WSM

WORKSHOP MANUAL
UTILITY VEHICLE

RTV1100

Kubota

KiSC issued 03, 2008 A

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 attempt to repair or use this unit.

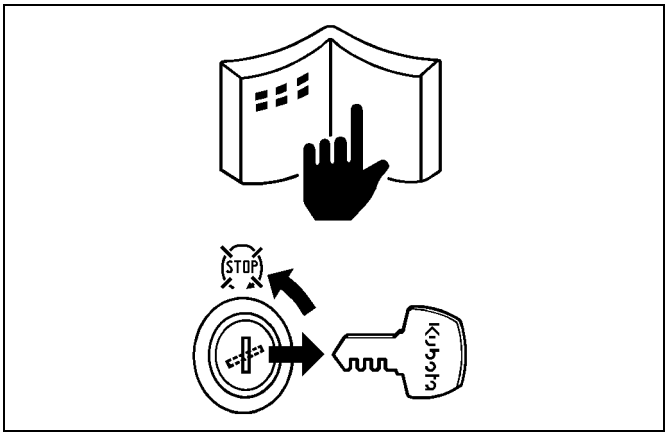
DANGER : Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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.

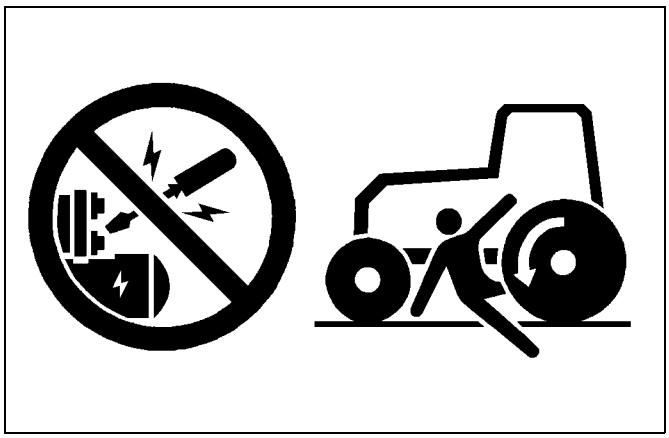
■ IMPORTANT : Indicates that equipment or property damage could result if instructions are not followed.

■ NOTE : Gives helpful information.



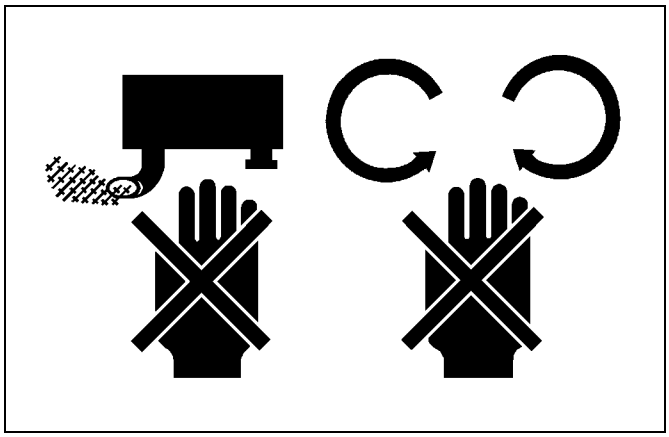
BEFORE SERVICING AND REPAIRING

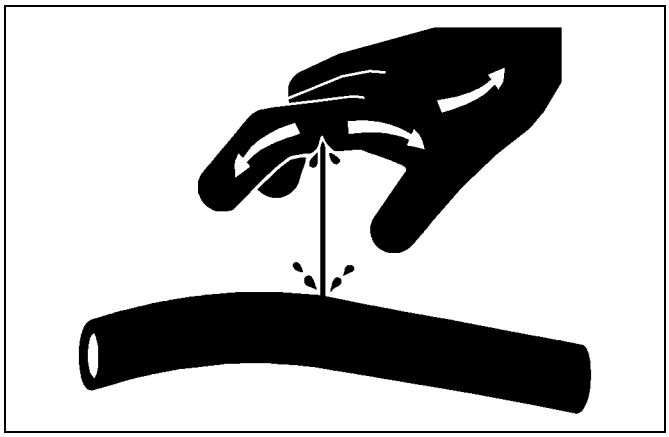
- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a firm and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, and remove the key.
- Disconnect the battery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

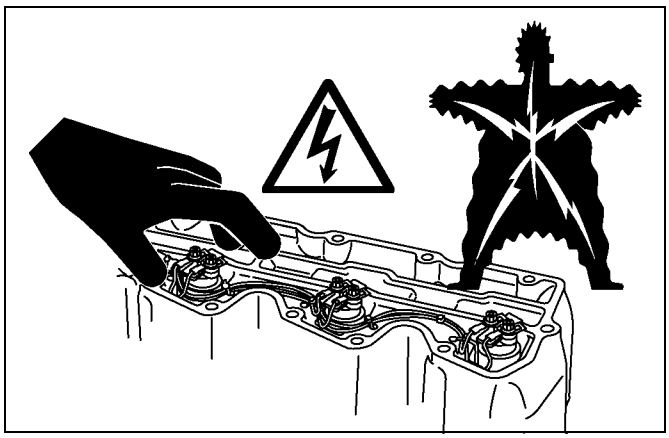


SAFETY STARTING

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

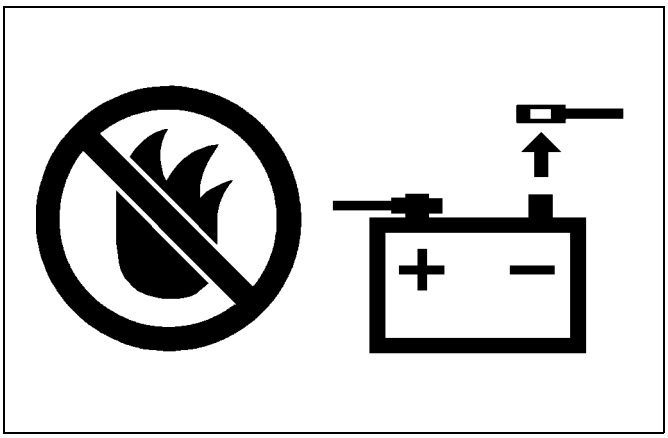






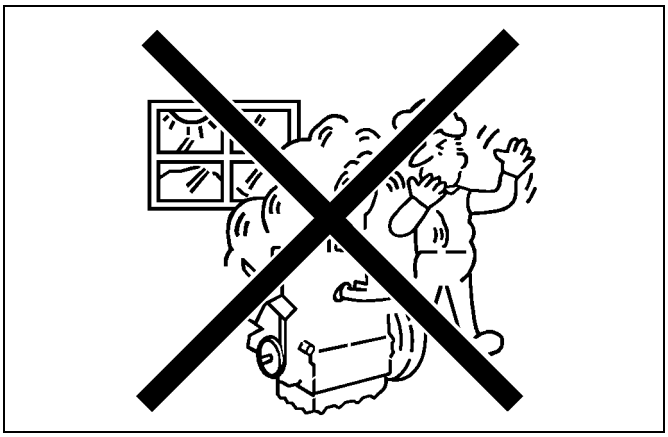
SAFETY WORKING

- Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- Wear close fitting clothing and safety equipment appropriate to the job.
- Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Do not work under the machine that is supported solely by a jack. Always support the machine by safety stands.
- Do not touch the rotating or hot parts while the engine is running.
- 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.
- 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.
- Do not open high-pressure fuel system.
  High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt to repair fuel lines, sensors, or any other components between the high-pressure fuel pump and injectors on engines with high pressure common rail fuel system.
- High voltage exceeding 100 V is generated in the ECU and injector.
  Pay sufficient caution to electric shock when performing work activities.



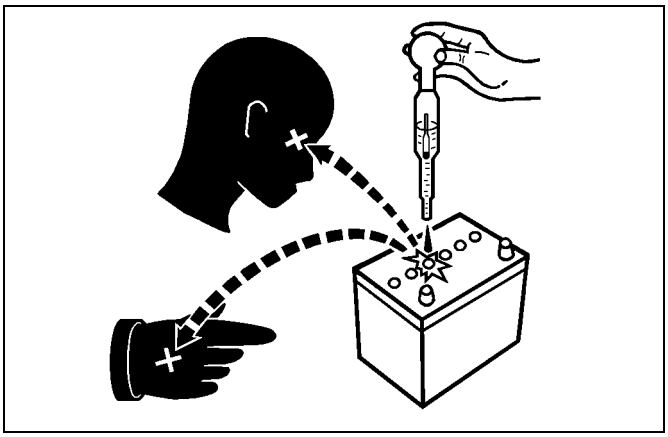
AVOID FIRES

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



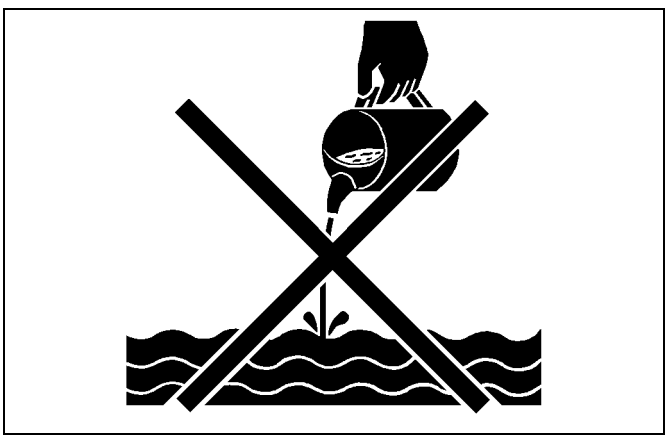
VENTILATE WORK AREA

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



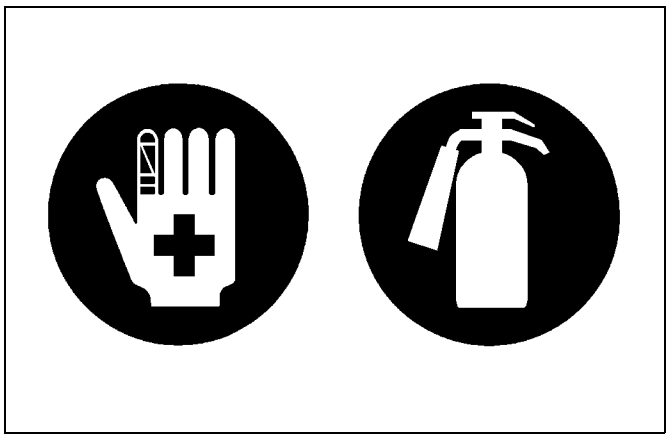
PREVENT ACID BURNS

- 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.



DISPOSE OF FLUIDS PROPERLY

- 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.



