INSTRUCTION SHEET
BLADE CONVERSION KIT, P/N 99944200418
BLADE CONVERSION KIT, P/N 99944200422

ECHO® Models	Serial Number Range
All SRM Models	All

⚠ WARNING

Read the operator's manual(s) and follow all warnings and safety instructions. Failure to do so can result in serious injury to the operator and/or bystanders.

⚠ WARNING

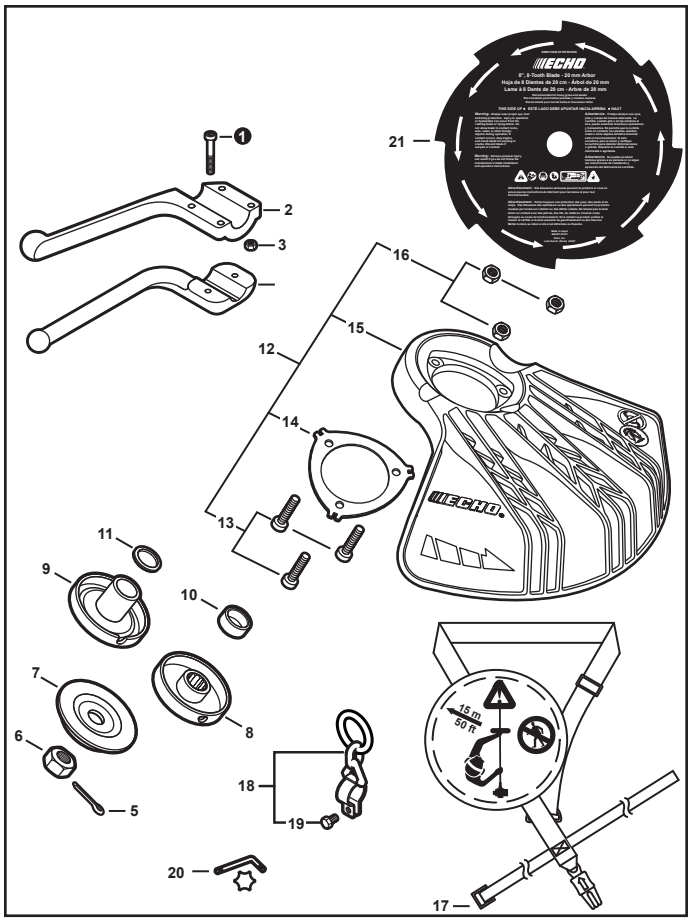
You must install a Barrier Bar or U-Handle Kit and all Blade Conversion parts shown in the following instructions before operating this unit with blades, otherwise serious injury may result.

To use these blades	Pro Maxi-Cut Grass/Weed Blade	Rigid Plastic Tri-Cut Grass/ Weed Blade	Metal Blade
You must install these parts	Support Handle, with or without Barrier Bar	U-Handle or Support Handle with Barrier Bar	U-Handle or Support Handle with Barrier Bar
	Narrow Plastic Shield with Knife	Narrow Plastic Shield with Knife	Wide Plastic Shield
	Harness	Harness	Harness
	Upper Plate and Flat Washer	Upper Plate and Glide Cup	Upper/Lower Blade Plates
	Hex Nut	Hex Nut	Hex Nut
	New Cotter Pin	New Cotter Pin	New Cotter Pin

⚠ WARNING

Do not install blades on GT (curved shaft) model trimmers.

- ***Arbor diameter of upper blade plate must match arbor diameter of blade.***
- ***New cotter pin required each time blade is installed.***
- ***Brushcutters over 7.5 kg (16.5 lbs) dry weight (without fuel) require a double shoulder harness.***
- ***The barrier bar is used to restrict rearward movement of the unit. The barrier bar is NOT A HANDLE and should not be gripped when using or carrying the unit.***

