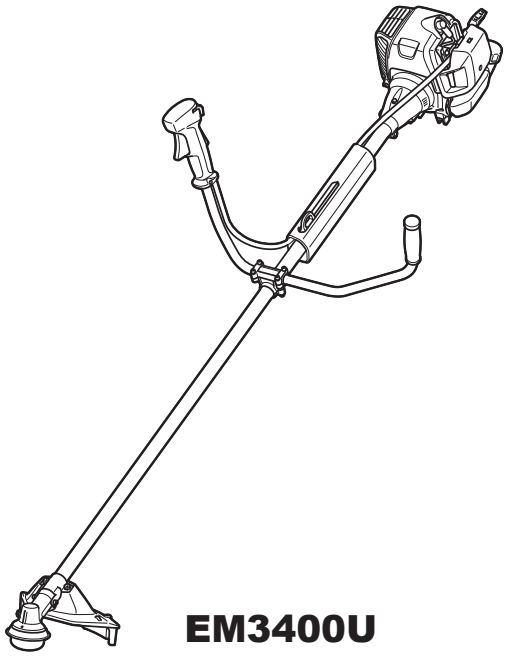
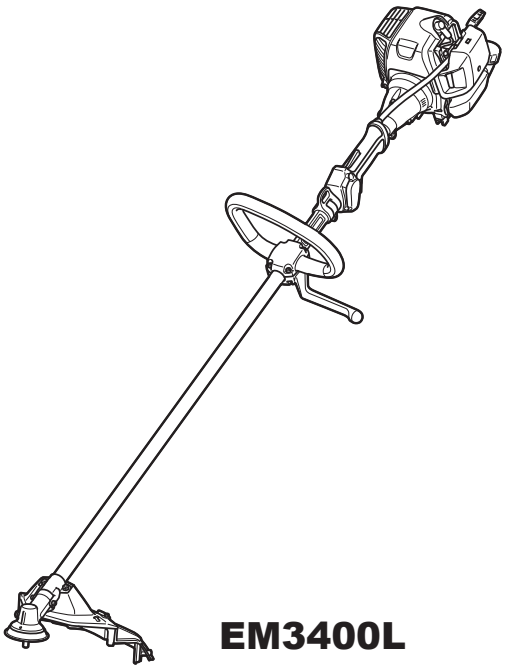
Petrol Brushcutter

EM3400U
EM3400L

INSTRUCTION MANUAL



EM3400U



EM3400L

Important:
Read this instruction manual carefully before putting the Petrol Brushcutter into operation and strictly observe the safety regulations!
Preserve instruction manual carefully!

English

(Original instructions)

Thank you very much for purchasing the MAKITA Outdoor Power Equipment. We are pleased to recommend to you the MAKITA product which is the result of a long development program and many years of knowledge and experience. Please read this booklet which refers in detail to the various points that will demonstrate its outstanding performance. This will assist you to obtain the best possible result from your MAKITA product.

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SYMBOLS

You will note the following symbols when reading the instructions manual.

Read instruction manual and follow the warnings and safety precautions!

Take particular care and attention!

Forbidden!

Keep distance!

Flying object hazard!

Kickback!

No smoking!

No open flame!

Protective gloves must be worn!

Wear sturdy boots with nonslip soles.
Steeltoed safety boots are recommended!

Keep the area of operation clear of all persons and pets!

Wear protective helmet, eye and ear protection!

Top permissible tool speed

Fuel and oil mixture

Engine-manual start

Emergency stop

First Aid

ON/START

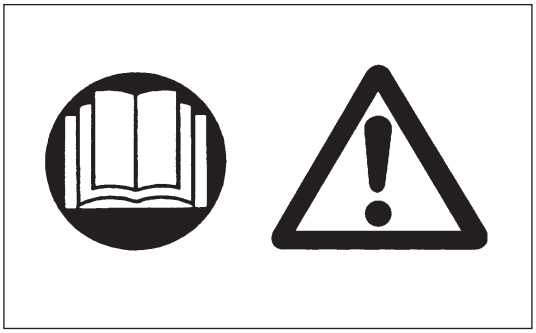
OFF/STOP

THROTTLE LOCK POSITION

SAFETY INSTRUCTIONS

General Instructions

– Read this instruction manual to become familiar with handling of the equipment. Users insufficiently informed will risk danger to themselves as well as others due to improper handling.
– It is recommended only to lend the equipment to people who have proven to be experienced.
Always hand over the instruction manual.
– First users should ask the dealer for basic instructions to familiarize oneself with the handling of brushcutters.
– Children and young persons aged under 18 years must not be allowed to operate this equipment. Persons over the age of 16 years may however use the device for the purpose of being trained while under supervision of a qualified trainer.
– Use with the utmost care and attention.
– Operate only if you are in good physical condition. Perform all work calmly and carefully. The user has to accept liability for others.
– Never use this equipment after consumption of alcohol or drugs, or if feeling tired or ill.
– National regulation can restrict the use of the machine.

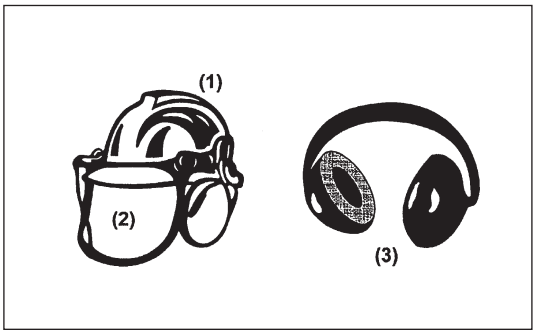


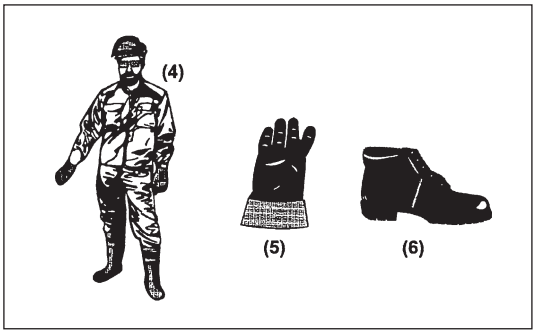
Intended use of the machine

– This equipment is only intended for cutting grass, weeds, bushes, undergrowth. It should not be used for any other purpose such as edging or hedge cutting as this may cause injury.

Personal protective equipment

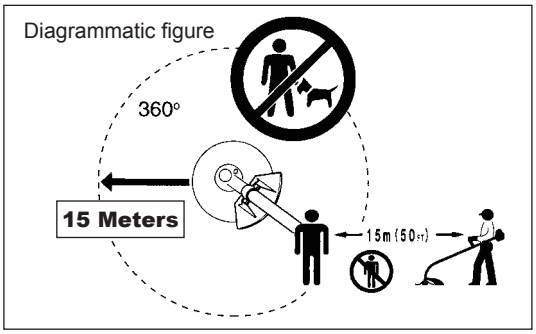
– The clothing worn should be functional and appropriate, i.e. it should be tight-fitting but not cause hindrance. Do not wear either jewelry or clothing which could become entangled with bushes or shrubs.
– In order to avoid either head-, eye-, hand-or foot injuries as well as to protect your hearing the following protective equipment and protective clothing must be used during operation.
– Always wear a helmet where there is a risk of falling objects. The protective helmet (1) is to be checked at regular intervals for damage and is to be replaced at the latest after 5 years. Use only approved protective helmets.
– The visor (2) of the helmet (or alternatively goggles) protects the face from flying debris and stones. During operation always wear goggles, or a visor to prevent eye injuries.
– Wear adequate noise protection equipment to avoid hearing impairment (ear muffs (3), ear plugs etc.).
– The work overalls (4) protect against flying stones and debris.
We strongly recommend that the user wears work overalls.
– Gloves (5) are part of the prescribed equipment and must always be worn during operation.
– When using the equipment, always wear sturdy shoes (6) with a non-slip sole. This protects against injuries and ensures a good footing.





Starting up the brushcutter

– Make sure that there are no children or other people within a working range of 15 meters (50 ft), also pay attention to any animals in the working vicinity.
– Before use always check the equipment is safe for operation:
Check the security of the cutting tool, the throttle lever for easy action and check for proper functioning of the throttle lever lock.
– Rotation of the cutting tool during idling speed is not allowed. Check with your dealer for adjustment if in doubt. Check for clean and dry handles and test the function of the start/stop switch.

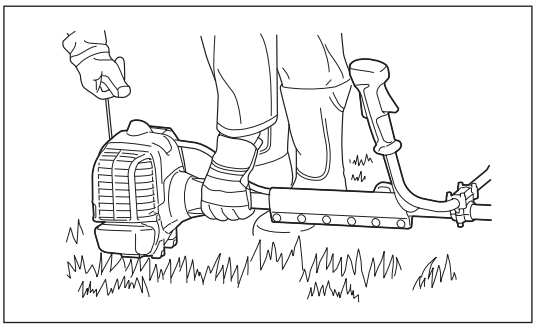


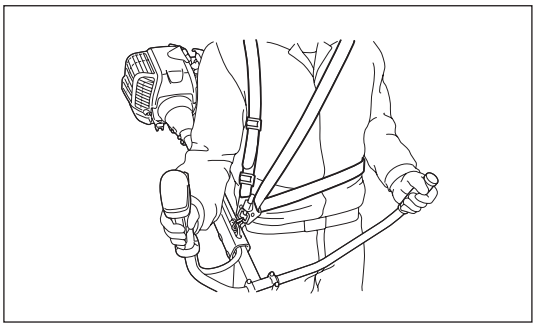
Start the brushcutter only in accordance with the instructions.

