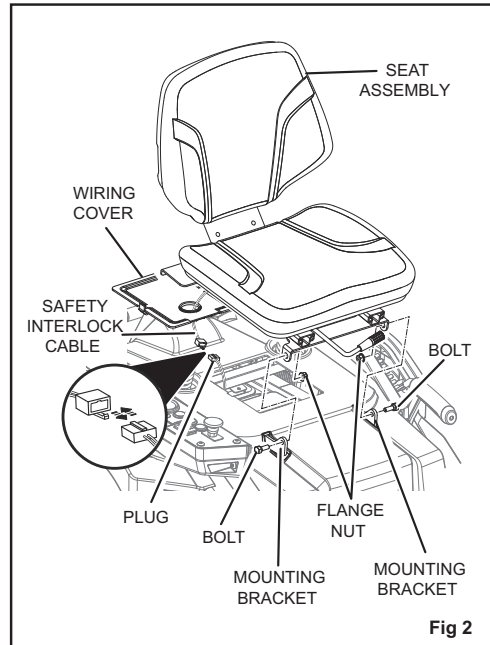
NOTE: Before reinstalling the wiring cover, install the seat as described in the next section.



INSTALLING THE SEAT

See fig. 2

1. Remove the bolts and flange nuts from the seat mounting brackets.
2. Place the seat assembly over the mounting brackets and align the holes as shown.
3. Reinstall and securely tighten the bolts and flange nuts.
4. Route the seat safety interlock cable through hole in wiring cover, then connect it to the plug on the product.
5. Reinstall the wiring cover and ensure that it is securely seated.

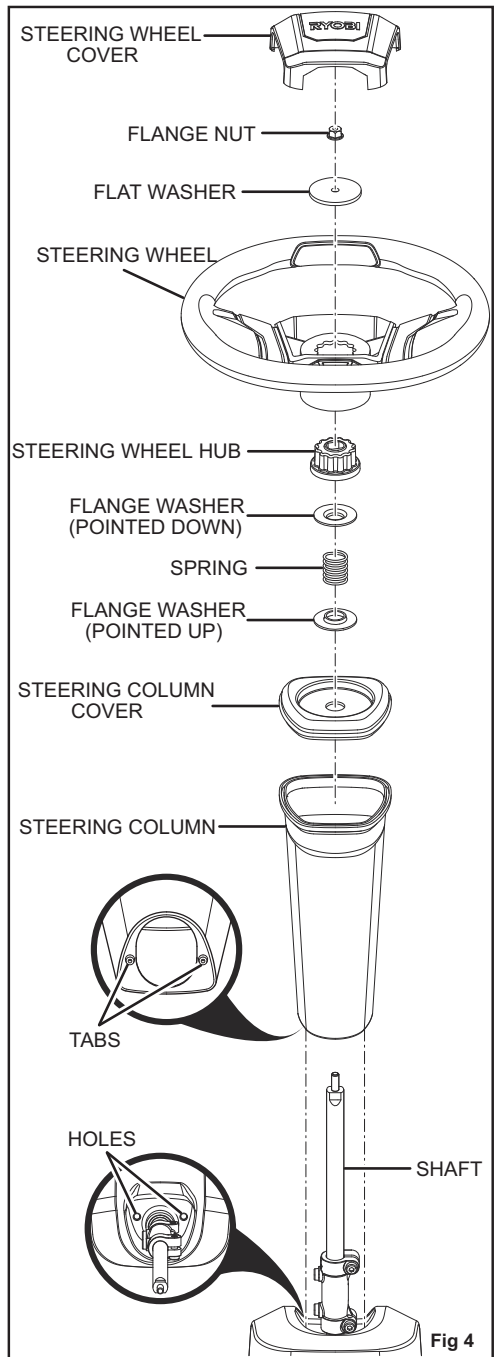
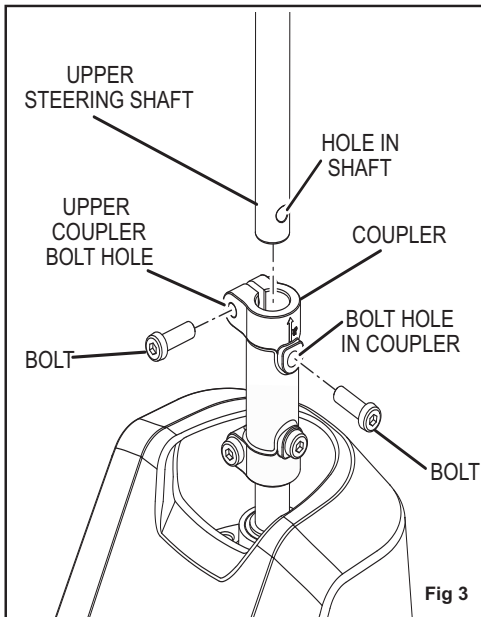


ASSEMBLY

ASSEMBLING THE STEERING COLUMN

See fig. 3 - 4

1. Install the upper steering shaft into the coupler, rotating as needed to align the hole in shaft with the bolt hole in the coupler.
2. Install and secure/tighten two bolts to 8.13 Nm (6 ft.lbs.) torque.
3. Insert the steering column over the shaft. Note the tabs on the bottom of the steering column that fit into the holes in the opening and make sure that steering column is securely seated.
4. Install the steering wheel cover so that it is securely seated. The upper steering shaft protrudes through the opening in the cover.
5. Install the flange washer (flange up), the spring, the second flange washer (flange down), and the steering wheel hub onto the upper steering shaft.
6. Ensure that the product's wheels are pointed straight ahead, then install the steering wheel over the wheel hub.
7. Install and securely tighten the flat washer and flange nut to 8.13 Nm (6 ft.lbs.) torque.
8. Install the steering wheel cover.

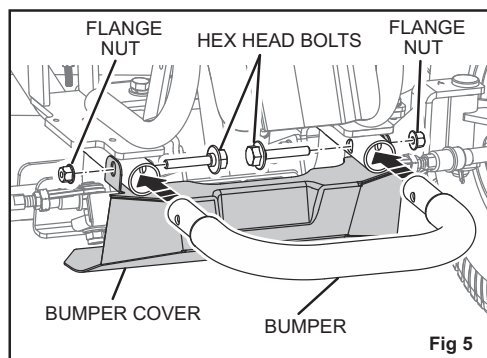


ASSEMBLY

INSTALLING THE BUMPER

See fig. 5

1. Remove the flange nuts and hex head bolts that secure the bumper cover to the mower frame.
2. Install the bumper into the openings at the front of the mower frame as shown.
3. Align the holes in the bumper, the mower frame, and the bumper cover. Reinstall and securely tighten the hex head bolts and flange nuts.



FINAL CHECKS

CHECKING THE TYRE AIR PRESSURE

Check the air pressure in all tyres before use. Improper air pressure affect[s] handling, steering response, traction, tyre life, level cutting, and operator comfort. Make sure that tyres are inflated to the recommended pressure of 1.6 bar (158.58 kPa).

NOTE: Measure and adjust the air pressure only when the tyres are cold.

⚠ WARNING

Check the tyre pressure carefully while inflating. Too much air in the tyre could cause the tyre to burst, causing serious personal injury.

CHARGING THE PRODUCT

See fig. 6

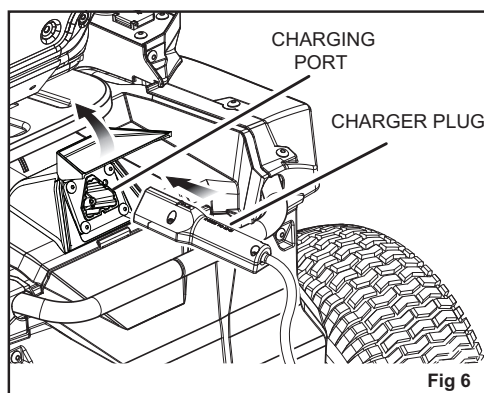
Mower batteries must be charged for 24 h before first use. To verify that the mower batteries are fully charged, check the battery level indicator.

To charge:

1. Connect the charger plug into the charging port on the mower, making sure that it is properly connected.
2. Connect the charger to a power supply that uses normal household current of 100-240 VAC, 50/60 Hz. The batteries should automatically begin to charge.

NOTE: Do not charge the product in an area of extreme heat or cold.

3. Disconnect the charger from the mower once it is fully charged and ready for use.



⚠ WARNING

To avoid accidental starting or movement of the product that could result in serious personal injury, always remove the start key and engage the parking brake when leaving the product unattended.

⚠ WARNING

Always connect the mower to the charger when it is not in use. If it is not possible to leave the mower charger connected, make sure to fully charge the batteries at least once a month.

ASSEMBLY

TESTING THE SAFETY INTERLOCK SYSTEM

See fig. 7

The safety interlock system stops the blades if the operator leaves the seat while the blades are running. Test the system before each use to ensure that it is working correctly.

To test:

1. Make sure direction control switch is in neutral (N) position and blade engage knob is down.
2. Insert the start key and turn the key to the ON position.
3. Pull up the blade engage knob to activate the blades.
4. Briefly stand up, but do not get off the mower.

The blades should stop off within 5 seconds. If the blades do not stop, verify that the safety interlock cable is connected as described in the "Installing the Seat" section.

If the cable is connected but the system still does not function, contact an authorised service centre. Do not operate the product until the safety interlock system has been repaired.

