

Product: Kubota W821SC-AU W821S-AU W819P-AU Service Manual

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WSM

WORKSHOP MANUAL WALK BEHIND MOWER

**W821SC-AU, W821S-AU,
W819P-AU**

Kubota

KiSC issued 03, 2014 A

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<https://www.arepairmanual.com/downloads/kubota-w821sc-au-w821s-au-w819p-au-service-manual/>

TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the W821SC-AU, W821S-AU and W819P-AU. It contains 4 parts: "**Information**", "**General**", "**Maintenance**" and "**Engine**".

■ **Information**

This section primarily contains information below.

- Safety First
- Safety instruction
- Safety Decal
- Specifications

■ **General**

This section primarily contains information below.

- Identification
- General Precautions
- Tightening Torques
- Special Tools

■ **Maintenance**

- Check List
- Check and Maintenance

■ **Reaping Portion**

- Mechanism
- Servicing

■ **Engine**

This section primarily contains information below about KOHLER XT-7.

- Troubleshooting
- Servicing Specifications
- Tightening Torques
- Checking, Disassembling and Servicing

All illustrations, photographs and specifications contained in this manual are of the newest information available at the time of publication.

KUBOTA reserves the right to change all information at any time without notice.

Since this manual includes many models, information or illustrations and photographs can show more than one model.

March, 2014

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I INFORMATION

INFORMATION

CONTENTS

1. SAFETY FIRST	I-1
2. SAFETY DECALS	I-4
[1] W821SC-AU, W821S-AU	I-4
[2] W819P-AU	I-5
3. SPECIFICATIONS	I-6
[1] W821SC-AU, W821S-AU	I-6
[2] W819P-AU	I-7
4. ACCESORIES (INFORMATION)	I-8
[1] ITEMS IN THE PACKAGE	I-8
(1) W821SC-AU, W821S-AU	I-8
(2) W819P-AU	I-8

1. SAFETY FIRST

SAFETY FIRST

- This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully.
- It is essential that you read the instructions and safety regulations before you try to repair or use this unit.

DANGER

- Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

- Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

- Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

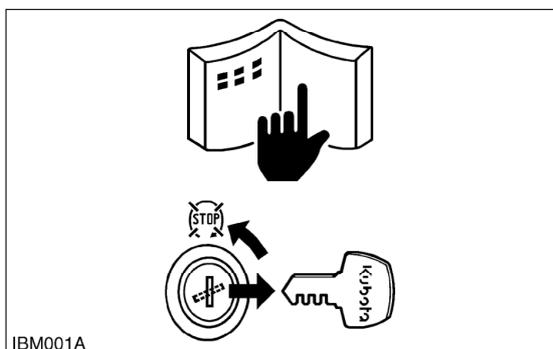
■ IMPORTANT

- Indicates that equipment or property damage could result if instructions are not followed.

■ NOTE

- Gives helpful information.

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BEFORE YOU START SERVICE

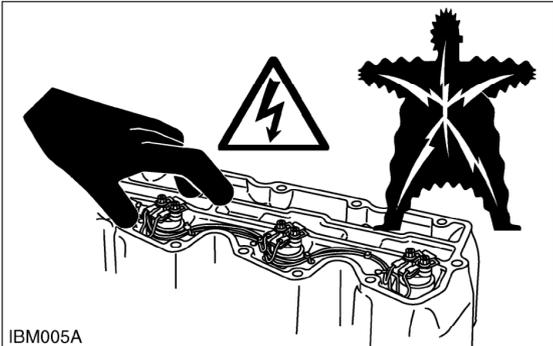
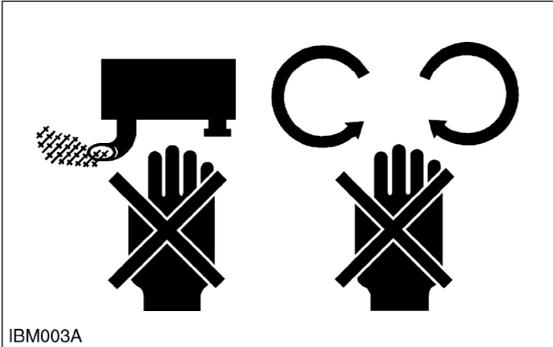
- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a stable and level ground.
- Stop the engine.
- Hang a "DO NOT OPERATE" tag on the machine.

9Y1211049INI0001US0

START SAFELY

- Do not do the procedures below when you start the engine.
 - short across starter terminals
 - bypass the safety start switch
- Do not alter or remove any part of machine safety system.

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OPERATE SAFELY

- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below the machine that only a jack holds. Always use a safety stand to hold the machine.
- Do not touch the hot parts or parts that turn when the engine operates.
- Put on an applicable ear protective device (earmuffs or earplugs) to prevent injury against loud noises.
- Be careful about electric shock. The engine generates a high voltage of more than DC100 V in the ECU and is applied to the injector.

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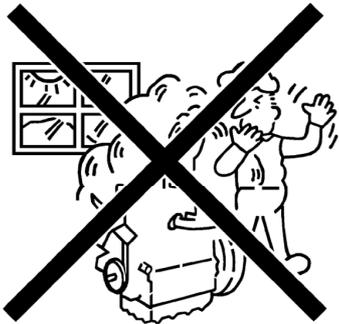
PREVENT A FIRE

- Fuel is very flammable and explosive under some conditions. Do not smoke or let flames or sparks in your work area.
- Make sure that you do not spill fuel on the engine.

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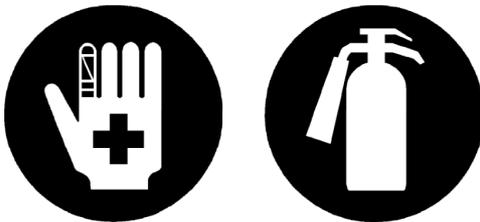
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IBM007A



IBM009A



IBM010A

PRECAUTIONS ON BLADE

- Do not insert your hand or foot from the gap under the cover while the engine is working.
- Stop the engine and remove the plug cap in the following situations:
During inspection and maintenance, and part replacement, and at a machine trouble or other trouble (such as the case being coughed by a branch, etc.)

9Y1211049INI0005US0

KEEP A GOOD AIRFLOW IN THE WORK AREA

- If the engine is in operation, make sure that the area has good airflow. Do not operate the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

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DISCARD FLUIDS CORRECTLY

- Do not discard fluids on the ground, down the drain, into a stream, pond, or lake. Obey related environmental protection regulations when you discard oil, fuel, coolant, electrolyte and other dangerous waste.