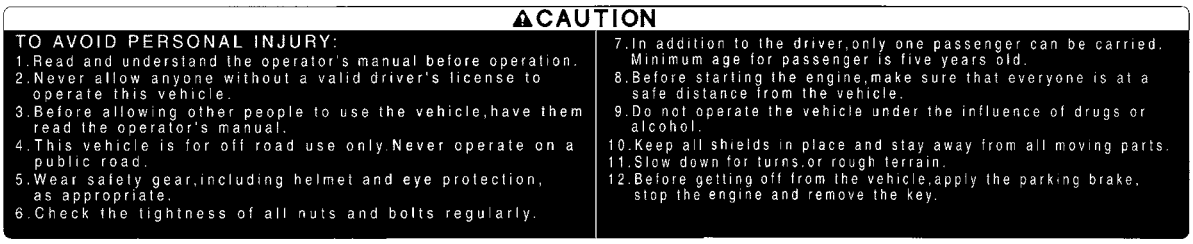
PREPARE FOR EMERGENCIES

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

SAFETY DECALS

The following safety decals are installed on the vehicle.
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. K7711-6522-0



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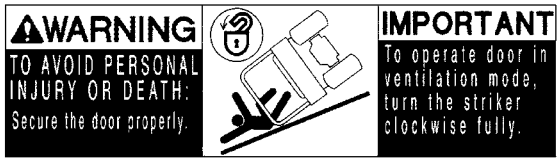

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(3) Part No. K7561-6565-2

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(4) Part No. K7711-6533-0

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(6) Part No. K7711-6541-0

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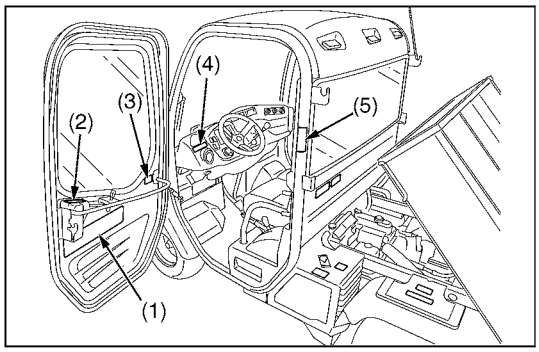

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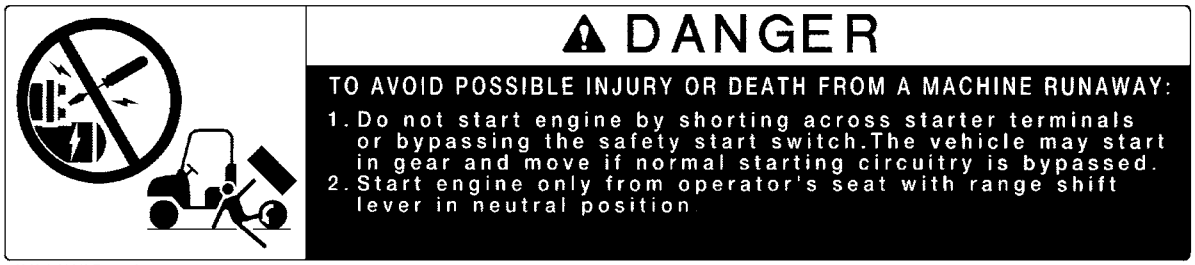

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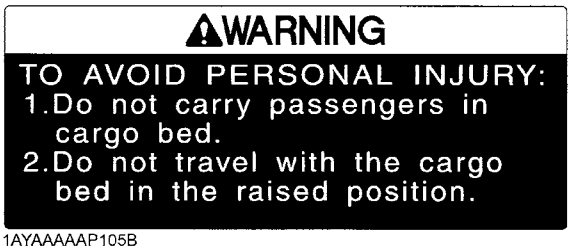

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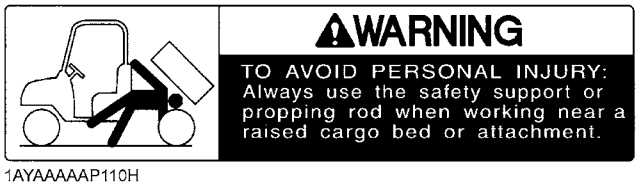

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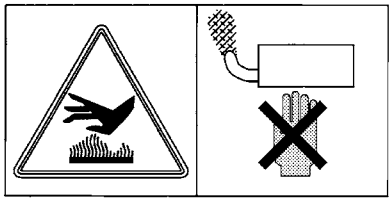

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(5) Part No. K7561-6584-0

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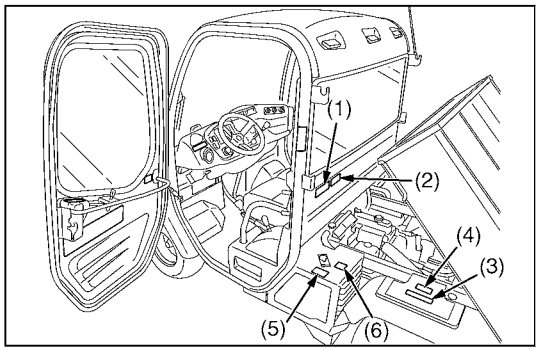

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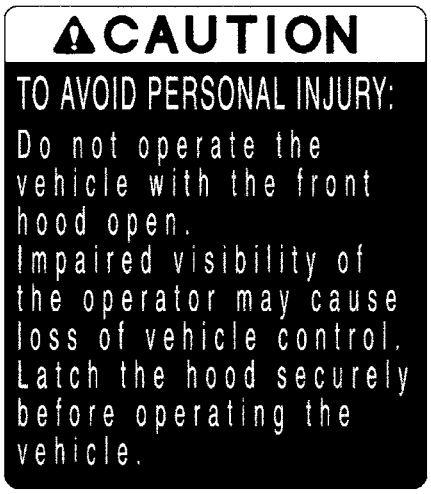
(1) Part No. K7711-6530-0



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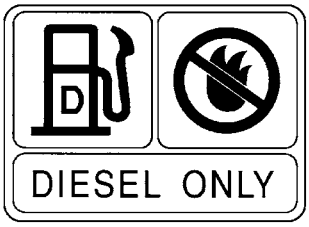

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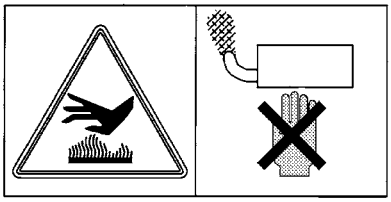

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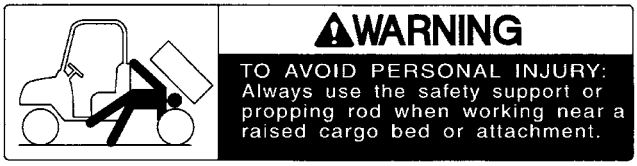

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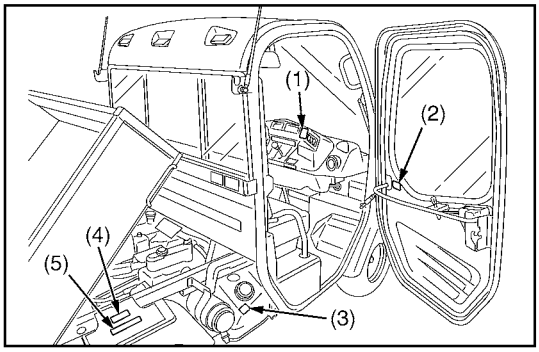

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(1) Part No. K7561-6546-2

⚠WARNING

TO AVOID PERSONAL INJURY:
1. Use brake fluid(DOT-3) only. Other oil types will ruin synthetic resin or rubber installed in brake system components, and cause brake failure.
2. If brake fluid is spilled on power steering hose, wash off with water immediately. Brake fluid quickly ruins synthetic resin or rubber hoses.

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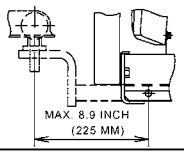
(2) Part No. K7561-6542-2

⚠WARNING

TO AVOID PERSONAL INJURY:
Attach pulled or towed loads to the drawbar only.



IMPORTANT

1. Carefully read the loading information and trailer hitch sections in the Operator's Manual.
2. Towing Capacity
   - Max. Towing Load : 295kg (650lbs)
   - Max. Tongue Weight : 50kg (110lbs)

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(3) Part No. K7711-6575-0

CAUTION REFRIGERANT UNDER HIGH PRESSURE

Improper service methods may cause personal injury. This air conditioning system should be serviced by your dealer or any other qualified service shop. See Workshop Manual for details.

Refrigerant: R134a USE ONLY — Max. 0.65kg(1.43lbs.) Min. 0.55kg(1.21lbs.)

oil: ND-OIL 8 USE ONLY — SAE J-639

IMPORTANT

TO AVOID DAMAGE TO AIR CONDITIONER
1. Do not spray water on any air conditioner parts.
2. Use air when cleaning the air conditioner.

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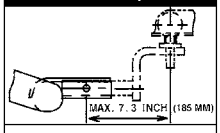
(4) Part No. K7561-6543-2

⚠WARNING

TO AVOID PERSONAL INJURY:
Attach pulled or towed loads to the drawbar only.



IMPORTANT

1. Carefully read the loading information and trailer hitch sections in the Operator's Manual.
2. Towing Capacity
   - Max. Towing Load 590kg (1300lbs)
   - Max. Tongue weight 50kg (110lbs)

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(3) Part No. K7711-6554-0

⚠CAUTION

TO AVOID PERSONAL INJURY:
1. Before touching any part of an exhaust system, be absolutely sure that it has had sufficient time to cool.
2. Always wear safety goggles and a (face)mask.
3. The particulate matter contained in the muffler contains chemicals that are harmful to people, animal and marine life.
4. If you are unable to do this work, have it done by your KUBOTA Dealer

◆ Maintenance

The screen type spark arrester should be removed, cleaned, and inspected after every 100 hours of use.
1. The spark arrester is located inside of the exhaust pipe, and is fastened with two bolts.
2. Unfasten the bolts and remove the spark arrester.
3. Shake loosened particles out of the screen assembly and lightly clean the screen with a wire brush. Soak in solvent and again clean with a wire brush if necessary.
4. If any breaks in the screen or weldments are discovered, the assembly must be replaced.
5. Reinstall the spark arrester in the muffler body and refasten the bolts.

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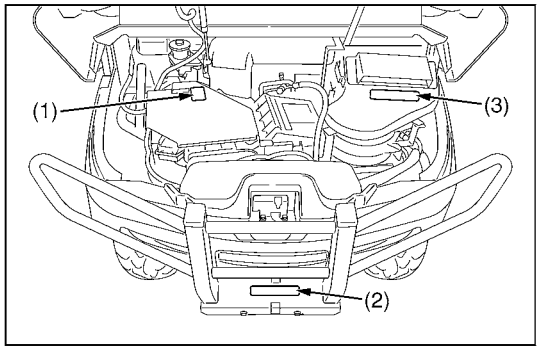

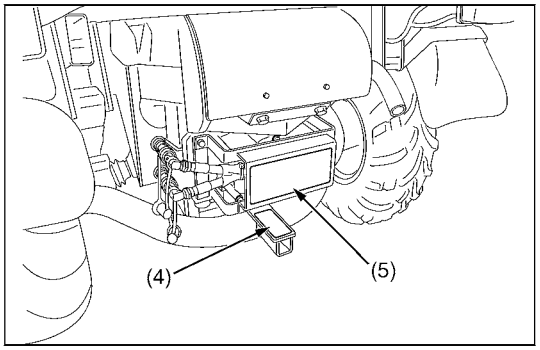

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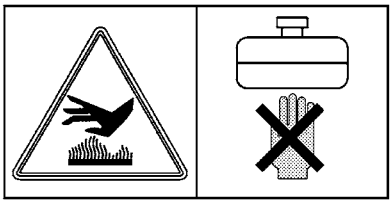

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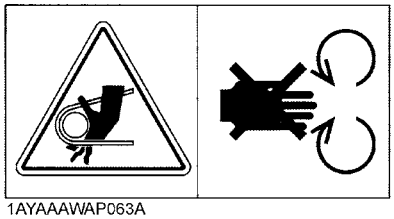

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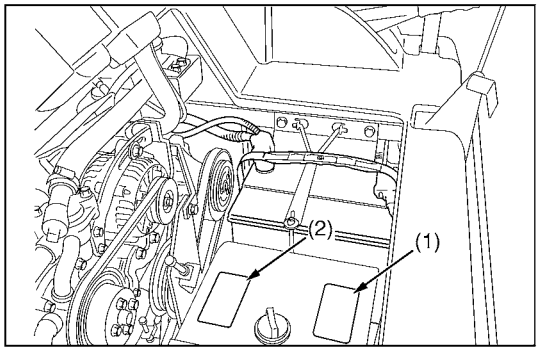

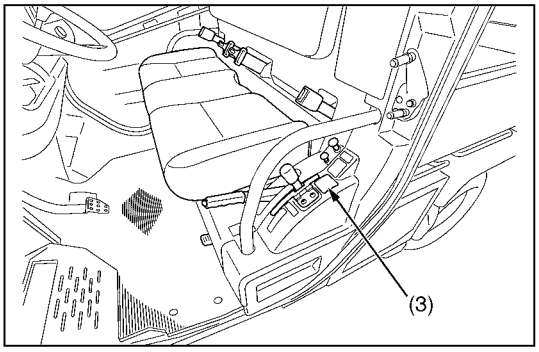

CARE OF DANGER, WARNING AND CAUTION LABELS

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.
4. If a component with danger, warning and caution label(s) affixed is replaced with new part, make sure new 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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SPECIFICATIONS

