

Product: Kubota TG1860 TG1860G Service Manual

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WSM

WORKSHOP MANUAL

MANUEL D'ATELIER

WERKSTATTANLEITUNG

TG1860, TG1860G

Kubota

KiSC issued 12, 2017 A

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TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of KUBOTA TG1860. It is divided into two parts, "Mechanism" and "Servicing" for each section.

■ Mechanism

Information on the construction and function are included. This part should be understood before proceeding with troubleshooting, disassembling and servicing.

■ Servicing

Under the heading "General" section comes general precautions, check and maintenance and special tools. Other section, there are troubleshooting, servicing specification lists, checking and adjusting, disassembling and assembling, and servicing which cover procedures, precautions, factory specifications and allowable limits.

All information, illustrations and specifications contained in this manual are based on the latest production information available at the time of publication.

The right is reserved to make changes in all information at any time without notice.

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August 2001

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Record of Revisions

For pdf, use search function {Search word} to find all revised locations.

Last digit of the Code No.	Issue month	Main Revised Point and Corrective Measures {Search word}	Reference Page
4	2014.07	Correction of errors in wiring diagram	8-M1, 8-M2
5	2017.12	Correction of errors	G-3

SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and decals 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 attempt to repair or use this unit.

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

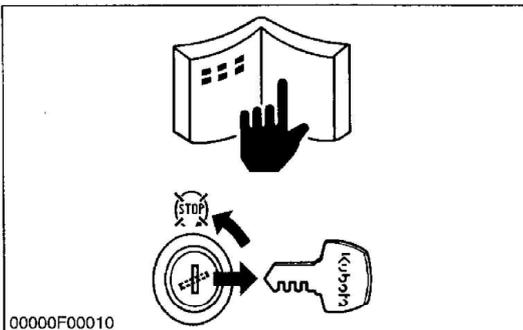
 **WARNING** :Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **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 SERVICING AND REPAIRING

- (1) Read all instructions and safety instructions in this manual and on your machine safety decals.
- (2) Clean the work area and machine.
- (3) Park the machine on a firm and level ground, and set the parking brake.
- (4) Lower the implement to the ground.
- (5) Stop the engine, and remove the key.
- (6) Disconnect the battery negative cable.
- (7) Hang a "DO NOT OPERATE" tag in operator station.

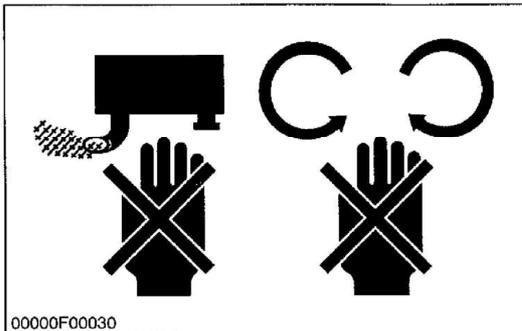
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SAFETY STARTING

- (1) Do not start the engine by shorting across starter terminals or bypassing the safety start switch.
- (2) Do not alter or remove any part of machine safety system.
- (3) Before starting the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- (4) Never start the engine while standing on ground. Start the engine only from operator's seat.

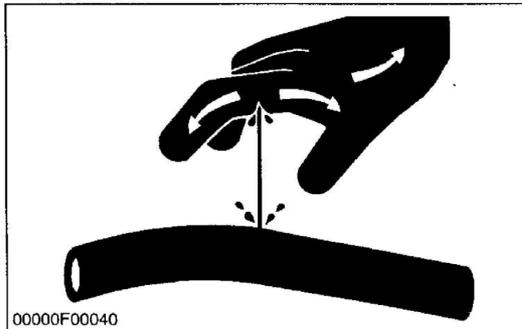
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SAFETY WORKING

- (1) Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- (2) Wear close fitting clothing and safety equipment appropriate to the job.
- (3) Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
- (4) When servicing is performed together by two or more persons, take care to perform all work safely.
- (5) Do not work under the machine that is supported solely by a jack. Always support the machine by safety stands.
- (6) Do not touch the rotating or hot parts while the engine is running.
- (7) Never remove the radiator cap while the engine is running, or immediately after stopping. Otherwise, hot water will spout out from radiator. Only remove radiator cap when cool enough to touch with bare hands. Slowly loosen the cap to first stop to relieve pressure before removing completely.
- (8) Escaping fluid (fuel or hydraulic oil) under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or fuel lines. Tighten all connections before applying pressure.

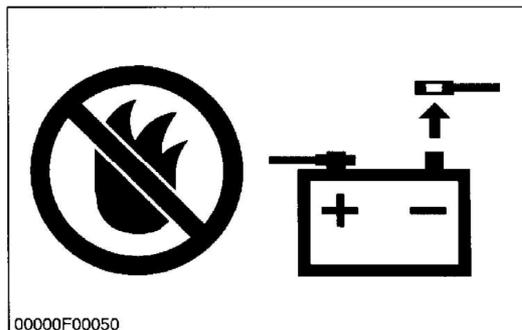
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AVOID FIRES

- (1) Fuel is extremely flammable and explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.
- (2) To avoid sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- (3) Battery gas can explode. Keep sparks and open flame away from the top of battery, especially when charging the battery.
- (4) Make sure that no fuel has been spilled on the engine.

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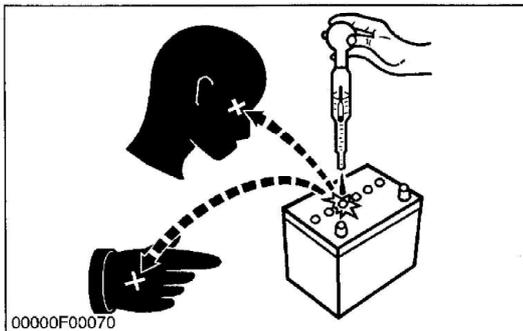




VENTILATE WORK AREA

- (1) If the engine must be running to do same work, make sure the area is well ventilated. Never run the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

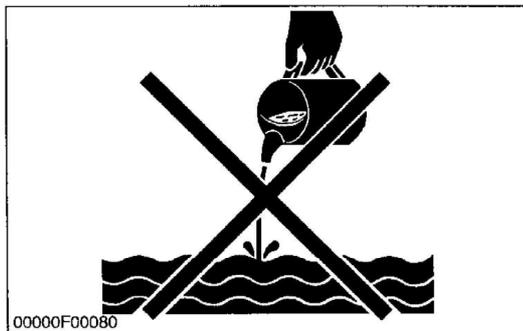
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PREVENT ACID BURNS

- (1) Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, clothing and cause blindness if splashed into eyes. Keep electrolyte away from eyes, hands and clothing. If you spill electrolyte on yourself, flush with water, and get medical attention immediately.

