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KUBOTA Corporation

English (U.K.)
Code No. 3N605-9971-2

OPERATOR'S MANUAL

KUBOTA TRACTOR

MODEL M108S



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READ AND SAVE THIS MANUAL

Kubota

ABBREVIATION LIST

Abbreviations	Definitions
2WD	Two Wheel Drive
4WD	Four Wheel Drive
API	American Petroleum Institute
ASAE	American Society of Agricultural 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

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. Nineteen 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 which are intended to help individuals and nations fulfill the potential inherent in their environment. 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.

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		Remote Cylinder-Retract
	Engine Warning		Remote Cylinder-Extend
	Diesel Fuel		Hazard Warning Lights
	Fuel-Level		Headlight-Low Beam
	Engine-Rotational Speed		Headlight-High Beam
	Hourmeter/Elapsed Operating Hours		Four-Wheel Drive-On
	Engine Coolant-Temperature		Four-Wheel Drive-Off
	Diesel Preheat/Glow Plugs(Low Temperature Start Aid)		Front-Wheel Drive-On
	Parking Brake/Brake Oil		Fast
	Engine Intake/Combustion Air-Filter		Slow
	Engine Oil-Pressure		Creep
	Turn Signal		Windshield Wiper
	Electrical Power-accessories		Windshield Wiper Intermittent
	Engine-Run		Windshield Washer
	Engine-Start		Lock
	Engine-Stop		Rear Window Defroster
	Power Take-Off Clutch Control-Off (Disengaged) Position		Steering Wheel-Tilt Control
	Power Take-Off Clutch Control-On (Engaged) Position		Side Window Defroster
	Differential Lock		Empty
	Position Control-Raised Position		Full
	Position Control-Lowered Position		PTO 540 rpm
	Draft Control-Shallow Position		PTO 1000 rpm
	Draft Control-Deep Position		Battery Charging Condition
	3-Point Lowering Speed Control		Beacon Light

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.

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SAFE OPERATION

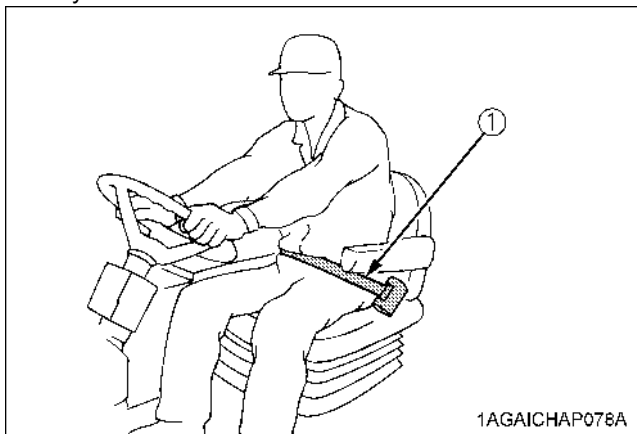
Careful operation is your best insurance against an accident.

Read and understand this manual carefully before operating the tractor.

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

1. BEFORE OPERATING THE TRACTOR

1. Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.
2. Pay special attention to the danger, warning and caution labels on the tractor.
3. 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.

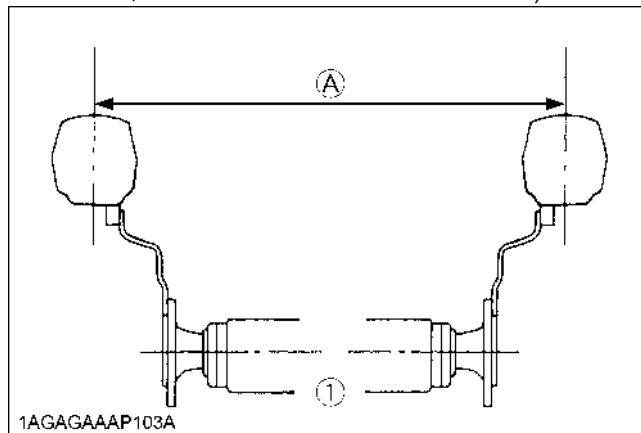


(1) Seat belt

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, 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.

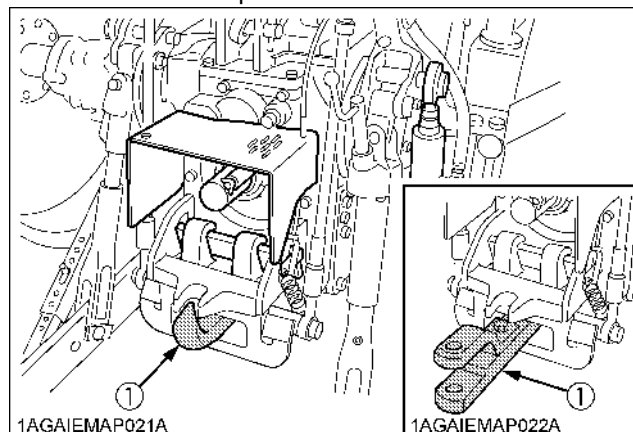
2. OPERATING THE TRACTOR

◆ Starting

- Always sit in the operator's seat when starting engine or operating levers or controls.
- 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.
- 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.
- Do not operate or idle engine in a non-ventilated area. Carbon monoxide gas is colorless, odorless, and deadly.

◆ Working

- 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

- Keep all shields and guards in place. Replace any that are missing or damaged.
- Avoid sudden starts. To avoid upsets, slow down when turning, on uneven ground, and before stopping.
- The tractor cannot turn with the rear wheel or 4-wheel differential locked and attempting to do so could be dangerous.
- 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.
- Watch where you are going at all times. Watch for and avoid obstacles. Be alert at row ends, near trees, and other obstructions.
- When working in groups, always let the others know what you are going to do before you do it.
- Never try to get on or off a moving tractor.

◆ 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.

- Never assume that children will remain where you last saw them.
- Keep children out of the work area and under the watchful eye of another responsible adult.
- Be alert and shut your machine down if children enter the work area.
- 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.
- Never allow children to operate the machine even under adult supervision.
- 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.

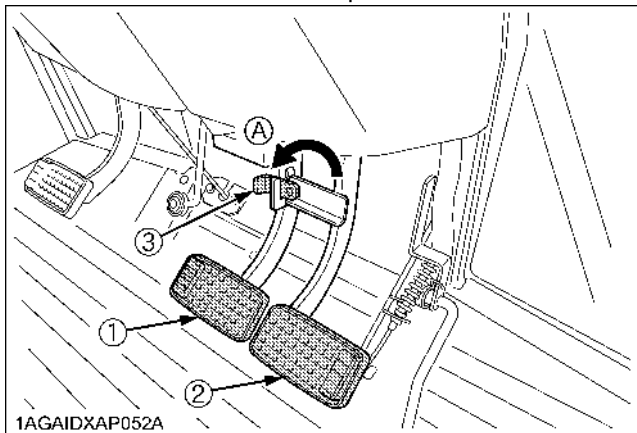
◆ Operating on slopes

Slopes are 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 or direction.
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. To improve stability on slope, set widest wheel tread as shown in "TIRE, WHEEL AND BALLAST" section. Follow recommendations for proper ballasting.

◆ Driving the tractor on the road

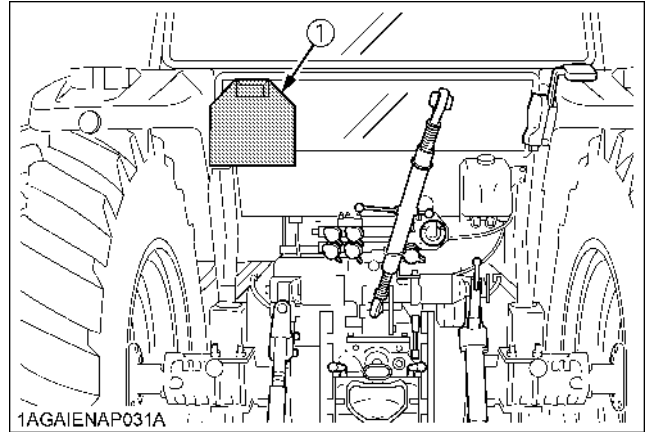
1. Lock the two brake pedals together to help assure straight-line stops. Uneven braking at road speeds could cause the tractor to tip over.



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

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. Observe all local traffic and safety regulations. Use the number plate as required.



(1) Number plate

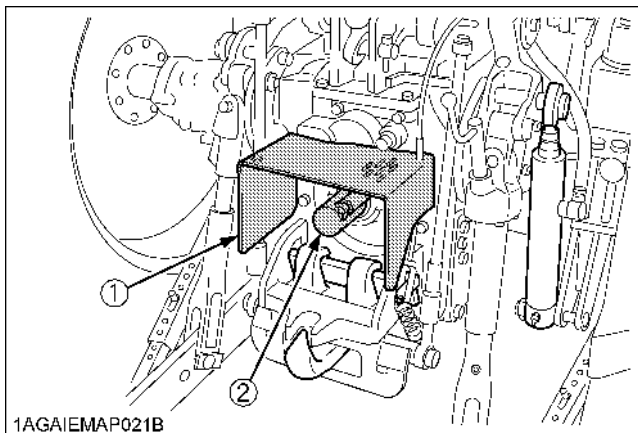
5. Turn the headlights on. Dim them when meeting another vehicle.
6. Drive at speeds that allow you to maintain control at all times.
7. Do not apply the differential lock while traveling at road speeds. The tractor may run out of control.
8. Avoid sudden motions of the steering wheel as they can lead to a dangerous loss of stability. The risk is especially great when the tractor is traveling at road speeds.
9. Do not operate an implement while the tractor is on the road. Lock the 3-point hitch in the raised position.

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 possible park on flat ground, if not, park across a slope, always with attachment on the ground.

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.

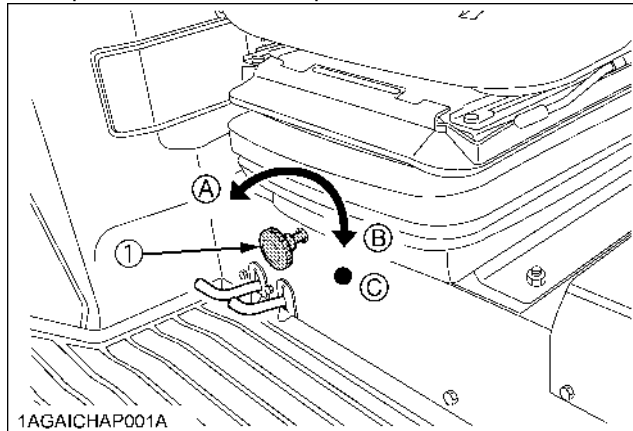


- (1) PTO Shaft cover
(2) PTO Shaft cap

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.



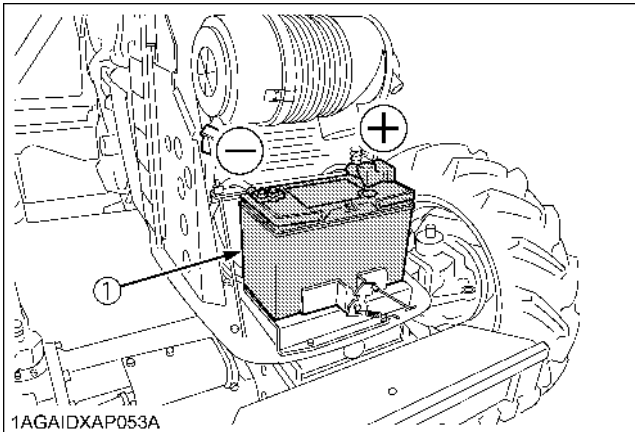
- (1) 3-point hitch lowering speed knob
(A) "FAST"
(B) "SLOW"
(C) "LOCK"

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.

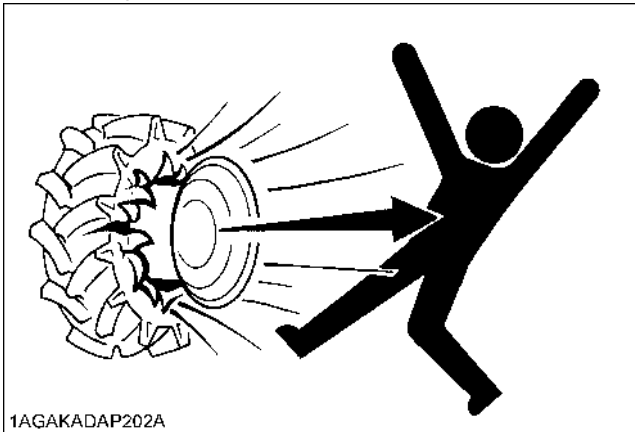
1. Allow the tractor time to cool off before working on or near the engine, muffler, radiator, etc.
2. Always stop the engine before refueling. Avoid spills and overfilling.
3. Do not smoke when working around battery or when refueling. Keep all sparks and flames away from battery and fuel tank. The battery presents an explosive hazard, because it gives off hydrogen and oxygen especially when recharging.
4. Before "jump starting" a dead battery, read and follow all of the instructions. (See "JUMP STARTING" in "OPERATING THE ENGINE" section.)
5. Keep first aid kit and fire extinguisher handy at all times.
6. 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.)

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.



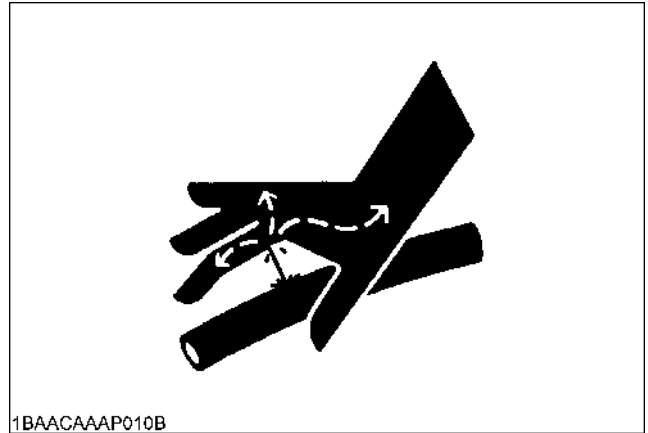
(1) Battery

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.

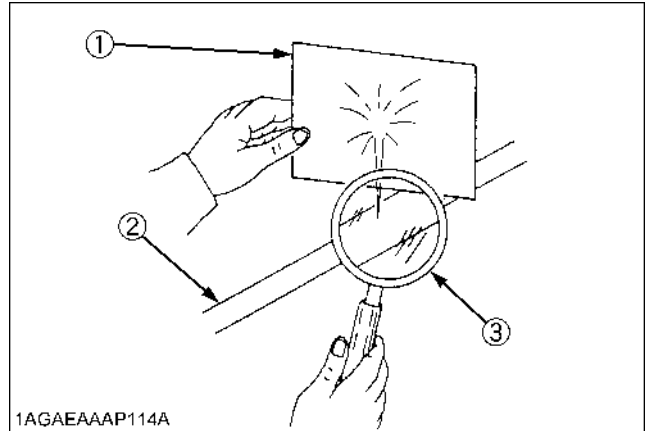


12. Securely support the tractor when either changing wheels or adjusting the wheel tread width.
13. Make sure that wheel bolts have been tightened to the specified torque.
14. Disconnect the battery's ground cable and stop the engine to avoid the possibility of the machine runaway due to 4WD braking system during testing, service or repair with only rear wheels off the ground.

15. 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.
16. 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.



17. 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.



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

18. Waste products such as used oil, fuel, hydraulic fluid, and batteries, can harm the environment, people, pets and wildlife. Please dispose properly. See your local Recycling Center or KUBOTA Dealer to learn how to recycle or get rid of waste products.

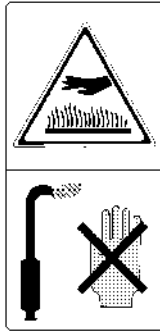
7. DANGER, WARNING AND CAUTION LABELS

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



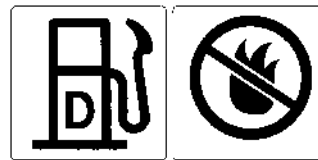
1AGAIAZAP110A

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



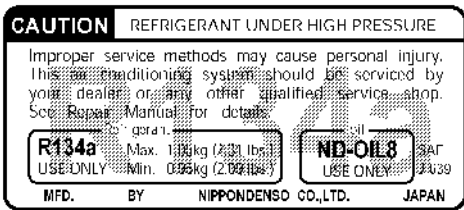
1AGAIAZAP071A

(3) Part No. TA040-4956-2
Diesel fuel only No fire



1AGAIAZAP118A

(4) Part No. TA040-7295-1

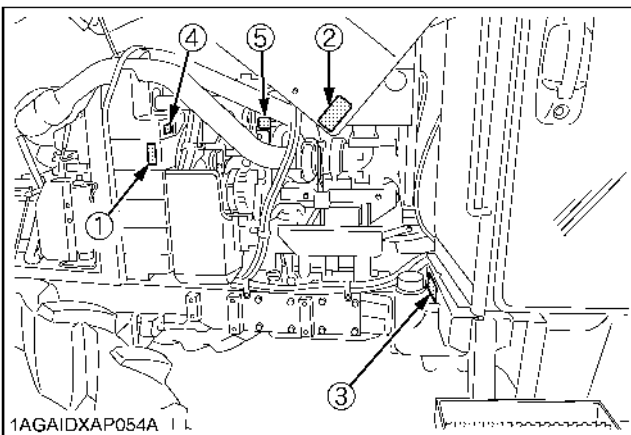


1AGAICHAP077A

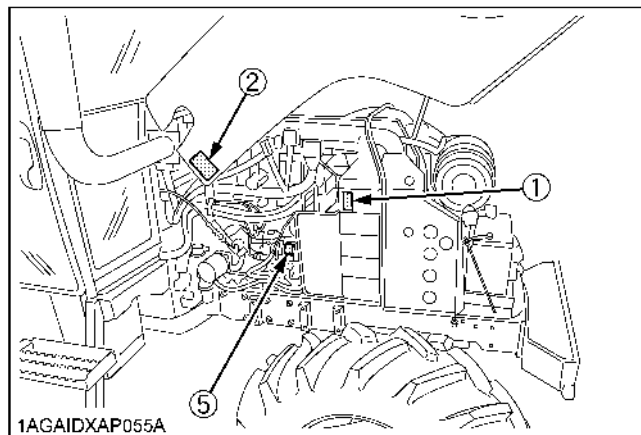
(5) Part No. 3N600-4958-1
Do not touch hot surface like supply pump, etc.



1AGAIDXAP073A




1AGAIDXAP054A I L



1AGAIDXAP055A

1AGAIDXAP063B

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

⚠ WARNING	BEFORE DISMOUNTING TRACTOR: 1. ALWAYS SET PARKING BRAKE. Leaving transmission in gear with the engine stopped will not prevent tractor from rolling. 2. PARK ON LEVEL GROUND WHENEVER POSSIBLE. If parking on a slope, position tractor across the slope. 3. LOWER ALL IMPLEMENTS TO THE GROUND. 4. STOP THE ENGINE.
	

1AGAIBDAP040A

(2) Part No. TA040-4965-2

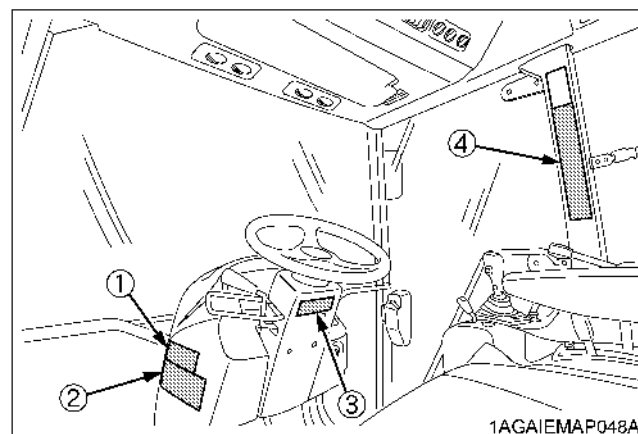
	⚠ DANGER
	TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY. 1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed. 2. Start engine only from operator's seat with transmission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

1AGAIAZAP009A

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

⚠ WARNING
To avoid free wheeling when shifting the shuttle lever while on a slope: Stop completely by using the brake and by depressing the clutch pedal. Start off after selecting shuttle direction by releasing the clutch pedal.

1AGAIBDAP039A



1AGAIEMAP048A

1AGAIEMAP051A

(4) Part No. 3F240-9836-2

⚠ CAUTION
TO AVOID PERSONAL INJURY: <ol style="list-style-type: none"> 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 tractor and 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 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.

1AGAICHAP113A

(1) Part No. 3N300-9892-1

<p>! DANGER/POISON</p>		
<p>SHIELD EYES. EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.</p>	<p>NO</p> <ul style="list-style-type: none"> • SPARKS • FLAMES • SMOKING 	<p>SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.</p>
<p>KEEP OUT OF REACH OF CHILDREN. DO NOT TIP. DO NOT OPEN BATTERY.</p>		
<p>FLUSH EYES IMMEDIATELY WITH WATER.</p>		<p>GET MEDICAL HELP FAST.</p>
<p>PROPOSITION 65 WARNING BATTERY POSTS, TERMINALS, AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.</p>		
<p>HYDROMETER</p>		<p>105E41R 12V</p>
<p>RESERVE CAPACITY (MIN) 160</p>		<p>COLD CRANKING AMPS(-18°C) 900</p>

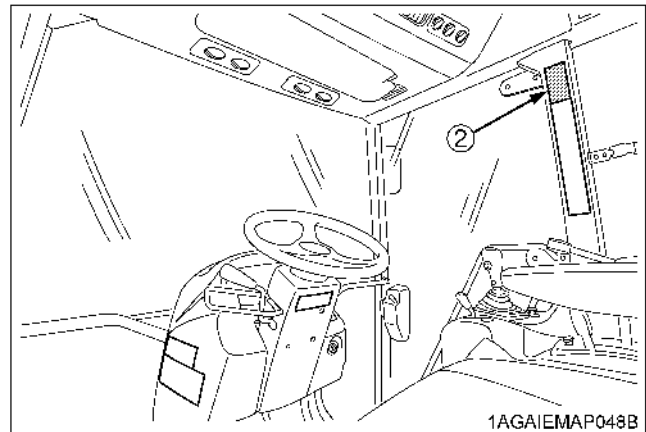
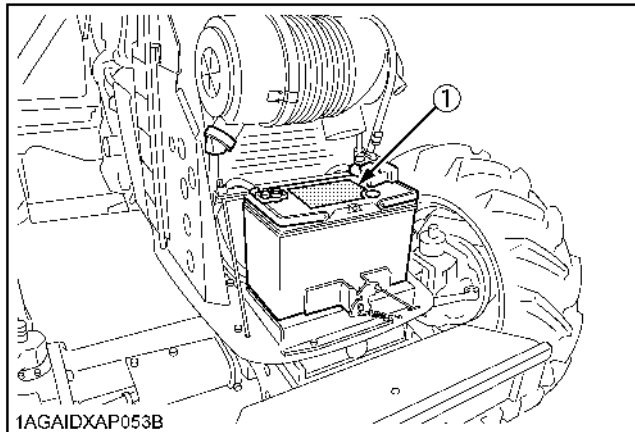
1AGAICHAP100A

(2) Part No. TA040-4902-1

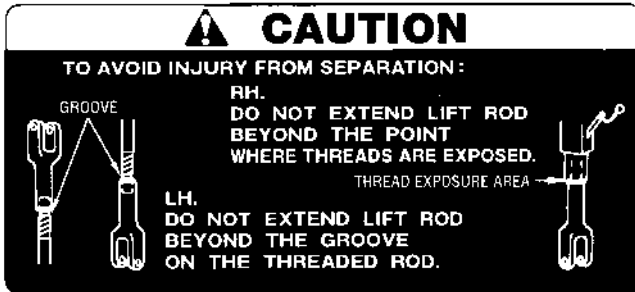
! WARNING

TO AVOID INJURY OR DEATH FROM ROLL-OVER:
 Always use seat belt when driving.

1AGAMAOAP078A



(1) Part No. 3A111-9856-3



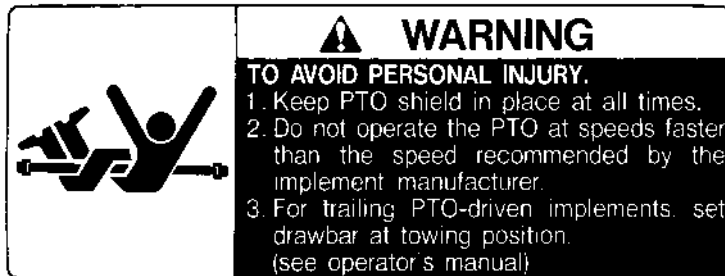
1AGAIAZAP119A

(2) Part No. TA040-4935-1

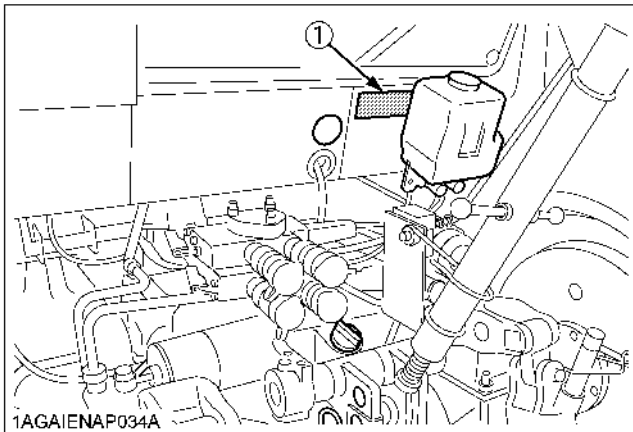


1AGAIAZAP056A

(3) Part No. TA040-4959-3

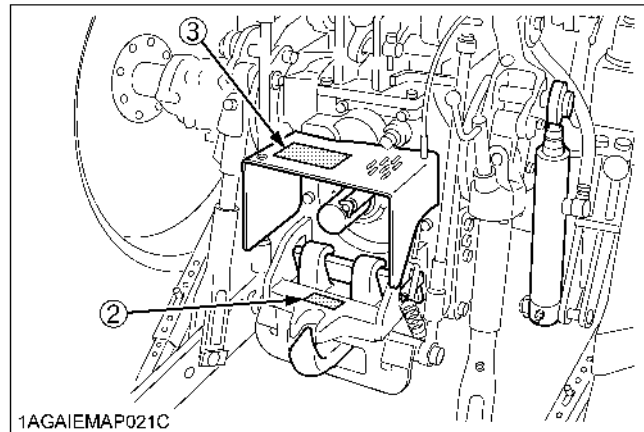


1AGAIAZAP116A



1AGAIENAP034A

1AGAIEMAP040B

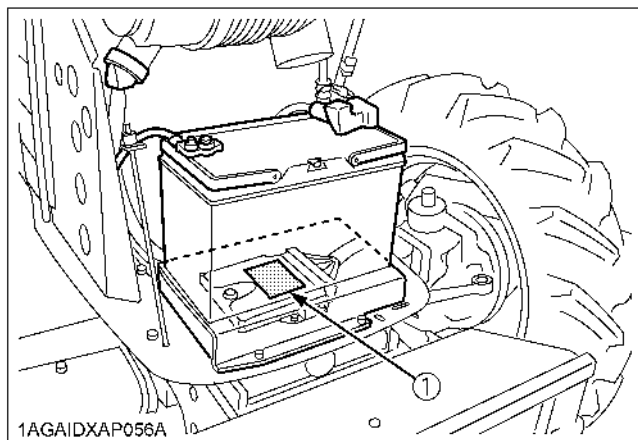


1AGAIEMAP021C

(1) Part No. 1J574-8721-1



1AGAIEDAP019A



1AGADXAP056A

1AGADXAP067E

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

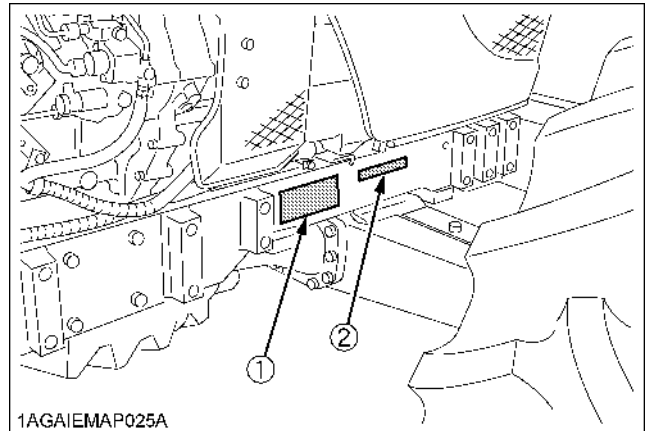
Your dealer is interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.

However, when in need of parts or major service, be sure to see your KUBOTA Dealer.

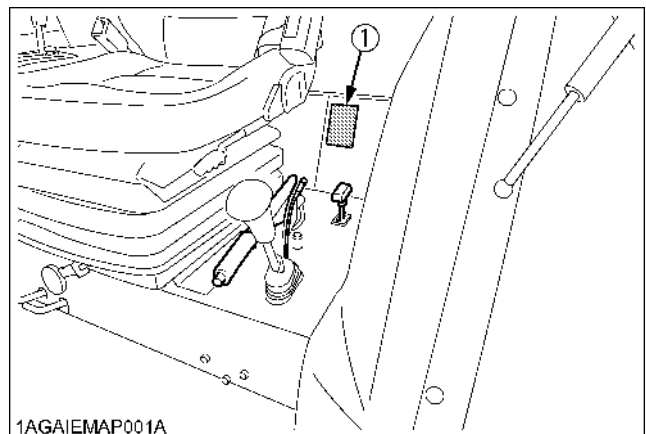
For service, contact the KUBOTA Dealership from which you purchased your tractor or your local KUBOTA Dealer. When in need of parts, be prepared to give your dealer the tractor, CAB and engine serial numbers.

Locate the serial numbers now and record them in the space provided.

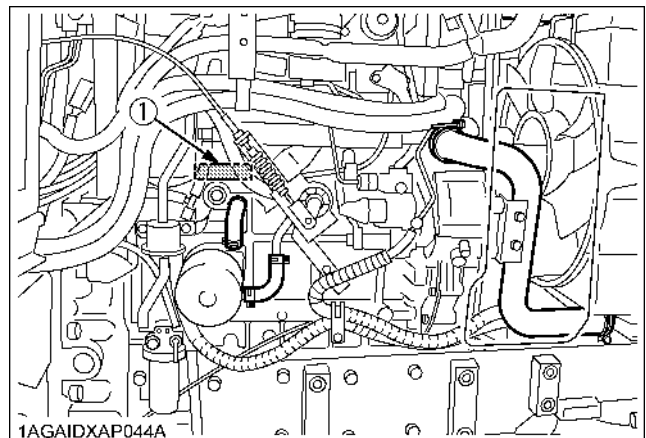
	Type	Serial No.
Tractor		
CAB		
Engine		
Date of Purchase		
Name of Dealer		
(To be filled in by purchaser)		



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



(1) CAB identification plate (CAB Serial No.)



(1) Engine serial number

SPECIFICATIONS

SPECIFICATION TABLE

Model			M108S
			4WD
Engine	Model		V3800DICR-TIE3
	Type		Direct Injection, liquid cooled 4 cylinder diesel
	Number of cylinders		4
	Total displacement	cm ³	3769
	Bore and stroke	mm	100 x 120
	Rated speed	rpm	2600
	Net power *1	kW (PS)	80.6 (109.6)
	PTO power *1 (factory observed)	kW (PS)	71.6 (97.3)
	Maximum torque	N-m (kgf-m) / rpm	366.4 (37.4) / 1400 to 1600
	Battery capacity		12V, RC: 160 min, CCA 900A
	Fuel tank capacity	L	175
	Engine oil capacity	L	10.7
	Coolant capacity	L	9.6
Dimensions	Overall length		mm 4145
	Overall width (minimum tread)		mm 2010
	Overall height		mm 2680
	Wheel base		mm 2435
	Tread	Front	mm 1565 to 1675
		Rear	mm 1755 to 1865
Minimum ground clearance		mm 435 (Drawbar bracket)	
Weight		kg 3890	
Traveling system	Standard tire size	Front tires	340 / 85R24 (13.6R24)
		Rear tires *2	460 / 85R34 (18.4R34)
	Clutch		Hydraulic wet disks
	Steering		Hydraulic Power Steering
	Braking system		Hydraulic wet disks
Differential		Bevel gears with diff. lock (Front & Rear)	








Model			M108S		
			4WD		
Hydraulic unit	Hydraulic control system		Position, draft (top link sensing) & mix control		
	Pump capacity	L / min	65		
	Three point hitch		Category 2		
	Max. lifting force	At lifting points *3	kg	4000 with 2 assist cylinders	
		24 in. behind lifting point *3	kg	3400 with 2 assist cylinders	
	Remote hydraulic control		2 standard (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	

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

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

TRAVELING SPEEDS

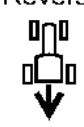






(At rated engine rpm)

Model				M108S	
Tire size (Rear)				460 / 85R34 (18.4R34)	
Shuttle shift lever	Range gear shift lever	Main gear shift lever		Dual Speed: Hi	Dual Speed: Lo
				km/h	km/h
Forward 	CREEP (option)		1	0.36	0.30
			2	0.45	0.38
			3	0.57	0.47
			4	0.72	0.60
			1	0.92	0.76
			2	1.18	0.97
			3	1.45	1.20
			4	1.84	1.52
	L		1	2.02	1.67
			2	2.57	2.13
			3	3.17	2.62
			4	4.02	3.33
			1	5.15	4.26
			2	6.56	5.42
			3	8.08	6.68
			4	10.27	8.49
	H		1	7.05	5.83
			2	8.98	7.43
			3	11.06	9.15
			4	14.06	11.63
		1	17.99	14.87	
		2	22.92	18.94	
		3	28.22	23.33	
		4	38.64*	29.66	

The company reserves the right to change the specifications without notice

* At maximum engine rpm

(At rated engine rpm)

Model				M108S		
Tire size (Rear)				460 / 85R34 (18.4R34)		
Shuttle shift lever	Range gear shift lever	Main gear shift lever	Dual Speed: Hi		Dual Speed: Lo	
			km/h		km/h	
Reverse 	CREEP (option)		1	0.36	0.30	
			2	0.46	0.38	
			3	0.57	0.47	
			4	0.73	0.60	
			1	0.93	0.77	
			2	1.19	0.98	
			3	1.46	1.21	
			4	1.86	1.53	
	L		1	2.04	1.68	
			2	2.59	2.14	
			3	3.19	2.64	
			4	4.06	3.36	
			1	5.19	4.29	
			2	6.61	5.47	
			3	8.15	6.74	
			4	10.36	8.56	
	H		1	7.11	5.88	
			2	9.06	7.49	
			3	11.16	9.22	
			4	14.18	11.73	
		1	18.15	15.00		
		2	23.11	19.11		
		3	28.47	23.53		
		4	38.97*	29.92		

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.	
without spacer	with spacer			2110 mm
1675 mm	2035 mm			

Actual figures			
Implement weight: W 1 and / or size	Max. drawbar Load: W 2	Trailer loading weight: W 3 Max. capacity	
As in the following list (Shown on the next page)	800 kg	3000 kg (without trailer brake)	13000 kg (with trailer brake)

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

1AGAI AZAP121B

NOTE :
 ● Implement size may vary depending on soil operating conditions.