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PREPARE FOR EMERGENCIES

- Keep a first aid kit and fire extinguisher ready at all times.
- Keep the emergency contact telephone numbers near your telephone at all times.

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2. SAFETY DECALS

[1] W821SC-AU, W821S-AU

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

(1)

 <p>WARNING TO PREVENT ACCIDENTS STOP ENGINE WHEN OPENING THIS COVER.</p> <p>TO AVOID INJURY</p> <ol style="list-style-type: none"> 1. Remove all stones and pieces of wood, etc. around the grass to be cut. 2. Don't take off the protective device. 3. When starting the engine, close the release cover or put on the collector bag.  <p>ATTENZIONE PER PREVENIRE INCIDENTI, FERMARE IL MOTORE PRIMA DI APRIRE QUESTO PORTELLO.</p> <p>PER EVITARE INFORTUNII</p> <ol style="list-style-type: none"> 1. Rimuovere pietre, pezzi di legno ed altri oggetti dalla zona di taglio. 2. Non rimuovere le protezioni di sicurezza. 3. Prima di mettere in moto il motore, montare il cesto o abbassare questo portello. 	<p>AVERTISSEMENT POUR EVITER TOUT ACCIDENT, ARRÊTEZ LE MOTEUR LORSQUE VOUS OUVREZ CE COUVERCLE.</p> <p>POUR EVITER DE VOUS BLESSER</p> <ol style="list-style-type: none"> 1. Retirez toutes les pierres, les morceaux de bois, etc., qui se trouvent dans la zone où vous voulez couper l'herbe. 2. Ne retirez pas le dispositif de protection. 3. Lorsque vous démarrez le moteur, fermez le couvercle de libération ou installez le sac de récupération. <p>WAARSCHUWING OM EEN ONGELUK TE VOORKOMEN, MOET U DE MOTOR AFZETTEN WANNEER U DIT DEKSEL OPENMAAKT.</p> <p>OM LETSEL TE VOORKOMEN</p> <ol style="list-style-type: none"> 1. Verwijder alle stenen, hout e.d. rondom het gras dat wordt afgesneden. 2. Verwijder niet de beschermingsvoorziening. 3. Sluit het ontgrendelingsdeksel of breng de verzamelzak aan wanneer de motor wordt gestart. 	<p>WARNUNG UM UNFÄLLE ZU VERHÜTEN, STELLEN SIE VOR DEM ÖFFNEN DIESER ABDECKUNG DEN MOTOR AB.</p> <p>UM VERLETZUNGEN ZU VERMEIDEN.</p> <ol style="list-style-type: none"> 1. Säubern Sie die zu mähende Rasenfläche von sämtlichen Steinen, Holzstücken usw. 2. Unterlassen Sie das Entfernen der Schutzvorrichtung. 3. Schließen Sie beim Starten des Motors die Auswurfabdeckung, oder bringen Sie den Sammelsack an. <p>ADVERTENCIA PARA EVITAR ACCIDENTES, PARE EL MOTOR CUANDO ABRA ESTA.</p> <p>CUBIERTA PARA EVITAR HERIDAS</p> <ol style="list-style-type: none"> 1. Retire todas las piedras y pedazos de madera, etc. alrededor del pasto a cortar. 2. No desmonte el dispositivo de protección. 3. Cuando arranque el motor, cierre la cubierta de liberación o ponga la bolsa colectoras.
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(2)

<p>ENLEVER LE CAPUCHON LORS DE LA RÉVISION OU DU NETTOYAGE DE LA LAME COUPE-HERBE.</p> <p>ATTENTION</p>	<p>WENN SIE DAS SCHNEIDE- BLATT WARTEN ODER REINIGEN, ZIEHEN SIE AUF ALLE FÄLLE DIE KAPPE VON DER ZÜNDKERZE.</p> <p>VORSICHT</p>	<p>TOGLIELE CAPSULA DELLA CANDELA QUANDO PULITE O FATE LAVORI DI MANUTENZIONE.</p> <p>ATTENZIONE</p>	<p>DISCONNECT THE SPARK PLUG CAP WHENEVER YOU DO SERVICING OR CLEANING WORK.</p> <p>WARNING</p>
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(3)

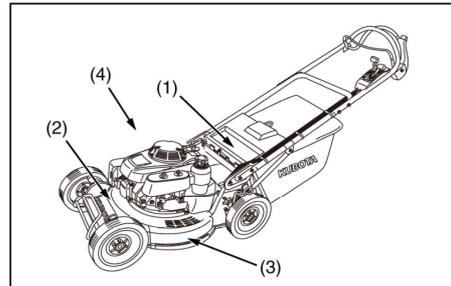
DANGER DANGER
GEFAHR GEVAAR 156

KEEP HANDS AND FEET AWAY
NE PAS APPROCHER DES MAINS ET DES PIEDS
HÄNDE UND FÜSSE FERN HALTEN
HOUD HANDEN EN VOETEN UIT DE BUURT



(4)

GEFAHR DANGER PERICOLO
KEEP HANDS AND FEET AWAY No.912

9Y1211049IC1001A

9Y1211049INI0007US0

[2] W819P-AU

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

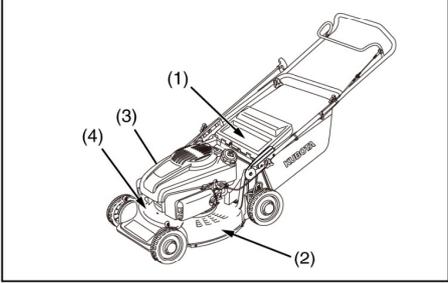
(1)