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DISPOSE OF FLUIDS PROPERLY

- (1) Do not pour fluids into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, electrolyte and other harmful waste.

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PREPARE FOR EMERGENCIES

- (1) Keep a first aid kit and fire extinguisher handy at all times.
- (2) Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

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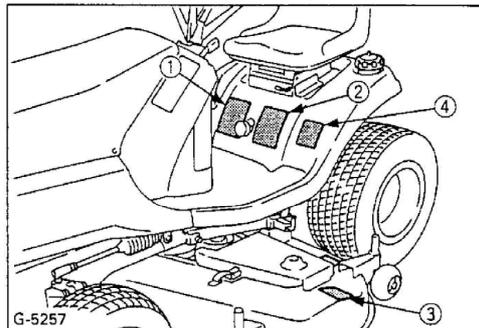
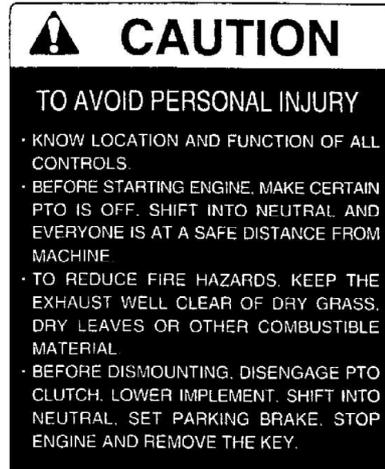
SAFETY DECALS

- The following safety decals are installed on the machine.
If a decal becomes damaged, illegible or is not on the machine, replace it. The decal part number is listed in the parts list.

① Part No. K1211-6581-1



② Part No. K1211-6582-1

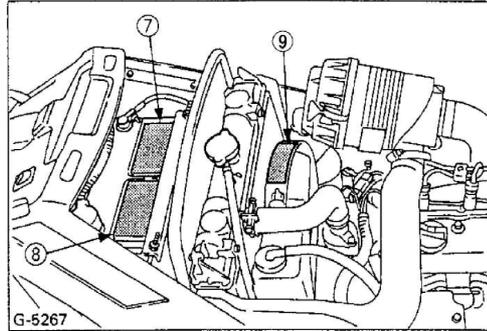
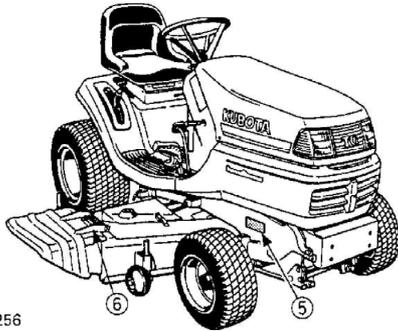


③ Part No. K5112-7312-2



④ Part No. K1122-6584-1





⑤ Part No. K1122-6583-1



⚠ WARNING

TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.

1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission and PTO OFF.

Never start engine while standing on the ground.

⑦ Part No. K1211-6115-1

⚠ DANGER/POISON

 SHIELD EYES EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY	 NO SPARKS, FLAMES OR SMOCKING	 SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS
--	--	---

⑥ Part No. K5112-7311-2



⚠ DANGER

1. STAY CLEAR OF DISCHARGE OPENING AT ALL TIMES.
2. DO NOT PUT HANDS OR FEET INTO MOWER WHEN ENGINE IS RUNNING.
3. DO NOT OPERATE MOWER WITHOUT DISCHARGE DEFLECTOR.



⑧ Part No. K1211-6116-1

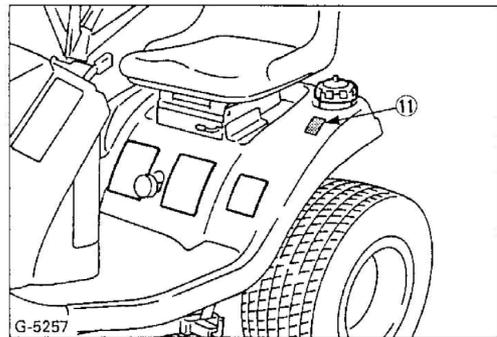
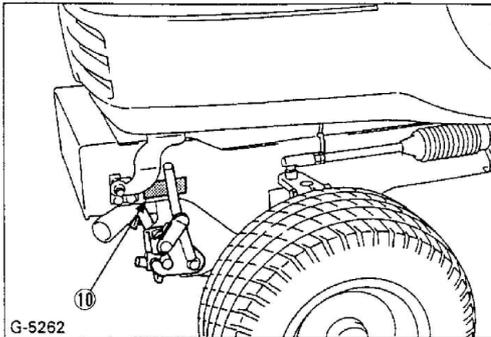
KEEP OUT OF THE REACH OF CHILDREN.
DO NOT TIP. DO NOT OPEN BATTERY!

FLUSH EYES IMMEDIATELY WITH WATER	 GET MEDICAL HELP FAST
--	---

⑨ Part No. K1211-6586-1

⚠ WARNING

TO AVOID PERSONAL INJURY: STAY CLEAR OF ROTATING RADIATOR FAN. STOP ENGINE AND ALLOW ENGINE TO COOL BEFORE SERVICING RADIATOR.



⑩ Part No. K1211-6532-1



⑪ Part No. K1211-6585-1

Diesel fuel
only

No fire



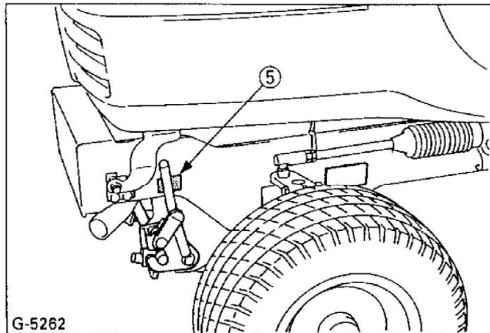
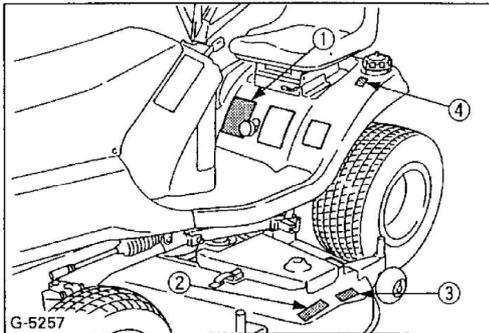
CARE OF DANGER, WARNING, AND CAUTION LABELS

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, and dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels from your local KUBOTA dealer.
4. If a component with danger, warning and/or caution label(s) affixed is replaced with new part, make sure the label(s) is(are) attached in the same location(s) as the replaced component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

