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English (Europe)
Code No. 6C486-9211-3

OPERATOR'S MANUAL

KUBOTA TRACTOR

**MODELS B2201·B2231
B2261·B2311**



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READ AND SAVE THIS MANUAL



ABBREVIATION LIST

Abbreviations	Definitions
2WD	2-wheel drive
4WD	4-wheel drive
API	American Petroleum Institute
ASABE	American Society of Agricultural and Biological Engineers, USA
ASTM	American Society for Testing and Materials, USA
DIN	Deutsches Institut für Normung, GERMANY
DT	Dual traction [4WD]
fpm	Feet per minute
GST	Glide shift transmission
Hi-Lo	High speed-low speed
HST	Hydrostatic transmission
m/s	Metres 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

Intended use

This machine is designed solely for use in customary agricultural or similar operations. Use in any other way is considered as contrary to the intended use. Compliance with and strict adherence to the conditions of operation, service, and repair as specified by the manufacturer, also constitute essential elements of the intended use.

This machine should be operated, serviced, and repaired only by persons who are familiar with its particular characteristics and who are acquainted with the relevant safety procedures.

Accident prevention regulations, all other generally recognized regulations on safety and occupational medicine, and all road traffic regulations must be observed at all times.

Any arbitrary modifications carried out to this machine may relieve the manufacturer of liability for any resulting damage or injury.

Manufacturer or distributor of the machine	KUBOTA Corporation
The model designation of the machine	B2201/B2231/B2261/B2311
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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. Thirty plants and 35000 employees produce over 1000 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 fulfil 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, 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 utilised on the instruments and controls. The symbols are shown below with an indication of their meaning.

■ General



Safety alert symbol



Fast



Slow



Read operator's manual



Lock



Unlock



On



Off



Tractor – forward movement –
overhead view of the machine



Tractor – rearward movement –
overhead view of the machine

■ Engine-related



Diesel fuel



Fuel level



Hour meter / elapsed operating hours



Engine coolant - temperature



Engine oil - pressure



n/min

Engine - rotational speed



Engine - run



Starter control



Engine - stop



Diesel preheat / glow plugs (low
temperature start aid)

■ Vehicle body-related



Tractor front wheel drive



Bi-speed turn



Cruise control



Parking OPC



Clutch



Brake



Handbrake warning indicator



Differential lock



Steering wheel – tilt control

■ PTO-related



Power take-off control - off position
(disengaged)



Power take-off control - on position
(engaged)



Stationary PTO

■ Hydraulic-related



Position control - raised position



Position control - lowered position



3-point lowering speed control



Remote cylinder - retract



Remote cylinder - extend



Remote cylinder - float

■ Electric-related



Battery charging condition



Master light switch



Headlight



Work light



Position lamps



Direction indicator



Hazard warning lights



Audible warning device



Beacon light



Front wiper / washer switch



Rear wiper / washer switch



Air circulation fan



Introduction of indoor air



Introduction of outer air



Rear window defroster

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 utilise 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, could result in minor or moderate injury.

IMPORTANT:

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

NOTE:

Gives helpful information.

OTHERS

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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.

BEFORE OPERATING THE TRACTOR

Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.

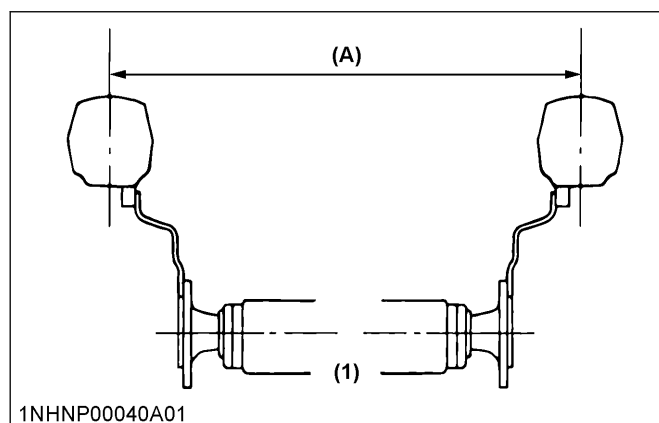
1. General

- Pay special attention to pictorial safety labels on the tractor.
- Do not operate the tractor or any implement attached to it while under the influence of alcohol, medication, controlled substances or while fatigued.
- Carefully check the vicinity before operating the 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 the tractor during operation.
- Before allowing other people to use your tractor, explain how to operate and have them read this manual before operation.
- 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, such as a hard hat, safety boots or shoes, eye and hearing protection, gloves and so on, as appropriate or required.
- Do not allow passengers to ride on any part of the tractor at any time. The operator must remain in the tractor seat during operation.
- Check brakes, clutch, linkage pins and other mechanical parts for improper adjustment and wear. Replace worn or damaged parts promptly. Check the tightness of all nuts and bolts regularly. (See MAINTENANCE on page 96.)
- Keep your tractor clean. Dirt, grease, and rubbish build up may contribute to fires and lead to personal injury.
- Use only implements meeting the specifications listed in this manual or implements approved by Kubota.

(See IMPLEMENT LIMITATIONS on page 27.)

- 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 maintain proper balance and braking. Follow the safe operating procedures specified in the implement or attachment manual.
- 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 IMPLEMENT LIMITATIONS on page 27.)



(1) Rear wheels

(A) Tread width

- Do not modify the tractor. Unauthorised modification may affect the function of the tractor, which may result in personal injury.
- Do not make any modifications to the engine or emission components as this may result in damage and malfunctions such as:
 - Damage to the powertrain due to excessive engine output.
 - Engine overheating caused by exceeding the engine cooling performance capabilities.
 - Malfunctions of the exhaust gas aftertreatment control devices.

Modifications to the engine and its emission components may violate emission regulations and are subject to fines and penalties.

Kubota and its affiliates are not liable for any damage, malfunction or accidents caused by modifications to the engine or emission components.

2. CAB and ROPS

- KUBOTA recommends the use of a CAB or roll over protective structures (ROPS) and seat belt in almost all applications. This combination will reduce

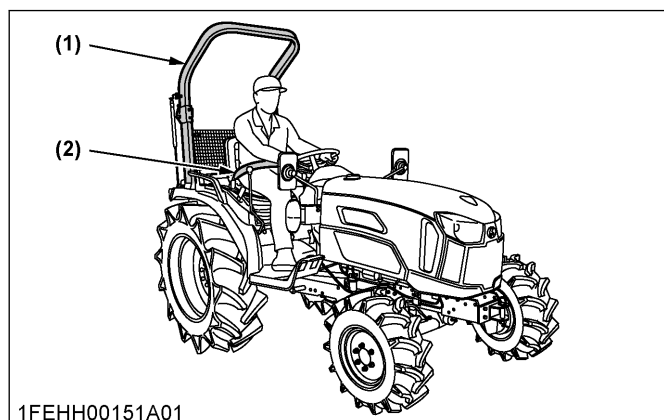
! SAFE OPERATION

the risk of serious injury or death, should the tractor be upset. Check for overhead clearance which may interfere with a CAB or ROPS.

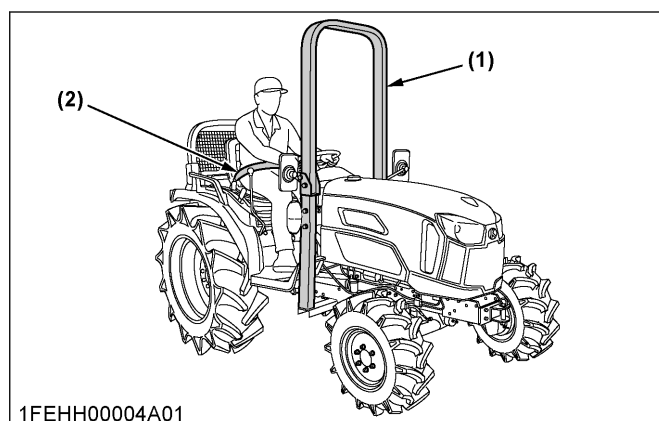
- Set the parking brake and stop the engine. Remove any obstruction that may prevent raising or folding the ROPS. Do not allow any bystanders. Always perform the function from a stable position at the rear of the tractor. Hold the top of the ROPS securely when raising or folding. Make sure that all pins are installed and locked.
- 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 any structural member of a CAB or ROPS because welding, bending, drilling, grinding, or cutting may weaken the structure.
- If any structural member of the CAB or ROPS is damaged, replace the entire structure at your local KUBOTA Dealer.
- If the tractor is equipped with a foldable ROPS it may be temporarily folded down only when absolutely necessary for areas with height constraints.

There is no operator protection provided by the ROPS in the folded position. For operator safety, the ROPS should be placed in the upright and locked position and the seat belt fastened for all other operations.

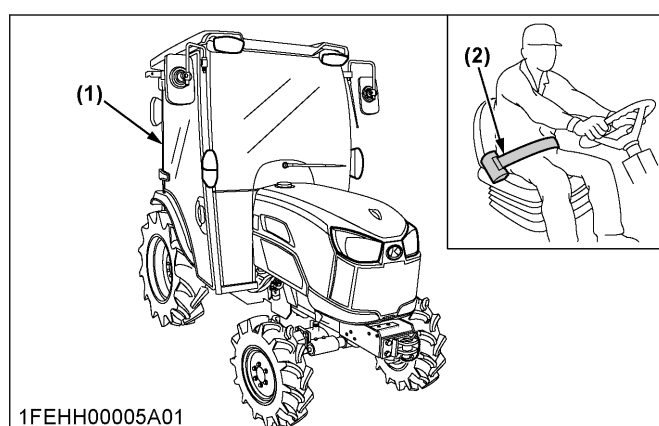
- Always use the seat belt if the tractor has a CAB or ROPS. Do not use the seat belt if the foldable ROPS is down or there is no ROPS. Check the seat belt regularly and replace if frayed or damaged.



- (1) ROPS
(2) Seat belt



- (1) Mid mount type ROPS
(2) Seat belt



- (1) CAB
(2) Seat belt

OPERATING THE TRACTOR

Operator safety is a priority. Safe operation, specifically with respect to overturning hazards, entails understanding the equipment and environmental conditions at the time of use.

Some prohibited uses which can affect overturning hazards include travelling and turning with implements, loads carried too high and so on. This manual sets forth some of the obvious risks, but the list is not, and cannot be, exhaustive. It is the operator's responsibility to be alert for any equipment or environmental condition that could compromise safe operation.

1. Starting to operate the tractor

- Always sit in the driver's seat when starting the engine or operating the levers or controls. Adjust seat per instructions in the operating the tractor section. Never start the engine while standing on the ground.
- 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

! SAFE OPERATION

(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.

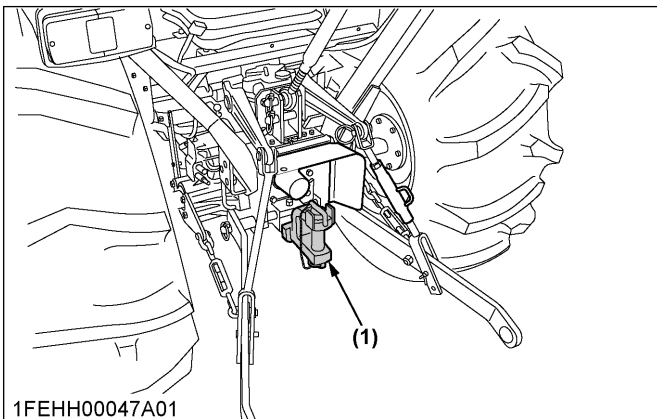
- Do not start the engine by shorting across starter terminals or bypassing the safety start switch. The tractor may start in gear and move if the normal starting circuitry is bypassed.
- Do not operate or idle the engine in a non-ventilated area. Carbon monoxide gas is colourless, odourless, and deadly.
- Check before each use that the operator presence controls (OPC) are functioning correctly. Test the safety systems.

(See Checking the engine start system (ROPS manual transmission type) on page 108 and Checking engine start system (ROPS HST type and CAB HST type) on page 109.)

Do not operate unless they are functioning correctly.

2. Working the tractor

- Pull only from the drawbar. Never hitch to the axle housing or any other point except the 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 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.
- Always sit in the operator's seat when operating levers or controls.
- Do not stand between tractor and implement or trailed vehicle unless the parking brake is applied.

3. 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.
- Use extra caution when reversing. Look behind and down to make sure area is clear before moving.

4. Operating on slopes

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

- To avoid upsets, always reverse up steep slopes. If you cannot reverse up the slope or if you feel uneasy on it, do not operate on it. Stay off slopes too steep for safe operation.
- Driving forward out of a ditch, mired condition or up a steep slope increases the risk of rear rollovers. Always back out of these situations. Extra caution is required with 4-wheel drive models because their increased traction can give the operator false confidence in the tractor's ability to climb slopes.
- Keep all movement on slopes slow and gradual. Do not make sudden changes in speed, direction or braking, nor make sudden motions with the steering wheel.
- Avoid disengaging the clutch or changing gears when climbing or going down a slope. If on a slope, disengaging the clutch or changing gears to neutral could cause the loss of control.
- Special attention should be paid to the weight and location of implements and loads as such will affect the stability of the tractor.

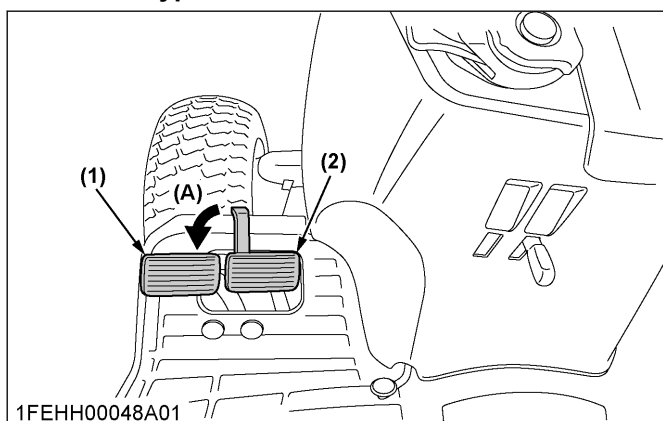
SAFE OPERATION

- To improve stability on slopes, set the widest possible wheel tread.
(See TYRES, WHEELS AND BALLAST on page 82.)
Follow the recommendations for proper ballasting.

5. Driving the tractor on the road

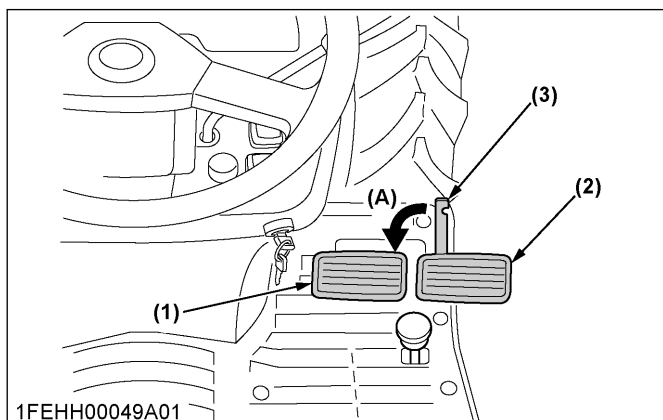
- Lock the 2 brake pedals together to help assure straight-line stops. Uneven braking at road speeds could cause the tractor to tip over.