	WARNING TO PREVENT ACCIDENTS STOP ENGINE WHEN OPENING THIS COVER. TO AVOID INJURY 1. Remove all stones and pieces of wood, etc. around the grass to be cut. 2. Don't take off the protective device. 3. When starting the engine, close the release cover or put on the collector bag.	AVERTISSEMENT POUR EVITER TOUT ACCIDENT, ARRETEZ LE MOTEUR LORSQUE VOUS OUVREZ CE COUVERCLE. POUR EVITER DE VOUS BLESSER 1. Retirez toutes les pierres, les morceaux de bois, etc., qui se trouvent dans la zone où vous voulez couper l'herbe. 2. Ne retirez pas le dispositif de protection. 3. Lorsque vous démarrez le moteur, fermez le couvercle de libération ou installez le sac de récupération.	WARNUNG UM UNFÄLLE ZU VERHÜTEN, STELLEN SIE VOR DEM ÖFFNEN DIESER ABDECKUNG DEN MOTOR AB. UM VERLETZUNGEN ZU VERMEIDEN. 1. Säubern Sie die zu mähende Rasenfläche von sämtlichen Steinen, Holzstücken usw. 2. Unterlassen Sie das Entfernen der Schutzvorrichtung. 3. Schließen Sie beim Starten des Motors die Auswurfabdeckung, oder bringen Sie den Sammelsack an.
	ATTENZIONE PER PREVENIRE INCIDENTI, FERMARE IL MOTORE PRIMA DI APRIRE QUESTO PORTELLO. PER EVITARE INFORTUNII 1. Rimuovere pietre, pezzi di legno ed altri oggetti dalla zona di taglio. 2. Non rimuovere le protezioni di sicurezza. 3. Prima di mettere in moto il motore, montare il cesto o abbassare questo portello.	WAARSCHUWING OM EEN ONGELUK TE VOORKOMEN, MOET U DE MOTOR AFZETTEN WANNEER U DIT DEKSEL OPENMAAKT. OM LETSEL TE VOORKOMEN 1. Verwijder alle stenen, hout e.d. rondom het gras dat wordt afgesneden. 2. Verwijder niet de beschermingsvoorziening. 3. Sluit het ontgrendelingsdeksel of breng de verzamelzak aan wanneer de motor wordt gestart.	ADVERTENCIA PARA EVITAR ACCIDENTES, PARE EL MOTOR CUANDO ABRA ESTA. CUBIERTA PARA EVITAR HERIDAS 1. Retire todas las piedras y pedazos de madera, etc. alrededor del pasto a cortar. 2. No desmonte el dispositivo de protección. 3. Cuando arranque el motor, cierre la cubierta de liberación o ponga la bolsa colector.

(2)

DANGER DANGER
GAFahr GEVAAR 156


KEEP HANDS AND FEET AWAY
 NE PAS APPROCHER DES MAINS ET DES PIEDS
 HÄNDE UND FÜSSE FERN HALTEN
 HOUD HANDEN EN VOETEN UIT DE BUURT



(3)

GEFAHR DANGER PERICOLO

KEEP HANDS AND FEET AWAY

No.912



(4)

704





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3. SPECIFICATIONS

[1] W821SC-AU, W821S-AU

Model	W821SC-AU	W821S-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 ³ (68 mm x 45 mm) (10.3 in ³ (ϕ 2.7 x 1.8 in.))	
Max. Output	3.2 kW / 3600 rpm (4.3 hp / 3600 rpm)	
Max. Torque	9.6 N·m / 2500 rpm (0.98 kgf·m / 2500 rpm)	
Operating speed	3100 rpm	
Fuel tank capacity	1.8 L (1.9 U.S.qts, 1.6 Imp.qts)	
Engine oil capacity	0.65 L (0.69 U.S.qts, 1.6 Imp.qts)	
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)	1830 x 580 x 1270 mm (72.05 x 22.80 x 50.00 in.)	1810 x 580 x 1260 mm (71.26 x 22.80 x 49.61 in.)
Dry weight	62 kg (140 lbs)	53 kg (120 lbs)
Grass bag capacity	75 L (79 U.S.qts, 66 Imp.qts)	
Mowing width	530 mm (20.9 in.)	
Mowing height	22, 32, 42, 52, 62, 72, 82 mm (0.9, 1.2, 1.7, 2.0, 2.5, 2.8, 3.2 in.)	15, 26, 37, 47, 57, 67, 77 mm (0.6, 1.0, 1.5, 1.8, 2.3, 2.6, 3.0 in.)
Mowing speed	2-step gearshift Low speed : 1.0 m / sec (2.2 mi/h) High speed : 1.4 m / sec (3.1 mi/h)	2-step gearshift Low speed : 0.8 m / sec (2 mi/h) High speed : 1.2 m / sec (2.7 mi/h)
Wheel diameter	9.6" Aluminum wheel	8" Resin wheel

The specifications above may change for improvement without prior notice.

Technical data

Sound power level	75 dB	
Vibration level (ISO 5349, EN1033)	3.5 m/s ² (0.36 G)	4.0 m/s ² (0.4 G)

9Y1211049INI0006US0

[2] W819P-AU

Model	W819P-AU
Engine	KOHLER : XT-7
Engine type	Air-cooled, 4-cycle OHV, Single-cylinder, gasoline engine
Fuel	Unleaded gasoline for automobiles
Displacement (Bore x Stroke)	173 cm ³ / (70 mm x 45 mm) (10.6 in ³ / (ϕ 2.8 x 1.8 in.))
Max. Output	3.5 kW / 3600 rpm (4.7 hp / 3600 rpm)
Max. Torque	9.5 N·m / 2600 rpm (0.97 kgf·m / 2600 rpm)
Operating speed	3000 rpm
Fuel tank capacity	1.4 L (1.5 U.S.qts, 1.2 Imp.qts)
Engine oil capacity	0.65 L (0.69 U.S.qts, 0.57 Imp.qts)
Ignition system	Transistorized magnet ignition
Ignition plug	Champion RC12YC
Starting method	Recoil method
Outside dimensions (L x W x H)	1710 x 515 x 1120 mm (67.3 x 20.3 x 44.1 in.)
Dry weight	41 kg (90 lbs)
Grass bag capacity	70 L (74 U.S.qts, 62 Imp.qts)
Mowing width	480 mm (18.9 in.)
Mowing height	15, 26, 37, 47, 57, 67, 77 mm (0.6, 1.0, 1.5, 1.8, 2.3, 2.6, 3.0 in.)
Wheel diameter	8" Resin wheel

The specifications above may change for improvement without prior notice.