No.	Implement		Remarks		M108S	
1	Slurry Tank		Max. Tank Capacity	L	5000	
			Max. Load Capacity	kg	6000	
2	Trailer		Max. Load Capacity	kg	7000	
			Max. Drawbar Load	kg	1500	
3	Mower	Rotary-Cutter (3P type)	Max. Cutting Width	mm	3200	
			Max. Weight	kg	800	
		Rotary-Cutter (Drawbar type)	Max. Cutting Width	mm	6096	
			Max. Weight	kg	1360	
		Disc Mower (Drawbar type)	Max. Cutting Width	mm	3962	
			Max. Weight	kg	1360	
Sickle Bar	Max. Cutting Width	mm	3050			
4	Sprayer		Max. Tank-Capacity	Mid	L	1000
				Rear 3P	L	1000
				Drawbar	L	5500
5	Rotary Tiller		Max. Tilling Width	mm	2700	
			Max. Weight	kg	1200	
6	Bottom Plow		Max. Size		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 3P Type	900	
7	Disk harrow	3P Type	Max. Size		24 in. x 28	
			Max. Harrowing Width	mm	3300	
			Max. Weight	kg	900	
		Drawbar Type	Max. Harrowing Width	mm	4300	
8	Disc Plow		Max. Size		28 in. x 4	
			Max. Weight	kg	900	
9	Sub Soiler		Numbers of Cultivating Tines		3	
			Cultivating Depth	mm	550	
10	Cultivator		Max. Width	mm	5490	
			Number of Rows		6	
			Max. Weight	kg	900	
11	Front Blade *1, *2		Max. Cutting Width	mm	2600	
			Max. Oil Pressure	MPa (kgf/cm ²)	19.6 (200)	
12	Rear Blade		Max. Cutting Width	mm	2600	
			Max. Oil Pressure	MPa (kgf/cm ²)	19.6 (200)	
13	Front Loader *1, *2		Max. Lifting Capacity	kg	1300	
			Max. Oil Pressure (extra hydro kit)	MPa (kgf/cm ²)	20.5 (209)	
14	Box Blade		Max. Cutting Width	mm	2430	
			Max. Weight	kg	800	
15	Snow Blade		Max. Width	mm	2600	
			Max. Weight	kg	800	

NOTE :

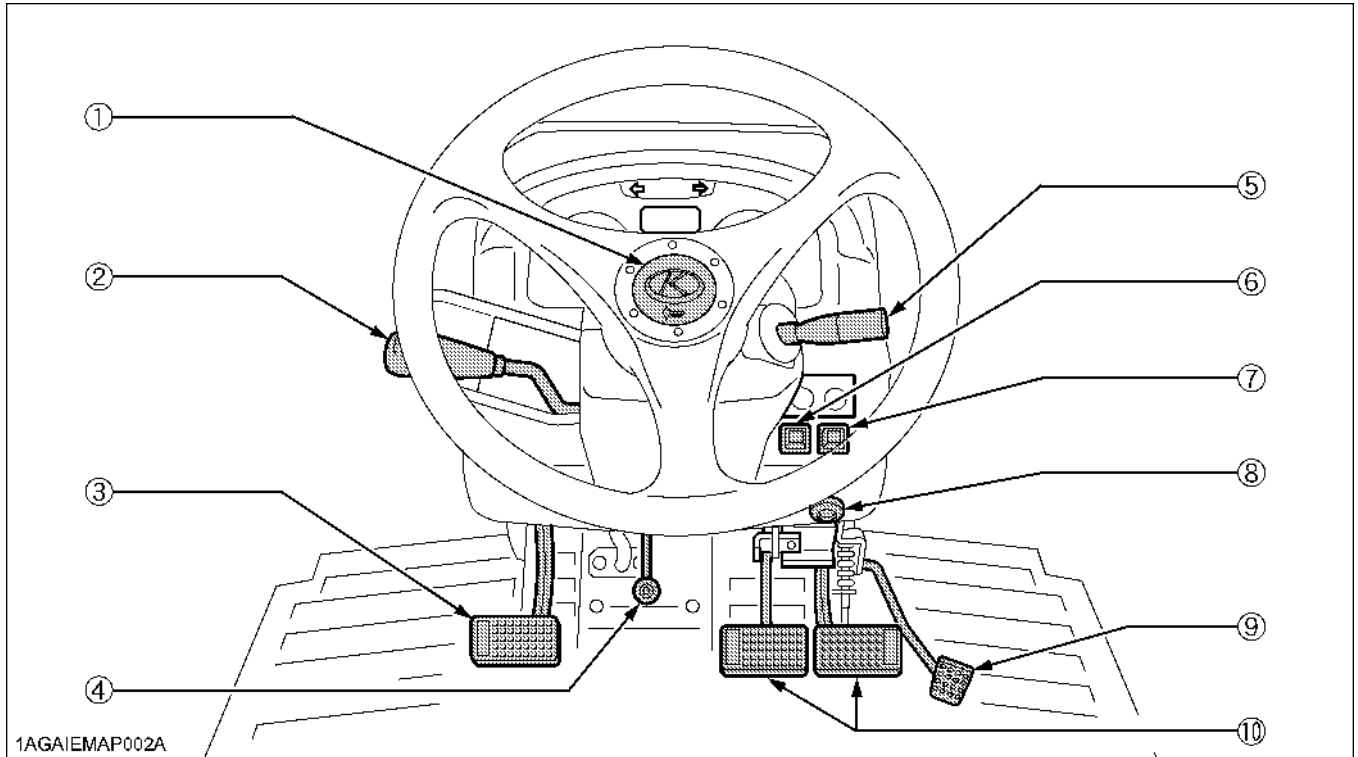
● Implement size may vary depending on soil operating conditions.

*1 Must remove front weight with this implement.

*2 Need subframe

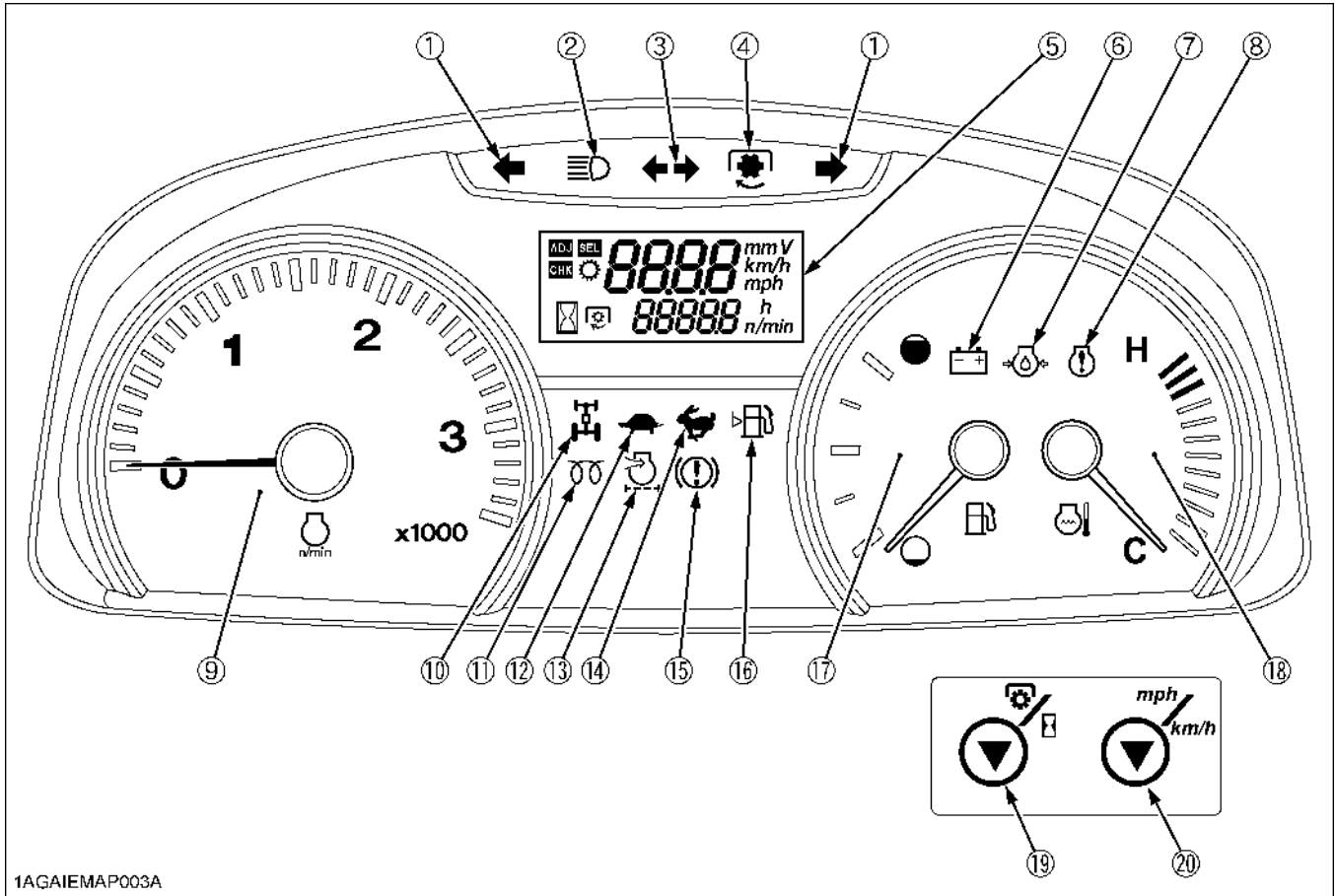
INSTRUMENT PANEL AND CONTROLS

■ Instrument Panel, Switches and Hand Controls



ILLUSTRATED CONTENTS

(1) Horn button.....	21
(2) Hydraulic-shuttle shift lever.....	25
(3) Clutch pedal.....	23
(4) Tilt pedal.....	19
(5) Turn signal / Head light switch.....	20,20
(6) Hazard light switch.....	20
(7) Front wheel drive switch (4WD).....	27
(8) Key switch.....	-
(9) Foot throttle.....	28
(10) Brake pedal.....	21



1AGAIEMAP003A

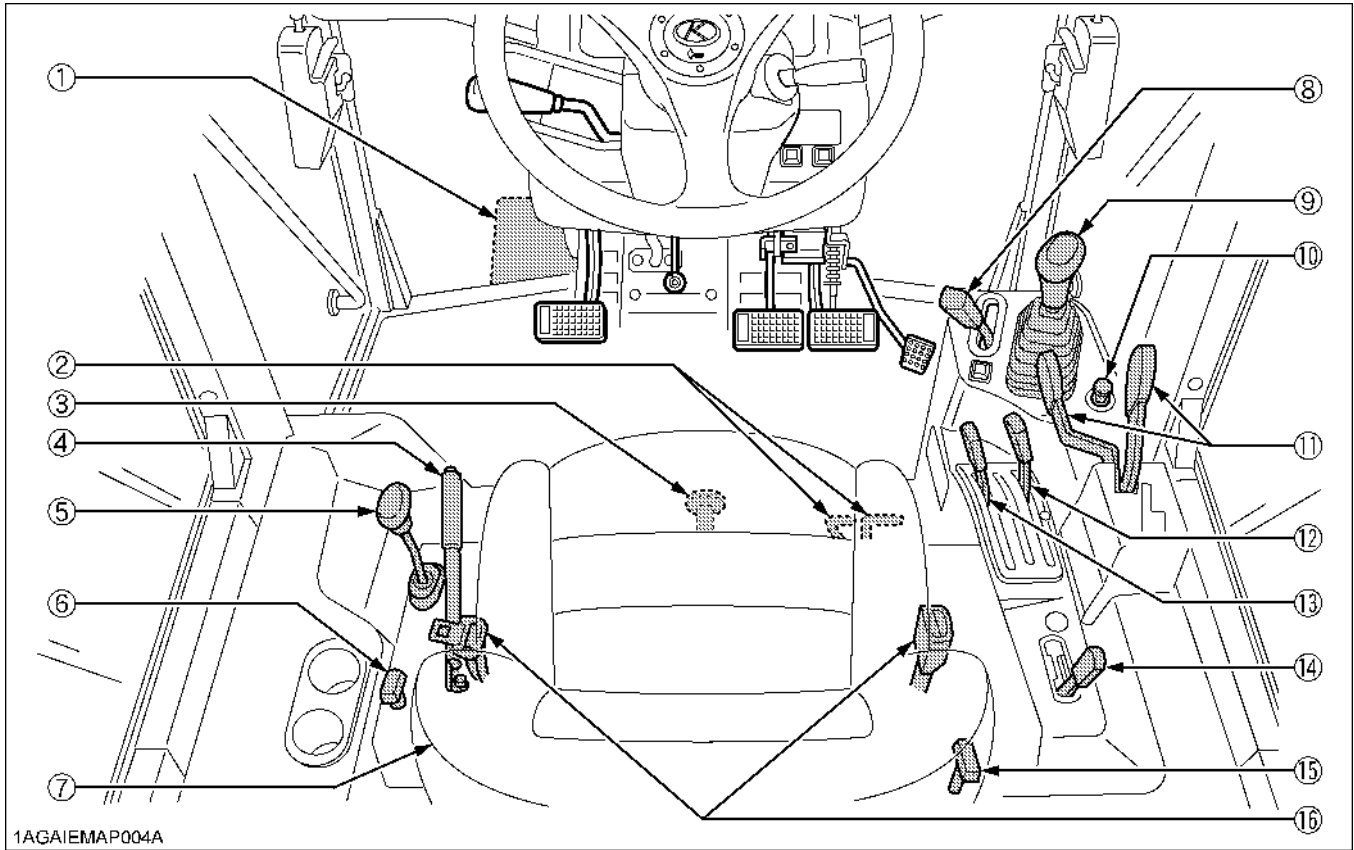
ILLUSTRATED CONTENTS

(1) Hazard / Turn signal indicator	20
(2) High beam indicator	20
(3) Trailer indicator.....	20
(4) PTO clutch indicator.....	37
(5) Liquid crystal display	31
(6) Electrical charge indicator	29
(7) Engine oil pressure indicator	29
(8) Engine warning indicator	29
(9) Tachometer	30
(10) 4WD indicator	27

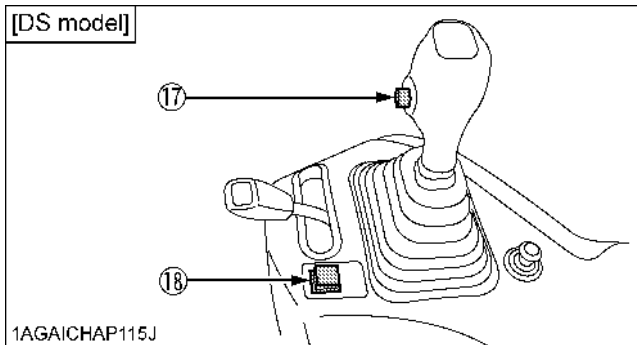
ILLUSTRATED CONTENTS

(11) Heater indicator	16
(12) Pilot lamp (LOW).....	24
(13) Air cleaner indicator.....	29
(14) Pilot lamp (HIGH).....	24
(15) Parking brake / Brake oil indicator	29
(16) Fuel level indicator	29
(17) Fuel gauge.....	30
(18) Coolant temperature gauge.....	30
(19) PTO / Hour meter select switch.....	31
(20) Travel speed select switch.....	31

■ Foot and Hand Controls



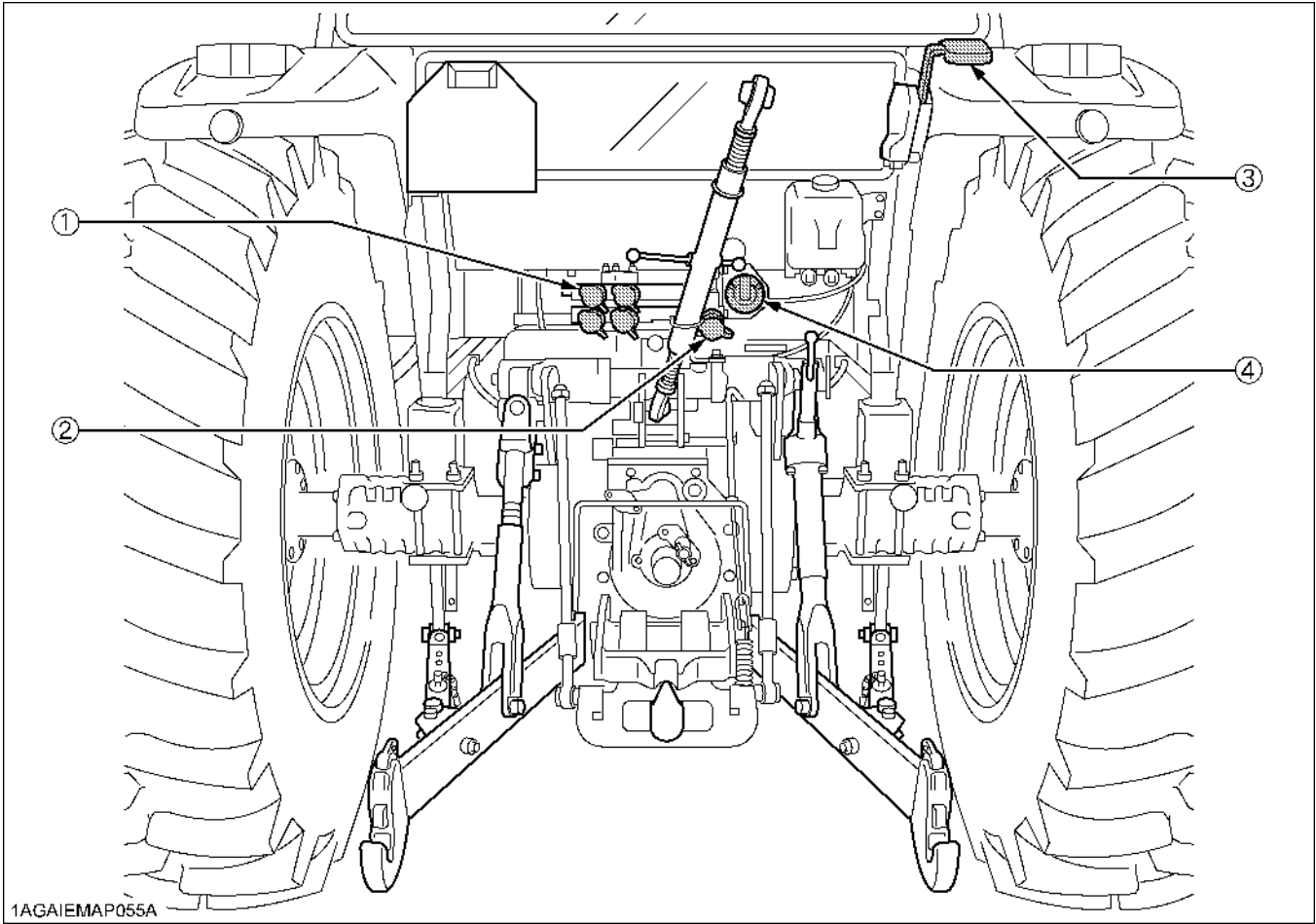
1AGAEMAP004A



1AGAICHAP115J

ILLUSTRATED CONTENTS

(1) Tool box.....	-
(2) Differential lock pedal.....	34
(3) 3-Point hitch lowering speed knob.....	48
(4) Parking brake lever.....	13, 28
(5) Range gear shift lever.....	25
(6) Creep lever (if equipped).....	26
(7) Operator's seat.....	18
(8) Hand throttle lever.....	28
(9) Main gear shift lever.....	24
(10) Cigarette lighter.....	68
(11) Remote control valve lever.....	49
(12) Position control lever.....	47
(13) Draft control lever.....	47
(14) PTO clutch control lever.....	37
(15) Auto hitch release knob.....	45
(16) Seat belt.....	19
(17) Dual speed shift switch.....	25
(18) Dual speed indicator.....	25



ILLUSTRATED CONTENTS

(1) Remote control valve coupler.....	50
(2) Trailer hydraulic brake outlet.....	36
(3) Remote hitch Up / Down lever.....	41
(4) Trailer electrical outlet.....	36

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 washer liquid level
- Check water separator
- Clean grill and radiator screen
- Clean air conditioner condenser screen
- Clean oil cooler
- Clean fuel cooler
- 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
- 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 :

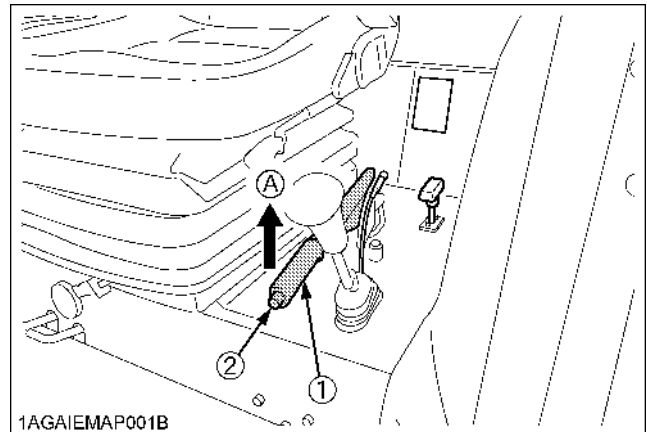
- Do not use starting fluid or ether.
- To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.

STARTING THE ENGINE

1. Make sure the parking brake is set.

Pull the parking brake lever up to park.

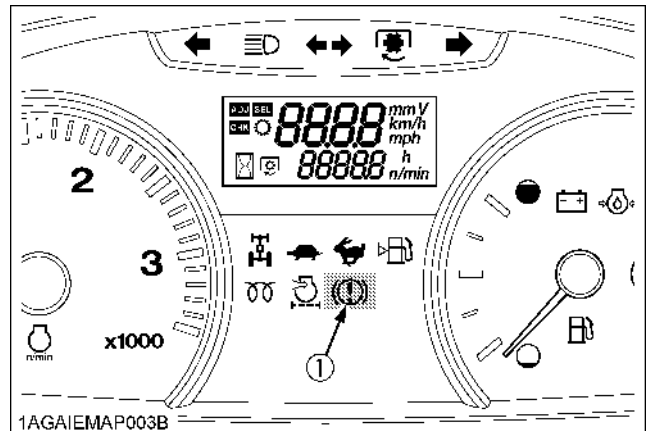
The parking brake indicator light on the Easy Checker(TM) will come on while the parking brake is set.



(1) Parking brake lever

(A) "PULL"

(2) Release button

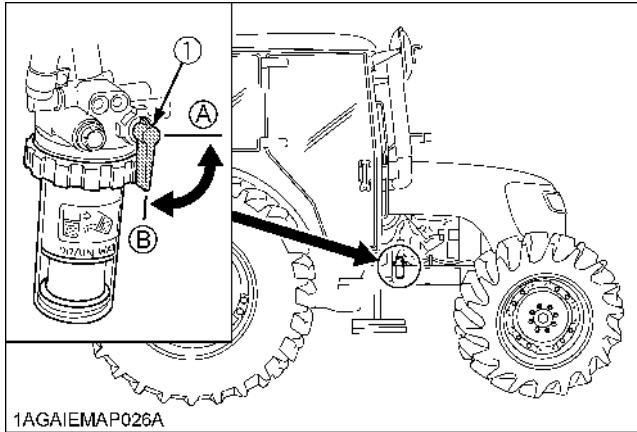


(1) Parking brake indicator light

IMPORTANT :

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

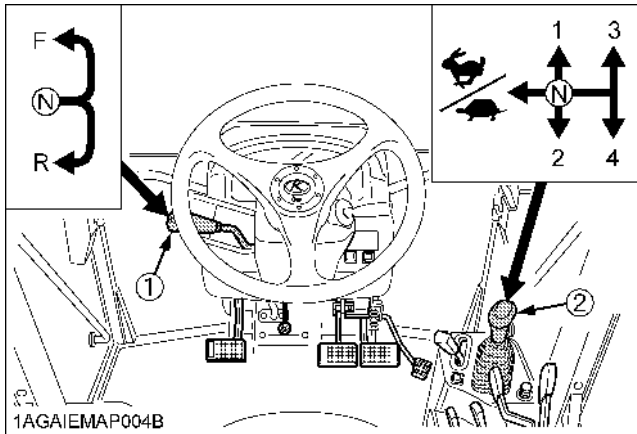
2. Make sure the fuel cock is in the "OPEN" position.



1AGAIEMAP026A

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

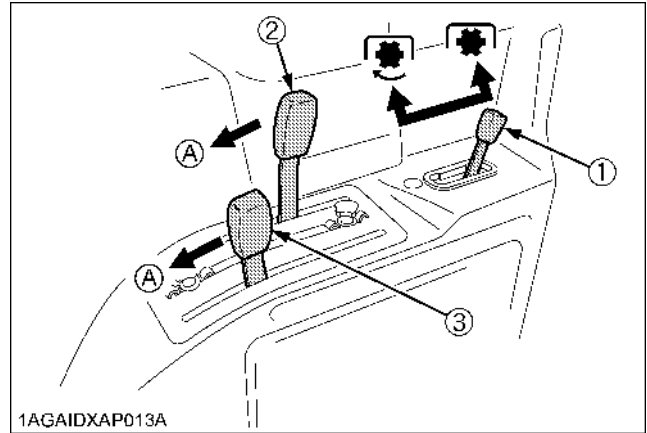
3. Place the shift levers in "NEUTRAL" position.



1AGAIEMAP004B

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

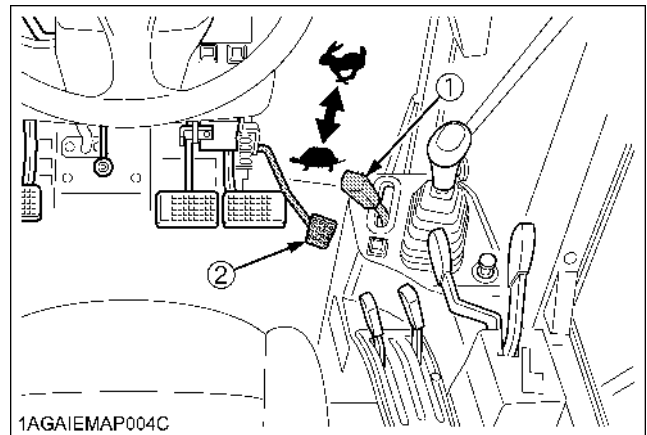
4. Place the PTO clutch control lever in "OFF" position and hydraulic control levers in "LOWEST" position.



1AGAIIDXAP013A

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

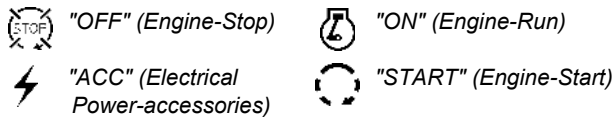
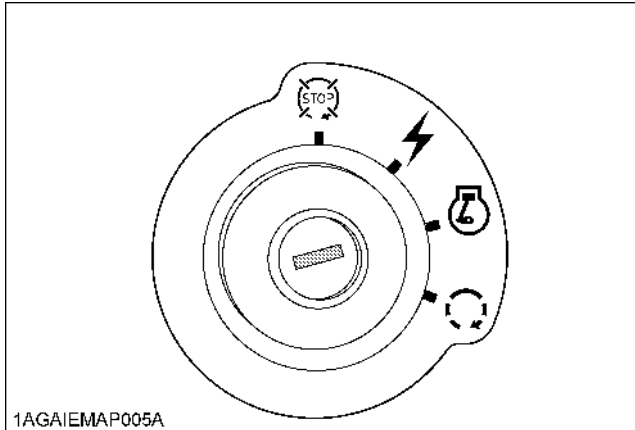
5. Set the throttle lever to about 1/2 way.



1AGAIEMAP004C

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

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

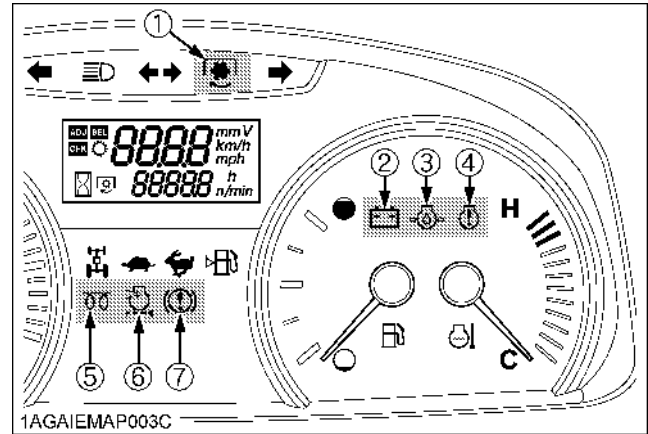


NOTE:

- ACC...
- The accessories can be used while the engine is stopped.
 - Do not leave the key at "ACC" position. The battery will be quickly discharged. Turn it back to "OFF" after use.

◆ Check Easy Checker(TM) Lamps:

1. When the key is turned "ON", lamps (2) (3) (4) (6) 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 (7) comes on while parking brake is applied and goes off when it is released.



- (1) PTO clutch indicator (5) Heater indicator
 (2) Electrical charge indicator (6) Air cleaner indicator
 (3) Engine oil pressure indicator (7) Parking brake /
 (4) Engine warning indicator Brake oil indicator

NOTE :

- Some of the Easy Checker(TM) lamps may come on or go off depending on the positions of the lever and switch.

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.

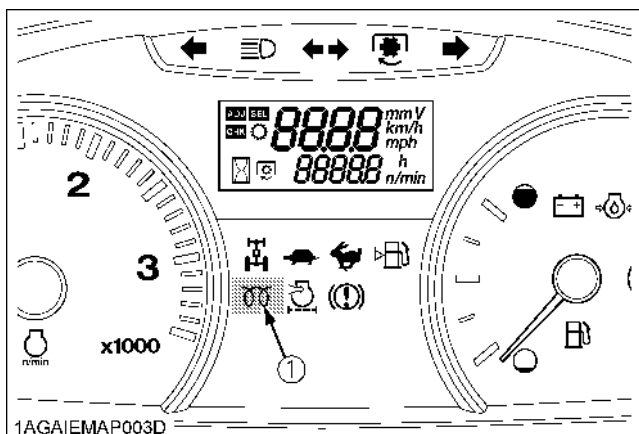
COLD WEATHER STARTING

If the ambient temperature is below 0 °C and the engine is very cold, start it in the following manner:

Take steps 1 through 5 above.

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 °C, 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 °C.

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 °C	Approx. 10 minutes
-15 to -10 °C	10 to 20 minutes
-20 to -15 °C	20 to 30 minutes
Below -20 °C	More than 30 minutes

IMPORTANT :

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

JUMP STARTING



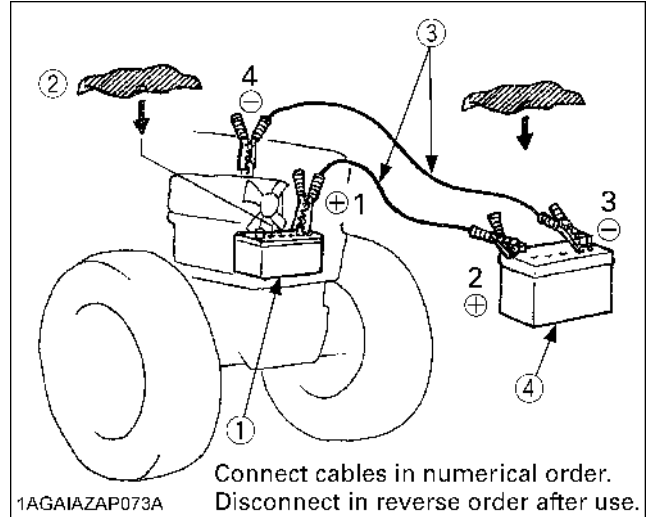
CAUTION

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.)

STARTING

1. Adjusting the Operator's Position.

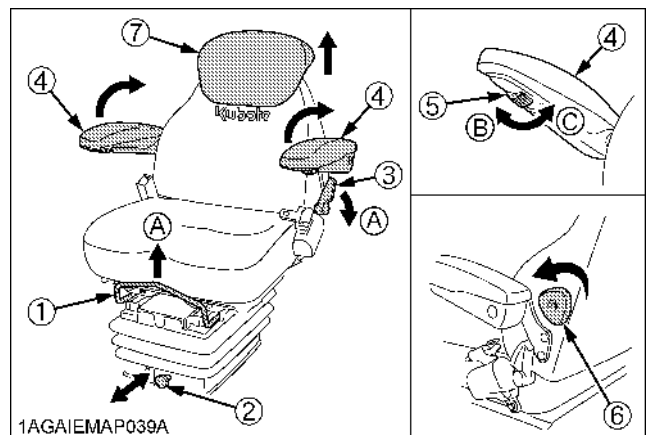
■ Operator's Seat



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 / Height adjust knob

(3) Backrest tilt adjust lever

(4) Arm rest

(5) Arm rest angle adjust knob

(6) Lumbar support adjust knob

(7) Backrest extension

(A) "UNLOCK"

(B) "TO INCREASE ANGLE"

(C) "TO DECREASE ANGLE"

◆ 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 and Height adjustment

Turn on the key switch. The seat should be adjusted for the operator's weight by briefly pulling or pushing the weight / height adjust knob with the tractor in a stationary position and the operator sitting on the seat.

The seat can be adjusted in its adjustable range.

IMPORTANT :

- In order to avoid damage of the seat, do not operate the weight / height adjust lever for more than 1 minute.

◆ **Tilt adjustment**

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

◆ **Arm rest**

Armrest may be set at upright position if desired.

◆ **Arm rest height adjustment**

Turn the adjust knob to the desired height of the armrests.

◆ **Backrest extension**

Pull the backrest extension to the desired height.

◆ **Lumbar support adjustment**

Turn the lumbar support adjust knob to the desired position. (5 positions)

IMPORTANT :

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

■ **Seat Belt**

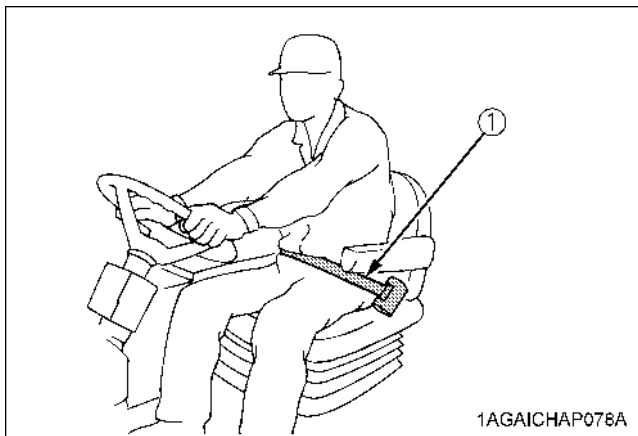


WARNING

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**

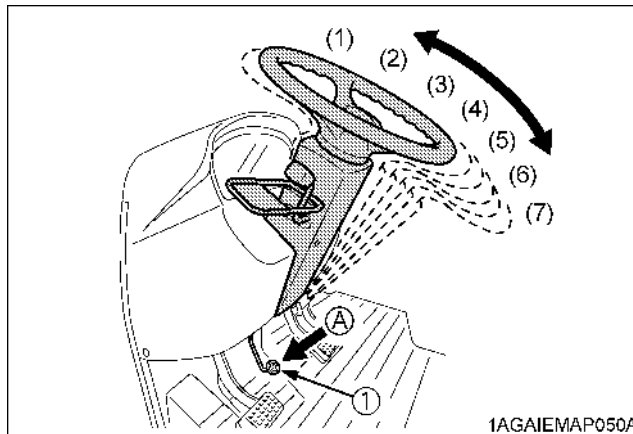


CAUTION

To avoid personal injury:

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

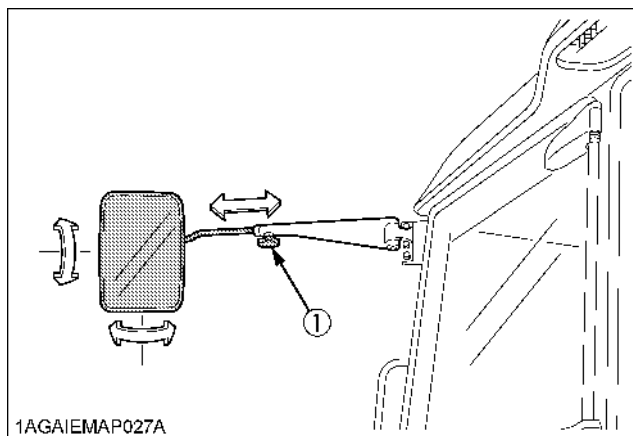
Press down the steering wheel tilt pedal, to release the lock so the steering wheel can be adjusted to one of 7 desired positions.



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

■ **Extensible Mirror**

1. To alter the length: Loosen the knob bolt and move the mirror to the required position, then tighten the knob bolt.
2. To adjust mirror head: Hold firmly, tilt horizontally and vertically as required.





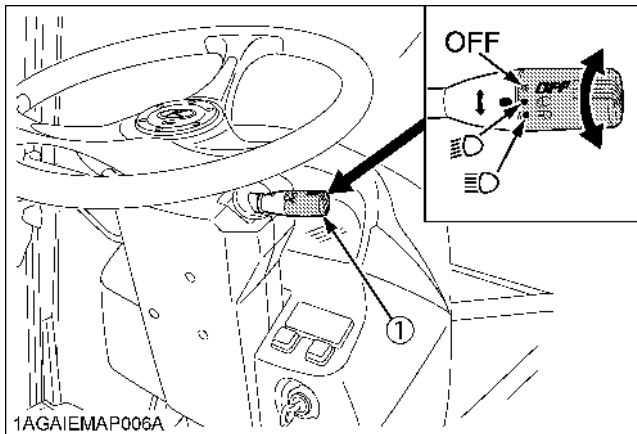
(1) Knob bolt

2. Selecting Light Switch Positions.

■ Light Switch

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

- OFF..... Head lights OFF.
- ..... Head lights dimmed, low beam.
- ..... Head lights ON, high beam.



(1) Head light switch

■ With Trailer Connector

[if equipped]

When you use the turn signal light switch with the trailer power connector connected, the indicator in the instrument panel start flashing.

■ 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.

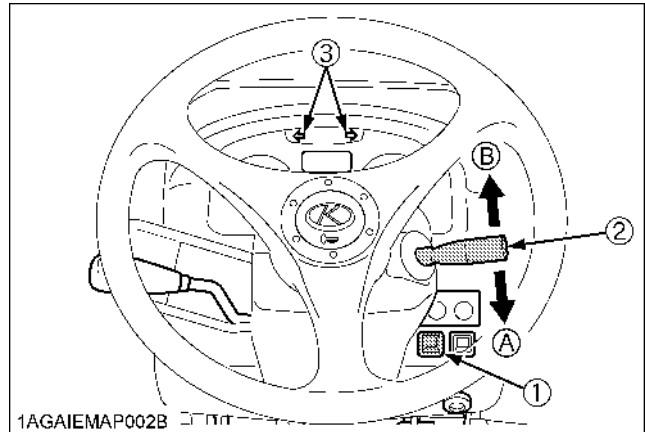
◆ Turn signal light

To indicate a right turn, turn the turn signal light switch clockwise. To indicate a left turn, turn the turn signal light switch counter-clockwise. The corresponding right and left turn signal lights and indicator on the instrument panel will flash.

