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KUBOTA Corporation

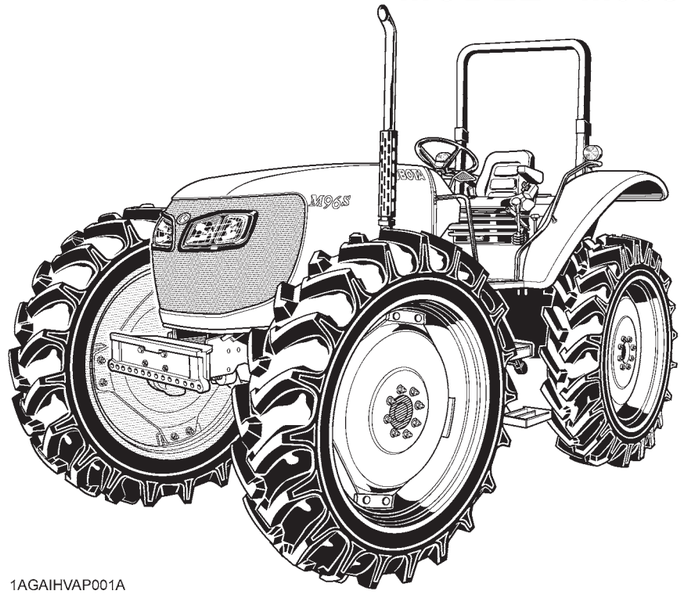
English (U.S.A.)
Code No. 3N470-9971-2

M96SDTM

OPERATOR'S MANUAL

KUBOTA TRACTOR

MODEL M96SDTM



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The first part of this manual covers the features of the common M series tractor.
The second part covers the special features of the M96SDTM tractor.
Please read both parts before operation.

READ AND SAVE THIS MANUAL

PRINTED IN JAPAN

ABBREVIATION LIST

Abbreviations	Definitions
2WD	Two Wheel Drive
4WD	Four Wheel Drive
API	American Petroleum Institute
ASABE	American Society of Agricultural and Biological Engineers, USA
ASTM	American Society for Testing and Materials, USA
DIN	Deutsches Institut für Normung, GERMANY
DT	Dual Traction [4WD]
fpm	Feet Per Minute
GST	Glide Shift Transmission
Hi-Lo	High Speed-Low Speed
HST	Hydrostatic Transmission
m/s	Meters Per Second
PTO	Power Take Off
RH/LH	Right-hand and left-hand sides are determined by facing in the direction of forward travel
ROPS	Roll-Over Protective Structures
rpm	Revolutions Per Minute
r/s	Revolutions Per Second
SAE	Society of Automotive Engineers, USA
SMV	Slow Moving Vehicle

California Proposition 65

⚠ WARNING ⚠

Engine exhaust, some of its constituents, certain vehicle components and fluids, contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

IMPORTANT

The engine in this machine is not equipped by the manufacturer with a standard spark arrester.
It is a violation of California Public Resource Code Section 4442 to use or operate this engine on or near any forest-covered, brush-covered land, or grass- covered land unless the exhaust system is equipped with a working spark arrester meeting state laws. Other states or federal areas may have similar laws.

KUBOTA Corporation is ···

Since its inception in 1890, KUBOTA Corporation has grown to rank as one of the major firms in Japan.

To achieve this status, the company has through the years diversified the range of its products and services to a remarkable extent, until today, 19 plants and 16,000 employees produce over 1,000 different items, large and small.

All these products and all the services which accompany them, however, are unified by one central commitment. KUBOTA makes products which, taken on a national scale, are basic necessities. Products which are indispensable, products intended to help individuals and nations fulfill the potential inherent in their environment. For KUBOTA is the Basic Necessities Giant.

This potential includes water supply, food from the soil and from the sea, industrial development, architecture and construction, and transportation.

Thousands of people depend on KUBOTA's know-how, technology, experience and customer service. You too can depend on KUBOTA.

M96SDTM (U.S.A.)
AQ . L . 6 - 6 . 0 . AK

UNIVERSAL SYMBOLS

As a guide to the operation of your tractor, various universal symbols have been utilized on the instruments and controls. The symbols are shown below with an indication of their meaning.


Safety Alert Symbol


Engine Warning


Diesel Fuel


Fuel-Level

Engine-Rotational Speed


Hourmeter/Elapsed Operating Hours


Engine Coolant-Temperature

Diesel Preheat/Glow Plugs(Low Temperature Start Aid)


Parking Brake/Brake Oil


Engine Oil-Pressure


Turn Signal


Electrical Power-accessories


Engine-Run


Engine-Start

Engine-Stop


Power Take-Off Clutch Control-Off (Disengaged) Position


Power Take-Off Clutch Control-On (Engaged) Position


Differential Lock


Position Control-Raised Position


Position Control-Lowered Position


Draft Control-Shallow Position


Draft Control-Deep Position


3-Point Lowering Speed Control


Remote Cylinder-Retract


Remote Cylinder-Extend


Hazard Warning Lights


Headlight-Low Beam


Headlight-High Beam


Four-Wheel Drive-On


Four-Wheel Drive-Off


Front-Wheel Drive-On


Fast


Slow


Creep


Windshield Wiper


Windshield Wiper Intermittent


Windshield Washer


Lock


Rear Window Defroster


Steering Wheel-Tilt Control


Side Window Defroster


Empty


Full

PTO 540 rpm

PTO 1000 rpm


Battery Charging Condition

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.

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, 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.

CONTENTS

⚠ SAFE OPERATION

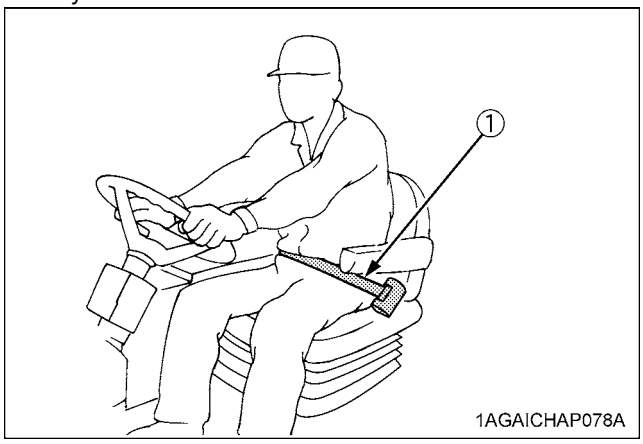
Careful operation is your best insurance against an accident.

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

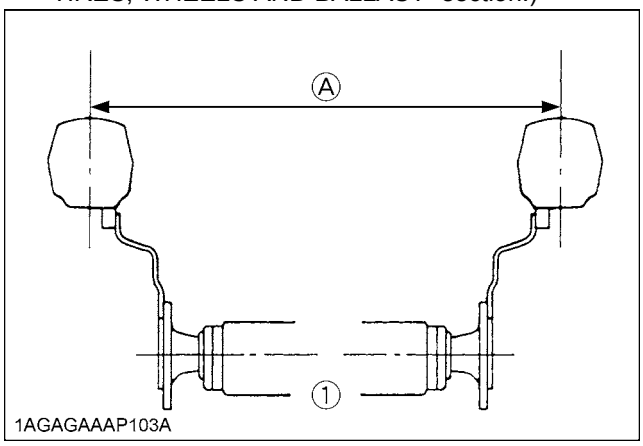
1. Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.
2. Pay special attention to the danger, warning and caution labels on the tractor.
3. KUBOTA recommends the use of a CAB or Roll Over Protective Structures (ROPS) and seat belt in almost all applications. This combination will reduce the risk of serious injury or death, should the tractor be upset.
   If the CAB or ROPS is loosened or removed for any reason, make sure that all parts are reinstalled correctly before operating the tractor.
   Never modify or repair a CAB or ROPS because welding, bending, drilling, grinding, or cutting may weaken the structure.
   A damaged CAB or ROPS structure must be replaced, not repaired or revised. If any structural member of the CAB or ROPS is damaged, replace the entire structure at your local KUBOTA Dealer.



(1) Seat belt

4. 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.
5. Do not operate tractor or any implement attached to it while under the influence of alcohol, medication, controlled substances or while fatigued.
6. Carefully check the vicinity before operating tractor or any implement attached to it. Check for overhead clearance which may interfere with a CAB or ROPS. Do not allow any bystanders around or near tractor during operation.
7. Before allowing other people to use your tractor, explain how to operate and have them read this manual before operation.
8. 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.
9. Do not allow passengers to ride on any part of the tractor at anytime. The operator must remain in the tractor seat during operation.
10. 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.)
11. Keep your tractor clean. Dirt, grease, and trash build up may contribute to fires and lead to personal injury.
12. Use only implements meeting the specifications listed under "IMPLEMENT LIMITATIONS" in this manual or implements approved by KUBOTA.
13. 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.

14. 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*

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

2. OPERATING THE TRACTOR

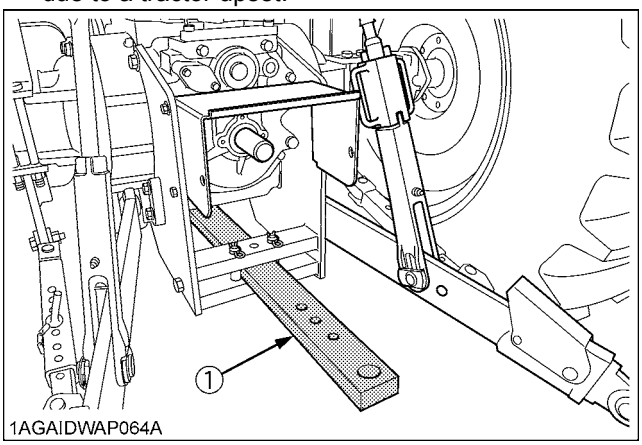
Operator safety is a priority. Safe operation, specifically with respect to overturning hazards, entails understanding the equipment and environmental conditions at the time of use. Some prohibited uses which can affect overturning hazards include traveling and turning with implements and loads carried too high etc. This manual sets forth some of the obvious risks, but the list is not, and cannot be, exhaustive. It is the operator's responsibility to be alert for any equipment or environmental condition that could compromise safe operation.

◆ Starting

1. Always sit in the operator's seat when starting engine or operating levers or controls. Adjust seat per instructions in the operating the tractor section. Never start engine while standing on the ground.
2. Before starting the engine, make sure that all levers (including auxiliary control levers) are in their neutral positions, that the parking brake is engaged, and that both the clutch and the Power Take-Off (PTO) are disengaged or "OFF".
   Fasten the seat belt if the tractor has a CAB, a fixed ROPS or a foldable ROPS in the upright and locked position.
3. 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.
4. Do not operate or idle engine in a non-ventilated area. Carbon monoxide gas is colorless, odorless, and deadly.
5. Check before each use that operator presence controls are functioning correctly. Test safety systems. (See "Checking Engine Start System" in "EVERY 50 HOURS" in "PERIODIC SERVICE" section.)
   Do not operate unless they are functioning correctly.

◆ Working

1. Pull only from the drawbar. Never hitch to axle housing or any other point except drawbar; such arrangements will increase the risk of serious personal injury or death due to a tractor upset.



(1) Drawbar

2. Keep all shields and guards in place. Replace any that are missing or damaged.
3. Avoid sudden starts. To avoid upsets, slow down when turning, on uneven ground, and before stopping.
4. The tractor cannot turn with the rear wheel or 4-wheel differential locked and attempting to do so could be dangerous.
5. Do not operate near ditches, holes, embankments, or other ground surface features which may collapse under the tractor's weight. The risk of tractor upset is even higher when the ground is loose or wet. Tall grass can hide obstacles, walk the area first to be sure.
6. Watch where you are going at all times. Watch for and avoid obstacles. Be alert at row ends, near trees, and other obstructions.
7. When working in groups, always let the others know what you are going to do before you do it.
8. Never try to get on or off a moving tractor.
9. Do not stand between tractor and implement or trailed vehicle unless parking brake is applied.

◆ Safety for children

Tragedy can occur if the operator is not alert to the presence of children. Children generally are attracted to machines and the work they do.

1. Never assume that children will remain where you last saw them.
2. Keep children out of the work area and under the watchful eye of another responsible adult.
3. Be alert and shut your machine down if children enter the work area.

4. Never carry children on your machine. There is no safe place for them to ride. They may fall off and be run over or interfere with your control of the machine.
5. Never allow children to operate the machine even under adult supervision.
6. Never allow children to play on the machine or on the implement.
7. Use extra caution when backing up. Look behind and down to make sure area is clear before moving.
8. When parking your machine if at all possible park on a firm, flat and level surface; if not, park across a slope. Set the parking brake(s), lower the implements to the ground, remove the key from the ignition and lock the cab door (if equipped) and chock the wheels.

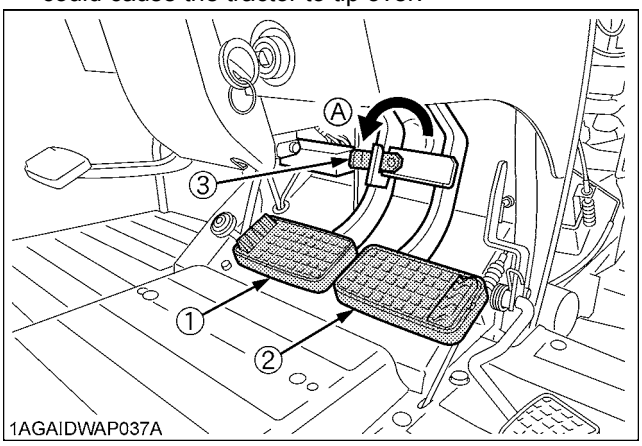
◆ Operating on slopes

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution.

1. To avoid upsets, always back up steep slopes. If you cannot back up the slope or if you feel uneasy on it, do not operate on it. Stay off slopes too steep for safe operation.
2. Driving forward out of a ditch, mired condition or up a steep slope increases the risk of a tractor to be upset backward. Always back out of these situations. Extra caution is required with four-wheel drive models because their increased traction can give the operator false confidence in the tractor's ability to climb slopes.
3. Keep all movement on slopes slow and gradual. Do not make sudden changes in speed, direction or apply brake and make sudden motions of the steering wheel.
4. Avoid disengaging the clutch or changing gears speed when climbing or going down a slope. If on a slope disengaging the clutch or changing gears to neutral could cause loss of control.
5. Special attention should be made to the weight and location of implements and loads as such will affect the stability of the tractor.
6. To improve stability on slope, set widest wheel tread as shown in "TIRES, WHEELS AND BALLAST" section.
   Follow recommendations for proper ballasting.

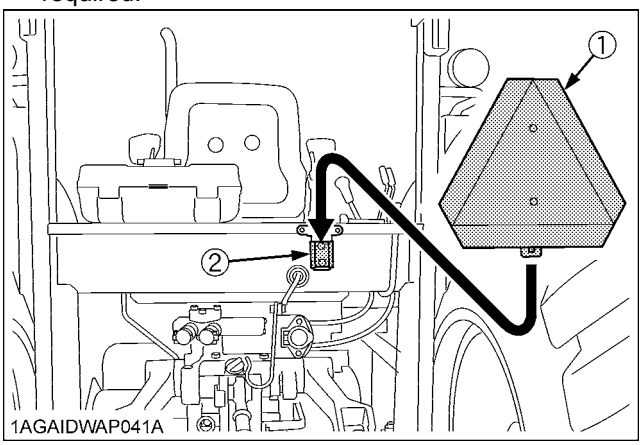
◆ Driving the tractor on the road

1. Lock the two brake pedals together to help assure straight-line stops. Uneven braking at road speeds could cause the tractor to tip over.



(1) Brake Pedal (LH)
(2) Brake Pedal (RH)
(3) Brake Pedal Lock
(A) Whenever travelling on the road

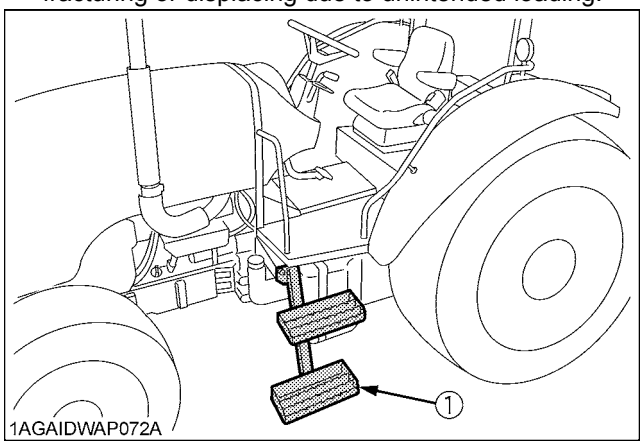
2. Check the front wheel engagement. The braking characteristics are different between two and four wheel drive. Be aware of the difference and use carefully.
3. Always slow the tractor down before turning. Turning at high speed may tip the tractor over.
4. Make sure that the Slow Moving Vehicle (SMV) sign is clean and visible. Use hazard lights and turn signals as required.



(1) SMV emblem
(2) Bracket

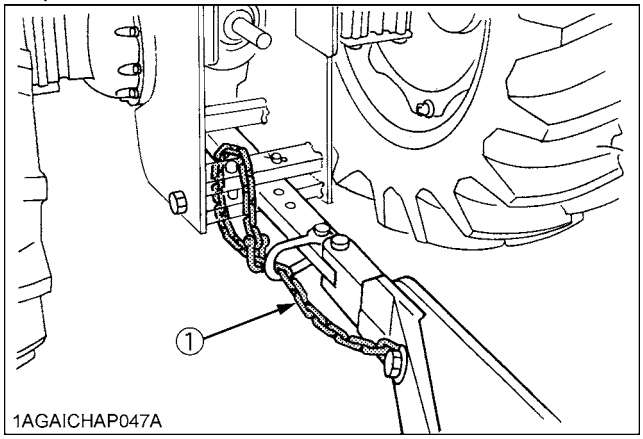
5. Observe all local traffic and safety regulations.
6. Turn the headlights on. Dim them when meeting another vehicle.
7. Drive at speeds that allow you to maintain control at all times.
8. Do not apply the differential lock while traveling at road speeds. The tractor may run out of control.

9. Avoid sudden motions of the steering wheel as they can lead to a dangerous loss of stability. The risk is especially great when the tractor is traveling at road speeds.
10. Do not operate an implement while the tractor is on the road. Lock the 3-point hitch in the raised position.
11. Do not ride or stand on the step during operation. Riding or standing there could result in being crushed under the rear tire due to slippage or the step fracturing or displacing due to unintended loading.



(1) Step

12. When towing other equipment, use a safety chain and place an SMV emblem on it as well.



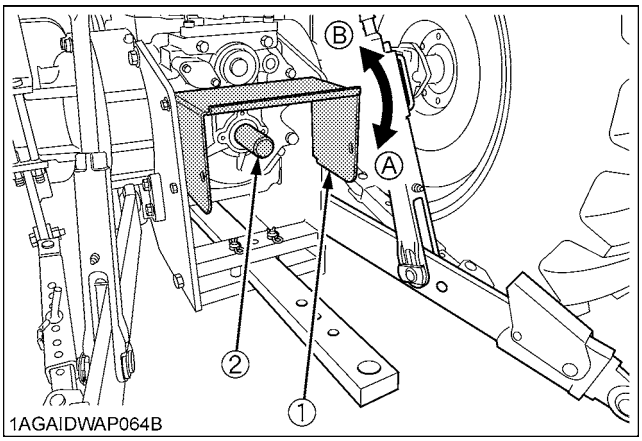
(1) Safety chain

3. PARKING THE TRACTOR

1. Disengage the PTO, lower all implements to the ground, place all control levers in their neutral positions, set the parking brake, stop the engine, and remove the key.
2. Make sure that the tractor has come to a complete stop before dismounting.
3. Avoid parking on steep slopes, if at all possible park on a firm and level surface; if not, park across a slope with chock the wheels.
   Failure to comply with this warning may allow the tractor to move and could cause injury or death.

4. OPERATING THE PTO

1. Wait until all moving components have completely stopped before getting off the tractor, connecting, disconnecting, adjusting, cleaning, or servicing any PTO driven equipment.
2. Keep the PTO shaft cover in place at all times. Replace the PTO shaft cap when the shaft is not in use.



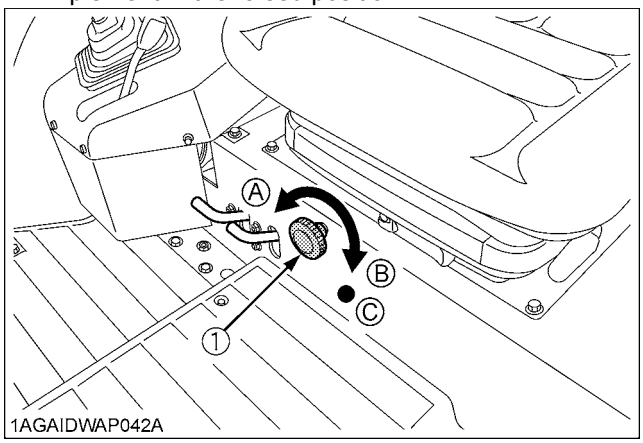
(1) PTO Shaft cover *(A) "NORMAL POSITION"*
(2) PTO Shaft cap *(B) "RAISED POSITION"*

3. Before installing or using PTO driven equipment, read the manufacturer's manual and review the safety labels attached to the equipment.
   To prevent PTO driven equipment from improper or unsafe use, select the lower speed (540rpm) unless the higher one is specifically recommended as safe by the equipment manufacture.
4. When operating stationary PTO driven equipment, always apply the tractor parking brake and place chocks behind and in front of the rear wheels. Stay clear of all rotating parts. Never step over rotating parts.

5. USING 3-POINT HITCH

1. Use the 3-point hitch only with equipment designed for 3-point hitch usage.
2. When using a 3-point hitch mounted implement, be sure to install the proper counterbalance weight on the front of the tractor.

3. When transporting on the road, set the implement lowering speed knob in the "LOCK" position to hold the implement in the raised position.

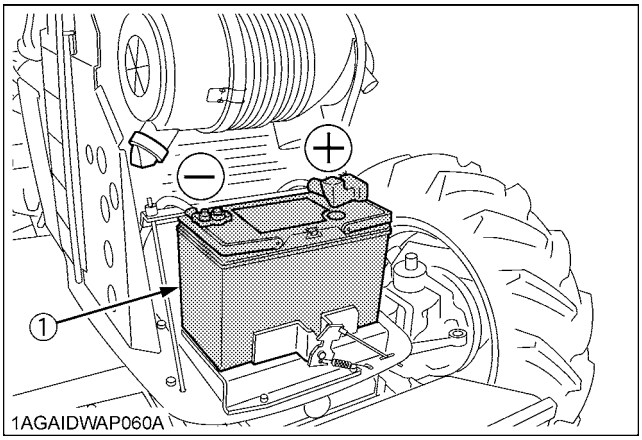


(1) 3-point hitch lowering speed knob
(A) "FAST"
(B) "SLOW"
(C) "LOCK"

6. SERVICING THE TRACTOR

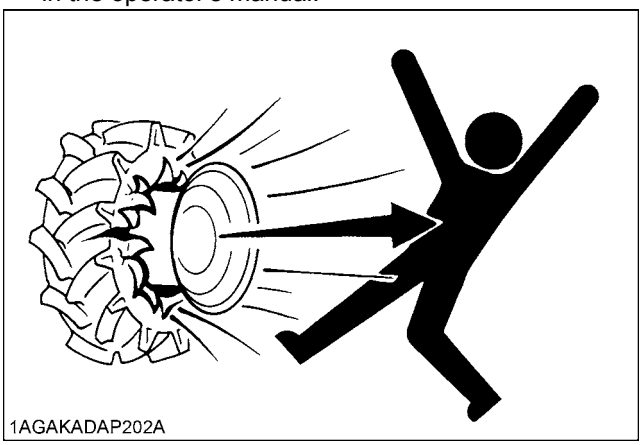
Before servicing the tractor, park it on a firm, flat and level surface, set the parking brake, lower all implements to the ground, place the gear shift lever in neutral, stop the engine and remove the key.

1. Allow the tractor time to cool off before working on or near the engine, muffler, radiator, etc.
2. 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. If the tractor has a coolant recovery tank, add coolant or water to the tank, not the radiator. (See "Checking Coolant Level" in "DAILY CHECK" in "PERIODIC SERVICE" section.)
3. Always stop the engine before refueling. Avoid spills and overfilling.
4. Do not smoke when working around battery or when refueling. Keep all sparks and flames away from battery and fuel tank. The battery presents an explosive hazard, because it gives off hydrogen and oxygen especially when recharging.
5. Before "jump starting" a dead battery, read and follow all of the instructions. (See "JUMP STARTING" in "OPERATING THE ENGINE" section.)
6. Keep first aid kit and fire extinguisher handy at all times.
7. Disconnect the battery's ground cable before working on or near electric components.
8. To avoid the possibility of battery explosion, do not use or charge the refillable type battery if the fluid level is below the LOWER (lower limit level) mark. Check the fluid level regularly and add distilled water as required so that the fluid level is between the UPPER and LOWER levels.
9. To avoid sparks from an accidental short circuit, always disconnect the battery's ground cable (-) first and reconnect it last.



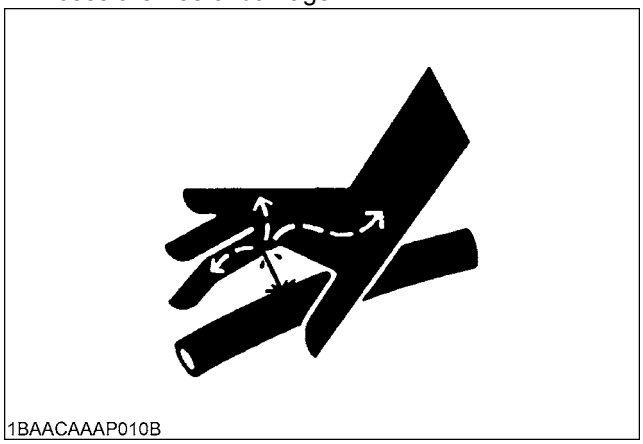
(1) Battery

10. Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.
11. Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure shown in the operator's manual.



12. Securely support the tractor when either changing wheels or adjusting the wheel tread width.
13. Make sure that wheel bolts have been tightened to the specified torque.
14. Do not work under any hydraulically supported devices. They can settle, suddenly leak down, or be accidentally lowered. If it is necessary to work under tractor or any machine elements for servicing or adjustment, securely support them with stands or suitable blocking beforehand.

15. Escaping hydraulic fluid under pressure has sufficient force to penetrate skin, causing serious personal injury. Before disconnecting hydraulic lines, be sure to release all residual pressure. Before applying pressure to the hydraulic system, make sure that all connections are tight and that all lines, pipes, and hoses are free of damage.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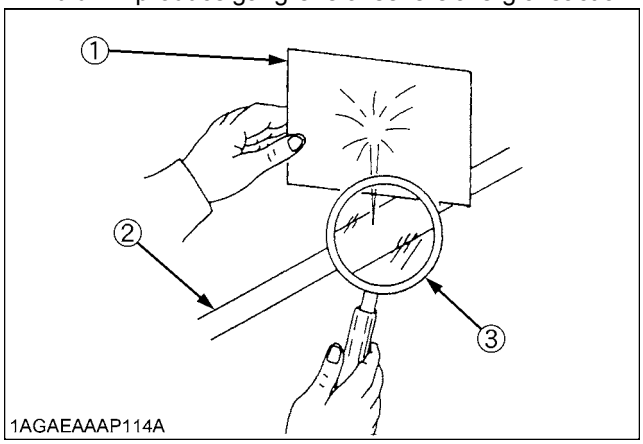
16. Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks; use a piece of cardboard or wood. Use of safety goggles or other eye protection is also highly recommended. If injured by escaping fluid, see a medical doctor at once. This fluid will produce gangrene or severe allergic reaction.



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(1) Cardboard
(2) Hydraulic line
(3) Magnifying glass

7. DANGER, WARNING AND CAUTION LABELS

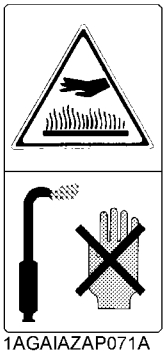
(1) Part No. 6C090-4958-2
Do not get your hands close to engine fan and fan belt.

1AGAIAZAP110A

(2) Part No. 3N600-4958-1 [M108S] [M96SDTM]
Do not touch hot surface like supply pump, etc.

1AGAIDXAP073A

(3) Part No. 3N300-4958-1
Do not touch hot surface like muffler, etc.



1AGAIAZAP071A

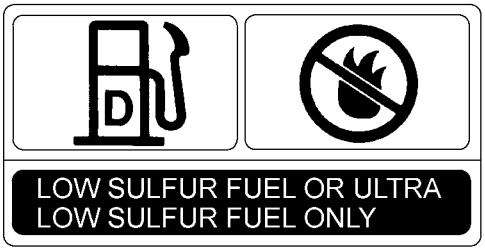
(4) Part No. TA040-4956-2 [M96S]

Diesel fuel only No fire

1AGAIAZAP118A

(4) Part No. TC230-4956-1 [M108S] [M96SDTM]

Diesel fuel only No fire



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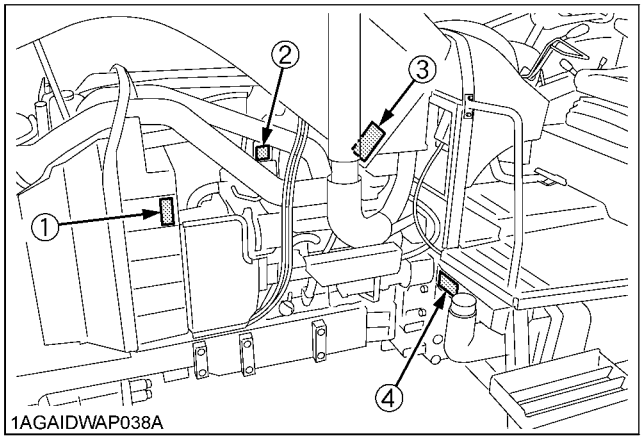

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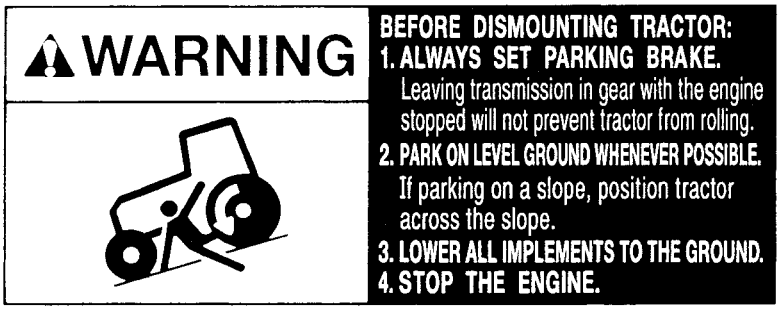
1AGAIDWAP045A

(1) Part No. 6C150-4743-1



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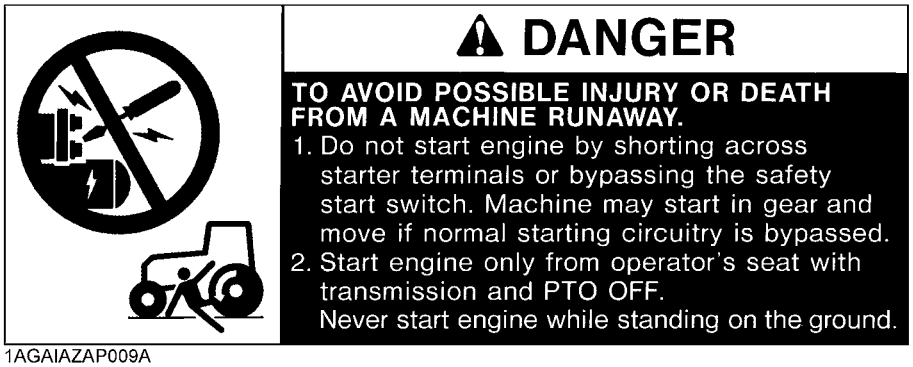
(2) Part No. TA040-4965-2

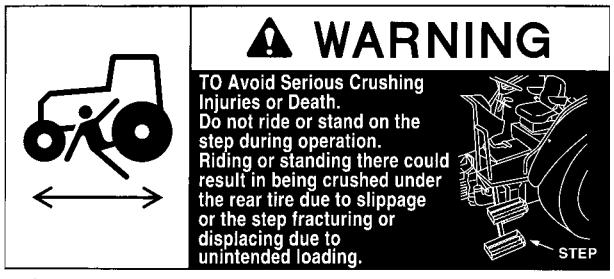


1AGAIAZAP009A

(3) Part No. 3F240-9857-1

1AGAIBDAP039A

(4) Part No. 3N600-9801-1



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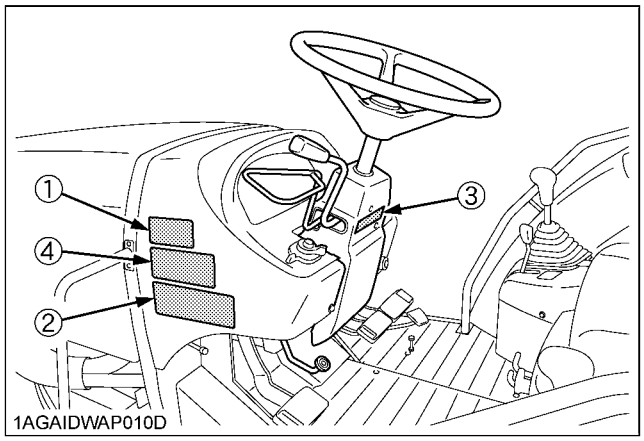
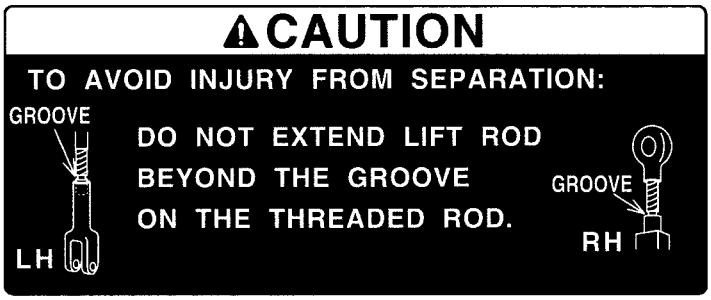


1AGAIDWAP010D

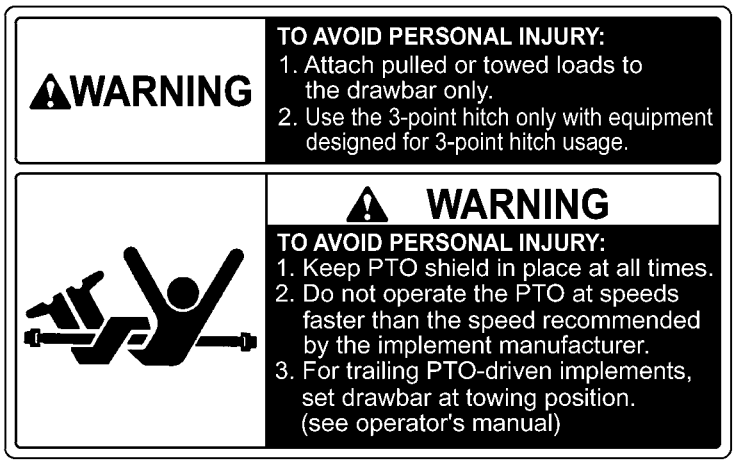
1AGAIDWAP046A

(1) Part No. 3P305-9856-1



1AGAICVAP046E

(2) Part No. 6C200-4959-1



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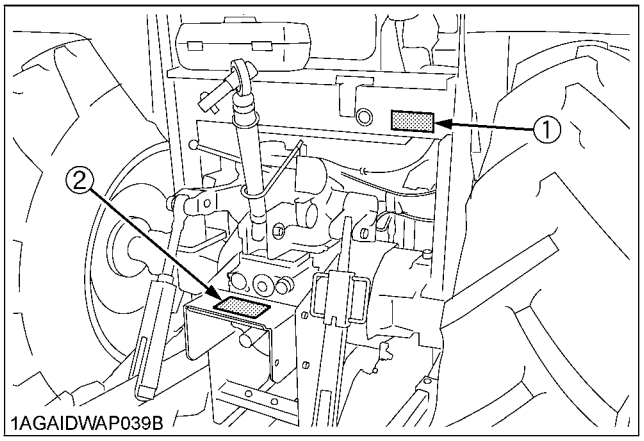


1AGAIDWAP039B

1AGAIDWAP075A

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

⚠ WARNING

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

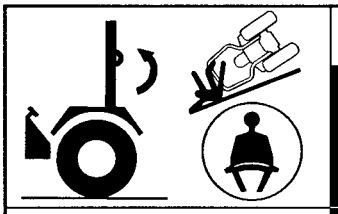
⚠ CAUTION

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.

1AGAIAZAP076A

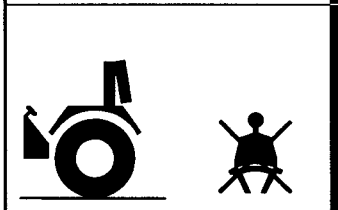
(2) Part No. 3A111-9848-2



⚠ WARNING

TO AVOID INJURY OR DEATH FROM ROLL-OVER:

- Keep Roll-Over Protective Structures (ROPS) in the upright and locked position.
- Fasten SEAT BELT before operating.



THERE IS NO OPERATOR PROTECTION WHEN THE ROPS IS IN THE FOLDED POSITION.

- Check the operating area and fold the ROPS only when absolutely necessary.
- Do not wear SEAT BELT if ROPS is folded.
- Raise and lock ROPS as soon as vertical clearance allows.
- Read ROPS related instructions and warnings.

1AGAIDCAP066E

(3) Part No. 6C070-4742-2

⚠ 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.

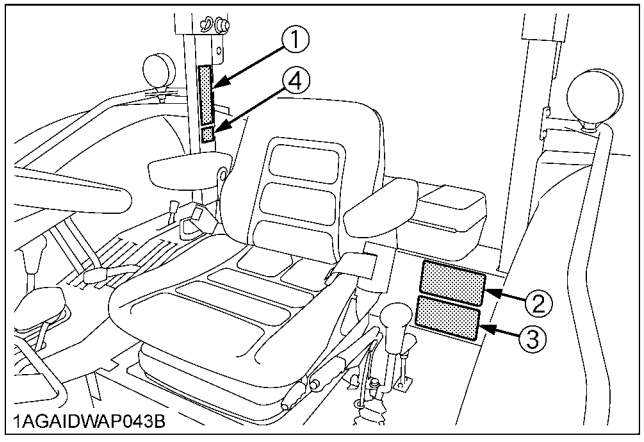
1AGAIAZAP109A

(4) Part No. 6C300-4744-1

⚠ WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation.
A spark arrester may be required.
The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

1AGAIHFAP069A



1AGAIDWAP043B

1AGAIDWAP048A

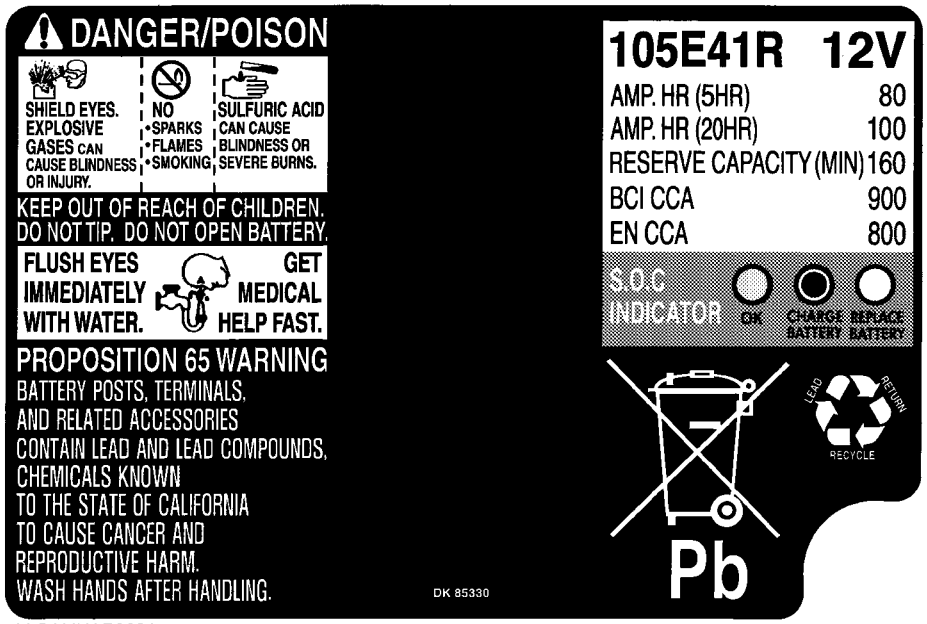
(1) Part No. 3N600-4958-1
[M108S] [M96SDTM]
Do not touch hot surface like supply pump, etc.

1AGAIDXAP073A

(2) Part No. 6C090-4958-2
Do not get your hands close to engine fan and fan belt.

1AGAIAZAP110A

(3) Part No. 3Y205-9892-1



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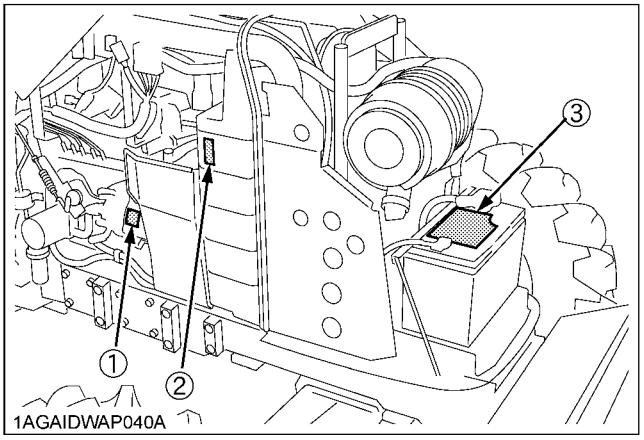
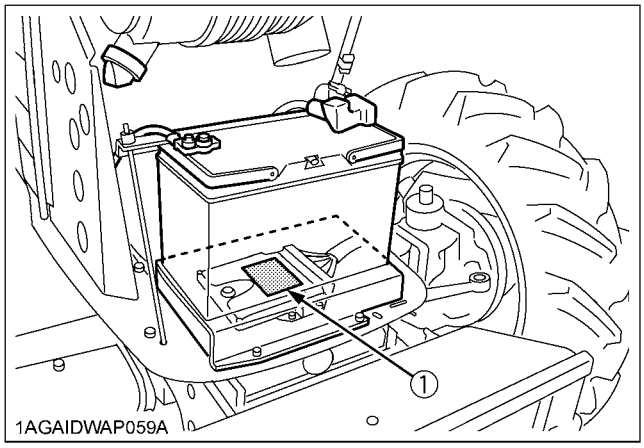


1AGAIDWAP040A

1AGAIDWAP049A

(1) Part No. 1J574-8721-1 [M108S] [M96SDTM]

1AGAIEDAP019A



1AGAIDWAP054A

8. CARE OF DANGER, WARNING AND CAUTION LABELS

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels from your local KUBOTA Dealer.
4. If a component with danger, warning and 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.

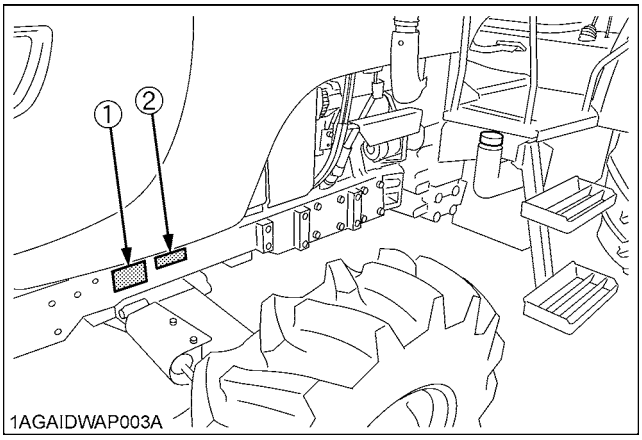
SERVICING OF TRACTOR

Your dealer is interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.
However, when in need of parts or major service, be sure to see your KUBOTA Dealer.
For service, contact the KUBOTA Dealership from which you purchased your tractor or your local KUBOTA Dealer. When in need of parts, be prepared to give your dealer both the tractor and engine serial numbers.
Locate the serial numbers now and record them in the space provided.

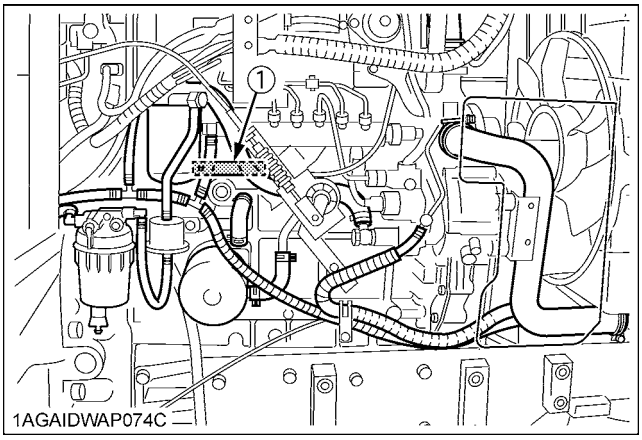
	Type	Serial No.
Tractor		
ROPS		
Engine		
Date of Purchase		
Name of Dealer		
(To be filled in by purchaser)		

◆ **Warranty**
This tractor is warranted under the KUBOTA Limited Express Warranty, a copy of which may be obtained from your selling dealer. No warranty shall, however, apply if the tractor has not been handled according to the instruction given in the Operator's Manual even it is within the warranty period.

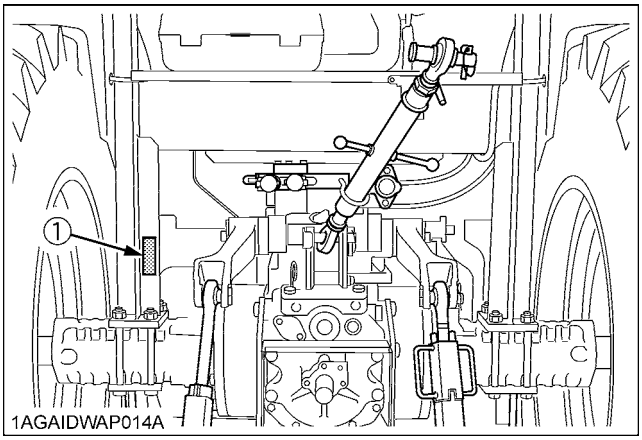
◆ **Scrapping the tractor and its procedure**
To put the tractor out of service, correctly follow the local rules and regulations of the country or territory where you scrap it. If you have questions, consult your local KUBOTA Dealer.



(1) Tractor identification plate
(2) Tractor serial number



(1) Engine serial number



(1) ROPS identification plate (ROPS serial No.)

SPECIFICATIONS

SPECIFICATION TABLE

Model				M96S		M108S	
				2WD	4WD	2WD	4WD
Engine	Model			V3800-DI-T		V3800-CR-TI	
	Type			Direct Injection, liquid cooled 4 cylinder diesel			
	Number of cylinders			4			
	Total displacement		cm^3 (cu.in.)	3769 (230)			
	Bore and stroke		mm (in.)	100 x 120 (3.9 x 4.7)			
	Rated revolution		rpm	2600			
	Low idling revolution		rpm	800 to 850			
	Net power *1		kW (HP)	70.9 (95)		80.6 (108)	
	PTO power *1 (factory observed)		kW (HP)	62.7 (84)		71.6 (96)	
	Maximum torque		N-m (ft-lbs) / rpm	314.8 (232.2) / 1400 to 1600		366.4 (270.2) / 1400 to 1600	
	Battery capacity			12V, RC: 160 min, CCA 900A			
	Fuel tank capacity		L (U.S.gals.)	175 (46.2)			
	Engine oil capacity		L (U.S.qts.)	10.7 (11.3)			
	Coolant capacity		L (U.S.qts.)	9.6 (10.1)			
Dimensions	Overall length		mm (in.)	4145 (163.2)			
	Overall width (minimum tread)		mm (in.)	2200 (86)		2195 (86)	2220 (87)
	Overall height		mm (in.)	2620 (103)		2670 (105)	
	Wheel base		mm (in.)	2435 (95.9)			
	Tread	Front	mm (in.)	1540 to 2040 (60.6 to 80.3)	1580, 1680 (62.2, 66.1)	1540 to 2040 (60.6 to 80.3)	1580, 1680 (62.2, 66.1)
		Rear	mm (in.)	1700 to 2010 (66.9 to 79.1)	1705 to 2060 (67.1 to 81.1)	1705 to 2005 (67.1 to 78.9)	1730 to 2035 (68.1 to 80.1)
	Minimum ground clearance		mm (in.)	385 (15.2)		435 (17.1) (Drawbar bracket)	
Weight			kg (lbs.)	2840 (6261)	3370 (7430)	2880 (6349)	3620 (7981)

Model				M96S		M108S	
				2WD	4WD	2WD	4WD
Traveling system	Standard tire size *2	Front tires		10.00-16	12.4-24	10.00-16	13.6-24
		Rear tires		18.4-30	18.4-30 cast	18.4-34	18.4-34 cast
	Clutch			Hydraulic wet disks			
	Steering			Hydraulic Power Steering			
	Braking system			Hydraulic wet disks			
	Differential			Bevel gears with diff. lock (Rear)	Bevel gears with diff. lock (Front & Rear)	Bevel gears with diff. lock (Rear)	Bevel gears with diff. lock (Front & Rear)
Hydraulic unit	Hydraulic control system			Position, draft (top link sensing) & mix control			
	Pump capacity		L (U.S.gals.) / min	65 (17.2)			
	Three point hitch			Category 2			
	Max. lifting force	At lifting points *3	kg (lbs.)	2500 (5510), 3900 (8600) with 2 assist cylinders (option)			
		24 in. behind lifting point	kg (lbs.)	2100 (4630), 3400 (7490) with 2 assist cylinders (option)			
	Remote hydraulic control			1 standard (2nd, 3rd & flow control valve optional)			
	System pressure		MPa (kgf/cm^2)	19.6 (200)			
	Traction system			Swinging drawbar, adjustable in direction			
PTO	Live PTO (Independent)	Direction of turning		Clockwise, viewed from tractor rear			
		PTO/ Engine speed	rpm	6 spline: 540 / 2205 21 spline: 1000 / 2210 (if equipped)			

The company reserves the right to change the specifications without notice.

