

WSM

WORKSHOP MANUAL
TRACTOR

L3800

Kubota

TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of KUBOTA Tractor L3800. It is divided into three parts, "General", "Mechanism" and "Servicing" for each section.

■ General

Information on the tractor identification, the general precautions, maintenance check list, check and maintenance and special tools are described.

■ Mechanism

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

Refer to Diesel Engine / Tractor Mechanism Workshop Manual (Code No. 97897-01873 / 97897-18200) for the one which has not been described to this workshop manual.

■ Servicing

Information on the troubleshooting, servicing specification lists, tightening torque, 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.

May 2006

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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.



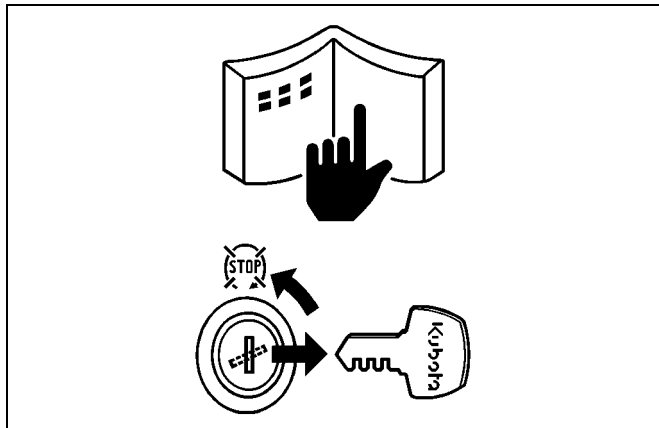
IMPORTANT

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



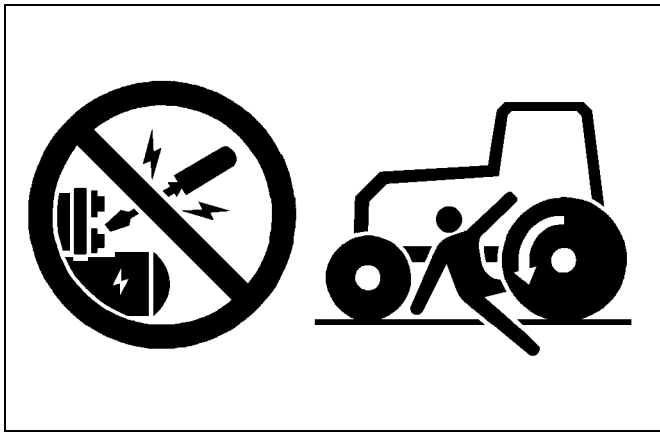
NOTE

: Gives helpful information.



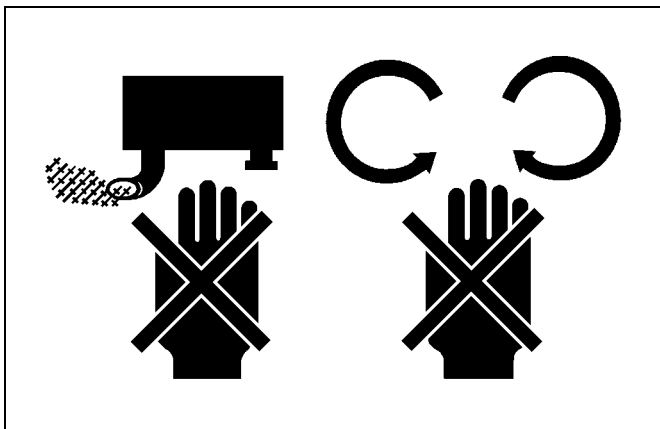
BEFORE SERVICING AND REPAIRING

- Read all instructions including safety instructions in this manual and your machine safety decals.
- Clean the work area and machine.
- Park the machine on 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" label on the operators platform.



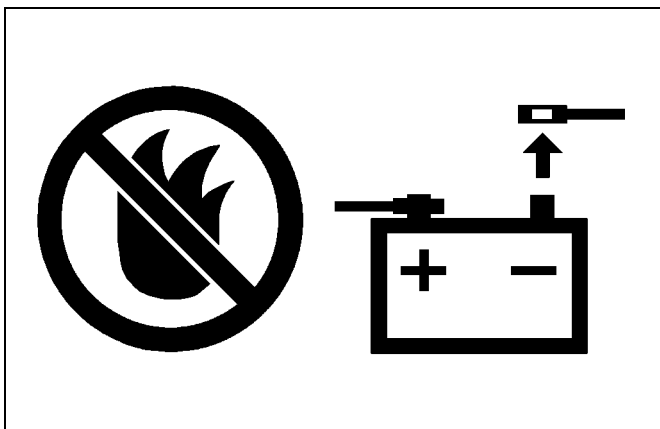
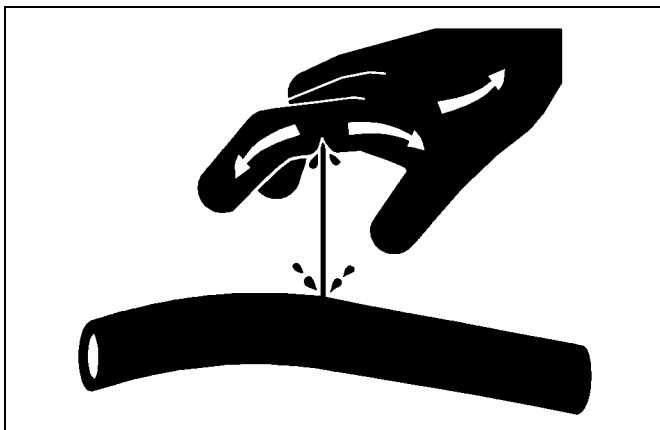
SAFETY STARTING

- 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.



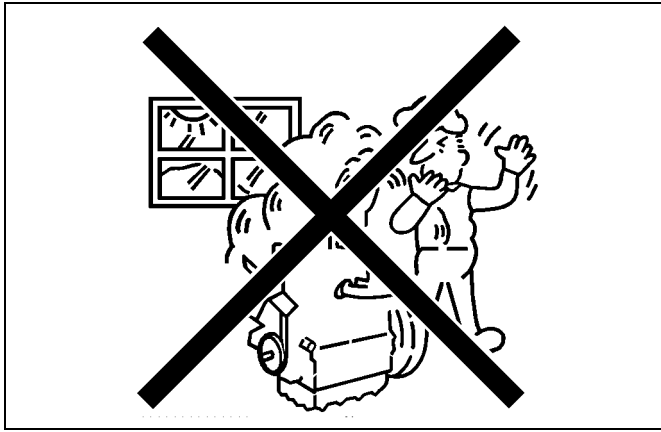
SAFETY WORKING

- 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.



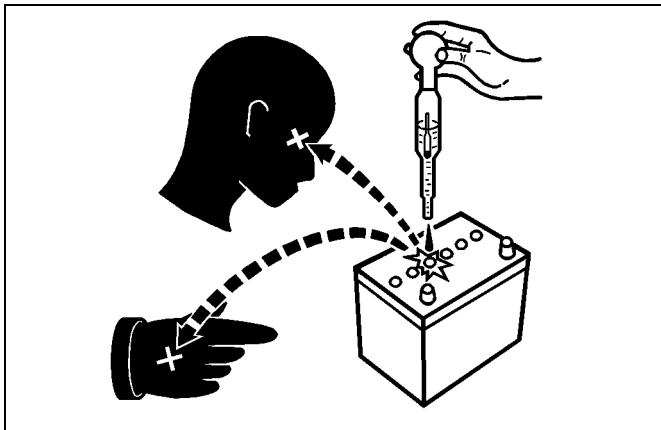
AVOID FIRES

- 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.
- Make sure that no fuel has been spilled on the engine.



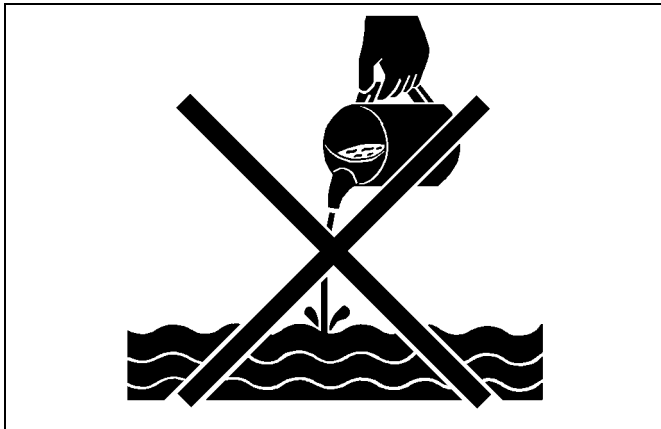
VENTILATE WORK AREA

- 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.