ROPS HST type



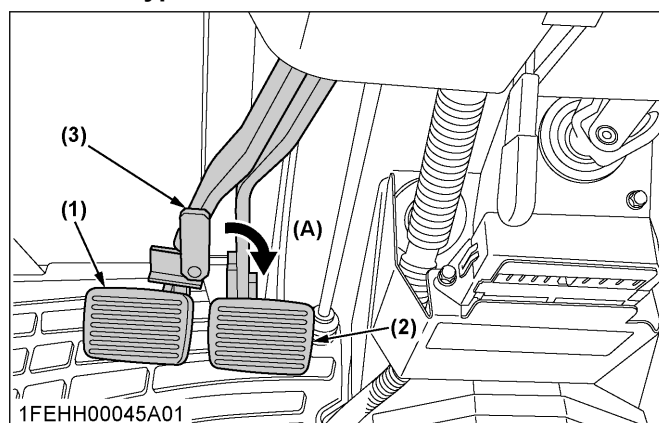
- (1) Brake pedal (LH)
- (2) Brake pedal (RH)
- (3) Brake pedal lock
- (A) Whenever travelling on the road

ROPS manual transmission type



- (1) Brake pedal (LH)
- (2) Brake pedal (RH)
- (3) Brake pedal lock
- (A) Whenever travelling on the road

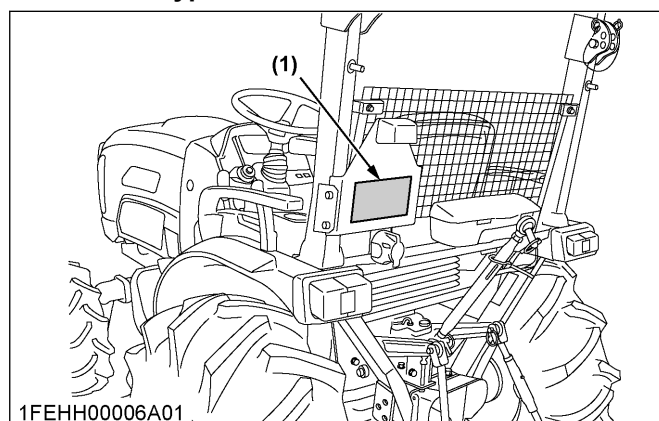
CAB HST type



- (1) Brake pedal (LH)
- (2) Brake pedal (RH)
- (3) Brake pedal lock
- (A) Whenever travelling on the road

- Check the front wheel engagement. The braking characteristics are different between a 2 and 4-wheel drive. Be aware of the difference and use carefully.
- Always slow down the tractor before turning. Turning at high speed may tip over the tractor.
- Observe all local traffic and safety regulations. Use the registration plate as required.

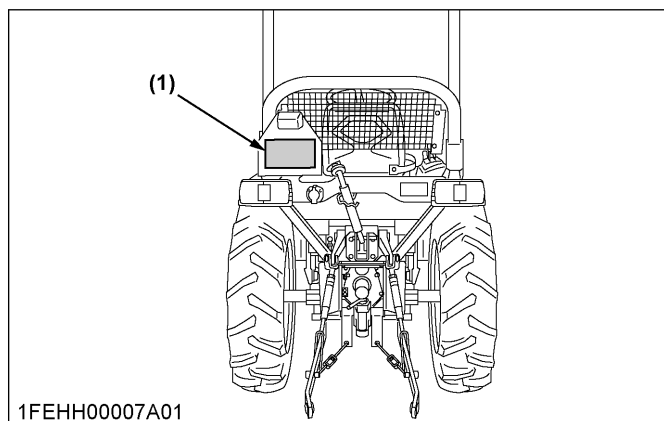
Rear mount type ROPS



- (1) Registration plate

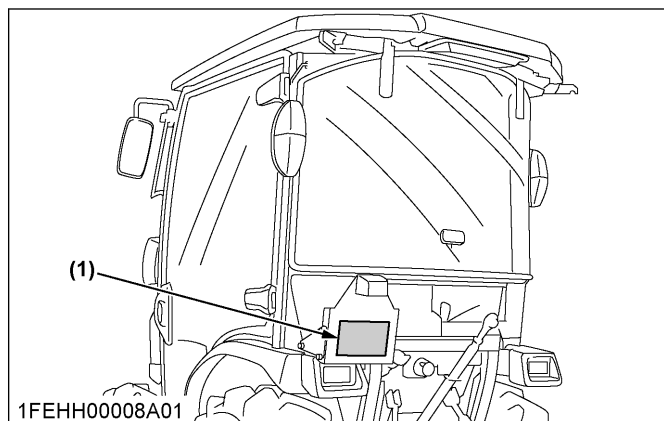
! SAFE OPERATION

Mid mount type ROPS



(1) Registration plate

CAB HST type



(1) Registration plate

- Turn the headlights on. Dim them when meeting another vehicle.
- Drive at speeds that allow you to maintain control at all times.
- Do not apply the differential lock while travelling at road speeds. The tractor may run out of control.
- 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 travelling at road speeds.
- Keep the ROPS in the "UP" position and wear the seat belt when driving the tractor on the road. Otherwise, you will not be protected in the event of a tractor roll-over.
- Do not operate an implement while the tractor is on the road. Lock the 3-point hitch in the raised position.
- For trailing PTO-driven implements, set the hitch devices to the towing position.
- Attach pulled or towed loads to the hitch devices only.

PARKING THE TRACTOR

- Disengage the PTO, lower all implements to the ground, place all control levers in their "NEUTRAL" positions, set the parking brake, stop the engine, remove the key from the ignition and lock the CAB door (if equipped).

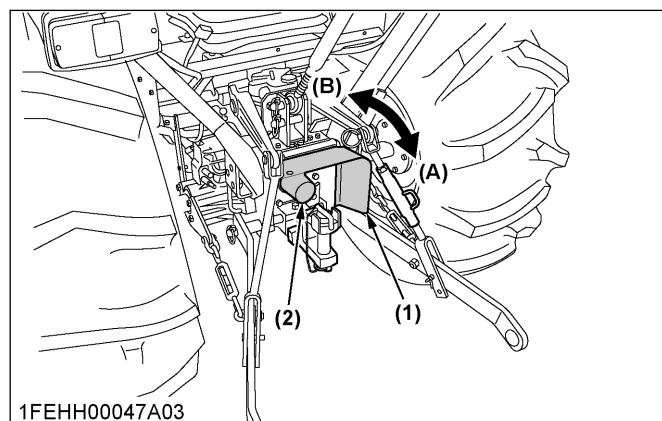
Leaving the transmission in gear with the engine stopped will not prevent the tractor from rolling.

- Make sure that the tractor has come to a complete stop before dismounting.
- Avoid parking on steep slopes. If at all possible, park on a firm and level surface; if not, park across a slope and chock the wheels.

Failure to comply with this warning may allow the tractor to move and could cause injury or death.

OPERATING THE PTO

- Wait until all moving components have completely stopped before getting off the tractor, connecting, disconnecting, adjusting, cleaning, or servicing any PTO driven equipment.
- 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

(A) "NORMAL POSITION"

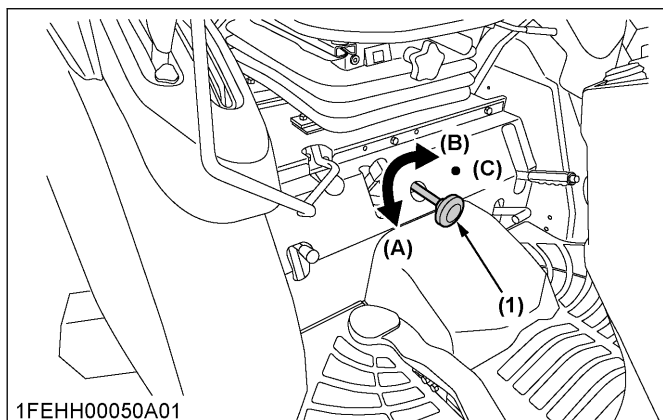
(B) "RAISED POSITION"

- 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 (540 rpm) unless the higher one is specifically recommended as safe by the equipment manufacturer.
- When operating stationary PTO driven equipment, always apply the tractor parking brake and place the chocks behind and in front of the rear wheels. Stay clear of all rotating parts.

! SAFE OPERATION

USING 3-POINT HITCH

- Use the 3-point hitch only with equipment designed for the appropriate category of 3-point hitch usage.
- When using a 3-point hitch mounted implement, be sure to install the proper counterbalance weight on the front of the tractor.
- When transporting on the road, set the 3-point hitch implement lowering speed knob in the "LOCK" position to hold the implement in the raised position.



(1) 3-point hitch lowering speed knob

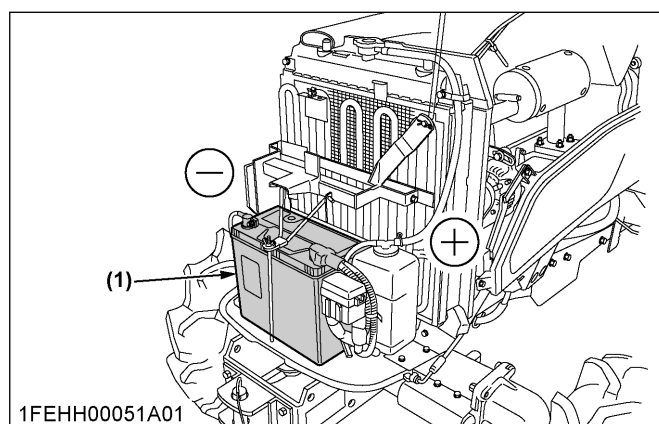
(A) "FAST"
(B) "SLOW"
(C) "LOCK"

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.

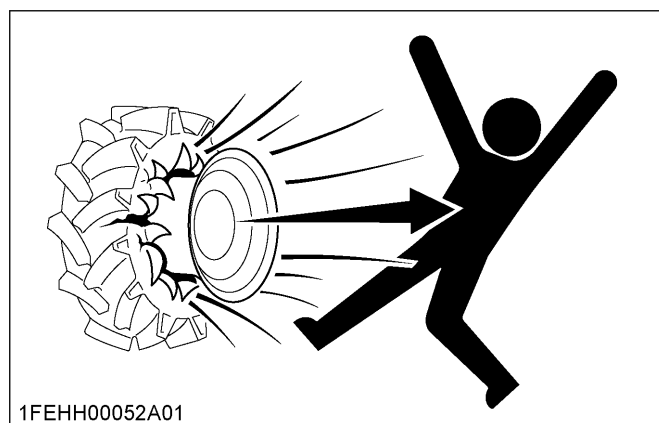
- Allow the tractor time to cool off before working on or near the engine, muffler, radiator and so on.
- Do not remove the radiator cap while the coolant is hot. When cool, slowly rotate the cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely. If the tractor has a coolant recovery tank, add coolant or water to the recovery tank, not the radiator. (See Checking the coolant level on page 104.)
- Always stop the engine before refuelling. Avoid spills and overfilling. Use only approved fuels.
- Always use grounded refuelling facilities.
- Do not smoke when working around the battery or when refuelling. 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.
- Before "jump starting" a dead battery, read and follow all of the instructions. (See JUMP STARTING THE ENGINE on page 42.)

- Keep first aid kit and fire extinguisher handy at all times.
- Disconnect the battery's ground cable before working on or near electric components.
- 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.
- To avoid sparks from an accidental short circuit, always disconnect the battery's ground cable (-) first and reconnect it last.



(1) Battery

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

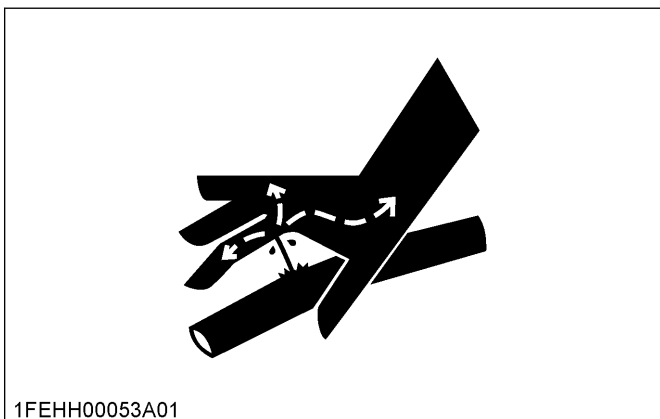


1FEHH00052A01

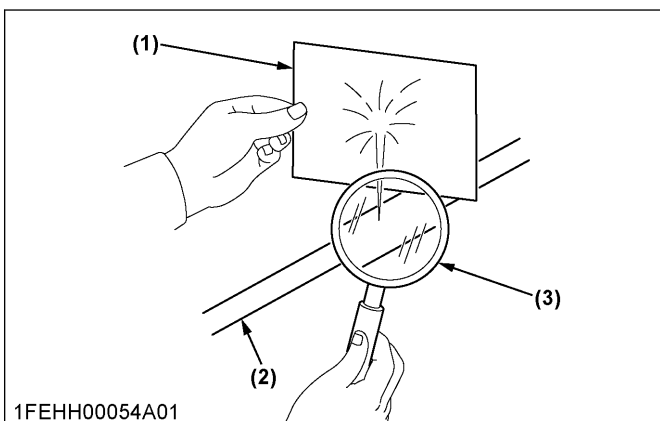
- Securely support the tractor when either changing wheels or adjusting the wheel tread width.
- Make sure that wheel bolts have been tightened to the specified torque.
- Do not work under any hydraulically supported devices. They can settle, suddenly leak down, or be accidentally lowered. If it is necessary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

! SAFE OPERATION

- 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.



- To avoid fire hazard:
After use and pressure-washing, make sure there is nothing flammable near the exhaust pipe. Grass or twigs under the bonnet may cause fire.
- 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 reactions.



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

- The improper disposal or burning of waste causes environmental pollution and can be punishable by local laws and regulations.
 - When draining fluids from the tractor, place a container underneath the drain port.
 - Do not pour waste onto the ground, down a drain, or into any water source (such as rivers, streams, lakes, marshes, seas and oceans).

- Waste products such as used oil, fuel, coolant, hydraulic fluid, aqueous urea solution (DEF (AdBlue)), refrigerant, solvent, filters, rubber, batteries and harmful substances, can harm the environment, people, pets and wildlife. Please dispose of properly.

See your local recycling centre or KUBOTA Dealer to learn how to recycle or get rid of waste products.

- Meaning of symbols on batteries regarding management of waste batteries:



- Separate collection symbol: batteries must not be disposed of with the household waste.

Pb

- Pb symbol: batteries contain more than 0.004 % lead.

! SAFE OPERATION

PICTORIAL SAFETY LABELS

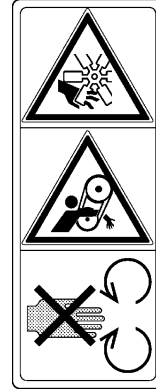
The pictorial safety labels affixed are intended to alert persons to potential hazards. The hazard is identified by a pictorial in the safety alert triangle or by the safety alert symbol alone. An adjacent pictorial provides instructions and information on how to avoid the hazard.

(1) Part No. 6C446-3012-1



(2) Part No. 6C782-4958-1

Do not get your hands close to the engine fan and fan belt.



TO AVOID INJURY FROM BATTERY GASES AND ACID



Keep away cigarettes, flames or sparks.



Always shield eyes and face from the battery.



Keep out of reach of children.



Poison causes severe burns.
Contains sulphuric acid.



Read and understand the operator's manual.

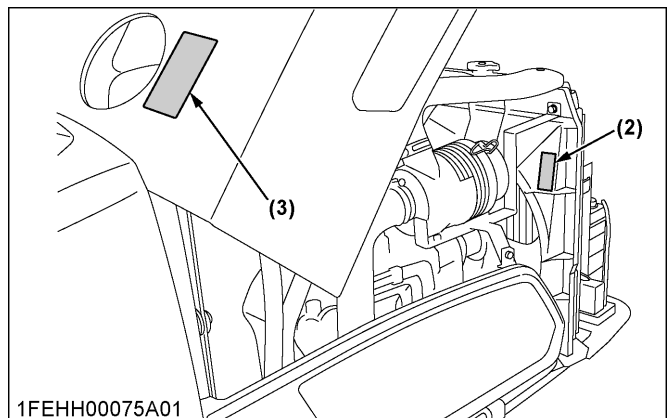
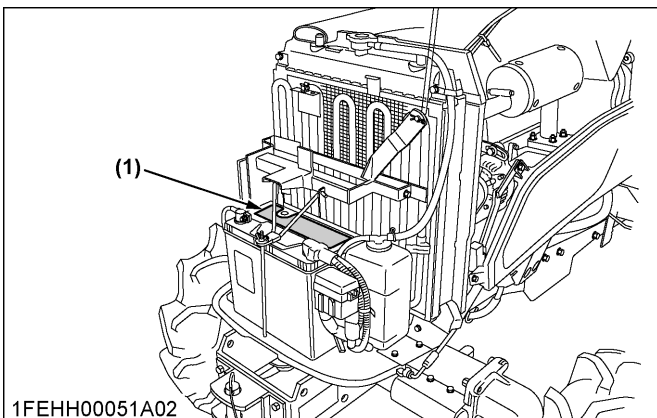
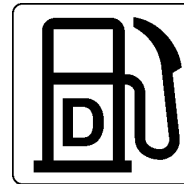


Danger explosive gases.