Technical data

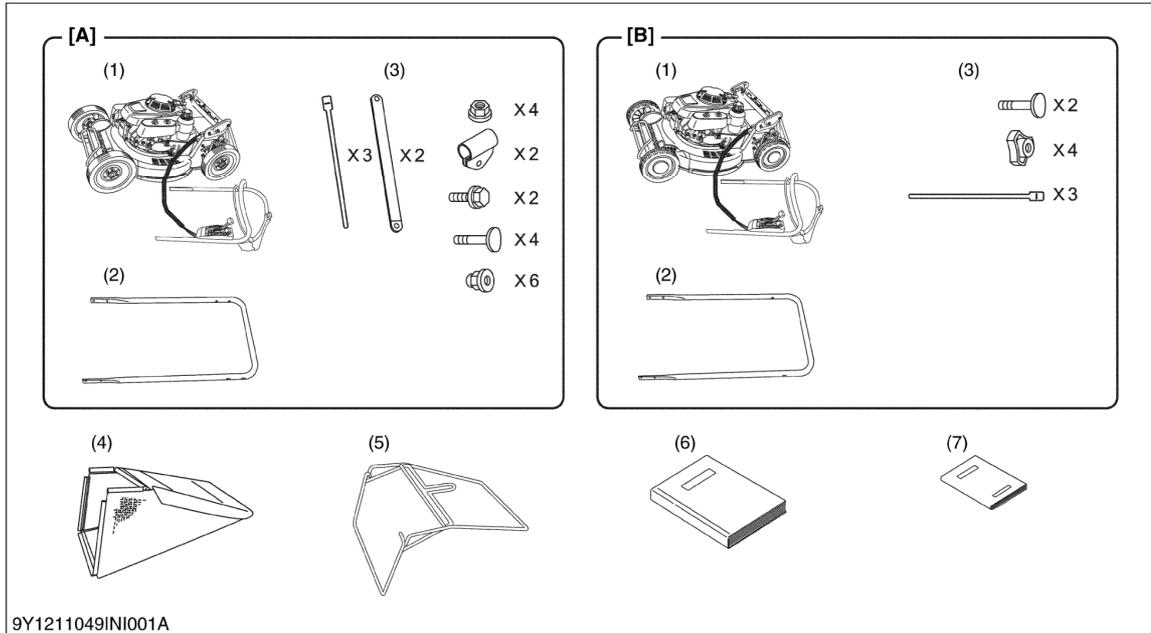
Sound power level	75 dB
Vibration level	3.9 m/s ² (0.4 G)

9Y1211049INI0009US0

4. ACCESORIES (INFORMATION)

[1] ITEMS IN THE PACKAGE

(1) W821SC-AU, W821S-AU



9Y1211049INI001A

- (1) The Machine
- (2) Lower handle
- (3) Bolt and Nut

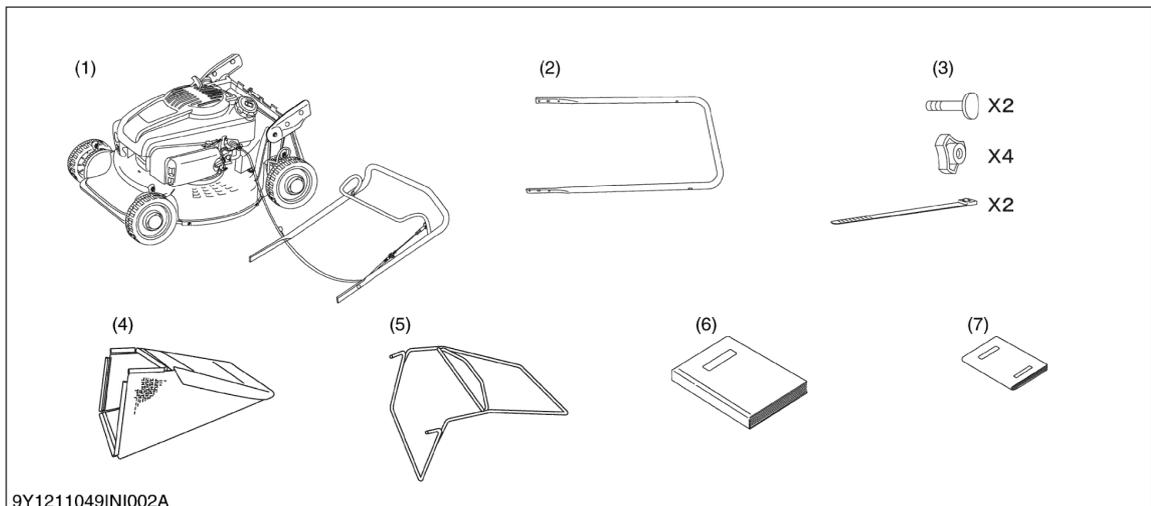
- (4) Grass Bag C.P.
- (5) Frame C.P.

- (6) Instruction Manual
- (7) Instruction Manual (Engine)

- [A] W821SC-AU
- [B] W821S-AU

9Y1211049INI0010US0

(2) W819P-AU



9Y1211049INI002A

- (1) The Machine
- (2) Lower handle

- (3) Bolt and Nut
- (4) Grass Bag C.P.

- (5) Frame C.P.
- (6) Instruction Manual

- (7) Instruction Manual (Engine)

9Y1211049INI0011US0

G GENERAL

GENERAL

CONTENTS

1. IDENTIFICATION	G-1
2. GENERAL SAFETY	G-2
3. GENERAL PRECAUTION	G-3
4. LUBRICANTS AND FUEL	G-4
5. TIGHTENING TORQUES	G-5
[1] GENERAL USE SCREWS, BOLTS AND NUTS	G-5
[2] STUD BOLTS	G-5
6. SPECIAL TOOLS	G-6

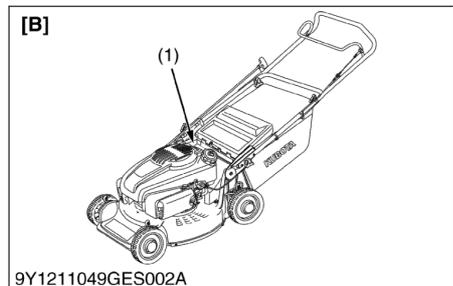
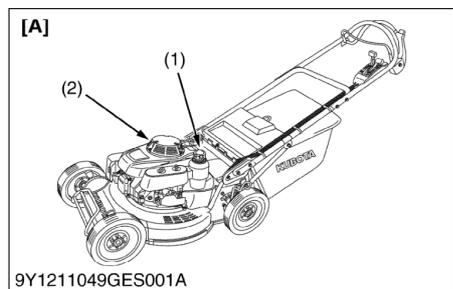
1. IDENTIFICATION

When contacting your local KUBOTA distributor, always specify engine serial number and mower serial number.