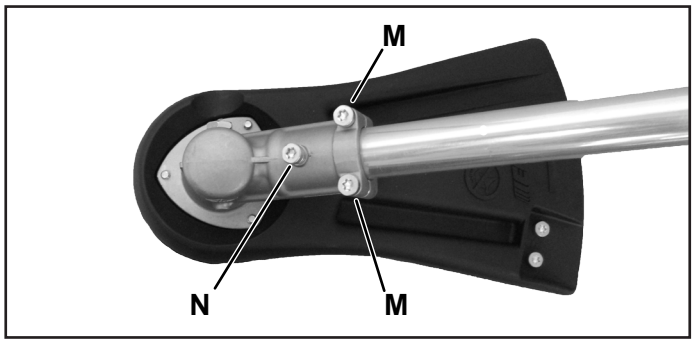


NO.	PART NUMBER	QTY.	DESCRIPTION
1	V805000060	4	BOLT, TORX 5×35
2	35164351730	1	BAR, BARRIER
3	90050000005	4	NUT M5
4	C405000170	1	BAR, BARRIER
5	90030020022	1	PIN, COTTER 2×22
6	90051100010	1	NUT 10
7	C535000150	1	PLATE, ADAPTER - LOWER
8	C535000160	1	PLATE, ADAPTER - UPPER
9	C535000330	1	PLATE, ADAPTER - UPPER
10	61031507130	1	SPACER 11.8×15×9
11	V376002000	1	SPACER
12	**P021050510**	**1**	**DEBRIS SHIELD KIT - BLADE**
13	V805000170	3	+BOLT, TORX 5×25
14	C552000240	1	+PLATE, SHIELD
15	C550000760	1	+SHIELD, DEBRIS - BLADE
16	90056250005	3	+NUT, LOCK M5
17	C062000310	1	HARNESS, SHOULDER
18	P021046740	1	HANGER SET, HARNESS
19	V805000140	1	BOLT, TORX 5×12
20	X605000060	1	WRENCH, ALLEN T27 80×30
21	69600120331	1	BLADE, 8", 8-TOOTH

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Install Harness Clamp

Note: Some models require installation of harness clamp. If your unit does not have a clamp follow these directions.



Remove the shield and gear case as an assembly:

1. Loosen two screws (M) that clamp the gear case to the shaft.
2. Remove locating screw (N) from the top of the gear case.
3. Pull the shield and gear case assembly off the drive shaft housing.

Note: Prevent the flexible drive cable from sliding out of the drive shaft housing. If the cable does slide free, clean any dirt from the cable and re-lubricate with lithium-based grease prior to reassembly.

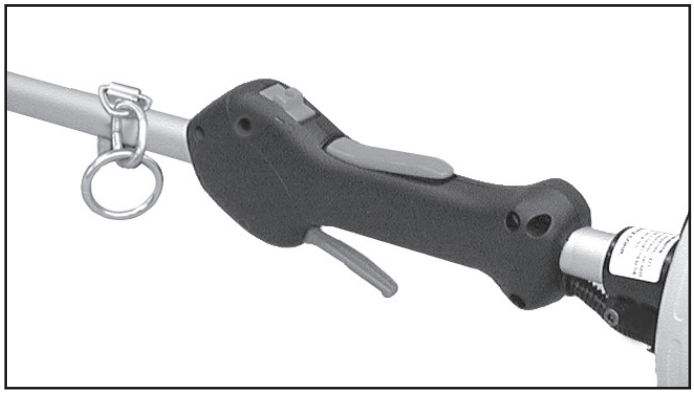


Remove the front handle:

1. Remove the screws, nuts, and back plate from the handle.
2. Remove the handle.

Install the clamp:

1. Slightly spread the clamp open and slide it on to the driveshaft. Do not tighten the clamp.

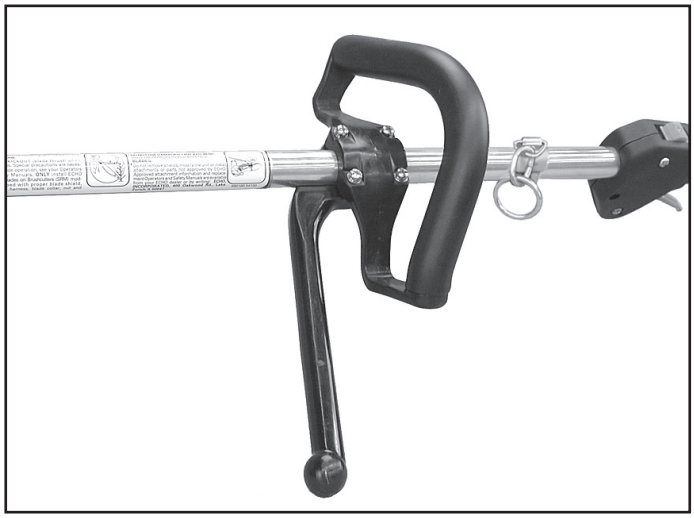


Install Handle / Barrier Bar:

Note: The barrier bar is required when using grass or weed blades. Units equipped with U-handles do not require installation of the barrier bar.

SRM's with 4-screw front handles:

1. Position the front handle on the driveshaft and install the barrier bar using four 5x35 mm screws and four new nuts included with the kit. The handle must be at least 250 mm (10 in.) from the center of the rear handle grip.
2. Adjust the handle position for comfortable operation, and tighten screws securely.



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SRM's with 2-screw front handles:

1. Position the front handle on the driveshaft and install the barrier bar using two 5 x 35 mm screws provided in the kit. The handle must be at least 250 mm (10 in.) from the center of the rear handle grip.
2. Adjust the handle position for comfortable operation, and tighten the screws securely.