(3) Part No. 6C782-4741-1

Diesel fuel only.

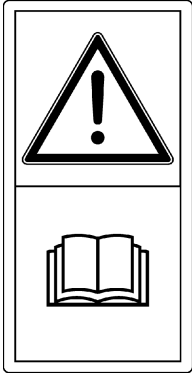
No fire.



! SAFE OPERATION

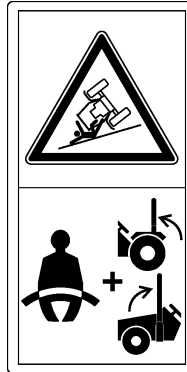
(1) Part No. TD179-3491-1

Carefully read operator's manual before handling the machine.
Observe instructions and safety rules when operating.



(2) Part No. 6C782-9848-1

Always lock ROPS in upright position unless it has to be folded down to allow operation underneath trees or bushes.
When ROPS is locked in upright position, seat belt should be used.

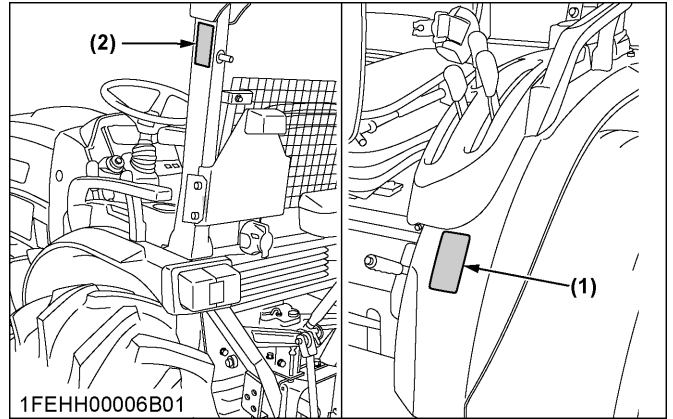


(3) Part No. 6C486-4741-1

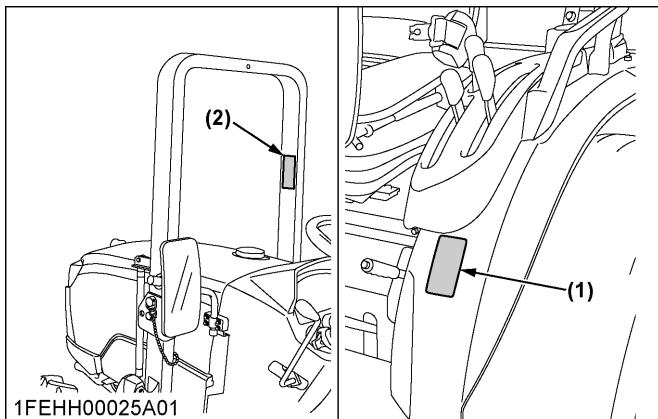
Seat belt should be used.



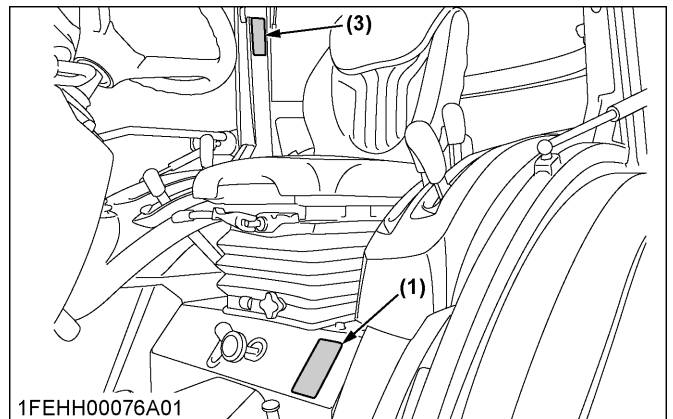
Rear mount type ROPS



Mid mount type ROPS



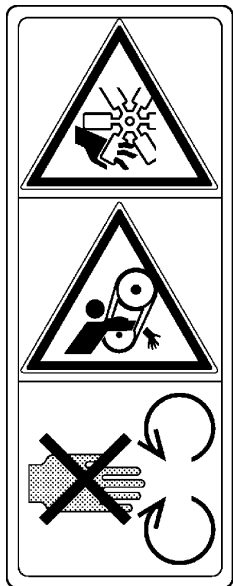
CAB type



SAFE OPERATION

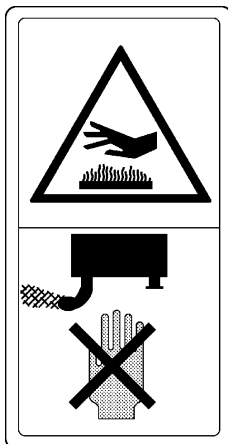
(1) Part No. 6C782-4958-1

Do not get your hands close to the engine fan and fan belt.



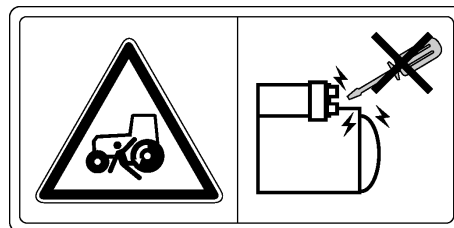
(2) Part No. 6C782-4959-1

Do not touch hot surfaces like the muffler, etc.



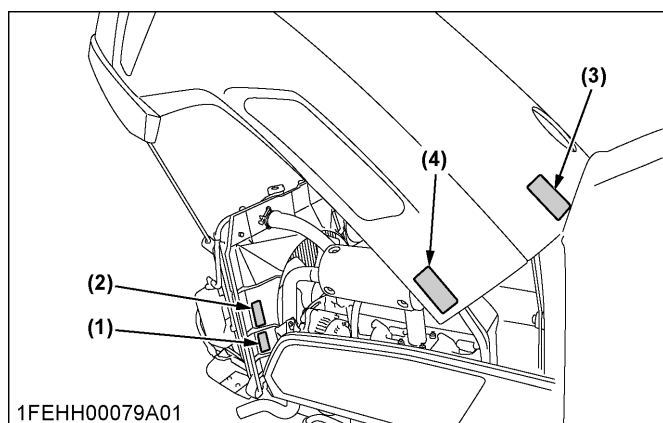
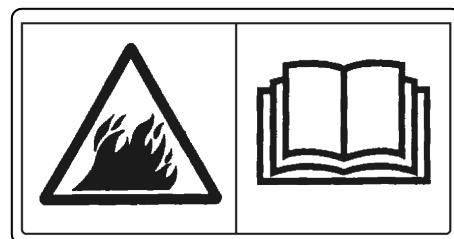
(3) Part No. 6C782-4718-1

Start engine from operator's seat only.



(4) Part No. 6C446-4752-1

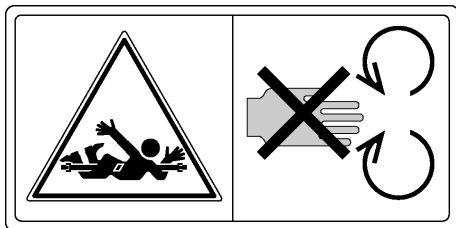
After use and pressure-washing, make sure there is nothing flammable near the exhaust pipe.
Grass or twigs under the bonnet may cause fire.



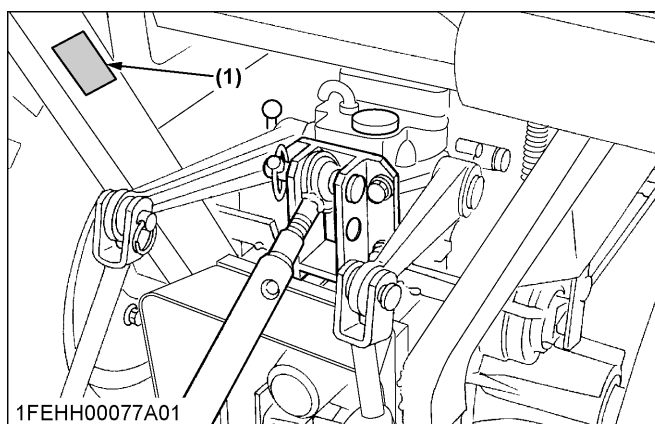
SAFE OPERATION

(1) Part No. 6C782-4711-1

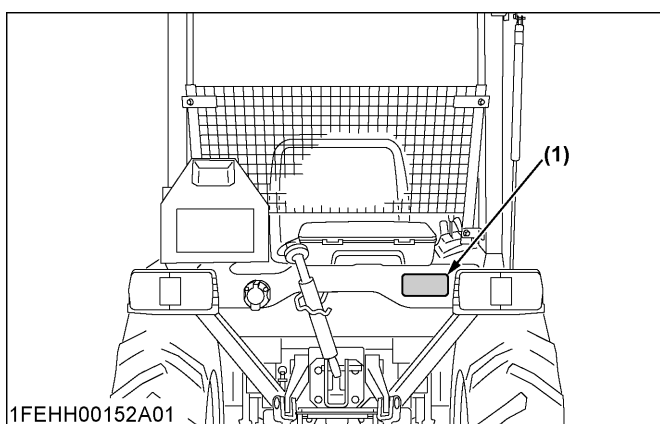
Do not stand by the implement or between the implement and tractor while operating.



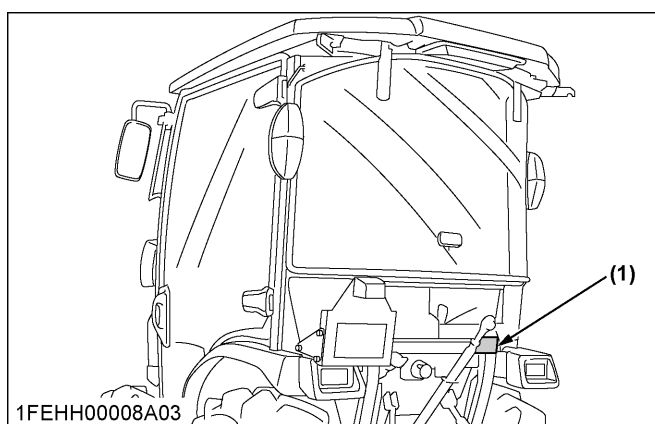
B2311 ROPS type



B2201/B2231/B2261 ROPS type



B2231/B2261/B2311 CAB type



SAFE OPERATION

CARE OF PICTORIAL SAFETY LABELS

- Keep pictorial safety labels clean and free from obstructing material.
- Clean pictorial safety labels with soap and water, dry with a soft cloth.
- Replace damaged or missing pictorial safety labels with new labels from your local KUBOTA Dealer.
- If a component with pictorial safety 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.
- Mount new pictorial safety labels by applying on a clean dry surface and pressing any bubbles to outside edge.

SERVICING OF TRACTOR

Your dealer has knowledge of your new machine 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 machine or your local KUBOTA Dealer.

When in need of parts, be prepared to give your dealer the product identification number (PIN), and the CAB/ROPS and engine serial numbers.

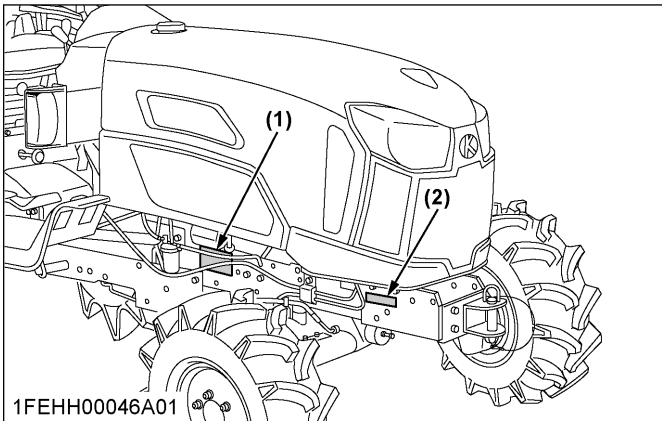
Locate the PIN and serial numbers now and record them in the space provided.

Date of purchase	
Name of dealer	

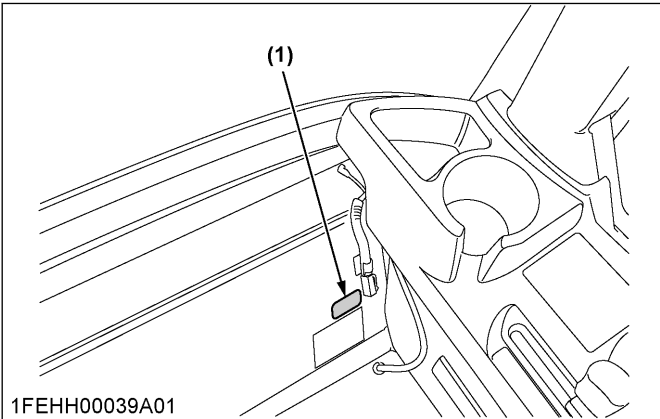
To be filled in by purchaser

	Type	PIN/Serial No.
Tractor		
CAB/ROPS		
Engine		

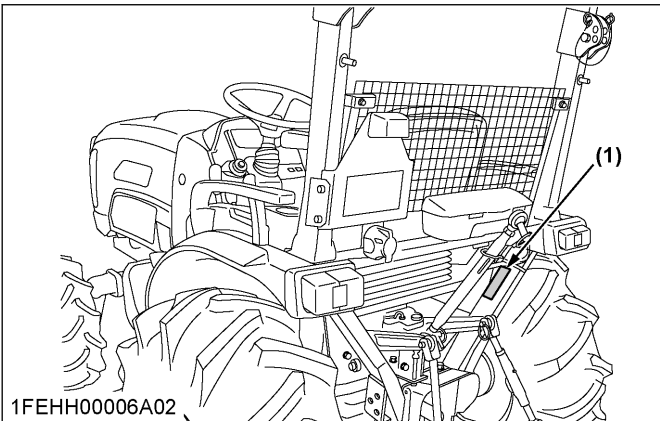
To be filled in by purchaser



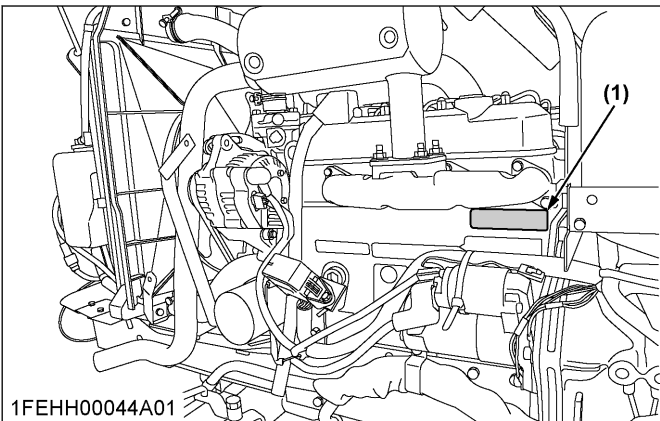
(1) Identification plate
(2) Product identification number



(1) CAB identification plate (CAB serial number)



(1) ROPS identification plate (ROPS serial number)



(1) Engine serial number

WARRANTY

This tractor is warranted under the **KUBOTA Limited Express Warranty**, a copy of which may be obtained from your selling dealer.

No warranty shall, however, apply if the tractor has not been handled according to the instruction given in the

operator's manual, even if it is within the warranty period.