- (1) Mower Serial Number
- (2) Engine Serial Number

- [A] **W821SC-AU, W821S-AU**
- [B] **W819P-AU**

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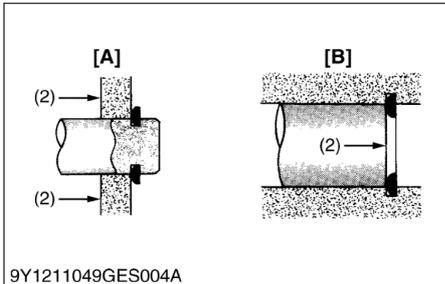
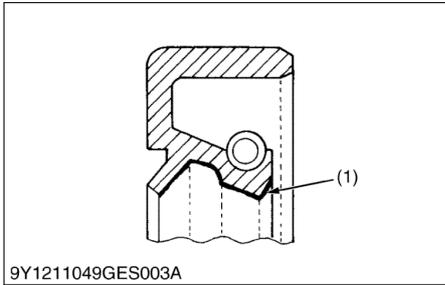


2. GENERAL SAFETY

- Stop the engine and remove the spark plug cap before servicing the mower.
- If the mower must be running, make sure the area is well ventilated. Never run the engine in a closed area.
- The exhaust gas contains poisonous carbon monoxide.
- Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.
- Keep away from rotating or hot parts and high voltage cords when the engine is run with its cover removed.

9Y1211049GEG0002US0

3. GENERAL PRECAUTION



- Do not operate or idle the engine in a non-ventilated area.
- When inspecting or servicing the engine, wait for the engine to cool before performing any operations.
- During disassembly, carefully arrange removed parts in a clean area to prevent later confusion. Screws, bolts and nuts should be replaced in their original positions to prevent reassembly errors.
- When special tools are required, use genuine KUBOTA tools. Special tools which are not used frequently should be made according to the drawings provided.
- Clean parts before measuring them.
- Use only genuine KUBOTA parts for parts replacement to maintain engine performance and to assure safety.
- Gaskets and O-rings must be replaced during reassembly. Apply grease to new O-rings or oil seals before reassembling. (See the left figure)
- When reassembling external snap rings, they must be positioned with the sharp edge facing against the direction from which a force is applied. (See the left figure)
- Use detergents for industrial parts to clean the engine parts.

- (1) Grease
(2) Force

- [A] External Snap Ring
[B] Internal Snap Ring

9Y1211049GEG0003US0

4. LUBRICANTS AND FUEL

Place		Capacity	Remarks
Engine crankcase	W821	0.65 L 0.69 U.S. qts. 0.53 Imp.qts.	A.P.I. type, SJ or later 9Y1211049GES005A
	W819		A.P.I. type, SJ or later 9Y1211049GES009A
Fuel tank	W821	1.8 L 1.9 U.S. qts. 1.6 Imp.qts.	Unleaded gasoline for automobiles
	W819	1.4 L 1.5 U.S. qts. 1.2 Imp.qts.	

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5. TIGHTENING TORQUES

[1] GENERAL USE SCREWS, BOLTS AND NUTS

Tighten screws, bolts and nuts whose tightening torques are not specified in this Workshop Manual according to the table below.

Indication on top of bolt	 No-grade or 4T						 7T						 9T		
Indication on top of nut	  No-grade or 4T									   6T					
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M6	7.9	0.80	5.8	7.9	0.80	5.8	9.81	1.00	7.24	7.9	0.80	5.8	12.3	1.25	9.05
	to 9.3	to 0.95	to 6.8	to 8.8	to 0.90	to 6.5	to 11.2	to 1.15	to 8.31	to 8.8	to 0.90	to 6.5	to 14.2	to 1.45	to 10.4
M8	18	1.8	13	17	1.7	13	24	2.4	18	18	1.8	13	30	3.0	22
	to 20	to 2.1	to 15	to 19	to 2.0	to 14	to 27	to 2.8	to 20	to 2.0	to 2.1	to 15	to 34	to 3.5	to 25
M10	40	4.0	29	32	3.2	24	48	4.9	36	40	4.0	29	61	6.2	45
	to 45	to 4.6	to 33	to 34	to 3.5	to 25	to 55	to 5.7	to 41	to 44	to 4.5	to 32	to 70	to 7.2	to 52
M12	63	6.4	47	-	-	-	78	7.9	58	63	6.4	47	103	10.5	76.0
	to 72	to 7.4	to 53	-	-	-	to 90	to 9.2	to 66	to 72	to 7.4	to 53	to 117	to 12.0	to 86.7
M14	108	11.0	79.6	-	-	-	124	12.6	91.2	-	-	-	167	17.0	123
	to 125	to 12.8	to 92.5	-	-	-	to 147	to 15.0	to 108	-	-	-	to 196	to 20.0	to 144
M16	167	17.0	123	-	-	-	197	20.0	145	-	-	-	260	26.5	192
	to 191	to 19.5	to 141	-	-	-	to 225	to 23.0	to 166	-	-	-	to 304	to 31.0	to 224
M18	246	25.0	181	-	-	-	275	28.0	203	-	-	-	344	35.0	254
	to 284	to 29.0	to 209	-	-	-	to 318	to 32.5	to 235	-	-	-	to 402	to 41.0	to 296
M20	334	34.0	246	-	-	-	368	37.5	272	-	-	-	491	50.0	362
	to 392	to 40.0	to 289	-	-	-	to 431	to 44.0	to 318	-	-	-	to 568	to 58.0	to 419

WSM000001GEG0001US0

[2] STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8	12	1.2	8.7	8.9	0.90	6.5
	to 15	to 1.6	to 11	to 11	to 1.2	to 8.6
M10	25	2.5	18	20	2.0	15
	to 31	to 3.2	to 23	to 25	to 2.6	to 18
M12	30	3.0	22	31	3.2	23
	to 49	to 5.0	to 36	-	-	-
M14	62	6.3	46	-	-	-
	to 73	to 7.5	to 54	-	-	-
M16	98.1	10.0	72.4	-	-	-
	to 112	to 11.5	to 83.1	-	-	-
M18	172	17.5	127	-	-	-
	to 201	to 20.5	to 148	-	-	-

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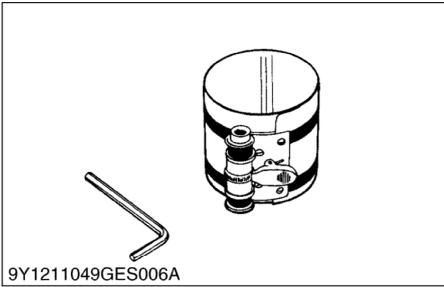
6. SPECIAL TOOLS

Piston Ring Compressor

Code No.