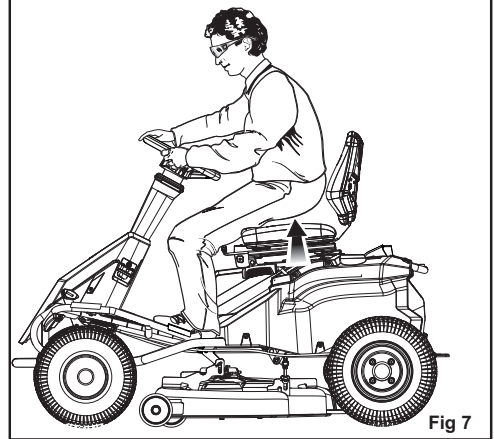


Fig 7

PRODUCT SPECIFICATIONS

Ride-On Mower	
Model	RM480e
Drive motor	
Hardware version	KTF04H20_CV008_20170906, KTF04H20_PV005_20170906
Software version	RY48110_111_112_20190701_ VER1003
Deck motor	
Hardware version	V1.2
Software version	GXDH0043
Input voltage	48 V d.c
Cutting rated power	1500 W
Drive rated power	1200 W
Height adjustments	3.81 cm to 11.43 cm (1.5 in. to 4.5 in.)
Wheel size	
Front	38.1 cm (15 in.)
Rear	40.6 cm (16 in.)
Cut size	96.5 cm (38 in.)
Turning radius	40.6 cm (16 in.)
Maximum speed	
Forward	12.1 km/h (7.5 mi/h)
Mow	7.4 km/h (4.6 mi/h)
Reverse	3.2 km/h (2 mi/h)
Tyre pressure	158.58 kPa (23 psi)

Charger	OP48RM
Input	220-240 V a.c., 50/60 Hz
Output	48 V d.c., 7.5-8 A
Charge time	17 h
Quick recharge (60%)	11 h
Battery	LPC12-75 (12V, 75 Ah)
Type	Lead-acid battery
Dimensions	285 x 193 x 272 mm
Battery weight	22.3 kg
Battery replacement part number	099749014036
Kit details	4 x LPC12-75
Total battery weight	89.2 kg
Blade replacement part number	099749001129
Noise emission level	
A-weighted sound power level	$L_{WA} = 101.7 \text{ dB(A)}$, $K = 2.5 \text{ dB (A)}$
A-weighted sound pressure level	$L_{PA} = 89.4 \text{ dB(A)}$, $K = 2.5 \text{ dB (A)}$
Vibration level	
Whole body	1.346 m/s^2
Hand-arm (steering wheel)	0.239 m/s^2
Uncertainty	$K = 1.5 \text{ m/s}^2$

FEATURES

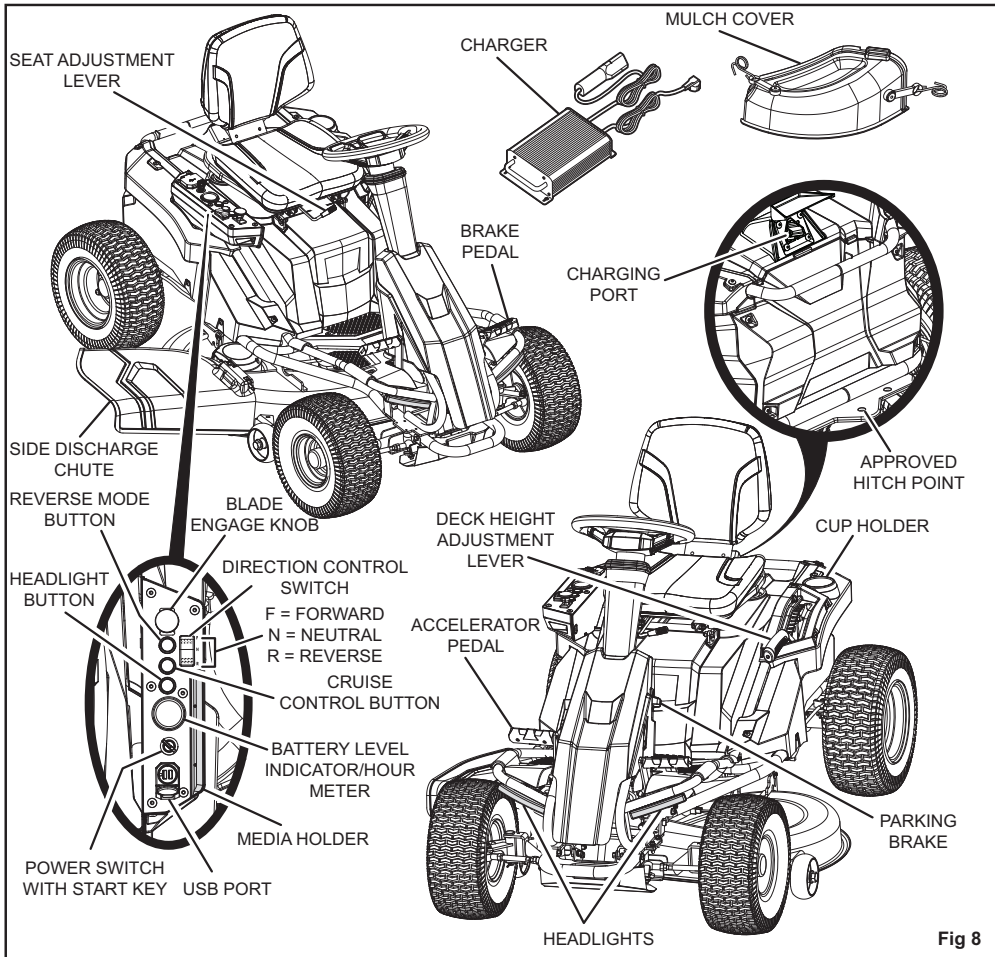


Fig 8

KNOW YOUR PRODUCT

See fig. 8

For safety, read and understand the information on the product and in this manual. Familiarise all operating features and safety rules before using the product.

ACCELERATOR PEDAL

The accelerator pedal controls the speed of the product.

BATTERY LEVEL INDICATOR/HOUR METER

The battery level indicator shows the amount of battery charge remaining. The hour meter

tracks the total number of hours the product has been used (key in on position) for maintenance purposes.

BLADE ENGAGE KNOB

The blade engage knob activates or stops the cutting blades.

Pull the blade engage knob up to activate the cutting blades. Press the knob to stop the cutting blades.

NOTE: For cutting in reverse, the reverse mode button must also be activated.

BRAKE PEDAL

The brake pedal slows down or stops the product.

CHARGER

The charger recharges the batteries of the mower. It has a key hole hanging feature for convenient, space-saving storage. When hanging by the keyhole slots, use at least one additional screw in the hole in the mounting flange to secure in place. Always mount in such a way that the charger's LED status light is visible while charging.

CRUISE CONTROL BUTTON

The cruise control button allows the product to continue forward at a set speed without needing to step on the accelerator pedal.

DECK HEIGHT ADJUSTMENT LEVER

The deck height adjustment lever raises or lowers the cutting deck.

DIRECTION CONTROL SWITCH

The direction control switch controls the direction movement of the mower. Available settings are forward (F), neutral (N), and reverse (R).

HEADLIGHT BUTTON

The headlight button turns the headlights on and off.

MEDIA HOLDER

The media holders provide a convenient place to store your mobile phone or MP3 player when charging with the USB port.

MULCH COVER

The mulch cover covers the side discharge opening, which allows the mower blade to cut and recut for finer clippings.

PARKING BRAKE

The parking brake locks the product in the brake position.

POWER SWITCH WITH START KEY

The power switch turns the product on and off. The start key must be inserted before the switch can be operated.

REVERSE MODE BUTTON

The reverse mode button allows the product to cut when maneuvering in the reverse direction. The blades stop if the product is operated in reverse without pressing the reverse mode button.

NOTE: The blade engage knob must also be pulled up for mowing to occur when maneuvering in reverse.

SEAT ADJUSTMENT LEVER

The seat adjustment lever moves the seat to the preferred position.

USB PORT

The USB charging port provides charging power of 5 Volts DC at up to 2 amps for your mobile phone, MP3 player, or other USB devices. Check the manual of your device for specific charging requirements.

Connect one end of a USB cable (not provided) to your device and the other end to the USB charging port on the product to begin charging your device.

NOTE: The USB port is only powered when the start key is in the on position.

⚠ WARNING

Never use headphones or any electronic device, such as a smart phone or tablet, while operating the product. A lapse in concentration while operating the product may result in serious personal injury to the operator or a bystander.

APPROVED HITCH POINT

The approved hitch point can be used for towing loads not more than 226.8 kg. (500 lbs.).

⚠ WARNING

Do not allow familiarity with products to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.

⚠ WARNING

Always wear eye protection with side shields. Failure to do so could result in objects being thrown into your eyes resulting in possible serious injury.

⚠ WARNING

Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop before assembling parts, making adjustments, cleaning the product, or leaving the product unattended. This will prevent accidental starting that could cause serious personal injury.

⚠ WARNING

Always inspect the product for missing or damaged parts. Always check the blades for damage or uneven or excessive wear before use. Using the product with damaged or missing parts may result in serious personal injury.

INSTALLING THE MULCH COVER

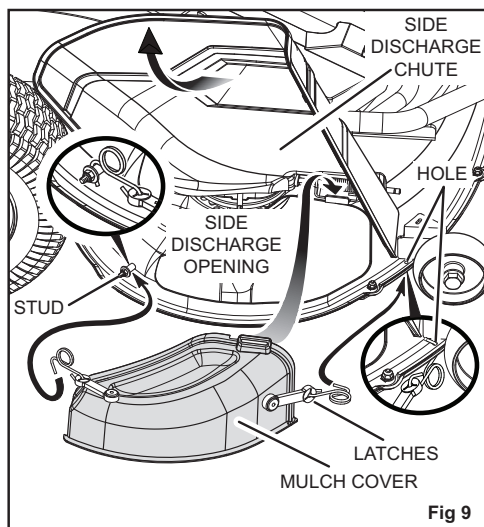
See fig. 9

The product is configured for side discharge when shipped. If mulching is preferred, install the mulch cover.

