

Product: 2006 Kubota WSM F2260,F2560(E),F3060,F3560 Front Mover Service Repair Workshop Manual (French)

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# WSM

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## WORKSHOP MANUAL

# F2260,F2560(E),F3060,F3560

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# Kubota

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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 F2260, F2560 (E), F3060 and F3560. 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 product information available at the time of publication.

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

### ■ Note

The following models are sold in the countries shown in the table below.

MODEL	U.S.A	Canada	Oceania	Europe
F2260		○	○	○
F2560	○	○	○	○
F2560E	○	○	○	○
F3060	○	○	○	○
F3560		○	○	○

February 2002

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## 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.

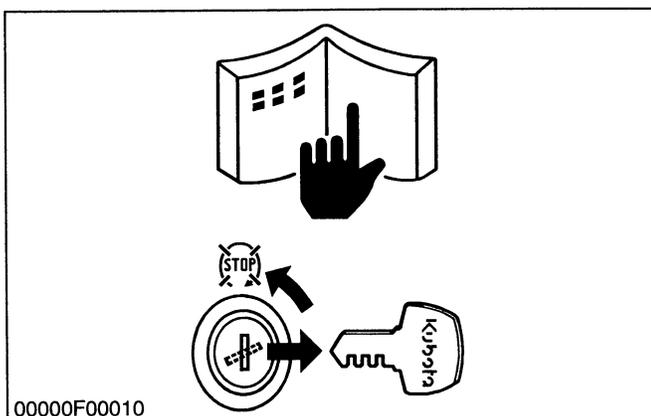
 **WARNING** : Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **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

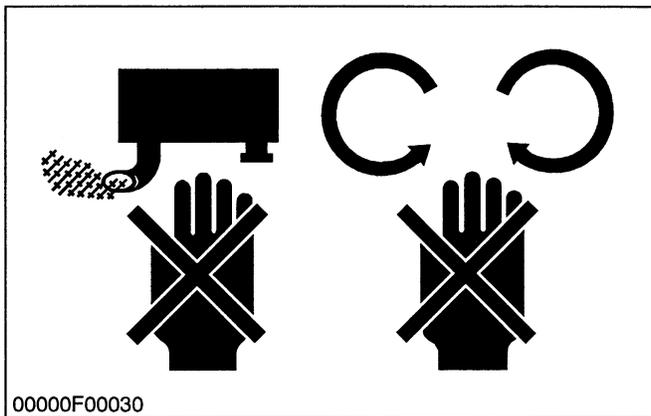
- (1) Read all instructions and safety instructions in this manual and on your machine safety decals.
- (2) Clean the work area and machine.
- (3) Park the machine on a firm and level ground, and set the parking brake.
- (4) Lower the implement to the ground.
- (5) Stop the engine, and remove the key.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

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**SAFETY STARTING**

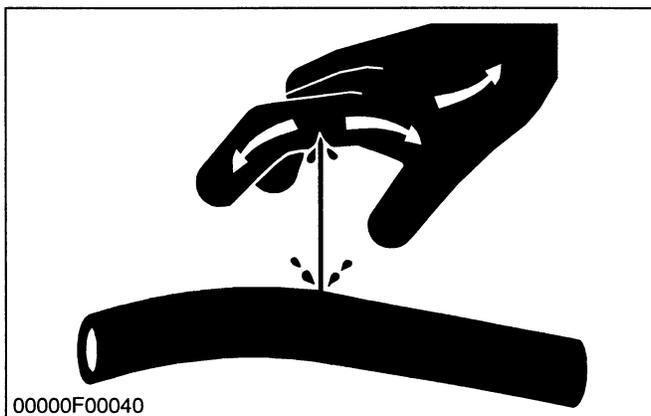
- (1) Do not start the engine by shorting across starter terminals or bypassing the safety start switch.
- (2) Do not alter or remove any part of machine safety system.
- (3) Before starting the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- (4) Never start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

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**SAFETY WORKING**

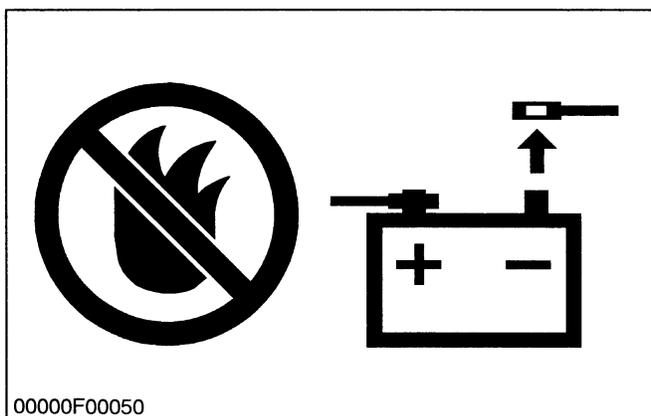
- (1) Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- (2) Wear close fitting clothing and safety equipment appropriate to the job.
- (3) Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
- (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.

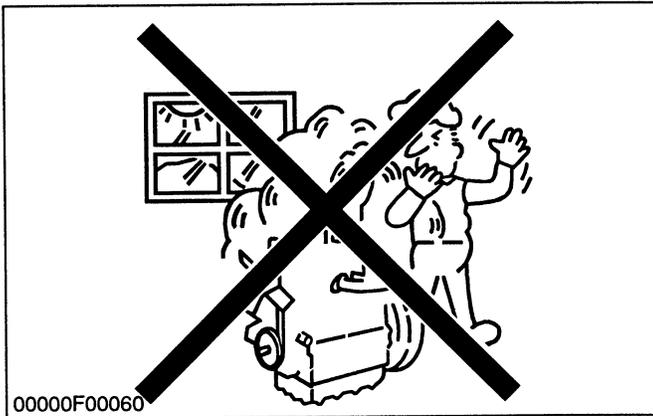
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**AVOID FIRES**

- (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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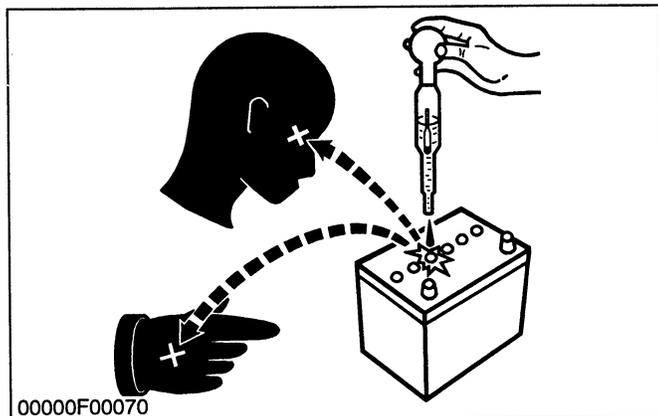




### VENTILATE WORK AREA

- (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.

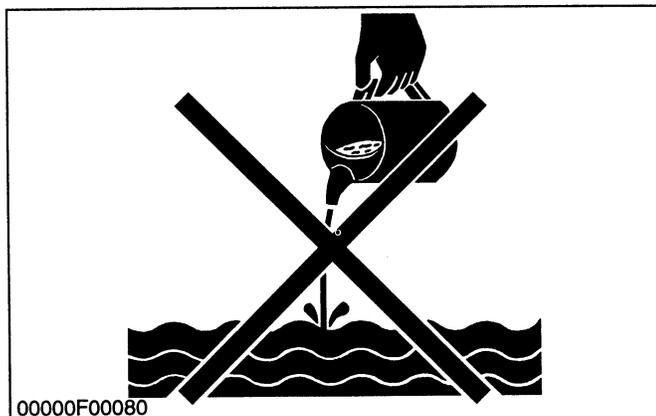
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### PREVENT ACID BURNS

- (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.

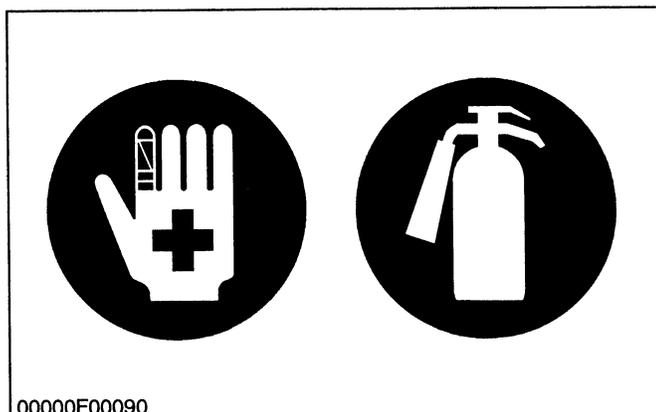
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### DISPOSE OF FLUIDS PROPERLY

- (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. K3311-4721-3 (RH & LH)

