

BACKPACK BRUSH CUTTER MANUAL

MODEL:

BG330 BG430 BG520



INTRODUCTION

Thank you for your purchasing the brush cutter of our Company. The present manual explains how to handle the brush cutter well. Before using it, please read this operator's manual carefully, operate the machine correctly and engage in your task with safely. By the way, due to changes of specifications, all details of your machine may not agree with this manual. Please understand accordingly.

- TECHNICAL DATA--

MODEL		BG330	BG430	BG520
	Remote type	Automatic centrifugal clutch; Spiral bevel gear; Flexible shaft		
	Maximum speed of gear shaft /engine speed (r/min)	7000/9000		
	Idle speed(r/min)	3000±150		
Main	Vibration values at each handle(m/s) ²	≤7.5		
unit	Sound pressure values[dB(A)]	≤105		
	Sound power values[dB(A)]	≤120		
	Reduction ratio	17: 22		
	Blade rotation direction	Counter-Clockwise(seen from the top)		
	Type of handle	"D" grip		
	Weight when dry(kg)	10	10.6	10.6
	Name of engine	1E36F-2	1E40F-5	1E44F-2
	Туре	Air-cooled; 2 cycle; vertical piston valve; gasoline engine		
	Displacement(mL)	32.6	42.7	51.7
	Maximum output(kW/r/min)	0.9/6500	1.25/6500	1.44/6500
Engina	2 1	Float-type		
Engine	Ignition	Non-contact electronic ignition		
	Method of starting	Recoil type		
	Fuel used	Gasoline mixed with lubricating oil (ratio of 25:1)		
	Fuel tank capacity(L)	1.2		
	Dry weight(kg)	4.2		
Length of main pipe section(mm)		1190		
Length of drive shaft section(mm)		1224		

Technical Data subject to changed without notice.

GRAPHIC WARNINGS

Because a trimmer/cutter is a high-speed, fast cutting power tool, special safety precaution must be observed to reduce the risk of personal injury. Read this manual carefully. Be familiar with the controls and the proper use of the unit. Know how to shut it off, and how to unhook a harnessed unit quickly



This graphic accompanied by the words WARNING and DANGER calls attention to an act of a condition which can lead to SERIOUS INJIRY.



READ & UNDERSTAND Operator's Manual and Safety Manual.



ALWAYS WEAR EYE AND EAR PROTECTION.



Always TURN OFF ENGINE and make sure the cutting tool has stopped before cleaning, removing or adjusting blade.



WARNING! Never modify a trimmer or cutter in any way. Improper use of any trimmer can cause SERIOUS OR FATAL PERSONAL INJURY.

WARNING ! DANGER



The engine exhaust from this product contains chemicals to cause cancer, birth defects, of other reproductive harm.

Specifications, descriptions and illustrative material in this manual are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.



SAFETY RULES & PRECAUTIONS

Proper safety precautions must be observed. Like all power equipment this unit must be handled carefully. DO NOT EXPOSE YOURSELF OR OTHERS TO DANGER Follow these general rules. Do not permit others to use this machine unless they are thoroughly responsible and have read, and understand the machine manual and are trained in its operation.

- Always wear safety goggles for eye protection. Dress properly, do not wear loose clothing or jewelry that could become caught in moving parts of the unit. Safe, sturdy, nonskid footwear should always be worn. Long hair should be tied back. It is recommended that legs and feet be covered to protect from flying debris during operation.
- Inspect the entire machine for loose parts (nuts, bolts, screws, etc.) and any damage.

 Repair or replace as necessary before using the machine.
- DO NOT USE any attachment with this power head other than the ones recommended by our company. Serious injury to the operator or bystanders could result as well as damage to the machine.
- Keep the handles free from oil and fuel.
- Always use proper handles and shoulder strap when cutting.
- Do not smoke while filling tank.
- Do not fill fuel in an enclosed room or near open flames. Assure adequate ventilation
- Always store the fuel in a properly marked container that is approved by local codes and ordinances for such usage.
- Never remove the fuel tank cap while the engine is running.
- Never start or run the engage inside a closed room or building. Fumes from the exhaust contain dangerous carbon monoxide.
- Never attempt to make engine adjustments while the unit is running and strapped to the operator. Always make engine adjustments with the unit resting on a flat, clear surface.