NOTE: *1 Manufacturer's estimate
*2 Cast iron disks available for wheels.
*3 At lower link end with links horizontal.

TRAVELING SPEEDS

(At rated engine rpm)

Model				M96S			M108S		
Tire size (Rear)				18.4-30			18.4-34		
Transmission type				without Dual speed	with Dual speed		without Dual speed	with Dual speed	
Shuttle shift lever	Range gear shift lever	Main gear shift lever		km/h (mph)	Hi km/h (mph)	Lo km/h (mph)	km/h (mph)	Hi km/h (mph)	Lo km/h (mph)
Forward	CREEP (option)	🐢	1	0.35 (0.22)	0.35 (0.22)	0.29 (0.18)	0.38 (0.23)	0.38 (0.23)	0.31 (0.19)
			2	0.44 (0.28)	0.44 (0.28)	0.37 (0.23)	0.48 (0.30)	0.48 (0.30)	0.39 (0.25)
			3	0.55 (0.34)	0.55 (0.34)	0.45 (0.28)	0.59 (0.37)	0.59 (0.37)	0.49 (0.30)
			4	0.67 (0.42)	0.67 (0.42)	0.55 (0.34)	0.72 (0.45)	0.72 (0.45)	0.60 (0.37)
		🐇	1	0.86 (0.53)	0.86 (0.53)	0.71 (0.44)	0.92 (0.57)	0.92 (0.57)	0.76 (0.47)
			2	1.09 (0.68)	1.09 (0.68)	0.90 (0.56)	1.18 (0.73)	1.18 (0.73)	0.97 (0.60)
			3	1.35 (0.84)	1.35 (0.84)	1.11 (0.69)	1.45 (0.90)	1.45 (0.90)	1.20 (0.74)
			4	1.65 (1.03)	1.65 (1.03)	1.36 (0.85)	1.77 (1.10)	1.77 (1.10)	1.47 (0.91)
	L	🐢	1	1.95 (1.21)	1.95 (1.21)	1.61 (1.00)	2.09 (1.30)	2.09 (1.30)	1.73 (1.08)
			2	2.48 (1.54)	2.48 (1.54)	2.05 (1.27)	2.67 (1.66)	2.67 (1.66)	2.20 (1.37)
			3	3.05 (1.90)	3.05 (1.90)	2.52 (1.57)	3.28 (2.04)	3.28 (2.04)	2.71 (1.69)
			4	3.74 (2.33)	3.74 (2.33)	3.09 (1.92)	4.02 (2.50)	4.02 (2.50)	3.33 (2.07)
		🐇	1	4.79 (2.98)	4.79 (2.98)	3.96 (2.46)	5.15 (3.20)	5.15 (3.20)	4.26 (2.65)
			2	6.10 (3.79)	6.10 (3.79)	5.04 (3.13)	6.56 (4.08)	6.56 (4.08)	5.42 (3.37)
			3	7.51 (4.67)	7.51 (4.67)	6.21 (3.86)	8.08 (5.02)	8.08 (5.02)	6.68 (4.15)
			4	9.21 (5.72)	9.21 (5.72)	7.61 (4.73)	9.90 (6.15)	9.90 (6.15)	8.19 (5.09)
	H	🐢	1	6.80 (4.23)	6.80 (4.23)	5.62 (3.49)	7.31 (4.54)	7.31 (4.54)	6.05 (3.76)
			2	8.66 (5.38)	8.66 (5.38)	7.16 (4.45)	9.31 (5.79)	9.31 (5.79)	7.70 (4.78)
			3	10.67(6.63)	10.67(6.63)	8.82(5.48)	11.47(7.13)	11.47(7.13)	9.48(5.89)
			4	13.07(8.13)	13.07(8.13)	10.81(6.72)	14.06(8.74)	14.06(8.74)	11.63(7.22)
		🐇	1	16.73(10.40)	16.73(10.40)	13.83(8.59)	17.99(11.18)	17.99(11.18)	14.87(9.24)
			2	21.31(13.24)	21.31(13.24)	17.61(10.95)	22.92(14.24)	22.92(14.24)	18.94(11.77)
			3	26.24(16.31)	26.24(16.31)	21.69(13.48)	28.22(17.54)	28.22(17.54)	23.33(14.50)
			4	34.64(21.53)*	34.64(21.53)*	26.59(16.53)	37.26(23.16)*	37.26(23.16)*	28.60(17.77)

The company reserves the right to change the specifications without notice

* At maximum engine rpm

(At rated engine rpm)

Model				M96S			M108S		
Tire size (Rear)				18.4-30			18.4-34		
Transmission type				without Dual speed	with Dual speed		without Dual speed	with Dual speed	
Shuttle shift lever	Range gear shift lever	Main gear shift lever		km/h (mph)	Hi	Lo	km/h (mph)	Hi	Lo
					km/h (mph)	km/h (mph)		km/h (mph)	km/h (mph)
Reverse	CREEP (option)	🐢	1	0.35 (0.22)	0.35 (0.22)	0.29 (0.18)	0.38 (0.24)	0.38 (0.24)	0.31 (0.19)
			2	0.45 (0.28)	0.45 (0.28)	0.37 (0.23)	0.48 (0.30)	0.48 (0.30)	0.40 (0.25)
			3	0.55 (0.34)	0.55 (0.34)	0.46 (0.28)	0.59 (0.37)	0.59 (0.37)	0.49 (0.30)
			4	0.68 (0.42)	0.68 (0.42)	0.56 (0.35)	0.73 (0.45)	0.73 (0.45)	0.60 (0.37)
		🐇	1	0.87 (0.54)	0.87 (0.54)	0.72 (0.44)	0.93 (0.58)	0.93 (0.58)	0.77 (0.48)
			2	1.10 (0.69)	1.10 (0.69)	0.91 (0.57)	1.19 (0.74)	1.19 (0.74)	0.98 (0.61)
			3	1.36 (0.84)	1.36 (0.84)	1.12 (0.70)	1.46 (0.91)	1.46 (0.91)	1.21 (0.75)
			4	1.66 (1.03)	1.66 (1.03)	1.38 (0.86)	1.79 (1.11)	1.79 (1.11)	1.48 (0.92)
	L	🐢	1	1.96 (1.22)	1.96 (1.22)	1.62 (1.01)	2.11 (1.31)	2.11 (1.31)	1.75 (1.08)
			2	2.50 (1.55)	2.50 (1.55)	2.07 (1.28)	2.69 (1.67)	2.69 (1.67)	2.22 (1.38)
			3	3.08 (1.91)	3.08 (1.91)	2.55 (1.58)	3.31 (2.06)	3.31 (2.06)	2.74 (1.70)
			4	3.77 (2.35)	3.77 (2.35)	3.12 (1.94)	4.06 (2.52)	4.06 (2.52)	3.36 (2.09)
		🐇	1	4.83 (3.00)	4.83 (3.00)	3.99 (2.48)	5.19 (3.23)	5.19 (3.23)	4.29 (2.67)
			2	6.15 (3.82)	6.15 (3.82)	5.08 (3.16)	6.61 (4.11)	6.61 (4.11)	5.47 (3.40)
			3	7.58 (4.71)	7.58 (4.71)	6.26 (3.89)	8.15 (5.06)	8.15 (5.06)	6.74 (4.19)
			4	9.29 (5.77)	9.29 (5.77)	7.68 (4.77)	9.99 (6.21)	9.99 (6.21)	8.26 (5.13)
	H	🐢	1	6.86 (4.26)	6.86 (4.26)	5.67 (3.52)	7.38 (4.58)	7.38 (4.58)	6.10 (3.79)
			2	8.73 (5.43)	8.73 (5.43)	7.22 (4.49)	9.39 (5.84)	9.39 (5.84)	7.77 (4.83)
			3	10.76(6.69)	10.76(6.69)	8.89(5.53)	11.57(7.19)	11.57(7.19)	9.57(5.94)
			4	13.19(8.20)	13.19(8.20)	10.90(6.78)	14.18(8.81)	14.18(8.81)	11.73(7.29)
		🐇	1	16.87(10.49)	16.87(10.49)	13.95(8.67)	18.15(11.28)	18.15(11.28)	15.00(9.32)
			2	21.49(13.36)	21.49(13.36)	17.77(11.04)	23.11(14.36)	23.11(14.36)	19.11(11.87)
			3	26.47(16.45)	26.47(16.45)	21.88(13.60)	28.47(17.69)	28.47(17.69)	23.53(14.62)
			4	34.94(21.71)*	34.94(21.71)*	26.82(16.67)	37.58(23.35)*	37.58(23.35)*	28.85(17.93)

The company reserves the right to change the specifications without notice

* At maximum engine rpm

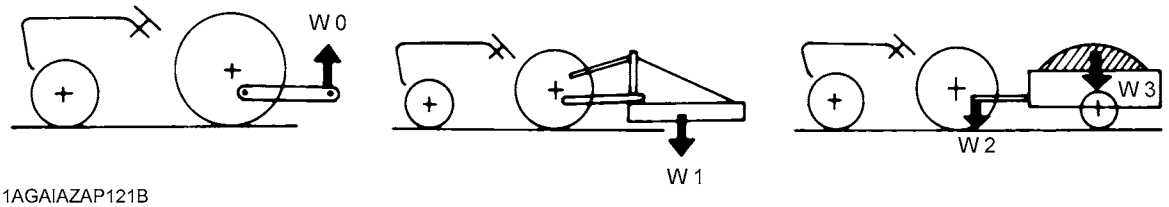
IMPLEMENT LIMITATIONS

The KUBOTA Tractor has been thoroughly tested for proper performance with implements sold or approved by KUBOTA. Use with implements which are not sold or approved by KUBOTA and which exceed the maximum specifications listed below, or which are otherwise unfit for use with the KUBOTA Tractor may result in malfunctions or failures of the tractor, damage to other property and injury to the operator or others. [Any malfunctions or failures of the tractor resulting from use with improper implements are not covered by the warranty.]

	Tread (max. width)				Operating condition	Lower link end max. lifting capacity: W 0
	Front			Rear	**IMPORTANT :** ● Tractor with front spacer option is not approved for use with front loader.	
	2WD	4WD				
		without spacer	with spacer			
M96S	2040 mm (80.3 in.)	1680 mm (66.1 in.)	2040 mm (80.3 in.)	2060 mm (81.1 in.)		2500 kg (5510 lbs.)
M108S		1680 mm (66.1 in.)	2040 mm (80.3 in.)	2035 mm (80.1 in.)		

	Implement weight: W 1	Max. drawbar Load: W 2	Trailer loading weight: W 3	
			2WD	4WD
M96S M108S	As in the following list (Shown on the next page)	1500 kg (3300 lbs.)	6000 kg (13200 lbs.)	7000 kg (15400 lbs.)

Lower link end max, hydraulic lifting capacity.....W 0
Implement weight.....The implement's weight which can be put on the lower link: W 1
Max. drawbar load.....W 2
Trailer loading weight.....The max. loading weight for trailer (without trailer's weight): W 3



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NOTE :
- Implement size may vary depending on soil operating conditions.
- Strictly follow the instructions outlined in the operator's manual of the mounted or trailed machinery or trailer, and do not operate the combination tractor - machine or tractor - trailer unless all instructions have been followed
- Forestry Application
  Following hazards exist;
  (a) toppling trees, primarily in case a rear-mounted tree grab-crane is mounted at the rear of the tractor;
  (b) penetrating objects in the operator's enclosure, primarily in case a winch is mounted at the rear of the tractor.
  Optional equipments such as OPS (Operator Protective Structure), FOPS (Falling Object Protective Structure), etc. to deal with these hazards and other related hazards are not available for this tractor. Without such optional equipment use is limited to tractor specific applications like transport and stationary work

No.	Implement		Remarks			M96S / M108S	
						2WD	4WD
1	Slurry Tank		Max. Tank Capacity		L (gals.)	5000 (1320)	
			Max. Load Capacity		kg (lbs.)	6000 (13200)	
2	Trailer		Max. Load Capacity		kg (lbs.)	6000 (13200)	7000 (15400)
			Max. Drawbar Load		kg (lbs.)	1500 (3300)	
3	Mower	Rotary-Cutter (3P type)	Max. Cutting Width		mm (in.)	3200 (126)	
			Max. Weight		kg (lbs.)	800 (1764)	
		Rotary-Cutter (Drawbar type)	Max. Cutting Width		mm (in.)	6096 (240)	
		Disc Mower (Drawbar type)	Max. Cutting Width		mm (in.)	3962 (156)	
		Flail Mower (Heavy)	Max. Cutting Width		mm (in.)	4267 (168)	
			Max. Weight		kg (lbs.)	1360 (3000)	
		Sickle Bar	Max. Cutting Width		mm (in.)	2743 (108)	3050 (120)
4	Sprayer		Max.Tank-Capacity	Mid	L (gals.)	1000 (260)	
				Rear 3P	L (gals.)	1000 (260)	
				Drawbar	L (gals.)	5000 (1320)	5500 (1450)
5	Rotary Tiller		Max. Tilling Width		mm (in.)	2700 (108)	
			Max. Weight		kg (lbs.)	1200 (2645)	
6	Bottom Plow		Max. Size			14 in. x 4 16 in. x 4 18 in. x 3 20 in. x 2 22 in. x 2 24 in. x 1	14 in. x 5 16 in. x 4 18 in. x 4 20 in. x 3 22 in. x 2 24 in. x 1
			Max. Weight	kg (lbs.) 3P Type		900 (1980)	
7	Disk harrow	3P Type	Max. Size			24 in. x 28	
			Max. Harrowing Width		mm (in.)	3300 (130)	
			Max. Weight		kg (lbs.)	900 (1980)	
		Drawbar Type	Max. Harrowing Width		mm (in.)	4300 (168)	
8	Disc Plow		Max. Size			28 in. x 4	
			Max. Weight		kg (lbs.)	900 (1980)	
9	Sub Soiler		Numbers of Cultivating Tines			3	
			Cultivating Depth		mm (in.)	550 (22)	
10	Cultivator		Max.Width		mm (in.)	5490 (216)	
			Number of Rows			6	
			Max. Weight		kg (lbs.)	900 (1980)	
11	Front Blade *1, *2		Max. Cutting Width		mm (in.)	2600 (102)	
			Max. Oil Pressure		MPa (psi.)	19.6 (2842)	
12	Rear Blade		Max. Cutting Width		mm (in.)	2600 (102)	
			Max. Oil Pressure		MPa (psi.)	19.6 (2842)	
13	Front Loader *1, *2		Max. Lifting Capacity (Bucket pivot pin, max height) *3		kg (lbs.)	1950 (4299)	
			Max. Oil Pressure (extra hydro kit)		MPa (psi.)	20.5 (2975)	
14	Box Blade		Max. Cutting Width		mm (in.)	2430 (96)	
			Max. Weight		kg (lbs.)	800 (1760)	
15	Snow Blade		Max. Width		mm (in.)	2600 (102)	
			Max. Weight		kg (lbs.)	800 (1760)	

NOTE :

- Implement size may vary depending on soil operating conditions.

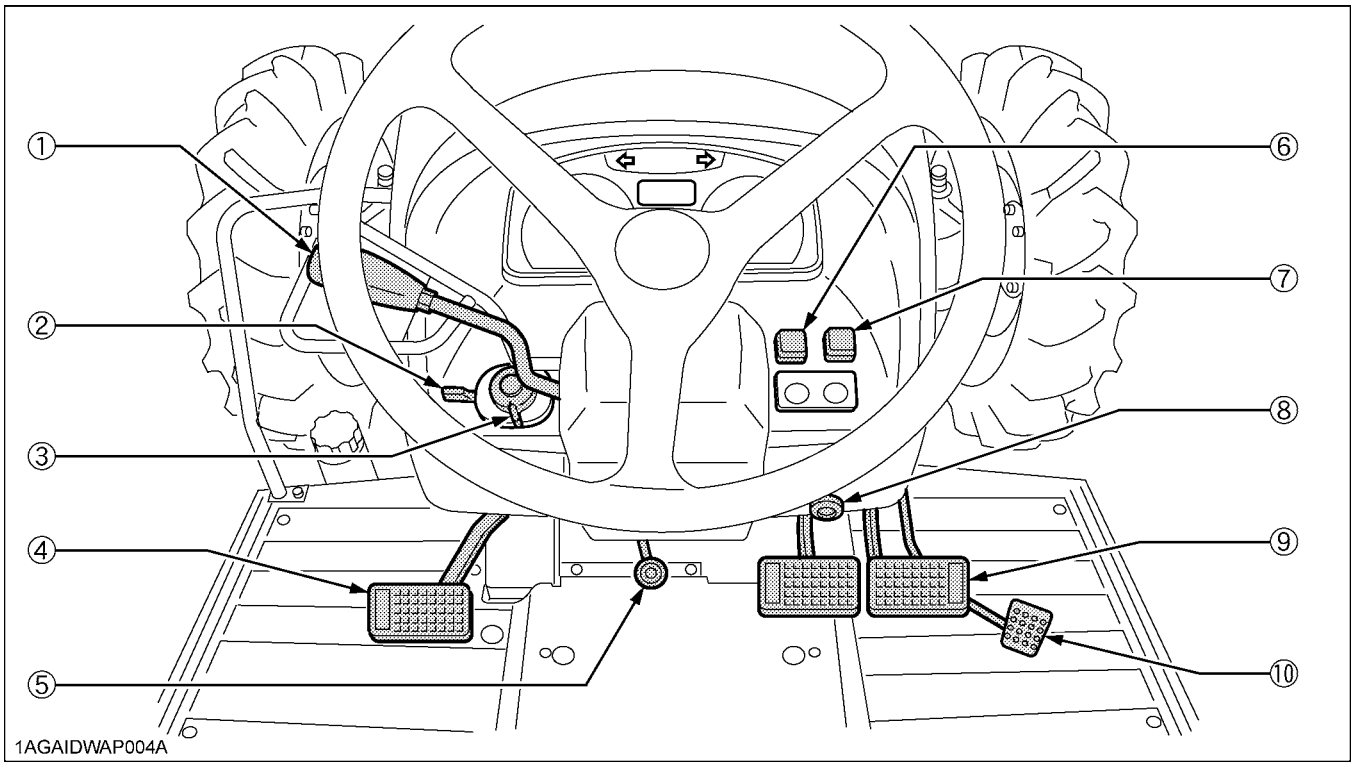
*1 Must remove front weight with this implement.

*2 Need subframe

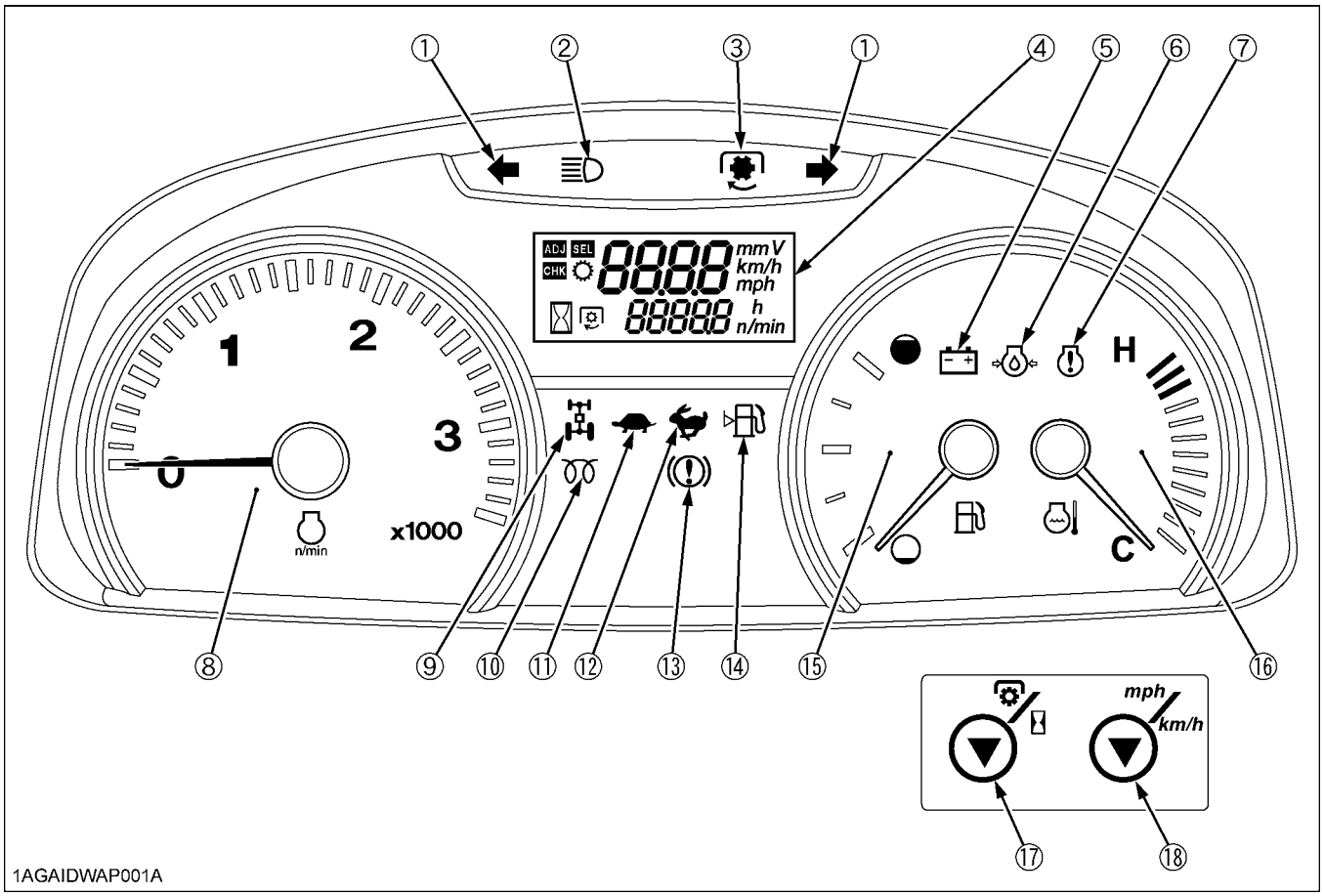
*3 The value contains the weight of KUBOTA standard bucket.

INSTRUMENT PANEL AND CONTROLS

■ Instrument Panel, Switches and Hand Controls



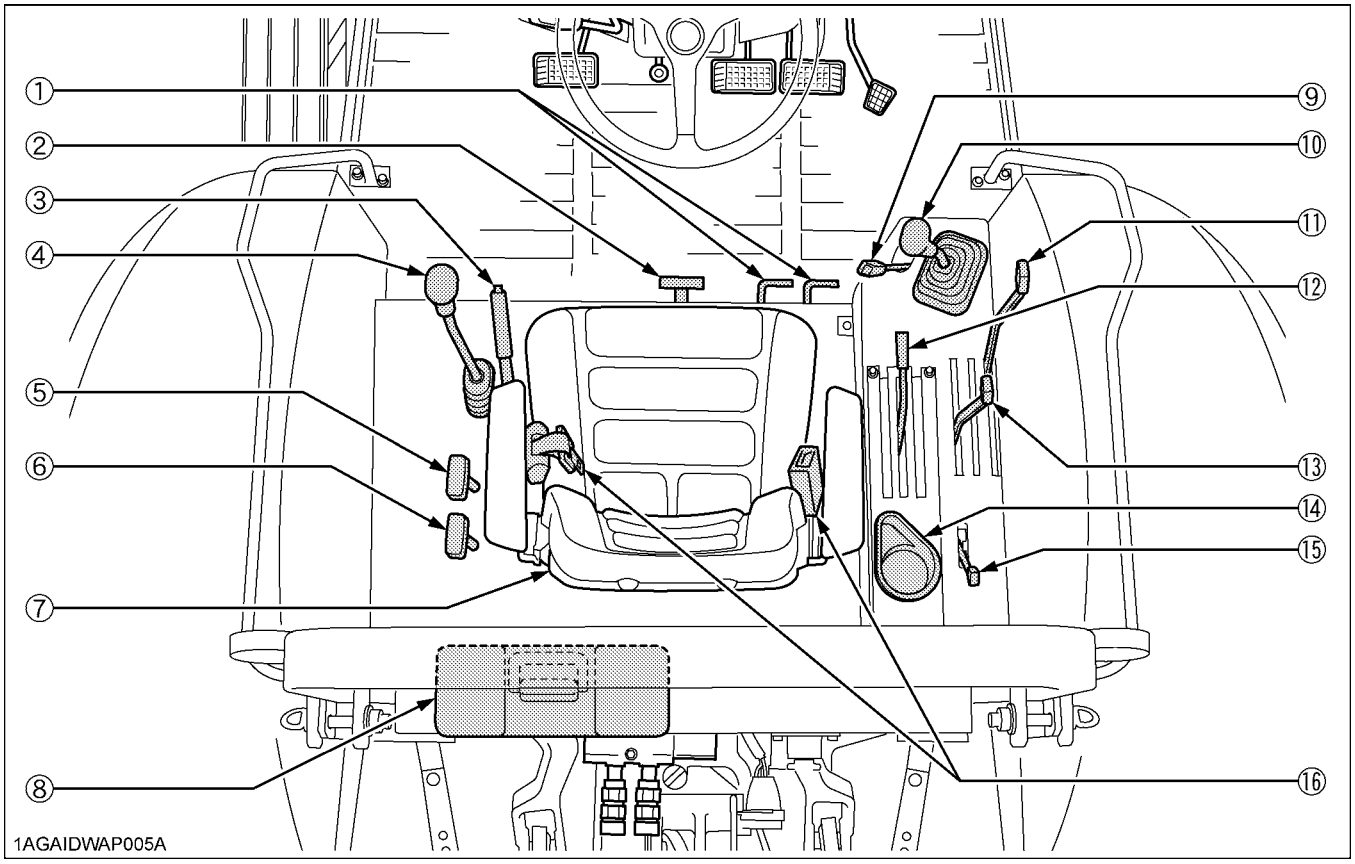
ILLUSTRATED CONTENTS

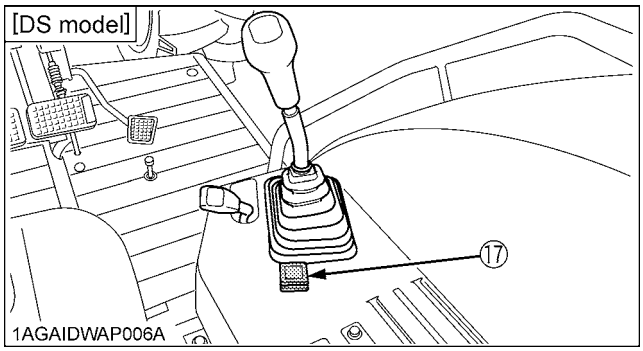


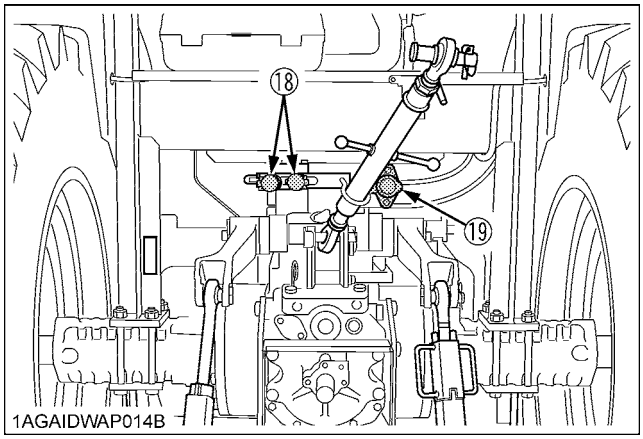
ILLUSTRATED CONTENTS

ILLUSTRATED CONTENTS

■ Foot and Hand Controls







ILLUSTRATED CONTENTS

PRE-OPERATION CHECK

DAILY CHECK

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

CAUTION

To avoid personal injury:

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

Check item

- Walk around inspection
- Check engine oil level
- Check transmission oil level
- Check brake oil level
- Check coolant level
- Check water separator
- Clean grill and radiator screen
- Clean oil cooler
- Clean fuel cooler
  [M108S]
- Check air cleaner evacuator valve
  (When used in a dusty place)
- Check brake pedal
- Check parking brake lever
- Check indicators, gauges and meter
- Check lights
- Check seat belt and ROPS
- Refuel
  (See "DAILY CHECK" in "PERIODIC SERVICE" section.)
- Care of danger, warning and caution labels
  (See "DANGER, WARNING AND CAUTION LABELS" in "SAFE OPERATION" section.)

OPERATING THE ENGINE

CAUTION

To avoid personal injury:

- **Read "Safe Operation" in the front of this manual.**
- **Read 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.**

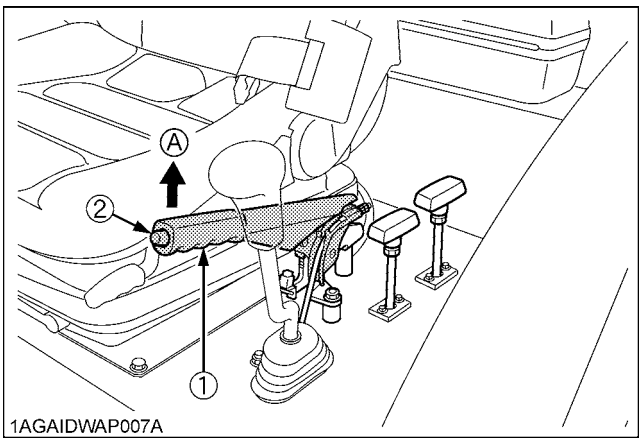
IMPORTANT :

- 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.

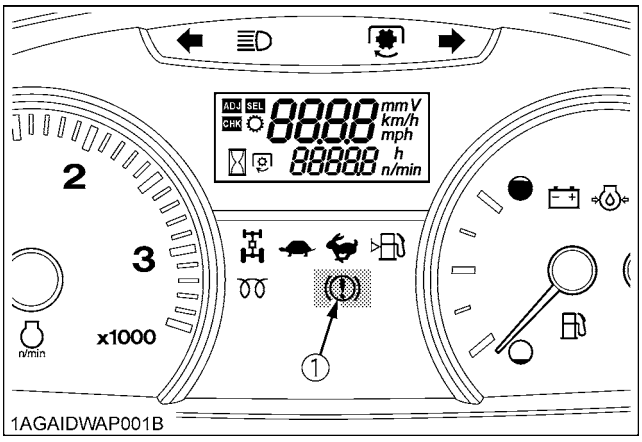
STARTING THE ENGINE

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

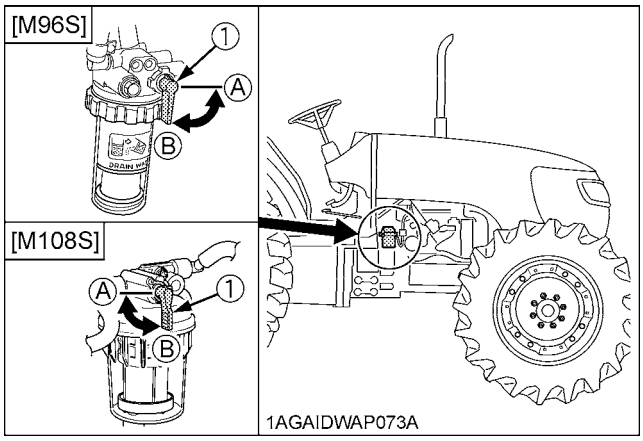


(1) Parking brake indicator light

IMPORTANT :

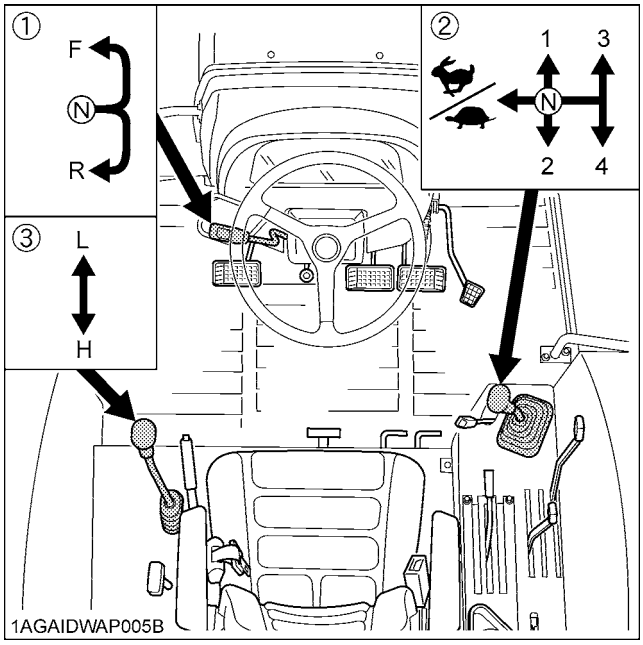
- If the tractor is operated with the parking brake set, the parking brake will be damaged.

2. Make sure the fuel cock is in the "OPEN" position.



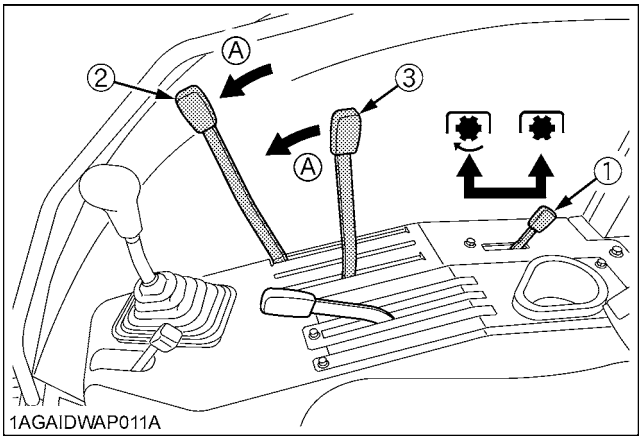
(1) Fuel cock
(A) "CLOSE"
(B) "OPEN"

3. Place the shift levers in "NEUTRAL" position.



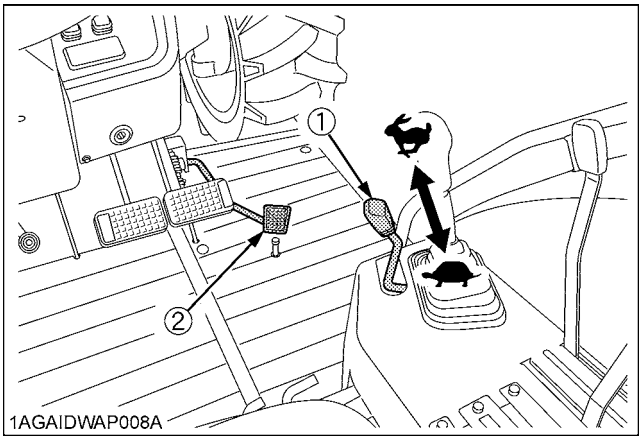
(1) Hydraulic-shuttle shift lever
(2) Main gear shift lever
(3) Range gear shift lever
(N) "NEUTRAL POSITION"

4. Place the PTO clutch control lever in "OFF" position and hydraulic control levers in "LOWEST" position.



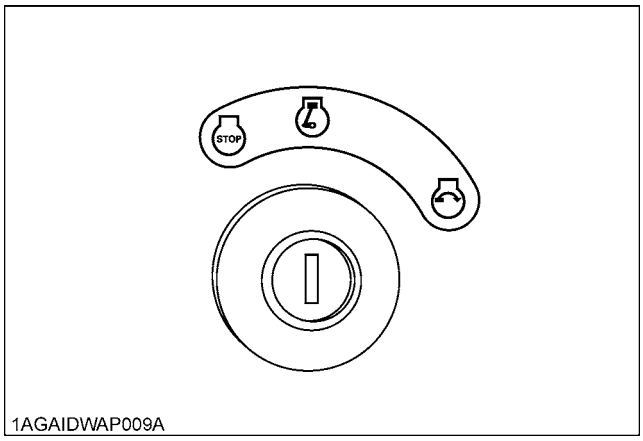
(1) PTO clutch control lever
(2) Position control lever
(3) Draft control lever
"ON"
"OFF"
(A) "DOWN"

5. Set the throttle lever to about 1/2 way.



(1) Hand throttle lever
(2) Foot throttle
"INCREASE"
"DECREASE"

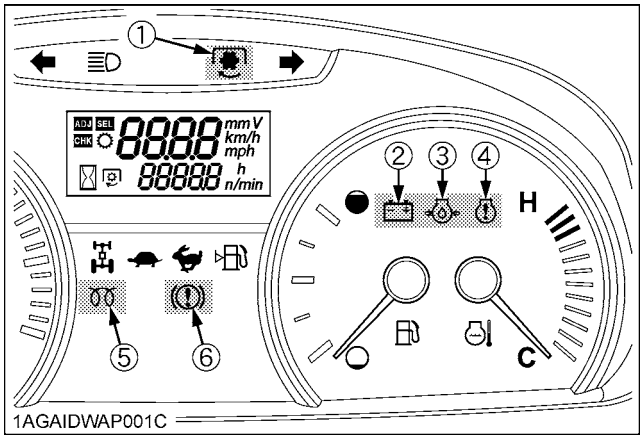
6. Insert the key into the key switch and turn it "ON".



"OFF" *"ON"* *"START"*

◆ **Check Easy Checker(TM) Lamps:**

1. When the key is turned "ON", lamps (2) (3) (4) should come on. If trouble should occur at any location while the engine is running, the indicator lamp corresponding to that location comes on.
2. Suppose that the engine coolant temperature is not high enough yet. The heater indicator (5) also comes on when the key is turned "ON" to preheat the engine and goes off automatically when preheat is completed. Illumination time of indicator varies according to the temperature of coolant
3. The PTO clutch indicator (1) comes on while PTO clutch control lever is engaged "ON" and goes off when disengaged "OFF" it.
4. The parking brake / Brake oil warning lamp (6) comes on while parking brake is applied and goes off when it is released.



(1) PTO clutch indicator
(2) Electrical charge indicator
(3) Engine oil pressure indicator
(4) Engine warning indicator [M108S model]
(5) Heater indicator
(6) Parking brake / Brake oil indicator

IMPORTANT :

- Daily checks with the Easy Checker(TM) only, are not sufficient. Never fail to conduct daily checks carefully by referring to Daily Check. (See "DAILY CHECK" in "PERIODIC SERVICE" section.)

7. Fully depress the clutch pedal.

8. Turn the key to "START" position and release when the engine starts.

IMPORTANT :

- Because of the safety devices, the engine will not start except when the PTO clutch control lever is placed in the "OFF" position and main gear shift lever is placed in the "NEUTRAL" position.

9. Check to see that all the lamps on the Easy Checker(TM) are "OFF".

If a lamp is still on, immediately stop the engine and determine the cause.

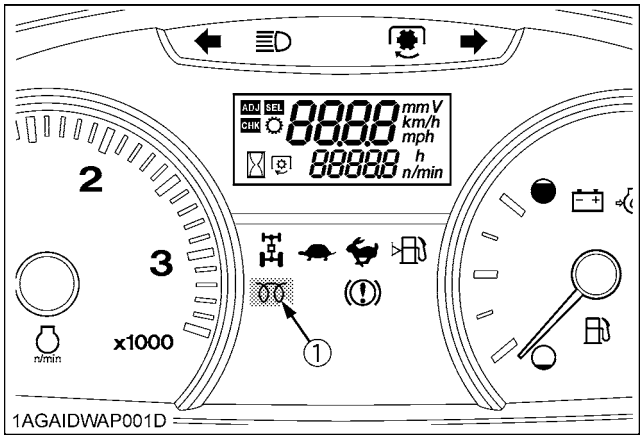
10. Release the clutch pedal.

COLD WEATHER STARTING

If the ambient temperature is below 0 ℃ (32 ℉) and the engine is very cold, follow the procedure below after taking the step 1 through 5 in the previous pages.

6. Turn the key to "ON" position and hold it until the heater indicator turns off.

Heater indicator comes on when the key is turned to "ON" position and engine coolant temperature is below 0 ℃ (32 ℉), and goes off automatically when preheat is completed.



(1) Heater indicator

7. Fully depress the clutch pedal.

8. Turn the key to the "START" position and the engine should start.

(If the engine fails to start after 10 seconds, turn off the key for 30 seconds. Then repeat steps 6 through 8. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.)

■Block Heater (if equipped)

A block heater is available as an option from your dealer. It will assist you in starting your tractor when the ambient temperature is below -20 ℃ (-4 ℉).

STOPPING THE ENGINE

1. **After slowing the engine to idle, wait 3 to 5 minutes for turbo to slow down and then turn the key to "OFF".**
2. **Remove the key.**

NOTE :

- If key does not stop the engine, consult your local KUBOTA Dealer.

WARMING UP

CAUTION

To avoid personal injury:

- **Be sure to set the parking brake during warm-up.**
- **Be sure to set all shift levers to the "NEUTRAL" positions and to place PTO lever in "OFF" position during warm-up.**

For five minutes after engine start-up, allow engine to warm up without applying any load, this is to allow oil to reach every engine part. If load should be applied to the engine without this warm-up period, trouble such as seizure, breakage or premature wear may develop.

■Warm-up and Transmission Oil at Low Temperature Range

Hydraulic oil serves as transmission fluid. In cold weather, the oil may be cold with increased viscosity. This can cause delayed oil circulation or abnormally low hydraulic pressure for some time after engine start-up. This in turn can result in trouble in the hydraulic system.
To prevent the above, observe the following instructions:
Warm up the engine at about 50 % of rated rpm according to the table below:

Ambient temperature	Warm-up time requirement
Higher than -10 ℃ (14 ℉)	Approx. 10 minutes
-15 to -10 ℃ (5 to 14 ℉)	10 to 20 minutes
-20 to -15 ℃ (-4 to 5 ℉)	20 to 30 minutes
Below -20 ℃ (-4 ℉)	More than 30 minutes

IMPORTANT :

- Do not operate the tractor under full load condition until it is sufficiently warmed up.

JUMP STARTING

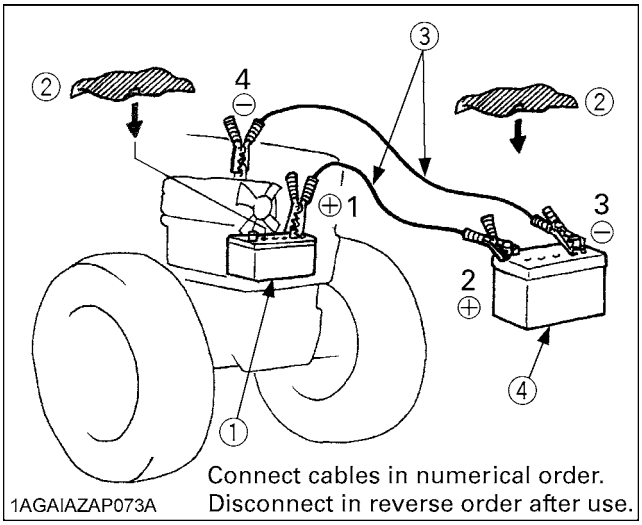
CAUTION

To avoid personal injury:

- **Battery gases can explode. Keep cigarettes, sparks, and flames away from battery.**
- **If tractor battery is frozen, do not jump start engine.**
- **Do not connect other end of negative (-) jumper cable to negative (-) terminal of tractor battery.**

When jump starting engine, follow the instructions below to safely start the engine.

1. Bring helper vehicle with a battery of the same voltage as disabled tractor within easy cable reach. "THE VEHICLES MUST NOT TOUCH".
2. Engage the parking brakes of both vehicles and put the shift levers in neutral. Shut both engines off.
3. Put on safety goggles and rubber gloves.
4. Ensure the vent caps are securely in place. (if equipped)
5. Cover vent holes with damp rags. Do not allow the rag to touch the battery terminals.
6. Attach the red clamp to the positive (red, (+) or pos.) terminal of the dead battery and clamp the other end of the same cable to the positive (red, (+) or pos.) terminal of the helper battery.
7. Clamp the other cable to the negative (black, (-) or neg.) terminal of the helper battery.
8. Clamp the other end to the engine block or frame of the disabled tractor as far from the dead battery as possible.
9. Start the helper vehicle and let its engine run for a few moments. Start the disabled tractor.
10. Disconnect the jumper cables in the exact reverse order of attachment. (Steps 8, 7 and 6).
11. Remove and discard the damp rags.



(1) Dead battery
(2) Lay a damp rag over the vent caps
(3) Jumper cables
(4) Helper battery

IMPORTANT :

- This machine has a 12 volt negative (-) ground starting system.
- Use only same voltage for jump starting.
- Use of a higher voltage source on tractor's electrical system could result in severe damage to tractor's electrical system.
  Use only matching voltage source when "Jump starting" a low or dead battery condition.

OPERATING THE TRACTOR

OPERATING NEW TRACTOR

How a new tractor is handled and maintained determines the life of the tractor.

A new tractor just off the factory production line has been, of course, tested, but the various parts are not accustomed to each other, so care should be taken to operate the tractor for the first 50 hours at a slower speed and avoid excessive work or operation until the various parts become "broken-in". The manner in which the tractor is handled during the "breaking-in" period greatly affects the life of your tractor.

Therefore, to obtain the maximum performance and the longest life of the tractor, it is very important to properly break-in your tractor. In handling a new tractor, the following precautions should be observed.

■Do not Operate the Tractor at Full Speed for the First 50 Hours.

- Do not start quickly nor apply the brakes suddenly.
- In winter, operate the tractor after fully warming up the engine.
- Do not run the engine at speeds faster than necessary.
- On rough roads, slow down to suitable speeds. Do not operate the tractor at fast speed.

The above precautions are not limited only to new tractors, but to all tractors. But it should be especially observed in the case of new tractors.

■Changing Lubricating Oil for New Tractors

The lubricating oil is especially important in the case of a new tractor. The various parts are not "broken-in" and are not accustomed to each other; small metal grit may develop during the operation of the tractor; and this may wear out or damage the parts. Therefore, care should be taken to change the lubricating oil a little earlier than would ordinarily be required.

For further details of change interval hours.

(See "MAINTENANCE" section.)

BOARDING AND LEAVING THE TRACTOR

1. Never try to get on or off a moving tractor or jump off the tractor to exit.
2. Face the tractor when getting into or out of the tractor. Do not use the controls as hand holds to prevent inadvertent machine movements.
3. Always keep steps and floor clean to avoid slippery conditions.

OPERATING FOLDABLE ROPS

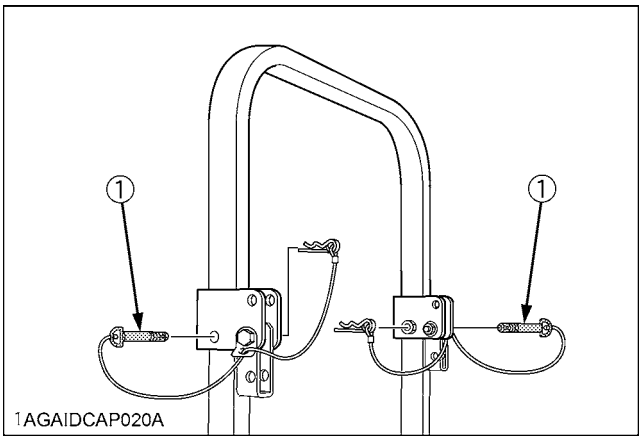
⚠ CAUTION

To avoid personal injury:

- **When raising or folding the ROPS, apply parking brake, stop the engine and remove the key.**
  Always perform function from a stable position at the rear of tractor.
- **Fold the ROPS down only when absolutely necessary and fold it up and lock it again as soon as possible.**
- **Before proceeding to fold ROPS, check for any possible interference with installed implements and attachments.**
  If interference occurs, contact your KUBOTA Dealer.

■To Fold the ROPS

1. Remove both set bolts.



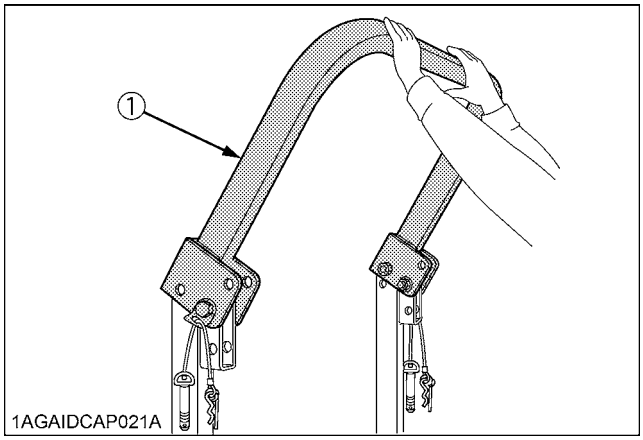
(1) Set bolt

2. Fold the ROPS.

CAUTION

To avoid personal injury:

- **Hold the top of the ROPS tightly with both hands and fold the ROPS slowly and carefully.**



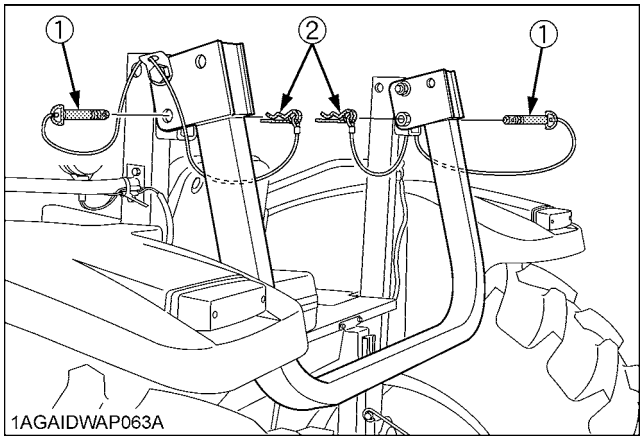
(1) ROPS

3. Align set bolt holes and insert both set bolts. Slightly tighten the set bolts and secure them with the hair pin cotters.