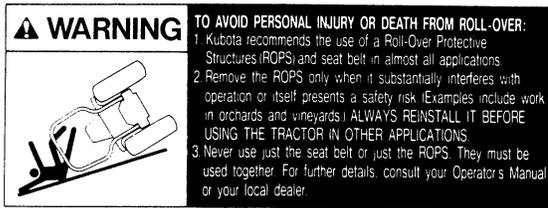


③ Part No. 6C040-4741-1

No fire



② Part No. TA040-4932-2

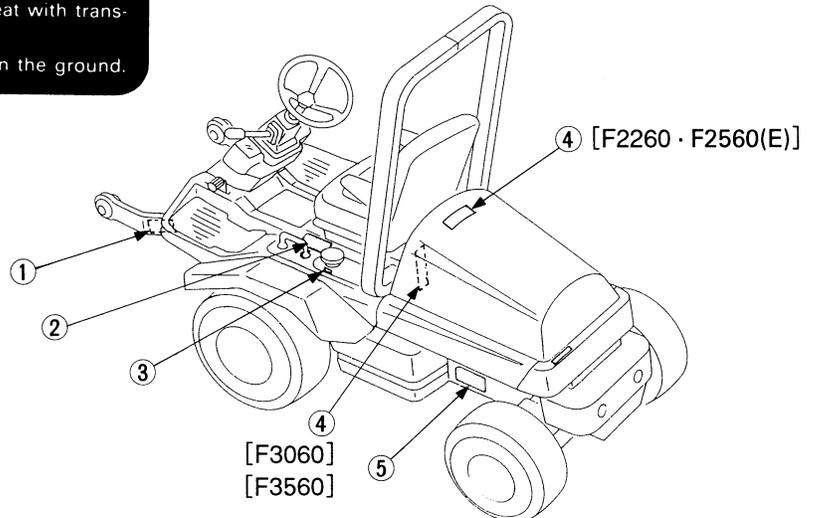
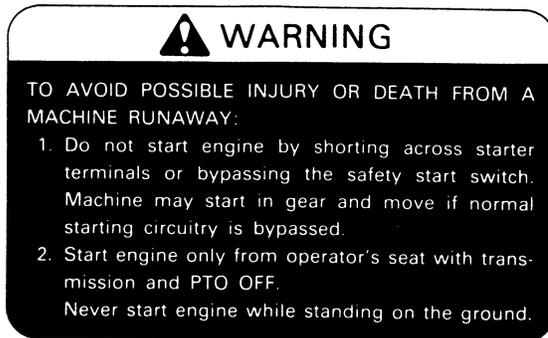


④ Part No. TA040-4957-1

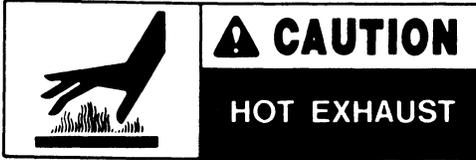
Stay clear of engine fan and fanbelt.



⑤ Part No. 76611-4723-1



⑥ Part No. 18620-8806-1



⑦ Part No. 6C040-5559-1

**DANGER EXPLOSIVE GASES**  
Cigarettes, flames or sparks could cause battery to explode. Always shield eyes and face from battery. Do not charge or use booster cables or adjust post connections without proper instruction and training.  
**KEEP VENT CAPS TIGHT AND LEVEL**  
**POISON CAUSES SEVERE BURNS**  
Contains sulfuric acid. Avoid contact with skin, eyes or clothing. In event of accident flush with water and call a physician immediately.  
**KEEP OUT OF REACH OF CHILDREN**

⑧ Part No. K3511-4717-2

**CAUTION**  
TO HELP PREVENT TIPOVER AND INJURY DO NOT DRIVE AT HIGH SPEED OR TURN THE FRONT MOWER WHEN THE DIFFERENTIAL IS LOCKED

**WARNING**

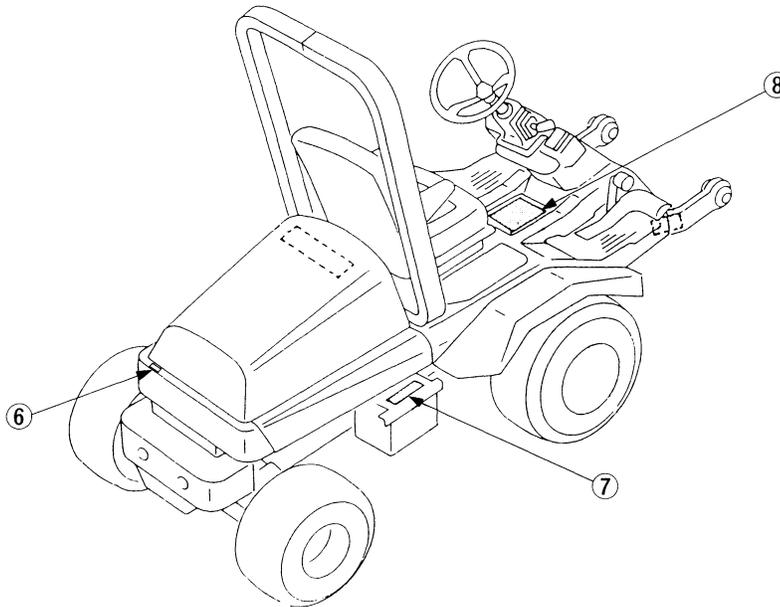
**CAUTION**  
AVOID PERSONAL INJURY

**AVOID SERIOUS INJURY OR DEATH**

- GO UP AND DOWN SLOPES, NOT ACROSS.
- AVOID SUDDEN TURNS.
- IF MACHINE STOPS GOING UP HILL, STOP BLADE AND BACK DOWN SLOWLY.
- NEVER CARRY CHILDREN OR OTHERS.
- KEEP SAFETY DEVICES (GUARDS, SHIELDS AND SWITCHES) IN PLACE AND WORKING.
- REMOVE OBJECTS THAT COULD BE THROWN BY THE BLADE.

READ OPERATOR'S MANUAL.

- KNOW LOCATION AND FUNCTION OF ALL CONTROLS
- BEFORE STARTING ENGINE, MAKE CERTAIN PTO IS DISENGAGED, SHIFT RANGE LEVER TO NEUTRAL AND EVERYONE IS AT A SAFE DISTANCE FROM THE MACHINE
- TO REDUCE FIRE HAZARD, KEEP THE EXHAUST CLEAR OF DRY GRASS, DRY LEAVES OR OTHER COMBUSTIBLE MATERIAL
- BEFORE DISMOUNTING, DISENGAGE PTO CLUTCH, LOWER IMPLEMENT, SHIFT INTO NEUTRAL, SET PARKING BRAKE, STOP ENGINE AND REMOVE THE KEY
- THIS MACHINE IS NOT FOR STREET OR HIGHWAY USE.

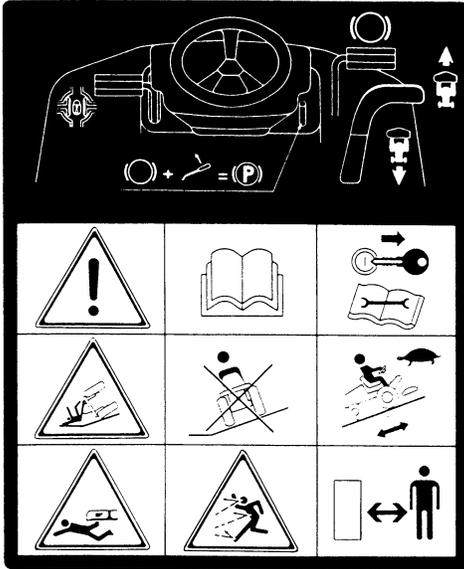


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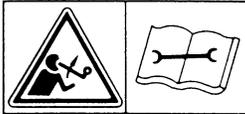
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[For Europe Specifications]

① Part No. K3512-4741-1



② Part No. K3512-4721-1



③ Part No. 6C040-4741-1  
No fire



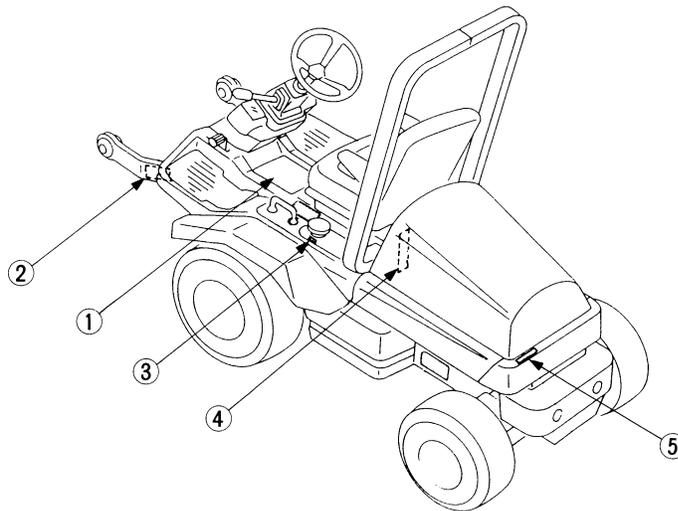
④ Part No. TA040-4957-1

Keep hands away from rotating parts.



⑤ Part No. K3512-4719-1

HOT SURFACE,  
DO NOT TOUCH

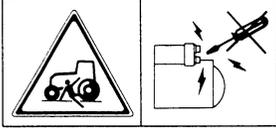


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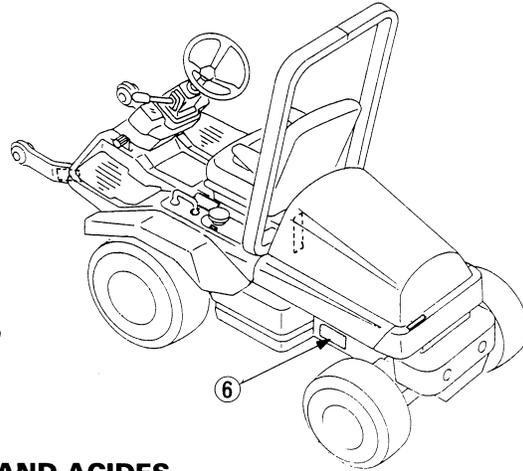
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[For Europe Specifications]

⑥ Part No. K3512-4718-1



- DO NOT start engine by shorting across starter terminals or bypassing the safety start switch to avoid a machine runaway.