SCRAPPING THE TRACTOR AND ITS PROCEDURE

To put the tractor out of service, correctly follow the local rules and regulations of the country or territory where you scrap it.

If you have questions, consult your local KUBOTA Dealer.

SPECIFICATIONS

SPECIFICATION TABLE FOR ROPS HST TYPE AND CAB HST TYPE

Model				B2231	B2261	B2311		
PTO power *1			kW (PS)	12.5 (17.0)	14.6 (19.9)	17.4 (23.7)		
Engine	Manufacturer			Kubota				
	Model			D1105	D1305	V1505		
	Type			Indirect injection. Vertical, water-cooled, 4cycle diesel				
	Number of cylinders			3		4		
	Bore and stroke		mm	Φ78 x 78.4	Φ78 x 88	Φ78 x 78.4		
	Total displacement		cm ³	1123	1261	1498		
	Engine power	ECE-R24	ROPS	kW (PS)	15.3 (20.8)	17.8 (24.2)	20.9 (28.4)	
			CAB	kW (PS)	15.1 (20.5)	17.6 (23.9)		
		167/2013/EU	ROPS	kW (PS)	15.7 (21.3)	18.2 (24.7)	21.5 (29.2)	
			CAB	kW (PS)				
	Rated revolution		rpm	2500				
	Maximum torque		N·m (kgf·m)	71.3 (7.27)	84.0 (8.57)	97.9 (9.98)		
	Battery			12 V, RC : 80 min, CCA (SAE) : 430 A, CCA (EN) : 360 A				
	Fuel			Diesel fuel No.2 (above -10 °C), Diesel fuel No.1 (below -10 °C)				
CO2 emission*2 (NRSC*3)		g/kWh	1018.0		---			
Capacities	Fuel tank		L	27				
	Engine crankcase (with filter)		L	3.1	4.0			
	Engine coolant		L	4.6				
	Transmission case		L	17.0				
Dimensions *4	Overall length (with 3P)	ROPS	mm	2624		2830		
		CAB	mm	2781		2900		
	Overall width (minimum tread)		mm	1234	1249	1365		
	Overall height	Rear ROPS	mm	2327	2353	2327		
		CAB	mm	2087	2112	2140		
	Wheel base	ROPS	mm	1500		1666		
		CAB	mm	1560		1666		
	Minimum ground clearance		mm	265	290	318		
	Tread	Front	mm	832	830	936		
		Rear	mm	986	1006	1050		
Weight *4	Rear ROPS		kg	780	790	850		
	CAB		kg	1010	1020	1070		
Clutch			Not applicable					
Travelling sys- tem	Tyres (farm)	Front	6-12				6.00-12	180/85D12
		Rear	9.5-16				9.5-18	12.4-16
	Steering			Hydraulic power steering				
	Transmission			Main hydrostatic transmission, 3 range gear shift				
	Brake			Wet disk type				
	Minimum turning radius (with brake)		m	2.1				

(Continued)

SPECIFICATIONS

Model				B2231	B2261	B2311
Hydraulic unit	Hydraulic control system			Position control		
	Pump capacity		L/min	3P: 18.9, power steering: 14.2		
	3-point hitch			SAE category 1		
	Max. lift force	At lift points	kg	970		
		600 mm behind lift point	kg	760		
	Remote hydraulic control			2 valve (M.F.V)		
	Remote control valve coupler			Hose connection type outlet		
PTO	Rear-PTO			SAE 1-3/8, 6 splines		
		PTO/engine speed	rpm	540/2400		
	Mid-PTO			USA No.5 (Kubota 10-tooth) involute spline		
		PTO/engine speed	rpm	2500/2500		
The level of protection against hazardous substances *5		ROPS		Not applicable		
		CAB		Category 1		
Noise at the operator's ear *6		ROPS	dB(A)	85.4	85.8	85.0
		CAB/door closed	dB(A)	82.7	82.6	83.0
		CAB/door opened	dB(A)	82.9	81.3	82.0
Noise of the tractor in motion *6		ROPS	dB(A)	81	80	80
		CAB	dB(A)	81	79	82
Value of the vibration level *7	GRAMMER MSG 83/511	Light driver	m/s ²	1.13		
		Heavy driver	m/s ²	1.00		
	GRAMMER MSG 93/511	Light driver	m/s ²	1.21		
		Heavy driver	m/s ²	1.05		
	SEARS 807	Light driver	m/s ²	1.24		
		Heavy driver	m/s ²	1.06		
	SEARS 830	Light driver	m/s ²	1.14		
		Heavy driver	m/s ²	1.00		
	COBO SC74/M91 *8	Light driver	m/s ²	1.13		
		Heavy driver	m/s ²	0.75		

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

*1 Manufacturer's estimate

*2 Measured according to Regulation (EU) 2017/654. The CO2 measurement is obtained from testing a(n) (parent) engine representative of the engine type (engine family) over a fixed test cycle under laboratory conditions. The CO2 measurement shall not imply or express any guarantee of the performance of a particular engine.

*3 Non-road steady-state test cycle

*4 When farm tyre fixed on the tractor.

*5 According to EN 15695-1:2009

*6 Measures according to Directive 1322/2014/EU ANNEX XIII

*7 Measured according to Directive 1322/2014/EU ANNEX XIV

*8 Except CAB model.

SPECIFICATION TABLE FOR ROPS MANUAL TRANSMISSION TYPE

Model				B2201	B2231	B2261
PTO power *1			kW (PS)	11.9 (16.2)	13.0 (17.7)	15.1 (20.5)
Engine	Manufacturer			Kubota		
	Model			D1105		D1305
	Type			Indirect injection. Vertical, water-cooled, 4 cycle diesel		
	Number of cylinders			3		
	Bore and stroke		mm	Φ78 x 78.4		Φ78 x 88
	Total displacement		cm³	1123		1261
	Engine power ECE-R24		kW (PS)	14.0 (19.0)	15.3 (20.8)	17.8 (24.2)
	Engine power 167/2013/EU		kW (PS)	14.4 (19.6)	15.7 (21.3)	18.2 (24.7)
	Rated revolution		rpm	2500		
	Maximum torque		N·m (kgf·m)	68.1 (6.94)	71.3 (7.27)	84.0 (8.57)
	Battery			12 V, RC : 80 min, CCA (SAE) : 430 A, CCA (EN) : 360 A		
	Fuel			Diesel fuel No.2 (above -10 °C), Diesel fuel No. 1 (below -10 °C)		
	CO2 emission*2 (NRSC*3)		g/kWh	1018.0		
Capacities	Fuel tank		L	27		
	Engine crankcase (with filter)		L	3.1		4.0
	Engine coolant		L	4.6		
	Transmission case		L	16.5		
Dimensions *4	Overall length (with 3P)		mm	2624		
	Overall width (minimum tread)		mm	1022	1234	1249
	Overall height	Rear ROPS	mm	2300	2327	2353
		Centre ROPS	mm	2017	---	2069
	Wheelbase		mm	1500		
	Minimum ground clearance		mm	238	265	290
	Tread	Front	mm	832	832	830
		Rear	mm	830	986	1006
Weight *4	Rear ROPS		kg	730	750	760
	Centre ROPS		kg	750	---	780
Clutch				Dry single plate		
Travelling system	Tyres (farm)	Front		5-12	6-12	6.00-12
		Rear		8-16	9.5-16	9.5-18
	Steering			Hydraulic power steering		
	Transmission			Gear shift, 9 forward and 9 reserve		
	Brake			Wet disk type		
	Minimum turning radius (with brake)		m	2.1		
Hydraulic unit	Hydraulic control system			Position control		
	Pump capacity		L/min	3P: 18.9, power steering: 14.2		
	3-point hitch			SAE category 1		
	Max. lift force	At lift points	kg	970		
		600 mm behind lift point	kg	760		
	Remote hydraulic control			1 standard		
	Remote control valve coupler			Block type outlet		
PTO	Rear-PTO			SAE 1-3/8, 6 splines		

(Continued)

SPECIFICATIONS

Model				B2201	B2231	B2261
PTO		PTO/engine speed	rpm	540/2400		
	Mid-PTO			USA No. 5 (Kubota 10-tooth) involute spline		
		PTO/engine speed	rpm	2500/2500		
The level of protection against hazardous substances *5				Not applicable		
Noise at the operator's ear *6			dB(A)	83.5	85.4	
Noise of the tractor in motion *6			dB(A)	77	79	
Value of the vibration level *7	GRAMMER MSG 83/511 *8	Light driver	m/s ²	1.13		
		Heavy driver	m/s ²	1.00		
	GRAMMER MSG 93/511 *8	Light driver	m/s ²	1.21		
		Heavy driver	m/s ²	1.05		
	SEARS 807	Light driver	m/s ²	1.24		
		Heavy driver	m/s ²	1.06		
	SEARS 830	Light driver	m/s ²	1.14		
		Heavy driver	m/s ²	1.00		
	COBO SC74/M91	Light driver	m/s ²	1.13		
		Heavy driver	m/s ²	0.75		
	PILOT P1311 BFD64/KM60X *9	Light driver	m/s ²	1.23		
		Heavy driver	m/s ²	1.08		

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

*1 Manufacturer's estimate

*2 Measured according to Regulation (EU) 2017/654. The CO₂ measurement is obtained from testing a(n) (parent) engine representative of the engine type (engine family) over a fixed test cycle under laboratory conditions. The CO₂ measurement shall not imply or express any guarantee of the performance of a particular engine.

*3 Non-road steady-state test cycle

*4 When farm tyre fixed on the tractor.

*5 According to EN 15695-1: 2009

*6 Measures according to Directive 1322/2014/EU ANNEX XIII

*7 Measured according to Directive 1322/2014/EU ANNEX XIV

*8 Except CAB model.

*9 Mid mount type ROPS only.

TRAVELLING SPEEDS FOR ROPS HST TYPE AND CAB HST TYPE

Model		B2231/B2261				
Tyre size (rear)		8-16 farm	9.5-16 farm	9.5-18 farm	31 x 13.5-15 turf	315/75D-15 turf
	Range gear shift lever	km/h				
Forward	Low	0 to 4.61	0 to 4.94	0 to 5.24	0 to 4.55	0 to 4.98
	Middle	0 to 7.57	0 to 8.09	0 to 8.59	0 to 7.46	0 to 8.17
	High	0 to 19.12	0 to 20.45	0 to 21.71	0 to 18.85	0 to 20.65
	Max speed (at 2650 engine rpm)	20.27	21.68	23.01	19.98	21.89
Reverse	Low	0 to 3.69	0 to 3.95	0 to 4.19	0 to 3.64	0 to 3.99
	Middle	0 to 6.05	0 to 6.48	0 to 6.87	0 to 5.97	0 to 6.54
	High	0 to 15.29	0 to 16.36	0 to 17.37	0 to 15.08	0 to 16.52
	Max speed (at 2650 engine rpm)	16.21	17.34	18.41	15.98	17.51

At rated engine rpm

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

Model		B2311	
Tyre size (rear)		12.4-16 farm	13.6- 16 turf
	Range gear shift lever	km/h	
Forward	Low	0 to 5.57	0 to 5.76
	Middle	0 to 9.14	0 to 9.44
	High	0 to 23.09	0 to 23.86
	Max speed (at 2650 engine rpm)	24.48	25.29
Reverse	Low	0 to 4.46	0 to 4.60
	Middle	0 to 7.31	0 to 7.55
	High	0 to 18.47	0 to 19.08
	Max speed (at 2650 engine rpm)	19.58	20.23

At rated engine rpm

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

TRAVELLING SPEEDS FOR ROPS MANUAL TRANSMISSION TYPE

Model			B2201/B2231/B2261				
Tyre size (rear)			8-16 farm	9.5-16 farm	9.5-18 farm	31 x 13.5-15 turf	315/75D-15 turf
		Range gear shift lever	km/h				
Forward	1	Low	1.03	1.10	1.17	1.02	1.12
	2		1.71	1.83	1.95	1.69	1.85
	3		2.66	2.84	3.02	2.62	2.87
	4	Middle	1.92	2.05	2.18	1.89	2.07
	5		3.19	3.41	3.62	3.14	3.44
	6		4.94	5.29	5.61	4.87	5.34
	7	High	6.89	7.37	7.83	6.79	7.44
	8		11.43	12.23	12.98	11.27	12.35
	9		17.74	18.97	20.14	17.49	19.16
Reverse		Max speed (at 2650 engine rpm)	18.80	21.11	21.35	18.53	20.31
	1	Low	0.94	1.01	1.07	0.93	1.02
	2		1.57	1.67	1.78	1.54	1.69
	3		2.43	2.60	2.76	2.40	2.62
	4	Middle	1.76	1.88	1.99	1.73	1.90
	5		2.91	3.12	3.31	2.87	3.15
	6		4.52	4.83	5.13	4.46	4.88
	7	High	6.30	6.74	7.15	6.21	6.80
	8		10.45	11.18	11.87	10.30	11.29
	9		16.22	17.35	18.41	15.99	17.51
		Max speed (at 2650 engine rpm)	17.19	18.39	19.52	16.95	18.57

At rated engine rpm

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

IMPLEMENT LIMITATIONS

The tractor has been thoroughly tested for proper performance with implements sold or approved by KUBOTA.

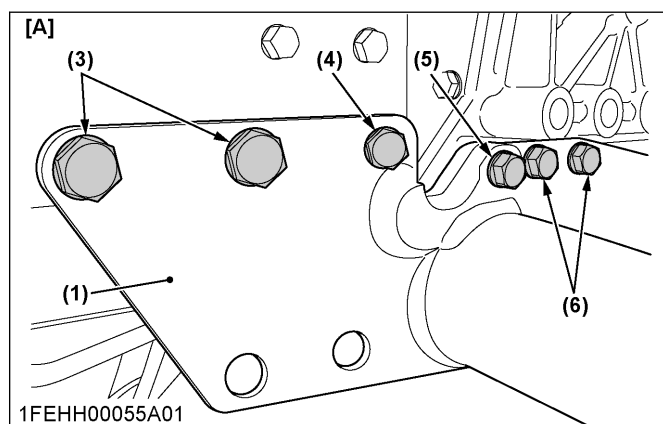
Use with implements which are not sold or approved by KUBOTA and which exceed the maximum specifications listed in the following table, or which are otherwise unfit for use with the tractor may result in malfunctions or failures of the tractor, damage to other property and injury to the operator or others.

Any malfunctions or failures of the tractor resulting from use with improper implements are not covered by the warranty.

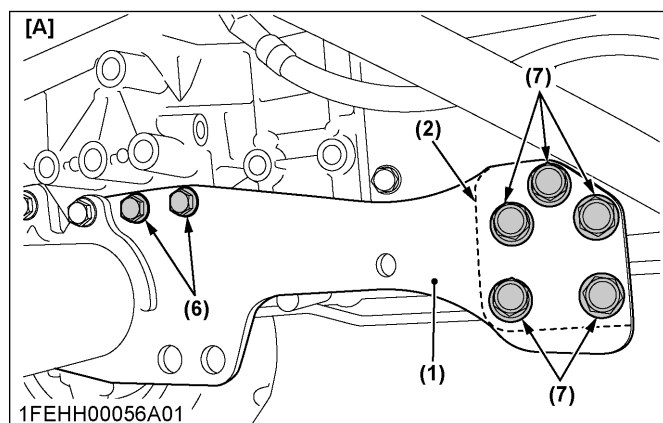
FRONT LOADER (LA424) FOR B2201/B2231/B2261

Fixation points on the body of the tractor where the front loader must be installed.