Model			Worksite	Recreational
Engine	Maker		KUBOTA	
	Model		D1105-E2-UV	
	Type		Indirect Injection. Vertical, water-cooled, 4-cycle diesel	
	Number of cylinders		3	
	Bore and stroke		78 × 78.4 mm (3.1 × 3.09 in.)	
	Total displacement		1123 cm^3 (68.53 cu.in.)	
	Engine gross power (DIN)		18.5 kW (24.8 HP)	
	Rated revolution		50.00 r/s [3000 min^{-1} (rpm)]	
	Maximum torque		69 N·m (7.0 kgf·m, 51 ft-lbs) / 33.34 to 40.00 r/s [2000 to 2400 min^{-1} (rpm)]	
	Battery		12 V, CCA : 535 A, RC : 80 min.	
	Starting system		Electric starting with cell starter, 12 V, 1.2 kW	
	Lubrication system		Forced lubrication by trochoidal pump	
	Cooling system		Pressurized radiator, forced circulation with water pump	
	Fuel		Diesel fuel No. 2-D [above −10 °C (14 °F)], Diesel fuel No. 1 [below −10 °C (14 °F)]	
Capacities	Fuel tank		30 L (7.9 U.S.gals, 6.6 Imp.gals)	
	Engine crankcase (with filter)		4.0 L (4.3 U.S.qts, 3.6 Imp.qts)	
	Engine coolant (with recovery tank)		5.2 L (5.5 U.S.qts, 4.6 Imp.qts)	
	Transmission case		12 L (3.2 U.S.gals, 2.6 Imp.gals)	
	Front axle case		0.6 L (0.6 U.S.qts, 0.5 Imp.qts)	
	Knuckle case		Ref. 0.15 L (0.16 U.S.qts, 0.13 Imp.qts)	
	Brake fluid (reservoir and lines)		0.87 L (0.92 U.S.qts, 0.77 Imp.qts)	
	Hydraulic oil		17.5 L (18.5 U.S.qts, 15.4 Imp.qts)	
Travelling system	Tires	Front	25 × 10-12 HDWS, 6PLY 25 × 10-12 ATV, 6PLY 25 × 12-12 Turf, 4PLY	25 × 10-12 HDWS, 6PLY 25 × 10-12 ATV, 6PLY
		Rear	25 × 10-12 HDWS, 6PLY 25 × 11-12 ATV, 6PLY 25 × 12-12 Turf, 4PLY	25 × 10-12 HDWS, 6PLY 25 × 11-12 ATV, 6PLY
	Steering		Hydrostatic power	
	Transmission		Continuously variable hydro transmission (VHT)	
	Wheels and drive		4 wheels, rear 2WD or 4WD	
	Gear selection		H-M-L range, forward, neutral, reverse	
	Differential lock		Standard; foot operated with mechanical holder	
	Brake	Front / Rear	Wet disc type	
		Parking brake	Rear wheel, hand lever	
	Turning diameter		7.8 m (26 feet)	
Suspension	Front		Independent, macpherson strut-type	
	Rear		Semi-independent, devion axle with leaf springs and shock absorber	

NOTE: * Manufacture's estimate
The company reserves the right to change the specifications without notice.

W1028103

Model			Worksite	Recreational
Dimensions	Overall length		3280 mm (129.1 in.)	
	Overall width		1700 mm (66.93 in.)	
	Overall height		2070 mm (81.50 in.)	
	Front tread center		1150 mm (45.28 in.) HDWS, ATV 1180 mm (46.46 in.) Turf	1150 mm (45.28 in.)
	Rear tread center		1180 mm (46.46 in.) HDWS, ATV 1210 mm (47.64 in.) Turf	1180 mm (46.46 in.)
	Wheel base		1970 mm (77.56 in.)	
	Ground clearance	Front axle	210 mm (8.27 in.)	
		Rear axle	175 mm (6.89 in.)	
Weight			1125 kg (2480 lbs)	
Max. rolling weight (Towing capacity)			590 kg (1300 lbs)	
Payload capacity			690 kg (1520 lbs)	
Cargo bed	Width		1320 mm (51.97 in.)	
	Length		1180 mm (46.47 in.)	
	Depth		290 mm (11.4 in.)	
	Volume		0.455 m^2 (16.1 cu.ft.)	
	Bed height (unload)		800 mm (31.5 in.)	
	Cargo bed load		500 kg (1102 lbs)	
Sound level (operator ear)			83 db (A)	
Front deluxe guard			Standard	
Body color			Orange	Camo
Bed lift			Standard	
Speedometer			Standard	

NOTE: * Manufacture's estimate
The company reserves the right to change the specifications without notice.

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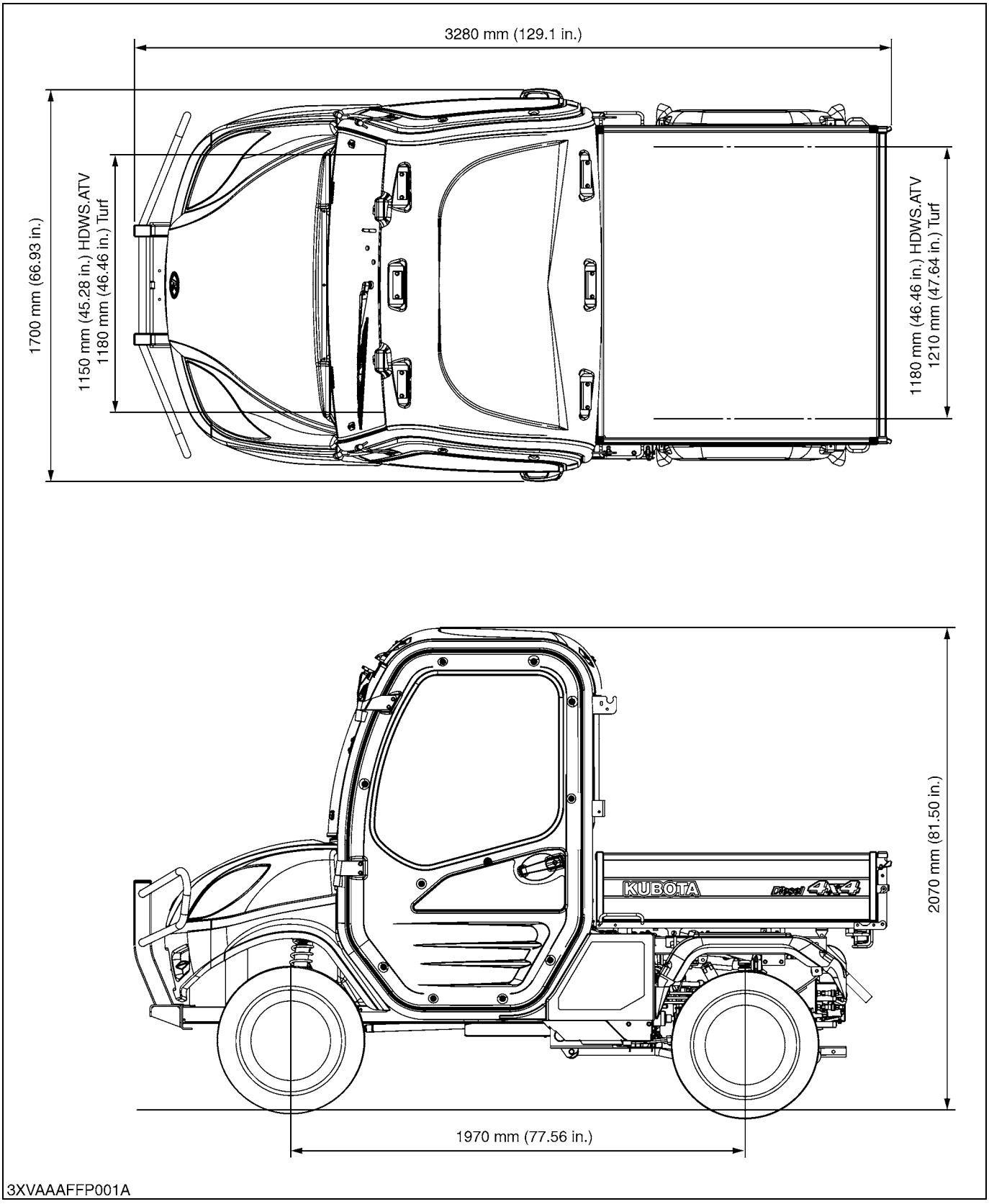
TRAVELLING SPEEDS

Model	Worksite	Recreational
Tire size (Rear)	25 × 10-12 HDWS, 6PLY 25 × 11-12 ATV, 6PLY 25 × 12-12 Turf, 4PLY	25 × 10-12 HDWS, 6PLY 25 × 11-12 ATV, 6PLY
Range gear shift lever	km/h (mph)	
Low	15 (9)	
Medium	26 (16)	
High	40 (25)	
Reverse	18 (11)	

W1035065

DIMENSIONS

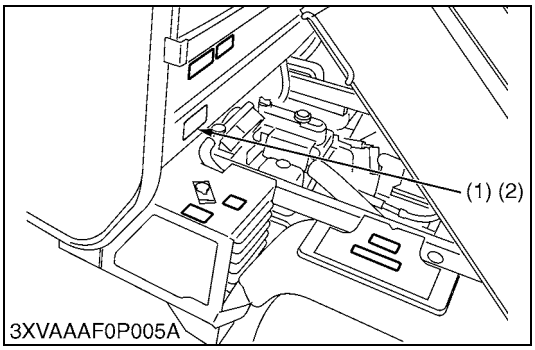

3280 mm (129.1 in.)
1700 mm (66.93 in.)
1150 mm (45.28 in.) HDWS.ATV
1180 mm (46.46 in.) Turf
1180 mm (46.46 in.) HDWS.ATV
1210 mm (47.64 in.) Turf
2070 mm (81.50 in.)
1970 mm (77.56 in.)
KUBOTA
Diesel 4X4
3XVAAAFFP001A

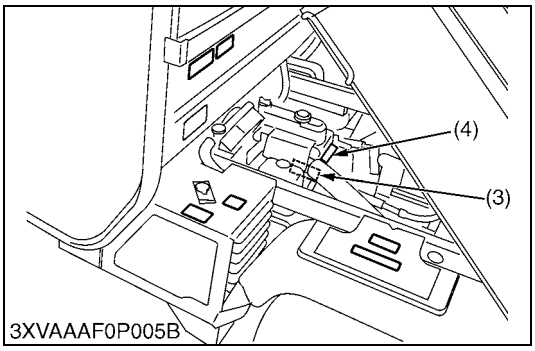
G GENERAL

GENERAL

CONTENTS

1. PRODUCT IDENTIFICATION



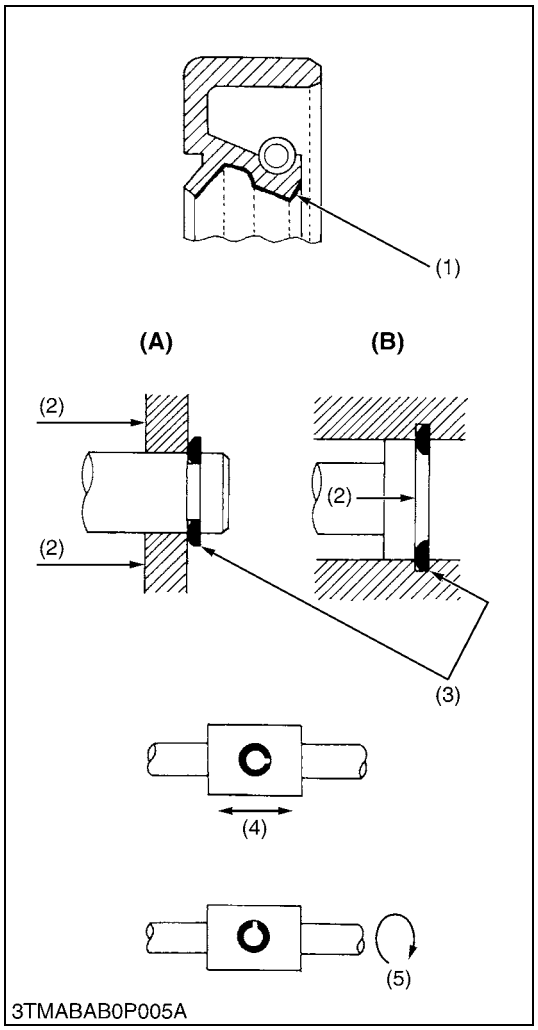


When contacting your local KUBOTA distributor, always specify engine serial number, product serial number and hour meter reading.

(1) Vehicle Identification Plate
(2) Product Identification Number
(3) Engine Serial Number
(4) Transmission Assembly Serial Number

W1011386

2. GENERAL PRECAUTIONS



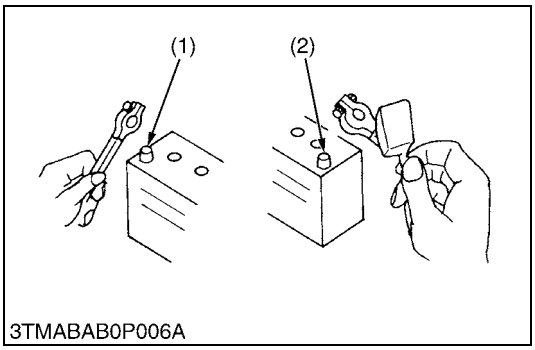
- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Screws, bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently used should be made according to the drawings provided.
- Before disassembling or servicing electrical wires, always disconnect the ground 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

W1010794

3. 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.