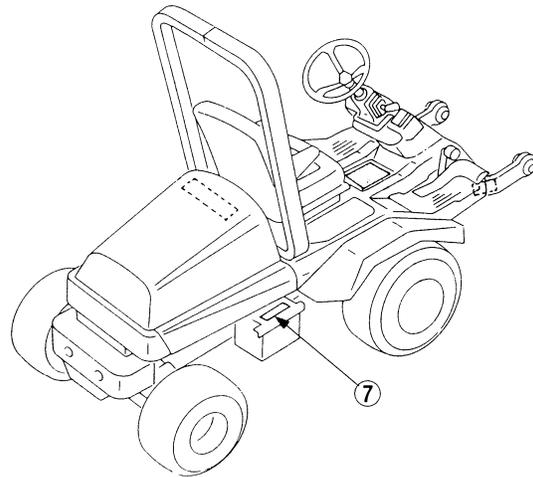


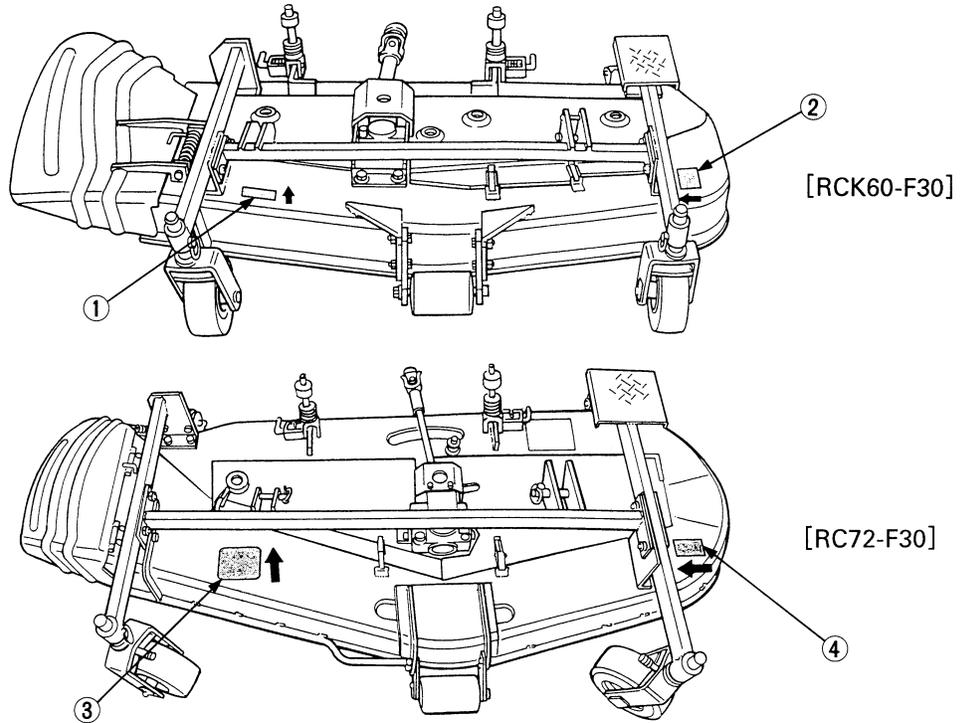
⑦ Part No. ST-CL121

**TO AVOID INJURY FROM BATTERY GASES AND ACIDES**



- Keep away cigarettes, flames or sparks.
- Always shield eyes and face from battery.
- Keep out of reach of children.
- Poison causes severe burns.
- Contains sulfuric acid.
- Read and understand operator's manual.
- Danger explosive gases.





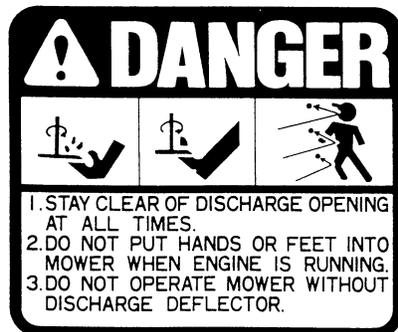
LABEL ① Part No. K5112-7311-1



LABEL ② Part No. K5112-7312-1



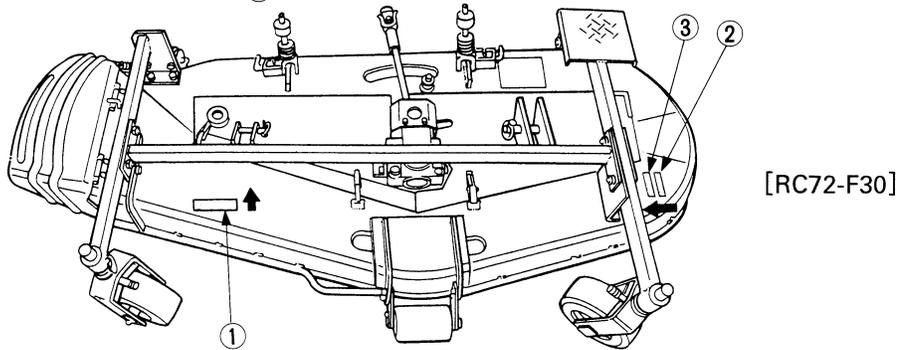
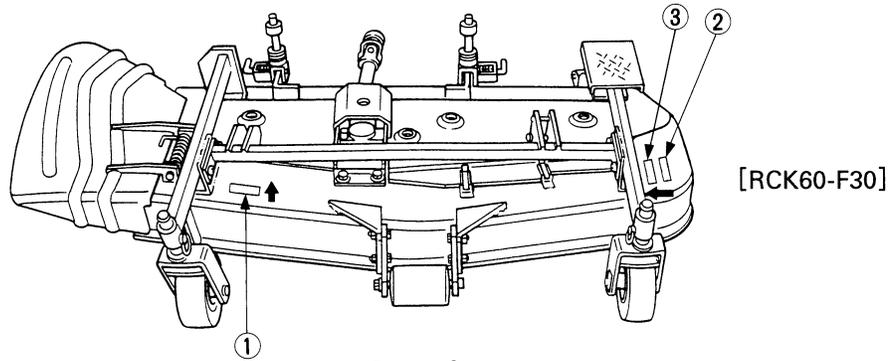
LABEL ③ Part No. 66071-6178-1



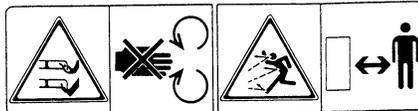
LABEL ④ Part No. 66071-6179-1



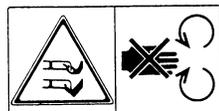
[For Europe Specifications]



LABEL ① Part No. K5761-4178-1



LABEL ② Part No. K5761-4179-1



LABEL ③ Part No. K5761-4180-1



# SPECIFICATIONS

Model		F2260	F2560E	F2560	F3060	F3560
Maximum P.T.O. Power		12 kW (16.5 HP)	13 kW (18.5 HP)		16 kW (22 HP)	18 kW (24.7 HP)
Engine	Model	D1005-EFM	D1105-EFM		V1305-EFM	V1505-EFM
	Type	Indirect injection, vertical, water cooled, 4-cycle diesel engine				
	Number of cylinders	3			4	
	Bore and stroke	76.0 × 73.6 mm (2.99 × 2.90 in.)	78.0 × 78.4 mm (3.07 × 3.09 in.)		76.0 × 73.6 mm (2.99 × 2.90 in.)	78.0 × 78.4 mm (3.07 × 3.09 in.)
	Total displacement	1001 cm <sup>3</sup> (61.08 cu.in.)	1123 cm <sup>3</sup> (68.53 cu.in.)		1335 cm <sup>3</sup> (81.47 cu.in.)	1498 cm <sup>3</sup> (91.41 cu.in.)
	Rated revolution	2530 min <sup>-1</sup> (2530 rpm)				
	Combustion chamber	Spherical type (New-TVCS)				
	Fuel injection pump	Bosch MD type mini pump				
	Governor	Centrifugal mechanical governor				
	Injection nozzle	Mini nozzle (DNOFD)				
	Injection timing	0.30 to 0.33 rad. (17 ° to 19 °) before T.D.C.				
	Injection order	1-2-3			1-3-4-2	
	Injection pressure	13.73 MPa (140 kgf/cm <sup>2</sup> , 1991 psi)				
	Compression ratio	22 : 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 CC class (API)				
	Starting system	Electric starter (12V, 1.4 kW)				Electric starter (12V, 1.1 kW)
	Battery	12 V (70 Ah) RC : 118 min, CCA : 529 A				
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	40 L (10.6 U.S.gals., 8.8 Imp.gals.)				
	Engine crankcase	2.4 L (2.5 U.S.qts., 2.1 Imp.qts.)			2.7 L (2.8 U.S.qts., 2.4 Imp.qts.)	
	Engine coolant	3.4 L (3.6 U.S.qts., 3.0 Imp.qts.)			3.9 L (4.1 U.S.qts., 3.4 Imp.qts.)	
	Recovery sub tank	0.3 L (0.3 U.S.qts., 0.3 Imp.qts.)				
	Transmission case	12.8 L (13.5 U.S.qts., 11.3 Imp.qts.)			13.5 L (14.3 U.S.qts., 11.9 Imp.qts.)	
	Rear axle differential case	1.3 L (1.4 U.S.qts., 1.1 Imp.qts.)	-		1.3 L (1.4 U.S.qts., 1.1 Imp.qts.)	
	Rear axle gear case	0.5 L (0.5 U.S.qts., 0.4 Imp.qts.)	-		0.5 L (0.5 U.S.qts., 0.4 Imp.qts.)	
Tires	Front	23 × 10.5-12 (4PR) Turf (For Europe 24 × 8.5-12 (4PR) Turf)				
	Rear	18 × 7.0-8 (4PR) Turf	16 × 6.5-8 (4PR) Turf		18 × 7.0-8 (4PR) Turf	
Travelling speeds	Forward	Low	0 to 9.0 km/h (0 to 5.6 mph) *2			
		High	0 to 17.0 km/h (0 to 10.6 mph) *2			
	Reverse	Low	0 to 4.8 km/h (0 to 3.0 mph) *2			
		High	0 to 8.5 km/h (0 to 5.3 mph) *2			