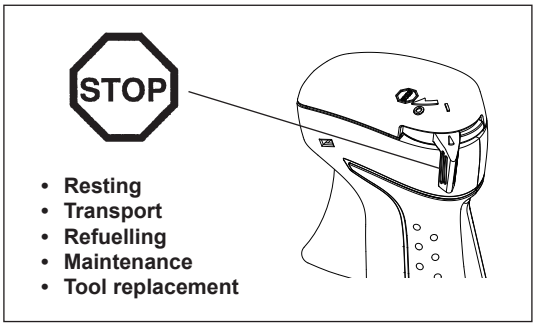
– Do not use any other methods for starting the engine!
– Use the brushcutter and the tools only for such applications as specified.
– Only start the engine, after the entire assembly is done. Operation of the device is only permitted after all the appropriate accessories are attached!
– Before starting make sure that the cutting tool has no contact with hard objects such as branches, stones etc. as the cutting tool will revolve when starting.
– The engine is to be switched off immediately in case of any engine problems.
– Should the cutting tool hit stones or other hard objects, immediately switch off the engine and inspect the cutting tool.
– Inspect the cutting tool at short regular intervals for damage (detection of hairline cracks by means of tapping-noise test).
– If the equipment gets heavy impact or fall, check the condition before continuing work. Check the fuel system for fuel leakage and the controls and safety devices for malfunction. If there is any damage or doubt, ask our authorized service center for the inspection and repair.
– Operate the equipment only with the shoulder harness attached which is to be suitably adjusted before putting the brushcutter into operation. It is essential to adjust the shoulder harness according to the user size to prevent fatigue occurring during use. Never hold the cutter with one hand during use.
– During operation always hold the brushcutter with both hands.
Always ensure a safe footing.
– Operate the equipment in such a manner as to avoid inhalation of the exhaust gases. Never run the engine in enclosed rooms (risk of gas poisoning). Carbon monoxide is an odorless gas.
– Switch off the engine when resting and when leaving the equipment unattended, and place it in a safe location to prevent danger to others or damage to the machine.
– Never put the hot brushcutter onto dry grass or onto any combustible materials.
– Always install the approved cutting tool guard onto the equipment before starting the engine.
Otherwise contact with the cutting tool may cause serious injury.
– All protective installations and guards supplied with the machine must be used during operation.
– Never operate the engine with faulty exhaust muffler.
– Shut off the engine during transport.
– When transporting the equipment, always attach the cover to the metal blade.
– Ensure safe position of the equipment during car transportation to avoid fuel leakage.
– When transporting, ensure that the fuel tank is completely empty.
– When unloading the equipment from the truck, never drop the Engine to the ground or this may severely damage the fuel tank.
– Except in case of emergency, never drop or cast the equipment to the ground or this may severely damage the equipment.
– Remember to lift the entire equipment from the ground when moving the equipment. Dragging the fuel tank is highly dangerous and will cause damage and leakage of fuel, possibly causing fire.
– Avoid contacting to the exhaust muffler. It becomes very hot during operation.
– Do not operate the engine in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Engine creates sparks which may ignite the dust or fumes.

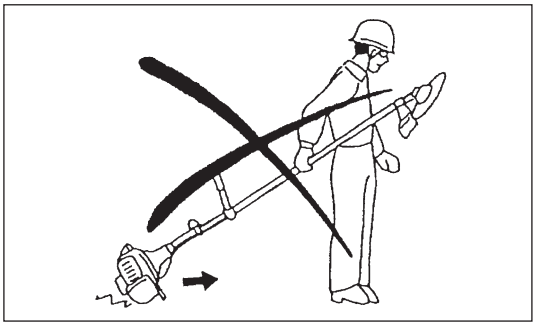
Refuelling

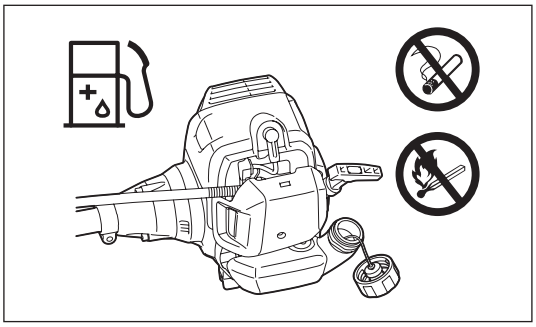
– Shut off the engine during refuelling, keep away from open flames and do not smoke.
– Avoid skin contact with mineral oil products. Do not inhale fuel vapor. Always wear protective gloves during refuelling. Change and clean protective clothing at regular intervals.
– Take care not to spill either fuel or oil in order to prevent soil contamination (environmental protection). Clean the brushcutter immediately after fuel has been spilt.
– Avoid any fuel contact with your clothing. Change your clothing instantly if fuel has been spilt on it (to prevent clothing catching fire).
– Inspect the fuel cap at regular intervals making sure that it can be securely fastened and does not leak.
– Carefully tighten the fuel tank cap. Change location to start the engine (at least 3 meters away from the place of refuelling).
– Never refuel in closed rooms. Fuel vapors accumulate at ground lever (risk of explosions).
– Only transport and store fuel in approved containers. Make sure the fuel stored is not accessible to children.

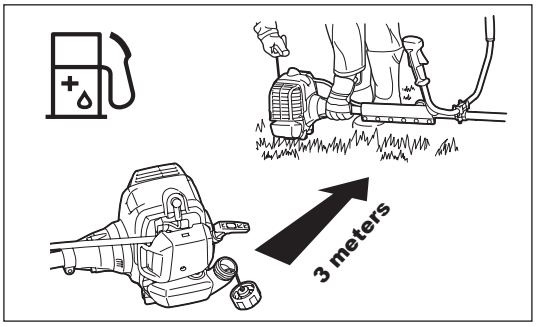












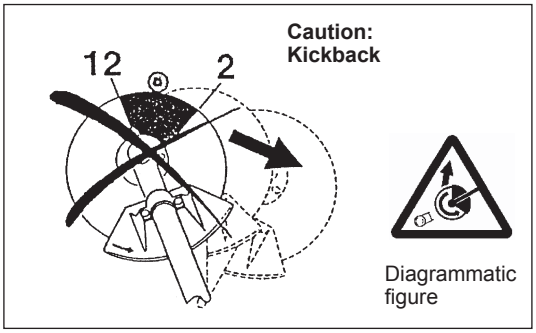
Method of operation

– Only use in good light and visibility. During the winter season beware of slippery or wet areas, ice and snow (risk of slipping). Always ensure a safe footing.
– Never cut above waist height.
– Never stand on a ladder.
– Never climb up into trees to perform cutting operation.
– Never work on unstable surfaces.
– Remove sand, stones, nails etc. found within the working range.
Foreign particles may damage the cutting tool and can cause dangerous kick-backs.
– Before commencing cutting, the cutting tool must have reached full working speed.
– When using metal blades, swing the tool evenly in half-circle from right to left, like using a scythe.
If grass or branches get caught between the cutting tool and guard, always stop the engine before cleaning. Otherwise unintentional blade rotation may cause serious injury.
– Take a rest to prevent loss of control caused by fatigue. We recommend to take a 10 to 20-minute rest every hour.

Cutting Tools

– Use an applicable cutting tool for the job in hand.
Nylon cutting heads (string trimmer heads) are suitable for trimming lawn grass.
Metal blades are suitable for cutting weeds, high grasses, bushes, shrubs, underwood, thicket, and the like.
Never use other blades including metal multi-piece pivoting chains and flail blades. Otherwise serious injury may result.
– When using metal blades, avoid “kickback” and always prepare for an accidental kickback. See the section “Kickback.”

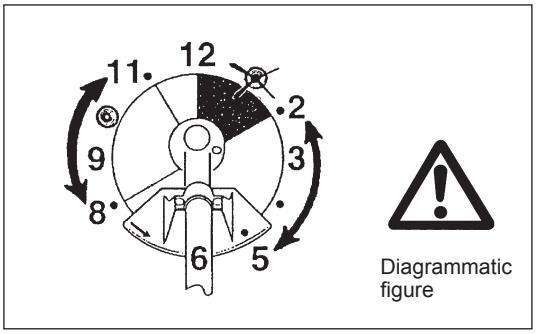
Kickback (blade thrust)



Diagrammatic figure

– Kickback (blade thrust) is a sudden reaction to a caught or bound metal blade. Once it occurs, the equipment is thrown sideway or toward the operator at great force and it may cause serious injury.
– Kickback occurs particularly when applying the blade segment between 12 and 2 o’clock to solids, bushes and trees with 3 cm or larger diameter.
– To avoid kickback:
  • Apply the segment between 8 and 11 o’clock;
  • Never apply the segment between 12 and 2 o’clock;
  • Never apply the segment between 11 and 12 o’clock and between 2 and 5 o’clock, unless the operator is well trained and experienced and does it at his/her own risk;
  • Never use metal blades close to solids, such as fences, walls, tree trunks and stones;
  • Never use metal blades vertically, for such operations as edging and trimming hedges.

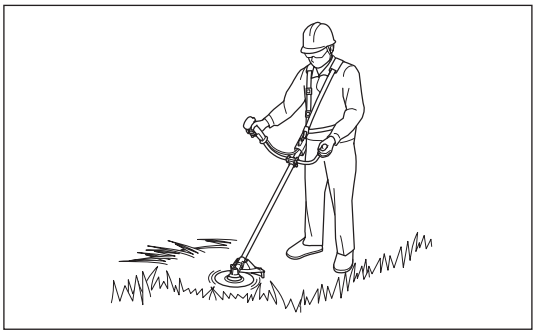
Vibration



Diagrammatic figure

– People with poor circulation who are exposed to excessive vibration may experience injury to blood vessels or the nervous system. Vibration may cause the following symptoms to occur in the fingers, hands or wrists: “Falling asleep” (numbness), tingling, pain, stabbing sensation, alteration of skin color or of the skin. If any of these symptoms occur, see a physician!
– To reduce the risk of “white finger disease”, keep your hands warm during operation and well maintain the equipment and accessories.

Maintenance instructions



– Have your equipment serviced by our authorized service center, always using only genuine replacement parts. Incorrect repair and poor maintenance can shorten the life of the equipment and increase the risk of accidents.
– The condition of the cutter, in particular of the cutting tool of the protective devices and also of the shoulder harness must be checked before commencing work. Particular attention is to be paid to the metal blades which must be correctly sharpened.
– Turn off the engine and remove spark plug connector when replacing or sharpening cutting tools, and also when cleaning the cutter or cutting tool.

Never straighten or weld damaged cutting tools.

