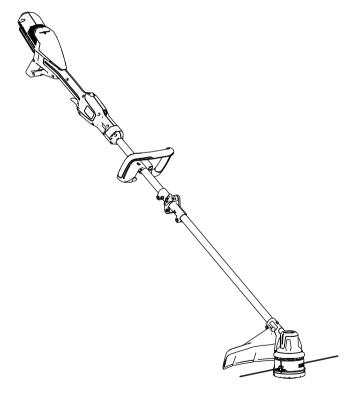


# Operator's Manual

# Flex-Force Power System™ 60V 35CM String Trimmer

Model No. 51890T—Serial No. 324000000 and Up







For assistance, please see www.Toro.com/support for instructional resources or contact your Authorized Service Dealer before returning this product.

#### Introduction

This trimmer is intended to be used by residential homeowners to trim grass as needed outdoors. It is designed to use Flex-Force™ 60V lithium-ion battery packs. These battery packs are designed to be charged only by Flex-Force 60V lithium-ion battery chargers. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

*Important:* If you are using this machine with a battery pack that is 8.0 Ah or greater, you must install the quick-release harness Model 139-5334 (not included) for proper support and balance.

Do not use other harnesses or multiple harnesses when operating the machine.

Model 51890T does not include a battery or a charger.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.Toro.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.



Whenever you need service, genuine manufacturer parts, or additional information, contact an Authorized Service Dealer or the manufacturer Customer Service and have the model and serial numbers of your product ready. Figure 1 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

*Important:* With your mobile device, you can scan the QR code on the serial number decal (if equipped) to access warranty, parts, and other product information.

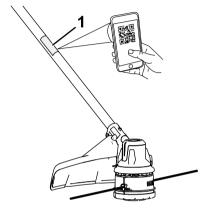


Figure 1

g507019

1. Model number, serial number, and QR code location

Model No		
Serial No		

#### Safety-Alert Symbol

The safety-alert symbol (Figure 2) shown in this manual and on the machine identifies important safety messages that you must follow to prevent accidents.



Figure 2
Safety-alert symbol

a000502

The safety-alert symbol appears above information that alerts you to unsafe actions or situations and is followed by the word **DANGER**, **WARNING**, or **CAUTION**.

**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.

This manual uses two other words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

# Safety

#### **A WARNING**

Read all safety warnings, instructions, illustrations and specifications provided with this machine.

Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "machine" in all the warnings refers to your mains-operated (corded) machine or battery-operated (cordless) machine.

#### I. Work area safety

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

#### II. Electrical safety

- 1. Machine plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) machines. Unmodified plugs and matching outlets will reduce risk of electric shock.
- 2. 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.
- 3. Do not expose machines to rain or wet conditions. Water entering a machine will increase the risk of electric shock.
- 4. Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the machine. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.



- 5. When operating a machine outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- 6. If operating a machine in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

#### III. Personal safety

- 1. Stay alert, watch what you are doing and use common sense when operating a machine. Do not use a machine while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating machines may result in serious personal injury.
- 2. Use personal protective equipment. Always wear eye protection. Protective equipment such as a dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions reduces personal injuries.
- 3. 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 machines with your finger on the switch or energizing machines that have the switch on invites accidents.
- 4. Remove any adjusting key or wrench before turning the machine on. A wrench or a key left attached to a rotating part of the machine may result in personal injury.
- 5. **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the machine in unexpected situations.*
- 6. Dress properly. Do not wear loose clothing or jewelry. Keep your hair and clothing away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
- 7. 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.
- 8. 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.



#### IV. Machine use and care

- 1. Do not force the machine. Use the correct machine for your application. The correct machine will do the job better and safer at the rate for which it was designed.
- 2. **Do not use the machine if the switch does not turn it on and off.** Any machine that cannot be controlled with the switch is dangerous and must be repaired.
- 3. Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the machine before making any adjustments, changing accessories, or storing machines. Such preventive safety measures reduce the risk of starting the machine accidentally.
- 4. Store idle machines out of the reach of children and do not allow persons unfamiliar with the machine or these instructions to operate the machine. Machines are dangerous in the hands of untrained users.
- 5. Maintain machines and accessories. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the machine's operation. If damaged, have the machine repaired before use. Many accidents are caused by poorly maintained machines.
- 6. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- 7. Use the machine, 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 machine for operations different from those intended could result in a hazardous situation
- 8. 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.