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Model		F2260	F2560E	F2560	F3060	F3560
Dimensions	Overall length	2840 mm (92.1 in.)				
	Overall width	1140 mm (44.9 in.) [1130 mm (44.5 in.)] *3				
	Overall height (with ROPS)	1910 mm (75.2 in.) [1920 mm (75.6 in.)] *3				
	Wheel base	1300 mm (51.2 in.)				
	Minimum ground clearance	175 mm (6.9 in.)				
	Treads	Front	875 mm (34.4 in.) [919 mm (36.1 in.)] *3			
Rear		875 mm (34.4 in.)				
Weight (Without mower deck)		600 kg (272 lbs)	580 kg (263 lbs)	600 kg (272 lbs)	630 kg (286 lbs)	
PTO shaft		Front PTO, USA No.5 (KUBOTA 10-tooth) involute splines				
Front PTO		1 speed 2530 min <sup>-1</sup> (rpm) at 2700 engine min <sup>-1</sup> (rpm)				
PTO brake		Wet single plate				
PTO clutch		Wet multiple discs				
Steering		Power, Hydraulic				
Transmission		Hydrostatic transmission, Hi-Low gear shift (2 forward, 2 reverse)				
Minimum turning radius (Left turn)		750 mm (2.36 ft) w/o brake	500 mm (1.64 ft) w/o brake	750 mm (2.36 ft) w/o brake		
Brake		Wet multiple discs				
Differential		Bevel gear				

(Specifications and design subject to change without notice)

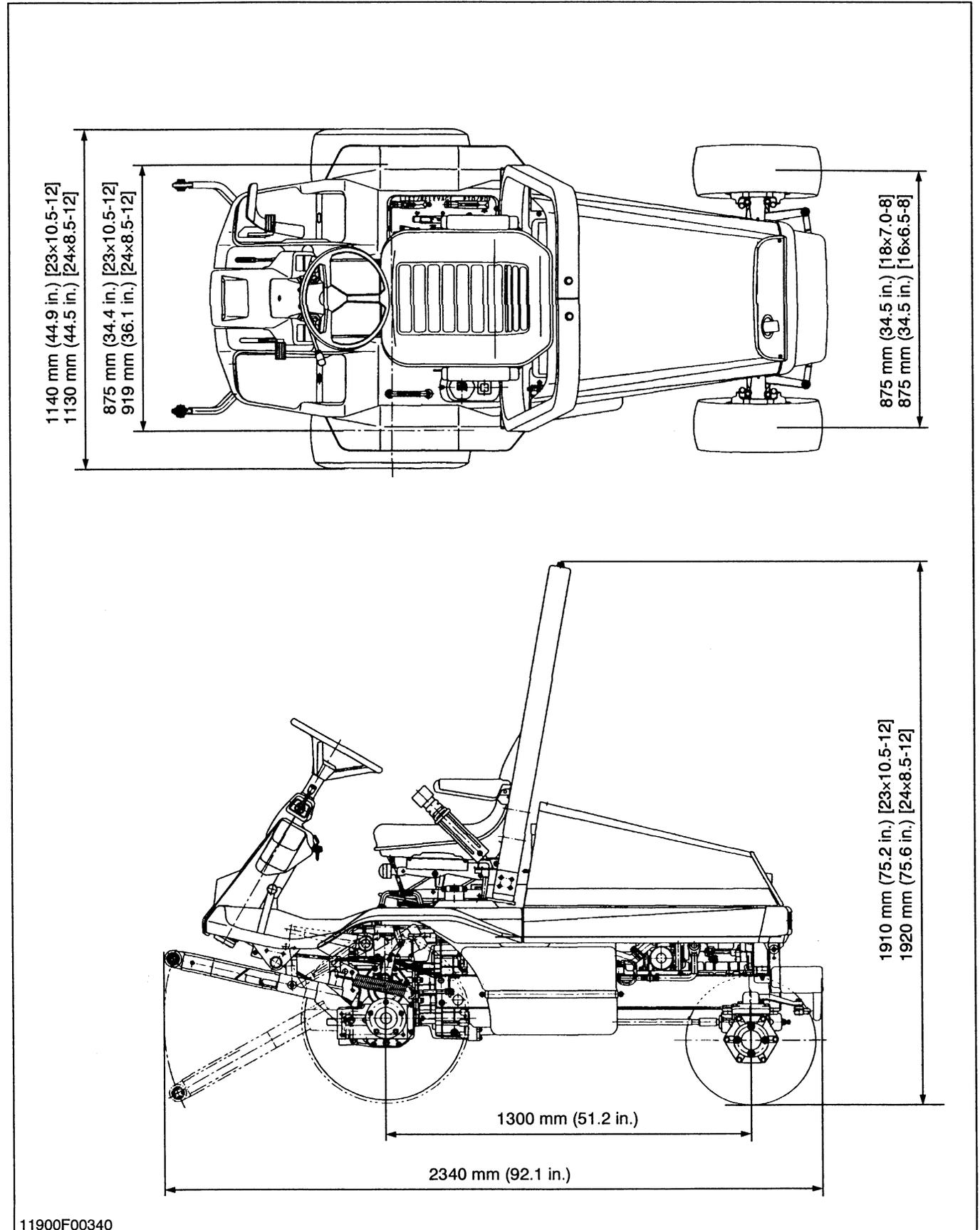
NOTE: \*1 Manufacture's estimate

\*2 At 2700 engine min<sup>-1</sup> (rpm)

\*3 With 24 × 8.5-12 Tire

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# DIMENSIONS



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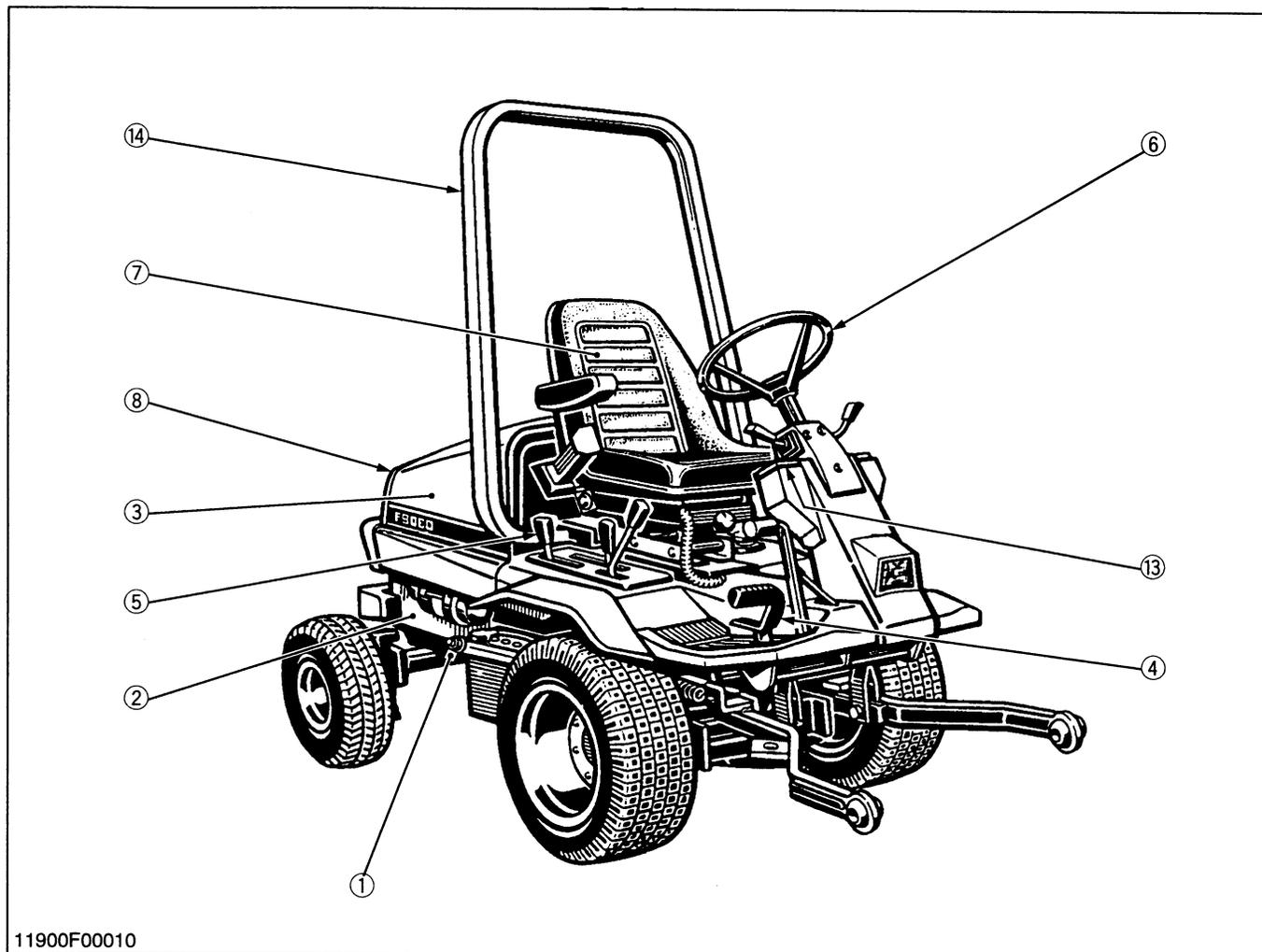
# **G GENERAL**

# GENERAL

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## [1] FEATURES



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### (1) Dual-Acting Overrunning 4WD

When you need a powerful 4WD that also travels gently on lawns during turns, look to Kubota's Dual-Acting Overrunning 4WD. Previously, a vehicle could utilize its one-way clutch only in a forward gear. But Dual-Acting Overrunning 4WD works not only in forward and reverse gears, it also automatically puts you in 2WD or 4WD as required. So it can automatically release pressure built up by the rear tires during turns.