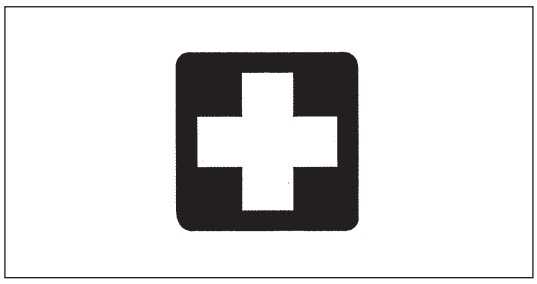
- Pay attention to the environment. Avoid unnecessary throttle operation for less pollution and noise emissions. Adjust the carburetor correctly.
- Clean the equipment at regular intervals and check that all screws and nuts are well tightened.
- Never service or store the equipment in the vicinity of naked flames.
- Always store the equipment in locked rooms and with an emptied fuel tank.
- When cleaning, servicing and storing the equipment, always attach the cover to the metal blade.

Observe the relevant accident prevention instructions issued by the relevant trade associations and by the insurance companies.
Do not perform any modifications to the equipment as this will endanger your safety.

The performance of maintenance or repair work by the user is limited to those activities as described in the instruction manual. All other work is to be done by an Authorized Service Agent. Use only genuine spare parts and accessories released and supplied by MAKITA.
Use of non-approved accessories and tools means increased risk of accidents.
MAKITA will not accept any liability for accidents or damage caused by the use of non-approved cutting tools and fixing devices of cutting tools, or accessories.

First Aid

In case of accident make sure that a first-aid box is available in the vicinity of the cutting operations. Immediately replace any item taken from the first aid box.



When asking for help, please give the following information:

- Place of accident
- What happened
- Number of injured persons
- Kind of injuries
- Your name

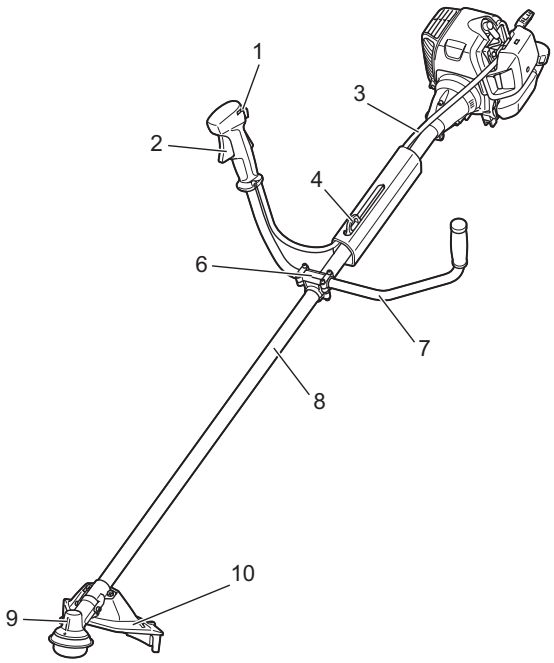
TECHNICAL DATA

Model		EM3400U	EM3400L
Handle type		Bike handle	Loop handle
Dimensions: length x width x height (without cutting tool)	mm	1,815 x 650 x 435	1,815 x 330 x 270
Weight (without cutting tool guard and cutting tool)	kg	6.4	6.2
Volume (fuel tank)	L	0.75	
Engine displacement	cm^3	34.0	
Maximum engine performance	kW	1.15 at 7,000 min^{-1}	
Engine speed at recommended max. spindle speed	min^{-1}	10,000	
Maximum spindle speed (corresponding)	min^{-1}	6,800	
Idling speed	min^{-1}	2,800	
Clutch engagement speed	min^{-1}	4,100	
Carburetor	type	WALBLO WYJ	
Spark plug	type	NGK BPMR7A	
Electrode gap	mm	0.6 - 0.7	
Mixture ratio (Fuel: MAKITA 2-stroke oil)		50 : 1	
Cutting tools (cutter blade dia.)	mm	255 (with 4-tooth blade), 255 (with 3-tooth blade), 305 (with 2-tooth blade)	
Gear ratio		13/19	

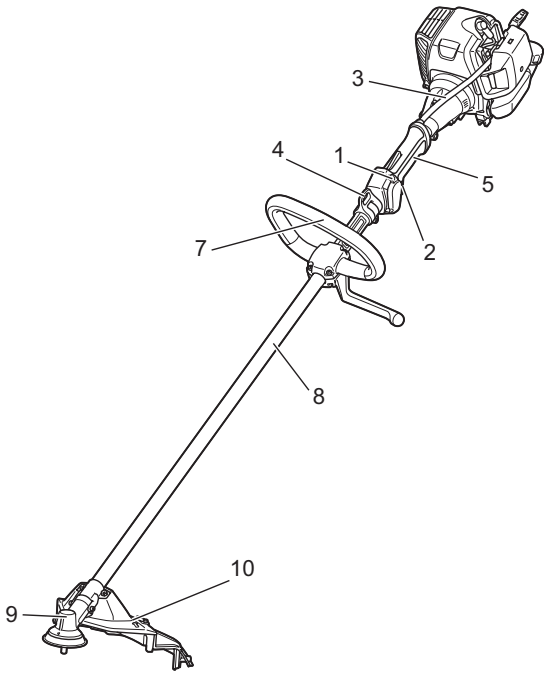
- Due to our continuing program of research and development, the specifications herein are subject to change without notice.
- Specifications may differ from country to country.

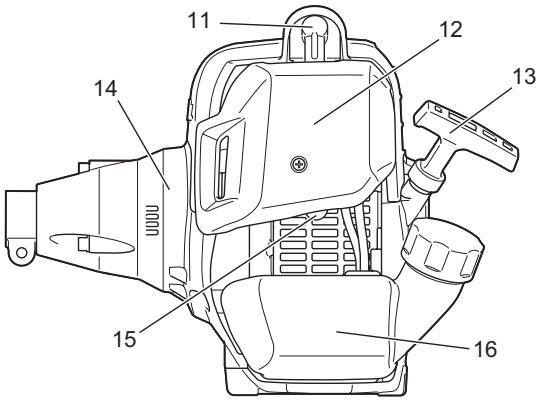
DESIGNATION OF PARTS

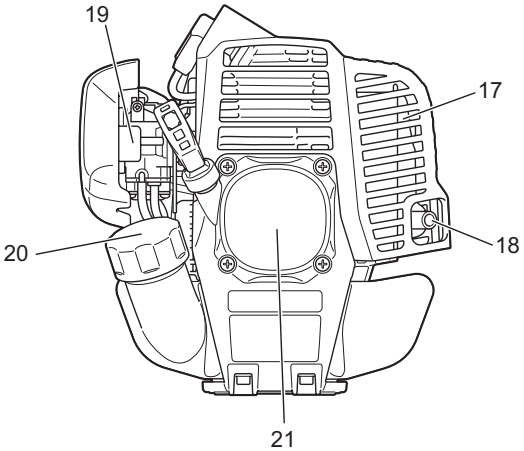
EM3400U



EM3400L







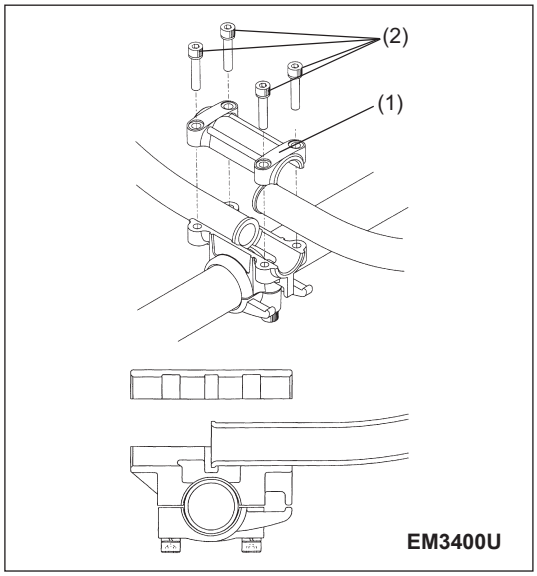
	DESIGNATION OF PARTS
1	I-O switch (on/off)
2	Throttle lever
3	Control cable
4	Hanger
5	Rear grip
6	Handle holder
7	Handle
8	Shaft
9	Gear case
10	Protector (Cutting tool guard)
11	Spark plug
12	Air cleaner
13	Starter knob
14	Clutch case
15	Primer pump
16	Fuel tank
17	Exhaust muffler
18	Exhaust pipe
19	Choke lever
20	Fuel tank cap
21	Recoil starter

MOUNTING OF HANDLE

CAUTION: Before doing any work on the equipment, always stop the engine and pull the spark plug connector off the spark plug. Always wear protective gloves!
CAUTION: Start the engine only after having assembled it completely.

For bike handle models

– Place the handle with the throttle lever on the handle holder on the right side (to be held by the right hand) and the other on the left side.
– Fit the handle edge to the handle holder groove, and provisionally fix the upper side (1) of the handle holder by four bolts M5 x 25 (2).
– Adjust the handle to an angle easy to manipulate, and tighten the bolt (2) uniformly on the right and left sides.

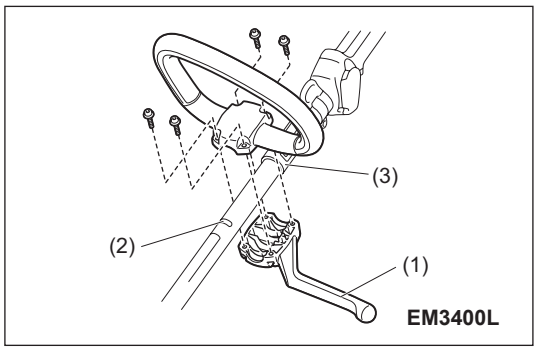


For loop handle models

– Fix a barrier (1) to the left side of the machine together with the handle for operator protection.
– Make sure that the grip/barrier assembly is fitted between the spacer and the arrow mark (2).

⚠ WARNING: Do not remove or shrink the spacer (3). The spacer keeps a certain distance between both hands. Setting the grip/barrier assembly close to the other grip beyond the length of the spacer may cause loss of control and serious personal injury.