- Do not use the unit if it is damaged or poorly adjusted. Never remove the machine's guard.
- Inspect the area to be cut and remove all debris that could become entangled in the nylon cutting head. Also remove any objects that the unit may throw during cutting.
- Keep children away. Onlookers should be kept at a safe distance from the work area, at least 15 METER(50 FEET)
- Never leave the machine unattended.
- Do not use this unit for any job other than those for which it is intended as described in this manual.
- Do not overreach. Keep proper footing and balance at all times. Do not run the unit
 while standing on a ladder or on any other unstable footing location.
- · Keep hands and feet clear of the nylon cutting head while unit is in use .
- Do not use this type of machine for sweeping away debris.
- Do not use the unit when you are tired, ill or under the influence of medication, drugs or alcohol.
- Use nylon cutting head which is free of damage. If a stone or any other obstacle is hit, stop the engine and check the nylon cutting head. A broken or unbalanced nylon cutting head must never be used.

FOLLOW INSTRUCTION FOR CHANGING ACCESSORIES.

- Do not store in a closed area where fuel vapors can reach an open flame from hot water heaters, heaters, furnaces, etc. Store in a locked, well ventilated area only.
- ensure safe and proper performance of your product. These part are available from your dealer. The use of any other accessories or attachments may cause a potential hazard or injury to the user, damage to the machine and void this warranty.
- Clean the machine completely, especially, the fuel tank, its surroundings, and the air cleaner.
- When refueling, be sure to stop the engine and confirm that it is cooled down. Never refuel when the engine is running or hot. When gasoline spills, be sure to wipe it up completely and properly dispose of those materials before starting the engine.
- Stay clear of other workers or bystanders by at least 15 meters /50 feet.
- When ever approaching an operator of the machine, carefully call his attention and confirm that the operator stops the engine. Be careful not to startle or distract the operator which can cause an unsafe situation.
- Never touch the nylon cutting head when ever the engine is running. If it is necessary
 to adjust the protector or nylon cutting head, be sure to stop the engine and confirm that
 the nylon cutting head has stopped running.
- The engine should be turned off when the machine is moved between work areas.
- Be careful not to hit the nylon cutting head against stones, or the ground.

Unreasonable rough operation will shorten the life of the machine as well as create an unsafe environment for yourself and those around you.

Pay attention to loosening and overheating of parts. If there is any abnormality of the machine, stop operation immediately and check the machine carefully. If necessary, have the machine serviced by a authorized dealer Never continue to operate a machine which may be malfunctioning.

In start-up or during operation of the engine, never touch hot parts such as the

muffler, the high voltage wire or the spark plug.

After the engine has stopped, the muffler is still hot. Never place the machine in any places where there are flammable materials (dry grass, etc.), combustible gasses or combustible liquids.

Pay special attention to operation in the rain or just after the rain as the ground

may be slippery.

If you slip or fall to the ground or into a hole, release the throttle lever immediately.

Be careful not to drop the machine or hit it against obstacles.

Before proceeding to adjust or repair the machine, be sure to stop the engine and

detach the spark plug cap from the spark plug.

 When the machine is placed in storage for a long time, drain fuel from the fuel tank and carburetor, clean the parts, move the machine to a safe place and confirm that the engine is cooled down.

Make periodic inspections to assure safe and efficient operation. For a thorough

inspection of your machine, please contact a dealer. Keep the machine away from fire or sparks.

• It is believed that a condition called Raynaud's phenomenon, which affects the fingers of certain individuals may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations followed by loss of color and numbness in the fingers. The following precautions are strongly recommended because the minimum exposure which might trigger the ailment is unknown.

Keep your body warm, especially the head, neck, feet, ankles, hands and wrists. Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking.

Limit the hours of operation. Try to fill each day with jobs where operating the brush

cutter or other hand-held power equipment is not required.

If you experience discomfort, redness and swelling of the fingers followed by whitening and loss of feeling, consult your physician before further exposing yourself to cold and vibration.

