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Telephone : (82)-63-544-5822

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KUBOTA Corporation

English (Oceania)
Code No. 3N606-9971-1

M108S

OPERATOR'S MANUAL

KUBOTA TRACTOR

MODEL M108S



1AGAIIJAP0010

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READ AND SAVE THIS MANUAL

PRINTED IN JAPAN

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⚠SAFE OPERATION ..... ⚠-1

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SAFE OPERATION

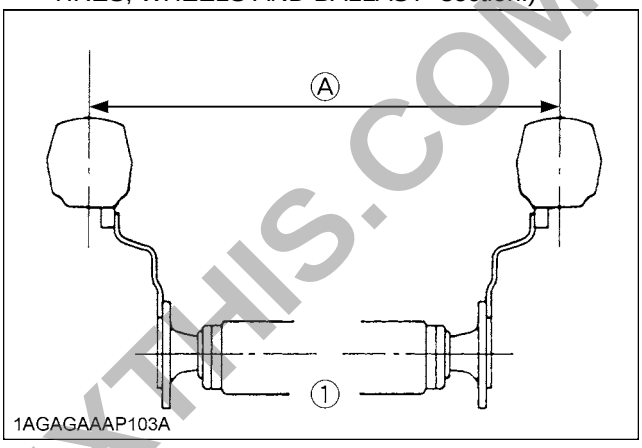
Careful operation is your best insurance against an accident.

Read and understand this manual carefully before operating the tractor.

All operators, no matter how much experience they may have, should read this and other related manuals before operating the tractor or any implement attached to it. It is the owner's obligation to instruct all operators in safe operation.

1. BEFORE OPERATING THE TRACTOR

1. Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.
2. Pay special attention to the danger, warning and caution labels on the tractor.
3. Do not operate the tractor or any implement attached to it while under the influence of alcohol, medication, controlled substances or while fatigued.
4. Before allowing other people to use your tractor, explain how to operate and have them read this manual before operation.
5. Never wear loose, torn, or bulky clothing around tractor. It may catch on moving parts or controls, leading to the risk of an accident. Use additional safety items, e.g. hard hat, safety boots or shoes, eye and hearing protection, gloves, etc., as appropriate or required.
6. Do not allow passengers to ride on any part of the tractor at anytime. The operator must remain in the tractor seat during operation.
7. Check brakes, clutch, linkage pins and other mechanical parts for improper adjustment and wear. Replace worn or damaged parts promptly. Check the tightness of all nuts and bolts regularly. (For further details, see "MAINTENANCE" section.)
8. Keep your tractor clean. Dirt, grease, and trash build up may contribute to fires and lead to personal injury.
9. Use only implements meeting the specifications listed under "IMPLEMENT LIMITATIONS" in this manual or implements approved by KUBOTA.
10. Use proper weights on the front or rear of the tractor to reduce the risk of upsets. When using the front loader, put an implement or ballast on the 3-point hitch to improve stability. Follow the safe operating procedures specified in the implement or attachment manual.
11. The narrower the tread, the greater the risk of a tractor upset. For maximum stability, adjust the wheels to the widest practical tread width for your application. (See "TIRES, WHEELS AND BALLAST" section.)



(1) Rear wheels *(A) Tread Width*

12. Do not modify the tractor. Unauthorized modification may affect the function of the tractor, which may result in personal injury.

◆ **CAB, ROPS**

1. KUBOTA recommends the use of a CAB or Roll Over Protective Structures (ROPS) and seat belt in almost all applications. This combination will reduce the risk of serious injury or death, should the tractor be upset. Check for overhead clearance which may interfere with a CAB or ROPS.
2. If the CAB or ROPS is loosened or removed for any reason, make sure that all parts are reinstalled correctly before operating the tractor.
3. Never modify or repair any structural member of a CAB or ROPS because welding, bending, drilling, grinding, or cutting may weaken the structure.
4. A damaged CAB or ROPS structure must be replaced, not repaired or revised.
5. If any structural member of the CAB or ROPS is damaged, replace the entire structure at your local KUBOTA Dealer.
6. Always use the seat belt if the tractor has a CAB or ROPS. Do not use the seat belt if there is no CAB or ROPS. Check the seat belt regularly and replace if frayed or damaged.