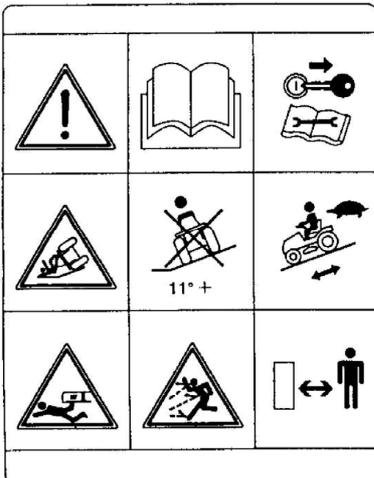
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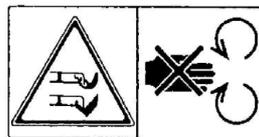
[For Europe Specifications]



① Part No. K1213-6581-1



② Part No. K5761-4179-1



③ Part No. K5761-4180-1



④ Part No. K1211-6585-1

Diesel fuel only No fire



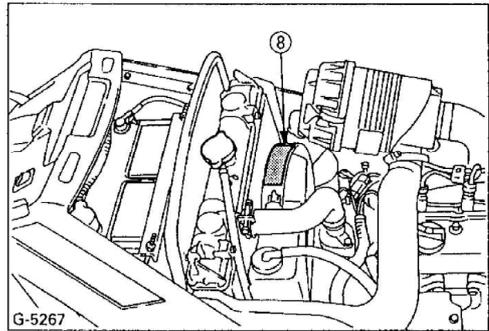
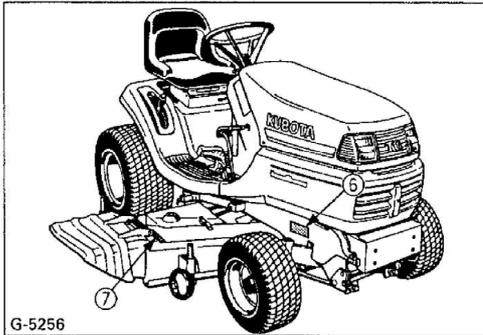
⑤ Part No. K1213-6532-1



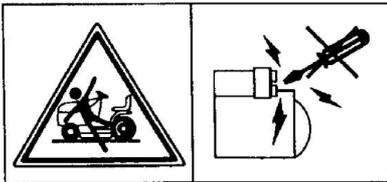
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[For Europe Specifications]



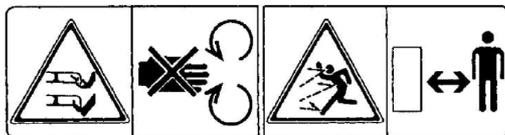
⑥ Part No. K1213-6583-1



⑧ Part No. K1213-6586-1



⑦ Part No. K5761-4178-1



CARE OF DANGER, WARNING AND CAUTION LABELS

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels from your local KUBOTA dealer.
4. If a component with danger, warning and/or caution label(s) affixed is replaced with new part, make sure the label(s) is(are) attached in the same location(s) as the replaced component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

SPECIFICATIONS

Model		TG1860	
Maximum gross power		13.4 kW (18 HP)	
Engine	Model	D722-E-GX	
	Type	Indirect injection, vertical, water cooled, 4-cycle diesel engine	
	Number of cylinders	3	
	Bore and stroke	67.0 × 68.0 mm (2.64 × 2.68 in.)	
	Total displacement	719 cm ³ (43.8 cu.in.)	
	Rated revolution	3000 min ⁻¹ (3000 rpm)	
	Combustion chamber	Spherical type (New-TVCS)	
	Fuel injection pump	Bosch MD type mini pump	
	Governor	Centrifugal ball mechanical governor	
	Injection nozzle	Bosch throttle type	
	Injection timing	0.31 to 0.34 rad. (17.5 ° to 19.5 °) before T.D.C.	
	Injection order	1-2-3	
	Injection pressure	13.73 MPa (140 kgf/cm ² , 1991 psi)	
	Compression ratio	23 : 1	
	Lubricating system	Forced lubrication by gear pump	
	Cooling system	Pressurized radiator, forced circulation with water pump	
	Lubricating oil	MIL-L-46152, MIL-L-2104C, quality better than CD class (API)	
	Starting system	Electric starter (12 V, 1.0 kW)	
Battery	12 V (36 Ah) RC : 300 min		
Fuel	Diesel fuel No.2-D (ASTM D 975) [No.1-D diesel fuel, if temperature is below -10 °C (14 °F)]		
Capacities	Fuel tank	15 L (4.0 U.S.gals., 3.3 Imp.gals.)	
	Engine crankcase	3.0 L (3.2 U.S.qts., 2.6 Imp.qts.)	
	Engine coolant	3.3 L (3.5 U.S.qts., 2.9 Imp.qts.)	
	Recovery sub tank	0.25 L (0.26 U.S.qts., 0.22 Imp.qts.)	
	Hydrostatic transmission	3.5 L (3.7 U.S.qts., 3.1 Imp.qts.)	
	Bevel gear case	0.63 L (0.67 U.S.qts., 0.55 Imp.qts.)	
Tires	Front	16 × 6.50-8 (4PR) Turf	
	Rear	23 × 10.5-12 (4PR) Turf	
Travelling speeds	Forward	0 to 11.5 km/h (0 to 7.1 mph)	
	Reverse	0 to 6.0 km/h (0 to 3.7 mph)	
Dimensions	Overall length	1925 mm (75.8 in.)	
	Overall width	1020 mm (40.2 in.)	
	Overall height	1135 mm (44.7 in.)	
	Wheel base	1265 mm (49.8 in.)	
	Treads	Front	825 mm (32.5 in.)
Rear		755 mm (29.7 in.)	
Weight (Without mower deck)		355 kg (783 lbs)	
PTO clutch		Electromagnetic clutch	
Steering		Electric power steering	
Transmission		Hydrostatic transmission	
Brake		Dry disk type	

(Specifications and design subject to change without notice)

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Model		TG1860	
Mower	Model	RCK48TG	RCK54TG
	Overall length	900 mm (35.4 in.)	938 mm (36.9 in.)
	Overall width	1545 mm (60.8 in.)	1690 mm (66.5 in.)
	Overall height	230 mm (9.1 in.)	255 mm (10.0 in.)
	Mounting method	Quick joint, parallel linkage	
	Adjustment of cutting height	Dial gauge	
	Cutting width	1219 mm (48.0 in.)	1372 mm (54.0 in.)
	Cutting height	25 to 102 mm (1.0 to 4.0 in.)	
	Number of blades	3	
	Weight (Approx.)	55 kg (121 lbs)	80 kg (176 lbs)
Discharge	Right side		