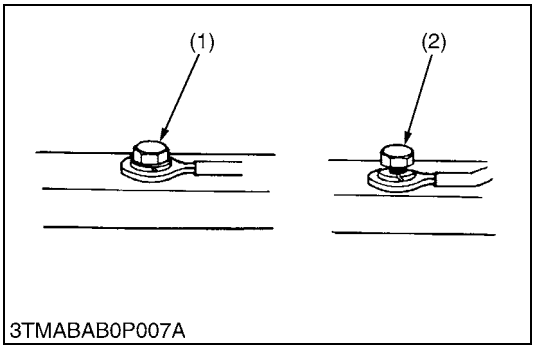
■ **IMPORTANT**

- **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

W10111140

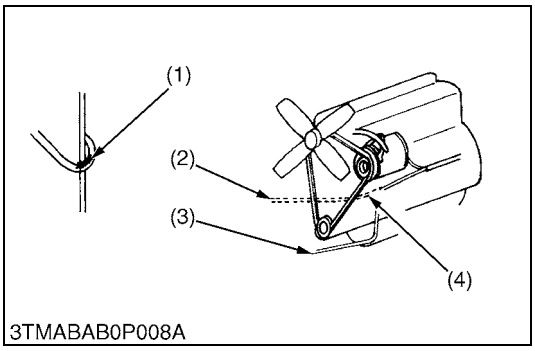
[1] WIRING



- Securely tighten wiring terminals.

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

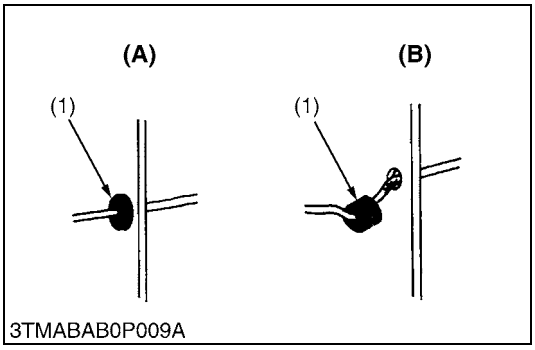
W10112160



- Do not let wiring contact dangerous part.

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

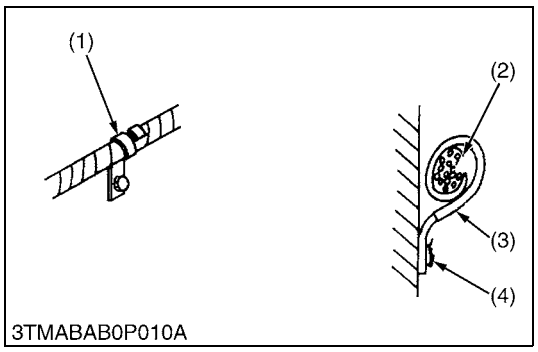
W10113130



- Securely insert grommet.

(1) Grommet **(A) Correct** **(B) Incorrect**

W10113880

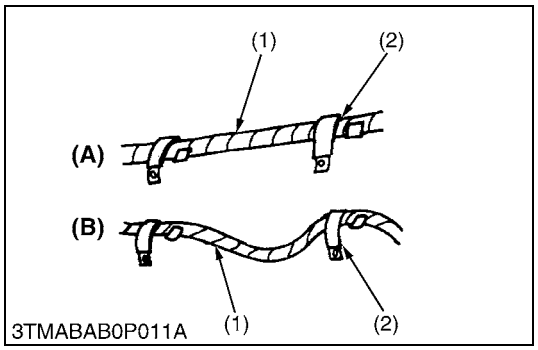


3TMABAB0P010A

- Securely clamp, being careful not to damage wiring.

(1) Clamp
  • Wind Clamp Spirally
(2) Wire Harness
(3) Clamp
(4) Welding Dent

W10114580

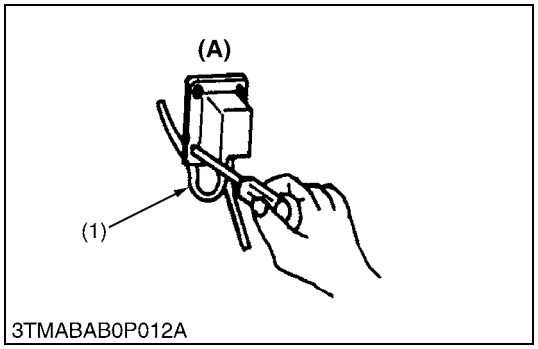


3TMABAB0P011A

- 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

W10115870

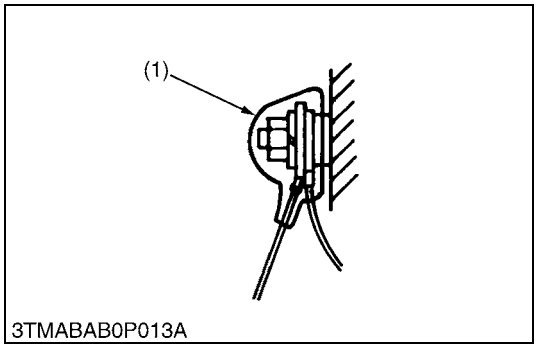


3TMABAB0P012A

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

(1) Wiring
(A) Incorrect

W10116700



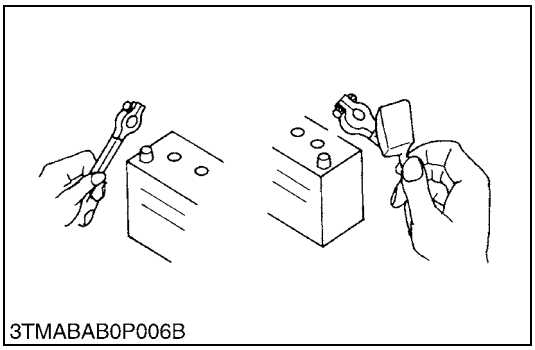
3TMABAB0P013A

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

(1) Cover
  • Securely Install Cover

W10117350

[2] BATTERY


3TMABAB0P006B

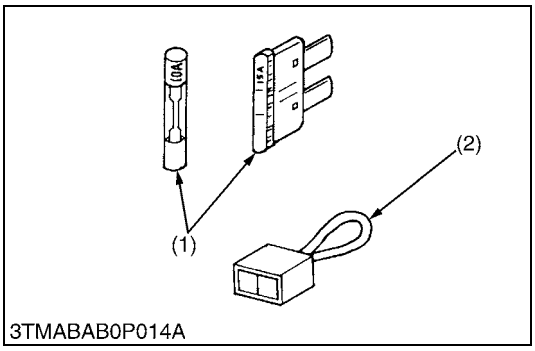
- Take care not to confuse positive and negative terminal posts.
- When removing battery cables, disconnect negative cable first. When installing battery cables, check for polarity and connect positive cable first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting 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.**

W10118160

[3] FUSE



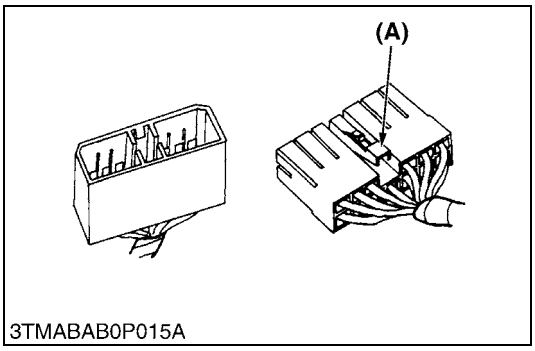
3TMABAB0P014A

- 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

W10120920

[4] CONNECTOR

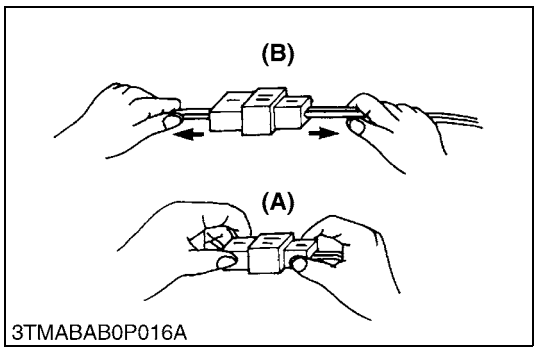


3TMABAB0P015A

- For connector with lock, push lock to separate.

(A) Push

W10122110

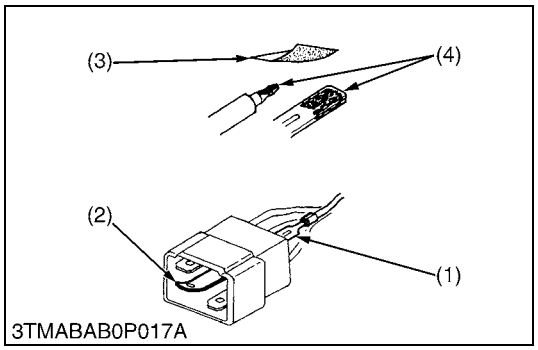


3TMABAB0P016A

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

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

W10122720

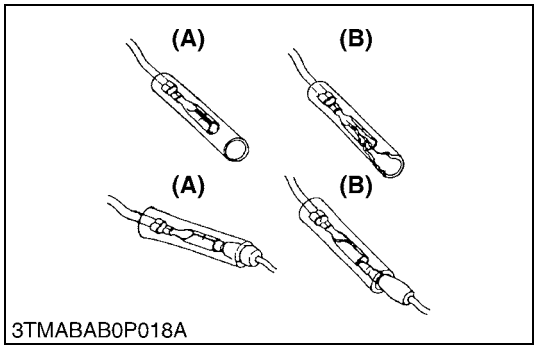


3TMABAB0P017A

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

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

W1012346

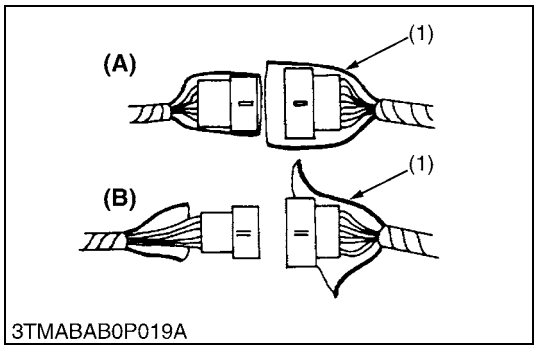


3TMABAB0P018A

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

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

W1012430



3TMABAB0P019A

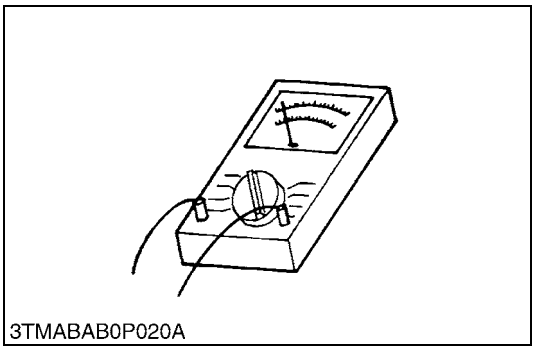
- Make certain plastic cover is large enough to cover whole connector.

(1) Cover

(A) Correct
(B) Incorrect

W1012519

[5] HANDLING OF CIRCUIT TESTER



3TMABAB0P020A

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

W1012684

4. LUBRICANTS, FUEL AND COOLANT

No.	Place	Capacity	Lubricants, fuel and coolant
1	Fuel tank	30 L 7.9 U.S.gals 6.0 Imp.gals	No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below –10 °C (14 °F)
2	Cooling system with recovery tank	5.2 L 5.5 U.S.qts 4.6 Imp.qts	Fresh clean water with anti-freeze
3	Engine crankcase with oil filter	(Oil filter exchanged) 4.1 L 4.3 U.S.qts 3.6 Imp.qts (Oil filter non-exchanged) 3.8 L 4.0 U.S.qts 3.3 Imp.qts	Engine oil : API Service Classification CF or better 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 L 3.2 U.S.qts 2.6 Imp.qts	KUBOTA UDT or SUPER UDT fluid*
5	Front axle case	0.6 L 0.6 U.S.qts 0.5 Imp.qts	KUBOTA UDT or SUPER UDT fluid*
6	Knuckle case	Ref. 0.15 L Ref. 0.16 U.S.qts Ref. 0.13 Imp.qts	KUBOTA UDT or SUPER UDT fluid*
7	Brake fluid (reservoir and lines)	0.87 L 0.92 U.S.qts 0.77 Imp.qts	KUBOTA DOT3 GENUINE BRAKE FLUID
8	Hydraulic oil	17.5 L 18.5 U.S.qts 15.4 Imp.qts	KUBOTA UDT or SUPER UDT fluid*

* KUBOTA original transmission hydraulic fluid.