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SPECIFICATIONS

SPECIFICATION TABLE

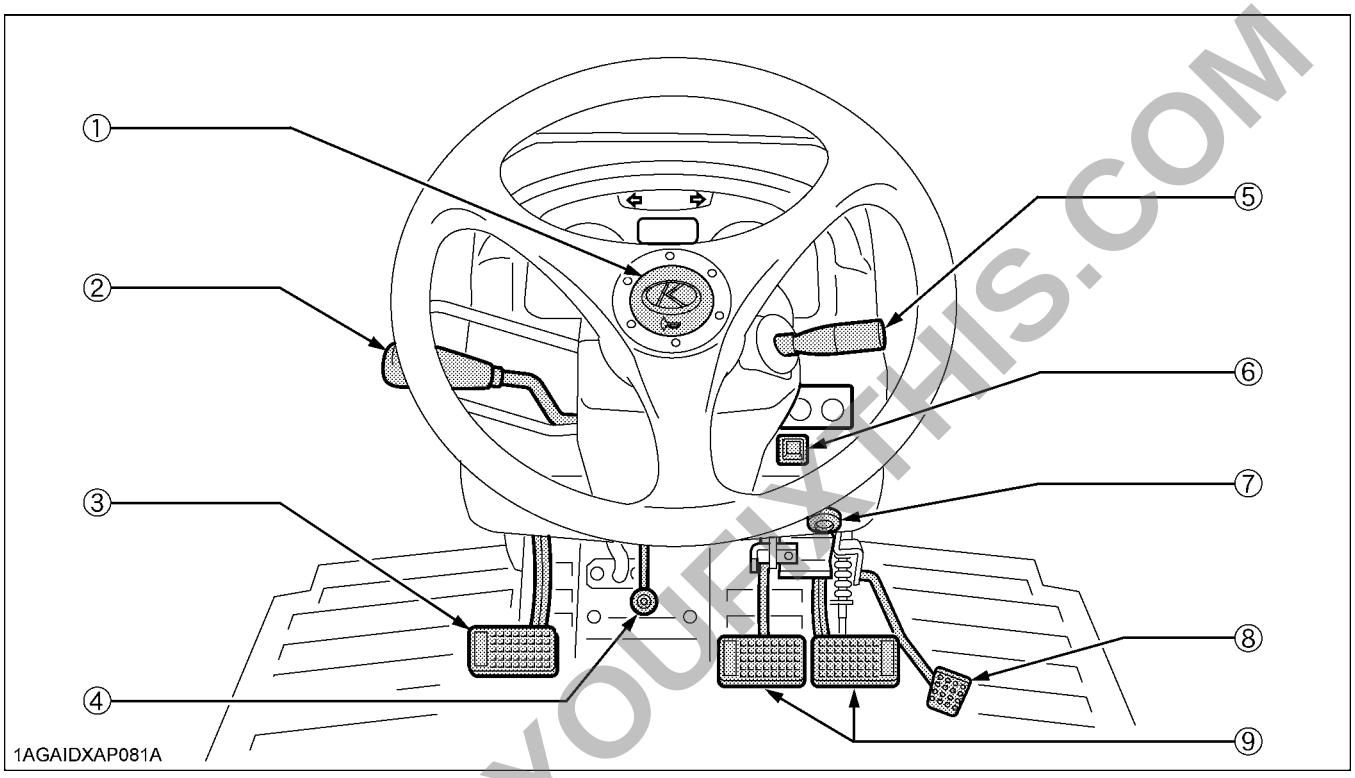
Model				M108S
				4WD
Engine	Model			V3800-DI-TI
	Type			Direct Injection, liquid cooled 4 cylinder diesel
	Number of cylinders			4
	Total displacement		cm^3	3769
	Bore and stroke		mm	100 x 120
	Rated speed		rpm	2600
	Net power *1		kW	77.2
	PTO power *1 (factory observed)		kW	69.4
	Maximum torque		N-m / rpm	355 / 1400 to 1600
	Battery capacity			12V, RC: 160 min, CCA 900A
	Fuel tank capacity		L	175
	Engine oil capacity		L	10.7
	Coolant capacity		L	9.6
Dimensions	Overall length		mm	4070
	Overall width (minimum tread)		mm	2010
	Overall height		mm	2680
	Wheel base		mm	2435
	Tread	Front	mm	1390 to 1690
		Rear	mm	1730 to 2035
	Minimum ground clearance		mm	435 (Drawbar bracket)
Weight			kg	3510
Traveling system	Standard tire size	Front tires		340 / 85R24 (13.6R24)
		Rear tires *2		480 / 70R34 (18.4R34)
	Clutch			Hydraulic wet disks
	Steering			Hydraulic Power Steering
	Braking system			Hydraulic wet disks
	Differential			Bevel gears with diff. lock (Front & Rear)