CAUTION

To avoid personal injury:

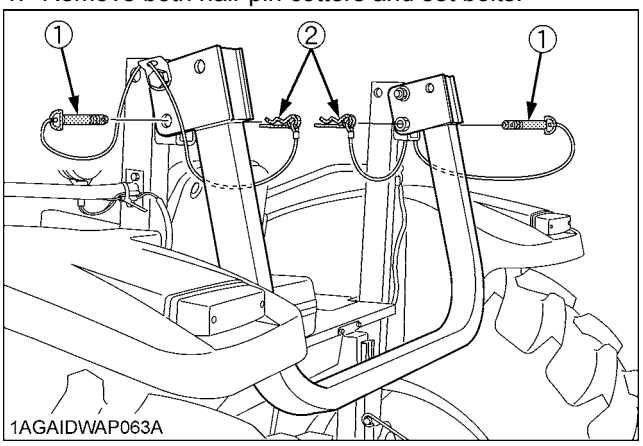
- **Make sure that both set bolts are properly installed and secured with the hair pin cotters.**



(1) Set bolt
(2) Hair pin cotter

■To Raise the ROPS to Upright Position

1. Remove both hair pin cotters and set bolts.



(1) Set bolt
(2) Hair pin cotter

2. Raise ROPS to the upright position.

CAUTION

To avoid personal injury:

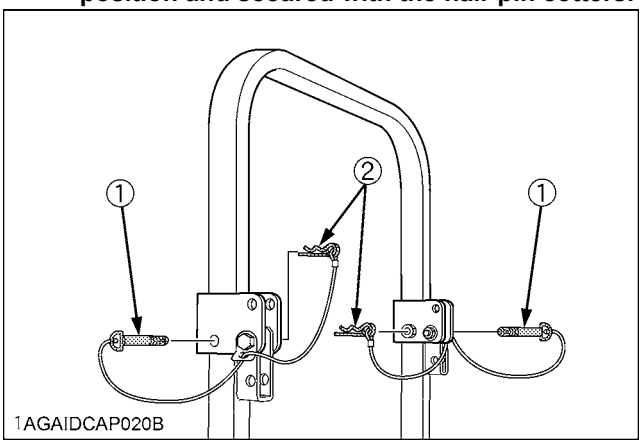
- **Raise the ROPS slowly and carefully.**

3. Align set bolt holes and insert both set bolts. Slightly tighten the set bolts and secure them with the hair pin cotters.

CAUTION

To avoid personal injury:

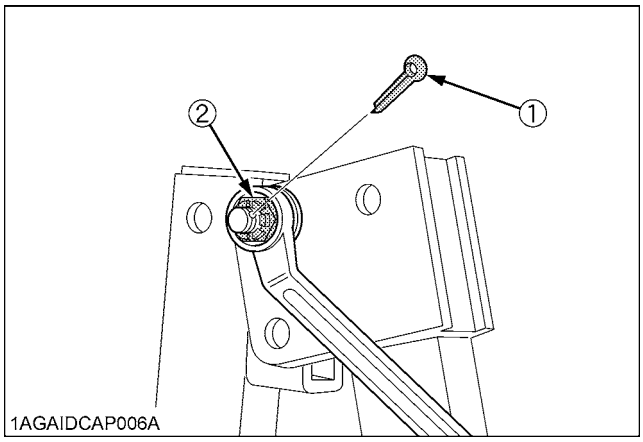
- **Make sure that both set bolts are properly installed as soon as the ROPS is in the upright position and secured with the hair pin cotters.**



(1) Set bolt
(2) Hair pin cotter

■Adjustment of Foldable ROPS

- Adjust the free fall of the ROPS upper frame regularly.
- If you feel less friction in folding the ROPS, remove the cotter pin (1), tighten the nut (2) until you feel the right friction in the movement and then replace the cotter pin.



(1) Cotter pin
(2) Nut

STARTING

1. Adjusting the Operator's Position.

NOTE :

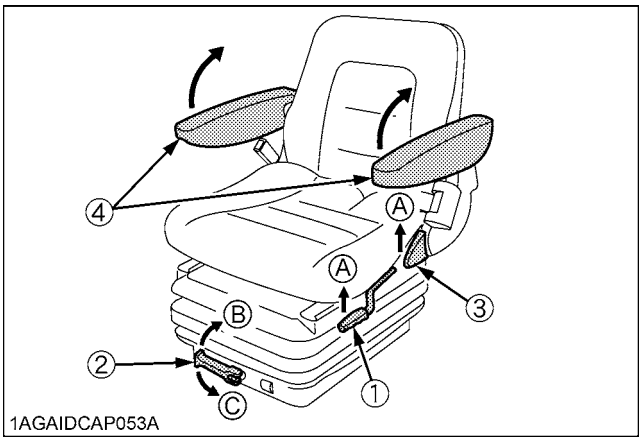
- The seat and suspension should be adjusted to ensure that the controls are comfortably at hand for the operator, ensuring that the operator maintains a good posture and minimizes risks from whole body vibration.

■Operator's Seat

CAUTION

To avoid personal injury:

- **Make adjustments to the seat only while the tractor is stopped.**
- **Make sure that the seat is completely secured after each adjustment.**
- **Do not allow any person other than the operator to ride on the tractor.**



(1) Travel adjust lever
(2) Weight adjust lever
(3) Backrest tilt adjust lever
(4) Arm rest
(A) "UNLOCK"
(B) "TO INCREASE TENSION"
(C) "TO DECREASE TENSION"

◆ Travel adjustment

Unlock the travel adjust lever and slide the seat backward or forward, as required. The seat will lock in position when the lever is released.

◆ Weight adjustment

Turn the weight adjust lever to achieve the optimum suspension setting.

◆ Height adjustment

Pull up with your hands the seat pan to the desired height of the three available positions.
Once it has reached the highest level, it will return to the lowest level.

◆ Tilt adjustment

Pull the backrest tilt adjust lever and tilt the backrest to the desired position.

◆ Arm rest

Armrest may be set at upright position if desired.

IMPORTANT :

- After adjusting the operator's seat, be sure to check to see that the seat is properly locked,

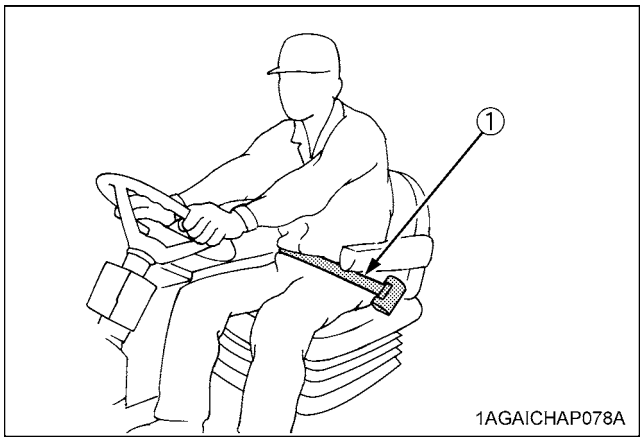
■Seat Belt

WARNING

To avoid personal injury:

- **Always use the seat belt when any ROPS or CAB are installed.**

Adjust the seat belt for proper fit and connect the buckle. This seat belt is auto-locking retractable type.



(1) Seat belt

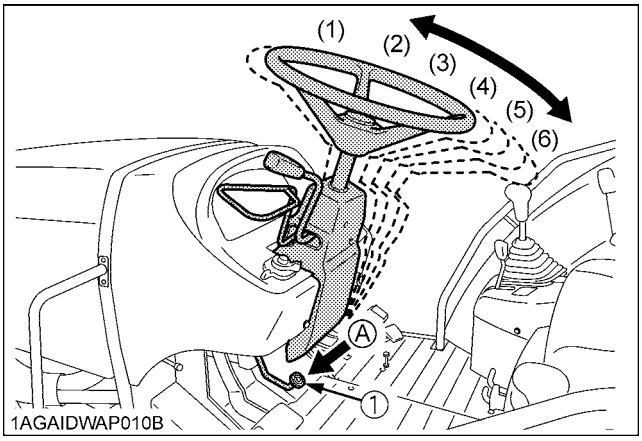
■Tilt Steering Adjustment

CAUTION

To avoid personal injury:

- **Do not adjust the steering wheel while the tractor is in motion.**

Press down the steering wheel tilt pedal, to release the lock so the steering wheel can be adjusted to one of six desired positions.



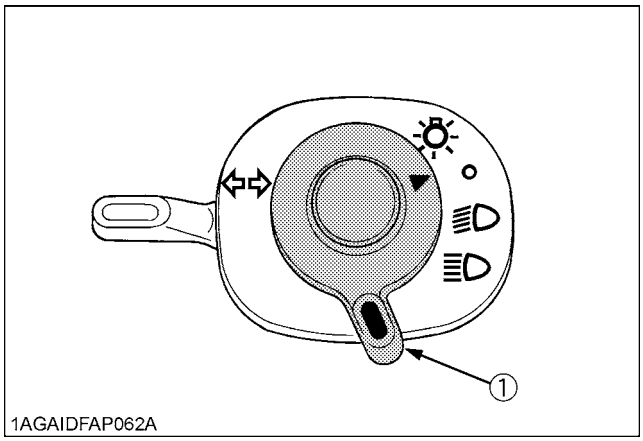
(1) Steering wheel tilt pedal (A) "PRESS DOWN"

2. Selecting Light Switch Positions.

■Light Switch

Turn the light switch clockwise, and the following lights are activated on the switch position.

- ○..... Head lights OFF.
- ≡D..... Head lights dimmed, low beam.
- ≡D..... Head lights ON, high beam.



(1) Head light switch

■Turn Signal / Hazard Light Switch

◆ **Hazard Light**

1. When the hazard light switch is pushed, the hazard lights flash, along with the L/H and R/H indicators on the instrument panel.
2. Push the hazard light switch again to turn off the hazard lights.

◆ **Turn Signal with Hazard Light**

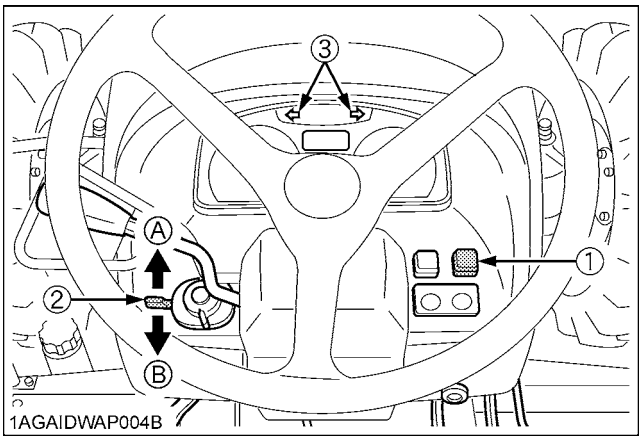
1. To indicate a right turn with the hazard lights already flashing, turn the switch clockwise.
2. To indicate a left turn with the hazard lights already flashing, turn the switch counterclockwise.
3. When the left or right turn signal is activated in combination with the hazard lights, the indicated turning light will flash and the other will stay on.

◆ **Turn Signal without Hazard Light**

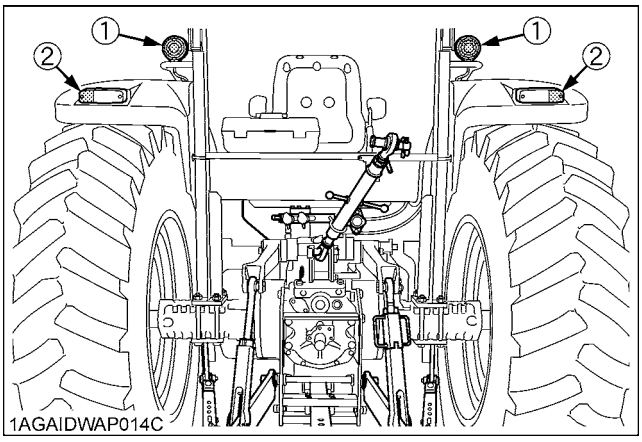
1. To indicate a right turn without hazard lights, turn the switch clockwise.
2. To indicate a left turn without hazard lights, turn the switch counterclockwise.
3. When the left or right turn signal is activated without the hazard lights, the indicated turning light will flash and the other will stay on.

NOTE :

- The hazard light switch is operative when the key switch is in either the "ON" or "OFF" position.
- The turn signal light switch is only operative when the key switch is in the "ON" position.
- Be sure to return the turn signal switch to center position after turning.



(1)Hazard light switch
(2)Turn signal light switch
(3)Hazard / Turn signal indicator
(A) "RIGHT TURN"
(B) "LEFT TURN"



(1)Hazard light
(2)Turn signal light

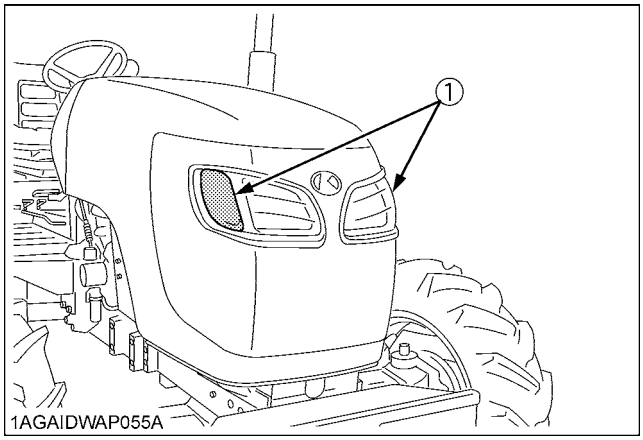
■Front Work Light Switch

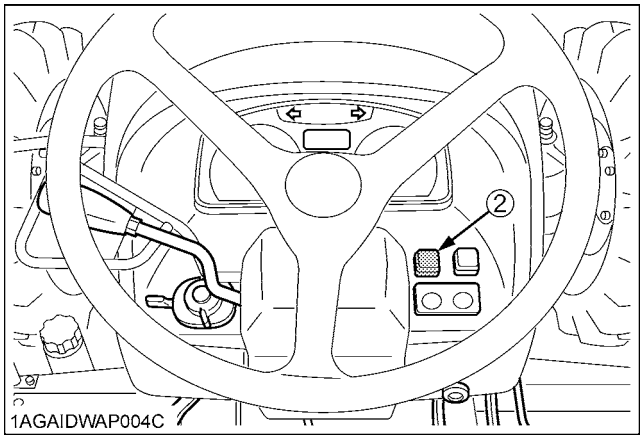
CAUTION

To avoid personal injury:

- **Do not operate on roads with work lights on. Work lights may blind or confuse operators of oncoming vehicles.**

Turn on the key switch and press the front work light switch. The work lights and the switch's indicator light up. Press the switch to turn off the light and indicator.





(1) Front work light
(2) Front work light switch with indicator

3. Checking the Brake Pedal.

■Brake Pedals (Right and Left)

WARNING

To avoid personal injury:

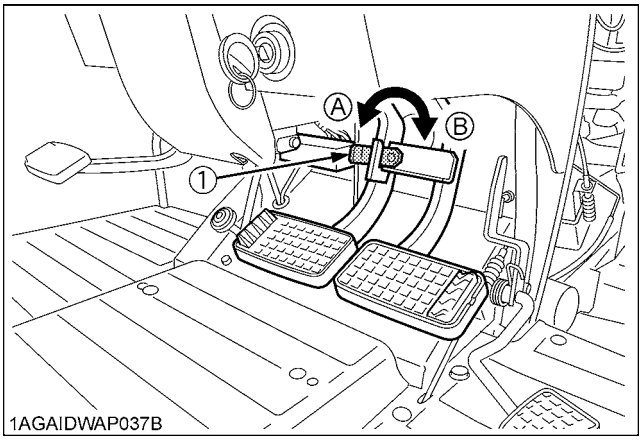
- **Be sure to interlock the right and left pedals. Applying only one rear wheel brake at high speeds could cause the tractor to swerve or roll-over.**
- **Be sure brake pedals have equal adjustment when using locked together. Incorrect or unequal brake pedal adjustment can cause the tractor to swerve or roll-over.**

CAUTION

To avoid personal injury:

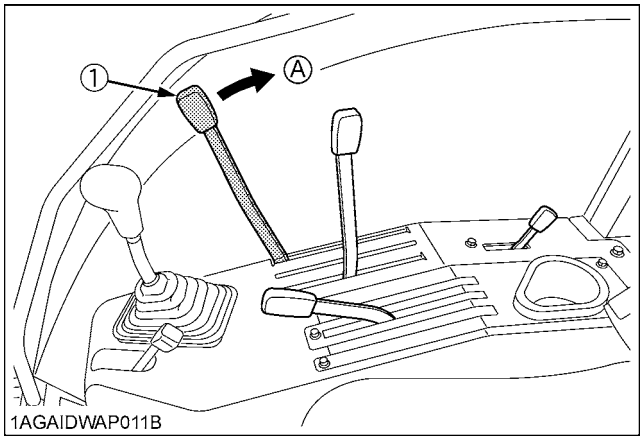
- **Do not make sudden braking.**
  An accident may occur such as by heavy towed load shifting forward or loss of control.
- **To avoid skidding and less of steering control when driving on icy, wet, or loose surfaces, make sure the tractor is correctly ballasted, operated at reduced speed, operated with front wheel drive engaged (If equipped).**
- **The braking characteristics are different between two and four wheel drive. Be aware of the difference and use carefully.**

1. Before operating the tractor on the road or before applying the parking brake, be sure to interlock the right and left pedals as illustrated below.
2. Use individual brakes to assist in making sharp turns at slow speeds (Field Operation Only). Disengage the brake pedal lock and depress only one brake pedal.
3. Be sure brake pedals have equal adjustment when using locked together.



(1) Brake pedal lock
(A) "LOCK"
(B) "RELEASE"

4. Raise the Implement.
(see "HYDRAULIC UNIT" section.)



(1) Position control lever (A) "UP"

5. Depress the Clutch Pedal.

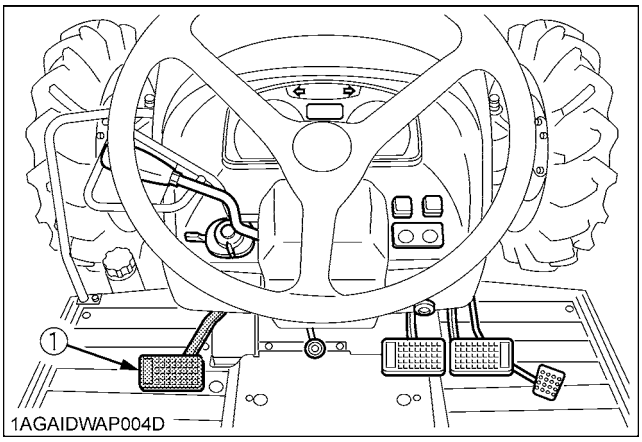
■Clutch Pedal

CAUTION

To avoid personal injury:

- **Sudden release of the clutch may cause the tractor to lunge in an unexpected manner.**

The clutch is disengaged when the clutch pedal is fully pressed down.



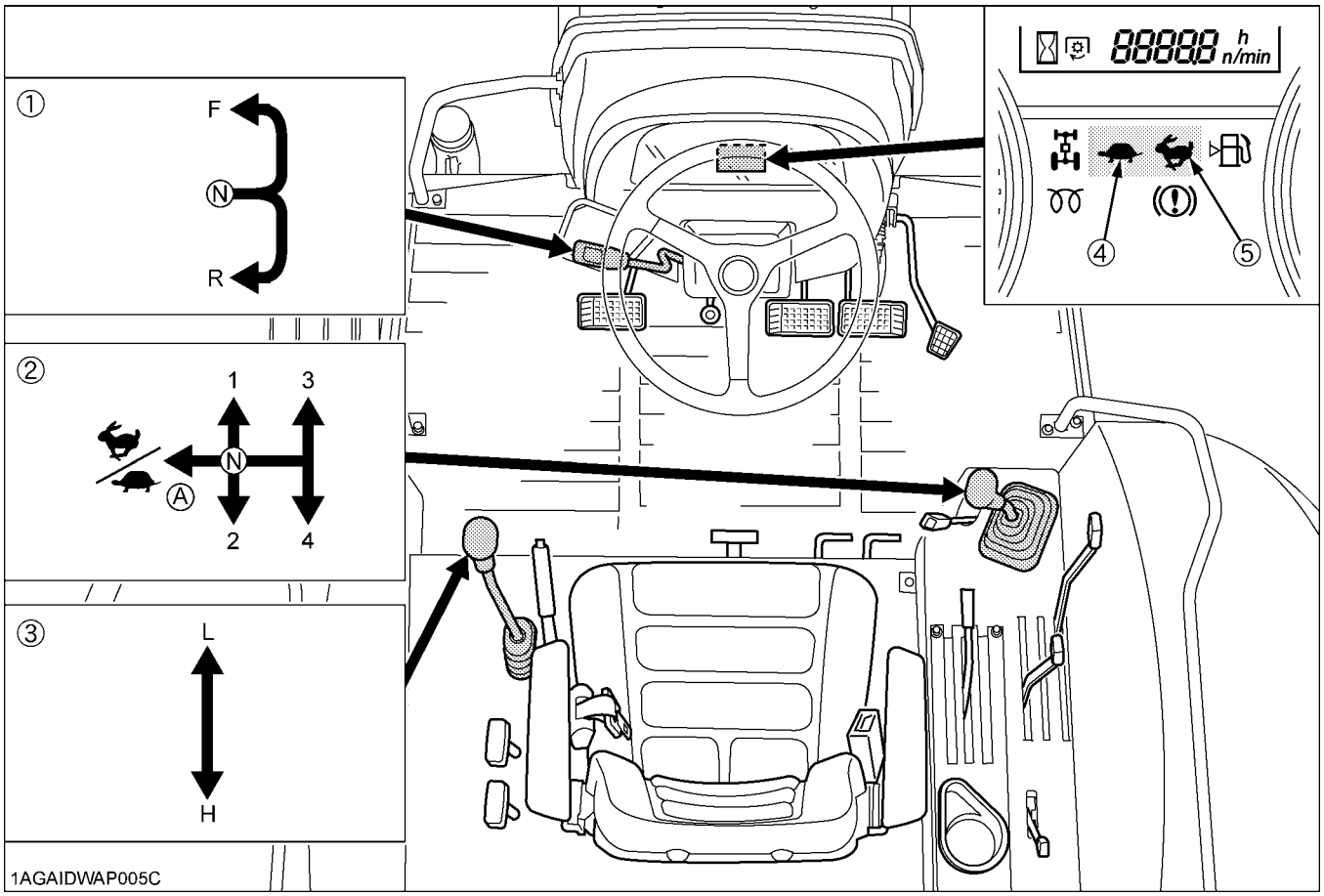
(1) Clutch pedal

IMPORTANT :

To help prevent premature clutch wear:

- The clutch pedal must be quickly disengaged and be slowly engaged.
- Avoid operating the tractor with your foot resting on the clutch pedal.
- Select proper gear and engine speed depending on the type of job.

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)

(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.

Standard model	Without creep	16 forward speeds 16 reverse speeds
	With creep	24 forward speeds 24 reverse speeds
Dual speed model	Without creep	32 forward speeds 32 reverse speeds
	With creep	48 forward speeds 48 reverse speeds

■Main Gear Shift Lever

CAUTION

To avoid personal injury:

- **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.

IMPORTANT :
- The main gear shift may be shifted between speeds on-the-go, but clutch must be depressed.

◆ **Shifting between and**
1. Keep the engine running and the main gear shift lever at "neutral". Move the lever against the left-side face, and the speed changes each time between and . Be sure to use the clutch while shifting.
2. The pilot lamps (4) and (5) indicate that the shift is changed between and .
3. The buzzer sounds when the shifting is underway (with both the pilot lamps (4) and (5) off).

■Range Gear Shift Lever

The range gear shift can only be shifted when the tractor is completely stopped and the clutch is depressed.

IMPORTANT :
- To avoid transmission damage, depress clutch pedal and stop the tractor before shifting between ranges.

■Hydraulic-Shuttle Shift Lever

Raise up and shift the shuttle shift lever forward to obtain forward speeds and shift back to obtain reverse speeds. This shifting does not require clutch operation.

IMPORTANT :
- The hydraulic-shuttle shift lever may be shifted while the tractor is moving slowly.

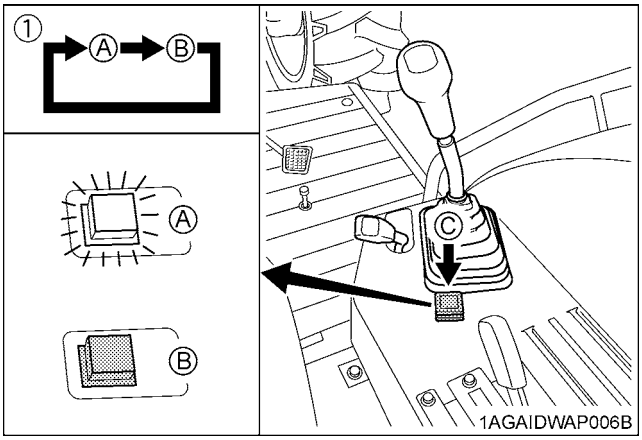
■Dual Speed Shift Switch

[Dual speed model]

The dual speed shift switch can be operated when the tractor is traveling without using the clutch.
(This switch effects tractor travel speed change by about 17%). "LO" speed and "HI" speed change at each time this switch is pushed.

◆ **Dual Speed Indicator**

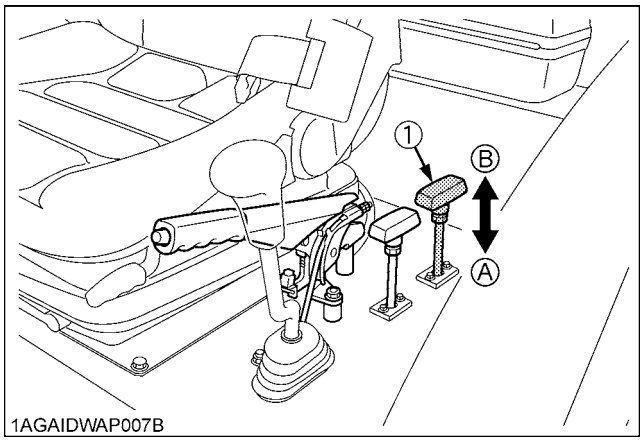
The indicator (switch) comes on when the dual speed switch is set to "LO".
The indicator (switch) goes off when the dual speed switch is set to "HI".



(1) Dual speed shift switch with indicator (A) "LO" (B) "HI" (C) "PUSH"

■Creep Lever (if equipped)

Push down the creep lever at " " to obtain low speeds with range gear shift lever is selected "L" range.
With the creep lever engaged (ON), the range gear shift lever cannot shift to "H". (The creep mode does not operate in the high-speed range.)
This shifting requires clutch operation.



(1) Creep Lever
(A) "LOW".....Creep ON
(B) "HIGH".....Creep OFF

◆ **Creep speed should be used only when doing one of the following jobs:**

1. Deep rotary-tilling and harrowing
2. Planting
3. Turf application

◆ **Creep speed can not be used for any of the followings:**

1. Pulling a trailer
2. Front-loader operation
3. Front-blade operation
4. Earth-moving
5. Entering and leaving a field
6. Loading onto and unloading from a truck

CAUTION

To avoid personal injury:

- **When you leave the tractor, be sure to apply the parking brake and stop the engine.**
- **IN APPLYING THE BRAKES:**
  - **The torque of the wheel axle is extremely high while creep speed is being used. Be sure to step down on the clutch pedal completely before applying the brakes, or the torque will overcome the brakes.**
  - **When starting to operate the tractor, be sure to release the parking brakes.**
    Misuse of the brakes may cause damage to the transmission and is therefore not acceptable to KUBOTA for coverage under the warranty.

IMPORTANT :

- Press the clutch pedal completely down and stop the tractor's motion before shifting the creep lever.

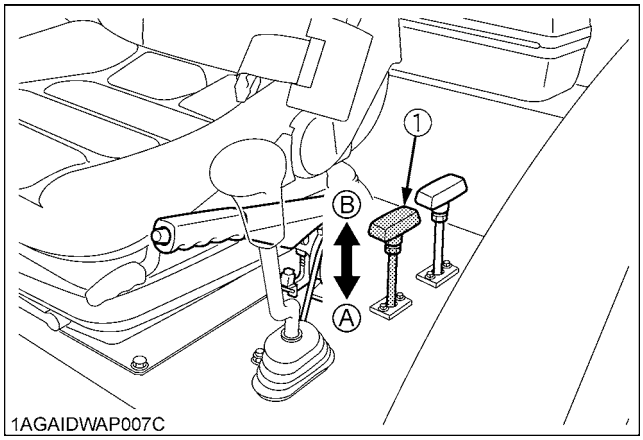
■Front Wheel Drive Lever

CAUTION

To avoid personal injury:

- **Do not engage the front wheel drive when traveling at road speed.**
- **When driving on icy, wet, or loose surfaces, make sure the tractor is correctly ballasted to avoid skidding and loss of steering control. Operate at reduced speed and engage front wheel drive.**
- **An accident may occur if the tractor is suddenly braked, such as by heavy towed loads shifting forward or loss of control.**
- **The braking characteristics are different between two and four wheel drive. Be aware of the difference and use carefully.**

The front wheel drive lever can be operated with the tractor moving slowly and with the engine decelerating without clutch operation. Shift the lever to "ON" to engage the front wheel drive.

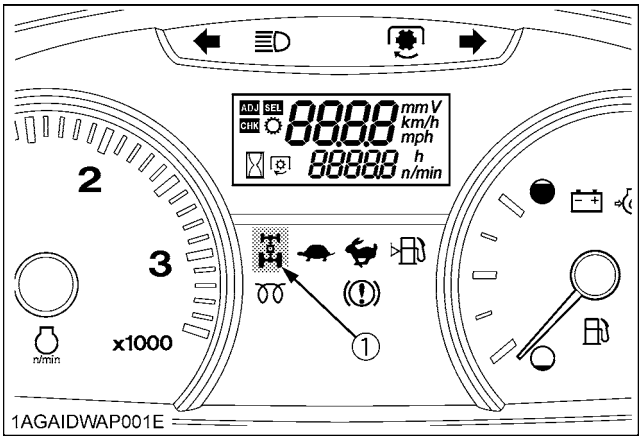


(1) Front wheel drive lever *(A) "ON"* *(B) "OFF"*

◆ 4WD Indicator

The 4WD indicator turns on while the front wheel drive lever is in "ON" (4WD) position.

The 4WD indicator goes off when the front wheel drive lever is in "OFF" (2WD) position.



(1) 4WD indicator

NOTE :

- Even when the front wheel drive lever is moved, the 4WD indicator may fail to light up or go out immediately. Just keep on running the tractor, and the indicator will light up or go out accordingly.
  If the indicator fails to come on or off with the tractor at a stop, turn the steering wheel clockwise and counterclockwise, and the indicator will light up or go out accordingly.

IMPORTANT :

- Tires will wear quickly if front wheel drive is engaged on paved roads.
- Reduce the rear wheels traction before engaging the front wheel drive lever.

◆ Front wheel drive is effective for the following jobs:

1. When greater pulling force is needed, such as working in a wet field, when pulling a trailer, or when working with a front-end loader.
2. When working in sandy soil.
3. When working on a hard soil where a rotary tiller might push the tractor forward.
4. For increased braking at reduced speed.

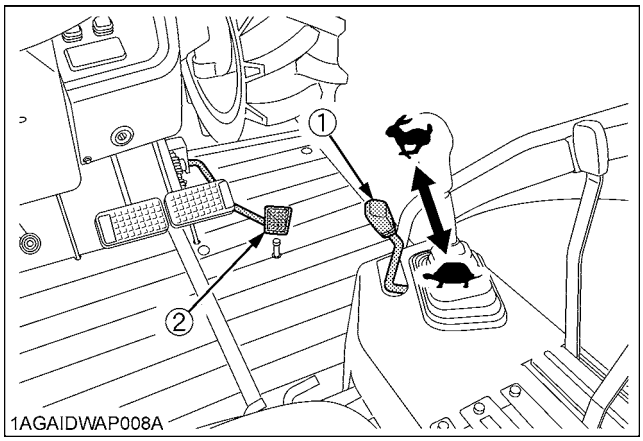
7. Accelerate the Engine.

■Hand Throttle Lever

Pulling the throttle lever back decreases engine speed, and pushing it forward increases engine speed.

■Foot Throttle

Use the foot throttle when traveling on the road. Press down on it for higher speed. The foot throttle is interlocked with the hand throttle lever; when using the foot throttle, keep the hand throttle lever in low idling position.

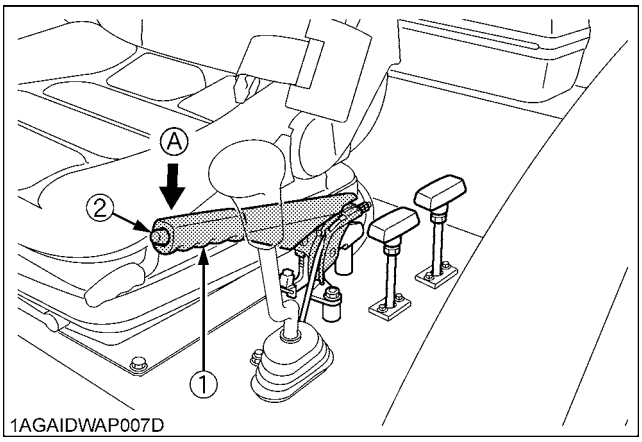


(1) Hand throttle lever *"INCREASE"*
(2) Foot throttle *"DECREASE"*

8. Unlock the Parking Brake and Slowly Release the Clutch.

■Parking Brake Lever

To release the parking brake, depress the brake pedal, push the release button and push the parking brake lever down.



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

NOTE :

- The parking brake indicator light on the Easy Checker(TM) will turn off when the parking brake is unlocked.

IMPORTANT :

- Do not attempt to put the tractor in motion before the parking brake indicator light turns off.
  If the tractor is operated with the parking brake set, the warning buzzer sounds and the parking brake indicator light starts flashing.
- If the tractor is operated with the parking brake set, the parking brake might be damaged.
- If the parking brake is released but the parking brake indicator light does not go out, check the level of brake oil.

STOPPING

■Stopping

1. Slow down the engine.
2. Step on the clutch and brake pedal.
3. After the tractor has stopped, disengage the PTO, lower the implement to the ground, shift the transmission to neutral, release the clutch pedal, and set the parking brake.

CHECK DURING DRIVING

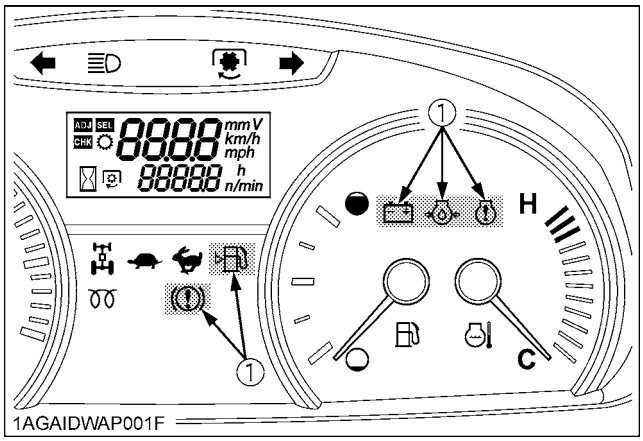
■Immediately Stop the Engine if:

- The engine suddenly slows down or accelerates,
- Unusual noises are suddenly heard,
- Exhaust fumes suddenly become very dark,

■Easy Checker(TM)

If the warning lamps in the Easy Checker(TM) come on during operation, immediately stop the engine, and find the cause as shown below.

Never operate the tractor while Easy Checker(TM) lamp is on.



(1) Easy Checker(TM)

[M108S model]

Engine warning

This indicator serves the following two functions. If the indicator lights up, pinpoint the cause and take a proper measure.

1. Error with the engine control system
   If during operation the water temperature gauge reads an acceptable level but the warning lamp in the Easy Checker(TM) comes on, stop the engine and get it restarted. If the error happens again, consult your local KUBOTA Dealer.

IMPORTANT :

- If the warning indicator lights up, the following phenomena may appear depending on the engine's trouble spot.
  - The engine stops unexpectedly.
  - The engine fails to start or gets interrupted just after start.
  - The engine output is not enough.
  - The engine output is enough, but the warning indicator stays on.

  If the engine output is not enough, immediately interrupt the operation and move the tractor to a safe place and stop the engine.

2. Engine overheat
   If the water temperature gauge reads an unusual level and the warning lamp in the Easy Checker(TM) comes on, the engine may have got overheated. Check the tractor by referring to "TROUBLESHOOTING" section.

Engine oil pressure

If the oil pressure in the engine goes below the prescribed level, the warning lamp in the Easy Checker(TM) will come on.

If this should happen during operation, and it does not go off when the engine is accelerated to more than 1000 rpm, check level of engine oil.

(See "Checking Engine Oil Level" in "DAILY CHECK" in "PERIODIC SERVICE" section.)

Fuel level

If the fuel in the tank goes below the prescribed level, the warning lamp in the Easy Checker(TM) will come on. (less than 11.8 L (3.1 gals.))

If this should happen during operation, refuel as soon as possible.

(See "Checking and Refueling" in "DAILY CHECK" in "PERIODIC SERVICE" section.)

Alarm against low brake oil level or parking brake operation.

1. The warning lamp in the Easy Checker(TM) comes on if the parking brake is applied.
   If the lamp is on during operation, release the parking brake lever immediately.
2. If the tractor is operated with the parking brake set, the warning buzzer sounds and the warning lamp starts flashing. Release the parking brake, and the warning is cleared.
3. If the brake oil goes below the prescribed level, the warning lamp in the Easy Checker(TM) will come on.
   If this should happen during operation, check to see that there is no oil leak in the brake system, and then add oil.
   (See "Checking Brake Oil Level" in "DAILY CHECK" in "PERIODIC SERVICE" section.)

Electrical charge

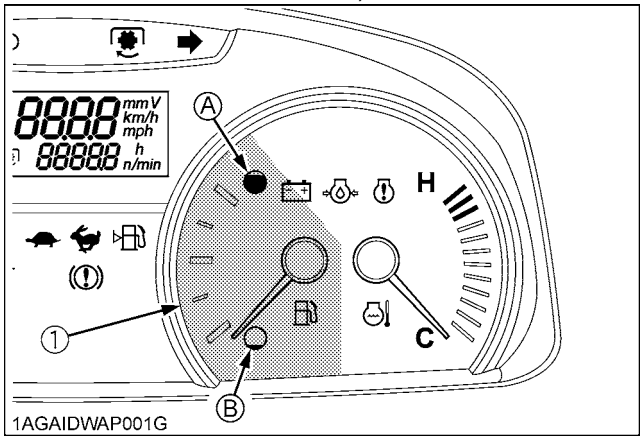
If the alternator is not charging the battery, the Easy Checker(TM) will come on.
If this should happen during operation, check the electrical charging system or consult your local KUBOTA Dealer.

NOTE :

- For checking and servicing of your tractor, consult your local KUBOTA Dealer for instructions.

■Fuel Gauge

When the key switch is on, the fuel gauge indicates the fuel level.
Be careful not to empty the fuel tank. Otherwise air may enter the fuel system.
Should this happen, the system should be bled (See "Bleeding Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)



(1) Fuel gauge *(A) "FULL"* *(B) "EMPTY"*

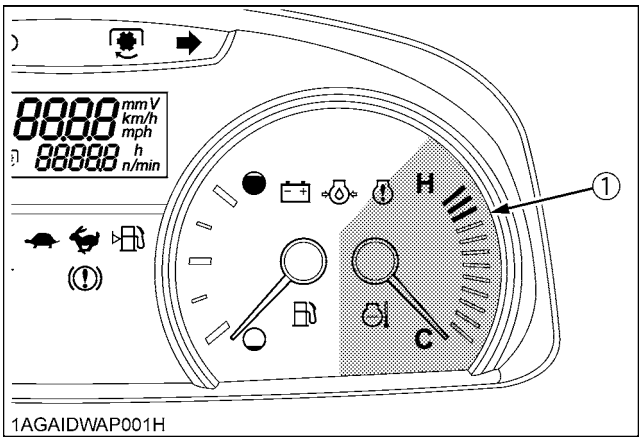
■Coolant Temperature Gauge

CAUTION

To avoid personal injury:

- **Do not remove radiator cap until coolant temperature is well below its boiling point. Then loosen cap slightly to the stop to relieve any pressure before removing cap completely.**

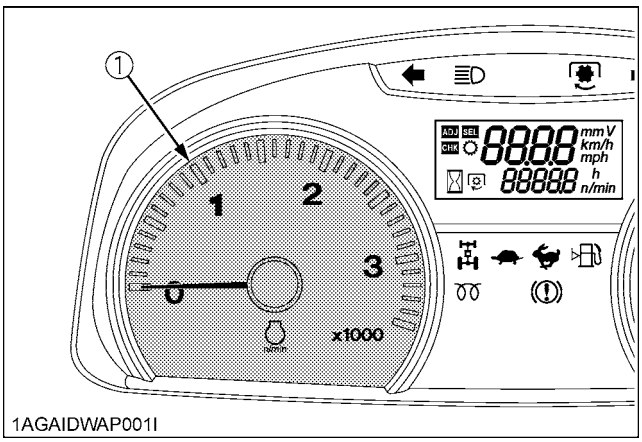
1. With the key switch at "ON", this gauge indicates the temperature of the coolant. "C" for "cold" and "H" for "hot."
2. If the indicator reaches the "H" position (red zone), engine coolant is overheated. Check the tractor by referring to "TROUBLESHOOTING" section.



(1) Coolant temperature gauge

■Tachometer

The tachometer indicates the engine speed on the dial.

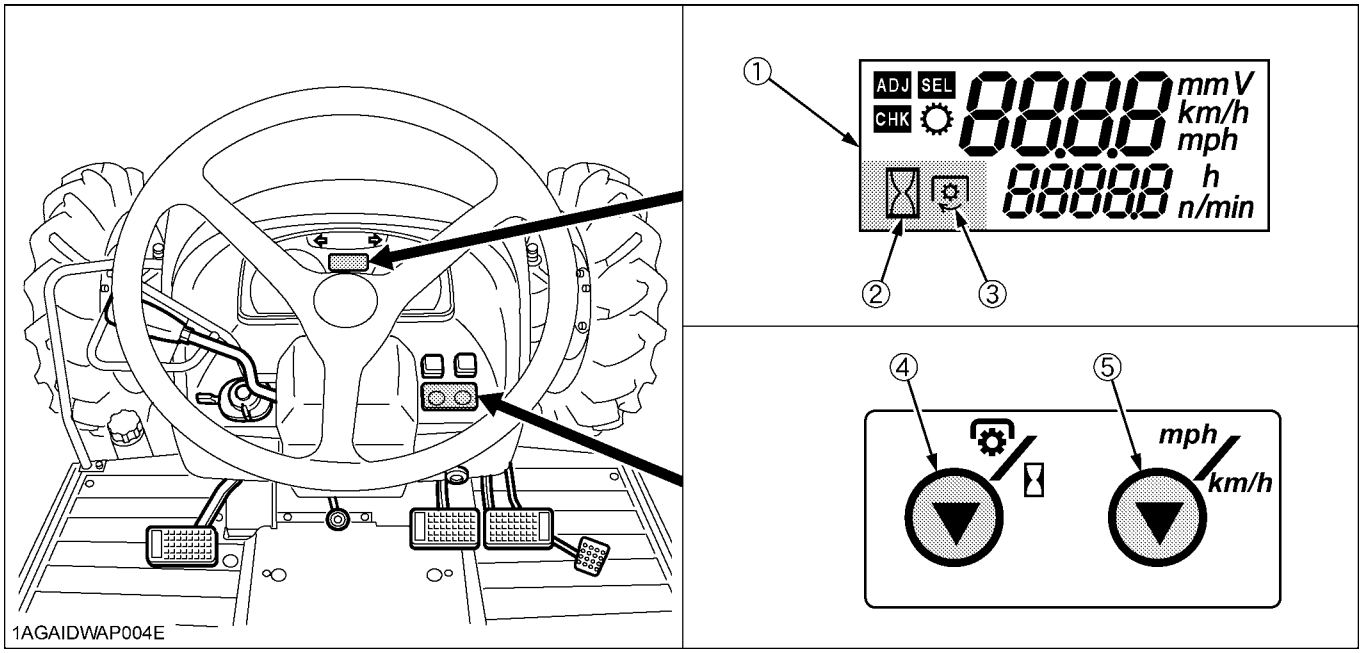


(1) Engine revolution

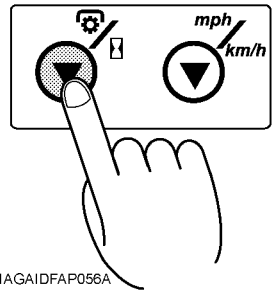
PTO RPM / TRAVEL SPEED MONITOR

■Changing Display Mode

1. The LCD monitor gives two different display modes: "Traveling speed and Hour meter" and "Traveling speed and PTO speed". Each time the PTO/Hour meter select switch is pressed, the mode is switched to the changing display.
2. To switch between "mph" and "km/h" for the traveling speed, use the Traveling speed select switch.
3. The PTO clutch control lever works for the following automatic display modes.
    1) PTO clutch control lever ON: Traveling speed and PTO speed are displayed.
    2) PTO clutch control lever OFF: Traveling speed and Hour meter are displayed.

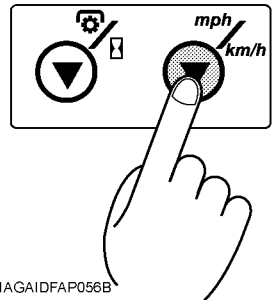


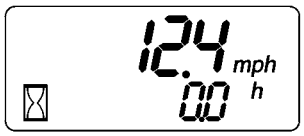
(1) LCD monitor
(2) Hour Meter indication
(3) PTO Indication
(4) PTO / Hour Meter Select Switch
(5) Traveling Speed Select Switch

<table>
<tr><td rowspan="2">1</td><td rowspan="2">Display mode switching
[Hour meter mode] and [PTO speed mode]
 

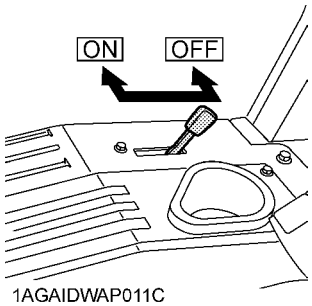
1AGAIDFAP056A</td><td>Hour meter mode
 

1AGAIDFAP072A</td><td>● Traveling speed and total operating hours are displayed.
● The hour meter indicates in five digits the hours the tractor has been used; the last digit indicates 1/10 of an hour.</td></tr>
<tr><td>PTO speed mode
 

1AGAIDFAP072B</td><td>● Traveling speed and PTO speed are displayed.
● When the PTO clutch control lever is in "OFF" position, "OFF" is displayed.
● See "PTO Speed Display Mode Switching" in "PTO RPM / TRAVEL SPEED MONITOR" in "OPERATING THE TRACTOR" section.</td></tr>
<tr><td>2</td><td>Display mode switching
[km/h] and [mph]
 

1AGAIDFAP056B</td><td>mph (Traveling speed)
 

1AGAIDFAP072D
km/h (Traveling speed)
 

1AGAIDFAP072C</td><td></td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">PTO clutch control lever
 

1AGAIDWAP011C</td><td>PTO OFF (Hour meter mode)
 

1AGAIDFAP072A</td><td>● Traveling speed and total operating hours are displayed.
● The hour meter indicates in five digits the hours the tractor has been used; the last digit indicates 1/10 of an hour.
● When the PTO / Hour meter select switch is pressed in this state, "OFF" is displayed.</td></tr>
<tr><td>PTO ON (PTO speed mode)
 

1AGAIDFAP072E</td><td>● Traveling speed and PTO speed are displayed.
● When the PTO / Hour meter select switch is pressed in this state, the display mode switches to hour meter mode.</td></tr>
</table>

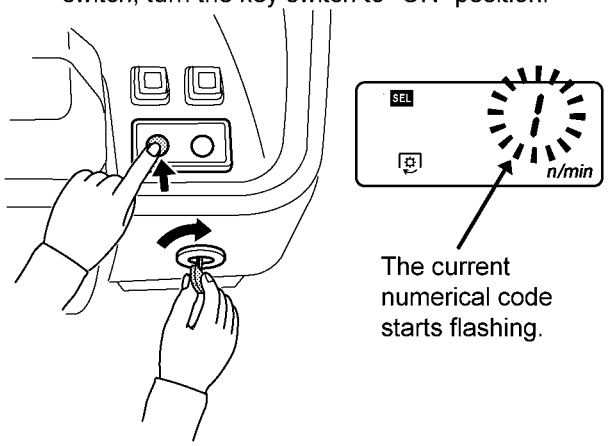
NOTE :
- The travel speed displayed when the wheels slip under traction is different from the actual one.
- In cold weather the LCD monitor response will normally be slower and the visibility be less, than in warmer weather.

■PTO Speed Display Mode Switching

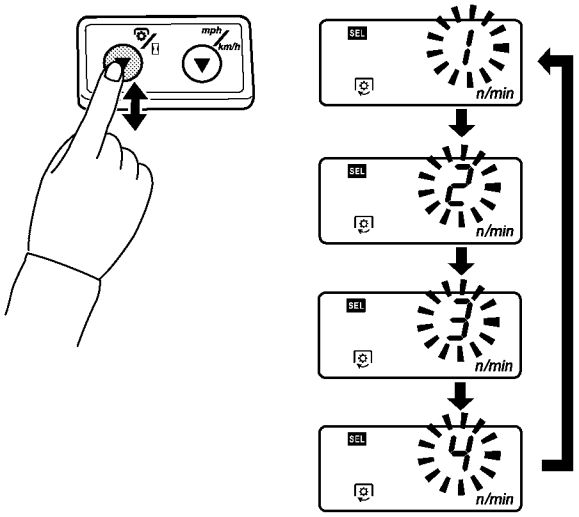
Whenever the PTO speed is changed to the other speed, it is necessary to switch the PTO speed display mode. Otherwise the PTO speed will not get correctly displayed in the LCD monitor. When the PTO speed is changed from 540 rpm to 1000 rpm or from 1000 rpm to 540 rpm, it is necessary to switch the PTO speed display mode.