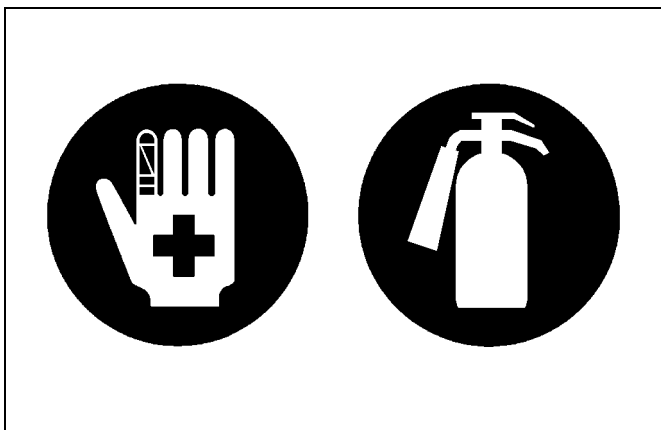
PREVENT ACID BURNS

- 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.

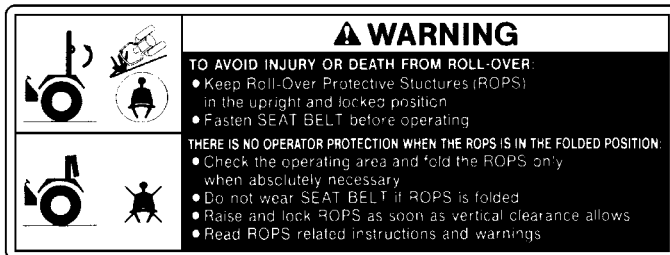
SAFETY DECALS

The following safety decals are installed on the 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.

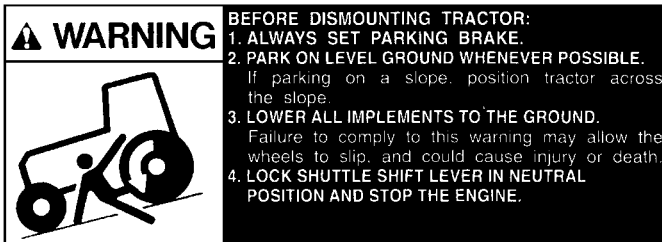
[Rear Mount Type ROPS] (For France, Germany, United Kingdom)

(1) Part No. 3A111-9848-2



1AGAMAAAP2370

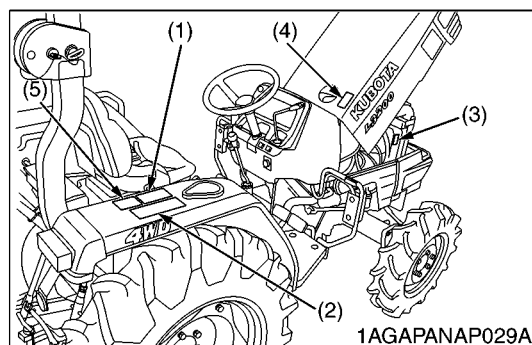
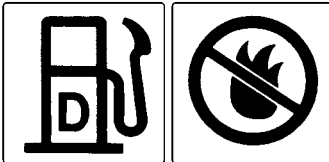
(2) Part No. TA140-4933-1



1AGAMAAAP4000

(4) Part No. TA040-4956-2

Diesel fuel only. No fire



1AGAPANAP029A

3TLAAAACP001A

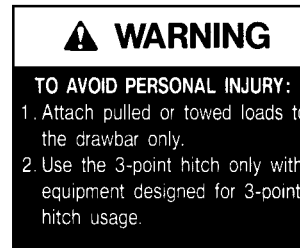
(3) Part No. 6C090-4958-2

Stay clear of engine fan and fan belt.



1AGAMAAAP2620

(5) Part No. TA040-4935-1



1AGAMAAAP2500

(1) Part No. TD020-3012-2

 NS70MF 12V AMP. HR (5HR) 52 RESERVE CAPACITY (MIN) 123 COLD CRANKING AMPS (-18°C) 490	 FLAMMABLES SHIELD EYES KEEP OUT OF THE REACH OF CHILDREN CAUTION OF SULFURIC ACID READ INSTRUCTION MANUAL CAREFULLY EXPLOSIVE	HYDROMETER OK CHARGE BATTERY REPLACE BATTERY DK 92109																						
<p>DANGER</p> <ul style="list-style-type: none"> • DUE TO HYDROGEN GAS GENERATED FROM BATTERY, HANDLING WITHOUT CARE CAN CAUSE FIRE AND EXPLOSION. • THIS 12V BATTERY IS ONLY FOR STARTING ENGINE. DO NOT APPLY THIS PRODUCT FOR OTHER USES. • CHARGE THIS BATTERY ONLY AT WELL VENTILATED PLACES, AND AVOID SHORTS OR SPARKS. • REFER TO THE INSTRUCTION MANUAL OF VEHICLE OR BATTERY BEFORE USING BOOSTER CABLE. • SULFURIC ACID MAY CAUSE BLINDNESS OR SEVERE BURN. IN CASE EYES, SKIN, CLOTHES OR ANY ARTICLES ARE STAINED WITH ACID, FLUSH OBJECTS IMMEDIATELY WITH WATER. IF ACID BEING SWALLOWED, DRINK PLENTY OF WATER PROMPTLY. IN CASE OF ACCIDENTAL CONTACT, CONSULT A DOCTOR IMMEDIATELY. • BATTERY FILLED WITH ACID (DO NOT TILT OR SPILL) • FLAMMABLE. DO NOT CHARGE NEAR FIRE OR SPARKS • DO NOT CHARGE RAPIDLY • DO NOT DISASSEMBLE THE BATTERY (SEALED TYPE) 																								
<h1>NS70MF</h1>																								
<h1>75D26R</h1>																								
FITTING DATE <table border="1"> <tr> <td>8</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td> </tr> </table> YEAR MONTH			8	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	10	11	12
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1	2	3	4	5	6	7	8	9	10	11	12													
<p>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.</p>		<p>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</p>																						

1AGAMAAAP0810

(2) Part No. TA040-4965-2

 	<p>⚠ DANGER</p> <p>TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.</p> <ol style="list-style-type: none"> 1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed. 2. Start engine only from operator's seat with transmission and PTO OFF. Never start engine while standing on the ground.
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1AGAMAAAP2450

(3) Part No. 6C090-4958-2

Stay clear of engine fan and fan belt.



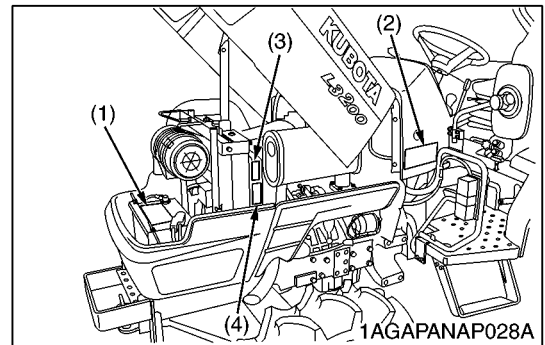
1AGAMAAAP2620

(4) Part No. TC030-4958-1

Do not touch hot surface like muffler, etc.



1AGAMAAAP2400



1AGAPANAP028A

3TLAAAACP002A


(1) Part No. 35260-3491-4

CAUTION**TO AVOID PERSONAL INJURY:**

1. Read and understand the operator's manual before operation.
2. Before starting the engine, make sure that everyone is at a safe distance from the tractor and that the PTO is OFF.
3. Do not allow passengers on the tractor at any time.
4. Before allowing other people to use the tractor, have them read the operator's manual.
5. Check the tightness of all nuts and bolts regularly.
6. Keep all shields in place and stay away from all moving parts.
7. Lock the two brake pedals together before driving on the road.
8. Slow down for turns, or rough roads, or when applying individual brakes.
9. On public roads use SMV emblem and hazard lights, if required by local traffic and safety regulations.
10. Pull only from the drawbar.
11. Before dismounting, lower the implement to the ground, set the parking brake, stop the engine and remove the key.
12. Securely support tractor and implements before working underneath.

1AGAMAAAP2390

(2) Part No. TA040-4959-3

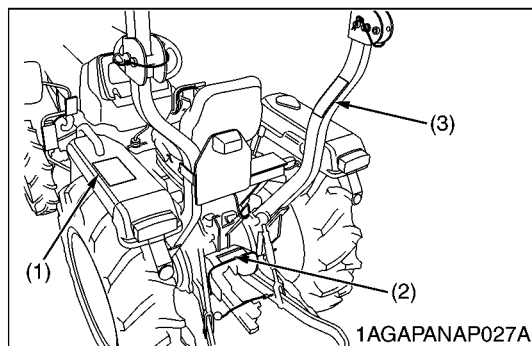


WARNING

TO AVOID PERSONAL INJURY:

1. Keep PTO shield in place at all times.
2. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer.
3. For trailing PTO-driven implements, set drawbar at towing position. (see operator's manual)

1AGAMAAAP2470



(3) Part No. 3A111-9554-1

[Rear mount type ROPS]**WARNING**

Never modify or repair a ROPS because welding, grinding, drilling or cutting any portion may weaken the structure.