Greasing				
	Place	**No. of greasing point**	**Capacity**	**Type of grease**
10	VHT link	2	Until grease overflows	Multipurpose type grease NLGI-2 or NLGI-1 (GC-LB)
11	Battery terminal	2	Moderate amount	
12	Cargo lift cylinder pivot	2		
13	Cargo bed pivot	2		
14	Parking brake linkage	2		
15	Range gear shift lever pivot	2		
16	4WD lever pivot	1		
17	VHT pressure release	1		
18	Steering joint shaft	1		
19	Accelerator wire	–		
20	Hand throttle cable	–		Engine oil

■ **NOTE**

- **Engine Oil :**
  Oil used in the engine should have an American Petroleum Institute (API) service classification and Proper SAE Engine Oil according to the ambient temperatures as shown above.
- **Transmission oil :**
  The oil used to lubricate the transmission is also used as hydraulic fluid. To insure proper operation of the hydraulic system and complete lubrication of the transmission, it is important that a multi-grade transmission fluid be used in this system. We recommend the use of KUBOTA SUPER UDT fluid for optimum protection and performance.
  Do not mix different brands or grades.
- **Brake fluid :**
  Always use KUBOTA DOT3 GENUINE BRAKE FLUID from a sealed container. If it is not available, you should use only DOT3 fluid as a temporary replacement from a sealed container.
  However, the use of any non-KUBOTA brake fluid can cause corrosion and decrease the lift of the system. Have the brake system flushed and refilled with KUBOTA DOT3 GENUINE BRAKE FLUID as soon as possible.
- **Indicated capacity of water and oil are manufacturer's estimate.**
- **Lubricating Oil**
  With the emission control now in effect, the CF-4 and CG-4 lubricating oils have been developed for use of a low-sulfur fuel on-road vehicle engines. When an off-road vehicle engine runs on a high-sulfur fuel, it is advisable to employ the CF, CD or CE lubricating oil with a high total base number. If the CF-4 or CG-4 lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals.
- **Lubricating oil recommended when a low-sulfur or high-sulfur fuel is employed.**

Fuel / Lubricating oil class	Low sulfur (0.5 % ≥)	High sulfur	Remarks
CF	❍	❍	TBN ≥ 10
CF-4	❍	X	
CG-4	❍	X	

❍ : Recommendable X : Not recommendable

5. 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	⬡ 4 No-grade or 4T			⬡ 7 7T						⬡ 9 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	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 (6 mm, 0.24 in.)	7.9 to 9.3	0.80 to 0.95	5.8 to 6.8	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
M8 (8 mm, 0.31 in.)	18 to 20	1.8 to 2.1	13 to 15	17 to 19	1.7 to 2.0	13 to 14	24 to 27	2.4 to 2.8	18 to 20	18 to 20	1.8 to 2.1	13 to 15	30 to 34	3.0 to 3.5	22 to 25
M10 (10 mm, 0.39 in.)	40 to 45	4.0 to 4.6	29 to 33	32 to 34	3.2 to 3.5	24 to 25	48 to 55	4.9 to 5.7	36 to 41	40 to 44	4.0 to 4.5	29 to 32	61 to 70	6.2 to 7.2	45 to 52
M12 (12 mm, 0.47 in.)	63 to 72	6.4 to 7.4	47 to 53	–	–	–	78 to 90	7.9 to 9.2	58 to 66	63 to 72	6.4 to 7.4	47 to 53	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

W1034542

[2] STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
Unit / Diameter	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8 (8 mm, 0.31 in.)	12 to 15	1.2 to 1.6	8.7 to 11	8.9 to 11	0.90 to 1.2	6.5 to 8.6
M10 (10 mm, 0.39 in.)	25 to 31	2.5 to 3.2	18 to 23	20 to 25	2.0 to 2.6	15 to 18
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

W1048139

[3] METRIC SCREWS, BOLTS AND NUTS

Grade	Property class 8.8 			Property class 10.9 		
Unit / Nominal Diameter	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8	24 to 27	2.4 to 2.8	18 to 20	30 to 34	3.0 to 3.5	22 to 25
M10	48 to 55	4.9 to 5.7	36 to 41	61 to 70	6.2 to 7.2	45 to 52
M12	78 to 90	7.9 to 9.2	58 to 66	103 to 117	10.5 to 12.0	76 to 86.7
M14	124 to 147	12.6 to 15.0	91.2 to 108	167 to 196	17.0 to 20.0	123 to 144
M16	197 to 225	20.0 to 23.0	145 to 166	260 to 304	26.5 to 31.0	192 to 224

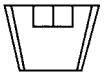
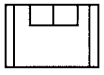
W1016172

[4] AMERICAN STANDARD SCREWS, BOLTS AND NUTS WITH UNC OR UNF THREADS

Grade	SAE GR.5 			SAE GR.8 		
Unit / Nominal Diameter	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
5/16	23.1 to 27.7	2.35 to 2.83	17.0 to 20.5	32.6 to 39.3	3.32 to 4.00	24.0 to 29.0
3/ 8	48 to 56	4.9 to 5.8	35.0 to 42.0	61.1 to 73.2	6.23 to 7.46	45.0 to 54.0
1/ 2	109 to 130	11.1 to 13.2	80.0 to 96.0	149.2 to 178.9	15.21 to 18.24	110.0 to 132.0
9/16	149.2 to 178.9	15.21 to 18.24	110.0 to 132.0	217.0 to 260.3	22.12 to 26.54	160.0 to 192.0
5/ 8	203.4 to 244	20.74 to 24.88	150.0 to 180.0	298.3 to 357.9	30.42 to 36.49	220.0 to 264.0

W1022485

[5] PLUGS

Shape	Size	Material of opponent part					
		Ordinariness			Aluminum		
		N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
Tapered screw 	**R1/8**	13 to 21	1.3 to 2.2	9.4 to 15	13 to 21	1.3 to 2.0	9.4 to 15
	R1/4	25 to 44	2.5 to 4.5	18 to 32	25 to 34	2.5 to 3.5	18 to 25
	R3/8	49 to 88	5.0 to 9.0	37 to 65	49.0 to 58	5.0 to 6.0	37 to 43
	R1/2	59 to 107	6.0 to 11.0	44 to 79.5	59 to 78	6.0 to 8.0	44 to 57
Straight screw 	**G1/4**	25 to 34	2.5 to 3.5	18 to 25	–	–	–
	G3/8	62 to 82	6.3 to 8.4	46 to 60	–	–	–
	G1/2	49 to 88	5.0 to 9.0	37 to 65	–	–	–

0000001666E

6. MAINTENANCE CHECK LIST

[1] FROM FIRST 50 HOURS TO EVERY 550 HOURS

■ **IMPORTANT**

- **The jobs indicated by ★ must be done after the first 50 hours of operation.**

(To be continued)

No.	Item \ Period		Indication on hour meter											Important		Reference page
			50	100	150	200	250	300	350	400	450	500	550			
1	Engine start system	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆			G-27
2	Greasing	Apply	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆			G-28
3	Engine oil	Change	★	☆		☆		☆		☆		☆				G-22
4	Muffler (Spark arrester)	Clean		☆		☆		☆		☆		☆				G-31
5	Wheel screw torque	Check	★	☆		☆		☆		☆		☆				G-23
6	Battery condition	Check		☆		☆		☆		☆		☆				G-33
7	Fan belt tension	Adjust		☆		☆		☆		☆		☆				G-34
8	VHT neutral spring	Check		☆		☆		☆		☆		☆				G-30
9	Toe-in	Adjust		☆		☆		☆		☆		☆				G-35
10	Fuel filter element	Check		☆		☆		☆		☆		☆				G-35
		Replace														–
11	Air cleaner element	Clean		☆		☆		☆		☆		☆				G-32
		Replace														–
12	Fuel line	Check		☆		☆		☆		☆		☆				G-35
		Replace														–
13	Engine oil filter	Replace	★			☆				☆						G-23
14	Transmission oil filter (HST) (Yellow color)	Replace	★			☆				☆						G-25
15	Transmission oil filter (Suction) (Orange color)	Replace	★			☆				☆						G-25
16	Transmission oil	Change	★			☆				☆						G-24
17	Parking brake lever	Adjust	★			☆				☆						G-25
18	Brake light switch	Check	★			☆				☆						G-25
19	Front brake case	Check	★			☆				☆						G-26
20	Hydraulic oil	Change				☆				☆						G-37
21	Hydraulic oil line	Change				☆				☆						G-39
22	Hydraulic tank oil filter (Yellow color)	Replace				☆				☆						G-38
23	Radiator hose and clamp	Check				☆				☆						G-36
		Replace														G-43
24	Power steering oil line	Check				☆				☆						G-38
		Replace														G-43
25	Intake air line	Check				☆				☆						G-39
		Replace														G-43
26	Brake hose and pipe	Check	★			☆				☆						G-26
		Replace														G-46
27	Inner air filter	Clean				☆				☆						G-39
28	Fresh air filter	Clean				☆				☆						G-40
29	Air conditioner condenser	Check				☆				☆						G-40
30	Air conditioner drive belt	Adjust				☆				☆						G-41

W10214620

(Continued)

No.	Item / Period		Indication on hour meter											Important		Reference page
			50	100	150	200	250	300	350	400	450	500	550			
31	Tire wear	Check	★			☆				☆						G-26
32	Front axle case oil	Change								☆						G-41
33	Knuckle axle case oil	Change								☆						G-41
34	Engine valve clearance	Adjust														G-42
35	Fuel injection nozzle injection pressure	Check														G-42
36	Injection pump	Check														G-42
37	Air conditioner pipes and hoses	Check														G-42
		Replace														G-46
38	Brake master cylinder inner parts	Replace														G-43
39	Brake fluid	Change														G-43
40	Remote hydraulic hose	Replace														G-43
41	Rear brake cylinder seal	Replace														G-43
42	Front brake seal	Replace														G-43
43	Cooling system	Flash														G-44
44	Coolant	Change														G-44
45	Fuel system	Bleed														G-46
46	Fuse	Replace														G-47
47	Around engine	Clean														G-46
48	Light bulb	Replace														G-48
49	Washer liquid	Add														G-49
50	Refrigerant (gas)	Check														G-49

W10368570

[2] FROM EVERY 600 HOURS TO EVERY 4 YEARS

■ **IMPORTANT**

- ***1 : Air cleaner should be cleaned more often in dusty conditions than in normal conditions.**
- ***2 : Every year or every 6 times of cleaning.**
- ***3 : Replace only if necessary.**
- ***4 : When the battery is used for less than 100 hours per year, check the fluid level annually.**
- **The items listed below (@ marked) are registered as emission related critical parts by KUBOTA in the U.S.EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the following instruction.**

(To be continued)

No.	Item \ Period		Indication on hour meter							After purchase			Impor-tant		Refe-rence page
			600	650	700	750	800	1500	3000	1 year	2 years	4 years			
1	Engine start system	Check	☆	☆	☆	☆	☆								G-27
2	Greasing	Apply	☆	☆	☆	☆	☆								G-28
3	Engine oil	Change	☆		☆		☆								G-22
4	Muffler (Spark arrester)	Clean	☆		☆		☆								G-31
5	Wheel screw torque	Check	☆		☆		☆								G-23
6	Battery condition	Check	☆		☆		☆						*4		G-33
7	Fan belt tension	Adjust	☆		☆		☆								G-34
8	VHT neutral spring	Check	☆		☆		☆								G-30
9	Toe-in	Adjust	☆		☆		☆								G-35
10	Fuel filter element	Check	☆		☆		☆							@	G-35
		Replace													–
11	Air cleaner element	Clean	☆		☆		☆			☆			*1	@	G-32
		Replace											*2		–
12	Fuel line	Check	☆		☆		☆							@	G-35
		Replace									☆		*3		–
13	Engine oil filter	Replace	☆				☆								G-23
14	Transmission oil filter (HST) (Yellow color)	Replace	☆				☆								G-25
15	Transmission oil filter (Suction) (Orange color)	Replace	☆				☆								G-25
16	Transmission oil	Change	☆				☆								G-24
17	Parking brake lever	Adjust	☆				☆								G-25
28	Brake light switch	Check	☆				☆								G-25
19	Front brake case	Check	☆				☆								G-26
20	Hydraulic oil	Change	☆				☆								G-37
21	Hydraulic oil line	Change	☆				☆								G-39
22	Hydraulic tank oil filter (Yellow color)	Replace	☆				☆								G-38