- 07909-32111

9Y1211049GEG0005US0



9Y1211049GES006A

Piston Ring Tool

Code No.

- 07909-32121

9Y1211049GEG0006US0



9Y1211049GES007A

Valve Seat Cutter

Code No.

- 07909-33102

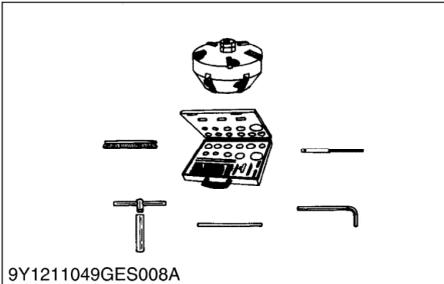
Angle

- 0.785 rad. (45°)
- 0.262 rad. (15°)

Diameter

- 28.6 mm (1.126 in.)
- 31.6 mm (1.244 in.)
- 35.0 mm (1.378 in.)
- 38.0 mm (1.496 in.)
- 41.3 mm (1.626 in.)
- 50.8 mm (2.000 in.)

9Y1211049GEG0007US0



9Y1211049GES008A

1 MAINTENANCE

SERVICING

CONTENTS

1. INSPECTION AND ADJUSTMENTS.....	1-S1
[1] MAINTENANCE CHECK LIST	1-S1
(1) W821SC-AU, W821S-AU	1-S1
(2) W819P-AU.....	1-S2
[2] CHECK AND MAINTENANCE	1-S3
(1) DAILY CHECK.....	1-S3
(2) CHECK POINTS OF EVERY 25 HOURS	1-S4
(3) CHECK POINTS OF EVERY 50 HOURS	1-S5
(4) CHECK POINTS OF EVERY 100 HOURS	1-S6

1. INSPECTION AND ADJUSTMENTS

[1] MAINTENANCE CHECK LIST

(1) W821SC-AU, W821S-AU

Inspection item		timing	Reference page
Engine oil	Check	Every time	1-S3
	Replace	* Every 50 hours	1-S4
Air cleaner	Cleaning	Every 25 hours	-
Loose bolt	Check	Every time	-
Fuel	Refueling	Every time	-
Ignition plug	Cleaning	Every 100 hours	1-S7
	Adjust	Every 100 hours	
Blade	Check	Every time	1-S3
Grass bag	Check	Every time	-
	Cleaning	Every time	
Throttle wire	Adjust	Every 100 hours	-
Drive clutch wire	Adjust	Every 50 hours	-
Blade wire	Adjust	Every 50 hours	-
	Check	Every 50 hours	
Gearshift wire	Adjust	Every 50 hours	-
Valve clearance	Adjust	** Every 100 hours	-
Combustion chamber	Cleaning	** Every 100 hours	-
Fuel tank	Cleaning	** Every 100 hours	-
Strainer	Cleaning	** Every 100 hours	-
Fuel tube	Check	Every 100 hours	-

* 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.

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(2) W819P-AU

Inspection item		Inspection time ***	Reference page
Engine oil	Inspection	Pre-work inspection	1-S3
	Replace	Every 3 months or every 25 hours of operation	1-S4
Air cleaner	Inspection	Pre-work inspection	1-S4
	Cleaning	* Every 3 months or every 25 hours of operation	
	Change	Every year or every 100 hours of operation	
Blade mounting bolt	Inspection	Pre-work inspection	1-S3
Center bolt	Inspection	** Every 6 months or every 50 hours of operation	-
Blade conditions	Inspection	Pre-work inspection	1-S3
Grass bag	Inspection	Pre-work inspection	-
Mower inspection, cleaning parts		Pre-work inspection	-
Lever operation	Inspection	Pre-work inspection	-
Engine operation	Inspection	Pre-work inspection	-
Ignition plug	Adjust	Every 6 months or every 50 hours of operation	1-S7
	Cleaning	Every year or every 100 hours of operation	
Mowing lever cable	Adjust	Every 6 months or every 50 hours of operation	-
Valve clearance	Adjust	** Every year or every 100 hours of operation	-
Combustion chamber	Cleaning	** Every 250 hours of operation	-
Fuel tank and fuel filter	Cleaning	** Every year or every 100 hours of operation	-
Fuel tube	Inspection	** Every 2 years (Replace when necessary)	-

* If the mower is used in an area with a lot of dust, clean the air cleaner after every 10 hours of operation, or once every day.

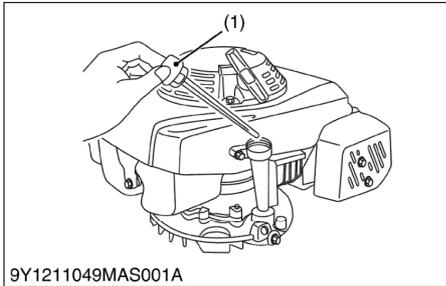
** This work requires the correct tools and knowledge of maintenance techniques. Contact the retailer where the mower was purchased or a service shop for assistance.

*** Perform inspections according to the noted time frame or the elapsed operation time, whichever comes first.

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[2] CHECK AND MAINTENANCE

(1) DAILY CHECK

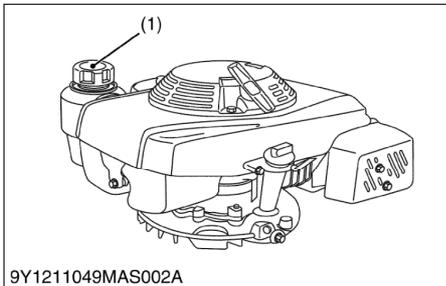


Checking the Engine Oil Amount

1. Remove oil tank cap (1), pull out the oil gauge, and then insert it not screwing it.
2. Remove oil tank cap (1), 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 (1) after confirmation.

(1) Oil Tank Cap

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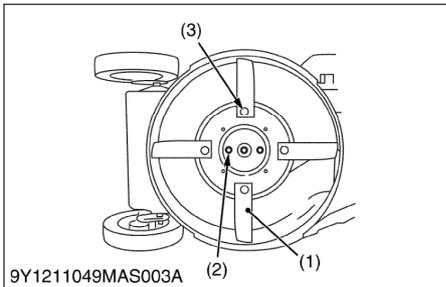


Refueling

1. Open fuel tank cap (1) and refuel gasoline. Immediately wipe off with a rag if gasoline is split.
2. Firmly close fuel tank cap (1) after refueling.

