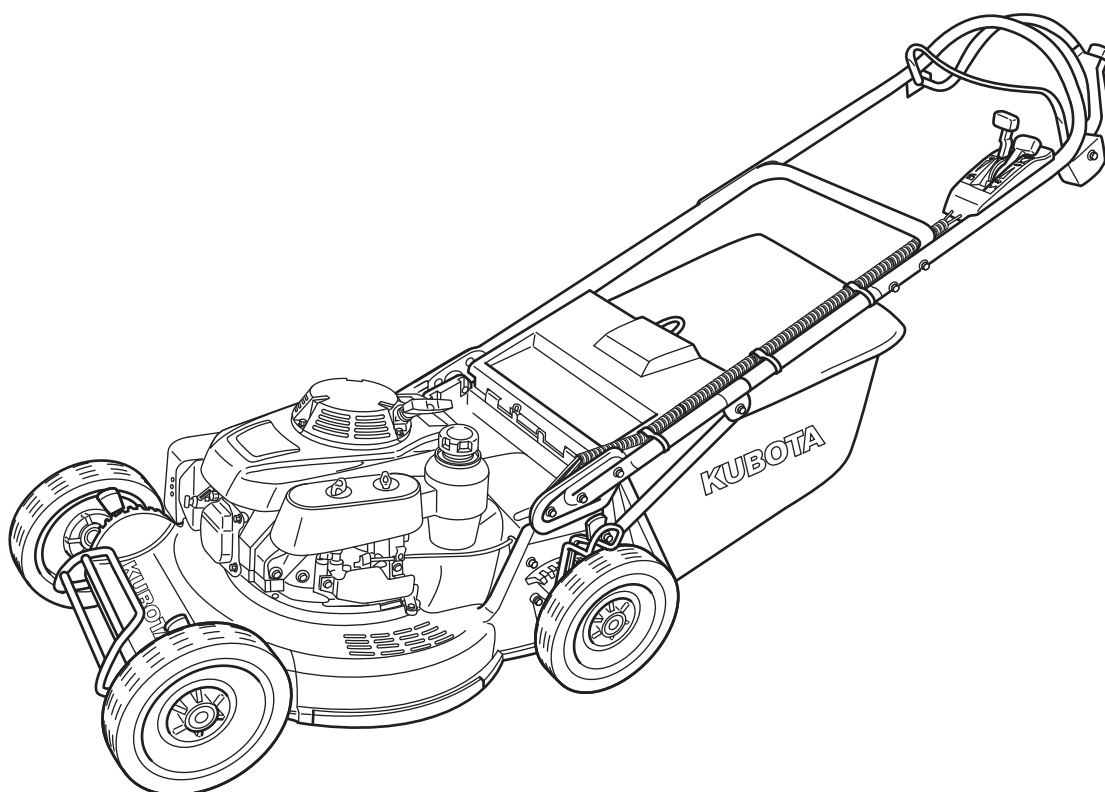


**OPERATOR'S MANUAL - KUBOTA LAWN MOWER**

# **KUBOTA**

## **W821S-AU**

## **W821SC-AU**



**Read and save this book**

# 1. INTRODUCTION

**(Be sure to read this manual before using the machine!)**

- Thank you very much for purchasing our Lawn Mower.
- Before operating the machine, be sure to carefully read all the manuals including this manual to understand their contents.



- If the machine is operated without fully understanding their contents, an unexpected personal accident may occur or the machine or other property may be damaged since you are not aware of the hazards involved in the machine and the safety measures to avoid them.

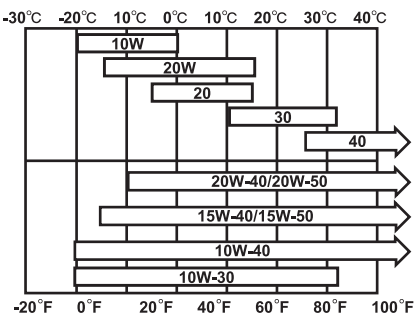
- Acknowledge that we cannot guarantee any damage occurred due to your failure to follow the contents in this manual.

- Never allow any child to operate or service this machine.

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## Recommended Engine Oils



**For Lawn Mower with HONDA engine:**  
Use engine oil of API Class SJ or later. SAE 10W-30 is generally recommended for the entire temperature range. Select engine oil suitable for the temperature in which the machine is used, referring to Table 1.

### NOTE

No engine oil is filled before the shipment from our factory. Be sure to fill the engine oil before starting the machine for the first time.

## 2. ABOUT THIS MANUAL

- Consult our distributor when you have lost or damaged this manual.
- The illustrations and contents in this manual may differ from the actual machine due to the revision of the specifications, etc.
- Attach this manual to the machine when you lend or resell the machine to other person.

## 3. SAFETY (Be Sure To Read!)

Strictly observe the contents in this section and the warnings in each section, and never take any general dangerous behavior.

### 3.1 Signal Words for Safety

In this manual, the following signal words are used for the safety precautions considered to be especially important.

- ⚠ DANGER** Indicates a hazardous situation that, if not followed, will result in death or serious injury.
- ⚠ WARNING** Indicates a hazardous situation that, if not followed, may result in death or serious injury.
- ⚠ CAUTION** Indicates a hazardous situation that, if not followed, may result in minor injury and / or damage to the machine.

## 3.2 Safety Labels

- Safety labels are affixed on the lawn mower as shown in Fig. 1.
- Always keep the safety labels clean and legible.
- Affix a new safety label if the old one becomes illegible.

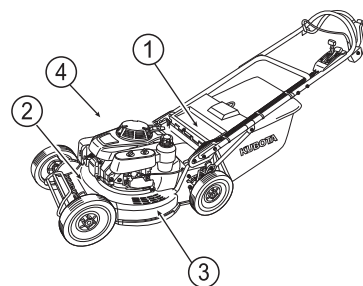


Fig. 1

## 3.3 Precautions on Blade

This machine is equipped with the blade that rotates at high speed. (See Section 9.7) It is very dangerous if you work without observing the following precautions since the blade is a sharp-edged, dangerous cutter.

## 3.4 Handling of Gasoline

Observe the following precautions to prevent an accident when handling gasoline.

## 3.5 General Safety Rules

### 3.5.1 Before Use

#### DANGER

Do not start the engine indoors or at a place not ventilated well. Concentrated harmful carbon monoxide will cause gas poisoning.



- Confirm that parts are firmly assembled. Especially, check the blade carefully. (See Section 9.7)
- Adjust the height of the handle to avoid uncomfortable posture.
- Use this machine at ambient temperatures between 5°C and 40°C. Failure to use this machine within this temperature range may result in malfunction, breakdown, or accident.
- Be careful about small stones and clubs in the mowing area. If any, remove it.
- Wear a long sleeve cloth and long trousers not loose.
- Do not use the machine with bare foot or with sandals on.
- Do not use the machine after you drink alcohol or take a medicine or when you feel unhealthy because of a cold, etc.
- Do not work for a long time under hot weather.