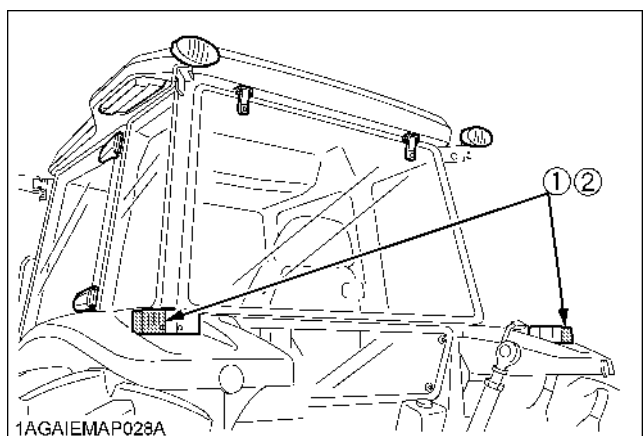
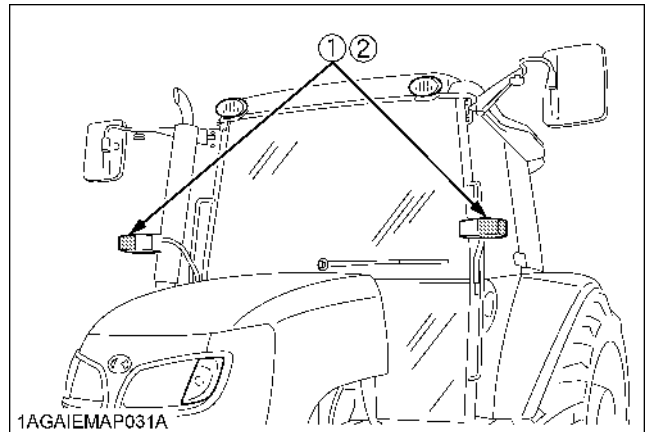
NOTE :

- The hazard light switch is operative when the key switch is in the "ON", "ACC" 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.



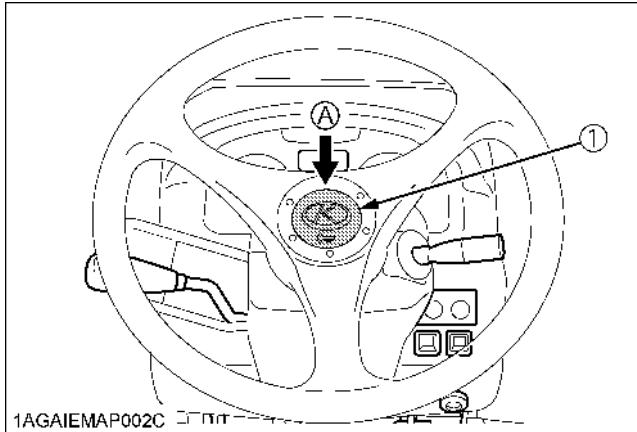
- (1) Hazard light switch
- (2) Turn signal light switch
- (3) Hazard / Turn signal indicator
- (A) "RIGHT TURN"
- (B) "LEFT TURN"



- (1) Hazard light
- (2) Turn signal light

■ Horn Button

The horn will sound when the key switch is "ON" position and horn button is pushed.



(1) Horn button

(A) "PUSH"

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.

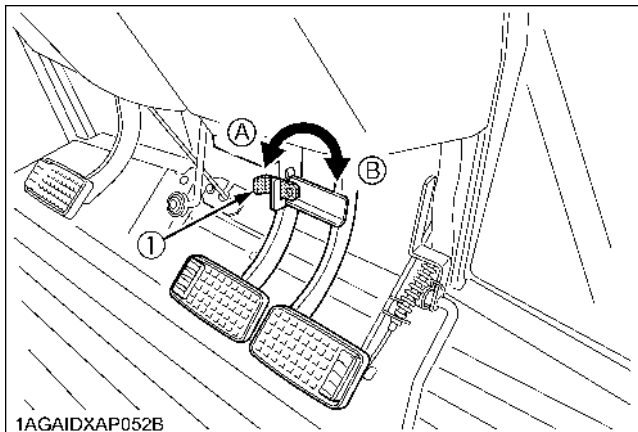


CAUTION

To avoid personal injury:

- Be aware of the enhanced braking characteristics of 4 wheel braking system. Appropriate care should be taken during hard braking and/or when pulling towed loads.
- 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 loss 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"

◆ 4WD Braking System [4WD model]

4WD model tractor is equipped with 4WD braking system. When both brake pedals are applied together, the front axle is engaged for four wheel braking regardless of the mode selected at the 4WD switch. The 4WD indicator light is not illuminated unless the front axle is engaged with the selector switch.



WARNING

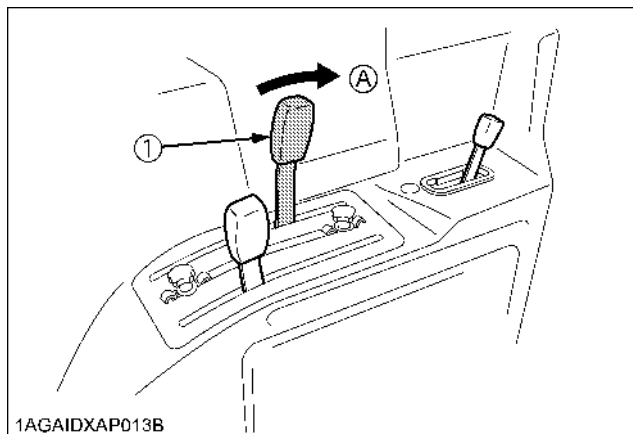
To avoid the possibility of personal injury or property damage from machine runaway during testing, service or repair with the rear wheels off the ground, make sure:

- Battery is disconnected and engine is not started.

If it is necessary to run the engine, make sure:

- Both front and rear wheels are off the ground and secured with stands before starting engine.

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



(1) Position control lever

(A) "UP"

5. Depress the Clutch Pedal.

■ Clutch Pedal

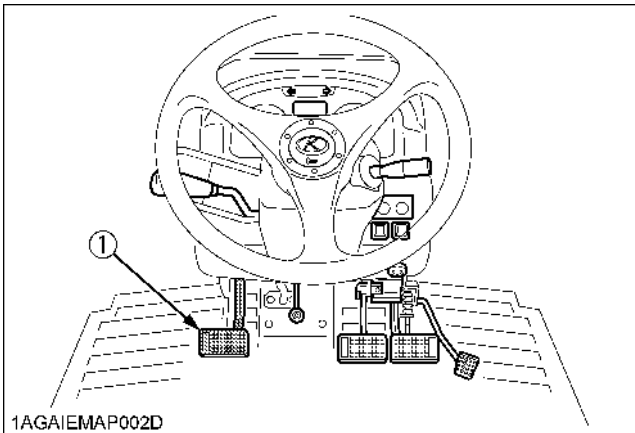


CAUTION

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.



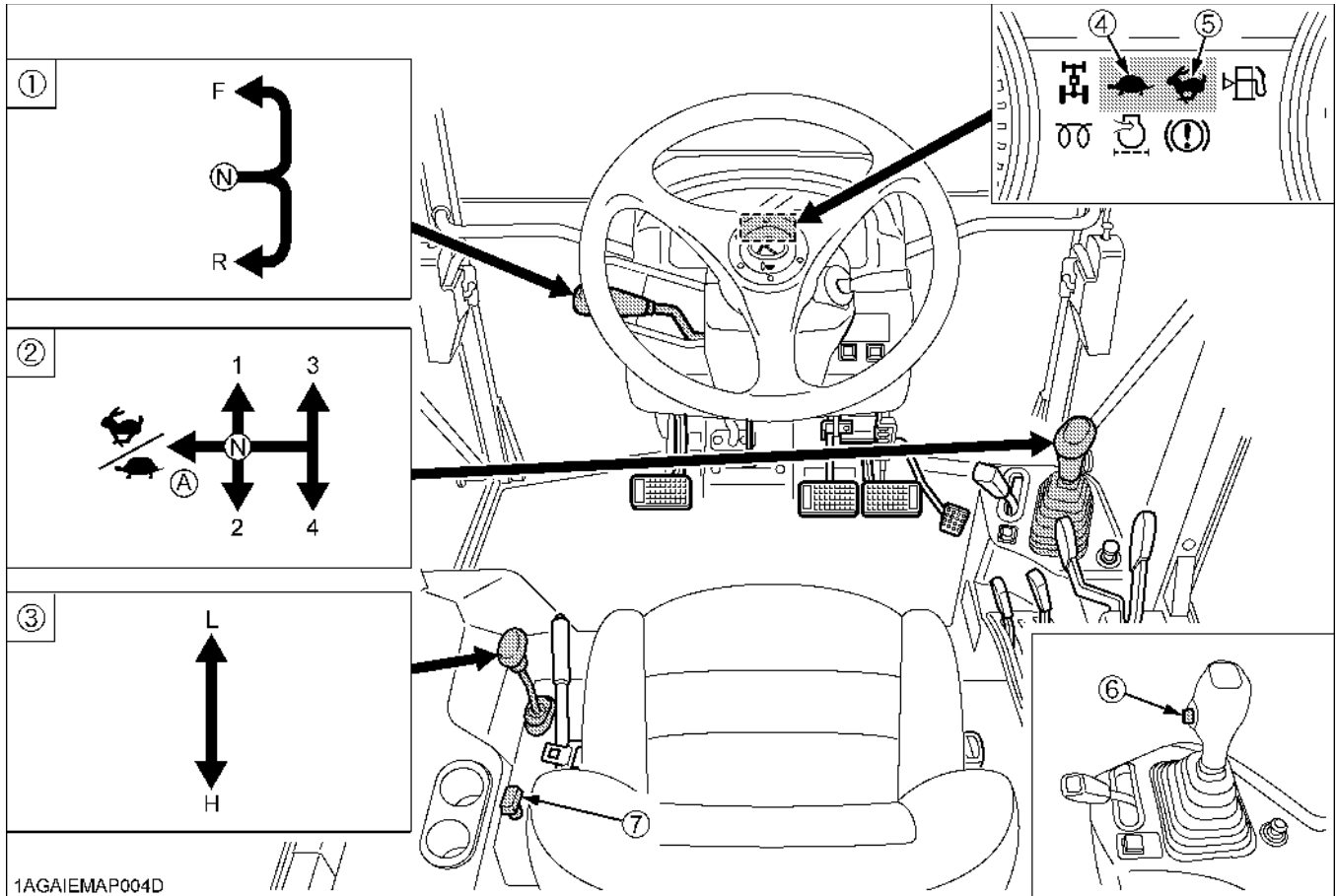
(1) Clutch pedal

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)

- (6) Dual speed shift switch
- (7) Creep lever (if equipped)

- (F) "FORWARD"
- (N) "NEUTRAL POSITION"
- (R) "REVERSE"
- ↔ "LOW"
- ↔ "HIGH"

(A) "PUSH"

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

Without creep	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

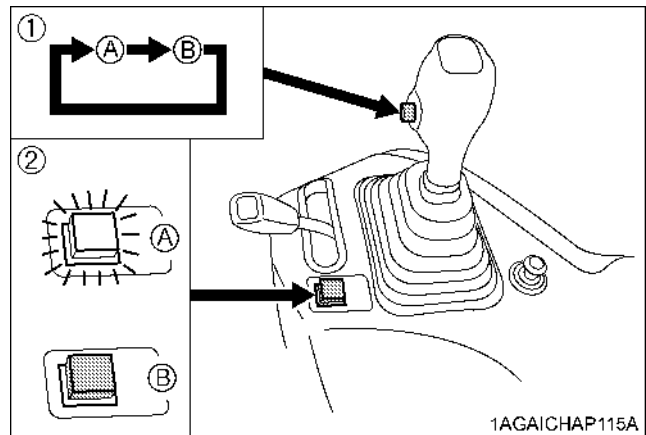
The dual speed shift switch can be operated when the tractor is traveling without using the clutch.

(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 comes on when the dual speed switch is set to "LO".

The indicator goes off when the dual speed switch is set to "HI".



(1) Dual speed shift switch
(2) Dual speed indicator

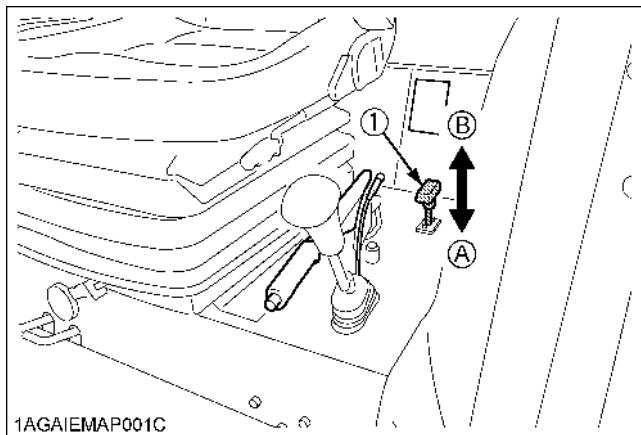
(A) "LO"
(B) "HI"

■ Creep Lever (if equipped)

Push down the creep lever at "L" 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.

■ 4WD Switch



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.
- 4WD model tractor is equipped with 4 wheel braking and appropriate care should be taken during hard braking.
- 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 tractor models. Be aware of the difference and use carefully.

When this switch is pressed;

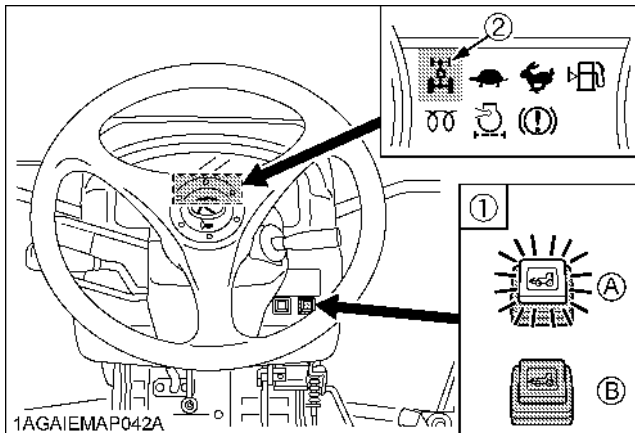
The front wheel drive (4WD) is engaged.

The switch with indicator and 4WD indicator come on when the system is in 4WD mode.

Press the switch again;

The drive system returns to 2WD mode.

The all indicators goes off when the system is in 2WD mode.



(1) 4WD switch with indicator
(2) 4WD indicator

(A) 4WD "ON"
(B) 4WD "OFF"

◆ 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.

IMPORTANT :

- Tires will wear quickly if the front wheel drive is engaged on paved roads.

NOTE :

- This switch can be operated when the tractor is on the go or at rest without depressing the clutch.

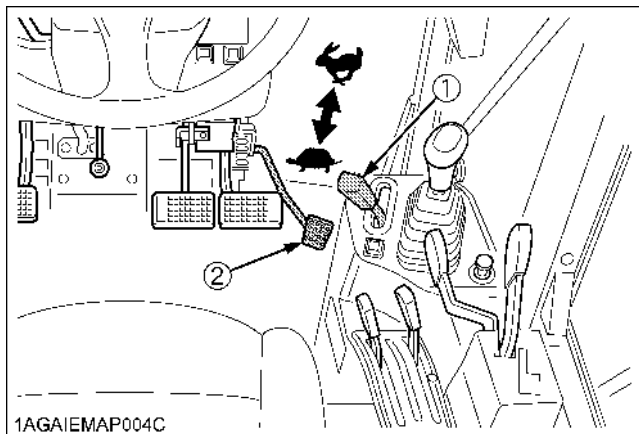
7. Accelerate the Engine.

■ 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.



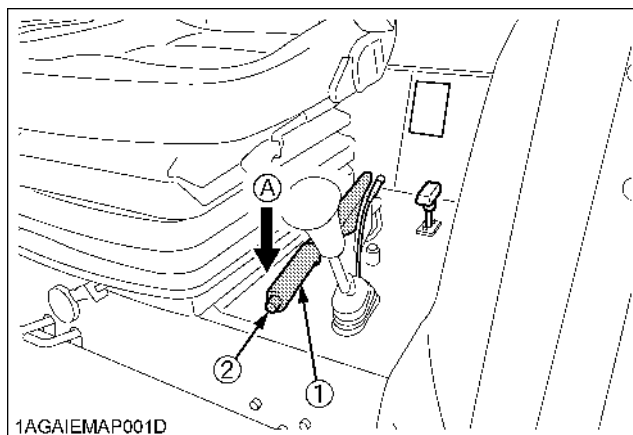
(1) Hand throttle lever
(2) Foot throttle

▲ "INCREASE"
▼ "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

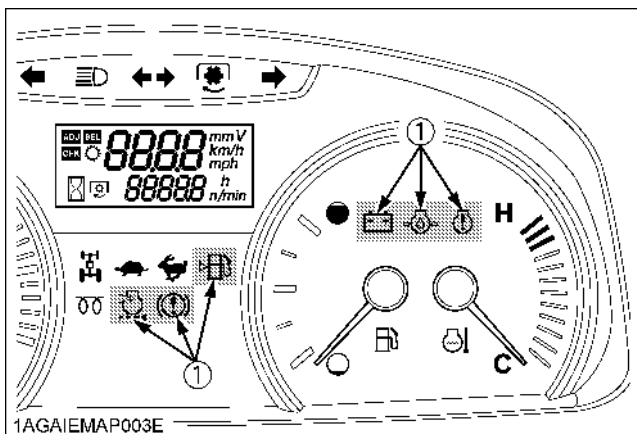
■ Immediately Stop the Engine if:

- 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)

! 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)

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

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

! Air cleaner

If the air cleaner is clogged, the warning lamp in the Easy Checker(TM) will come on.

If this should happen during operation, clean the air cleaner element.

(See "Cleaning Air Cleaner Primary Element" in "EVERY 100 HOURS" 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.

- 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 :

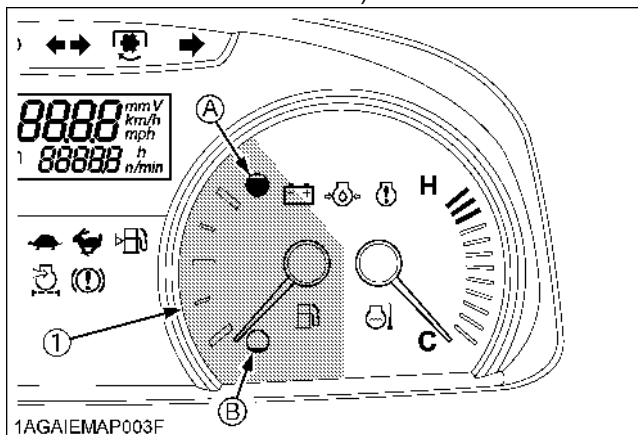
- For checking and servicing of your tractor, consult your local KUBOTA Dealer for instructions.

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

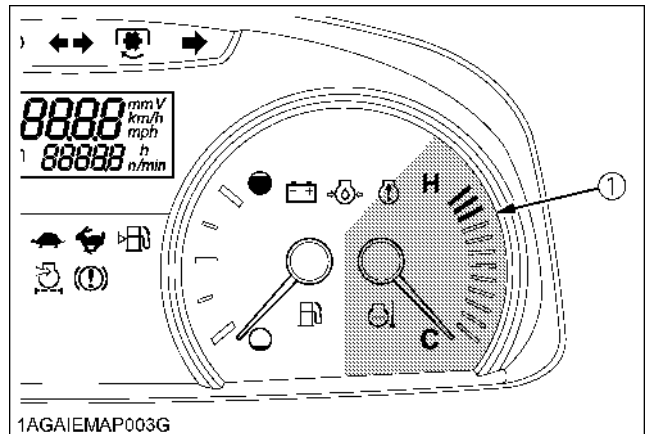


CAUTION

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.

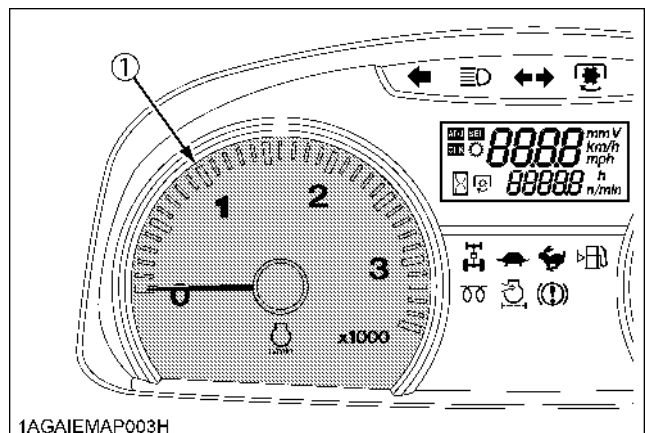
- With the key switch at "ON", this gauge indicates the temperature of the coolant. "C" for "cold" and "H" for "hot."
- If the indicator reaches the "H" position (red zone), engine coolant is overheated. Check the tractor by referring to "TROUBLESHOOTING" section.



(1) Coolant temperature gauge

Tachometer

The tachometer indicates the engine speed on the dial.

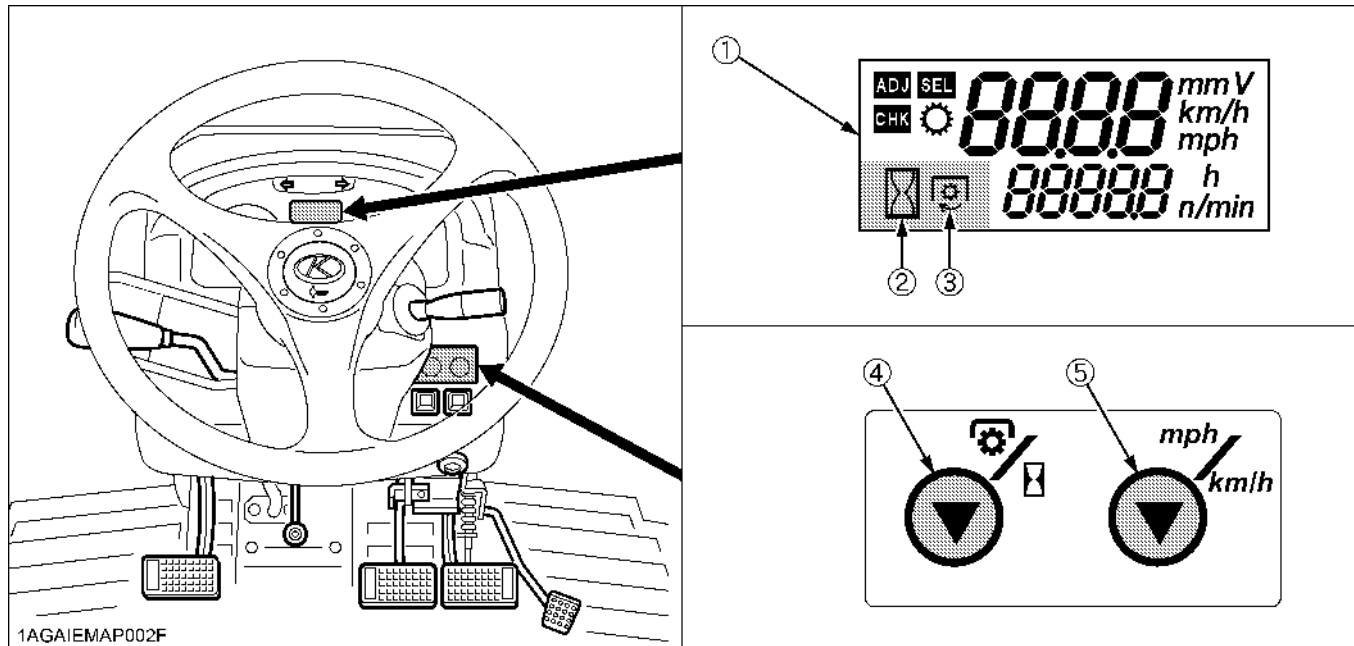


(1) Engine revolution

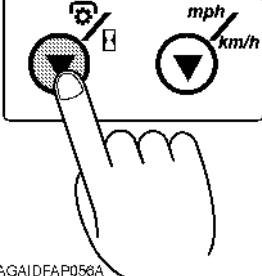


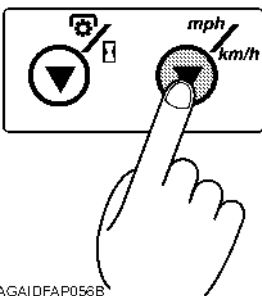

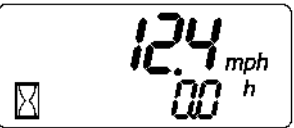
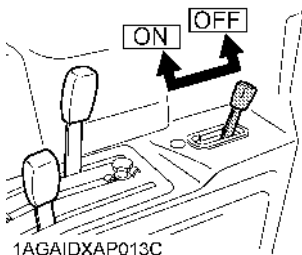

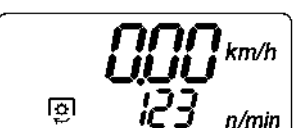
PTO RPM / TRAVEL SPEED MONITOR

■ 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

<p>1</p>	<p>Display mode switching [Hour meter mode] and [PTO speed mode]</p>  <p>1AGAIDFAP056A</p>	<p>Hour meter mode</p>  <p>1AGAIDFAP072H</p>	<ul style="list-style-type: none"> ● 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.
		<p>PTO speed mode</p>  <p>1AGAIDFAP072I</p>	<ul style="list-style-type: none"> ● 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.
<p>2</p>	<p>Display mode switching [km/h] and [mph]</p>  <p>1AGAIDFAP056B</p>	<p>km/h (Traveling speed)</p>  <p>1AGAIDFAP072C</p>	
		<p>mph (Traveling speed)</p>  <p>1AGAIDFAP072D</p>	
<p>3</p>	<p>PTO clutch control lever</p>  <p>1AGAIDXAP013C</p>	<p>PTO OFF (Hour meter mode)</p>  <p>1AGAIDFAP072H</p>	<ul style="list-style-type: none"> ● 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.
		<p>PTO ON (PTO speed mode)</p>  <p>1AGAIDFAP072I</p>	<ul style="list-style-type: none"> ● 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.

NOTE :

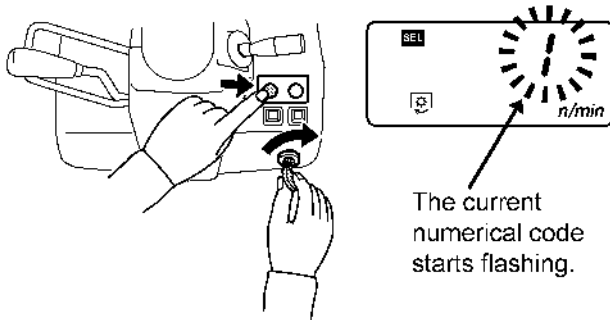
- The travel speed displayed when the wheels slip under traction is different from the actual one.
- In cold weather the LCD monitor response will normally be slower and the visibility be less, than in warmer weather.

■ PTO Speed Display Mode Switching

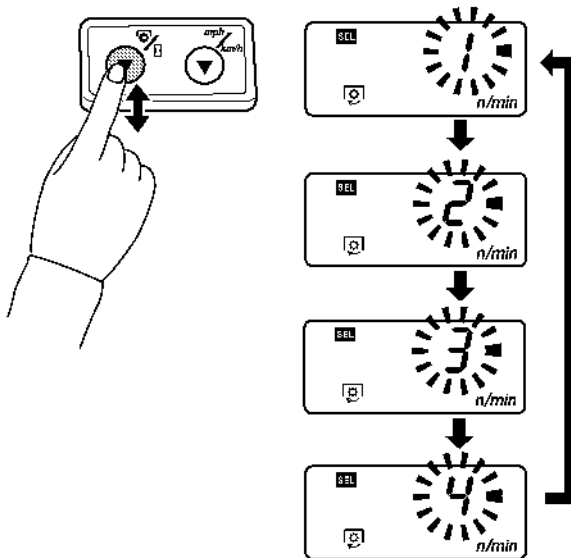
Whenever the PTO speed is changed to the other speed, it is necessary to switch the PTO speed display mode. Otherwise the PTO speed will not get correctly displayed in the LCD monitor. When the PTO speed is changed from 540 rpm to 1000 rpm or from 1000 rpm to 540 rpm, it is necessary to switch the PTO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

◆ Switching procedure

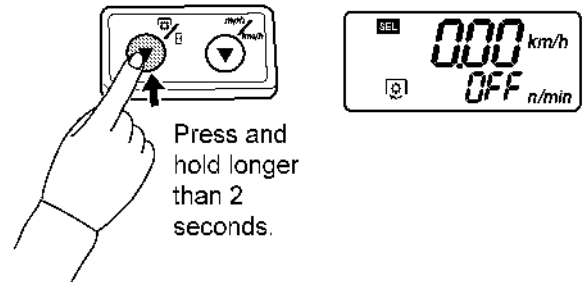
- ① While pressing the PTO/Hour meter select switch, turn the key switch to "ON" position.



- 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	

PARKING

■ Parking

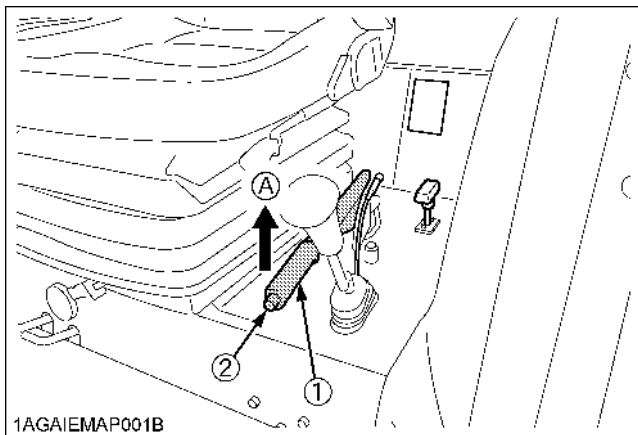


CAUTION

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

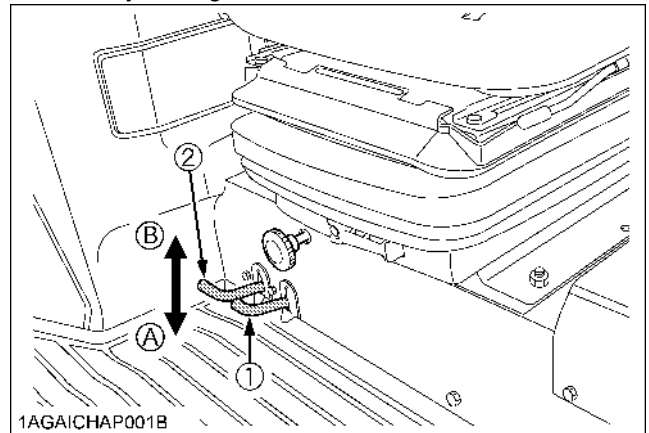


WARNING

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.

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 then turn together, reducing 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) (A) Press to "ENGAGE"
(2) Front wheel differential lock pedal (Front wheel only) (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.

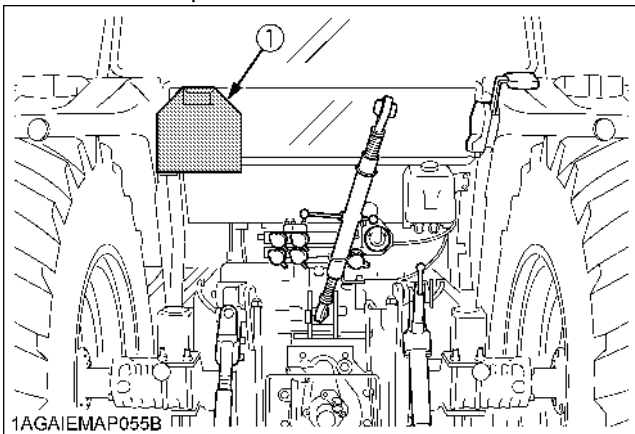
■ Operating the Tractor on a Road

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.

Observe all local traffic and safety regulations.
Use the number plate.



(1) Number plate

■ 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.

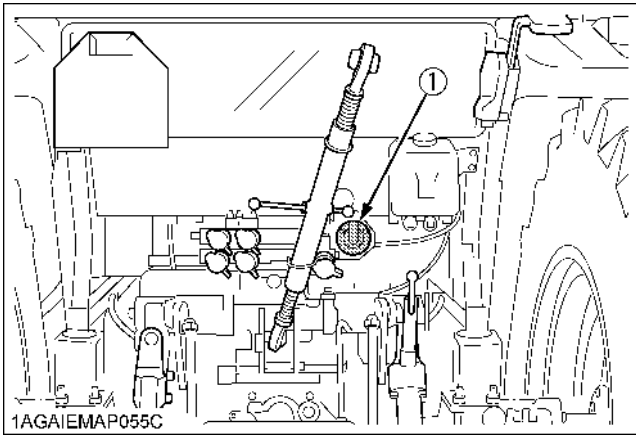
1. Be sure wheel tread is adjusted to provide maximum stability.
(See "WHEEL ADJUSTMENT" in "TIRES, WHEELS AND BALLAST" section.)
2. Slow down for slopes, rough ground, and sharp turns, especially when transporting heavy, rear mounted equipment.
3. Before descending a slope, shift to a gear low enough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

■ 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.

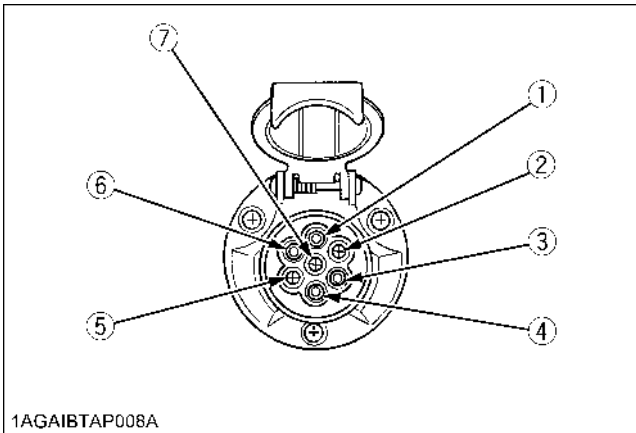
Trailer Electrical Outlet

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



(1) Trailer electrical outlet

Function of each terminals in trailer electrical outlet

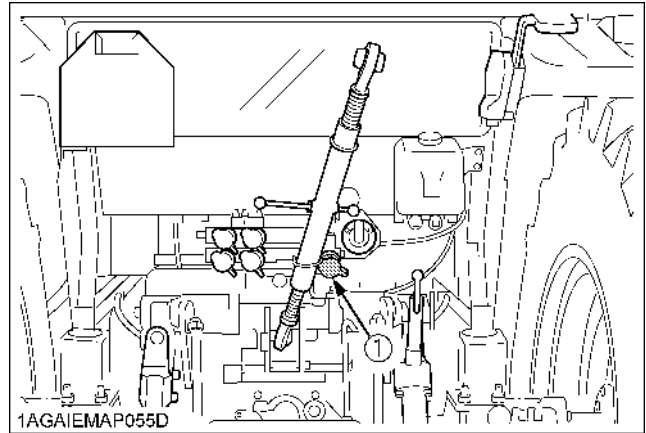


Terminal	Function
(1)	Turn signal light (LH)
(2)	---
(3)	Ground
(4)	Turn signal light (RH)
(5)	Tail light Sidemarker light Parking light
(6)	Brake stop light
(7)	Number plate light

Hydraulic Brake for Trailer

The trailer brake is worked when using the tractor's brake pedals. It uses the pressure from the main hydraulic circuit. The braking force while towing is proportional to the force applied on the tractor pedals.

It is most useful when towing very heavy loads, this device considerably increases braking efficiency and safety.