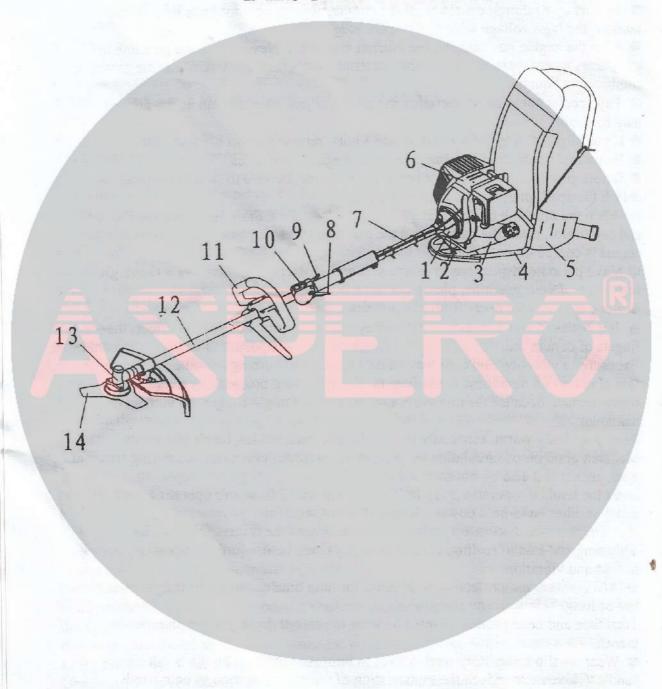
Always wear ear protection, loud noise for long time can make hearing debase even

lost hearing.

Total face and head protection must be wear to prevent damage from plummet or branch.

- Wear no-slip heavy duty work gloves to improve your grip on the brush cutter handle. Gloves also reduce the transmission of machine vibration to your hands.
- WARNING: The cutter area is still dangerous while the machine is coasting to a stop.

DESCRIPTION





DESCRIPTION

SAFETY MANUAL included with unit. Read before operating and keep for future reference to learn proper, safe operating techniques.

1.CLUTCH CASE

- 2.ENGINE BASE ASS'Y
- 3. FUEL TANK Contains fuel and fuel filter.
- 4.SHOULDER FRAME HOLDER ASS'Y
- 5.SHOULDER BELT ASS'Y
- 6.GASOLINE ENGINF
- 7.FLEXIBLE SHAFT ASS'Y
- 8.THROTTLE TRIGGER Spring loaded to return to idle when released. When accelerating, press trigger gradually for best operating technique .Do not hold trigger while starting.
- 9. SAFETY LEVER Before acceleration. compress it please.
- 10. IGNITION SWITCH "slide switch" mounted on top of the Throttle Trigger Housing. Move switch FORWARD to Run, BACK to STOP.
- ed at you convenience for comfort.
- 12. DRIVE SHAFT ASSEMBLY Contains a specially designed liner flexible drive shaft

13.GEAR CASE

14.BLADE Circular blade for grass, weed or brush cutting applications. Harness, metal shield and U-Handles required for blade operation.

15.NYLON CUTTER HEAD Contains replaceable nylon trimming line that advances when the trimmer head is tapped against the ground whilethehead is turning at normal operating speed.

16.CUT-OFF KNIFE Trims nylon filament to the correct length-7", head to end of line-when nylon trimming head is bumped on the ground during opration, line advance. if trimmer is operated without a cut-off knife the line becomes too long(more than 7") the operating speed will slow down the engine, this will overheat or damage the engine.

17.DEBRIS SHIELD Mounted just above the cutting attachment .Helps protect 11. D-HANDLE this handle can be adjust-operator by deflecting debris produced during the trimming operation .Do not operate unit without shield.

1. ASSEMBLING PROCEDURES

BG 435 is composed of three major units; engine, flexible shaft and drive shaft.

1. Assembling drive shaft(Fig. 1)

Insert the flexible shaft into the joint pipe of Drive Shaft to the end and tighten the joint pipe bolt by engaging the bolt to the slot of flexible shaft.

NOTE: Make sure to align square end of flexible inner shaft with square hole of drive shaft by slightly rotating drive shaft so that they are connected firmly.

2. Assembling flexible shaft(Fig. 2)

Remove temporarily installed PIN. Insert flexible shaft into clutch case to the end by inserting square end of flexible inner shaft into square hole of adaptor in Clutch Case. Then screw-in the PIN by engaging the pin the slot of flexible shaft.

