

## MODELS

CG 23EA (SL)

CG 32EA/CG 32EA (SL)

CG 42EA/CG 42EA (SL)

CG 51EA/CG 51EA (SL)

# Hitachi Power Tools

C

## BRUSH CUTTER

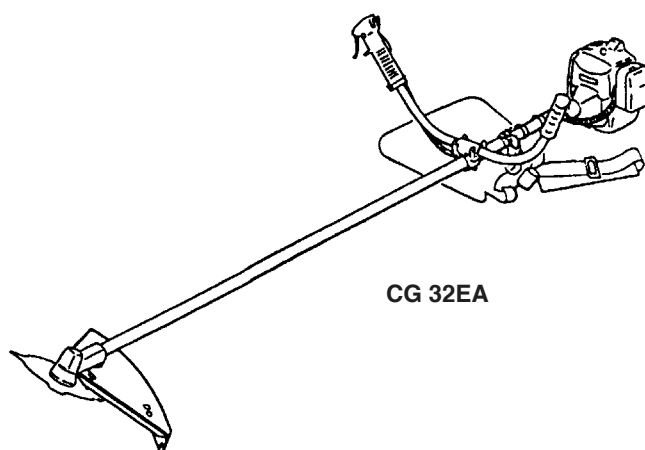
CG 23EA (SL)

CG 32EA/CG 32EA (SL)

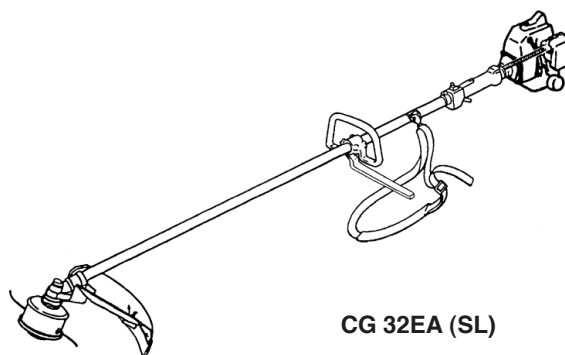
CG 42EA/CG 42EA (SL)

CG 51EA/CG 51EA (SL)

## TECHNICAL DATA AND SERVICE MANUAL



CG 32EA



CG 32EA (SL)

LIST Nos. CG 23EA: E021  
CG 32EA: E022  
CG 42EA: E023  
CG 51EA: E024

Feb. 2005



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## 1. PRODUCT NAME

Hitachi Brush Cutter, Models CG 23EA (SL), CG 32EA, CG 32EA (SL), CG 42EA, CG 42EA (SL), CG 51EA, CG 51EA (SL)

## 2. MARKETING OBJECTIVE

A four-model (seven kinds of specifications) series of brush cutters will be put on the European markets as our first engine-driven tools. The table below shows the engine displacement and the handle shape of each model.

Model	Engine displacement	Handle shape	Standard accessory	Main application
CG 23EA (SL)	22.5 mL	Loop type	Nylon string trimmer	For general and semi-professional use
CG 32EA	31.8 mL	Offset type	4-teeth x 255 mm cutter blade for grass cutting Nylon string trimmer	For professional use
CG 32EA (SL)		Loop type		
CG 42EA	41.5 mL	Offset type		
CG 42EA (SL)		Loop type		
CG 51EA	50.2 mL	Offset type		
CG 51EA (SL)		Loop type		

All the models comply with the CE regulation on exhaust gas emission (stage 1).

Compliance period: CG 23EA (SL), CG 32EA, CG 32EA (SL) ... Up to 2006

CG 42EA, CG 42EA (SL), CG 51EA, CG 51EA (SL) ... Up to 2009

Please promote the sales of these models vigorously.

## 3. APPLICATIONS

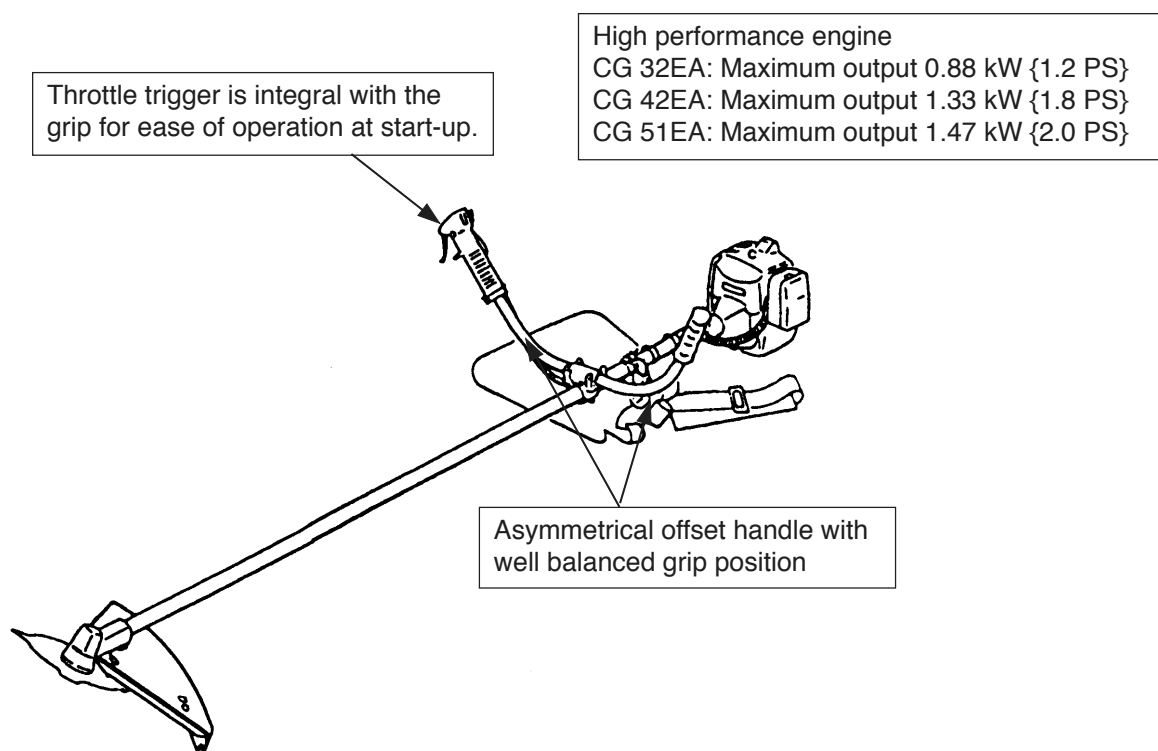
Nylon string trimmer: Specifically designed for cutting grass

4-teeth x 255 mm cutter blade for grass cutting: Specifically designed for cutting grass and brush

## 4. SELLING POINTS

(1) Brush cutter Models CG 32EA, CG 42EA and CG 51EA

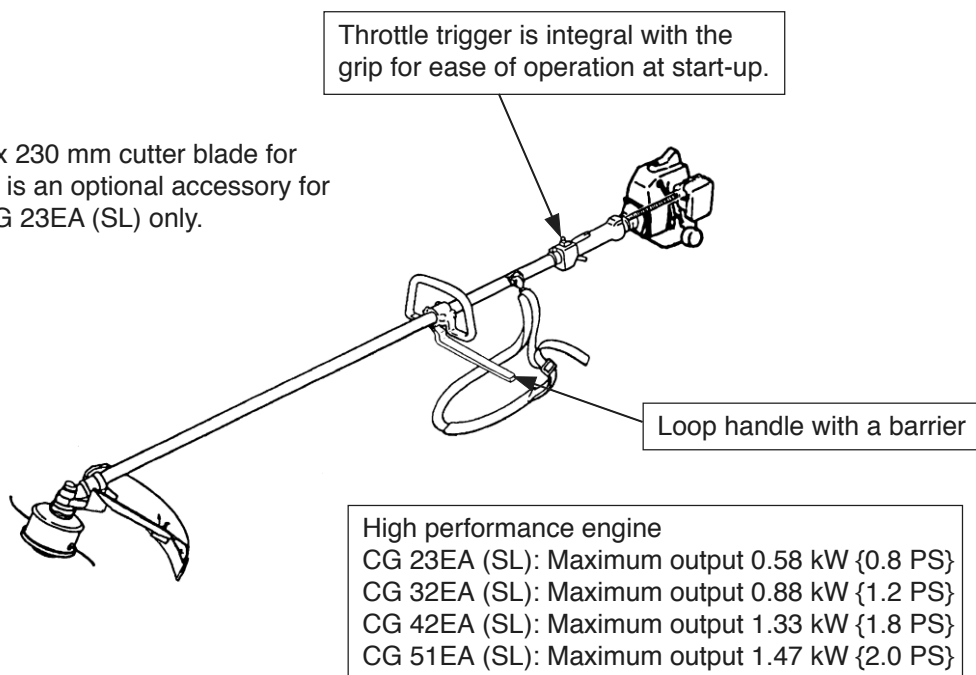
**[Representative model: CG 32EA]**



(2) Brush cutter Models CG 23EA (SL), CG 32EA (SL), CG 42EA (SL) and CG 51EA (SL)

**[Representative model: CG 32EA (SL)]**

\* The 4-teeth x 230 mm cutter blade for grass cutting is an optional accessory for the Model CG 23EA (SL) only.



**4-1. Selling Point Descriptions**

(1) Models CG 32EA, CG 42EA and CG 51EA

① Throttle trigger is integral with the grip for ease of operation at start-up

Keeping the trigger lever and the throttle trigger depressed simultaneously, press the stop switch button at cold start. Then release the trigger lever and the throttle trigger, and the throttle trigger is positioned at fast-idle start position. Thus initial combustion is easily made for ease of operation at start-up.

② Asymmetrical offset handle with well balanced grip position

The asymmetrical offset handle is ergonomically designed for a well balanced grip position. The Models CG 32EA, CG 42EA and CG 51EA are convenient for cutting grass.

③ High performance engine

Thanks to the high performance engine, the Models CG 32EA, CG 42EA and CG 51EA have excellent cutting capacity.

Model CG 32EA: Engine displacement 31.8 mL, maximum output 0.88 kW {1.2 PS}

Model CG 42EA: Engine displacement 41.5 mL, maximum output 1.33 kW {1.8 PS}

Model CG 51EA: Engine displacement 50.2 mL, maximum output 1.47 kW {2.0 PS}

(2) Models CG 23EA (SL), CG 32EA (SL), CG 42EA (SL) and CG 51EA (SL)

① Throttle trigger is integral with the grip for ease of operation at start-up

Keeping the trigger lever and the throttle trigger depressed simultaneously, press the stop switch button at cold start. Then release the trigger lever and the throttle trigger, and the throttle trigger is positioned at fast-idle start position. Thus initial combustion is easily made for ease of operation at start-up.

② Loop handle with a barrier

In the event the brush cutter is turned around unexpectedly due to a kickback etc., the barrier keeps the blade from contact with the operator.

③ High performance engine

Thanks to the high performance engine, the Models CG 23EA (SL), CG 32EA (SL), CG 42EA (SL) and CG 51EA (SL) have excellent cutting capacity.

Model CG 23EA (SL): Engine displacement 22.5 mL, maximum output 0.58 kW {0.8 PS}

Model CG 32EA (SL): Engine displacement 31.8 mL, maximum output 0.88 kW {1.2 PS}

Model CG 42EA (SL): Engine displacement 41.5 mL, maximum output 1.33 kW {1.8 PS}

Model CG 51EA (SL): Engine displacement 50.2 mL, maximum output 1.47 kW {2.0 PS}

## 5. SPECIFICATIONS

Model		CG 23EA (SL)	CG 32EA	CG 32EA (SL)	CG 42EA	CG 42EA (SL)	CG 51EA	CG 51EA (SL)	
Type of engine		Two-cycle, air-cooled gasoline engine							
Engine displacement		22.5 mL	31.8 mL	41.5 mL		50.2 mL			
Bore size x stroke		32 mm dia. x 28 mm	38 mm dia. x 28 mm	40 mm dia. x 33 mm		44 mm dia. x 33 mm			
Max. power output		0.58 kW {0.8 PS}/7,000 min <sup>-1</sup>	0.88 kW {1.2 PS}/6,500 min <sup>-1</sup>	1.33 kW {1.8 PS}/6,500 min <sup>-1</sup>		1.47 kW {2.0 PS}/6,500 min <sup>-1</sup>			
Fuel		Mixed fuel of gasoline and two-cycle oil at 25 to 50 : 1							
Fuel tank capacity		0.55 liters	1.0 liters						
Ignition system		Point-less flywheel magnet type (LHIC type)							
Ignition plug		NGK BPMR6Y							
Carburetor		Diaphragm type (with a primer pump)							
Starting		Recoil starter type							
Stopping		Slide type							
Throttle lever		Fixed type							
Clutch		Automatic centrifugal							
Carrying		Shoulder belt type (single)	Shoulder belt type (double)	Shoulder belt type (single)	Shoulder belt type (double)	Shoulder belt type (single)	Shoulder belt type (double)	Shoulder belt type (single)	
Cutter blade dimensions		—	255 mm-dia. x 1.4 mm-thick x 25.4 mm-bore						
Nylon string trimmer		Semi-automatic head 4 inches type							
Rotating direction of cutter blade		Counterclockwise when viewed from above							
Dimensions [When mounting the 4-teeth blade]	L	1,780 mm	1,860 mm	1,860 mm	1,910 mm	1,895 mm	1,910 mm	1,895 mm	
	W	350 mm	690 mm	350 mm	690 mm	350 mm	690 mm	350 mm	
	H	320 mm	400 mm	275 mm	425 mm	310 mm	425 mm	310 mm	
Product Weight [Excluding the mixture of gasoline and oil, cutter blade, nylon string trimmer, hanging strap ass'y and safety guard ass'y]		4.2 kg	5.6 kg	5.3 kg	7.8 kg	7.0 kg	7.8 kg	7.0 kg	
Gear reduction ratio		1 : 1.36	1 : 1.46		1 : 1.29				
Standard accessories	○ Nylon string trimmer	1 pc.	○ 4-teeth x 255 mm cutter blade for grass cutting						1 pc.
	○ Hanging strap ass'y	1 pc.	○ Nylon string trimmer						1 pc.
	○ Box spanner	1 pc.	○ Hanging strap ass'y						1 pc.
	○ Double-ended wrench	1 pc.	○ Blade cover (2 pcs./set)						1 set
	○ Lever handle	1 pc.	○ Box spanner						1 pc.
Optional accessories			○ Double-ended wrench						1 pc.
			○ Lever handle						1 pc.
	○ Lithium-base bearing lube	1 pc.							
	○ 4-teeth x 230 mm cutter blade for grass cutting	1 pc.	○ Lithium-base bearing lube						1 pc.
	○ Blade cover (2 pcs./set)	1 set							

## 6. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Brush Cutter by all of our customers, it is very important that at the time of sale the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Handling Instructions, and fully understands the meaning of the precautions listed on the Warning Label attached to each unit.

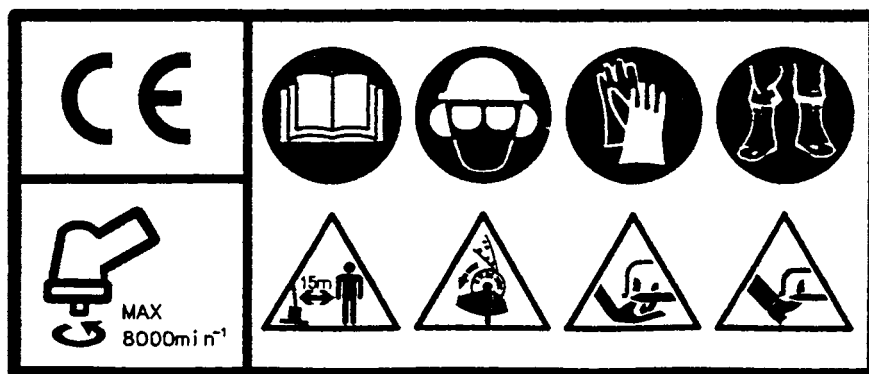
### 6-1. Handling Instructions

Although every effort is made in each step of design, manufacture and inspection to provide protection against safety hazards, the dangers inherent in the use of any grass cutting machine cannot be completely eliminated. Accordingly, specific precautions and suggestions for the use of the Brush Cutter are listed in the Handling Instructions to enhance the safe and efficient use of the tool by the customer. Salespersons must be thoroughly familiar with the contents of the Handling Instructions to be able to offer appropriate guidance to the customer during sales promotion.

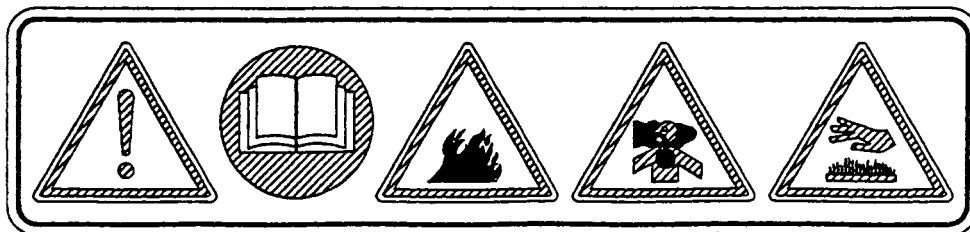
### 6-2. Warning Label

Each brush cutter is provided with two Warning Labels (illustrated below) which list basic safety precautions in its use.

6-2-1. The following precautions are listed on the Warning Label attached to the drive shaft assembly.



6-2-2. The following precautions are listed on the Warning Label attached to the engine.



### 6-2-3. Symbol explanation

Read and understand the explanation of each symbol described on the Handling Instructions, and instruct the users properly.

### **6-3. Thorough Instruction to the Customers**

#### **6-3-1. Starting and stopping procedures**

Thoroughly instruct the customers especially the difference between the cold starting procedure and the hot restarting procedure, and also the importance of starting with the throttle trigger positioned at fast-idle start position.

#### **6-3-2. Fuel safety**

- The engine used on the Models CG 23EA (SL), CG 32EA, CG 32EA (SL), CG 42EA, CG 42EA (SL), CG 51EA and CG 51EA (SL) is of a two-cycle design. Instruct the customers to use a mixture of gasoline and two-cycle oil in the ratio of 25 to 50 : 1 as fuel.
- Instruct the customers to use a container intended for mixing gasoline and oil. Use of resin containers such as poly tanks and PET bottles can cause a failure because they may melt into the mixture.
- Fuel stored for a long time is degraded and deteriorated. In addition, improper capping can degrade the fuel only in one day especially in the summer months. Instruct the customers not to store the mixed fuel but to make the required amount of mixture when necessary.

#### **6-3-3. Storage**

Instruct the customers to empty the fuel tank and perform idling until the engine stops to remove any fuel that may remain in the carburetor before long term storage of the Models CG 23EA (SL), CG 32EA, CG 32EA (SL), CG 42EA, CG 42EA (SL), CG 51EA and CG 51EA (SL). If any fuel is remained in the carburetor, only the gasoline mixed in the fuel volatilizes during the storage period and the passage for fuel is clogged with the two-cycle oil. Thus the engine cannot be started next time.

#### **6-3-4. Applicable blade**

Thoroughly instruct the customers to use the blades of specified outside diameters and types [the maximum blade diameter for the Model CG 23EA (SL) is 230 mm, and 250 mm for the other models]. Use of an inapplicable blade may result in not only short brush cutter life but also an unexpected accident.



## 7. TROUBLESHOOTING GUIDE

Problem		Cause	Action
Starter grip cannot be pulled.	Crank shaft does not turn.	Seized piston ring	Disassemble and replace.
		Seized connecting rod bearing	
Engine does not start.	Spark plug is dry.	Empty fuel tank	Replenish with fuel.
		Clogged fuel filter ass'y	Clean or replace.
		Folded or improperly connected or damaged fuel pipe	Check or replace.
		Defective breather ass'y of fuel tank	Replace.
		Clogged carburetor ass'y	Clean.
		Defective carburetor ass'y	Check or replace.
	No spark is made.	Stained or defective spark plug	Clean or replace.
		Improperly connected high tension cable and terminal	Check.
		Damaged high tension cable	Replace.
		Improper air gap	Adjust.
		Defective coil	Replace.
		Defective stop switch	Replace.
		Improperly connected or damaged internal wires	Check or replace.
	No compression is made.	Defective piston ring	Replace.
		Worn piston	
		Defective oil seal of crank chamber	
Engine starts but cannot continue idling.	Sparkling is weak.	Stained or defective spark plug	Clean or replace.
		Improper air gap	Adjust.
		Defective coil	Replace.
	Compression is weak.	Defective piston ring	Replace.
		Defective oil seal of crank chamber	
	Both sparking and compression are proper.	Clogged carburetor ass'y	Clean.
		Defective carburetor ass'y	Check or replace.
		Clogged fuel filter ass'y	Clean or replace.
		Folded or improperly connected or damaged fuel pipe	Check or replace.
		Too low idling speed	Adjust.
Engine starts and accelerates but ...	Engine stops.	Clogged carburetor ass'y	Clean.
		Defective carburetor ass'y	Check or replace.
		Clogged fuel filter ass'y	Clean or replace.
	Acceleration is improper. Engine is not revved up.	Defective carburetor ass'y	Check or replace.
		Clogged muffler with carbon	Clean.
		Clogged element of air cleaner ass'y	Clean.
Engine starts but ...	Engine speed fluctuates.	Clogged carburetor ass'y	Clean.
		Defective carburetor ass'y	Check or replace.
	Fuel consumption is excessive.	Defective carburetor ass'y	Check or replace.
		Clogged element of air cleaner ass'y	Clean.
	Blade rotates at idling speed.	Improper idling adjustment	Adjust.
		Worn clutch section	Replace.

## 8. REPAIR AND MAINTENANCE GUIDE

This section describes troubleshooting and repair procedures for phenomena which can be expected to occur commonly in the operation of brush cutters. The procedures in this section and in Section 7 TROUBLESHOOTING GUIDE should be studied and referred to regularly to ensure efficient diagnoses and prompt repair of problems.