(1) Trailer hydraulic brake outlet

PTO

PTO OPERATION



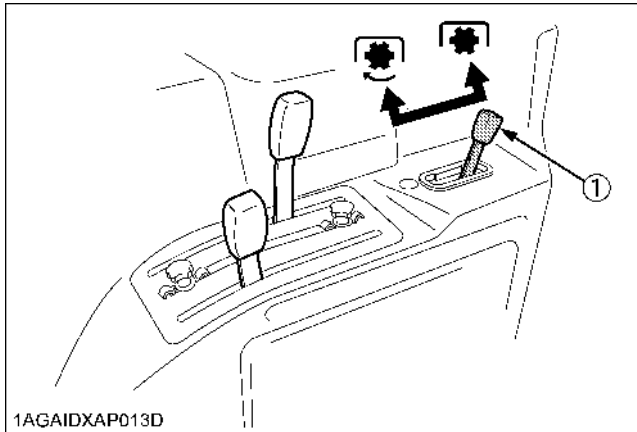
CAUTION

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

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 :

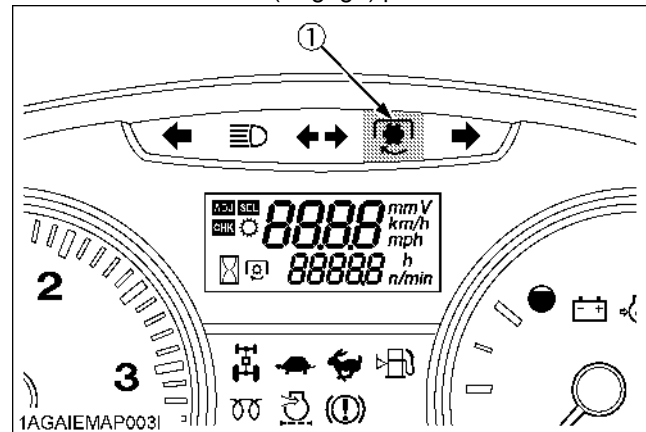
- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed.
- To avoid damage of PTO clutch and implement, shift the PTO clutch control lever slowly, when engaging the PTO clutch. Do not keep the PTO clutch control lever half way. Proper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

NOTE :

- Tractor engine will not start if PTO clutch control lever is in the engaged "ON" position.

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

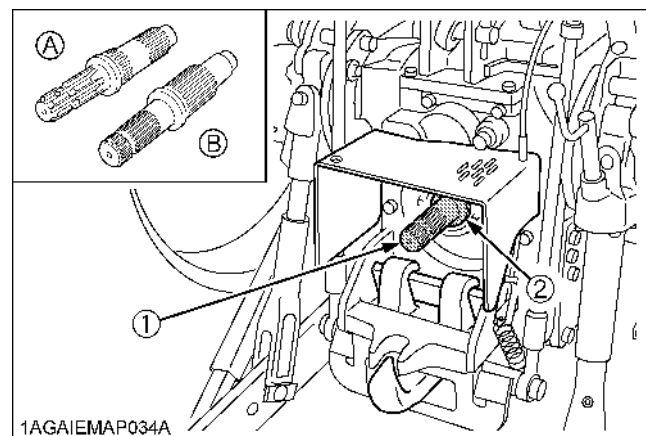


WARNING

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
1000 rpm	21 - spline	406 mm

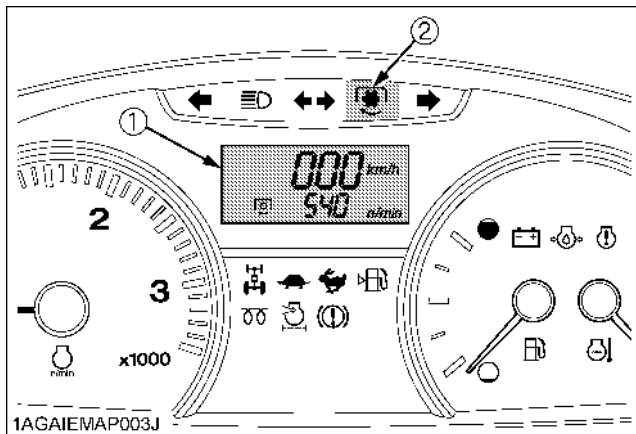
Engine speed rpm	PTO speed rpm
2205	540
2210	1000

IMPORTANT :

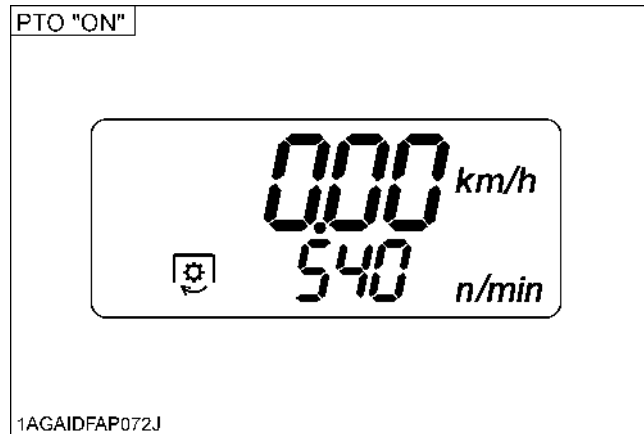
- For maximum PTO shaft speeds of various implements, see the implement Operator's Manual.

■ 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

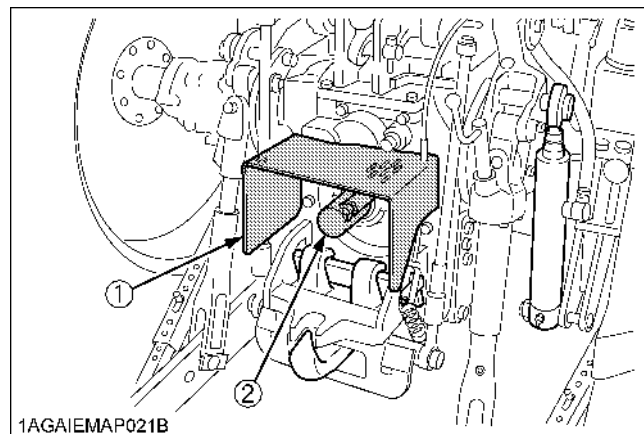


NOTE :

- 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.)

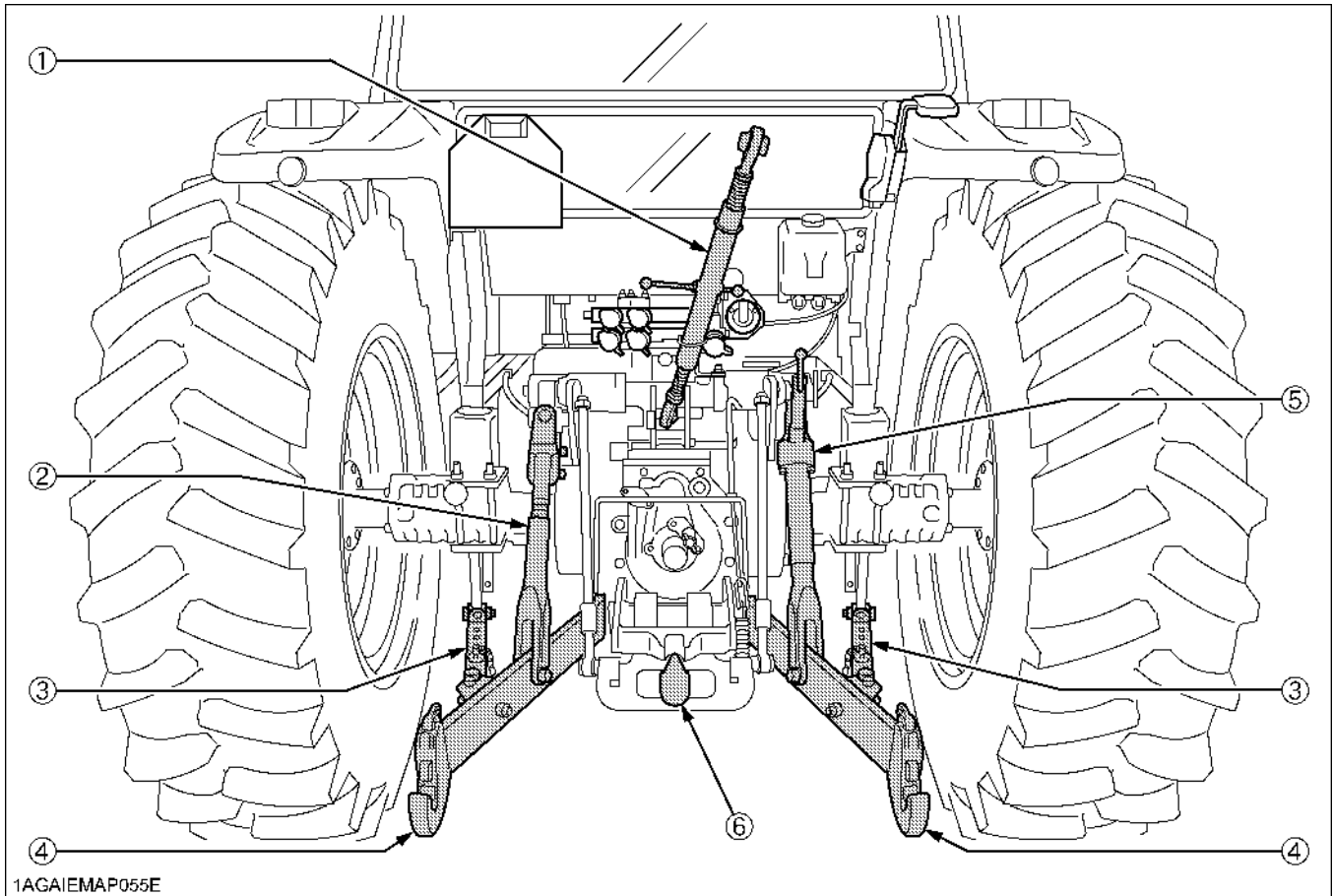
■ PTO Shaft Cover and Shaft Cap

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".



(1) PTO shaft cover
(2) PTO shaft cap

THREE-POINT HITCH & DRAWBAR



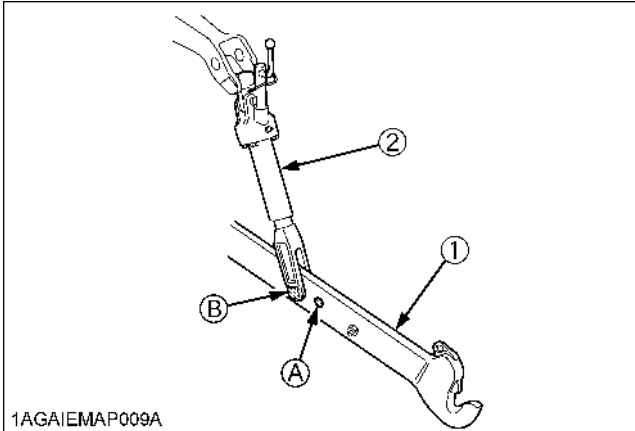
- (1) Top link
- (2) Lifting rod (Left)
- (3) Telescopic stabilizers
- (4) Lower link
- (5) Lifting rod (Right)
- (6) Drawbar

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
(2) Lifting rod

holes: (A), (B)

NOTE :

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

■ Adjustment of Left Lifting Rod



CAUTION

To avoid personal injury:

- Do not extend lifting rod beyond the groove on the threaded rod.

◆ To extend the left lifting rod

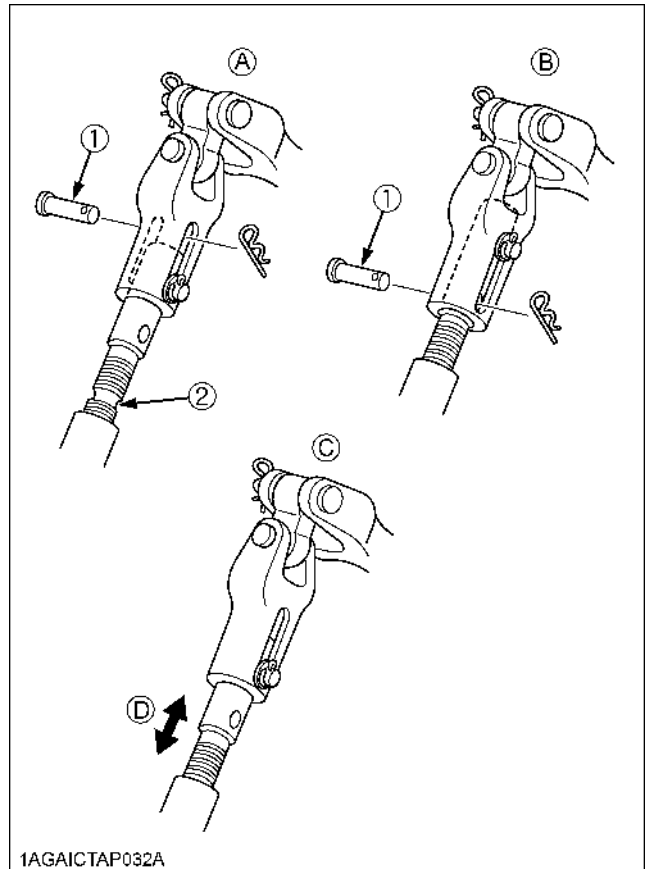
Change the lifting rod pin position or turn the lifting rod sleeve as illustration.

◆ To allow floating

Remove the lifting rod pin as illustration.

◆ 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.

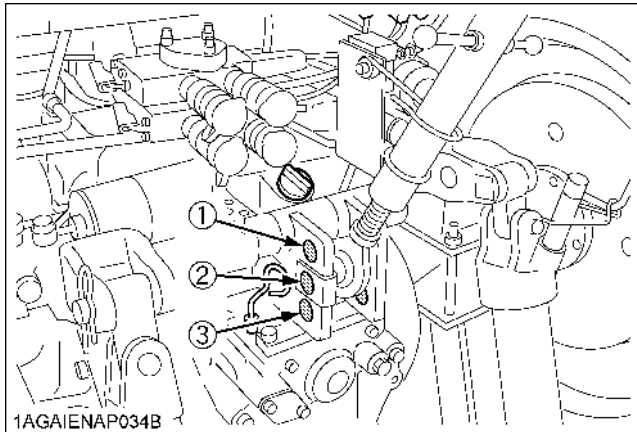


(1) Pin (A) Extended Position (Put pin in upper hole)
(2) Groove (B) Shortened Position (Put pin in lower hole)
(C) Floating Position (Remove pin)
(D) Movable up and down

■ 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).



■ 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.

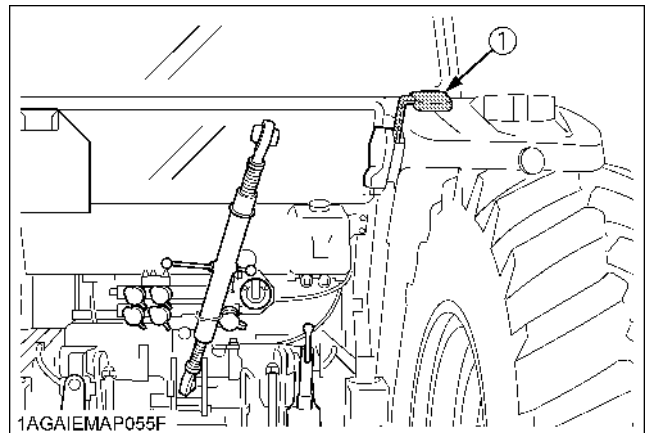
■ Remote Hitch UP / DOWN Lever



CAUTION

- Do not use the Remote hitch up / down lever when the implement is attached on the 3-point hitch.

This lever is used to raise and lower the 3-point hitch for aligning the arm with the implement only.



(1) Remote hitch up / down lever

■ Lifting Rod (Right)

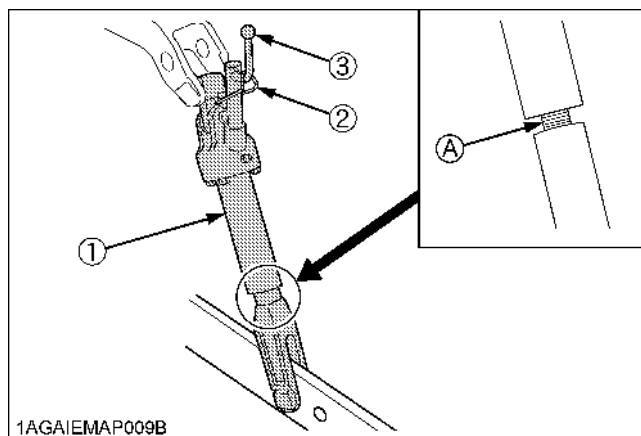


CAUTION

To avoid personal injury:

- Do not extend lifting rod beyond the point where threads are exposed.

Level a 3-point mounted implement from side to side by turning the adjusting handle to shorten or lengthen the adjustable lifting rod with the implement on the ground. After adjustment, lock adjusting handle with handle stopper.



- (1) Lifting rod
(2) Handle stopper
(3) Adjusting handle

(A) "THREAD"

■ Top Link

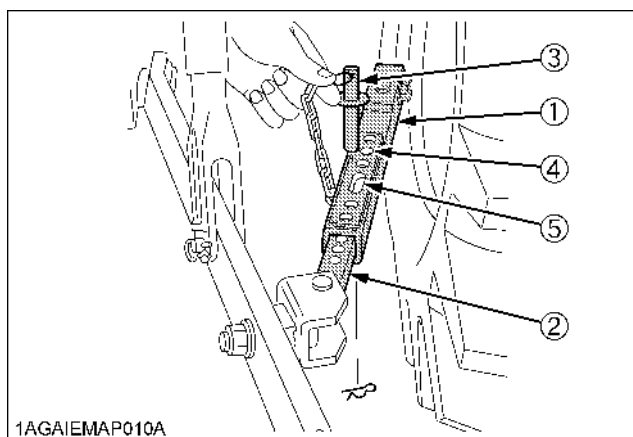
1. Adjust the angle of the implement to the desired position by shortening or lengthening the top link.
2. The proper length of the top link varies according to the type of implement being used.

■ 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

■ Quick Hitch (Hook type)

CAUTION

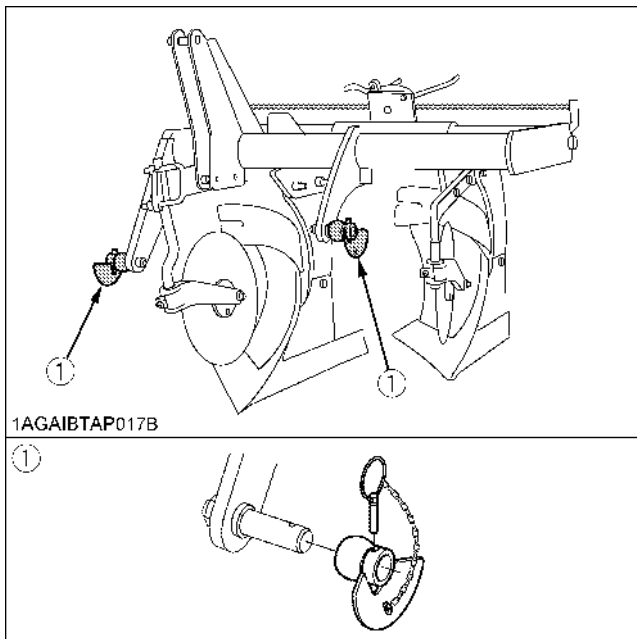
- To avoid personal injury:
 Confirm the under mentioned matter when installing the implement:
- Make sure the hook of a quick hitch is surely locked.

The 3-point hitch with quick-hitch, all of which have claw ends that permit rapid attaching and detaching of implements.

◆ Installing Ball-joint to Implement

Before the implement is installed on the 3-point hitch with quick hitches, it is necessary to install the ball-joints to the implement according to the following instructions.

1. The ball-joints with guide cones should be installed on the lower hitch pins with the cones in the lowest position.

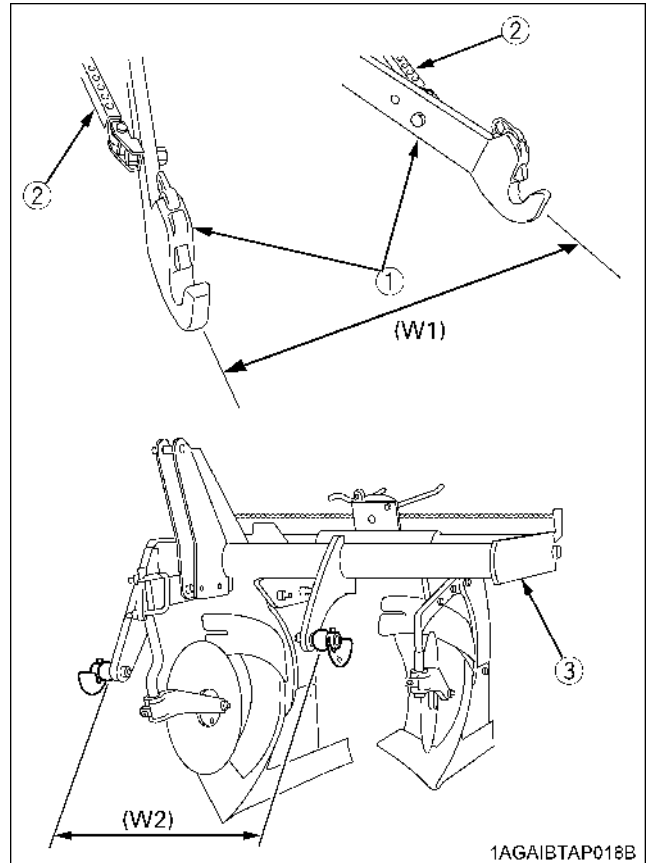


(1) Ball-joint with guide cone

◆ Adjusting Lower Link Width

Set the width (W1) of lower links to be the same as width (W2) of the implement.

(See "TELESCOPIC STABILIZERS" in this section to adjust the width (W1) of lower links.



- (1) Lower link
- (2) Telescopic stabilizer
- (3) Implement

◆ **Attaching implement to Tractor**

1. Set the release lever on the quick hitches to "LOCK" position, if its lever is in "UNLOCK" position. (Self-locking latches are closed)
2. With the lower links fully lowered, reverse the tractor until the quick hitches are beneath the implement ball-joints.
3. Raise the lower links using the hydraulic control lever until the quick hitches engage the ball-joints.

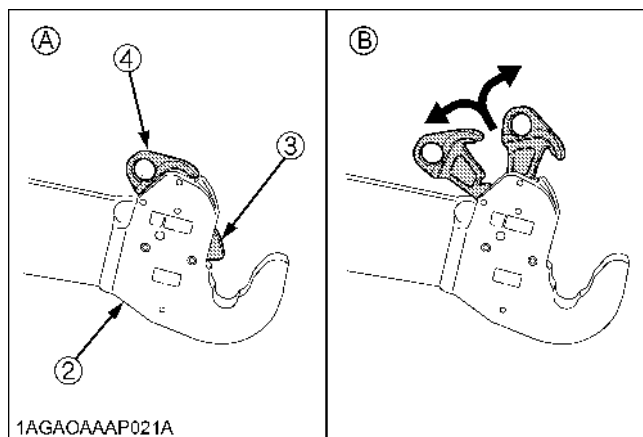
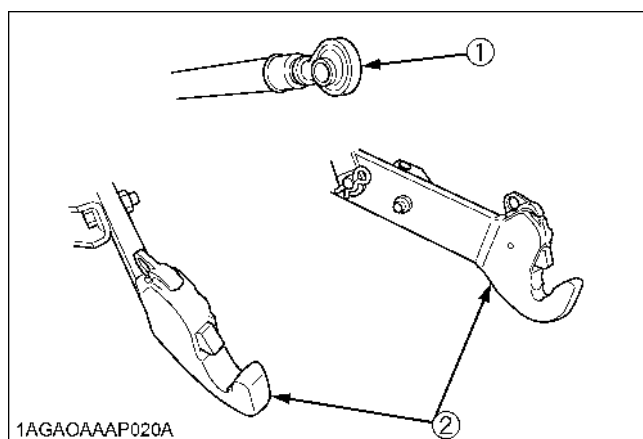
NOTE :

- An audible click will be heard as the self-locking latches engage the implement ball-joint.

4. Connect the top link to the implement. If necessary, adjust the top link length.

◆ **Detaching Implement from Tractor**

1. Fully lower the implement to the ground. Support the implement with parking stand. (if equipped) If necessary, adjust the top link and or lifting rod length so that the implement may stabilize on the ground.
2. Detach the top link from implement. Hook the top link in the top link support.
3. Pull the release levers on both lower links to release the quick hitches from implement ball-joints. The latches will disengage and allow the lower links to lower and detaching the implement.



- (1) Top link
- (2) Lower link
- (3) Latch
- (4) Release lever

- (A) "LOCK" position
- (B) "UNLOCK" position

AUTO HITCH



WARNING

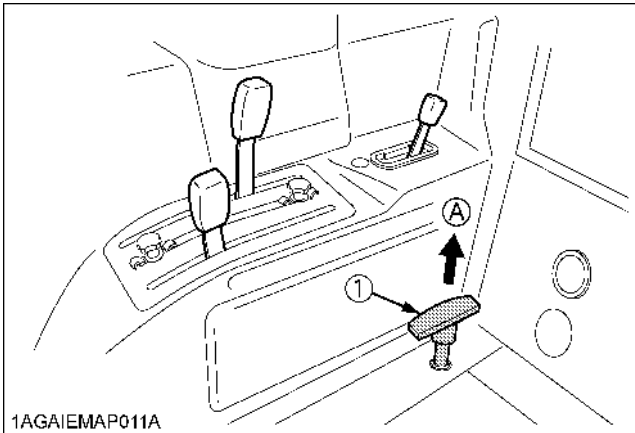
To avoid personal injury:

- Never pull from the top link, the rear axle or any point above the hitch. Doing so could cause the tractor to tip over rearward causing personal injury or death.
- Make sure the latch hook is locked before towing an implement.

■ Auto Hitch

◆ To Lower the Hitch

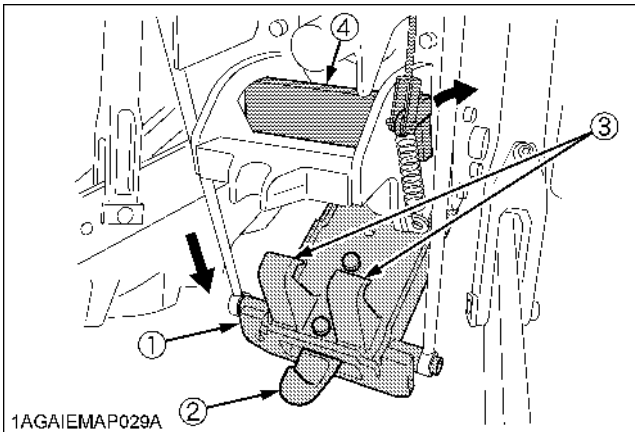
1. Start the engine and adjust the position control lever to raise the lift arm to its topmost position.
2. Pull the auto hitch release knob to unlock the latch hooks and the latch bar from each other.



1AGAIEMAP011A

(1) Auto hitch release knob (A) "PULL"

3. With the auto hitch release knob being pulled, push down the position control lever to lower the auto hitch.
4. Attach or detach an implement.

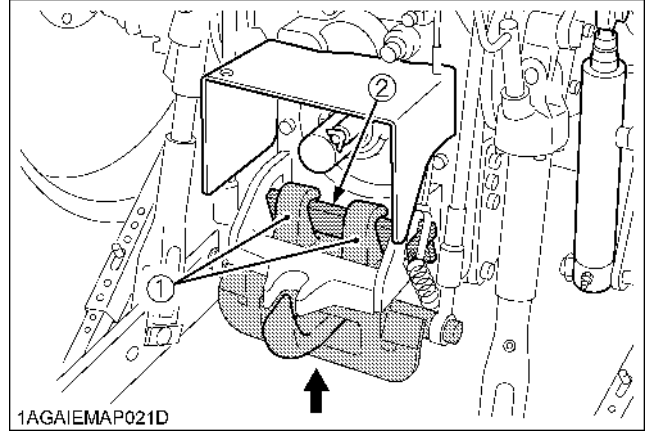


1AGAIEMAP029A

(1) Auto hitch
 (2) Hook
 (3) Latch hook
 (4) Latch bar

◆ To Lift the Hitch

1. Make sure the implement is securely attached or detached. Start the engine and adjust the position control lever to lift the auto hitch until the latch hooks tightly catch the latch bar.



1AGAIEMAP021D

(1) Latch hook
 (2) Latch bar

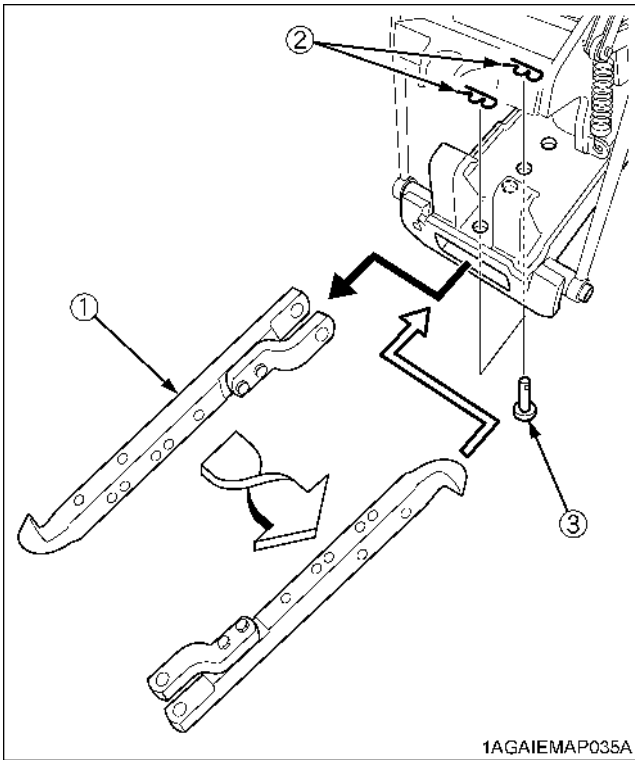
2. Slightly push down the position control lever to be sure that the auto hitch does not move down.

IMPORTANT :

- In pulling an implement, keep the position control lever slightly down to have the hydraulic system free of load.

◆ **Hook / Clevis Change over**

1. Remove the hair pin cotter and lower the auto hitch.
2. Remove the drawbar pin and pull out the drawbar.
3. Turn the drawbar and insert it to use clevis side.



(1) Hook

(2) Hair pin cotter

(3) Drawbar pin

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

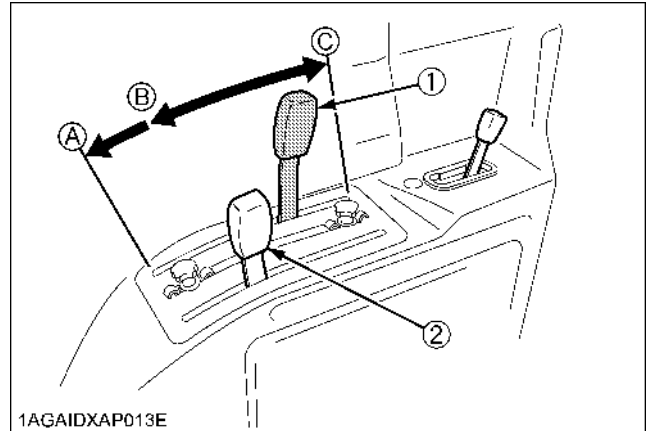
IMPORTANT :

- 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

■ Position Control

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

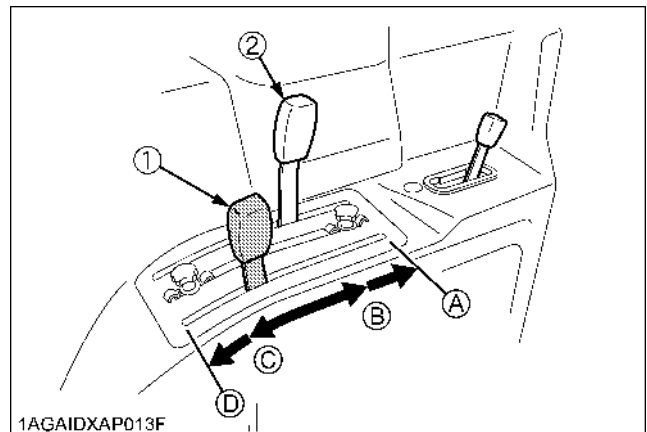


- (1) Position control lever
(2) Draft control lever

- (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.



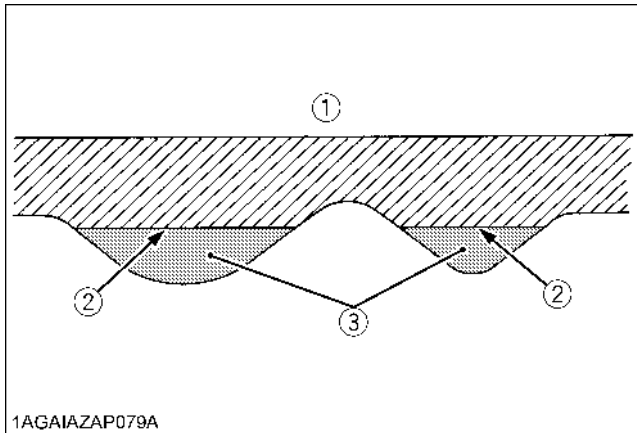
- (1) Draft control lever
(2) Position control lever

- (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.



1AGAIAZAP079A

- (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

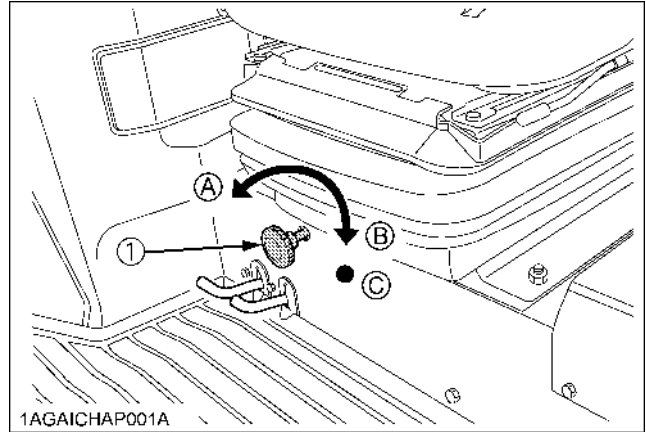


CAUTION

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 lowering speed knob.



1AGAICHAP001A

- (1) 3-Point 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.

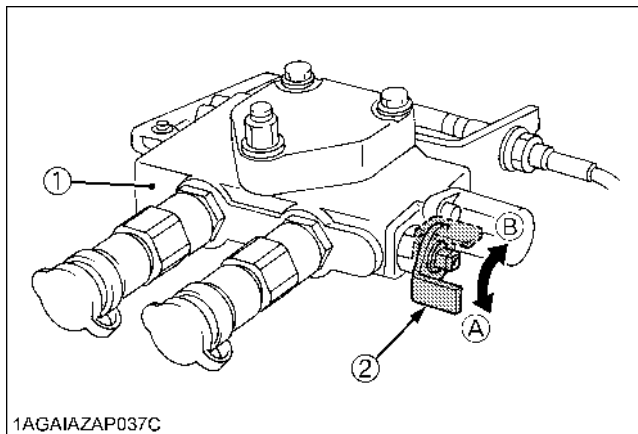
Remote Control Valve

There are three 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.
- **Single/double acting valve:**
This valve can be utilized as single or double acting valve by adjusting the auxiliary control valve selector knob located on the valve.
 - 1) Turn the auxiliary control valve selector knob clockwise all the way to utilize as single acting valve.
 - 2) Turn the auxiliary control valve selector knob anticlockwise all the way to utilize as double acting valve.

NOTE :

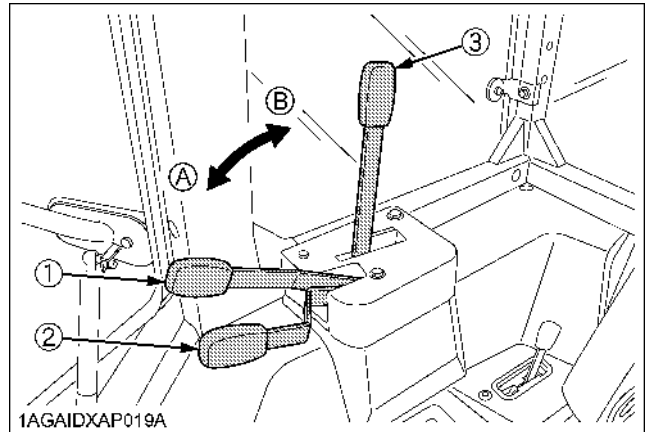
- This float valve can be attached as the second or third segment.



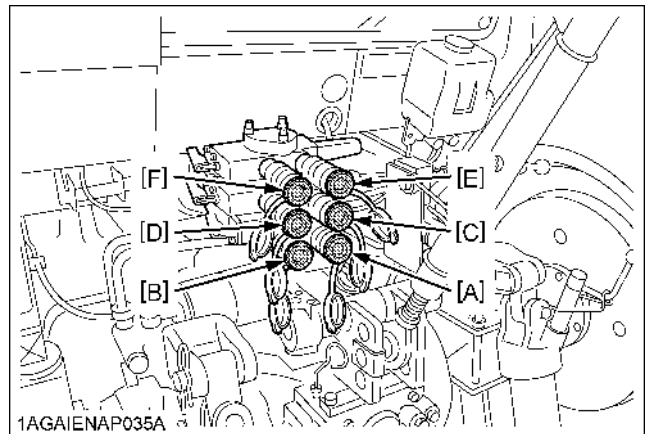
(1) Single / double acting valve (A) Double acting
(2) Auxiliary control valve selector knob (B) Single acting

Remote Control Valve Lever

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



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



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.