#### V. Battery tool use and care

- 1. 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.
- 2. Use machines only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.
- 3. 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.
- 4. 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.
- 5. **Do not use a battery pack or tool that is damaged or modified.**Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.
- 6. Do not expose a battery pack or tool to fire or excessive temperature. Exposure to fire or temperature above 130 °C (265 °F) may cause explosion.
- 7. 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.

#### VI. Service

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



#### VII. String Trimmer safety

- 1. Do not use the machine in bad weather conditions, especially when there is a risk of lightning. This decreases the risk of being struck by lightning.
- 2. Thoroughly inspect the area for wildlife where the machine is to be used. Wildlife may be injured by the machine during operation.
- 3. Thoroughly inspect the area where the machine is to be used and remove all stones, sticks, wires, bones, and other foreign objects. Thrown objects can cause personal injury.
- 4. Before using the machine, always visually inspect to see that the cutter and the cutter assembly are not damaged. Damaged parts increase the risk of injury.
- 5. Keep guards in place. Guards must be in working order and be properly mounted. A guard that is loose, damaged, or is not functioning correctly may result in personal injury.
- 6. **Keep all cooling air inlets clear of debris.** Blocked air inlets and debris may result in overheating or risk of fire.
- 7. **Wear eye protection and ear protection.** Adequate protective equipment will reduce personal injury..
- 8. While operating the machine, always wear non-slip and protective footwear. Do not operate the machine when barefoot or wearing open sandals. This reduces the chance of injury to the feet from contact with the moving cutter.
- 9. Always wear clothing such as trousers that covers the operator's legs while operating the machine. Contact with the moving cutter or line may cause injury.
- 10. Keep bystanders away while operating the machine. Thrown debris can result in serious personal injury.
- 11. **Do not operate the machine above waist height.** This helps prevent unintended cutter contact and enables better control of the machine in unexpected situations.
- 12. Exercise caution when operating the machine in wet grass. Walk, never run. This reduces the risk of slipping and falling which may result in personal injury.
- 13. **Do not operate the machine on excessively steep slopes.** This reduces the risk of loss of control, slipping and falling which may result in personal injury.
- 14. When working on slopes, always be sure of your footing, always work across the face of slopes, never up or down and



- **exercise extreme caution when changing direction.** This reduces the risk of loss of control, slipping and falling which may result in personal injury.
- 15. **Keep all power cords and cables away from cutting area.** Power cords or cables may be hidden in hedges or bushes and can be accidentally cut or damaged by the line or cutter.
- 16. Keep all parts of the body away from the moving trimmer cutter or line. Do not clear material from the machine until it has been disconnected from the power source. The moving trimmer cutter or line may result in serious personal injury.
- 17. Carry the machine with the machine switched off and away from your body. Proper handling of the machine will reduce the likelihood of accidental contact with a moving trimmer cutter or line.
- 18. Only use replacement cutting heads and trimmer cutters or lines specified by the manufacturer. Do not replace the trimmer cutters or lines with metal wires or blades. Incorrect replacement parts may cause loss of control, breakage and injury.
- 19. When clearing jammed material or servicing the machine, make sure the switch is off and the battery pack is removed.

  Unexpected starting of the machine while clearing jammed material or servicing may result in serious personal injury.

# SAVE THESE INSTRUCTIONS



#### **Safety and Instructional Decals**



Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



161-7083

Warning—read the Operator's
 Manual; wear eye and ear protection;
 use flexible line; do not use metal
 blades; stay away from moving parts;
 keep all guards and shields in place;
 do not expose to rain.



decal161-7098

161-7098

- Warning—keep bystanders away from the machine in all directions.
- Thrown object hazard—keep bystanders away.

decal161-7083



decal161-7075

#### 161-7075

- 1. Do not dispose of improperly
- 2. Thrown object hazard—keep bystanders at least 15 m (50 ft) away.
- 3. Warning—remove the battery pack before performing maintenance.