◆ Switching procedure

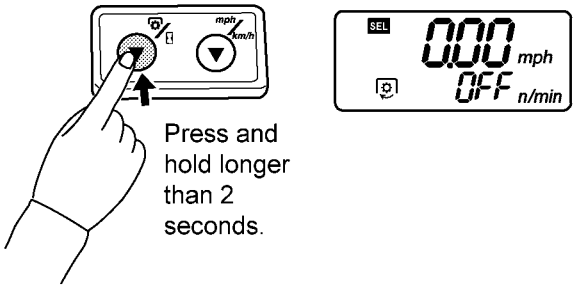
① While pressing the PTO/Hour meter select switch, turn the key switch to "ON" position.



② Each time the PTO/Hour meter select switch is pressed, the code changes in the order of [1]→[2]→[3]→[4]→[1]. Select the appropriate code according to the table below.



③ Press and hold the PTO/Hour meter select switch longer than 2 seconds. The setting is put in memory, and the LCD monitor goes back to the PTO speed display mode.



NOTE:

- The setting will be cancelled if the key switch is turned OFF halfway in the procedure.

Numerical code	PTO speed (rpm)
1	540 (factory setting)
2	1000
3	Not select
4	

1AGAIDWAP056A

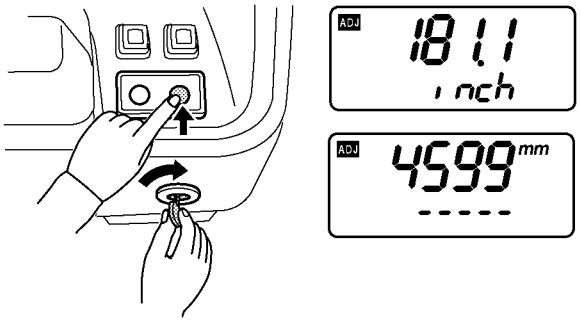
■Entering the Travel Speed Coefficient

When optional different-diameter tires are fitted on the machine, the travel speed display mode must be changed. Otherwise the travel speed will not get correctly displayed. Such mode switching is also needed when the original tires are back on the machine.

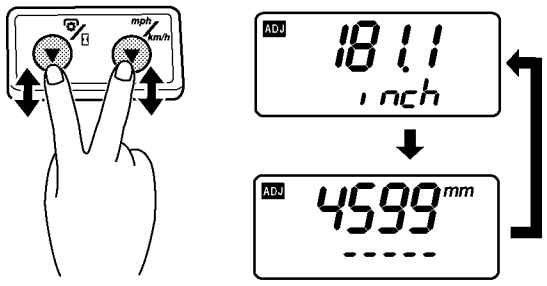
◆ **How to enter the tire circumference**

Example: Entering 179.0 inch.

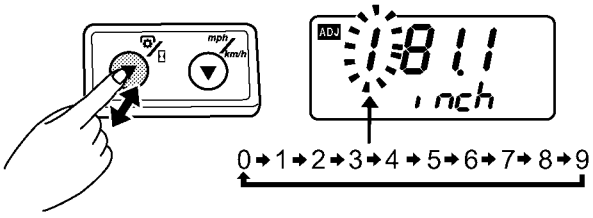
① While pressing the Traveling speed select switch, turn the key switch to ON position. The setting of the current tire's circumference is displayed in inches or millimeters. The highest-digit numeral starts flashing.



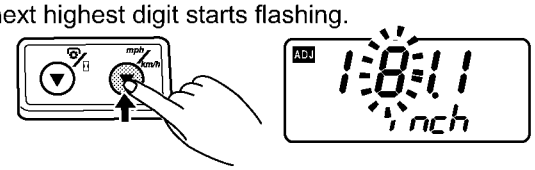
② Each time both the PTO/Hour meter select switch and Traveling speed select switch are pressed at the same time, the unit changes for inches or millimeters. Select the inch display mode.



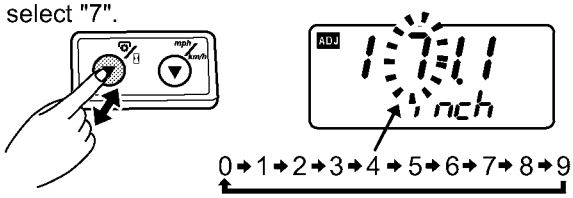
③ Note that the highest-digit numeral is flashing. Press the PTO/Hour meter select switch to select "1". (The numeral changes from 0 to 9 at each push of the switch.).



④ Press the Traveling speed select switch, and the next highest digit starts flashing.

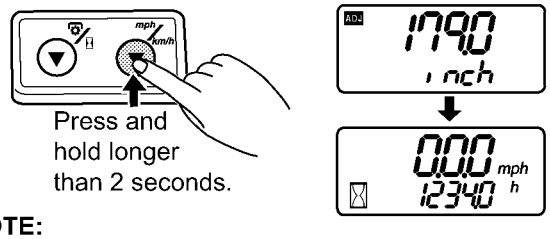


Now press the PTO/Hour meter select switch to select "7".



⑤ Enter "9" and "0" for the remaining digits in the same procedure.

⑥ Make sure the entry is "179.0". Press and hold the Traveling speed select switch longer than 2 seconds. The setting is put in memory, and the LCD monitor goes back to the Hour meter mode.



NOTE:

- The setting will be cancelled if the key switch is turned OFF halfway in the procedure.

◆ **Tire circumference chart (reference)**

Rear tire size	Entry (in.)	Entry (mm)
18.4-34	194	4928
18.4R34	195	4953
16.9-34	187	4750
18.4-30	183	4648
18.4R30	182	4623
16.9-24*	154	3914
18.4-26*	168	4260
13.6-38**	141	3590
9.5R48**	146	3720
12.4R46**	152	3860

* : M108S Low profile model

** : M96SDTM Mudder model

1AGAIDWAP057A

PARKING

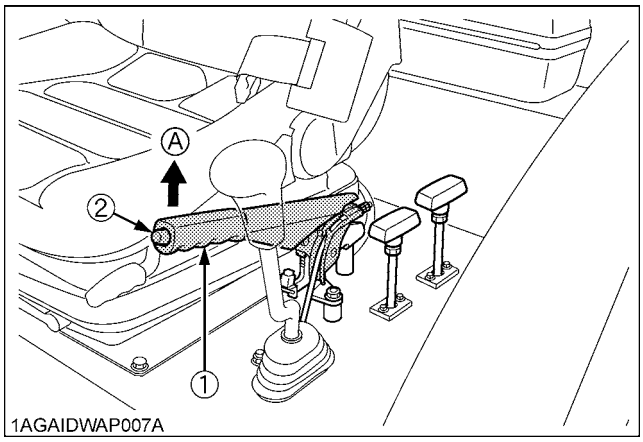
■Parking

CAUTION

To avoid personal injury:
BEFORE DISMOUNTING TRACTOR

- **ALWAYS SET PARKING BRAKE AND LOWER ALL IMPLEMENTS TO THE GROUND.**
  Leaving transmission in gear with the engine stopped will not prevent the tractor from accidental rolling.
- **STOP THE ENGINE AND REMOVE THE KEY.**

1. Before getting off the tractor, disengage the PTO, lower all implements, place all control levers in their neutral positions, pull the parking brake lever up to park, stop the engine and remove the key.
2. If it is necessary to park on an incline, be sure to chock the wheels to prevent accidental rolling of the machine.



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

IMPORTANT :

- Do not leave your tractor in the rain. If it cannot be avoided, cover the muffler pipe to prevent water entering.

OPERATING TECHNIQUES

■Differential Lock

WARNING

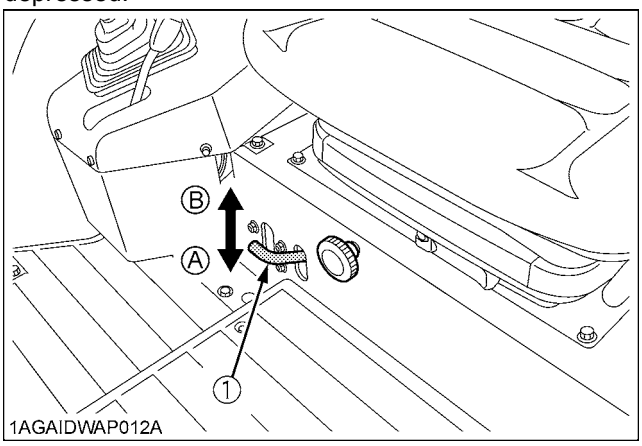
To avoid personal injury due to loss of steering control:

- **Do not operate the tractor at high speed with any differential lock engaged.**
- **Do not attempt to turn with the rear wheel or 4-wheel differential lock engaged.**
- **Be sure to release the rear wheel or 4-wheel differential locks before making a turn in field conditions.**

[2WD]

If one of the rear wheels should slip, step on the differential lock pedal. Both wheels will turn together, then reduce slippage.

Differential lock is maintained only while the pedal is depressed.



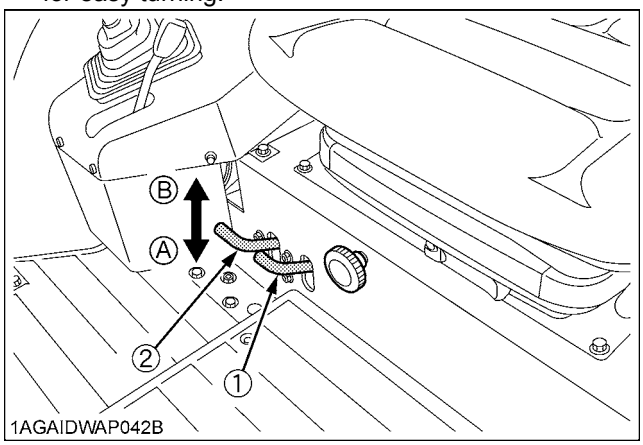
(1) Differential lock pedal (Rear wheel) *(A) Press to "ENGAGE"* *(B) Release to DISENGAGE"*

IMPORTANT :

- When using the differential lock, always slow the engine down.
- To prevent damage to power train, do not engage differential lock when one wheel is spinning and the other is completely stopped.
- If the differential lock cannot be released, step lightly on the brake pedals alternately.

[4WD]

1. If the front and/or rear wheels should slip while driving straight in field conditions, step on the 4-wheel differential lock pedal. The four wheels will turn together, then reduce slippage.
2. If the front and/or rear wheels slip while in a turn in field conditions, step on the front wheel differential lock pedal only. The front wheels alone will rotate together for easy turning.



(1) 4-wheel differential lock pedal (Rear and Front wheel)
(2) Front wheel differential lock pedal (Front wheel only)
(A) Press to "ENGAGE"
(B) Release to "DISENGAGE"

IMPORTANT :

- When using the differential lock, always slow the engine down.
- To prevent damage to power train, do not engage differential lock when one wheel is spinning and the other is completely stopped.
- To prevent damage to power train, do not attempt to turn the tractor when 4-wheel differential lock pedal is pressed down.
- If the differential lock cannot be released:
  - 4-wheel differential lock pedal:
    --- Step lightly on the brake pedals alternately.
  - Front wheel differential lock pedal:
    --- Turn the steering wheel alternately.

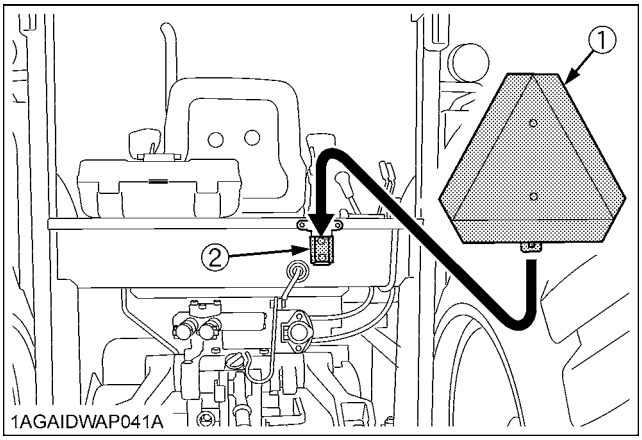
■Operating the Tractor on a Road

CAUTION

To avoid personal injury:

- **To help assure straight line stops when driving at transport speeds, lock the brake pedals together. Uneven braking at road speeds could cause the tractor to roll-over.**
- **When traveling on road with 3-point hitch mounted implement attached, be sure to have sufficient front weight on the tractor to maintain steering ability.**

Be sure SMV emblem and warning lamps are clean and visible. If towed or rear-mounted equipment obstructs these safety devices, install SMV emblem and warning lamps on equipment.
Consult your local KUBOTA Dealer for further details.



(1) SMV emblem
(2) Bracket

■Operating on Slopes and Rough Terrain

CAUTION

To avoid personal injury:

- **Always back up when going up a steep slope. Driving forward could cause the tractor to tip over backward. Stay off hills and slopes too steep for safe operation.**
- **Avoid changing gears when climbing or descending a slope.**
- **If operating on a slope, never disengage the clutch or shift levers to neutral. Doing so could cause loss of control.**
- **Do not drive the tractor close to the edges of ditches or banks which may collapse under the weight of the tractor. Especially when the ground is loose or wet.**

1. Be sure wheel tread is adjusted to provide maximum stability.
   (See "WHEEL ADJUSTMENT" in "TIRES, WHEELS AND BALLAST" section.)
2. Slow down for slopes, rough ground, and sharp turns, especially when transporting heavy, rear mounted equipment.
3. Before descending a slope, shift to a gear low enough to control speed without using brakes.

■Transport the Tractor Safely

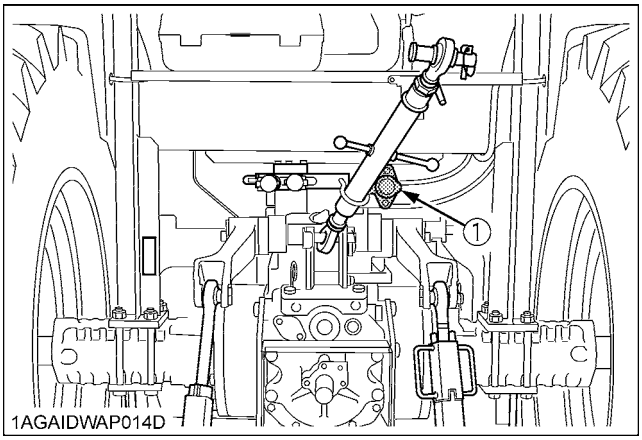
1. The tractor, if damaged, must be carried on a truck. Secure the tractor tightly with ropes.
2. Follow the instruction below when towing the tractor: Otherwise, the tractor's powertrain may get damaged.
   - Set the all shift levers to "NEUTRAL" position.
   - If possible, start engine and select 2WD, if creep speed is fitted ensure that it is disengaged.
   - Tow the tractor using its front hitch or drawbar.
   - Never tow faster than "10 km/h (6.2 mph)".

■Directions for Use of Power Steering

1. Power steering is activated only while the engine is running. Slow engine speeds make the steering a little heavier. While the engine is stopped, the tractor functions in the same manner as tractors without power steering.
2. When the steering wheel is turned all the way to the stop, the relief valve is activated. Do not hold the steering wheel in this position for a long period of time.
3. Avoid turning the steering wheel while the tractor is stopped, or tires may wear out sooner.
4. The power steering mechanism makes the steering easier. Be careful when driving on a road at high speeds.

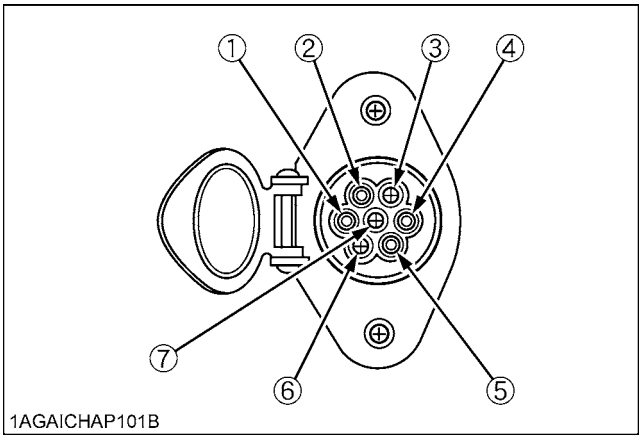
■Trailer Electrical Outlet

A trailer electrical outlet is supplied for use with trailer or implement.



(1) Trailer electrical outlet

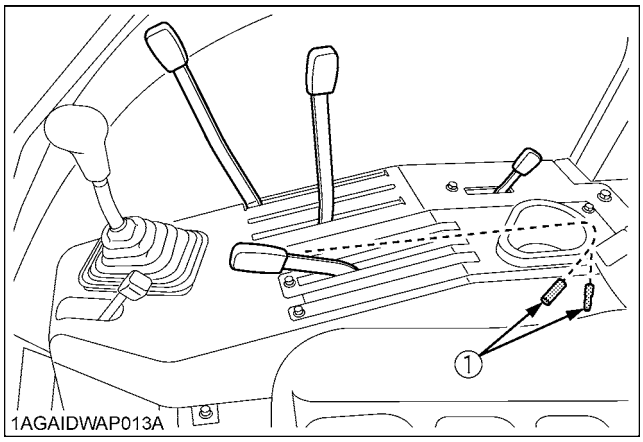
◆ **Function of each terminals in trailer electrical outlet**



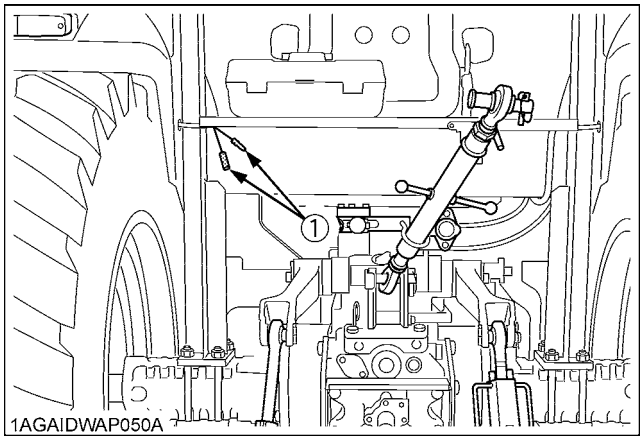
Terminal	Function
(1)	Ground
(2)	Tail light Sidemarker light Parking light
(3)	Turn signal light (LH)
(4)	Brake stop light
(5)	Turn signal light (RH)
(6)	Registration plate light
(7)	---

■Electrical Outlet

Two electrical outlets are supplied for use with work light.



(1) Accessory electrical outlet for work light (7.5A)



(1) Accessory electrical outlet for work light (11A)

PTO

PTO OPERATION

⚠ CAUTION

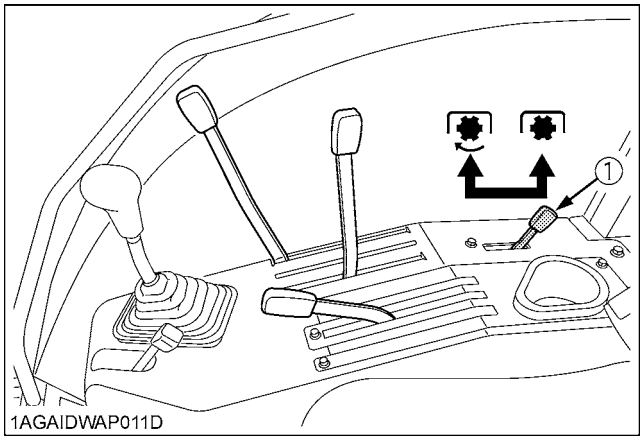
To avoid personal injury:

- **Disengage PTO, stop engine, and allow all rotating components to come to a complete stop before connecting, disconnecting, adjusting, or cleaning any PTO driven equipment.**

■PTO Clutch Control Lever

1. The tractor has a 540 rpm speed position and 6-spline shaft.
2. The PTO clutch control lever engages or disengages the PTO clutch which gives the PTO independent control.

Shift the lever to "ON" to engage the PTO clutch. Shift the lever to "OFF" to disengage the PTO clutch.



(1) PTO clutch control lever "ON" "OFF"

IMPORTANT :

- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed.
- To avoid damage of PTO clutch and implement, shift the PTO clutch control lever slowly, when engaging the PTO clutch. Do not keep the PTO clutch control lever half way.
  Proper warm up is strongly recommended in cold weather.
  Do not continuously shift the PTO clutch control lever.

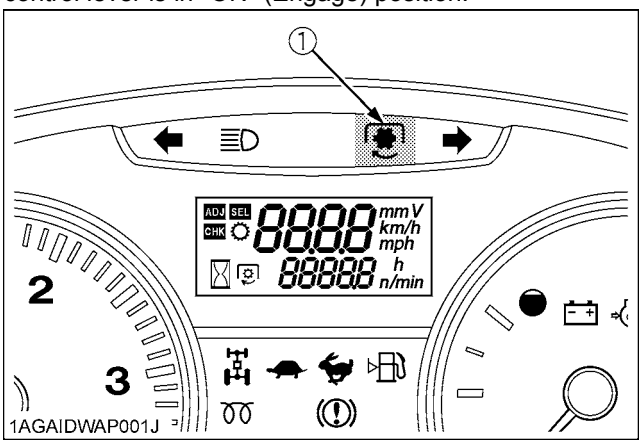
Engine speed rpm	PTO speed rpm
2205	540

NOTE :

- Tractor engine will not start if PTO clutch control lever is in the engaged "ON" position.
- If the PTO system is engaged and you stand up from the seat, the warning buzzer will whistle for about 10 seconds after standing up.
  This is because the tractor is equipped with "Operator Presence Control System".

◆ PTO Clutch Indicator

The PTO clutch indicator turns on while PTO clutch control lever is in "ON" (Engage) position.



(1) PTO clutch indicator

■1000 rpm PTO Shaft

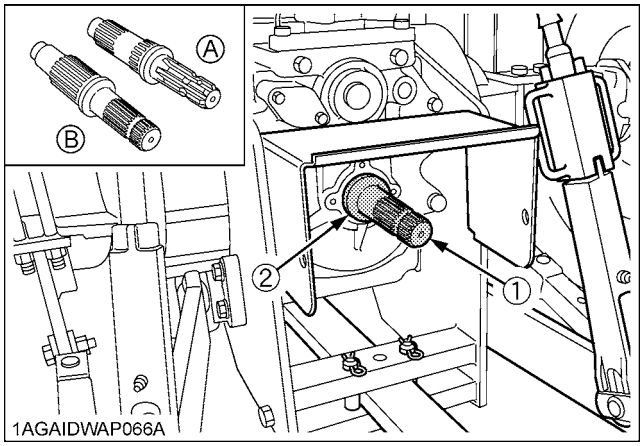
[if equipped]

WARNING

To avoid personal injury:

- **Be sure to observe the PTO shaft speed prescribed for the individual implements. It is extremely dangerous to run an implement at high speed that is meant to be operated at low speed. Use only when this higher rpm is specifically recommended by the implement manufacturer.**

By interchanging the PTO shafts, two different PTO shaft speeds can be obtained.



(1) PTO shaft *(A) 540 rpm PTO shaft*
(2) Snap ring *(B) 1000 rpm PTO shaft*

◆ **PTO shaft interchanging procedure**

1. The 6-spline 540 rpm PTO shaft is standard equipment.
2. Place an oil pan under the PTO shaft to catch oil spillage. Remove the snap ring, and then the PTO shaft.
3. Install the 21-spline PTO shaft (1000 rpm). To ensure that it is tight, push it in by turning.
4. Reinsert the snap ring.
5. Set the distance from drawbar pin hole to the rear end of PTO shaft according to the following instructions.

	PTO Shaft Type	Distance
540 rpm	6 - spline	355 mm (14 in.)
1000 rpm	21 - spline	406 mm (16 in.)

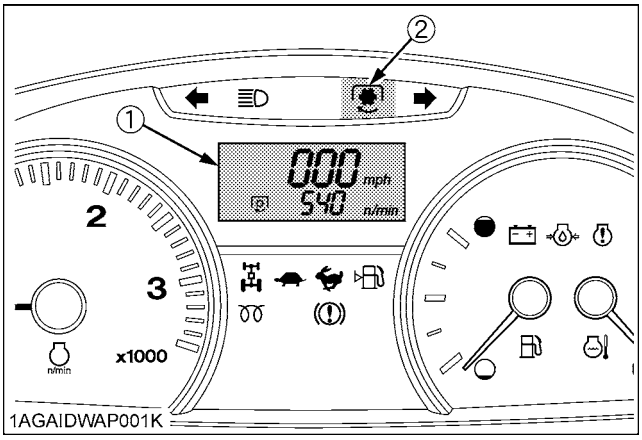
Engine speed rpm	PTO speed rpm
2205	540
2210	1000

IMPORTANT :

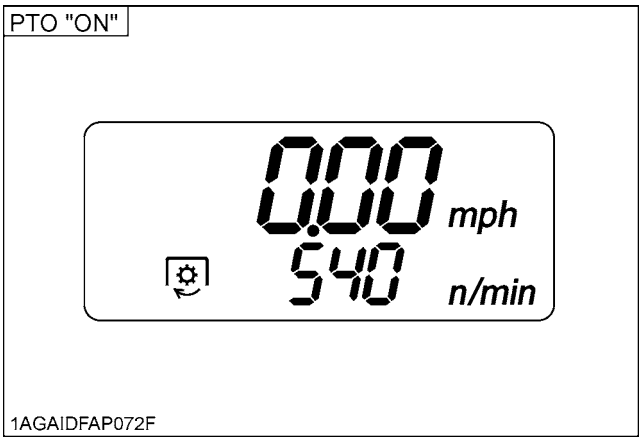
- For maximum PTO shaft speeds of various implements, see the implement Operator's Manual.

■LCD Monitor Message

1. The PTO rpm can be checked in the LCD monitor. (See "PTO RPM / TRAVEL SPEED MONITOR" in "OPERATING THE TRACTOR" section.)
2. When the PTO system gets engaged (ON), the indicator lights up.



(1) LCD monitor
(2) PTO clutch indicator

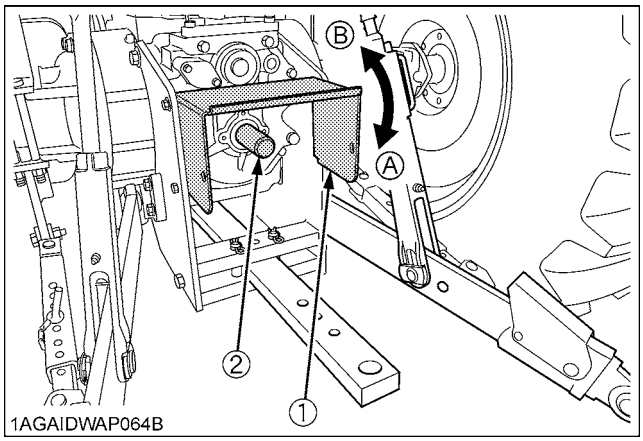


NOTE :

- When the PTO speed is changed from 540 rpm to 1000 rpm, it is necessary to switch the PTO speed display mode. Otherwise the PTO speed will not get correctly displayed in the LCD monitor. Such mode switching is also needed when returning to the 540 rpm PTO speed.
  (See "PTO RPM / TRAVEL SPEED MONITOR" in "OPERATING THE TRACTOR" section.)

■PTO Shaft Cover and Shaft Cap

Keep the PTO shaft cover in place at all times. Replace the PTO shaft cap when the PTO is not in use. Before connecting or disconnecting a drive shaft to PTO shaft, be sure engine is "OFF". Raise up the PTO shaft cover.
Afterward be sure to return the PTO shaft cover to the "NORMAL POSITION".

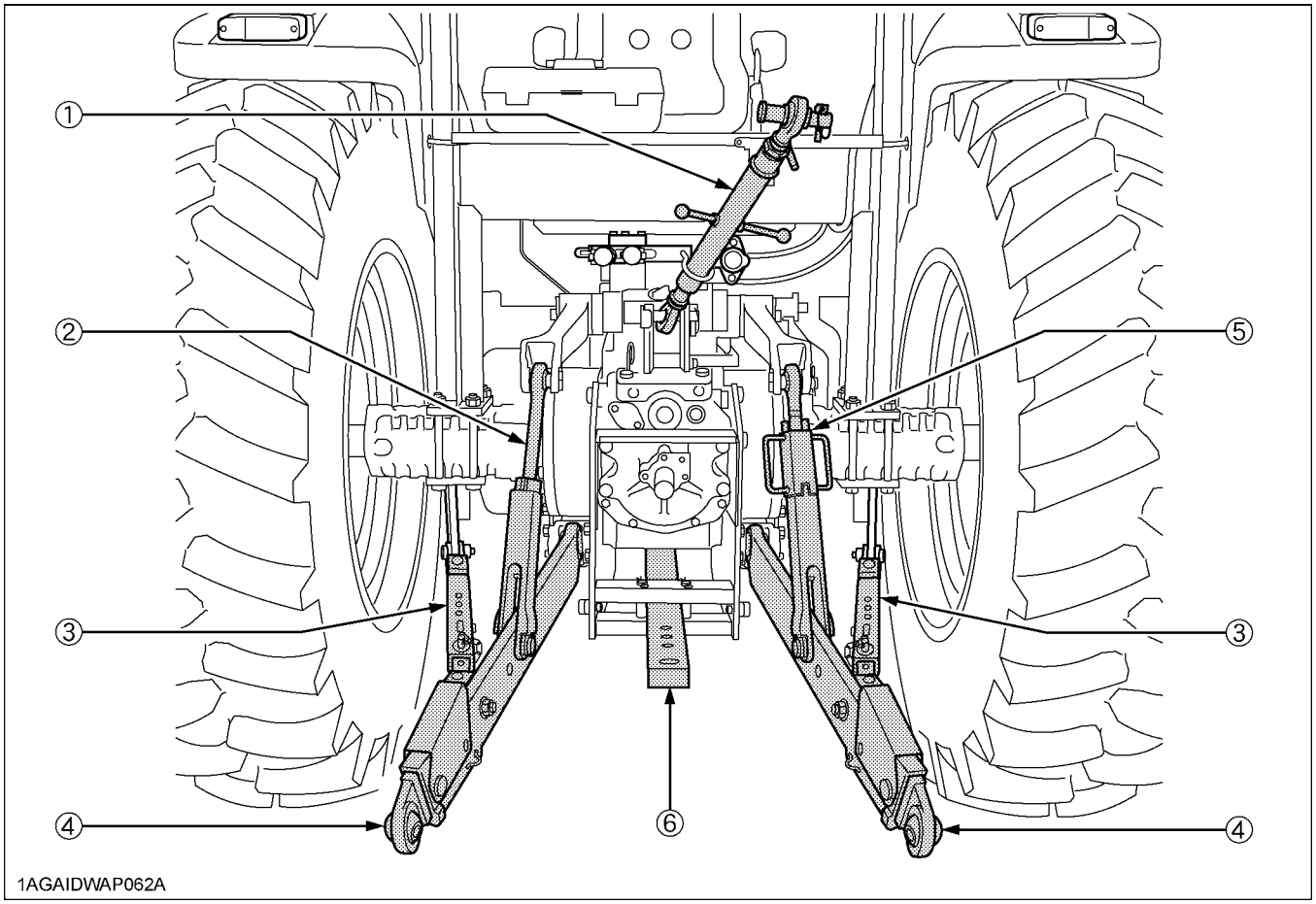


(1) PTO shaft cover
(2) PTO shaft cap
(A) "NORMAL POSITION"
(B) "RAISED POSITION"

IMPORTANT :

- The universal joint of the PTO drive shaft is technically limited in its moving angle. Refer to the PTO Drive Shaft Instructions for proper use.

THREE-POINT HITCH & DRAWBAR



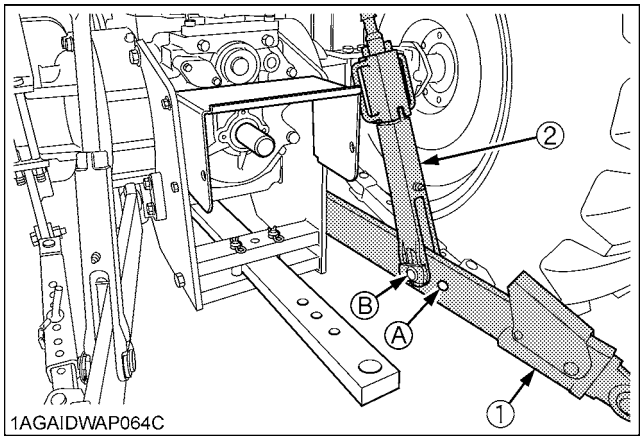
(1) Top link
(2) Lifting rod (Left)
(3) Telescopic stabilizers
(4) Lower link
(5) Lifting rod (Right)
(6) Drawbar

3-POINT HITCH

1. Make preparations for attaching implement.

■Selecting the holes of Lower Links

There are two holes in the lower links. For most operations the lifting rods should be attached to the (B) hole.

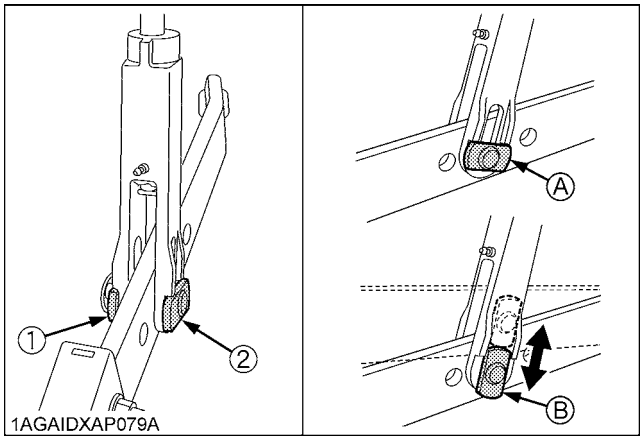


(1) Lower link *holes: (A), (B)*
(2) Lifting rod

NOTE :
- The lifting rods may be attached to (A) for greater lifting force.

■Adjusting Lateral Float

To allow the implement to follow ground contour, attach the rectangular washers and pin heads in vertical position. To hold the implement, reset the rectangular washers and pin heads in horizontal position.



(1) Rectangular washer *(A) Horizontal position*
(2) Pin head *(B) Vertical position*

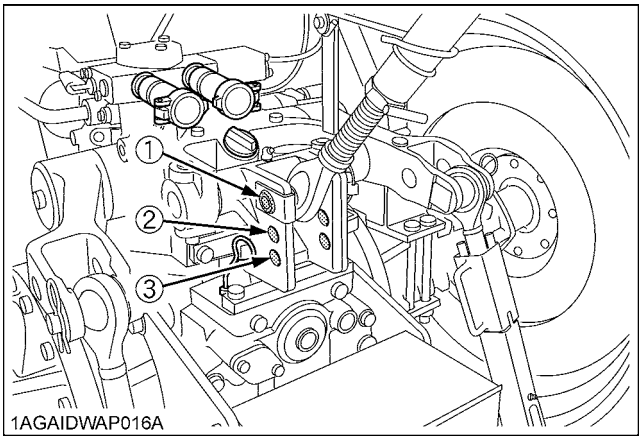
◆ **Floating mechanism**

When the floating mechanism is used, the implement is able to follow the tractor freely in response to the soil and ground conditions. This is suited for operation with implements wider than the tractor.

■Selecting the Top Link Mounting Holes

Select the proper set of holes by referring to the "Hydraulic Control Unit Use Reference Chart" in Hydraulic Unit section.

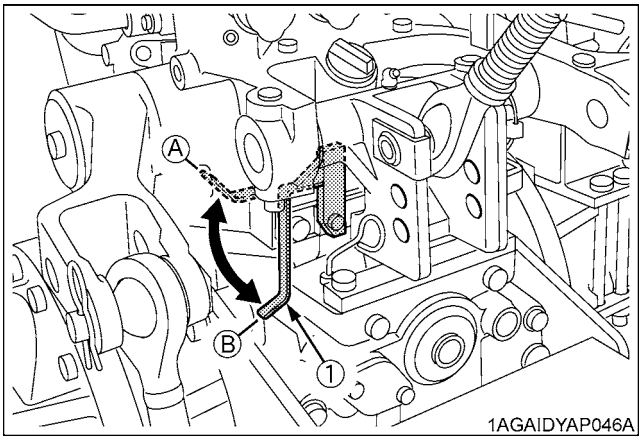
If the hydraulic unit is set for draft control, draft response is more sensitive when an implement is connected to the lower set of top link mounting holes. If draft control is not required, it is recommended to use the top set (1).



■Draft Stopper

To reduce the vibrations of attachments, set the draft stopper to the "LOCK" position.

When using the draft control for plowing and similar works, set the draft stopper to the "UNLOCK" position.



(1) Draft stopper *(A) "LOCK"*
(B) "UNLOCK"

■Drawbar

Remove the drawbar if a close mounted implement is attached.

2. Attaching and detaching implements

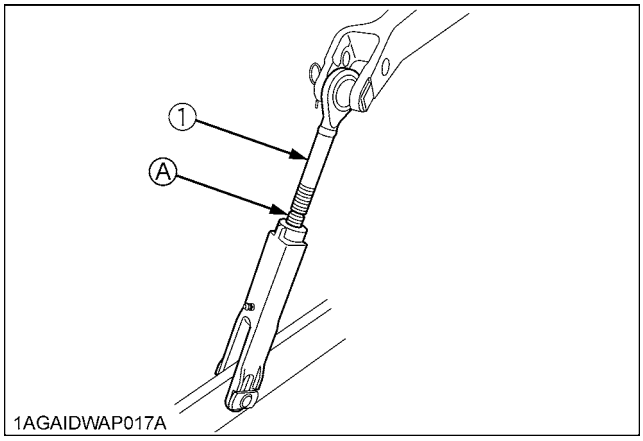
CAUTION

To avoid personal injury:

- **Be sure to stop the engine.**
- **Do not stand between tractor and implement unless parking brake is applied.**
- **Before attaching or detaching implement, locate the tractor and implement on a firm level surface.**
- **Whenever an implement or other attachment is connected to the tractor 3-point hitch, check full range of operation for interference, binding or PTO separation.**
- **Do not exceed maximum allowable length of either lifting rod, or the lifting rod will come apart and the 3-point equipment may fall.**

■Lifting Rod (Left)

By turning the rod itself, the lifting rod varies its length.
When extending the rod, do not exceed the groove on the rod thread.



(1) Lifting rod *(A) "GROOVE"*

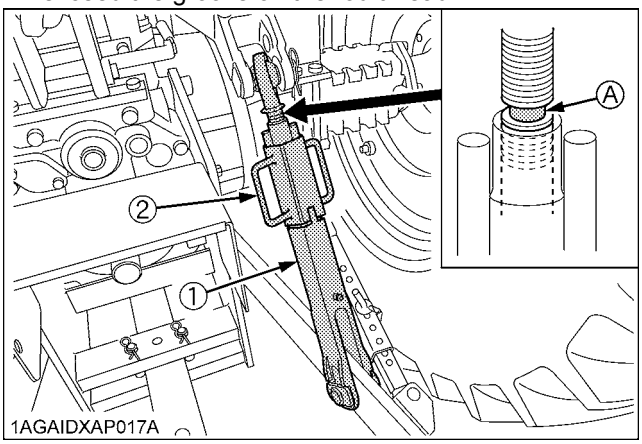
■Lifting Rod (Right)

CAUTION

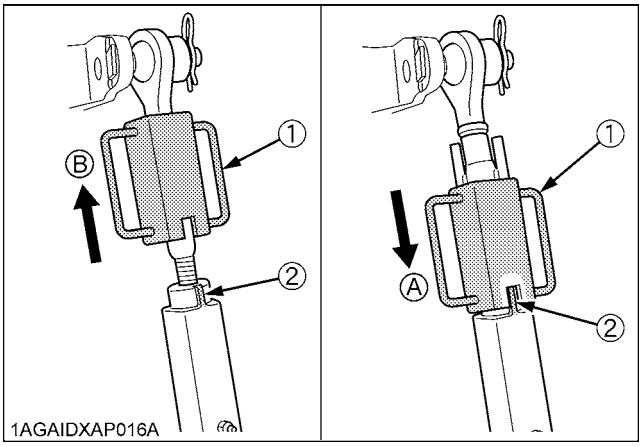
To avoid personal injury:

- **Do not extend lifting rod beyond the groove on the thread rod.**

1. To adjust the length of the lifting rod, lift the adjusting handle and turn to desired length.
2. After adjusting, lower the lifting rod adjusting handle to the lock position.
3. When extending the rod using adjusting handle, do not exceed the groove on the rod thread.



(1) Lifting rod *(A) "GROOVE"*
(2) Adjusting handle



(1) Adjusting handle *(A) "LOCK POSITION"*
(2) Lock pin *(B) "UNLOCK POSITION"*

■Top Link

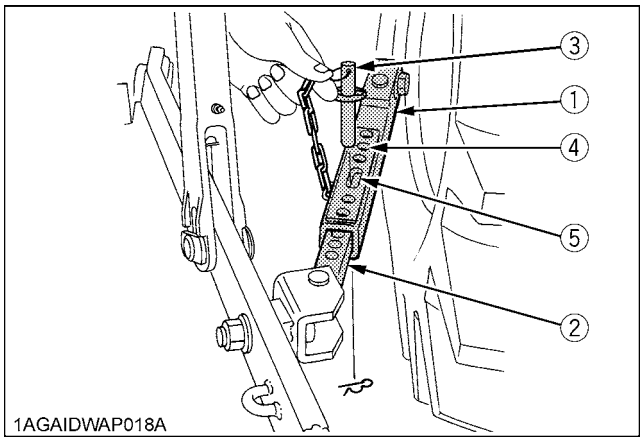
1. Adjust the angle of the implement to the desired position by shortening or lengthening the top link.
2. The proper length of the top link varies according to the type of implement being used.

■Telescopic Stabilizers

Adjust the telescopic stabilizers to control horizontal sway of the implement. Select the proper set of holes by referring to the "Hydraulic Control Unit Use Reference Chart" in "REMOTE HYDRAULIC CONTROL SYSTEM" in "HYDRAULIC UNIT" section.

After aligning satisfactorily, insert the set-pin through any one of the five holes on the outer tube that align with one of the holes on the inner bar, both stabilizers will be locked.

If the set-pin is inserted through the slot to engage one of the holes on the inner bar, a limited degree of sway will be permitted.

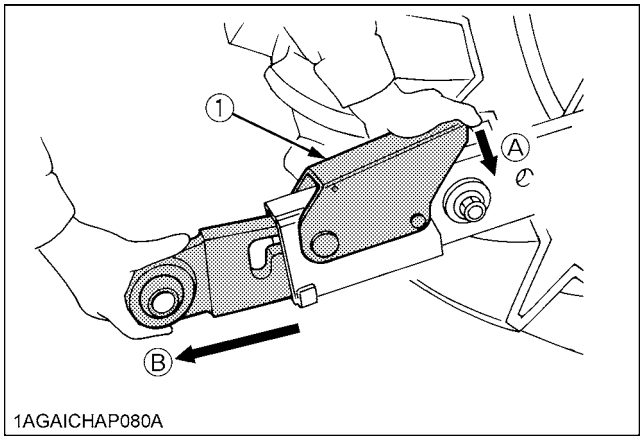


(1) Outer tube
(2) Inner bar
(3) Set-pin
(4) Hole
(5) Slot

■Telescopic Lower Links

To attach an implement, follow the instructions below:

1. Push the levers, pull out the lower link ends, and attach to the implement.
2. Back up the tractor slightly to make sure the lower links are pushed in securely.



(1) Lever
(A) "PUSH"
(B) "PULL OUT"

DRAWBAR

WARNING

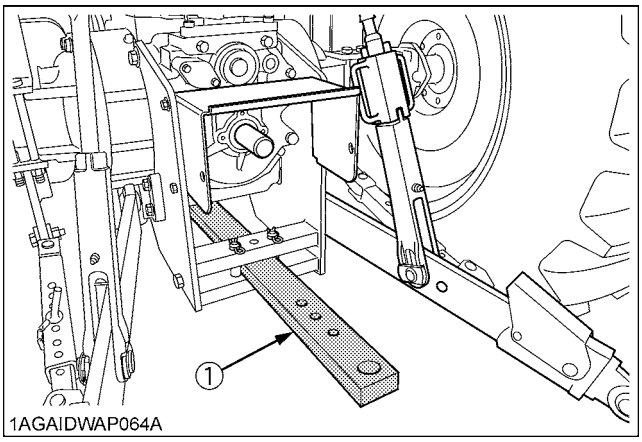
To avoid personal injury:

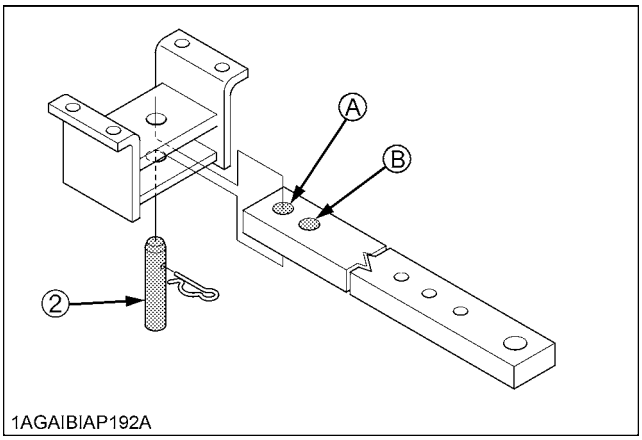
- **Never pull from the top link, the rear axle or any point above the drawbar. Doing so could cause the tractor to tip over rearward causing personal injury or death.**

■Adjusting Drawbar Length

When towing an implement, it is recommended that the (A) hole in drawbar be utilized.

The drawbar load is specified in the "IMPLEMENT LIMITATIONS" section.

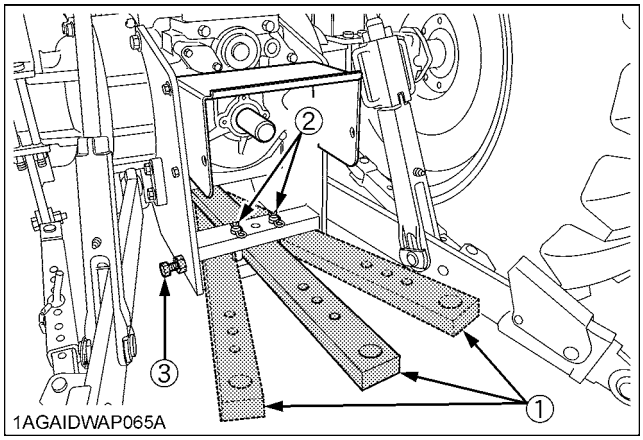




(1) Drawbar
(2) Pivot pin
Holes: (A), (B)

■Swing Drawbar

The drawbar can be used in three different ways as illustrated below. Assemble it correctly with locating pins.



(1) Drawbar
(2) Locating pin
(3) Looseness preventing bolt

HYDRAULIC UNIT

The standard tractor has 5 hydraulic control systems as shown below. Therefore, use the most appropriate system for the implement you are using.

◆ **3-Point Hitch Control System**
1. Position Control
2. Draft Control
3. Mixed Control
4. Float Control

◆ **Remote Hydraulic Control System**
5. Combined Flow Control

IMPORTANT :
- Do not operate until the engine is warmed up. If operation is attempted when the engine is still cold, the hydraulic system may be damaged.
- If noises are heard when implement is lifting after the hydraulic control lever has been activated, the hydraulic mechanism is not adjusted properly. Unless corrected, the unit will be damaged. Contact your KUBOTA Dealer for adjustment.

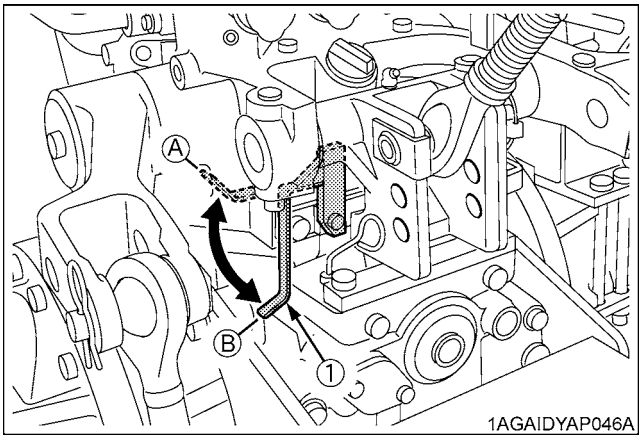
3-POINT HITCH CONTROL SYSTEM

⚠ CAUTION

To avoid personal injury:
- **Before using the 3-point hitch controls, ensure that no person or object is in the area of the implement or 3-point hitch. Do not stand on or near the implement or between the implement and tractor when operating the 3-point hitch controls.**

■Draft Stopper

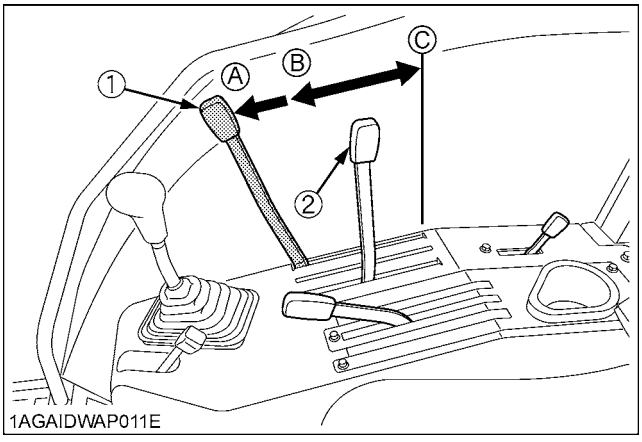
To reduce the vibrations of attachments, set the draft stopper to the "LOCK" position.
When using the draft control for plowing and similar works, set the draft stopper to the "UNLOCK" position.