### 8-1. Precautions in Maintenance, Inspection and Repair

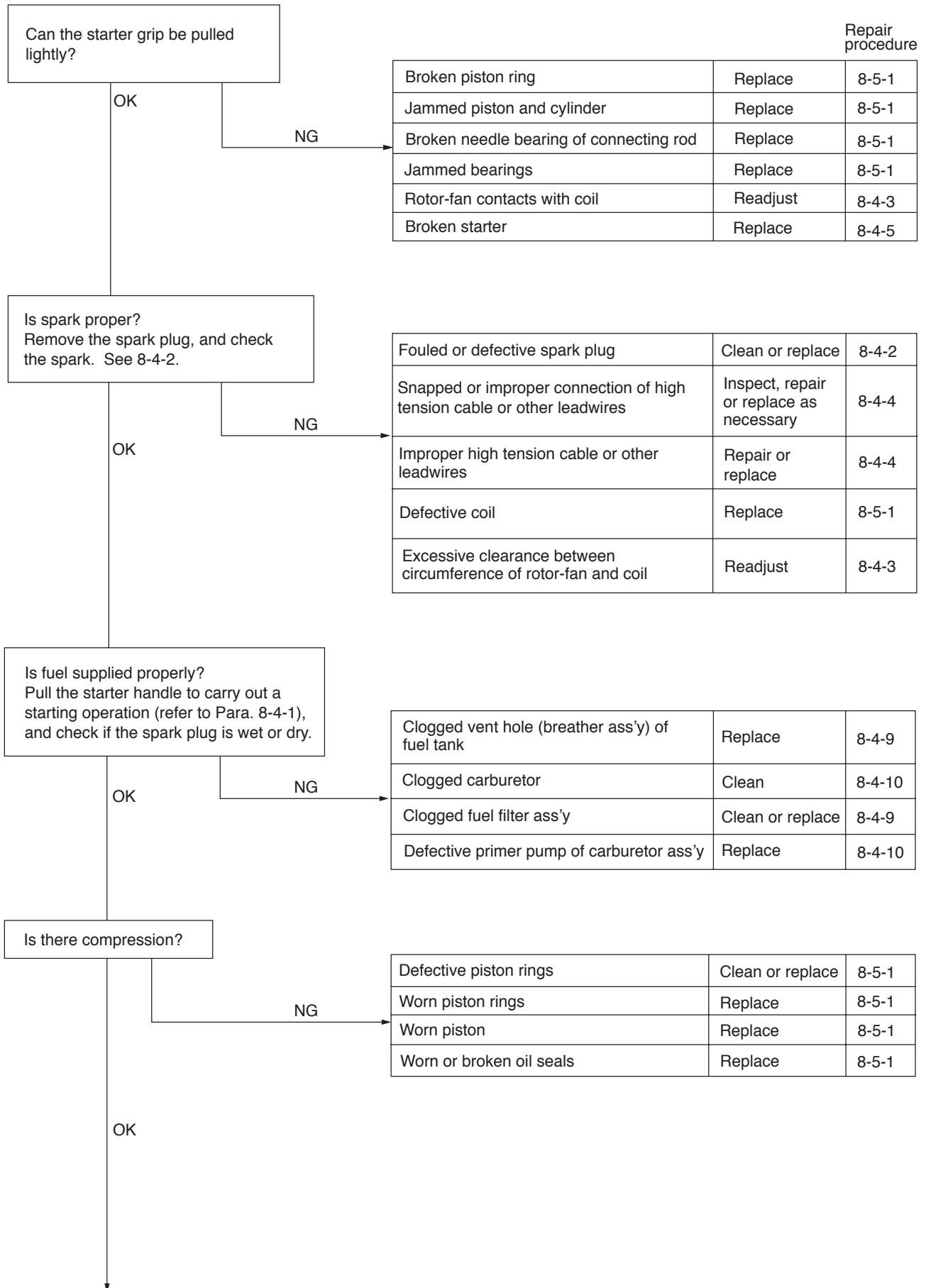
- As the fuel used in the brush cutter is highly flammable, carefully keep sources of fire out of the area.
- If the engine section is disassembled, replace gaskets and oil seals with new ones without fail prior to reassembly.
- Prior to commencing disassembly and repair, thoroughly drain all fuel from the unit into a suitable container.
- Always ensure that the engine has been allowed to cool thoroughly before attempting disassembly.
- When starting, operating or performing maintenance on the unit, carefully avoid coming in contact with hot portions of the muffler and other components, the high tension cable, or the spark plug which could cause serious burn or electrical shock.
- When there is a cutter blade mounted on the unit, carefully confirm that there is no one else in the immediate area before starting the engine.
- When repairing the unit indoors or in other protected areas, carefully ensure there is adequate ventilation.
- On completion of repair, carefully confirm that all screws, nuts and bolts are properly tightened; that the throttle trigger returns properly to the idling position when released; and that the engine stops when the stop switch is slid to the STOP position.

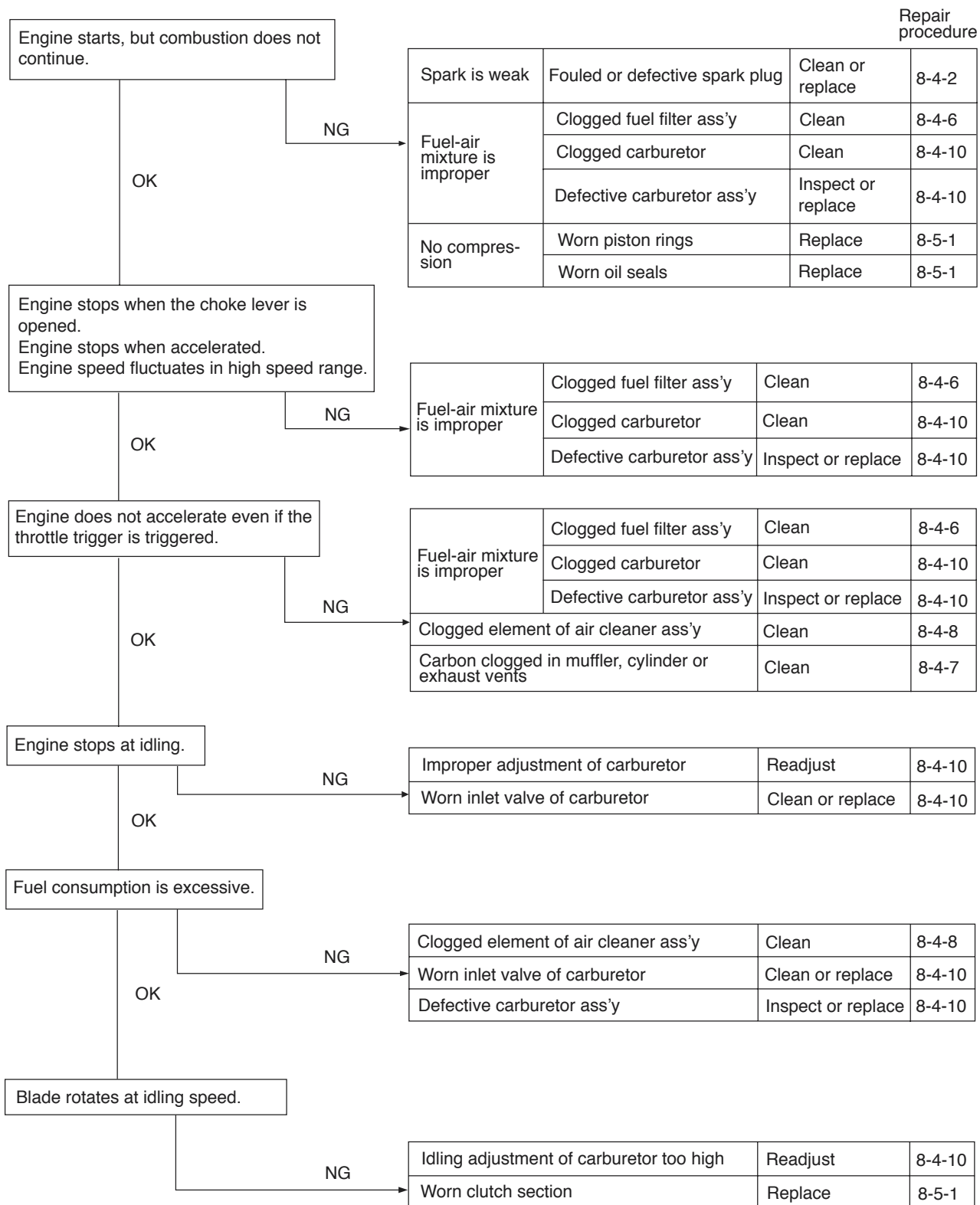
### 8-2. Inspection Standards and Spark Plug Replacement/Adjustment

The table below can be utilized as a handy guide during and after repair for inspection standards and replacement or adjustment of the spark plug.

Item			Standard value						
Model			CG 23EA (SL)	CG 32EA	CG 32EA (SL)	CG 42EA	CG 42EA (SL)	CG 51EA	CG 51EA (SL)
Inspection standard	Idling rotation speed	rpm	2,700 to 3,300			2,300 to 2,900			
	No-load max. rotation speed (after warming up) [with 4-teeth cutter blade]	rpm	—	9,000 or more					
	No-load max. rotation speed (after warming up) [with nylon string trimmer]	rpm	7,500 or more						
	Clutch engages	rpm	3,601 to 4,200			3,301 to 3,700			
	Engine acceleration	—	Accelerates smoothly						
	Clearance between the external circumference of flywheel and the ignition coil	mm	0.3 to 0.4						
Spark plug	Spark plug replacement	—	NGK BPMR6Y						
	Clearance between the electrodes of the spark plug	mm	0.6 to 0.7						

### 8-3. Repair Flow Chart





## 8-4. Inspection and repair procedures

The **[Bold]** numbers in the description below correspond to the item numbers in the parts list and exploded assembly diagram for the Model CG 32EA, and the **(Bold)** numbers correspond to those for the Model CG 32EA (SL) as representative models.

(Common numbers between the Models CG 32EA and CG 32EA (SL): **[Bold]** numbers)

### 8-4-1. Starting the engine

A. When the engine is cold:

- (1) Turn the choke lever to the close position (↖↘).
- (2) Pump the primer pump until fuel can be seen flowing through the return pipe to the fuel tank.
- (3) With the stop switch "START" position, and the throttle trigger positioned at Fast-idle start position, pull the starter grip. After the engine is started, turn the choke lever to the open position (↗↘). then squeeze the throttle trigger to allow it to return to the idle position.

If the engine stops running before you turn the choke lever to the open position (↗↘):

Go ahead and open the choke, pull the starter grip with the throttle trigger positioned at Fast-idle start position.

B. When the engine is warm:

To start the engine that is already warmed up (hot restart).

- (1) Turn the choke lever to the open position (↗↘), and set the stop switch to the "START" position.
- (2) Leave the throttle trigger in the idle position and pull the starter grip.
- (3) If the engine fails to start three to four pulls, follow the instructions in the cold starting procedure section above.

### 8-4-2. Checking the spark of the spark plug

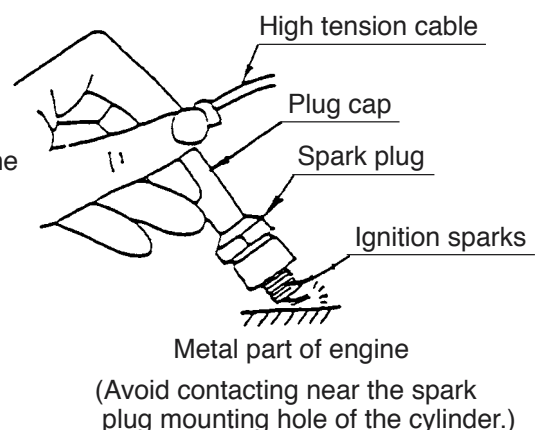
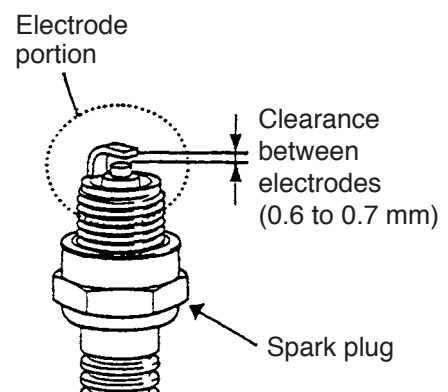
(1) Remove the spark plug from the cylinder.

If there is any carbon on the electrodes of the spark plug, clean it off thoroughly with a wire brush. If the clearance between the electrodes is improper, readjust it as necessary (see illustration). In addition, if the electrodes are wet with fuel, thoroughly wipe the fuel off with a clean, soft rag. Then, remove any fuel which may be remaining in the cylinder by performing the following procedures:

- ① Hold the spark plug away from the cylinder.
- ② Face the spark plug mounting hole of the cylinder downward.
- ③ Pull the starter grip a few times.

(2) Insert the spark plug into the plug cap. Keeping the electrode portion of the spark plug in contact with the metal part of the engine (avoid contacting near the spark plug mounting hole of the cylinder), pull the starter grip.

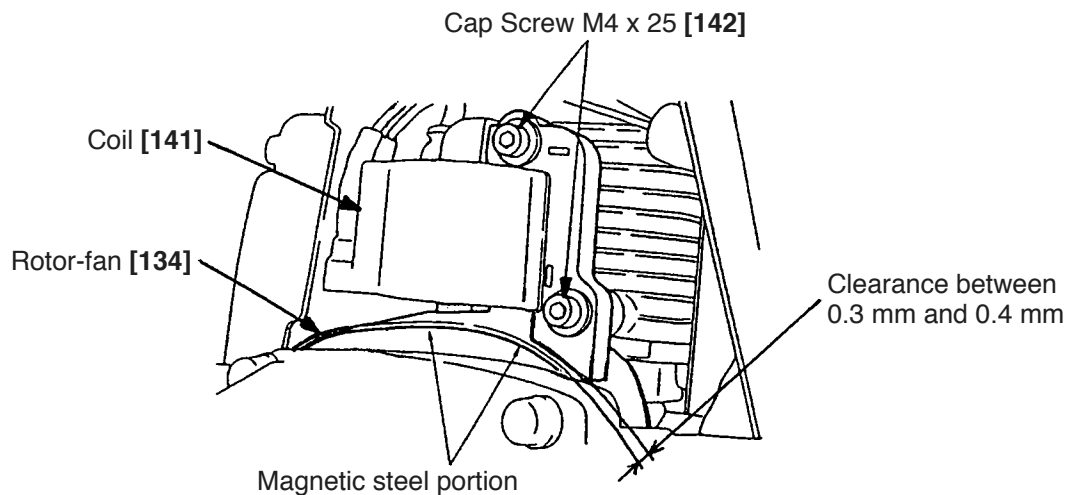
(3) If the spark plug is functioning properly, there should be sparks from the electrode portion, together with a crackling sound.



- WARNING:** ○ When performing the procedures outlined below, should your hand(s) come in contact with metallic portions of the spark plug when the starter grip is pulled, it will give you an electric shock. Be very careful in handling the spark plug.
- Thoroughly wipe up any fuel in the vicinity of the spark plug, and confirm there is no danger of fire before checking the spark.

#### 8-4-3. Adjustment of air gap (clearance) between the rotor-fan perimeter and the coil

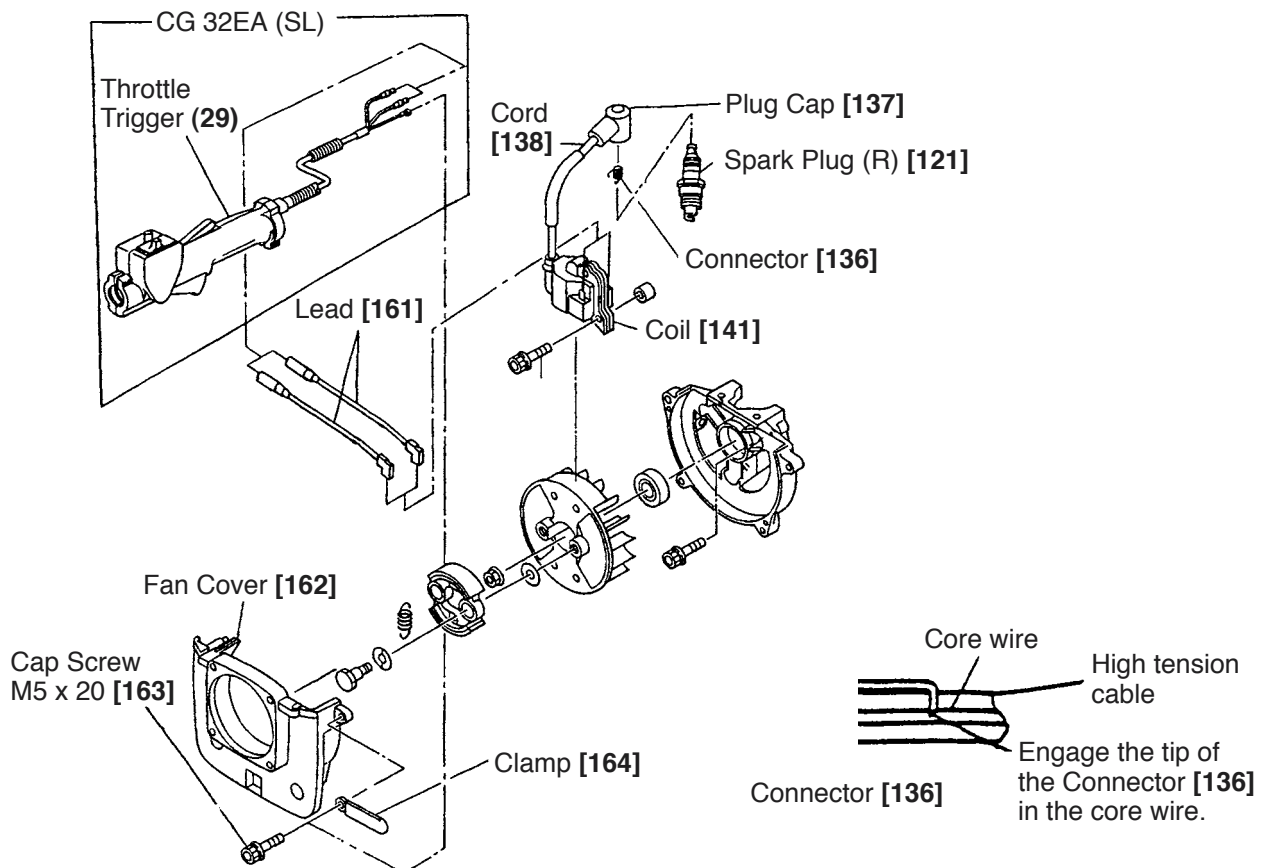
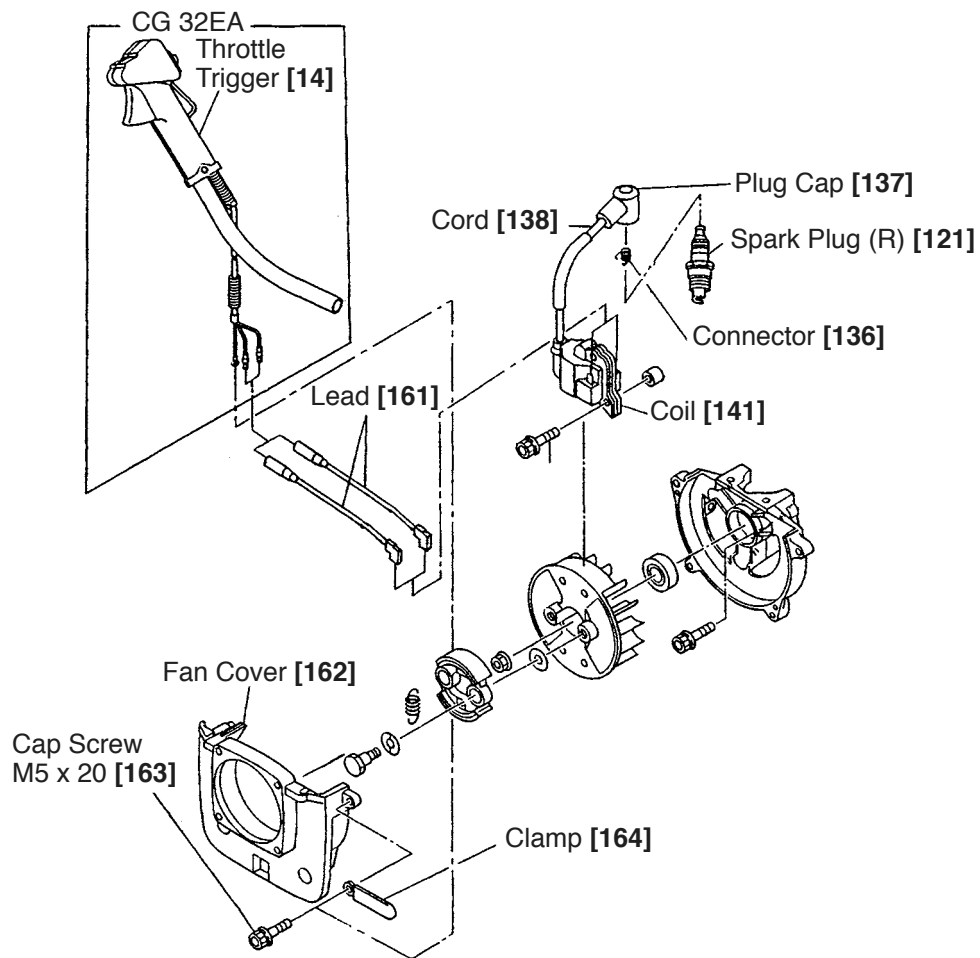
- (1) Remove the Knob [117], Top Cover [118] and Grommet [120].
- (2) Loosen the two Cap Screws M4 x 25 [142] to the extent that the Coil [141] is temporarily secured.
- (3) Insert a clearance gauge between the magnetic steel portion around the perimeter of the Rotor-fan [134] and the Coil [141] then adjust the position of the Coil [141] so that the clearance becomes 0.3 mm to 0.4 mm.
- (4) Tighten the two Cap Screws M4 x 25 [142] and remove the clearance gauge.
- (5) After tightening the Cap Screws M4 x 25 [142] securely, check that the clearance is between 0.3 mm and 0.4 mm.



#### 8-4-4. Wiring diagram

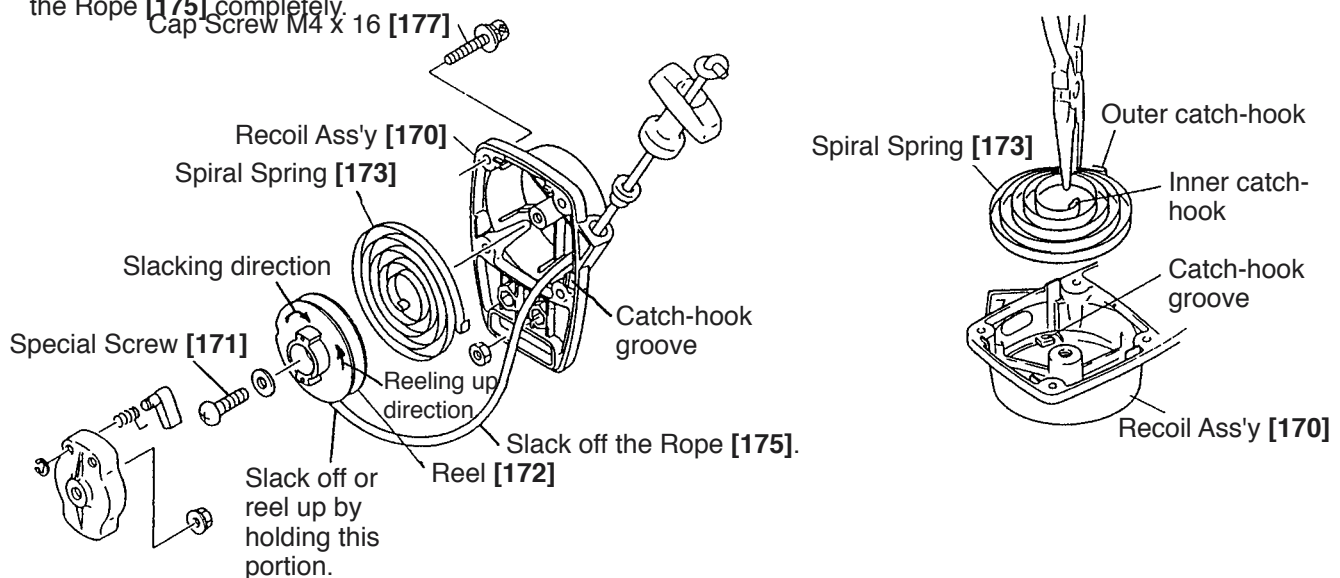
Wiring should be done as shown in the figure below.

Connect the two Leads [161] to the two connectors of the Coil [141]. Connect the two internal wires of the Throttle Trigger [14] (29) to these two Leads [161]. Secure both the remained internal wire of the Throttle Trigger [14] (29) and the Clamp [164] to the Fan Cover [162] with the Cap Screw M5 x 20 [163]. Engage the needle tip of the Connector [136] in the core wire of the Cord [138]. Apply two-cycle oil to the cord mounting hole of the Plug Cap [137] then insert the Cord [138] and the Connector [136] into the hole. After mounting, check for sparking of the Spark Plug (R) [121] and continuity of the Connector [136].