W10402640

(Continued)

No.	Item / Period		Service Interval							After purchase			Important		Reference page
			600	650	700	750	800	1500	3000	1 year	2 years	4 years			
23	Radiator hose and clamp	Check	☆				☆								G-36
		Replace									☆				G-43
24	Power steering oil line	Check	☆				☆								G-38
		Replace									☆				G-43
25	Intake air line	Check	☆				☆							@	G-39
		Replace									☆		*3		G-43
26	Brake hose and pipe	Check	☆				☆								G-26
		Replace										☆			G-46
27	Inner air filter	Clean	☆				☆								G-39
28	Fresh air filter	Clean	☆				☆								G-40
29	Air conditioner condenser	Check	☆				☆								G-40
30	Air conditioner drive belt	Adjust	☆				☆								G-41
31	Tire wear	Check	☆												G-26
32	Front axle case oil	Change					☆								G-41
33	Knuckle axle case oil	Change					☆								G-41
34	Engine valve clearance	Adjust					☆								G-42
35	Fuel injection nozzle injection pressure	Check						☆						@	G-42
36	Injection pump	Check							☆					@	G-42
37	Air conditioner pipes and hoses	Check								☆					G-42
		Replace									☆				G-46
38	Brake master cylinder inner parts	Replace									☆				G-43
39	Brake fluid	Change									☆				G-43
40	Remote hydraulic hose	Replace									☆				G-43
41	Rear brake cylinder seal	Replace									☆				G-43
42	Front brake seal	Replace									☆				G-43
43	Cooling system	Flash									☆				G-44
44	Coolant	Change									☆				G-44
45	Fuel system	Bleed								Service as required					G-46
46	Fuse	Replace													G-47
47	Around engine	Clean													G-46
48	Light bulb	Replace													G-48
49	Washer liquid	Add													G-49
50	Refrigerant (gas)	Check													G-49

W10484820

7. CHECK AND MAINTENANCE

[1] DAILY CHECK

To prevent trouble from occurring, it is important to know the condition of the vehicle well. Check it before starting.

CAUTION

- **Be sure to check and service the vehicle on a level surface with the engine shut off and the parking brake "ON" and implement lowered to the ground if equipped.**

Walk Around Inspection

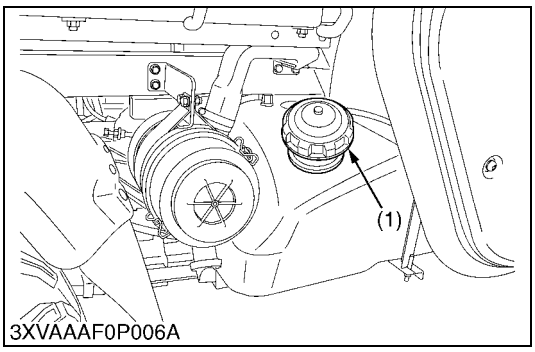
1. Look around and under the vehicle for such items as loose bolts, trash build-up, oil or coolant leaks, broken or worn parts.

W10536540

Checking Around Engine

1. Park the vehicle on a firm, flat and level surface.
2. Stop the engine and remove the key.
3. Tilt the seat and remove the utility box.
4. Check around the engine for mud or foreign materials.
5. Remove all foreign materials if they are found.

W10403340



Checking and Refueling

CAUTION

- **Do not smoke while refueling.**
- **Be sure to stop the engine before refueling.**

1. Turn the key switch to **"ON"** check the amount of furl by fuel gauge.
2. Fill fuel tank when fuel gauge shows 1/4 or less fuel in tank.
3. Use grade No. 2-Diesel fuel at temperatures above -10 °C (14 °F).
   Use grade No. 1-Diesel fuel at temperatures below -10 °C (14 °F).

Fuel tank capacity	30 L 7.9 U.S.gals 6.0 Imp.gals

■ **IMPORTANT**

- **Do not permit dirt or trash to get into the fuel system.**
- **Be careful not to let the fuel tank become empty, otherwise air will enter the fuel system, necessitating bleeding before next engine start.**
- **Be careful not to spill during refueling. If should spill, wipe it off at once, or it may cause a fire.**
- **To prevent water condensation from accumulating in the fuel tank, fill the tank before parking overnight.**

■ **NOTE**

- **No. 2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service. (SAE J313 JUN87)**
- **Grade of Diesel Fuel Oil According to ASTM D975.**

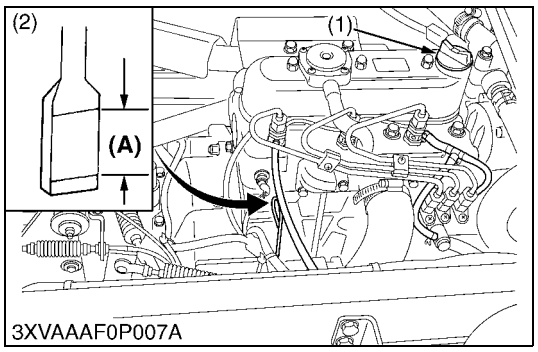
Flash point °C (°F)	Water and Sediment, volume %	Carbon Residue on, 10 percent Residuum, %	Ash, weight %
Min	Max	Min	Max
52 (125)	0.05	0.35	0.01

Distillation Temperatures, °C (°F) 90% Point		Viscosity Kinematics cSt or mm^2/S at 40 °C		Viscosity Saybolt, SUS at 100 °F	
Min	Max	Min	Max	Min	Max
282 (540)	338 (640)	1.9	4.1	32.6	40.1

Sulfur, weight %	Copper strip Corrosion	Cetane Number
Max	Max	Min
0.50	No.3	40

(1) Fuel Tank Cap

W10537280



Checking Engine Oil Level

CAUTION

- **Be sure to stop the engine before checking the oil level.**

1. Park the vehicle on a flat surface, raise the cargo bed and mount the safety support.
2. Check engine oil before starting the engine or 5 minutes or more after the engine has stopped.
3. To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level lies between the two notches.
   If the level is too low, add new oil to the prescribed level at the oil inlet.

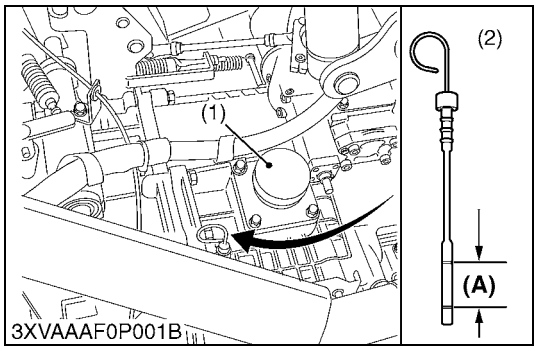
■ **IMPORTANT**

- **When using an oil of different maker or viscosity from the previous one, remove all of the old oil.**
  Never mix two different types of oil.
- **If oil level is low, do not run engine.**

Engine oil capacity	Oil filter exchanged	4.1 L 4.3 U.S.qts 3.6 Imp.qts
	Oil filter non-exchanged	3.8 L 4.0 U.S.qts 3.3 Imp.qts

(1) Oil Inlet
(2) Dipstick
(A) Oil level is acceptable within this range.

W10544680



Checking Transmission Fluid Level

1. Park the vehicle on a flat surface, lower the implement and shut off engine.
2. To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level lies between the two notches.
   If the level is too low, add new oil to the prescribed level at the oil inlet. (Refer to "**4. LUBRICANT, FUEL AND COOLANT**" in "**G. GENERAL**" section.)

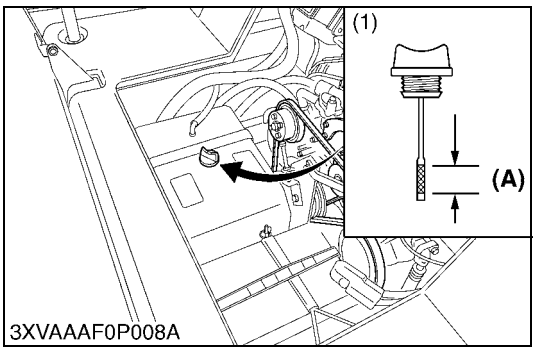
■ **IMPORTANT**

- **If oil level is low, do not run engine.**

Transmission oil capacity	12 L 3.2 U.S.gals 2.6 Imp.gals

(1) Oil Inlet
(2) Dipstick
(A) Oil level is acceptable within this range.

W10548160



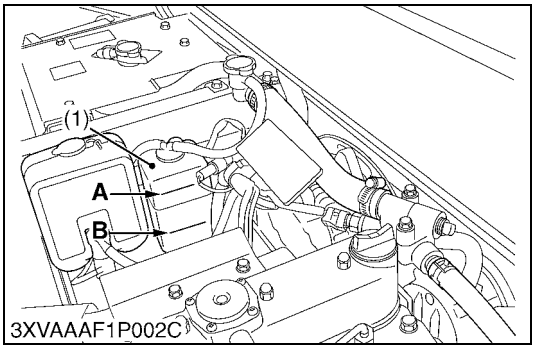
Checking Hydraulic Oil Tank Level

1. Park the vehicle on a flat surface.
2. Stop the engine and remove the key.
3. Tilt the seat and remove the utility box.
4. To check the oil level, remove the dipstick, wipe it clean, screw it into filling hole and remove dipstick again.
   If the level is too low, add new oil to the prescribed level at the oil inlet. (Refer to "**4. LUBRICANT, FUEL AND COOLANT**" in "**G. GENERAL**" section.)

■ **IMPORTANT**
- **If oil level is low, do not run engine.**

(1) Filling Plug with Dipstick
(A) Oil level is acceptable within this range.

W10405060



Checking Coolant Level

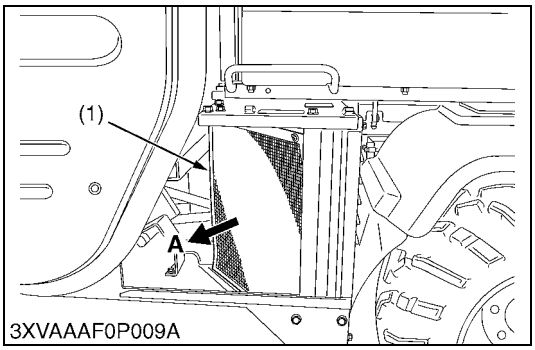
CAUTION
- **Do not remove radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely.**

1. Park the vehicle on a flat surface, raise the cargo bed, mount the safety support and shut off the engine.
2. Check to see that the coolant level is between the **"FULL"** and **"LOW"** marks of recovery tank.
3. When the coolant level drops due to evaporation, add water only up to the full level.
   In case of leakage, add anti-freeze and water in the specified mixing ratio up to the full level.
   See "**Flush Cooling System and Changing Coolant**" in this section.

■ **IMPORTANT**
- **If the radiator cap has to be removed, follow the caution above and securely retighten the cap.**
- **Use clean, fresh water and anti-freeze to fill the recovery tank.**
- **If water should leak, check the cooling system.**

(1) Recovery Tank
A : FULL
B : LOW

W1055128



Cleaning Radiator Screen

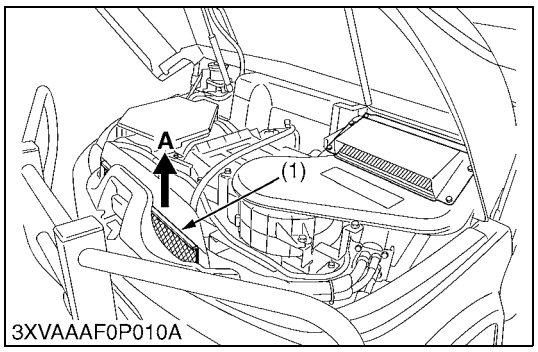
CAUTION
- **Be sure to stop the engine before removing the screen.**

1. Park the vehicle on flat surface and remove the radiator side cover.
2. Detach the screen and remove all foreign materials.