1. Lift the side discharge chute.
2. Place the mulch cover on the tab on the mower housing.
3. Connect the mulch cover latches to the two side mounting points on the mower deck housing.
4. Release the side discharge chute.

⚠ WARNING

Ensure that the side discharge chute fully closes when finished. Failure to do so may cause serious personal injury.



ENGAGING THE PARKING BRAKE

See fig. 10

To engage the parking brake:

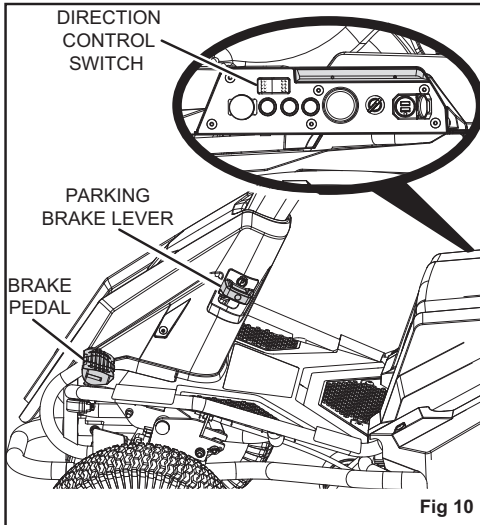
1. Place the direction control switch in the neutral (N) position.
2. Step on and hold the brake pedal.
3. Lift and hold the parking brake lever all the way up.
4. Release the brake pedal.
5. Release the parking brake lever.

To release the parking brake:

- Step on and release the brake pedal.

⚠ WARNING

Never leave the product unattended when the motor is running. Verify that the parking brake is engaged and the key has been removed. Failure to engage the parking brake could cause the product to move, and leaving the key could allow unauthorised use that could result in serious personal injury.



ADJUSTING THE SEAT

See fig. 11

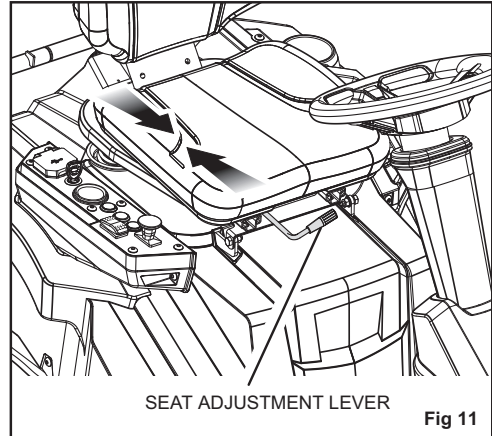
Adjust the seat position to ensure that the user is able to make firm contact with the accelerator and brake pedals before operating the product.

To move the seat:

1. Sit down on the seat, and pull up the seat adjustment lever.
2. While holding the lever, slide the seat to the preferred position.
3. Release the lever, and make sure that the seat is locked in position before operating the product.

⚠ WARNING

Ensure that the seat is locked into place before operating the mower. A seat that is not secure can cause the operator to shift and lose control of the mower and result in possible death or serious personal injury.



SETTING THE CUTTING DECK HEIGHT

See fig. 12

Before using the product, raise the deck height to the cutting position best suited for your lawn.

NOTE: To prevent scalping the lawn when encountering high spots, the cutting deck wheels should be positioned approximately 1.27 cm (1/2 in.) off the ground when the mower is at the desired cutting height. When shipped, the cutting deck wheels are set to the 3.81 cm (1.5 in.) position. Depending on your preferred cutting height, you may need to change the position of the cutting deck wheels. To do so, refer to the "Adjusting Cutting Deck Wheels" section in this manual.

To adjust the cutting deck height:

1. Stop the product, and disengage the blades.
2. Turn the start key to the OFF position and engage the parking brake.
3. To raise the cutting deck, grasp the deck height adjustment lever, push left to disengage from slot, move toward the back of the mower, then push right into slot to secure.
4. To lower the cutting deck, grasp the deck height adjustment lever, push left to disengage from slot, move toward the front of the mower, then push right into slot to secure.

⚠ WARNING

Firmly hold the deck height adjustment lever when setting the deck height and release only when it is secure in the preferred slot. Quickly letting go of the lever may create a pinching or pulling hazard to the operator's hand.

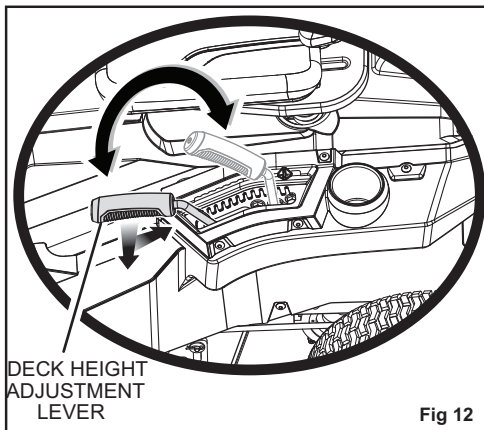


Fig 12

SETTING THE CRUISE CONTROL

See fig. 13

Cruise control allows the product to remain at a constant speed without the operator having to maintain pressure on the accelerator pedal. It should only be used in the forward position on relatively smooth, straight surfaces, and should never be used on slopes or rough terrain.

To set the cruise control:

While driving the product forward, press the accelerator pedal until the preferred speed is achieved.

1. Press the cruise control button. The light around the button illuminates to show that cruise control is active.
2. Release pressure on the accelerator pedal. The mower speed should remain constant.

To release the cruise control:

1. Step on the accelerator pedal.
2. Release the brake pedal, or press the cruise control button again. The light around the cruise control button will go out to indicate that cruise control is no longer active.

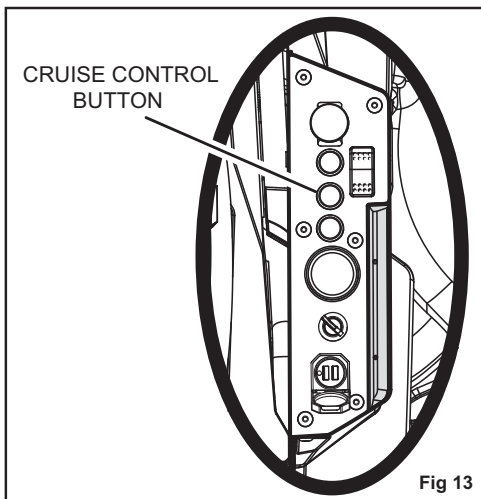


Fig 13

CHARGING THE PRODUCT

See fig. 14 - 15

Mower batteries must be charged for 24 h before first use. To verify that the mower batteries are fully charged, check the battery level indicator.

For best results:

- Do not charge the product in an area of extreme heat or cold.
- Never charge a frozen battery.
- Mount or place the charger in an area with adequate ventilation, without covering the cooling fins.
- Make sure both the charger and mower connections are clean and free of dirt or debris.

To charge:

1. Connect the charger plug into the charging port on the mower, making sure that it is properly connected.
2. Connect the charger to a power supply that uses normal household current of 100-240 VAC, 50/60 Hz. The batteries should automatically begin to charge.
3. When you are ready to mow, disconnect the charger from the power supply, then disconnect the charger from the mower.

NOTE: The charger is equipped with a plug featuring a grounding pin and must be plugged into a matching outlet that has been properly installed and grounded in accordance with all local codes and ordinances. Do not use adaptors or modify the plug provided. If it does not fit the outlet, have the proper outlet installed by a qualified electrician.

When powered, the LED indicator on the charger illuminates to indicate the charger's status. See the chart that follows to determine the meaning of the LED's display.

⚠ WARNING

Always turn the power switch to the OFF position and remove the start key when charging the product and when the product is not in use.

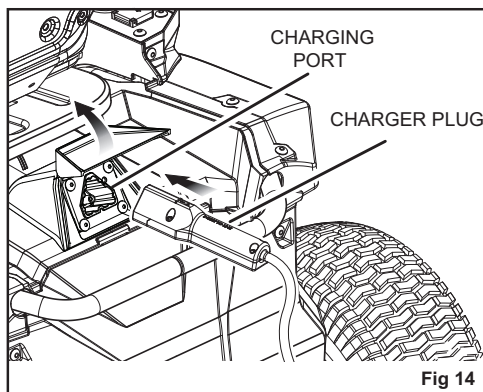


Fig 14

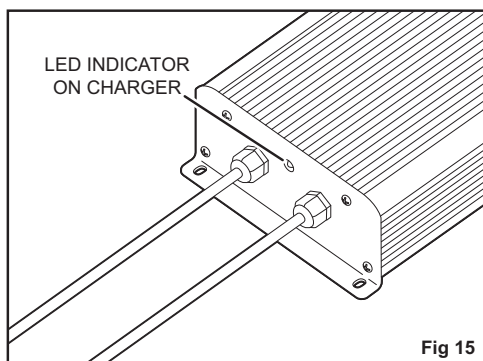


Fig 15

CHARGER LED INDICATOR

Charger status	Connected to		LED		Status
	Power supply	Mower	Charger	Mower	
Standby	Yes	No	On	Off	Ready to charge battery pack
Charging	Yes	Yes	On	Slow flashing	—
	Yes	Yes	Off	Fast flashing	Battery temperature, battery capacity, or charger may be faulty.
Charger error	If the LED status shows error, wait for about 15 minutes to allow the battery and charger to cool down. If the LED status repeats a second time, reset the charger or reinsert the battery. If a different charger charges normally, the charger may be defective. If a different battery charges normally, battery capacity may be faulty.				
Fully charged	Yes	Yes	On	On	Fast charging is complete; charger maintains charge mode.
Interlock	No	Yes	Off	Fast flashing	The plug is still connected to the mower. The mower cannot be started.
Defective	Yes	Yes	On	Fast flashing	The battery pack could be defective.
	If the LED status shows defective, reset the charger or reinsert the battery. If the LED status repeats a second time, try charging a different battery. If a different battery charges normally, dispose of the defective pack (see maintenance section).				