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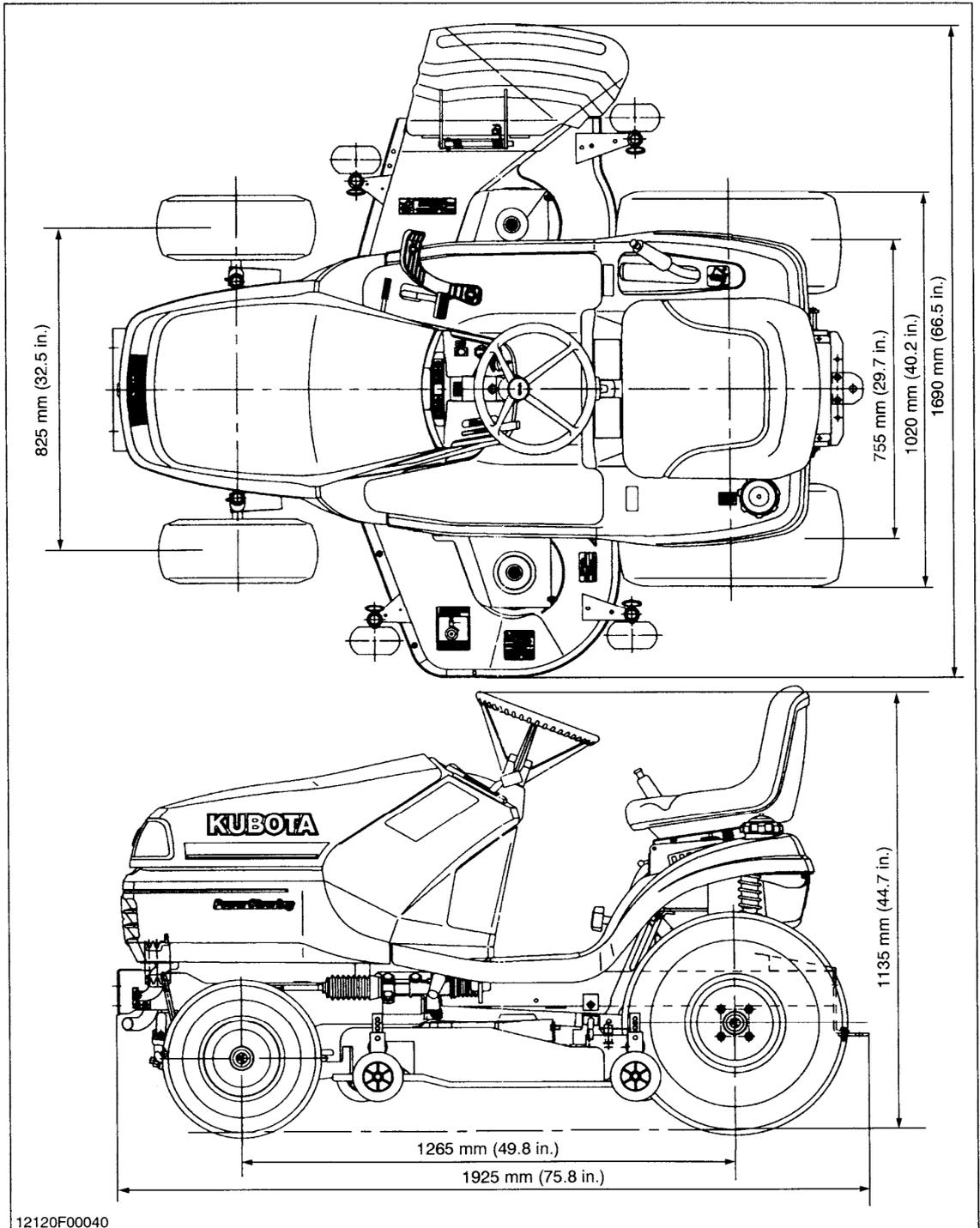
SPECIFICATIONS

Model		TG1860G	
Maximum gross power		13.4 kW (18 HP)	
Engine	Model	WG590V	
	Type	Liquid-cooled, Vertical shaft, OHV, 4-stroke engine	
	Number of cylinders	2	
	Bore and stroke	74.0 × 68.0 mm (2.90 × 2.66 in.)	
	Total displacement	585 cm ³ (35.7 cu.in.)	
	Rated revolution	57.7 S ⁻¹ (3400 rpm)	
	Ignition system	Transistor-controlled battery-ignition system	
	Spark plug	NGK BMR6A (TYPE-I), NGK BPR4ES (TYPE-II)	
	Carburetor	Float type with fixed main jet	
	Air cleaner	Dual stage element	
	Governor	Mechanical fly weight type	
	Lubricating system	Forced lubrication by oil pump	
	Cooling system	Pressurized radiator, forced circulation with water pump	
	Starting system	Shift type electric starter	
	Charging system	Charging coil (12 V, 20 A) with regulator	
	Battery	U1L-9 (12V, 300 CCA)	
Fuel	Automobile unleaded or regular gasoline		
Capacities	Fuel tank	15 L (4.0 U.S.gals., 3.3 Imp.gals.)	
	Engine crankcase	1.7 L (1.8 U.S.qts., 1.5 Imp.qts.)	
	Engine coolant	3.0 L (3.2 U.S.qts., 2.6 Imp.qts.)	
	Recovery tank	0.70 L (0.74 U.S.qts., 0.62 Imp.qts.)	
	Hydrostatic transmission	3.5 L (3.7 U.S.qts., 3.1 Imp.qts.)	
Tires	Front	16 × 6.50-8 (4PR) Turf	
	Rear	23 × 10.5-12 (4PR) Turf	
Travelling speeds	Forward	0 to 11.5 km/h (0 to 7.1 mph)	
	Reverse	0 to 6.0 km/h (0 to 3.7 mph)	
Dimensions	Overall length	1925 mm (75.8 in.)	
	Overall width	1020 mm (40.2 in.)	
	Overall height	1135 mm (44.7 in.)	
	Wheel base	1265 mm (49.8 in.)	
	Treads	Front	825 mm (32.5 in.)
Rear		755 mm (29.7 in.)	
Weight (Without mower deck)		310 kg (683 lbs)	
PTO clutch		Electromagnetic clutch	
Steering		Electric power steering	
Transmission		Hydrostatic transmission	
Brake		Dry disk type	

(Specifications and design subject to change without notice)