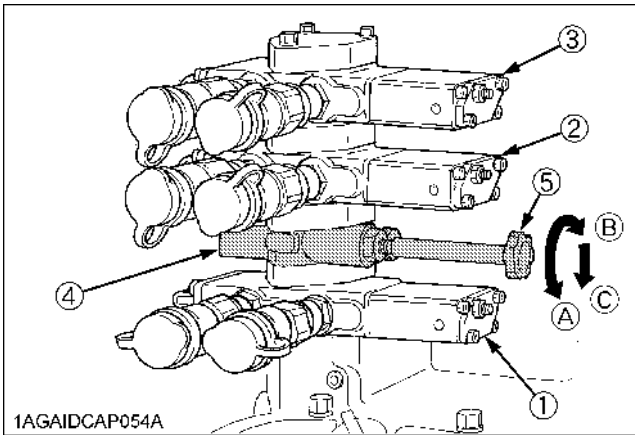
1. The flow rate for the remote control valves (2) or (3), located on above the flow control valve (4), can be adjusted.
2. Turn the flow control knob (5) counterclockwise (A), and the flow rate for the remote control valves (2) or (3) increases. A clockwise turn (B) of the knob causes the flow to decrease. 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 effect 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.



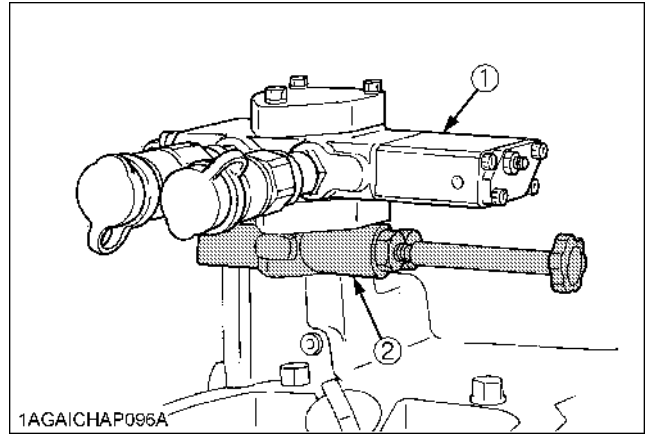
- (1) Remote control valve (1)
- (2) Remote control valve (2)
- (3) Remote control valve (3)
- (4) Flow control valve
- (5) Flow control knob
- (A) "INCREASE"
- (B) "DECREASE"
- (C) "STOP"

■ Positions and advantages of the flow control valve

Refer to illustration below.

◆ Position 1

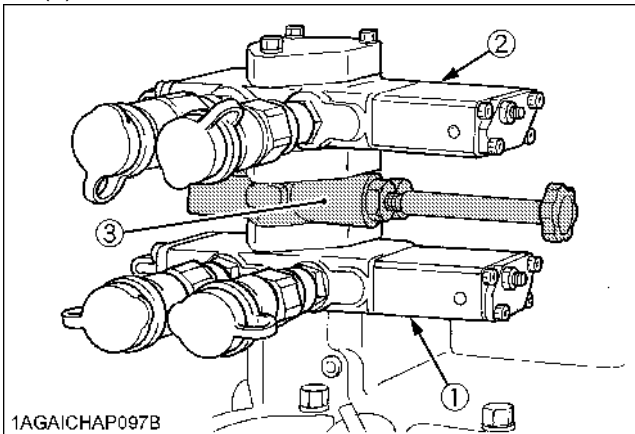
1. The attachment control speed (hydraulic motor RPM, for example) of the remote control valve (1) can be maintained at a constant level within limits.
2. The remote control valve (1) and the 3-point hitch can be operated at the same time. The 3-point lift speed will be influenced by the level of flow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


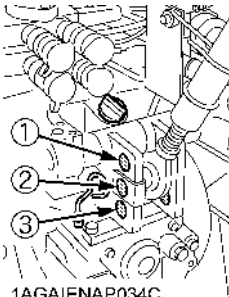
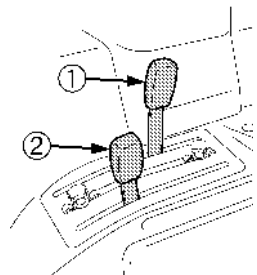
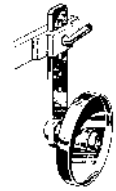
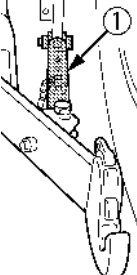


- (1) Remote control valve (1)
(2) Remote control valve (2)
(3) Flow control valve

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	 1AGIAZAP122A Soil condition	 1AGAIENAP034C Top link mounting holes	 1AGAIDXAP013G (1) Position control lever (2) Draft control lever	 1AGIAZAP070A Gauge wheel	 1AGAIEMAP023F (1) Telescopic stabilizers	Remarks
Moldboard plow	Light soil Medium soil Heavy soil	3 2 or 3 2	Draft and Mixed control	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.
Disc plow	---	2 or 3	(Place the draft control lever to the suitable position and set the implement pull with the position control lever.)	YES/NO	Loose	For implements with gauge wheels, lower the position control lever all way.
Harrower (spike, springtooth, disc type)	---	2				
Sub-soiler.....						
Weeder, ridger.....				YES		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.....	---	1	Position control (Hold the draft control lever at the front most position during operation.)	NO	Tighten	

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	340 / 85R24 (13.6R24)	160 kPa (1.6 kgf/cm ²)
Rear	460 / 85R34 (18.4R34)	140 kPa (1.4 kgf/cm ²)

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 four wheel drive)

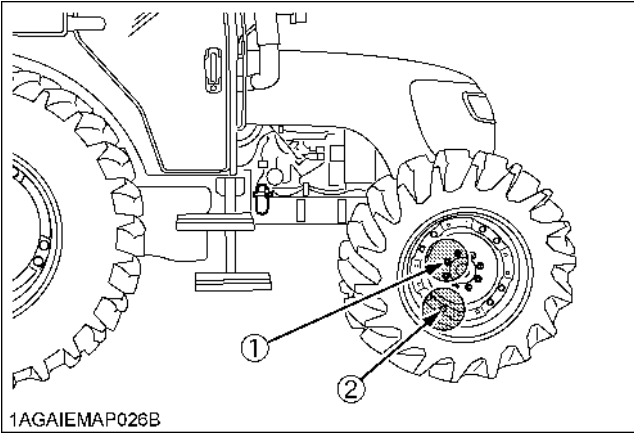
Front tread width can be adjusted as shown with the standard equipped tires.

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]
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.)

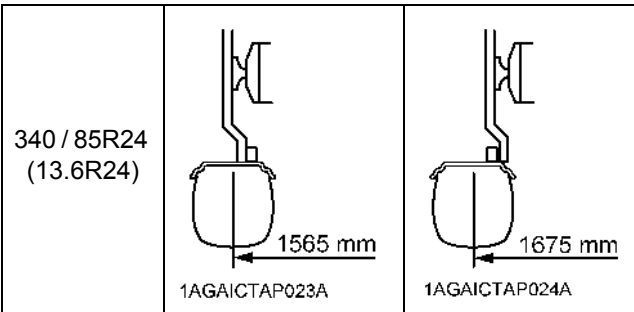


1AGAIEMAP026B

- (1) 260 to 304 N-m (26.5 to 31.0 kgf-m)
- (2) 298 to 366 N-m (30.4 to 37.3 kgf-m)

NOTE :

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

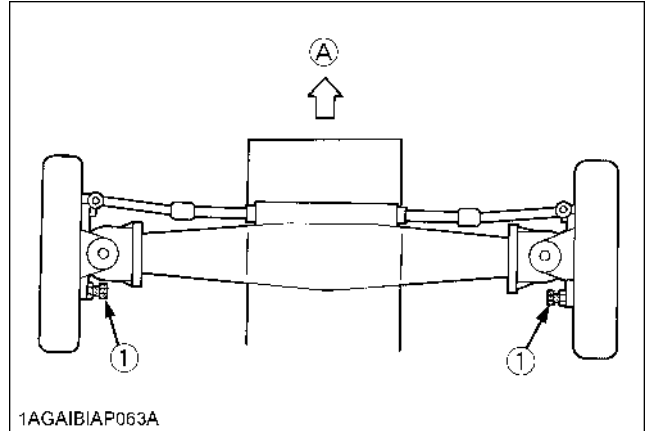


- Need to limit turning angle depended on the tire size. Refer to the chart provided for additional instructions.

■ 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.



1AGAIBIAP063A

(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 collar

■Rear Wheels

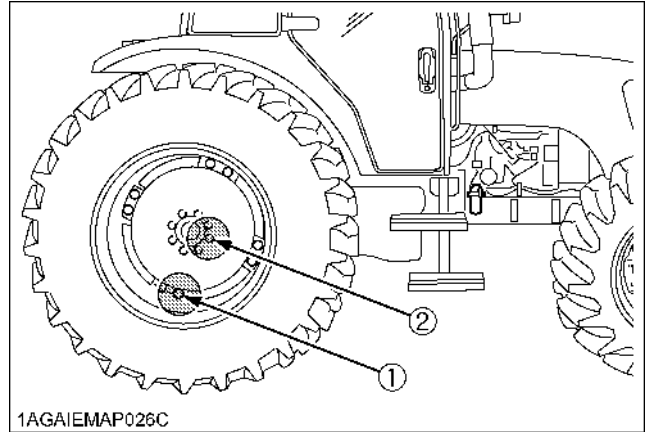
Rear tread width can be adjusted as shown with the standard equipped tires.

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 tires as shown in the drawings.
- 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 (200yards) and thereafter according to service interval.
(See "MAINTENANCE" section.)



1AGAEMAP026C

- (1) 260 to 304 N-m (26.5 to 31.0 kgf-m)
- (2) 343 to 401 N-m (35.0 to 41.0 kgf-m)

[Steel disc]

<p>1AGAEMAP045A</p>		
460 / 85R34 (18.4R34)	1755 mm	1850 mm
		1860 mm

[Cast iron disc]

<p>1AGAEMAP046A</p>		
460 / 85R34 (18.4R34)	1665 mm	1705 mm
		1865 mm

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.

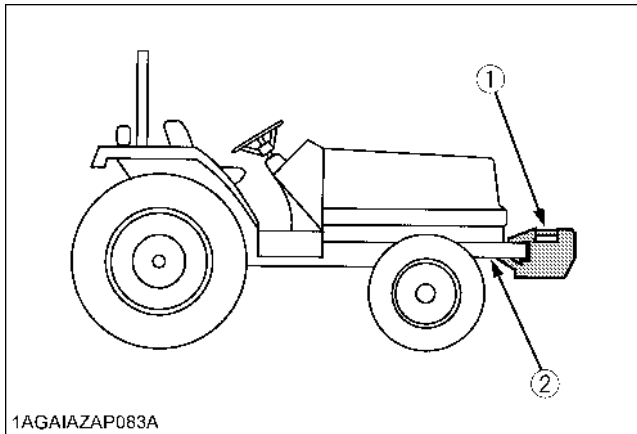
■ Front Ballast

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 12 pieces
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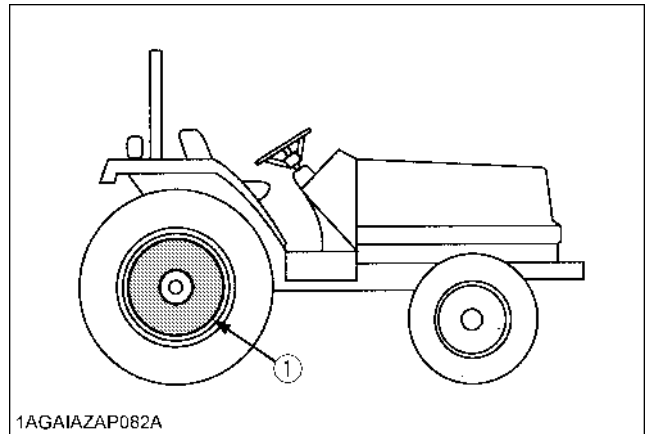
■ Rear Ballast

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
	[Steel disk] 72.5 kg x 3 pieces

◆ **Liquid Ballast in Rear Tires**

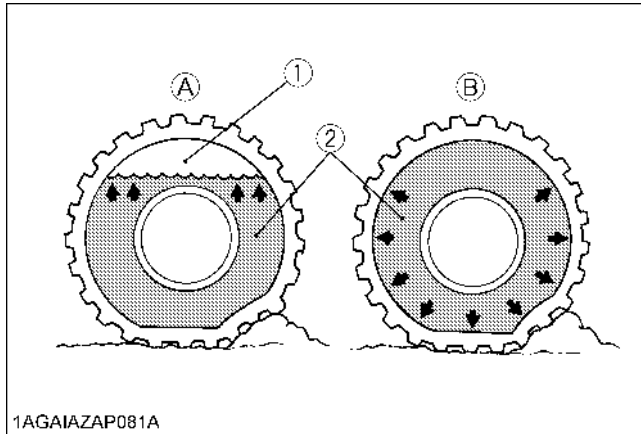
Water and calcium chloride solution provides safe economical ballast. Used properly, it will not damage tires, tubes or rims. The addition of calcium chloride is recommended to prevent the water from freezing. Use of this method of weighting the wheels has the full approval of the tire companies. See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

Liquid weight per tire (75 Percent filled)

Tire sizes	460 / 85R34 (18.4R34)
Slush free at -10 °C Solid at -30 °C [Approx. 1 kg CaCl ₂ per 4 L of water]	417 kg
Slush free at -24 °C Solid at -47 °C [Approx. 1.5 kg CaCl ₂ per 4 L of water]	457 kg
Slush free at -47 °C Solid at -52 °C [Approx. 2.25 kg CaCl ₂ per 4 L of water]	490 kg

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

CAB OPERATION

DOOR AND WINDOW

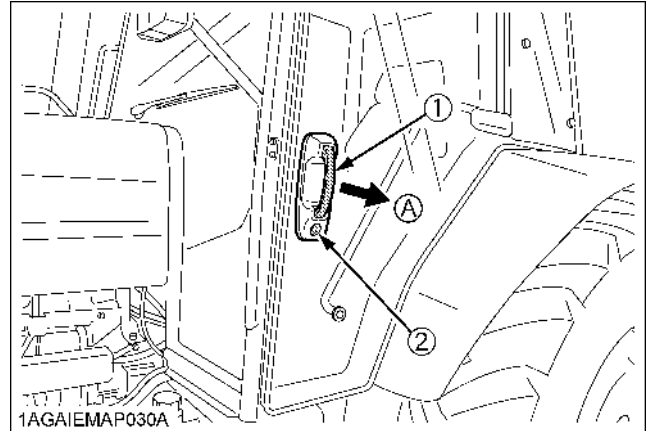
■ Locking and Unlocking the Door

From the outside Insert the key into the door lock. Turn the key clockwise to unlock the door. To lock the door, turn the key in the opposite direction. The key can be removed when it is in the vertical direction.

From the inside Push down the lock knob to lock the door. Pull up the lock knob to unlock the door.

■ Opening the Door

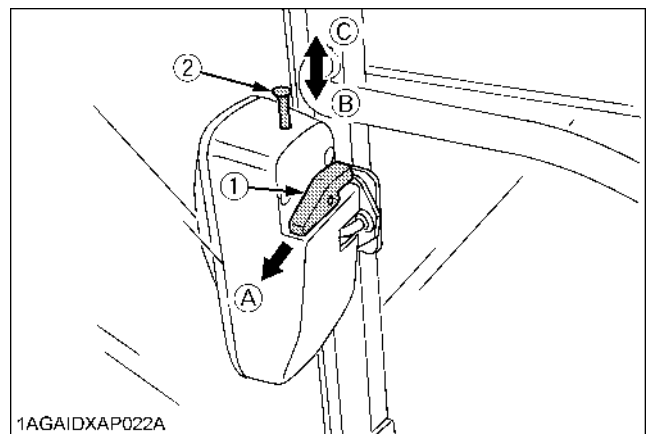
From the outside Unlock the door, and pull the outer door handle.



(1) Outer door handle
(2) Door lock

(A) "PULL"

From the inside Unlock the door and pull the inner door handle.

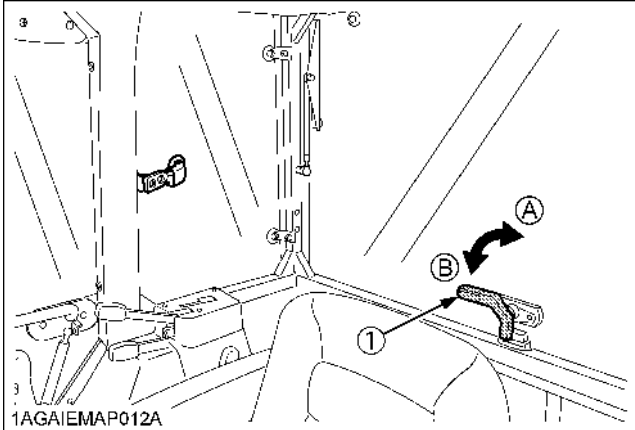


(1) Inner door handle
(2) Lock knob

(A) "PULL"
(B) "PUSH" (Lock)
(C) "PULL" (Unlock)

■Rear Window

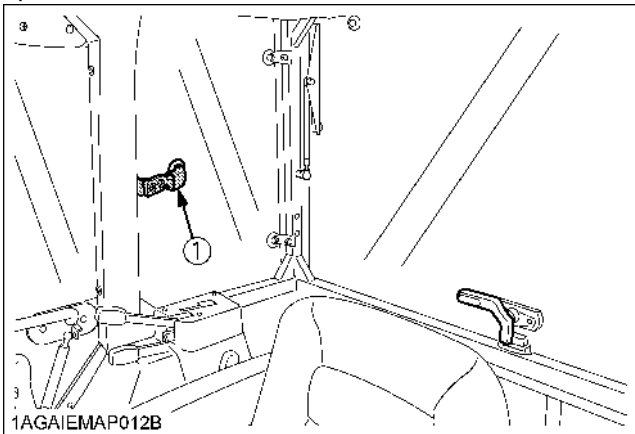
Turn the rear window handle clockwise to the vertical position and push the handle. The rear window is opened by the gas spring cylinder.



(1) Rear window handle (A) "OPEN" (B) "CLOSE"

■Side Window

Pull the side window handle and push the side window to open the window.



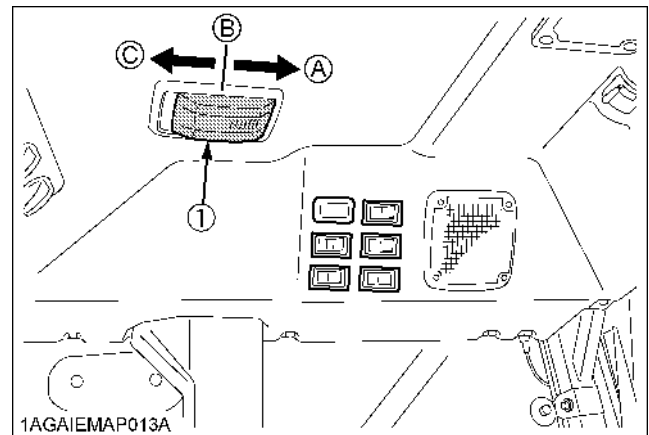
(1) Side window handle

DOME LIGHT

■Dome Light

Sliding the dome light lens will give the following light condition:

- OFF The light does not turn on when the door is opened.
- DOOR The light turns on when the door (LH) is opened. It turns off when the door (LH) is closed.
- ON The light remains on regardless of the door position.



(1) Dome light (A) "OFF" (B) "DOOR" (C) "ON"

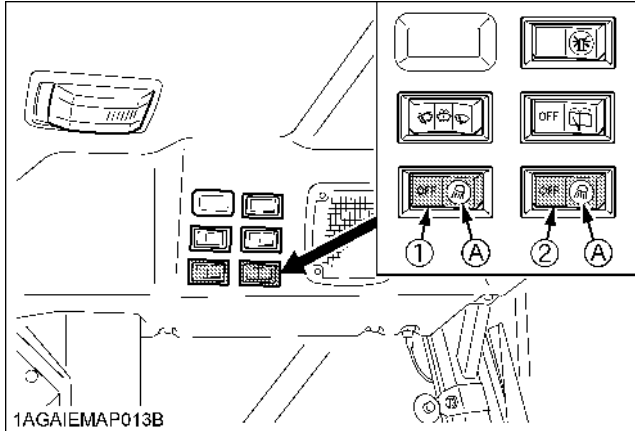
IMPORTANT :

- The battery will discharge if the dome light remains on. Be sure to check the dome light lens position and/or door closure.

WORK LIGHT

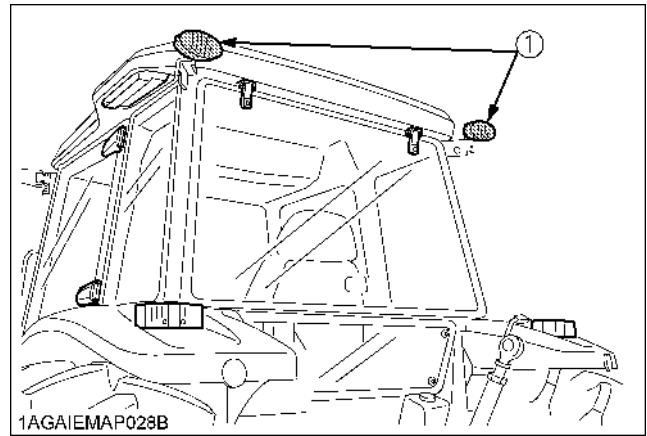
■ Work Light Switch

Turn on the key switch and press the right half of the work light switch. The work light and the switch's indicator light up. Press the left half of the work light switch to turn off the light and indicator.



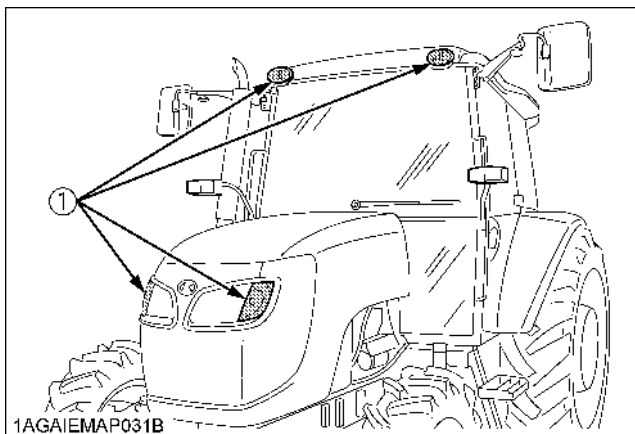
(1) Front work light switch (A) Indicator for work lights
 (2) Rear work light switch

■ Rear Work Light



(1) Rear work light

■ Front Work Light



(1) Front work light

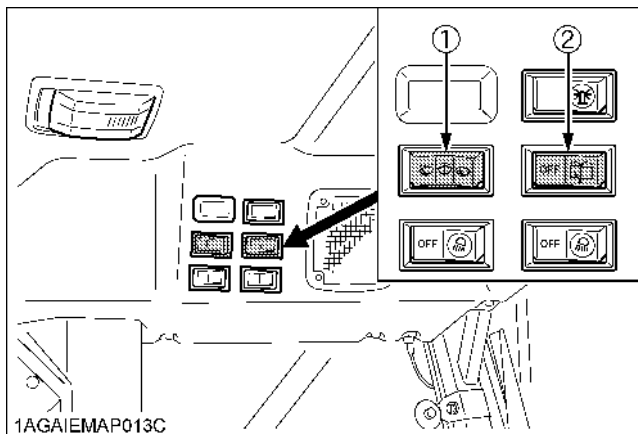
WIPER

■ Front Wiper / Washer Switch

1. Turn on the key switch and press the right half of the wiper switch to the first step, the wiper is activated.
When the switch is pressed further to the second step, washer liquid jets out.
The jetting continues while the switch is pressed and the wiper is activated continuously.
2. Press the left half to the first step, the wiper is activated at regular intervals.
When the switch is pressed further to the second step, washer liquid jets out and the wiper is activated at regular intervals.

■ Rear Wiper / Washer Switch (if equipped)

1. Turn on the key switch and press the right half of the wiper switch to the first step, and the wiper is activated.
When the switch is pressed further to the second step, washer liquid jets out.
The jetting continues while the switch is pressed and the wiper is activated continuously.
2. Press the left half of the wiper / washer switch, washer liquid only jets out.



(1) Front wiper / washer switch

(2) Rear wiper / washer switch

■ Using the Wipers in Cold Season

1. While not used in cold season, keep the wiper blades off the windshield to prevent them from being stuck with ice.
2. If the windshield is covered with snow, scrape it off the windshield before using the wipers.
3. If the wiper blades are stuck on the windshield with ice and fail to move, be sure to turn the main key switch to "OFF" and remove the ice off the blades. Then place the main key switch back to "ON".
4. When commercially available cold-season wiper blades are used, make sure their size is the same as or smaller than that of the standard ones.

IMPORTANT :

- In cold season, the wiper blades and the wiper motor might get overloaded causing damage. To avoid this, be sure to take the above precautions.

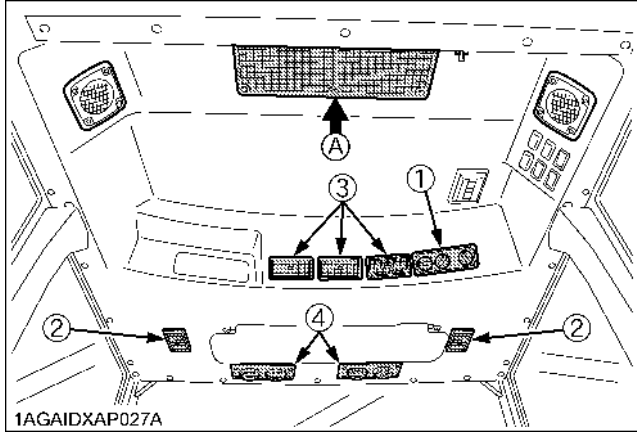
IMPORTANT :

- Do not activate the wipers when the windows are dry, they may be scratched.
Be sure to jet washer liquid first and then activate the wipers.

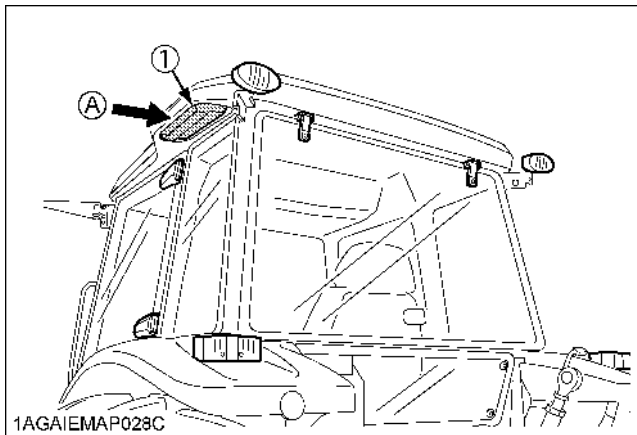
AIR CONDITIONER

■ Airflow

Air in the CAB and fresh air introduced into the CAB flow as shown below. Adjust the 9 air ports to obtain the desired condition.



(1) Control panel (A) "INNER AIR RECIRCULATION"
 (2) Door air outlet
 (3) Face air outlet
 (4) Front air outlet



(1) Fresh air filter (A) "FRESH AIR INLET"

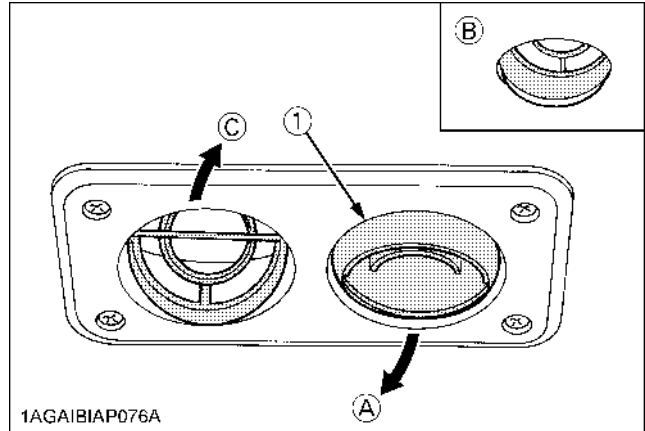
IMPORTANT :

- Do not pour water directly into the fresh air port while washing the vehicle.

■ Air Control Vent

◆ Front air outlet

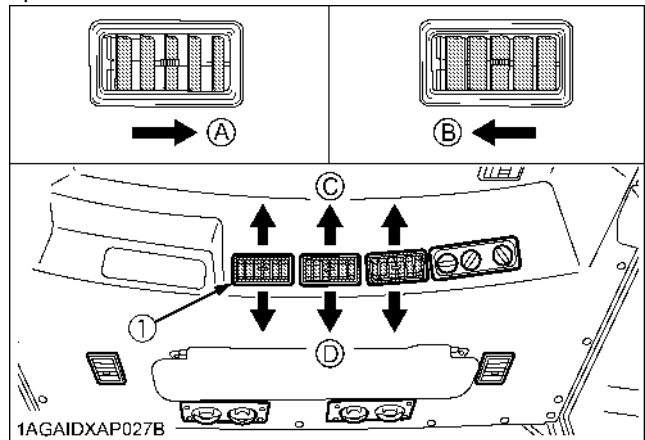
The front air outlets can be independently adjusted as required. To defrost the windshield, rotate the outlets toward the windshield.



(1) Front air outlet (A) "WINDSHIELD"
 (B) "CLOSED"
 (C) "CHEST AREA"

◆ Face air outlet

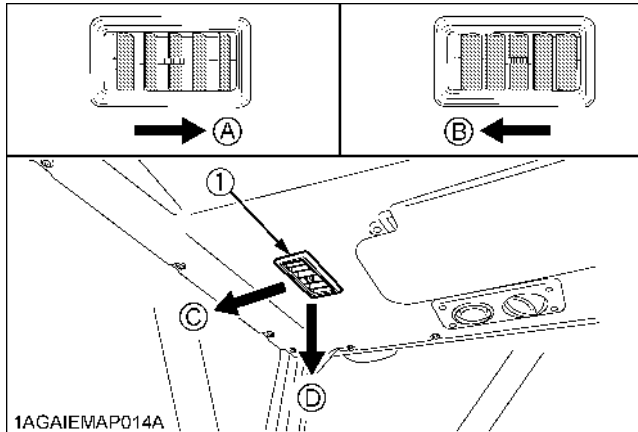
The face air outlets can be adjusted to direct air on to the operator or the rear of the CAB.



(1) Face air outlet (A) "OPEN"
 (B) "SHUT"
 (C) "BACK AREA"
 (D) "FACE AREA"

◆ **Door air outlet**

The door air outlets can be adjusted to direct air on to the door window or the foot area.



(1) Door air outlet


- (A) "OPEN"
- (B) "SHUT"
- (C) "DOOR WINDOW"
- (D) "FOOT AREA"


CAUTION

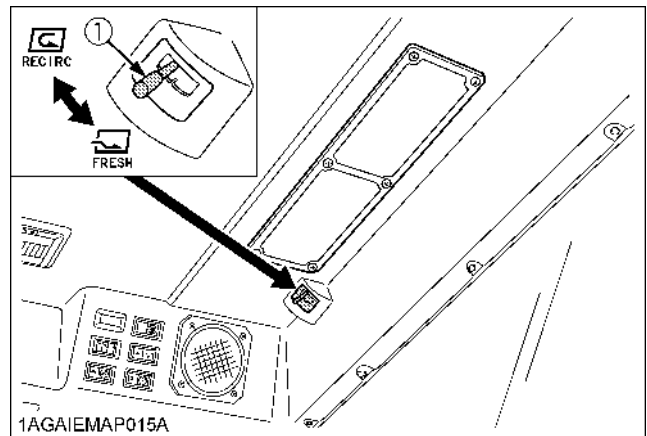
To avoid personal injury;

- Replace the water hoses every two years.
- Daily inspection
Have the tractor repaired immediately if any of the following defects are discovered. (Such defects may cause burns or injury. They may also cause engine seizure or other serious failure.)
 - Scratches, cracks or swelling in water hoses.
 - Water leakage at water hose joints.
 - Missing or damaged water hose protective wrap or grommets.
 - Loose mounting bolts, damaged brackets.
- Do not touch the water hoses and the heater with your hand. You may get burned.
- If the window fails to defrost in extreme conditions or becomes cloudy when dehumidifying the CAB, wipe off moisture with a soft cloth.
- Do not block all the air outlets of the air conditioner. A problem could occur.

◆ **Recirculation / fresh air selection lever**

FRESH AIR: Set the lever to the  position, and fresh air will flow into the CAB. This is helpful when you work in dusty conditions or if the glass windows get foggy.

RECIRCULATION: Set the lever to the  position, and the in-CAB air will be recirculated. This is useful for cooling or heating the CAB quickly or keeping it extra cool or warm.



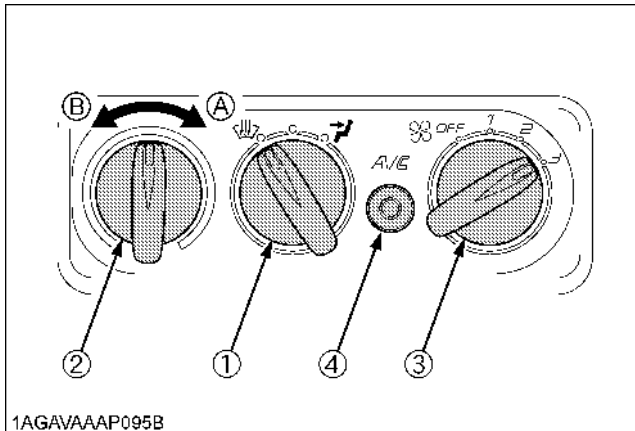
(1) Recirculation / fresh air selection lever

-  "FRESH AIR"
-  "RECIRCULATION"

NOTE :

- When heating, do not keep the lever at the "RECIRCULATION" position for a long time. The windshield easily gets foggy.
- While working in a dusty conditions, keep the lever at the "FRESH AIR" position. This increases the pressure in the CAB, which helps prevent dust from coming into the CAB.

Control Panel



1AGAVAAP095B

- (1) Mode switch
 - (2) Temperature control dial
 - (3) Blower switch
 - (4) Air conditioner switch with indicator light
- (A) "WARM"
(B) "COOL"

Mode switch

Set the mode switch to the desired position.

- Air is blown from only the face air outlets.
- Air is blown from the front, face and door air outlets.
- Air is blown from the front and door air outlets.

Temperature Control Dial

Set this dial at the desired position to obtain the optimum air temperature. Turn the dial in the "WARM" direction to obtain warmer air. Turn it in the "COOL" direction to obtain cooler air.

Blower Switch

Air volume can be changed in three steps. At the "3" position, the largest air volume is obtained.

Air Conditioner Switch

Push this switch to activate the air conditioner. An indicator light will light up when the switch is set to "ON". Push the switch again to turn the air conditioner off, in which case the indicator light will be off.

NOTE :

- With the blower switch at the "OFF" position, the indicator light will not light up even when the air conditioner switch is set to "ON".

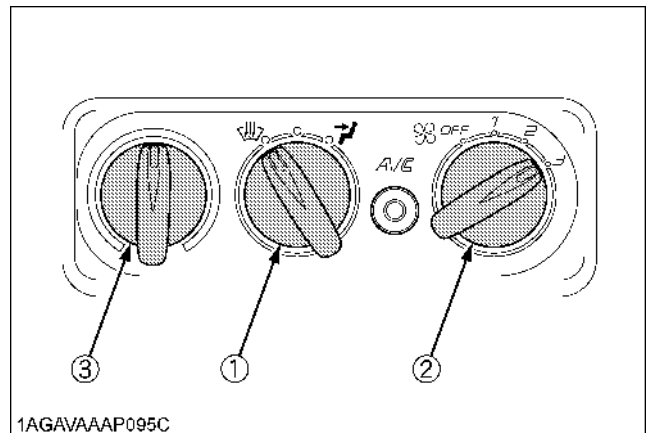
IMPORTANT :

- To operate the air conditioner after the tractor has not been used for one week or longer, run the engine at idling speed first and then set the air conditioner switch to "ON". Keep this for one minute or so. If the air conditioner switch is set to "ON" with the engine running at high rpm, the compressor may get in trouble.

Operation

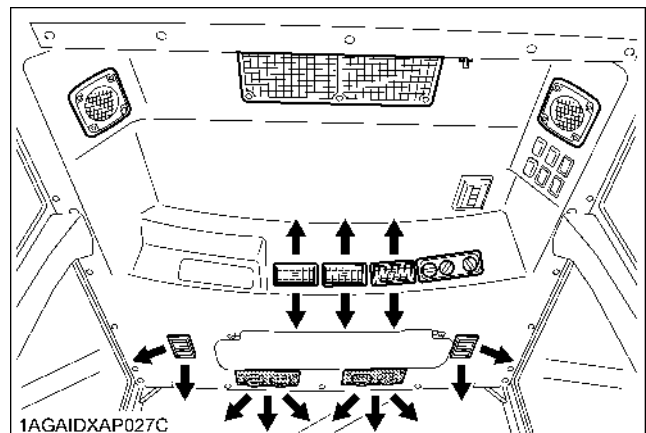
Heating

1. Set the mode switch to the , , or position.
2. Set the recirculation / fresh air selection lever to the "FRESH AIR" position. To raise the temperature in the CAB quickly, set this lever to the "RECIRCULATION" position.
3. Adjust the blower (1/2/3) switch and the temperature control dial to achieve a comfortable temperature level.