### 3.5.2 During Use

#### DANGER

Do not insert your foot or hand from the gap under the housing. (See Section 4.2)

#### WARNING

- Do not allow any child to step into the mowing area.
- Always stop the engine and remove the ignition plug when attaching or detaching the grass bag or adjusting the mowing height.
- If you have noticed abnormal vibration, sound, or smell during use or hit some hard object such as a stone, immediately stop the engine and remove and check the ignition plug.
- Do not allow any other persons to get close to the machine. Always stop the blade if other person approaches.
- Do not plug the outlet of the muffler.
- Take special caution when mowing grass on undulating terrain. The lawn mower may incline, making the blade visible and kicking about grass and stones.
- When using on a slope, mow across it. Never mow upward along the slope.
- Take special caution when changing the mowing direction on a slope.
- Do not use the machine on a steep slope.
- Use the machine in the bright daytime or under sufficiently bright lighting.
- Do not use the machine for wet grass. Otherwise, you may slip and fall.
- Firmly grab the handle with both hands and watch your step. Never run while using the machine.
- Release (disengage) the drive clutch lever and the blade lever when starting the engine.
- Do not access the rotating parts with your hand or foot when operating the mower.
- Do not lift the machine while the engine is working.
- Do not use the machine with the guard removed or open.
- Always stop the engine when leaving the machine unattended.
- Always stop the blade when not using the machine while you move to other mowing area.

### 3.5.3 After Use

After use, remove the grass or refuse from the machine and check for lost parts or abnormalities.

### 3.5.4 Inspection and Maintenance


#### DANGER

Do not start the engine indoors or at a place not ventilated well. Concentrated harmful carbon monoxide will cause gas poisoning.

#### WARNING

- When performing inspection, maintenance, repair, or cleaning, stop the engine and remove the plug cap.
- Wear eye protectors when grinding the blade.
- Wear leather gloves when checking the blade.
- Take caution not to get burnt when removing the plug cap.
- Service the engine after it has cooled down.
- Take caution not to spill gasoline or oil when leaning this machine. If spilt, immediately wipe off with a rag.
- Do not use this machine if there are some tears or damages. Do not repair parts. Instead, exchange them. Use only the parts specified by us. Also, use only the blade specified by us. Parts of an unequal quality, if used, may damage the machine and impair safety.

### 3.5.5 Transportation by Car

 DANGER Stop the engine.

#### WARNING

- Fix this machine with ropes so that its handle does not project from the loading platform.
- When using a running board for loading or unloading of the machine, use one with sufficient strength, width, and length, and skids and hooks.
- Do not lift this machine by yourself. Lift it by two workers.
- Wear slip-less gloves.
- Avoid jack-rabbit starts, rapid acceleration, and quick stops when driving a car.

### 3.5.6 Engine

- See the separate engine instruction manual for the information on the engine.
- Stop the engine by setting the throttle lever to "I" if it does not stop with the lever at "STOP" position.

### 3.5.7 Others

#### DANGER

- Keep the machine out of reach of children.
- Do not modify this lawn mower.
- Do not use the machine for any purpose other than mowing a lawn.
- Do not accumulate any flammable refuse such as grass on the engine (to prevent a fire) since it becomes hot.
- Adjust the mowing height after stopping the engine.
- Put this machine on a flat place when leaving it unattended or servicing it.

### 3.6 SAFETY INSTRUCTIONS

- Never mow while barefoot or wearing open sandals, or thongs. Wear long trousers and heavy shoes.
- Know your controls. Read the owner's manual carefully. Learn how to stop the engine quickly in any emergency.
- Make sure the lawn is clear of sticks, stones, bones, wire and debris. They could be thrown by the blade.
- Stop the engine and disconnect spark plug wire (on internal combustion engines) or disconnect the mower from the mains (on electric mowers) before clearing blockages, checking or working on the mower.
- Before using, always visually inspect to see that blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.

#### **DAMAGED BLADES AND WORN BOLTS ARE MAJOR HAZARDS.**

- Check all nuts, bolts and screws often; always be sure the mower is in safe operating condition. Use only replacement parts made and guaranteed by the original manufacturer of your mower.
- Refuel outdoors only. Do not smoke while fuelling engine. Add fuel before starting the engine. Never remove the cap off the fuel tank or add petrol while the engine is running or the engine is hot. If petrol is spilled, do not attempt to start the engine but move machine away from the area of the spill and avoid creating any source of ignition until petrol vapours have dissipated.
- Do not mow whilst people, especially children, are in the work area.
- Replace worn or faulty silencers.
- Mow only in good daylight.
- Never use the mower unless the grass catcher, or guards provided by the manufacturer, are in position.
- Start the engine carefully with feet well away from the blades.
- Do not operate engine in a confined space where exhaust fumes (carbon monoxide) can collect.
- Stop the engine whenever you leave the mower, even for a moment.
- Do not allow children or people unfamiliar with these instructions to use the mower.
- Store the mower in a well-ventilated room away from naked flames such as may be found in hot water heaters.
- Never use an electrically powered mower in the rain or when grass is wet.
- Never leave wind-up starters in a wound condition.
- Do not over-speed the engine or alter governor settings. Excessive speed is dangerous and shortens mower life.
- It is advisable to wear suitable eye protection when operating a mower.
- Turn the fuel off at the conclusion of mowing and reduce the throttle setting during engine run-out.
- Store fuel in a cool place in a container specifically designed for the purpose. In general, plastics containers are unsuitable.
- Stop the engine, disconnect the spark plug wire or mains power cord, as applicable, and inspect the mower if
  - (a) the mower begins to vibrate abnormally; or
  - (b) after striking a foreign object.

- Never cut grass while walking backwards.
- Stop the engine before pushing mower across gravel driveways, walkways or roads.
- Walk, never run.
- Mow across the face of slopes, never up and down. Exercise extreme caution when changing direction on slopes. Do not mow excessively steep slopes.
- Never pick up or carry a mower when it is operating.