# Setup

#### **Loose Parts**

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
1	Connector knob	1	Unfold the shaft.
2	Auxiliary handle assembly	1	Install the auxiliary handle.
3	Guard Screw	1 2	Install the guard.



### **Unfolding the Shaft**

#### Parts needed for this procedure:

1 Connector knob

#### **Procedure**

- 1. Unfold the shaft (A of Figure 3).
- 2. Secure the shaft together at the coupler using the connector knob (B of Figure 3).

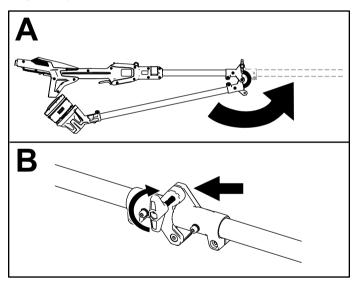


Figure 3



#### Installing the Auxiliary Handle

#### Parts needed for this procedure:

1 Auxiliary handle assembly

#### **Procedure**

1. Separate the auxiliary handle from the handle bracket by unscrewing the handle-lock knob and removing the bolt (A of Figure 4).

*Important:* The bolt may be wedged into the plastic of the handle; lightly tap the bottom of the bolt until it is free from the handle.

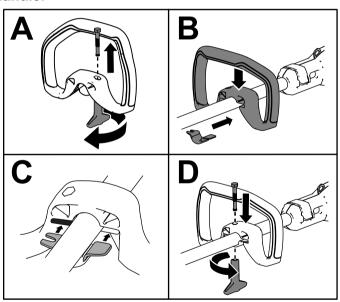


Figure 4

- 2. Align the handle bracket with the auxiliary handle (B of Figure 4).
- 3. Slide the handle bracket into the slot on the auxiliary handle (C of Figure 4).
- 4. Secure the lower handle bracket to the auxiliary handle with the handle-lock knob and the previously removed bolt (D of Figure 4).



# Installing the Guard

#### Parts needed for this procedure:

1	Guard
2	Screw

#### **Procedure**

Secure the guard onto the base of the trimmer with the 2 screws.

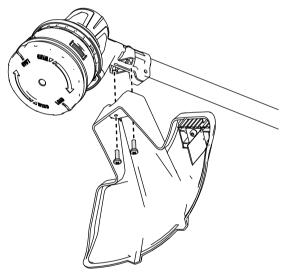
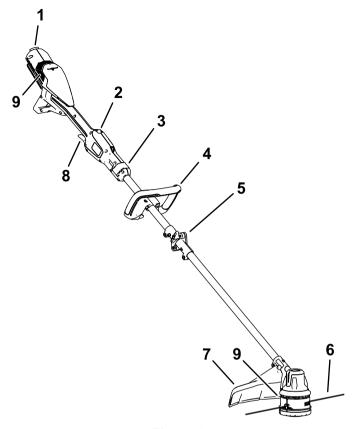


Figure 5

# **Product Overview**



g507020

#### Figure 6

- 1. Battery latch
- 2. Lockout switch
- 3. Telescoping latch
- 4. Auxiliary handle
- 5. Mid-shaft coupler

- 6. Cutting line
- 7. Guard
- 8. Run trigger
- 9. Trimmer vents

#### **Specifications**

Model	51890T	
Rated Voltage	60V DC maximum, 54 VDC nominal usage	
Charger Type	Flex-Force 60V lithium-ion chargers	
Battery Type	Flex-Force 60V lithum-ion batteries*	

If you are using this machine with a battery pack that is 8.0 Ah or greater, you must install the quick-release harness Model 139-5334 (not included).

#### **Appropriate Temperature Ranges**

Charge/store the battery pack at	5°C (41°F) to 40°C (104°F)*
Use the battery pack at	-30°C (-22°F) to 49°C (120°F)
Use the trimmer at	0°C (32°F) to 49°C (120°F)
Store the trimmer at	0°C (32°F) to 49°C (120°F)*

<sup>\*</sup>Charging time will increase if you do not charge the battery within this range.

Store the tool, battery pack, and battery charger in an enclosed clean, dry area.

#### Attachments/Accessories

A selection of Toro approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or authorized Toro distributor or go to www.Toro.com for a list of all approved attachments and accessories.

To ensure optimum performance and continued safety certification of the machine, use only genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous.