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INSTRUMENT PANEL AND CONTROLS

■ Instrument Panel, Switches and Hand Controls



ILLUSTRATED CONTENTS

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(2) Hydraulic-shuttle shift lever..... 24
(3) Clutch pedal..... 22
(4) Tilt pedal..... 19
(5) Turn signal / Head light switch..... 19
(6) Hazard light switch..... 20
(7) Key switch..... -
(8) Foot throttle..... 26
(9) Brake pedal..... 21

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OPERATING THE ENGINE

WARNING

To avoid personal injury or death:

- **Read and understand "Safe Operation" in the front of this manual.**
- **Read and understand the danger, warning and caution labels located on the tractor.**
- **To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.**
- **Never start engine while standing on ground. Start engine only from operator's seat.**
- **Make it a rule to set all shift levers to the "NEUTRAL" positions and to place PTO lever in "OFF" position before starting the engine.**

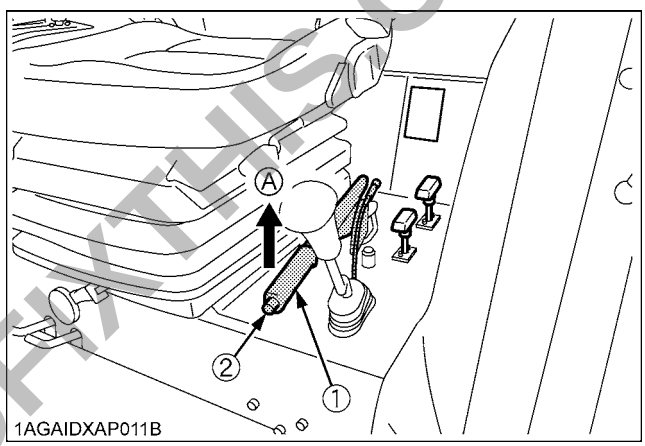
IMPORTANT :

- Do not use starting fluid or ether.
- To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.

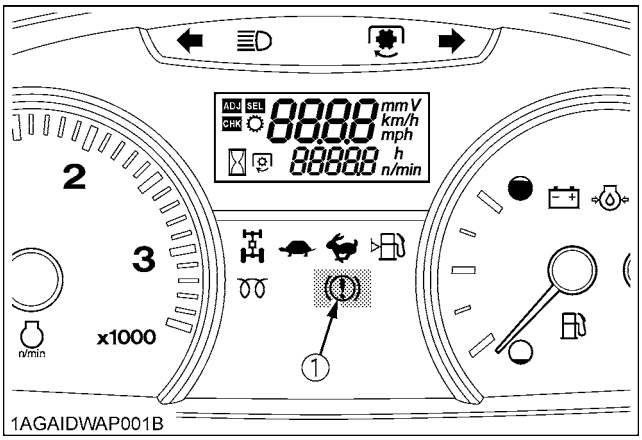
STARTING THE ENGINE

1. Make sure the parking brake is set.

Pull the parking brake lever up to park.
The parking brake indicator light on the Easy Checker(TM) will come on while the parking brake is set.