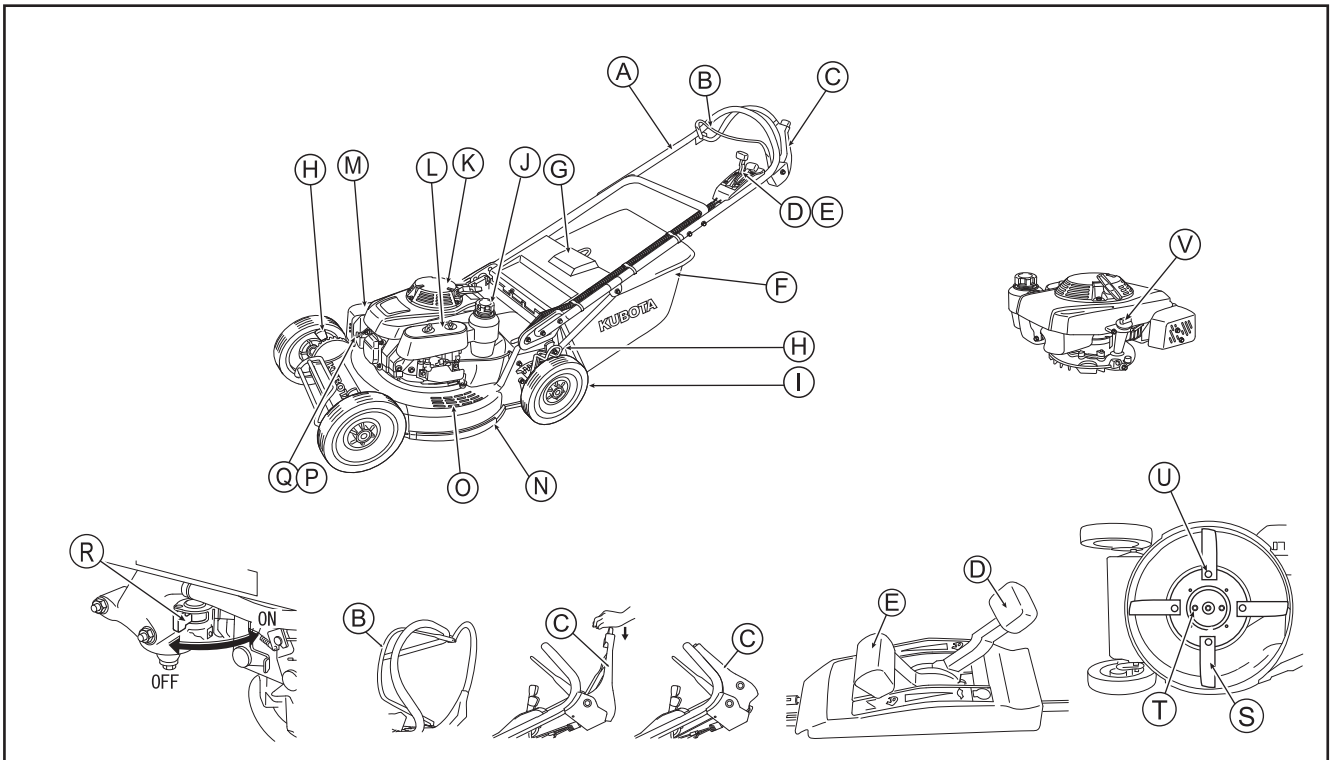


## 4. NAME AND FUNCTION OF EACH PART

### 4.1 Purpose of Use

This lawn mower is designed and manufactured to mow a lawn.

### 4.2 Name and Function of Each Part



**NOTE** Illustrations may differ from the actual machine you have purchased.

No.	Name	Description															
A	Handle	Grab this handle when using the lawn mower.															
B	Drive clutch lever	Controls mowing and stoppage. Pushed forward: Starts mowing. Released: Stops mowing.															
C	Blade lever	Rotates and stops the blade. Pushed forward with button pressed: Rotates the blade. (When pushed forward with the button not pressed, the blade does not rotate.) Released: Stops the blade rotation.															
D	Gearshift lever	Adjusts the mowing speed.															
E	Throttle lever	Adjusts the engine speed. <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">(Position)</td> <td style="text-align: center;">(Meaning)</td> <td style="text-align: center;">(Usage)</td> </tr> <tr> <td style="text-align: center;">"   \   "</td> <td style="text-align: center;">Choking</td> <td style="text-align: center;">Engine start</td> </tr> <tr> <td style="text-align: center;">" ⚙ "</td> <td style="text-align: center;">High speed</td> <td style="text-align: center;">Mowing</td> </tr> <tr> <td style="text-align: center;">" ⚙ "</td> <td style="text-align: center;">Low speed</td> <td style="text-align: center;">Idling</td> </tr> <tr> <td style="text-align: center;">" STOP "</td> <td style="text-align: center;">Stop</td> <td style="text-align: center;">Engine stop</td> </tr> </table>	(Position)	(Meaning)	(Usage)	"   \   "	Choking	Engine start	" ⚙ "	High speed	Mowing	" ⚙ "	Low speed	Idling	" STOP "	Stop	Engine stop
(Position)	(Meaning)	(Usage)															
"   \   "	Choking	Engine start															
" ⚙ "	High speed	Mowing															
" ⚙ "	Low speed	Idling															
" STOP "	Stop	Engine stop															
F	Grass bag	Receives the mown grass.															
G	Guard																
H	Adjustment lever	Adjusts the mowing height. (Mounted at each wheel.)															
I	Wheel																
J	Fuel tank port	Refuels gasoline.															
K	Recoil starter	Pull the knob to start the engine.															
L	Air cleaner																
M	Muffler																
N	Housing																
O	Step	Put your foot when starting up the engine.															
P	Ignition plug																
Q	Plug cap																
R	Fuel cock	Supplies fuel to the engine. "ON": Fuel supply "OFF": Fuel stop															
S	Blade																
T	Blade holder bolt	Bolts to mount the blade holder to the machine.															
U	Blade setting bolt	Bolts to set the blade to the blade holder.															
V	Oil tank cap	Cap for oil filler port with oil gauge.															

## 5. SPECIFICATIONS

Model	W821S-AU	W821SC-AU
Engine	HONDA GXV160	
Engine type	Air-cooled, 4-cycle OHV, Single-cylinder, gasoline engine	
Fuel	Unleaded gasoline for automobiles	
Displacement (Bore x Stroke)	163 cm <sup>3</sup> (68 mm x 45 mm)	
Max. Output	3.2 kW / 3,600rpm	
Max. Torque	9.6 Nm / 2,500rpm	
Operating speed	3,100 rpm	
Fuel tank capacity	1.8 L	
Engine oil capacity	0.65 L	
Ignition system	Transistorized magnet ignition	
Ignition plug	NGK : BPR 5 ES / DENSO : W 16 EPR-U	
Starting method	Recoil method	
Outside dimensions (L x W x H)	1,810 x 580 x 1,260 (mm)	1,830 x 580 x 1,270 (mm)
Dry weight	53 kg	62 kg
Grass bag capacity	75 L	
Mowing width	530 mm	
Mowing height	15,26,37,47,57,67,77 mm	22,32,42,52,62,72,82 mm
Mowing speed	2-step gearshift Low speed : 0.8 m / sec High speed : 1.2 m / sec	2-step gearshift Low speed : 1.0 m / sec High speed : 1.4 m / sec
Wheel diameter	8" Resin wheel	9.6" Aluminum wheel