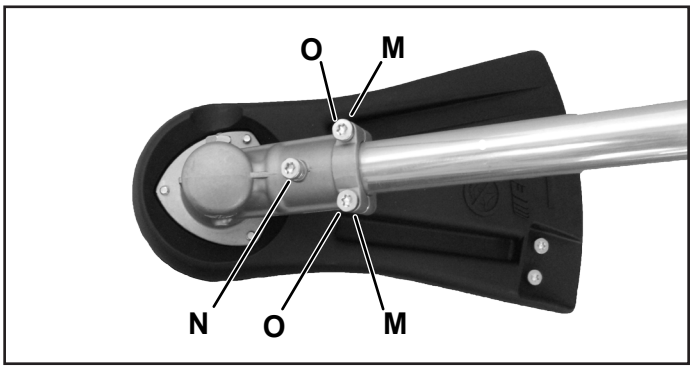
Note: The barrier bar is not a handle.



Install the Shield and Gear Case Assembly

1. Install the gear case assembly on the end of driveshaft taking care to engage the drive cable with the gear case.
2. Align the gear case on the driveshaft and install locating screw (N).
3. Tighten the two side clamping screws (M).

IMPORTANT: The flat edge of washers (O) must be against the driveshaft.



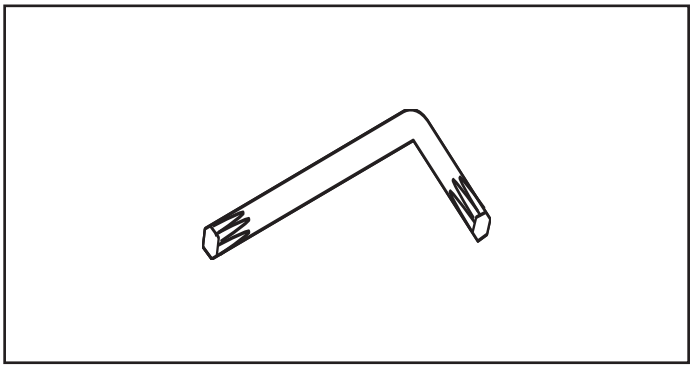
Install Plastic Blade Shield

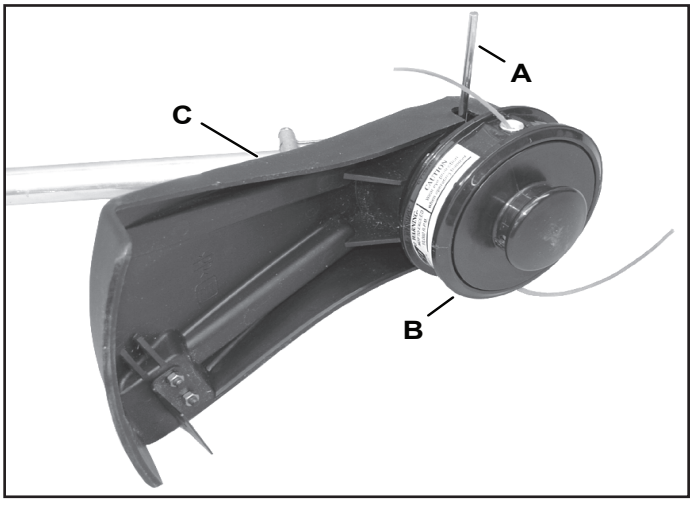
Tools Required: Torx T27 L-Wrench

Parts Required:

- 3 - 5 x 25 mm screws (plastic shield to gear case)
- 3 - 5 mm lock nuts

1. If installed remove the nylon line head, upper fixing plate, shield plate, and plastic shield.
2. Align the locking hole in the upper plate with the notch in the edge of the gear housing and insert head locking tool (A).
3. Remove line head (B) by turning it clockwise until the head is completely off the driveshaft.
4. Remove the locking tool.
5. Remove the three screws holding the shield plate and plastic shield (C) to the gear case.
6. Retain all parts for conversion back to nylon line head operation.





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7. Align plastic blade shield (C) with the driveshaft, and install on the bottom of the gear case flange.
8. Place shield plate (D) on shield and align holes. Install three screws (E) and three lock nuts (F).
9. Tighten all fasteners