■ **IMPORTANT**
- **Radiator screen must be clean from debris to prevent engine from overheating.**

(1) Radiator Screen
(2) Cover
A : DETACH

W1055616

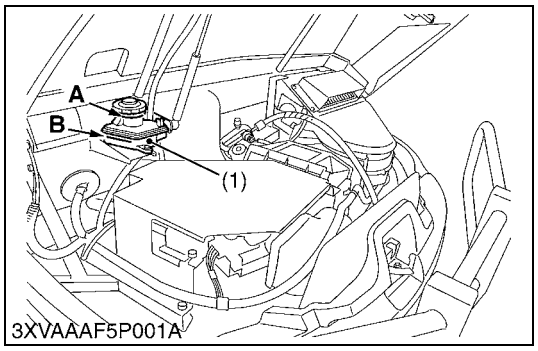


Cleaning Air Conditioner Condenser Screen

1. Park the vehicle on a flat surface and open the hood.
2. Detach the air conditioner condenser screen and remove all foreign materials.

(1) Air Conditioner Condenser Screen **A : DETACH**

W1040763



Checking Brake Fluid Level

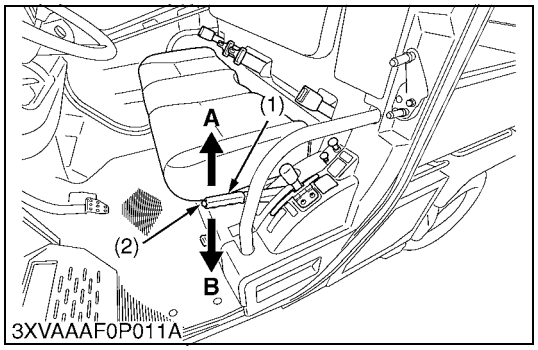
CAUTION

- **Never operate the vehicle, if the brake fluid is below the "MIN" mark.**
- **Use only KUBOTA DOT3 GENUINE BRAKE FLUID from a sealed container. Using other type of oil ruins synthetic resin or rubber installed in brake system components, and may cause brake failure.**
- **Avoid contamination of the brake fluid. Thoroughly clean area around the filler cap before removing. Do no open the brake fluid reservoir cap unless absolutely necessary.**
- **Use extreme care when filling the reservoir. If brake fluid is spilled on power steering hose, wash off with water immediately. Brake fluid quickly ruins synthetic resin or rubber hoses.**

1. Park the vehicle on level ground and open hood.
2. Check to see that the brake fluid level is between the **"MAX"** and **"MIN"** marks.
3. If it is below the **"MIN"** mark, add brake fluid to the **"MAX"** mark.

(1) Oil Tank Cap **A : MAX**
B : MIN

W1055884



Checking Parking Brake

1. Pull the parking brake lever to apply the brakes. With the key switch at **"ON"** position, the parking brake indicator on the instrument panel lights up. To release the brakes, push in the button at the tip of the parking brake lever and tilt down the lever.

■ **NOTE**

- **Make sure the parking brake warning lamp on the Easy Checker (TM) goes off when parking brake lever is down.**

(1) Parking Brake Lever **A : Pull**
(2) Release Button **B : Release**

W1056498

Checking Gauges, Meter and Easy Checker (TM)

1. Inspect the instrument panel for broken gauge(s), meter(s) and Easy Checker lamps.
2. Replace if broken.

W1056786

Checking Head Light, Turn Signal Light etc.

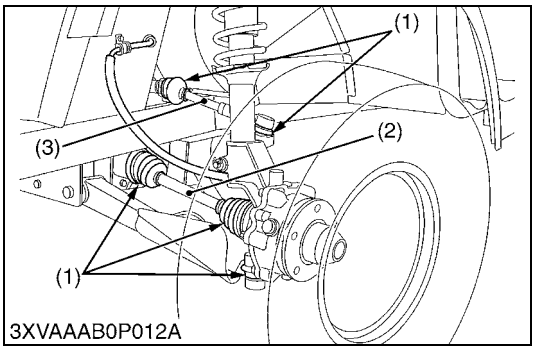
1. Inspect the lights for broken bulbs and lenses.
2. Replace if broken.

W1056880

Checking Seat Belt

1. Always check condition of seat belt before operating vehicle.
2. Replace if damaged.

W1056955

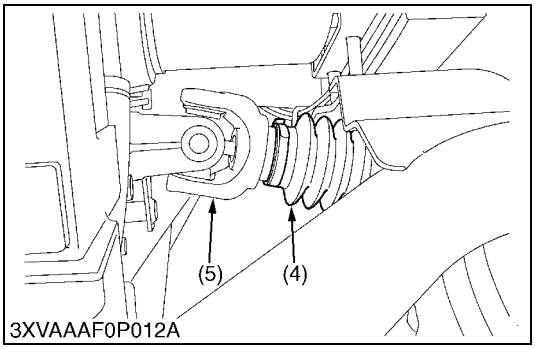


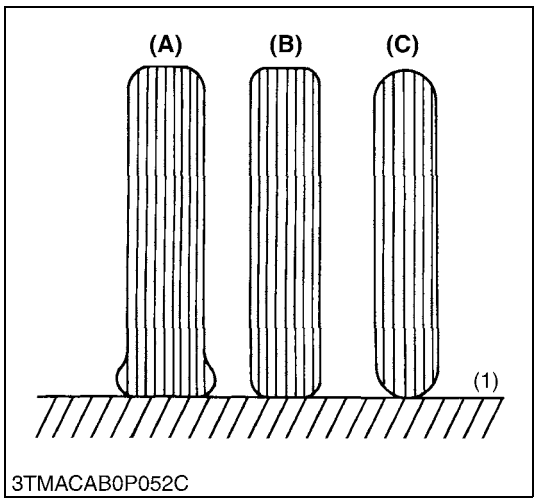
Checking Joint Boot

1. Check to see if the joint boots are not damaged.
2. If the boots are cuts, cracked or deterioration, replace the new one. (Refer to "**3. CHECKING, DISASSEMBLING AND SERVICING**" in "**3. REAR AXLE**" and "**5. FRONT AXLE**" section.)

(1) Joint Boot (Front)
(2) Front Drive Shaft
(3) Tie-rod
(4) Joint Boot (Rear)
(5) Rear Drive Shaft

W1057102





Checking Tire Inflation Pressure

Though the tire pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Thus, check it everyday and inflate as necessary.

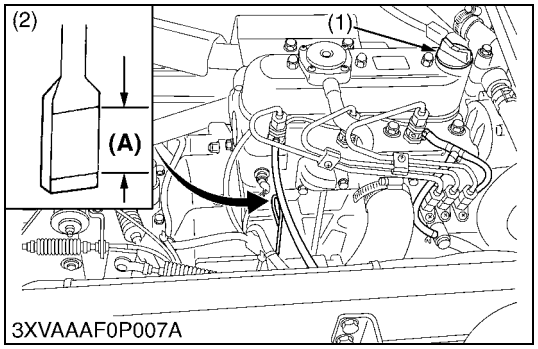
Tire sizes	Inflation pressure
25 x 10 - 12 HDWS, Front and Rear	140 kPa (1.43 kgf/cm^2, 20.3 psi)
25 x 12 - 12 Turf, Front and Rear	
25 x 10 - 12 ATV, Front 25 x 11 - 12 ATV, Rear	

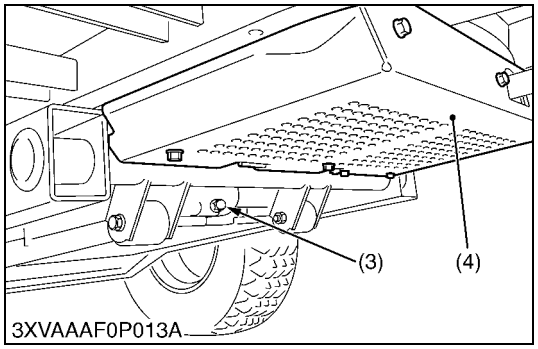
(1) Ground

(A) Insufficient
(B) Normal
(C) Excessive

W1034256

[2] CHECK POINTS OF INITIAL 50 HOURS





Changing Engine Oil

CAUTION

- **Be sure to stop the engine before changing the oil.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

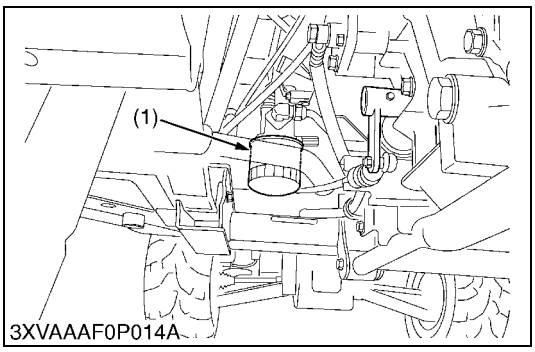
1. Park the vehicle on a flat surface, raise the cargo bed and mount the safety support.
2. To drain the used oil, remove the protect cover (4) and the drain plug (3) at the bottom of the engine and completely drain the oil into an oil pan.
   All the used oil can be drained out easily when the engine is still warm.
3. After draining reinstall the drain plug (3).
4. Fill with the new oil up to the upper notch on the dipstick. (Refer to "**4. LUBRICANT, FUEL AND COOLANT**" in "**G. GENERAL**" section.)
5. Attach the protect cover (4).

Engine oil capacity (with filter)	4.1 L 4.3 U.S.qts 3.6 Imp.qts

(1) Oil Inlet
(2) Dipstick
(3) Drain Plug
(4) Protect Cover

(A) Oil level is acceptable within this range.

W1057798



Replacing Engine Oil Filter

CAUTION

- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

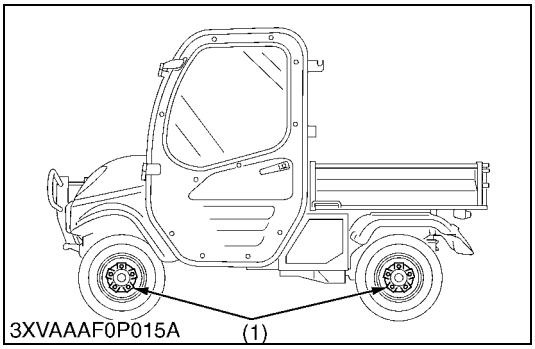
1. Remove the oil filter (1).
2. Put a film of clean engine oil on the rubber seal of the new filter.
3. Tighten the filter quickly until it contacts the mounting surface. Tighten filter by hand an additional 1/2 turn only.
4. After the new filter has been replaced, the engine oil normally decreases a little. Make sure that the engine oil does not leak through the seal and be sure to check the oil level on the dipstick. Then, replenish the engine oil up to the prescribed level.

■ **IMPORTANT**

- **To prevent serious damage to the engine, use only a KUBOTA genuine filter.**

(1) Engine Oil Filter

W1058183



Checking Wheel Screw Torque

CAUTION

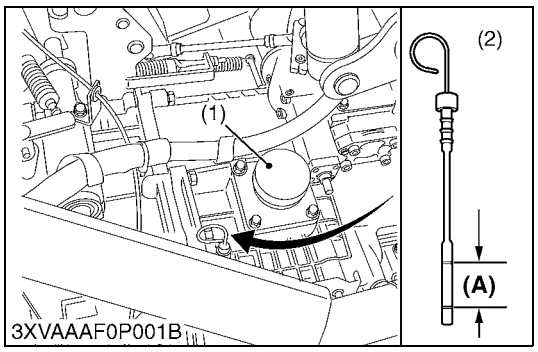
- **Never operate vehicle with a loose wheel screw.**
- **Any time screws are loosened, retighten to the specified torque.**
- **Check all screw frequently and keep them tight.**

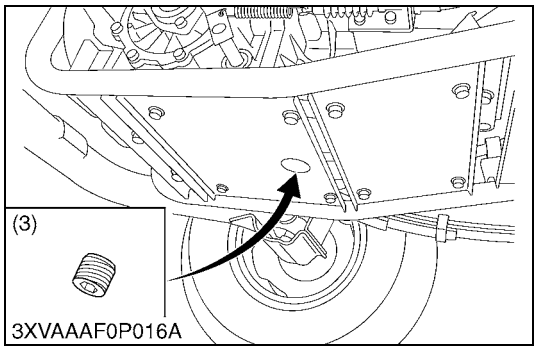
1. Check wheel screws (1) regularly especially when new. If they are loose, tighten them as follows.

Tightening torque	Wheel mounting screw	75 to 90 N·m 7.6 to 9.2 kgf·m 55 to 66 lbf·ft

(1) Wheel Mounting Screw

W1059106





Changing Transmission Oil

CAUTION

- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. Park the vehicle on a flat surface, raise the cargo bed, mount the safety support and shut off the engine.
2. To drain the used oil, remove the drain plug (3) at the bottom of the transmission case and drain the oil completely into the oil pan.
3. Clean off metal fillings with clean rags at the drain plug with magnet (3).
4. After draining reinstall the drain plug (3).