(1) Parking brake lever *(A) "PULL"*
(2) Release button



(1) Parking brake indicator light

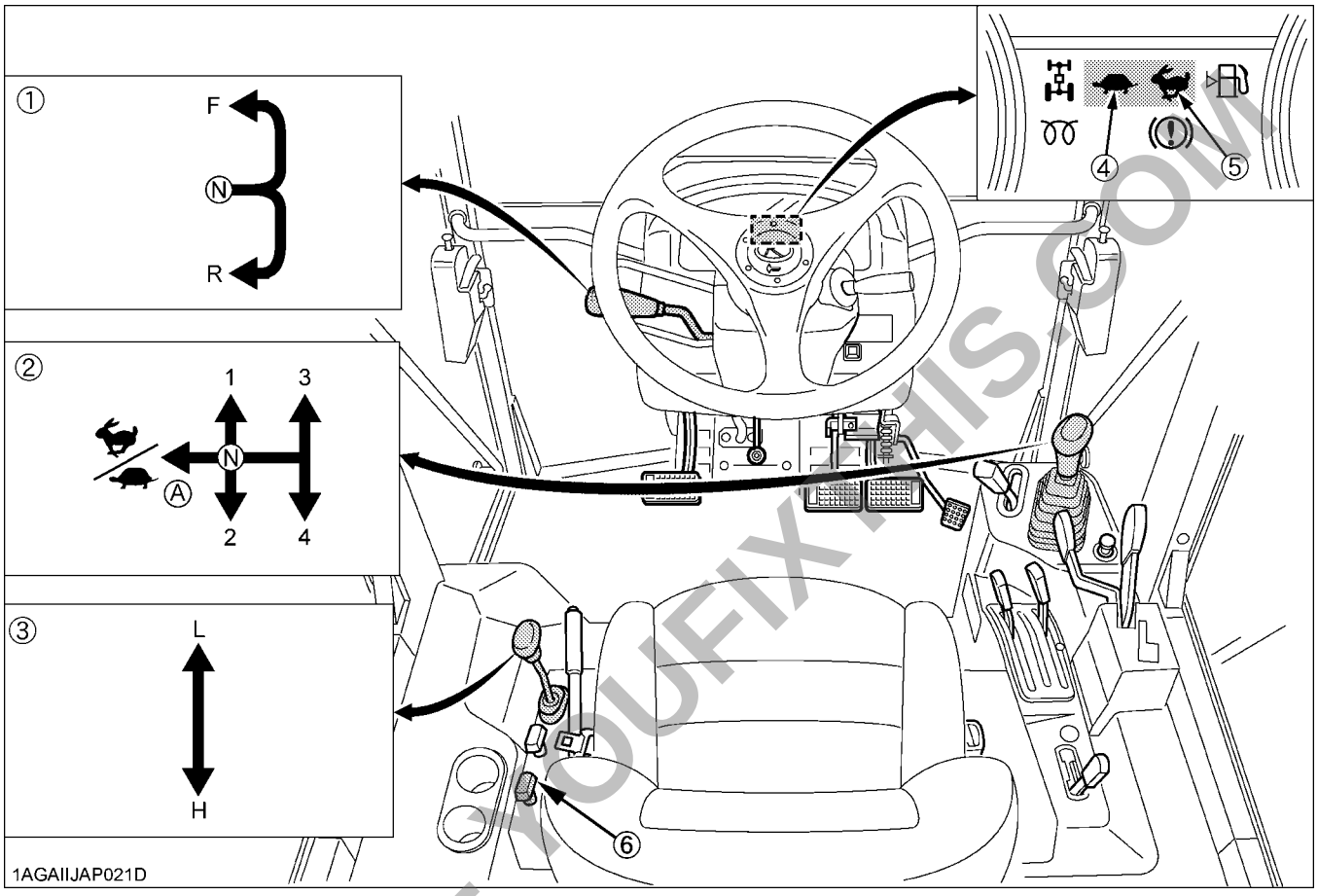
IMPORTANT :

- If the tractor is operated with the parking brake set, the parking brake will be damaged.