(1) Fuel Tank Cap

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Checking the Blade Mounting Bolts

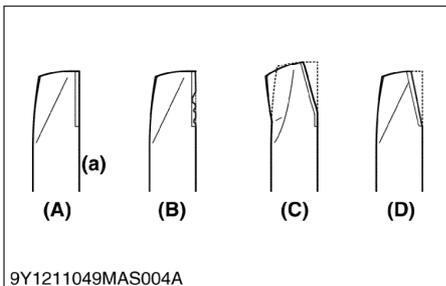
⚠ DANGER

- 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.

1. Confirm that there is no chip, bend, or wear with blade (1).
2. If blade (1), its holder bolts (2) or its setting bolts (3) are "worn", "broken" or "deformed", exchange with new one(s) specified by us.
3. Confirm that blade holder bolts (2) and its setting bolts (3) are tightening by the specified torque.

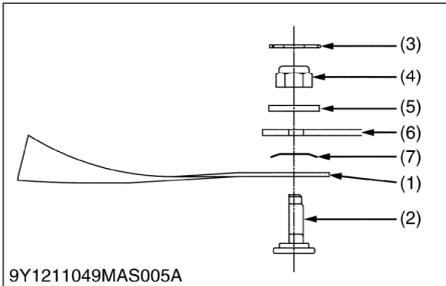


Tightening torque	Holder bolt	29 to 39 N·m
	Blade setting bolt	3.0 to 3.9 kgf·m 22 to 28 lbf·ft

- (1) Blade
 (2) Holder Bolt
 (3) Blade Setting Bolt

- (A) New Blade
 (B) Chip
 (C) Bend
 (D) Wear
 (a) Flat

9Y1211049MAS0005US0



9Y1211049MAS005A

Attaching / Detaching the Blade

Detaching

1. Loosen blade holder bolts, and remove the blade.
2. Remove snap pin, and loosen blade setting bolts (2).

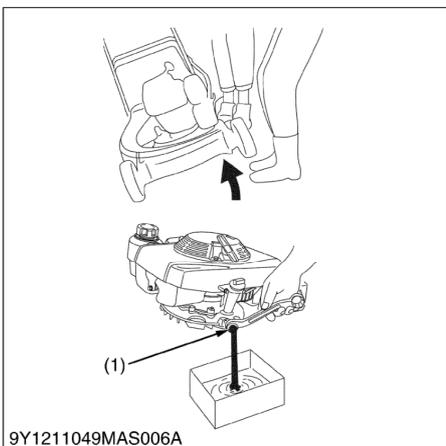
Attaching

1. Remove grass adhered around the blade mounting bracket, and dirt.
2. Assemble blade setting bolt (2) and tighten by the specified torque.
3. Set snap pin (3).
4. Fully tighten blade holder bolts with hand.
5. Confirm that blade holder bolts are tightened by the specified torque.

- | | |
|------------------------|------------------|
| (1) Blade | (5) Nylon nut |
| (2) Blade Holder Bolt | (6) Washer |
| (3) Blade Setting Bolt | (7) Blade Holder |
| (4) Snap pin | (8) Coned Spring |

9Y1211049MAS0006US0

(2) CHECK POINTS OF EVERY 25 HOURS



9Y1211049MAS006A

Exchanging Engine Oil

CAUTION

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

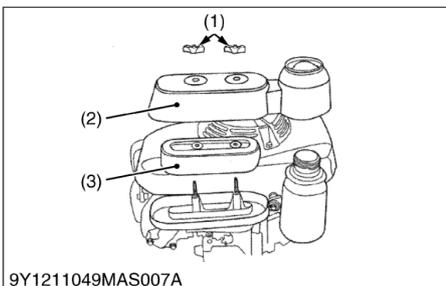
1. Stop the engine and remove the plug cap.
2. Remove the oil tank cap. (See Section 1-S3)
3. Drain the engine oil from the drain port.
4. Check the gauge on the oil tank cap, and fill with oil to the upper limit. (See Section 1-S3)

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.

- (1) Drain

9Y1211049MAS0007US0



9Y1211049MAS007A

Air Cleaner

NOTE

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

1. Remove mounting bolts (1) and open cover (2).
2. Use a neutral detergent to clean the sponge element (3). Allow it to dry thoroughly before use.
3. Return element (3) to its original position, and close cover (2) with mounting bolts (1).

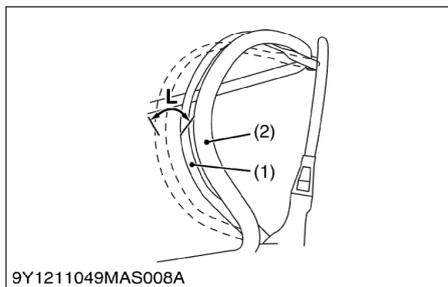
CAUTION

- 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.

- | | |
|-------------------|-------------|
| (1) Mounting Bolt | (3) Element |
| (2) Cover | |

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(3) CHECK POINTS OF EVERY 50 HOURS

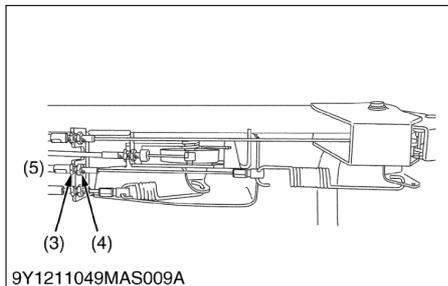


Drive Clutch Lever

Adjust so that the machine runs (the drive clutch gets engaged) when the distance between drive clutch lever (1) and the handle (2) is 75 mm as shown in the left figure.

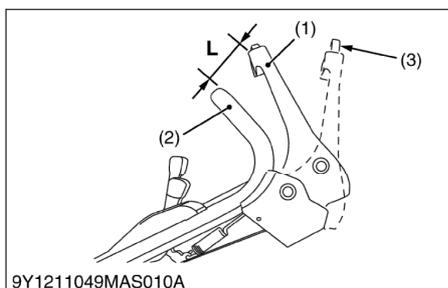
1. If adjustment is necessary, adjust by turning adjuster (3), loosening lock nut (4) of drive clutch wire (5).
2. Set the adjuster to the optimal position and tighten lock nut (4).
3. Confirm that the machine can be pull backward when drive clutch lever (1) is released.