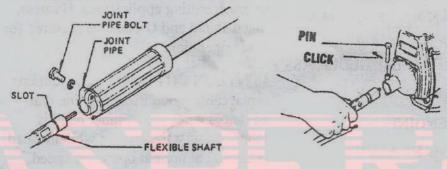


Fig. 1

Fig. 2

3. Throttle cable and stop cord

Put throttle cable and stop cord through cable passage of shaft grip, then connect each terminal with each proper position respectively. (Fig. 3)

Finally, clamp those connected throttle cable and stop cord together to flexble shaft with two wire clamp bands provided. (Fig. 4)

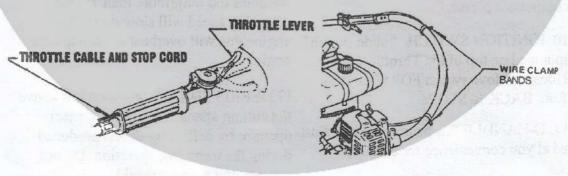


Fig. 3

Fig. 4

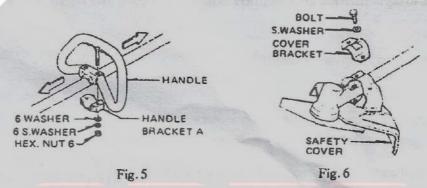
4. Haldle (Fig. 5)

Remove the handle bracket A.

Set the handle on, and attach the handle bracket A with two bolts slightly. And adjust position of the handle according to your working style. Then fix it firmly with the bolts.

5. Safety cover (Fig. 6)

- 1) Install the safety cover on the shaft with the safety cover bracket and the screws provided.
- 2) Tighten the screws after setting the safety cover bracket at the appropriate position.



6. Blade

- 1) When installing a steel blade, fit the blade as shown in the fig. 7
- 2) When installing or removing a blade, lock cutter holder with lock handle to tighten or to untighten as shown in Fig. 8

NOTE: As the blade fixing bolt is left threaded, turn it counter-clockwise and take a special care not to hurt your fingers by the blade. Be sure to check if it has been fitted correctly.

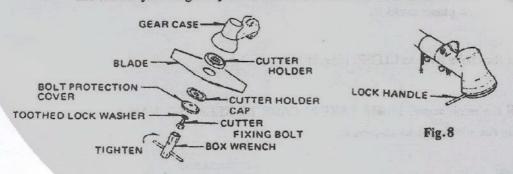


Fig. 7

2. OPERATING PROCEDURES

Adjust shoulder belt length as you feel appropriate before starting engine.

1. Filling the fuel

 This engine is 4 stroke, no needs to mix fuel and oil. It is better to use good quality fourcycle oil in the oil tank

CAUTION: THE OIL IN THE OIL TANK SHOULD BELOW THE SCALE FROM THE CAP.

2) Be sure to check bolts and other fasteners to see if any of them have become loose or missing.

2. Starting

- 1) Open the fuel cock.
- 2) Move the throttle lever to start position or about 1/4 full throttle, in case of metal lever.

 (Fig. 9)

NOTE: Staring with full throttle causes sudden high revolution of Blade, which is dangerous, so please avoid it.

- 3) Set the choke lever to CLOSE. (Fig. 10)
- 4) Pull the recoil starter briskly, TAKING CARE TO KEEP THE HANDLE in your grasp, while not allowing it to snap back.
- 5) When you hear combustible sounds a couple of times, move the choke lever back to as it is (open position). Then pull the recoil starter briskly.
- 6) After starting the engine, allow it about 2~3 minutes to warm up before subjecting it to any load.

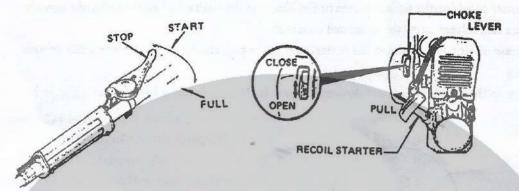


Fig. 9

Fig. 10

CAUTION: Blade may turn and flexible shaft may swing as engine starts. Do not let the blade touch any object when engine starts.

* Adjustment (Fig. 13)

When the idle speed is too high or too low, adjust it with the idle speed adjusting screw. In case that the blade keeps turning at the idling speed, turn the idle adjusting screw counterclockwise.

3. How to carry (Fig. 14)

- 1) First, hold the handle with your left hand and bend yourself down. Slip your right arm into the right belt.
- 2) Transfer the shaft to your right hand and reaching back, slip the left arm through the other belt.
- 3) When the engine unit is mounted on your back, grip the shaft as shown in the figure.

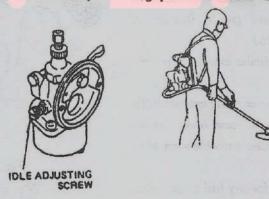


Fig. 11

Fig. 12

4. Cutting

- 1) The blade turns counterclockwise, therefore be advised to operate the cutter from right to leftward for efficient cutting.
- 2) When working on a slope, the blade should allow the contour from top to bottom, with the operator looking down to the left.
- 3) Keep the onlookers out of the working area at least 7~8m(30ft). (Fig. 13)
- 4) Special care

If the cutter should strike against stones or the like, stop the engine and cutter and make sure that the cutter and related parts are in normal condition.