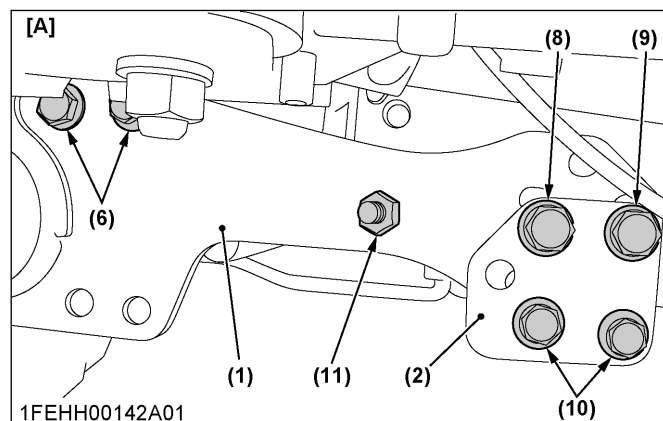
Attach the main frame ROPS and CAB type



[A] Front side: ROPS and CAB type



[A] Back side: ROPS type



[A] Back side: CAB type

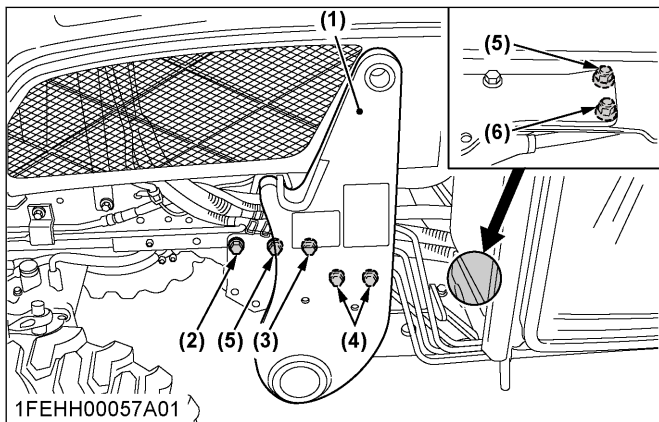
	Parts name	Tightening torque
(1)	Main frame	---
(2)	Spacer plate	---
(3)	2-M14 x 40 bolt with spring washer assy 2-M14 plain washers	130 N·m (13.3 kgf·m)
(4)	1-M12 x 35 bolt with spring washer assy 1-M12 plain washer	80 N·m (8.2 kgf·m)
(5)	1-M12 x 45 bolt with spring washer assy 1-M12 plain washer	80 N·m (8.2 kgf·m)
(6)	2-M12 x 35 bolt with spring washer assy 2-M12 plain washer	80 N·m (8.2 kgf·m)
(7)	5-M12 x 40 bolt with spring washer assy 5-M12 plain washer 5-M12 nut	80 N·m (8.2 kgf·m)
(8)	1-M14 x 60 bolts 1-M14 plain washer 1-M14 spring lock washer 1-M14 nut	130 N·m (13.3 kgf·m)
(9)	1-M14 x 60 bolts 1-M14 plain washer 1-M14 spring lock washer	130 N·m (13.3 kgf·m)
(10)	2-M12 x 40 bolt with spring washer assy 2-M12 plain washer 2-M12 nut	80 N·m (8.2 kgf·m)
(11)	1-M14 plain washer 1-M14 spring lock washer 1-M14 nut	128 N·m (13.1 kgf·m)

Output capacity

Max. lifting capacity (bucket pivot pin, max. height)	420 kg
Max. oil pressure	16.6 MPa / 169 kgf/cm ²

FRONT LOADER (LA534) FOR B2311

Attach the main frame: ROPS and CAB type



	Parts name	Tightening torque
(1)	Main frame	---
(2)	1-M14 1-M14 spring lock washers	150 N·m (15.3 kgf·m)
(3)	1-M12 (original) 1-M12 spring lock washers (original)	90 N·m (9.2 kgf·m)
(4)	2-M12 (original) 2-M12 spring lock washers (original)	80 N·m (8.2 kgf·m)
(5)	2-M14 (original) 2-M14 spring lock washers (original)	150 N·m (15.3 kgf·m)
(6)	1-M14 nut (original) 1-M14 spring lock washers (original)	128 N·m (13.1 kgf·m)

Output capacity

Max. lifting capacity (bucket pivot pin, max. height)	520 kg
Max. oil pressure	16.6 MPa / 169 kgf/cm ²

NOTE :

- The value of max lifting capacity contains the weight of the KUBOTA standard bucket.

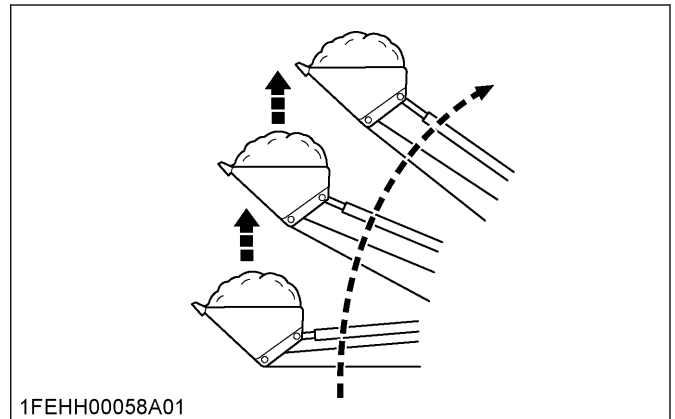
DANGER

To avoid personal injury or death:

- Special attention should be made when lifting the load, keep the bucket correctly positioned to prevent spillages.

NOTE :

- Not all risks are listed.
Refer to front loader operator's manual.



OTHER IMPLEMENTS

- For selecting implements, consult your local dealer.
- Strictly follow the instructions outlined in the operator's manual of the mounted or trailed machinery or trailer, and do not operate the tractor-machine or tractor-trailer combination unless all instructions have been followed.
- Forestry application

Following hazards exist:

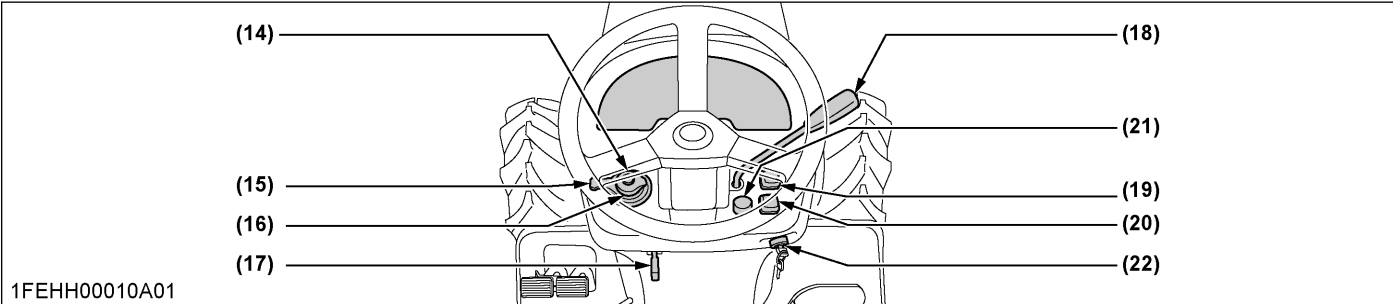
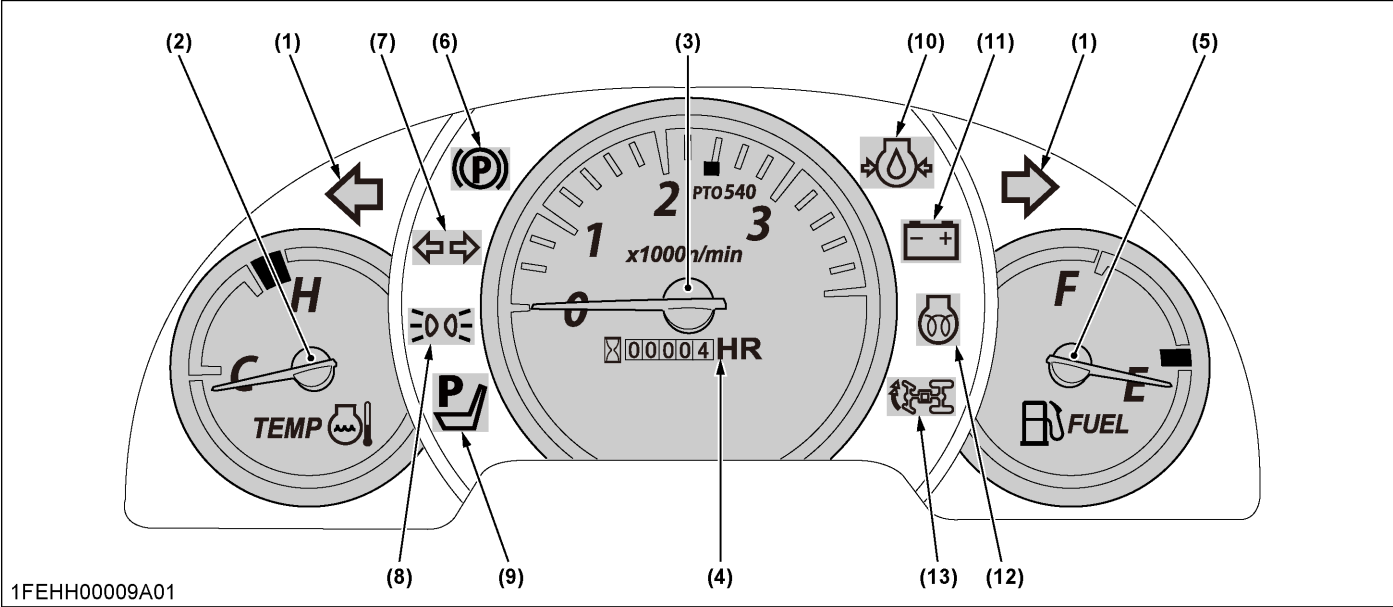
- toppling trees, primarily in case a rear-mounted tree grab-crane is mounted at the rear of the tractor.
- penetrating objects in the operator's enclosure, primarily in case a winch is mounted at the rear of the tractor.

Optional equipment such as operator protective structure (OPS), falling object protective structure (FOPS), etc. to deal with these hazards and other related hazards are not available for this tractor. Without such optional equipment use is limited to tractor specific applications like transport and stationary work.

INSTRUMENT PANEL AND CONTROLS

SWITCHES AND HAND CONTROLS

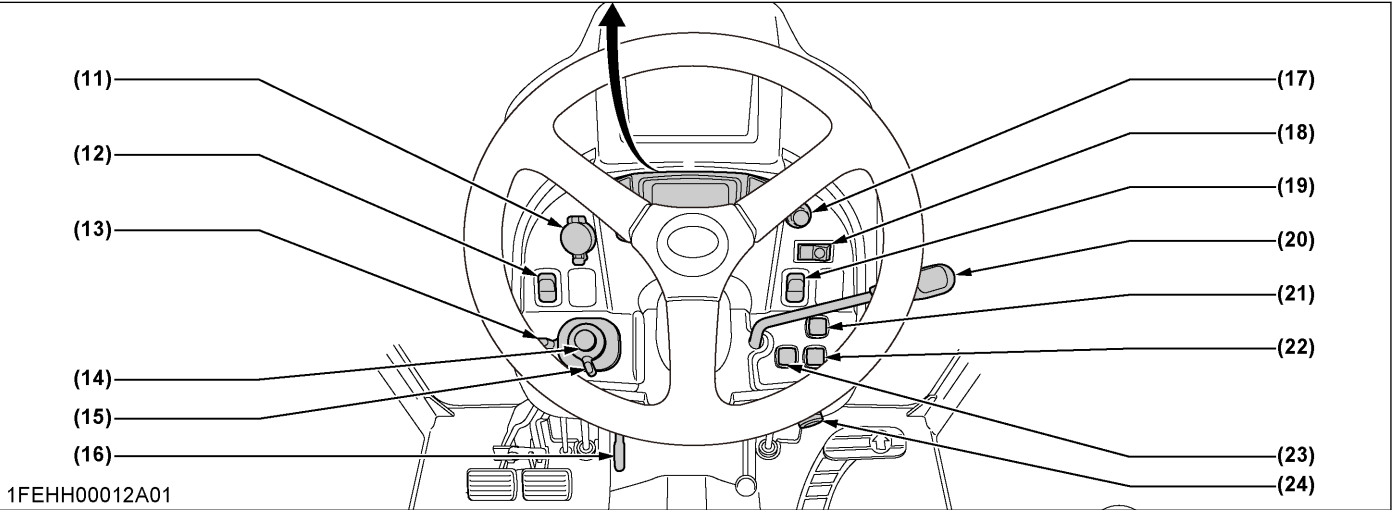
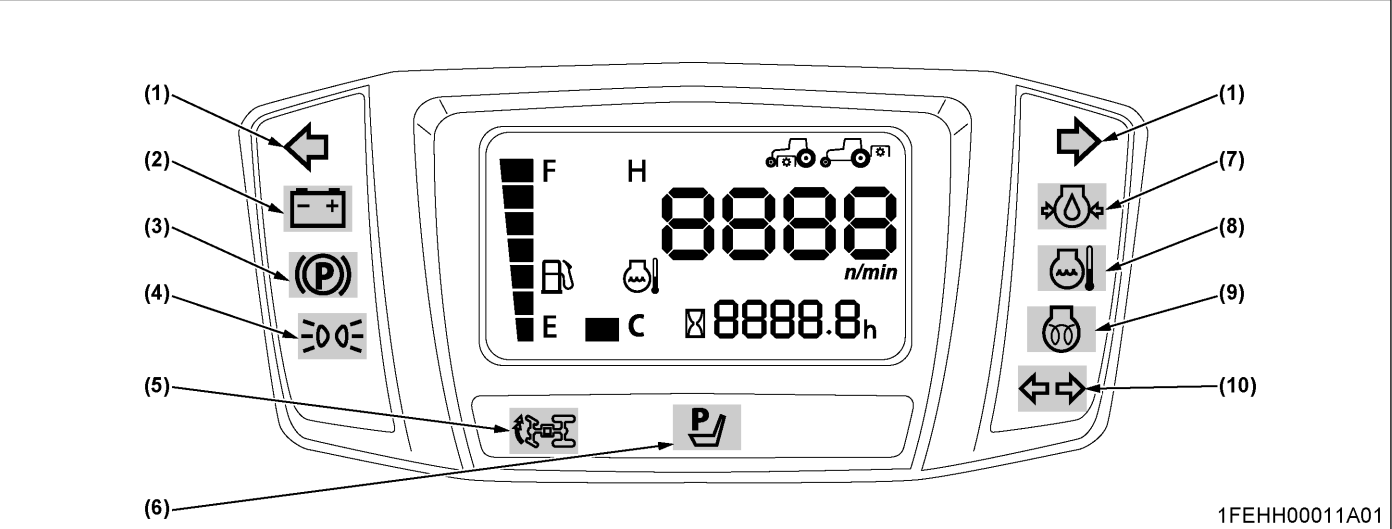
ROPS HST type and ROPS manual transmission type



Illustrated contents

(1) Direction indicator and hazard light indicator.....	51	(13) Bi-speed turn indicator (if equipped).....	56
(2) Coolant temperature gauge.....	62	(14) Hazard light switch.....	51
(3) Tachometer.....	62	(15) Direction indicator light switch.....	51
(4) Hour meter.....	62	(16) Headlight switch.....	51
(5) Fuel gauge.....	61	(17) Bi-speed turn lever (if equipped).....	56
(6) Parking brake indicator.....	35	(18) Hand throttle lever.....	57
(7) Trailer indicator.....	51	(19) Stationary PTO switch.....	71
(8) Position lights indicator.....	51	(20) Beacon switch.....	52
(9) Parking OPC indicator.....	64	(21) Horn button.....	52
(10) Engine oil pressure warning indicator.....	61	(22) Key switch.....	35
(11) Electrical charge warning indicator.....	61		
(12) Glow plug indicator.....	35		
.....	38		