⚠ WARNING

Always connect the mower to the charger when it is not in use. If it is not possible to leave the mower charger connected, make sure to fully charge the batteries at least once a month.

⚠ WARNING

Charge the product in a well-ventilated area. Do not charge the product in a confined space.

SAFETY INTERLOCK SYSTEM

See fig 16

The safety interlock system stops the blades if the operator leaves the seat while the blades are running. Test the system before each use to ensure that it is working correctly.

To test:

1. Make sure direction control switch is in neutral (N) position and blade engage knob is down.
2. Insert the start key and turn the key to the ON position.
3. Pull up the blade engage knob to activate the blades.
4. Briefly stand up, but do not get off the mower.

The blades should stop off within 5 seconds. If the blades do not stop, verify that the safety interlock cable is connected as described in the "Installing the Seat" section. If the cable is connected but the system still does not function, contact an authorised service centre. Do not operate the product until the safety interlock system has been repaired.

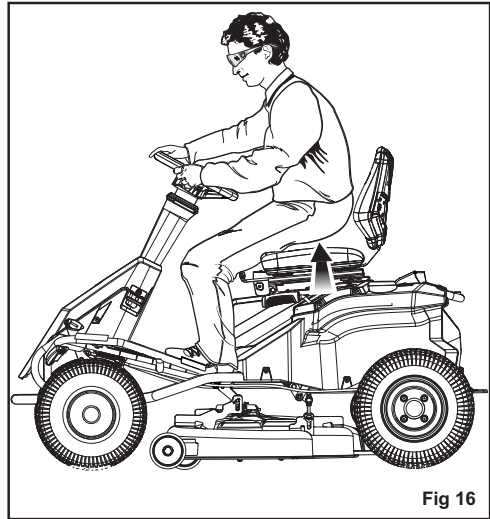


Fig 16

OPERATION

USING THE PRODUCT

See fig. 17 - 18

⚠ WARNING

Clear the area of bystanders before operating the product. If anyone enters the mowing area, stop immediately and do not return to mowing until the bystanders leave the area.

Before starting the product:

- Ensure that the work area is clear of children, bystanders, and pets.
- Clear the work area of objects that may be thrown by the mower blades.
- Check the brake operation.
- Check the tyre pressure.
- Check for loose fasteners.
- Check to make sure that all guards are in place and working properly.
- Remove debris from mower.
- Test the safety interlock system.
- Adjust the seat to the preferred position.
- Verify the battery charge level.

⚠ WARNING

When the level of battery charge reaches the red zone on the battery charge indicator, the blades automatically stop. Immediately return to the charging location, and recharge the mower. Continuing to mow when the battery charge level is in the red zone can cause the mower to become stranded away from the charging area.

NOTE: If the mower is stranded away from the charger, set the direction control switch to the neutral (N), and push the mower back to the charging location.

Mowing:

1. Set the cutting deck to the maximum height.
2. Insert the start key and turn the key to the ON position.
3. Disengage the parking brake.
4. Set the direction control switch to the forward (F) position, and drive to the mowing location.

⚠ WARNING

Make sure that you have correctly set your intended direction of travel with the direction control switch before stepping on the accelerator pedal. Failure to do so could result in you driving the mower in an unintended direction, which could cause loss of control or an accident resulting in death, serious personal injury, or property damage.

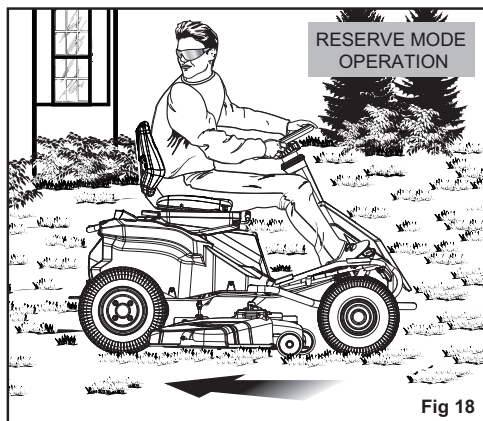
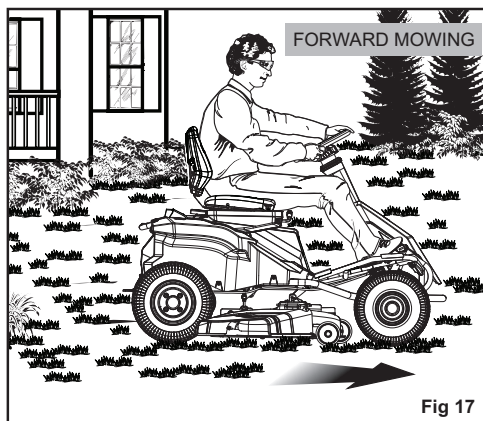
5. Stop the mower, turn the start key to the OFF position, and engage the parking brake.
6. Set the cutting deck to the preferred position.
7. Turn the start key to the ON position, and disengage the parking brake.
8. Pull up the blade engage knob to activate the blades, and press the accelerator pedal to mow the lawn.

⚠ WARNING

Use caution when crossing over gravelly paths or driveways. Before crossing, stop the blades and set the cutting deck to the maximum position to minimize the possibility of ricochet. Drive slowly to avoid loss of traction and control.

⚠ WARNING

Do not attempt to change the direction of operation while the mower is in motion. Always come to a complete stop before changing the mower direction.



Reverse mode operation:

⚠ WARNING

The product emits a constant beeping sound when operated in reverse with either the blade off or in reverse mode operation.

1. Step on the brake pedal and bring the product to a complete stop.
2. Press the blade engage knob to turn off the blades.
3. Set the direction control switch in reverse (R) position.

4. Press the reverse mode button.
5. Pull up the blade engage knob, slowly step on the accelerator pedal, and reverse mow as needed.

⚠ WARNING

Do not mow in reverse unless absolutely necessary. Always look down and behind before and while reversing to make sure that no children, bystanders, or pets enter the mowing area. Be aware that the reverse mode operation is activated when the reverse mode button is illuminated in red and a constant beeping sound is emitted. Remember that a careless fraction of a second is sufficient to inflict death or serious injury.

⚠ WARNING

Be especially careful before and when reversing with the bagger kit installed, as it may limit visibility. Always look closely behind and down for small children, bystanders, and pets and move the mower slowly to prevent back over accidents that can cause death or serious personal injury.

When mowing is complete:

1. Stop the product on a flat, level surface. Do not stop the product on a slope.
2. Press the blade engage knob to turn off the blades
3. Set the direction control switch in the neutral (N) position.
4. Engage the parking brake.
5. Turn the start key to the OFF position, and remove the key.

⚠ WARNING

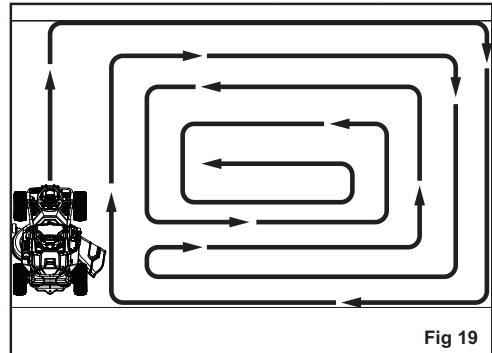
If the product emits a beeping noise after you leave the seat, verify that the parking brake is engaged and that the key has been removed. Failure to engage the parking brake could cause the product to move, and leaving the key could allow unauthorised use that could result in serious personal injury.

NOTE: The reverse mode operation resets each time the power switch is turned to the OFF position.

MOWING TIPS

See fig 19

- Keep the mower blades sharp.
- Make sure that the lawn is clear of stones, sticks, wires, toys, tree nuts, tree branches, and other objects that could damage the mower blades or motor. Do not mow over property stakes or other metal posts. Such objects could damage the blade or be accidentally thrown by the product in any direction and cause serious personal injury to the operator and others.
- For a healthy lawn, always cut off one-third or less of the total length of the grass.



- When mowing large areas, start by turning to the right so that clippings discharge away from shrubs, fences, and driveways. After one or two rounds, mow in the opposite direction, making left hand turns until finished.
- Mow so that the discharged clippings exit in the direction of the lawn area that has already been cut.
- When cutting heavy grass, reduce speed to allow for more effective cutting and a proper discharge of the clippings.
- Do not cut wet grass. Wet grass sticks to the underside of the deck and prevents proper bagging or mulching of grass clippings.
- New or thick grass may require a narrower cut or a higher cutting height.

- Keep the mower deck and side discharge chute clean. Remove grass clippings, leaves, dirt, and any other accumulated debris before and after each use. Do not spray with a garden hose to clean.

NOTE: Always stop product, allow blades to completely stop, and remove the start key before cleaning underneath the product.

SLOPE OPERATION

See fig 20

⚠ WARNING

Slopes are a major factor related to tip-over and roll-over accidents that can result in severe injury or death. Operation on slopes requires extra caution. If you feel uneasy on a slope, do not mow it. Never use the product on steep slopes greater than 15°. Make a copy or cut out the "Slope Guide" at the back of this manual and use it to determine if your slope is too steep for safe operation.