(1) Draft stopper
(A) "LOCK"
(B) "UNLOCK"

■Position Control

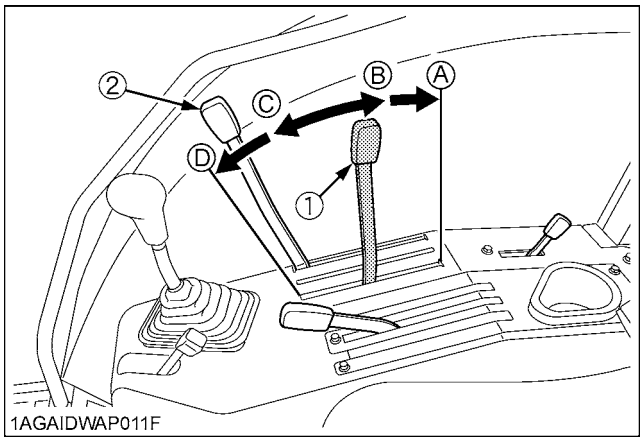
This will control the working depth of 3-point hitch mounted implement regardless of the amount of pull required.



(1) Position control lever
(2) Draft control lever
(A) "FLOAT"
(B) "DOWN"
(C) "UP"

■Draft Control

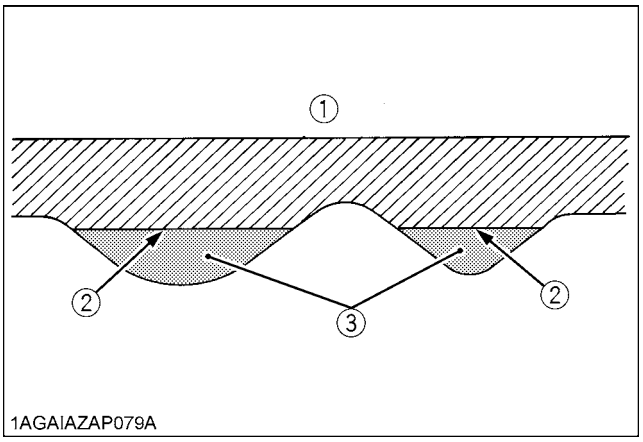
This will control the pull of the 3-point implement. As the load on the 3-point hitch changes due to various soil conditions, the draft control system automatically responds to these changes by either raising or lowering the implement slightly to maintain a constant pull.
Place the position control lever in the lowest position and set the implement pull with the draft control lever.



(1) Draft control lever
(2) Position control lever
(A) "UP"
(B) "SENSITIVE"
(C) "INSENSITIVE"
(D) "FLOAT"

■Mixed Control

In draft control, when draft decreases, the implement automatically lowers to increase draft. However, the implement sometimes lowers too much. To limit the degree, the implement can be lowered, set the position control lever at the lowest working depth desired for the implement. Lower the draft control lever to the point where the implement is at the desired depth.
This stops the implement from going too deep and causing loss of traction and ground speed.



(1) Ground surface
(2) Implement penetration limit
(3) Light soil

■Float Control

Place both the draft control lever and the position control lever in the float position to make the lower links move freely along with the ground conditions.

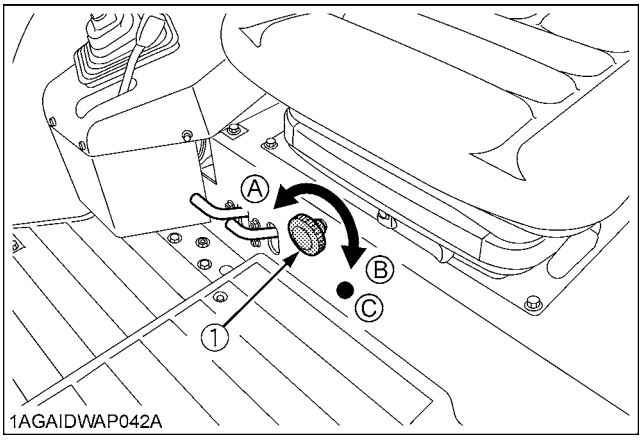
■3-point Hitch Lowering Speed

CAUTION

To avoid personal injury:

- **Fast lowering speed may cause damage or injury. Lowering speed of implement should be adjusted to two or more seconds.**

The lowering speed of the 3-point hitch can be controlled by adjusting the 3-point hitch lowering speed knob.



(1) 3-point hitch lowering speed knob
(A) "FAST"
(B) "SLOW"
(C) "LOCK"

REMOTE HYDRAULIC CONTROL SYSTEM

The hydraulic auxiliary control valves can be installed up to triple segments irrespective of installation of flow control valve.

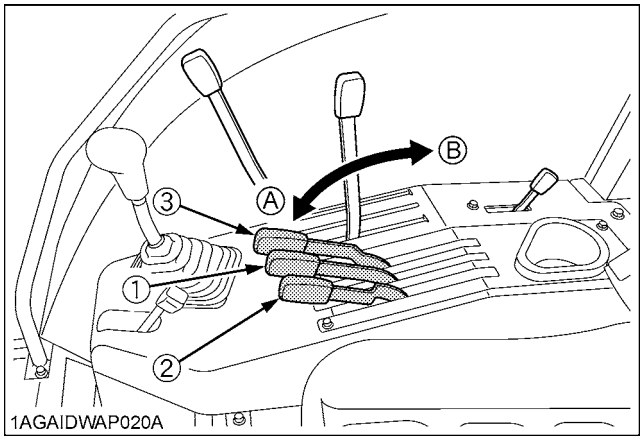
■Remote Control Valve

There are two types of remote valves available for these models.

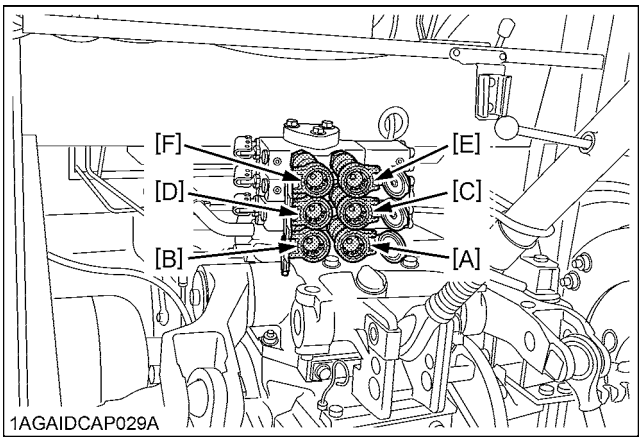
- Double acting valve with detents and self cancelling:
  This valve may be placed in the detent mode. The lever will stay in this position until the pressure reaches a predetermined level or a cylinder reaches the end of its stroke. Then it will automatically return to neutral
- Double acting valve with float position:
  This valve may be placed in the float mode with the control lever all the way forward. The cylinder is free to extend or retract, letting an implement such as a loader bucket follow the ground.

■Remote Control Valve Lever

The remote control valve lever directs pressurized oil flow to the implement hydraulic system.



(1) Remote control valve lever 1
(2) Remote control valve lever 2
(3) Remote control valve lever 3
(A) "PUSH"
(B) "PULL"



Pressure ⟶
Returning ⟵

		Double-acting		Single-acting	
Lever (1)		Push	Pull	Push	Pull
Port	[A]	Out ⟶	In ⟵	-	-
	[B]	In ⟵	Out ⟶	In ⟵	Out ⟶

Lever (2)		Push	Pull
Port	[C]	Out ⟶	In ⟵
	[D]	In ⟵	Out ⟶

Lever (3)		Push	Pull
Port	[E]	Out ⟶	In ⟵
	[F]	In ⟵	Out ⟶

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], [D] or [F] 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], [D] or [F] 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

CAUTION

To avoid personal injury:

- **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.

■Adjusting the flow rate

CAUTION

To avoid the possibility of personal injury be aware of the following when making adjustments:

- **The 3-point hitch operation is influenced by the combination of the adjustment of the flow control valve and the engine speed.**
- **The 3-point hitch may raise slowly or not at all at low engine RPM.**
- **The 3-point hitch may raise suddenly if engine RPM is increased, or, flow control adjustment is changed.**

Refer to the illustration below.

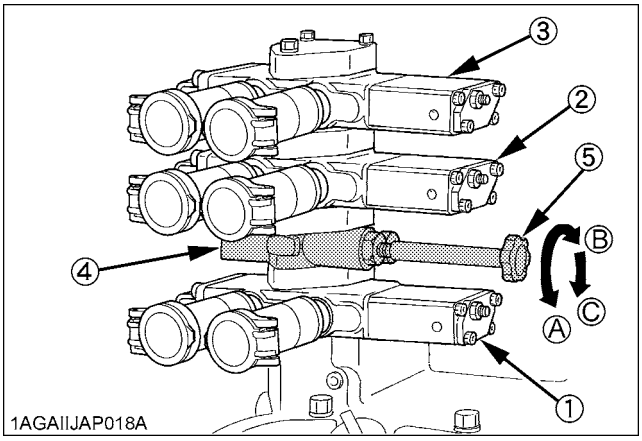
1. The flow rate for the remote control valves (2) or (3), located on above the flow control valve (4), can be adjusted.
2. Turn the flow control knob (5) counterclockwise (A), and the flow rate for the remote control valves (2) or (3) increases. A clockwise turn (B) of the knob causes the flow to decrease. If the knob is turned all the way (C), there will be no flow.
3. To adjust the flow rate, set the engine speed to the operating RPM, turn the flow control knob once all the way clockwise (C), and then turn it gradually counterclockwise until a required flow rate is reached.

NOTE :

- Full adjustment of the valve will occur in approximately 1 1/2 revolutions of the flow control knob. Turning the flow control knob beyond this point will have no affect on the flow rate.

IMPORTANT :

- When there is no need to adjust the flow rate, turn the flow control knob all the way counterclockwise and keep it in this position.



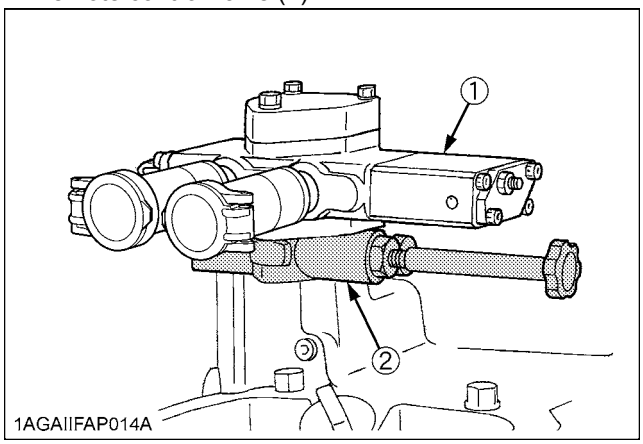
(1) Remote control valve (1)
(2) Remote control valve (2)
(3) Remote control valve (3)
(4) Flow control valve
(5) Flow control knob
(A) "INCREASE"
(B) "DECREASE"
(C) "STOP"

■Positions and advantages of the flow control valve

Refer to illustration below.

◆ **Position 1**

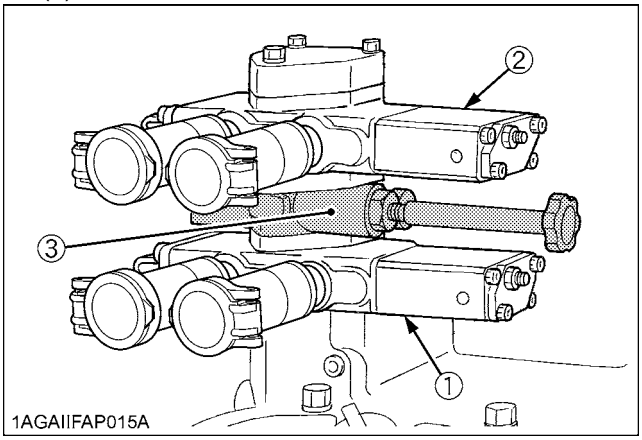
1. The attachment control speed (hydraulic motor RPM, for example) of the remote control valve (1) can be maintained at a constant level within limits.
2. The remote control valve (1) and the 3-point hitch can be operated at the same time. The 3-point lift speed will be influenced by the level of flow required at remote control valve (1).



(1) Remote control valve (1)
(2) Flow control valve

◆ **Position 2**

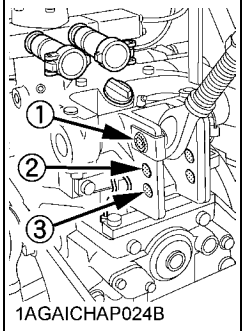
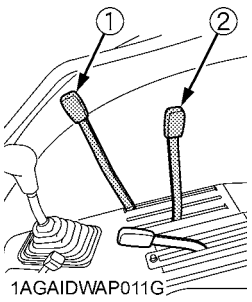
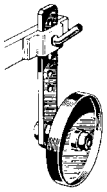
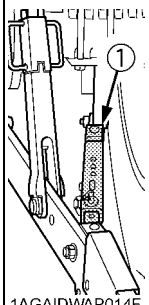
1. The attachment control speed (hydraulic motor RPM, for example) of the remote control valve (2) can be maintained at a constant level.
2. The remote control valve (2) and the 3-point hitch can be operated at the same time with the speed of the 3-point being influenced by the adjustment range of the flow control valve.
3. Remote control valves (1) and (2) can be operated at the same time with operation of the 3-point hitch being interrupted by activation of valve (1).
4. The operation of valve (1) is influenced by the flow adjustment to valve (2).
5. The 3-point hitch lift speed and the flow available for valve (1) are influenced by the flow adjustment of valve (2).



(1) Remote control valve (1)
(2) Remote control valve (2)
(3) Flow control valve

■Hydraulic Control Unit Use Reference Chart

In order to handle the hydraulics properly, the operator must be familiar with the following.
Though this information may not be applicable to all types of implements and soil conditions, it is useful for general conditions.

Implement	 1AGAIAZAP122A Soil condition	 1AGAICHAP024B Top link mounting holes	 1AGAIDWAP011G (1) Position control lever (2) Draft control lever	 1AGAIAZAP070A Gauge wheel	 1AGAIDWAP014F (1) Telescopic stabilizers	Remarks
Moldboard plow	Light soil Medium soil Heavy soil	3 2 or 3 2	Draft and Mixed control (Place the draft control lever to the suitable position and set the implement pull with the position control lever.)	YES/NO	Loose	Insert the set-pin through the slot on the outer tube that align with one of the holes on the inner bar. For implements with gauge wheels, lower the position control lever all way.
Disc plow	---	2 or 3				
Harrower (spike, springtooth, disc type)	---	2				
Sub-soiler.....						
Weeder, ridger.....	---	1	Position control (Hold the draft control lever at the front most position during operation.)	YES	Tighten	Telescopic stabilizer should be tight enough to prevent excessive implement movement when implement is in raised position. For implements with gauge wheels, lower the position control lever all way.
Earthmover, digger, scraper, manure fork, rear carrier.....				YES/NO		
Mower (mid- and rear-mount type) Hayrake, tedder.....				NO		

TIRES, WHEELS AND BALLAST

TIRES

WARNING

To avoid personal injury:

- **Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.**
- **Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure shown in the operator's manual.**

IMPORTANT :

- Do not use tires other than those approved by KUBOTA.

■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
Front	9.5 L-15	250 kPa (2.5 kgf/cm², 36 psi.)
	10.00-16, 6PR	220 kPa (2.2 kgf/cm², 32 psi.)
	12.4-24, 6PR	170 kPa (1.7 kgf/cm², 24 psi.)
	13.6-24, 6PR	150 kPa (1.5 kgf/cm², 22 psi.)
	13.6R24	160 kPa (1.6 kgf/cm², 23 psi.)
Rear	16.9-34, 6PR	120 kPa (1.2 kgf/cm², 18 psi.)
	18.4-34	140 kPa (1.4 kgf/cm², 20 psi.)
	18.4R34	120 kPa (1.2 kgf/cm², 18 psi.)
	18.4-30	110 kPa (1.1 kgf/cm², 16 psi.)
	18.4R30	110 kPa (1.1 kgf/cm², 16 psi.)

NOTE :

- Maintain the maximum pressure in front tires, if using a front loader or when equipped with a full load of front weights.

WHEEL ADJUSTMENT

CAUTION

To avoid personal injury:

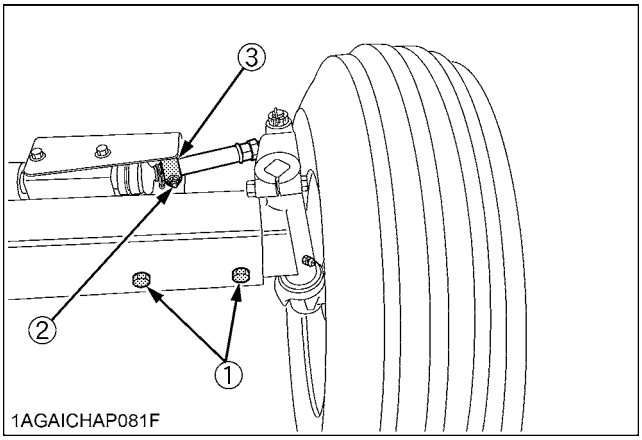
- **When working on slopes or when working with trailer, set the wheel tread as wide as practical for maximum stability.**
- **Support tractor securely on stands before removing a wheel.**
- **Do not work under any hydraulically supported devices. They can settle, suddenly leak down, or be accidentally lowered. If necessary to work under tractor or any machine elements for servicing or adjustment, securely support them with stands or suitable blocking beforehand.**
- **Never operate tractor with a loose rim, wheel, or axle.**

■Front Wheels (with two wheel drive)

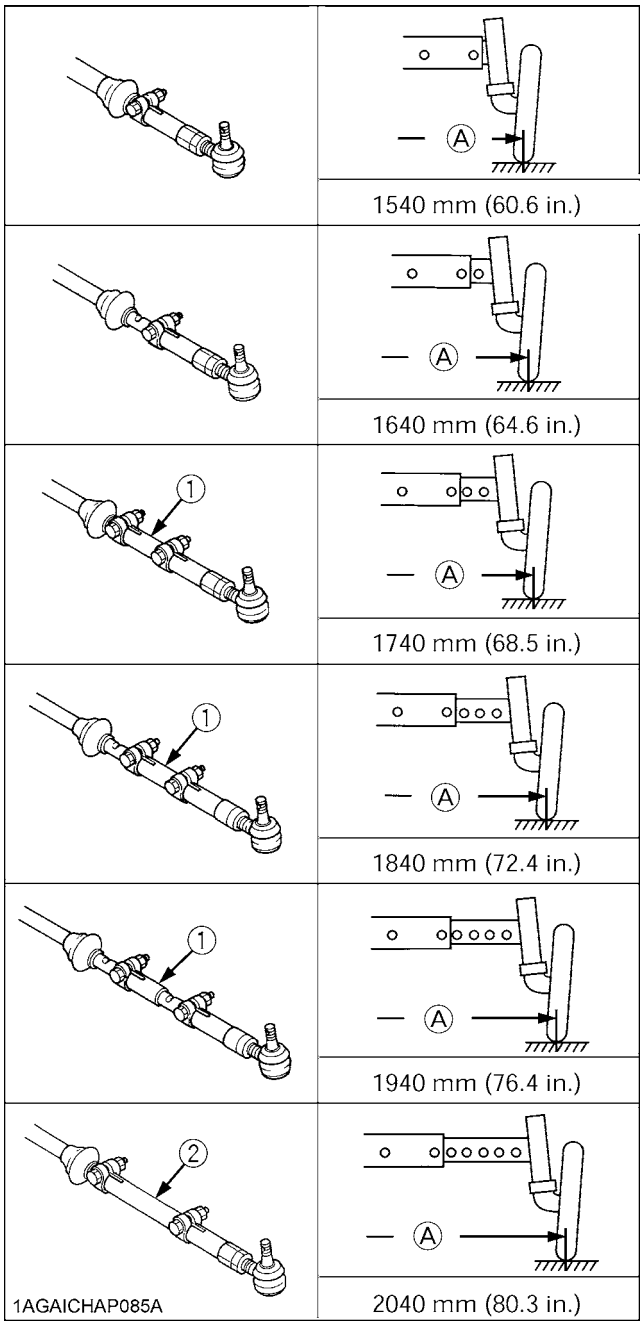
Front tread width can be adjusted as shown with the standard equipped tires.

To change the tread width

1. Remove the front axle mounting bolts and the tie-rod mounting bolts.
2. Move the front axles (right and left) to the desired position, and tighten the bolts.
3. Adjust the toe-in: [1 to 5 mm (0.04 to 0.2 in.)] (See "Adjusting Toe-in" in "EVERY 200 HOURS" in "PERIODIC SERVICE" section.)



(1) Front axle mounting bolt
260 to 303 N-m (26.5 to 31.0 kgf-m) (192 to 224 ft-lbs)
(2) Tie-rod mounting bolt
61 to 71 N-m (6.2 to 7.2 kgf-m) (44.8 to 52.1 ft-lbs)
(3) Tie rod clamp



(1) Extension1 (short spacer) *(A) "TREAD"*
(2) Extension2 (long spacer)

IMPORTANT :
- The front tread width for the front loader application on 2WD models should not be greater than 1640 mm (64.6 in.).

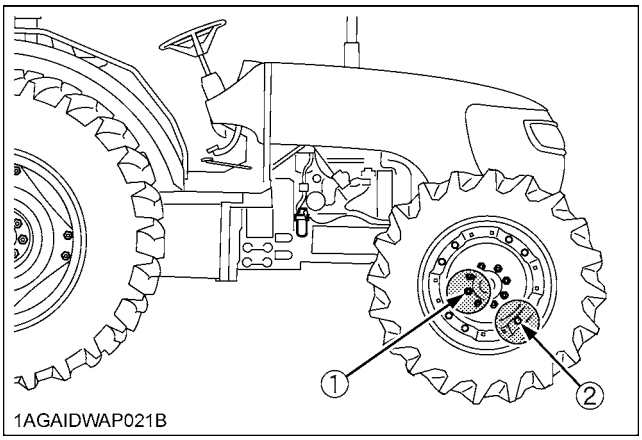
■Front Wheels (with four wheel drive)

Front tread width can be adjusted as shown with the standard equipped tires.

To change the tread width

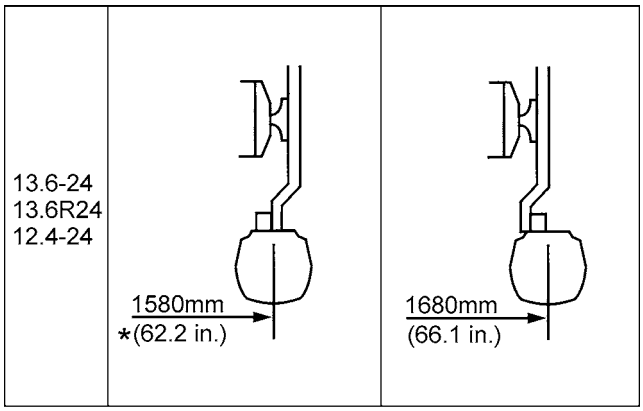
1. Remove the wheel rim and disk mounting bolts.
2. Change the position of the rim and disk (right and left) to the desired position, and tighten the bolts.
3. Adjust the toe-in [2 to 8mm (0.1 to 0.3 in.)]
   See "Adjusting Toe-in" in "EVERY 200 HOURS" in "PERIODIC SERVICE" section.

IMPORTANT :
- Always attach wheels as shown in the drawing.
- If not attached as illustrated, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200m (200 yards) and thereafter according to service interval. (See "MAINTENANCE" section.)



(1) 260 to 304 N-m (26.5 to 31 kgf-m) (192 to 224 ft-lbs)
(2) [Waffle wheel]
298 to 366 N-m (30.4 to 37.3 kgf-m) (220 to 270 ft-lbs)
[Except waffle wheel]
244 N-m (34.9 kgf-m) (180 ft-lbs)

NOTE :
- Wheels with beveled or tapered holes: Use the tapered side of lug nut.



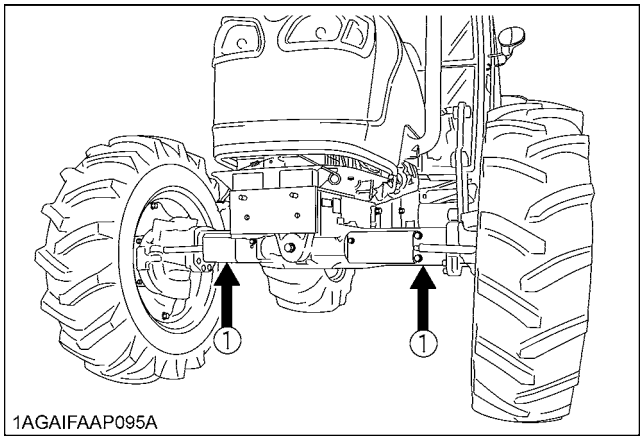
1AGAIDXAP076A

*: Need to limit turning angle at 1580 mm (62.2 in.) width setting to 42 degrees. Refer to the chart provided for additional instructions.

CAUTION

To avoid personal injury:

- **Before jacking up the tractor, park it on a firm and level ground and chock the rear wheels.**
- **Fix the front axle to keep it from swinging.**
- **Select jacks that withstand the machine weight and set them up as shown below.**



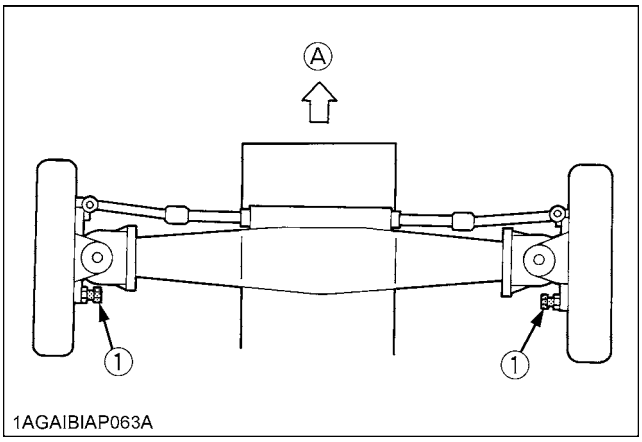
1AGAIFAAP095A

(1) Jack point

■Adjusting Front Wheel Turning Stopper Bolt

IMPORTANT :

- Always check if tires contact with tractor or loader frame assemblies.
- Adjust turning angle with provided stoppers if necessary.



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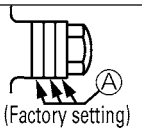
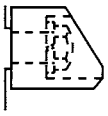
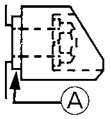
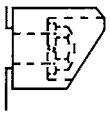
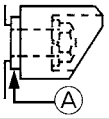
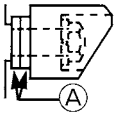
(1) Stopper bolts *(A) "FRONT"*

	Stopper bolts (ex. LH stopper bolt)		
Angle	50°	45°	42°
Stopper			
Angle	37°	33°	30°
Stopper			

1AGAICHAP124E

(A) 5 mm (0.2 in.) collar

■Rear Wheels

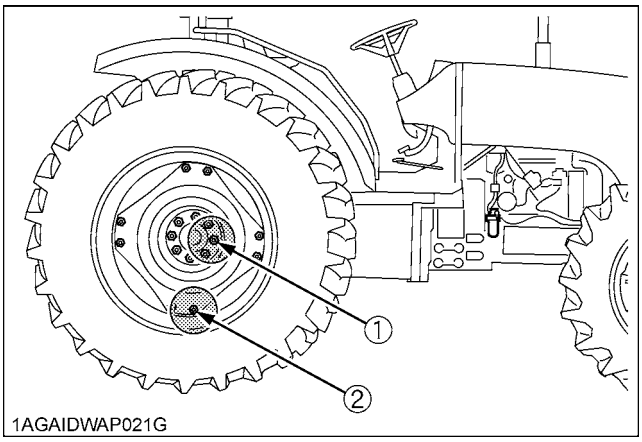
Rear tread width can be adjusted as shown with the standard equipped tires.

To change the tread width

1. Remove the wheel rim and / or disk mounting bolts.
2. Change the position of the rim and / or disk (right and left) to the desired position, and tighten the bolts.

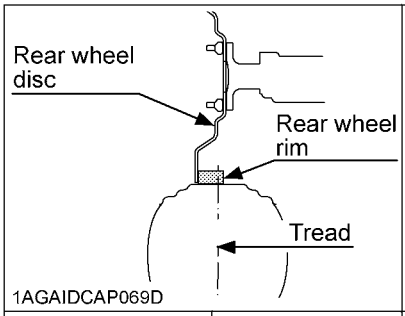
IMPORTANT :

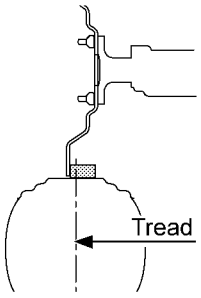
- Always attach wheels as shown in the drawing.
- If not attached as illustrated, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200m (200 yards) and thereafter according to service interval.
  (See "MAINTENANCE" section.)

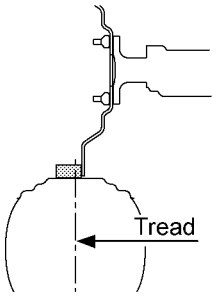


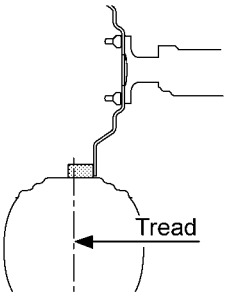
(1) 343 to 401 N-m (35.0 to 41.0 kgf-m) (254 to 297 ft-lbs)
(2) [Steel disc] 244 N-m (24.9 kgf-m) (180 ft-lbs)
[Cast iron disc]
260 to 304 N-m (26.5 to 31.0 kgf-m) (192 to 224 ft-lbs)

[Steel disc]



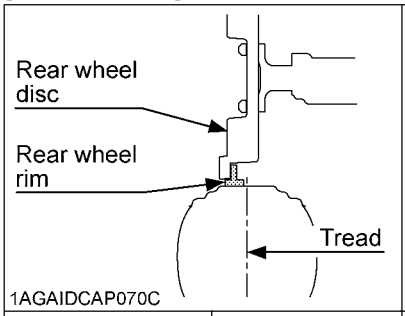


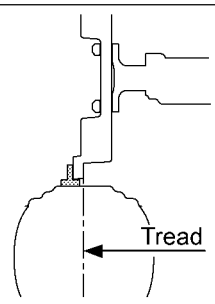


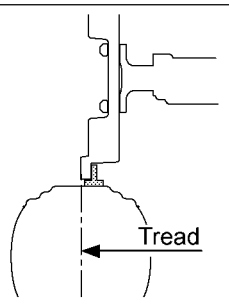


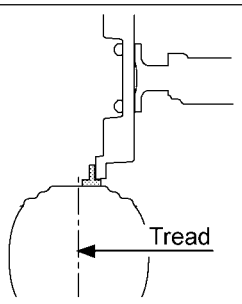
18.4R34 18.4-34 16.9-34	1705 mm (67.2 in.)	1805 mm (71.1 in.)	1905 mm (75.0 in.)	2005 mm (79.0 in.)
18.4-30	1700 mm (66.9 in.)	1810 mm (71.3 in.)	1900 mm (74.8 in.)	2010 mm (79.1 in.)

[Cast iron disc]







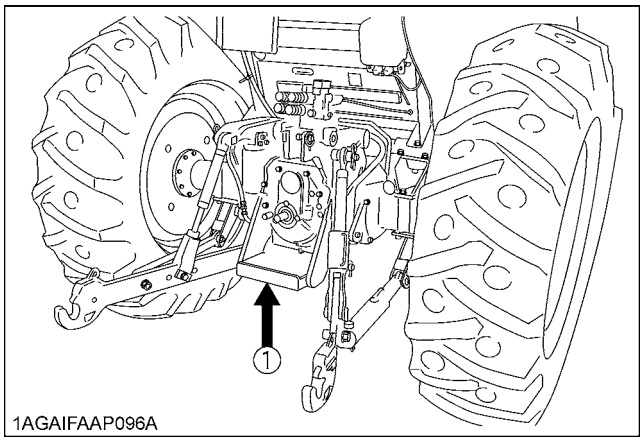


18.4R34 18.4-34 16.9-34	1730 mm (68.1 in.)	1835 mm (72.2 in.)	1930 mm (76.0 in.)	2035 mm (80.1 in.)
18.4-30 18.4R30	1705 mm (67.2 in.)	1860 mm (73.2 in.)	1905 mm (75.0 in.)	2060 mm (81.1 in.)

CAUTION

To avoid personal injury:

- **Before jacking up the tractor, park it on a firm and level ground and chock the front wheels.**
- **Fix the front axle to keep it from swinging.**
- **Select a jack that withstands the machine weight and set it up as shown below.**



(1) Jack point

BALLAST

CAUTION

To avoid personal injury:

- **Additional ballast will be needed for transporting heavy implements. When the implement is raised, drive slowly over rough ground, regardless of how much ballast is used.**
- **Do not fill the front wheels with liquid to maintain steering control.**

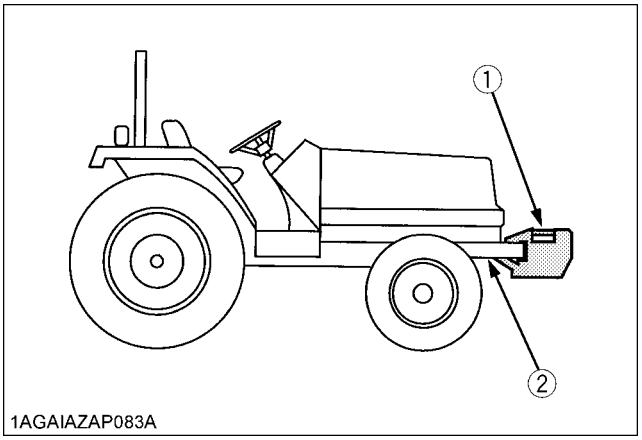
■Front Ballast

Add weights if needed for stability (2WD. 4WD models) and improve traction (4WD model). Heavy pulling and heavy rear mounted implements tend to lift front wheels. Add enough ballast to maintain steering control and prevent tip over. Remove weight when no longer needed.

◆ Front End Weights (option)

The front end weights can be attached to the bumper.

See your implement operator's manual for required number of weights or consult your local KUBOTA Dealer to use.



(1) Front end weights
(2) Bumper

IMPORTANT :

- Do not overload tires.
- Add no more weight than indicated in chart.

Maximum weight	47 kg x 12 pieces (1240 lbs.)

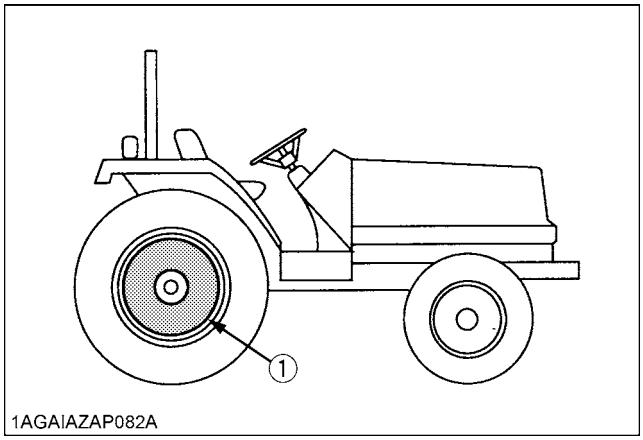
■Rear Ballast

Add weight to rear wheels if needed to improve traction or for stability. The amount of rear ballast should be matched to job and the ballast should be removed when it is not needed.

The weight should be added to the tractor in the form of liquid ballast, rear wheel weights or a combination of both.

◆ Rear Wheel Weights (option)

The rear wheel weights can be attached to the rear wheel. See your implement operator's manual for required number of weights or consult your local KUBOTA Dealer to use.



(1) Rear wheel weights

IMPORTANT :

- Do not overload tires.
- Add no more weight than indicated in chart.

Maximum weight per wheel	[34 in. Cast iron disk] 72.5 kg x 2 pieces (320 lbs.)
	[Steel disk, 30 in. Cast iron disk] 72.5 kg x 3 pieces (480 lbs.)

◆ Liquid Ballast in Rear Tires

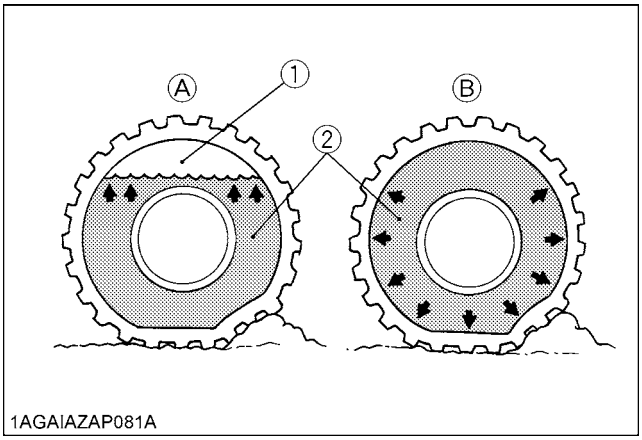
Water and calcium chloride solution provides safe economical ballast. Used properly, it will not damage tires, tubes or rims. The addition of calcium chloride is recommended to prevent the water from freezing. Use of this method of weighting the wheels has the full approval of the tire companies. See your tire dealer for this service.

Liquid weight per tire (75 Percent filled)

Tire sizes	16.9-34	18.4R30 18.4-30	18.4R34 18.4-34
Slush free at -10 ℃ (-14 ℉) Solid at -30 ℃ (-22 ℉) [Approx.1 kg (2 lbs.) $CaCl_2$ per 4 L (1 gal.) of water]	342 kg (755 lbs.)	385 kg (848 lbs.)	417 kg (920 lbs.)
Slush free at -24 ℃ (-11 ℉) Solid at -47 ℃ (-53 ℉) [Approx.1.5 kg (3.5 lbs.) $CaCl_2$ per 4 L (1 gal.) of water]	376 kg (829 lbs.)	414 kg (912 lbs.)	457 kg (1007 lbs.)
Slush free at -47 ℃ (-53 ℉) Solid at -52 ℃ (-62 ℉) [Approx.2.25 kg (5 lbs.) $CaCl_2$ per 4 L (1 gal.) of water]	399 kg (880 lbs.)	436 kg (960 lbs.)	490 kg (1081 lbs.)

IMPORTANT :

- Do not fill tires with water or solution more than 75% of full capacity (to the valve stem level).



(1) Air (A) Correct-75% Air compresses like a cushion
(2) Water (B) Incorrect-100% Full Water can not be compressed

MAINTENANCE

SERVICE INTERVALS

No.	Items			Indication on hour meter														Interval	Ref. page		
				50	100	150	200	250	300	350	400	450	500	550	600	650	700				
[M96S]																					
1	Fuel injection nozzle injection pressure		Check															every 1500 Hr	86	*4	@
2	Injection pump		Check															every 3000 Hr	86	*4	@
3	Fuel injection timer		Check															every 3000 Hr	86	*4	@
[M108S]																					
1	Fuel injection nozzle Active test		Check															every 1500 Hr	86	*4	@
2	Supply pump		Check															every 3000 Hr	86	*4	@
[COMMON ITEMS]																					
1	Engine start system		Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	71		
2	Wheel bolt torque		Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	72		
3	Battery condition		Check		○		○		○		○		○		○		○	every 100 Hr	73	*5	
4	Greasing		---		○		○		○		○		○		○		○	every 100 Hr	72		
5	Fan belt		Adjust		○		○		○		○		○		○		○	every 100 Hr	76		
6	Brake Pedal		Adjust		○		○		○		○		○		○		○	every 100 Hr	76		
7	Parking Brake Lever		Adjust		○		○		○		○		○		○		○	every 100 Hr	28		
8	Air cleaner element	Primary element	Clean		○		○		○		○		○		○		○	every 100 Hr	75	*1	@
			Replace															every 1 year	86	*2	
		Second-ary element	Replace															every 1 year	86		
9	Fuel line		Check		○		○		○		○		○		○		○	every 100 Hr	77		@
			Replace															every 2 years	89	*4	
10	Hydraulic oil filter		Replace	◎			○				○				○			every 200 Hr	78		
11	Toe-in		Adjust				○				○				○			every 200 Hr	80		
12	Fuel tank water		Drain				○				○				○			every 200 Hr	81		

No.	Items		Indication on hour meter														Interval	Ref. page		
			50	100	150	200	250	300	350	400	450	500	550	600	650	700				
13	Oil cooler line	Check				○				○				○			every 200 Hr	79		
		Replace															every 2 years	89	*4	
14	Power steering oil line	Check				○				○				○			every 200 Hr	80		
		Replace															every 2 years	89	*4	
15	Radiator hose and clamp	Check				○				○				○			every 200 Hr	79		
		Replace															every 2 years	89		
16	Intake air line	Check				○				○				○			every 200 Hr	80		@
		Replace															every 2 years	89	*3	
17	Engine oil	Change	◎					○						○			every 300 Hr	82		
18	Greasing (2WD front wheel hub)	---								○							every 400 Hr	84		
19	Water separator	Clean								○							every 400 Hr	83		
20	Fuel filter	Replace								○							every 400 Hr	82		@
21	Engine oil filter	Replace	◎											○			every 600 Hr	84		
22	Transmission fluid	Change	◎											○			every 600 Hr	84		
23	Front differential case oil	Change	◎											○			every 600 Hr	85		
24	Front axle gear case oil	Change	◎											○			every 600 Hr	85		
25	King-pin pivot	Adjust												○			every 600 Hr	86		
26	Brake oil	Change												○			every 600 Hr	86	*4	
27	Front axle pivot	Adjust												○			every 600 Hr	85		
28	Engine valve clearance	Adjust															every 800 Hr	86	*4	
29	Turbo charger	Check															every 3000 Hr	86	*4	@
30	Intake air heater	Check															every 3000 Hr	86	*4	
31	Cooling system	Flush															every 2 years	87		
32	Coolant	Change															every 2 years	87		
33	Parking brake cable	Replace															every 2 years	89	*4	

No.	Items		Indication on hour meter														Interval	Ref. page		
			50	100	150	200	250	300	350	400	450	500	550	600	650	700				
34	Brake hose	Replace															every 2 years	89	*4	
35	Master cylinder kit	Replace															every 2 years	89	*4	
36	Equalizer kit	Replace															every 2 years	89	*4	
37	Brake seal 1 and 2	Replace															every 2 years	89	*4	
38	Fuel system	Bleed															Service as required	89		
39	Brake system	Bleed															Service as required	91	*4	
40	Clutch housing water	Drain															Service as required	91		
41	Fuse	Replace															Service as required	91		
42	Light bulb	Replace															Service as required	92		

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 Consult your local KUBOTA Dealer for this service.

*5 When the battery is used for less than 100 hours per year, check the battery condition by reading the indicator annually.

- The items listed above (@ 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 above instruction.
  Please see the Warranty Statement in detail.

LUBRICANTS

<table>
<tr><th rowspan="2">No.</th><th rowspan="2">Locations</th><th colspan="2">Capacities</th><th colspan="3" rowspan="2">Lubricants</th></tr>
<tr><th>M96S</th><th>M108S</th></tr>
<tr><td>1</td><td>Fuel</td><td colspan="2">175 L
(46.2 U.S.gals.)</td><td colspan="3">No.2-D diesel fuel
No.1-D diesel fuel if temperature is below -10℃ (14℉)</td></tr>
<tr><td>2</td><td>Coolant</td><td colspan="2">9.6 L (10.1 U.S.qts.)
(Recovery tank: 1.1 L (1.2 U.S.qts.))</td><td colspan="3">Fresh clean soft water with anti-freeze</td></tr>
<tr><td rowspan="5">3</td><td rowspan="5">Engine crankcase
(with filter)</td><td colspan="2" rowspan="5">10.7 L
(11.3 U.S.qts.)</td><td rowspan="2">• Engine oil: API Service Classification</td><td>M96S</td><td>CD, CE or CF</td></tr>
<tr><td>M108S</td><td>CF or CI-4
[External EGR type engine]</td></tr>
<tr><td>Above 25℃ (77℉)</td><td colspan="2">SAE30, SAE10W-30 or 10W-40</td></tr>
<tr><td>0 to 25℃ (32 to 77℉)</td><td colspan="2">SAE20, SAE10W-30 or 10W-40</td></tr>
<tr><td>Below 0℃ (32℉)</td><td colspan="2">SAE10W, SAE10W-30 or 10W-40</td></tr>
<tr><td>4</td><td>Transmission case</td><td colspan="2">60 L
(63.4 U.S.qts.)</td><td colspan="3">• KUBOTA SUPER UDT-2 fluid</td></tr>
<tr><td>5</td><td>Brake oil
(reservoir and lines)</td><td colspan="2">0.3 L
(0.3 U.S.qts.)</td><td colspan="3">• KUBOTA SUPER UDT-2 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>6</td><td>Front differential
case oil [4WD]</td><td colspan="2">7 L
(7.4 U.S.qts.)</td><td colspan="3" rowspan="2">• KUBOTA SUPER UDT-2 fluid or SAE 80 - SAE 90
gear oil</td></tr>
<tr><td>7</td><td>Front axle gear
case oil [4WD]</td><td colspan="2">3.5 L
(3.7 U.S.qts.)</td></tr>
<tr><td rowspan="10">8</td><td>Greasing</td><td colspan="2">No. of greasing points</td><td>Capacity</td><td colspan="2">Type of grease</td></tr>
<tr><td>Top link</td><td colspan="2">2</td><td rowspan="8">Until grease overflows.</td><td colspan="2" rowspan="9">Multipurpose Grease
NLGI-2 OR
NLGI-1(GC-LB)</td></tr>
<tr><td>Top link bracket</td><td colspan="2">2</td></tr>
<tr><td>Lift rod</td><td colspan="2">3</td></tr>
<tr><td>Front axle gear
case support [4WD]</td><td colspan="2">2</td></tr>
<tr><td>Front axle support</td><td colspan="2">2</td></tr>
<tr><td>Front wheel hub
[2WD]</td><td colspan="2">2</td></tr>
<tr><td>Knuckle shaft
[2WD]</td><td colspan="2">2</td></tr>
<tr><td>Steering joint shaft</td><td colspan="2">1</td></tr>
<tr><td>Battery terminal</td><td colspan="2">2</td><td>A small amount</td></tr>
</table>

NOTE :

The product name of KUBOTA genuine UDT fluid may be different from that in the Operator's Manual depending on countries or territories. Consult your local KUBOTA Dealer for further details.

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:
- 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 or better" lubricating oil with a high Total Base Number (TBN of 10 minimum).

- Refer to the following table for the suitable API classification engine oil according to the engine type (with internal EGR, external EGR or non-EGR) and the fuel (low-sulfur or high-sulfur fuel).

Fuel used	Engine oil classification (API classification)	
	Oil class of engines except external EGR	Oil class of engines with external EGR
High Sulfur Fuel [≧ 0.05% (500 ppm)]	**CF** (If the "CF-4, CG-4, CH-4 or CI-4" lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals. (approximately half))	---
Low Sulfur Fuel [<0.05% (500 ppm)] or Ultra Low Sulfur Fuel [<0.0015% (15 ppm)]	**CF, CF-4, CG-4, CH-4** or **CI-4**	**CF** or **CI-4** (Class CF-4, CG-4 and CH-4 engine oils cannot be used on EGR type engines)

EGR: Exhaust Gas Re-circulation

- The CJ-4 engine oil is intended for DPF (Diesel Particulate Filter) type engines, and cannot be used on this tractor.

◆ **Fuel:**

- Cetane number of 45 minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20℃ (-4℉) or elevations above 1500 m (5000ft).
- If diesel fuel with sulfur content greater than 0.5% (5000 ppm) sulfur content is used, reduce the service interval for engine oil and filter by 50%.
- NEVER use diesel fuel with sulfur content greater than 0.05% (500 ppm) for EXTERNAL EGR type engine.
- DO NOT use diesel fuel with sulfur content greater than 1.0% (10000 ppm).
- Diesel fuels specified to EN 590 or ASTM D975 are recommended.
- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service. (SAE J313 JUN87)

◆ **Transmission Oil:**

*KUBOTA Super UDT-2: For an enhanced ownership experience, we highly recommend Super UDT-2 to be used instead of standard hydraulic/transmission fluid.
Super UDT-2 is a proprietary KUBOTA formulation that deliveries superior performance and protection in all operating conditions.
Regular UDT is also permitted for use in this machine.

- Indicated capacities of water and oil are manufacturer's estimate.

PERIODIC SERVICE

CAUTION

To avoid personal injury:

- **Do not work under any hydraulically supported devices. They can settle, suddenly leak down, or be accidentally lowered. If necessary to work under tractor or any machine elements for servicing or adjustment, securely support them with stands or suitable blocking beforehand.**

HOW TO OPEN THE HOOD

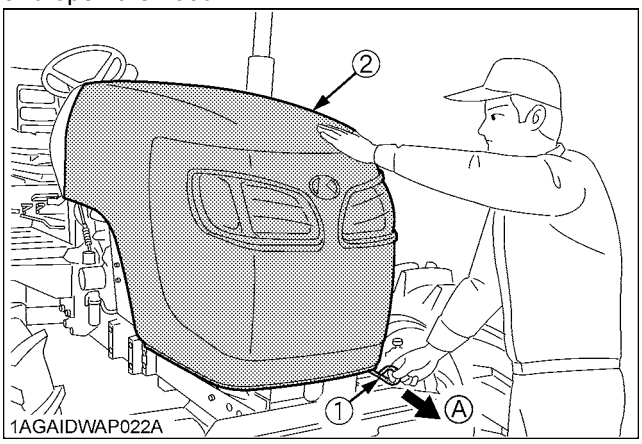
CAUTION

To avoid personal injury from contact with moving parts;

- **Never open the hood while the engine is running.**
- **Do not touch muffler or exhaust pipes while they are hot; Severe burns could result.**
- **Hold the hood with other hand while unlocking release lever.**

■Hood

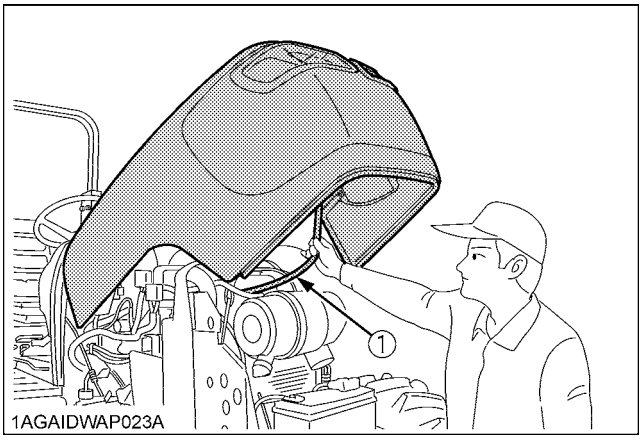
To open the hood, hold the hood and pull the release lever and open the hood.