### (2) Light, Compact Frame

### (3) E-TVCS (Three Vortex Combustion System) Diesel Engine

The heart of your vehicle is Kubota's lightweight and compact E-TVCS engine, 22 hp, 25 hp, 30 hp, and 33hp. These diesel powered engines emit low vibration and noise levels, and generate maximum efficiency.

### (4) HST (Hydrostatic Transmission) And One-Foot Pedal

Direction changes are easier than ever with the new one-foot-pedal design.

### (5) Hydraulic PTO Clutch

The hydraulically actuated PTO clutch engages smoothly, reducing shock and maintaining clutch durability.

### (6) Power Steering

### (7) Deluxe Operator Seat

Ground shocks are quietly absorbed by the comfortable, spring suspension, high-back seat.

### (8) Full Open Hood

The hood opens wide for fast, simple access.

### (9) Shaft Drive Mower

Giving you efficient and more dependable cutting power in all mowing conditions.

### (10) Tilt-Up Mower Deck

It's imperative that you have quick and safe access to the cutting blades, and Kubota ensures this with its versatile tilt-up mower deck.

### (11) Large Capacity Fuel Tank

### (12) Operating Safety

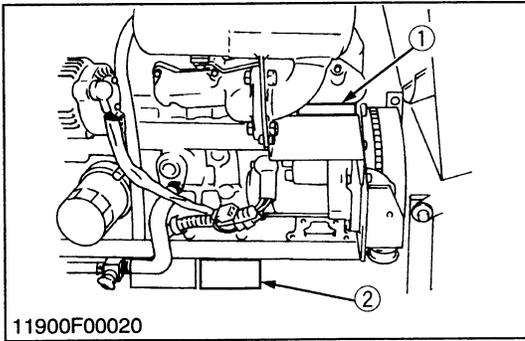
Numerous safety features are built-in.

### (13) Easy Checker

### (14) ROPS (Roll Over Protective Structures)

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## [2] IDENTIFICATION



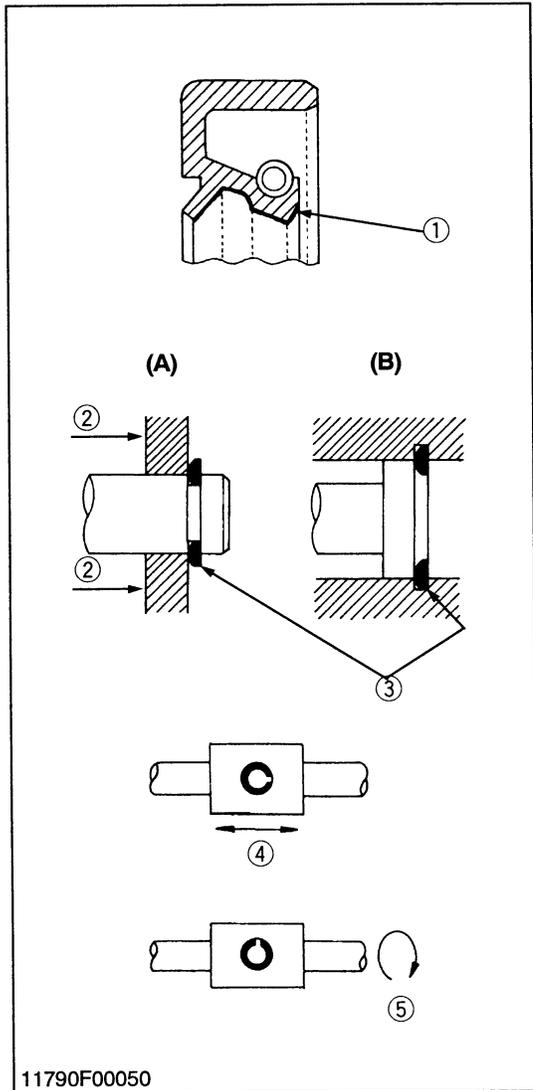
When contacting your local KUBOTA distributor, always specify engine serial number and frame serial number.

(1) Engine Serial Number

(2) Frame Serial Number

11900G00020

## [3] GENERAL PRECAUTIONS



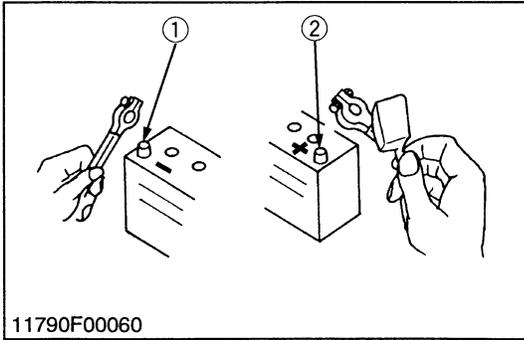
- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently used 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.
- Use only 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



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

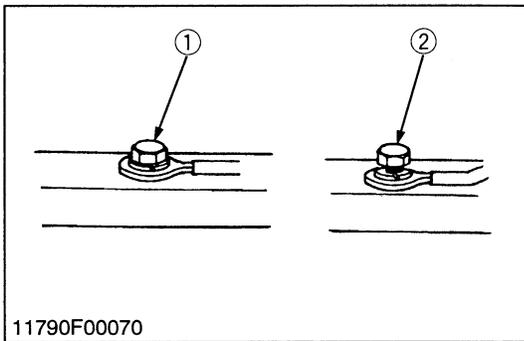
**IMPORTANT**

- 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

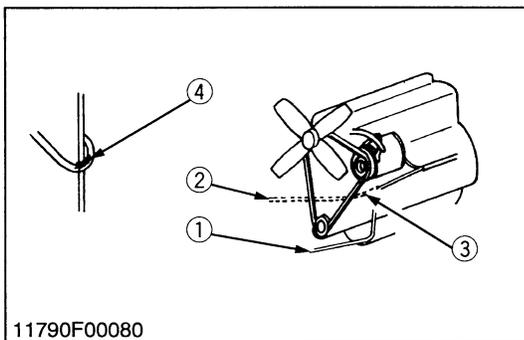
## (1) Wiring



- Securely tighten wiring terminals.

- (1) Correct (Securely Tighten) (2) Incorrect (Loosening Leads to Faulty Contact)

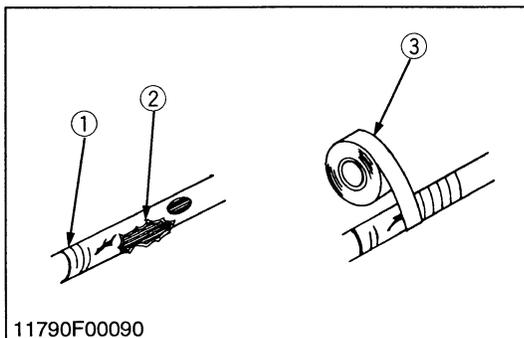
11790G00050



- Do not let wiring contact dangerous part.

- (1) Wiring (Correct) (2) Wiring (Incorrect) (3) Dangerous Part (4) Dangerous Part

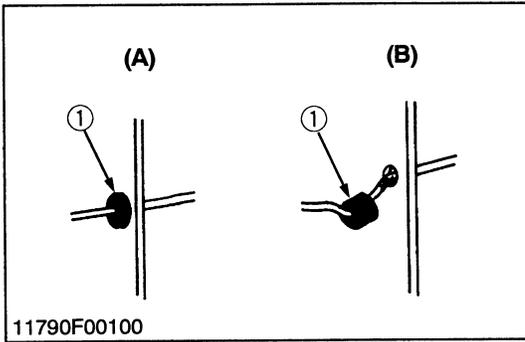
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- Repair or change torn or aged wiring immediately.

- (1) Aged (2) Torn (3) Insulating Vinyl Tape

11790G00070

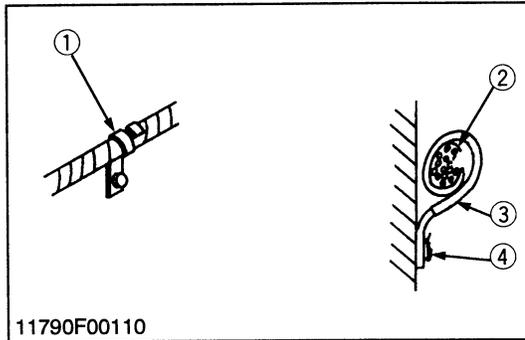


● Securely insert grommet.

(1) Grommet

(A) Correct  
(B) Incorrect

11790G00080

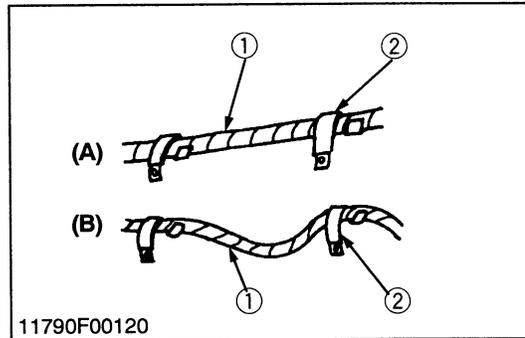


● Securely clamp, being careful not to damage wiring.