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6. Selecting the Travel Speed.



(1) Hydraulic - shuttle shift lever
(2) Main gear shift lever
(3) Range gear shift lever
(4) Pilot lamp (LOW)
(5) Pilot lamp (HIGH)
(6) Creep lever (if equipped)
(F) "FORWARD"
(N) "NEUTRAL POSITION"
(R) "REVERSE"
"LOW"
"HIGH"
(A) "PUSH"

By combination of using the shift lever and the shift switch, forward speeds and reverse speeds shown in the table below are obtained.

Without creep	16 forward speeds 16 reverse speeds
With creep	24 forward speeds 24 reverse speeds

■Main Gear Shift Lever

WARNING

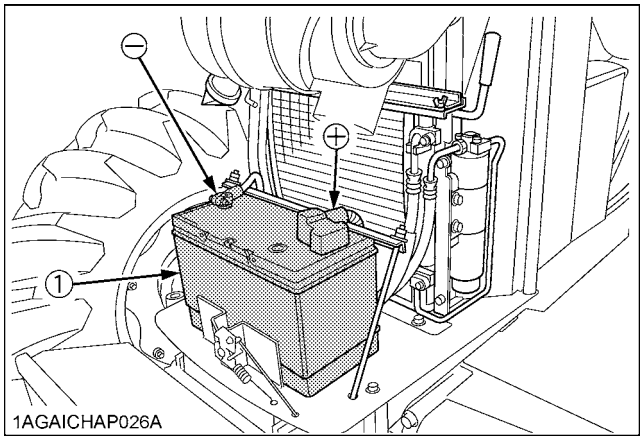
To avoid personal injury or death:

- **Before moving the main gear shift lever (1 ⟷ 2 ⟷ 3 ⟷ 4), make sure the pilot lamp is on. If the pilot lamp fails to come on, stop the tractor completely and start the gear shifting all over.**
- **Do not shift between and on a downhill way. The shifting may fail. Be sure to do the shifting before going downhill.**

1. 8 speeds can be selected by the main gear shift lever.
2. The main gear shift is fully synchronized to shift without stopping.

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(1) Battery

1. To slow charge the battery, connect the battery positive terminal to the charger positive terminal and the negative to the negative, then recharge in the standard fashion.
2. A boost charge is only for emergencies. It will partially charge the battery at a high rate and in a short time.
   When using a boost-charged battery, it is necessary to recharge the battery as early as possible.
   Failure to do this will shorten the battery's service life.
3. The battery is charged if the indicator display turns green from black.
4. When exchanging an old battery for a new one, use battery of equal specification shown in **table 1**.

Table 1

Battery Type	Volts (V)	Capacity at 5H.R(A.H)
GP31 (105E41R)	12	85.3

Reserve Capacity (min)	Cold Cranking Amps	Normal Charging Rate (A)
160	900	11

◆ **Direction for Storage**

1. When storing the tractor for long periods of time, remove the battery from tractor, adjust the electrolyte to the proper level and store in a dry place out of direct sunlight.
2. The battery self-discharges while it is stored.
   Recharge it once every 3 months in hot seasons and once every 6 months in cold seasons.

IMPORTANT :

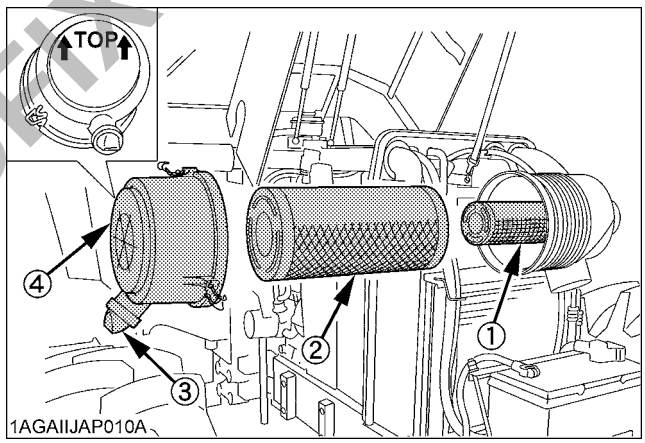
- In checking and refilling the battery, be careful not to spill battery fluid. Spilt battery fluid may affect the engine controller (ECU) located below the battery, resulting in damage.