#### 8-4-5. Disassembly and reassembly of the recoil starter ass'y

- (1) Loosen the four Cap Screws M4 x 16 [177] and remove the Recoil Ass'y [170] from the engine.
- (2) Holding the Reel [172] with fingers, slack off the Rope [175] with a screwdriver and hook it on the notch of the Reel [172] then return the Reel [172] slowly until it stops.
- (3) Loosen the Special Screw [171]. Lift the Reel [172] slowly being careful not to pop out the Spiral Spring [173].
- (4) After disassembly, clean dirt from each component completely. Apply grease to the sliding portions before reassembly.
- (5) Insert the outer catch-hook of the Spiral Spring [173] in the groove of the Recoil Ass'y [170].
- (6) Insert the inner catch-hook of the Spiral Spring [173] in the groove of the Reel [172] and tighten the Special Screw [171]. At this time, shape the inner catch-hook of the Spiral Spring [173] with a pair of long-nose pliers for easier reassembly.
- (7) Slack off the Rope [175] from the notch of the Reel [172] inward. Holding the slacked Rope [175], reel up the Spiral Spring [173]. When reeling up, keep 1 or 2 turns of the Spiral Spring [173] slacked even after drawing the Rope [175] completely.



#### 8-4-6. Checking the fuel filter

Remove the Fuel Filter [238] from the fuel inlet of the Fuel Tank [241] with a piece of wire. If the Fuel Filter [238] is stained, clean it with gasoline.

Remove the Fuel Filter [238] from the Fuel Pipe [235]. Check whether the Fuel Filter [238] is clogged or not by breathing upon it. Replace the Fuel Filter [238] as necessary.

#### 8-4-7. Cleaning the muffler comp. and the cylinder

Remove the Knob [117], Top Cover [118] and Grommet [120]. Loosen the two Cap Screws M5 x 55 [113] and remove the Muffler Comp. [114].

Clean carbon off the exhaust port of the muffler with a screwdriver. Close the exhaust port of the cylinder with the piston and scrape carbon off the exhaust port.

**NOTE: Do not scratch the piston.**

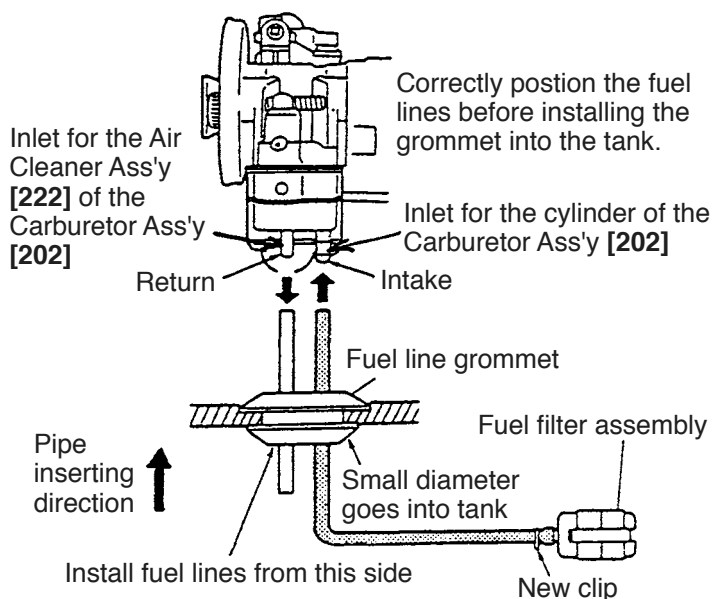


#### 8-4-8. Cleaning the element

Remove the Air Cleaner Ass'y [222] and the Air Cleaner Cover [229]. Remove the Element [228] and clean it with the compressor air. If the Element [228] is stained heavily, clean it with gasoline and dry it well before reassembly.

#### 8-4-9. Replacement of the fuel pipe

Remove the Fuel Pipe [235] and the Return Pipe 3 x 6 x 85 [237] from the Grommet [236] and replace them with new ones if they are cracked. When inserting the Fuel Pipe [235] into the Grommet [236], insert into the hole that is positioned inside the Fuel Tank [241] first. Insert the Fuel Pipe [235] with the Fuel Filter [238] into the inlet for the cylinder of the Carburetor Ass'y [202]. Insert the yellow Return Pipe 3 x 6 x 85 [237] into the inlet for the Air Cleaner Ass'y [222] of the Carburetor Ass'y [202].



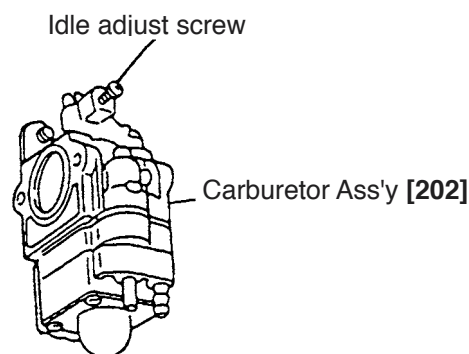
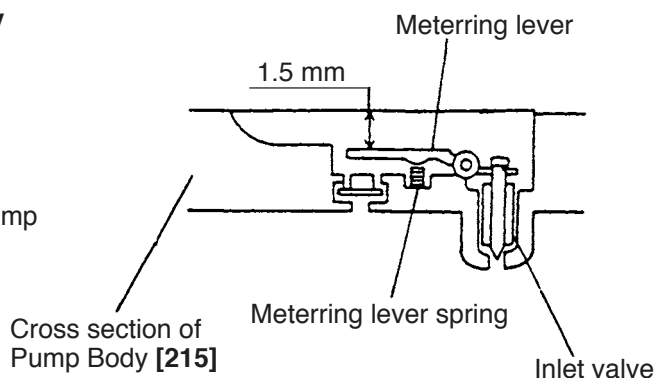
#### 8-4-10. Checking and adjustment of the carburetor ass'y

##### A. Checking the carburetor ass'y

(1) Check the following parts when disassembling the Carburetor Ass'y [202].

- Deformation of the meterring lever spring of the Pump Body [215]
- Wear of the inlet valve of the Pump Body [215]
- Hardening or damage to the Diaphragm [214]
- Hardening or damage to the Diaphragm [217]
- Clogging of the Jet Main [212]

- (2) If the fuel overflows, the tip of the inlet valve is worn or clogged with dust. Disassemble the Carburetor Ass'y [202] and check it. Clean the inlet or replace with new one.
- (3) The standard height of the meterring lever is 1.5 mm higher than the end surface of the main body.



##### B. Adjustment of the carburetor ass'y

(1) Idle adjust screw

Adjust opening of the throttle valve during idling. The engine speed increases by turning clockwise and decreases by turning counterclockwise. When the blade rotates during idling, decrease the speed so that the blade does not rotate. Note that too low speed may stop the engine during idling. In such a case, increase the speed but do not allow the blade to rotate.

(2) The standard setting value of the Carburetor Ass'y [202] is as follows.

Idle adjust screw	* 2,700 to 3,300 min <sup>-1</sup> (Check that the blade does not rotate.)
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\* For the speed other than the Models CG 32EA and CG 32EA (SL), refer to the idling rotation speed listed in the table of 8-2.

(3) It is impossible to adjust both the idle needle that adjusts the flow rate of fuel at low speed and the high speed needle that adjusts the flow rate of fuel at high speed.

## 8-5. Disassembly and Reassembly

### 8-5-1. Disassembly of the engine

(1) Disconnect the three internal wires of the Throttle Trigger [14] (29) from the engine. Loosen the Bolt (W/Sp. Washer) M5 x 25 [11] and four Bolts (W/Washers) M5 x 20 [10] and separate the engine from the drive shaft tube.

(2) Removal of the top cover and the starter ass'y

Loosen the Knob [117] and remove the Top Cover [118]. Loosen the four Cap Screws M4 x 16 [177] and remove the Recoil Ass'y [170].

(3) Removal of the fan cover

Loosen the four Cap Screws M5 x 20 [163]. Remove the Clamp [164], one internal wire of the Throttle Trigger [14] (29) and Fan Cover [162].

(4) Removal of the fuel tank

Pull out the Fuel Pipe [235] and the Return Pipe [237] from the Carburetor Ass'y [202]. Remove the Fan Cover [162] or the Recoil Starter Ass'y [165] then remove the Fuel Tank [241].

(5) Removal of the carburetor ass'y and the muffler

Remove the Air Cleaner Cover [229] and the Element [228]. Loosen the two Cap Screws M5 x 60 [230] then remove the Housing [224] and the Carburetor Ass'y [202]. Loosen the Knob [117] and remove the Top Cover [118]. Loosen the two Cap Screws M5 x 55 [113] and remove the Muffler Comp. [114].

(6) Removal of the coil and the plug cap

Loosen the Knob [117] and remove the Top Cover [118]. Loosen the two Cap Screws M4 x 25 [142] and remove the Coil [141]. Apply a drop of oil into the hole for the spark plug on the Plug Cap [137] and spread the applied oil entirely by inserting and pulling the high tension cable. Slowly disconnect the Connector [136] being careful not to stretch it.

(7) Removal of the clutch ass'y and the starter pulley

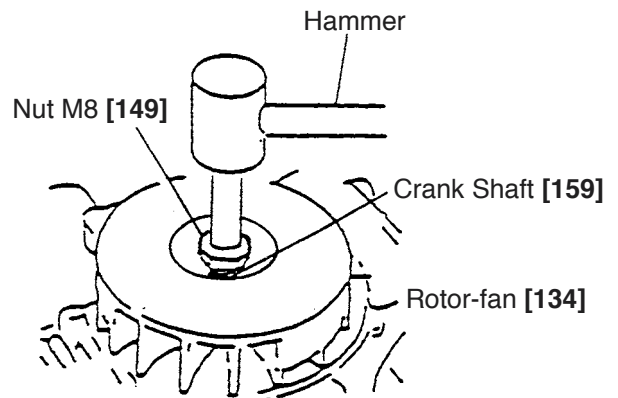
To stop turning the crank shaft, insert the rope of the Recoil Starter Ass'y [165] into the spark plug mounting hole of the Cylinder [126] and turn the Rotor-fan [134] counterclockwise to lock the Piston [129] at the top dead center. Loosen the two Special Bolts M6 [144] and remove the Clutch Ass'y [146]. With the crank shaft stopped, tap the Starter Pulley Ass'y [166] lightly with a plastic hammer so that it turns counterclockwise. Then the Starter Pulley Ass'y [166] can be removed.

**NOTE: Use a clean rope to stop turning the crank shaft. Do not leave foreign matter such as shreds of rope in the cylinder.**

(8) Removal of the rotor-fan

Stop turning the Crank Shaft [159] in the same manner as the above (7) and loosen the Nut M8 [149]. Make the screw end surface of the Crank Shaft [159] flush with the top surface of the Nut M8 [149]. Holding the Rotor-fan [134] with a hand, tap the end surface of the Crank Shaft [159] lightly with a hammer. Then the Rotor-fan [134] can be removed.

Holding the Rotor-fan [134] with a hand, tap the end surface of the Crank Shaft [159] lightly with a hammer. Be careful not to deform the threaded portion.



(9) Removal of the cylinder

Loosen the four Cap Screws M5 x 20 [125] and pull out the Cylinder [126] slowly.

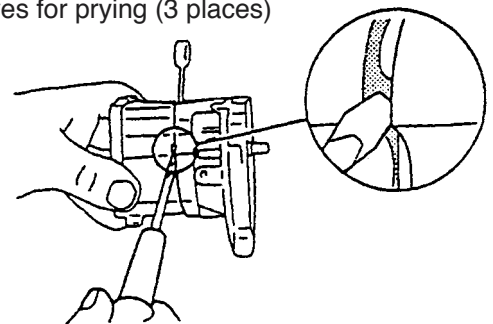
(10) Removal of the piston and the piston ring

Remove the Clip (Piston Pin) [130] with a pair of long-nose pliers. Tap the Piston Pin [131] lightly and remove the Piston [129]. Pull out the Piston Ring [128] by opening up the juncture of the ring. Be careful not to open up the juncture forcibly. Otherwise, the cast-iron ring may be broken.

(11) Removal of the crank case

Grooves have been cast into the Crank Case [152] at the screw attaching points to provide a means for separating the two Crank Case [152] halves. Insert a screwdriver into the grooves and gently pry the two halves apart. The Crank Shaft [159] is a snug slip-fit in the two Bearings 201C3 [154]. the Crank Case [152] halves should be carefully separated from the Crank Shaft [159].

Grooves for prying (3 places)



**NOTE: The Crank Shaft [159] and the connecting rod are assembled as one complete unit and cannot be separated.**

## 8-5-2. Reassembly of the engine

(1) Removal of carbon

Before reassembly of the engine, clean carbon off the piston head, exhaust port of the cylinder and combustion chamber. If the piston ring fitted in the piston groove does not move smoothly, clean carbon off the ring groove and the side of the piston ring completely. Be careful not to scratch the parts such as cylinder and piston. Clean carbon off the air inlet and the exhaust port of the muffler, too.

(2) Cleaning the parts

Clean the Crank Case [152], Crank Shaft [159], Piston [129], Piston Ring [128], Piston Pin [131] and Cylinder [126] with gasoline.

(3) Reassembly of the crank case, piston and cylinder

Press-fit Oil Seals (B) and (C) **[160]** **[151]** in the Crank Case **[152]** so that the pressure spring is positioned inwardly. Apply "Multemp PS No. 2 (Kyodo Yushi Co., Ltd.)" between the lips. Do not reuse the removed oil seals. Be sure to replace them with new ones.

Be sure the mating surfaces of the crank case halves are clean and dry. Apply a small continuous bead of liquid gasket to the mating surface of only one of the crank case halves. Using care to prevent damage to the seal, place the rotor-half of the crank case onto the crank shaft and press squarely until the crank case halves come together.

Use the following liquid gasket.

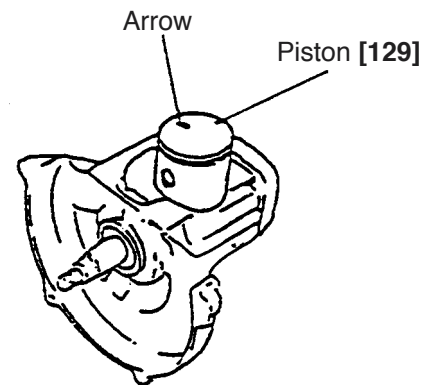
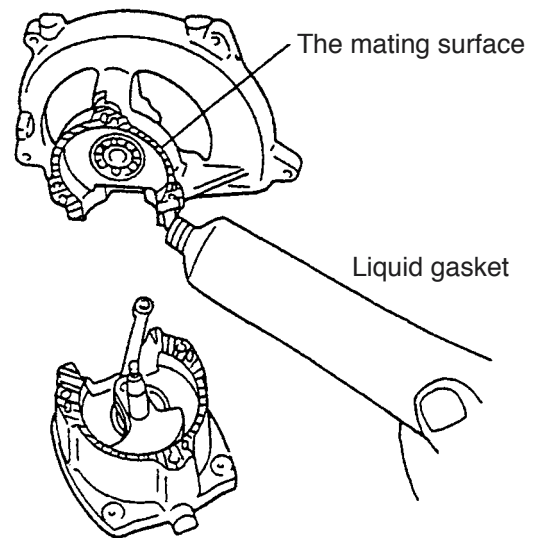
Maker: Threebond

Type: Nonsolvent type siliconebased

Name of product: Threebond 1207D

Before reassembly of the cylinder, apply two-cycle oil to the ball bearings, connecting rod large/small end bearings, piston ring and inside of the cylinder with two-cycle oil.

Mount the Piston **[129]** to the connecting rod facing the exhaust (arrow) mark at the top of the piston to the muffler. When mounting the Cylinder **[126]**, correctly align the juncture of the Piston Ring **[128]** with the stopper pin of the piston groove, and align the position of the cylinder with the piston. Otherwise, the Piston Ring **[128]** may be broken.



(4) Mounting the rotor-fan and the clutch ass'y

Mount the Woodruff Key **[155]** to the key way of the Crank Shaft **[159]**. Align the Woodruff Key **[155]** with the key way of the center hole of the Rotor-fan **[134]** and tighten the Nut M8 **[149]**. To reassemble the Clutch Ass'y **[146]**, mount the Clutch Shoe **[148]** to the Spring Clutch **[147]** being careful of the arrow mark direction on the Clutch Shoe **[148]** (counterclockwise viewing from the drive shaft tube). Put the Washer **[150]** between the Clutch Shoe **[148]** and the Rotor-fan **[134]** and insert the Special Bolts M6 **[144]** into the Wave Washers **[145]**. Tighten the two Special Bolts M6 **[144]**.

(5) Mounting the carburetor ass'y

Mount the Carburetor Ass'y **[202]** aligning the pulse holes of the Insulator **[123]** and the Air Duct **[122]** with the pulse holes of the Cylinder **[126]** and the Carburetor Ass'y **[202]**.

### 8-5-3. Removal of the drive shaft tube

- (1) Loosen the Bolt (W/Sp. Washer) M5 x 25 [82] and the Bolt M5 x 12 [71]. Remove the Gear Case Ass'y [72] from the Drive Shaft Tube [31] by tapping the Gear Case Ass'y [72] lightly.
- (2) Disassemble the Gear Case Ass'y [72] as follows.
  - When the 4-teeth blade is mounted:  
Remove the Bolt (Left Hand) W/Washers M8 x 22 [73], Stabilizer [74], Cutter Blade 255MM-D25.4 Hole-NT4 [502], Clamping Washer [75], Boss Adapter [76] and Safety Guard Ass'y [35].
  - When the semi-automatic head 4" is mounted:  
Remove the Semi-automatic Head 4" [503], Clamping Washer [75], Boss Adapter [76] and Safety Guard Ass'y [35]. Warm up the Gear Case Ass'y [72]. Remove the Snap Ring H9 [86] and Snap Ring H24 [87] from the pinion of the Gear Set [88]. Remove the pinion by tapping the Gear Case Ass'y [72] lightly. At the same time, remove the Snap Ring H28 [77] then tapping the Gear Case Ass'y [72] lightly, remove the Blade Shaft [79] and the gear from the Gear Set [88].
- (3) Pull out the Drive Shaft [30] from the Drive Shaft Tube [31].
- (4) Disassembly of the clutch drum and the clutch case ass'y  
Secure the Drive Shaft [30] by two surfaces at the tip of the cutter blade side and loosen the Clutch Drum [12]. Warm up the Clutch Case Ass'y [2] and loosen the four Screws (W/Sp. Washer) M5 x 15 [9]. Tap the Bearing Case [8] with a wooden hammer toward the engine to remove the Drive Shaft Tube Adapter [5]. Remove the Snap Ring H26 [4]. Tap the Bearing Case [8] with a wooden hammer to remove the two Bearings 6000ZZ [3].

### 8-5-4. Reassembly of the drive shaft tube

- (1) Mounting the clutch drum  
Mount the Snap Ring H26 [4] to the Bearing Case [8]. Then secure the Drive Shaft [30] by two surfaces at the tip of the cutter blade side and mount the Clutch Drum [12].
- (2) Mounting the drive shaft  
Wipe the stained grease off the Drive Shaft [30] and apply "Doubrex 251" grease lightly. Insert it into the Drive Shaft Tube [31].
- (3) Mounting the blade shaft  
Insert the Blade Shaft [79] into the gear of the Gear Set [88]. Press-fit the Bearing 60012RK [78] and the Bearing 608 [80] then press-fit it to the Gear Case [83] and secure with the Snap Ring H28 [77]. At this time, be careful not to deform the Snap Ring H28 [77] excessively and check that the Snap Ring H28 [77] is securely fit in the groove of the Gear Case [83].

#### (4) Mounting the pinion

Press-fit the Bearing 609 [84] and the Bearing 609Z [85] to the pinion of the Gear Set [88] and secure with the Snap Ring H9 [86]. Press-fit the pinion to the inmost position of the gear case hole and secure with the Snap Ring H24 [87]. At this time, be careful not to scratch the pinion by contacting the gear teeth. After mounting the Blade Shaft [79] and the pinion to the Gear Case [83], remove the Bolt M8 x 10 (Black) [81] from the Gear Case [83] and fill grease (Service Code No. 682975) in the Gear Case [83] through the screw hole.

#### (5) Mounting the gear case

Insert the Drive Shaft Tube [31] into the hole of the Gear Case [83] as far as it will go aligning the side hole of the Drive Shaft Tube [31] with the M5 screw hole at the side of the Gear Case [83]. Tighten the Bolt M5 x 12 [71] securely being careful not to contact the Drive Shaft Tube [31]. Tighten the Bolt (W/Sp. Washer) M5 x 25 [82]. Check that the Drive Shaft [30] is inserted into the pinion completely. It is inserted completely when the Blade Shaft [79] rotates by rotating the Drive Shaft [30] coming out of the engine side end of the Drive Shaft Tube [31].

### 8-5-5. Mounting the handle

#### [Model CG 32EA]

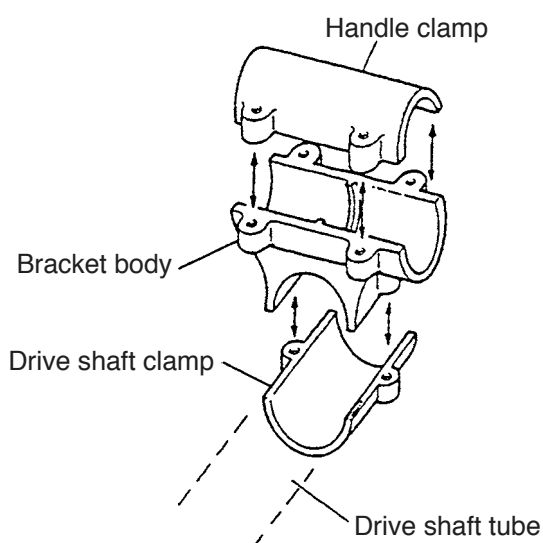
Position the bracket body and the drive shaft clamp of the Handle Bracket Ass'y [16] closer to the gear case than the Hanging Bracket Ass'y [21]. Tighten the two Bolts (W/Sp. Washer) M5 x 25 [17] evenly. Align Handle (A) Ass'y [18] and Handle (B) Ass'y [13] with the groove at the center of the bracket body. Place the handle clamp on it and tighten the four Bolts (W/Sp. Washer) M5 x 25 [17] evenly to secure it.

#### [Model CG 32EA (SL)]

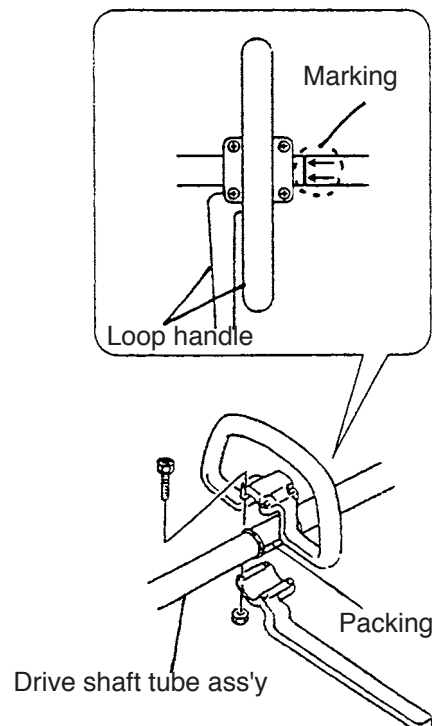
Position Packing (A) (27) closer to the gear case than the marked line on the Drive Shaft Tube (31). Place the Loop Handle (26) on it and tighten the four Screws (W/Sp. Washer) M5 x 28 (25) evenly to secure it.