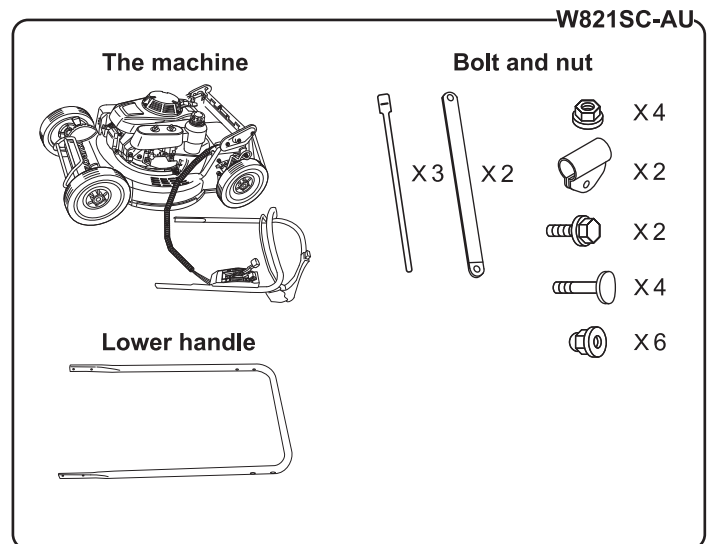
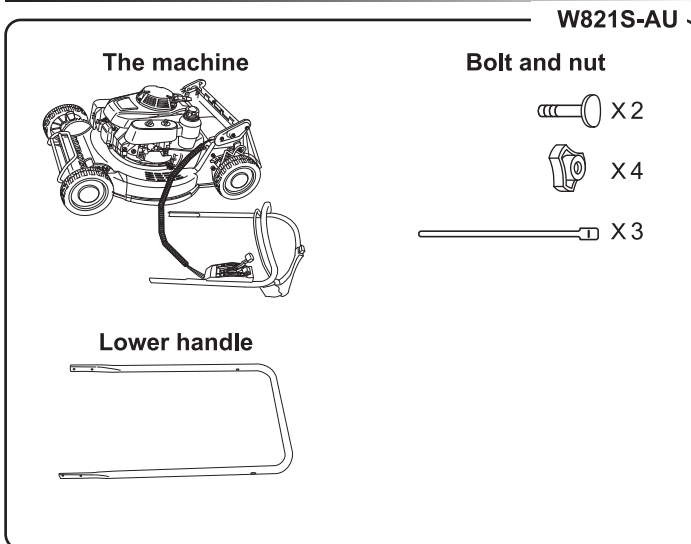
The specifications above may change for improvement without prior notice.

### Technical data

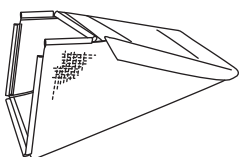
Sound power level	75 dB	
Vibration level (ISO 5349, EN1033)	4.0 m/s <sup>2</sup>	3.5 m/s <sup>2</sup>

## 6. ACCESORIES (Check After Purchase)

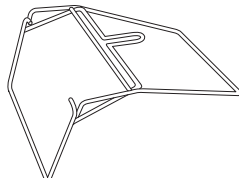
### Items in the package



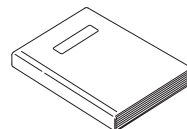
**Grass bag C.P.**



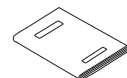
**Frame C.P.**



**Instruction manual**



**Instruction manual (Engine)**

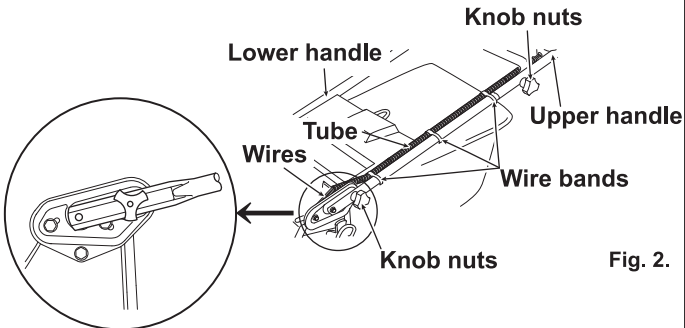


## 7. ASSEMBLY

### 7.1 Assembly and Height Adjustment of Handle

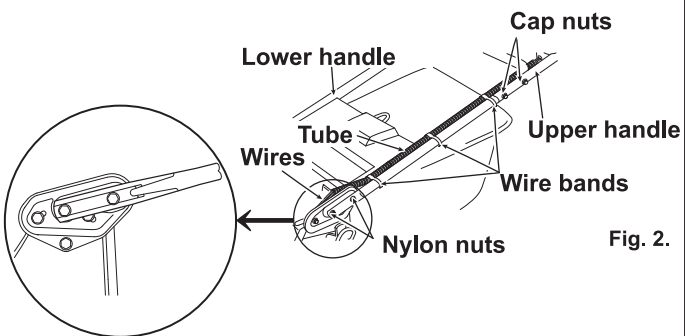
#### W821S-AU

- 1 Install the lower handle to the machine (with knob nuts). (See Fig. 2.)
- 2 Assemble the upper handle to the lower handle, and then tighten with bolts and knob nuts.



#### W821SC-AU

- 1 Install the lower handle to the machine (with 4 nylon nuts). (See Fig. 2.)
- 2 Assemble the upper handle to the lower handle, and then tighten with bolts and cap nuts.



- 3 Remove the housing bolts and loosely fix the bar temporarily. (See Fig. 3.)
- 4 Install the fixing band to the lower handle.
- 5 Catch the bar with the hanger band and tighten it with bolts and cap nuts.
- 6 Tighten the bolts of the housing.

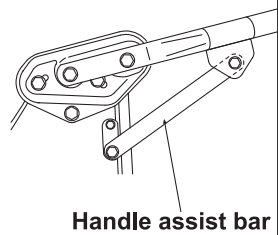


Fig. 3.

#### handle height adjust bolt

The handle can be adjusted steplessly within its adjustment range. (See Fig. 4.)

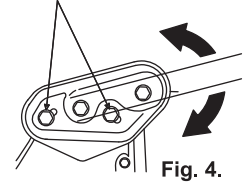


Fig. 4.

#### NOTE

Fix wires, etc. to the handle with wire bands so that they do not interfere opening / closing of the guard or operation of the machine.

#### W821SC-AU

When adjusting the height of the handle, loosen the bolt of the handle assist bar before loosening the handle height adjust bolt.

### 7.2 Attaching and Detaching of Grass Bag

#### CAUTION

Be sure to stop the engine. Open or Close Guard (G) slowly. Also, do not insert your fingers in between.

(See Figs. 5, 6 and 7.)

#### 7.2.1 Assembly

- 1 Lift Guard (G), and set Hook (W) on the housing.
- 2 Confirm that Grass bag (F) is attached at the specified position.

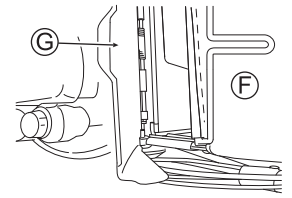


Fig. 5.

#### 7.2.2 Removal

- 1 Lift Guard (G), and remove Hook (W) from the housing.
- 2 Close Guard (G) slowly.

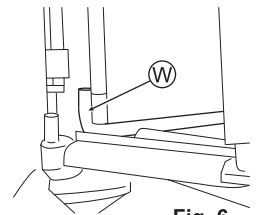


Fig. 6.

#### NOTE

- \* Clogging of the grass bag lowers the collecting performance.
- \* A wet grass bag advances clogging.

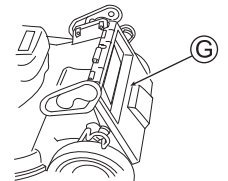
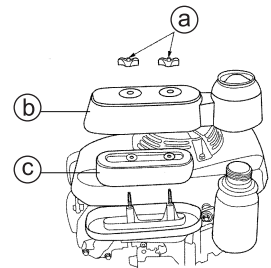


Fig. 7.