CAUTION**TO AVOID INJURY WHEN RAISING OR FOLDING ROPS:**

- Set parking brake and stop engine.
- Remove any obstruction that may prevent raising or folding of the ROPS.
- Do not allow any bystanders.
- Always perform function from a stable position at the rear of the tractor.
- Hold the top of the ROPS securely when raising or folding.
- Make sure all pins are installed and locked.

1AGAMAAAP2380

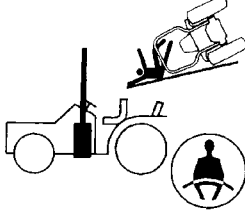
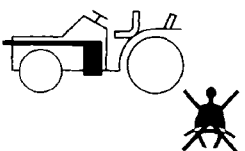
CARE OF DANGER, WARNING AND CAUTION LABELS

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 or 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.

3TLAAAECPO03A

[Mid Mount Type ROPS] (For Spain, Portugal, Italy, Greece)

(1) Part No. 3A431-9848-1

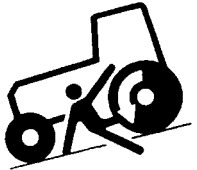
	<p>⚠ WARNING</p> <p>TO AVOID INJURY OR DEATH FROM ROLL-OVER:</p> <ul style="list-style-type: none"> • Keep Roll-Over Protective Structures (ROPS) in upright position. • Check operating environment for vertical clearance for ROPS. • Fasten SEAT BELT before operation.
	<p>IN FOLDED POSITION, ROPS PROTECTION IS ELIMINATED:</p> <ul style="list-style-type: none"> • Do not fasten SEAT BELT when ROPS is folded. • Raise ROPS as soon as vertical clearance allows, and read related instructions and warnings.

(5) Part No. 6C090-4958-2
Stay clear of engine fan and fan belt



1AGAMAAAP2620

(2) Part No. TA140-4933-1

<p>⚠ WARNING</p> 	<p>BEFORE DISMOUNTING TRACTOR:</p> <ol style="list-style-type: none"> 1. ALWAYS SET PARKING BRAKE. 2. PARK ON LEVEL GROUND WHENEVER POSSIBLE. If parking on a slope, position tractor across the slope. 3. LOWER ALL IMPLEMENTS TO THE GROUND. Failure to comply to this warning may allow the wheels to slip, and could cause injury or death. 4. LOCK SHUTTLE SHIFT LEVER IN NEUTRAL POSITION AND STOP THE ENGINE.
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1AGAMAAAP4000

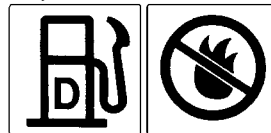
(3) Part No. TC229-4746-1

<p>⚠ WARNING</p> <p>Never modify or repair a ROPS because welding, grinding, drilling or cutting any portion may weaken the structure.</p>
<p>⚠ CAUTION</p> <p>TO AVOID INJURY WHEN RAISING OR FOLDING ROPS:</p> <ul style="list-style-type: none"> • Set parking brake and stop engine. • Remove any obstruction that may prevent raising or folding of the ROPS. • Do not allow any bystanders. • Always perform function from a stable position at the side of the tractor. • Hold the ROPS securely when raising or folding. • Make sure bolts are installed and locked.

3TLAAAECP004A

(4) Part No. TA040-4956-2

Diesel fuel only No fire

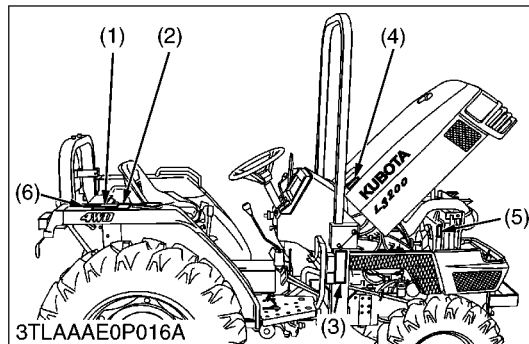


1AGAMAAAP2480

(5) Part No. TA040-4935-1

<p>⚠ WARNING</p> <p>TO AVOID PERSONAL INJURY:</p> <ol style="list-style-type: none"> 1. Attach pulled or towed loads to the drawbar only. 2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.
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1AGAMAAAP2500



3TLAAAE0P016A

(1) Parts No. TD020-3012-2

 RECYCLE	 FLAMMABLES	 SHIELD EYES	 KEEP OUT OF THE REACH OF CHILDREN	 CAUTIONS OF SULFURIC ACID	 READ INSTRUCTION MANUAL CAREFULLY	 EXPLOSIVE
NS70MF 12V AMP. HR (5HR) 52 RESERVE CAPACITY (MIN) 123 COLD CRANKING AMPS (-18°C) 490	DUE TO HYDROGEN GAS GENERATED FROM BATTERY, HANDLING WITHOUT CARE CAN CAUSE FIRE AND EXPLOSION. THIS 12V BATTERY IS ONLY FOR STARTING ENGINE. DO NOT APPLY THIS PRODUCT FOR OTHER USES. CHARGE THIS BATTERY ONLY AT WELL VENTILATED PLACES, AND AVOID SHORTS OR SPARKS. REFER TO THE INSTRUCTION MANUAL OF VEHICLE OR BATTERY BEFORE USING BOOSTER CABLE. SULFURIC ACID MAY CAUSE BLINDNESS OR SEVERE BURN. IN CASE EYES, SKIN, CLOTHES OR ANY ARTICLES ARE STAINED WITH ACID, FLUSH OBJECTS IMMEDIATELY WITH WATER. IF ACID BEING SWALLOWED, DRINK PLENTY OF WATER PROMPTLY. IN CASE OF ACCIDENTAL CONTACT, CONSULT A DOCTOR IMMEDIATELY. BATTERY FILLED WITH ACID (DO NOT TILT OR SPILL) - FLAMMABLE. DO NOT CHARGE NEAR FIRE OR SPARKS. DO NOT CHARGE RAPIDLY - DO NOT DISASSEMBLE THE BATTERY (SEALED TYPE)					HYDROMETER OK CHARGE REPLACE BATTERY BATTERY DK 92109
NS70MF		75D26R FITTING DATE 0 1 2 3 4 5 6 7 8 9 YEAR 1 2 3 4 5 6 7 8 9 10 11 12 MONTH				
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.			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			

1AGAMAAAP0810

(2) Parts No. TA040-4965-2

 	⚠ DANGER TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY. 1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed. 2. Start engine only from operator's seat with transmission and PTO OFF. Never start engine while standing on the ground.
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1AGAMAAAP2450

(3) Parts No. 6C090-4958-2

Stay clear of engine fan an fan belt.



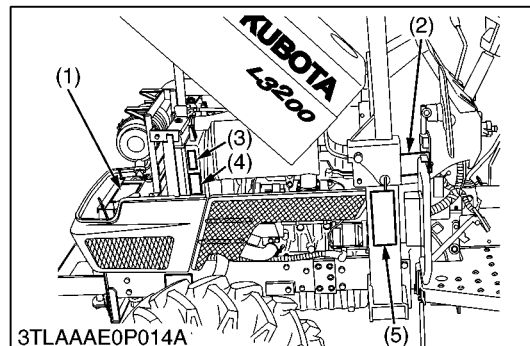
1AGAMAAAP262A

(4) Parts No. TC030-4958-1

Do not touch hot surface like muffler, etc.



1AGAMAAAP240A



3TLAAAE0P014A

(5) Parts No. TC229-4928-1

IMPORTANT RAISED POSITION
Tighten bolt.
FOLDED POSITION
Tighten bolt.
⚠ CAUTION TO AVOID INJURY WHEN RAISING OR LOWERING ROPS. <ul style="list-style-type: none"> • Stop and park the tractor. • Hold center of ROPS by hand when lowering ROPS not to free-fall. • Make sure bolts are installed correctly.