#### [CG 32EA]

Horn handle bracket assembly



#### [CG 32EA (SL)]



## 8-6. Service Data

Models	CG 23EA (SL)	CG 32EA CG 32EA (SL)	CG 42EA CG 42EA (SL)	CG 51EA CG 51EA (SL)
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### Rope

Dia. x Length (mm x mm)	3.0 mm dia. x 890	3.5 mm dia. x 890	3.8 mm dia. x 1000
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### Ignition

Spark plug gap (mm)	0.6 to 0.7
Coil air gap (mm)	0.3 to 0.4
Ignition timing (deg.)	25° (Before top dead center)

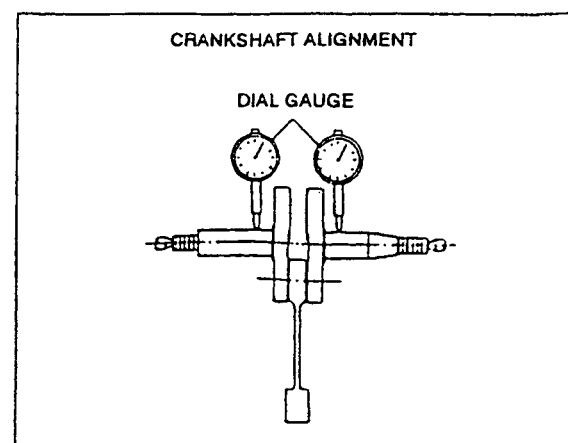
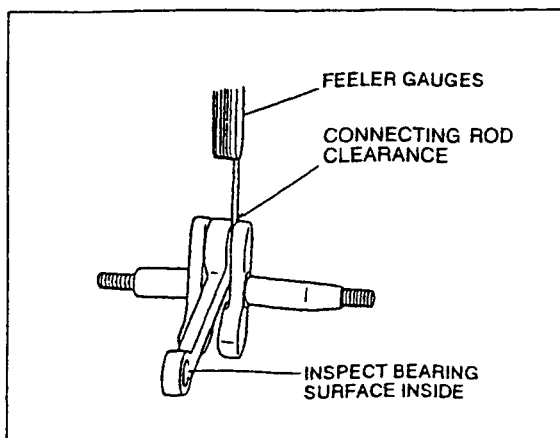
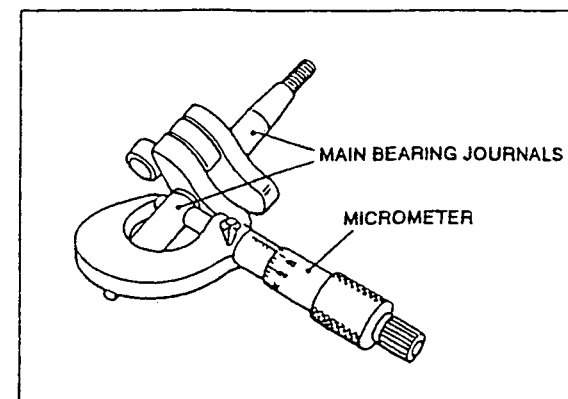
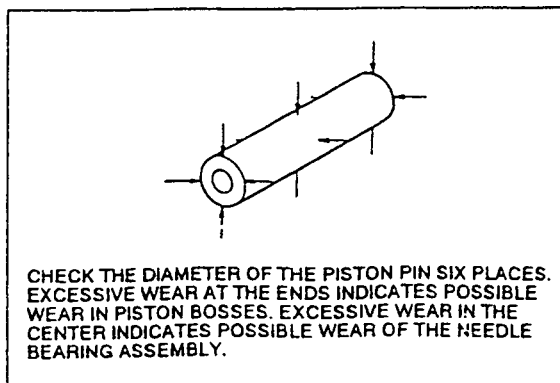
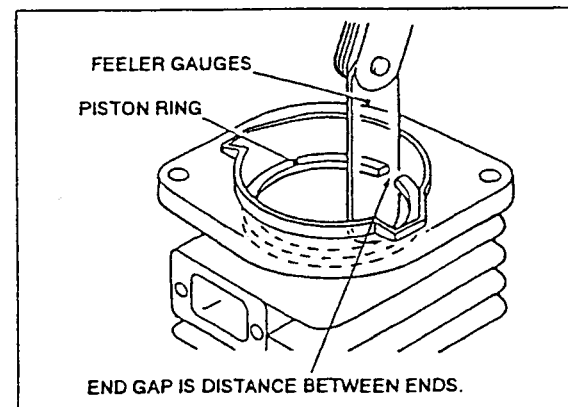
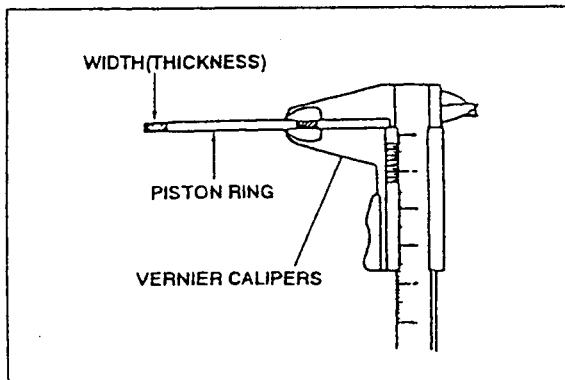
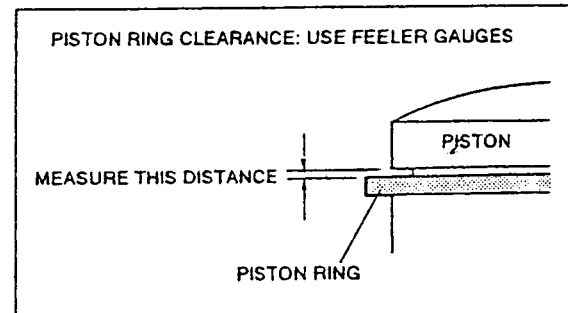
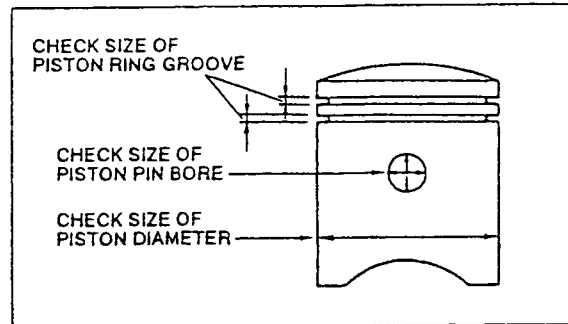
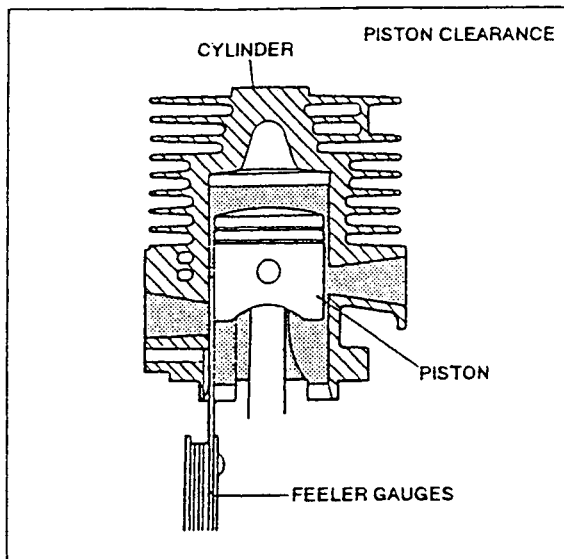
### Carburetor

Idling rotation speed (rpm)	2,700 to 3,300	2,300 to 2,900
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### Engine

Cylinder dia. (mm)	Standard	32	38	40	44
	Wear limit	Until plating wears through			
Piston dia. (mm)	Standard	32	38	40	44
	Wear limit	31.9	37.9	39.9	43.9
Skirt/cyl. clearance (mm)	Standard	0.06 to 0.1			
	Wear limit	0.2			
Piston ring groove (mm)	Standard	1.5			
	Wear limit	1.6			
Piston ring clearance (mm)	Standard	0.026 to 0.054			
	Wear limit	0.15			
Piston ring width (mm)	Standard	1.5			
	Wear limit	1.4			
Piston ring end gap (mm)	Standard	0.1 to 0.3			
	Wear limit	0.5			
Piston pin dia. (mm)	Standard	8	10	11	11
	Wear limit	7.98	9.98	10.98	10.98
Piston pin bore (mm)	Standard	8	10	11	11
	Wear limit	8.04	10.04	11.04	11.04
Crank shaft journal (main bearing) (mm)	Standard	12	12	15	15
	Wear limit	11.9	11.9	14.9	14.9
Connecting rod clearance (mm)	Standard	0.2			
	Wear limit	0.4			
Crank shaft alignment (mm)	Standard	0 to 0.03			
	Wear limit	0.05			
Crank shaft end-play (mm)		0.08 to 0.29			







## 8-7. Tightening Torques

Use-location	Screw type	Size	N·m
Cylinder to crank case			
CG 23EA (SL), CG 32EA, CG 32EA (SL)	Skt. Hd (WSW)	M5 x 20	6.0 to 9.0
CG 42EA , CG 42EA (SL), CG 51EA, CG 51EA (SL)	Skt. Hd (WSW)	M5 x 25	6.0 to 9.0
Carb. insulator to cylinder	Skt. Hd (WSW)	M5 x 25	4.0 to 6.0
Carburetor			
CG 23EA (SL), CG 32EA, CG 32EA (SL)	Skt. Pan Hd (WSW)	M5 x 60	4.0 to 6.0
CG 42EA , CG 42EA (SL), CG 51EA, CG 51EA (SL)	Skt. Pan Hd (WSW)	M5 x 50	4.0 to 6.0
Gasket (Heat shield)	Skt. Hd (WSW)	M5 x 16	5.0 to 7.5
Muffler to cylinder			
CG 23EA (SL)	Skt. Hd (Flange)	M5 x 50	6.0 to 9.0
CG 32EA, CG 32EA (SL)	Skt. Hd (Flange)	M5 x 55	6.0 to 9.0
CG 42EA , CG 42EA (SL), CG 51EA, CG 51EA (SL)	Skt. Pan Hd (WSW)	M6 x 65	8.0 to 12.0
Crank case			
CG 23EA (SL), CG 32EA, CG 32EA (SL)	Skt. Hd (WSW)	M5 x 30	5.0 to 7.5
CG 42EA , CG 42EA (SL), CG 51EA, CG 51EA (SL)	Skt. Hd (WSW)	M5 x 40	5.0 to 7.5
Clutch shoe			
CG 23EA (SL), CG 32EA, CG 32EA (SL)	Hx hd. shoulder screw (Flange)	M6	8.0 to 12.0
CG 42EA , CG 42EA (SL), CG 51EA, CG 51EA (SL)	Hx hd. shoulder screw (Flange)	M8	8.0 to 12.0
Fan cover to crank case	Skt. Hd (WSW)	M5 x 20	5.0 to 7.5
Rotor to crank shaft			
CG 23EA (SL), CG 32EA, CG 32EA (SL)	Nut	M8	8.0 to 12.0
CG 42EA , CG 42EA (SL), CG 51EA, CG 51EA (SL)	Nut	M10	9.0 to 13.0
Pawl case to crank shaft			
CG 23EA (SL), CG 32EA, CG 32EA (SL)	Welded onto pawl case	M8	8.0 to 12.0
CG 42EA , CG 42EA (SL), CG 51EA, CG 51EA (SL)	Nut	M8	8.0 to 12.0
Ignition coil	Skt. Hd (WSW)	M4 x 25	2.5 to 3.8
Starter case	Skt. Hd (WSW)	M4 x 16	2.5 to 3.8

Spark plug	BPMR6Y	M14	11.0 to 17.0
Clutch case (Tube clamp)			
CG 23EA (SL)	Hx hd. (WSW)	M5 x 30	3.5 to 4.5
CG 32EA, CG 32EA (SL)	Hx hd. (WSW)	M5 x 25	5.0 to 6.0
CG 42EA (SL), CG 51EA (SL)	Hx hd. (WSW)	M6 x 30	5.5 to 6.5
CG 42EA, CG 51EA	Hx hd. (WSW)	M6 x 30	11.5 to 12.5
Clutch case to fan cover			
CG 23EA (SL), CG 32EA, CG 32EA (SL)	Hx hd. (WSW)	M5 x 20	4.0 to 5.0
CG 42EA (SL), CG 51EA (SL)	Hx hd. (SW)	M6 x 20	7.0 to 8.0
CG 42EA, CG 51EA	Skt. Hd (WSW)	M6 x 20	7.0 to 8.0
Gear case (Tube clamp)			
CG 23EA (SL)	Hx hd. (SW)	M5 x 25	3.5 to 4.5
CG 32EA, CG 32EA (SL)	Hx hd. (SW)	M5 x 25	5.5 to 6.5
CG 42EA, CG 42EA (SL), CG 51EA, CG 51EA (SL)	Hx hd. (WSW)	M6 x 30	6.5 to 7.5
Gear case (Align. screw)			
CG 23EA (SL)	Hx hd.	M5 x 12	3.5 to 4.5
CG 32EA, CG 32EA (SL)	Hx hd.	M5 x 12	5.5 to 6.5
CG 42EA, CG 42EA (SL), CG 51EA, CG 51EA (SL)	Hx hd.	M6 x 12	6.5 to 7.5
Handle bracket			
CG 32EA	Hx hd. (SW)	M5 x 25	4.0 to 5.0
CG 42EA, CG 51EA	Hx hd. (WSW)	M6 x 30	4.0 to 5.0

## 8-8. Confirmation After Reassembly

- Confirm that all fastening screws, bolts and nuts are properly tightened.
- Confirm that each moving part functions properly, and that there is no abnormal noise from rotating parts.
- Confirm that there is no gas leakage from any part of the engine section.
- Confirm that the stop switch functions properly.

## 9. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30			120	130	140	150 min.
	Fixed										
CG 23EA		Work Flow									
		Clutch Case Ass'y	Clutch Case Bearing Clutch Drum Ignition Coil Ass'y Coil Fan Cover	Magneto Ass'y Clutch Ass'y Clutch Shoe x 2							
		Gasket Insulator									
		Carburetor Ass'y Air Filter Filter Gasket	Pump Body O-ring Gasket x 2 Diaphragm Primer Pump								
		Spark Plug (R) Cord Ass'y									
		Top Cover Muffler Gasket									
		Fuel Tank Ass'y Fuel Pipe Grommet Return Pipe Fuel Filter									
		Engine Ass'y				Cylinder Gasket		Crank Case Oil Seal	Crank Shaft Ass'y Bearing x 2 Needle Bearing		
		Recoil Starter Ass'y	Swing Arm	Pulley Spiral Spring Starter Rope				Piston Piston Ring Piston Pin			
				Carbon Cleaner							



MODEL	Variable	10	20	30		120	130	140	150 min.
	Fixed								
CG 32EA CG 42EA CG 51EA	<div>Work Flow</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div> <div>→</div>								
		Clutch Case Ass'y	Bearing Case	Magneto Ass'y					
			Bearing	Clutch Ass'y					
			Clutch Drum	Clutch Shoe x 2					
			Ignition Coil Ass'y						
			Coil						
		Air Duct Insulator	Cooling Cover [CG 42EA, CG 51EA]						
			Fan Cover [CG 32EA]						
		Carburetor Ass'y	Pump Body						
		Air Cleaner Ass'y	O-ring						
		Element	Gasket x 2						
		Gasket	Diaphragm (Meterring) [CG 42EA, CG 51EA]						
		Spark Plug (R)	Diaphragm [CG 32EA]						
		Spark Plug Cord Ass'y [CG 42EA, CG 51EA]	Primer Pump						
		Cord Ass'y [CG 32EA]							
	Engine Ass'y	Top Cover							
		Muffler							
		Gasket							
		Fuel Tank Ass'y							
		Fuel Pipe							
		Grommet							
		Return Pipe							
		Fuel Filter							
						Cylinder Gasket		Crank Case Oil Seal	Crank Shaft Bearing x 2
									Needle Bearing
		Recoil Starter Ass'y	Return Spring Ratchet	Pulley					
				Spiral Spring				Piston	
				Rope				Piston Ring x 2	
				Carbon Cleaner				Piston Pin	