CAB HST type

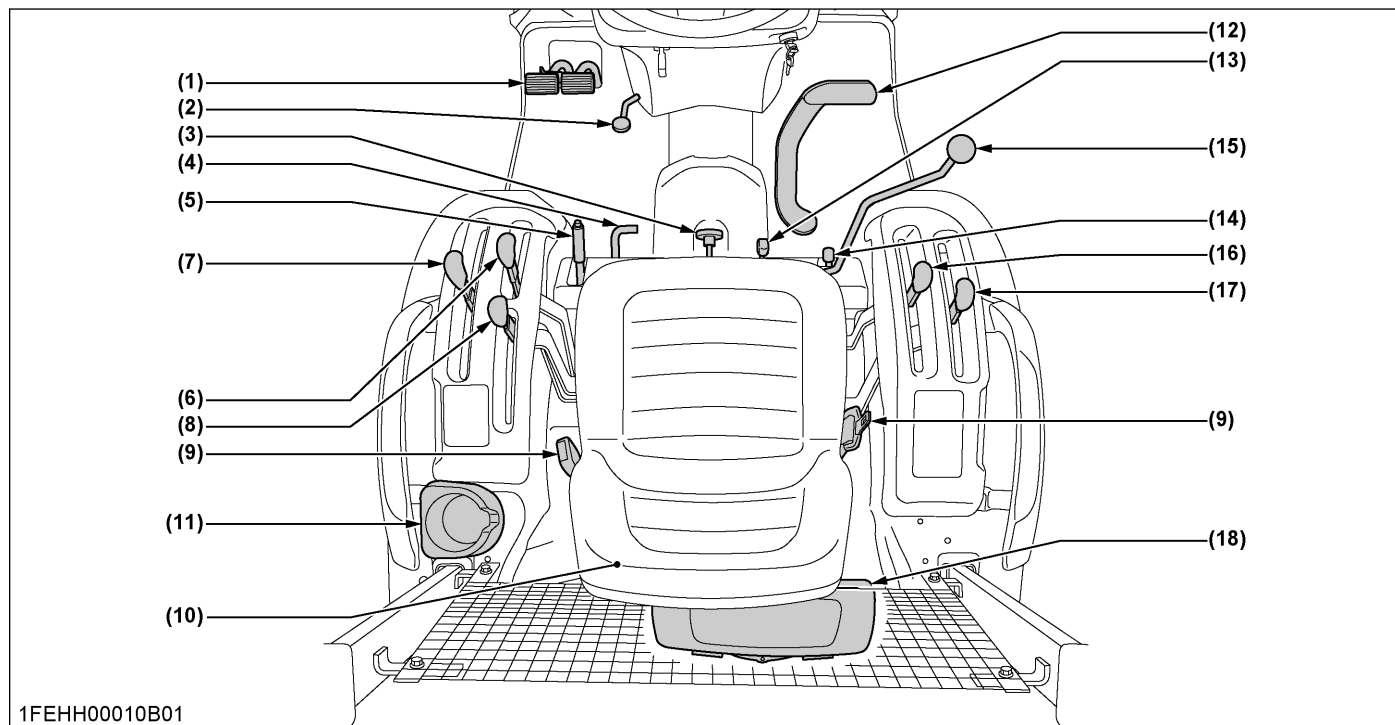


Illustrated contents

(1) Direction indicator and hazard light indicator.....	51	(13) Direction indicator light switch	51
(2) Electrical charge warning indicator	61	(14) Horn button	52
(3) Parking brake indicator.....	35	(15) Headlight switch.....	51
(4) Position lights indicator.....	51	(16) Bi-speed turn lever.....	56
(5) Bi-speed turn indicator.....	56	(17) Display switch (engine rpm, PTO speed).....	63
(6) Parking OPC light.....	64	(18) Demister switch	95
(7) Engine oil pressure warning indicator.....	61	(19) Front wiper and washer switch	90
(8) Engine overheat warning indicator	61	(20) Hand throttle lever	57
(9) Glow plug indicator	40	(21) Hazard light switch.....	51
(10) Trailer indicator	51	(22) Beacon switch.....	52
(11) Electrical power socket.....	67	(23) Stationary PTO switch	71
(12) Front work light switch	90	(24) Key switch.....	35

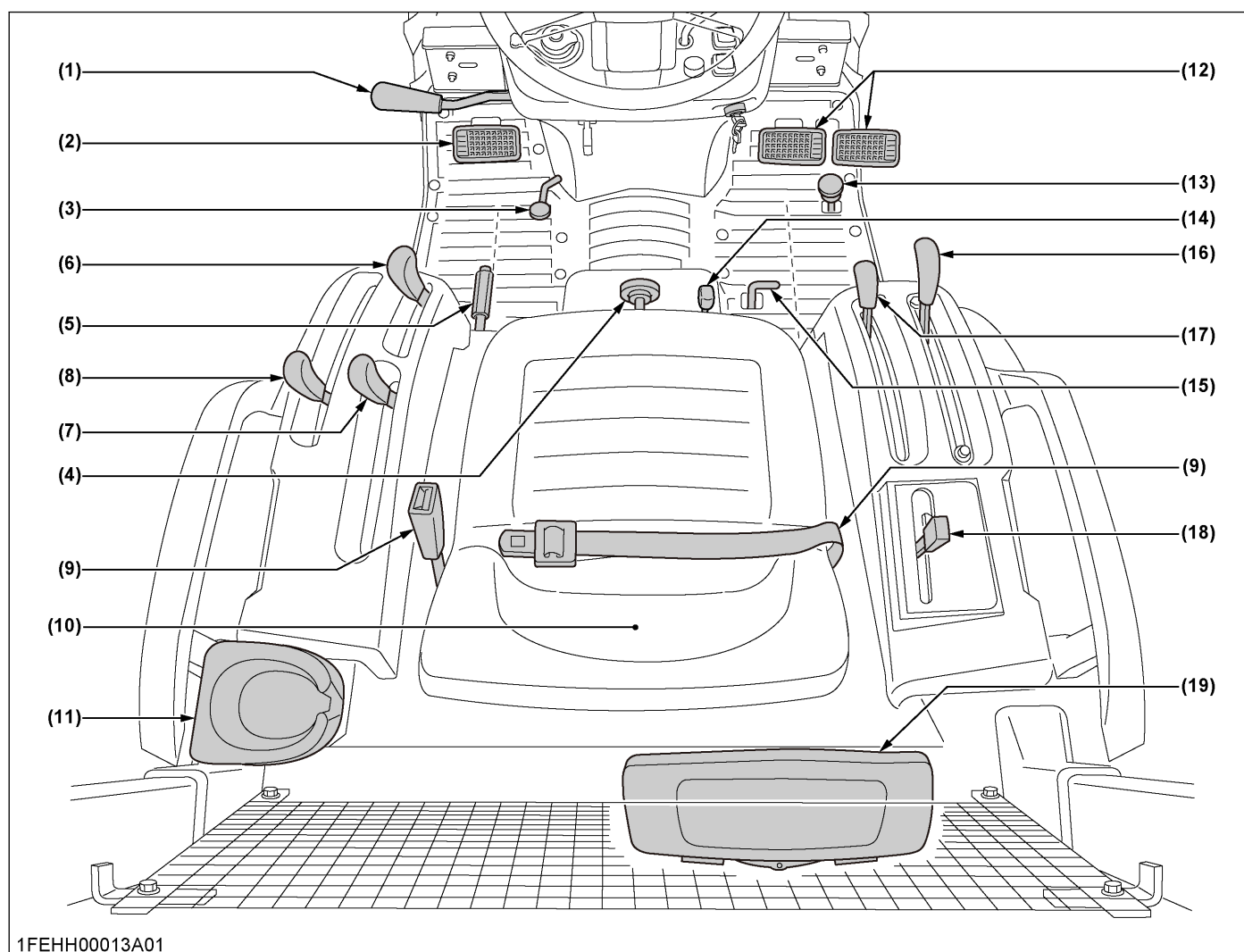
FOOT AND HAND CONTROLS

ROPS HST type



(1) Brake pedal.....	53	(11) Cup holder	
(2) Steering wheel tilt pedal.....	50	(12) Speed control pedal.....	58
(3) 3-point hitch lowering speed knob.....	76	(13) Front wheel drive lever.....	56
(4) Differential lock pedal.....	64	(14) Loader lock lever.....	35
(5) Parking brake lever.....	58	(15) Loader control lever.....	35
(6) PTO clutch lever.....	70	(16) Cruise control lever.....	59
(7) Range gear shift lever.....	54		60
(8) PTO select lever.....	69	(17) Position control lever.....	76
(9) Seat belt.....	50	(18) Tool box	
(10) Operator's seat.....	48		

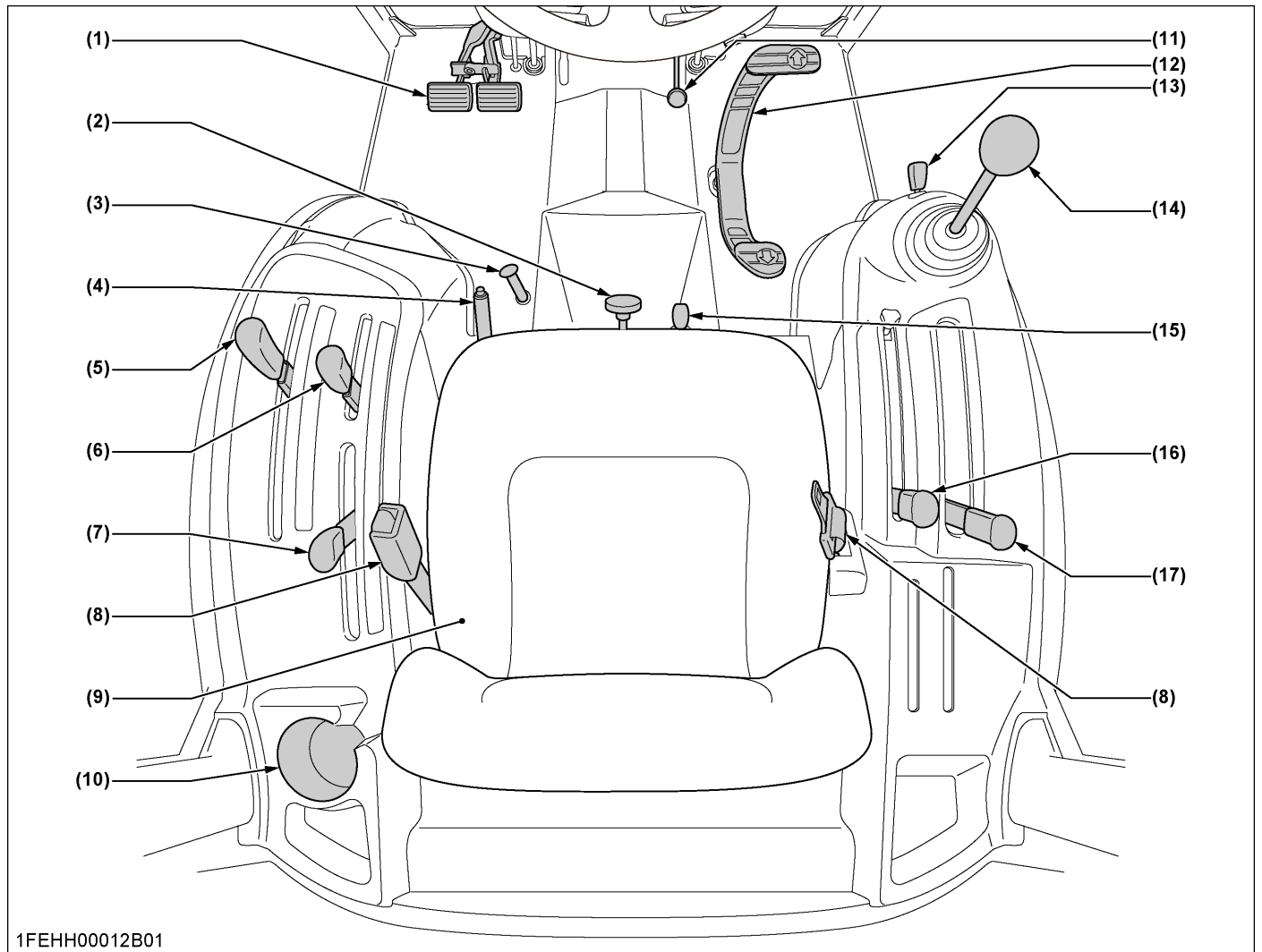
ROPS manual transmission type



1FEHH00013A01

(1) Shuttle shift lever	55	(11) Cup holder	53
(2) Clutch pedal	54	(12) Brake pedal	53
(3) Steering wheel tilt pedal	50	(13) Foot throttle	58
(4) 3-point hitch lowering speed knob	76	(14) Front wheel drive lever	56
(5) Parking brake lever	58	(15) Differential lock pedal	64
(6) PTO ON-OFF lever	70	(16) Position control lever	76
(7) PTO select lever (if equipped)	69	(17) Main gear shift lever	55
(8) Range gear shift lever	54	(18) Remote control valve lever	78
(9) Seat belt	50	(19) Tool box	
(10) Operator's seat	48		

CAB HST type



1FEHH00012B01

(1) Brake pedal.....	53	(10) Cup holder.....	50
(2) 3-point hitch lowering speed knob.....	76	(11) Steering wheel tilt pedal.....	50
(3) Differential lock pedal.....	64	(12) Speed control pedal.....	58
(4) Parking brake lever.....	58	(13) Loader lock lever.....	35
(5) Range gear shift lever (L-M-H).....	54	(14) Loader control lever.....	35
(6) PTO clutch lever.....	70	(15) Front wheel drive lever.....	56
(7) PTO select lever.....	69	(16) Position control lever.....	76
(8) Seat belt.....	50	(17) Cruise control lever.....	59
(9) Operator's seat.....	48		60

PRE-OPERATION CHECK

DAILY CHECK

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



WARNING

To avoid personal injury or death:

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

Check item

- Walk around inspection
- Check engine oil level
- Check transmission oil level
- Check coolant level
- Clean air conditioning condenser screen (CAN type only)
- Clean grill and radiator screen
- Check air cleaner evacuator valve (when used in a dusty place)
- Check brake pedal
- Check clutch pedal (ROPS manual transmission type only)
- Check parking brake lever
- Check indicators, gauges and meter
- Check lights
- Check wire harness
- Check seat belt
- Check ROPS and CAB
- Check movable parts
- Refuel (See DAILY CHECK on page 102.)
- Care of pictorial safety labels (See PICTORIAL SAFETY LABELS on page 14.)

OPERATING THE ENGINE

WARNING

To avoid personal injury or death:

- Read and understand the safe operation section.
- Understand the pictorial safety 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 the PTO lever in the "NEUTRAL" position before starting the engine.

Details regarding safe operation can be found in a different section.

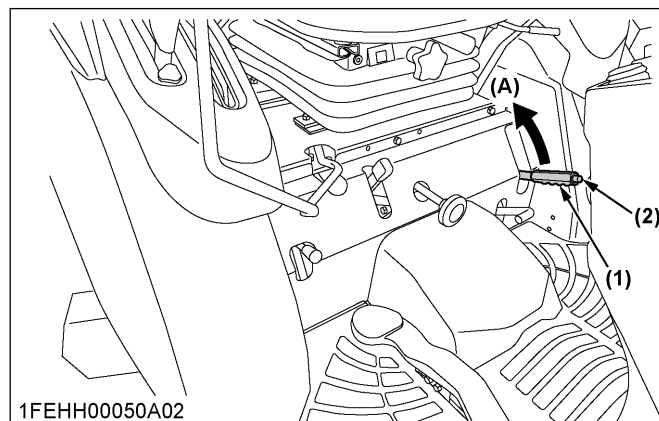
(See SAFE OPERATION on page 7.)

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.
- Operate, use and maintain the engine, including the emission control system, in accordance with the instructions provided to the end users, so that the engine's emission performance is kept within the requirements applicable to the engine's category.
- Do not deliberately tamper with or misuse the engine emission control system, especially with regard to deactivating or not maintaining an exhaust gas recirculation (EGR) system or a reagent dosing system.
- When a warning indicator lights up, the engine is experiencing trouble, which may also cause problems in the emission control system. Take prompt action and rectify any incorrect operation, use or maintenance of the emissions control system in accordance with the rectification measures. (See ENGINE TROUBLESHOOTING on page 132.)

b. Depress the brake pedals.