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DIMENSIONS



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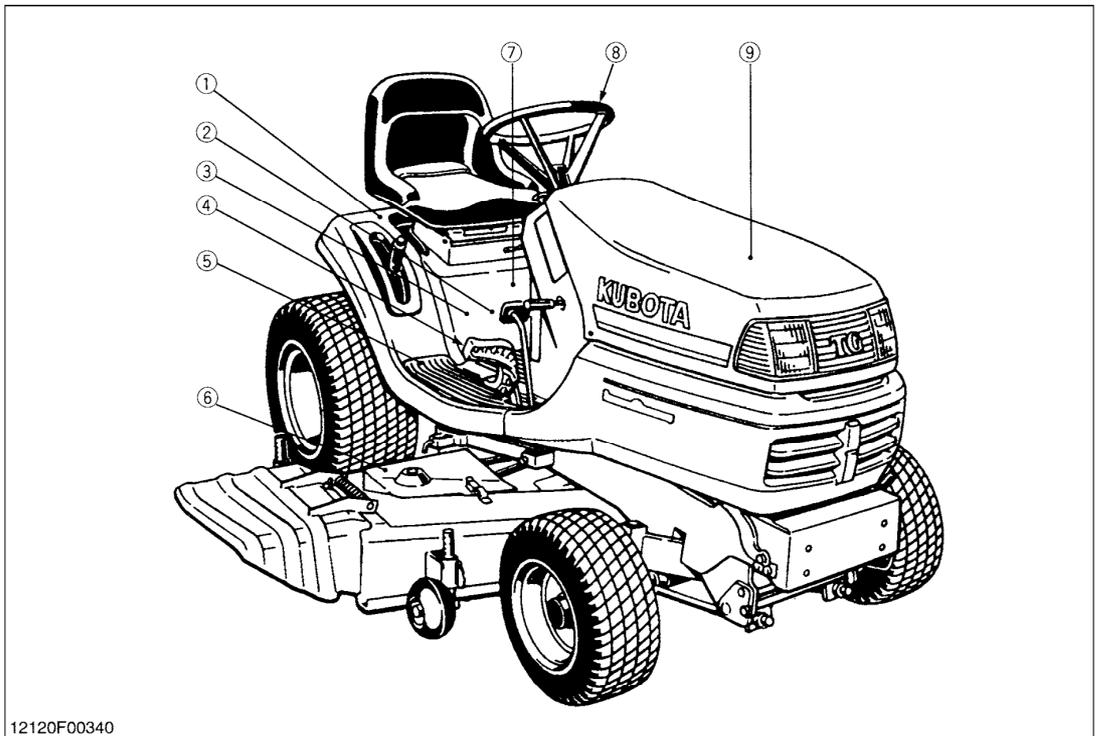
G GENERAL

GENERAL

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[1] FEATURES

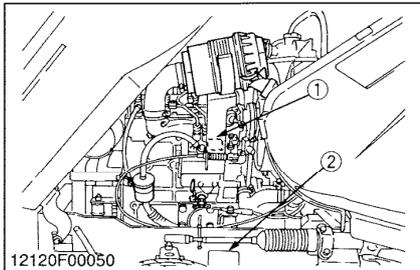


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1. Cushion Ride
2. Cutting Height Control Dial
3. Standard Equipped with Grass Catcher PTO Pulley
4. Hydrostatic Transaxle And One-Foot Pedal
5. Full Flat Step
6. Low-noise, High-performance Mower
7. Electromagnetic Clutch
8. Electric Power Steering
9. E-TVCS (Three Vortex Combustion System) Diesel Engine (TG1860)
Liquid-Cooled Gasoline Engine (TG1860G)

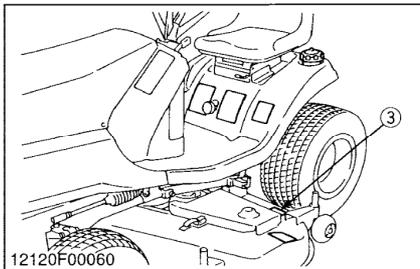
[2] IDENTIFICATION

(1) TG1860



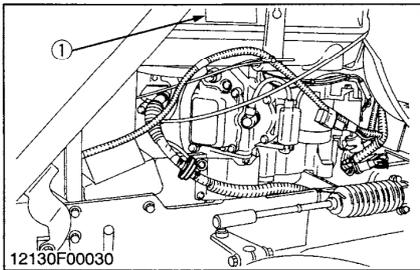
When contacting your local KUBOTA distributor, always specify engine serial number, machine serial number and mower serial number.

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



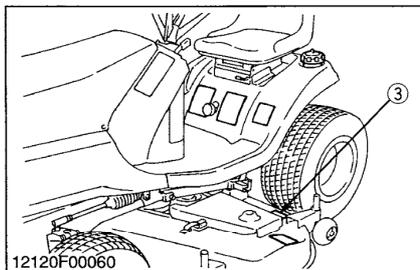
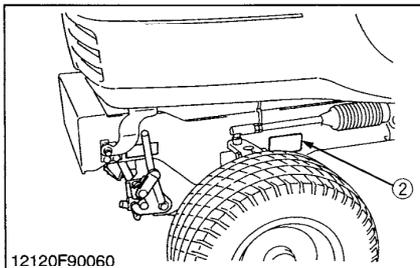
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(2) TG1860G



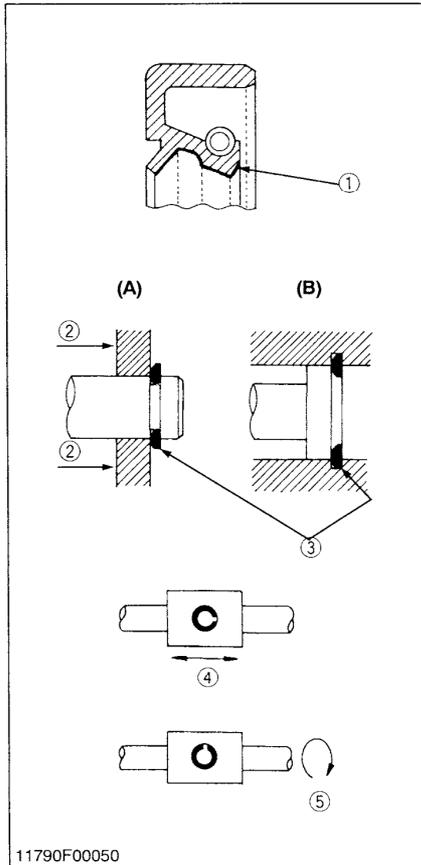
When contacting your local KUBOTA distributor, always specify engine serial number, machine serial number and mower serial number.

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



12130G00020

[3] GENERAL PRECAUTIONS



11790F00050

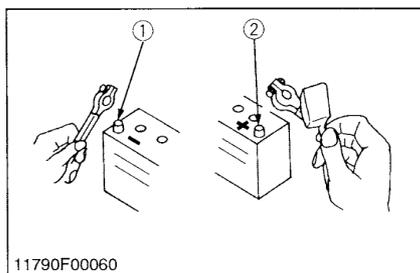
- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently used should be made according to the drawings provided.
- Before disassembling or servicing electrical wires, always disconnect the negative cable from the battery first.
- Remove oil and dirt from parts before measuring.
- We recommend the use KUBOTA genuine parts for parts replacement to maintain machine performance and to assure safety.
- Gaskets and O-rings must be replaced during reassembly. Apply grease to new O-rings or oil seals before assembling. See the figure left side.
- When reassembling external snap rings or internal snap rings, they must be positioned so that sharp edge faces against the direction from which a force is applied. See the figure left side.
- When inserting spring pins, their splits must face the direction from which a force is applied. See the figure left side.
- To prevent damage to the hydraulic system, use only specified fluid or equivalent.