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- (1) Mode switch
- (2) Blower switch
- (3) Temperature control dial



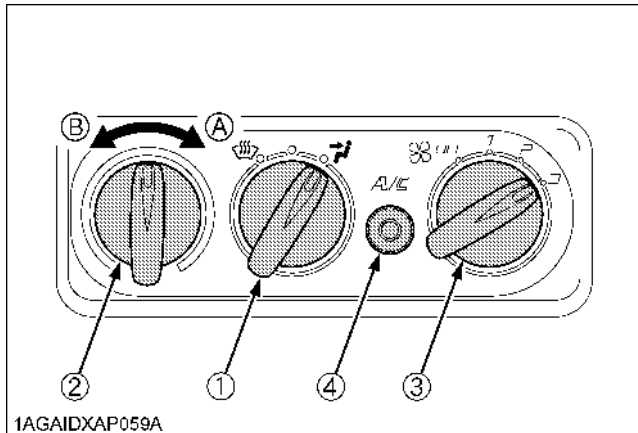
1AGAIDXAP027C

◆ **Cooling or dehumidifying-heating**

1. Set the mode switch to the  or  position.
2. Set the recirculation / fresh air selection lever to the "FRESH AIR" position. To fall the temperature in the CAB quickly, set this lever to the "RECIRCULATION" position.
3. Press and turn on the air-conditioner switch with indicator.
4. Turn on the blower (1/2/3) switch.
5. Adjust the temperature control dial to the "COOL" or an intermediate position to achieve a comfortable temperature level.

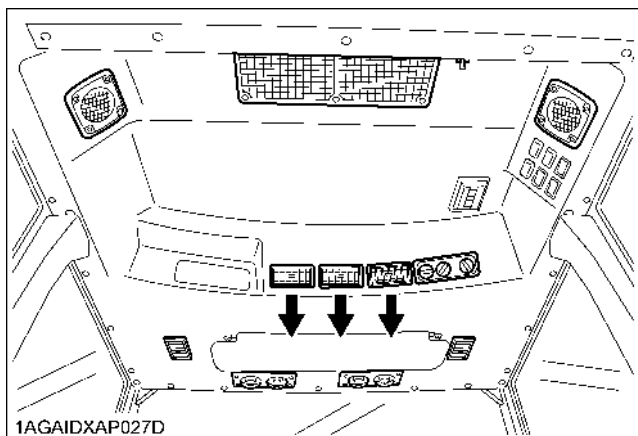
NOTE :

- In summer when the heater is not used, keep the temperature control dial at the max "COOL" (end of counterclockwise) position. Otherwise, hot air will raise the temperature in the CAB.




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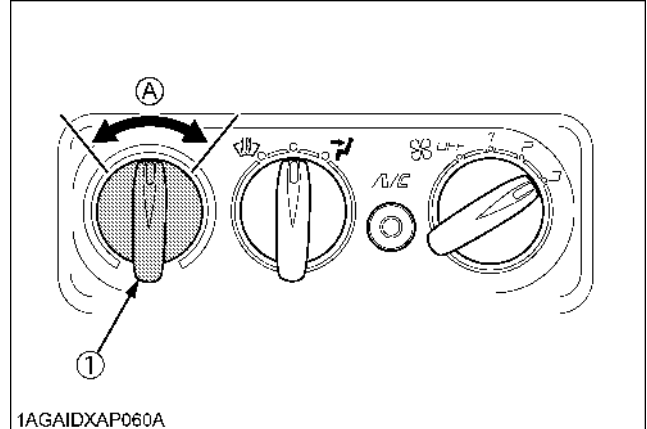
- | | |
|---|------------|
| (1) Mode switch | (A) "WARM" |
| (2) Temperature control dial | (B) "COOL" |
| (3) Blower switch | |
| (4) Air conditioner switch with indicator light | |



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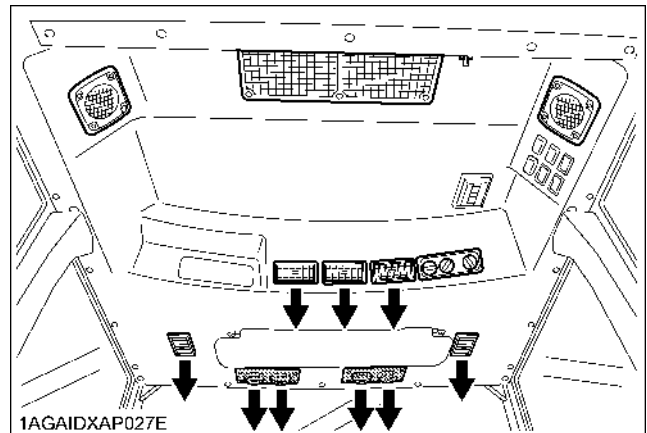
◆ **Foot warming and head cooling**

1. Set the mode switch to the  position.
2. In the cooling or dehumidifying-heating mode, set the temperature control dial at the center position area.
3. Open the front air outlet and the door air outlet direct it to your feet.
4. You can feel your head cool and your feet warm.



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
- (1) Temperature control dial (A) Center position area

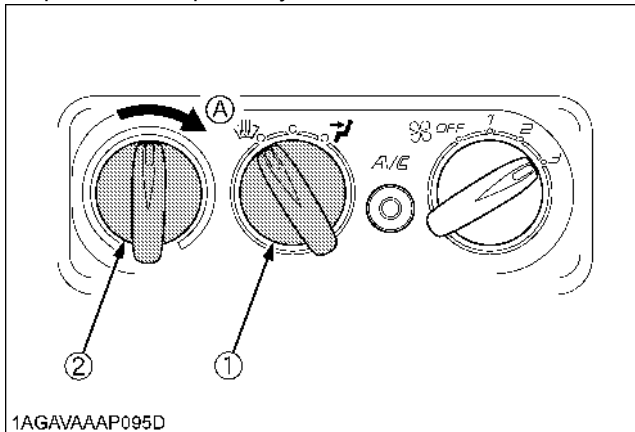


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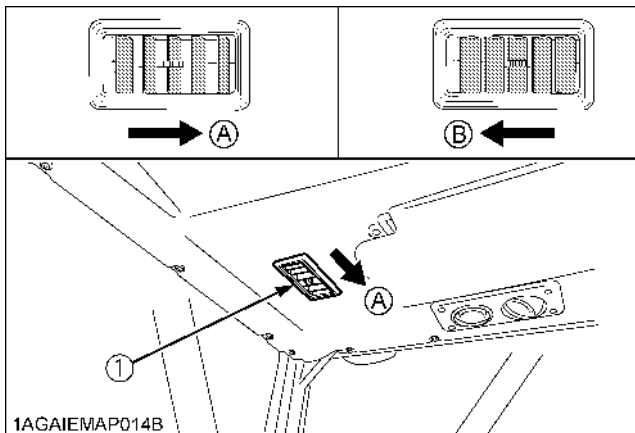
◆ **Defrosting or demisting**

To defrost or demist the windshield, take the following steps.

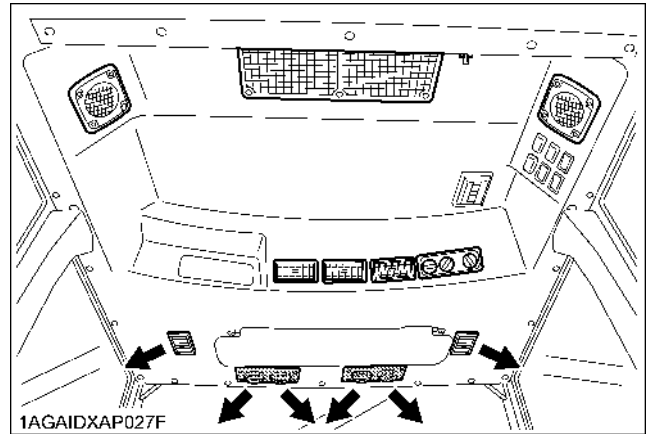
1. Set the mode switch to the  position.
2. Open the front air outlet, door air outlet and direct it to the windshield.
3. Set the recirculation / fresh air selection lever to the "FRESH AIR" position.
4. Set the blower switch and the temperature control dial to the "3" and max "WARM" (end of clockwise) positions, respectively.




(1) Mode switch (A) "WARM"
 (2) Temperature control dial



(1) Door air outlet (A) "OPEN"
 (B) "SHUT"



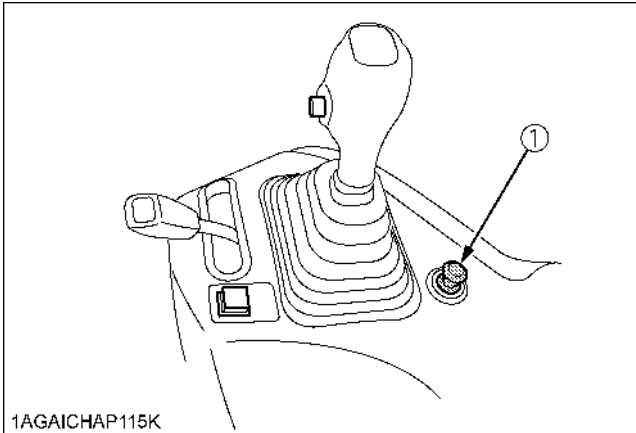
NOTE :

- If you set the temperature control dial to "COOL" side position at  position, cool air will not come out from the face air outlets.

CIGARETTE LIGHTER

Push the lighter knob down to activate, with the key switch in the "ON" or "ACC" positions.

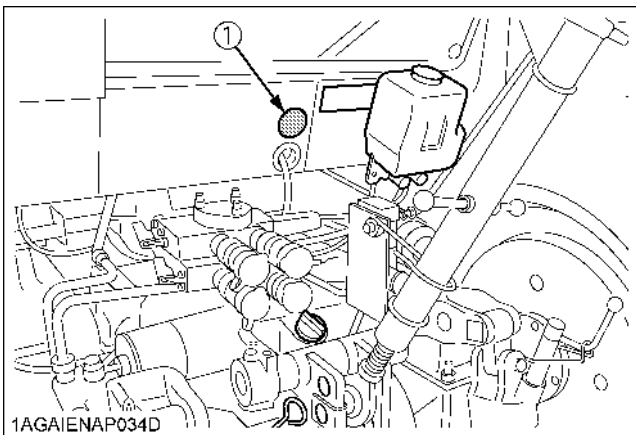
Lighter will move up when ready to use.



(1) Cigarette lighter

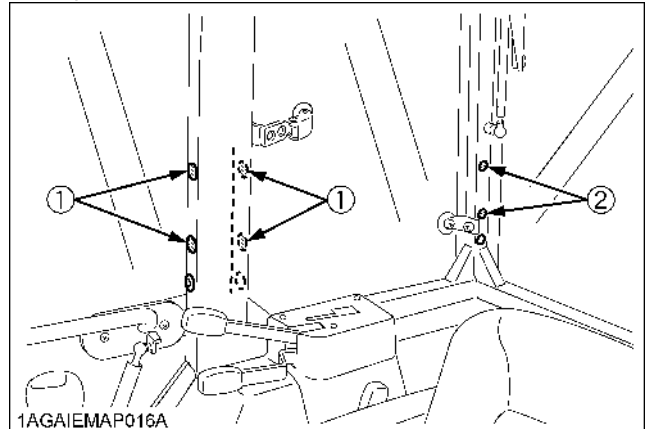
INSTALLING THE IMPLEMENT CONTROL BOX

1. Make an opening in each of the rubber caps. Introduce the implement control cable and hydraulic hose through these openings into the CAB.



(1) Rubber cap

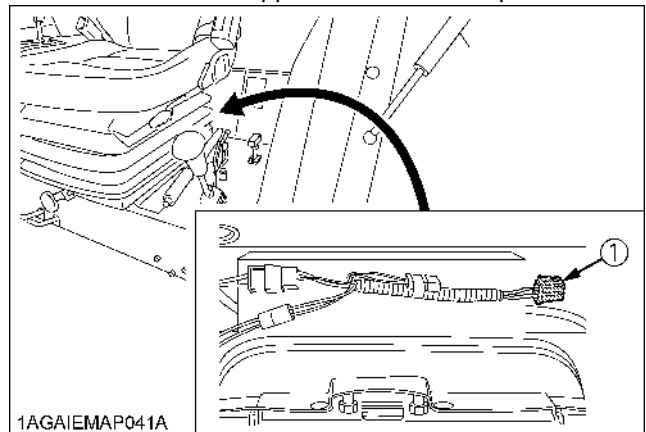
2. Make the holes in each of the pillar covers located on the marked portion. Install the implement control box in place.



- (1) 4 - M8 nuts
(2) 2 - M6 nuts

■ Electrical Outlet

A electrical outlet is supplied for use with implement.



(1) Accessory electrical outlet (15A)

BEACON LIGHT

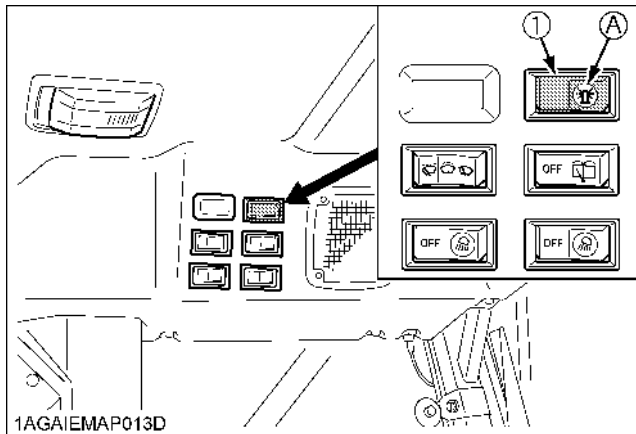
■ Beacon Light Switch

The beacon light switch with wire harness for beacon light connection is equipped.

Turn on the key switch and press the right half of the beacon light switch. Then the beacon light and indicator of switch will be activated.

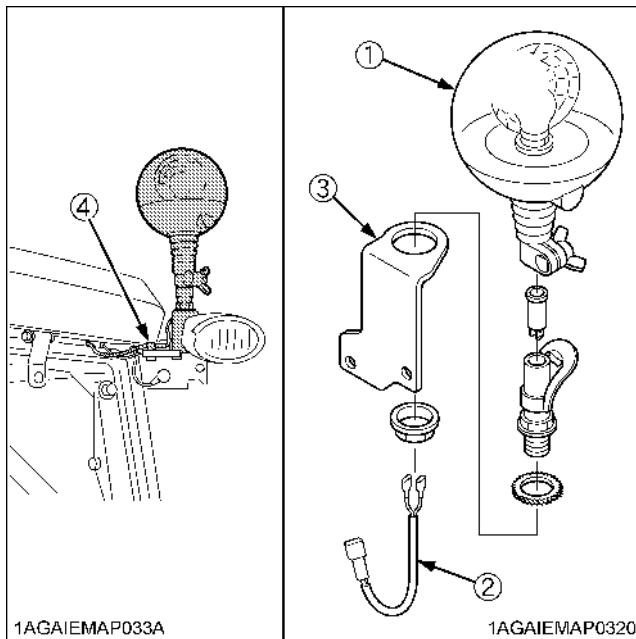
Press the left half of the switch to turn off the light and the indicator.

- Pre-assemble the beacon light and relay harness, and connect the relay harness to the connector of beacon electrical outlet.



(1) Beacon light switch

(A) Indicator for beacon light



(1) Beacon light (if equipped)

(2) Relay harness for beacon light
(MAX. 7 amperes)

(3) Stay

(4) Beacon electrical outlet

NOTE :

- The relay harness for beacon light is in the accessories box.

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	82	
2	Wheel bolt torque	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	83	
3	Battery condition	Check		○		○		○		○		○		○		○	every 100 Hr	85	*5	
4	Greasing	---		○		○		○		○		○		○		○	every 100 Hr	83		
5	Fan belt	Adjust		○		○		○		○		○		○		○	every 100 Hr	87		
6	Brake Pedal	Adjust		○		○		○		○		○		○		○	every 100 Hr	88		
7	Parking Brake Lever	Adjust		○		○		○		○		○		○		○	every 100 Hr	82		
8	Air cleaner element	Primary element	Clean		○		○		○		○		○		○		every 100 Hr	86	*1	
		Secondary element	Replace															every 1 year	99	*2
			Replace																every 1 year	99
9	Fuel line	Check		○		○		○		○		○		○		○	every 100 Hr	89		
		Replace																every 2 years	102	*4
10	Hydraulic oil filter	Replace	⊗			○				○				○			every 200 Hr	90		
11	Toe-in	Adjust				○				○				○			every 200 Hr	92		
12	Fuel tank water	Drain				○				○				○			every 200 Hr	92		
13	Oil cooler line	Check				○				○				○			every 200 Hr	91		
		Replace																every 2 years	102	*4
14	Power steering oil line	Check				○				○				○			every 200 Hr	91		
		Replace																every 2 years	102	*4
15	Radiator hose and clamp	Check				○				○				○			every 200 Hr	90		
		Replace																every 2 years	102	

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	91	
		Replace																every 2 years	102	*3
17	Engine oil	Change	⊗					○							○			every 300 Hr	95	
18	Water separator	Clean								○								every 400 Hr	96	
19	Fuel filter	Replace								○								every 400 Hr	96	
20	Engine oil filter	Replace	⊗												○			every 600 Hr	97	
21	Transmission fluid	Change	⊗												○			every 600 Hr	97	
22	Front differential case oil	Change	⊗												○			every 600 Hr	98	
23	Front axle gear case oil	Change	⊗												○			every 600 Hr	98	
24	King-pin pivot	Adjust													○			every 600 Hr	99	
25	Brake oil	Change													○			every 600 Hr	99	*4
26	Front axle pivot	Adjust													○			every 600 Hr	98	
27	Engine valve clearance	Adjust																every 800 Hr	99	*4
28	Fuel injection nozzle Active test	Check																every 1500 Hr	99	*4
29	Supply pump	Check																every 3000 Hr	99	*4
30	Turbo charger	Check																every 3000 Hr	99	*4
31	Intake air heater	Check																every 3000 Hr	99	*4
32	Cooling system	Flush																every 2 years	100	
33	Coolant	Change																every 2 years	100	
34	Parking brake cable	Replace																every 2 years	102	*4
35	Brake hose	Replace																every 2 years	102	*4
36	Master cylinder kit	Replace																every 2 years	102	*4
37	Equalizer kit	Replace																every 2 years	102	*4
38	Brake seal 1 and 2	Replace																every 2 years	102	*4
39	Assist cylinder hose	Replace																every 2 years	102	*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	102	
41	Brake system	Bleed															Service as required	103	*4
42	Clutch housing water	Drain															Service as required	103	
43	Fuse	Replace															Service as required	104	
44	Light bulb	Replace															Service as required	105	

No.	Items		Indication on hour meter													Interval	Ref. page		
			50	100	150	200	250	300	350	400	450	500	550	600	650				700
1	Inner air filter	Clean				○				○					○		every 200 Hr	93	
2	Fresh air filter	Clean				○				○					○		every 200 Hr	93	
3	Air conditioner condenser	Clean				○				○					○		every 200 Hr	94	
4	Air conditioner drive belt	Adjust				○				○					○		every 200 Hr	95	
5	Air conditioner pipes and hoses	Check															every 1 year	99	
		Replace															every 2 years	102	
6	CAB isolation cushion	Check															every 1 year	99	
7	Washer liquid	Add															Service as required	106	
8	Refrigerant (gas)	Check															Service as required	107	

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.

LUBRICANTS

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

NOTE :

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

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 (≥ 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 (< 500 ppm) or Ultra Low Sulfur Fuel (< 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 °C or elevations above 1500 m.
- If diesel fuel with sulfur content greater than 0.5% sulfur content is used, reduce the service interval for engine oil and filter by 50%.
- DO NOT use diesel fuel with sulfur content greater than 1.0%.
- 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:

The oil used to lubricate the transmission is also used as hydraulic fluid. To insure proper operation of the hydraulic system and to complete lubrication of the transmission, it is important that a multi-grade transmission fluid is used in this system. We recommend the use of **KUBOTA UDT or SUPER UDT fluid** for optimum protection and performance. (Consult your local KUBOTA Dealer for further detail.)

Do not mix different brands together.

- 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



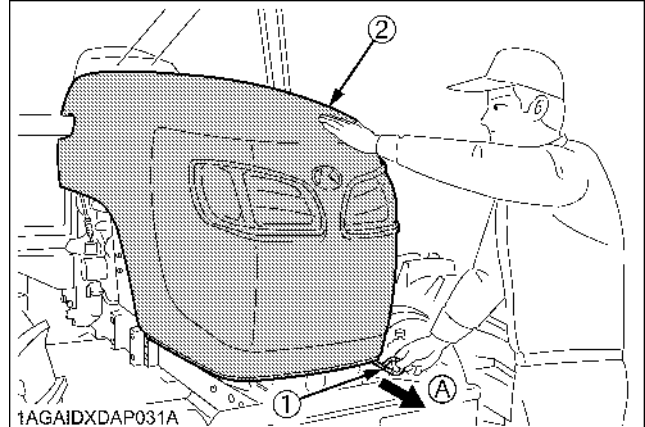
CAUTION

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.



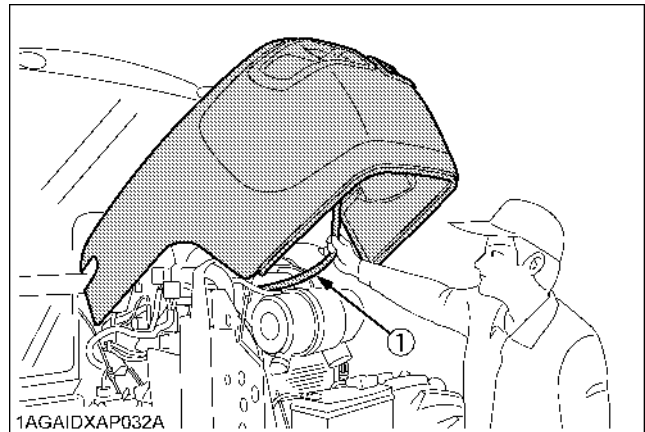
(1) Release lever

(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 through daily inspection before operating the machine to start the engine.



CAUTION

To avoid personal injury:

- Be sure to check and service the tractor on a flat place with the engine shut off and the parking brake "ON".

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

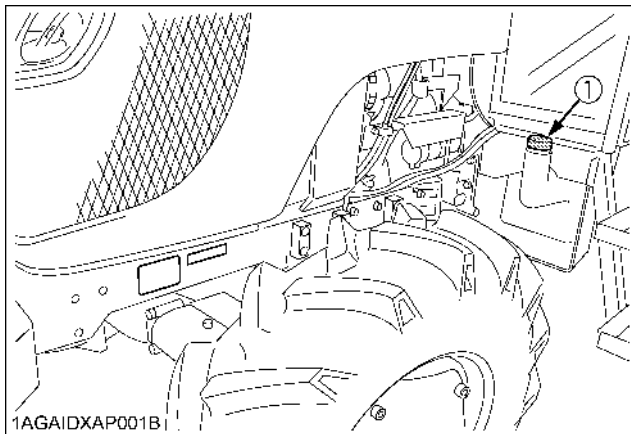


CAUTION

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

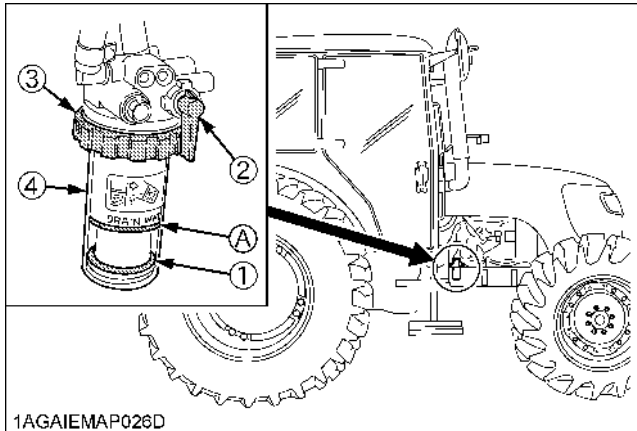
Fuel tank capacity	175 L
--------------------	-------

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

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"

IMPORTANT :

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

■ Checking Engine Oil Level

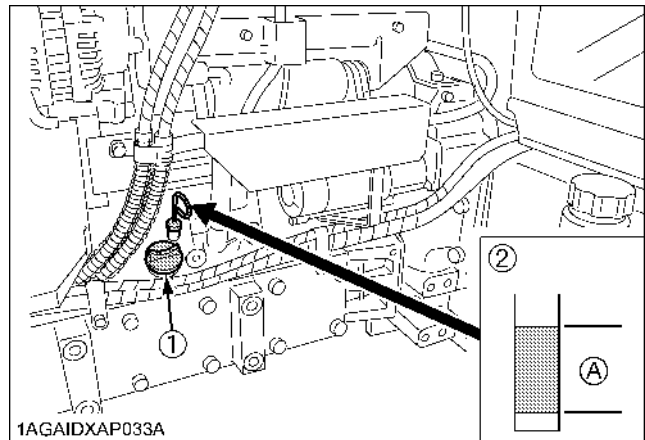


CAUTION

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.)



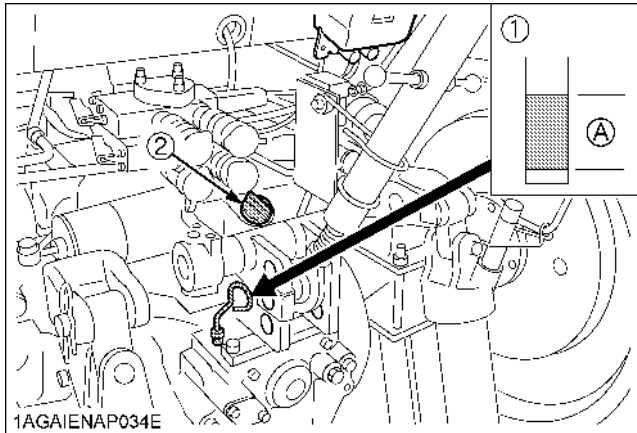
- (1) Oil inlet
- (2) Dipstick
- (A) Oil level is acceptable within this range.

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

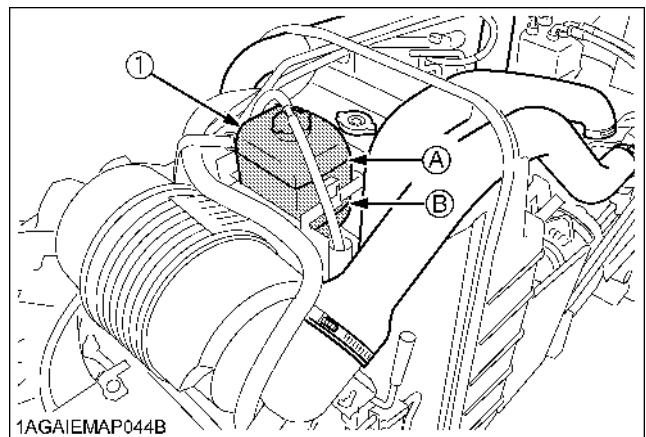


CAUTION

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 water only up to the full level.
In case of leakage, add anti-freeze and water in the specified mixing ratio up to the full level.
(See "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 water and anti-freeze to fill the recovery tank.
- If water should leak, consult your local KUBOTA Dealer.

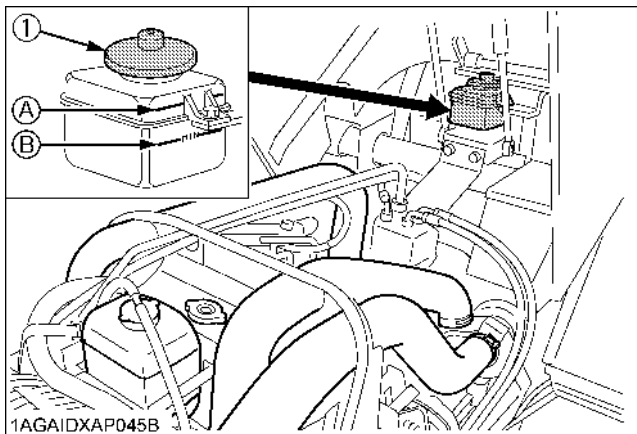
■Checking Brake Oil Level

⚠ 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.

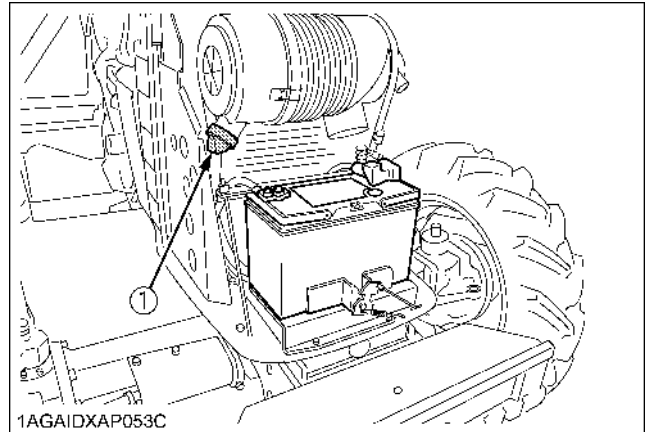


(1) Oil tank cap

(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

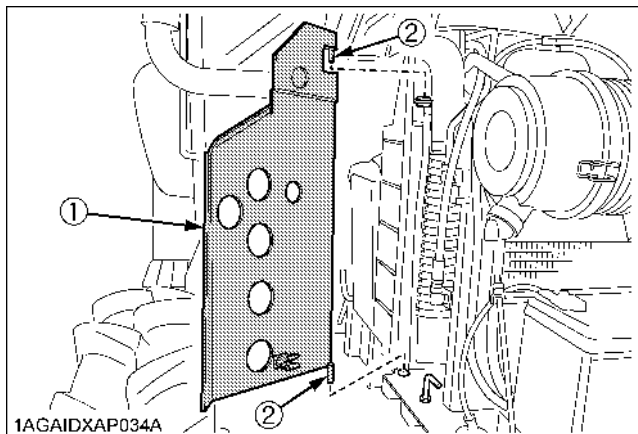
⚠ CAUTION

To avoid personal injury:

- Be sure to stop the engine before removing the screen.
- The condenser and receiver become hot while the air conditioner is running. Before checking or cleaning them, wait long enough until they cool down.

◆ Detaching the Panel [RH]

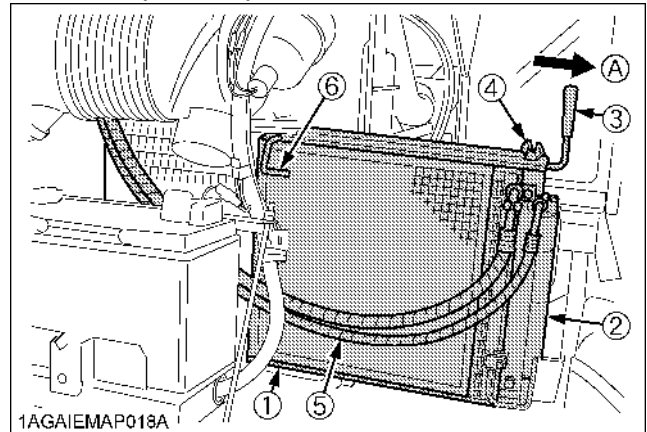
1. To open the panel (RH), pull its front outward.
2. Lift the panel until pin (A) clears the hole.
3. Pull the panel.
4. Attaching the panel is performed vice versa.



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

◆ Detaching the Panel (LH)

1. Release the air conditioner hoses off the hook.
2. Loosen the wing nut.
3. Hold the handle, slide the air conditioner condenser assembly toward yourself.

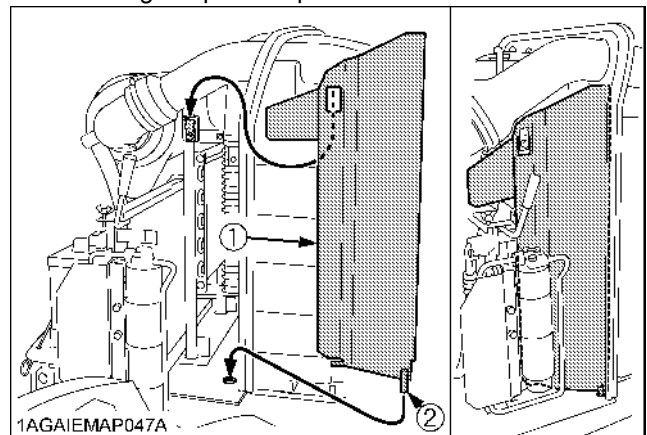


(1) Condenser (A) "PULL"
(2) Receiver
(3) Handle
(4) Wing nut
(5) Air conditioner hose
(6) Hook

IMPORTANT :

- Do not hold the air conditioner receiver or the air conditioner pipes when sliding out the condenser for cleaning.

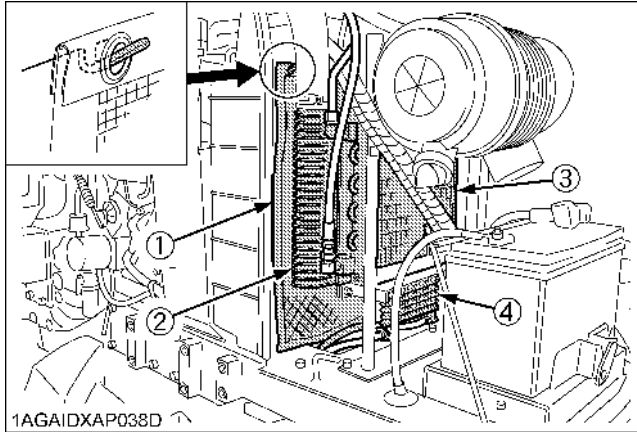
4. Lift the panel (LH) until pin (A) clears the hole.
5. Pull the panel (LH).
6. Attaching the panel is performed vice versa.



(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) 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.

■ **Cleaning Air Conditioner Condenser Screen**

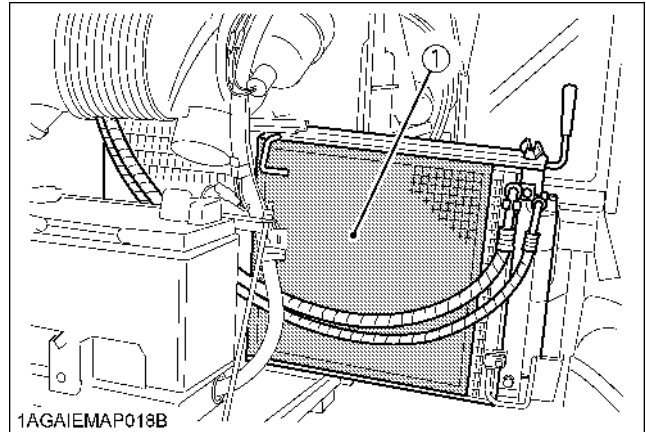


CAUTION

To avoid personal injury:

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

1. Detach the air conditioner condenser screen and remove all foreign materials.



(1) Air conditioner condenser screen

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.)

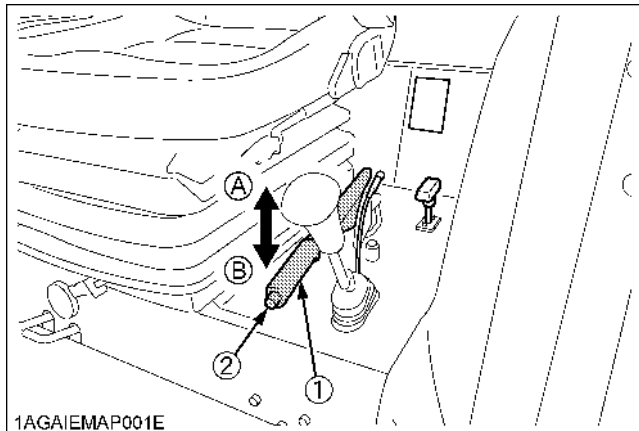
■Checking Parking Brake

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 (A) "PULL"
(2) Release button (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

1. Always check condition of seat belt 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.

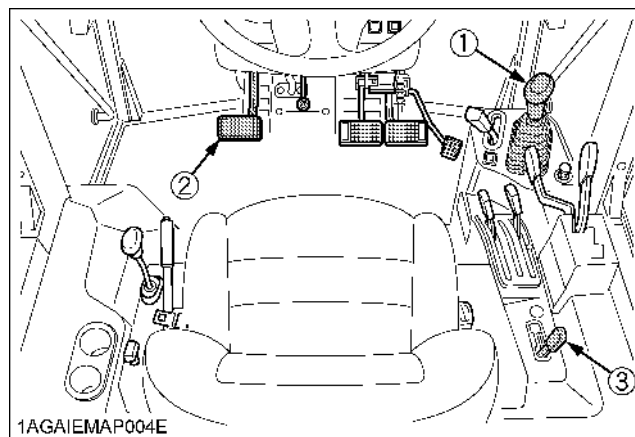
1. Place all control levers in the "NEUTRAL" position.
2. Set the parking brake and stop the engine.