NOTE:
– In some countries the spacer is not included. In that case fit the grip/barrier assembly between arrow marks.

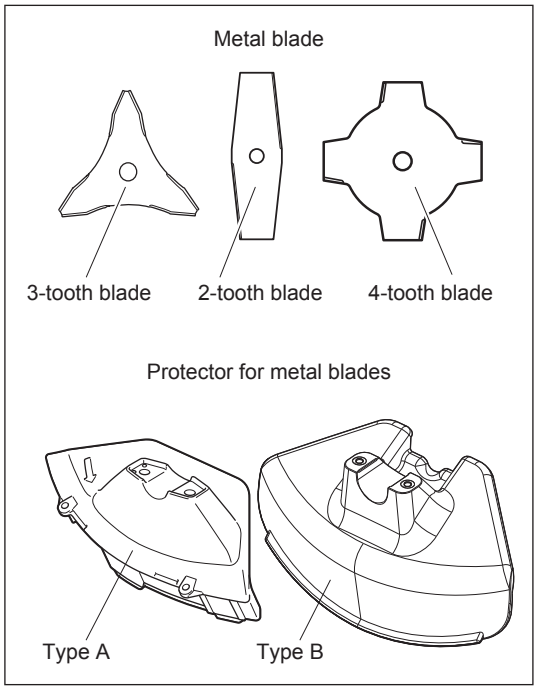


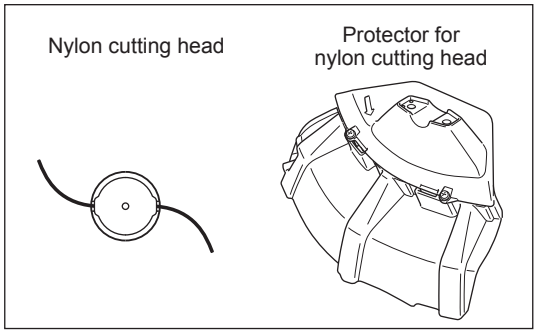
MOUNTING OF PROTECTOR

To meet the applicable safety provisions, only the tool/protector combinations as indicated in the table must be used.

CAUTION: The appropriate protector must always be installed, for your own safety and in order to comply with accident prevention regulations.
Operation of the equipment without the guard being in place is not permitted.

NOTE: The standard combination of cutting tool differs from county to country.

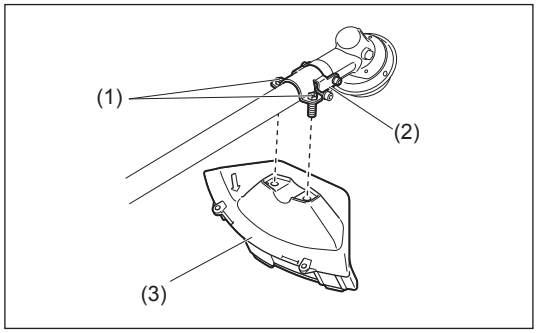




– In use of the metal blade, perform one of the following steps in accordance with the protector type.

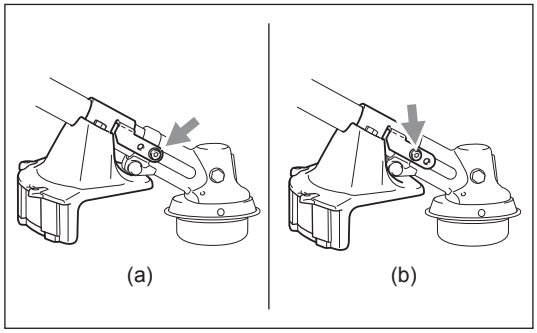
For type A metal blade protector

1. Fix the protector (3), to the clamp (2) with two bolts (1).



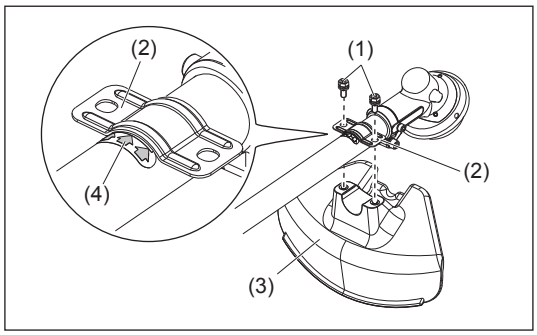
2. For 12” 2-tooth blade, use the hole on the end of the clamp (a).
For 10” or less diameter blades, such as 4-tooth blade and 3-tooth blade, use the hole on the middle of the clamp (b).
(Tightening torque: 2.0 - 3.5 N·m)

CAUTION: The blade hits the protector or protector does not function appropriately if the position of the protector is wrong.



For type B metal blade protector

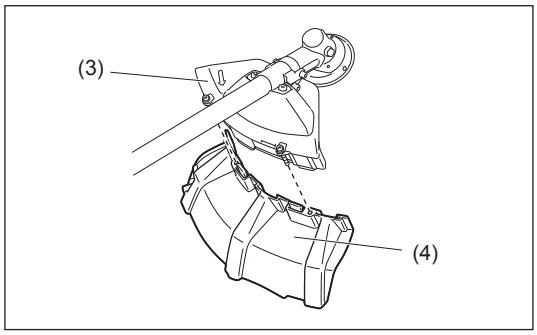
Align the clamp (2) with the arrow mark (4), and fix the protector (3), to the clamp (2) with two bolts.



NOTE: Tighten the right and left bolts evenly so that the gap between the clamp (2) and the protector (3) will be constant.
Otherwise, the protector sometimes may not function as specified.

– In cases where the nylon cord cutter is to be used, be sure to mount the nylon cord cutter protector (4) onto the type A metal blade protector (3).

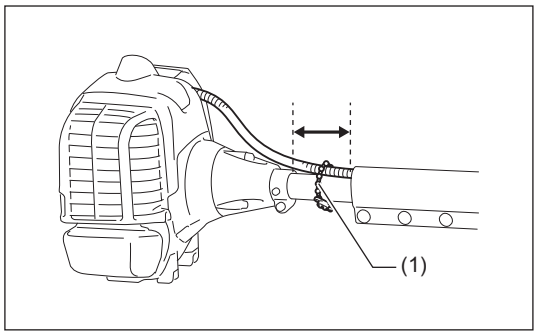
CAUTION: Take care not to injure yourself on the cutter for cutting the nylon cord.



(For model EM3400U only)

Attaching the fastener

Fix the control cable and shaft by the fastener (1) in the area shown in the figure.



MOUNTING OF CUTTING TOOL

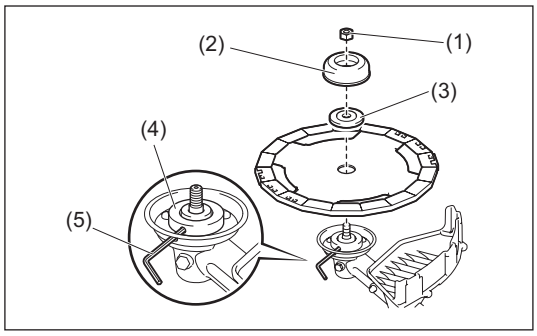
Be sure to use genuine MAKITA metal blades or nylon cutting head.

– The metal blade must be well cleaned, free of cracks or breakage. If the metal blade hits against a stone during operation, stop the engine and check the blade immediately.
– Clean or replace the metal blade every three hours of operation.
– If the nylon cutting head hits against a hard object such as stone during operation, stop the engine and check the nylon cutting head immediately.

CAUTION: The appropriate protector must always be installed, for your own safety and in order to comply with accident-prevention regulations. Operation of the equipment without the guard being in place is not permitted.
The outside diameter of the cutter blade must be 255 mm (10”) or less. Never use any blades exceeding 255 mm (10”) in outside diameter except for 2-tooth blade. Cutter blades with outside diameter of 305 mm or 12 inches can be used only for those with 2-tooth blade.
CAUTION: Make sure that the cutting tool is securely attached before operation.

Turn the machine upside down, and you can replace the metal blade or nylon cutting head easily.

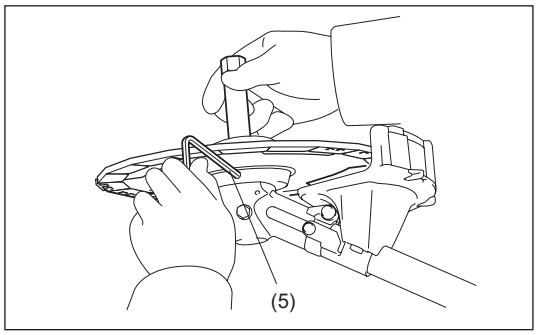
– Insert the hex wrench (5) through the hole in the gear case and rotate the receive washer (4) until it is locked with the hex wrench.
– Loosen the nut (1) (left-hand thread) with the socket wrench and remove the nut (1), cup (2), and clamp washer (3).



Mounting of metal blade with the hex wrench (5) still in place

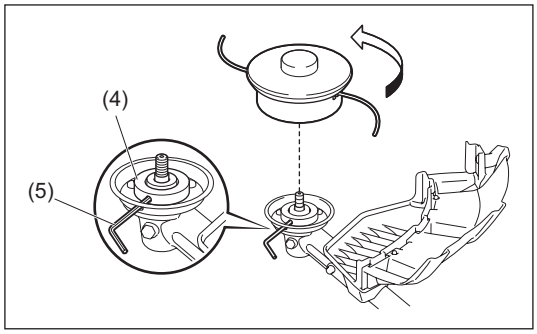
– Mount the metal blade onto the shaft so that the guide of the receive washer (4) fits in the arbor hole in the metal blade. Install the clamp washer (3), cup (2), and secure the metal blade with the nut (1).
[Tightening torque: 13 - 23 N-m]

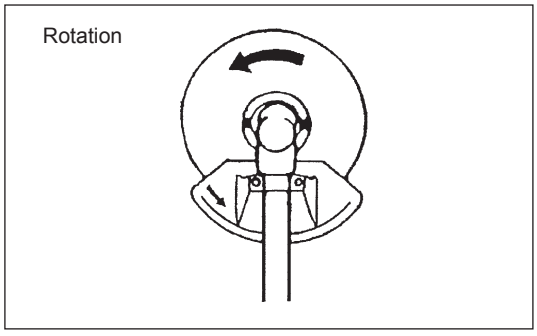
NOTE: Always wear gloves when handling the metal blade.
NOTE: The metal blade-fastening nut (with spring washer) is a consumable part. If there appears any wear or deformation on the spring washer, replace the nut.