### 7.3 Attaching of Air cleaner

- 1 Assemble element (c) to its original position, and close cover (b) with Mounting bolts (a).



## 8. OPERATION

### 8.1 Preparation and Inspection Before Operation

Place the lawn mower at a level place.

**⚠ DANGER** Before inspection, be sure to stop the engine and remove the plug cap.

#### 8.1.1 Checking the engine oil amount

- 1 Remove Oil tank cap (V), pull out the oil gauge, and then insert it not screwing it. (See Fig. 8)
- 2 Remove Oil tank cap (V), and confirm that the oil level is between the upper and lower limits of the oil gauge.
- 3 Replenish oil if oil level is near the lower limit.
- 4 Firmly close Oil tank cap (V) after confirmation.

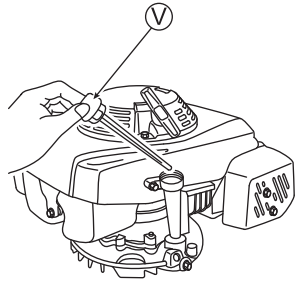


Fig. 8

#### 8.1.2 Refueling (See Section 3.4 for precautions during refueling.)

- 1 Open Fuel tank cap (J) and refuel gasoline. Immediately wipe off with a rag if gasoline is spilt. (See Fig. 9)
- 2 Firmly close Fuel tank cap (J) after refueling.

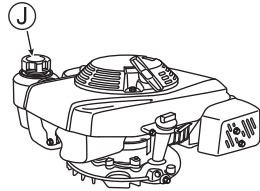


Fig. 9

#### 8.1.3 Checking the grass bag

Confirm that there are no holes and damages with the grass bag. If any, exchange it with new one specified by us.

#### 8.1.4 Checking each part

- 1 Confirm that all the bolts, nuts, and screws are securely tightened.
- 2 Confirm that the covers and guards are firmly installed. Remove the drive shaft cover with a tool.
- 3 See Section 9.7 for the inspection of the blade.

### 8.2 Start and Stop of Engine

#### 8.2.1 Start

- 1 Install Plug cap (Q). (See Fig. 12)
- 2 Set Fuel cock (R) to "ON". (See Fig. 10)
- 3 Set Throttle lever (E) to Choking "N". (See Fig. 11) (The engine can start by setting the lever at "S" when it is warm.)
- 4 To start the engine, step one foot on the step of the housing, lightly pull Starter knob (W) and temporarily stop at a position where you feel heavy to pull the knob (See Fig. 12), and then powerfully pull it from that position. After that, return Starter knob (W) slowly.

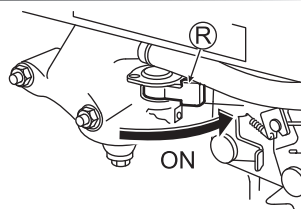


Fig. 10

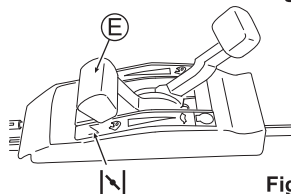


Fig. 11

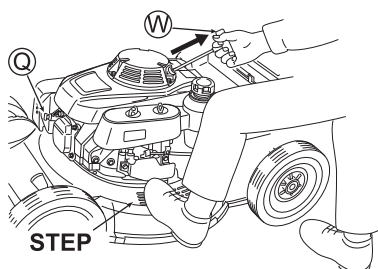


Fig. 12

#### ⚠ CAUTION

- Confirm that there is no person behind you when pulling Starter knob (W).
- Securely grab Starter knob (W) when you pull it.
- Return Starter knob (W) slowly.

- 5 Warm up the machine before use. After the engine has warmed up, start mowing by setting Throttle lever (E) to "S". (See Fig. 13)

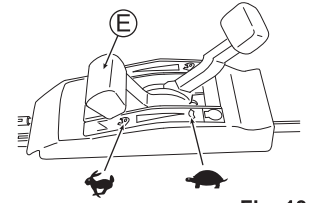


Fig. 13

#### NOTE

- The engine stalls if the blade lever is gripped with Throttle lever (E) set at "S".

#### 8.2.2 Stop

- 1 Release the blade lever and the drive clutch lever.
- 2 Set Throttle lever (E) to "STOP". (See Fig. 14)
- 3 Set Fuel cock (R) to "OFF". (See Fig. 15)

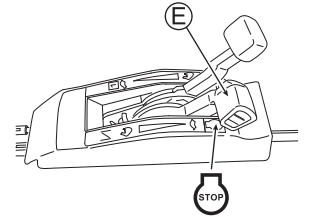


Fig. 14

#### NOTE

- Do not stop the engine with Throttle lever (E) set at "N". Restarting the engine will become harder. If the engine does not stop even if Throttle lever (E) is set at "STOP", set it to "N".

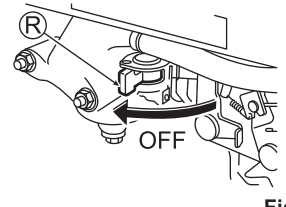


Fig. 15

### 8.3 Recommended Mowing Procedure

- 1 When grass and weeds are particularly long, mow the area in two passes. For first pass, set the mower to tallest height. For second pass, set the mower to target height. (See Figs. 16.)
- 2 The grass bag can collect cut grass if it expands wide while the blade are turning. If the grass bag does not expand, stop the engine and then empty the grass bag. (See Figs. 17.)
- 3 If the engine speed drops while mowing because the grass/weeds are long, damp, or densely packed together, you can achieve better results by pushing the mower slowly or reducing the amount of grass/weeds that come into the housing. (See Figs. 18.)
- 4 If the engine stalls while mowing, pull the mower back to a location where the grass is short. Then press down on the handle to lift the front wheels slightly, and restart the engine. (See Figs. 19.)
- 5 Often remove cut grass that has accumulated in the housing and the grass bag. Continuing to mow while the housing and grass bag are full of cut grass will damage the mower.

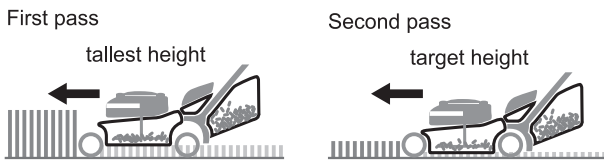


Fig. 16.

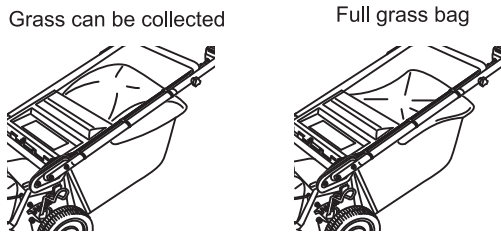


Fig. 17.



Fig. 18.

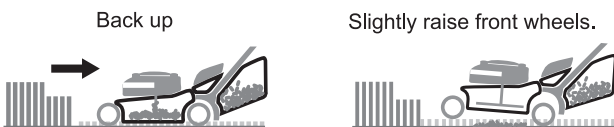


Fig. 19.

#### **WARNING**

Before adjusting the mowing height, be sure to stop the engine and remove the plug cap.