(1) Release lever *(A) "PULL"*
(2) Hood

NOTE :

- To close the hood, pull down on the strap and push the hood into position using both hands.



(1) Strap

DAILY CHECK

For your own safety and maximum service life of the machine, make a thorough daily inspection before operating the machine to start the engine.

CAUTION

To avoid personal injury:

Take the following precautions when checking the tractor.

- **Park the machine on firm and level ground.**
- **Set the parking brake.**
- **Lower the implement to the ground.**
- **All residual pressure of the hydraulic system released.**
- **Stop the engine and remove the key.**

■Walk Around Inspection

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

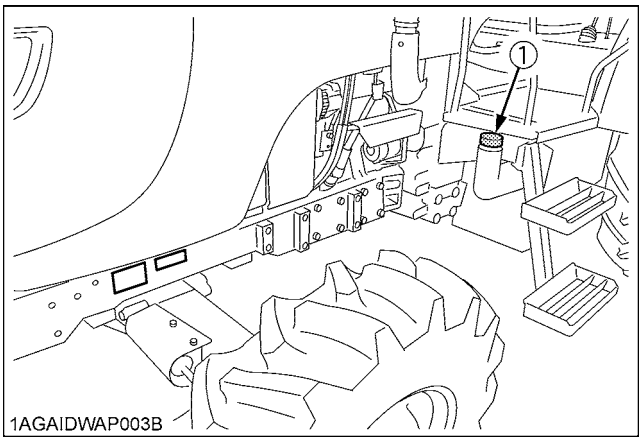
■Checking and Refueling

CAUTION

To avoid personal injury:

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

1. Check the amount of fuel by fuel gauge.
2. When the fuel warning indicator lights up, it is time to add fuel.



(1) Fuel tank cap

Fuel tank capacity	175 L (46.2 U.S.gals.)

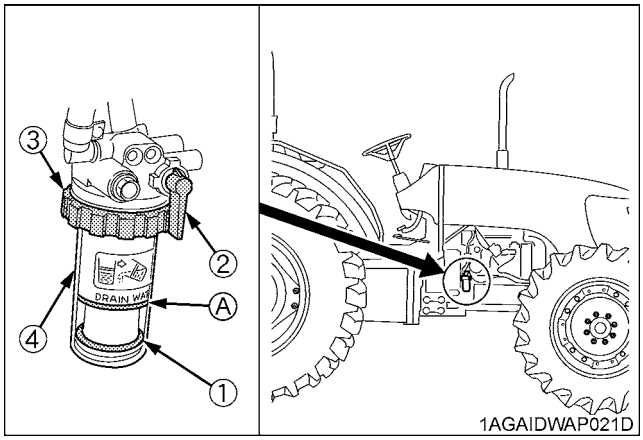
IMPORTANT :

- 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 a spill should occur, wipe it off at once, or it may cause a fire.
- To prevent condensation (water) accumulation in the fuel tank, fill the tank before parking overnight.

■Checking Water Separator

[M96S]

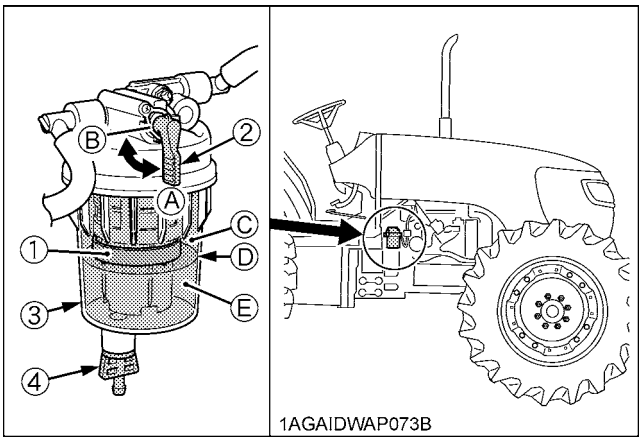
1. As water is collected in the water separator, the red float is raised.
2. When the red float has reached the white line, close the fuel cock, loosen the retainer ring, take out the cup, and clean the cup. Be careful not to break the element.
3. Place the cup back into position. Bleed the fuel system.
   (See "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)



(1) Red float
(2) Fuel cock
(3) Retainer ring
(4) Cup
(A) "WHITE LINE"

[M108S]

1. As water is collected in the water separator, the red float is raised.
2. When the red float has reached the upper limit, close the fuel cock and loosen the drain plug by several turns.
   Allow water to drain. When no more water comes out and fuel starts to flow out, retighten the drain plug.
3. Bleed the fuel system.
   (See "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)



(1) Red float
(2) Fuel cock
(3) Cup
(4) Drain plug
(A) "ON"
(B) "OFF"
(C) "FUEL"
(D) "UPPER LIMIT"
(E) "WATER"

IMPORTANT :

- If water is drawn through to the fuel pump, extensive damage will occur.

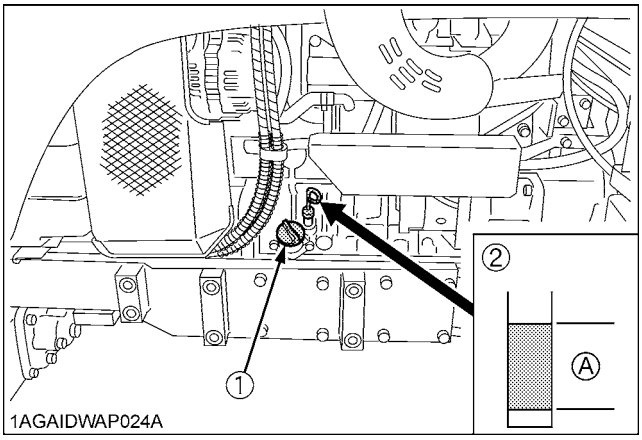
■Checking Engine Oil Level

CAUTION

To avoid personal injury:

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

1. Park the machine on a flat surface.
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.
   (See "LUBRICANTS" in "MAINTENANCE" section.)

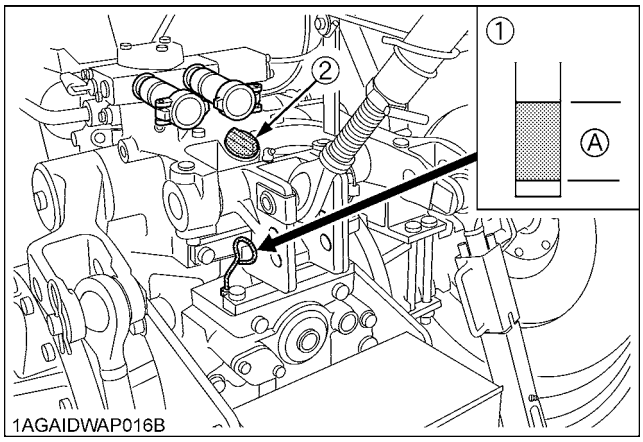


(1) Oil inlet
(2) Dipstick
(A) Oil level is acceptable within this range.

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.

■Checking Transmission Fluid Level

1. Park the machine 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.
   (See "LUBRICANTS" in "MAINTENANCE" section.)



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

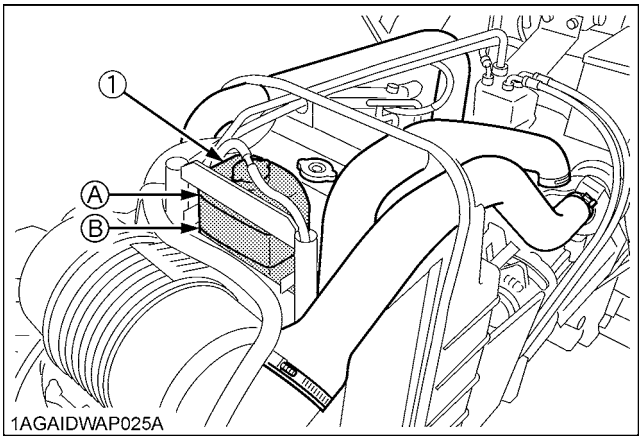
IMPORTANT :
- If oil level is low, do not run engine.

■Checking Coolant Level

CAUTION

To avoid personal injury:
- **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. Check to see that the coolant level is between the "FULL" and "LOW" marks of recovery tank.
2. When the coolant level drops due to evaporation, add soft water only up to the full level.
   In case of leakage, add anti-freeze and soft water in the specified mixing ratio up to the full level.
   (See "Flushing Cooling System and Changing Coolant" in "EVERY 2 YEARS" in "PERIODIC SERVICE" section.)



(1) Recovery tank *(A) "FULL"*
(B) "LOW"

IMPORTANT :
- If the radiator cap has to be removed, follow the caution above and securely retighten the cap.
- Use clean, fresh soft water and anti-freeze to fill the recovery tank.
- If water should leak, consult your local KUBOTA Dealer.

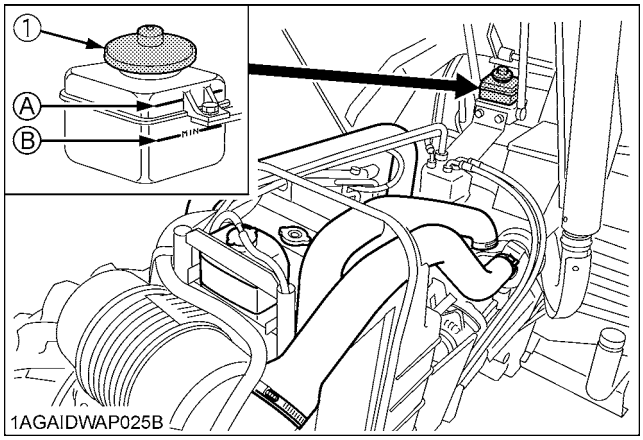
■Checking Brake Oil Level

CAUTION

To avoid personal injury:

- **Never operate the tractor, if the brake oil is below the "MIN" line.**
- **Be sure to use the recommended mineral type brake oil. (see "LUBRICANTS" in "MAINTENANCE" section.)**
  Never use automotive brake oil. This will cause brake failure.
- **When replenishing brake oil, use the same quality of oil as the one already in the tank. Adding an oil of different make or type can cause damage, and must be avoided.**

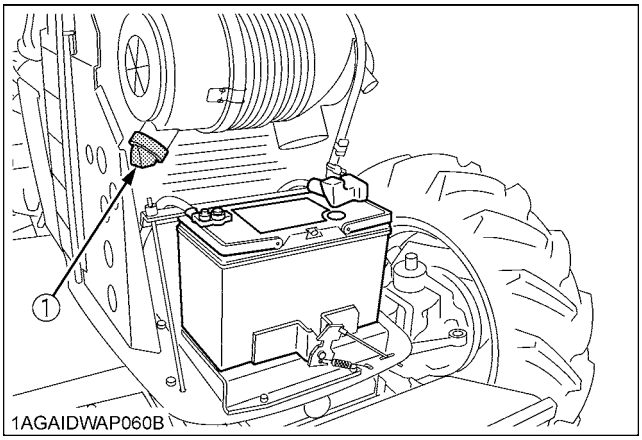
1. Check to see that the brake oil level is between the MAX and MIN marks.
2. If it is below the MIN line, consult your local KUBOTA Dealer.



(1) Oil tank cap
(A) "MAX"
(B) "MIN"

■Cleaning Evacuator Valve

Open the evacuator valve to get rid of large particles of dust and dirt.



(1) Evacuator valve

■Cleaning Grill, Radiator Screen, Intercooler and Oil Cooler

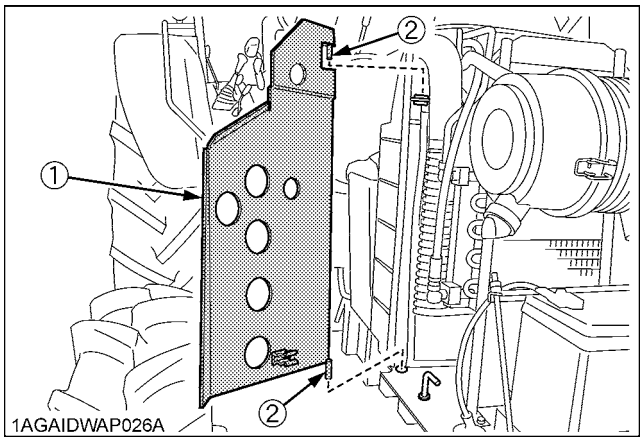
CAUTION

To avoid personal injury:

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

◆ **Detaching the Panel [RH]**

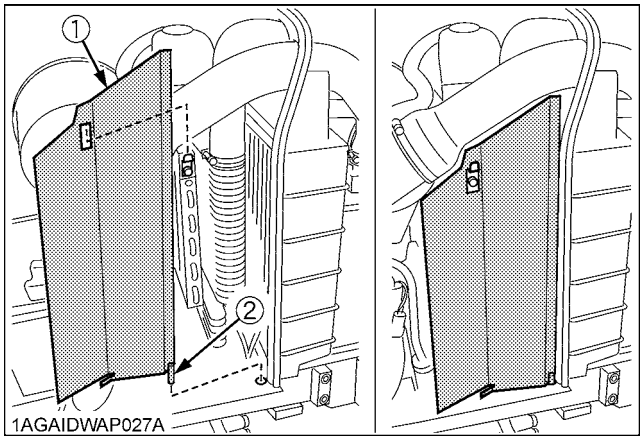
1. To open the panel (RH), pull its front outward.
2. Lift the panel until pin (A) clears the hole.
3. Pull the panel.
4. Attaching the panel is performed vice versa.



(1) Panel (RH)
(2) Pin (A)

◆ **Detaching the Panel (LH)**

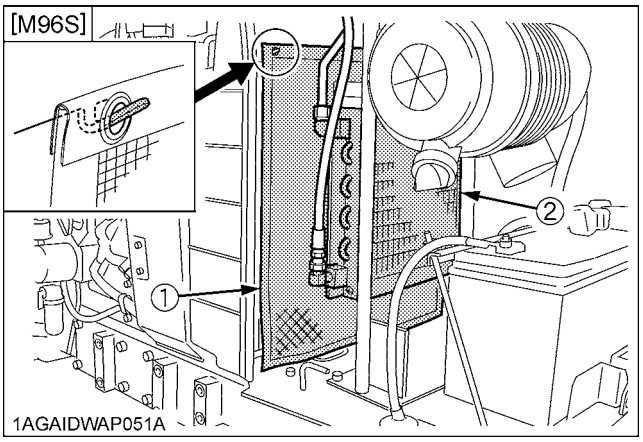
1. Lift the panel (LH) until pin (A) clears the hole.
2. Pull the panel (LH).
3. Attaching the panel is performed vice versa.



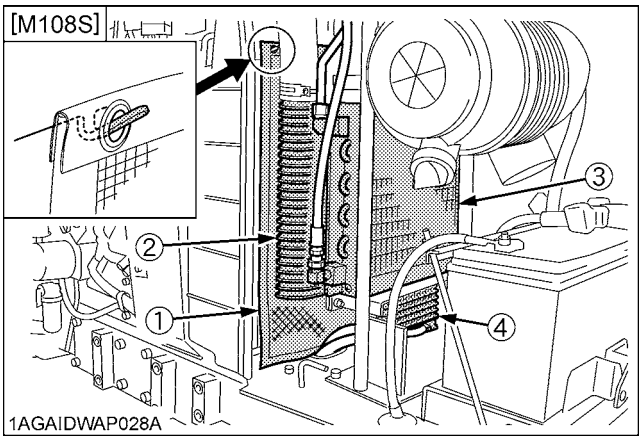
(1) Panel (LH)
(2) Pin (A)

◆ **Cleaning**

1. Check front grill to be sure it is clean from debris.
2. Detach the radiator screen and remove all foreign materials.
3. Check oil cooler and intercooler to be sure they are clean from debris.



(1) Radiator screen
(2) Oil cooler



(1) Radiator screen
(2) Intercooler
(3) Oil cooler
(4) Fuel cooler

IMPORTANT :

- Grill and screen must be clean from debris to prevent engine from overheating and to allow good air intake for air cleaner.

■Checking Brake Pedal

WARNING

To avoid personal injury:

- **Be sure brake pedals have equal adjustment when using locked together. Incorrect or unequal brake pedal adjustment can cause the tractor to swerve or roll-over.**

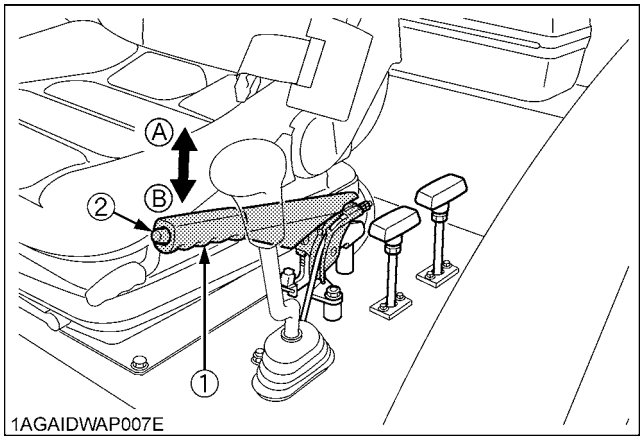
1. Inspect the brake pedals for free travel, and smooth operation.
2. Adjust if incorrect measurement is found:
   (See "Adjusting Brake Pedal" in "EVERY 100 HOURS" in "PERIODIC SERVICE" section.)

■Checking Parking Brake

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 ( ) lamp on the instrument panel goes off when parking brake lever is down.



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

■Checking Gauges, Meter and Easy Checker(TM)

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

■Checking Head Light, Hazard Light etc.

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

■Checking Seat Belt and ROPS

1. Always check condition of seat belt and ROPS attaching hardware before operating tractor.
2. Replace if damaged.

EVERY 50 HOURS

■Checking Engine Start System

CAUTION

To avoid personal injury:

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

◆ **Preparation before testing.**

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

◆ **Test: Switch for the main gear shift lever.**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
2. Sit on the operator's seat.
3. Shift the main gear shift lever to the desired position.
4. Depress the clutch pedal fully.
5. Disengage the PTO clutch control switch or lever.
6. Turn the key to "START" position.
7. The engine must not crank.
8. If it cranks, consult your local KUBOTA Dealer for this service.

◆ **Test: Switch for the PTO clutch control switch or lever.**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
2. Sit on the operator's seat.
3. Engage the PTO clutch control switch or lever.
4. Depress the clutch pedal fully.
5. Shift the main gear shift lever to the neutral position.
6. Turn the key to "START" position.
7. The engine must not crank.
8. If it cranks, consult your local KUBOTA Dealer for this service.

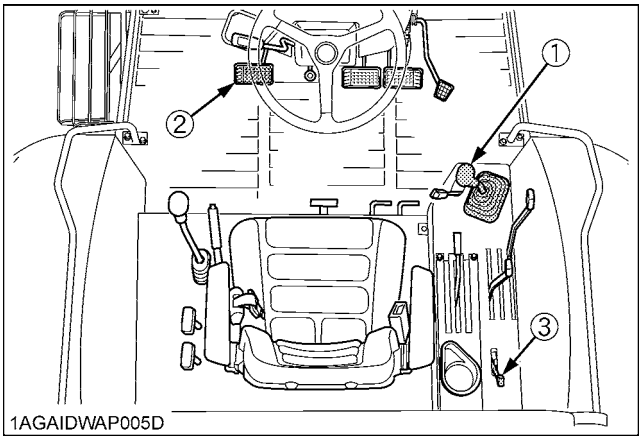
◆ **Test: Checking Operator Presence Control (O.P.C.) System.**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
2. Sit on the operator's seat.
3. Make sure the PTO drive shaft is disconnected from any attached implement.
4. Start the engine.
5. Engage the PTO clutch control switch or lever. The PTO should begin to rotate. Disengage the PTO clutch control switch or lever.
6. While lifting yourself from the seat, engage the PTO clutch control switch or lever.
   (1) The PTO should begin to rotate and a buzzer should sound.
   (2) Disengage the PTO clutch control switch or lever.
   (3) If the buzzer does not sound, shut off the engine and consult your local KUBOTA Dealer for immediate servicing of the PTO OPC.
7. If the PTO OPC is operating properly, shut off the engine, and reconnect the implement drive shaft to the PTO. Restart the engine per the available instructions.

WARNING

To avoid serious injury or death:

- **Before checking the PTO OPC, make sure that the PTO drive shaft should be disconnected from the tractor.**
- **If the buzzer does not sound during the PTO OPC check procedure, shut off engine and consult your local KUBOTA Dealer for immediate servicing of the PTO OPC.**
- **The unit should not be operated until servicing is completed.**



(1) Main gear shift lever
(2) Clutch pedal
(3) PTO clutch control lever

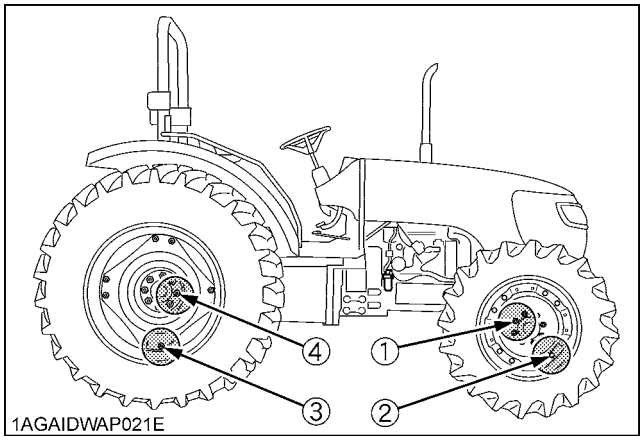
■Checking Wheel Bolt Torque

CAUTION

To avoid personal injury:

- **Never operate tractor with a loose rim, wheel, or axle.**
- **Any time bolts and nuts are loosened, retighten to specified torque.**
- **Check all bolts and nuts frequently and keep them tight.**

Check wheel bolts and nuts regularly especially when new. If they are loose, tighten them as follows.



N-m (kgf-m) [ft-lbs.]

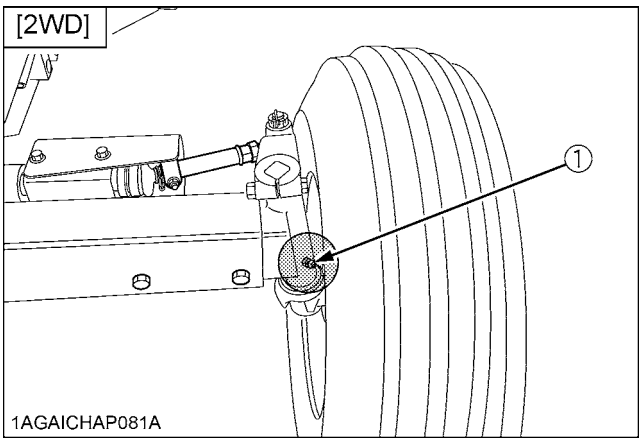
	(1)	(2)	(3)	(4)
2WD	168 to 196 (17.1 to 20.0) [124 to 145]	---	Steel disc 244 (24.9) [180] Cast iron disc 260 to 304 (26.5 to 31.0) [192 to 224]	343 to 401 (35.0 to 41.0) [254 to 297]
4WD	260 to 304 (26.5 to 31.0) [192 to 224]	Waffle wheel 298 to 366 (30.4 to 37.3) [220 to 270] Except waffle wheel 244 (24.9) [180]		

EVERY 100 HOURS

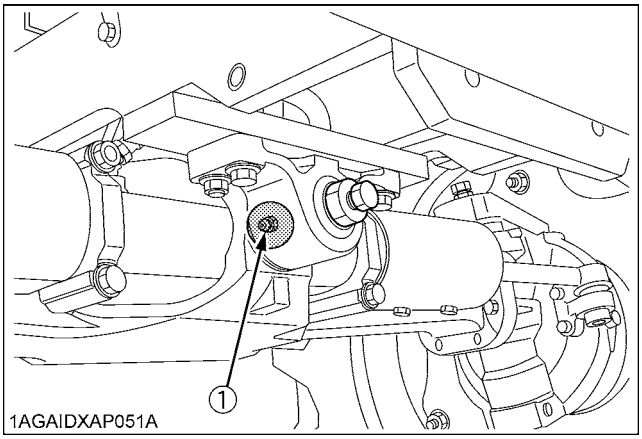
■Lubricating Grease Fittings

Apply a small amount of multipurpose grease to the following points every 100 hours:

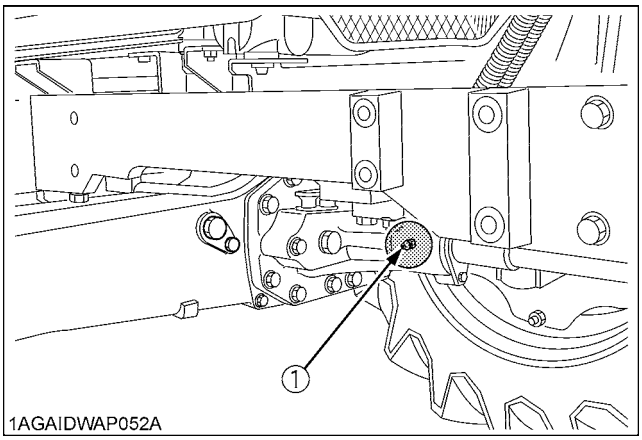
If you operated the machine in extremely wet and muddy conditions, lubricate grease fittings more often.



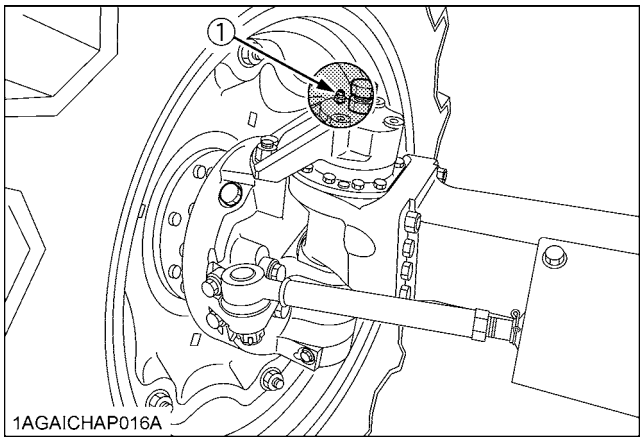
(1) Grease fitting (Knuckle shaft) [RH, LH]



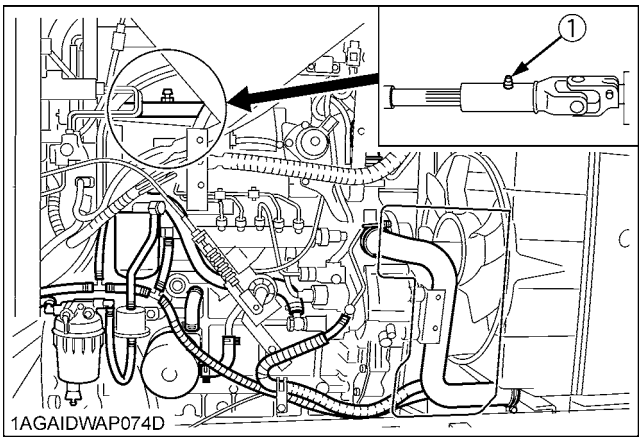
(1) Grease fitting (Front axle support)



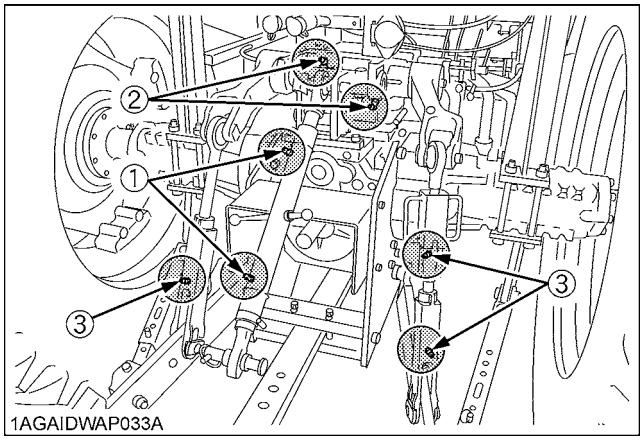
(1) Grease fitting (Front axle support)



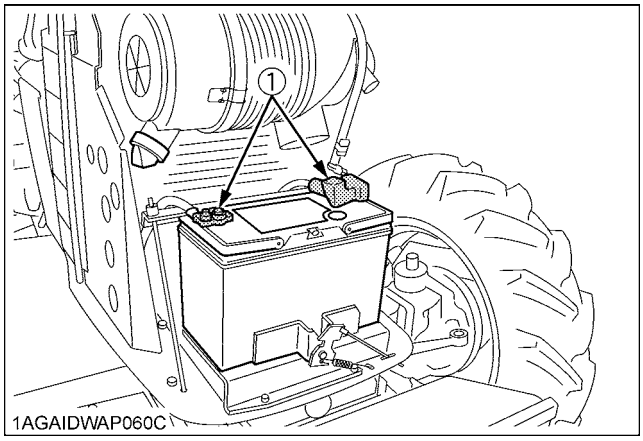
(1) Grease fitting (Front axle gear case support) [RH, LH]



(1) Grease fitting (Steering joint shaft)



(1) Grease fitting (Top link)
(2) Grease fitting (Top link bracket)
(3) Grease fitting (Lifting rod)



(1) Battery terminals

■Checking Battery Condition

DANGER

To avoid the possibility of battery explosion:
For the refillable type battery, follow the instructions below.

- **Do not use or charge the refillable type battery if the fluid level is below the LOWER (lower limit level) mark. Otherwise, the battery component parts may prematurely deteriorate, which may shorten the battery's service life or cause an explosion. Check the fluid level regularly and add distilled water as required so that the fluid level is between the UPPER and LOWER levels.**

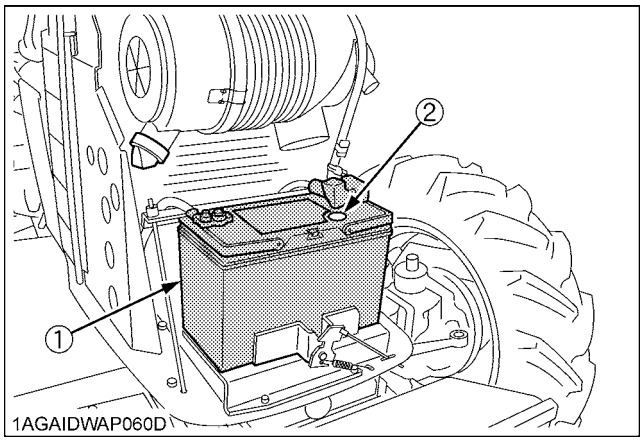
CAUTION

To avoid personal injury:

- **Never remove the battery cap while the engine is running.**
- **Keep electrolyte away from eyes, hands and clothes. If you are spattered with it, wash it away completely with water immediately and get medical attention.**
- **Keep open sparks and flames away from the battery at all times. Hydrogen gas mixed with oxygen becomes very explosive.**
- **Wear eye protection and rubber gloves when working around battery.**

The factory-installed battery is of non-refillable type. If the indicator turns white, do not charge the battery but replace it with new one.

Mishandling the battery shortens the service life and adds to maintenance costs.
The original battery is maintenance free, but needs some servicing.
If the battery is weak, the engine will be difficult to start and the lights will be dim. It is important to check the battery periodically.



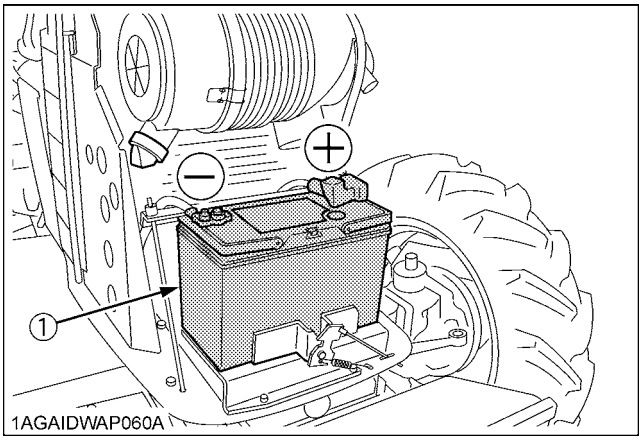
(1) Battery
(2) Indicator

◆ **How to read the indicator**
Check the battery condition by reading the indicator.

State of indicator display	
Green	Specific gravity of electrolyte and quality of electrolyte are both in good condition.
Black	Needs charging battery.
White	Needs replacing battery.

◆ **Battery Charging**

CAUTION
To avoid personal injury:
- **When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.**
- **When charging the battery, ensure the vent caps are securely in place. (if equipped)**
- **When disconnecting the cable from the battery, start with the negative terminal first.**
  When connecting the cable to the battery, start with the positive terminal first.
- **Never check battery charge by placing a metal object across the posts.**
  Use a voltmeter or hydrometer.



(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 three months in hot seasons and once every six months in cold seasons.

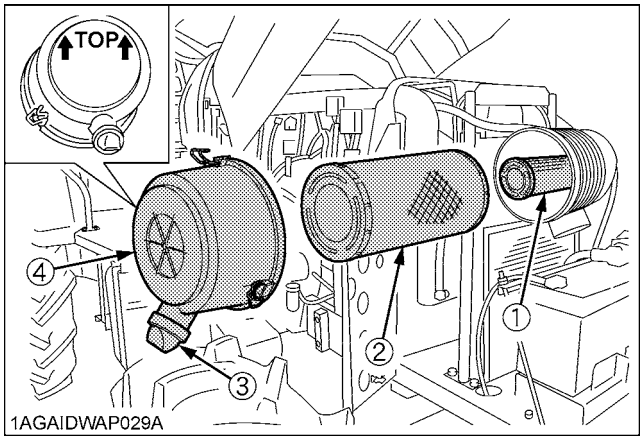
IMPORTANT :
[M108S]
- In checking and refilling the battery, be careful not to spill battery fluid. Spilt battery fluid may affect the engine controller (ECU) located below the battery, resulting in damage.

■Cleaning Air Cleaner Primary Element

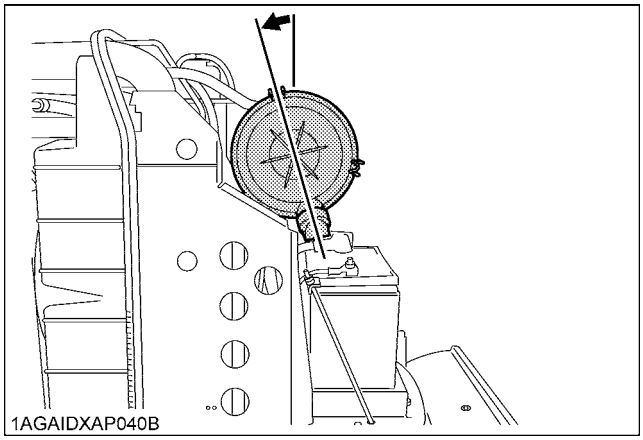
1. Remove the air cleaner cover and primary element.
2. Clean the primary element:
   (1) When dry dust adheres to the element, blow compressed air from the inside, turning the element. Pressure of compressed air must be under 205 kPa (2.1 kgf/cm², 30 psi).
   (2) When carbon or oil adheres to the element, 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 yearly or after every sixth cleaning, 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



IMPORTANT :

- The air cleaner uses a dry element, never apply oil.
- Do not run the engine with filter element removed.
- Be sure to refit the cover with the arrow ⬆ (on the rear of cover) upright. If the cover is improperly fitted, evacuator valve will not function and dust will adhere to the element.
- Do not touch the secondary element except in cases where replacing is required.
  (See "Replacing Air Cleaner Secondary Element" in "EVERY 1 YEAR" in "PERIODIC SERVICE" section.)

◆ Evacuator Valve

Open the evacuator valve once a week under ordinary conditions - or daily when used in a dusty place - to get rid of large particles of dust and dirt.

■Adjusting Fan Belt Tension

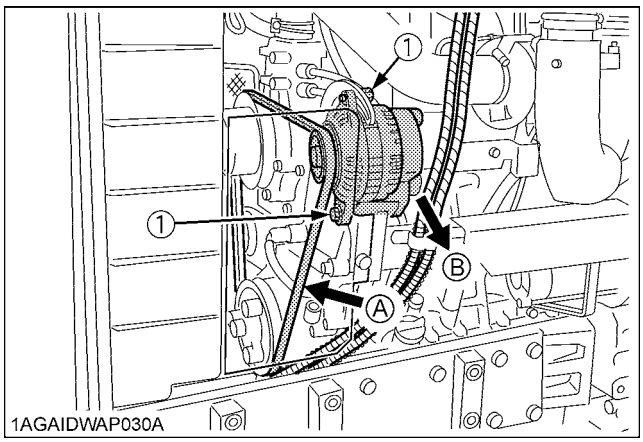
CAUTION

To avoid personal injury:

- **Be sure to stop the engine before checking belt tension.**

Proper fan belt tension	A deflection of between 10 to 12 mm (0.39 to 0.47 in.) when the belt is pressed in the middle of the span.

1. Stop the engine and remove the key.
2. Apply moderate thumb pressure to belt between pulleys.
3. If tension is incorrect, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection of the belt falls within acceptable limits.
4. Replace fan belt if it is damaged.



(1) Bolt
(A) Check the belt tension
(B) To tighten

■Adjusting Brake Pedal

CAUTION

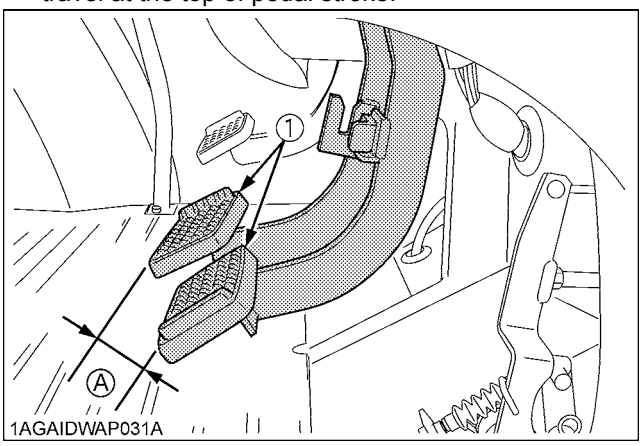
To avoid personal injury:

- **Stop the engine and chock the wheels before checking brake pedal.**
- **To prevent uneven braking, the specification must be within the recommended limit. If found out of the specifications, contact your local KUBOTA Dealer for adjusting the brakes.**

◆ Checking the brake pedal free travel

Proper brake pedal free travel	7 to 14 mm (0.3 to 0.6 in.) on the pedal
	Keep the free travel in the right and left brake pedals equal.

1. Release the parking brake.
2. Slightly depress the brake pedals and measure free travel at the top of pedal stroke.



(1) Brake pedals
(A) "FREE TRAVEL"

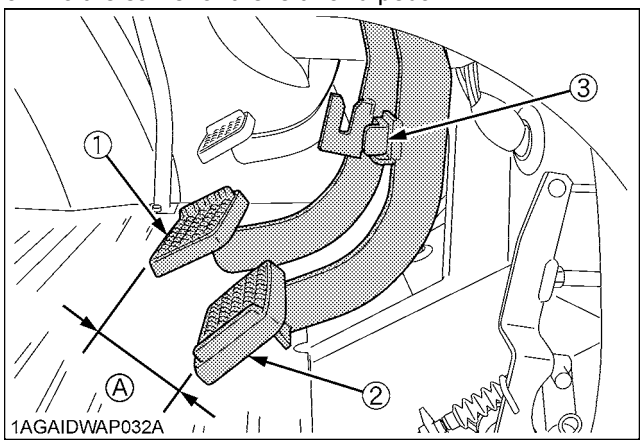
NOTE :

- Brake pedals should be equal when depressed.

◆ **Checking the brake pedal stroke**

Pedal stroke	Less than 100 mm (3.9 in.) 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"

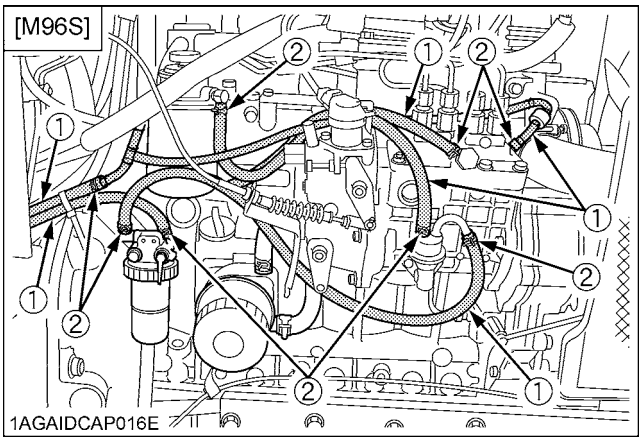
◆ **Checking the equalizer working level (anti-imbalance device)**

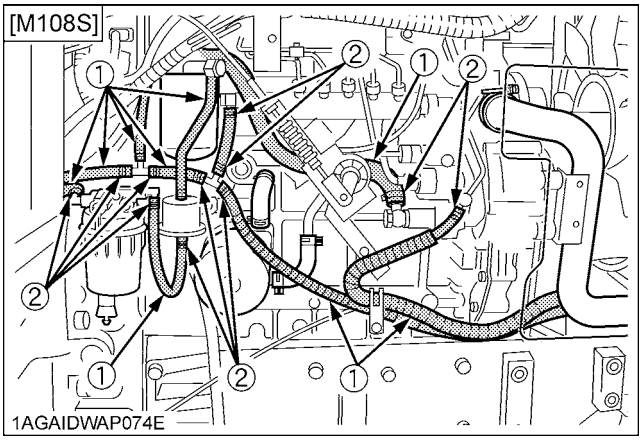
1. Gently step on both brake pedals at once.
2. Further step on the right-hand pedal (the left-hand pedal slightly raises itself) and measure the level difference between the pedals.
3. Do the same for the left-hand pedal.

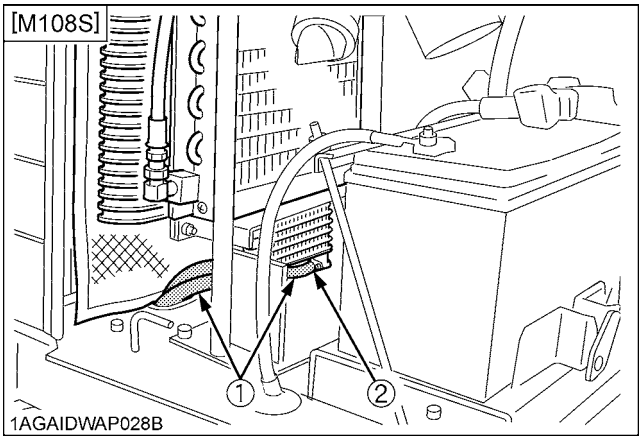
Equalizer working level	Level difference of over 10 mm (0.4 in.) between both pedals

■Checking Fuel Line

1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.







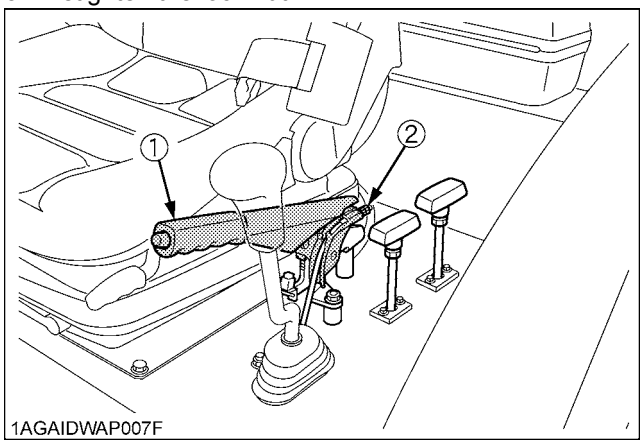
(1) Fuel lines
(2) Clamp bands

NOTE :
- If the fuel line is removed, be sure to properly bleed the fuel system.
  (See "Bleeding Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)

■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

EVERY 200 HOURS

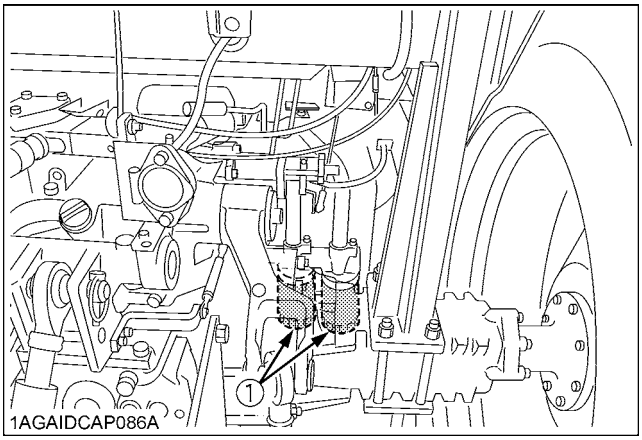
■Replacing Hydraulic Oil Filter

◆ **Cleaning Magnetic Filter**

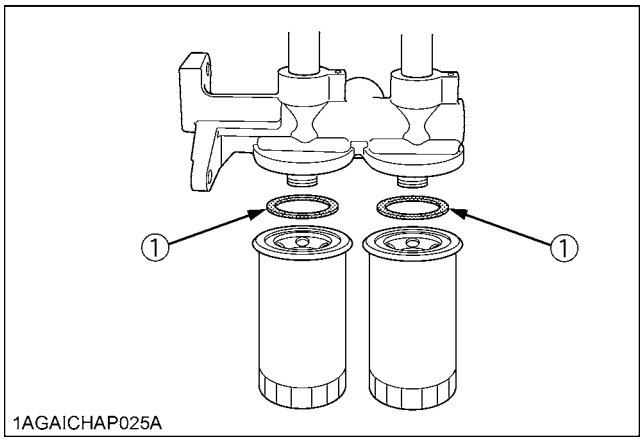
CAUTION

To avoid personal injury:
- **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 two oil filters.
2. Clean off metal filings with clean rags at the magnetic filters.
3. Put a film of clean transmission oil on rubber seal of new filters.
4. Tighten the filter quickly until it contacts the mounting surface.
   Tighten filter by hand an additional 1/2 turn only.
5. After the new filter has been replaced, the transmission fluid level will decrease a little. Make sure that the transmission fluid does not leak through the seal, and check the fluid level.
   Top up if necessary.



(1) Hydraulic Oil filter



(1) Magnetic filter (Clean off metal filings)

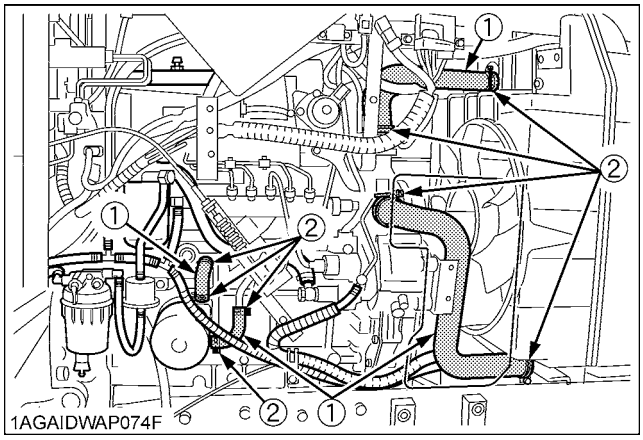
IMPORTANT :
- To prevent serious damage to the hydraulic system, use only a KUBOTA genuine filter.

■Checking Radiator Hose and Clamp

Check to see if radiator hoses are properly fixed every 200 hours of operation or six months, whichever comes first.

1. If hose clamps are loose or water leaks, tighten bands securely.
2. Replace hoses and tighten hose clamps securely, if radiator hoses are swollen, hardened or cracked.

Replace hoses and hose clamps every 2 years or earlier if checked and found that hoses are swollen, hardened or cracked.



(1) Radiator hoses
(2) Hose clamps

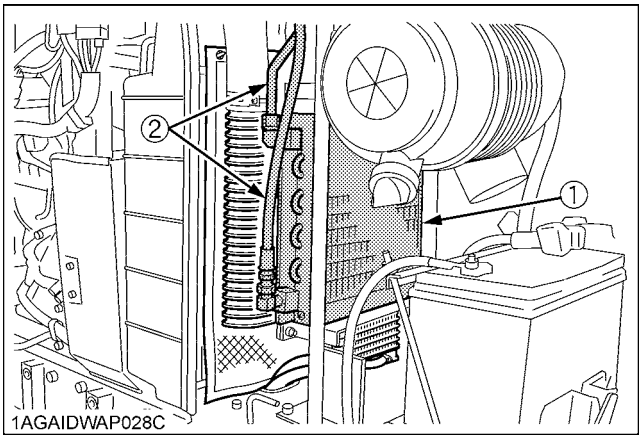
◆ **Precaution at Overheating**

Take the following actions in the event the coolant temperature is nearly or more than the boiling point, what is called "Overheating"

1. Park the tractor in a safe place and keep the engine unloaded idling.
2. Don't stop the engine suddenly, but stop it after about 5 minutes of unloaded idling.
3. Keep yourself well away from the machine for further 10 minutes or while the steam blows out.
4. Check that there are no dangers such as burns. Get rid of the causes of overheating according to the manual, see "TROUBLESHOOTING" section, and then, start again the engine.

■Checking Oil Cooler Line

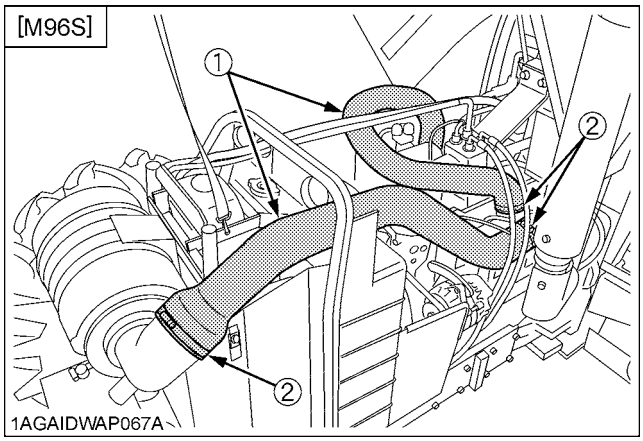
1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.