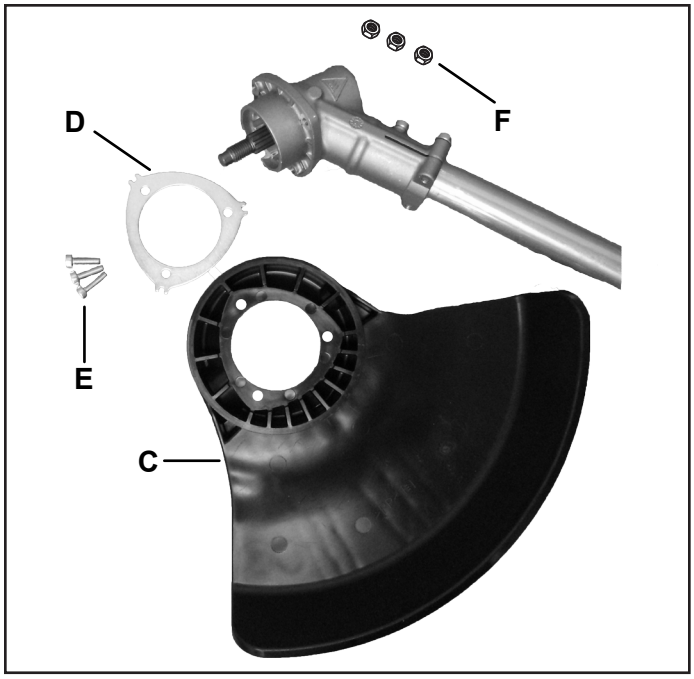
Install Optional Blade

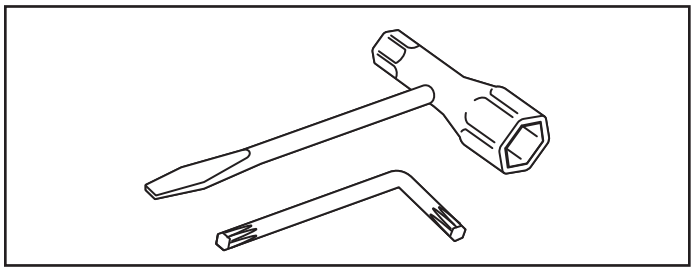
Kit 99944200418 - Blade not included
Kit 99944200422 - Blade included

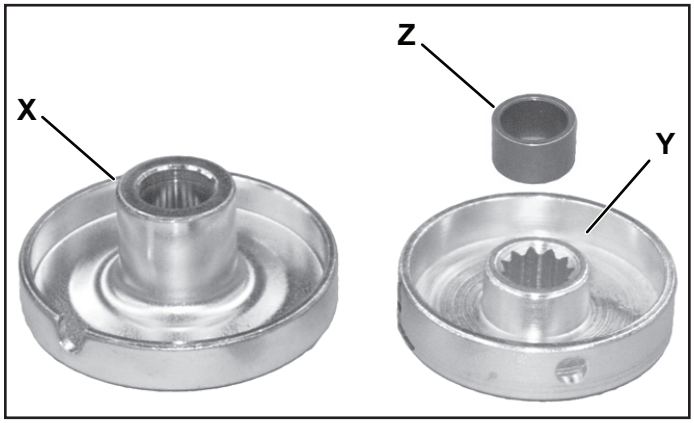
Tools Required: Torx T27 L-Wrench, T-Wrench
Parts Required: Upper Fixing Plate with 20 mm pilot, Lower Plate, 10 mm Nut, Split Pin, Blade.

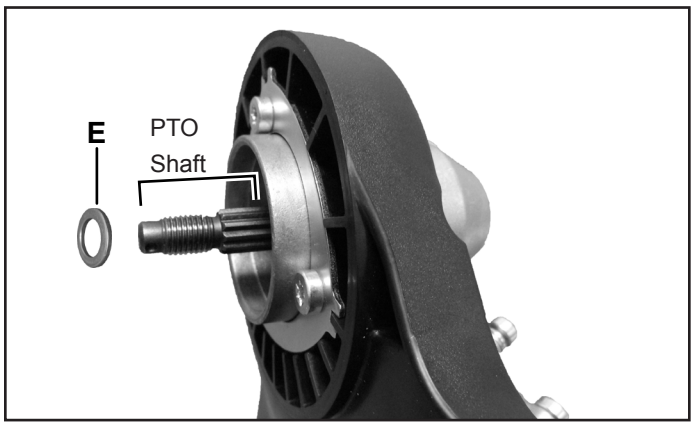
IMPORTANT: This kit can be mounted on several different style gear cases. A long-necked upper fixing plate (X), a short-necked upper fixing plate (Y), and a 10 mm shaft collar (Z) are included in the kit and may be required to properly mount the blade. Failure to install the correct upper fixing plate configuration will cause the gear case to bind. Refer to the assembly instructions below to identify upper fixing plate assembly.

1. Check the type of the gear case assembly on the unit:
   - Measure the PTO shaft.
   - If the shaft is 32 mm, proceed to Step 2.
   - If the shaft is 42 mm, proceed to Step 3.
   - If the shaft is 35 mm, proceed to Step 4.
2. Install short-necked upper fixing plate (Y) onto the PTO shaft.
3. Install shaft collar (Z) then short-necked upper fixing plate (Y) onto the PTO shaft.
4. Install small spacer (S) then long-necked upper fixing plate (X) onto the PTO shaft.