- Mow up and down, not across the face of slopes.
- Do not mow on wet grass. Wet grass can cause the tyres to lose traction or slip on slopes, even though the brakes are functioning properly.
- Watch out for holes, ruts, rocks, hidden objects, or bumps that can cause you to slip or trip. Tall grass can hide obstacles. Remove all objects such as rocks and tree limbs, which could be tripped over or thrown by the blade.
- Do not mow near drop-offs, ditches, or embankments.
- Drive slowly and do not make sudden changes in speed or direction.
- Avoid stopping on slope if at all possible. If stopping is unavoidable, make sure to engage the parking brake. When restarting, use the lowest possible speed. If turning is necessary, exercise extreme caution when changing direction and always turn downhill.
- Never attempt to stabilize the mower on a slope by placing your foot on the ground during operation.
- If using the optional bagger kit, use extreme caution and operate the mower slowly

when operating on slopes, as the bagging kit can change the stability of the mower.

- Always use the brakes when travelling down the slope. Do not attempt to let the mower coast downhill in neutral.
- If at any point the tyres lose traction while operating on a slope, disengage the blades and proceed slowly and carefully straight down the slope.

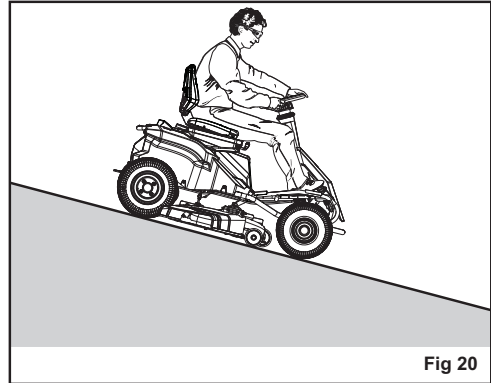


Fig 20

TRANSPORTING THE PRODUCT

See fig. 21

⚠ WARNING

Use care when driving the product off of or onto a trailer or truck. Step on the brake pedal as needed to control the speed. The mower freely rolls if it is moved on an inclined surface without stepping on the brake pedal or engaging the parking brake. Failure to follow these instructions can result in loss of control and result in death, serious personal injury, or property damage.

⚠ WARNING

Use care when loading or unloading the product onto a trailer. Ensure that the cutting deck is raised to the maximum height so that it is not caught on the ramp. The wheels on the product can go off the ramp or trailer, causing it to pivot or tip over, and result in a crush hazard that can cause death or serious personal injury.

1. Park the product on a level surface.
2. Raise the cutting deck to the highest position.
- Position and secure a ramp to the trailer according to manufacturer's instructions.

NOTE: Use one full width loading ramp that is at least 30,5 cm wider than the mower to minimize the risk of the mower's wheels going off the side of the ramp.

3. Slowly drive the product onto the ramp and into the trailer.
4. Set the cutting deck to the lowest height.
5. Engage the parking brake.
6. Turn off the product, engage the parking brake, and remove the start key.
7. Secure the product as needed using straps or cables to prevent movement during transport.

⚠ WARNING

To avoid accidental starting or movement of the product that could result in serious personal injury, always remove the start key and engage the parking brake when transporting the product.

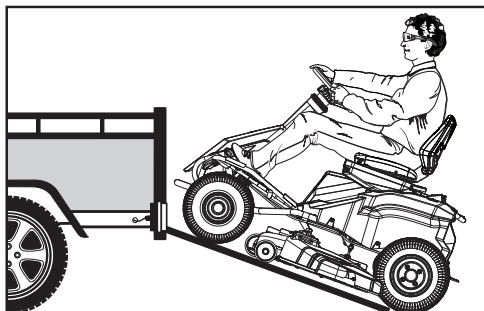


Fig 21

MAINTAINING THE PRODUCT

⚠ WARNING

Turn off the product, engage the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop before performing any maintenance tasks to avoid accidental starting and possible serious personal injury.

⚠ WARNING

Always wear eye protection with side shields. Failure to do so could result in objects being thrown into your eyes resulting in possible serious injury.

⚠ WARNING

When servicing, use only original replacement parts. Use of any other parts can create a hazard or cause product damage.

⚠ WARNING

Strictly adhere to all torque wrench tightening specifications. Failure to do so could cause serious personal injury.

⚠ WARNING

Before each use, inspect the entire product for damaged, missing, or loose parts, such as screws, nuts, bolts, and caps. Securely tighten all fasteners and caps, and do not operate the product until all missing or damaged parts are replaced. Contact an authorised service centre.

General maintenance

Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean cloths to remove dirt, dust, oil, and grease.

⚠ WARNING

Do not at any time let brake fluids, gasoline, petroleum-based products, and penetrating oils, come in contact with plastic parts. Chemicals can damage, weaken, or destroy plastic, which can result in serious personal injury.

Remove any build-up of grass and leaves on or around the motor cover. Wipe the mower clean with a dry cloth occasionally. Do not use water.

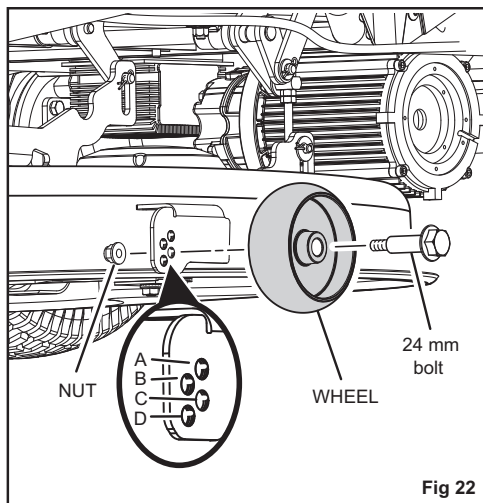
ADJUSTING CUTTING DECK WHEELS

See fig. 22

The cutting deck wheels should be positioned approximately 1.27 cm (1/2 in.) off the ground when the mower is at the preferred cutting height to minimize the chance of scalping the lawn in most situations. When shipped, the wheels are positioned in Position A.

To adjust the cutting deck wheels:

1. Park the product on a level surface and set the parking brake.
2. Turn off the product, and remove the start key. Make sure that all moving parts have come to a complete stop.
3. Set the cutting deck to the preferred height setting.
4. Remove the nut and bolt that holds the cutting deck wheel in place.
5. Move the wheel to preferred position. Available hole positions are:
 - 3.81 cm. (1.5 in.) (A)
 - 4.44 cm (1.75 in.) (B)
 - 5.08 cm. (2 in.) (C)
 - 5.72 cm (2.25 in.) (D).
6. Reinstall and securely tighten the bolt and nut to 5.42-8.13 Nm (4-6 ft. lbs.) torque.
7. Repeat the steps with the remaining cutting deck wheel, making sure that both wheels are installed in the same position.



REMOVING THE CUTTING DECK

See fig. 23

The cutting deck can be removed from the mower to easily access the blades when replacing.

1. Make sure direction control switch is in neutral (N) position and blade engage knob is down.
2. Turn off the product, set the parking brake, and remove the start key. Make sure that all moving parts have come to a complete stop.
3. Disconnect the cables that connect the cutting deck to the mower.
4. Set the cutting deck to the lowest height.
5. Remove the 4 hitch pins and washers that secure the cutting deck in place.
6. Slide the deck out from under the mower.

Reverse the steps to reinstall the cutting deck to the mower.

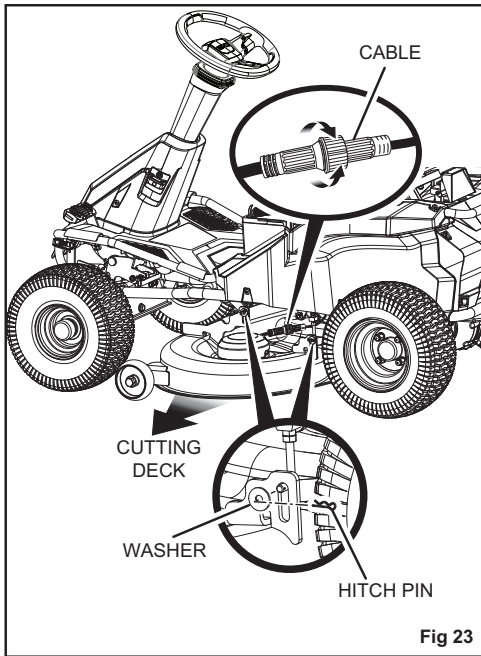


Fig 23

REPLACING CUTTING BLADES

See fig. 24 - 26

⚠ WARNING

Use only original replacement blades and blade bolts authorised by the manufacturer of your ride-on mower. Use of blades and blade bolts that are not authorised is hazardous and may damage your ride-on mower.

1. Make sure direction control switch is in neutral (N) position and blade engage knob is down.
2. Stop the motor, remove the start key, and set the parking brake.
3. Raise the height of the cutting deck to its highest position to allow access to the blades.

NOTE: If necessary, raise the mower by placing on a lift or using a jack and jack stands, or remove the cutting deck as described in the previous section to gain access to the blades.