Mounting of nylon cutting head

– The clamp washer (3), cup (2), and nut (1) are not necessary for mounting the nylon cutting head. The nylon cutting head should go on top of the receive washer (4).
– Insert the hex wrench (5) through the hole in the gear case and rotate the receive washer (4) until it is locked with the hex wrench.
– Then screw the nylon cutting head onto the shaft by turning it counter-clockwise.
– Remove the hex wrench (5).



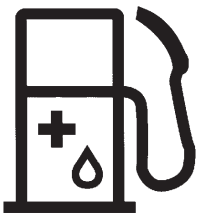


Handling petroleum products

Utmost care is required when handling fuel. Fuel may contain substances similar to solvents. Refuel either in a well ventilated area or outdoors. Do not inhale fuel vapors, avoid any contact of fuel or oil with your skin.
Mineral oil products degrease your skin. If your skin comes in contact with these substances repeatedly and for an extended period of time, various skin diseases may result. In addition, allergic reactions are known to occur. Eyes can be irritated by contact with oil, fuel etc.
If oil comes into your eyes, immediately wash them with clear water.
If your eyes are still irritated, see a doctor immediately.

Observe the Safety Instructions on page 4!

Fuel and oil mixture



The engine of the brushcutter is a high-efficiency two-stroke engine.
It is run with a mixture of fuel and two-stroke engine oil. The engine is designed to use unleaded regular fuel with a min. Octane value of 91 RON. If no such fuel is available, you can use fuel with a higher octane value. This will not affect the engine, but may cause poor operating behavior.
A similar situation will arise from the use of leaded fuel. To obtain optimum engine performance and to protect your health and the environment, only unleaded fuel should be used!

For engine lubrication use a two-stroke engine oil (quality grade: JASO FC or ISO EGD), which is added to the fuel. The engine has been designed to use MAKITA two-stroke engine oil at mixture ratio of 50:1 to protect the environment. In addition, a long service life and reliable operation with a minimum emission of exhaust gasses is assured. It is absolutely essential to observe a mixture ratio of 50:1 MAKITA 2-stroke engine oil. Otherwise reliable function of the brushcutter cannot be guaranteed.

The correct mixture ratio:
Mix 50 parts gasoline with 1 part MAKITA 2-stroke engine oil (see table on right).

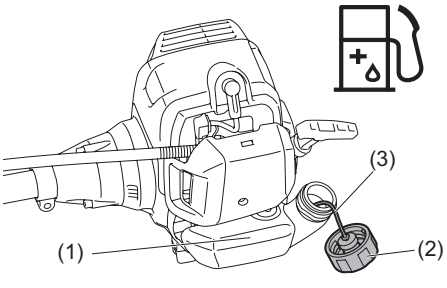
NOTE: For preparing the fuel-oil mixture first mix the entire oil quantity with half of the fuel required in an approved can which meets or exceeds all local code standards, then add the remaining fuel. Throughly shake the mixture before filling it into the brushcutter tank. It is not wise to add more engine oil than specified to ensure safe operation. This will only result in a higher production of combustion residues which will pollute the environment and clog the exhaust channel in the cylinder, the spark plugs as well as the muffler. In addition, fuel consumption will rise and the performance will be decreased.

Gasoline (premium unleaded)		**50:1**
	+	
1,000 cc (1 L) 5,000 cc (5 L) 10,000 cc (10 L)		20 cc 100 cc 200 cc

Refuelling

Never perform refuelling operations in a closed, unventilated area.

The engine must be switched off!
- Thoroughly clean the area around the tank cap, to prevent dirt from getting into the fuel tank (1).
- Unscrew the tank cap (2) and fill the tank with fuel.
- Never fill the fuel tank to the very top.
- Securely screw on the tank cap.
- Wipe the screw plug and tank with an absorbent after refuelling! Allow cloths to dry and discard in a proper container.



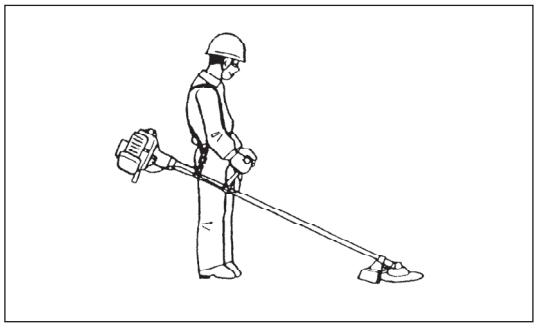
NOTE: In some countries, the tank cap does not have the strap (3).

Storage of Fuel

Fuel cannot be stored for an unlimited period of time.
Purchase only the quantity required for a 4 week operating period. Only use approved fuel storage containers.

CORRECT HANDLING OF MACHINE

WARNING: Failure to maintain complete control of the machine at all could result in serious bodily injury or DEATH.



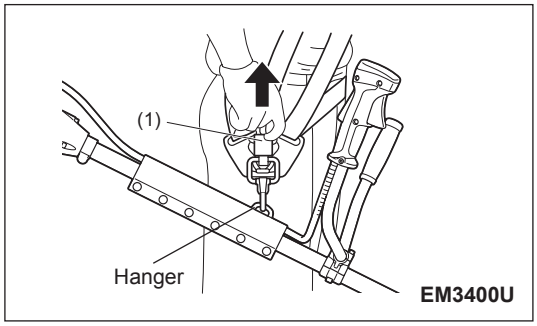
Attachment of shoulder strap

– Adjust the strap length so that the cutter blade will be kept parallel with the ground.

Detachment

For EM3400U

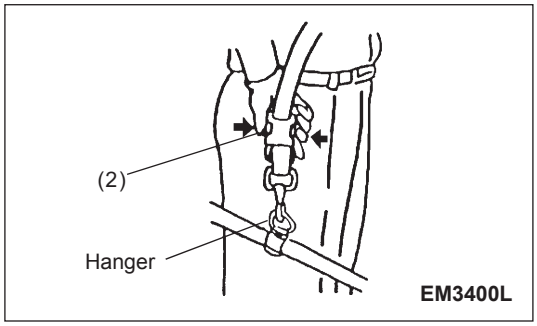
– In an emergency, pull up the hook (1) to detach the machine from you.
Be extremely careful to maintain control of the machine at this time. Do not allow the machine to be deflected toward you or anyone in the work vicinity.



EM3400U

For EM3400L

– In an emergency, push the notches (2) at both sides, and you can detach the machine from you.
Be extremely careful to maintain control of the machine at this time. Do not allow the machine to be deflected toward you or anyone in the work vicinity.



EM3400L

POINTS IN OPERATION AND HOW TO STOP

CAUTION : Observe the applicable accident prevention regulations!

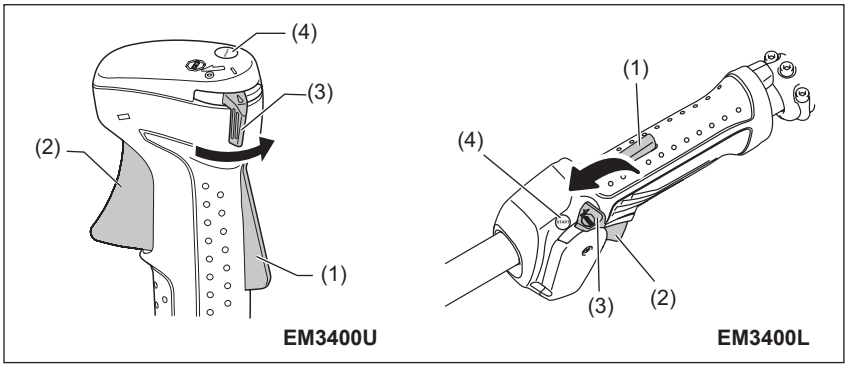
STARTING

WARNING: Pay attention that the cutting tool rotates immediately after engine starts. Make sure that the cutting tool has no contact with hard objects such as branches, stones etc.

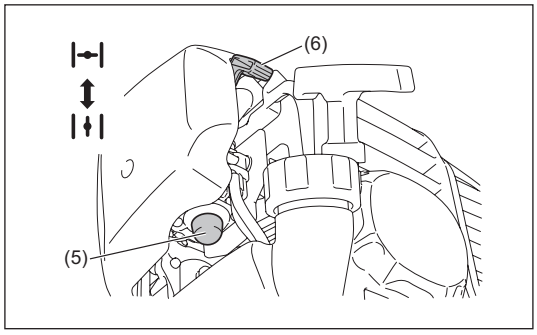
CAUTION:
– Move at least 3 m away from the place of refuelling. Place the unit on the ground taking care that the cutting tool does not come into contact with the ground or any other objects.
– Never pull the rope to the full extension. Once the starter knob is pulled, never release your hand immediately. Hold the starter knob until it returns to its original point.

A: Cold start

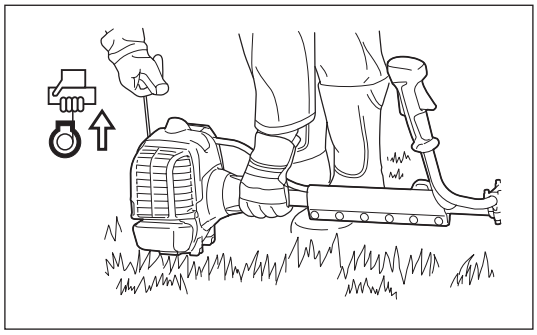
1) Set this machine on a flat space.
2) Grasp the handle (the safety lock-off (1) is released by the grasp).
3) Press the throttle lever (2) and hold it down.
4) Slide the I-O switch (3) to START (4). It makes the throttle lever become half-throttle lock state.