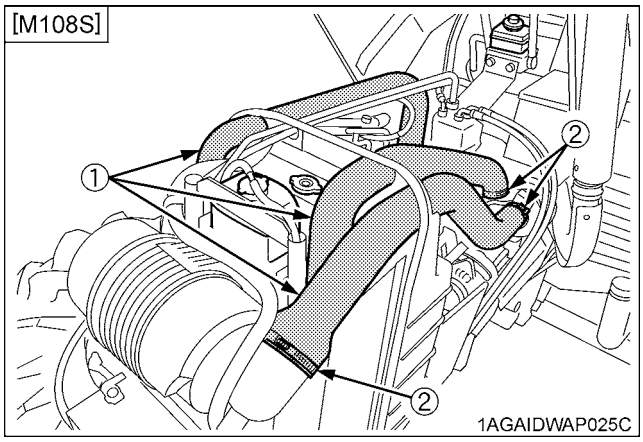


(1) Oil cooler
(2) Oil cooler line

■Checking Intake Air Line

1. Check to see that hoses and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.

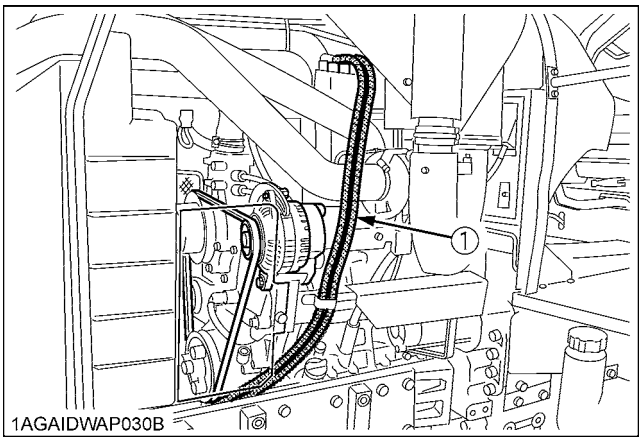




(1) Hose
(2) Hose clamps

■Checking Power Steering Line

1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.

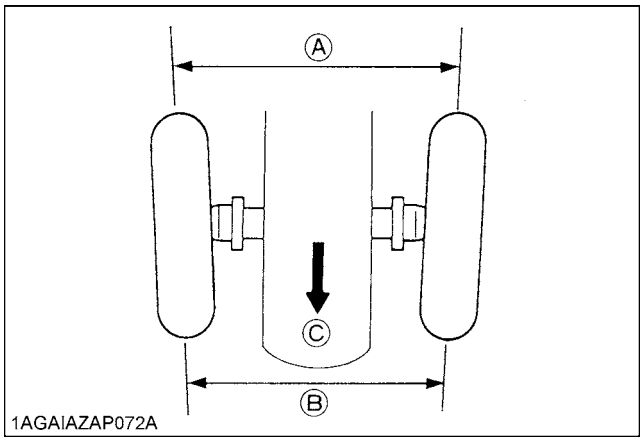


(1) Power steering pressure hoses

■Adjusting Toe-in

	Proper toe-in
4WD	2 to 8 mm (0.08 to 0.31 in.)
2WD	1 to 5 mm (0.04 to 0.2 in.)

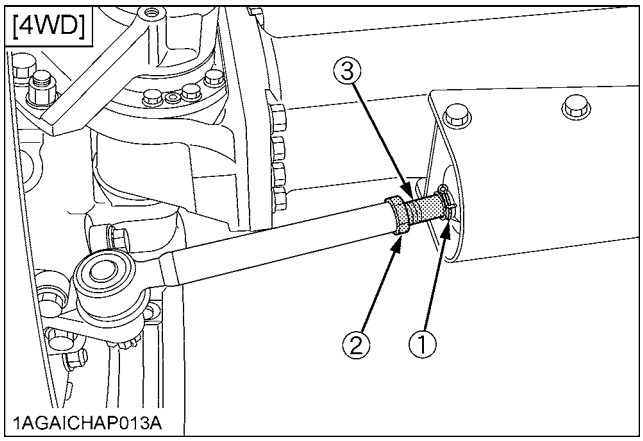
1. Park tractor on a flat place.
2. Turn steering wheel so front wheels are in the straight ahead position.
3. Lower the implement, lock the park brake and stop the engine.
4. Measure distance between tire beads at front of tire, at hub height.
5. Measure distance between tire beads at rear of tire, at hub height.
6. Front distance should be shorter than rear distance. If not, adjust tie rod length.



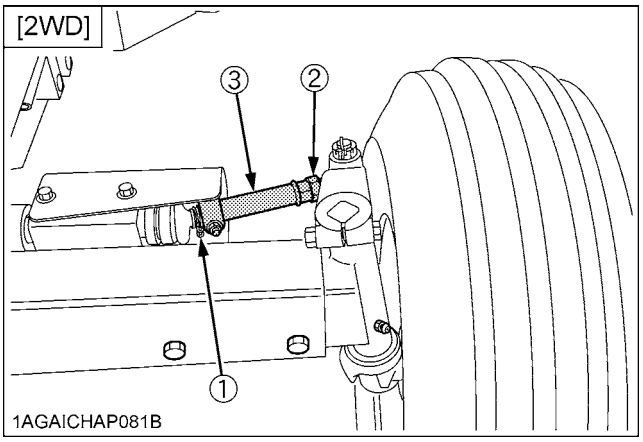
(A) Wheel - to - wheel distance at rear
(B) Wheel - to - wheel distance at front
(C) "FRONT"

◆ **Adjusting procedures**

1. Detach the snap ring.
2. Loosen the tie-rod nut.
3. Turn the tie-rod joint to adjust the rod length until the proper toe-in measurement is obtained.
4. Retighten the tie-rod nut.
5. Attach the snap ring of the tie-rod joint.



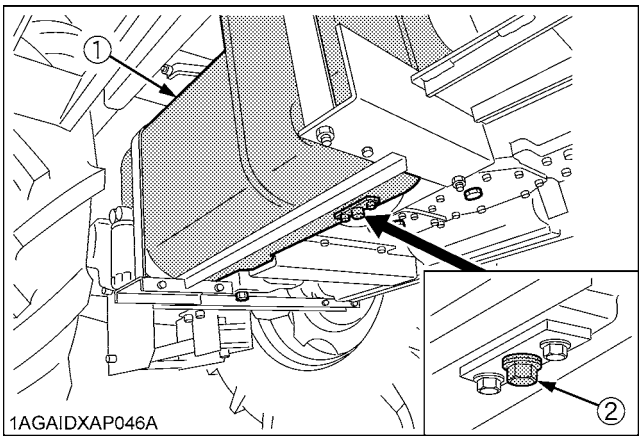
(1) Snap ring
(2) Tie-rod nut
(167 to 196 N-m, 17 to 20 kgf-m, 123.2 to 144.6 ft-lbs)
(3) Tie-rod joint



(1) Snap ring
(2) Tie-rod nut
(167 to 196 N-m, 17 to 20 kgf-m, 123.2 to 144.6 ft-lbs)
(3) Tie-rod joint

■Draining Fuel Tank Water

Loosen the drain plug at the bottom of the fuel tank to let sediments, impurities and water out of the tank. Finally tighten up the plug.



(1) Fuel Tank (Right)
(2) Drain plug

IMPORTANT :

- If the fuel contains poor qualities with much water in it, drain the fuel tank at shorter intervals.
- Drain the fuel tank before operating the tractor after a long period of storage.

EVERY 300 HOURS

■Changing Engine Oil

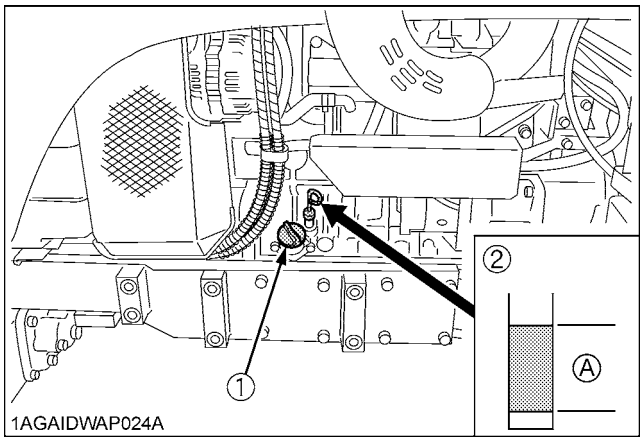
CAUTION

To avoid personal injury:

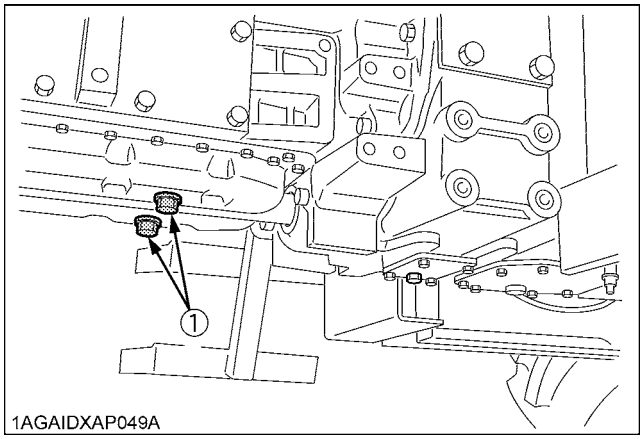
- **Be sure to stop the engine before changing the oil.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. To drain the used oil, remove the drain plug at the bottom of the engine and drain the oil completely into the oil pan.
   All the used oil can be drained out easily when the engine is still warm.
2. After draining reinstall the drain plug.
3. Fill with the new oil up to the upper notch on the dipstick.
   (See "LUBRICANTS" in "MAINTENANCE" section.)

Oil capacity with filter	10.7 L (11.3 U.S.qts.)



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

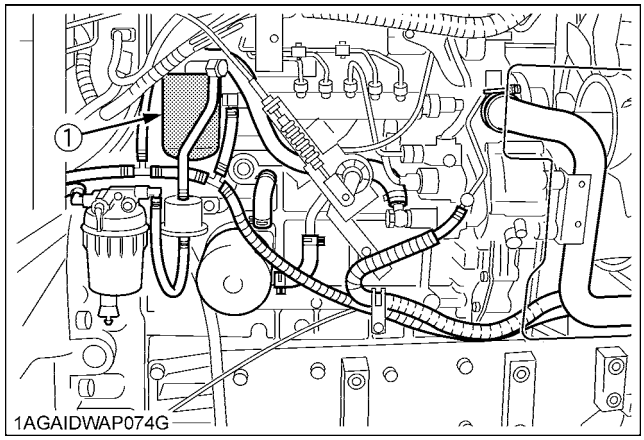


(1) Drain plug

EVERY 400 HOURS

■Replacing Fuel Filter

1. Remove the fuel filter.
2. Put a film of clean fuel 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. Bleed the fuel system.
   (See "Bleeding Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)



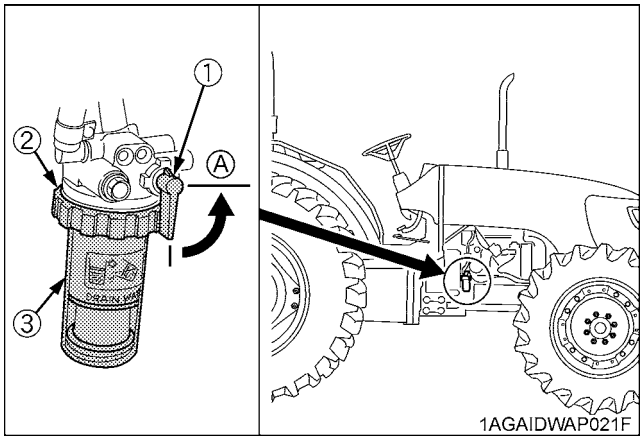
(1) Fuel filter

■Cleaning Water Separator

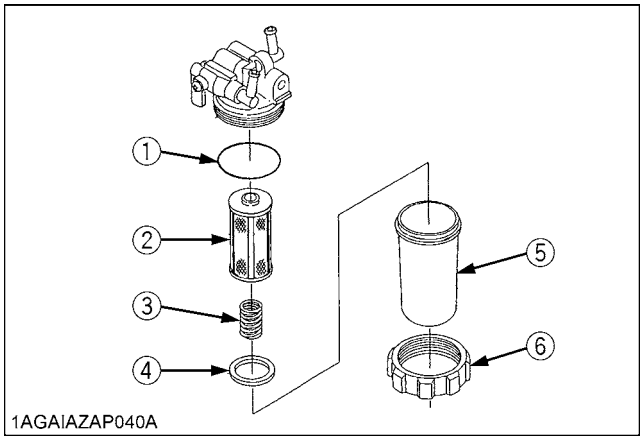
[M96S]

This job should not be done in the field, but in a clean place.

1. Close the fuel cock.
2. Unscrew the retainer ring and remove the cup, and rinse the inside with kerosene.
3. Take out the element and dip it in the kerosene to rinse.
4. After cleaning, reassemble the water separator, keeping out dust and dirt.
5. Bleed the fuel system.
   (See "Bleeding Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)



(1) Fuel cock *(A) "CLOSE"*
(2) Retainer ring
(3) Cup

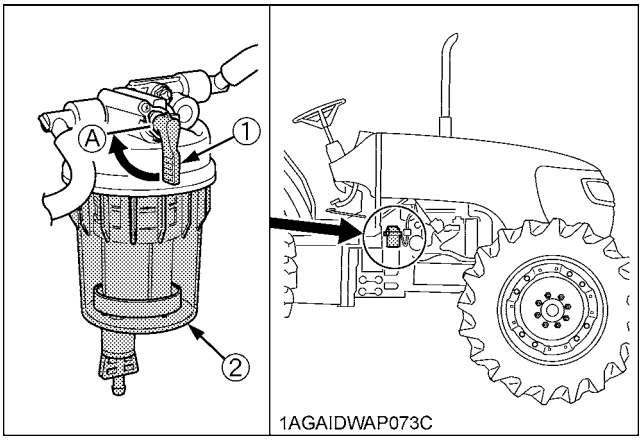


(1) O ring
(2) Element
(3) Spring
(4) Red float
(5) Cup
(6) Retainer ring

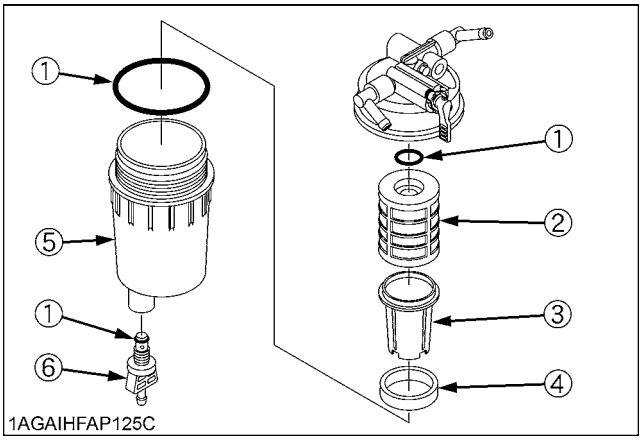
[M108S]

This job should not be done in the field, but in a clean place.

1. Close the fuel cock.
2. Unscrew the cup and remove it, then rinse the inside with kerosene.
3. Take out the element and dip it in the kerosene to rinse.
4. After cleaning, reassemble the water separator, keeping out dust and dirt.
5. Bleed the fuel system.
   (See "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)



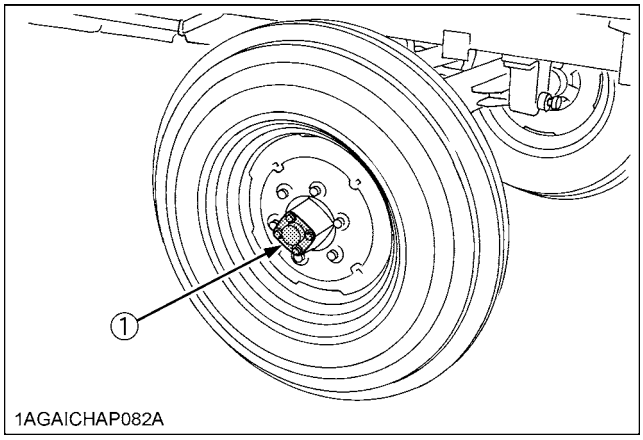
(1) Fuel cock *(A) "CLOSE"*
(2) Cup



(1) O ring
(2) Element
(3) Element cup
(4) Red float
(5) Cup
(6) Drain plug

■Lubricating Grease Fitting [2WD Model]

Detach the cover, and apply bearing grease.



(1) Front wheel hub cover

EVERY 600 HOURS

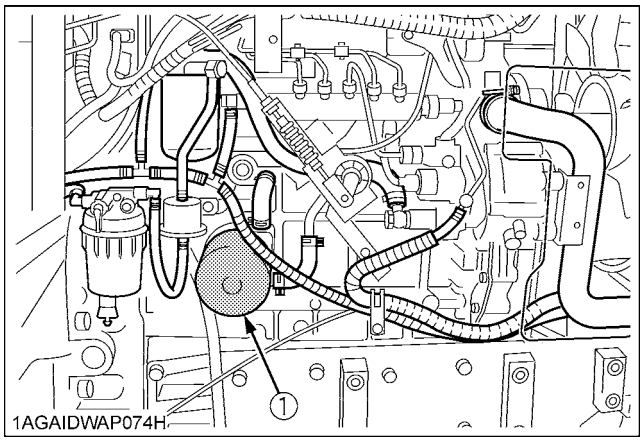
■Replacing Engine Oil Filter

CAUTION

To avoid personal injury:

- **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.
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.



(1) Engine oil filter

IMPORTANT :

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

■Changing Transmission Fluid

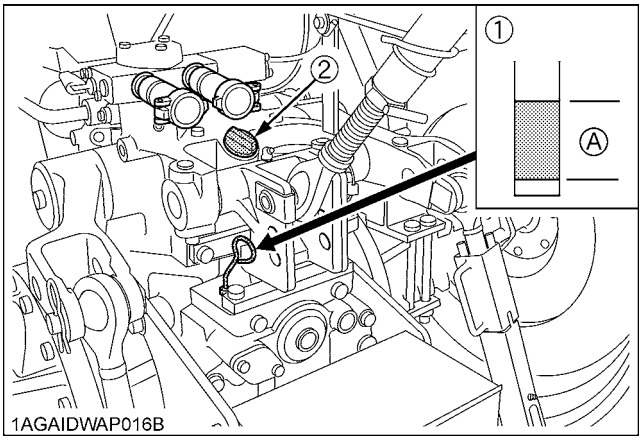
CAUTION

To avoid personal injury:

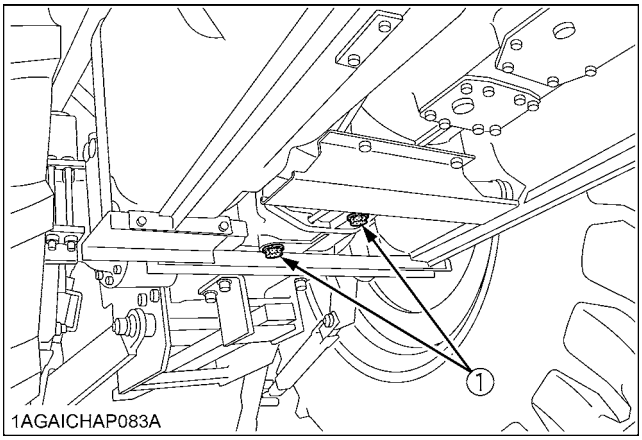
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. To drain the used oil, remove the drain plug at the bottom of the transmission case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Fill with the new KUBOTA SUPER UDT fluid up to the upper notch on the dipstick.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
4. After running the engine for a few minutes, stop it and check the oil level again; add oil to prescribed level.

Oil capacity	60 L (63.4 U.S.qts.)



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



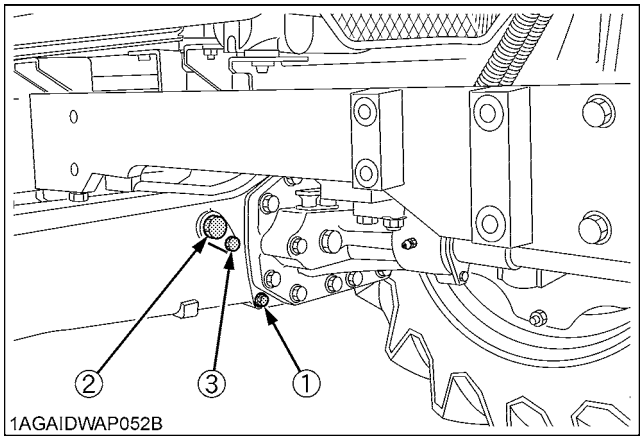
(1) Drain plug

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

■Changing Front Differential Case Oil

1. To drain the used oil, remove the drain and filling plug at the front differential case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Remove the oil level check plug.
4. Fill with the new oil up to the lower rim of check plug port.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
5. After filling reinstall the filling plug and check plug.

Oil capacity	7 L (7.4 U.S.qts)

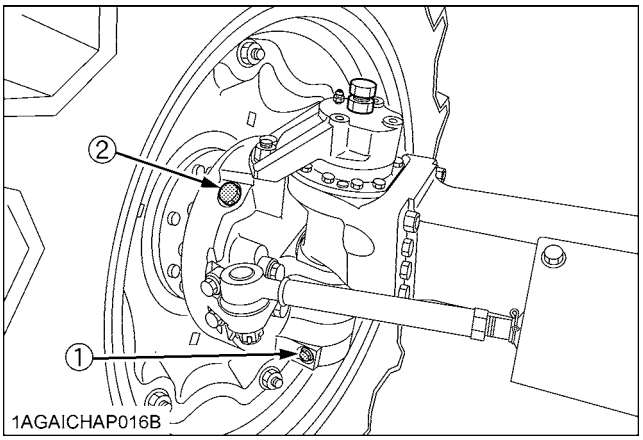


(1) Drain plug
(2) Filling plug
(3) Check plug

■Changing Front Axle Gear Case Oil

1. To drain the used oil, remove the right and left drain plugs and filling plugs at the front axle gear case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plugs.
3. Fill with the new oil up to the filling plug port.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
4. After filling reinstall the filling plugs.

Oil capacity	3.5 L (3.7 U.S.qts.) for each side



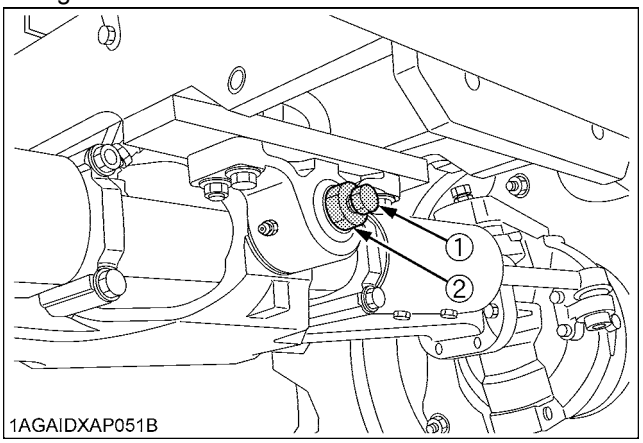
(1) Drain plug
(2) Filling plug

■Adjusting Front Axle Pivot

If the front axle pivot pin adjustment is not correct, front wheel vibration can occur causing vibration in the steering wheel.

◆ Adjusting procedure

Loosen the lock nut, screw-in the adjusting screw until seated, then tighten the screw with an additional 1/6 turn. Re-tighten the lock nut.

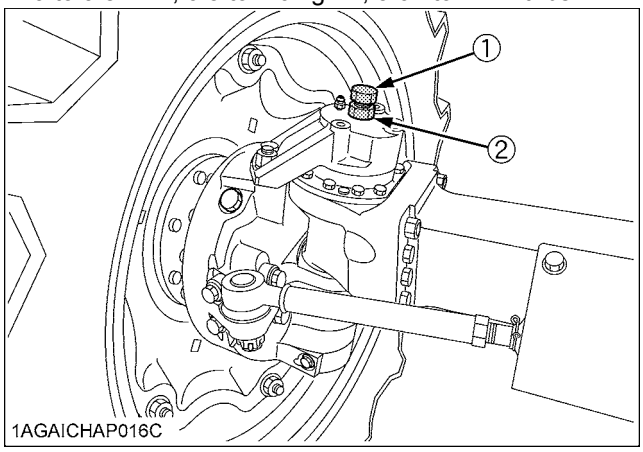


(1) Adjusting screw
(2) Lock nut

■Adjusting King-pin Pivot

Loosen the lock nut and tighten the adjusting screw with following torque:

4.9 to 9.8 N-m, 0.5 to 1.0 kgf-m, 3.62 to 7.24 ft-lbs



(1) Adjusting screw
(2) Lock nut

■Changing Brake Oil

Consult your local KUBOTA Dealer for this service.

EVERY 800 HOURS

■Adjusting Engine Valve Clearance

Consult your local KUBOTA Dealer for this service.

EVERY 1500 HOURS

■Checking Fuel Injection Nozzle (Injection Pressure)

[M96S]

Consult your local KUBOTA Dealer for this service.

■Checking Fuel Injection Nozzle (Active Test)

[M108S]

Consult your local KUBOTA Dealer for this service.

EVERY 3000 HOURS

■Checking Turbocharger

Consult your local KUBOTA Dealer for this service.

■Checking Injection Pump

[M96S]

Consult your local KUBOTA Dealer for this service.

■Checking Supply Pump

[M108S]

Consult your local KUBOTA Dealer for this service.

■Checking Fuel Injection Timer

[M96S]

Consult your local KUBOTA Dealer for this service.

■Checking Intake Air Heater

Consult your local KUBOTA Dealer for this service.

EVERY 1 YEAR

■Replacing Air Cleaner Primary Element and Secondary Element

(See "Cleaning Air Cleaner Primary Element" in "EVERY 100 HOURS" in "PERIODIC SERVICE" section.)

EVERY 2 YEARS

■Flushing Cooling System and Changing Coolant

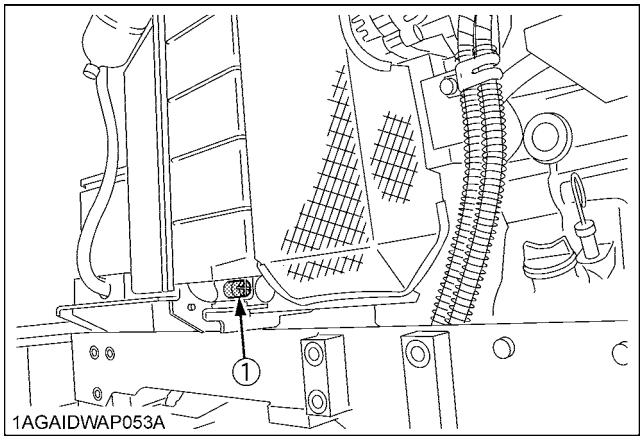
CAUTION

To avoid personal injury:

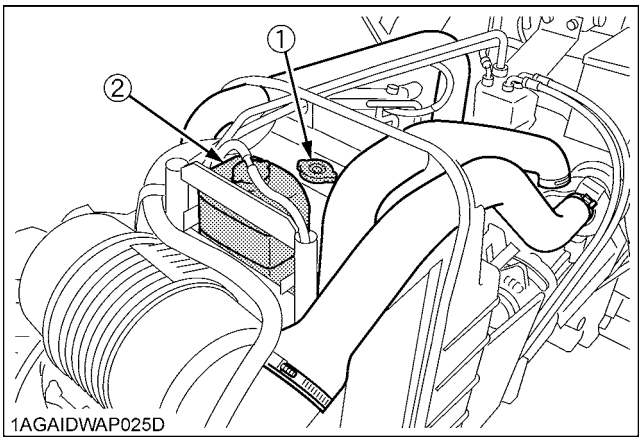
- **Do not remove radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely.**

1. Stop the engine, remove the key and let it cool down.
2. To drain the coolant, open the radiator drain plug and remove radiator cap. The radiator cap must be removed to completely drain the coolant.
3. After all coolant is drained, reinstall the drain plug.
4. Fill with clean soft water and cooling system cleaner.
5. Follow directions of the cleaner instruction.
6. After flushing, fill with clean soft water and anti-freeze until the coolant level is just below the radiator cap. Install the radiator cap securely.
7. Fill with coolant up to the "FULL" mark of recovery tank.
8. Start and operate the engine for few minutes.
9. Stop the engine, remove the key and let cool.
10. Check coolant level of recovery tank and add coolant if necessary.
11. Properly dispose of used coolant.

Coolant capacity	9.6 L (10.1 U.S.qts.)



(1) Drain plug ((+) Plus screwdriver)



(1) Radiator cap
(2) Recovery tank

IMPORTANT :

- Do not start engine without coolant.
- Use clean, fresh soft water and anti-freeze to fill the radiator and recovery tank.
- When mixing the anti-freeze with water, the anti-freeze mixing ratio is 50 %.
- Securely tighten radiator cap. If the cap is loose or improperly fitted, water may leak out and the engine could overheat.

■Anti-Freeze

CAUTION

To avoid personal injury:

- **When filling antifreeze, put on some protection such as rubber gloves (Antifreeze contains poison.).**
- **If antifreeze is swallowed, throw up at once and take medical attention.**
- **When antifreeze comes in contact with the skin or clothing, wash it off immediately.**
- **Do not mix different types of Antifreeze. The mixture can produce chemical reaction causing harmful substances.**
- **Antifreeze is extremely flammable and explosive under certain conditions. Keep fire and children away from antifreeze.**
- **When draining fluids from the engine, place a container underneath the engine body.**
- **Do not pour waste onto the grounds, down a drain, or into any water source.**
- **Also, observe the relevant environmental protection regulations when disposing of antifreeze.**

If it freezes, coolant can damage the cylinders and radiator. If the ambient temperature falls below 0℃ (32℉) or before a long-term storage, let out cooling water completely, or mix fresh water with long-life coolant and fill the radiator and recovery tank with the mixture.

1. Long-life coolant (hereafter LLC) comes in several types. Use ethylene glycol (EG) type for this engine.
2. Before employing LLC-mixed cooling water, fill the radiator with fresh water and empty it again.
   Repeat this procedure 2 or 3 times to clean up the inside.
3. Mixing the LLC
   Put the LLC in cooling water in the percentage (%) for a target temperature. When mixing, stir it up well, and then fill into the radiator.
4. The procedure for the mixing of water and antifreeze differs according to the make of the antifreeze and the ambient temperature. Refer to SAE J1034 standard, more specifically also to SAE J814c.

IMPORTANT :

- When the antifreeze is mixed with water, the antifreeze mixing ratio must be less than 50%.

Vol % Anti-freeze	Freezing Point		Boiling Point*	
	℃	℉	℃	℉
40	-24	-12	106	222
50	-37	-34	108	226

* At 1.013 x 10^5 Pa (760 mmHg) pressure (atmospheric). A higher boiling point is obtained by using a radiator pressure cap which permits the development of pressure within the cooling system.

5. Adding the LLC
   (1) Add only water if the mixture reduces in amount by evaporation.
   (2) If there is a mixture leak, add the LLC of the same manufacturer and type in the same mixture percentage.
   * Never add any long-life coolant of different manufacturer. (Different brands may have different additive components, and the engine may fail to perform as specified.)
6. When the LLC is mixed, do not employ any radiator cleaning agent. The LLC contains anticorrosive agent. If mixed with the cleaning agent, sludge may build up, adversely affecting the engine parts.
7. Kubota's genuine long-life coolant has a service life of 2 years. Be sure to change the coolant every 2 years.

NOTE :

- The above data represent industry standards that necessitate a minimum glycol content in the concentrated antifreeze.
- When the coolant level drops due to evaporation, add water only to keep the antifreeze mixing ratio less than 50%. In case of leakage, add antifreeze and water in the specified mixing ratio before filling in to the radiator.

■Replacing Radiator Hose (Water pipes)
Replace the hoses and clamps.
(See "Checking Radiator Hose and Clamp" in "EVERY 200 HOURS" in "PERIODIC SERVICE" section.)

■Replacing Power Steering Hose
Consult your local KUBOTA Dealer for this service.

■Replacing Fuel Hose
Consult your local KUBOTA Dealer for this service.

■Replacing Oil Cooler Line
Consult your local KUBOTA Dealer for this service.

■Replacing Intake Air Line
(See "Checking Intake Air Line" in "EVERY 200 HOURS" in "PERIODIC SERVICE" section.)

■Replacing Parking Brake Cable
Consult your local KUBOTA Dealer for this service.

■Replacing Brake Hose
Consult your local KUBOTA Dealer for this service.

■Replacing Master Cylinder Kit
Consult your local KUBOTA Dealer for this service.

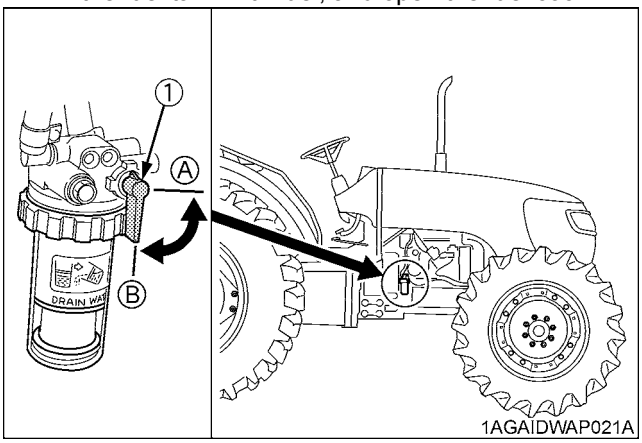
■Replacing Equalizer Kit
Consult your local KUBOTA Dealer for this service.

■Replacing Brake Seal 1 and 2
Consult your local KUBOTA Dealer for this service.

SERVICE AS REQUIRED

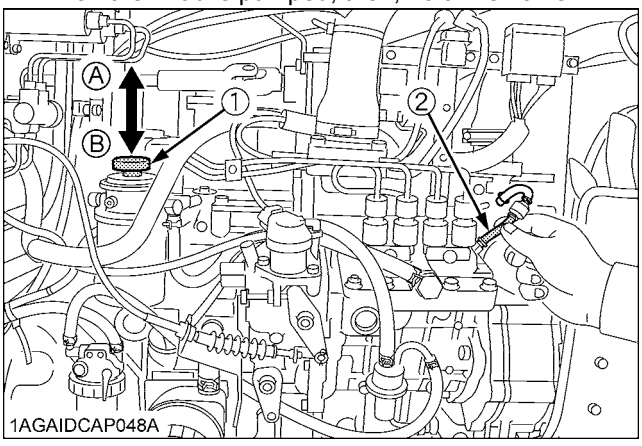
■Bleeding Fuel System
[M96S]
Air must be removed:
1. When the fuel filter or lines are removed.
2. When water is drained from water separator.
3. When tank is completely empty.
4. After the tractor has not been used for a long period of time.

◆ **Bleeding procedure is as follows:**
1. Fill the fuel tank with fuel, and open the fuel cock.



(1) Fuel cock *(A) "CLOSE"* *(B) "OPEN"*

2. Pump the fuel pump knob(1) located on the top of the fuel filter. The fuel pump knob will pump easily at first and with added resistance as air is purged from the system. To make sure air is completely purged, pinch the fuel overflow hose with fingers, if a pulsation is felt when the knob is pumped, then, no air remains.



(1) Fuel pump knob *(A) "UP"*
(2) Fuel overflow hose *(B) "DOWN"*

3. Set the hand throttle lever at the maximum speed position, turn the key switch to start the engine and then reset the throttle lever at the mid speed (around 1500 rpm) position.
   If engine doesn't start, try it several times at 30 second intervals.

IMPORTANT :
- Do not hold key switch at engine start position for more than 10 seconds continuously. If more engine cranking is needed, try again after 30 seconds.

4. Accelerate the engine to remove the small portion of air left in the fuel system.
5. If air still remains and the engine stops, repeat the above steps.

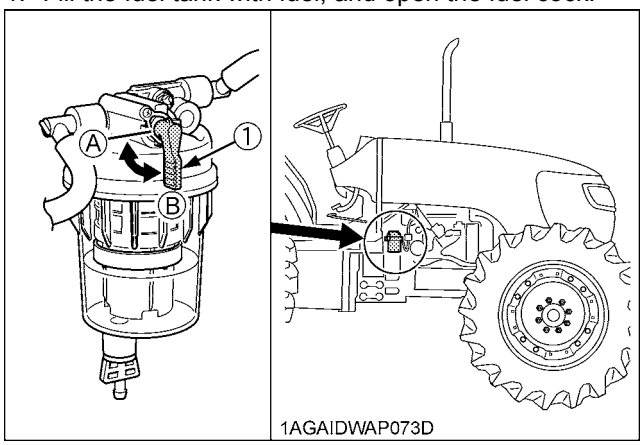
■Bleeding Fuel System

[M108S]

Air must be removed:
1. When the fuel filter or lines are removed.
2. When water is drained from water separator.
3. When tank is completely empty.
4. After the tractor has not been used for a long period of time.

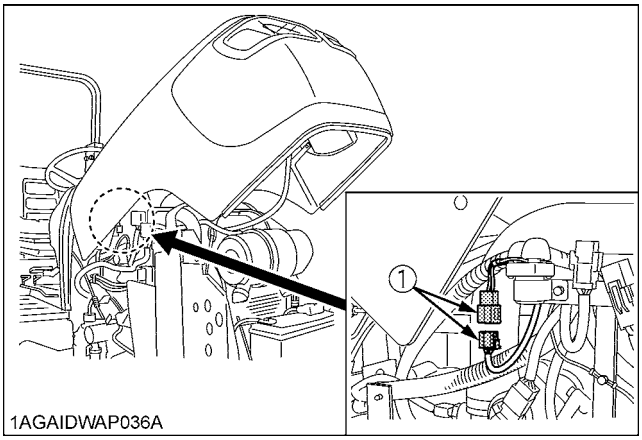
◆ **Bleeding procedure is as follows:**

1. Fill the fuel tank with fuel, and open the fuel cock.



(1) Fuel cock *(A) "CLOSE"* *(B) "OPEN"*

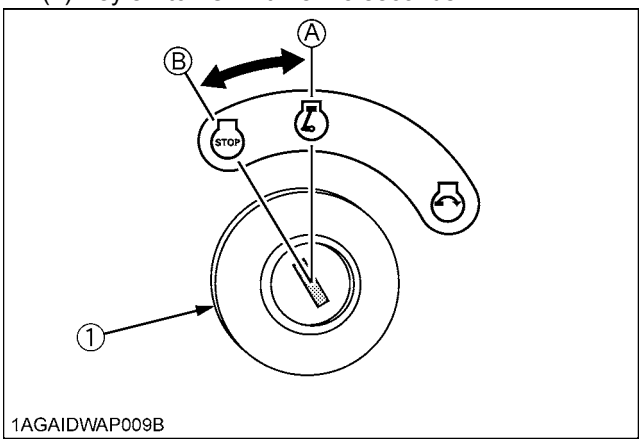
2. Disconnect the intake heater connector.



(1) Connector

IMPORTANT :
- Do not try air-bleeding with the heater in operation. Otherwise the battery may get damaged.

3. Turn ON and OFF the key switch repeatedly 10 times or so at the following intervals. This lets the air out of the fuel line.
   (1) Key switch ON time: 30 seconds
   (2) Key switch OFF time: 15 seconds



(1) Key switch *(A) "ON"* *(B) "OFF"*

4. Set the hand throttle lever at the maximum speed position, turn the key switch to start the engine and then reset the throttle lever at the mid speed (around 1500 rpm) position.
   If engine doesn't start, try it several times at 30 second intervals.

IMPORTANT :
- Do not hold key switch at engine start position for more than 10 seconds continuously. If more engine cranking is needed, try again after 30 seconds.

5. Accelerate the engine to remove the small portion of air left in the fuel system.
6. If air still remains and the engine stops, repeat the above steps.

■Bleeding Brake System

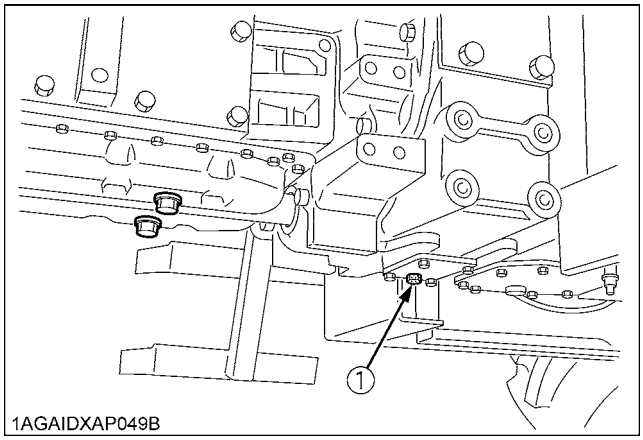
Consult your local KUBOTA Dealer for this service.

■Draining Clutch Housing Water

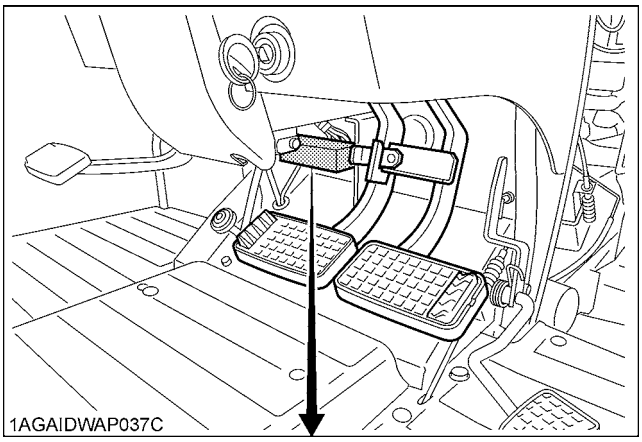
The tractor is equipped with a drain plug under the clutch housing.

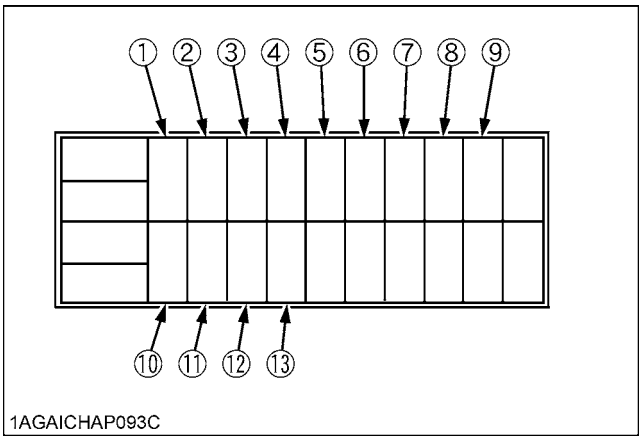
After operating in rain, snow or if the tractor has been washed, water may get into the clutch housing.

Remove the drain plug and drain the water, then install the plug again.



(1) Water drain plug





■Replacing Fuse

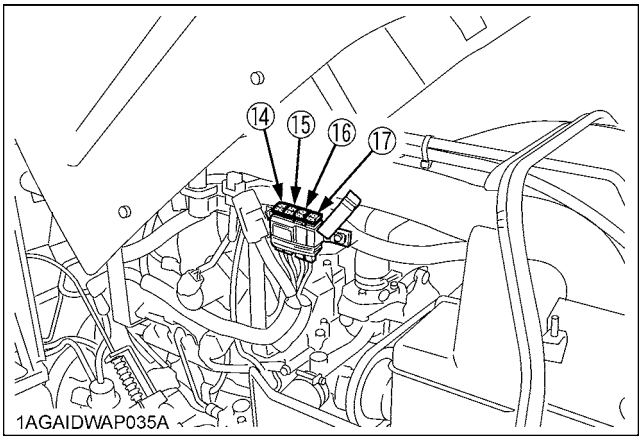
The tractor electrical system is protected from potential damage by fuses.

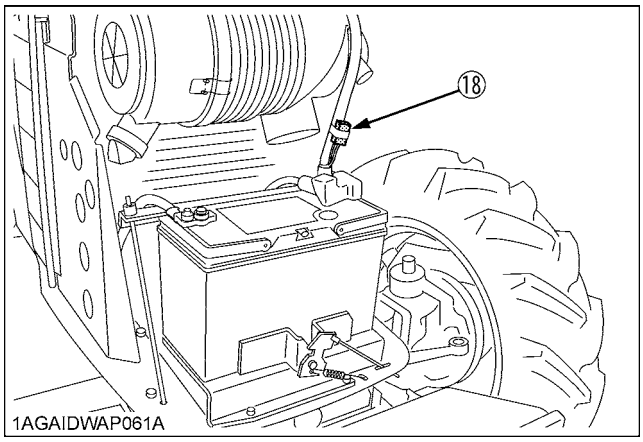
A blown fuse indicates that there is an overload or short somewhere in the electrical system.

If any of the fuses should blow, replace with a new one of the same capacity.

IMPORTANT :

- Before replacing a blown fuse, determine why the fuse blew and make any necessary repairs. Failure to follow this procedure may result in serious damage to the tractor electrical system. Refer to the "TROUBLESHOOTING" section of this manual or your local KUBOTA Dealer for specific information dealing with electrical problems.





FUSE No.	CAPACITY (A)	Protected circuit
(1)	15A	Flasher (Hazard)
(2)	15A	Head Light
(3)	10A	Tail Lamp, Horn
(4)	5A	Engine, PTO, Alternator
(5)	10A	T/M Control
(6)	5A	Meter Panel, OPC, Buzzer
(7)	10A	Turn Signal
(8)	15A	AUX Power
(9)	5A	Relay
(10)	15A	Work Light RH (Front, F/S)
(11)	15A	Work Light LH (Rear)
(12)	5A	Meter Backup
(13)	10A	Brake Lamp
(14)	100A	Charge
(15)	120A	Heater
(16)	30A	Main Key Switch
(17)	50A	Head Light, Work Light
(18)	10A	CRS Power [M108S]

■Replacing Light Bulb

1. Head light
   Take the bulb out of the light body and replace with a new one.
2. Other lights
   Detach the lens and replace the bulb.

Light	Capacity
Head light	60 / 55 W
Hazard light	21 W
Rear turn signal	21 W
Tail light	5 W
Front work light	21 W

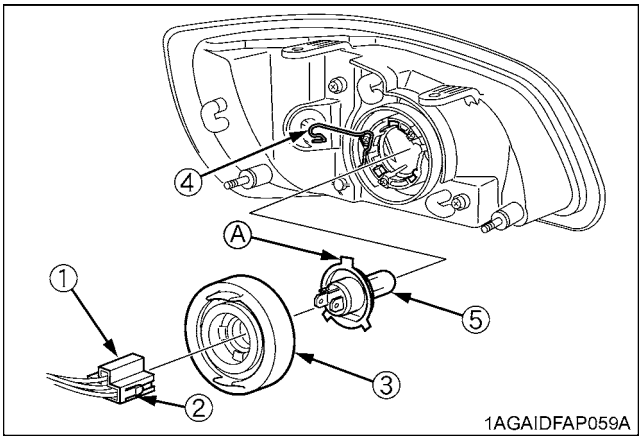
■Replacing Head Lamp

CAUTION

To avoid personal injury:

- **Be careful not to drop the bulb, hit anything against the lamp, apply excess force, and get the lamp scratched. If broken, glass may cause injury. Pay more attention to halogen lamps in particular, which have high pressure inside.**
- **Before replacing the lamp, be sure to turn off the light and wait until the bulb cools down, otherwise, you may get burned.**

1. While pushing the right and left lock buttons, pull and remove the electrical connector.
2. Remove the rubber boot.
3. Remove the clamping fixture and take out the bulb.
4. Replace with a new bulb and reinstall the head lamp assembly in the reverse order.



(1) Electrical connector
(2) Lock buttons
(3) Rubber boot
(4) Clamping fixture
(5) Bulb
(A)"Base's wider projection to face upward"

IMPORTANT :

- Be sure to use a new bulb of the specified wattage.
- Never touch the bulb surface (glass) with bare hands. Fingerprints, for example, may break the bulb.

STORAGE

CAUTION

To avoid personal injury:

- **Do not clean the machine while the engine is running.**
- **To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.**
- **When storing, remove the key from the key switch to avoid unauthorized persons from operating the tractor and getting injured.**

TRACTOR STORAGE

If you intend to store your tractor for an extended period of time, follow the procedures outlined below.

These procedures will insure that the tractor is ready to operate with minimum preparation when it is removed from storage.

1. Check the bolts and nuts for looseness, and tighten if necessary.
2. Apply grease to tractor areas where bare metal will rust also to pivot areas.
3. Detach the weights from the tractor body.
4. Inflate the tires to a pressure a little higher than usual.
5. Change the engine oil and run the engine to circulate oil throughout the engine block and internal moving parts for about five minutes.
6. Keep the PTO clutch control lever at "DISENGAGE" position while tractor is stored for a long period of time.
7. With all implements lowered to the ground, coat any exposed hydraulic cylinder piston rods with grease.
8. Remove the battery from the tractor. Store the battery following the battery storage procedures.
   (See "Checking Battery Condition" in "EVERY 100 HOURS" in "PERIODIC SERVICE" section.)
9. Keep the tractor in a dry place where the tractor is sheltered from the elements. Cover the tractor.
10. Store the tractor indoors in a dry area that is protected from sunlight and excessive heat. If the tractor must be stored outdoors, cover it with a waterproof tarpaulin.
    Jack the tractor up and place blocks under the front and rear axles so that all four tires are off the ground.
    Keep the tires out of direct sunlight and extreme heat.

IMPORTANT :

- When washing the tractor, be sure to stop the engine. Allow sufficient time for the engine to cool before washing.
- Cover the tractor after the muffler and the engine have cooled down.

REMOVING THE TRACTOR FROM STORAGE

1. Check the tire air pressure and inflate the tires if they are low.
2. Jack the tractor up and remove the support blocks from under the front and rear axles.
3. Install the battery. Before installing the battery, be sure it is fully charged.
4. Check the fan belt tension.
5. Check all fluid levels (engine oil, transmission/ hydraulic oil, engine coolant and any attached implements).
6. Start the engine. Observe all gauges. If all gauges are functioning properly and reading normal, move the tractor outside. Once outside, park the tractor and let the engine idle for at least five minutes. Shut the engine off and walk around tractor and make a visual inspection looking for evidence of oil or water leaks.
7. With the engine fully warmed up, release the parking brake and test the brakes for proper adjustment as you move forward. Adjust the brakes as necessary.