⚠ WARNING

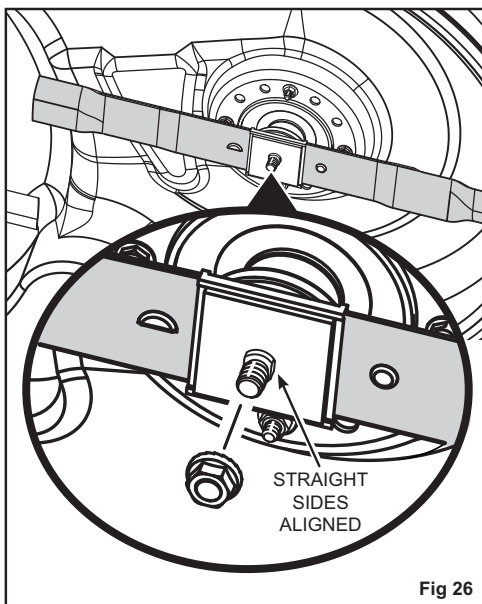
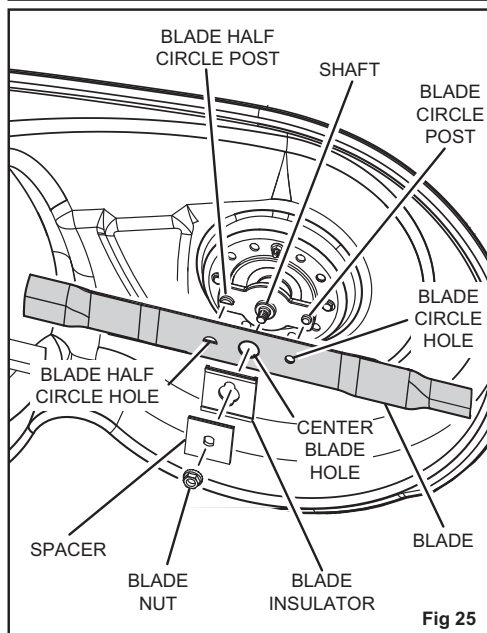
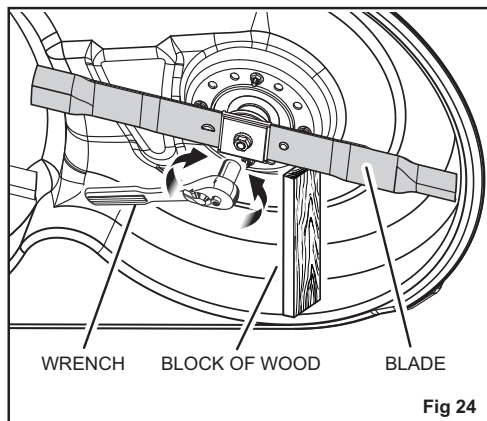
If raising the mower to access the blades, make sure that the mower is properly secured and the parking brake is engaged before proceeding. Failure to properly secure the mower could cause it to fall, resulting in death or possible serious personal injury.

4. Wedge a block of wood between the blade and mower deck to prevent the blade from turning.
 5. Loosen the blade nut by turning it counterclockwise (as viewed from bottom of mower) using a 15 mm wrench or socket (not provided).
 6. Remove the blade nut, spacer, blade insulator, and blade.
 7. Remove any build-up of debris from the cutting deck, especially around the blade mounting bolt.
 8. Place the new blade on the shaft against the corresponding blade posts. Ensure that the blade is properly seated with shaft going through the center blade hole and the two blade posts inserted into their respective holes on the blade. Make sure that the blade is installed with the curved ends pointing up toward the mower deck and not down toward the ground. When seated properly, the blade should be flat against the blade posts.
 9. Reinstall the blade insulator and spacer, making sure that the flat sides on each piece align and the straight sides of the opening on the spacer are aligned with the straight sides of the blade shaft.
- NOTE:** Make sure that all parts are replaced in the exact order in which they were removed.
10. Thread the blade nut on the shaft.
 11. Hand-tighten the nut until the blade is secured and does not shake, then use a spanner to further tighten the nut by 1.5 turns at least (70-80 Nm torque)."

⚠ WARNING

Ensure blade is properly seated and the blade nut is tightened to the torque specifications above. Failure to properly attach the blade could cause it to come loose and result in possible serious personal injury.

Repeat the steps with the second blade, if needed.



TYRE MAINTENANCE

The product is equipped with tubeless tires with the following dimensions:

- Front tyres: 38.1 x 15.2 x 15.2 cm (15 x 6 x 6 in.)
- Rear tyres: 40.6 x 16.5 x 20.3 cm (16 x 6.5 x 8 in.)

Tyre air pressure

Check the air pressure in all tyres before use. Improper air pressure affects handling, steering response, traction, tire life, level cutting, and operator comfort. Be sure tires are inflated to the pressure of 1.6 bar (158.58 kPa).

NOTE: The air pressure should only be measured or adjusted when the tyres are cold.

⚠ WARNING

Check the tyre pressure carefully while inflating. Too much air could cause the tyre to burst, causing serious personal injury.

⚠ WARNING

Maintaining correct air pressure in the tyres is very important. Too little pressure could allow the tyre to rotate off the wheel rim. Too much pressure could cause the tyre to burst. Failure to maintain correct air pressure in the tyres could cause problems with mower operation and stability, causing serious personal injury.

TYRE REPAIR

If a leak or flat tyre occurs due to a puncture, the tyre may be repaired using a plug-type patch. If the damage is from a cut, or if the puncture cannot be repaired using a plug, replace the tyre

REPLACING TIRES

When tyres are worn, the traction of the mower decreases, which increases the chance of having an accident. Tyres should be replaced when the depth on the tread is 4 mm (0.16 in.) or less, or any time there is damage to the tyre. Always use original replacement tires. Using improper tyres on the product could cause loss of control, which could cause serious personal injury.

Have the tyres replaced by an authorised service centre only.

ADJUSTING THE BRAKES

See fig. 27

Being able to stop the mower properly is critical to mowing safety. If the mower travels farther before stopping when you step on the brake pedal, the brakes may need adjusting.

To test:

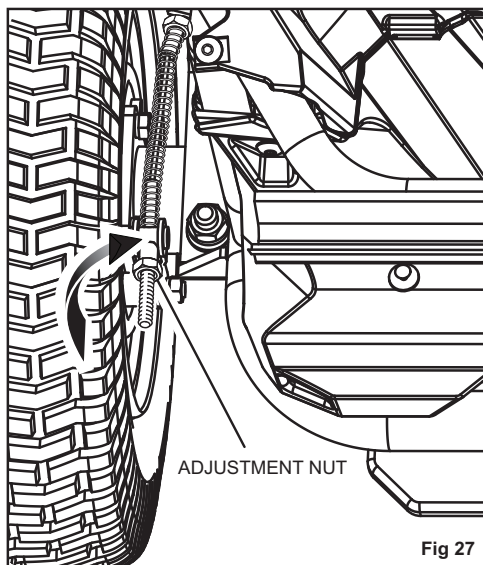
1. Stop the product on a level surface, and engage the parking brake.
2. Set the direction control switch in the neutral (N) position.
3. Stand behind the mower and try to push it forward. If the rear tyres turn, the brakes need to be tightened.

To tighten:

- Locate the brake adjustment nuts on the interior side of each of the rear wheel.
- Turn each adjustment nut 1/4 turn clockwise, then try again to push the mower.

- Continue rotating each nut 1/4 turn and testing until the mower can no longer be moved by pushing.

After final adjustment, test the brakes by driving the mower at normal speed on flat ground to be sure that the mower stops quickly when stepping on the brake pedal.

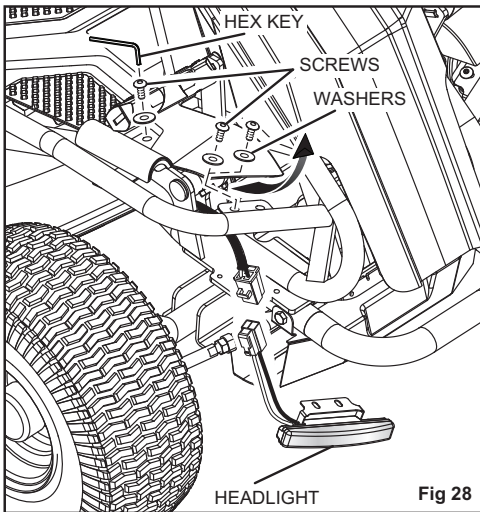


REPLACING THE HEADLIGHTS

See fig. 28

Contact an authorised service centre to order a new headlight.

1. Stop the product on a level surface, and engage the parking brake.
2. Turn off the product, and remove the start key.
3. Remove and set aside the hex head screw and flat washer that holds the mower floor panel in place.
4. Slightly lift the floor panel to access the two hex head screws and flat washers that secure the headlight in place. Remove and set aside the screws and washers.
5. Disconnect and discard the old headlight.
6. Connect the new headlight. Reinstall and securely tighten the washers and screws.
7. Lower floor panel. Reinstall the washer and screw to secure the floor panel.



LEVELING THE CUTTING DECK

See fig. 29 - 30

If your lawn appears unevenly cut after using the mower, the cutting deck may need adjusting. Before deciding that leveling the cutting deck is necessary, make sure that tyres are properly inflated to the recommended air pressure when mowing. Over-inflated or under-inflated tyres can affect the appearance of the cut, and proper inflation of the tyres may be all that is needed to resolve uneven cutting issues.

NOTE: Always check side-to-side alignment and adjust as needed before measuring and adjusting front-to-back.

Before beginning:

1. Make sure that the direction control switch is in the neutral (N) position and blade engage knob is down.
2. Turn off the product, engage the parking brake, and remove the start key.
3. Set the cutting deck to the maximum height.

To make side-to-side adjustment:

1. Position the blades so that the ends point toward the sides of the mower.
2. On the outside edge of each blade, measure the distance from the bottom edge of the side of the blade to the ground. If the distance between the two sides is greater than 0.32 cm (1/8 in.), a side-to-side adjustment is necessary.