3TLAAAECP005A

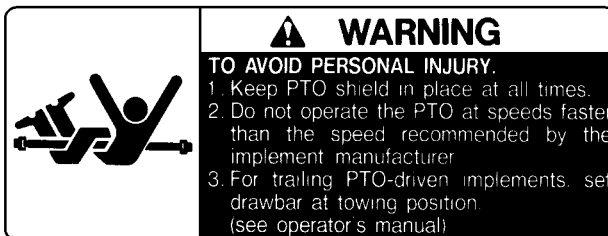
(1) Part No. 35260-3491-4

CAUTION**TO AVOID PERSONAL INJURY:**

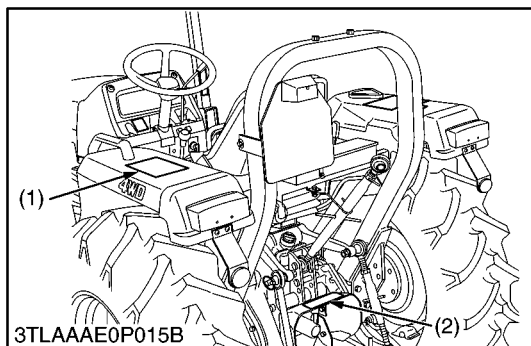
1. Read and understand the operator's manual before operation.
2. Before starting the engine, make sure that everyone is at a safe distance from the tractor and that the PTO is OFF.
3. Do not allow passengers on the tractor at any time.
4. Before allowing other people to use the tractor, have them read the operator's manual.
5. Check the tightness of all nuts and bolts regularly.
6. Keep all shields in place and stay away from all moving parts.
7. Lock the two brake pedals together before driving on the road.
8. Slow down for turns, or rough roads, or when applying individual brakes.
9. On public roads use SMV emblem and hazard lights, if required by local traffic and safety regulations.
10. Pull only from the drawbar.
11. Before dismounting, lower the implement to the ground, set the parking brake, stop the engine and remove the key.
12. Securely support tractor and implements before working underneath.

1AGAMAAAP2390

(2) Part No. TA040-4959-3



1AGAMAAAP2470



3TLAAAE0P015B

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 or 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.

3TLAAAECP006A

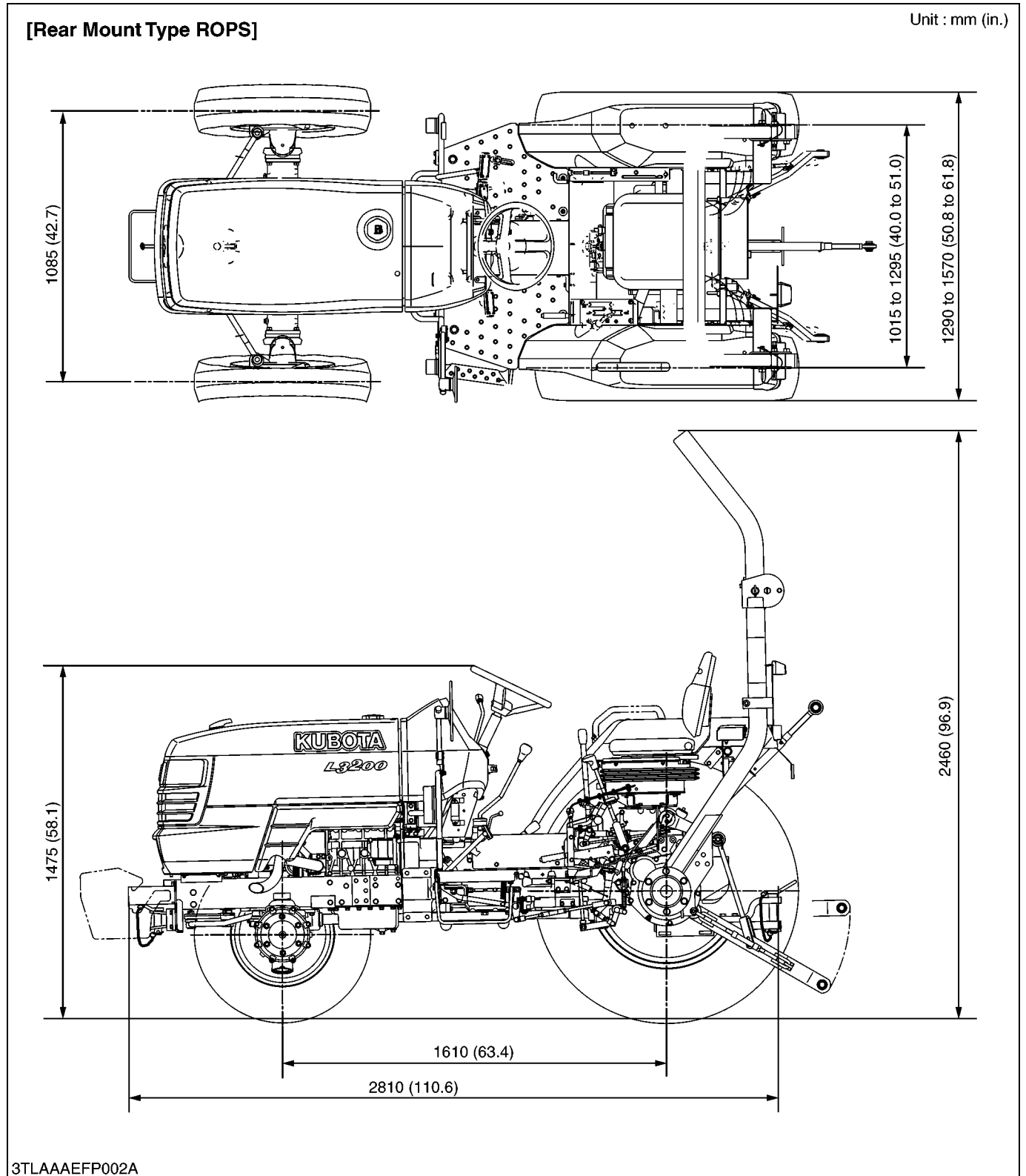
SPECIFICATIONS

Model		L3800		
		Rear Mount Type ROPS (For France, Germany, United Kingdom)	Mid Mount Type ROPS (For Spain, Portugal, Italy, Greece)	
PTO power		21.3 kW (28.6 HP)		
Engine	Maker	KUBOTA		
	Model	D1703-MA-E2A		
	Type	Vertical, water-cooled, 4-cycle diesel		
	Number of cylinders	3		
	Bore and stroke	87 × 92.4 mm (3.4 × 3.6 in.)		
	Total displacement	1647 cm ³ (101.0 cu.in.)		
	Engine gross power	24.6 kW (32.9 HP)		
	Rated revolution	41.7 r/s [2500 min ⁻¹ (rpm)]		
	Maximum torque	108.4 N-m (80.0 ft-lbs)		
	Battery	12 V. RC : 123 min., CCA : 490 A		
	Fuel	Diesel fuel No. 1-D, No. 2-D		
Capacities	Fuel tank	34 L (9.0 U.S.gals, 7.5 Imp.gals)		
	Engine crankcase (with filter)	5.7 L (6.0 U.S.qts., 5.0 Imp.qts)		
	Engine coolant	6.0 L (6.3 U.S.qts., 5.3 Imp.qts)		
	Transmission case	27.5 L (7.3 U.S.qts, 6.1 Imp.gals)		
Dimensions	Overall length (without 3P)		2810 mm (110.6 in.)	
	Overall width (min. tread)		1290 mm (50.8 in.)	
	Overall height (with ROPS)		2460 mm (96.9 in.)	2230 mm (87.8 in.)
	Overall height (Top of steering wheel)		1475 mm (58.1 in.)	
	Wheel base		1610 mm (63.4 in.)	
	Min. ground clearance		345 mm (13.6 in.)	
	Tread	Front	1085 mm (42.7 in.)	
Rear		1015 mm (40.0 in.), 1115 mm (43.9 in.), 1195 mm (47.0 in.), 1295 mm (51.0 in.)		
Weight (with ROPS)		1210 kg (2668 lbs)	1240 kg (2734 lbs)	
Clutch		Dry type dual stage		
Traveling system	Tires	AG Front	7.00 – 16	
		AG Rear	11.2 – 24	
	Steering	Integral type power steering		
	Transmission	Gear shift, 8 forward and 4 reverse		
	Brake	Wet disk type		
Min. turning radius (without brake)		2.5 m (8.2 feet)		
Hydraulic unit	Hydraulic control system		Position control	Draft control
	Pump capacity (main)		22.2 L/min. (5.9 U.S.gals./min., 4.9 Imp.gals./min.)	
	Pump capacity (PS)		13.5 L/min. (3.6 U.S.gals./min., 3.0 Imp.gals./min.)	
	Three point hitch		Category I	
	Max. lift force	At lift points	8885 N (906 kgf, 1998 lbs)	
		24 in. behind points	6384 N (651 kgf, 1435 lbs)	
System pressure		15.7 MPa (160 kgf/cm ²)		
PTO	Rear PTO	SAE 1-3/8, 6 splines		
PTO / Engine speed		9 r/s [540 min ⁻¹ (rpm)] / 40.4 r/s [2425 min ⁻¹ (rpm)]		