■Cleaning Air Cleaner Primary Element

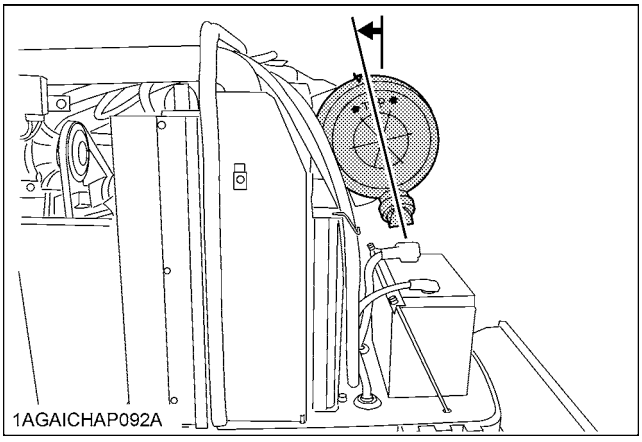
1. Remove the air cleaner cover and primary element.
2. Clean the primary element:
   (1) When dry dust adheres to the element, blow compressed air from the inside, turning the element. Pressure of compressed air must be under 205 kPa (2.1 kgf/cm², 30 psi).
   (2) When carbon or oil adheres to the element, soak the element in detergent for 15 minutes then wash it several times in water, rinse with clean water and dry it naturally. After element is fully dried, inspect inside of the element with a light and check if it is damaged or not.
3. Replace air cleaner primary element:
   Once every 1000 hours or yearly, whichever comes first.

NOTE :

- Check to see if the evacuator valve is blocked with dust.



(1) Secondary (safety) element
(2) Primary element
(3) Evacuator valve
(4) Cover



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Pressure →
Returning ←

Lever (1)		Lever position			
		Z (detent)		X	Y
Port	(A)	in	Float	in ←	out →
	(B)	out		out →	in ←

Lever (2)		Lever position			
		Z(detent)	X	Y	Z(detent)
Port	(C)	in ←		out →	
	(D)	out →		in ←	

IMPORTANT :
- Do not hold the lever in the "pull" or "push" position once the remote cylinder has reached the end of the stroke, as this will cause oil to flow through the relief valve. Forcing oil through the relief valve for extended periods will overheat the oil.
- When using the tractor hydraulic system to power front loader, do not operate boom and bucket cylinders simultaneously.

NOTE :
- Connect the pressure of load side of implement cylinders to ports [B] or [D] which have built in load check valve to prevent leak down.
- To use the single-acting cylinder with the float valve, connect this cylinder to the [B] or [D] port.
  To extend a single-acting cylinder, pull the remote control valve lever rearward. To retract a cylinder, push it fully forward to the "FLOAT" position. Do not hold it in the down position, the transmission fluid may be overheat.

■Remote Control Valve Coupler Connecting and Disconnecting

WARNING

To avoid personal injury or death:
- **Stop the engine and relieve pressure before connecting or disconnecting lines.**
- **Do not use your hand to check for leaks.**

◆ **Connecting**
1. Clean both couplers.
2. Remove dust plugs.
3. Insert the implement coupler to the tractor hydraulic coupler.
4. Pull the implement coupler slightly to make sure couplers are firmly connected.

◆ **Disconnecting**
1. Lower the implement first to the ground to release hydraulic pressure in the hoses.
2. Clean the couplers.
3. Relieve pressure by moving hydraulic control levers with engine shut off. Pull the hose straight from the hydraulic coupler to release it.
4. Clean oil and dust from the coupler, then replace the dust plugs.