3. On the side you wish to adjust, loosen the jam nuts as shown.
4. Turn the adjustment nuts clockwise to raise or counterclockwise to lower the side of the cutting deck. Each full turn of the adjustment nut changes the deck height approximately 0.48 cm (3/16 in.).
NOTE: If raising the side, turn the top adjustment nut, then the bottom nut. If lowering, turn the bottom nut, then the top nut.
5. Measure the distance again. Continue to adjust and measure until the difference between the distance on each side is 0.32 cm (1/8 in.) or less.
6. Proceed to front-to-back adjustment or retighten the jam nuts to secure.

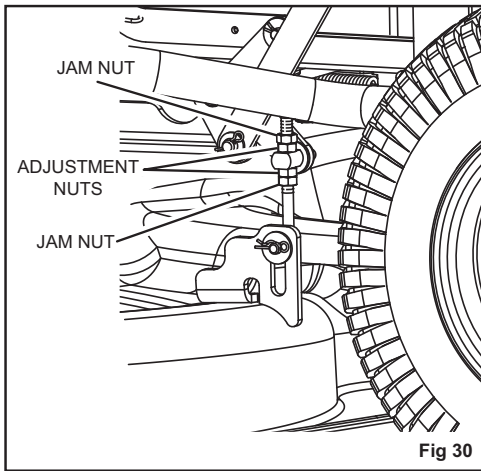
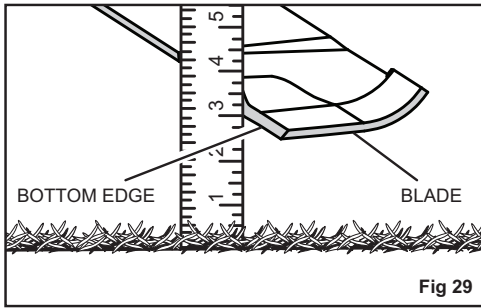
To make front-to-back adjustment:

NOTE: Always level the deck side-to-side before making a front-to-back adjustment.

1. Position the blade nearest the side discharge chute so that the ends now point toward the front and back of the mower.
2. Measure the distance from the tip of the blade to the ground. For best results, the front tip of the blade should be from 0.32 cm to 0.95 cm (1/8 in. to 3/8 in.) lower than the rear tip.
3. If front-to-back adjustment is needed, turn the adjustment nuts clockwise to raise or counterclockwise to lower the back of the cutting deck. Each full turn of the adjustment nut changes the deck height approximately 0.32 cm (1/8 in.).

NOTE: Make sure to turn the adjustment nuts on both sides equally to prevent throwing the side-to-side measurement off again.

4. Measure the distance between the blade and ground again to verify that the front tip is now 0.32 cm to 0.95 cm (1/8 in. to 3/8 in.) lower than the rear tip. If not, continue to adjust and measure until the distance is correct.
5. Without moving the adjustment nuts, retighten the jam nuts to secure the adjustment nuts in place.



REPLACING THE BATTERIES

See fig. 31 - 34

NOTE: Use only RYOBI ride-on mower lead-acid batteries, part number 099749014036.

The mower operates on four 12-volt batteries connected in series. If replacing one or more of the batteries, always replace them using batteries of the same type with equal voltage and capacity.

⚠ WARNING

Do not open or damage the batteries. Released electrolyte is corrosive and may cause damage to the eyes or skin. It may be toxic if swallowed.

Do not incinerate the battery. The batteries could explode. Check with local codes for possible special disposal instructions.

When batteries are not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws, or other small metal objects, that can make a connection from one terminal to another. Shorting the battery pack terminals together may cause sparks, burns, fire or explosion.

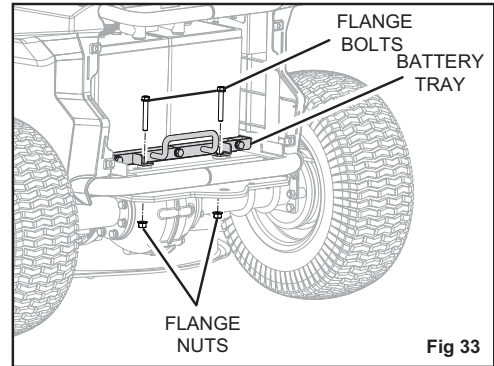
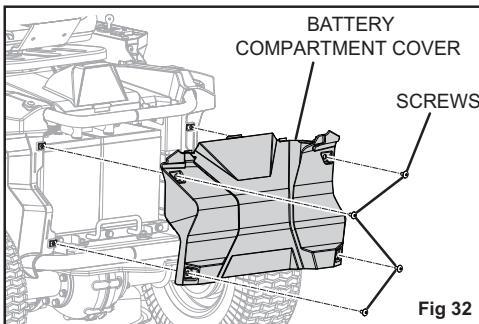
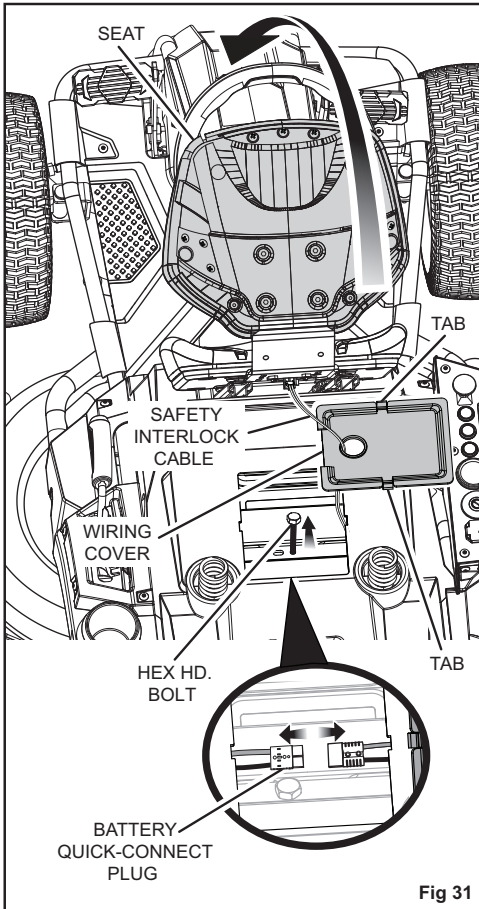
Exercise care in handling batteries in order not to short the battery with conducting materials, such as rings, bracelets, and keys. The battery or conductor may overheat and cause burns.

⚠ WARNING

Use only original lead-acid batteries when replacing.

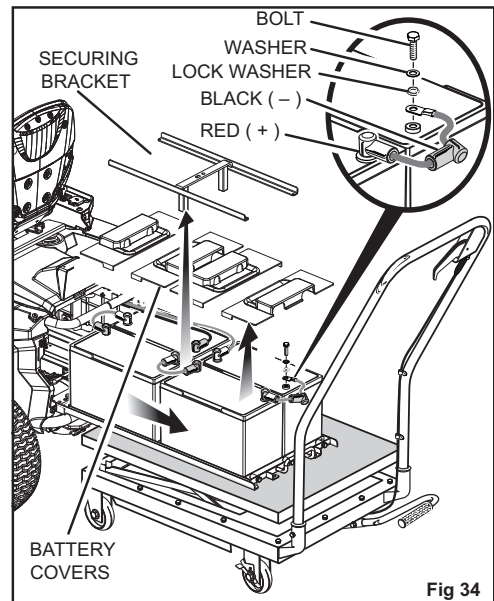
Never mix different makes and sizes of batteries in the series. Doing so will eventually cause damage to the batteries and may also damage the mower.

1. Stop the product on a level surface, and engage the parking brake.
2. Turn off the product, and remove the start key.
3. Raise the mower seat.
4. Press the tabs on the wiring cover. Lift the cover and turn it to one side to access the compartment below.
5. Remove and set aside the hex head bolt that secures the battery tray in place.
6. Disconnect the battery quick-connect plug. The plug connects the batteries to the mower.
7. Remove the four screws that secure the battery compartment cover in place.
8. Remove the two flange nuts and flange bolts that secure the front of the battery tray in place.
9. Fully extend the battery tray, resting the end outside the mower on a stable surface that can support a minimum weight of 136.1 kg. (300 lb.).



⚠ WARNING

The battery tray is very heavy and requires two people to extend. Use a hydraulic tabletype cart (or similar device) to extend the tray. Failure to properly extend and support the battery tray could result in serious personal injury, and damage to the mower.



WARNING

Under abusive conditions, liquid may be ejected from the batteries; avoid contact. If contact accidentally occurs, flush with water. If liquid comes in contact with eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

10. Remove and set aside the battery securing bracket off the batteries.
11. Remove and set aside the battery covers for the battery or batteries being replaced.
12. Disconnect the battery or batteries that need to be replaced.
13. Disconnect the negative (black) cable, then the positive (red) cable. Be careful not to short across the terminals.
14. Replace the battery or batteries as needed and reconnect the cables. Connect the positive (red) cable, then the negative (black) cable. Be careful not to short across the terminals.
15. Reinstall the battery covers and the battery securing bracket.
16. Push the battery tray back inside the mower just enough to allow you to reconnect the battery quick-connect plug.
NOTE: To gain enough leverage to reconnect, connect from the battery compartment area rather than the area under the seat.
17. Once the batteries are reconnected to the mower, push the battery tray fully back inside the mower.
18. Reinstall and securely tighten the flange bolts and flange nuts to secure the outside edge of the battery tray. Tighten securely.
19. Reinstall the hex head bolt to secure battery tray in place.
20. Reinstall the battery compartment cover/ Reinstall and securely tighten the four screws.
NOTE: Make sure that the tabs on the battery compartment cover are seated in the slots on the mower top and side panels before tightening screws.
21. Reinstall wiring cover, and push down until it snaps in place, then lower the mower seat.
NOTE: Always ensure that the safety interlock cable connection is still fully seated when replacing the wiring cover.