- (1) Grease
- (2) Force
- (3) Sharp Edge
- (4) Axial Force
- (5) Rotating Movement

- (A) External Snap Ring
- (B) Internal Snap Ring

11790G00031

[4] HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING



11790F00060

To ensure safety and prevent damage to the machine and surrounding equipment, heed the following precautions in handling electrical parts and wiring.

■ IMPORTANT

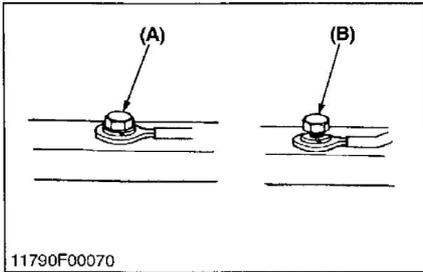
- Check electrical wiring for damage and loosened connection every year. To this end, educate the customer to do his or her own check and at the same time recommend the dealer to perform periodic check for a fee.
- Do not attempt to modify or remodel any electrical parts and wiring.
- When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.

(1) Negative Terminal

(2) Positive Terminal

11790G00041

(1) Wiring

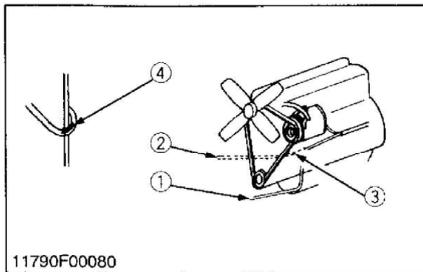


• Securely tighten wiring terminals.

(A) **Correct**
(Securely Tighten)

(B) **Incorrect**
(Loosening Leads to Faulty Contact)

12120G00420

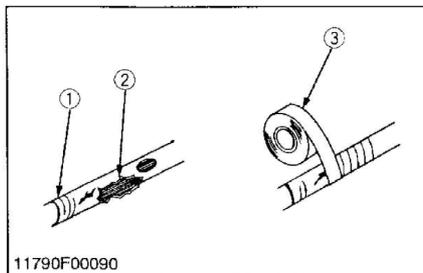


• Do not let wiring contact dangerous part.

(1) Wiring (Correct)
(2) Wiring (Incorrect)

(3) Dangerous Part
(4) Dangerous Part

11790G00060

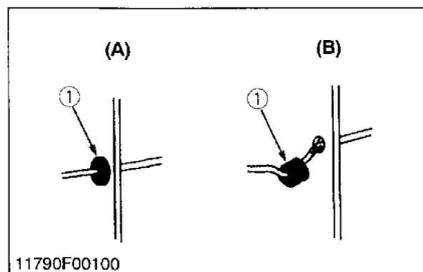


• Repair or change torn or aged wiring immediately.

(1) Aged
(2) Torn

(3) Insulating Vinyl Tape

11790G00070

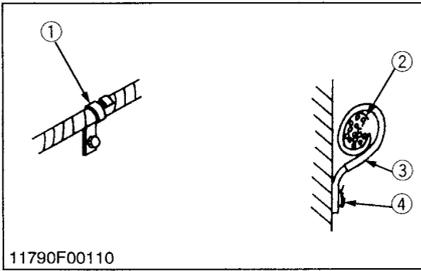


• Securely insert grommet.

(1) Grommet

(A) **Correct**
(B) **Incorrect**

11790G00080

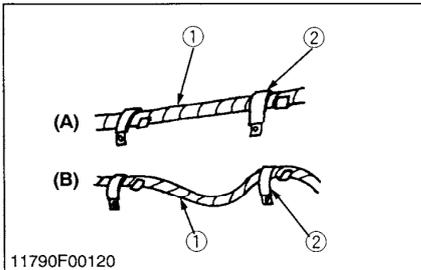


11790F00110

- Securely clamp, being careful not to damage wiring.

- (1) Clamp
- (2) Wire Harness
- (3) Clamp
- (4) Welding Dent

11790G00090

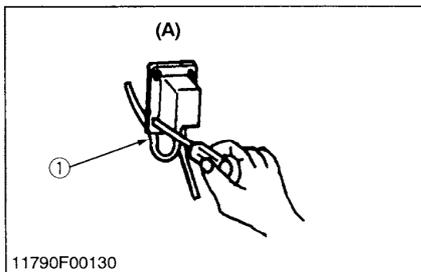


11790F00120

- Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

- (1) Wiring
- (2) Clamp
- (A) Correct
- (B) Incorrect

11790G00100

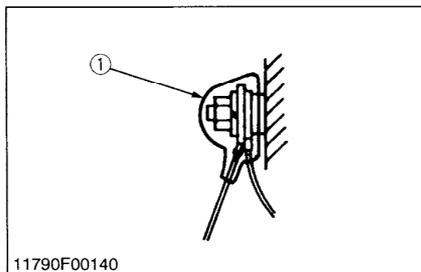


11790F00130

- In installing a part, take care not to get wiring caught by it.

- (1) Wiring
- (A) Incorrect

11790G00110



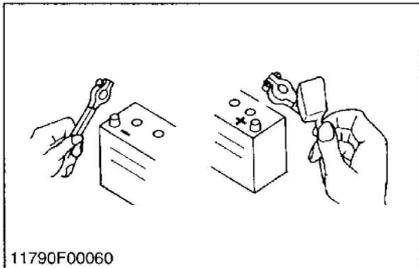
11790F00140

- After installing wiring, check protection of terminals and clamped condition of wiring, only then connect battery.

- (1) Cover
- Securely Install Cover

11790G00120

(2) Battery



11790F00060

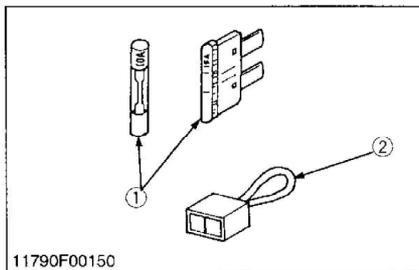
- Take care not to confuse positive and negative terminal posts.
- When removing battery cables, disconnect negative cable first. When installing battery cables, check for polarity and connect positive cable first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting cables to battery terminal posts, apply high temperature grease to them and securely install terminal covers on them.
- Do not allow dirt and dust to collect on battery.