(1) Clamp  
• Wind Clamp Spirally  
(2) Wire Harness

(3) Clamp  
(4) Welding Dent

11790G00090

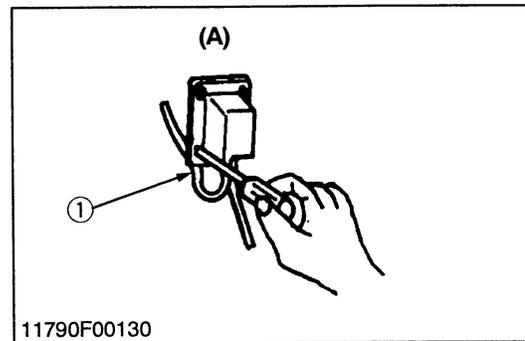


● Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

(1) Wiring  
(2) Clamp

(A) Correct  
(B) Incorrect

11790G00100

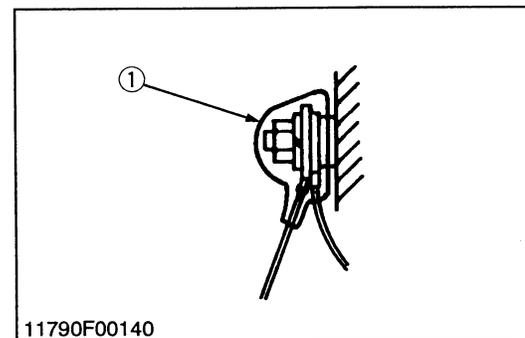


● In installing a part, take care not to get wiring caught by it.

(1) Wiring

(A) Incorrect

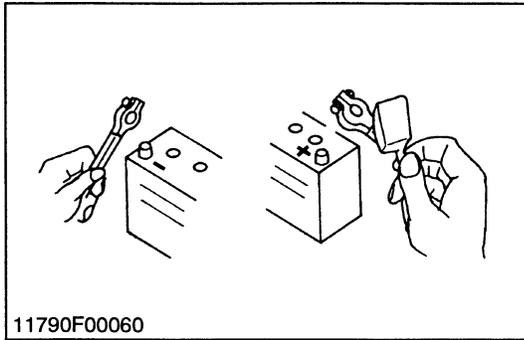
11790G00110



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

(1) Cover  
• Securely Install Cover

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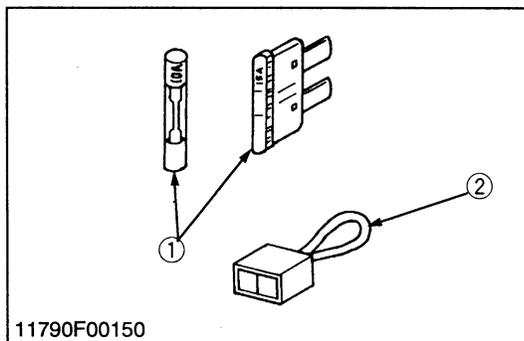
**(2) Battery**

- 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

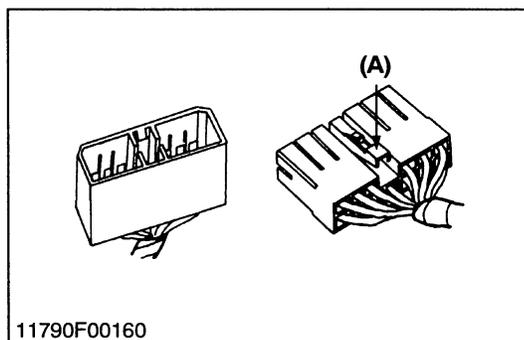
**(3) Fuse**

- 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) Fusible Link

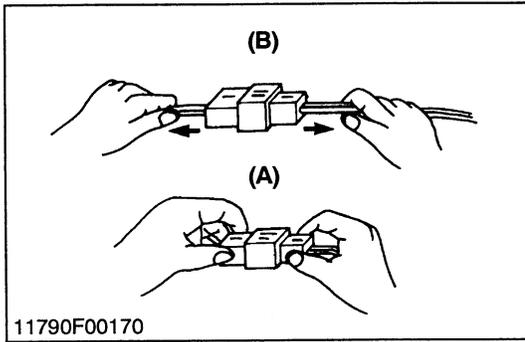
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**(4) Connector**

- For connector with lock, push lock to separate.

(A) Push

11790G00150

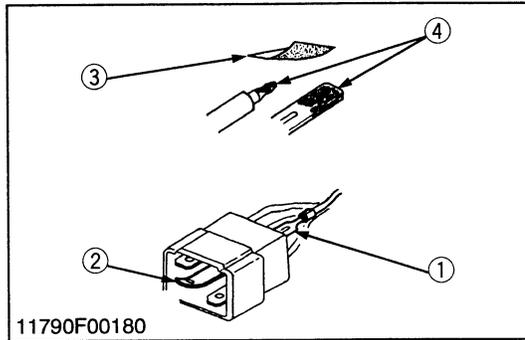


- In separating connectors, do not pull wire harnesses.
- Hold connector bodies to separate.

(A) Correct

(B) Incorrect

11790G00160

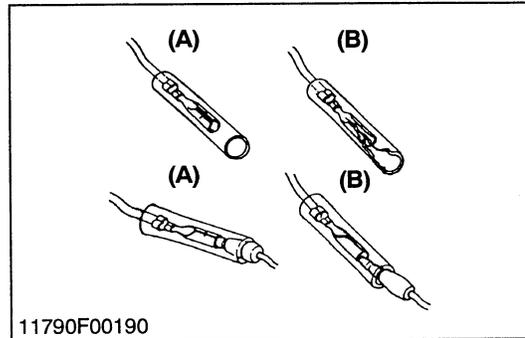


- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make certain there is no terminal being exposed or displaced.

(1) Exposed Terminal  
(2) Bend Terminal

(3) Sandpaper  
(4) Rust

11790G00170

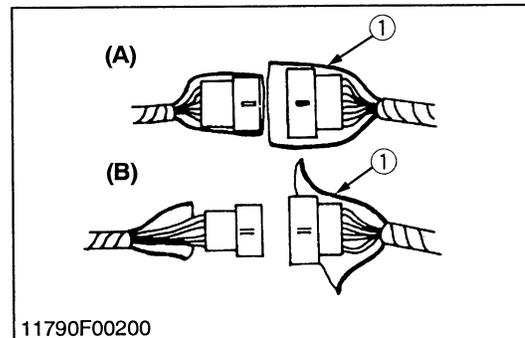


- Make certain that there is no female connector being too open.

(A) Correct

(B) Incorrect

11790G00180



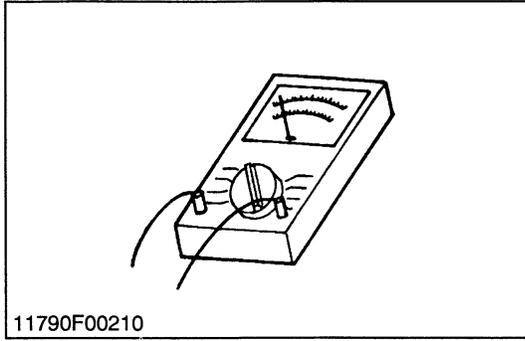
- Make certain plastic cover is large enough to cover whole connector.

(1) Cover

(A) Correct  
(B) Incorrect

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### (5) Handling of Circuit Tester



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

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**[5] LUBRICANTS, FUEL AND COOLING WATER**

	Place		Capacity					Lubricants, fuel and cooling water
			F2260	F2560E	F2560	F3060	F3560	
1	Fuel		40 L 10.6 U.S.gals. 8.8 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	3.4 L 3.6 U.S.qts. 3.0 Imp.qts		3.9 L 4.1 U.S.qts. 3.4 Imp.qts			Fresh clean water (soft water) with anti-freeze
		Recovery tank	0.3 L 0.3 U.S.qts. 0.3 Imp.qts					
3	Engine crankcase		2.4 L 2.5 U.S.qts. 2.1 Imp.qts		2.7 L 2.8 U.S.qts. 2.4 Imp.qts			Engine oil : MIL-L-2104C, API Service Classification CC or CD Below 0 °C (32 °F) ...SAE10W, 10W-30 or 10W-40 0 to 25 °C (32 to 77 °F)...SAE20, 10W-30 or 10W-40 Above 25 °C (77 °F)...SAE30, 10W-30 or 10W-40
4	Transmission case		12.8 L 13.5 U.S.qts. 11.3 Imp.qts		13.5 L 14.3 U.S.qts. 11.9 Imp.qts			KUBOTA SUPER UDT fluid * (Reference) Maker Brand name Exxon.....Torque Fluid 56 Shell.....Donax TD Union.....Hydraulic / Tractor Fluid Mobil.....Mobil Fluid 424
5	Rear axle differential case		1.3 L 1.4 U.S.qts. 1.1 Imp.qts	–	1.3 L 1.4 U.S.qts. 1.1 Imp.qts			KUBOTA SUPER UDT fluid * or SAE85W, SAE90 gear oil (API Service Classification : better than GL-3)
6	Rear axle gear case		0.5 L 0.5 U.S.qts. 0.4 Imp.qts	–	0.5 L 0.5 U.S.qts. 0.4 Imp.qts			
7	Speed control pedal shaft		Until grease overflows					SAE multipurpose type grease
	Link pivots (Left and right)							
	Seat adjuster							
	Speed change link							
	Universal joint							
	Rear wheel drive shaft (Front and rear for 4WD)							
	Knuckle arm (Left and right for 4WD)							
Kingpin (Left and right for 2WD)								
8	Accelerator cable		Moderate amount					Oil

\*KUBOTA original transmission hydraulic fluid.