NOTE :
- Your local KUBOTA Dealer can supply parts to adapt couplers to hydraulic hoses.

■Flow Control Valve (option)

The optional flow control valve may be added for the following purposes.
1. To operate within limits, the remote control valves (2) or (3) above the flow control valve (4) and the 3-point hitch at the same time without one affecting the other.
2. To operate within limits, the remote control valves (2) or (3) above the flow control valve (4) and the other remote control valve (1) at the same time without one affecting the other. Activating the remote control valve (1) will interrupt the operation of the 3-point hitch.
3. To maintain within limits, the constant speed of an attachment (hydraulic motor RPM, for example) when connected to the remote control valves (2) or (3) above the flow control valve (4).

NOTE :
- At slower engine speeds the total hydraulic flow rate may be inadequate for simultaneous operation of the remote control valves (2) or (3) and the 3-point hitch or the remote control valve (1), or operation of an attachment connected to the remote control valves (1)(2)(3). Under these conditions, the engine speed must be increased to provide additional hydraulic flow.
- The remote control valves (2) and (3) above the flow control valve (4) can not be operated at the same time.

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LUBRICANTS, FUEL AND COOLANT

<table>
<tr><th>No.</th><th>Locations</th><th>Capacities</th><th colspan="2">Lubricants</th></tr>
<tr><td>1</td><td>Fuel</td><td>175 L</td><td colspan="2">No.2-D diesel fuel
No.1-D diesel fuel if temperature is below -10 ℃</td></tr>
<tr><td>2</td><td>Coolant</td><td>9.6 L
(Recovery tank: 1.1 L)</td><td colspan="2">Fresh clean water with anti-freeze</td></tr>
<tr><td>3</td><td>Washer liquid</td><td>1.3 L</td><td colspan="2">Automobile washer liquid</td></tr>
<tr><td rowspan="4">4</td><td rowspan="4">Engine crankcase
(with filter)</td><td rowspan="4">10.7 L</td><td colspan="2">● Engine oil: API Service Classification CD, CE or CF</td></tr>
<tr><td>Above 25 ℃</td><td>SAE30, SAE10W-30 or 15W-40</td></tr>
<tr><td>0 to 25 ℃</td><td>SAE20, SAE10W-30 or 15W-40</td></tr>
<tr><td>Below 0 ℃</td><td>SAE10W, SAE10W-30 or 15W-40</td></tr>
<tr><td>5</td><td>Transmission case</td><td>60 L</td><td colspan="2">● KUBOTA UDT or SUPER UDT fluid*</td></tr>
<tr><td>6</td><td>Brake oil
(reservoir and lines)</td><td>0.3 L</td><td colspan="2">● KUBOTA UDT or SUPER UDT fluid* or Turbine oil 32
(See below)
regular type, multipurpose straight mineral oil
Mobile DTE Oil #32
TEXACO Regal Oil #32
CHEVRON -GST Oil #32
TERESSO OIL #32
Never use automotive brake oil.</td></tr>
<tr><td>7</td><td>Front differential case oil</td><td>7 L</td><td colspan="2" rowspan="2">● KUBOTA UDT or SUPER UDT fluid* or SAE 80 - SAE 90 gear oil</td></tr>
<tr><td>8</td><td>Front axle gear case oil</td><td>3.5 L</td></tr>
<tr><td rowspan="10">9</td><td>Greasing</td><td>No. of greasing points</td><td>Capacity</td><td>Type of grease</td></tr>
<tr><td>Top link</td><td>2</td><td rowspan="8">Until grease overflows.</td><td rowspan="9">Multipurpose Grease
NLGI-2 OR
NLGI-1(GC-LB)</td></tr>
<tr><td>Top link bracket</td><td>2</td></tr>
<tr><td>Lift rod</td><td>3</td></tr>
<tr><td>Front axle gear case support</td><td>2</td></tr>
<tr><td>Front axle support</td><td>2</td></tr>
<tr><td>Steering joint shaft</td><td>1</td></tr>
<tr><td>Assist cylinder
(if equipped)</td><td>2</td></tr>
<tr><td>Battery terminal</td><td>2</td><td>A small amount</td></tr>
</table>