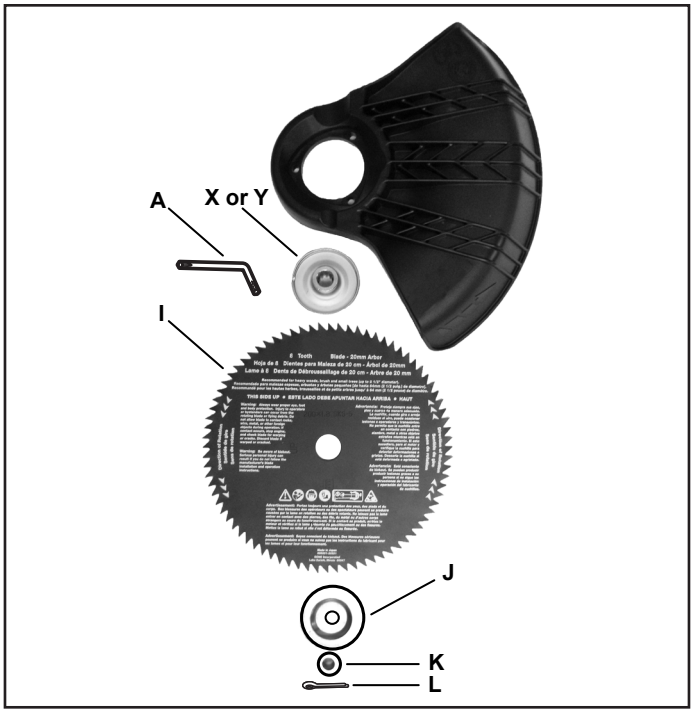
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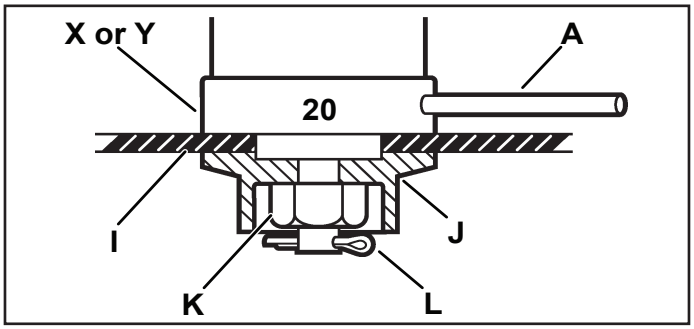
5. Install blade (I) on upper plate pilot. Blades must be installed so the rotation arrow on the blade faces the gear case. Secure the blade with lower fixing plate (J) and 10 mm nut (K). Turn nut counterclockwise on PTO shaft to tighten.
6. Align the hole in the upper plate with the notch in the gear case. Insert locking tool (A) to prevent the splined shaft from turning. The arrow on gear case points to the notch. Tighten the 10 mm nut securely.
7. Insert split pin (L) in hole in PTO shaft, and bend pin legs around shaft counterclockwise to retain the 10 mm nut.

IMPORTANT: Never reuse a split pin. Install a new split pin each time a blade is installed or replaced.

8. Remove the locking tool.

Your ECHO trimmer is now set up to for safe blade application. Always save your original equipment shield, upper plate adapter, fasteners, and trimmer head for re-installation for trimmer line cutting application. Do not use a trimmer line head with blade shield and adapter, otherwise the trimmer head line will rapidly damage the shield. When converting back to trimmer line application always remove and retain blade shield, fasteners, upper, and lower adapter plates, and spacers from the gear case.