## 8.4 Operation (Mowing and Running)

Perform mowing work correctly and safely by observing the instructions in this manual.

Use this machine at ambient temperatures between 5°C and 40°C. Failure to use this machine within this temperature range may result in malfunction, breakdown, or accident.

### ! WARNING

Before working, fully understand the contents of the safety instructions including those in Section 3.

### ! CAUTION Operate each lever securely.

1 Perform the inspection before operation. (See Section 8.1.)

2 Set Throttle lever (E) to " " to start mowing. (See Fig. 20.)

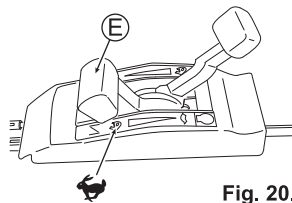


Fig. 20.

3 Push Blade lever (C) forward while pressing its yellow button. (See Fig. 21.) Then, the blade starts rotating.

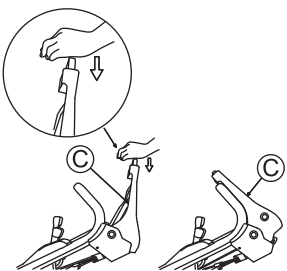


Fig. 21.

4 Pull Drive clutch lever (B) toward you to start mowing. (See Fig. 22.)

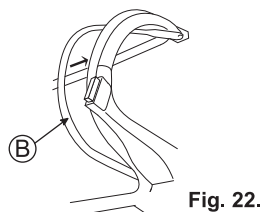


Fig. 22.

5 Adjust the mowing speed with Gearshift lever (D). (See Fig. 23.)

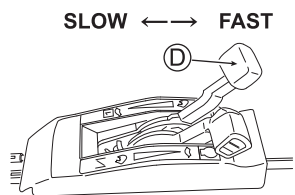


Fig. 23.

### ! CAUTION

Push down each lever until it touches the handle. Continuing to work with each lever not pushed down completely will result in a machine failure.

### NOTE

Adjust the mowing speed according to the conditions of the mowing area and the grass.

The blade does not rotate for safety when Blade lever (C) is operated with its button not pressed.

6 To interrupt mowing work halfway or finish it, return Drive clutch lever (B) and Blade lever (C), and then set Throttle lever (E) to "STOP" to stop the engine. (See Fig. 24.)

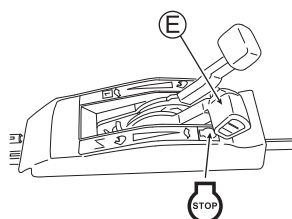


Fig. 24.

## 8.5 Adjustment of Mowing Height

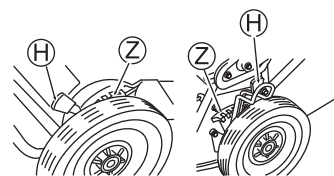
Adjust the mowing height with the mowing height adjustment levers on the wheels.

### ! CAUTION

Take caution not touch the muffler and the engine when adjusting the mowing height adjustment levers on the front wheels.

1 Stop the engine.

2 Lean the mowing height adjustment lever (H) toward the wheel side, separating from the notches (dents) (Z).



(See Figs. 25 and 26.)

Fig. 25.

3 Insert the mowing height adjustment lever (H) into the notch (Z) for the target height with the lever kept leaned.

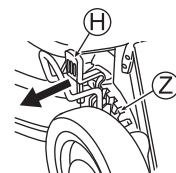
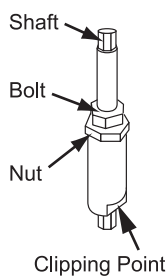


Fig. 26.

4 Insert all Mowing height adjustment levers (H) into the notches (Z) of the same height.

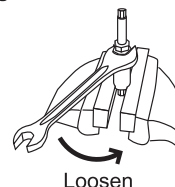
## 8.6 Torque Adjustment Method (W821SC-AU)

Fig. 27



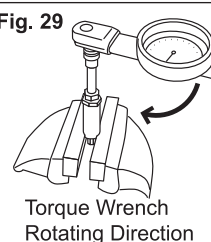
Clipping Point

Fig. 28



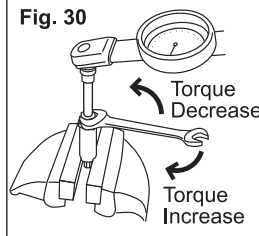
Loosen

Fig. 29



Torque Wrench Rotating Direction

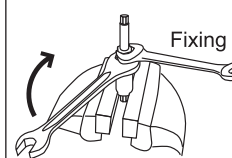
Fig. 30



Torque Decrease

Torque Increase

Fig. 31



Fixing

### Attention

Be sure that torque wrench should rotate in a clockwise direction. Shaft would be loosen, when it rotate in an anticlockwise direction.

1 (See Fig. 27)

Clip and fix torque limiter on the vise in the Fig. point.

2 (See Fig. 28)

Loose nut (for loose prevention) in an anticlockwise direction.

[Hexagon position side : 24mm]

3 (See Fig. 29)

Set torque wrench on the shaft.

[Hexagon position side : 10mm]

4 (See Fig. 30)

When rotate torque wrench 360-degree roll, adjust the torque with bolt rotated so as to be in the range from lower limit : 15Nm to higher limit.

[Hexagon position side : 19mm]

To increase torque : Clockwise direction

To decrease torque: Anticlockwise direction

5 (See Fig. 31)

Fix bolt by tool not to move and tighten up the nut in a clockwise direction.

### Attention

When torque surpass higher limit 20Nm, torque limiter loses its function.

When you cannot adjust in range of lower limit 15Nm ~ higher limit 20Nm, please change it to new one.

## 8.7 Adjustment of Wires

### NOTE

Poor adjustment of each wire will result in the decline of performance or a machine failure.

### 8.7.1 Throttle Lever (See Figs. 32 and 33.)

Adjust Throttle lever (E) so that choking works when it is positioned at "N".

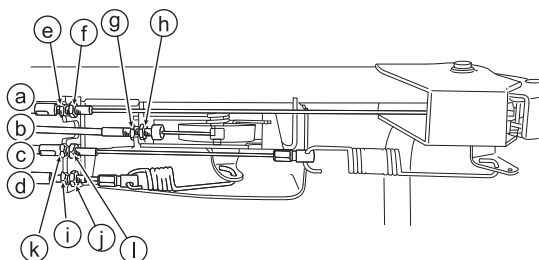


Fig. 32.

- 1 Confirm that the adjustment hole on the engine control panel matches Throttle lever (E) when the lever is set at high speed position "H".

- 2 If adjustment is necessary, adjust by turning Adjuster (g), loosening Lock nut (h) of Throttle wire (b).

- 3 Set the adjuster to the optimal position and tighten Lock nut (h).

- 4 Start the engine and confirm that the engine stops completely when Throttle lever (E) is set at "STOP".

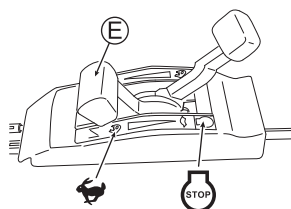


Fig. 33.