◆ Test : Switch for the main gear shift lever.

1. Sit on operator's seat.
2. Shift the main gear shift lever to the desired position.
3. Depress the clutch pedal fully.
4. Disengage the PTO clutch control lever.
5. Turn the key to "START" position.
6. The engine must not crank.
7. If it cranks, consult your local KUBOTA Dealer for this service.

◆ Test : Switch for the PTO clutch control lever.

1. Sit on operator's seat.
2. Engage the PTO clutch control lever.
3. Depress the clutch pedal fully.
4. Turn the key to "START" position.
5. The engine must not crank.
6. If it cranks, consult your local KUBOTA Dealer for this service.



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

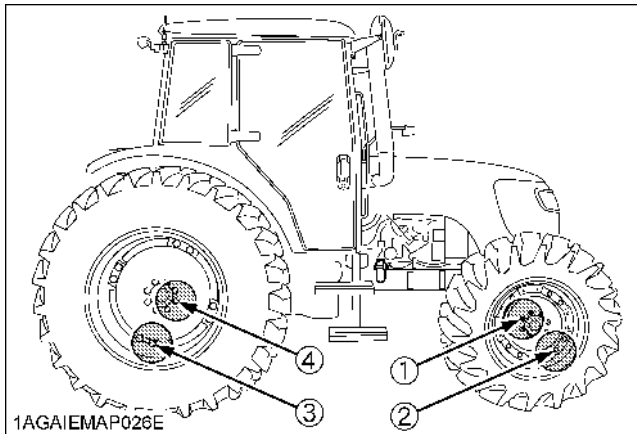
■Checking Wheel Bolt Torque

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)

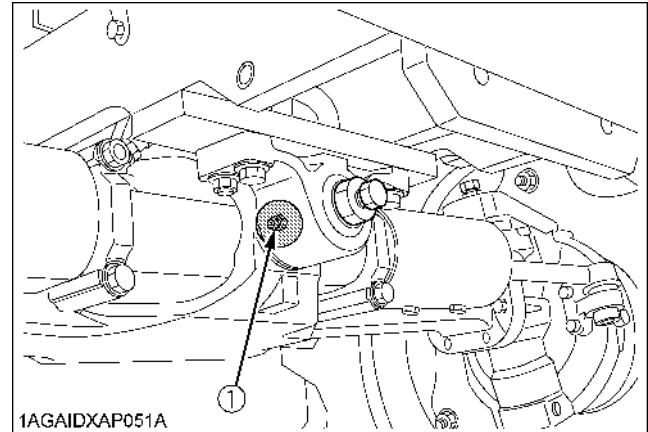
(1), (2), (3)	(4)
260 to 303 (26.5 to 31.0)	343 to 401 (35.0 to 41.0)

EVERY 100 HOURS

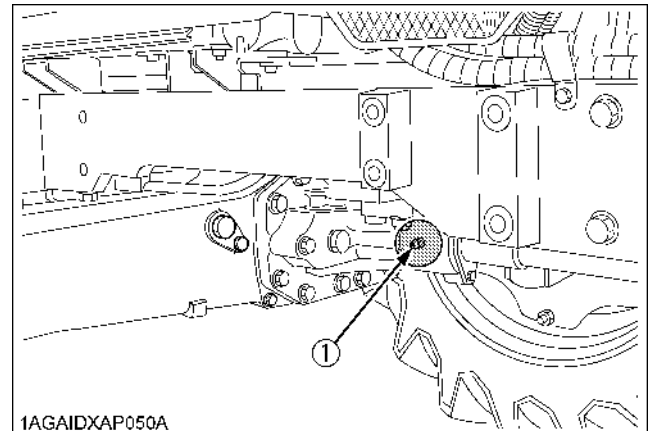
■Lubricating Grease Fittings

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

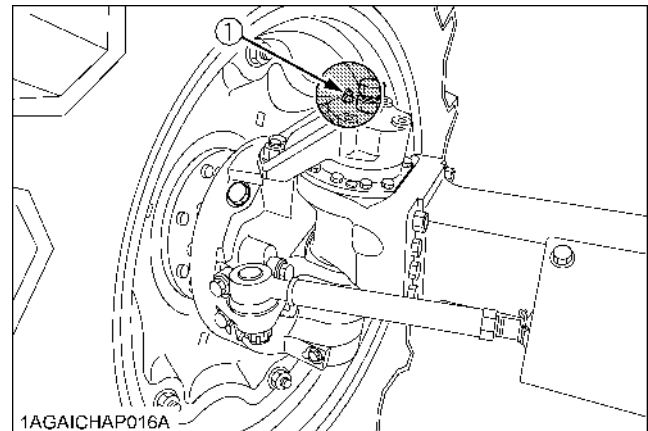
If you operated the machine in extremely wet and muddy conditions, lubricate grease fittings more often.



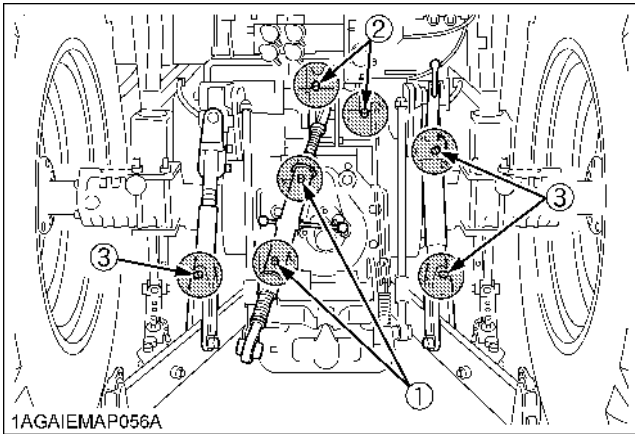
(1) Grease fitting (Front axle support)



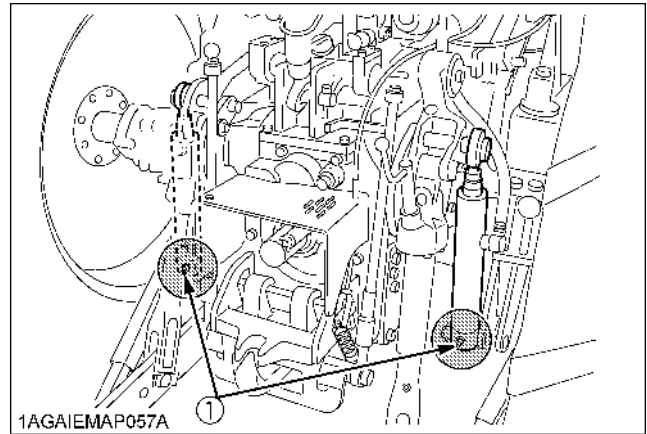
(1) Grease fitting (Front axle support)



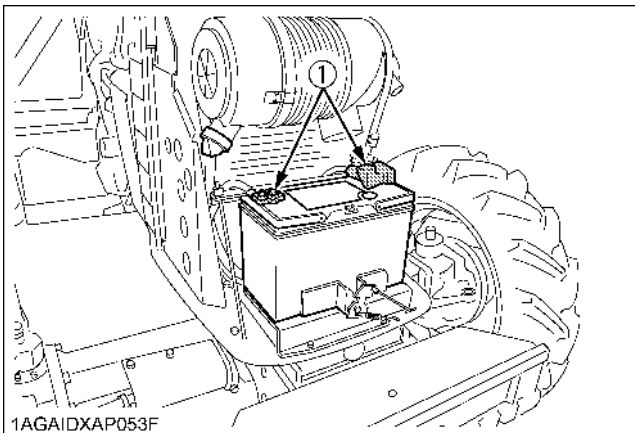
(1) Grease fitting (Front axle gear case support) [RH, LH]



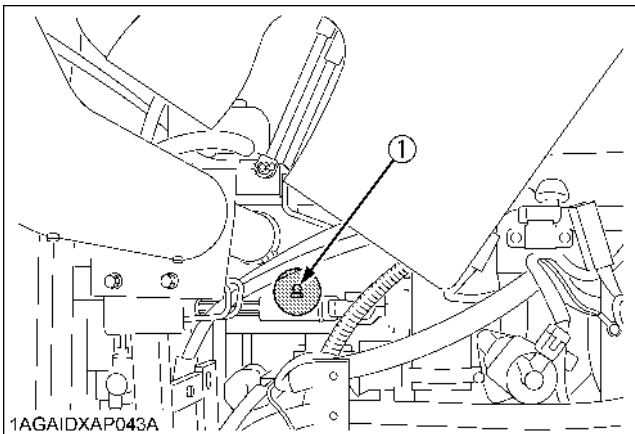
- (1) Grease fitting (Top link)
- (2) Grease fitting (Top link bracket)
- (3) Grease fitting (Lifting rod)



- (1) Grease fitting (Assist cylinder)



- (1) Battery terminals



- (1) Grease fitting (Steering joint shaft)

■ 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:

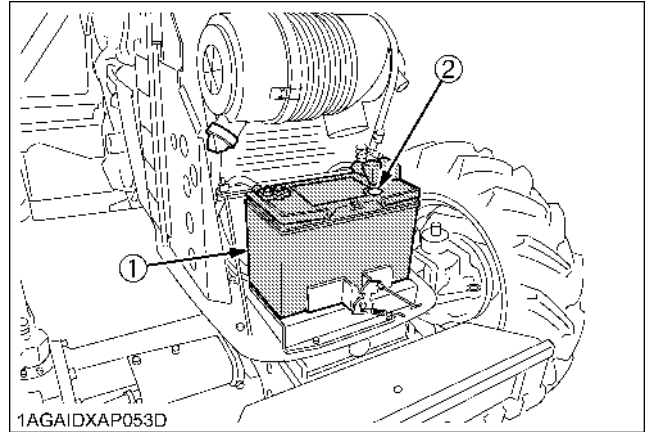
- Never remove the battery cap while the engine is running.
- Keep electrolyte away from eyes, hands and clothes. If you are splattered with it, wash it away completely with water immediately and get medical attention.
- Keep open sparks and flames away from the battery at all times. Hydrogen gas mixed 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.

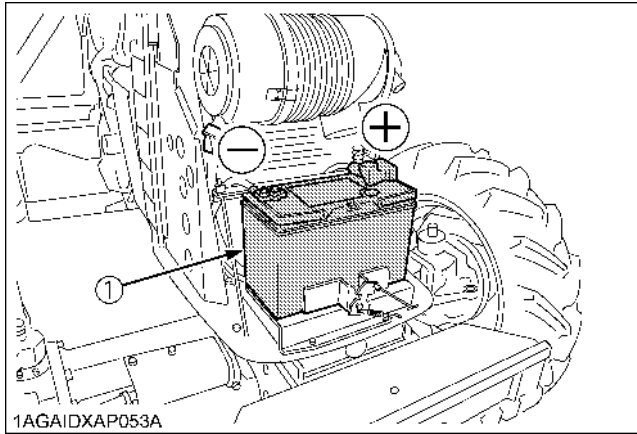
State of indicator display	
Green	Specific gravity of electrolyte and quality of electrolyte are both in good condition.
Black	Needs charging battery.
White	Needs replacing battery.

◆ 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 :

- 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.

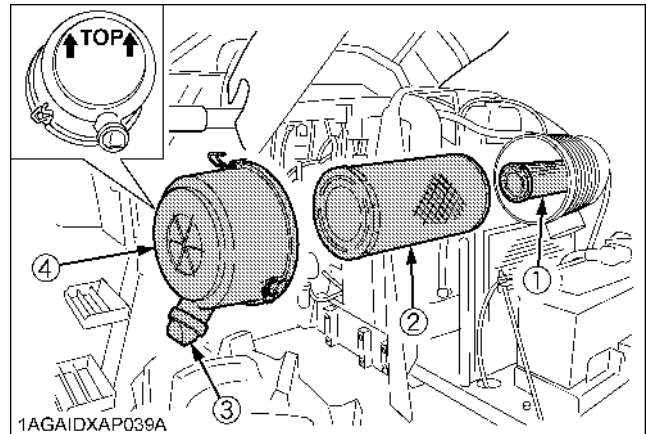
■ **Cleaning Air Cleaner Primary Element**

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:

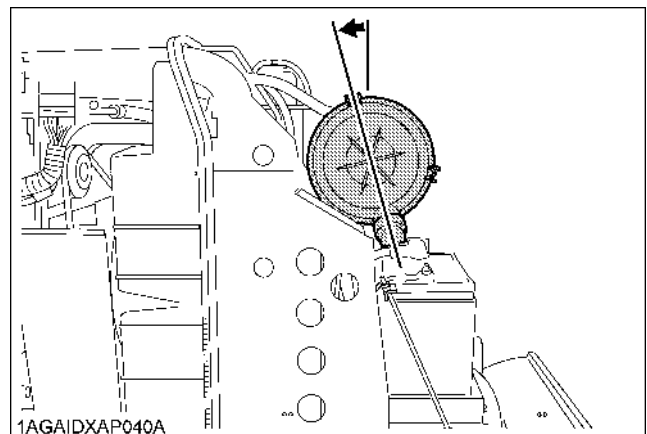
Once yearly or after every sixth cleaning, whichever comes first.

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**



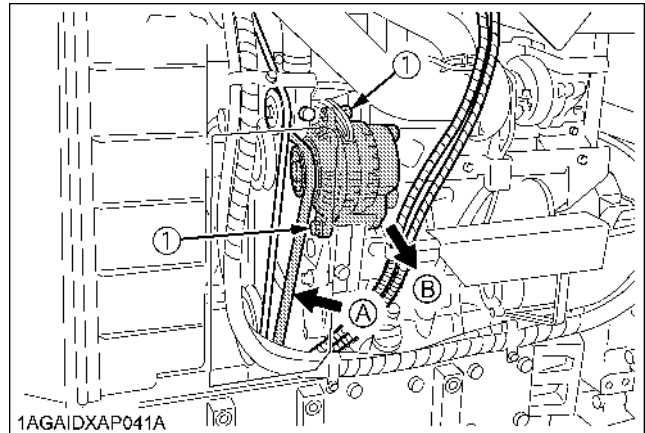
CAUTION

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 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

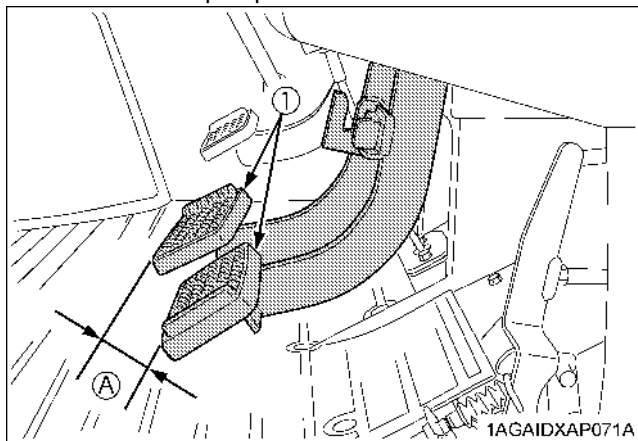
To avoid personal injury:

- 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 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"

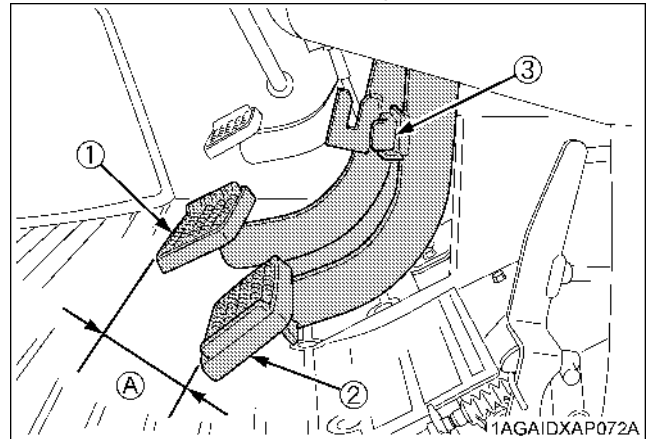
NOTE :

- Brake pedals should be equal when depressed.

◆ Checking the brake pedal stroke

Pedal stroke	Less than 100 mm 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) (A) "PEDAL STROKE"
 (2) Brake pedal (RH)
 (3) Brake pedal lock

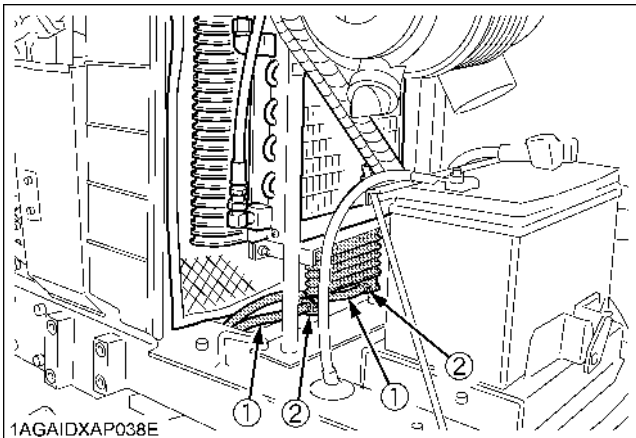
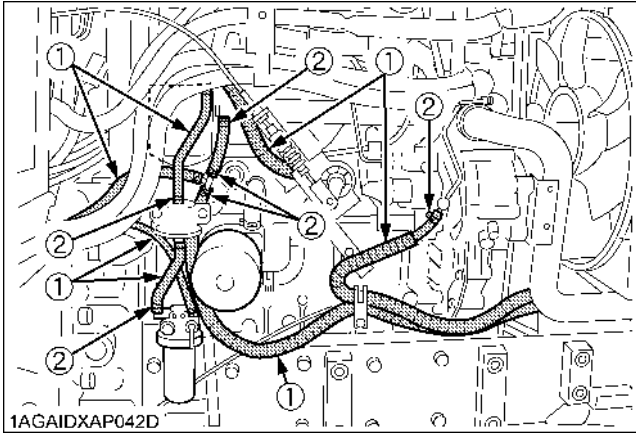
◆ Checking the equalizer working level (anti-imbalance device)

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

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

■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

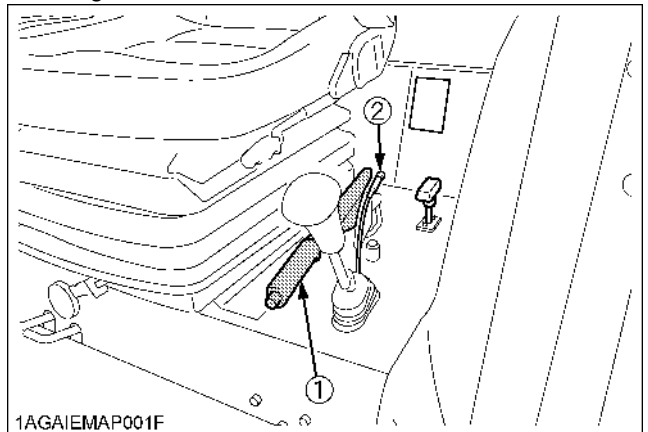
NOTE :

- 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

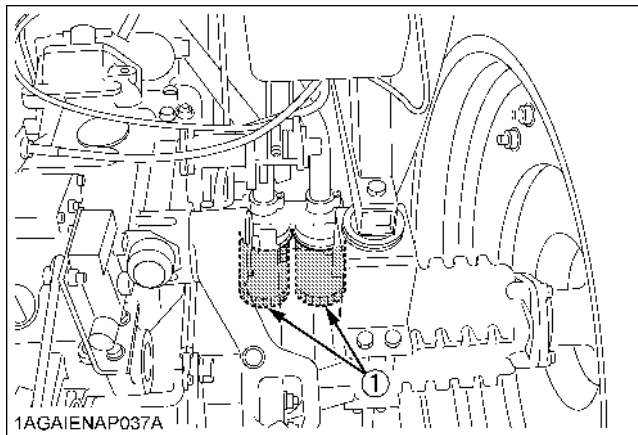


CAUTION

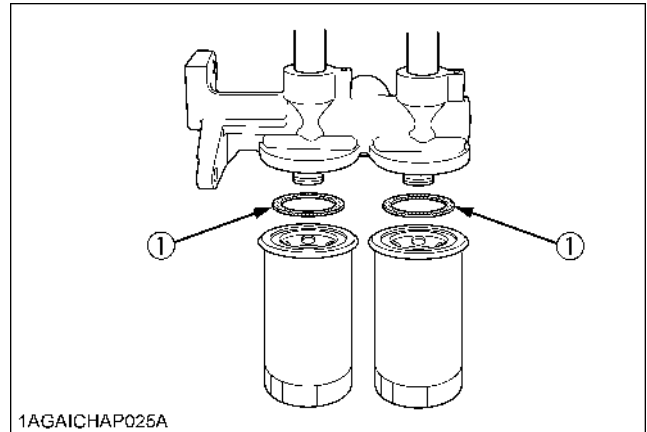
To avoid personal injury:

- 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)

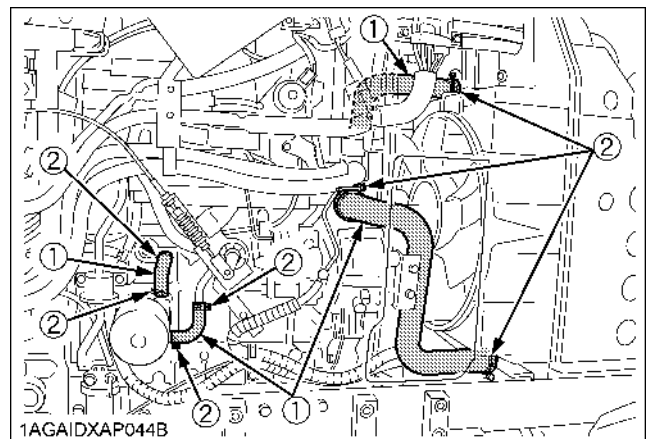
IMPORTANT :

- 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

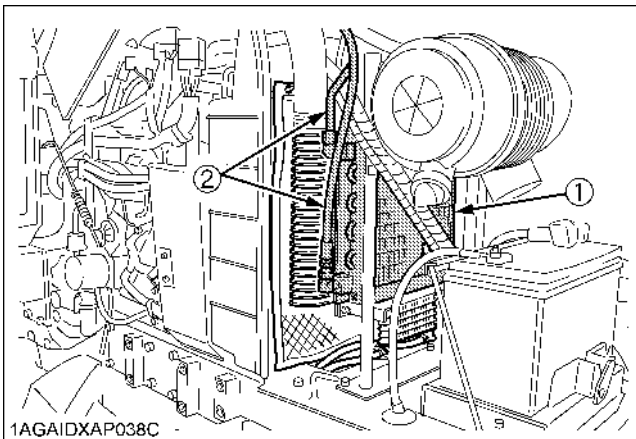
◆ **Precaution at Overheating**

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**

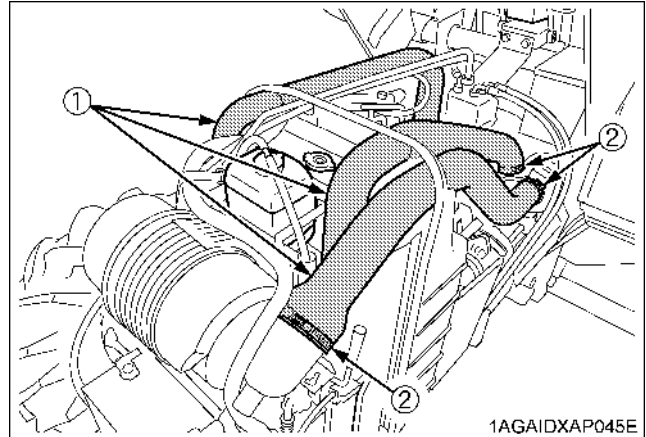
1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.



1AGAI DXAP038C
 (1) Oil cooler
 (2) Oil cooler line

■ **Checking Intake Air Line**

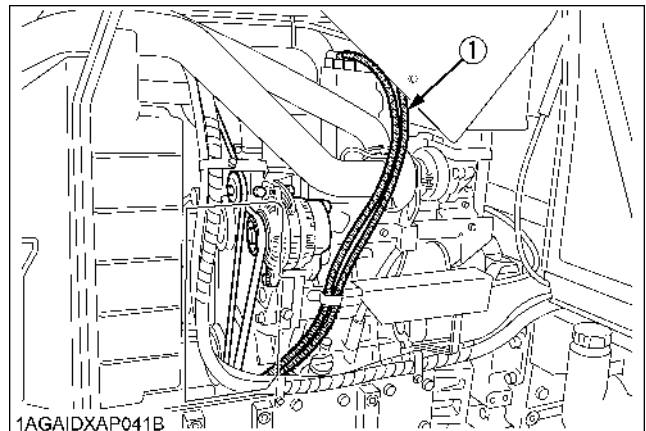
1. Check to see that hoses and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.



(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.

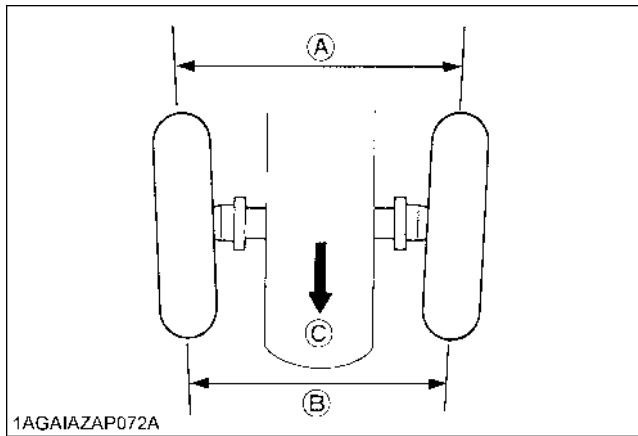


1AGAI DXAP041B
 (1) Power steering pressure hoses

■ Adjusting Toe-in

Proper toe-in	2 to 8 mm
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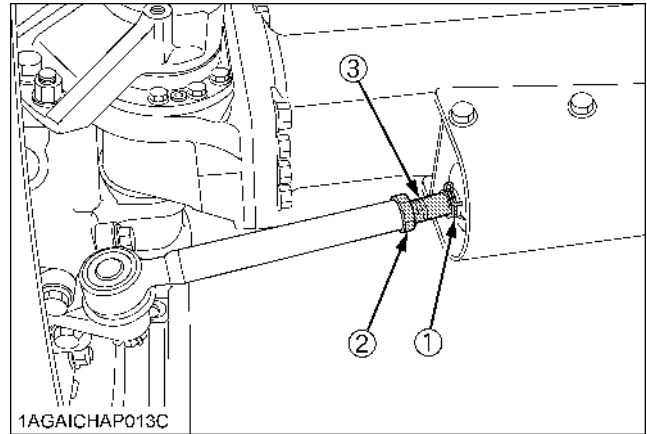
1. Park tractor on a flat place.
2. Turn steering wheel so front wheels are in the straight ahead position.
3. Lower the implement, lock the park brake and stop the engine.
4. Measure distance between tire beads at front of tire, at hub height.
5. Measure distance between tire beads at rear of tire, 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

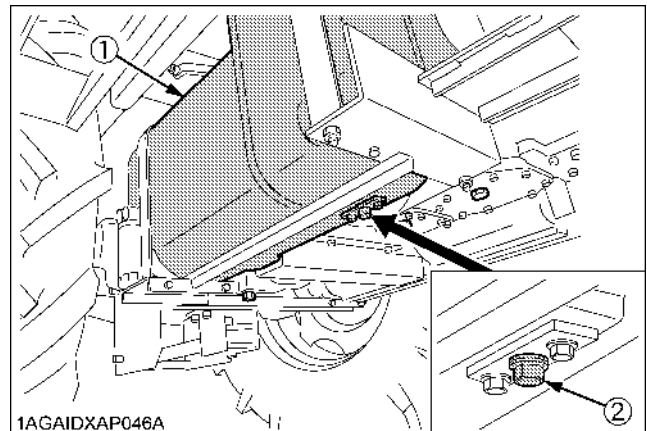
1. Detach the snap ring.
2. Loosen the tie-rod nut.
3. Turn the tie-rod joint to adjust the rod length until the proper toe-in measurement is obtained.
4. Retighten the tie-rod nut.
5. Attach the snap ring of the tie-rod joint.



(1) Snap ring
 (2) Tie-rod nut
 (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

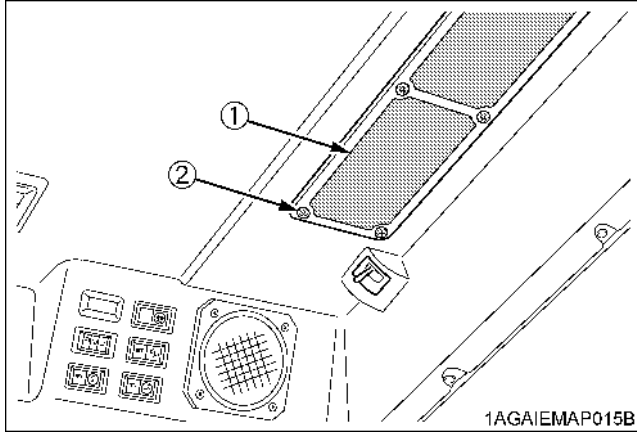
IMPORTANT :

- 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.

■Cleaning Inner Air Filter

Remove the inner filter, and blow air from the direction opposite to the filter's normal air flow.

Pressure of compressed air must be under 205 kPa (2.1 kgf/cm², 30 psi).

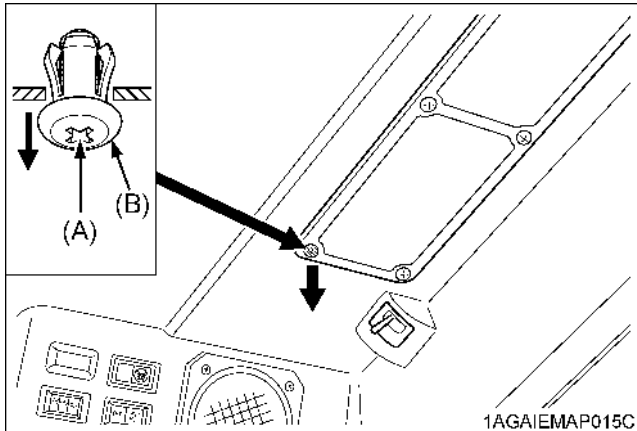


(1) Inner air filter
(2) Push-riev

◆ How to attach and detach the push-riev assy.

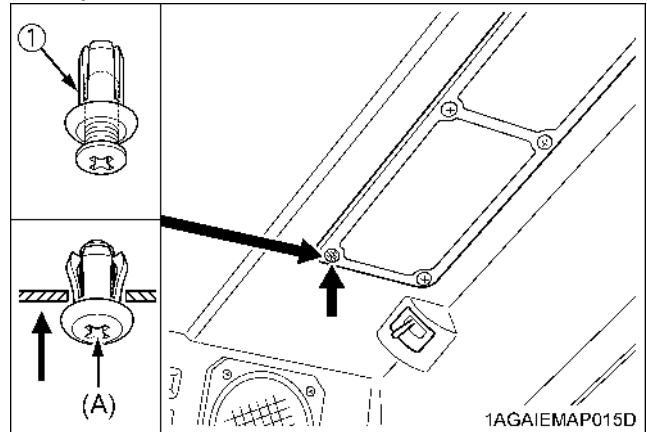
● Detaching procedure

To remove the push-riev of the indoor air filter, hold the rivet around its head (B), apply a Phillips screwdriver to the recess (A) and turn the rivet counterclockwise.



● Attaching procedure

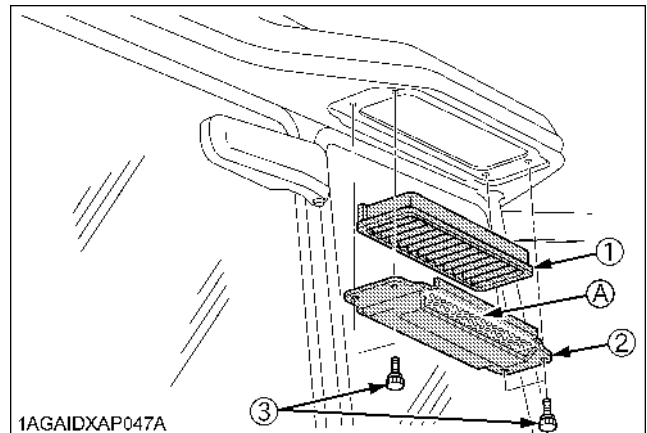
To fix the push-riev in the indoor air filter, put the rivet end in the filter and push on the rivet head (A) all the way.



(1) Push-riev removed

■Cleaning Fresh Air Filter

Remove the knob bolts and pull out filter.



(1) Fresh air filter
(2) Cover
(3) Knob bolt

(A) Air inlet port

NOTE :

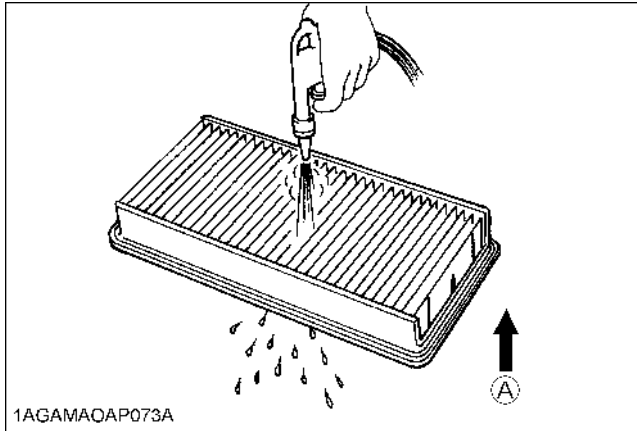
- Attach the filter and cover as the illustration above.

◆ **Cleaning the air filter**

- Normal use
Blow air from the opposite direction to the filter's normal air flow.
Pressure of compressed air must be under 205 kPa (2.1 kgf/cm², 30 psi).

IMPORTANT :

- Do not hit the filter. If the filter becomes deformed, dust may enter into the air-conditioner, which may cause damage and malfunction.



1AGAMAQAP073A

(A) "AIR CONDITIONER AIRFLOW"

NOTE :

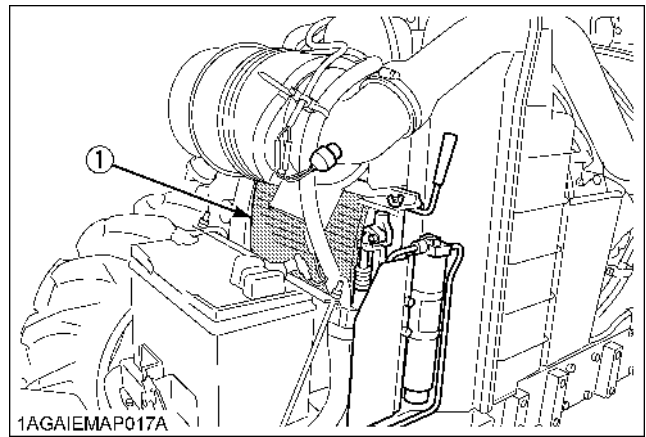
- If the filter is very dirty:
Dip the filter in lukewarm water with mild dish washing detergent.
Move it up and down as well as left and right to loosen dirt. Rinse the filter with clean water and let it air-dry.

IMPORTANT :

- Do not use gasoline, thinner or similar chemicals to clean the filter as damage to the filter may occur.
- It may also cause an unpleasant odor in the CAB when the system is used next.

■ **Checking Air Conditioner Condenser**

Check air conditioner condenser to be sure it is clean of debris.



1AGAIEMAP017A

(1) Air conditioner condenser

◆ **Sliding the air conditioner condenser**

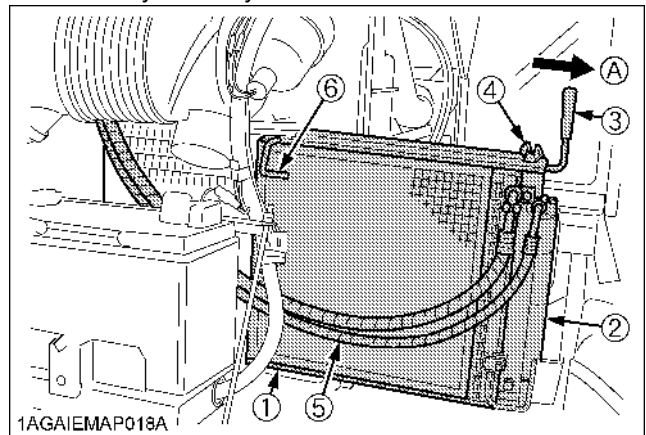


CAUTION

To avoid personal injury:

- The condenser and receiver become hot while the air conditioner is running. Before checking or cleaning them, wait long enough until they cool down.