NOTE :

* KUBOTA UDT or SUPER UDT fluid... KUBOTA original transmission hydraulic fluid

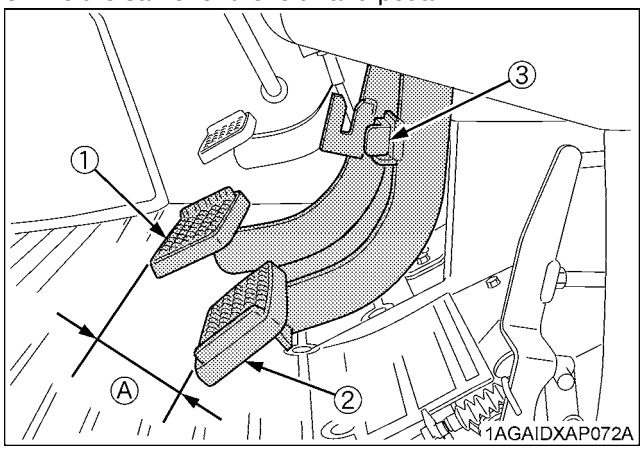
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◆ **Checking the brake pedal stroke**

Pedal stroke	Less than 100 mm at each pedal

1. Disengage the brake pedal lock.
2. Step on the right-hand pedal and measure the level difference (pedal stroke) between this pedal and the left-hand pedal.
3. Do the same for the left-hand pedal.



(1) Brake pedal (LH)
(2) Brake pedal (RH)
(3) Brake pedal lock
(A) "PEDAL STROKE"

◆ **Checking the equalizer working level (anti-imbalance device)**

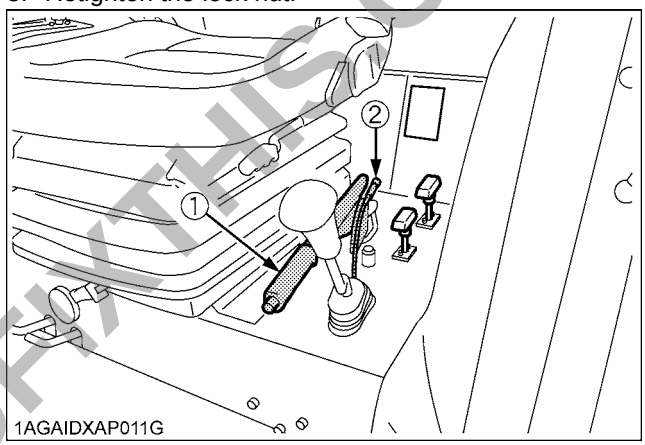
1. Gently step on both brake pedals at once.
2. Further step on the right-hand pedal (the left-hand pedal slightly raises itself) and measure the level difference between the pedals.
3. Do the same for the left-hand pedal.

Equalizer working level	Level difference of over 10 mm between both pedals

■Adjusting Parking Brake Lever

Proper parking brake lever free travel	2 notches (Ratchet sound 2).

1. Raise the parking brake lever to the parking position while counting the ratchet sound made by the parking brake lever.
2. If adjustment is needed, loosen the lock nut and adjust the parking brake cable length with in acceptable limit.
3. Retighten the lock nut.



(1) Parking brake lever
(2) Lock nut

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PREVIEW

FOREWORD

You are now the proud owner of a KUBOTA Tractor. This tractor is a product of KUBOTA quality engineering and manufacturing. It is made of fine materials and under a rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your tractor, please read this manual carefully. It will help you become familiar with the operation of the tractor and contains many helpful hints about tractor maintenance. It is KUBOTA's policy to utilize as quickly as possible every advance in our research. The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated. KUBOTA distributors and dealers will have the most up-to-date information. Please do not hesitate to consult with them.

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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 assemble 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, could result in minor or moderate injury.
IMPORTANT :	Indicates that equipment or property damage could result if instructions are not followed.
NOTE :	Gives helpful information.

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