### 8.7.2 Blade Lever (See Figs. 32 and 34.)

Adjust so that the blade starts rotating when the distance between Blade lever (C) and the handle is 50 - 75 mm with the yellow button pressed as shown in Fig. 34.

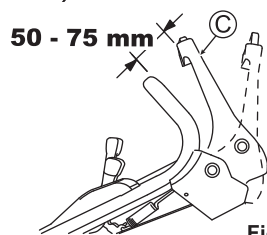


Fig. 34.

- 1 If adjustment is necessary, adjust by turning Adjuster (e), loosening Lock nut (f) of Blade wire (a).
- 2 Set the adjuster to the optimal position and tighten Lock nut (f).
- 3 Confirm that the blade stops completely when Blade lever (C) is released.

### 8.7.3 Drive Clutch Lever (See Figs. 32 and 35.)

Adjust so that the machine runs (the drive clutch gets engaged) when the distance between Drive clutch lever (B) and the handle is 75 mm as shown in Fig. 35.

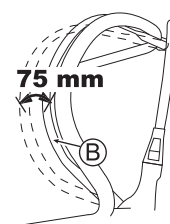


Fig. 35.

- 1 If adjustment is necessary, adjust by turning Adjuster (k), loosening Lock nut (l) of Drive clutch wire (c).
- 2 Set the adjuster to the optimal position and tighten Lock nut (l).
- 3 Confirm that the machine can be pull backward when Drive clutch lever (B) is released.

### 8.7.4 Gearshift Lever (See Figs. 32 and 36.)

Adjust the play of Gearshift lever (D) to 1 - 3 mm as shown in Fig. 36.

- 1 If adjustment is necessary, adjust by turning Adjuster (i), loosening Lock nut (j) of Gearshift wire (d).

- 2 Set to the optimal position and tighten Lock nut (j).

- 3 Start the engine and confirm that running speed changes when Gearshift lever (D) is operated.

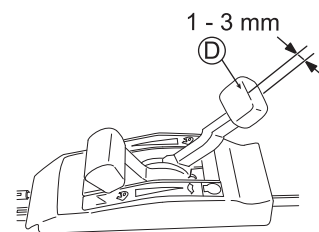


Fig. 36.

### NOTE

Ask our distributor for adjustment if the machine does not operate properly even after adjusted by the above-mentioned methods.

## 9. INSPECTION AND MAINTENANCE

### NOTE

See the engine instruction manual for the details of the maintenance of the engine.

### 9.1 Cleaning

- Wipe dirt off when this machine and the safety labels get dirty.
- Do not directly spray water with a hose, etc. since it may cause a machine failure.
- Wipe with a dry rag after cleaning, and then wipe the metal surface with a rag soaked with oil.
- Clean the grass bag while spraying water with a hose. Dry bag before use.

### 9.2 Checklist

Operating hours		Every time	Time		
			25	50	100
Engine oil (8.1.1, 9.4)	Check	○			
	Exchange			○*	
Air cleaner (9.5)	Cleaning		○		
Loose bolt (9.8)	Check	○			
Fuel (8.1.2)	Refueling	○			
Ignition plug (9.6)	Cleaning				○
	Adjust				○
Blade (9.7)	Check	○			
Blade bolt (9.7.1)	Check	○			
Grass bag (8.1.3)	Check	○			
	Cleaning	○			
Throttle wire	Adjust				○
Drive clutch wire	Adjust			○	
Blade wire	Adjust			○	
	Check			○	
Gearshift wire	Adjust			○	
Valve clearance	Adjust				○**
Combustion chamber	Cleaning				○**
Fuel tank	Cleaning				○**
Strainer	Cleaning				○**
Fuel tube	Check				○

\* Exchange oil after using the machine for 25 hours only for the first time after purchase. After that, exchange oil at 50-operating hour intervals according to the degree of dirtiness.

\*\* Maintenance techniques and special tools are necessary for this check item. Therefore, consult our distributor near you. The numbers in ( ) show the sections in this manual to be referred.

### 9.3 Lubrication to Each Part

Regularly lubricate each bearing with an oilcan to keep the smooth operation of each part.

### 9.4 Exchanging Engine Oil

#### NOTE

Extract gasoline first before tilting the engine to drain its oil. Treat and dispose the drained engine oil properly according to the law in each country.

**CAUTION** Take sufficient caution not to get burnt since the engine and the muffler are very hot right after the engine stops.

- Stop the engine and remove the plug cap.
- Remove the oil tank cap. (See Section 8.1.1) (See Fig. 37)
- Drain the engine oil from the drain port.
- Check the gauge on the oil tank cam, and fill with oil to the upper limit. (See section 8.1.1)

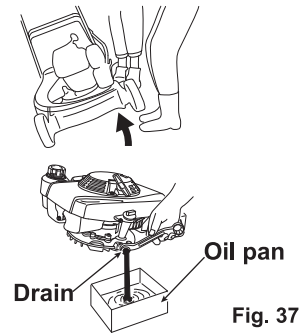


Fig. 37

### 9.5 Air cleaner (See Fig. 38)

#### NOTE

If the air cleaner is clogged, engine output is reduced and gasoline consumption increases. Clean the air cleaner on a regular basis.

- Remove Mounting bolts (a) and open Cover (b).
- Use a neutral detergent to clean the sponge element (c). Allow it to dry thoroughly before use.
- Return Element (c) to its original position, and close Cover (b) with Mounting bolts (a).

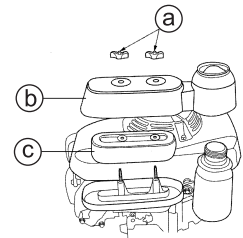


Fig. 38

**CAUTION** Securely install the air cleaner cover. If it is not installed correctly, vibration will loosen it, allowing dust to be sucked in and damaging the engine.

### 9.6 Ignition Plug

- Remove Plug cap (Q). (See Fig. 39)
- Remove Ignition plug (P) with the attached plug wrench. (See Fig. 40)
- Exchange Ignition plug (P) if a great amount of carbon is adhered to it or its insulator is cracked or damaged.
- Remove the carbon adhered to the electrode, and adjust the electrode clearance to 0.7 mm. (See Fig. 41)
- Install Ignition plug (P) and Plug cap (Q).

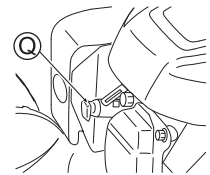


Fig. 39

#### Plug Wrench

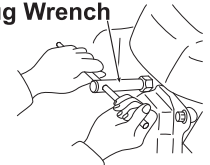


Fig. 40

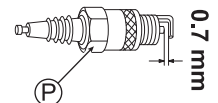


Fig. 41

### 9.7 Blade

#### NOTE

Incline this machine with the carburetor side of the engine positioned upside.