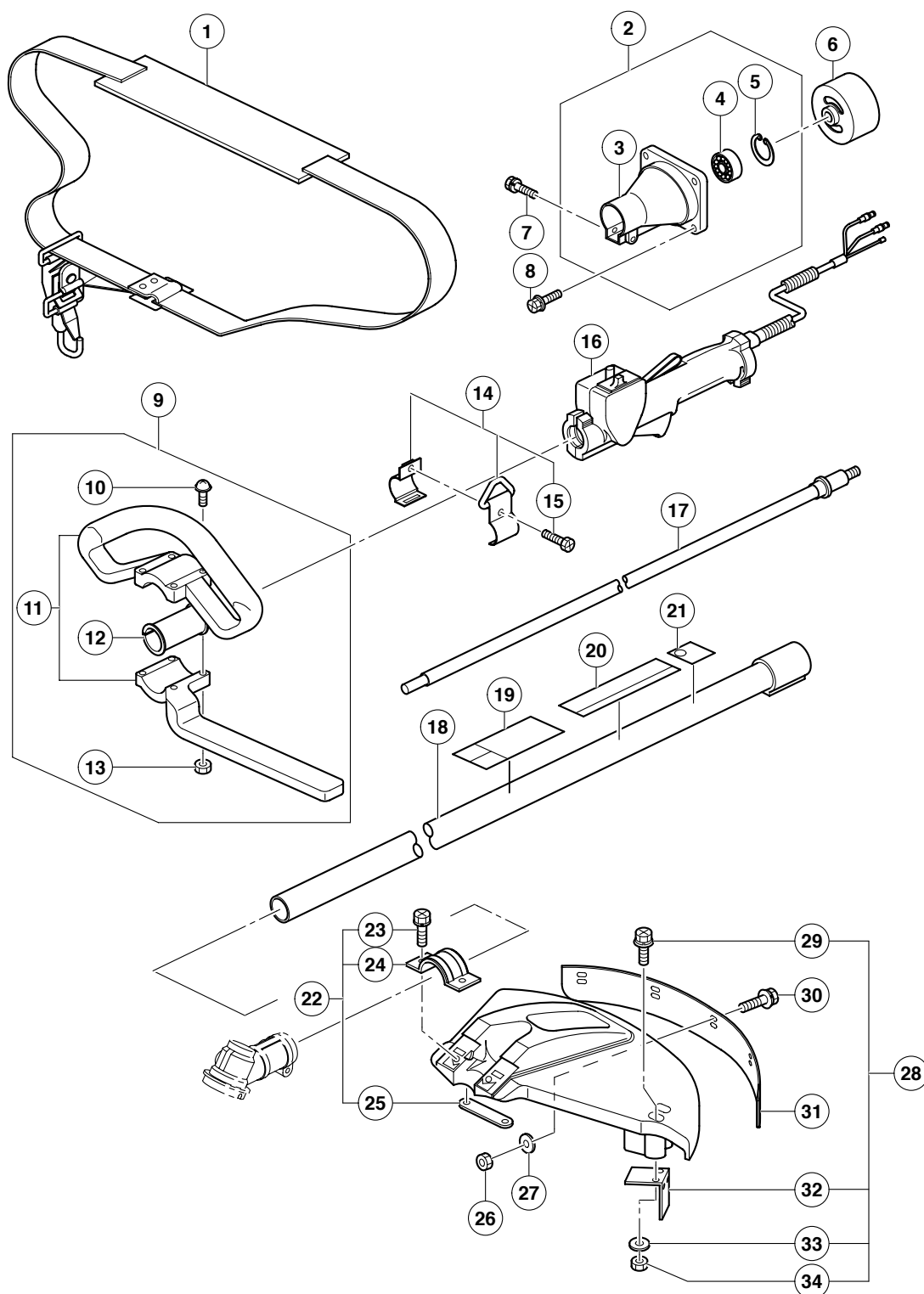


## ENGINE TOOL PARTS LIST

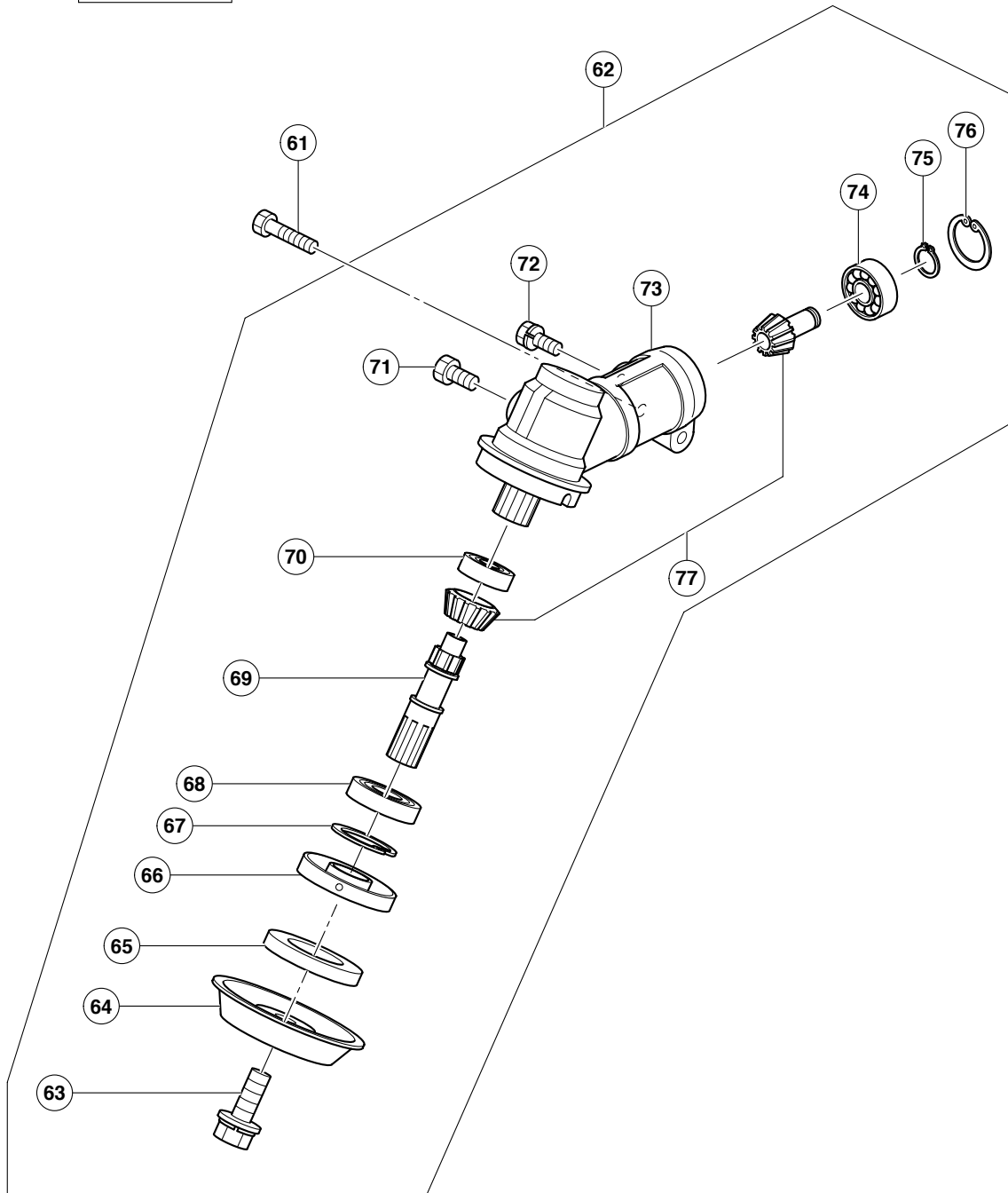
■ **BRUSH CUTTER**  
**Model CG 23EA**

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**(E1)**

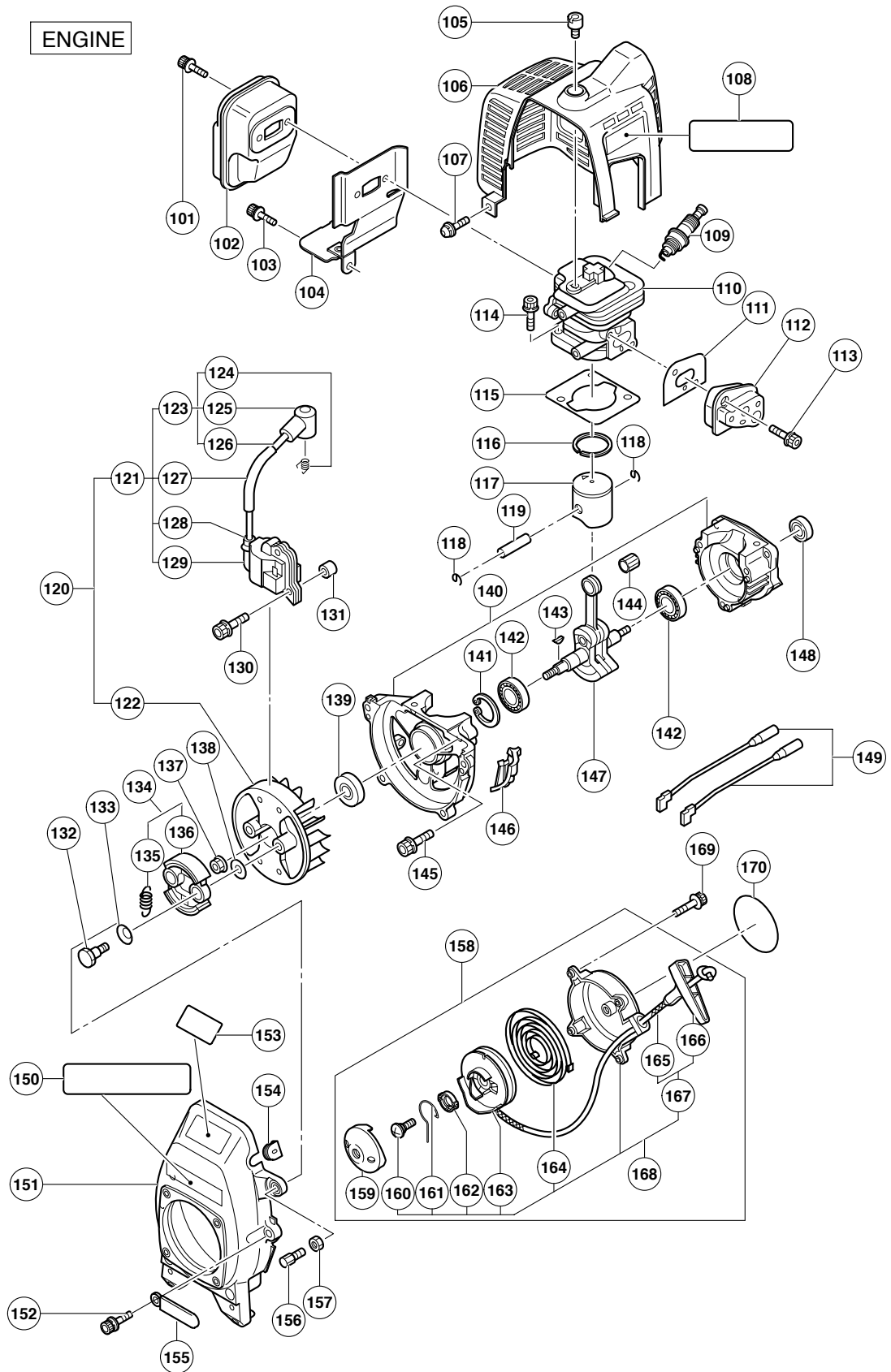
### MAIN BODY

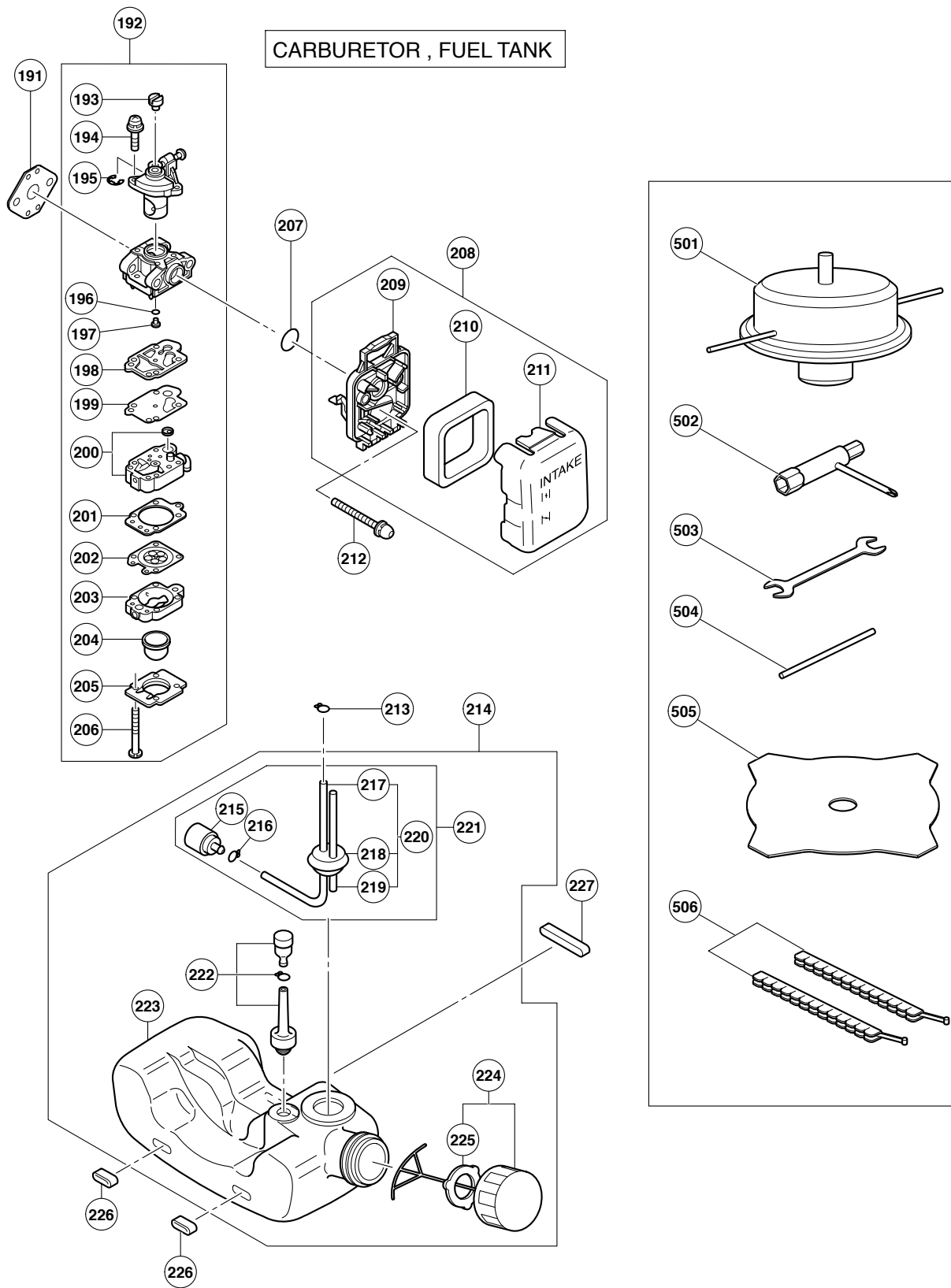


GEAR CASE









# PARTS

CG 23EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
		MAIN BODY			
1	683-002	HANGING STRAP	1		
2	682-976	CLUTCH CASE ASS'Y	1	INCLUD. 3-5	
3	682-977	CLUTCH CASE	1		
4	682-978	BEARING 6200ZZ	1		
5	682-979	SNAP RING H30	1		
6	682-981	CLUTCH DRUM	1		
7	682-980	BOLT (W/WASHERS) M5X30	1		
8	683-001	BOLT (W/WASHERS) M5X20	4		
9	682-987	LOOP HANDLE ASS'Y	1	INCLUD. 10-13	
10	682-990	SCREW (W/SP. WASHER) M5X28	4		
11	682-988	LOOP HANDLE	1		
12	682-989	PACKING (A)	1		
13	949-555	NUT M5 (10 PCS.)	4		
14	682-985	HANGING BRACKET ASS'Y	1	INCLUD. 15	
15	682-986	BOLT M5X15	1		
16	682-984	THROTTLE TRIGGER	1		
17	682-982	DRIVE SHAFT	1		
18	682-983	DRIVE SHAFT TUBE	1		
19		CAUTION LABEL (A)	1		
20		HITACHI LABEL	1		
21		NOISE LABEL (A)	1		
22	682-991	SAFETY GUARD ASS'Y	1	INCLUD. 23-25	
23	682-994	BOLT (W/SP. WASHER) M6X30	2		
24	682-992	BRACKET	1		
25	682-993	THREADED BRACKET	1		
26	949-555	NUT M5 (10 PCS.)	5		
27	683-000	PLANE WASHER	5		
28	682-995	STRING CUTTER ASS'Y	1	INCLUD. 29, 32-34	
29	682-997	BOLT (W/WASHER) M5X25	2		
30	682-999	BOLT (W/WASHERS) M5X15	5		
31	682-998	EXTENSION	1		
32	682-996	STRING CUTTER	1		
33	949-454	SPRING WASHER M5 (10 PCS.)	2		
34	949-555	NUT M5 (10 PCS.)	2		
		GEAR CASE			
61	683-019	BOLT M5X12	1		
62	683-003	GEAR CASE ASS'Y	1	INCLUD. 63-77	
63	683-018	BOLT (LEFT HAND) W/WASHERS M8X22	1		
64	683-017	STABILIZER	1		
65	683-016	CLAMPING WASHER	1		
66	683-015	BOSS ADAPTER	1		
67	683-010	SNAP RING H28	1		
68	683-009	BEARING 60012RK	1		
69	683-008	BLADE SHAFT	1		
70	683-006	BEARING 626	1		
71	683-005	BOLT M6X8	1		
72	683-014	BOLT (W/SP. WASHER) M5X25	1		
73	683-004	GEAR CASE	1		
74	683-011	BEARING 609Z	1		
75	683-012	SNAP RING H9	1		

# PARTS

CG 23EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
76	683-013	SNAP RING H24	1		
77	683-007	GEAR SET	1		
		ENGINE			
101	683-031	SCREW M5X50	2		
102	683-030	MUFFLER COMP.	1		
103	683-033	CAP SCREW M5X16	1		
104	683-032	GASKET COMP.	1		
105	683-035	KNOB	1		
106	683-034	TOP COVER	1		
107	683-085	SCREW M5X16	1		
108	683-351	CE LABEL	1		
109	683-068	SPARK PLUG (R)	1		
110	683-024	CYLINDER	1		
111	683-028	GASKET (B)	1		
112	683-027	INSULATOR	1		
113	683-029	SCREW M5X25	2		
114	683-026	SCREW M5X20	2		
115	683-025	GASKET (A)	1		
116	683-042	PISTON RING	1		
117	683-041	PISTON	1		
118	683-045	CLIP (PISTON PIN)	2		
119	683-043	PISTON PIN	1		
120	683-054	MAGNETO ASS'Y	1	INCLUD. 121, 122	
121	683-056	IGNITION COIL ASS'Y	1	INCLUD. 123, 127-129	
122	683-055	ROTOR-FAN	1		
123	683-058	CORD ASS'Y	1	INCLUD. 124-126	
124	683-061	CONNECTOR	1		
125	683-060	PLUG CAP	1		
126	683-059	CORD	1		
127	683-063	TUBE	1		
128	683-062	CAP	1		
129	683-057	COIL	1		
130	683-067	CAP SCREW M4X25	2		
131	683-066	SPACER	2		
132	683-050	SPECIAL BOLT M6	2		
133	683-052	WAVE WASHER	2		
134	683-047	CLUTCH ASS'Y	1	INCLUD. 135, 136	
135	683-049	SPRING CLUTCH	1		
136	683-048	CLUTCH SHOE	2		
137	683-065	NUT M8	1		
138	683-051	WASHER	2		
139	683-038	OIL SEAL (A)	1		
140	683-036	CRANK CASE	1		
141	683-010	SNAP RING H28	1		
142	683-037	BEARING 6001C3	2		
143	683-064	WOODRUFF KEY	1		
144	683-044	NEEDLE BEARING	1		
145	683-040	CAP SCREW M5X30	3		
146	683-086	SCREEN	1		
147	683-046	CRANK SHAFT AND CONN. ROD SET	1		
148	683-039	OIL SEAL (B)	1		

# PARTS

CG 23EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
149	683-069	LEAD	2		
150		CAUTION LABEL (B)	1		
151	683-053	FAN COVER	1		
152	683-087	CAP SCREW M5X20	4		
153		EMISSION LABEL (A)	1		
154	683-070	GROMMET	1		
155	683-088	CLAMP	1		
156	683-084	SCREW	1		
157	683-083	NUT M6	1		
158	683-071	RECOIL STARTER ASS'Y	1	INCLUD. 159, 168	
159	683-081	STARTER PULLEY	1		
160	683-080	SPECIAL SCREW	1		
161	683-079	SWING ARM	1		
162	683-078	COLLAR	1		
163	683-077	PULLEY	1		
164	683-076	SPIRAL SPRING	1		
165	683-075	STARTER ROPE	1		
166	683-074	STARTER GRIP	1		
167	683-073	ROPE ASS'Y	1	INCLUD. 165, 166	
168	683-072	RECOIL ASS'Y	1	INCLUD. 160-164, 167	
169	683-082	BOLT M4X16	3		
170		NAME PLATE	1		
		CARBURETOR, FUEL TANK			
191	683-104	GASKET (E)	1		
192	683-089	CARBURETOR ASS'Y	1	INCLUD. 193-206	
193	683-102	SWIVEL	1		
194	683-103	SCREW M3X10	2		
195	683-101	RING	1		
196	683-090	O-RING (I.D. 1.8)	1		
197	683-091	MAIN JET	1		
198	683-092	GASKET (C)	1		
199	683-093	DIAPHRAGM	1		
200	683-094	PUMP BODY	1		
201	683-095	GASKET (D)	1		
202	683-096	DIAPHRAGM	1		
203	683-097	PURGE BODY	1		
204	683-098	PRIMER PUMP	1		
205	683-099	PUMP COVER	1		
206	683-100	SCREW M3X24	4		
207	683-105	O-RING (I.D. 14.8)	1		
208	683-106	AIR FILTER ASS'Y	1	INCLUD. 209-211	
209	683-107	CASE	1		
210	683-108	FILTER	1		
211	683-109	CLEANER COVER	1		
212	683-110	CAP SCREW M5X60	2		
213	683-122	CLIP	1		
214	683-111	FUEL TANK ASS'Y	1	INCLUD. 221-224	
215	683-121	FUEL FILTER	1		
216	683-122	CLIP	1		
217	683-119	FUEL PIPE 3X5X140	1		
218	683-118	GROMMET	1		

**PARTS**

CG 23EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
219	683-120	RETURN PIPE 3X6X85	1		
220	683-117	PIPE ASS'Y	1	INCLUD. 217-219	
221	683-116	FUEL PIPE ASS'Y	1	INCLUD. 215, 216, 220	
222	683-115	BREATHER	1		
223	683-112	FUEL TANK	1		
224	683-113	FUEL TANK CAP ASS'Y	1	INCLUD. 225	
225	683-114	PACKING (B)	1		
226	683-123	PAD (A)	2		
227	683-124	PAD (B)	1		

**STANDARD ACCESSORIES**

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
501	683-020	SEMI-AUTOMATIC HEAD 4"	1		
502	683-021	BOX SPANNER	1		
503	683-022	DOUBLE-ENDED WRENCH	1		
504	683-023	LEVER HANDLE	1		
505	683-350	CUTTER BLADE 230MM-D25.4 HOLE-NT4	1		
506	683-155	BLADE COVER	1		

**OPTIONAL ACCESSORIES**

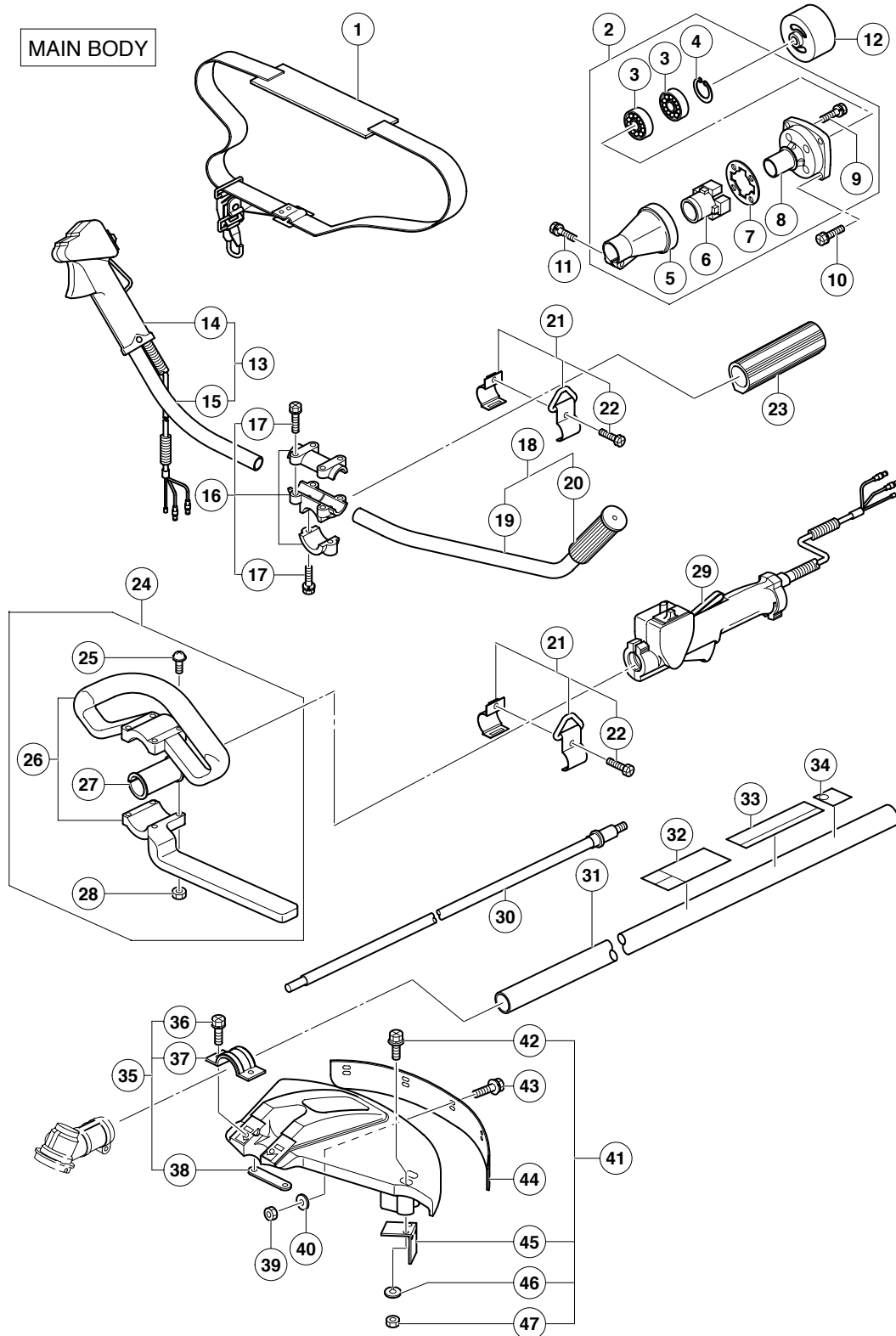
ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
601	682-975	GREASE (100G)	1		

## ENGINE TOOL PARTS LIST

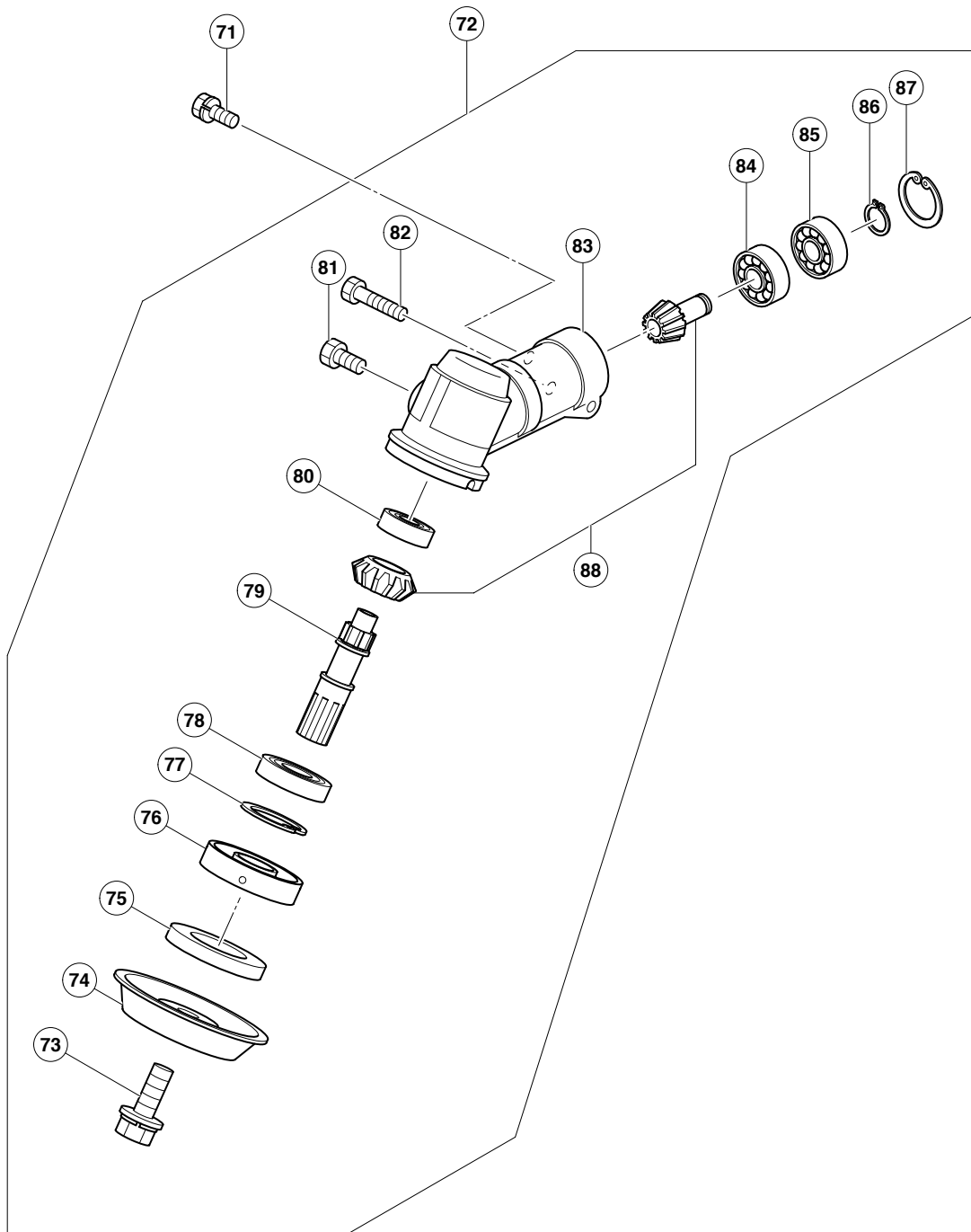
### BRUSH CUTTER Model CG 32EA

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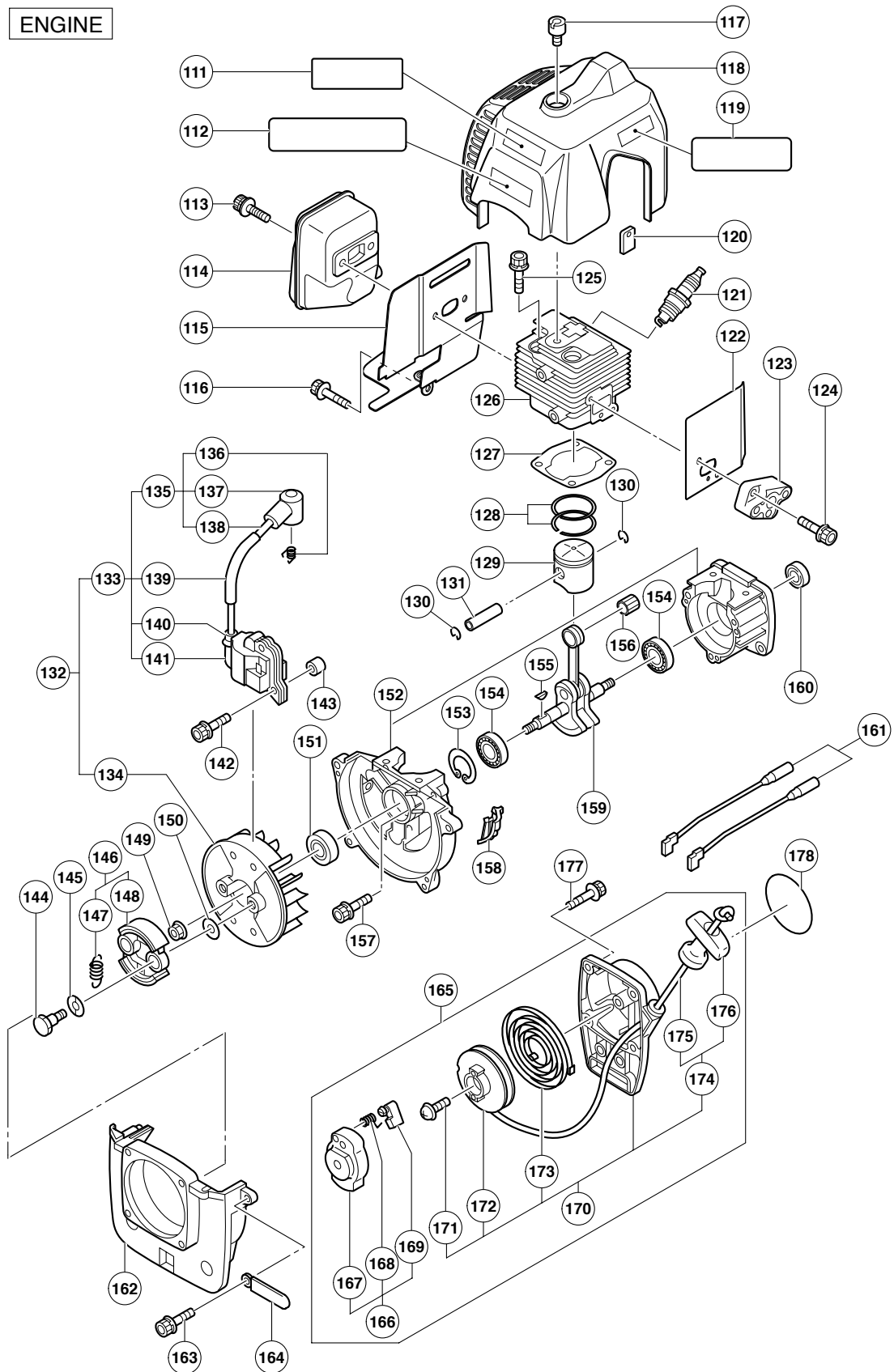