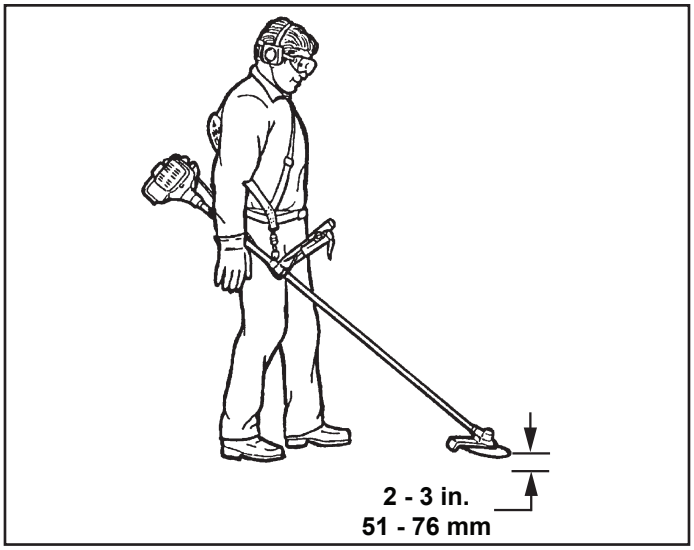


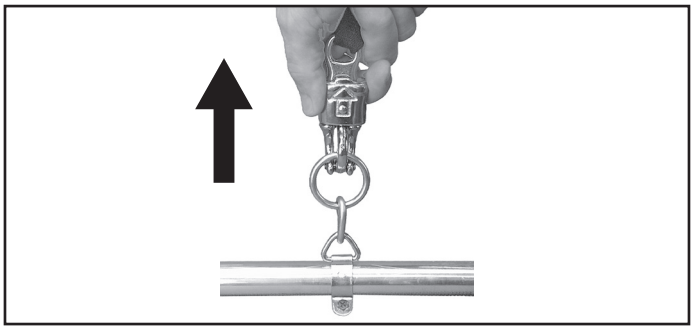


Balance the Unit

1. Put on harness and attach unit to harness.
2. Slide the harness clamp up and down until the unit balances with the head approximately 2 - 3 in. (51 - 76 mm) from the ground.
3. Tighten the clamp screw.

Note: In case of emergency, the trimmer/brushcutter can be released from the harness by pulling up on the quick-release collar.





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Operation with Blades

Description of Symbols

Symbol	Description
	Warning, See Operator's Manual
	Wear Eye, Ear, and Head Protection
	Wear Hand and Foot Protection
	Keep feet away from blade
	Thrown Objects
	Direction of Blades
	DO NOT USE LINE HEADS - blades only.
	DO NOT USE BLADES - line heads only
	AVOID KICKOUT Keep Bystanders at Least 15 m (50 ft.) Away Beware Thrown Objects Wear Eye Protection
	Keep Bystanders and Helpers Away 15 m (50 ft.)

Note: Not all symbols will appear on your unit.

⚠ WARNING

Metal blades are very sharp and can cause severe injuries, even if unit is off and blades are not moving. Avoid contact with blades. Wear gloves to protect hands.

⚠ WARNING

Blade use demands specific brushcutter configuration. Operation without specified shield, barrier bar or U-handle, and harness can result in serious personal injury. Follow installation instructions.

⚠ WARNING

Do Not install blades on GT (Curved Shaft) model trimmers.

- ***Use only ECHO approved parts. Failure to use the correct parts can cause the blade to fly off. Serious injury to the operator and/or bystanders can occur.***
- ***Arbor diameter of upper blade plate must match arbor diameter of blades.***
- ***For barrier bar or U-handle, follow instructions supplied with either blade conversion kit or U-handle kit, and verify blade is secured properly.***
- ***A new cotter pin is required each time a blade is installed.***
- ***Shoulder harnesses may be used on all trimmers and brushcutters to reduce operator fatigue. Brushcutters over 7.5 kg (16.5 lbs.) dry weight (without fuel) and U-handle brushcutters require a double shoulder harness.***

Note: The barrier bar is used to restrict rearward movement of the unit. The barrier bar is not a handle and should not be gripped when using or carrying the unit.

Operating Techniques - Metal or Plastic Blade

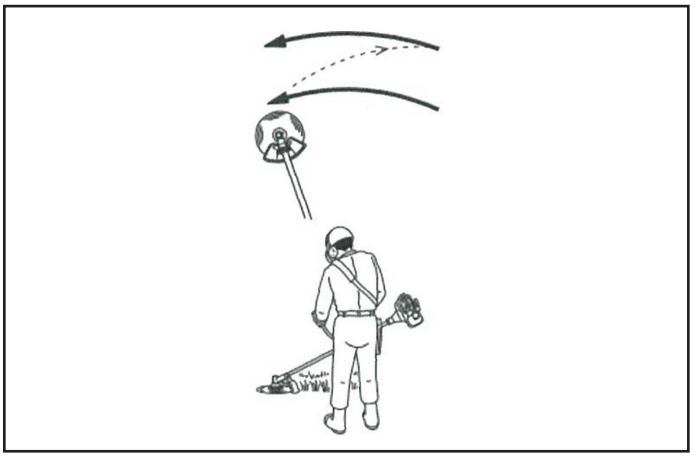
Brushcutter blades may be used to cut and trim a wide variety of materials. Refer to the blade selection section for determining the correct blade for the application.

Scything (3, 8, and 80 tooth weed/grass, and brush blades):

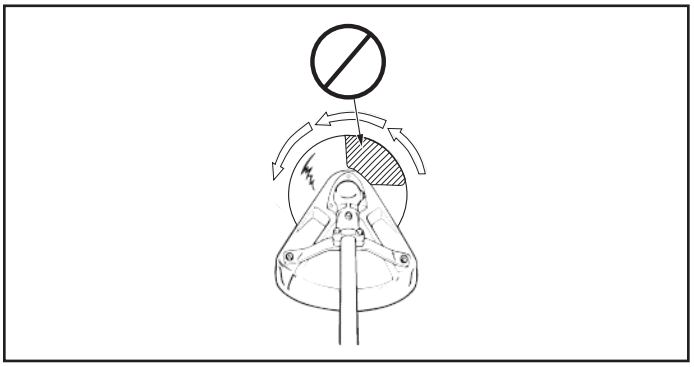
- To cut large sections of field grass and weeds swing the cutting head in a level arc, gradually feeding the blade into the material being cut. Adjust throttle speed according to your work.
- Do not swing the main pipe with arms. Turn hips to swing the blade horizontally from right to left, and cut weeds on the left side of the blade.