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

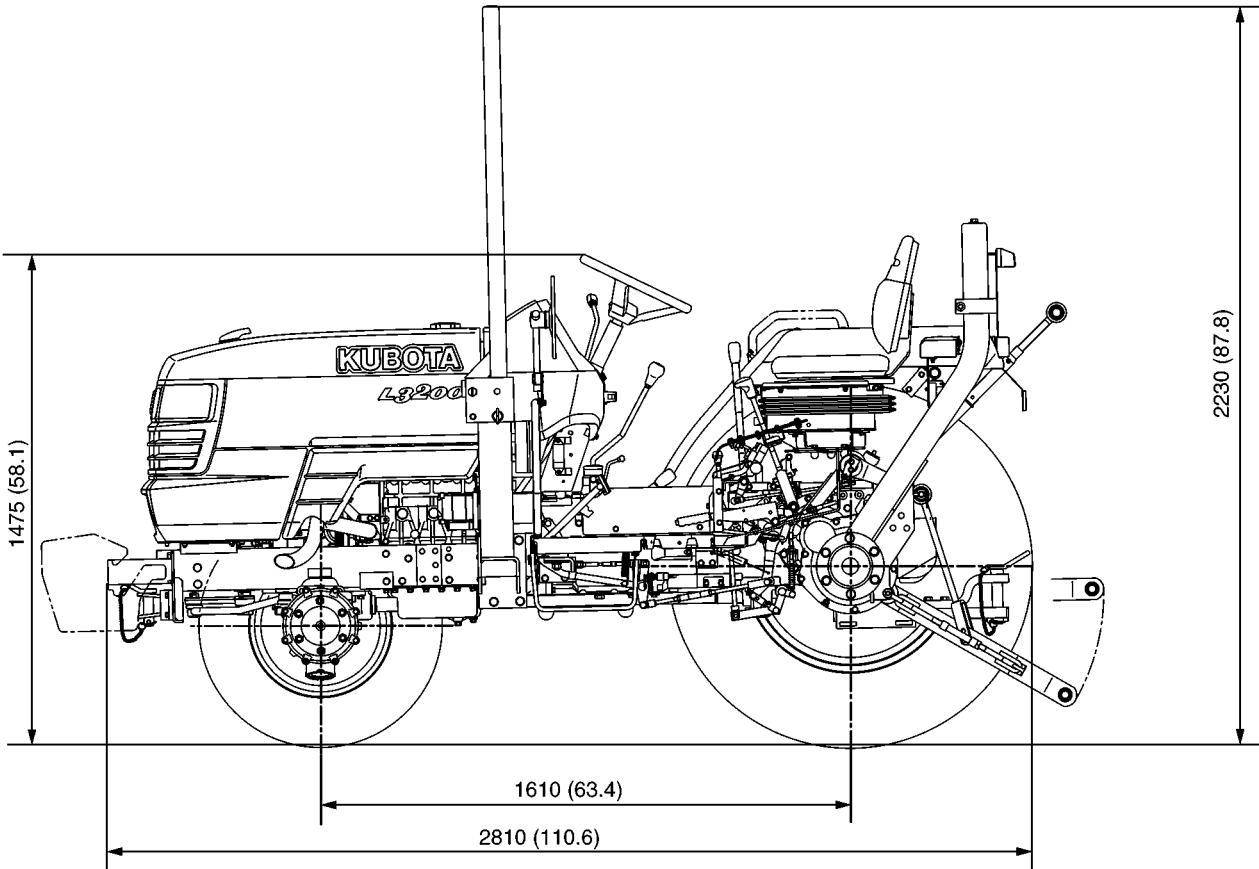
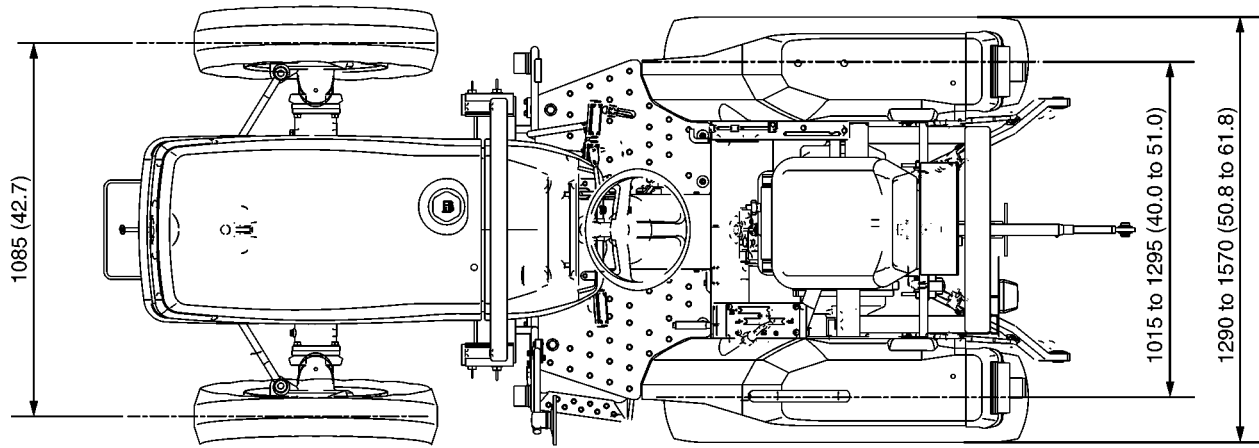
W1028103

DIMENSIONS



[Mid Mount Type ROPS]

Unit : mm (in.)



3TLAAAEFP002A

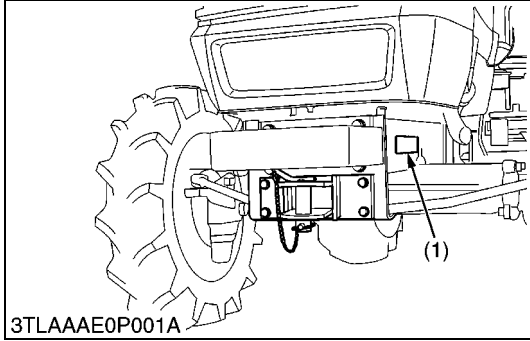
G GENERAL

GENERAL

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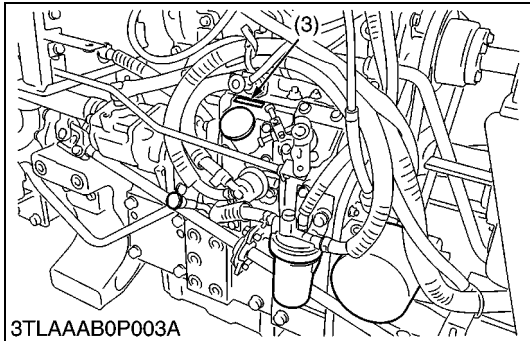
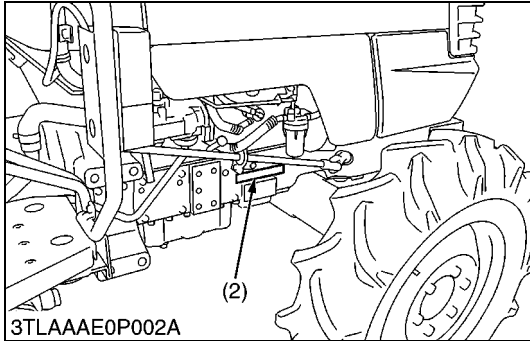
1. TRACTOR IDENTIFICATION



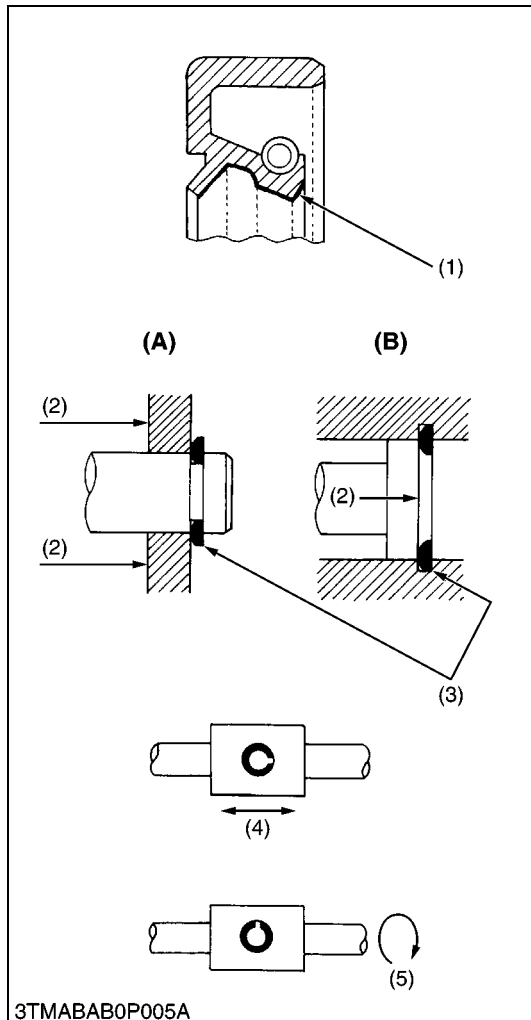
- (1) Tractor Identification Plate
- (2) Tractor Serial Number