# **Operation**

#### Starting the Trimmer

- 1. Ensure that the vents on the trimmer are clear of any dust and debris.
- 2. Align the cavity in the battery pack with the tongue on the power head (Figure 7).
- 3. Push the battery pack into the power head until the battery locks into the latch (Figure 7).

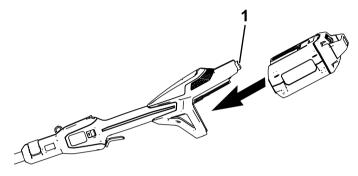


Figure 7

g507688

- 1. Battery latch
- 4. To start the trimmer, pull back the lockout switch, then squeeze the variable-speed trigger (Figure 8).

**Note:** Slide the speed range switch to change the speed of the trimmer.

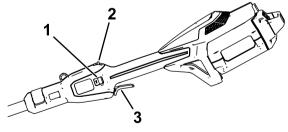


Figure 8

g507689

- 1. Speed range switch
- Lockout switch

3. Variable-speed trigger

#### **Shutting Off the Trimmer**

To shut off the trimmer, release the trigger and the lockout switch.

Whenever you are not using the trimmer or are transporting the trimmer to or from the work area, remove the battery pack.

#### **Removing the Battery Pack from the Trimmer**

Press the battery latch to release the battery pack and slide the battery pack out of the machine (Figure 9).

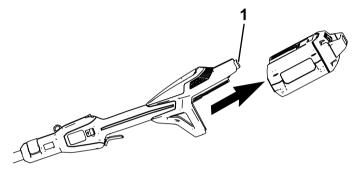


Figure 9

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1. Battery latch

#### Adjusting the Auxiliary-Handle Position

- 1. Loosen the handle-lock knob on the bottom of the auxiliary handle.
- 2. Adjust the position of the auxiliary handle on the shaft until you can hold the trimmer in a neutral, comfortable position while operating.
- 3. Tighten the handle-lock knob to secure the auxiliary handle in place.

#### **Adjusting the Shaft Length**

- 1. Open the telescoping latch at the front of the handle.
- 2. Extend or retract the shaft until you can hold the trimmer in a neutral, comfortable position while operating.
- 3. Close the telescoping latch to secure the shaft.

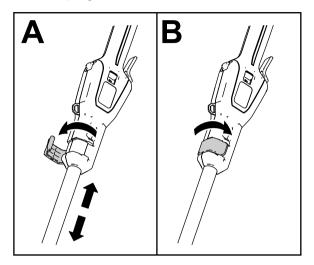


Figure 10

#### Advancing the Line Using the Bump Feed

- Run the tool at full throttle.
- 2. Tap the bump head on the ground to advance the line. The line advances each time the bump head is tapped.

*Important:* Do not hold the bump head on the ground while running the trimmer.

**Note:** The line trimming cut-off blade on the grass deflector cuts the line to the correct length.

**Note:** If the line is worn too short, you may not be able to advance the line by tapping it on the ground. If so, release both the trigger and the lockout switch and refer to Advancing the Line Manually (page 22).

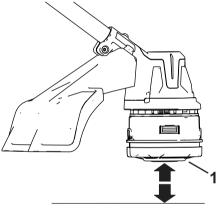


Figure 11

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1. Bump head

#### **Advancing the Line Manually**

Remove the battery pack from the trimmer, then push the bump head at the base of the spool retainer while pulling on the trimmer line to manually advance the line.

#### **Using the Shoulder Harness**

*Important:* If you are using the string trimmer with a 8.0 Ah or greater battery pack installed, install a shoulder harness (not included).

Do not use the shoulder harness if you are powering the string trimmer with the backpack and backpack tether; use only the backpack harness.

Connect the clip on the shoulder harness to the attachment eye on top of the handle (Figure 12).

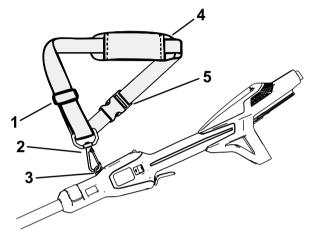


Figure 12

- Strap adjuster
- 2. Pivot clip
- 3. Attachment eye

- 4. Shoulder pad
- Quick-release buckle

The strap length is adjustable; slide the strap adjuster up to decrease the length of the strap, or down to increase the length of the strap (Figure 12).