## [6] TIGHTENING TORQUES

### (1) General Use Screws, Bolts 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	SS400, S20C						S43C, S48C						SCr435, SCM435		
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) Stud Bolts

Material of opponent part	Ordinariness			Aluminum		
Unit Diameter	N-m	kgf-m	ft-lbs	N-m	kgf-m	ft-lbs
M8 (8 mm, 0.31 in.)	11.8 to 15.6	1.2 to 1.6	8.68 to 11.5	8.82 to 11.8	0.90 to 1.2	6.51 to 8.67
M10 (10 mm, 0.39 in.)	24.6 to 31.3	2.5 to 3.2	18.1 to 23.1	19.7 to 25.4	2.0 to 2.6	14.5 to 18.8
M12 (12 mm, 0.47 in.)	29.5 to 49.0	3.0 to 5.0	21.7 to 36.1	31.4	3.2	23.1

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**[7] MAINTENANCE CHECK LIST**

No.	Items	Period	Indication on hour meter (Hr)								Reference page	
			50	100	200	300	400	500	600	After since		
1	Engine oil	Change	★	☆	☆	☆	☆	☆	☆	☆	every 100 Hr	G-11
2	Engine oil filter cartridge	Replace	★		☆		☆		☆		every 200 Hr	G-12, 20
3	Transmission oil	Change			★		☆		☆		every 200 Hr	G-19, 21
4	Transmission oil filter cartridge	Replace	★		☆		☆		☆		every 200 Hr	G-12, 19, G-21
5	Transmission oil strainer	Clean			★		☆		☆		every 200 Hr	G-20, 21
6	Rear axle differential case oil [4WD]	Change			★		☆		☆		every 200 Hr	G-20, 21
7	Rear axle gear case oil (Left and right) [4WD]	Change			★		☆		☆		every 200 Hr	G-20, 21
8	Rear axle pivot	Adjust					☆				every 400 Hr	G-23
9	Safety devices	Check	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hr	G-13
10	Greasing	Check	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hr	G-14
11	Battery condition	Check	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hr	G-15, 16
12	Air cleaner element	Clean	☆	☆	☆	☆	☆	☆	☆	☆	every 50 Hr *	G-17
		Replace									every 1 year	G-24
13	Fuel filter	Check		☆	☆	☆	☆	☆	☆	☆	every 100 Hr	G-17
		Replace					☆				every 400 Hr	G-23
14	Radiator hose and clamp	Check			☆		☆		☆		every 200 Hr	G-21
		Replace									every 2 years	G-26
15	Hydraulic hose	Check			☆		☆		☆		every 200 Hr	G-22
		Replace									every 2 years	G-26
16	Fuel line	Check			☆		☆		☆		every 200 Hr	G-22
		Replace									every 2 years	G-27
17	Cooling system	Clean									every 1 year	G-25, 26
18	Radiator core	Check		☆	☆	☆	☆	☆	☆	☆	every 100 Hr *	G-18
19	Coolant	Change									every 1 year	G-25, 26
20	Fan belt tension	Adjust		☆	☆	☆	☆	☆	☆	☆	every 100 Hr	G-18
21	Brake pedal free travel	Adjust		☆	☆	☆	☆	☆	☆	☆	every 100 Hr	G-19
22	Fuel system	Bleed									Service as required	G-27
23	Fuse	Replace										G-28
24	Light bulb	Replace										G-28

**Note :** The jobs indicated by ★ must be done initially.

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

11900G00390

## [8] CHECK AND MAINTENANCE

### CAUTION

- Be sure to check and service the machine on a flat place with engine shut off, the parking brake on and chock the wheels.

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### (1) Daily Check

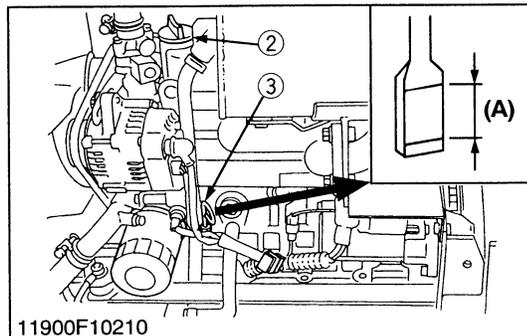
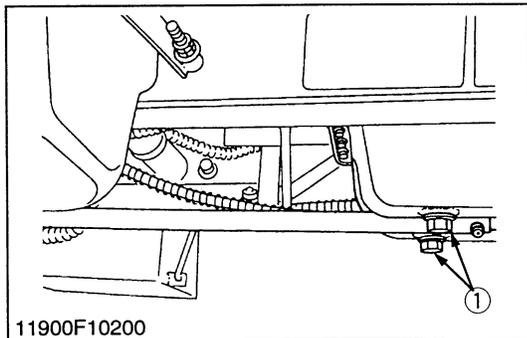
To prevent trouble from occurring, it is important to know the condition of the machine. Check the following items before starting.

#### Checking

- Check areas where previous trouble was experienced.
- Walk around the machine.
  - 1) The tire pressure, wear and damage
  - 2) Oil and water leak
  - 3) Engine oil level
  - 4) Transmission oil level
  - 5) Battery electrolyte level
  - 6) Coolant level in the recovery tank
  - 7) Damage of machine body, tightness of all screws, bolts and nuts
  - 8) Radiator screen
  - 9) Panel screen
  - 10) Brake play
  - 11) Oiling
  - 12) Fuel level
- While sitting in the operator's seat.
  - 1) Speed control pedal
  - 2) Brake pedal
  - 3) Speed set lever (Option)
  - 4) Parking brake
  - 5) Steering wheel
- Turning the key switch "ON".
  - 1) Performance of the easy checker light
  - 2) Head light
- Starting the engine.
  - 1) Color of the exhaust fumes
  - 2) Safety start switch, seat safety control and another safety devices
  - 3) Check for abnormal noise and vibration
- Others.
  - 1) Check the areas where previous trouble was experienced

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### (2) Check Points of Initial 50 Hours



#### Changing Engine Oil

### CAUTION

- Be sure to stop the engine before changing oil.
  1. Start and warm up the engine for approx. 5 minutes.
  2. Place an oil pan underneath the engine.
  3. To drain the used oil, remove the drain plugs (1) at the bottom of the engine and drain the oil completely.
  4. Screw in the drain plugs (1).
  5. Fill new oil up to upper line on the dipstick (3).

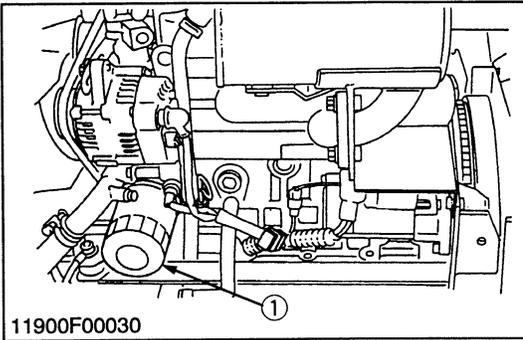
#### ■ IMPORTANT

- When using an oil of different manufacture or viscosity from the previous one, remove all of the old oil.
- Never mix two different type of oil.
- Use the proper SAE Engine Oil according to ambient temperatures.  
Refer to "LUBRICANTS, FUEL AND COOLING WATER".  
(See page G-8.)

- (1) Drain Plug  
(2) Oil Inlet Plug  
(3) Dipstick

(A) Oil level is acceptable within this range.

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11900F00030

### Replacing Engine Oil Filter Cartridge

#### **⚠ CAUTION**

- **Be sure to stop the engine before changing the oil filter cartridge.**

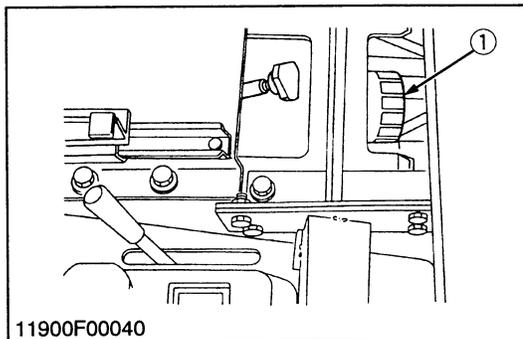
1. Remove the engine oil filter cartridge (1) with the filter wrench.
2. Apply a slight coat of oil onto the rubber gasket.
3. To install the new cartridge, screw it in by hand. Over tightening may cause deformation of rubber gasket.
4. After the new cartridge has been replaced, the engine oil normally decrease a little. Thus see that the engine oil does not leak through the seal and be sure to read the oil level on the dipstick. Then, replenish the engine oil up to the specified level.

#### **■ IMPORTANT**

- **To prevent serious damage to the engine, replacement filter cartridge must be highly efficient. Use only a KUBOTA genuine filter.**

(1) Engine Oil Filter Cartridge

11900G00040



11900F00040

### Replacing Transmission Oil Filter Cartridge

#### **⚠ CAUTION**

- **Be sure to stop the engine before changing the oil filter cartridge.**

1. Remove the transmission oil filter cartridge (1) with the filter wrench.
2. When installing, apply the clean transmission oil slightly onto the rubber gasket.
3. Tighten the transmission oil filter cartridge quickly until it contacts the mounting surface. Tighten the transmission oil filter cartridge (1) by hand. Over tightening may cause deformation of rubber gasket.
4. After the new cartridge has been replaced, the transmission fluid level normally decreases a little. Add KUBOTA SUPER UDT fluid to proper level. Check for oil leaks around filter gasket.