- (3) Engine Serial Number

W1010590



2. GENERAL PRECAUTIONS



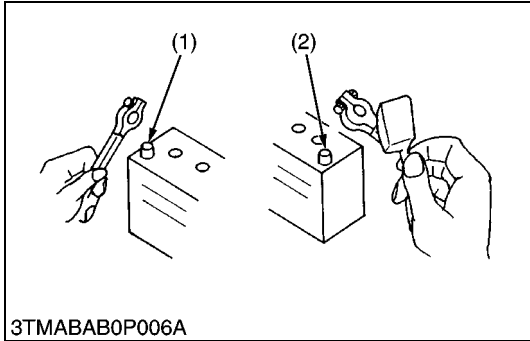
- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Screws, bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently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



3TMABAB0P006A

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

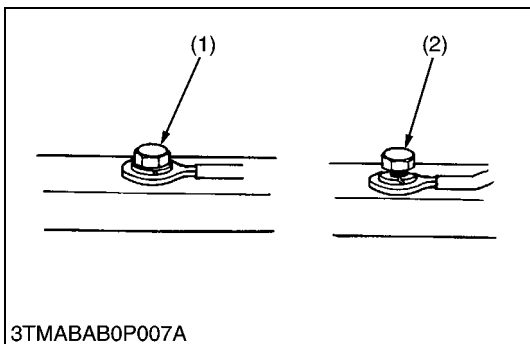
■ IMPORTANT

- 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 while carrying out routine servicing.
- 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

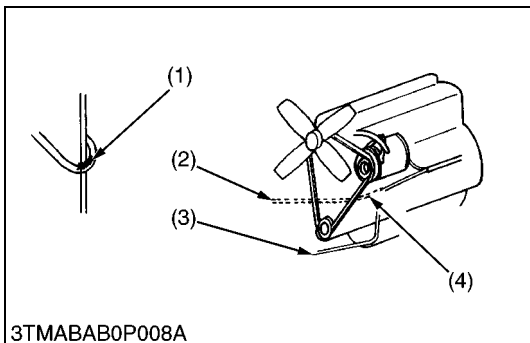


3TMABAB0P007A

- Securely tighten wiring terminals.

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

W10112160

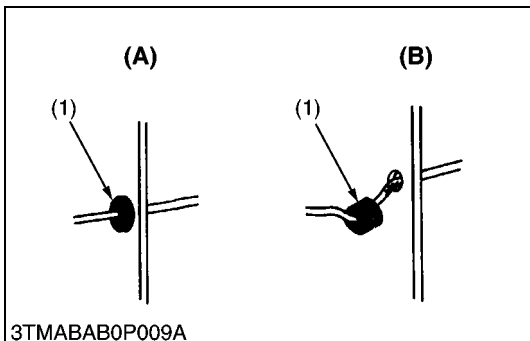


3TMABAB0P008A

- Do not let wiring contact dangerous part.

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

W10113130

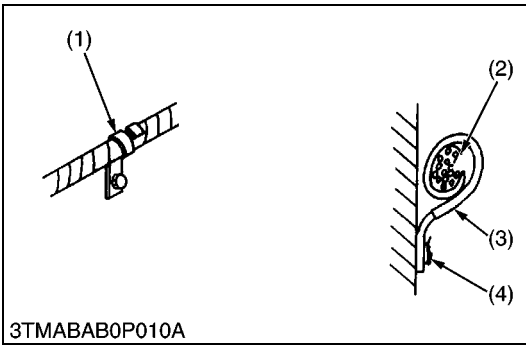


3TMABAB0P009A

- Securely insert grommet.

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

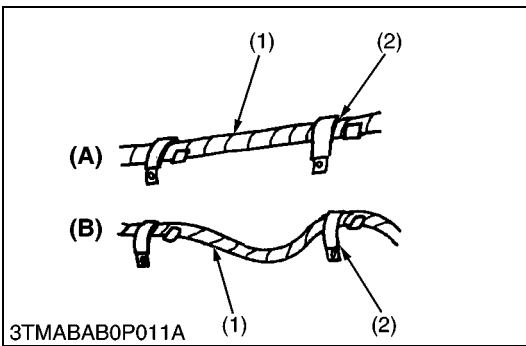
W10113880



- Securely clamp, being careful not to damage wiring.

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

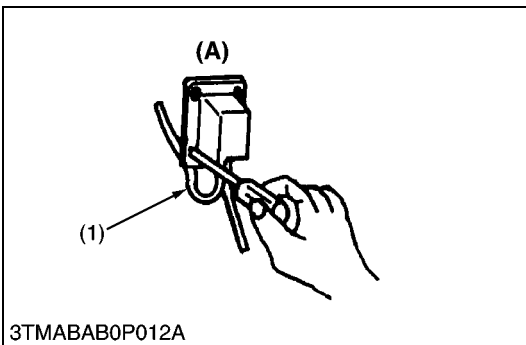
W10114580



- 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

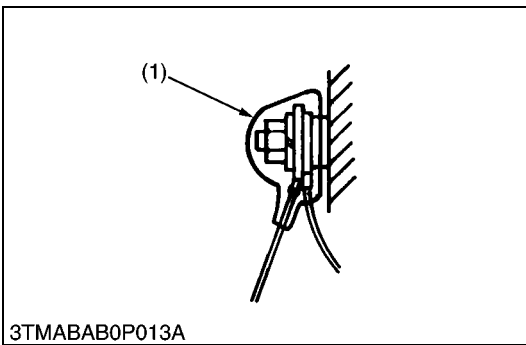
W10115870



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

- (1) Wiring
- (A) Incorrect

W10116700

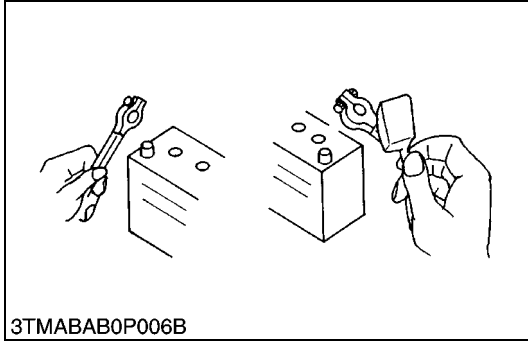


- After installing wiring, check protection of terminals and clamped condition of wiring, only connect battery.

- (1) Cover
 - Securely Install Cover

W10117350

[2] BATTERY



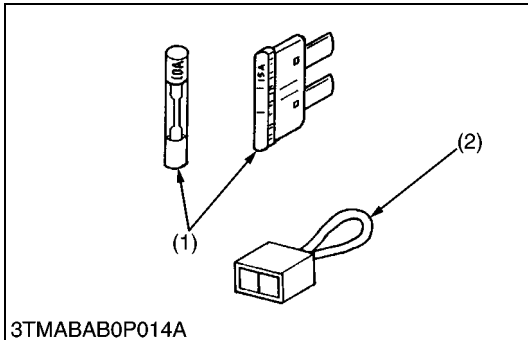
- Take care not to confuse positive and negative terminal posts.
- When removing battery cables, disconnect negative cable first. When installing battery cables, check for polarity and connect positive cable first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting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

W10118160

[3] FUSE



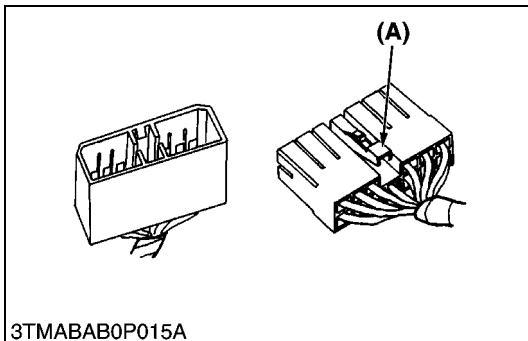
- Use fuses with specified capacity. Neither too large or small capacity fuse is acceptable.
- Never use steel or copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of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

(1) Fuse

(2) Fusible Link

W10120920

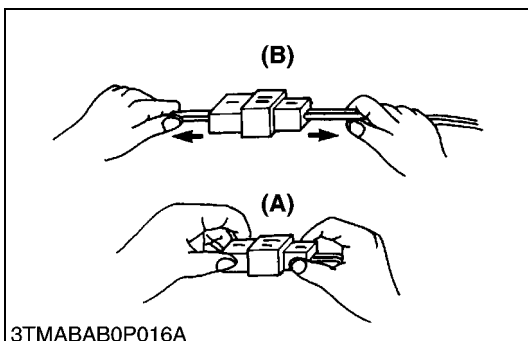
[4] CONNECTOR



- For connector with lock, push lock to separate.