When grass or vine twines round the cutter, stop the engine and blade and remove grass or vine.

5. Stopping

1) Decrease the engine speed, and depress the stop button until engine has stopped. (Fig. 14)

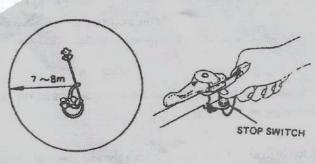


Fig. 13

Fig. 14

3. MAINTENANCE

1. Periodical check

1) Cleaning

1-1 Clean the cleaner element. (Fig. 15)

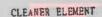
1-2 Scrape off the carbon from the spark plug gap (standard gap is 0.6mm or 0.023in.). (Fig. 16)

1-3 Clean the cylinder exhaust port and muffler.

Remove the grasses or dusts entered in the cylinder cover or fan case cover (otherhwise they may cause a trouble such as an overheating)

- 2) Inspect carefully for any fuel or oil leaks.
- Check all nuts, bolts.screws, etc., making sure they are tightened and secured as they should be.
- 4) Lubricate Gear Case, every 50 hours of use.
- 5) When lubricating flexible shaft, apply grease in the flexible pipe of clutch case side. (It is recommended to

apply grease after every 10 hours of use.)



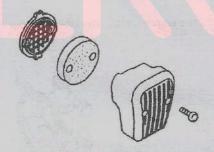


Fig. 15

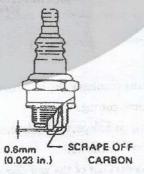


Fig. 16

2. Storage

- 1) Completely drain the fuel out of the tank and the carburetor.
- 2) Keep the engine always to be highter than gear box part.
- 3) Clean the unit carefully and keep it from moisture.

 Installation of throttle lever and stop switch (Fig. 17 and Fig. 3)

Before installation, put throttle, cable and stop cord through cable passage of the shaft grip.

- The throttle lever and stop switch are temperially assembled together, so they should be disassembled first.
- Put the round head of throttle cable and throttle cable together into the handle channel.
- 3) Fix the throttle lever on the hard shaft.
- 4) Finally, fix the stop switch on the throttle lever with a screw.

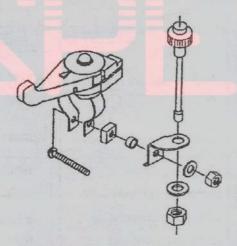


Fig. 17

TROUBLESHOOTING GUIDE

1.FAILURE TO START

symptom		probable cause	remedy		
	spark	fule system abnor	n mality	these is no fuel in tank fuel filter obstruct	add fuel in tank
cylinder compress	spark normal	fule system normal	fule	fuel is too dirty there is water in fuel there is too much fuel in cylinder	instead fuel instead fuel tear down spark plug and dry it
pressure	fule	high voltage	spark	spark plug fouled with oily deposits	clean the oily deposits
normal	system	wire spark normal	plug	spark plug insulation damage	replace spark plug adjust spark gap 0.6-0.7mm
	normal	high volta wire spark abno		high voltage wire breach or break off coil looseness	replace or tighten tighten
fule	ignition system	pre	npress ss ortage	piston ring attrite piston ring is breaked piston ring cementation spark plug looseness conjoint surface of the cylinder and crank cass leak	replace a new replace eliminate tighten eliminate
normal	normal	com	press	high voltage wire and spark plug contact badness stop switch failure or short circuit	tighten the spark plug cap