⚠ CAUTION

- Take care not to let battery liquid spill on your skin and clothes. If contaminated, wash it off with water immediately.
- Before recharging the battery, remove it from the machine.
- Before recharging, remove cell caps.
- Do recharging in a well-ventilated place where there is no open flame nearby, as hydrogen gas and oxygen are formed.

11790G00131

(3) Fuse



11790F00150

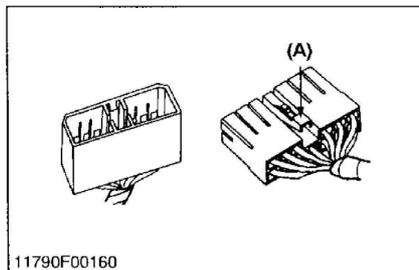
- Use fuses with specified capacity. Neither too large or small capacity fuse is acceptable.
- Never use steel or copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of reserve power supply is exceeded.

(1) Fuse

(2) Slow Blow Fuse

12120G00030

(4) Connector

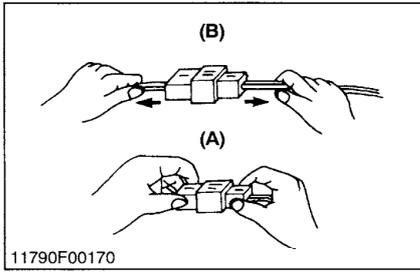


11790F00160

- For connector with lock, push lock to separate.

(A) Push

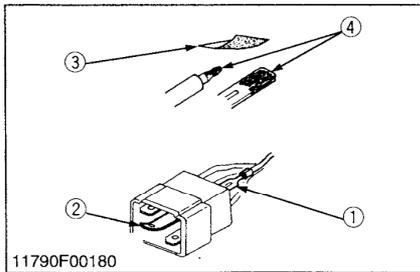
11790G00150



- In separating connectors, do not pull wire harnesses.
- Hold connector bodies to separate.

(A) Correct (B) Incorrect

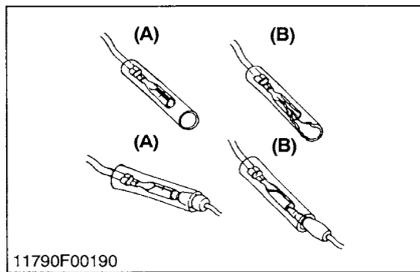
11790G00160



- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make certain there is no terminal being exposed or displaced.

(1) Exposed Terminal (2) Bend Terminal (3) Sandpaper (4) Rust

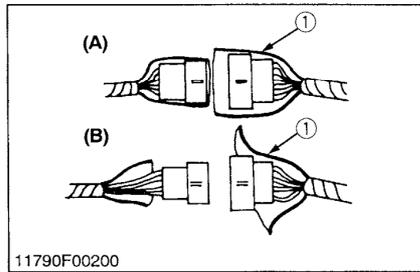
11790G00170



- Make certain that there is no female connector being too open.

(A) Correct (B) Incorrect

11790G00180

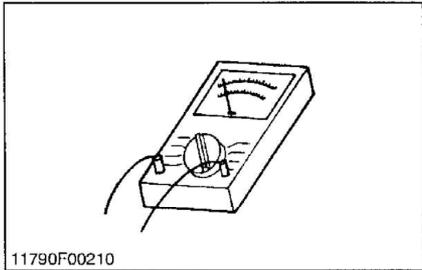


- Make certain plastic cover is large enough to cover whole connector.

(1) Cover (A) Correct (B) Incorrect

11790G00190

(5) Handling of Circuit Tester



11790F00210

- Use tester correctly following manual provided with tester.
- Check for polarity and range.

11790G00200

[5] LUBRICANTS, FUEL AND COOLANT
(1) TG1860

	Place		Capacity	Lubricants, fuel and coolant
			TG1860	
1	Fuel		15 L 4.0 U.S.gals. 3.3 Imp.gals.	[ASTM D 975] No.2-D diesel fuel No.1-D diesel fuel if temperature is below - 10 °C (14 °F)
2	Coolant	Cooling system	3.3 L 3.5 U.S.qts. 2.9 Imp.qts.	Fresh clean water (soft water) with anti-freeze
		Recovery tank	0.25 L 0.26 U.S.qts. 0.22 Imp.qts.	
3	Engine crankcase		3.0 L 3.2 U.S.qts. 2.6 Imp.qts.	Engine oil : MIL-L-46152, MIL-L-2104C, API Service Classification CC or CD Below 0°C SAE10W, 10W-30 (32 °F) or 10W-40 0 to 25 °C SAE20, 10W-30 (32 to 77 °F) or 10W-40 Above 25 °C SAE30, 10W-30 (77 °F) or 10W-40
4	Hydrostatic transmission		3.5 L 3.7 U.S.qts. 3.1 Imp.qts.	Engine oil : API Service Classification SG or CD SAE 20W-50
5	Bevel gear case		0.63 L 0.67 U.S.qts. 0.55 Imp.qts.	SAE90 gear oil (API Service Classification : better than GL-3)
6	King pin (Left and right)		Until grease overflows	SAE multipurpose type grease
	Center pin			
	PTO tension arm			
	Universal joint			
	Side blade shaft			
	Center blade shaft			
7	Mower tension arm		Moderate amount	Oil
	Speed change pedal			
	Lift lever shaft			
	Brake pedal shaft			
	Anti-scalp roller			
	Mower link			
	Speed control link			
Accelerator cable				

12120G00040

(2) TG1860G

	Place		Capacity	Lubricants, fuel and coolant
			TG1860G	
1	Fuel		15 L 4.0 U.S.gals. 3.3 Imp.gals.	Automobile unleaded gasoline [Use of alcohol mixed gasoline (Gasohol)] Use "Gasohol" only when the ethanol additive is less than 10 % of the fuel. The use of methanol additive is not recommended. Warranty does not apply to mechanical or performance problems arising from the use of "Gasohol". For best results use unleaded fuel with a minimum of 87 octane.
2	Coolant	Cooling system	3.0 L 3.2 U.S.qts. 2.6 Imp.qts.	Fresh clean water (soft water) with anti-freeze
		Recovery tank	0.70 L 0.74 U.S.qts. 0.62 Imp.qts.	
3	Engine crankcase		1.7 L 1.8 U.S.qts. 1.5 Imp.qts.	Engine oil : API Service Classification SE or SF Below 0°C (32 °F) SAE5W-20 Above 0 °C (32 °F) SAE30
4	Hydrostatic transmission		3.5 L 3.7 U.S.qts. 3.1 Imp.qts.	Engine oil : API Service Classification SG or CD SAE 20W-50
5	King pin (Left and right)		Until grease overflows	SAE multipurpose type grease
	Center pin			
	PTO tension arm			
	Tension arm			
	Side blade shaft (Left and right)			
	Center blade shaft			
	Mower tension arm			
6	Speed change pedal		Moderate amount	Oil
	Lift lever shaft			
	Brake pedal shaft			
	Anti-scalp roller			
	Mower link			
	Speed control link			
	Accelerator cable			

12130G00030

[6] TIGHTENING TORQUES

(1) General Use Screws, Bolt and Nuts

Screws, bolts and nuts whose tightening torques are not specified in this Workshop Manual should be tightened according to the table below.