#### 9.7.1 Checking the blade mounting bolts

**DANGER** Stop the engine and remove the ignition plug when you check the blade.

**CAUTION** Wear thick gloves when you check or attach or detach the blade.

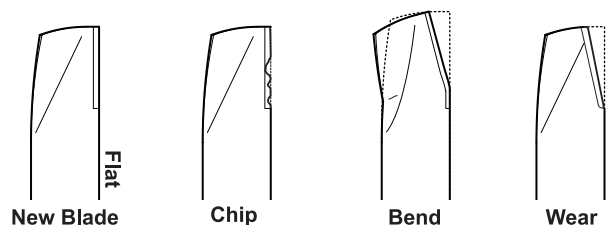


Fig. 42

- 1 Confirm that there is no chip, bend, or wear with blade (S). (See Fig. 42)
- 2 If Blade (S), its holder bolts (T) or its setting bolts (U) are "worn", "broken" or "deformed", exchange with new one(s) specified by us.
- 3 Confirm that Blade holder bolts (T) and its setting bolts (U) are tightened by the specified torque. (See Fig. 43)

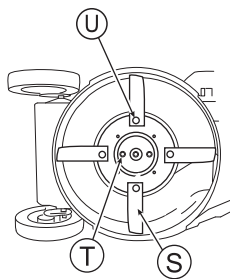


Fig. 43

(Tightening torque of Blade holder bolts (T) and its setting bolts (U): 29-39 Nm)

### 9.7.2 Attaching / Detaching the blade

#### Detaching

- 1 Loosen Blade holder bolts (T), and remove the blade.
- 2 Remove snap pin, and Loosen Blade setting bolts (U).

#### Attaching

- 1 Remove the refuse and grass adhered around the blade mounting bracket and also remove dirt.
- 2 Assemble Blade setting bolt (U) and tighten by the specified torque. (See Fig. 44)
- 3 Set snap pin.
- 4 Fully tighten Blade holder bolts (T) with hand.
- 5 Confirm that Blade holder bolts (T) are tightened by the specified torque. (See Fig. 43)

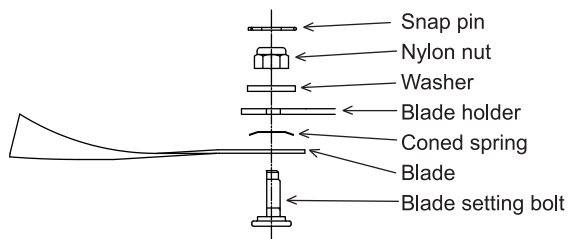


Fig. 44

(Tightening torque of Blade holder bolts (T) and its setting bolts (U): 29-39 Nm)

### 9.8 Inspection of Each Part

Confirm that all the bolts, nuts, and screws are securely tightened.

## 10. TRANSPORTATION

**! DANGER**  
Stop the engine and remove the plug cap. Do not leave nor transport this machine tilted.

- 1 Close the fuel cock. (See Section 8.2.2)
- 2 Detach the handle depending on the situation. Temporarily tighten the screws at the original positions if the handle is detached.

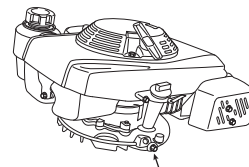
## 11. LONG-TERM STORAGE

### 11.1 Storage

Perform the following operations when the machine is left for 30 days or more without starting the engine.

**! DANGER**  
Before working, stop the engine and remove the plug cap.

- 1 Exchange the engine oil (See Section 9.4) and idle the machine for 5 minutes.
- 2 Extract the fuel from the fuel tank and the carburetor. (See Fig. 45)
- 3 Clean the air cleaner. (See Section 9.5)



Drain Fig. 45

#### NOTE

- See the engine instruction manual for details.
  - By discharging the residual fuel inside the carburetor, foreseeable troubles such as engine startup trouble caused by residual fuel can be eliminated.
- 4 Clean the blade and each part, and check tightening.
  - 5 Wipe the metal parts with a rag soaked with oil.
  - 6 Remove the ignition plug, and inject engine oil (5 - 10 cc) into the cylinder.
  - 7 Install the ignition plug after cleaning it. (See Section 9.6)
  - 8 Pull the recoil starter for a couple of times, and then pull it slowly up to a position where you feel heavy to pull it.
  - 9 Clean the grass bag.
  - 10 After using the machine, move it to a dry, un-dusty, flat place and cover it for storage.

#### NOTE

Repair or exchange abnormal parts, if any. Use only the specified parts.

## 12. DISPOSAL

- Dispose the waste engine oil, gasoline, or the disused lawn mower itself according to the relevant law of your country or the relevant regulations of your region, or consult our distributor.
- Never dispose them illegally since it may cause ground and / or water pollution.
- Dispose the rags used for wiping gasoline or oil, separated from general garbage.

## 13. TROUBLESHOOTING

First, inspect the following areas on your own. If trouble persists, do not disassemble the mower. Contact the retailer where the mower was purchased for assistance.

### Engine does not start.

Inspection item	Cause	Solution
Check the gasoline.	Is there gasoline in the tank?	Refuel the gasoline. (See Section 8.1.2.)
	Was something other than unleaded regular gasoline or an adulterated gasoline used?	Contact the retailer where the mower was purchased or a service shop for assistance.
Check the engine oil.	Is there gasoline in the tank?	Replenish the engine oil. (See Section 8.1.1.)
	Was an engine oil of a grade other than the specified grade used?	Contact the retailer where the mower was purchased or a service shop for assistance.
Check the ignition plug.	Was a spark plug other than the standard plug used?	Use the standard plug.
	Is the distance between electrodes correct?	Adjust the electrode clearance. Replace the spark plug. (See Section 9.6.)
	Is the ignition plug wet?	Thoroughly dry the plug, and re-install it.

### It is difficult to mow well.

Inspection item	Cause	Solution
Check the lawn condition.	Is the grass excessively tall, dense, or damp?	Raise the mowing height, and cut the grass in two passes. (See Section 8.3.) Wait until the grass dries to mow.
Check the inside of the housing. (mowing area)	Is the housing clogged with cut grass?	Remove the cut grass.
Check the grass bag.	Is the grass bag full of cut grass or clogged?	Empty and Clean the grass bag.
Check the air cleaner.	Are the elements dirty?	Clean or replace the elements. (See Section 9.5.)
Check the gasoline.	Is the gasoline level too low?	Refuel the gasoline. (See Section 8.1.2.)
	Was something other than unleaded regular gasoline or an adulterated gasoline used?	Remove and Refuel the gasoline.
Check the blade and the blade mounting bolt.	Is the blade chipped, bent, worn, or cracked?	Maintenance the blade. (See Section 9.7.)
	Is the blade mounting bolt loose?	Tighten the blade installation bolts correctly.
Check the mowing height adjustment levers.	Are the mowing height adjustment levers on all four wheels set to the same positions?	Adjust the mowing height adjustment levers on all wheels to the same position. (See Section 8.5.)



—MEMO—

Dealer

A large empty rectangular box with a black border, intended for the dealer's name, address, telephone, fax, and signature.

If you bought the unit, make sure to have your dealer seal placed on the dealer's sealing space in the Operator's Manual for maintenance. (with dealer's name, address, telephone, fax, signature of person in charge)

**KUBOTA TRACTOR AUSTRALIA PTY LTD**

25-29 Permas Way TRUGANINA VIC 3029

Phone: 03-9394-4400