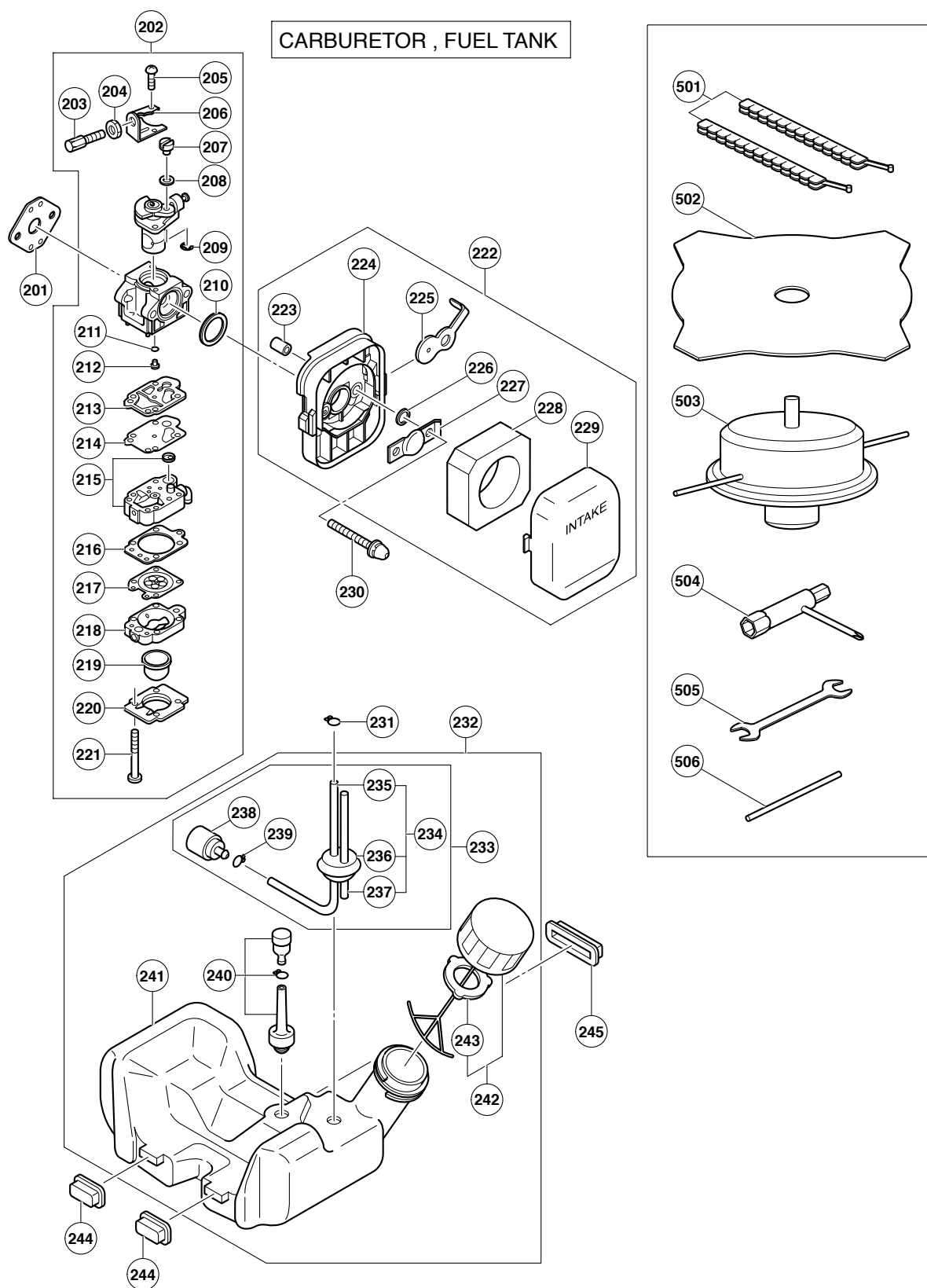
## GEAR CASE





## ENGINE





# PARTS

CG 32EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
		MAIN BODY			
1	683-002	HANGING STRAP	1		
2	683-125	CLUTCH CASE ASS'Y	1	INCLUD. 3-9	
3	683-127	BEARING 6000ZZ	2		
4	683-128	SNAP RING H26	1		
5	683-132	DRIVE SHAFT TUBE ADAPTER	1		
6	683-129	BUFFER	1		
7	683-130	WASHER	1		
8	683-126	BEARING CASE	1		
9	683-131	SCREW (W/SP. WASHER) M5X15	4		
10	683-001	BOLT (W/WASHERS) M5X20	4		
11	683-014	BOLT (W/SP. WASHER) M5X25	1		
12	682-981	CLUTCH DRUM	1		
* 13	683-140	HANDLE (B) ASS'Y	1	INCLUD. 14, 15 FOR CG 32EA	
* 14	683-142	THROTTLE TRIGGER	1	FOR CG 32EA	
* 15	683-141	HANDLE (B)	1	FOR CG 32EA	
* 16	683-136	HANDLE BRACKET ASS'Y	1	INCLUD. 17 FOR CG 32EA	
* 17	683-014	BOLT (W/SP. WASHER) M5X25	6	FOR CG 32EA	
* 18	683-137	HANDLE (A) ASS'Y	1	INCLUD. 19, 20 FOR CG 32EA	
* 19	683-138	HANDLE (A)	1	FOR CG 32EA	
* 20	683-139	HANDLE GRIP	1	FOR CG 32EA	
21	682-985	HANGING BRACKET ASS'Y	1	INCLUD. 22	
22	682-986	BOLT M5X15	1		
* 23	683-135	SHAFT GRIP	1	FOR CG 32EA	
* 24	682-987	LOOP HANDLE ASS'Y	1	INCLUD. 25-28 FOR CG 32EA (SL)	
* 25	682-990	SCREW (W/SP. WASHER) M5X28	4	FOR CG 32EA (SL)	
* 26	682-988	LOOP HANDLE	1	FOR CG 32EA (SL)	
* 27	682-989	PACKING (A)	1	FOR CG 32EA (SL)	
* 28	949-555	NUT M5 (10 PCS.)	4	FOR CG 32EA (SL)	
* 29	683-147	THROTTLE TRIGGER	1	FOR CG 32EA (SL)	
30	683-133	DRIVE SHAFT	1		
* 31	683-134	DRIVE SHAFT TUBE	1	FOR CG 32EA	
* 31	683-146	DRIVE SHAFT TUBE	1	FOR CG 32EA (SL)	
32		CAUTION LABEL (A)	1		
33		HITACHI LABEL	1		
34		NOISE LABEL (B)	1		
35	683-143	SAFETY GUARD ASS'Y	1	INCLUD. 36-38	
36	682-994	BOLT (W/SP. WASHER) M6X30	2		
37	683-144	BRACKET	1		
38	683-145	THREADED BRACKET	1		
39	949-555	NUT M5 (10 PCS.)	5		
40	683-000	PLANE WASHER	5		
41	682-995	STRING CUTTER ASS'Y	1	INCLUD. 42, 45-47	
42	682-997	BOLT (W/WASHER) M5X25	2		
43	682-999	BOLT (W/WASHERS) M5X15	5		
44	682-998	EXTENSION	1		
45	682-996	STRING CUTTER	1		
46	949-454	SPRING WASHER M5 (10 PCS.)	2		
47	949-555	NUT M5 (10 PCS.)	2		
		GEAR CASE			
71	683-019	BOLT M5X12	1		

# PARTS

CG 32EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
72	683-148	GEAR CASE ASS'Y	1	INCLUD. 73-88	
73	683-018	BOLT (LEFT HAND) W/WASHERS M8X22	1		
74	683-017	STABILIZER	1		
75	683-016	CLAMPING WASHER	1		
76	683-015	BOSS ADAPTER	1		
77	683-010	SNAP RING H28	1		
78	683-009	BEARING 60012RK	1		
79	683-153	BLADE SHAFT	1		
80	683-151	BEARING 608	1		
81	683-150	BOLT M8X10 (BLACK)	1		
82	683-014	BOLT (W/SP. WASHER) M5X25	1		
83	683-149	GEAR CASE	1		
84	683-154	BEARING 609	1		
85	683-011	BEARING 609Z	1		
86	683-012	SNAP RING H9	1		
87	683-013	SNAP RING H24	1		
88	683-152	GEAR SET	1		
		ENGINE			
111		EMISSION LABEL (B)	1		
112		CAUTION LABEL (B)	1		
113	683-164	CAP SCREW M5X55	2		
114	683-161	MUFFLER COMP.	1		
115	683-162	GASKET COMP.	1		
116	683-033	CAP SCREW M5X16	1		
117	683-166	KNOB	1		
118	683-165	TOP COVER	1		
119	683-351	CE LABEL	1		
120	683-181	GROMMET	1		
121	683-068	SPARK PLUG (R)	1		
122	683-160	AIR DUCT	1		
123	683-159	INSULATOR	1		
124	683-029	SCREW M5X25	2		
125	683-087	CAP SCREW M5X20	4		
126	683-157	CYLINDER	1		
127	683-158	GASKET (F)	1		
128	683-172	PISTON RING	2		
129	683-171	PISTON	1		
130	683-175	CLIP (PISTON PIN)	2		
131	683-173	PISTON PIN	1		
132	683-054	MAGNETO ASS'Y	1	INCLUD. 133, 134	
133	683-056	IGNITION COIL ASS'Y	1	INCLUD. 135, 139-141	
134	683-055	ROTOR-FAN	1		
135	683-058	CORD ASS'Y	1	INCLUD. 136-138	
136	683-061	CONNECTOR	1		
137	683-060	PLUG CAP	1		
138	683-059	CORD	1		
139	683-063	TUBE	1		
140	683-062	CAP	1		
141	683-057	COIL	1		
142	683-067	CAP SCREW M4X25	2		
143	683-066	SPACER	2		

# PARTS

CG 32EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
144	683-050	SPECIAL BOLT M6	2		
145	683-052	WAVE WASHER	2		
146	683-177	CLUTCH ASS'Y	1	INCLUD. 147, 148	
147	683-179	SPRING CLUTCH	1		
148	683-178	CLUTCH SHOE	2		
149	683-065	NUT M8	1		
150	683-051	WASHER	2		
151	683-169	OIL SEAL (C)	1		
152	683-167	CRANK CASE	1		
153	683-170	SNAP RING H32	1		
154	683-168	BEARING 201C3	2		
155	683-064	WOODRUFF KEY	1		
156	683-174	NEEDLE BEARING	1		
157	683-040	CAP SCREW M5X30	3		
158	683-194	SCREEN	1		
159	683-176	CRANK SHAFT	1		
160	683-039	OIL SEAL (B)	1		
161	683-069	LEAD	2		
162	683-180	FAN COVER	1		
163	683-087	CAP SCREW M5X20	4		
164	683-088	CLAMP	1		
165	683-182	RECOIL STARTER ASS'Y	1	INCLUD. 166, 170	
166	683-190	STARTER PULLEY ASS'Y	1	INCLUD. 167-169	
167	683-193	STARTER PULLEY	1		
168	683-192	RETURN SPRING	1		
169	683-191	RATCHET	1		
170	683-183	RECOIL ASS'Y	1	INCLUD. 171-174	
171	683-189	SPECIAL SCREW	1		
172	683-188	REEL	1		
173	683-187	SPIRAL SPRING	1		
174	683-184	ROPE ASS'Y	1	INCLUD. 175, 176	
175	683-186	ROPE	1		
176	683-185	STARTER GRIP	1		
177	683-163	CAP SCREW M4X16	4		
178		NAME PLATE	1		
		CARBURETOR, FUEL TANK			
201	683-104	GASKET (E)	1		
202	683-195	CARBURETOR ASS'Y	1	INCLUD. 203-221	
203	683-199	SCREW	1		
204	683-083	NUT M6	1		
205	683-197	SCREW M3X10	2		
206	683-198	BRACKET	1		
207	683-102	SWIVEL	1		
208	683-201	WASHER M4.85	1		
209	683-101	RING	1		
210	683-200	FRAME	1		
211	683-090	O-RING (I.D. 1.8)	1		
212	683-196	JET MAIN	1		
213	683-092	GASKET (C)	1		
214	683-093	DIAPHRAGM	1		
215	683-094	PUMP BODY	1		

## PARTS

CG 32EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
216	683-095	GASKET (D)	1		
217	683-096	DIAPHRAGM	1		
218	683-097	PURGE BODY	1		
219	683-098	PRIMER PUMP	1		
220	683-099	PUMP COVER	1		
221	683-100	SCREW M3X24	4		
222	683-202	AIR CLEANER ASS'Y	1	INCLUD. 223-229	
223	683-207	SLEEVE	2		
224	683-203	HOUSING	1		
225	683-208	CHOKE VALVE	1		
226	683-206	WASHER M6.5	1		
227	683-209	PLATE	1		
228	683-205	ELEMENT	1		
229	683-204	AIR CLEANER COVER	1		
230	683-110	CAP SCREW M5X60	2		
231	683-122	CLIP	1		
232	683-210	FUEL TANK ASS'Y	1	INCLUD. 233, 240-242	
233	683-212	FUEL PIPE ASS'Y	1	INCLUD. 234, 238, 239	
234	683-213	PIPE ASS'Y	1	INCLUD. 235-237	
235	683-214	FUEL PIPE	1		
236	683-118	GROMMET	1		
237	683-120	RETURN PIPE 3X6X85	1		
238	683-121	FUEL FILTER	1		
239	683-122	CLIP	1		
240	683-115	BREATHER	1		
241	683-211	FUEL TANK	1		
242	683-113	FUEL TANK CAP ASS'Y	1	INCLUD. 243	
243	683-114	PACKING (B)	1		
244	683-215	PAD (C)	2		
245	683-216	PAD (D)	1		

## STANDARD ACCESSORIES

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
501	683-155	BLADE COVER	1		
502	683-156	CUTTER BLADE 255MM-D25.4 HOLE-NT4	1		
503	683-020	SEMI-AUTOMATIC HEAD 4"	1		
504	683-021	BOX SPANNER	1		
505	683-022	DOUBLE-ENDED WRENCH	1		
506	683-023	LEVER HANDLE	1		

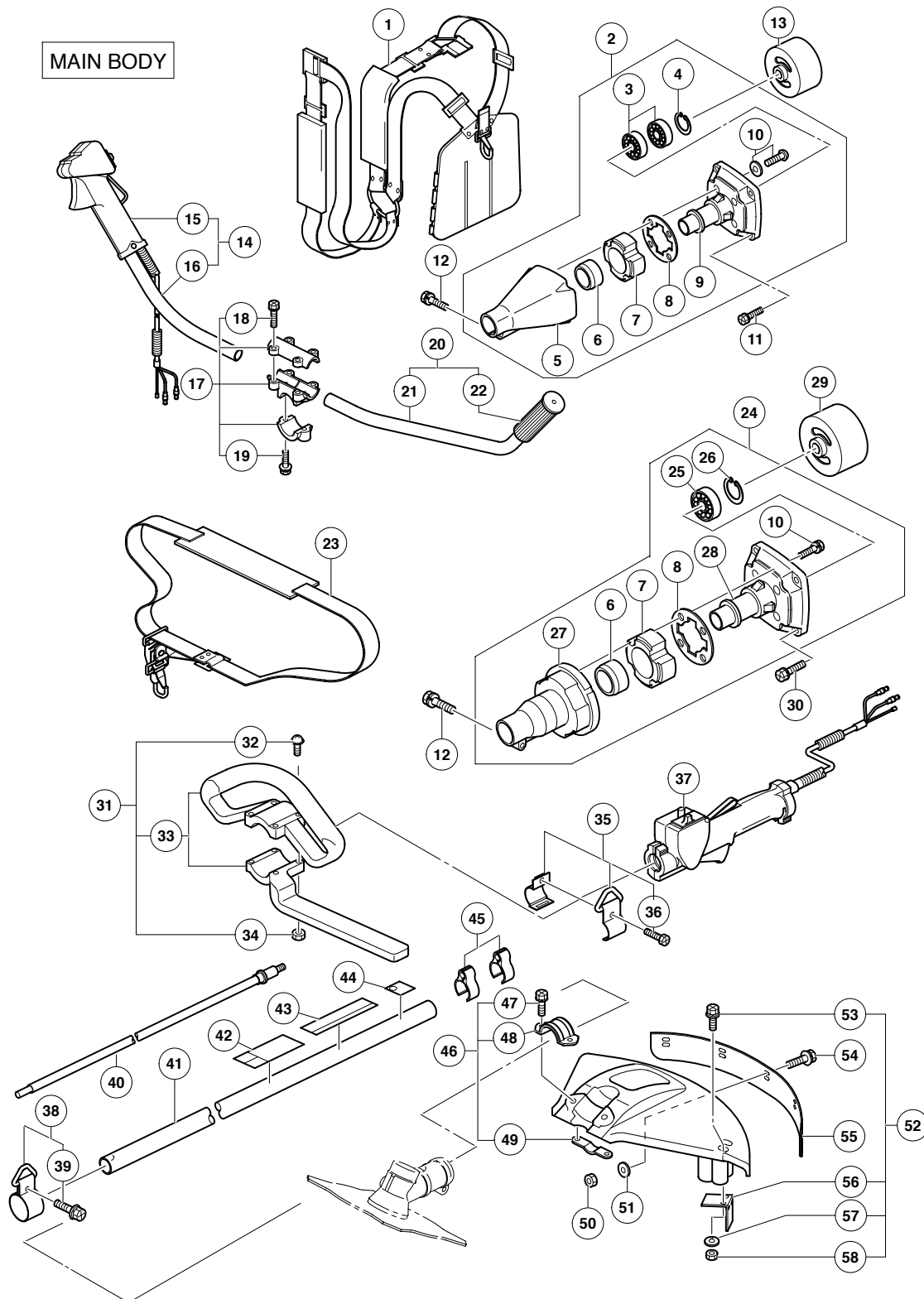
## OPTIONAL ACCESSORIES

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
601	682-975	GREASE (100G)	1		