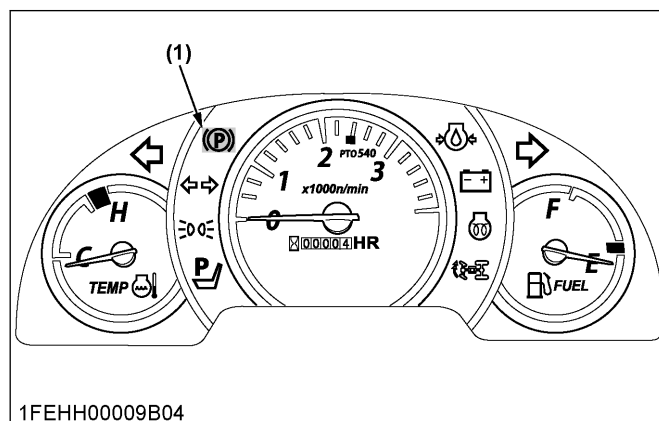
c. Pull the lever to park.



(1) Parking brake lever

(A) "PULL"

(2) Release button



1FEHH0009B04

(1) Parking brake indicator

NOTE :

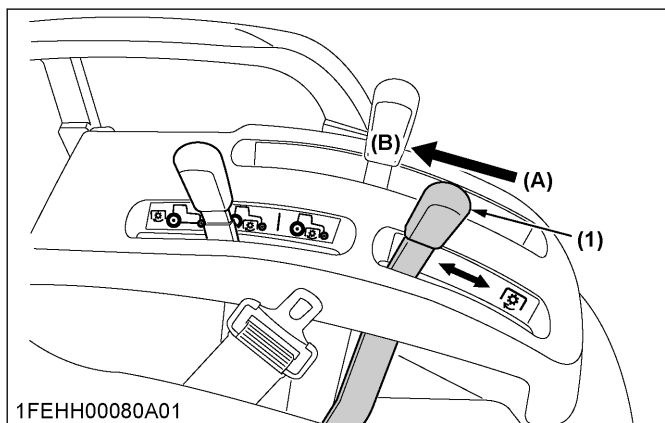
- It is recommended that the operator practices engaging and disengaging the parking brake on a flat surface without the engine running before operating the tractor for the first time.
- When the parking brake is set while the key switch is [ON], the parking brake indicator light on the Easy Checker™ will turn on.

STARTING THE ENGINE FOR THE ROPS HST TYPE

1. Make sure the parking brake is set.
 - a. Interlock the parking brake levers.

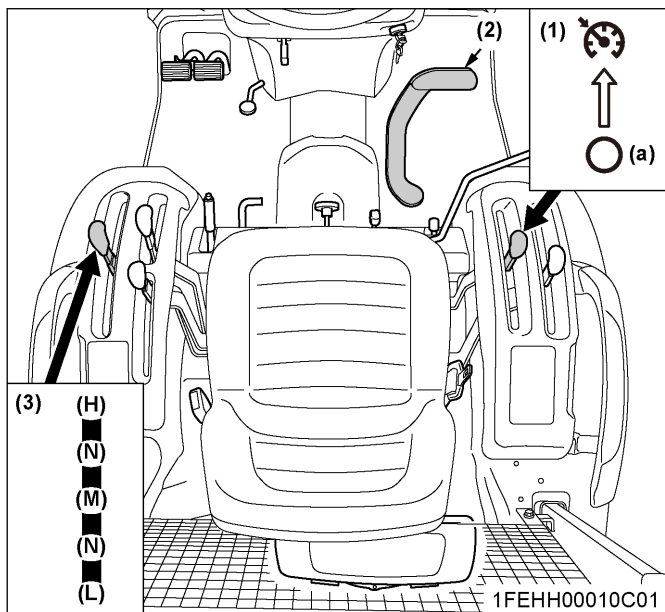
OPERATING THE ENGINE

2. Place the PTO clutch lever in the "OFF" position.



- (1) PTO clutch lever
(A) "ON"
(B) "OFF"

3. Make sure the cruise control lever is in the "OFF" position. Place the speed control pedal to the "NEUTRAL" position. Place the range gear shift lever ("L"- "M"- "H") in the "NEUTRAL" position.

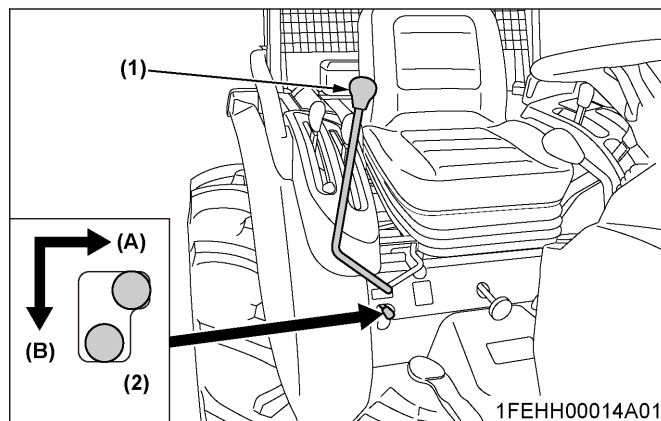


- (1) Cruise control lever
(2) Speed control pedal
(3) Range gear shift lever (L-M-H)
(N) "NEUTRAL"
(a) "OFF POSITION"

NOTE :

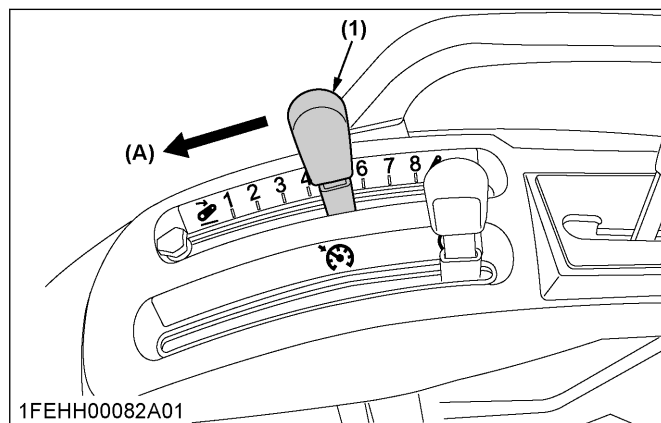
- Depress both brake pedals together, doing so the cruise control lever automatically returns to the off position.
- Step out the foot from speed control pedal, doing so the pedal automatically returns to the neutral position.

4. Lock the loader control lever in the "LOCK" position.



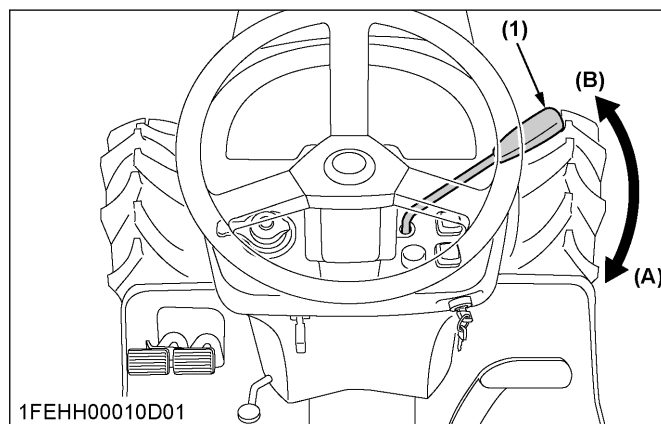
- (1) Loader control lever
(2) Lock lever
(A) "UNLOCK"
(B) "LOCK"

5. Place the position control lever in the "LOWEST" position.



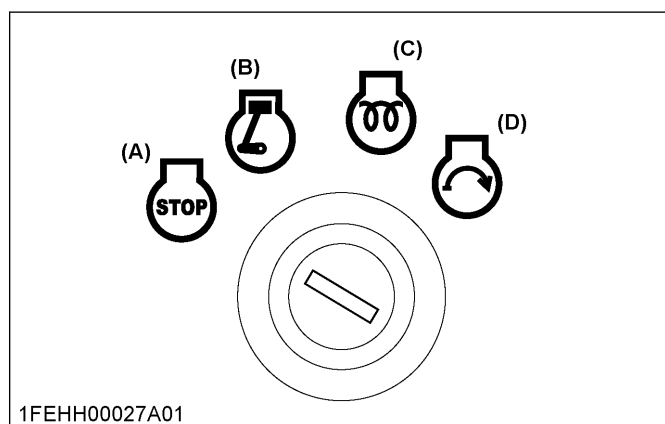
- (1) Position control lever
(A) "DOWN"

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



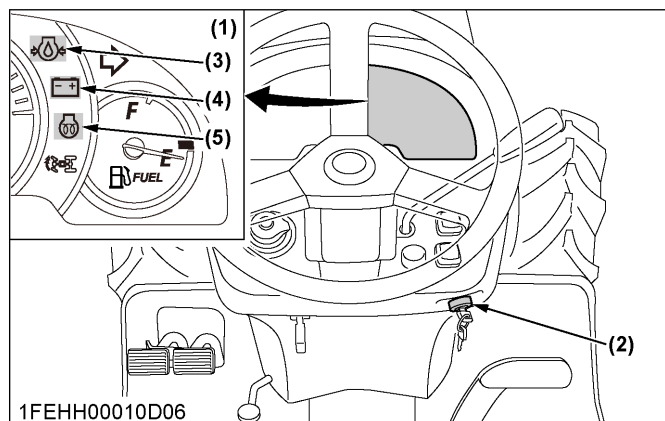
- (1) Hand throttle lever
(A) "INCREASE"
(B) "DECREASE"

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



- (A) "OFF"
(B) "ON"
(C) "PREHEAT"
(D) "START"

8. Check the Easy Checker™ indicators.
When the key is turned "ON", indicators (3) (4) should come on. If trouble should occur at any location while the engine is running, the warning indicator corresponding to that location comes on.



- (1) Easy Checker™
(2) Key switch
(3) Engine oil pressure warning indicator
(4) Electrical charge warning indicator
(5) Glow plug indicator

IMPORTANT :

- **Daily checks with the Easy Checker™ only, are not sufficient. Never fail to conduct daily checks carefully by referring to the daily check.**
(See PERIODIC SERVICE on page 101.)

9. Turn the key to the "PREHEAT" position and hold it for about 2 to 3 seconds.
For the appropriate preheating time, refer to the table below:

Temperature	Preheating time
Over 0 °C	2 to 3 seconds
0 to -5 °C	5 seconds
-5 to -15 °C	10 seconds

NOTE :

- **The glow plug indicator comes on while the engine is being preheated.**

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

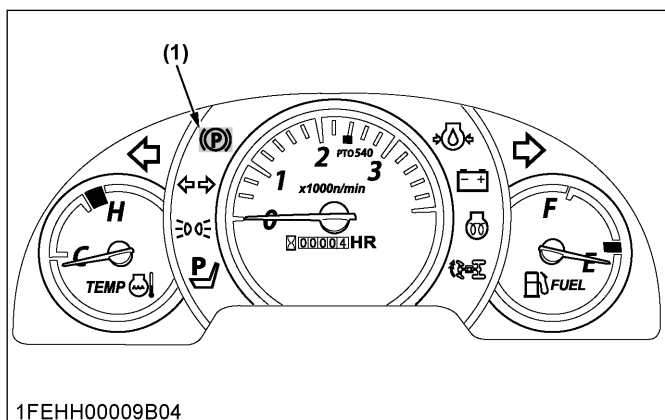
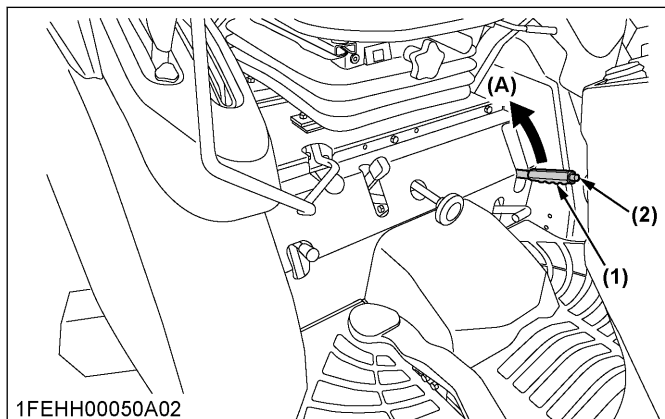
IMPORTANT :

- **Because of the safety devices, the engine will not start unless the PTO clutch lever is placed in the "OFF" position, the range gear shift lever and the HST pedal are placed in the "NEUTRAL" position from the operator's seat.**
- **When the ambient temperature is below -5 °C and the engine is very cold. If the engine fails to start, turn off the key for 30 seconds. Then repeat steps 9 and 10. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.**

11. Check to see that all the indicators on the Easy Checker™ are "OFF".
If any indicators stay on, immediately stop the engine and determine the cause.

STARTING THE ENGINE FOR ROPS MANUAL TRANSMISSION TYPE

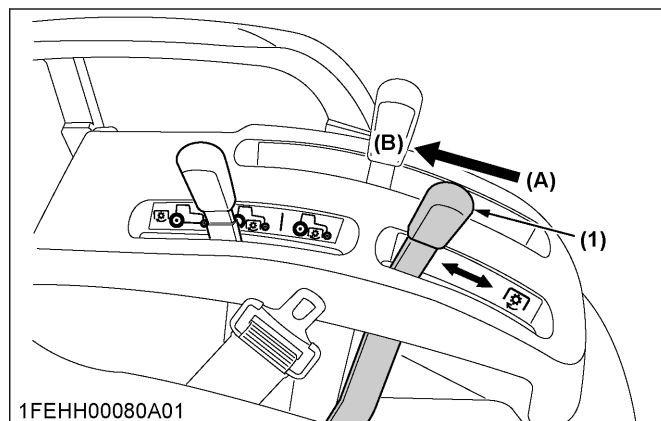
1. Make sure the parking brake is set.
 - a. Interlock the parking brake levers.
 - b. Depress the brake pedals.
 - c. Pull the lever to park.



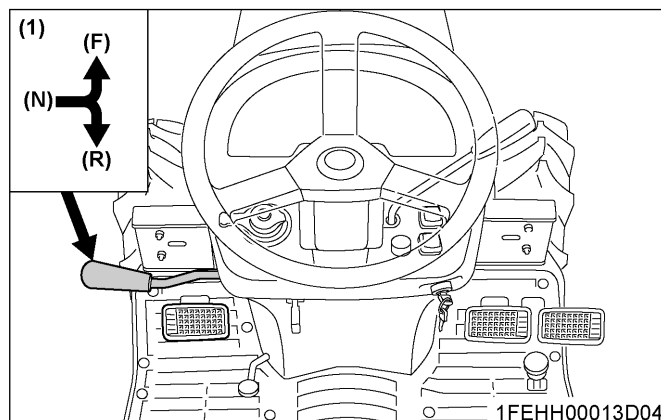
NOTE :

- It is recommended that the operator practices engaging and disengaging the parking brake on a flat surface without the engine running before operating the tractor for the first time.
- When the parking brake is set while the key switch is [ON], the parking brake indicator light on the Easy Checker™ will turn on.

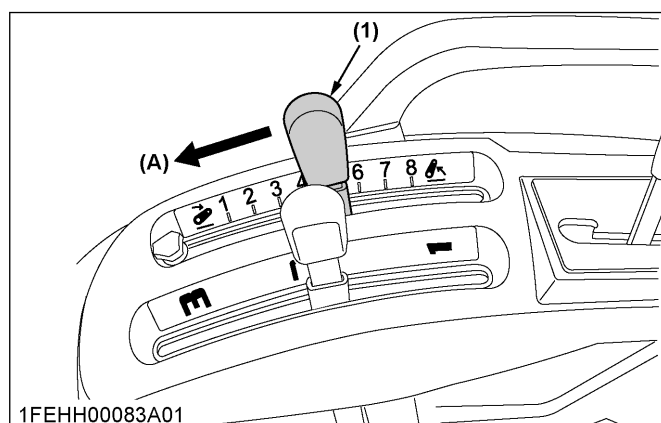
2. Place the PTO ON-OFF lever in the "OFF" position.