5) Give a gentle push on the primer pump (5) repeatedly (7-10 times) until fuel comes into the primer pump.
6) Move the choke lever (6) to the top position (|⊷| - closed choke).



7) Firmly hold the unit by your left hand.
8) Pull the starter knob gently until feeling compression. Then pull it strongly.
9) Repeat the starting operation until initial ignitions are heard.
10) When the engine starts, return the choke lever to " |↕| - open choke" position.
11) As soon as the engine starts, immediately grasp the handle (the safety lock-off is released by the grasp) and pull the throttle trigger for a little, and release it. (It releases the half-throttle lock state and the engine runs in idle.)
12) Run the engine for approximately one minute at moderate speed before applying full throttle.



B: Warm start

– Same as described above, except without moving the choke lever (choke lever remains " |↕| - open choke" position).

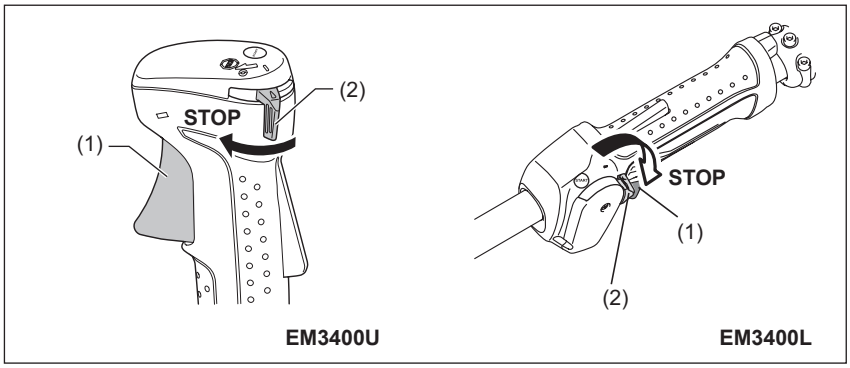
NOTE:
In case of excessive fuel intake, remove the spark plug and pull the starter handle slowly to remove excess fuel. Also,dry the electrode section of the spark plug.

Caution during operation: If the throttle lever is opened fully in a no-load operation, the engine rotation is increased to 10,000 min^{-1} or more. Never operate the engine at higher speed than required. Operate the engine at an approximate speed of 6,000 - 8,000 min^{-1}.

STOPPING

1) Release the throttle lever (1) fully.
2) When the engine revolution becomes lowered, set the I-O switch (2) to STOP position.

CAUTION:
Be aware that the cutting head may not stop immediately.
Allow it to slow down fully.

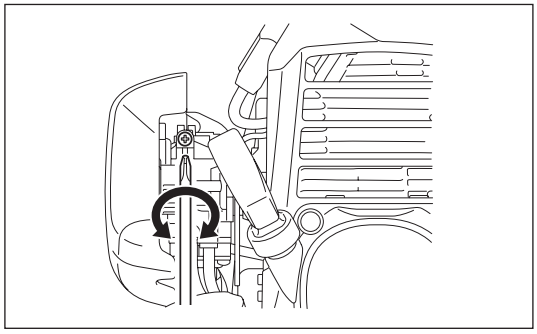


ADJUSTMENT OF IDLE SPEED

When it is necessary to adjust the idle speed, perform it by the carburetor adjusting screw.

CHECKUP OF IDLE SPEED

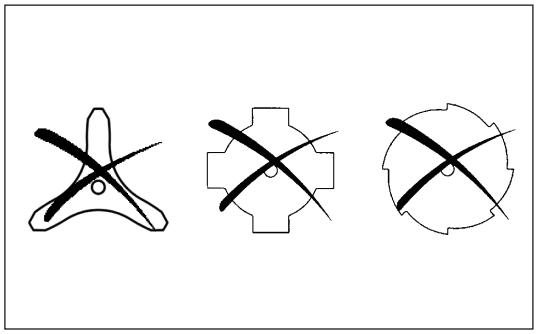
– Set the idle speed to 2,800 min^{-1}.
  If it is necessary to change the idle speed, use a phillips head screw driver on the screw.
– To increase the idle speed, turn the adjusting screw clockwise.
  To reduce the idle speed, turn the adjusting screw counterclockwise.
– The carburetor is factory adjusted. However, after several use the idle speed need to be re-adjusted.



RESHARPENING THE CUTTING TOOL

CAUTION: The cutting tools shown in the illustration are not to be sharpened. Manual resharpening will result in imbalances of the cutting tool causing vibrations and damage to the equipment.

NOTE: To increase the service life of the cutter blade, it may be turned over once, until both cutting edges have become blunt.

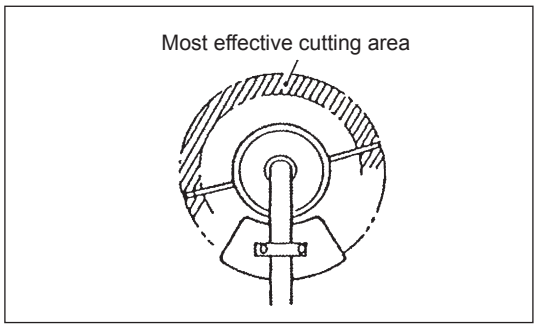


NYLON CUTTING HEAD

The nylon cutting head is a dual line trimmer head that has bump & feed mechanism.
The nylon cutting head feeds out the nylon cord after tapping the trimmer head on the ground.

Operation

– Increase the nylon cutting head speed to approx. 6,000 min^{-1}.
  Bump the nylon cutting head lightly on the ground.
– The most effective cutting area is shown by the shaded area.
– If the nylon cord does not feed out, rewind/replace the nylon cord by following the procedures described under “Replacing the nylon cord.”

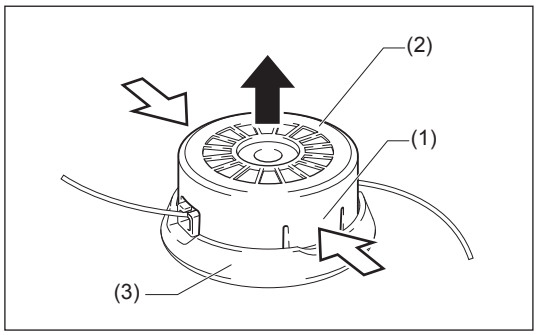


Replacing the nylon cord (BUMP & FEED)

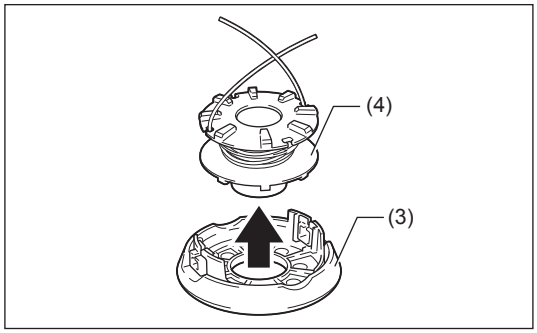
⚠ WARNING:

- Make sure that the cover of the nylon cutting head is secured to the housing properly as described below. Failure to properly secure the cover may cause the nylon cutting head to fly apart resulting in serious personal injury.

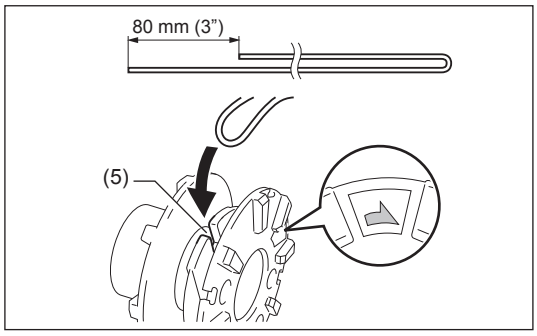
1. Press the latches (1) on the housing (2) inwards and lift upward to remove the cover (3).



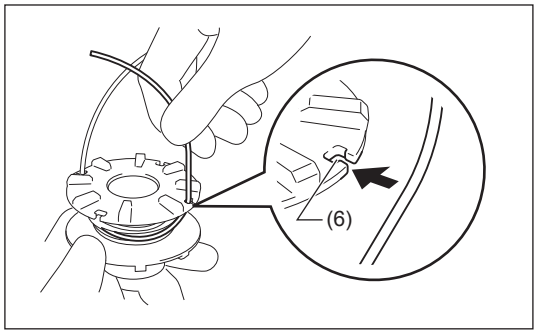
2. Release the nylon cord from the eyelet. And remove the spool (4) from the cover. Discard any of the remaining nylon cord.



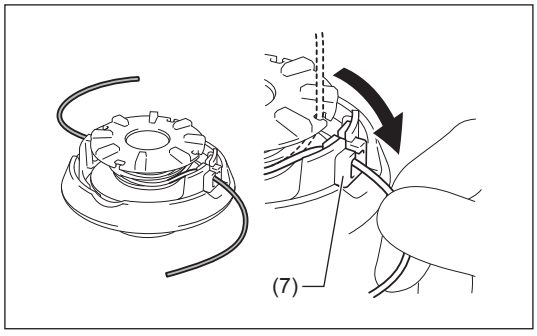
3. Hook the middle of the new nylon cord to the notch (5) located at the center of the spool between the 2 channels.
   One side of the cord should be about 80 mm (3”) longer than the other side. Wind both ends firmly around the spool in the direction of arrow mark on the spool.



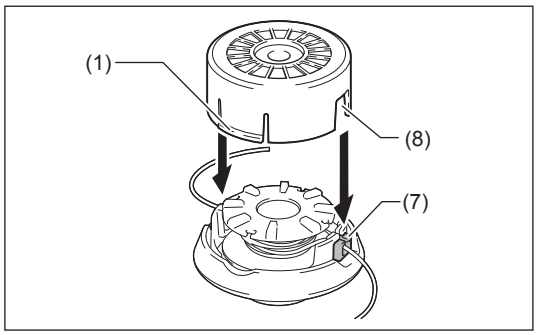
4. Wind all but about 100 mm (4”) of the cords, leaving the ends temporarily hooked through notches (6).