Indication on top of bolt	 No-grade or 4T						 7T						 9T		
	Material of bolt						Material of bolt						Material of bolt		
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
	Unit														
Diameter	N-m	kgf-m	ft-lbs	N-m	kgf-m	ft-lbs	N-m	kgf-m	ft-lbs	N-m	kgf-m	ft-lbs	N-m	kgf-m	ft-lbs
M6 (6 mm, 0.24 in.)	7.85 to 9.31	0.80 to 0.95	5.79 to 6.87	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
M8 (8 mm, 0.31 in.)	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	16.7 to 19.6	1.7 to 2.0	12.3 to 14.4	23.6 to 27.4	2.4 to 2.8	17.4 to 20.2	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	29.5 to 34.3	3.0 to 3.5	21.7 to 25.3
M10 (10 mm, 0.39 in.)	39.3 to 45.1	4.0 to 4.6	29.0 to 33.2	31.4 to 34.3	3.2 to 3.5	23.2 to 25.3	48.1 to 55.8	4.9 to 5.7	35.5 to 41.2	39.3 to 44.1	4.0 to 4.5	29.0 to 32.5	60.9 to 70.6	6.2 to 7.2	44.9 to 52.0
M12 (12 mm, 0.47 in.)	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5				77.5 to 90.2	7.9 to 9.2	57.2 to 66.5	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	103 to 117	10.5 to 12.0	76.0 to 86.7
M14 (14 mm, 0.55 in.)	108 to 125	11.0 to 12.8	79.6 to 92.5				124 to 147	12.6 to 15.0	91.2 to 108				167 to 196	17.0 to 20.0	123 to 144
M16 (16 mm, 0.63 in.)	167 to 191	17.0 to 19.5	123 to 141				197 to 225	20.0 to 23.0	145 to 166				260 to 304	26.5 to 31.0	192 to 224
M18 (18 mm, 0.71 in.)	246 to 284	25.0 to 29.0	181 to 209				275 to 318	28.0 to 32.5	203 to 235				344 to 402	35.0 to 41.0	254 to 296
M20 (20 mm, 0.79 in.)	334 to 392	34.0 to 40.0	246 to 289				368 to 431	37.5 to 44.0	272 to 318				491 to 568	50.0 to 58.0	362 to 419

11790G00761

(2) Metric Screws, Bolts and Nuts

Grade Unit Nominal Diameter	Property class 8.8 			Property class 10.9 		
	N-m	kgf-m	ft-lbs	N-m	kgf-m	ft-lbs
M6	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31			
M8	23.6 to 27.4	2.40 to 2.80	17.4 to 20.2	29.4 to 34.3	3.00 to 3.50	21.7 to 25.3
M10	48.1 to 55.8	4.90 to 5.70	35.5 to 41.2	60.8 to 70.5	6.20 to 7.20	44.9 to 52.1
M12	77.5 to 90.1	7.90 to 9.20	57.2 to 66.5	103.0 to 117.0	10.50 to 12.00	76.0 to 86.8
M14	124.0 to 147.0	12.60 to 15.00	91.2 to 108.0	167.0 to 196.0	17.00 to 20.00	123.0 to 144.0
M16	196.0 to 225.0	20.0 to 23.0	145.0 to 166.0	260.0 to 303.0	26.50 to 31.00	192.0 to 224.0

12130G00290

(3) American Standard Screws, Bolts and Nuts with UNC or UNF Threads

Grade Unit Nominal Diameter	SAE GR.5 			SAE GR.8 		
	N-m	kgf-m	ft-lbs	N-m	kgf-m	ft-lbs
5/16	23.1 to 27.3	2.35 to 2.84	17.0 to 20.5	32.5 to 39.3	3.31 to 4.01	24.0 to 29.0
3/8	47.5 to 57.0	4.84 to 5.82	35.0 to 42.0	61.0 to 73.2	6.22 to 7.47	45.0 to 54.0
1/2	108.5 to 130.2	11.07 to 13.29	80.0 to 96.0	149.2 to 179.0	15.22 to 18.27	110.0 to 132.0
9/16	149.2 to 179.0	15.22 to 18.27	110.0 to 132.0	217.0 to 260.4	22.14 to 26.57	160.0 to 192.0
5/8	203.4 to 244.1	20.75 to 24.91	150.0 to 180.0	298.3 to 358.0	30.44 to 36.53	220.0 to 264.0

12120G00060

[7] MAINTENANCE CHECK LIST

(1) TG1860

No.	Items	Period	Every 50 hrs	Indication on hour meter (Hr)							Reference page	
				50	100	200	300	400	500	After since		
1	Tires (Pressure, wear and damage)	Check	☆									G-15
2	Brake play ◆	Check	☆									3-S2
3	Engine oil	Change		★	☆	☆	☆	☆	☆	☆	Every 100 hrs	G-17
4	Engine oil filter cartridge	Replace		★		☆		☆			Every 200 hrs	G-18
5	Bevel gear case oil	Change				☆				☆	Every 300 hrs	G-26
6	Fan drive belt tension	Adjust	☆									G-18
7	Air cleaner element	Clean	☆**									G-19
		Replace									Every year **	G-28
8	All grease nipples	Lubricate	☆									G-20
9	Fuel lines	Check			☆	☆	☆	☆	☆	☆	Every 100 hrs	G-25
		Replace									Every 2 years *	G-31
10	Fuel filter	Check			☆	☆	☆	☆	☆	☆	Every 100 hrs	G-25
11	Fuel filter ◆	Replace								☆	Every 500 hrs	G-28
12	Anti-freeze and coolant	Change									Every year	G-29
13	Radiator	Clean									Every year	G-29
14	Radiator hose and clamp	Check				☆		☆			Every 200 hrs	G-27
15	Radiator core	Clean			☆	☆	☆	☆	☆	☆	Every 100 hrs**	G-26
16	Radiator hose	Replace									Every 2 years	G-31
17	Safety devices	Check	☆								Every 50 hrs	G-22
18	Battery condition	Check	☆								Every 50 hrs	8-S8

Note : ★ The maintenance indicated by ★ must be done initially.

* Replace only if necessary.

** This maintenance should be done daily in dusty conditions than in normal conditions.

◆ These items should be serviced by an authorized KUBOTA dealer, unless the owner has the proper tools and is mechanically proficient.

12120G00070