NOTE: Always abide by the safety warnings provided with the battery. Dispose of the old battery according to local and state regulations.

STORING THE PRODUCT

The following steps should be taken before storing the product.

- Park the mower on a level surface, and engage the parking brake.
- Remove any build-up of grass and leaves on or around the motor cover. Wipe the product clean with a dry cloth. Do not use water to clean the product.
- Plug the product to charge for the entire time of storage.
NOTE: If it is not possible to leave the mower charger connected during storage, charge the batteries at least once a month during storage.
- Store the product in a clean, dry place that is inaccessible to children. Do not store the product near any appliance that operates with flame such as a gas water heater, clothes dryer, or furnace.
NOTE: Do not leave the start key in the product during storage.
- If the product must be stored outside, make sure it is covered completely to protect it from the elements.
- Keep the product away from corrosive agents, such as garden chemicals and de-icing salts.

PREPARING FOR USE AFTER STORAGE

The following steps should be taken before using the product after it has been stored:

- Review maintenance chart.
- Fully charge the batteries.
- Check tyre pressure and inflate as needed.
- Briefly drive the product and check all systems and components to ensure that they are functioning correctly.

MAINTENANCE SCHEDULE

	Inspect Before Each Use	Every 25 Hours	Every 50 Hours or Yearly	Before Storage
Check the brake operation	■			
Check the tyre pressure	■			
Check the safety interlock system	■			
Check for loose fasteners	■			■
Clean debris from the product	■			■
Check / Replace the mower blades		■		
Clean the battery terminals			■	

NOTE: Maintenance should be performed more frequently when the product is used in dusty areas.

When the product has exceeded the maximum figures specified in the table, maintenance should still be cycled according to the intervals of time or hours stated herein.

If you are unsure how to perform any of the maintenance items listed above, have the product serviced by an authorised service centre only.

ACCESSORIES

Description	Part number
Bagging kit (includes bagger assembly and bagger blades)	000997207
Mulching blades (as installed by the operator, for mulching and side discharge)	682162001
Bagger blades	000997208/637934001
Canopy attachment Kit	696184001

WARNING

Current attachments and accessories available for use with the product are listed above. Do not use any attachments or accessories not recommended by the manufacturer of the product. The use of attachments or accessories not recommended can result in serious personal injury.

TROUBLESHOOTING

If these solutions do not solve the problem, have the product serviced by an authorised service centre only.

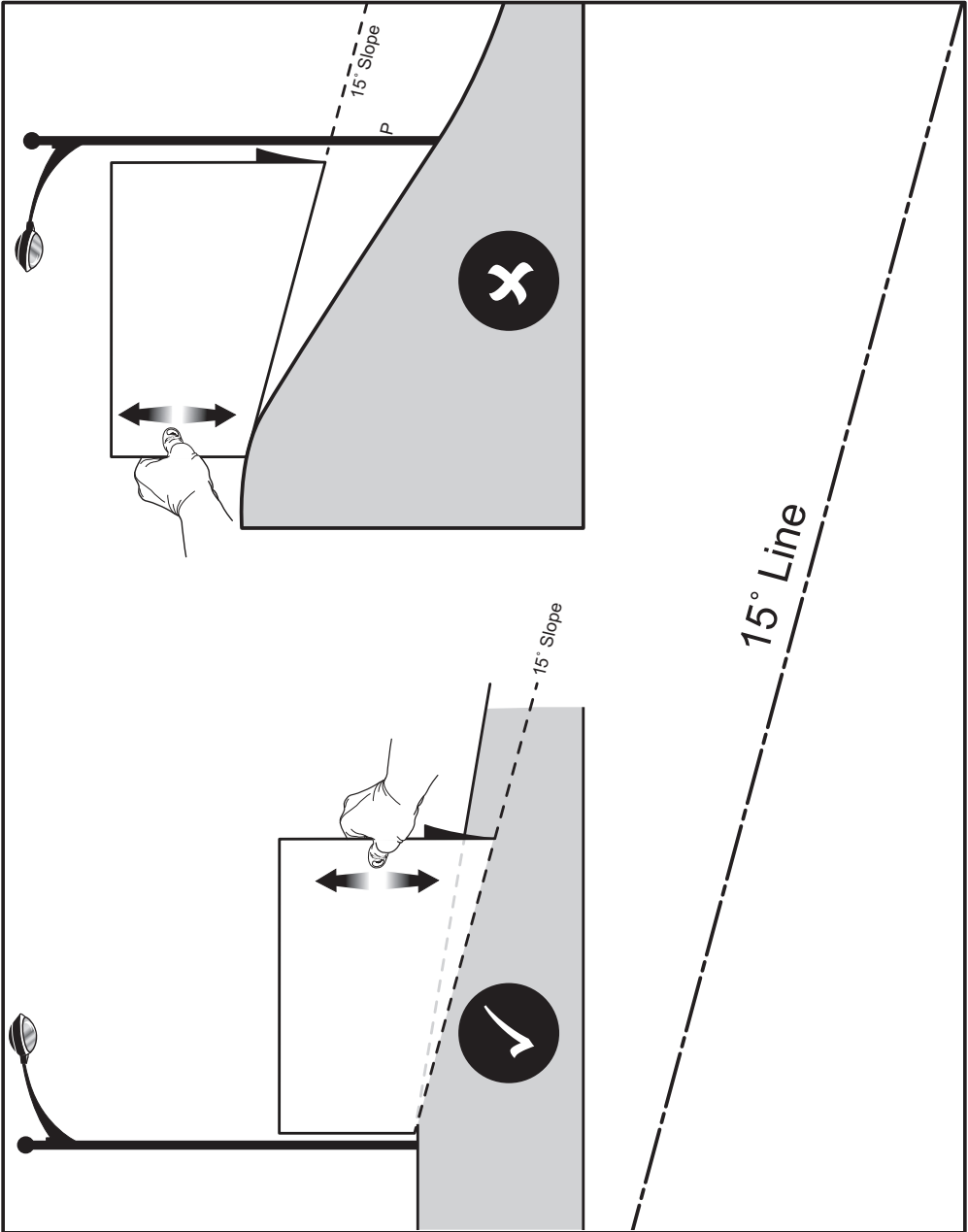
Problem	Possible cause	Solution
The product does not start.	The battery charge is low.	Charge the battery.
	The charger is connected to the product.	Disconnect the charger from product.
	The start key is not installed or is in the OFF position.	Insert the start key and turn it to the ON position.
	The battery cables are not properly connected.	Check and clean all battery connections.
The product won't move.	The start key is not installed or is in the OFF position.	Insert the start key and turn it to the ON position.
	The parking brake is engaged.	Disengage the parking brake.
	The direction control switch is in the neutral (N) position.	Set the direction control switch in the desired direction (forward or reverse).
	The brake is pressed and/or accelerator pedal is not pressed.	Release the brake pedal and step on the accelerator pedal.
	The charger is connected to the product.	Disconnect the charger from product.
The product is cutting grass unevenly.	The tyre air pressure is uneven.	Check the air pressure in all four tyres.
	The mower deck is not level.	Perform cutting deck level adjustment.
	The blade is worn, bent, loose, or dull.	Replace the blade.
	There is build-up of debris under the product.	Clean the underside of the mower housing.
	Mowing speed is too fast.	Mow at a slower speed.
The product is not mulching properly.	Wet grass clippings sticking to the underside of the deck.	Wait until the grass dries before mowing.
	The grass is too high.	Mow once at a high cutting height, then mow again at the preferred height.
	The blade is worn, bent, loose, or dull.	Replace the blade.
	The mowing speed is too fast.	Mow at a slower speed.
The product is vibrating at a higher speed.	The blade is unbalanced, loose, or excessively or unevenly worn.	Replace the blade.
	The motor shaft is bent.	Stop the motor, and remove start key. Inspect for damage. Have the product serviced by an authorised service centre before restarting.

TROUBLESHOOTING

If these solutions do not solve the problem, have the product serviced by an authorised service centre only.

Problem	Possible cause	Solution
Poor grass discharge.	The side discharge chute or opening is plugged.	Clean side discharge chute and/or opening.
	The grass is wet.	Allow grass to dry before mowing.
	The mowing speed is too fast.	Mow at a slower speed.
	The grass is too high.	Mow once at a high cutting height, then mow again at the desired height.
The motor stops while cutting.	The cutting height set too low.	Raise the cutting height.
	The battery charge is low.	Charge the battery.
The blades do not rotate.	The battery charge is low.	Charge the battery.
	The blade engage knob is down.	Raise blade engage knob.
	The operator is not fully seated.	Sit down fully on the seat.
	Build-up of debris under mower.	Clean underside of mower housing.
The blades do not rotate while moving in reverse.	The reverse mode option is off.	Press the reverse mode button to activate.
	The blade engage knob is down.	Raise blade engage knob.
The product won't reach full speed.	The battery charge is low.	Charge the battery.
The blades continue to turn after the operator leaves the seat without setting the parking brake.	The safety interlock system is not functioning correctly.	Ensure safety interlock system seat plug is fully connected. If blades still won't stop, have the product serviced by an authorised service centre only..
The headlights are not working.	The headlights are off.	Press headlight button to turn headlights on.
	The headlights are damaged.	Replace headlights.
The battery will not charge.	Bad battery cells.	Replace the battery.
	Poor cable connections.	Check/clean all battery connections.

SLOPE GUIDE





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