Tightening torque	Drain plug	58 to 67 N·m 5.9 to 6.9 kgf·m 43 to 49 lbf·ft

5. Fill with the new KUBOTA SUPER UDT fluid up to the upper notch on the dipstick (2). (Refer to "**4. LUBRICANT, FUEL AND COOLANT**" in "**G. GENERAL**" section.)
6. After running the engine for a few minutes, stop the engine and check the oil level again; add oil to prescribed level.

■ **IMPORTANT**

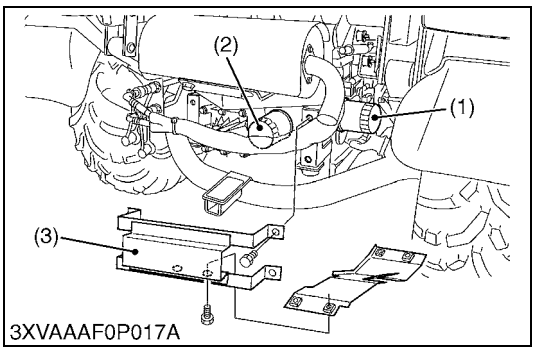
- **Do not operate the vehicle immediately after changing the transmission fluid.**
  Run the engine at medium speed for a few minutes to prevent damage to the transmission.

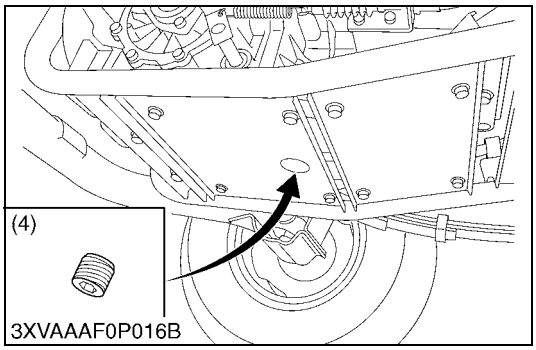
Transmission oil capacity	12 L 3.2 U.S.gals 2.6 Imp.gals

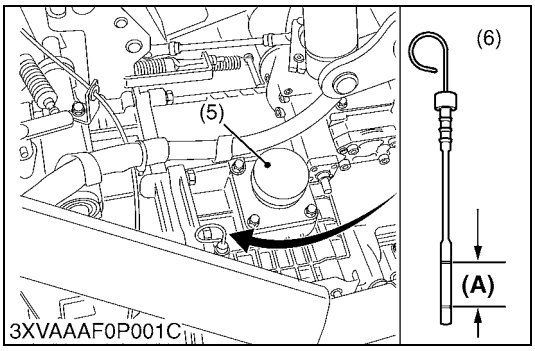
(1) Oil Inlet
(2) Dipstick
(3) Drain Plug

(A) Oil level is acceptable within this range.

W1059382







Replacing Transmission Oil Filter

CAUTION

- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine too cool down sufficiently, oil can be hot and can burn.**

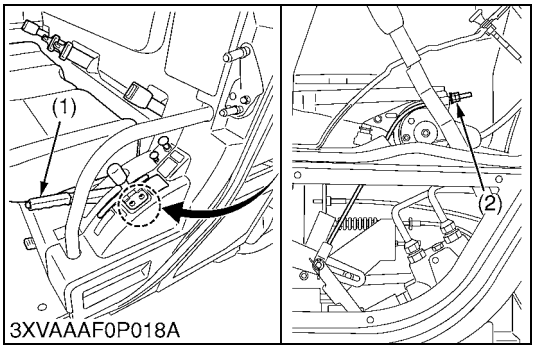
1. Remove the drain plug (4) at the bottom of the transmission case and drain the oil completely into the oil pan.
2. Clean off metal fillings with clean rags at the drain plug with magnet (4).
3. After draining reinstall the drain plug (4).
4. Remove the rear guard.
5. Remove the oil filters.
6. Put a film of clean transmission oil on the rubber seal of the new filter.
7. Quickly tighten the filter until it contacts the mounting surface, then, with a filter wrench, tighten it an additional 1 turn only.
8. After the new filter has been replaced, fill the transmission oil up to the upper notch on the dipstick (6).
9. After running the engine for a few minutes, stop the engine and check the oil level again, add oil to the prescribed level.
10. Make sure that the transmission fluid does not leak past the seal on the filters.
11. Install the rear guard.

■ **IMPORTANT**

- **To prevent serious damage to the transmission, use only a KUBOTA genuine filter.**

(1) Transmission Oil Filter (HST) (Yellow Color)
(2) Transmission Oil Filter (Suction) (Orange Color)
(3) Rear Guard
(4) Drain Plug
(5) Oil Inlet
(6) Dipstick
(A) Oil level is acceptable within this range.

W1059727



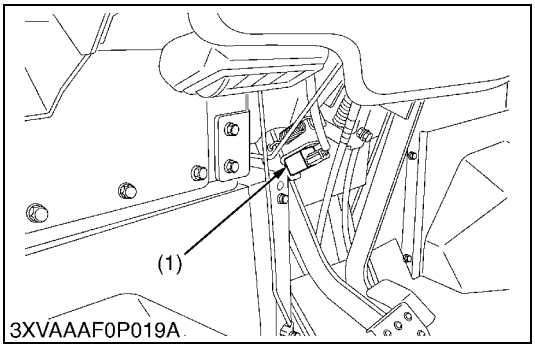
Adjusting Parking Brake

1. Release the parking brake.
2. Loosen the lock nut, and adjust the cable wire length.
3. Tighten the lock nut (2), and check the free play.

Proper parking brake lever free play range	Factory spec.	1 notch

(1) Parking Brake Lever (2) Lock Nut

W1061323

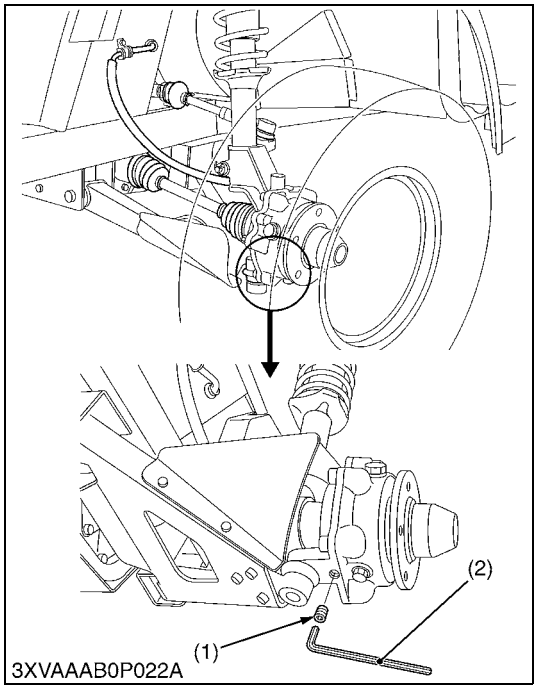


Checking Brake Light Switch

1. Turn the key switch to the **"ON"** position.
2. Step on the brake pedal to check if the brake light comes on.
3. If it does not, check the bulb or brake light switch (1).

(1) Brake Light Switch

W1061550

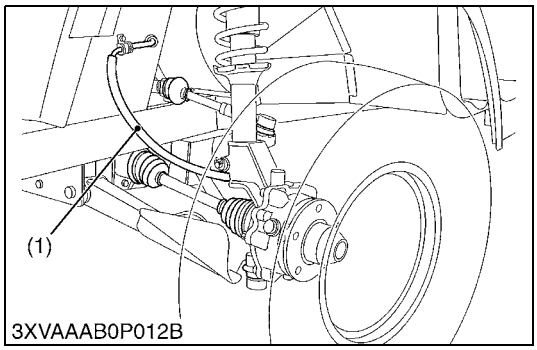


Checking Front Brake Case

1. Remove the drain plug.
2. Check the brake case for brake fluid leak.
3. If there is brake fluid leak, check the brake seals. (Refer to "**[2] DISASSEMBLING AND ASSEMBLING**" of "**4. CHECKING, DISASSEMBLING AND SERVICING**" in "**4. BRAKES**" and "**5. FRONT AXLE**" section.)

(1) Drain Plug (2) Allen Wrench

W1061972

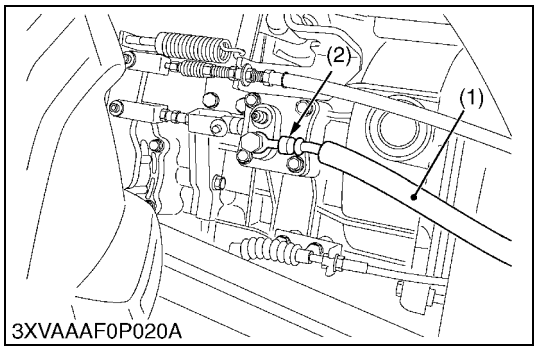


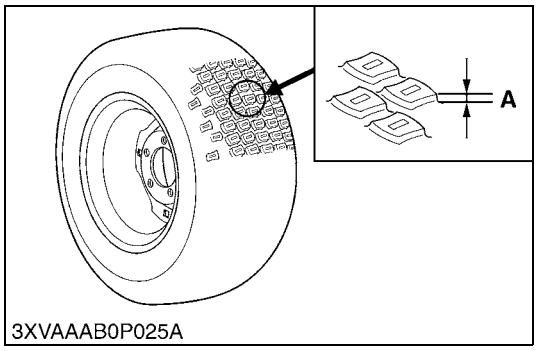
Checking Brake Hose and Pipe

1. Check to see that brake hose and pipe are not swollen, hardened or cracked.
2. Check the brake hose (1) and pipe joints for oil leaks.
3. If there is any abnormality, replace the new one.

(1) Brake Hose (2) Brake Pipe

W1062177





Checking Tire

1. Check to see if tires are not damaged.
2. If the tires are cracked, bulged, or cut, or they are worn out, replace or repair them at once.

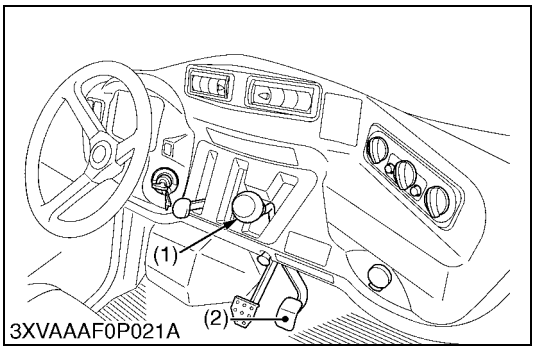
■ **Tire Tread Depth**

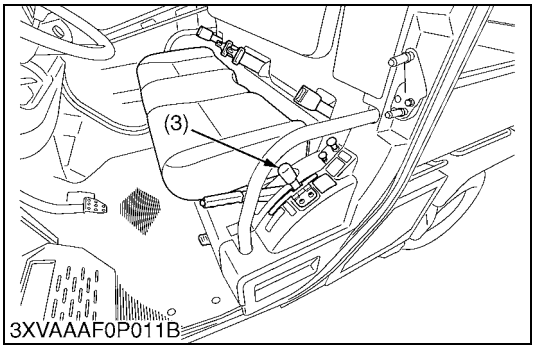
Always replace the tires when the tread depth is worn to minimum allowable.

A : 3 mm (0.12 in.)

W1062371

[3] CHECK POINTS OF EVERY 50 HOURS





Checking Engine Start System

CAUTION

- **Do not allow anyone near the vehicle while testing.**
- **If the vehicle does not pass the test do not operate the vehicle.**

■ **Preparation before testing**

1. Place all control levers in the **"NEUTRAL"** position.
2. Set the parking brake and stop the engine.

■ **Test : Switch the range gear shift lever**

1. Sit on the operator's seat.
2. Shift the range gear shift lever (1) to **H**, **M**, **L** or reverse position.
3. Return the speed control pedal (2) to the **"NEUTRAL"** position.
4. Shift the hydraulic lift cylinder lever (3) to the **"NEUTRAL"** position.
5. Turn the key to **"START"** position.
6. The engine must not crank.
7. If it cranks, adjust or replace the required safety switch.

(1) Range Gear Shift Lever
(2) Speed Control Pedal
(3) Hydraulic Lift Cylinder Lever

W1062701