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- Do not scythe back and forth as the grass may scatter and kickback may occur easily.



- Tilt blade left by 5 to 10 degrees so that cut grasses will push left, making progress easier.
- Move forward with each arc to cut a swath.
- Width of cutting swath depends on arc. Use a larger arc for a wider swath, or a smaller arc for a narrow swath. Suggested cutting width is about 1.5 m (4.9 ft).
- When scything large brush up to 12.7 mm (0.5 in.) diameter from right to left, avoid cutting with highlighted section.



Reaction Forces

⚠ WARNING

- ***The cutting attachment will continue to rotate even after the throttle is released, maintain control of the unit until it has come to a complete stop.***
- ***Blade thrust may occur when the spinning blade contacts an object that it does not immediately cut. Following proper cutting techniques will prevent blade thrust.***
- ***Blade thrust can be violent enough to cause the unit and/or operator to be propelled in any direction, and possibly lose control of the unit.***
- ***Blade thrust can occur without warning if the blade snags, stalls or binds.***
- ***Blade thrust is more likely to occur in areas where it is difficult to see the material being cut.***

Push or Pull - Kickout

During normal use, operating a brushcutter with a circular metal blade can produce sudden strong reaction forces that are difficult to control. Strong reaction forces can cause a loss of balance or loss of control of the equipment, resulting in serious injury to operator and bystanders

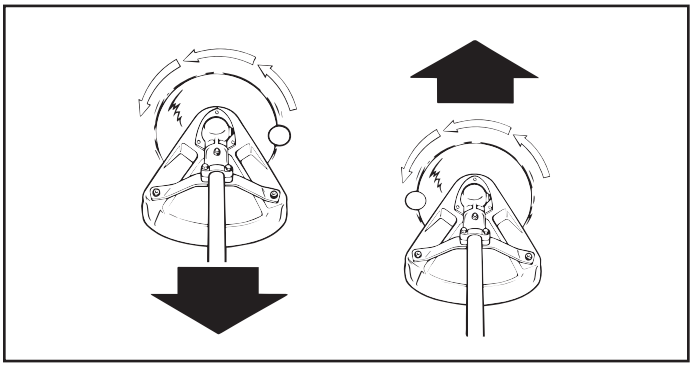
Understanding what causes these reactive forces may help you to avoid them, and can help you to maintain control of the equipment if you experience a sudden reaction during cutting. Reactive forces occur when the force being applied by the cutting teeth of a blade meet resistance, and some of the cutting force is directed back toward the equipment. The greater the cutting force or the amount of resistance, the greater the reactive force.

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Push and Pull Forces

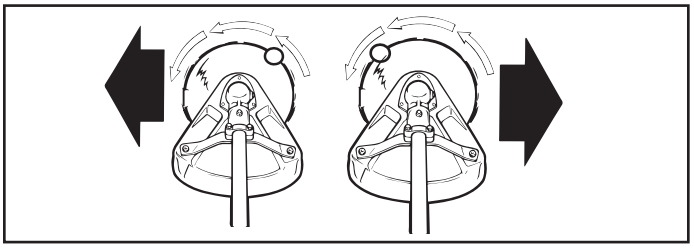
Push and pull forces are reactive forces that push the equipment directly toward the operator, or that pull the equipment directly away from the operator. These forces are the result of cutting on the sides of the blade. The direction of the force depends on the side of the blade being used, and the direction of blade rotation at the point of contact. The reactive force is in the opposite direction of blade rotation at the contact point, regardless of where the contact is being made. These types of reactive forces are also called “Blade Thrust.”

As shown in the illustration, a blade turning counterclockwise will cause the equipment to pull away from the operator if the point of cutting resistance is on the left side of the blade. If the point of cutting resistance is on the right side of the blade, the equipment will push back toward the operator. In both examples, the reactive force is in the opposite direction of blade rotation at the contact point where resistance occurs.



Kickout

Kickout is also a reactive force caused by resistance to cutting, but the direction of blade thrust is lateral (to the left or right of the blade), instead of forward or back toward the operator.