If you ever need to rapidly remove the harness, disconnect the quick-release buckle as follows:

1. Press in on the sides of the buckle (A of Figure 13).



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2. Allow the buckle to disconnect (B of Figure 13).

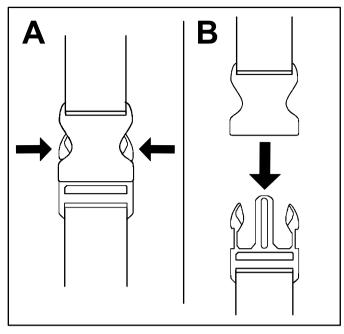
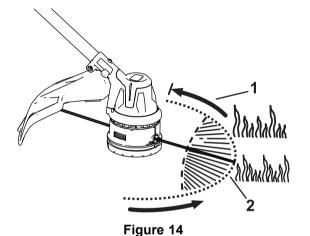


Figure 13

#### **Operating Tips**

- Keep the trimmer tilted toward the area being cut; this is the best cutting area.
- The string trimmer cuts when you move it from right to left. This prevents the trimmer from throwing debris at you.
- Use the tip of the cutting line to do the cutting; do not force the trimmer head into uncut grass.
- Wire and picket fences can cause the cutting line to wear rapidly and even break. Stone and brick walls, curbs, and wood can also cause the cutting line to wear rapidly.
- Avoid trees and shrubs. The cutting line can easily damage tree bark, wood moldings, siding, and fence posts.



g507692

1. Direction of rotation

2. Cutting line path

#### **Maintenance**

After each use of the trimmer, complete the following:

- 1. Remove the battery pack from the trimmer.
- 2. Wipe the trimmer clean with a damp cloth. Do not hose the trimmer down or submerge it in water.

#### **A** CAUTION

The line cutoff blade on the deflector is sharp and can cut you.

Do not use your hands to clean the deflector shield and blade.

- 3. Wipe or scrape clean the cutting head area any time there is an accumulation of debris.
- 4. Check and tighten all fasteners. If any part is damaged or lost, repair or replace it.
- 5. Brush debris away from air intake vents on the power head and the exhaust on the motor housing to prevent the motor from overheating.

#### Replacing the Cutting Line

Use only 2.0 mm (0.080 inch) diameter monofilament cutting line or 2.4 mm (0.095 inch) diameter twisted monofilament cutting line from Toro.

- 1. Remove the battery pack from the trimmer.
- 2. Remove any existing line on the spool by repetitively pressing the bump head while pulling the line out equally from both sides of the bump head.
- 3. Cut a piece of line that is no longer than 7.3 m (24 ft).

Important: Do not overload the spool.

*Important:* Do not use any other gauge or type of line, as this could damage the trimmer.

 Press and turn the bump head in the direction shown by the arrows (clockwise) on the bottom of the bump head until the marks on the side of the bump head align with the marks beneath the eyelets (Figure 15).



5. Insert 1 end of the line straight into the eyelet and push the line through until it comes out of the eyelet on the other side.

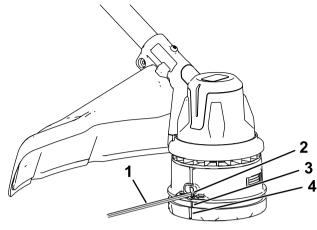


Figure 15

g507694

- 1. Cutting line
- 2. Eyelet

- 3. Eyelet alignment mark
- 4. Bump head alignment mark

#### Important: Do not disassemble the trimmer head.

- 6. Pull the line through the eyelets until there is an equal length of line on each side of the trimmer head.
- 7. Hold the string trimmer in place with one hand. With your other hand, turn the bottom of the trimmer head in the direction shown by the arrows (clockwise) on the bottom of the bump head to wind the line; leave about 152 mm (6 inches) extending beyond the eyelet on each side.

#### **Replacing the Trimmer Head**

- 1. Remove the battery pack from the trimmer.
- 2. Insert a small-diameter tool (such as a screwdriver) through the motor housing and into the groove in the fan to secure the trimmer head so it does not freely rotate (Figure 16).