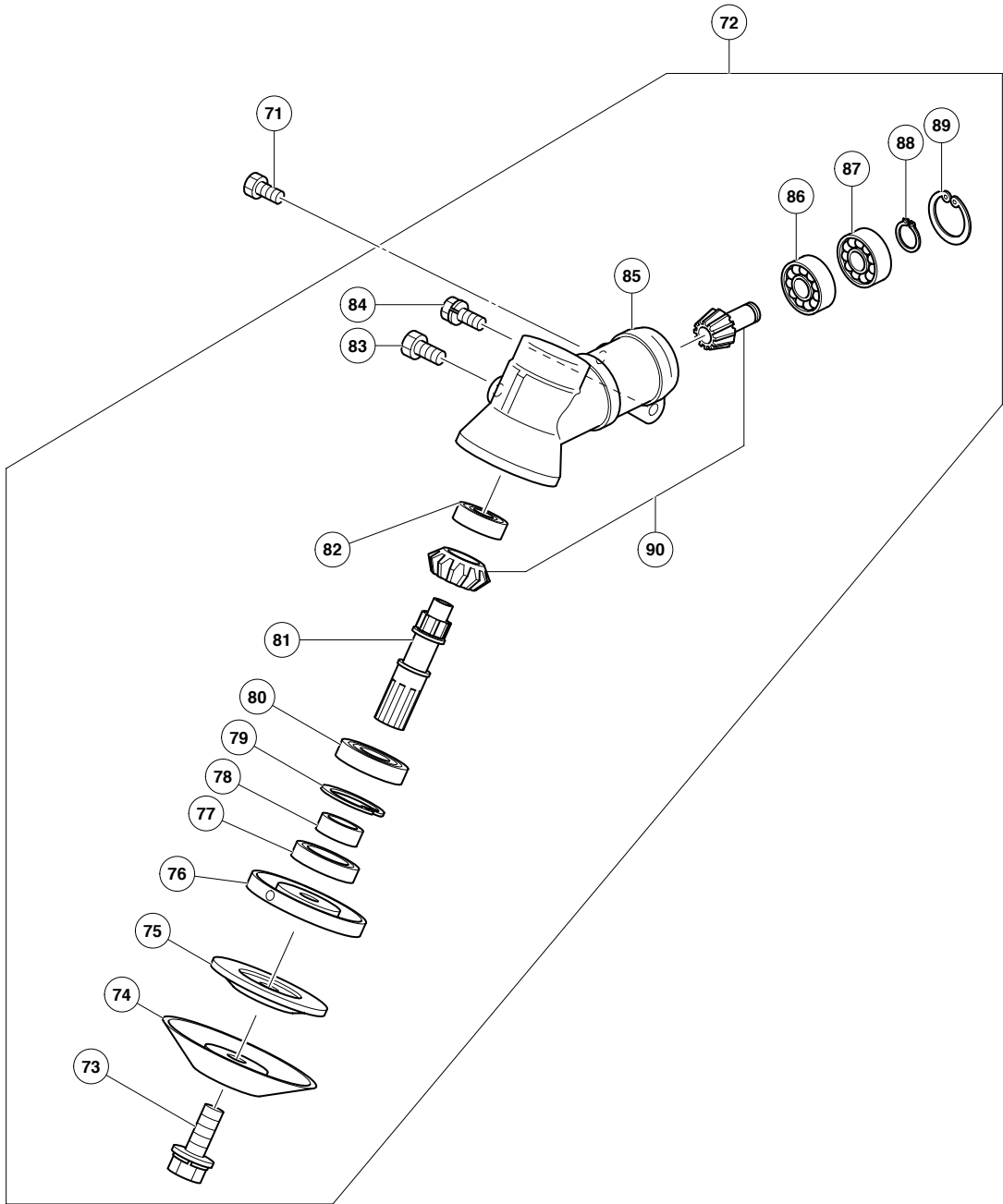
## ENGINE TOOL PARTS LIST

■ **BRUSH CUTTER**  
**Model CG 42EA**

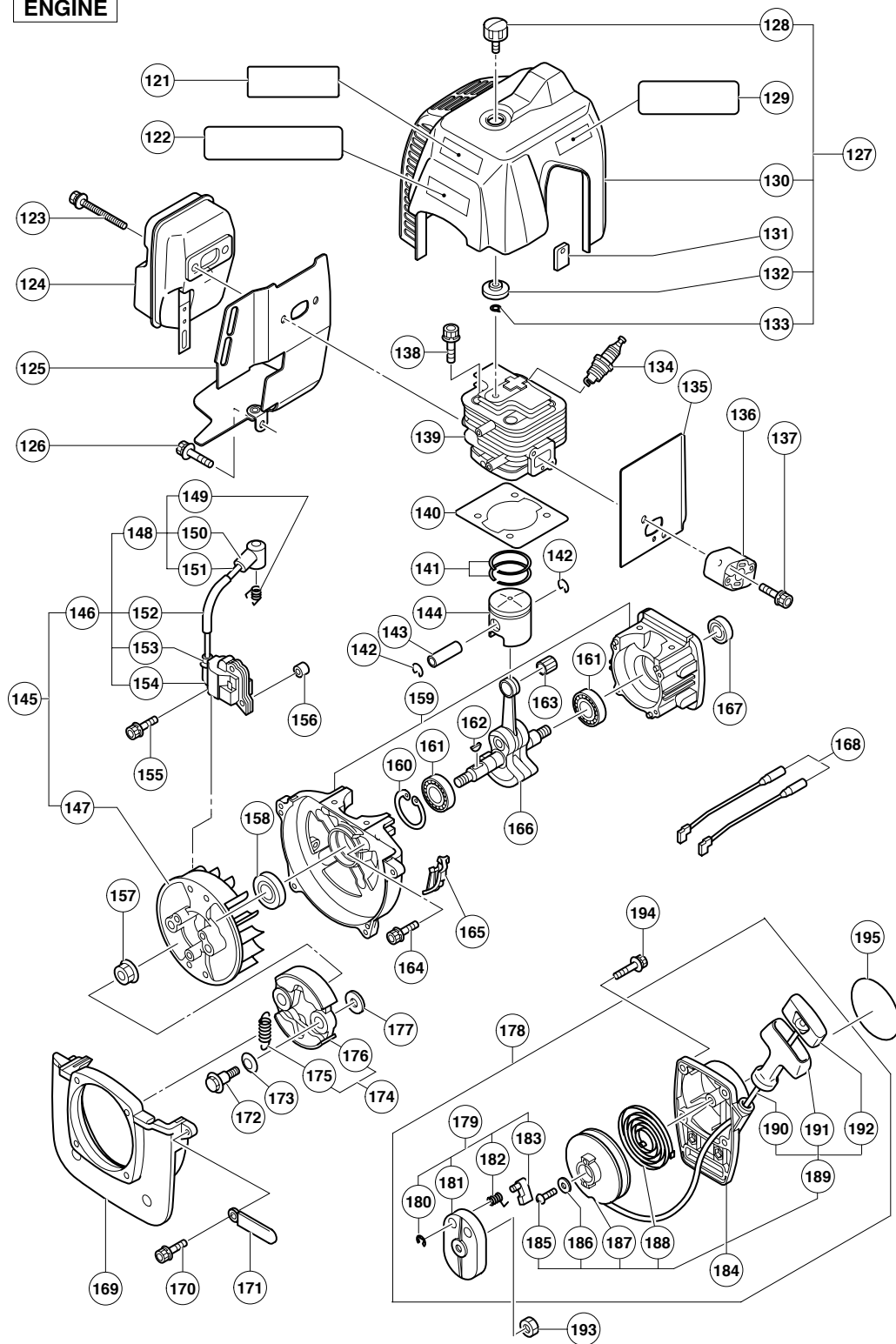
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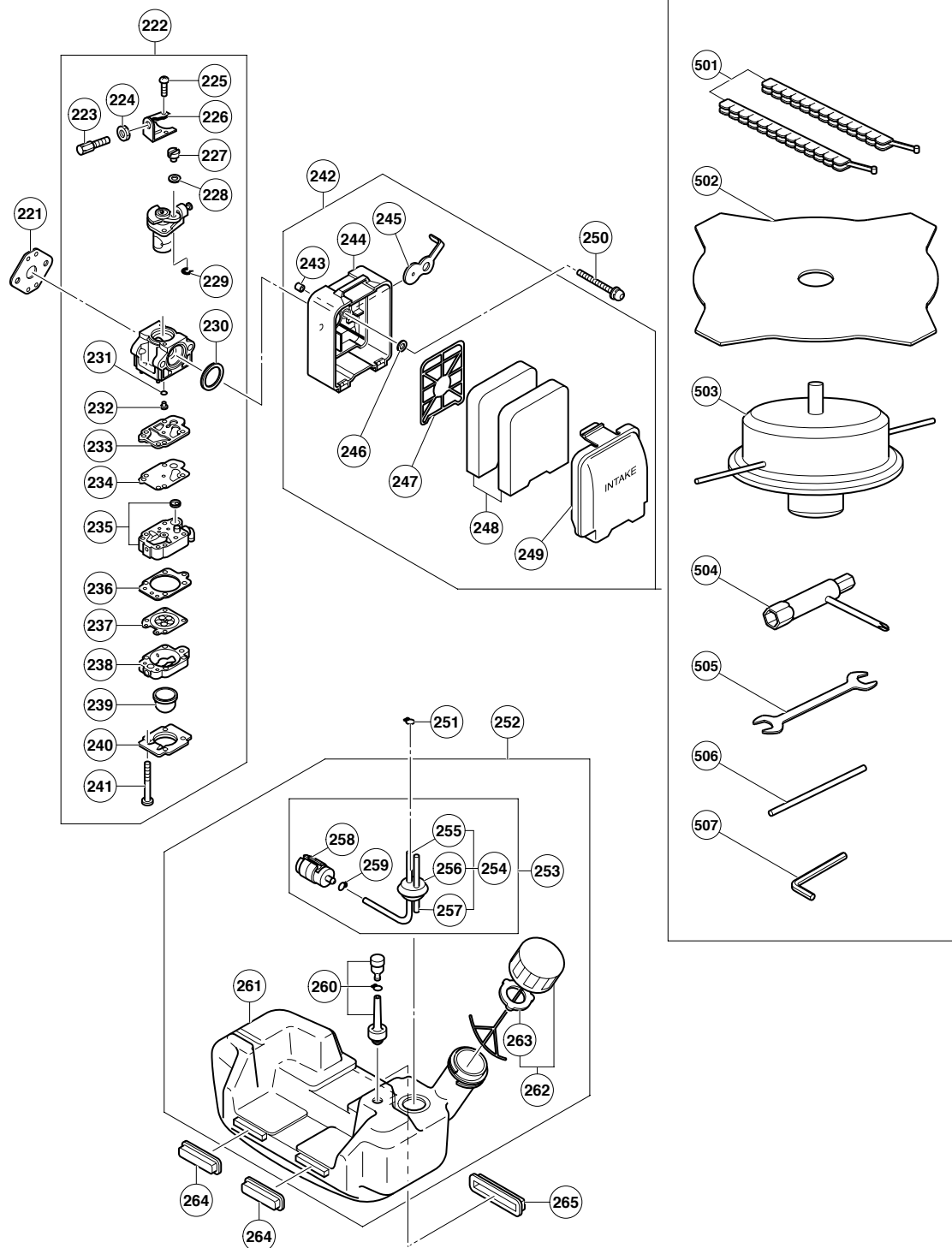
GEAR CASE





**ENGINE**

## CARBURETOR , FUEL TANK



# PARTS

CG 42EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
		MAIN BODY			
* 1	683-239	HANGING STRAP	1	FOR CG 42EA	
* 2	683-217	CLUTCH CASE ASS'Y	1	INCLUD. 3-10 FOR CG 42EA	
* 3	683-219	BEARING 6202ZZ	2	FOR CG 42EA	
* 4	683-220	SNAP RING H35	1	FOR CG 42EA	
* 5	683-224	DRIVE SHAFT TUBE ADAPTER	1	FOR CG 42EA	
	683-222	BUFFER (B)	1		
	683-221	BUFFER (A)	1		
	683-223	WASHER	1		
* 9	683-218	BEARING CASE	1	FOR CG 42EA	
	683-131	SCREW (W/SP. WASHER) M5X15	4		
* 11	683-240	BOLT (W/SP. WASHER) M6X20	4	FOR CG 42EA	
	683-225	BOLT (W/WASHERS) M6X30	1		
* 13	683-226	CLUTCH DRUM	1	FOR CG 42EA	
* 14	683-236	HANDLE (B) ASS'Y	1	INCLUD. 15, 16 FOR CG 42EA	
* 15	683-238	THROTTLE TRIGGER	1	FOR CG 42EA	
* 16	683-237	HANDLE (B)	1	FOR CG 42EA	
* 17	683-230	HANDLE BRACKET ASS'Y	1	INCLUD. 18, 19 FOR CG 42EA	
* 18	683-231	BOLT (W/WASHERS) M6X25	4	FOR CG 42EA	
* 19	683-225	BOLT (W/WASHERS) M6X30	2	FOR CG 42EA	
* 20	683-233	HANDLE (A) ASS'Y	1	INCLUD. 21, 22 FOR CG 42EA	
* 21	683-234	HANDLE (A)	1	FOR CG 42EA	
* 22	683-235	HANDLE GRIP	1	FOR CG 42EA	
* 23	683-002	HANGING STRAP	1	FOR CG 42EA (SL)	
* 24	683-244	CLUTCH CASE ASS'Y	1	INCLUD. 6-8, 10, 25-28 FOR CG 42EA (SL)	
* 25	683-246	BEARING 6201ZZ	1	FOR CG 42EA (SL)	
* 26	683-170	SNAP RING H32	1	FOR CG 42EA (SL)	
* 27	683-247	DRIVE SHAFT TUBE ADAPTER	1	FOR CG 42EA (SL)	
* 28	683-245	BEARING CASE	1	FOR CG 42EA (SL)	
* 29	683-248	CLUTCH DRUM	1	FOR CG 42EA (SL)	
* 30	683-254	BOLT M6X20	4	FOR CG 42EA (SL)	
* 31	683-251	LOOP HANDLE ASS'Y	1	INCLUD. 32-34 FOR CG 42EA (SL)	
* 32	682-990	SCREW (W/SP. WASHER) M5X28	4	FOR CG 42EA (SL)	
* 33	682-988	LOOP HANDLE	1	FOR CG 42EA (SL)	
* 34	949-555	NUT M5 (10 PCS.)	4	FOR CG 42EA (SL)	
* 35	683-250	HANGING BRACKET ASS'Y	1	INCLUD. 36 FOR CG 42EA (SL)	
* 36	682-986	BOLT M5X15	1	FOR CG 42EA (SL)	
* 37	683-249	THROTTLE TRIGGER	1	FOR CG 42EA (SL)	
* 38	683-229	HANGING BRACKET ASS'Y	1	INCLUD. 39 FOR CG 42EA	
* 39	682-999	BOLT (W/WASHERS) M5X15	1	FOR CG 42EA	
* 40	683-227	DRIVE SHAFT	1	FOR CG 42EA	
* 40	683-253	DRIVE SHAFT	1	FOR CG 42EA (SL)	
* 41	683-228	DRIVE SHAFT TUBE	1	FOR CG 42EA	
* 41	683-252	DRIVE SHAFT TUBE	1	FOR CG 42EA (SL)	
		CAUTION LABEL (A)	1		
		HITACHI LABEL	1		
	683-352	NOISE LABEL (C)	1		
* 45	683-232	WIRE GUIDE	2	FOR CG 42EA	
	683-241	SAFETY GUARD ASS'Y	1	INCLUD. 47-49	
	682-994	BOLT (W/SP. WASHER) M6X30	2		
	683-242	BRACKET	1		

# PARTS

CG 42EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
49	683-243	THREADED BRACKET	1		
50	949-555	NUT M5 (10 PCS.)	5		
51	683-000	PLANE WASHER	5		
52	682-995	STRING CUTTER ASS'Y	1	INCLUD. 53, 56-58	
53	682-997	BOLT (W/WASHER) M5X25	2		
54	682-999	BOLT (W/WASHERS) M5X15	5		
55	682-998	EXTENSION	1		
56	682-996	STRING CUTTER	1		
57	949-454	SPRING WASHER M5 (10 PCS.)	2		
58	949-555	NUT M5 (10 PCS.)	2		
		GEAR CASE			
71	683-268	BOLT M6X12	1		
72	683-255	GEAR CASE ASS'Y	1	INCLUD. 73-90 FOR CG 42EA	
72	683-269	GEAR CASE ASS'Y	1	INCLUD. 73-90 FOR CG 42EA (SL)	
73	683-018	BOLT (LEFT HAND) W/WASHERS M8X22	1		
74	683-267	STABILIZER	1		
75	683-266	CLAMPING WASHER	1		
76	683-265	BOSS ADAPTER	1		
77	683-261	OIL SEAL	1		
78	683-260	COLLAR	1		
79	683-170	SNAP RING H32	1		
80	683-259	BEARING 6002	1		
81	683-258	BLADE SHAFT	1		
82	683-154	BEARING 609	1		
83	683-150	BOLT M8X10 (BLACK)	1	FOR CG 42EA	
83	683-271	BOLT M8X10 (SILVER)	1	FOR CG 42EA (SL)	
84	683-225	BOLT (W/WASHERS) M6X30	1		
85	683-256	GEAR CASE	1	FOR CG 42EA	
85	683-270	GEAR CASE	1	FOR CG 42EA (SL)	
86	683-262	BEARING 6000	1		
87	683-263	BEARING 6000Z	1		
88	683-264	SNAP RING H10	1		
89	683-128	SNAP RING H26	1		
90	683-257	GEAR SET	1		
		ENGINE			
121		EMISSION LABEL (C)	1		
122		CAUTION LABEL (B)	1		
123	683-279	CAP SCREW M6X65	2		
124	683-277	MUFFLER	1		
125	683-278	GASKET COMP.	1		
126	683-033	CAP SCREW M5X16	1		
127	683-280	TOP COVER ASS'Y	1	INCLUD. 128, 130, 132, 133	
128	683-282	KNOB	1		
129	683-351	CE LABEL	1		
130	683-281	TOP COVER	1		
131	683-181	GROMMET	1		
132	683-283	SPACER	1		
133	683-284	SNAP RING H6	1		
134	683-068	SPARK PLUG (R)	1		
135	683-276	AIR DUCT	1		
136	683-275	INSULATOR	1		

## PARTS

CG 42EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
137	683-029	SCREW M5X25	2		
138	683-274	CAP SCREW M5X25	4		
139	683-272	CYLINDER	1		
140	683-273	GASKET (H)	1		
141	683-291	PISTON RING	2		
142	683-294	CLIP PISTON	2		
143	683-292	PISTON PIN	1		
144	683-290	PISTON	1		
145	683-303	MAGNETO ASS'Y	1	INCLUD. 146, 147	
146	683-305	IGNITION COIL ASS'Y	1	INCLUD. 148, 152-154	
147	683-304	ROTOR	1		
148	683-307	SPARK PLUG CORD ASS'Y	1	INCLUD. 149-151	
149	683-061	CONNECTOR	1		
150	683-060	PLUG CAP	1		
151	683-308	CORD	1		
152	683-309	TUBE	1		
153	683-062	CAP	1		
154	683-306	COIL	1		
155	683-067	CAP SCREW M4X25	2		
156	683-066	SPACER	2		
157	683-310	NUT M10	1		
158	683-287	OIL SEAL (D)	1		
159	683-285	CRANK CASE	1		
160	683-220	SNAP RING H35	1		
161	683-286	BEARING 6202C3	2		
162	683-064	WOODRUFF KEY	1		
163	683-293	NEEDLE BEARING	1		
164	683-289	CAP SCREW M5X40	4		
165	683-328	SCREEN	1		
166	683-295	CRANK SHAFT	1		
167	683-288	OIL SEAL (E)	1		
168	683-311	LEAD	2		
169	683-302	COOLING COVER	1		
170	683-087	CAP SCREW M5X20	4		
171	683-088	CLAMP	1		
172	683-301	CLUTCH BOLT	2		
173	683-300	WAVE WASHER	2		
174	683-296	CLUTCH ASS'Y	1	INCLUD. 175, 176	
175	683-298	SPRING CLUTCH	1		
176	683-297	CLUTCH SHOE	2		
177	683-299	WASHER M8	2		
178	683-312	RECOIL STARTER ASS'Y	1	INCLUD. 179, 184	
179	683-322	STARTER PAWL ASS'Y	1	INCLUD. 180-183	
180	683-326	E-RING	1		
181	683-325	PULLEY (A)	1		
182	683-324	RETURN SPRING	1		
183	683-323	RATCHET	1		
184	683-313	RECOIL ASS'Y	1	INCLUD. 185-189	
185	683-321	SCREW	1		
186	683-320	WASHER M5.3	1		
187	683-319	PULLEY (B)	1		

# PARTS

CG 42EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
188	683-318	SPIRAL SPRING	1		
189	683-314	ROPE ASS'Y	1	INCLUD. 190-192	
190	683-316	ROPE	1		
191	683-315	STARTER KNOB	1		
192	683-317	CAP	1		
193	683-327	NUT M8	1		
194	683-163	CAP SCREW M4X16	4		
195		NAME PLATE	1		
		CARBURETOR, FUEL TANK			
221	683-346	GASKET (I)	1		
222	683-329	CARBURETOR ASS'Y	1	INCLUD. 223-241	
223	683-199	SCREW	1		
224	683-083	NUT M6	1		
225	683-197	SCREW M3X10	2		
226	683-198	BRACKET	1		
227	683-102	SWIVEL	1		
228	683-201	WASHER M4.85	1		
229	683-101	RING	1		
230	683-200	FRAME	1		
231	683-090	O-RING (I.D. 1.8)	1		
232	683-330	MAIN JET	1		
233	683-092	GASKET (C)	1		
234	683-093	DIAPHRAGM	1		
235	683-094	PUMP BODY	1		
236	683-095	GASKET (D)	1		
237	683-331	DIAPHRAGM (METERRING)	1		
238	683-097	PURGE BODY	1		
239	683-098	PRIMER PUMP	1		
240	683-099	PUMP COVER	1		
241	683-100	SCREW M3X24	4		
242	683-332	AIR CLEANER ASS'Y	1	INCLUD. 243-249	
243	683-334	SLEEVE	2		
244	683-333	AIR CLEANER CASE	1		
245	683-208	CHOKE VALVE	1		
246	683-206	WASHER M6.5	1		
247	683-335	PLATE	1		
248	683-336	ELEMENT	2		
249	683-337	AIR CLEANER COVER	1		
250	683-338	CAP SCREW M5X50	2		
251	683-122	CLIP	1		
252	683-339	FUEL TANK ASS'Y	1	INCLUD. 253, 260-262	
253	683-341	FUEL PIPE ASS'Y	1	INCLUD. 254, 258, 259	
254	683-342	PIPE ASS'Y	1	INCLUD. 255-257	
255	683-343	FUEL PIPE	1		
256	683-118	GROMMET	1		
257	683-120	RETURN PIPE 3X6X85	1		
258	683-344	FUEL FILTER	1		
259	683-122	CLIP	1		
260	683-115	BREATHER	1		
261	683-340	FUEL TANK	1		
262	683-113	FUEL TANK CAP ASS'Y	1	INCLUD. 263	