(A) Push

W10122110



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

(A) Correct

(B) Incorrect

W10122720

4. LUBRICANTS, FUEL AND COOLANT

	Place	Capacity	Lubricants, fuel and coolant	
		L3800		
1	Fuel	34 L 9.0 U.S.gals. 7.4 Imp.gals.	No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below -10 °C (14 °F)	
2	Coolant	6.0 L 6.3 U.S.qts. 5.3 Imp.qts.	Fresh clean water with anti-freeze	
	Recovery tank	0.6 L 0.63 U.S.qts. 0.53 Imp.qts.		
3	Engine crankcase (with filter)	5.7 L 6.0 U.S.qts. 5.0 Imp.qts.	Engine oil : API service Classification CD, CE or CF 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	27.5 L 7.3 U.S.gals. 6.1 Imp.gals.	KUBOTA UDT or SUPER UDT fluid*	
5	Front axle case	4.5 L 4.8 U.S.qts. 3.9 Imp.qts.	KUBOTA UDT or SUPER UDT fluid* or SAE80, 90 gear oil	
Greasing				
	Place	No. of greasing points	Capacity	Type of grease
6	Front axle support	2	Until grease overflows	Multipurpose type grease NLGI-2 or NLGI-1 (GC-LB)
	Clutch pedal	1		
	Brake pedal	1		
	Pedal shaft	1		
	Top link bracket	2 [with draft control (if equipped)]		
	Battery terminals	2		
	Lift rod	1		

* KUBOTA original transmission hydraulic fluid.

■ NOTE

- 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.
- 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 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.

5. TIGHTENING TORQUES

[1] GENERAL USE SCREWS, BOLTS AND NUTS

Screws, bolts, nuts and whose tightening torque 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	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
Diameter															
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

W1034542

6. MAINTENANCE

No.	Period Item		Indication on hour meter													After since	Refer- -ence page		
			50	100	150	200	250	300	350	400	450	500	550	600	650				700
1	Engine oil	Change	★	☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-11	
2	Engine oil filter	Replace	★			☆				☆				☆			every 200Hr	G-11	
3	Hydraulic oil filter	Replace	★			☆				☆				☆			every 200Hr	G-13	
4	Transmission fluid	Change	★							☆							every 400Hr	G-12	
5	Front axle case oil	Change	★							☆							every 400Hr	G-14	
6	Front axle pivot	Adjust												☆			every 600Hr	G-26	
7	Greasing	-	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50Hr	G-16	
8	Engine start system	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50Hr	G-17	
9	Wheel bolt torque	Check	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	every 50Hr	G-17	
10	Battery condition	Check		☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-22	*4
11	Air cleaner element	Clean		☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-18	*1
		Replace															every 1 year	G-18	*2
12	Fuel filter element	Clean		☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-19	
		Replace															every 400Hr	G-19	
13	Fan belt	Adjust		☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-19	
14	Clutch	Adjust	★	☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-15	
15	Brake	Adjust		☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-20	
16	Radiator hose and hose clamp	Check				☆				☆				☆			every 200Hr	G-24	
		Replace															every 2 years	G-24	
17	Power steering oil line	Check				☆				☆				☆			every 200Hr	G-24	
		Replace															every 2 years	G-24	
18	Fuel line	Check		☆		☆		☆		☆		☆		☆		☆	every 100Hr	G-20	
		Replace															every 2 years	G-20	*3
19	Parking brake (Cable)	Adjust		☆		☆		☆		☆		☆		☆		☆	every 200Hr	G-21	
		Replace															every 2 years	G-21	

No.	Period Item		Indication on hour meter														After since	Refer- ence page
			50	100	150	200	250	300	350	400	450	500	550	600	650	700		
20	Toe-in	Adjust				☆				☆				☆			every 200Hr	G-25
21	Engine valve clearance	Adjust															every 800Hr	1-S11
22	Cooling system	Flush															every 2 years	G-27, 28
23	Coolant	Change															every 2 years	G-27, 28
24	Fuel system	Bleed																G-29
25	Clutch housing water	Drain															Service as require d	G-29
26	Fuse	Replace																G-30
27	Light bulb	Replace																G-30

■ IMPORTANT

- The jobs indicated by ★ must be done after the first 50 hours of operation.
- *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 battery condition by reading the indicator annually.

W1067893

7. CHECK AND MAINTENANCE



CAUTION

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

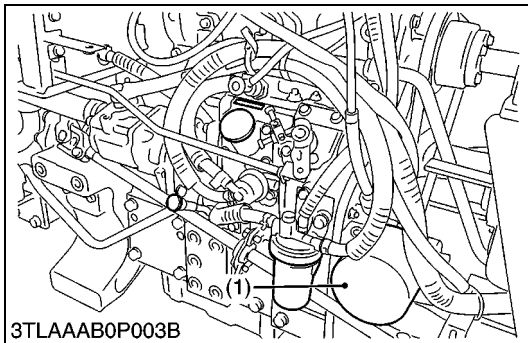
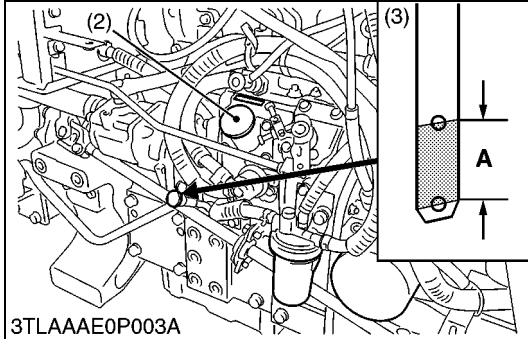
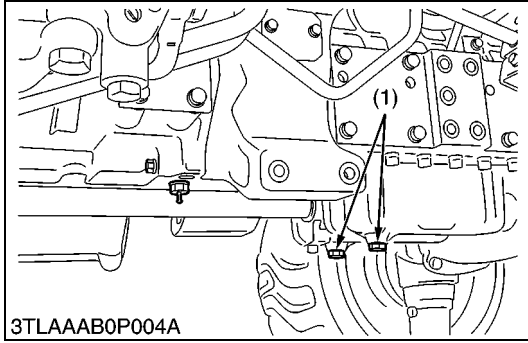
[1] DAILY CHECK

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

Checking

- Check areas where previous trouble was experienced.
 - Walk around the tractor.
1. Check the tire pressure, and check for wear and damage.
 2. Check for oil and water leak.
 3. Check the engine oil level.
 4. Check the transmission fluid level.
 5. Check the coolant level.
 6. Check the condition of seat belt and ROPS attaching hardware.
 7. Check and clean the radiator screen and grill.
 8. Check the nuts of tires are tight.
 9. Care of danger, warning and caution labels.
 10. Clean around the exhaust manifold and the muffler of the engine.
 - While sitting in the operator's seat.
 1. Check the brake pedals and clutch pedal.
 2. Check the parking brake.
 3. Check the steering wheel.
 - Turning the key switch.
 1. Check the performance of the easy checker lights.
 2. Check the lights, turn signal lights, hazard lights and other light equipment. Clean if necessary.
 3. Check the performance of the meters and gauges.
 - Starting the engine.
 1. Check to see that the lights on the easy checker go off.
 2. Check the color of the exhaust gas.
 3. Check the brakes for proper operation.

[2] CHECK POINTS OF INITIAL 50 HOURS



Changing Engine Oil

⚠ CAUTION

- **Before changing oil, be sure to stop the engine.**
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 plug (1) at the bottom of the engine and drain the oil completely.
 4. Screw in the drain plug (1).
 5. Fill new oil up to upper hole 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 types of oil.**
- **Use the proper SAE Engine Oil according to ambient temperatures.**
- **Refer to "LUBRICANTS, FUEL AND COOLANT". (See page G-7).**

Engine oil	Capacity	5.7 L 6.0 U.S.qts 5.0 Imp.qts

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

(A) Oil level is acceptable within this range.