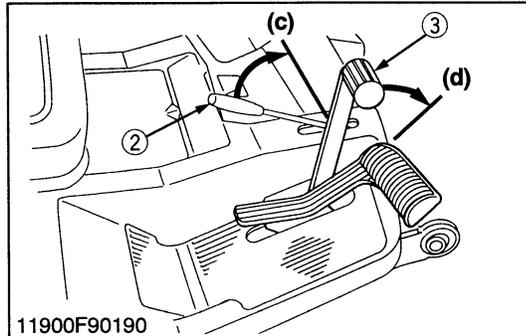
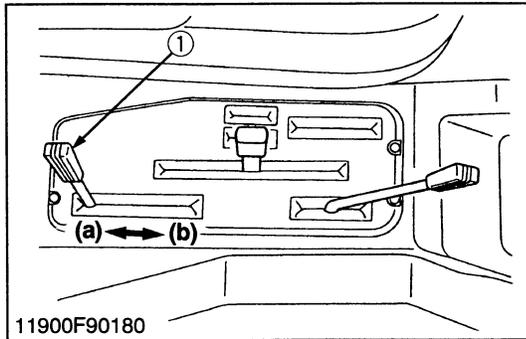
#### **■ IMPORTANT**

- **To prevent serious damage to the hydraulic system, replacement oil filter cartridge must be highly efficient. Use only a genuine KUBOTA filter.**

(1) Transmission Oil Filter Cartridge

11900G00050

### (3) Check Points of Every 50 Hours



- |                        |                          |
|------------------------|--------------------------|
| (1) PTO Lever          | (a) <b>DISENGAGE</b>     |
| (2) Parking Lock Lever | (b) <b>ENGAGE</b>        |
| (3) Main Brake Pedal   | (c) <b>Lock Position</b> |
|                        | (d) <b>Depress</b>       |

#### Checking Safety Devices

The Safety Devices in your machine help to protect you while operating. Please check this Safety Devices periodically - daily is best - to test function of the Safety Devices before operation.

#### ⚠ CAUTION

To avoid personal injury :

- Do not allow anyone near the machine while testing.
- If the machine does not pass a test do not operate the machine.
- Sit on operator's seat for all tests except for Test 1.

1. Check the following tests before operating the machine.
2. If the machine does not pass one of the following tests, do not operate the machine, and check the safety switches and the wiring harness.

#### Test 1 (OPERATOR NOT ON SEAT)

1. Do not depress the main brake pedal (3) or unlock the parking lock lever (2).
2. Turn the key switch to "START" position.
3. The engine must not crank.

#### Test 2 (OPERATOR ON SEAT)

1. Do not depress the main brake pedal (3) or unlock the parking lock lever (2).
2. Shift the PTO lever (1) to "DISENGAGE" position.
3. Turn the key switch to "START" position.
4. The engine must not crank.

#### Test 3 (OPERATOR ON SEAT)

1. Do not depress the main brake pedal (3) or unlock the parking lock lever (2).
2. Shift the PTO lever (1) to "DISENGAGE" position.
3. Depress the speed control pedal forward.
4. Turn the key switch to "START" position.
5. The engine must not crank.

#### Test 4 (OPERATOR ON SEAT)

1. Depress the main brake pedal (3) fully.
2. Shift the PTO lever (1) to "ENGAGE" position.
3. Turn the key switch to "START" position.
4. The engine must not crank.

#### Test 5 (OPERATOR ON SEAT)

1. Start the engine.
2. Do not depress the main brake pedal (3) or unlock the parking lock lever (2).
3. Shift the PTO lever (1) to "ENGAGE" position.
4. Stand up. (Do not get off the machine.)
5. The engine must shut off.

#### Test 6 (OPERATOR ON SEAT)

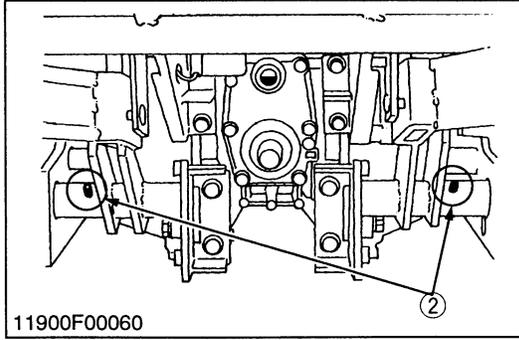
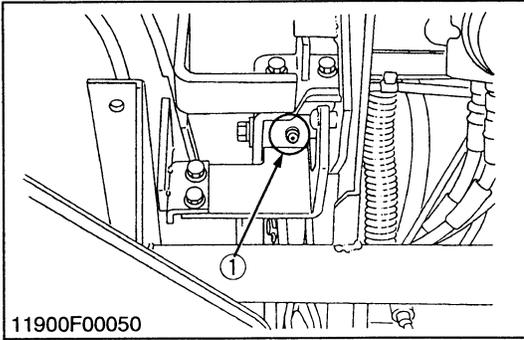
1. Start the engine.
2. Do not depress the main brake pedal (3) or unlock the parking lock lever (2).
3. Shift the PTO lever (1) to "DISENGAGE" position.
4. Stand up. (Do not get off the machine.)
5. The engine must shut off.

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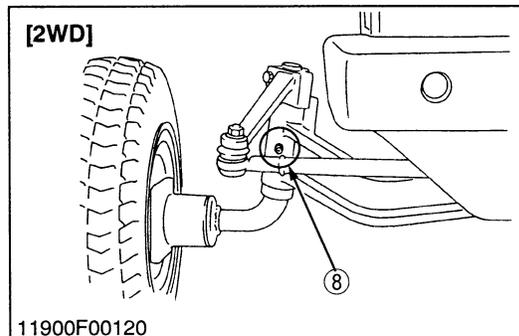
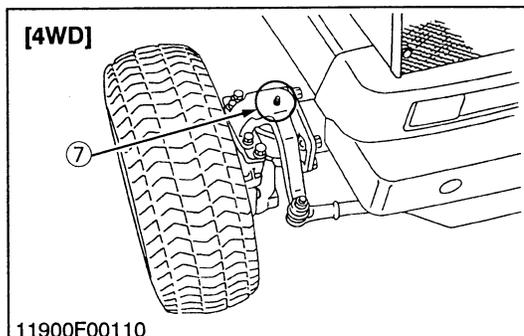
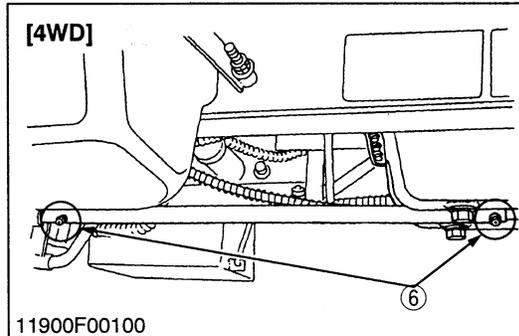
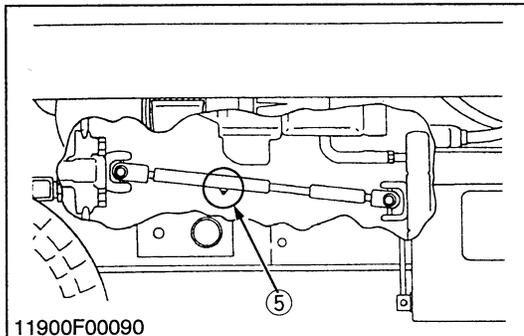
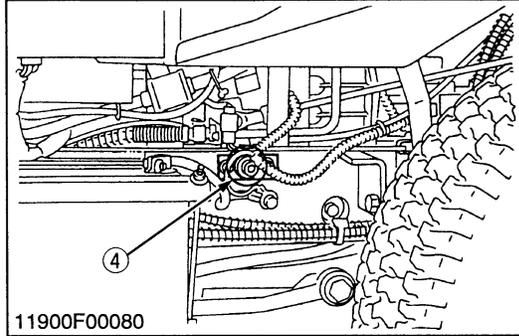
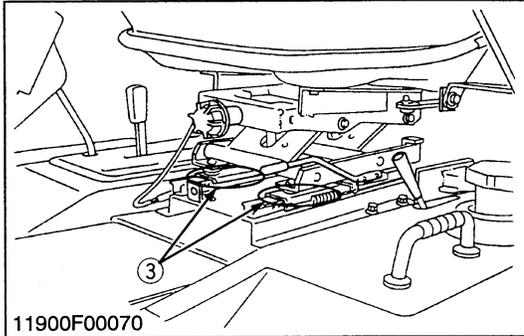
Greasing

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1. Apply grease to the following points.



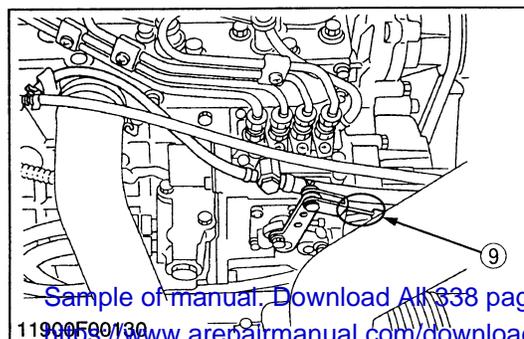
- (1) Speed Control Pedal Shaft
- (2) Link Pivots (Left and Right)
- (3) Seat Adjuster
- (4) Speed Change Link
- (5) Universal Joint
- (6) Rear Wheel Drive Shaft [4WD] (Front Side and Rear Side)
- (7) Knuckle Arm [4WD] (Left and Right)
- (8) Kingpin [2WD] (Left and Right)



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2. Apply oil to the following point.

- (9) Accelerator Cable



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