Distance L between drive clutch lever (1) and the handle (2)	Factory specification	75 mm
--	-----------------------	-------



- | | |
|------------------------|-----------------------|
| (1) Drive Clutch Lever | (4) Lock Nut |
| (2) Handle | (5) Drive Clutch Wire |
| (3) Adjuster | |

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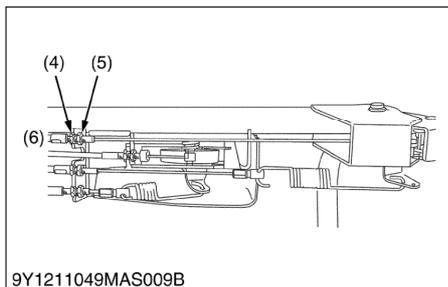


Blade Lever

Adjust so that the blade starts rotating when the distance between blade lever (1) and the handle (2) is 50 - 75 mm with the yellow button (3) pressed as shown in the left figure.

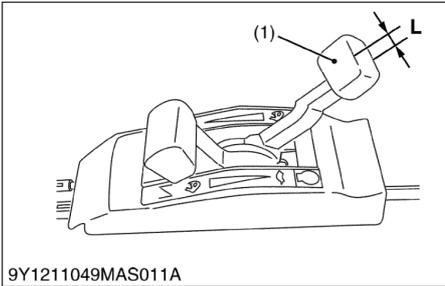
1. If adjustment is necessary, adjust by turning adjuster (4), loosening lock nut (5) of blade wire (6).
2. Set the adjuster to the optimal position and tighten lock nut (5).
3. Confirm that the blade stops completely when blade lever (1) is released.

Distance L between blade lever (1) and the handle (2)	Factory specification	50 to 75 mm
---	-----------------------	-------------



- | | |
|-------------------|----------------------|
| (1) Blade Lever | (4) Turning Adjuster |
| (2) Handle | (5) Lock Nut |
| (3) Yellow Button | (6) Blade Wire |

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Gearshift Lever

Adjust the play of Gearshift lever (1) to 1 - 3 mm as shown in the left figure.

1. If adjustment is necessary, adjust by turning adjuster (2) loosening lock nut (3) of gearshift wire (4).
2. Set to the optimal position and tighten lock nut (3).
3. Start the engine and confirm that running speed changes when gearshift lever (1) is operated.

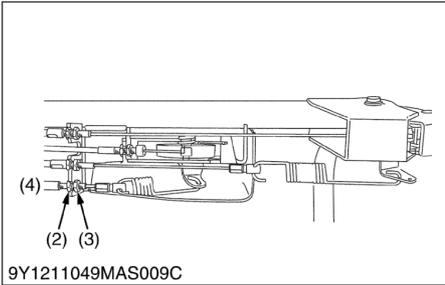
■ **NOTE**

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

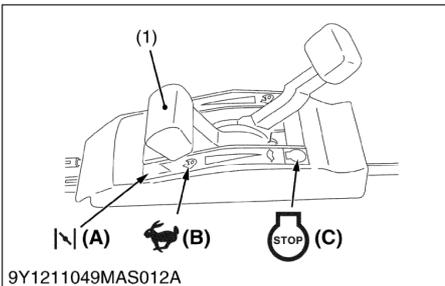
Distance L	Factory specification	1 to 3 mm
------------	-----------------------	-----------

- | | |
|---------------------|--------------------|
| (1) Gearshift Lever | (3) Lock Nut |
| (2) Adjuster | (4) Gearshift Wire |

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(4) CHECK POINTS OF EVERY 100 HOURS



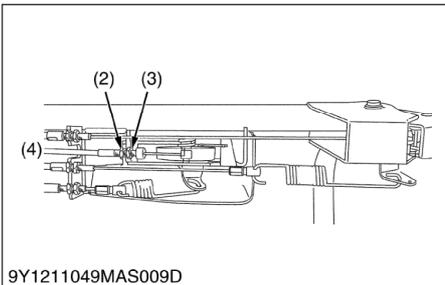
Throttle Lever

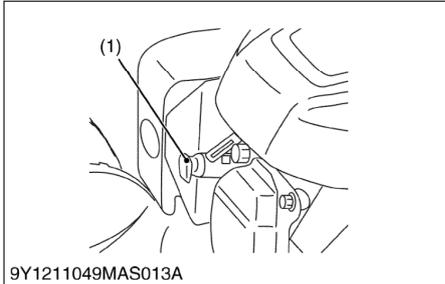
Adjust throttle lever (1) so that choking works when it is positioned at (A).

1. Confirm that the adjustment hole on the engine control panel matches throttle lever (1) when the lever is set at high speed position (B).
2. If adjustment is necessary, adjust by turning adjuster (2), loosening lock nut (3) of throttle wire (4).
3. Set the adjuster to the optimal position and tighten lock nut (3).
4. Start the engine and confirm that the engine stops completely when throttle lever (1) is set at (C).

- | | |
|--------------------|-------------------|
| (1) Throttle Lever | (3) Lock Nut |
| (2) Adjuster | (4) Throttle Wire |

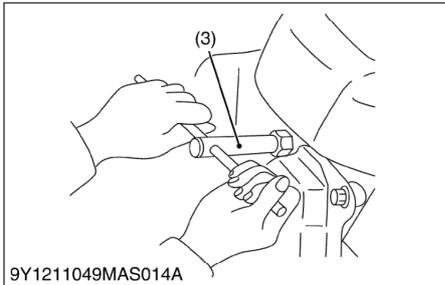
9Y1211049MAS0012US0



**Ignition Plug**

1. Remove plug cap (1).
2. Remove ignition plug (2) with the attached plug wrench.
3. Exchange ignition plug (2) if a great amount of carbon is adhered to it or its insulator is cracked or damaged.
4. Remove the carbon adhered to the electrode, and adjust the electrode clearance to 0.7 mm.
5. Install ignition plug (2) and plug cap (1).

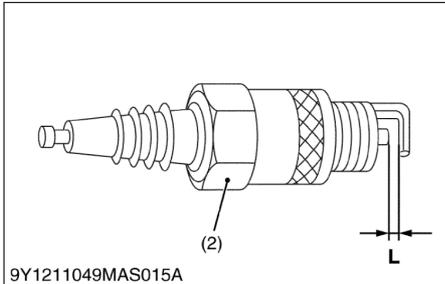
Electrode clearance L	Factory specification	0.7 mm
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- (1) Plug Cap
(2) Ignition Plug

- (3) Plug Wrench

9Y1211049MAS0013US0



Engine valve clearance and other engine items, refer to engine workshop manual which matched engine models.

9Y1211049MAS0014US0

Product: Kubota W821SC-AU W821S-AU W819P-AU Service Manual

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