## CG 42EA

## STANDARD ACCESSORIES

## OPTIONAL ACCESSORIES

- 9 -



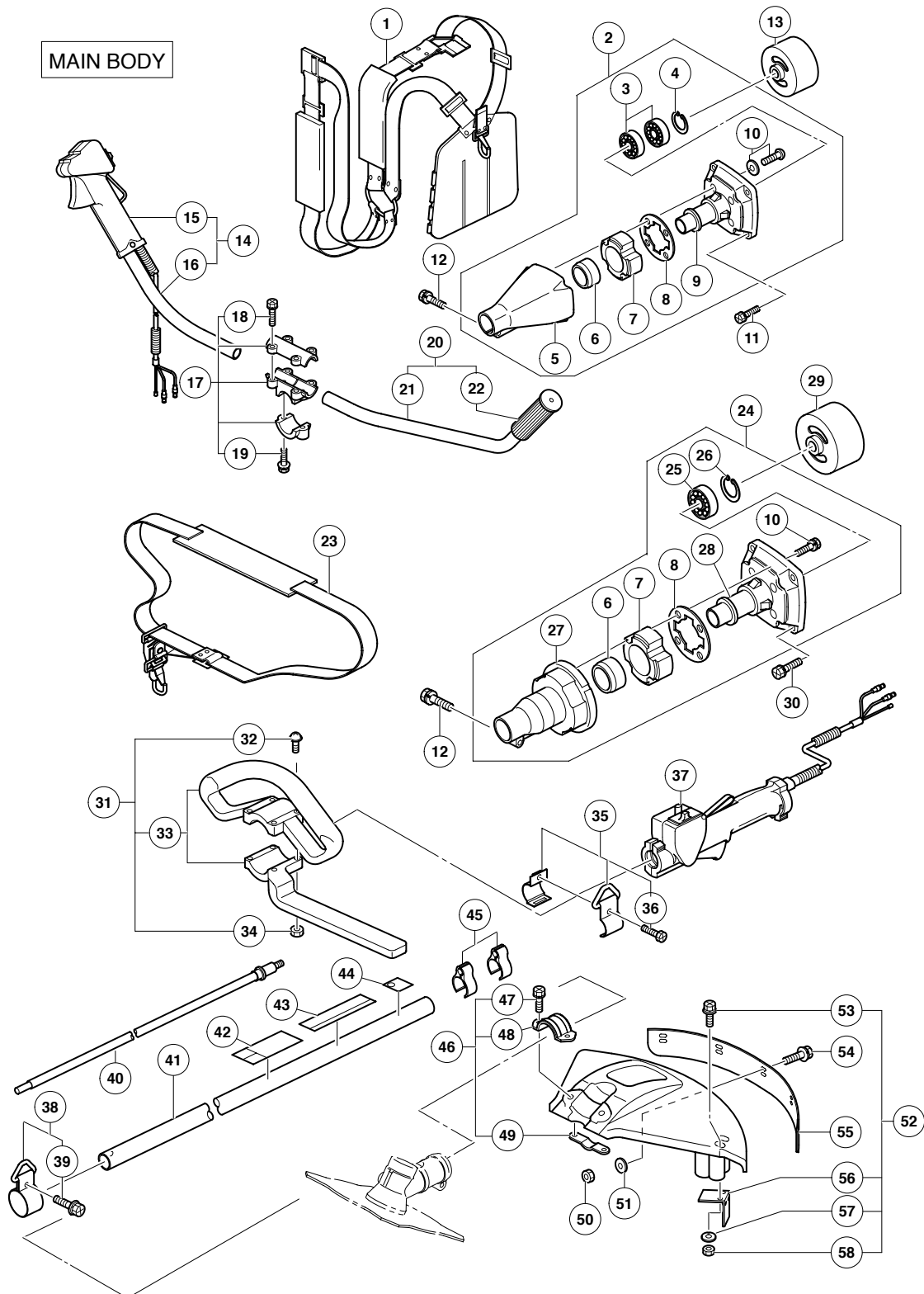


## ENGINE TOOL PARTS LIST

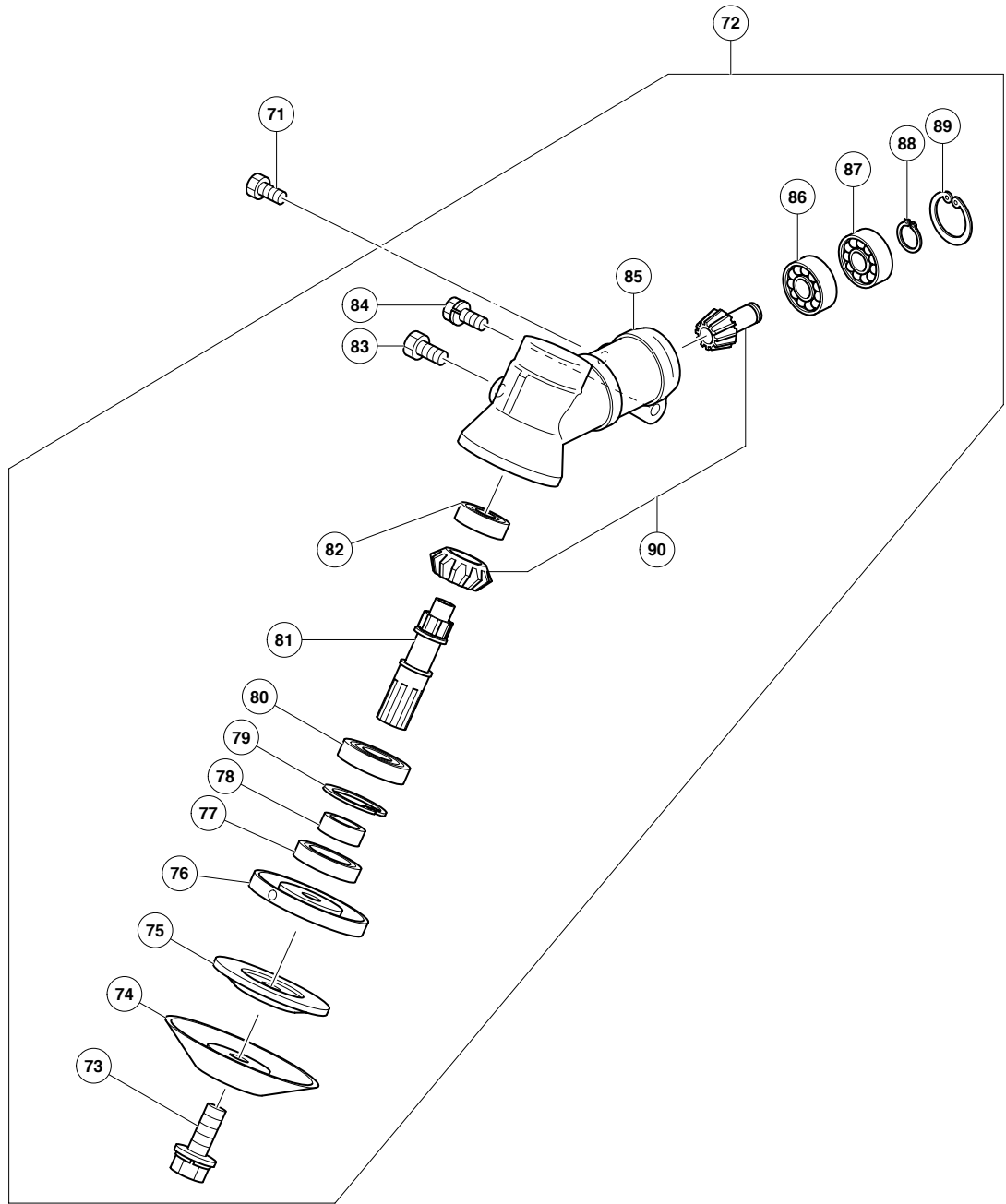
### BRUSH CUTTER Model CG 51EA

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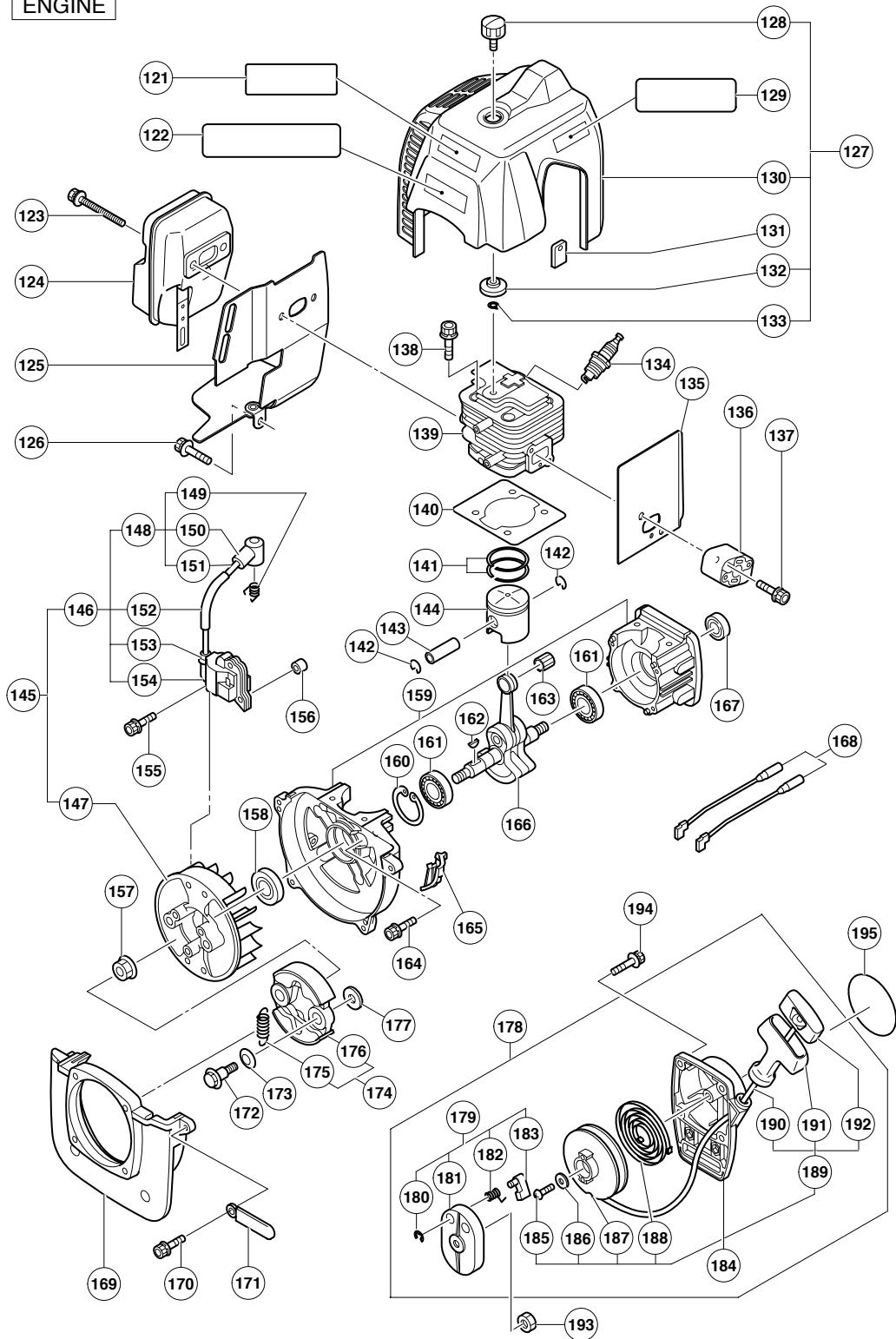
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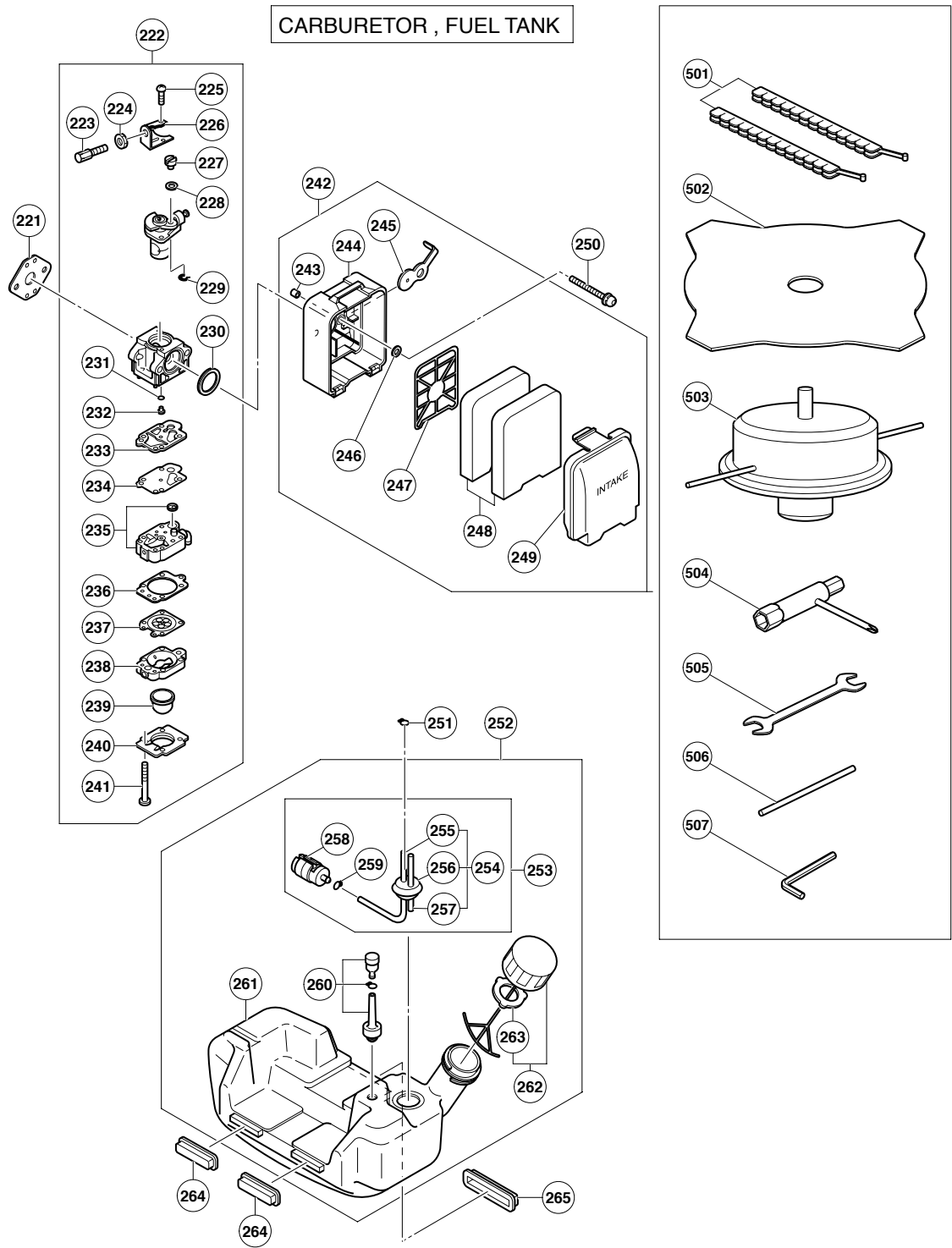


GEAR CASE



ENGINE





# PARTS

CG 51EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
		MAIN BODY			
* 1	683-239	HANGING STRAP	1	FOR CG 51EA	
* 2	683-217	CLUTCH CASE ASS'Y	1	INCLUD. 3-10 FOR CG 51EA	
* 3	683-219	BEARING 6202ZZ	2	FOR CG 51EA	
* 4	683-220	SNAP RING H35	1	FOR CG 51EA	
* 5	683-224	DRIVE SHAFT TUBE ADAPTER	1	FOR CG 51EA	
	683-222	BUFFER (B)	1		
	683-221	BUFFER (A)	1		
	683-223	WASHER	1		
* 9	683-218	BEARING CASE	1	FOR CG 51EA	
	683-131	SCREW (W/SP. WASHER) M5X15	4		
* 11	683-240	BOLT (W/SP. WASHER) M6X20	4	FOR CG 51EA	
	683-225	BOLT (W/WASHERS) M6X30	1		
* 13	683-226	CLUTCH DRUM	1	FOR CG 51EA	
* 14	683-236	HANDLE (B) ASS'Y	1	INCLUD. 15, 16 FOR CG 51EA	
* 15	683-238	THROTTLE TRIGGER	1	FOR CG 51EA	
* 16	683-237	HANDLE (B)	1	FOR CG 51EA	
* 17	683-230	HANDLE BRACKET ASS'Y	1	INCLUD. 18, 19 FOR CG 51EA	
* 18	683-231	BOLT (W/WASHERS) M6X25	4	FOR CG 51EA	
* 19	683-225	BOLT (W/WASHERS) M6X30	2	FOR CG 51EA	
* 20	683-233	HANDLE (A) ASS'Y	1	INCLUD. 21, 22 FOR CG 51EA	
* 21	683-234	HANDLE (A)	1	FOR CG 51EA	
* 22	683-235	HANDLE GRIP	1	FOR CG 51EA	
* 23	683-002	HANGING STRAP	1	FOR CG 51EA (SL)	
* 24	683-244	CLUTCH CASE ASS'Y	1	INCLUD. 6-8, 10, 25-28 FOR CG 51EA (SL)	
* 25	683-246	BEARING 6201ZZ	1	FOR CG 51EA (SL)	
* 26	683-170	SNAP RING H32	1	FOR CG 51EA (SL)	
* 27	683-247	DRIVE SHAFT TUBE ADAPTER	1	FOR CG 51EA (SL)	
* 28	683-245	BEARING CASE	1	FOR CG 51EA (SL)	
* 29	683-248	CLUTCH DRUM	1	FOR CG 51EA (SL)	
* 30	683-254	BOLT M6X20	4	FOR CG 51EA (SL)	
* 31	683-251	LOOP HANDLE ASS'Y	1	INCLUD. 32-34 FOR CG 51EA (SL)	
* 32	682-990	SCREW (W/SP. WASHER) M5X28	4	FOR CG 51EA (SL)	
* 33	682-988	LOOP HANDLE	1	FOR CG 51EA (SL)	
* 34	949-555	NUT M5 (10 PCS.)	4	FOR CG 51EA (SL)	
* 35	683-250	HANGING BRACKET ASS'Y	1	INCLUD. 36 FOR CG 51EA (SL)	
* 36	682-986	BOLT M5X15	1	FOR CG 51EA (SL)	
* 37	683-249	THROTTLE TRIGGER	1	FOR CG 51EA (SL)	
* 38	683-229	HANGING BRACKET ASS'Y	1	INCLUD. 39 FOR CG 51EA	
* 39	682-999	BOLT (W/WASHERS) M5X15	1	FOR CG 51EA	
* 40	683-227	DRIVE SHAFT	1	FOR CG 51EA	
* 40	683-253	DRIVE SHAFT	1	FOR CG 51EA (SL)	
* 41	683-228	DRIVE SHAFT TUBE	1	FOR CG 51EA	
* 41	683-252	DRIVE SHAFT TUBE	1	FOR CG 51EA (SL)	
		CAUTION LABEL (A)	1		
		HITACHI LABEL	1		
	683-352	NOISE LABEL (C)	1		
* 45	683-232	WIRE GUIDE	2	FOR CG 51EA	
	683-241	SAFETY GUARD ASS'Y	1	INCLUD. 47-49	
	682-994	BOLT (W/SP. WASHER) M6X30	2		
	683-242	BRACKET	1		

# PARTS

CG 51EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
49	683-243	THREADED BRACKET	1		
50	949-555	NUT M5 (10 PCS.)	5		
51	683-000	PLANE WASHER	5		
52	682-995	STRING CUTTER ASS'Y	1	INCLUD. 53, 56-58	
53	682-997	BOLT (W/WASHER) M5X25	2		
54	682-999	BOLT (W/WASHERS) M5X15	5		
55	682-998	EXTENSION	1		
56	682-996	STRING CUTTER	1		
57	949-454	SPRING WASHER M5 (10 PCS.)	2		
58	949-555	NUT M5 (10 PCS.)	2		
		GEAR CASE			
	71	683-268	BOLT M6X12	1	
*	72	683-255	GEAR CASE ASS'Y	1	INCLUD. 73-90 FOR CG 51EA
*	72	683-269	GEAR CASE ASS'Y	1	INCLUD. 73-90 FOR CG 51EA (SL)
	73	683-018	BOLT (LEFT HAND) W/WASHERS M8X22	1	
	74	683-267	STABILIZER	1	
	75	683-266	CLAMPING WASHER	1	
	76	683-265	BOSS ADAPTER	1	
	77	683-261	OIL SEAL	1	
	78	683-260	COLLAR	1	
	79	683-170	SNAP RING H32	1	
	80	683-259	BEARING 6002	1	
	81	683-258	BLADE SHAFT	1	
	82	683-154	BEARING 609	1	
*	83	683-150	BOLT M8X10 (BLACK)	1	FOR CG 51EA
*	83	683-271	BOLT M8X10 (SILVER)	1	FOR CG 51EA (SL)
	84	683-225	BOLT (W/WASHERS) M6X30	1	
*	85	683-256	GEAR CASE	1	FOR CG 51EA
*	85	683-270	GEAR CASE	1	FOR CG 51EA (SL)
	86	683-262	BEARING 6000	1	
	87	683-263	BEARING 6000Z	1	
	88	683-264	SNAP RING H10	1	
	89	683-128	SNAP RING H26	1	
	90	683-257	GEAR SET	1	
		ENGINE			
	121		EMISSION LABEL (D)	1	
	122		CAUTION LABEL (B)	1	
	123	683-279	CAP SCREW M6X65	2	
	124	683-277	MUFFLER	1	
	125	683-278	GASKET COMP.	1	
	126	683-033	CAP SCREW M5X16	1	
	127	683-280	TOP COVER ASS'Y	1	INCLUD. 128, 130, 132, 133
	128	683-282	KNOB	1	
	129	683-351	CE LABEL	1	
	130	683-281	TOP COVER	1	
	131	683-181	GROMMET	1	
	132	683-283	SPACER	1	
	133	683-284	SNAP RING H6	1	
	134	683-068	SPARK PLUG (R)	1	
	135	683-276	AIR DUCT	1	
	136	683-275	INSULATOR	1	

## PARTS

CG 51EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
137	683-029	SCREW M5X25	2		
138	683-274	CAP SCREW M5X25	4		
139	683-347	CYLINDER	1		
140	683-273	GASKET (H)	1		
141	683-349	PISTON RING	2		
142	683-294	CLIP PISTON	2		
143	683-292	PISTON PIN	1		
144	683-348	PISTON	1		
145	683-303	MAGNETO ASS'Y	1	INCLUD. 146, 147	
146	683-305	IGNITION COIL ASS'Y	1	INCLUD. 148, 152-154	
147	683-304	ROTOR	1		
148	683-307	SPARK PLUG CORD ASS'Y	1	INCLUD. 149-151	
149	683-061	CONNECTOR	1		
150	683-060	PLUG CAP	1		
151	683-308	CORD	1		
152	683-309	TUBE	1		
153	683-062	CAP	1		
154	683-306	COIL	1		
155	683-067	CAP SCREW M4X25	2		
156	683-066	SPACER	2		
157	683-310	NUT M10	1		
158	683-287	OIL SEAL (D)	1		
159	683-285	CRANK CASE	1		
160	683-220	SNAP RING H35	1		
161	683-286	BEARING 6202C3	2		
162	683-064	WOODRUFF KEY	1		
163	683-293	NEEDLE BEARING	1		
164	683-289	CAP SCREW M5X40	4		
165	683-328	SCREEN	1		
166	683-295	CRANK SHAFT	1		
167	683-288	OIL SEAL (E)	1		
168	683-311	LEAD	2		
169	683-302	COOLING COVER	1		
170	683-087	CAP SCREW M5X20	4		
171	683-088	CLAMP	1		
172	683-301	CLUTCH BOLT	2		
173	683-300	WAVE WASHER	2		
174	683-296	CLUTCH ASS'Y	1	INCLUD. 175, 176	
175	683-298	SPRING CLUTCH	1		
176	683-297	CLUTCH SHOE	2		
177	683-299	WASHER M8	2		
178	683-312	RECOIL STARTER ASS'Y	1	INCLUD. 179, 184	
179	683-322	STARTER PAWL ASS'Y	1	INCLUD. 180-183	
180	683-326	E-RING	1		
181	683-325	PULLEY (A)	1		
182	683-324	RETURN SPRING	1		
183	683-323	RATCHET	1		
184	683-313	RECOIL ASS'Y	1	INCLUD. 185-189	
185	683-321	SCREW	1		
186	683-320	WASHER M5.3	1		
187	683-319	PULLEY (B)	1		

# PARTS

CG 51EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
188	683-318	SPIRAL SPRING	1		
189	683-314	ROPE ASS'Y	1	INCLUD. 190-192	
190	683-316	ROPE	1		
191	683-315	STARTER KNOB	1		
192	683-317	CAP	1		
193	683-327	NUT M8	1		
194	683-163	CAP SCREW M4X16	4		
195		NAME PLATE	1		
		CARBURETOR, FUEL TANK			
221	683-346	GASKET (I)	1		
222	683-329	CARBURETOR ASS'Y	1	INCLUD. 223-241	
223	683-199	SCREW	1		
224	683-083	NUT M6	1		
225	683-197	SCREW M3X10	2		
226	683-198	BRACKET	1		
227	683-102	SWIVEL	1		
228	683-201	WASHER M4.85	1		
229	683-101	RING	1		
230	683-200	FRAME	1		
231	683-090	O-RING (I.D. 1.8)	1		
232	683-330	MAIN JET	1		
233	683-092	GASKET (C)	1		
234	683-093	DIAPHRAGM	1		
235	683-094	PUMP BODY	1		
236	683-095	GASKET (D)	1		
237	683-331	DIAPHRAGM (METERRING)	1		
238	683-097	PURGE BODY	1		
239	683-098	PRIMER PUMP	1		
240	683-099	PUMP COVER	1		
241	683-100	SCREW M3X24	4		
242	683-332	AIR CLEANER ASS'Y	1	INCLUD. 243-249	
243	683-334	SLEEVE	2		
244	683-333	AIR CLEANER CASE	1		
245	683-208	CHOKE VALVE	1		
246	683-206	WASHER M6.5	1		
247	683-335	PLATE	1		
248	683-336	ELEMENT	2		
249	683-337	AIR CLEANER COVER	1		
250	683-338	CAP SCREW M5X50	2		
251	683-122	CLIP	1		
252	683-339	FUEL TANK ASS'Y	1	INCLUD. 253, 260-262	
253	683-341	FUEL PIPE ASS'Y	1	INCLUD. 254, 258, 259	
254	683-342	PIPE ASS'Y	1	INCLUD. 255-257	
255	683-343	FUEL PIPE	1		
256	683-118	GROMMET	1		
257	683-120	RETURN PIPE 3X6X85	1		
258	683-344	FUEL FILTER	1		
259	683-122	CLIP	1		
260	683-115	BREATHER	1		
261	683-340	FUEL TANK	1		
262	683-113	FUEL TANK CAP ASS'Y	1	INCLUD. 263	



**PARTS**

CG 51EA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
263	683-114	PACKING (B)	1		
264	683-216	PAD (D)	2		
265	683-345	PAD (E)	1		

**STANDARD ACCESSORIES**

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
501	683-155	BLADE COVER	1		
502	683-156	CUTTER BLADE 255MM-D25.4 HOLE-NT4	1		
503	683-020	SEMI-AUTOMATIC HEAD 4"	1		
504	683-021	BOX SPANNER	1		
505	683-022	DOUBLE-ENDED WRENCH	1		
506	683-023	LEVER HANDLE	1		
* 507	944-459	HEX. BAR WRENCH 5MM	1	FOR CG 51EA	

**OPTIONAL ACCESSORIES**

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
601	682-975	GREASE (100G)	1		