1. Release the air conditioner hoses off the hook.
2. Loosen the wing nut.
3. Hold the handle, slide the air conditioner condenser assembly toward yourself.



1AGAIEMAP018A

(1) Condenser

(2) Receiver

(3) Handle

(4) Wing nut

(5) Air conditioner hose

(6) Hook

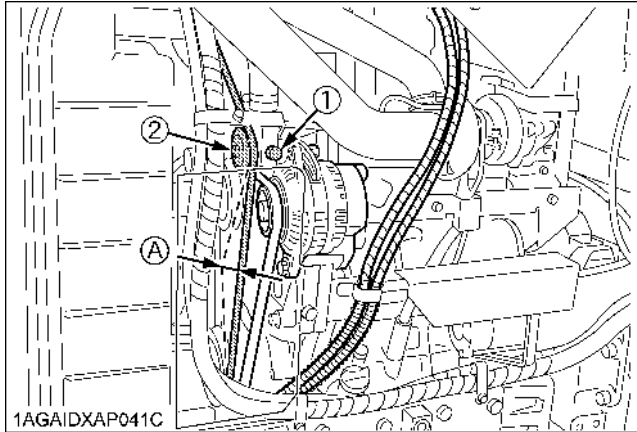
(A) "PULL"

IMPORTANT :

- Do not hold the air conditioner receiver or the air conditioner pipes when sliding out the condenser for cleaning.

■ Adjusting Air-Conditioner Belt Tension

1. Push on the belt between the pulleys with a finger. A deflection of 10 to 12 mm under a 98 N (10 kgf) load is appropriate.
2. If tension is incorrect, loosen the tension pulley mounting nut and turn the adjusting bolt to adjust the belt tension within acceptable limits.



(1) Adjusting bolt (A) 10 to 12 mm
 (2) Tension pulley mounting nut

EVERY 300 HOURS

■ Changing Engine Oil



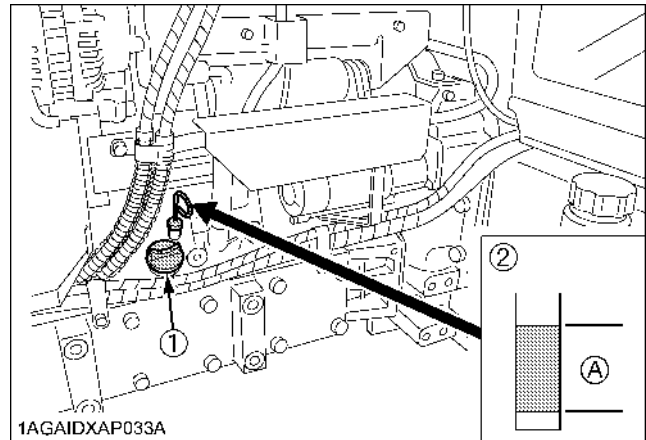
CAUTION

To avoid personal injury:

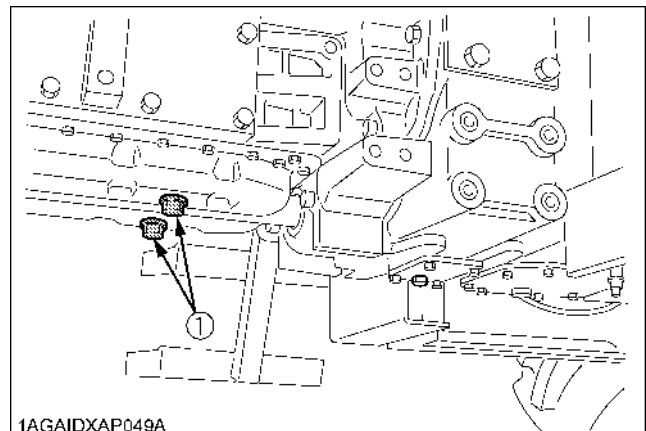
- Be sure to stop the engine before changing the oil.
- Allow engine to cool down sufficiently, oil can be hot and can burn.

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
--------------------------	--------



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

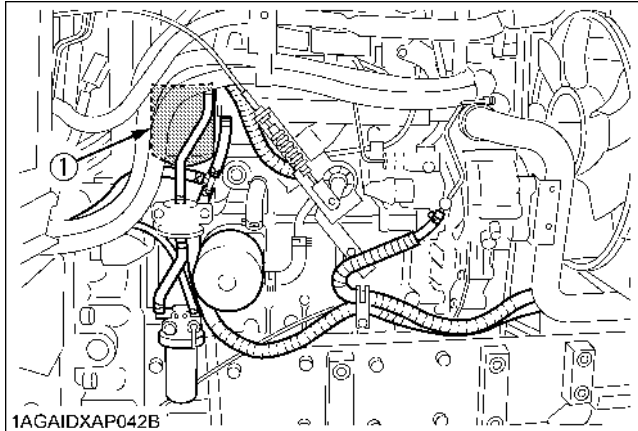


(1) Drain plug

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.)

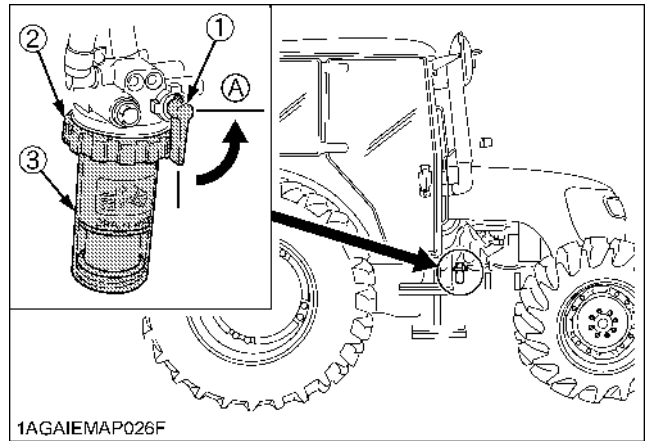


(1) Fuel filter

■ Cleaning Water Separator

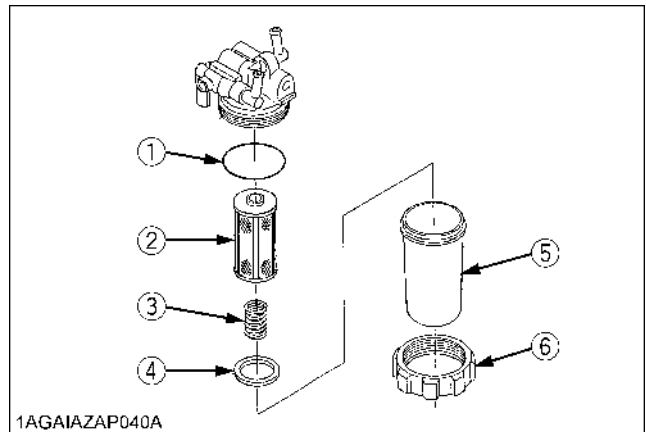
This job should not be done in the field, but in a clean place.

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
(2) Retainer ring
(3) Cup

(A) "CLOSE"



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

EVERY 600 HOURS

■ Replacing Engine Oil Filter

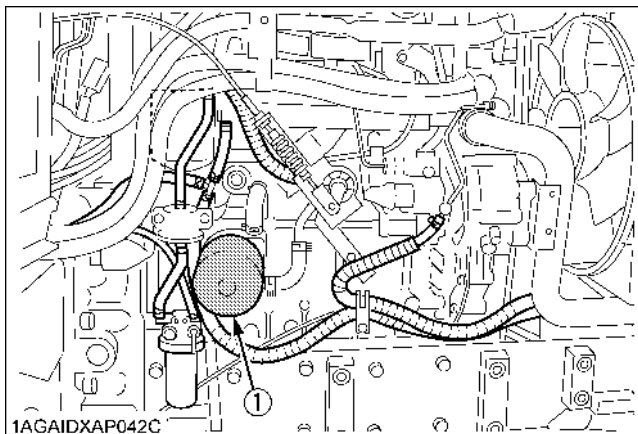


CAUTION

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



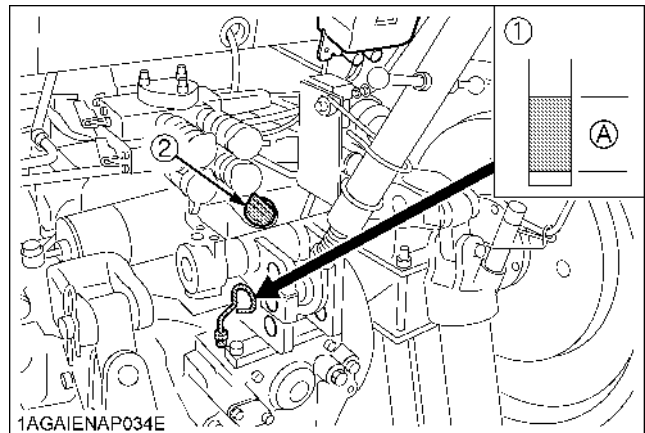
CAUTION

To avoid personal injury:

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

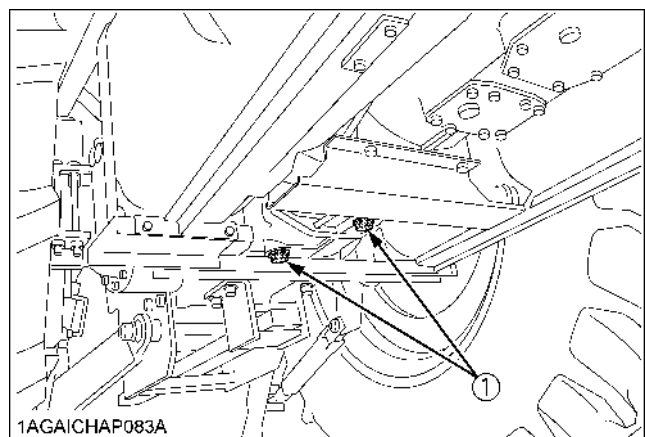
1. To drain the used oil, remove the drain plug at the bottom of the transmission case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Fill with the new KUBOTA SUPER UDT fluid up to the upper notch on the dipstick.
(See "LUBRICANTS" in "MAINTENANCE" section.)
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
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(1) Dipstick
(2) Oil inlet

(A) Oil level is acceptable within this range.



(1) Drain plug

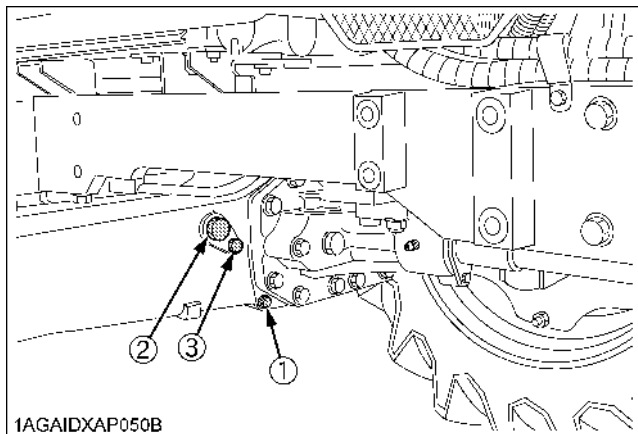
IMPORTANT :

- 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
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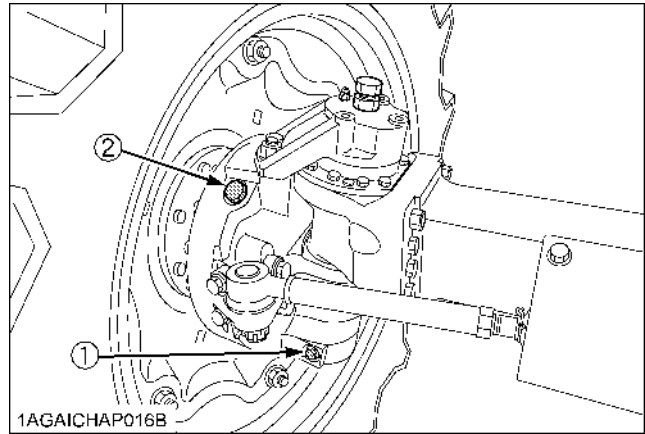


- (1) Drain plug
- (2) Filling plug
- (3) Check plug

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 for each side
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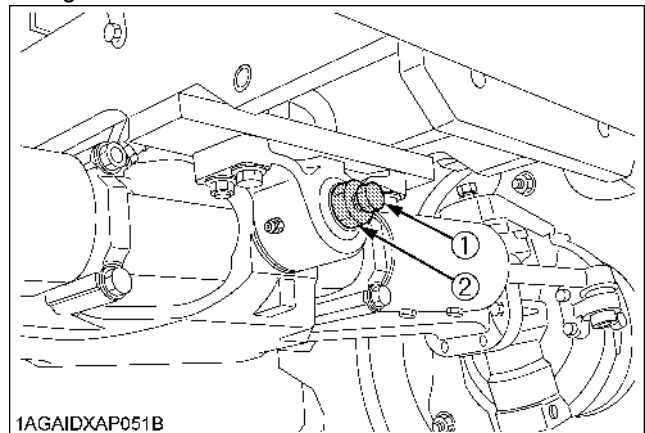
- (1) Drain plug
- (2) Filling plug

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.

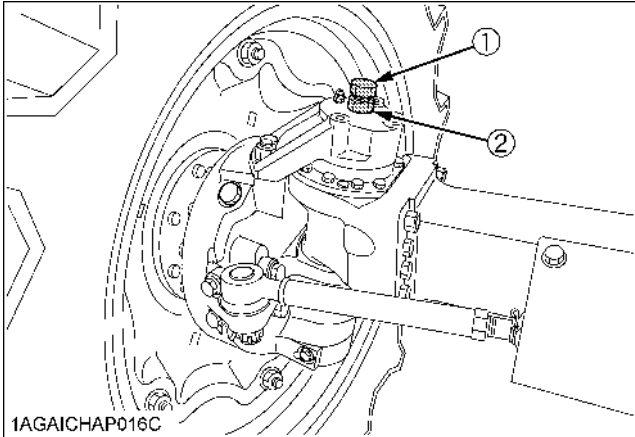


- (1) Adjusting screw
- (2) Lock nut

■ Adjusting King-pin Pivot

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

Adjusting screw	4.9 to 9.8 N-m, 0.5 to 1.0 kgf-m
Lock nut	98.1 to 147 N-m, 10 to 15 kgf-m



(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 (Active Test)

Consult your local KUBOTA Dealer for this service.

EVERY 3000 HOURS

■ Checking Turbocharger

Consult your local KUBOTA Dealer for this service.

■ Checking Supply Pump

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.)

■ Checking Air-Conditioner Pipe and Hose

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, consult your local KUBOTA Dealer for this service.

■ Checking CAB Isolation Cushion

Check the cushion for any breakage or fatigue. Replace them if they are deteriorated.

EVERY 2 YEARS

■ Flushing Cooling System and Changing Coolant



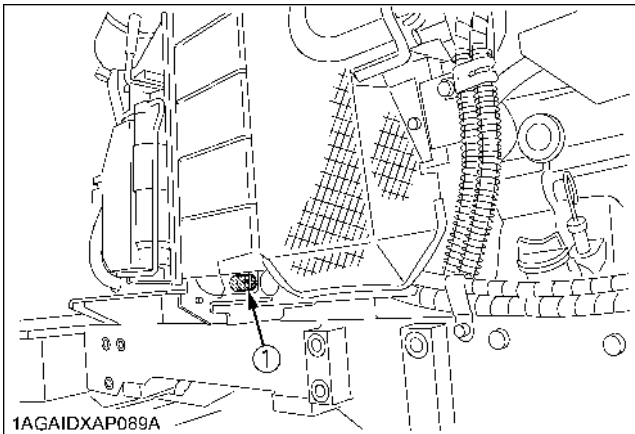
CAUTION

To avoid personal injury:

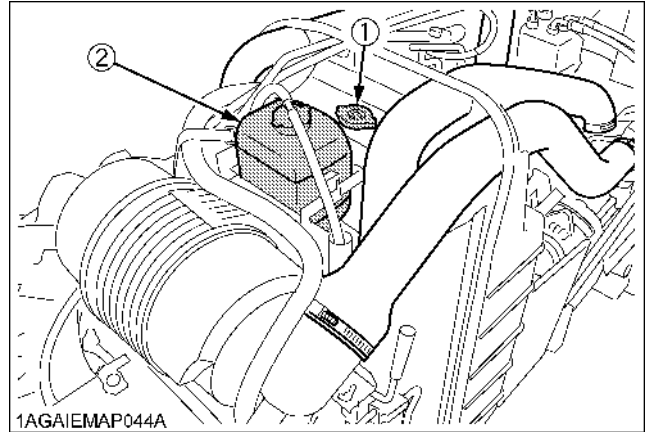
- Do not remove radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely.

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 water and cooling system cleaner.
5. Follow directions of the cleaner instruction.
6. After flushing, fill with clean 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
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(1) Drain plug ((+) Plus screwdriver)



(1) Radiator cap
(2) Recovery tank

IMPORTANT :

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

NOTE :

- On cab type machines, coolant circulates through the heater. This means that one more liter or so of coolant is required.

In changing coolant, pour coolant up to the filler port of the recovery tank. Turn ON the heater (shift the temperature control dial toward WARM), and run the engine for a while in order to warm coolant. Then stop the engine.

When coolant has cooled down, some of the coolant in the recovery tank is sucked. Now the recovery tank is appropriately filled with coolant.

■ **Anti-Freeze**



CAUTION

To avoid personal injury:

- When using antifreeze, put on some protection such as rubber gloves (Antifreeze contains poison.).
- If should drink antifreeze, 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 some 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 °C 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*
	°C	°C
40	-24	106
50	-37	108

* At 1.013 x 10⁵Pa (760mmHg) 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.

■ Replacing Assist Cylinder Hose

Consult your local KUBOTA Dealer for this service.

■ Replacing Air Conditioner Hose

Consult your local KUBOTA Dealer for this service.

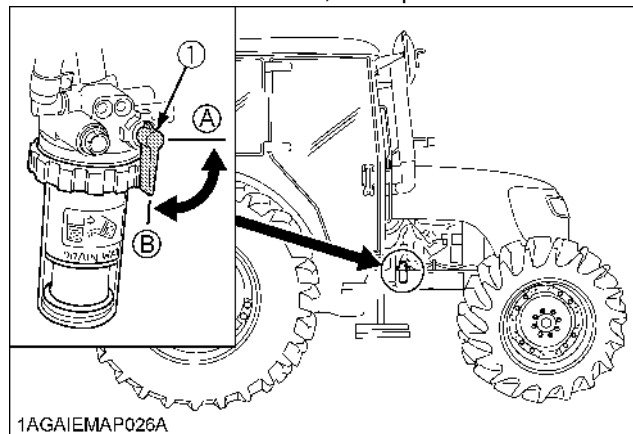
SERVICE AS REQUIRED**■ Bleeding Fuel System**

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.

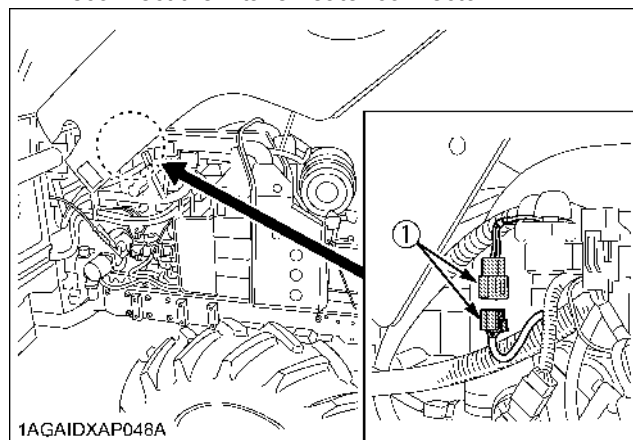


(1) Fuel cock

(A) "CLOSE"

(B) "OPEN"

2. Disconnect the intake heater connector.

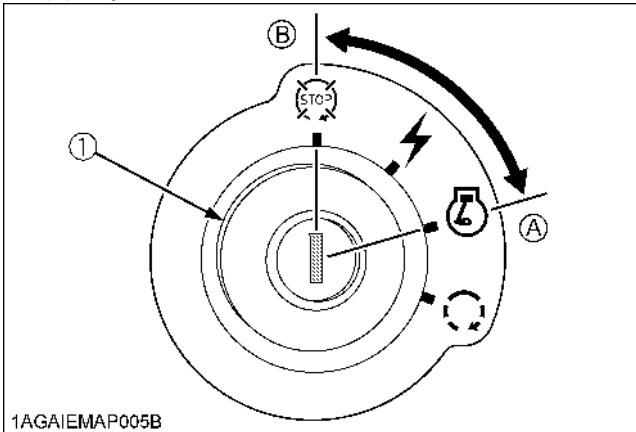


(1) Connector

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



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- (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.

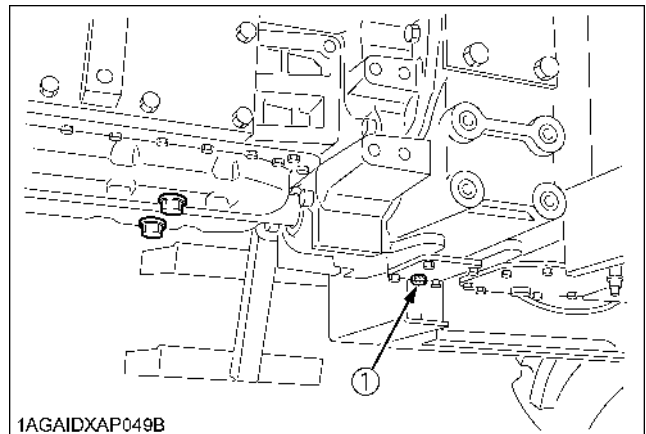
5. Accelerate the engine to remove the small portion of air left in the fuel system.
6. If air still remains and the engine stops, repeat the above steps.

■ 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.



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- (1) Water drain plug

■ Replacing Fuse

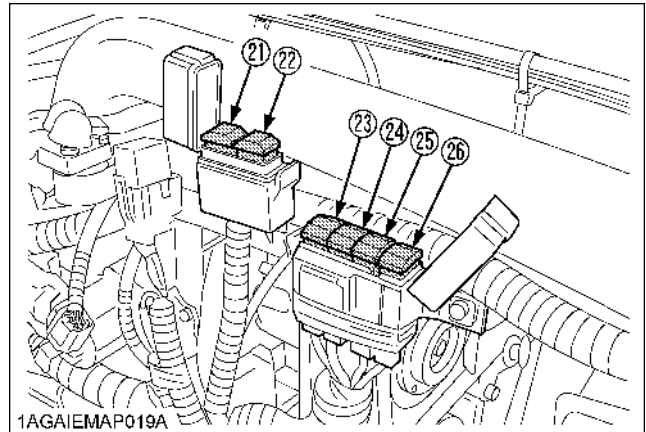
The tractor electrical system is protected from potential damage by fuses.

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

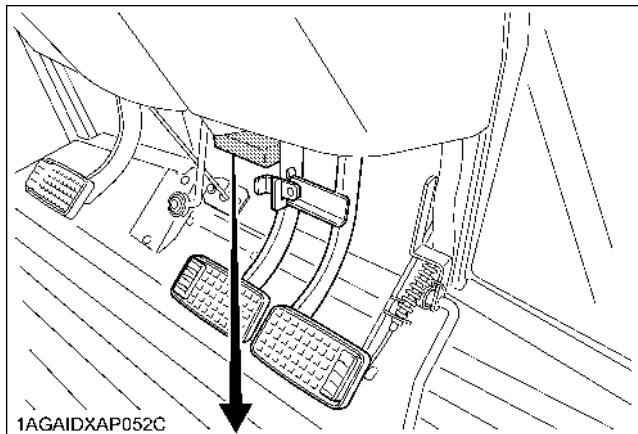
If any of the fuses should blow, replace with a new one of the same capacity.

IMPORTANT :

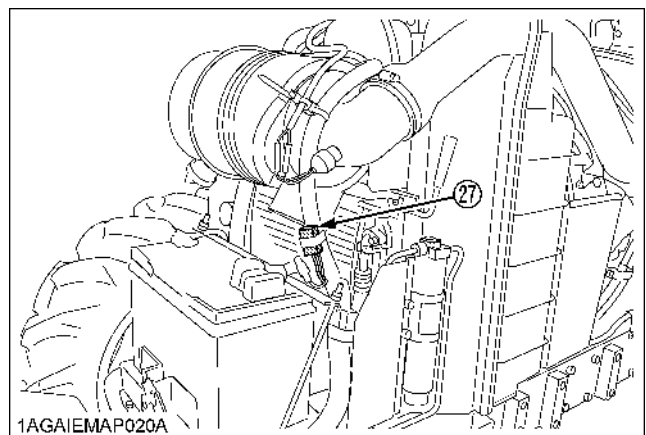
- Before replacing a blown fuse, determine why the fuse blew and make any necessary repairs. Failure to follow this procedure may result in serious damage to the tractor electrical system. Refer to the "TROUBLESHOOTING" section of this manual or your local KUBOTA Dealer for specific information dealing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



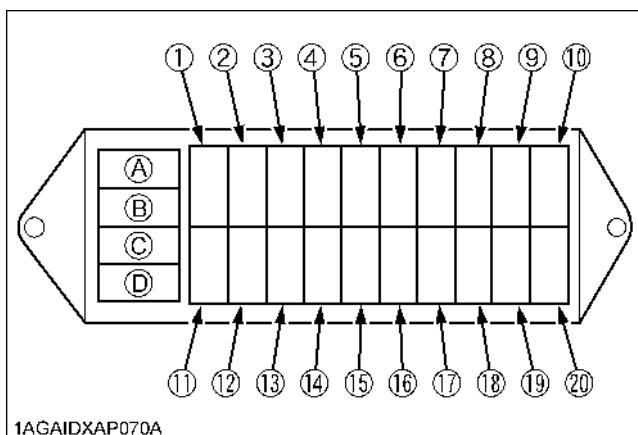
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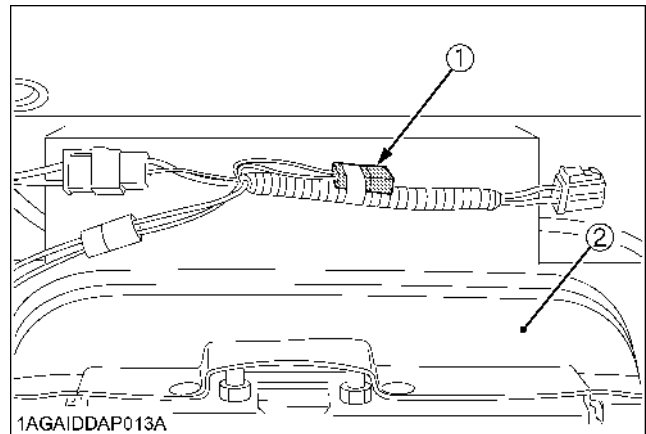
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FUSE No.	CAPACITY (A)	Protected circuit
(1)	5A	Meter backup
(2)	15A	Flasher (Hazard)
(3)	15A	Dome light, Brake lamp
(4)	15A	Head light
(5)	25A	Auxiliary power
(6)	15A	Tail / Position lamp, Horn
(7)	10A	Air conditioner compressor, Front side work light
(8)	25A	Air conditioner (Fan motor)
(9)	15A	Front work light
(10)	15A	Rear work light
(11)	5A	Engine, PTO(Power Take Off), Alternator
(12)	5A	Meter panel, Buzzer
(13)	10A	Turn signal
(14)	10A	Transmission control
(15)	5A	Air conditioner, Auxiliary control
(16)	15A	Wiper
(17)	10A	Beacon
(18)	5A	Audio (Radio)
(19)	15A	Cigarette lighter
(20)	5A	Starter relay
(21)	30A	Main key
(22)	30A	Auxiliary Power
(23)	120A	Charge
(24)	120A	Heater
(25)	60A	Head light, Flasher, Dome light
(26)	60A	Air conditioner (Fan motor)
(27)	10A	CRS(Common Rail System) power
(A)	25A	Spare
(B)	15A	
(C)	10A	
(D)	5A	

◆ Air suspension seat type (if equipped)



(1) Fuse (15 A)
(2) Seat

■ 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
Tail light	10 W
Turn signal / hazard light (Front)	21 W
Turn signal / hazard light (Rear)	21 W
Brake stop light	21 W
Front work light (Front side)	21 W
Work light	55 W
Dome light (room lamp)	10 W
Sidemarket light	10 W
Number plate light	10 W

■ Replacing Head Lamp

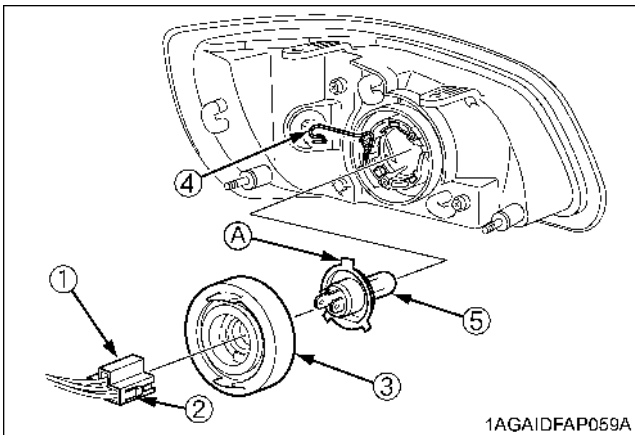


CAUTION

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.

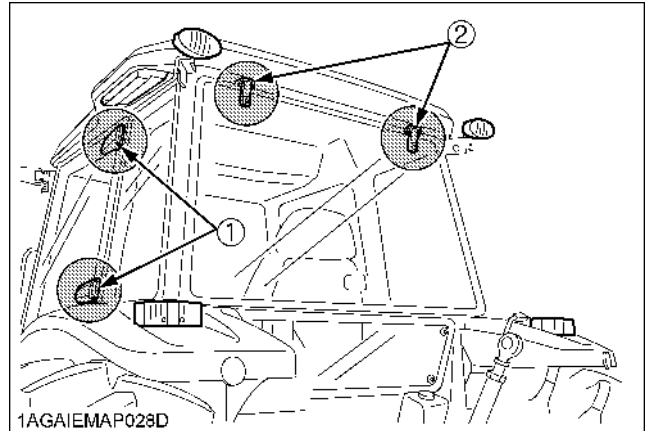


- (1) Electrical connector (A) "Base's wider projection to face upward"
- (2) Lock buttons
- (3) Rubber boot
- (4) Clamping fixture
- (5) Bulb

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.

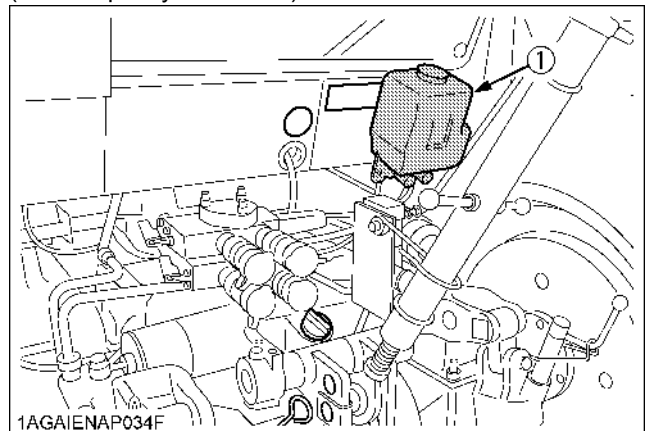
■ Lubricating Points



- (1) Door hinge
- (2) Rear window hinge

■ Adding Washer Liquid

Add a proper amount of automobile washer liquid.
(Tank capacity: 1.3 liters.)



- (1) Washer liquid tank

■ Checking the Amount of Refrigerant (gas)

WARNING

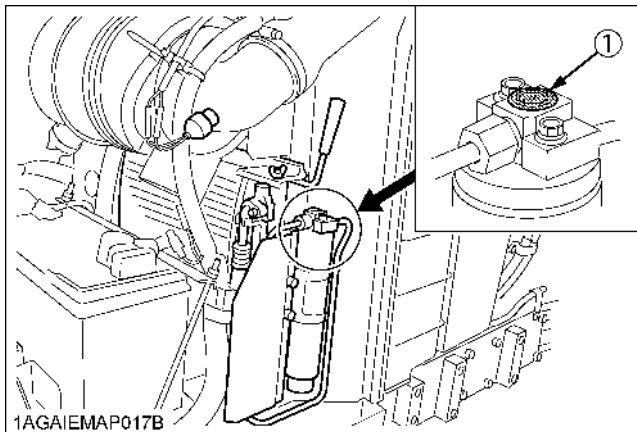
To avoid personal injury:

- Liquid contact with eyes or skin may cause frostbite.
- In the event of a leakage, wear safety goggles. Escaping refrigerant can cause severe injuries to eyes.
- In contact with a flame, R134a refrigerant gives a toxic gas.
- Do not disconnect any part of the refrigeration circuit of the air conditioning system. Consult your local KUBOTA Dealer for assistance and service.

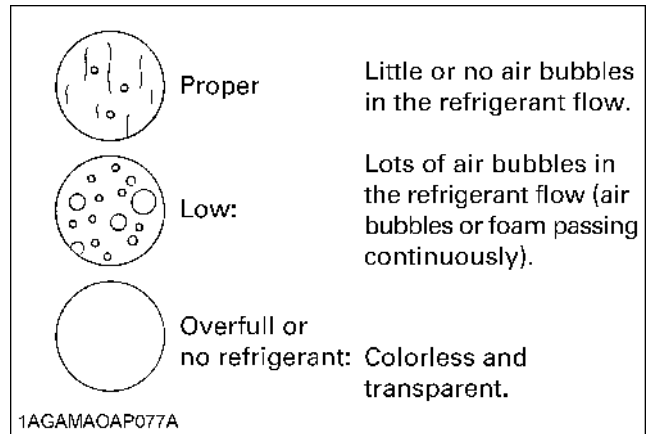
A shortage of refrigerant impairs the air-conditioner performance. Check the following points. If it is indicated that the amount of refrigerant is extremely low, ask your dealer to inspect and charge.

◆ Checking procedure

1. Run the air-conditioner in the following conditions.
 - Engine speed: About 1500 rpm
 - Temperature control dial: Maximum cooling position
 - Fan switch: Highest blow (HI)
 - Air-conditioner switch: ON
2. Look into the sight glass to see if the refrigerant is flowing through its circuit.



(1) Sight glass



IMPORTANT :

- Charge only with R134a not R12 refrigerant (gas).

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.		<ul style="list-style-type: none"> No fuel flow. 	<ul style="list-style-type: none"> Check the fuel tank and the fuel filter. Replace filter if necessary.
		<ul style="list-style-type: none"> Air or water is in the fuel system. 	<ul style="list-style-type: none"> 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.)
		<ul style="list-style-type: none"> In winter, oil viscosity increases, and engine revolution is slow. 	<ul style="list-style-type: none"> Use oils of different viscosities, depending on ambient temperatures. Use engine block heater (Optional)
		<ul style="list-style-type: none"> Battery becomes weak and the engine does not turn over quick enough. 	<ul style="list-style-type: none"> 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.
		<ul style="list-style-type: none"> Intake air heater system trouble. 	<ul style="list-style-type: none"> 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.		<ul style="list-style-type: none"> Insufficient or dirty fuel. The air cleaner is clogged. 	<ul style="list-style-type: none"> Check the fuel system. Clean or replace the element.
Engine stops suddenly.		<ul style="list-style-type: none"> Insufficient fuel. 	<ul style="list-style-type: none"> Refuel. Bleed the fuel system if necessary.
Exhaust fumes are colored.	Black	<ul style="list-style-type: none"> Fuel quality is poor. Too much oil. The air cleaner is clogged. 	<ul style="list-style-type: none"> Change the fuel and fuel filter. Check the proper amount of oil. Clean or replace the element.
	Blue white	<ul style="list-style-type: none"> The inside of exhaust muffler is dumped with fuel. Injection nozzle trouble. Fuel quality is poor. 	<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> Engine overloaded 	<ul style="list-style-type: none"> Shift to lower gear or reduce load.
		<ul style="list-style-type: none"> Low coolant level 	<ul style="list-style-type: none"> Fill cooling system to the correct level; check radiator and hoses for loose connections or leaks.
		<ul style="list-style-type: none"> Loose or defective fan belt 	<ul style="list-style-type: none"> Adjust or replace fan belt.
		<ul style="list-style-type: none"> Dirty radiator core or grille screens 	<ul style="list-style-type: none"> Remove all trash.
		<ul style="list-style-type: none"> Coolant flow route corroded 	<ul style="list-style-type: none"> 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.	<p>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.</p> <ul style="list-style-type: none">● 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.

- 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
- Front end weights
For front ballast
- Rear Wheel Weights
For rear ballast
- Creep Speed Kit
- 80" Wide Axle
- Rear wiper
- Radio with cassette player
- Fuel Tank Guard Kit
- Rear Cast Iron Disk