TROUBLESHOOTING

ENGINE TROUBLESHOOTING

If something is wrong with the engine, refer to the table below for the cause and its corrective measure.

Trouble		Cause	Countermeasure
Engine is difficult to start or won't start.		● No fuel flow.	● Check the fuel tank and the fuel filter. Replace filter if necessary.
		● Air or water is in the fuel system.	● Check to see if the fuel line coupler bolt and nut are tight. ● Bleed the fuel system (See "Bleeding Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)
		● In winter, oil viscosity increases, and engine revolution is slow.	● Use oils of different viscosities, depending on ambient temperatures. ● Use engine block heater (Optional)
		● Battery becomes weak and the engine does not turn over quick enough.	● Clean battery cables & terminals. ● Charge the battery. ● In cold weather, always remove the battery from the engine, charge and store it indoors. Install it on the tractor only when the tractor is going to be used.
		● Intake air heater system trouble.	● Check to see if the slow blow fuse of the intake air heater blows. ● Check to see if the intake air heater functions in cold weather.
Insufficient engine power.		● Insufficient or dirty fuel. ● The air cleaner is clogged.	● Check the fuel system. ● Clean or replace the element.
Engine stops suddenly.		● Insufficient fuel.	● Refuel. ● Bleed the fuel system if necessary.
Exhaust fumes are colored.	Black	● Fuel quality is poor. ● Too much oil. ● The air cleaner is clogged.	● Change the fuel and fuel filter. ● Check the proper amount of oil. ● Clean or replace the element.
	Blue white	● The inside of exhaust muffler is dumped with fuel. ● Injection nozzle trouble. ● Fuel quality is poor.	● Check to see if the intake air heater functions in cold weather. ● Heat the muffler by applying load to the engine. ● Check the injection nozzle. ● Change the fuel and fuel filter.
Engine overheats		● Engine overloaded	● Shift to lower gear or reduce load.
		● Low coolant level	● Fill cooling system to the correct level; check radiator and hoses for loose connections or leaks.
		● Loose or defective fan belt	● Adjust or replace fan belt.
		● Dirty radiator core or grille screens	● Remove all trash.
		● Coolant flow route corroded	● Flush cooling system.

If you have any questions, contact your local KUBOTA Dealer.

Trouble	Operator's action
Engine not overheated, but engine warning indicator on.	Stop the engine and get it restarted. If the engine fails to restart or the indicator stays on, immediately contact your local KUBOTA dealer.If the warning indicator lights up, the following phenomena may appear depending on the engine's trouble spot. ● The engine stops unexpected. ● The engine fails to start or gets interrupted just after start. ● The engine output is not enough. ● The engine output is enough, but the warning indicator stays on.

If you have any questions, contact your local KUBOTA Dealer.

OPTIONS

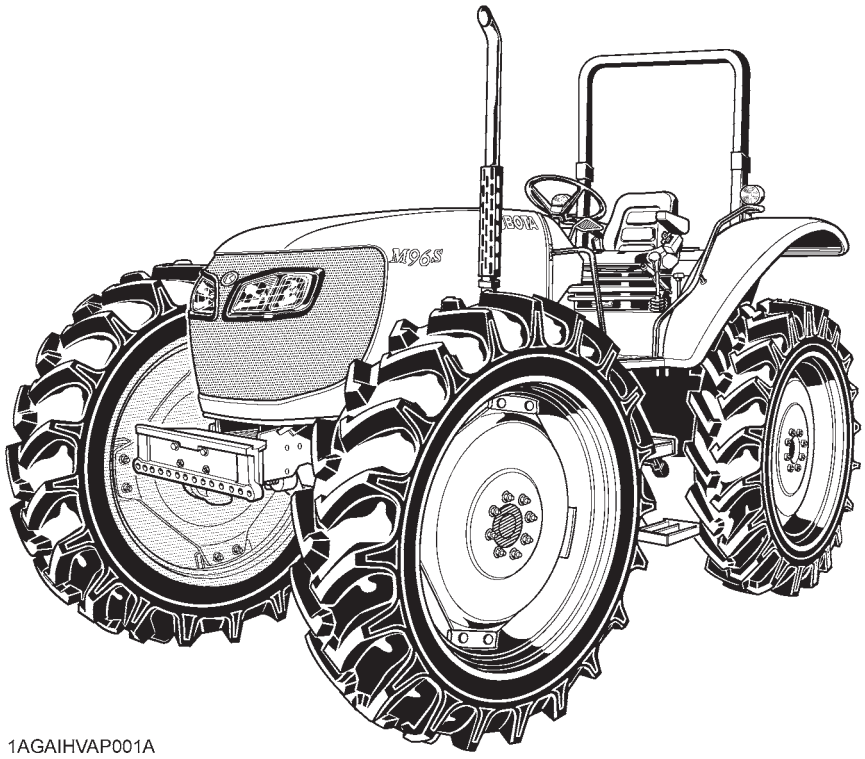
Consult your local KUBOTA Dealer for further details.

- Rear Work Light.
  High visibility for night work.
- Engine Block Heater
  For extremely cold weather starting
- Double Acting Remote Hydraulic Control Valve with Detents and Self-Cancelling
- Flow Control Valve Kit
- Double Acting Remote Hydraulic Control Valve with Detents and Self-Cancelling for Flow Control Valve
- Double Acting Remote Hydraulic Control Valve with Float Position
- Clevis for Drawbar
- Front end weights
  For front ballast
- Rear Wheel Weights
  For rear ballast
- Creep Speed Kit
- 80A Alternator Kit
- 80" Wide Axle
- Dual Lift Assist Cylinder Kit
- 540 / 1000 rpm PTO Speed Kit
- Fuel Tank Guard Kit
- Rear Cast Iron Disk
- Deluxe canopy

APPENDICES

INDEX

M96SDTM
MUDDER TRACTOR



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FOREWORD

Thank you very much for choosing the mudder model of the M series tractor.
This operator's manual covers the operation, inspection and preventive maintenance instructions that are specific to the M series mudder model. For other information and instructions, refer to the first part of this manual. Please read this manual carefully to operate the machine properly and safely. Proper daily inspection, servicing and lubrication keeps your machine in good condition.

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, 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.

CONTENTS

SPECIFICATIONS

SPECIFICATION TABLE

Model				M96SDTM	
				Standard	With 80 in. wide axle
Engine	Model			V3800-DI-TE3	
	Type			Direct Injection, liquid cooled 4 cylinder diesel	
	Number of cylinders			4	
	Total displacement		cm^3 (cu.in.)	3769 (230)	
	Bore and stroke		mm (in.)	100 x 120 (3.9 x 4.7)	
	Rated revolution		rpm	2600	
	Low idling revolution		rpm	800 to 850	
	Net power *1		kW (HP)	70.9 (95)	
	PTO power *1 (factory observed)		kW (HP)	62.7 (84)	
	Maximum torque		N-m (ft-lbs) / rpm	314.8 (232.2) / 1400 to 1600	
	Battery capacity			12V, RC: 160 min, CCA 900A	
	Fuel tank capacity		L (U.S.gals.)	175 (46.2)	
	Engine oil capacity		L (U.S.qts.)	10.7 (11.3)	
	Coolant capacity		L (U.S.qts.)	9.6 (10.1)	
Dimensions	Overall length		mm (in.)	4275 (168.3)	
	Overall width (minimum tread)		mm (in.)	2030 (79.9)	2270 (89.4)
	Overall height (with ROPS)		mm (in.)	2835 (111.6)	
	Wheel base		mm (in.)	2420 (95.3)	
	Tread	Front	mm (in.)	1565 (61.6), 1665 (65.6)	1830 (72), 1925 (75.8), 2025 (79.7)
		Rear	mm (in.)	1545 (60.8), 1645 (64.8)	1865 (73.4), 1960 (77.2), 2060 (81.1)
	Minimum ground clearance		mm (in.)	655 (25.8) (Drive Case)	
Weight (with ROPS)			kg (lbs.)	3620 (7981)	3700 (8157)
Traveling system	Standard tire size	Front tires		13.6-38	
		Rear tires		13.6-38	
	Clutch			Hydraulic wet disks	
	Steering			Hydraulic Power Steering	
	Braking system			Hydraulic wet disks	
	Differential			Bevel gears with differential lock (Front, Rear)	

Model				M96SDTM	
				Standard	With 80 in. wide axle
Hydraulic unit	Hydraulic control system			Position, draft (top link sensing) & mix control	
	Pump capacity		L (U.S.gals.) / min	65 (17.2)	
	Three point hitch			Category 2	
	Max. lifting force	At lifting points *2	kg (lbs.)	2500 (5510), 3900 (8600): with 2 assist cylinders (option)	
		24 in. behind lifting point	kg (lbs.)	2100 (4630), 3400 (7490): with 2 assist cylinders (option)	
	Remote hydraulic control			1 standard (2nd, 3rd & flow control valve optional)	
	System pressure		MPa (kgf/cm^2)	19.6 (200)	
	Traction system			Swinging drawbar, adjustable in direction	
PTO	Live PTO (Independent)	Direction of turning		Clockwise, viewed from tractor rear	
		PTO/Engine speed	rpm	6 spline: 540 / 2205	

The company reserves the right to change the specifications without notice.

NOTE: *1 Manufacturer's estimate

*2 At lower link end with links horizontal.

TRAVELING SPEEDS

(At rated engine rpm)

Model				M96SDTM	
Tire size (Rear)				13.6-38	
Shuttle shift lever	Range gear shift lever	Main gear shift lever		km/h	mph
Forward	CREEP	🐢	1	0.19	0.12
			2	0.24	0.15
			3	0.30	0.19
			4	0.37	0.23
		🐇	1	0.47	0.29
			2	0.60	0.37
			3	0.73	0.46
			4	0.90	0.56
	L	🐢	1	1.06	0.66
			2	1.35	0.84
			3	1.67	1.03
			4	2.04	1.27
		🐇	1	2.61	1.62
			2	3.33	2.07
			3	4.10	2.55
			4	5.02	3.12
	H	🐢	1	5.34	3.32
			2	6.80	4.22
			3	8.37	5.20
			4	10.26	6.38
		🐇	1	13.13	8.16
			2	16.37	10.39
			3	20.60	12.80
			4	27.20*	16.90*

Model				M96SDTM	
Tire size (Rear)				13.6-38	
Shuttle shift lever	Range gear shift lever	Main gear shift lever		km/h	mph
Reverse	CREEP	🐢	1	0.19	0.12
			2	0.24	0.15
			3	0.30	0.19
			4	0.37	0.23
		🐇	1	0.47	0.29
			2	0.60	0.37
			3	0.74	0.46
			4	0.91	0.56
	L	🐢	1	1.07	0.67
			2	1.36	0.85
			3	1.68	1.04
			4	2.06	1.28
		🐇	1	2.63	1.64
			2	3.35	2.08
			3	4.13	2.57
			4	5.06	3.15
	H	🐢	1	5.38	3.35
			2	6.86	4.26
			3	8.45	5.25
			4	10.35	6.43
		🐇	1	13.25	8.23
			2	16.87	10.48
			3	20.78	12.91
			4	27.43*	17.05*

The company reserves the right to change the specifications without notice.

* At maximum engine rpm

TIRES, WHEELS AND BALLAST

TIRES

WARNING

To avoid personal injury:

- **Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.**
- **Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure shown in the operator's manual.**

IMPORTANT :

- Do not use tires other than those approved by KUBOTA.

■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
Front	13.6-38	150 kPa (1.5 kgf/cm², 22 psi.)
	9.5R48	240 kPa (2.4 kgf/cm², 35 psi.)
	12.4R46	240 kPa (2.4 kgf/cm², 35 psi.)
Rear	13.6-38	150 kPa (1.5 kgf/cm², 22 psi.)
	9.5R48	240 kPa (2.4 kgf/cm², 35 psi.)
	12.4R46	240 kPa (2.4 kgf/cm², 35 psi.)

NOTE :

- Maintain the maximum pressure in front tires when equipped with a full load of front weights.

■Dual Tires

Dual tires are not approved.

WHEEL ADJUSTMENT

CAUTION

To avoid personal injury:

- **When working on slopes or when working with trailer, set the wheel tread as wide as practical for maximum stability.**
- **Support tractor securely on stands before removing a wheel.**
- **Do not work under any hydraulically supported devices. They can settle, suddenly leak down, or be accidentally lowered. If necessary to work under tractor or any machine elements for servicing or adjustment, securely support them with stands or suitable blocking beforehand.**
- **Never operate tractor with a loose rim, wheel, or axle.**

■Front Wheels (with four wheel drive)

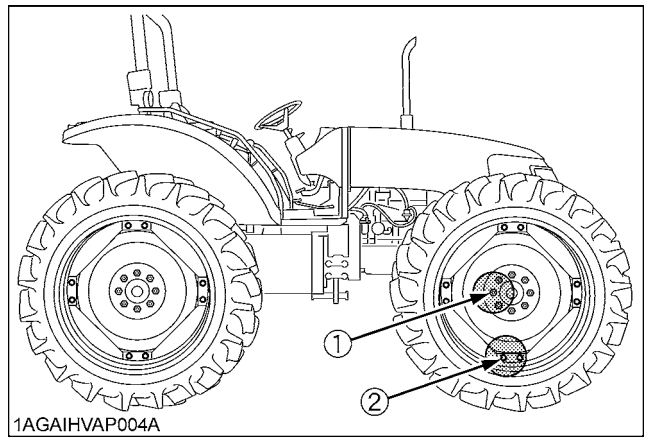
Front tread width can be adjusted as shown with the standard equipped tires.

To change the tread width

1. Remove the wheel rim and disk mounting bolts.
2. Change the position of the rim and disk (right and left) to the desired position, and tighten the bolts.
3. Adjust the toe-in [2 to 8mm (0.1 to 0.3 in.)]
   See "Adjusting Toe-in" in "EVERY 200 HOURS" in "PERIODIC SERVICE" section.

IMPORTANT :

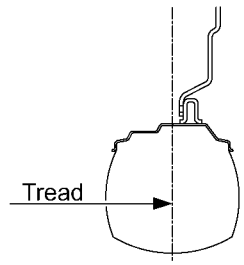
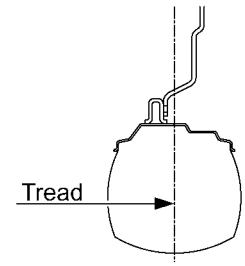
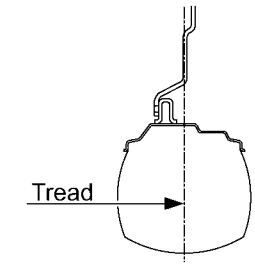
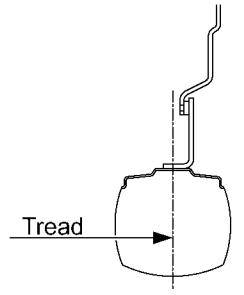
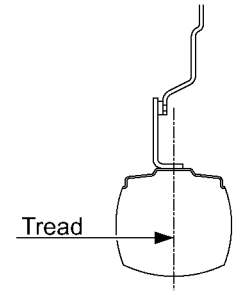
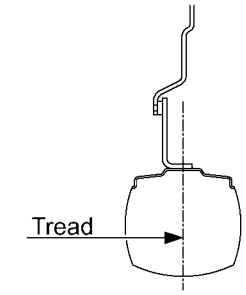
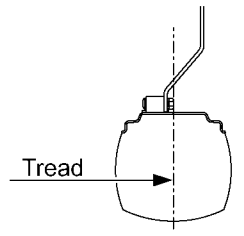
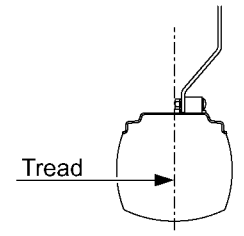
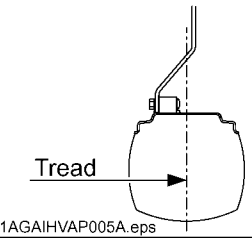
- Always attach wheels as shown in the drawing.
- If not attached as illustrated, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200m (200 yards) and 10 times of shuttle movement by 5 m (5 yards), and thereafter according to service interval. (See "MAINTENANCE" section.)



N-m (kgf-m) [ft-lbs]

	Standard tire	Option tire	
	13.6-38 (Front and rear: Steel disk)	9.5R48 12.4R46	13.6-38 (Front: Steel disk Rear: Cast iron disk)
(1)	260 to 304 (26.5 to 31) [192 to 224]		
(2)	280 to 340 (28.6 to 34.7) [207 to 251]		200 to 278 (20.2 to 28.4) [146 to 205]

NOTE :
- Wheels with beveled or tapered holes: Use the tapered side of lug nut.

Standard tire	Standard	---	① 1565 mm (61.6 in.)	② 1665 mm (65.6 in.)
	With 80 in. wide axle	③ 1830 mm (72 in.)	④ 1925 mm (75.8 in.)	⑤ 2025 mm (79.7 in.)
	13.6-38 (Steel disk)			
Option tire	Standard	---	① 1565 mm (61.6 in.)	② 1665 mm (65.6 in.)
	With 80 in. wide axle	③ 1830 mm (72 in.)	④ 1925 mm (75.8 in.)	⑤ 2025 mm (79.7 in.)
	9.5R48 12.4R46			
	Standard	---	① 1565 mm (61.6 in.)	② 1665 mm (65.6 in.)
	With 80 in. wide axle	③ 1830 mm (72 in.)	④ 1925 mm (75.8 in.)	⑤ 2025 mm (79.7 in.)
	13.6-38 (Steel disk)			

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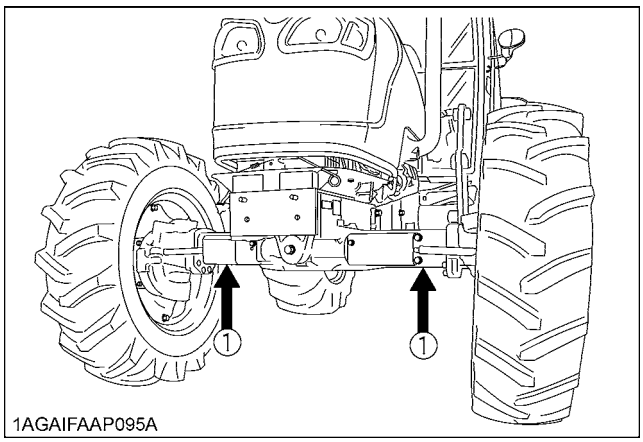
CAUTION

To avoid personal injury:

- **Before jacking up the tractor, park it on a firm and level ground and chock the rear wheels.**
- **Fix the front axle to keep it from swinging.**
- **Select jacks that withstand the machine weight and set them up as shown below.**



(1) Jack point

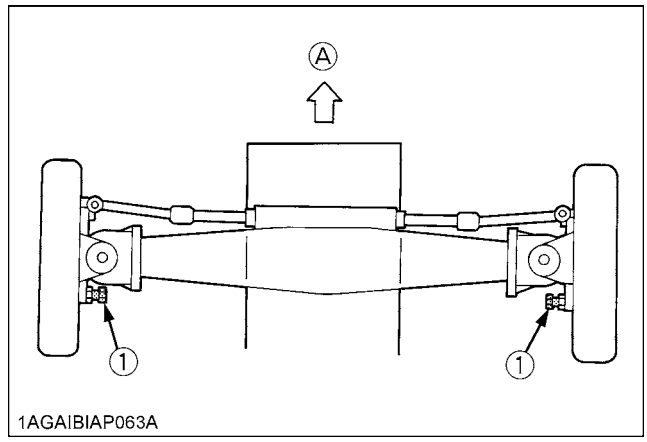
■Adjusting Front Wheel Turning Stopper Bolt

Take the following steps to adjust the turning angle with the stopper.

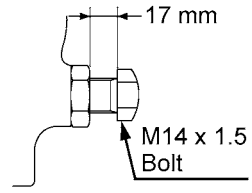
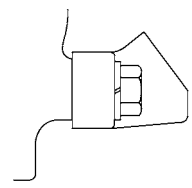
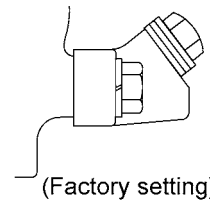
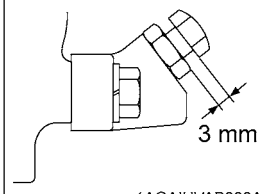
1. Slightly tighten the stopper bolt.
2. Start the engine. Turn the steering wheel to the right and left to get the stopper two or three times into contact with the bevel gear case. (This is to position the stopper's contact face.)
3. Then hold the stopper with an adjustable wrench to prevent it from getting out of position. Finally tighten the stopper bolt to the specified torque.

IMPORTANT :

- The turning angle varies depending on the presence or absence of the front weight bumper as well as the tire size and tread setting. Adjust the stopper bolt with these factors in mind.
- Make sure that the stopper bolts are always tightened to the correct torque.



(1) Stopper bolts *(A) "FRONT"*

	Stopper bolts adjustment (ex. LH stopper bolt)	
Tread	⑤ 2025 mm (79.7 in.)	④ 1925 mm (75.8 in.) ③ 1830 mm (72 in.)
Stopper		
Tread	② 1665 mm (65.6 in.)	① 1565 mm (61.6 in.)
Stopper		
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■Rear Wheels

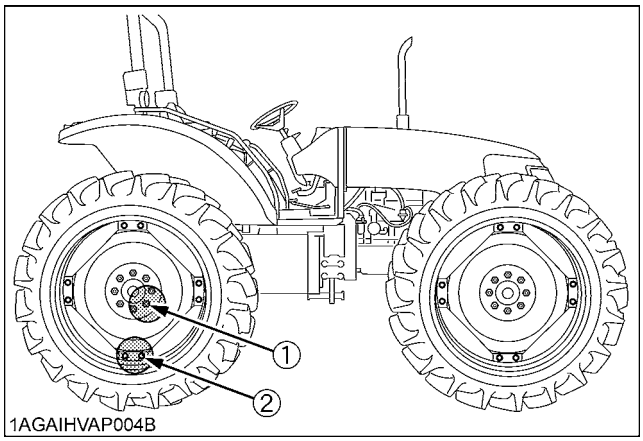
Rear tread width can be adjusted as shown with the standard or optional equipped tires.

To change the tread width

1. Remove the clamp mounting bolts.
2. Change the clamp position of the rim and disk to the desired position, and tighten the bolts.

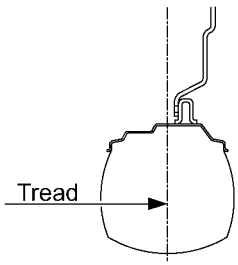
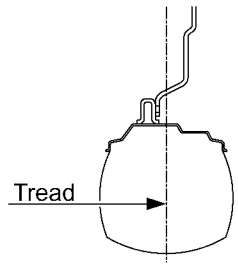
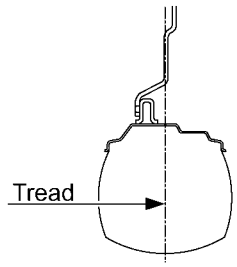
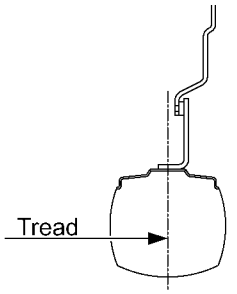
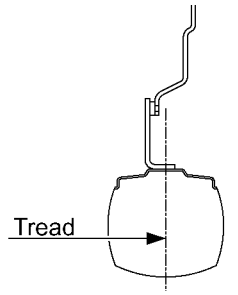
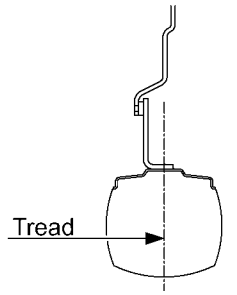
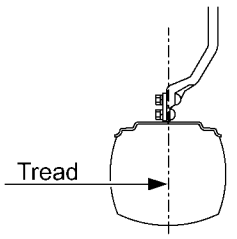
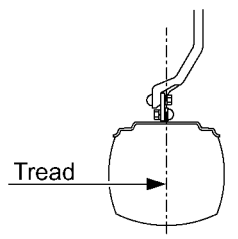
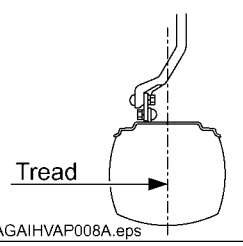
IMPORTANT :

- Always attach wheels as shown in the drawing.
- If not attached as illustrated, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200m (200 yards) and 10 times of shuttle movement by 5 m (5 yards), and thereafter according to service interval. (See "MAINTENANCE" section.)



N-m (kgf-m) [ft-lbs]

	Standard tire	Option tire	
	13.6-38 (Front and rear: Steel disk)	9.5R48 12.4R46	13.6-38 (Front: Steel disk Rear: Cast iron disk)
(1)	260 to 304 (26.5 to 31) [192 to 224]		
(2)	280 to 340 (28.6 to 34.7) [207 to 251]		305 to 373 (31.1 to 38.0) [225 to 275]

Standard tire	Standard	—	1545 mm (60.8 in.)	1645 mm (64.8 in.)
	With 80 in. wide axle	1865 mm (73.4 in.)	1960 mm (77.2 in.)	2060 mm (81.1 in.)
	13.6-38 (Steel disk)			
Option tire	Standard	—	1545 mm (60.8 in.)	1645 mm (64.8 in.)
	With 80 in. wide axle	1865 mm (73.4 in.)	1960 mm (77.2 in.)	2060 mm (81.1 in.)
	9.5R48 12.4R46			
	Standard	—	1525 mm (60.0 in.)	1630 mm (64.2 in.)
	With 80 in. wide axle	1845 mm (72.6 in.)	1940 mm (76.3 in.)	2045 mm (80.6 in.)
	13.6-38 (Cast iron disk)			

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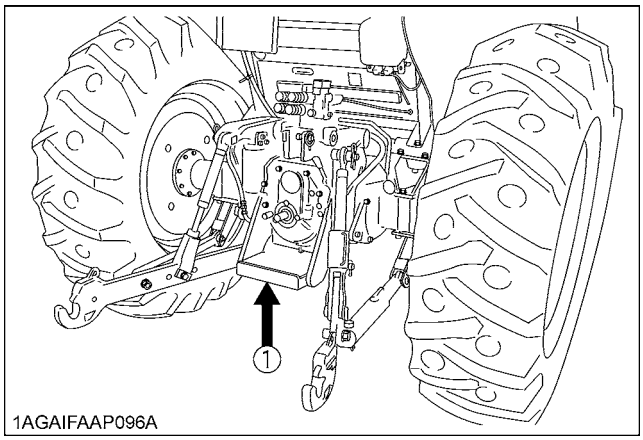
CAUTION

To avoid personal injury:

- **Before jacking up the tractor, park it on a firm and level ground and chock the front wheels.**
- **Fix the front axle to keep it from swinging.**
- **Select a jack that withstands the machine weight and set it up as shown below.**



(1) Jack point

■Handrails and Auxiliary Steps

◆ Handrails

Hold the handrails when getting on and off the tractor.

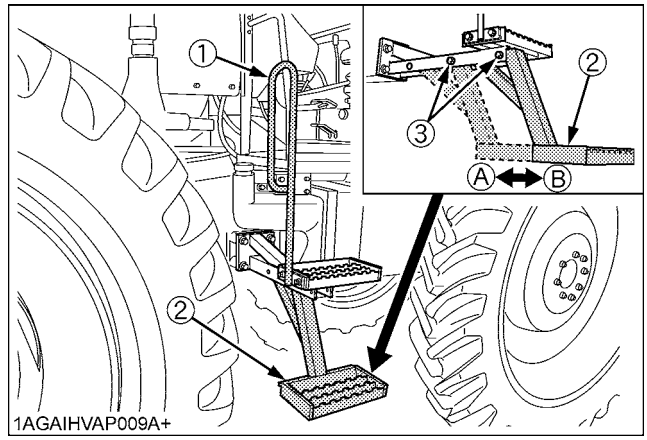
WARNING

To avoid serious crushing injuries or death:

- **Do not ride or stand on the step during operation.**
- **Riding or standing there could result in being crushed under the rear tire due to slippage or the step fracturing or displacing due to unintended loading.**

◆ Auxiliary steps

Reposition the auxiliary steps, as required, according to the tread width setting.



(1) Handrail
(2) Auxiliary step
(3) Bolt: 103.0 to 117.7 N-m (10.5 to 12.0 kgf-m, 76 to 87 ft-lbs.)
(A) Tread: 1525 to 1645 mm (60 to 64.8 in.)
(B) Tread: 1845 to 2060 mm (72.6 to 81.1 in.)

BALLAST

CAUTION

To avoid personal injury:

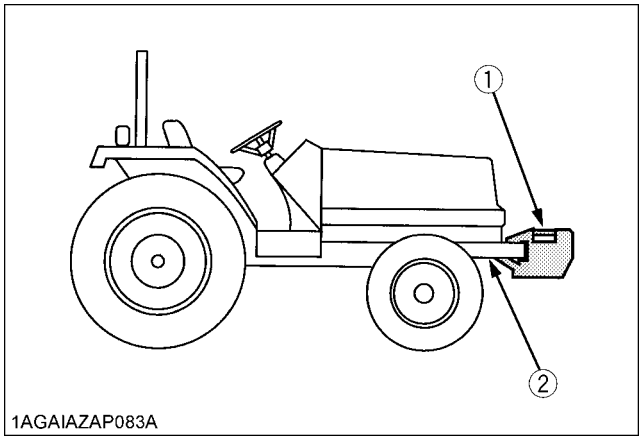
- **Additional ballast will be needed for transporting heavy implements. When the implement is raised, drive slowly over rough ground, regardless of how much ballast is used.**
- **Do not fill the front wheels with liquid to maintain steering control.**

■Front Ballast

Add weights if needed for stability and improve traction.
Heavy pulling and heavy rear mounted implements tend to lift front wheels. Add enough ballast to maintain steering control and prevent tip over.
Remove weight when no longer needed.

◆ Front End Weights (option)

The front end weights can be attached to the bumper.
See your implement operator's manual for required number of weights or consult your local KUBOTA Dealer to use.



(1) Front end weights
(2) Bumper

IMPORTANT :
- Do not overload tires.
- Add no more weight than indicated in chart.

Maximum weight	47 kg x 10 pieces (1040 lbs.)

■Rear Ballast

Add weight to rear wheels if needed to improve traction or for stability. The amount of rear ballast should be matched to job and the ballast should be removed when it is not needed.
The weight should be added to the tractor in the form of liquid ballast, rear wheel weights, and/or cast iron disks.

◆ Cast Iron Disk

The cast iron rear wheel disk may be utilized to provide additional rear weight.

Tire size	Cast Iron Disk
13.6-38	130 kg x 2 Pieces (578 lbs.)

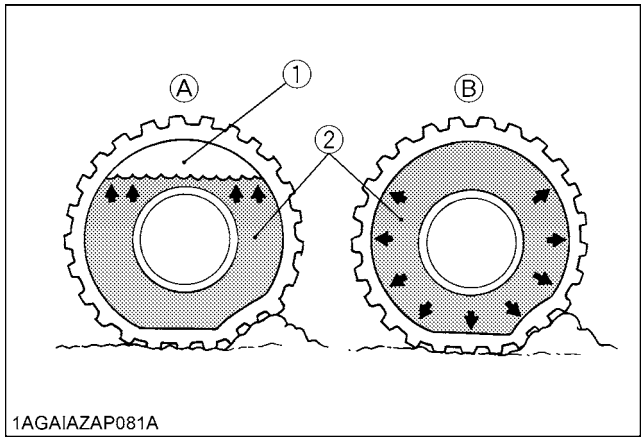
◆ Liquid Ballast in Rear Tires

Water and calcium chloride solution provides safe economical ballast. Used properly, it will not damage tires, tubes or rims. The addition of calcium chloride is recommended to prevent the water from freezing. Use of this method of weighting the wheels has the full approval of the tire companies. See your tire dealer for this service.

Liquid weight per tire (75 Percent filled)

Tire sizes	13.6-38	9.5R48	12.4R46
Slush free at -10 ℃ (-14 ℉) Solid at -30 ℃ (-22 ℉) [Approx.1 kg (2 lbs.) $CaCl_2$ per 4 L (1 gal.) of water]	231.3 kg (509 lbs.)	120 kg (270 lbs.)	195 kg (430 lbs.)
Slush free at -24 ℃ (-11 ℉) Solid at -47 ℃ (-53 ℉) [Approx.1.5 kg (3.5 lbs.) $CaCl_2$ per 4 L (1 gal.) of water]	263.5 kg (580 lbs.)	130 kg (285 lbs.)	215 kg (475 lbs.)
Slush free at -47 ℃ (-53 ℉) Solid at -52 ℃ (-62 ℉) [Approx.2.25 kg (5 lbs.) $CaCl_2$ per 4 L (1 gal.) of water]	278.5 kg (613 lbs.)	135 kg (300 lbs.)	225 kg (495 lbs.)

IMPORTANT :
- Do not fill tires with water or solution more than 75% of full capacity (to the valve stem level).



(1) Air (A) Correct-75% Air compresses like a cushion
(2) Water (B) Incorrect-100% Full Water can not be compressed

MAINTENANCE

SERVICE INTERVALS

No.	Items			Indication on hour meter														Interval	Ref. page		
				50	100	150	200	250	300	350	400	450	500	550	600	650	700				
1	Engine start system		Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	*		
2	Wheel bolt torque		Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	15		
3	Battery condition		Check		○		○		○		○		○		○		○	every 100 Hr	*	*5	
4	Greasing		---		○		○		○		○		○		○		○	every 100 Hr	*		
5	Fan belt		Adjust		○		○		○		○		○		○		○	every 100 Hr	*		
6	Brake Pedal		Adjust		○		○		○		○		○		○		○	every 100 Hr	*		
7	Parking Brake Lever		Adjust		○		○		○		○		○		○		○	every 100 Hr	*		
8	Air cleaner element	Primary element	Clean		○		○		○		○		○		○		○	every 100 Hr	*	*1	@
			Replace															every 1 year	*	*2	
		Second-ary element	Replace															every 1 year	*		
9	Fuel line		Check		○		○		○		○		○		○		○	every 100 Hr	*		@
			Replace															every 2 years	*	*4	
10	Hydraulic oil filter		Replace	◎			○				○				○			every 200 Hr	*		
11	Toe-in		Adjust				○				○				○			every 200 Hr	*		
12	Fuel tank water		Drain				○				○				○			every 200 Hr	*		
13	Oil cooler line		Check				○				○				○			every 200 Hr	*		
			Replace															every 2 years	*	*4	
14	Power steering oil line		Check				○				○				○			every 200 Hr	*		
			Replace															every 2 years	*	*4	
15	Radiator hose and clamp		Check				○				○				○			every 200 Hr	*		
			Replace															every 2 years	*		

No.	Items		Indication on hour meter														Interval	Ref. page		
			50	100	150	200	250	300	350	400	450	500	550	600	650	700				
16	Intake air line	Check				○				○				○			every 200 Hr	*		@
		Replace															every 2 years	*	*3	
17	Engine oil	Change	◎					○						○			every 300 Hr	*		
18	Water separator	Clean								○							every 400 Hr	*		
19	Fuel filter	Replace								○							every 400 Hr	*		@
20	Engine oil filter	Replace	◎											○			every 600 Hr	*		
21	Transmission fluid	Change	◎											○			every 600 Hr	15		
22	Front differential case oil	Change	◎											○			every 600 Hr	16		
23	Front axle gear case oil	Change	◎											○			every 600 Hr	*		
24	King-pin pivot	Adjust												○			every 600 Hr	*		
25	Brake oil	Change												○			every 600 Hr	*	*4	
26	Front axle pivot	Adjust												○			every 600 Hr	*		
27	Engine valve clearance	Adjust															every 800 Hr	*	*4	
28	Fuel injection nozzle injection pressure	Check															every 1500 Hr	*	*4	@
29	Injection pump	Check															every 3000 Hr	*	*4	@
30	Fuel injection timer	Check															every 3000 Hr	*	*4	@
31	Turbo charger	Check															every 3000 Hr	*	*4	@
32	Intake air heater	Check															every 3000 Hr	*	*4	
33	Cooling system	Flush															every 2 years	*		
34	Coolant	Change															every 2 years	*		
35	Parking brake cable	Replace															every 2 years	*	*4	
36	Brake hose	Replace															every 2 years	*	*4	
37	Master cylinder kit	Replace															every 2 years	*	*4	
38	Equalizer kit	Replace															every 2 years	*	*4	
39	Brake seal 1 and 2	Replace															every 2 years	*	*4	

No.	Items		Indication on hour meter														Interval	Ref. page		
			50	100	150	200	250	300	350	400	450	500	550	600	650	700				
40	Fuel system	Bleed															Service as required	*		
41	Brake system	Bleed															Service as required	*	*4	
42	Clutch housing water	Drain															Service as required	*		
43	Fuse	Replace															Service as required	*		
44	Light bulb	Replace															Service as required	*		

* : Please refer to the first part of this manual.

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 Consult your local KUBOTA Dealer for this service.

*5 When the battery is used for less than 100 hours per year, check the battery condition by reading the indicator annually.

- The items listed above (@ 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 above instruction.
  Please see the Warranty Statement in detail.

LUBRICANTS

<table>
<tr><th rowspan="2">No.</th><th rowspan="2">Locations</th><th colspan="2">Capacities</th><th colspan="2" rowspan="2">Lubricants</th></tr>
<tr><th>Standard</th><th>With 80 in. wide axle</th></tr>
<tr><td>1</td><td>Fuel</td><td colspan="2">175 L
(46.2 U.S.gals.)</td><td colspan="2">No.2-D diesel fuel
No.1-D diesel fuel if temperature is below -10 ℃ (14 ℉)</td></tr>
<tr><td>2</td><td>Coolant</td><td colspan="2">9.6 L (10.1 U.S.qts.)
(Recovery tank: 1.1 L (1.2 U.S.qts.))</td><td colspan="2">Fresh clean soft water with anti-freeze</td></tr>
<tr><td rowspan="4">3</td><td rowspan="4">Engine crankcase
(with filter)</td><td colspan="2" rowspan="4">10.7 L
(11.3 U.S.qts.)</td><td>• Engine oil: API Service Classification</td><td>CF or CI-4
[External EGR type engine]</td></tr>
<tr><td>Above 25 ℃ (77 ℉)</td><td>SAE30, SAE10W-30 or 15W-40</td></tr>
<tr><td>0 to 25 ℃ (32 to 77 ℉)</td><td>SAE20, SAE10W-30 or 15W-40</td></tr>
<tr><td>Below 0 ℃ (32 ℉)</td><td>SAE10W, SAE10W-30 or 15W-40</td></tr>
<tr><td>4</td><td>Transmission case</td><td>63 L
(66.6 U.S.qts.)</td><td>64 L
(67.7 U.S.qts.)</td><td colspan="2">• KUBOTA SUPER UDT-2 fluid</td></tr>
<tr><td>5</td><td>Brake oil
(reservoir and lines)</td><td colspan="2">0.3 L
(0.3 U.S.qts.)</td><td colspan="2">• KUBOTA SUPER UDT-2 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>6</td><td>Front differential case oil</td><td>7 L
(7.4 U.S.qts.)</td><td>8 L
(8.5 U.S.qts.)</td><td colspan="2" rowspan="2">• KUBOTA SUPER UDT-2 fluid or SAE 80 - SAE 90 gear oil</td></tr>
<tr><td>7</td><td>Front axle gear case oil</td><td colspan="2">3.5 L
(3.7 U.S.qts.)</td></tr>
<tr><td rowspan="8">8</td><td>Greasing</td><td colspan="2">No. of greasing points</td><td>Capacity</td><td>Type of grease</td></tr>
<tr><td>Top link</td><td colspan="2">2</td><td rowspan="6">Until grease overflows.</td><td rowspan="7">Multipurpose Grease
NLGI-2 OR
NLGI-1(GC-LB)</td></tr>
<tr><td>Top link bracket</td><td colspan="2">2</td></tr>
<tr><td>Lift rod</td><td colspan="2">3</td></tr>
<tr><td>Front axle gear case support</td><td colspan="2">2</td></tr>
<tr><td>Front axle support</td><td colspan="2">2</td></tr>
<tr><td>Steering joint shaft</td><td colspan="2">1</td></tr>
<tr><td>Battery terminal</td><td colspan="2">2</td><td>A small amount</td></tr>
</table>

NOTE :

The product name of KUBOTA genuine UDT fluid may be different from that in the Operator's Manual depending on countries or territories. Consult your local KUBOTA Dealer for further details.

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:
- 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 or better" lubricating oil with a high Total Base Number (TBN of 10 minimum).

- Refer to the following table for the suitable API classification engine oil according to the engine type (with internal EGR, external EGR or non-EGR) and the fuel (low-sulfur or high-sulfur fuel).

Fuel used	Engine oil classification (API classification)	
	Oil class of engines except external EGR	Oil class of engines with external EGR
High Sulfur Fuel [≧ 0.05% (500 ppm)]	**CF** (If the "CF-4, CG-4, CH-4 or CI-4" lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals. (approximately half))	---
Low Sulfur Fuel [<0.05% (500 ppm)] or Ultra Low Sulfur Fuel [<0.0015% (15 ppm)]	**CF, CF-4, CG-4, CH-4** or **CI-4**	**CF** or **CI-4** (Class CF-4, CG-4 and CH-4 engine oils cannot be used on EGR type engines)

EGR: Exhaust Gas Re-circulation

- The CJ-4 engine oil is intended for DPF (Diesel Particulate Filter) type engines, and cannot be used on this tractor.

◆ **Fuel:**

- Cetane number of 45 minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20℃ (-4℉) or elevations above 1500 m (5000ft).
- If diesel fuel with sulfur content greater than 0.5% (5000 ppm) sulfur content is used, reduce the service interval for engine oil and filter by 50%.
- NEVER use diesel fuel with sulfur content greater than 0.05% (500 ppm) for EXTERNAL EGR type engine.
- DO NOT use diesel fuel with sulfur content greater than 1.0% (10000 ppm).
- Diesel fuels specified to EN 590 or ASTM D975 are recommended.
- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service. (SAE J313 JUN87)

◆ **Transmission Oil:**

*KUBOTA Super UDT-2: For an enhanced ownership experience, we highly recommend Super UDT-2 to be used instead of standard hydraulic/transmission fluid.
Super UDT-2 is a proprietary KUBOTA formulation that deliveries superior performance and protection in all operating conditions.
Regular UDT is also permitted for use in this machine.

- Indicated capacities of water and oil are manufacturer's estimate.

PERIODIC SERVICE

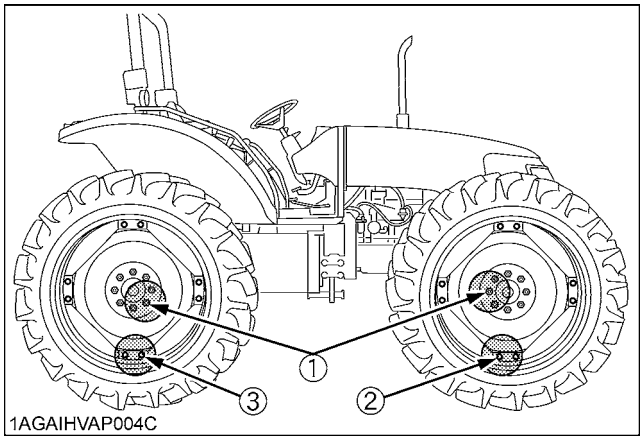
CAUTION
To avoid personal injury:
- **Use a stable stand or ladder for opening or closing the hood or inspecting and servicing items out of reach from the ground.**

EVERY 50 HOURS

■Checking Wheel Bolt Torque

CAUTION
To avoid personal injury:
- **Never operate tractor with a loose rim, wheel, or axle.**
- **Any time bolts and nuts are loosened, retighten to specified torque.**
- **Check all bolts and nuts frequently and keep them tight.**

Check wheel bolts and nuts regularly especially when new. If they are loose, tighten them as follows.



N-m (kgf-m) [ft-lbs]

	Standard tire	Option tire	
	13.6-38 (Front and rear: Steel disk)	9.5R48 12.4R46	13.6-38 (Front: Steel disk Rear: Cast iron disk)
(1)	260 to 304 (26.5 to 31) [192 to 224]		
(2)	280 to 340 (28.6 to 34.7) [207 to 251]		200 to 278 (20.2 to 28.4) [146 to 205]
(3)			305 to 373 (31.1 to 38.0) [225 to 275]

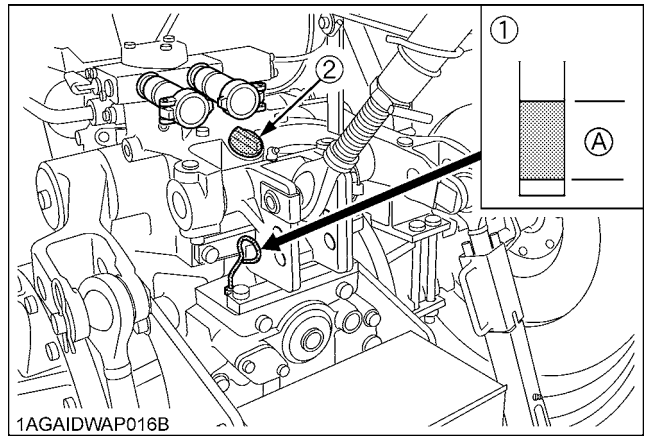
EVERY 600 HOURS

■Changing Transmission Fluid

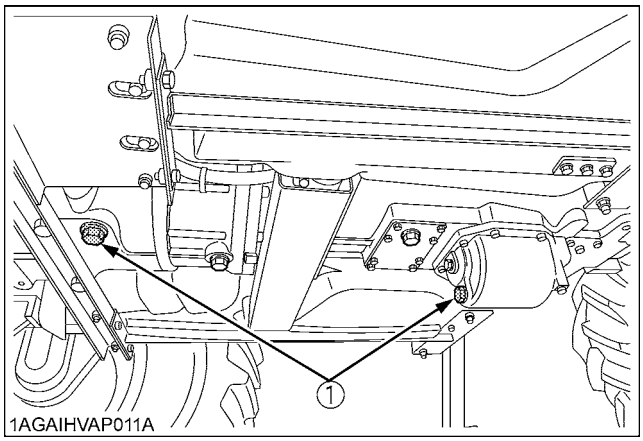
CAUTION
To avoid personal injury:
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

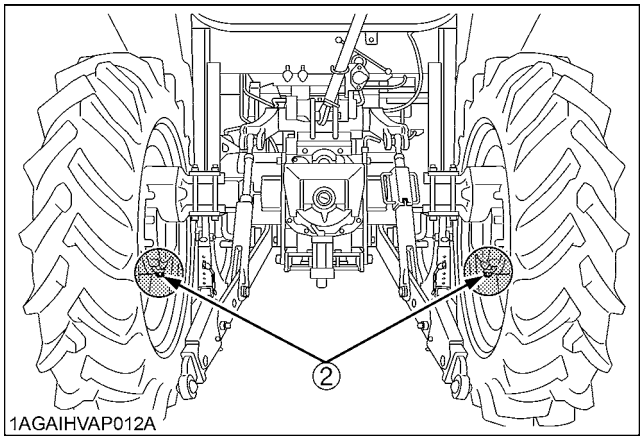
1. To drain the used oil, remove the drain plug at the bottom of the transmission case and final gear case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Fill with the new KUBOTA SUPER UDT fluid up to the upper notch on the dipstick.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
4. After running the engine for a few minutes, stop it and check the oil level again; add oil to prescribed level.

Oil capacity	Standard	63 L (66.6 U.S.qts.)
	With 80 in. wide axle	64 L (67.7 U.S.qts.)



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





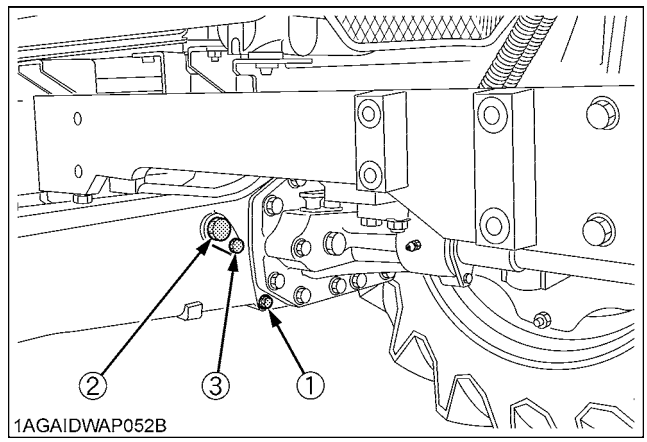
(1) Drain plug
(2) Drain plugs (both sides)

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

■Changing Front Differential Case Oil

1. To drain the used oil, remove the drain and filling plug at the front differential case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Remove the oil level check plug.
4. Fill with the new oil up to the lower rim of check plug port.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
5. After filling reinstall the filling plug and check plug.

Oil capacity	Standard	7.0 L (7.4 U.S.qts.)
	With 80 in. wide axle	8.0 L (8.5 U.S.qts.)



(1) Drain plug
(2) Filling plug
(3) Check plug

OPTIONS

Consult your local KUBOTA Dealer for further details.

- Rear Work Light.
  High visibility for night work.
- Engine Block Heater
  For extremely cold weather starting
- Double Acting Remote Hydraulic Control Valve with Detents and Self-Cancelling
- Flow Control Valve Kit
- Double Acting Remote Hydraulic Control Valve with Detents and Self-Cancelling for Flow Control Valve
- Double Acting Remote Hydraulic Control Valve with Float Position
- Clevis for Drawbar
- Front end weights
  For front ballast
- Rear Wheel Weights
  For rear ballast
- 80A Alternator Kit
- Front and Rear 80" Wide Axle Kit
- Dual Lift Assist Cylinder Kit
- 540 / 1000 rpm PTO Speed Kit
- Fuel Tank Guard Kit
- Rear Cast Iron Disk
- Deluxe canopy

APPENDICES

INDEX