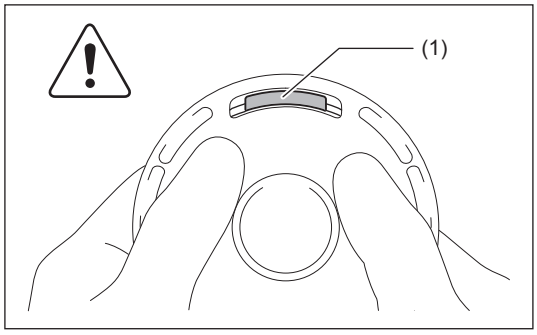


5. Mount the spool in the cover as holding notches meet the eyelets (7). Unhook the ends of the cord from their temporary position and feed the cords through the eyelets.



6. Align the square slits (8) on the housing with the eyelets (7). Then push the housing firmly onto the cover to secure it. Make sure the latches (1) fully spread in the cover.



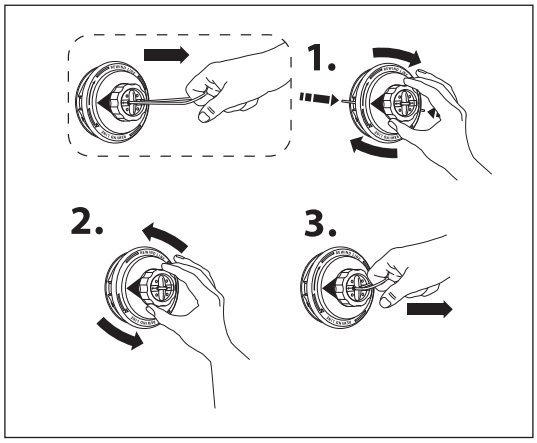


(For Proulx) Except for Europe

First, stop the engine.

Hold the housing securely and turn the spool clockwise until the remaining nylon cord retracts into the housing, and turn back and forth to relieve the cord stress.

Grasp the loop on top of the spool and pull it from the spool.

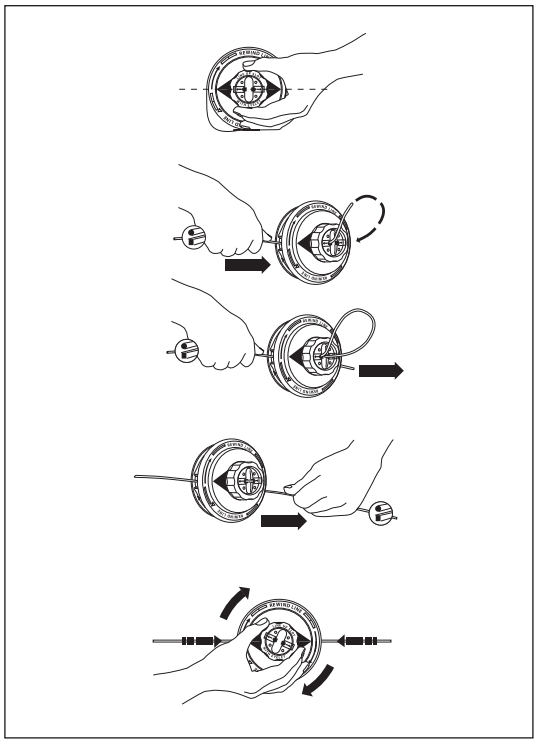


Prepare a nylon cord with the following specifications.
4.5 m (15 ft) length
2.4 mm (0.095”) diameter round cord or 2.0 mm (0.08”) diagonal square cord.
Align the arrow on the spool with the eyelets on the housing.

Insert one end of the nylon cord into eyelet on the side of the housing, feed through hole on top of the spool and then re-insert into the second hole on top of the spool. Push the nylon cord into holes until the cord feeds through eyelets on side of the housing.

Push the nylon cord into holes feeding through eyelets on side of the housing until equal length on both sides.

Hold the housing securely and turn the spool clockwise to wind the nylon cord into the spool.



SERVICING INSTRUCTIONS

CAUTION: Before doing any work on the equipment, always stop the engine and pull the plug cap off the spark plug (see “checking the spark plug”).
Always wear protective gloves!

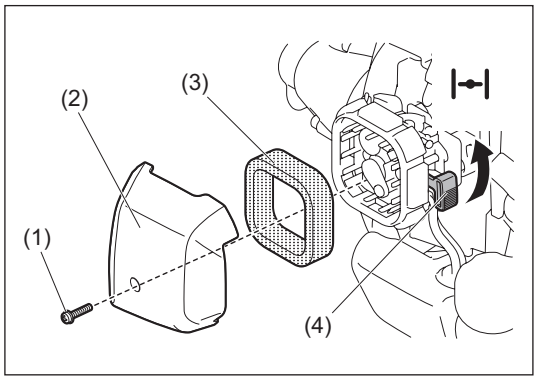
To ensure a long service life and to avoid any damage to the equipment, the following servicing operations should be performed at regular intervals.

Daily checkup and maintenance

– Before operation, check the machine for loose screws or missing parts. Pay particular attention to the tightness of the metal blade or nylon cutting head.
– Before operation, always check for clogging of the cooling air passage and the cylinder fins.
Clean them if necessary.
– Perform the following work daily after use:
  • Clean the equipment externally and inspect for damage.
  • Clean the air filter. When working under extremely dusty conditions, clean the filter the several times a day.
  • Check the blade or the nylon cutting head for damage and make sure it is firmly mounted.
  • Check that there is sufficient difference between idling and engagement speed to ensure that the cutting tool is at a standstill while the engine is idling (if necessary reduce idling speed).
  If under idling conditions the tool should still continue to run, consult your nearest Authorized Service Agent.
– Check the functioning of the I-O switch, the lock-off lever, the throttle lever, and the lock button.

CLEANING OF AIR CLEANER

WARNING: Shut off the engine, keep away from open flames and do not smoke.



Interval of Cleaning and Inspection: Daily (every 10 operating hours)

– Turn the choke lever (4) to the full close side, and keep the carburetor off from dust or dirt.

Removing air cleaner cover

– Remove the screw (1), and remove the air cleaner cover (2).

Cleaning element

– Remove the element (3) and tap them to remove dirt.
– For heavy contamination:
Remove the sponge element, wash it in water diluted detergent and dry it completely.
– After the element is dried, dip it into 2 stroke engine oil, then wring it out to remove excess oil.
– Before attaching the sponge element, make sure that the oil is applied onto the element evenly. Excess oil may lead to difficult start-up.
– Wipe out oil adhering around the air cleaner cover with cloth.

Attaching air cleaner cover

– After cleaning, return the sponge element. Return the air cleaner cover. And then fasten it with the screw.

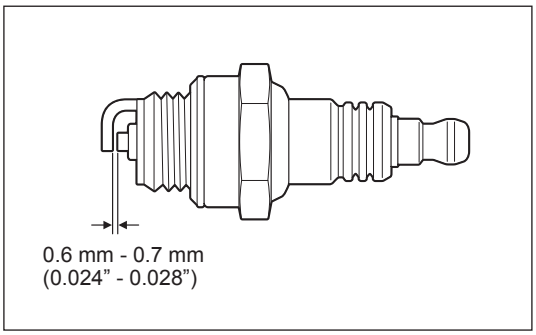
NOTICE:

– If there is excessive dust or dirt adhering to the air cleaner, clean it everyday. Dirty elements reduce engine power and make starting engine difficult.
– Remove oil on the elements. If operation continues with the elements remaining not cleared of oil, oil in the air cleaner may fall outside, resulting in contamination of the environment.
– Do not put the elements on the ground or dirty place. Otherwise they pick up dirt or debris and it may damage the engine.
– Never use fuel for cleaning the elements. Fuel may damage them.

CHECKING THE SPARK PLUG

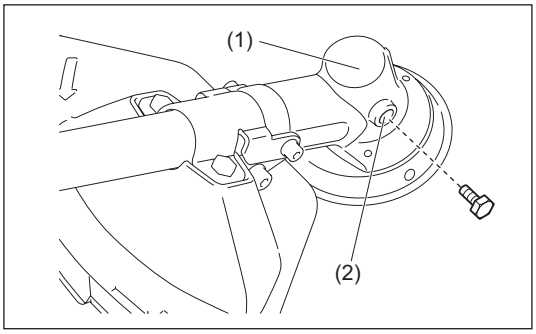
– Only use the supplied universal wrench to remove or to install the spark plug.
– The gap between the two electrodes of the spark plug should be 0.6 - 0.7 mm (0.024” - 0.028”). If the gap is too wide or too narrow, adjust it. If the spark plug is clogged or contaminated, clean it thoroughly or replace it.
Place the plug cap properly as illustrated after checking.

CAUTION: Never touch the spark plug connector while the engine is running (danger of high voltage electric shock).



SUPPLY OF GREASE TO GEAR CASE

– Supply grease (Shell Alvania 2 or equivalent) to the gear case (1) through the grease hole (2) every 30 hours. (Genuine MAKITA grease may be purchased from your MAKITA dealer.)



CLEANING OF FUEL FILTER

WARNING: INFLAMMABLES STRICTLY PROHIBITED

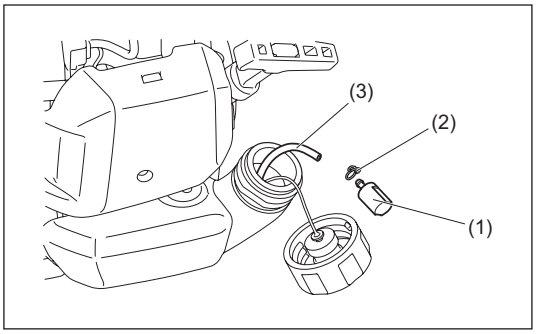
Interval of inspection: Monthly (every 50 operating hours)

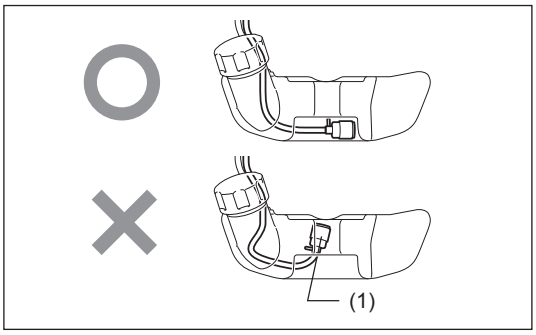
Suction head in the fuel tank

Check the fuel filter (1) periodically. To check the fuel filter, follow the steps below:

1. Remove the fuel tank cap, drain the fuel to empty the tank. Check the tank inside for any foreign materials. If any, remove them.
2. Pull out the suction head by using a wire hook through the tank opening.
3. If the fuel filter clogged slightly, clean it. To clean it, gently shake and tap it in fuel. To avoid damage, do not squeeze or rub it. The fuel used for the cleaning must be disposed in accordance with the method specified by regulations in your country.
If the fuel filter became hard or heavily clogged up, replace it.
4. After checking, cleaning or replacing, insert the fuel filter into the fuel pipe (3) and fix it by the hose clamp (2). Push the fuel filter in all the way to the bottom of the fuel tank.