W1014533

Replacing Engine Oil Filter Cartridge

⚠ CAUTION

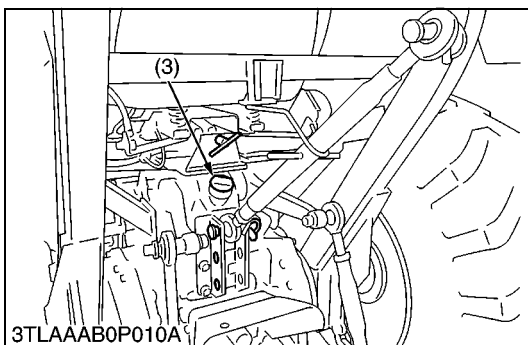
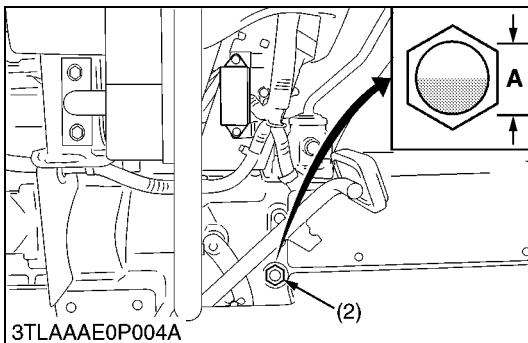
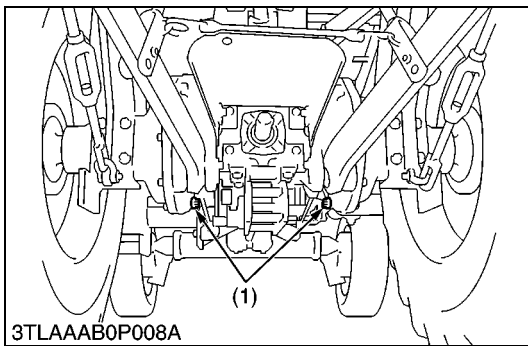
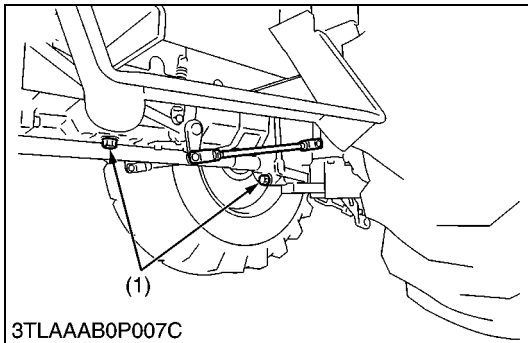
- **Be sure to stop the engine before changing oil filter cartridge (1).**
 - **Allow engine to cool down sufficiently, oil can be hot and can burn.**
1. Remove the engine oil filter cartridge (1).
 2. Put a film of clean engine oil on rubber seal of new filter.
 3. Tighten the filter quickly until it 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, replacement element must be highly efficient. Use only a KUBOTA genuine filter.**

- (1) Engine Oil Filter Cartridge

W1026738



Changing Transmission Fluid

⚠ CAUTION

- **Be sure to stop the engine before checking and changing the transmission fluid.**

1. Place an oil pan underneath the transmission case.
2. Remove the drain plugs (1) at the bottom of the transmission case.
3. Drain the transmission fluid.
4. After draining, screw in the drain plugs (1).
5. Fill with the new KUBOTA SUPER UDT fluid up to the upper line of the gauge (2).
6. After running the engine for a few minutes, stop it and check the fluid level again, if low, add fluid prescribed level (A).

■ IMPORTANT

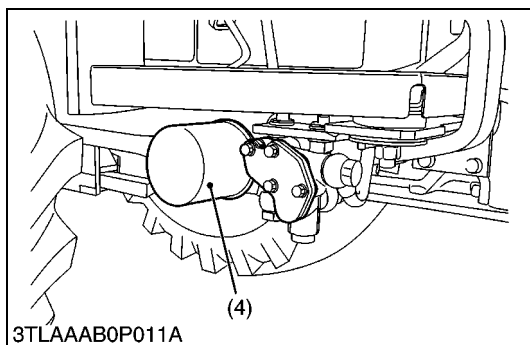
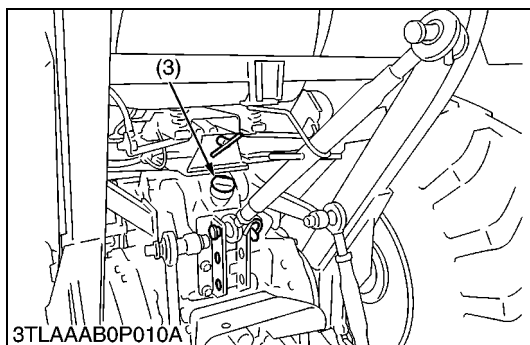
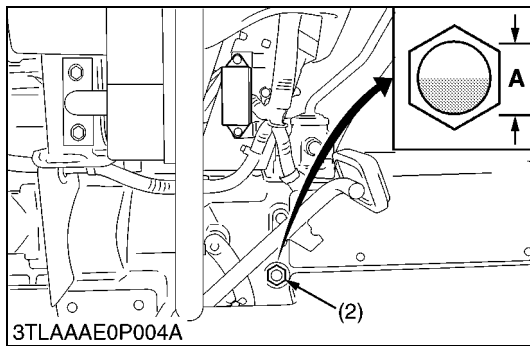
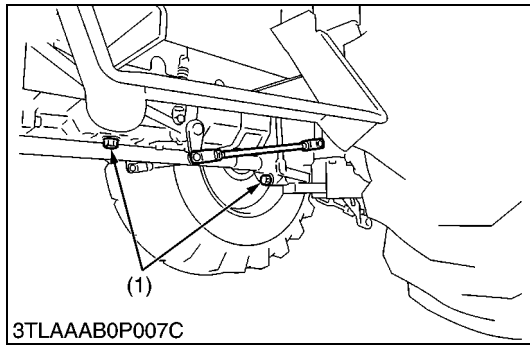
- **Use only multi-grade transmission fluid. Use of other fluids may damage the transmission or hydraulic system.**
- **Refer to "LUBRICANTS, FUEL AND COOLANT". (See page G-7.)**
- **Never work the tractor immediately after changing the transmission fluid. Keeping the engine at medium speed for a few minutes to prevent damage to the transmission.**
- **Do not mix different brands of oil together.**

Transmission fluid	Capacity	27.5 L 7.3 U.S.qts 6.1 Imp.qts
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- (1) Drain Plug
- (2) Oil Gauge
- (3) Filling Plug

A : Oil level is acceptable within this range.

W1026893



Replacing Hydraulic Oil Filter

⚠ CAUTION

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

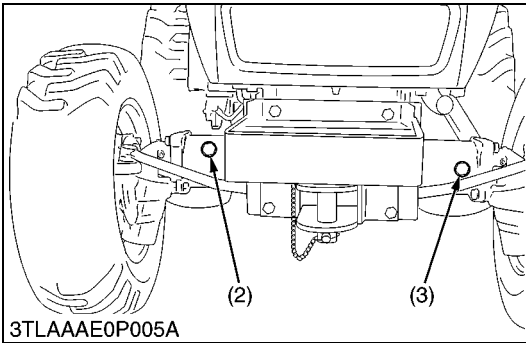
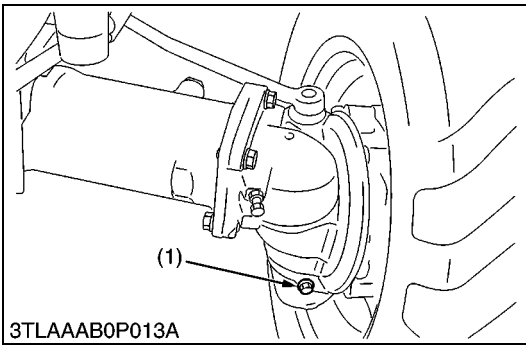
1. Place an oil pan under the tractor.
2. Remove the drain plugs (1) at the bottom of the transmission case.
3. Drain the transmission fluid.
4. After draining, screw in the drain plugs.
5. Remove the oil filter cartridge (4) by using a filter wrench.
6. Make sure the mounting surface is clean.
Put a film of clean transmission fluid on the rubber seal of the new filter.
7. Install the new filter cartridge.
8. Quickly tighten the filter until it contacts the mounting surface, then tighten it by hand an additional 1/2 turn only.
9. After the new filters have been replaced, fill oil up to the upper line on the gauge (2).
10. After running the engine for a few minutes, stop it and recheck the oil level, add oil to the prescribed level.
11. Make sure that the transmission fluid doesn't leak through the seal of the filter.

■ IMPORTANT

- To prevent serious damage to the hydraulic system. Use only a genuine KUBOTA filter or its equivalents.

- (1) Drain Plug
 (2) Oil Gauge
 (3) Filling Plug
 (4) Hydraulic Oil Filter

A : Oil level is acceptable within this range.



Changing Front Axle Case Oil

1. Place the oil pans underneath the front axle case.
2. Remove the drain plug (1) both sides and filling port plug (2) to drain the oil.
3. After draining, reinstall the drain plug.
4. Remove the oil level check plug (3).
5. Fill with the new oil up to the check plug (3) port.
6. After filling, reinstall the check plug (3) and filling port plug.

■ IMPORTANT

- Use KUBOTA SUPER UDT fluid or SAE 80, 90 gear oil. Refer to "LUBRICANTS, FUEL AND COOLANT". (See page G-7.)

Front axle case oil	Capacity	4.5 L 4.8 U.S.qts 3.9 Imp.qts
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(1) Drain Plug

(2) Filling Port Plug

(3) Check Plug

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