**Note:** With the tool inserted in the hole, rotate the trimmer head until you feel the rod fall into the groove.

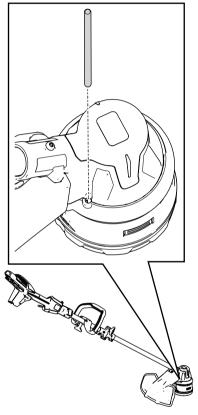


Figure 16

3. With a tool securing the trimmer head, rotate the trimmer head counterclockwise to remove it from the threaded gearcase post (Figure 17).

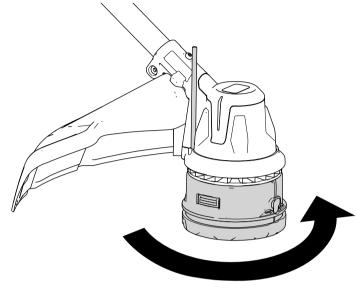


Figure 17

g516022

4. To install the new trimmer head, rotate it clockwise onto the gearcase post while securing the fan with a tool.

#### **Storage**

*Important:* Store the machine, battery pack, and charger only in temperatures that are within the appropriate range; refer to Specifications (page 18).

Important: If you are storing the machine for a year or longer, remove the battery pack from the machine and charge the battery pack until 1 or 2 LED indicators turn green on the battery. Do not store a fully charged or fully depleted battery. When you are ready to use the machine again, charge the battery pack until the left indicator light turns green on the charger or all 4 LED indicators turn green on the battery.

- Disconnect the machine from the power supply (i.e., remove the battery pack) and check for damage after use.
- Clean all foreign material from the machine.
- Do not store the machine or charger with the battery pack installed.
- When not in use, store the machine, battery pack, and battery charger out of the reach of children.
- Keep the machine, battery pack, and battery charger away from corrosive agents such as garden chemicals and de-icing salts.
- To reduce the risk of serious personal injury, do not store the battery pack outside or in vehicles.
- Store the machine, battery pack, and battery charger in an enclosed clean, dry area.
- When the machine is folded for storage, do not hang it from the electrical wire harness.

# **Troubleshooting**

Perform only the steps described in these instructions. All further inspection, maintenance, and repair work must be performed by an authorized service center or a similarly qualified specialist if you cannot solve the problem yourself.

Always remove the battery from the tool when troubleshooting, inspecting, maintaining, or cleaning the tool.

Problem	Possible Cause	Corrective Action
The tool does not run or does not run continuously.	The battery is not fully installed in the tool.	Remove and then replace the battery into the tool, making sure that it is fully installed and latched.
	The battery pack is not charged.	Remove the battery pack from the tool and charge it.
	The battery pack is over or under the appropriate temperature range.	3. Move the battery pack to a place where it is dry and the temperature is between 5°C (41°F) and 40°C (104°F).
	There is moisture on the leads of the battery pack.	Allow the battery pack to dry or wipe it dry.
	5. The battery pack is damaged.	Replace the battery pack.
	There is another electrical problem with the tool.	Contact an Authorized     Service Dealer.
The tool does not reach full power or the motor housing is getting hot.	The battery pack charge capacity is too low.	Remove the battery pack from the tool and fully charge the battery pack.
	The air vents are blocked.	2. Clean the air vents.

Problem	Possible Cause	Corrective Action
The tool is producing excessive vibration or noise.	There is debris under the grass shield or in the bump head housing on the trimmer.	Clean any debris from under the grass shield or in the bump head housing.
	The spool is not properly wound.	Advance the line using the bump head and/or remove the line on the spool and wind the spool again.
The bump head does not advance the line.	The trimmer is out of line.	Add more line to the bump head.
	The line is tangled in the bump head housing.	Remove the bump head cover and untangle the line.
	There is debris under the grass shield or in the bump head housing on the trimmer.	<ol> <li>Clean any debris from under the grass shield or in the bump head housing.</li> </ol>
The battery pack loses charge quickly.	The battery pack is over or under the appropriate temperature range.	1. Move the battery pack to a place where it is dry and the temperature is between 5°C (41°F) and 40°C (104°F).
	The trimmer is overloaded.	2. Trim at a slower pace.