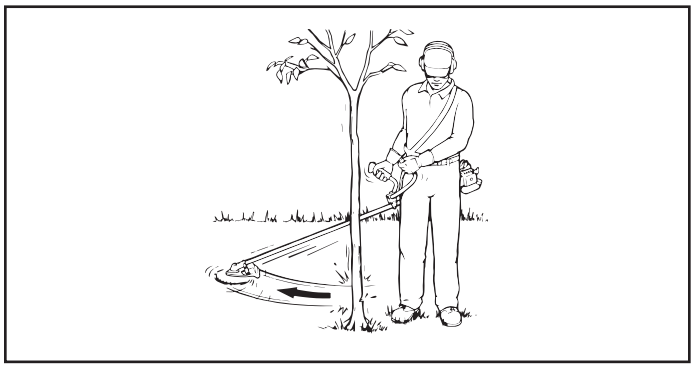


In most cases, Push, Pull, and Kickout can be reduced or eliminated by:

- Using the correct blade for the cutting job.
- Using properly sharpened blades.
- Applying consistent, even force to the blade during the cut.
- Avoiding obstacles and ground hazards.
- Using extra care when cutting harder materials such as extremely dry brush, saplings, and small trees.
- Cutting from a stable, secure position.

Blade Cutting Problems

Binding - Blades may bind in the cut if dull or forced. Binding can damage blade, and result in blade breakage or injury from fragments and flying debris. If a blade binds in a cut, don’t try to get it out by applying “up and down” force to pry the cut open. Applying prying force to the blade can bend the blade, and result in blade failure and injury.



To free a blade that is bound in the cut, stop the unit, and support the trimmer or brushcutter to keep stress off the blade. Push the tree away from the entry point of the cut to open the cut, and pull the blade directly away from the cut in a straight-line motion. Use caution when releasing the tree to avoid being struck by spring-back or falling.

Inspect the blade for damage before proceeding. Sharpen teeth if dull, or replace blade if cracked, bent, missing teeth, or otherwise damaged.

To prevent binding:

- Keep blades sharp
- Avoid excessive pressure during cuts
- Don’t exceed cutting capacity of blade
- Don’t use blades with damaged or missing cutting teeth
- Don’t rock blades in cut

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Blade Selection

Please note if using a blade conversion kit you MUST use a 20 mm blade. All blade conversion kits have 20 mm arbors. Blade conversion kit is required for metal blades.

NOTICE

Not all blades are compatible with all trimmers. 8 in. blades are not to be used with a SRM-3020/T/U and SRM-410X/U. Visit www.echo-usa.com to find compatible blades.

⚠ WARNING

The type of blade used MUST be matched to the type and size of material cut. An improper or dull blade can cause serious personal injury. Blades MUST be sharp. Dull blades increase the chance of kick-out and injury to yourself and bystanders. Never use an edging blade, circular saw blade, or any other type of unapproved blade.

3-Tooth Grass/Weed Blades may be used wherever the nylon line head is used. DO NOT use this blade for heavy weeds or brush.

8-Tooth Weed/Grass Blade is designed for grass, garden debris and thick weeds up to 19 mm (0.75 in.) diameter. DO NOT use this blade for brush or heavy woody growth.

80-Tooth Brush Blade is designed for cutting brush and woody growth up to 13 mm (0.5 in.) diameter.

22-Tooth Clearing Blade is designed for dense thickets and saplings up to 64 mm (2.5 in.) diameter.

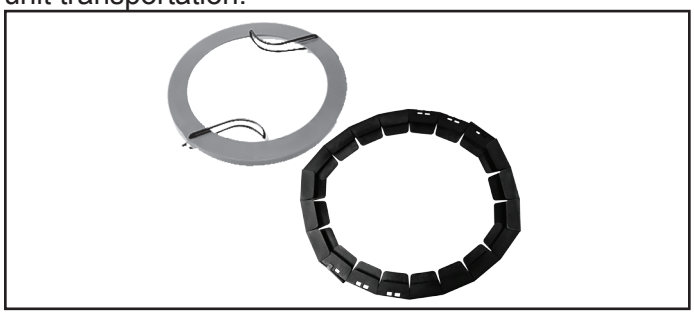
⚠ WARNING

A trimmer/brushcutter with a metal blade can cause serious injuries if handled improperly.

Always use extreme care when carrying or handling the equipment to avoid contact with the cutting edges of the blade. Use the optional blade cover when unit is not in use.

Keep blades in protective packaging until ready to install. Store blades safely after removal to prevent injury from accidental contact.

Use blade protectors to protect blade teeth during unit transportation.



Use Shoulder/Waist Harness

Use of the shoulder/waist harness is recommended for all trimmer/brushcutter use, not just blade operation. The shoulder/waist harness when used in a trimming operation with nylon line head suspends the trimmer from the operator's shoulder and reduces operator fatigue.



During blade operation, the same fatigue reduction is achieved. Safety to the operator is also enhanced by reducing the possibility of blade contact with the operator's hands and feet by restricting trimmer movement. Make sure the warning sign on the back of the shoulder harness can be read easily.

NOTE: In case of emergency, disconnect the trimmer/brushcutter from the harness.

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