Clogged or damaged fuel filter can cause insufficient fuel supply and reduce engine power. Replace the fuel filter at least quarterly to ensure satisfactory fuel supply to the carburetor.



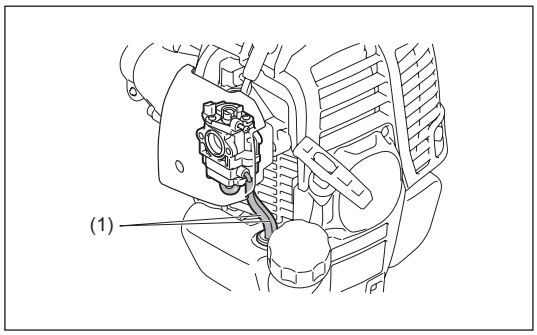


REPLACEMENT OF FUEL PIPE

CAUTION: INFLAMMABLES STRICTLY PROHIBITED

Interval of Cleaning and Inspection: Daily (every 10 operating hours)
Replacement: Annually (every 200 operating hours)

Replace the fuel pipe (1) every year, regardless of operating frequency. Fuel leakage may lead to fire.
If any leakage is detected during inspection, replace the fuel pipe immediately.



INSPECTION OF BOLTS, NUTS AND SCREWS

– Retighten loose bolts, nuts, etc.
– Check the fuel cap and oil cap for tightness. Check for fuel and oil leakage.
– Replace damaged parts with new ones for safety operation.

CLEANING OF PARTS

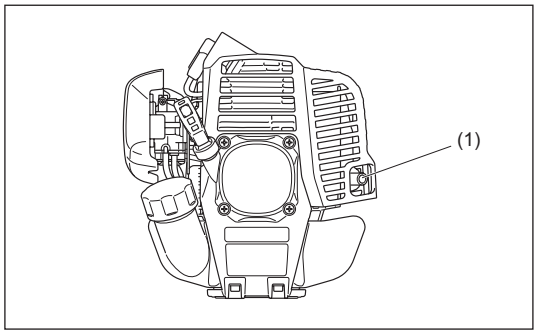
– Always keep the engine clean by wiping down with a cloth rag.
– Keep the cylinder fins free of dust or dirt. Dust or dirt adhering to the fins will cause piston seizure.

REPLACEMENT OF GASKETS AND PACKINGS

Replace gaskets and packings if the engine is disassembled.
Any maintenance or adjustment work that is not included and described in this manual is only to be performed by Authorized Service Agents.

CLEANING OF MUFFLER EXHAUST PORT

– Check of muffler exhaust port (1) regularly.
– If it is clogged by carbon deposits, carefully scratch the deposits out with a suitable tool.



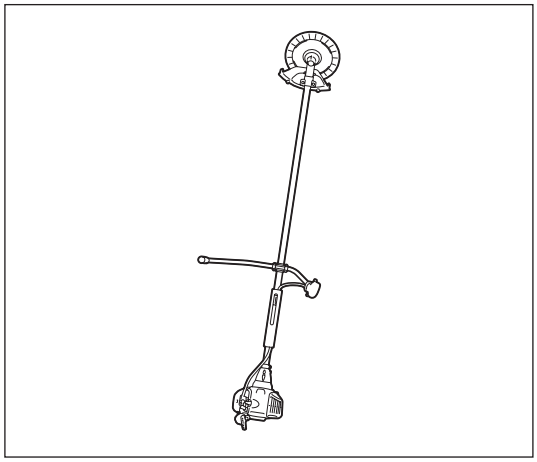
STORAGE

WARNING: The engine is still hot just after stopping engine. When draining the fuel, allow sufficient time for the engine to cool down after stopping it. Otherwise a skin burn and/or fire may result.

DANGER: When the machine is kept out of operation for a long time, drain all fuel from the fuel tank and carburetor, and keep it at a dry and clean place.

– Drain fuel from the fuel tank and carburetor according to the following procedure:
  1) Remove the fuel tank cap, and drain fuel completely.
     If there is any foreign matter remaining in the fuel tank, remove it completely.
  2) Pull out the fuel filter from the refill port using a wire.
  3) Push the primer pump until fuel is drained from there, and drain fuel coming into the fuel tank.
  4) Put the filter to the fuel tank, and securely tighten the fuel tank cap.
  5) Then, continue to operate the engine until it stops.

– Remove the spark plug, and drip several drops of engine oil through the spark plug hole.
– Gently pull the starter handle so that engine oil will spread over the engine, and attach the spark plug.
– Attach the cover to the metal blade.
– In general, store the machine in horizontal position. If it is not possible, place the machine as the motor unit comes below the cutting tool. Otherwise engine oil may leak from inside.
– Keep the drained fuel in a special container in a well-ventilated shade.



Operating time / Item		Before operation	After refuleling	Daily (10h)	30h	50h	200h or 1 year, whichever earlier	Before storage	Corres-ponding P
Tightening parts (bolt, nut)	Inspect	○							21
Fuel tank	Clean	○							—
	Drain fuel							○*2	21
Throttle lever	Check function		○						—
Stop switch	Check function		○						19
Cutting tool	Inspect	○		○					10
Idle speed	Inspect/adjust			○					16
Air cleaner	Clean			○					19
Spark plug	Inspect			○					20
Cooling air passage and cylinder fins	Clean/inspect			○					21
Fuel pipe	Inspect			○					21
	Replace						◎*1		—
Gear-case grease	Refill				○				20
Muffler	Inspect/Clean the opening				○				—
Fuel filter	Clean/replace					○			20
Carburetor	Drain fuel							○*2	21

*1 For the 200 operating hour inspection, request Authorized Service Agent or a machine shop.
*2 After emptying the fuel tank, continue to run the engine and drain fuel in the carburetor.

TROUBLESHOOTING

Before making a request for repairs, check for trouble by yourself. If any abnormality is found, control your machine according to the description of this manual. Never tamper or dismount any part contrary to the description. For repairs, contact Authorized Service Center or local dealership.

State of abnormality	Probable cause (malfunction)	Remedy
Engine does not start.	I-O switch is set to STOP.	Set the I-O switch to START.
	Failure to operate primer pump.	Push 7 to 10 times.
	Low pulling speed of starter rope.	Pull strongly.
	Lack of fuel.	Feed fuel.
	Incorrect choke position.	Set to “CLOSE” (cold start). Set to “OPEN” (warm start).
	Clogged fuel filter.	Replace.
	Bent or blocked fuel tube.	Straighten or replace fuel tube.
	Deteriorated fuel.	Deteriorated fuel makes starting more difficult. Replace with new fuel. (Recommended replacement: 1 month)
	Excessive suction of fuel.	Set throttle lever from medium speed to high speed, and pull starter handle until engine starts. **Once engine starts, cutting tool starts rotating. Pay full attention to cutting tool.** If engine will not start still, remove spark plug, dry the electrode, and reassemble them as they originally are. Then, start as specified.
	Detached plug cap.	Attach securely.
	Contaminated spark plug.	Clean.
	Abnormal clearance of spark plug.	Adjust clearance.
	Abnormality of spark plug.	Replace.
	Abnormal carburetor.	Make request for inspection and maintenance.
	Starter rope cannot be pulled, or no compression is felt.	Make request for inspection and maintenance.
	Abnormal drive/electric system. (I-O switch fault, wiring fault, connector fault, etc.)	Make request for inspection and maintenance.
Engine stops soon. Engine speed does not increase.	Insufficient warm-up.	Perform warm-up operation.
	Choke lever is set to “CLOSE” although engine is warmed up.	Set to “OPEN”.
	Low idle speed.	Adjust idle speed.
	Clogged fuel filter.	Replace.
	Contaminated or clogged air cleaner.	Clean or replace.
	Abnormal carburetor.	Make request for inspection and maintenance.
	Exhaust muffler fault. (clogged, etc.)	Make request for inspection and maintenance.
	Abnormal drive/electric system.	Make request for inspection and maintenance.
Metal blade does not rotate. ↓ Stop engine immediately.	Loosened metal blade-tightening nut.	Tighten securely.
	Twigs caught by metal blade or dispersion-preventing cover.	Remove foreign matter.
	Abnormal drive system.	Make request for inspection and maintenance.
Main unit vibrates abnormally. ↓ Stop engine immediately.	Broken, bent or worn metal blade.	Replace metal blade.
	Loosened metal blade-tightening nut.	Tighten securely.
	Shifted convex part of metal blade and metal blade support fitting.	Attach securely.
	Abnormal drive system.	Make request for inspection and maintenance.
Metal blade does not stop immediately. ↓ Stop engine immediately.	High idle speed.	Adjust idle speed.
	Detached throttle wire.	Attach securely.
	Abnormal drive system.	Make request for inspection and maintenance.
Engine does not stop. ↓ Run engine at idling, and set choke lever to CLOSE.	Detached connector.	Attach securely.
	Abnormal electric system.	Make request for inspection and maintenance.

- When the engine does not start after warm-up operation:
  If there is no abnormality found for the check items, open the throttle by about 1/3 and start the engine.
- If there are abnormality other than this chart, contact Authorized Service Center.

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