TROUBLESHOOTING GUIDE

2.LOW OUTPUT

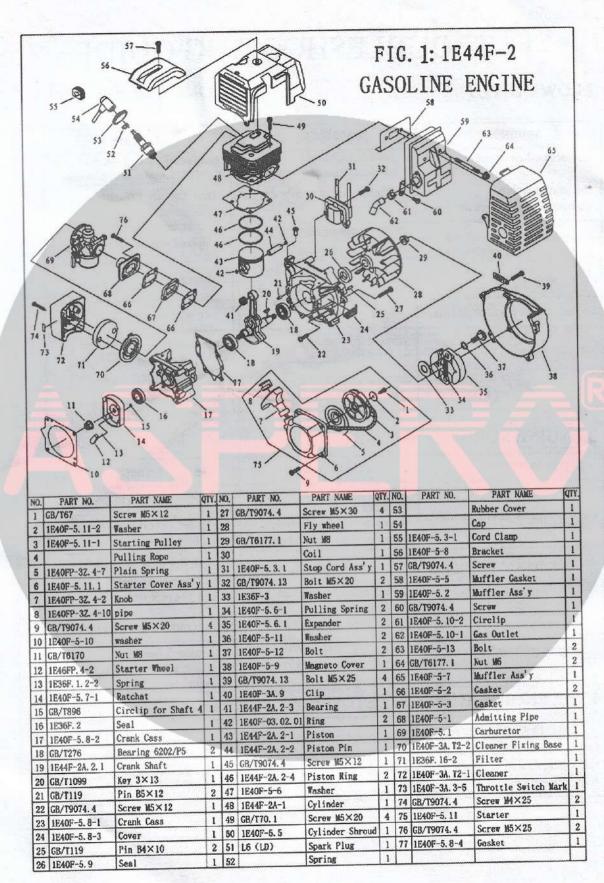
symptom	probable cause	remedy	
flameout when speedup the smoke is thin, carburetor spout backward	fuel filter obstruct, fall short of fuel muffler fouled with oily deposits	clean fuel filter, clean fuel road adjust carburetor clean the oily deposits	
compress press is shortage	piston piston ring cylinder attrite	replace piston, piston ring	
engine leak	conjoint surface of the cylinder and crank cass leak	repair	
the end of two crank shaft leak	the seal is bad	replace seal	
	burning room fouled with	avoid use it for long time , high speed and heavy load clean the oily deposits	

3.ENGINE RUNNING UNSTABLE

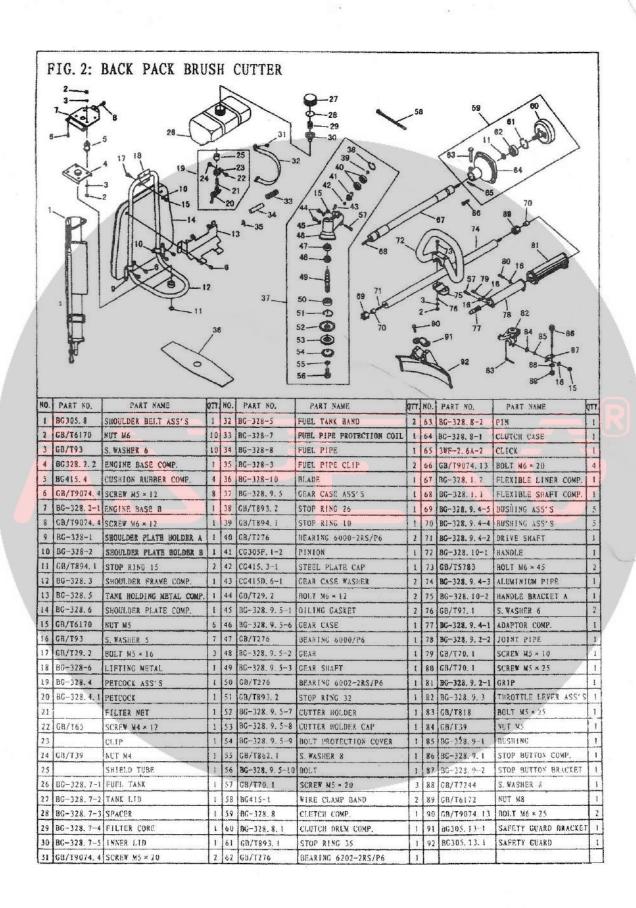
symptom	probable cause	remedy
there are knock sound in engine	piston piston ring cylinder attrite piston pin piston attrite bearing of crank shaft attrite	replace piston, piston ring replace piston pin, piston replace bearing
there are metal knock sound	engine overheats burning room fouled with oily deposits gasoline branded is unfit	avoid use it for long time high speed and heavy load clean the oily deposits replace require branded octane
engine ignition break off	there is water in fuel spark gap is wrong coil gap is wrong	adjust spark gap 0.6-0.7mm adjust coil gap 0.3-0.4mm

4. THE ENGINE SUDDENLY STOPPED

probable cause	remedy	
fuel is use up	add fuel	
spark plug fouled with oily deposits and short circuit	clean the oily deposits	
high voltage wire fall off	connect	



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