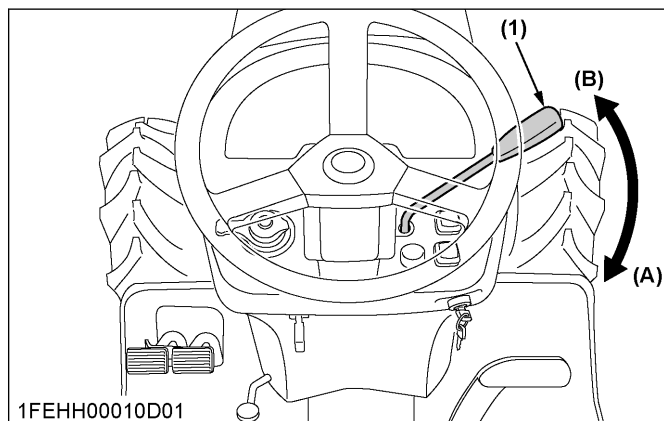
3. Place the shuttle shift lever to the "NEUTRAL" position.



4. Place the position control lever in the "LOWEST" position.



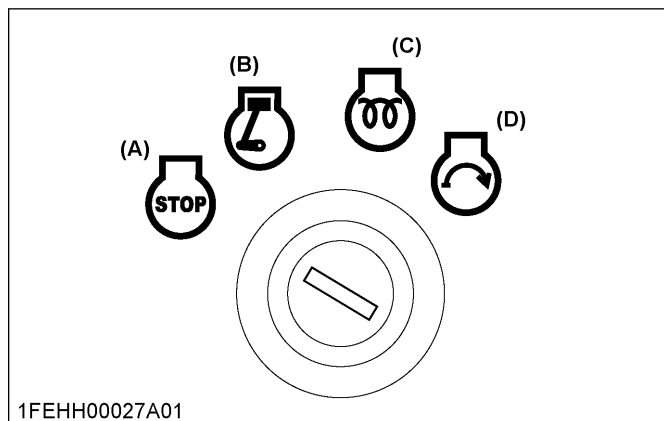
5. Set the throttle lever to about 1/2 way.



- (1) Hand throttle lever
(A) "INCREASE"
(B) "DECREASE"

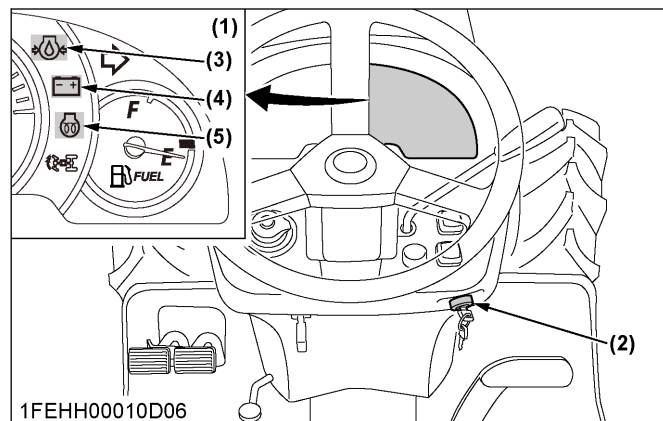
6. Depress the clutch pedal.

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



- (A) "OFF"
(B) "ON"
(C) "PREHEAT"
(D) "START"

8. Check the Easy Checker™ indicators.
When the key is turned "ON", indicators (3) (4) should come on. If trouble should occur at any location while the engine is running, the warning indicator corresponding to that location comes on.



- (1) Easy Checker™
(2) Key switch
(3) Engine oil pressure warning indicator
(4) Electrical charge warning indicator
(5) Glow plug indicator

IMPORTANT :

- Daily checks with the Easy Checker™ only, are not sufficient. Never fail to conduct daily checks carefully by referring to the daily check.
(See PERIODIC SERVICE on page 101.)

9. Turn the key to the "PREHEAT" position and hold it for about 2 to 3 seconds.

For the appropriate preheating time, refer to the table below:

Temperature	Preheating time
Over 0 °C	2 to 3 seconds
0 to -5 °C	5 seconds
-5 to -15 °C	10 seconds

NOTE :

- The glow plug indicator comes on while the engine is being preheated.

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

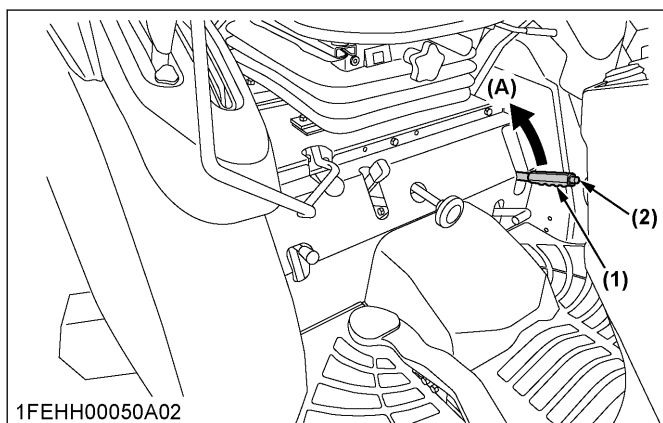
IMPORTANT :

- Because of the safety devices, the engine will not start unless the PTO ON-OFF lever is placed in the "OFF" position, the main shuttle lever is placed in the "NEUTRAL" position and the clutch pedal is pressed down from the operator's seat.
- When the ambient temperature is below -5 °C and the engine is very cold. If the engine fails to start, turn off the key for 30 seconds. Then repeat steps 9 and 10. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.

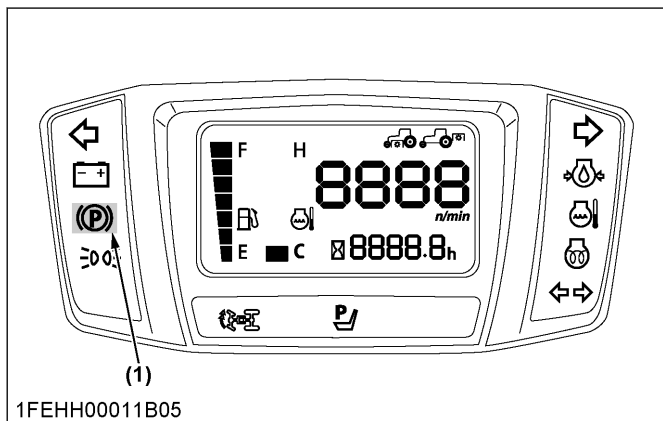
11. Check to see that all the indicators on the Easy Checker™ are “OFF”.
If any indicators stay on, immediately stop the engine and determine the cause.

STARTING THE ENGINE FOR CAB HST TYPE

1. Make sure the parking brake is set.
 - a. Interlock the parking brake levers.
 - b. Depress the brake pedals.
 - c. Pull the lever to park.



- (1) Parking brake lever (A) “PULL”
(2) Release button

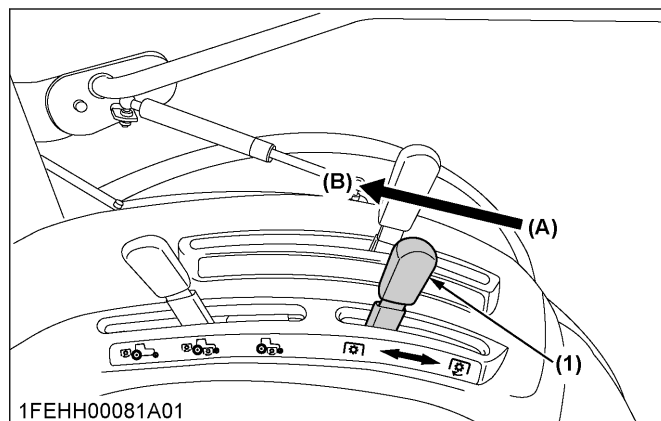


- (1) Parking brake indicator

NOTE :

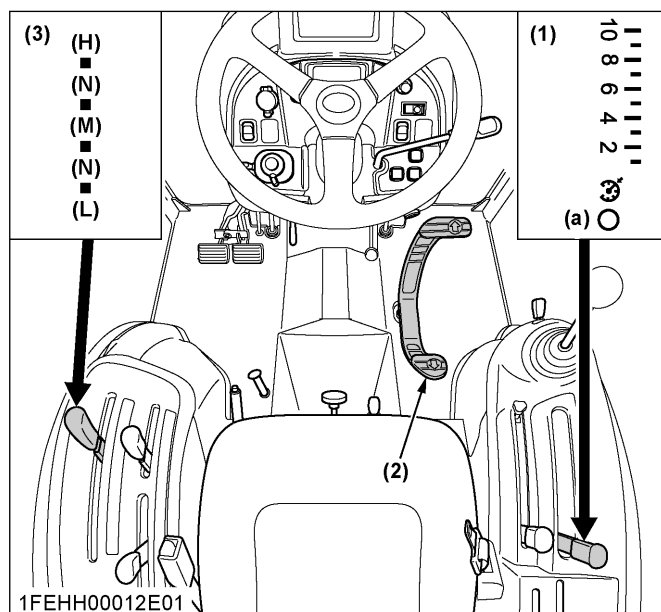
- It is recommended that the operator practices engaging and disengaging the parking brake on a flat surface without the engine running before operating the tractor for the first time.
- When the parking brake is set while the key switch is [ON], the parking brake indicator light on the Easy Checker™ will turn on.

2. Place the PTO clutch lever in the “OFF” position.



- (1) PTO clutch lever (A) “ON”
(B) “OFF”

3. Make sure the cruise control lever is in the “NEUTRAL” position. Place the speed control pedal to the “NEUTRAL” position. Place the range gear shift lever (“L”-“M”-“H”) in the “NEUTRAL” position.

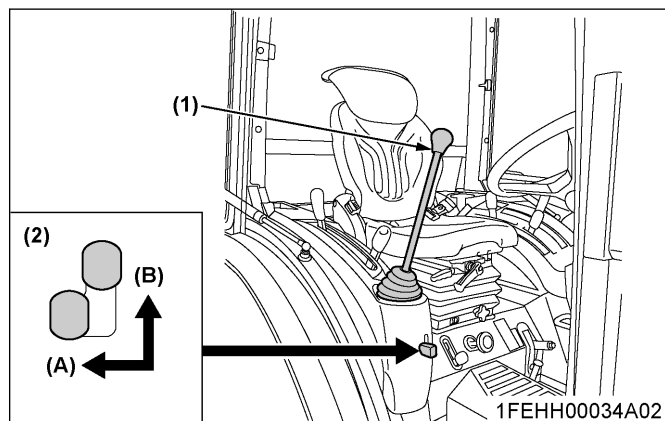


- (1) Cruise control lever (N) “NEUTRAL”
(2) Speed control pedal (a) Cruise “NEUTRAL” position
(3) Range gear shift lever (L-M-H)

NOTE :

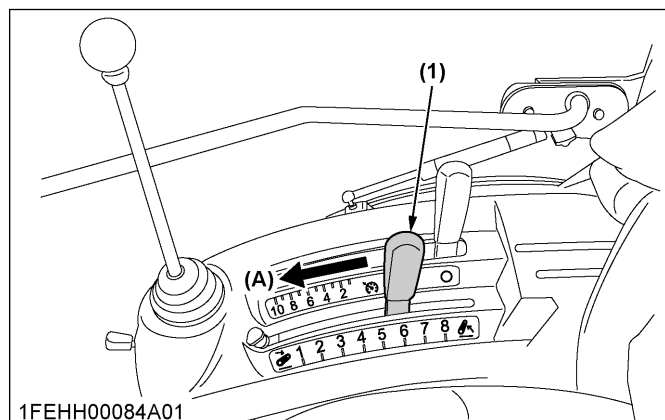
- Depress both brake pedals together, doing so the cruise control lever automatically returns to the off position.
- Step out the foot from speed control pedal, doing so the pedal automatically returns to the neutral position.

4. Lock the loader control lever in the "LOCK" position.



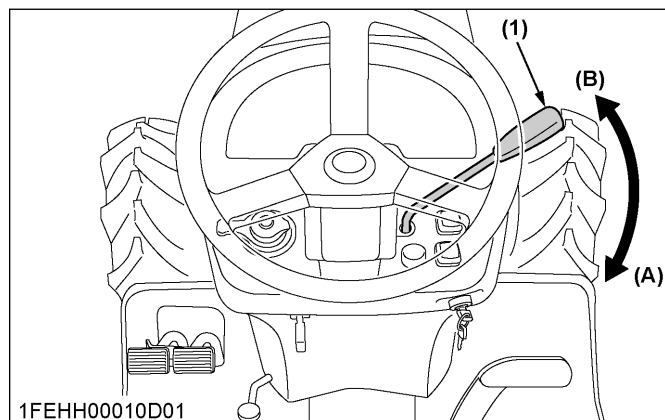
- (1) Loader control lever (A) "UNLOCK"
(2) Lock lever (B) "LOCK"

5. Place the position control lever in the "LOWEST" position.



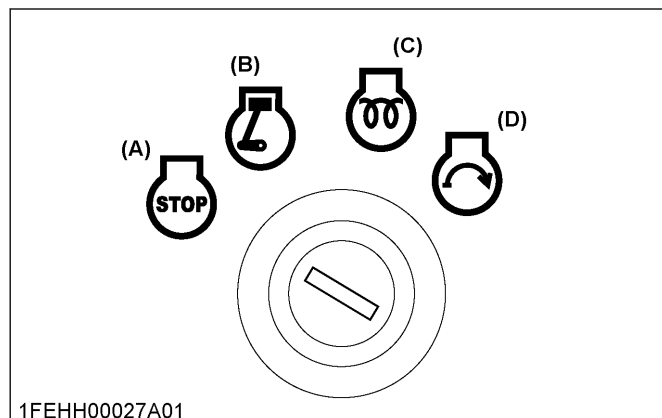
- (1) Position control lever (A) "DOWN"

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



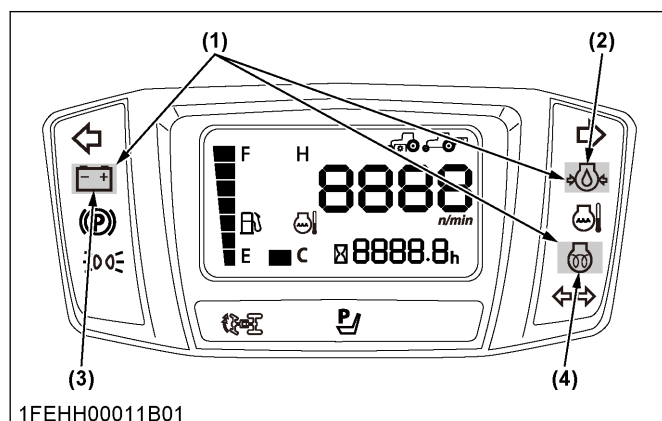
- (1) Hand throttle lever (A) "INCREASE"
(B) "DECREASE"

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



- (A) "OFF"
(B) "ON"
(C) "PREHEAT"
(D) "START"

8. Check the Easy Checker™ indicators. When the key is turned "ON", indicators (3) (4) should come on. If trouble should occur at any location while the engine is running, the warning indicator corresponding to that location comes on.



- (1) Easy Checker™
(2) Engine oil pressure warning indicator
(3) Electrical charge warning indicator
(4) Glow plug indicator

IMPORTANT :

- Daily checks with the Easy Checker™ only, are not sufficient. Never fail to conduct daily checks carefully by referring to the daily check.
(See PERIODIC SERVICE on page 101.)

9. Turn the key to the **"PREHEAT"** position and hold it for about 2 to 3 seconds.
For the appropriate preheating time, refer to the table below:

Temperature	Preheating time
Over 0 °C	2 to 3 seconds
0 to -5 °C	5 seconds
-5 to -15 °C	10 seconds

NOTE :

- The glow plug indicator comes on while the engine is being preheated.
10. Turn the key to the **"START"** position and release it when the engine starts.

IMPORTANT :

- Because of the safety devices, the engine will not start except when the PTO clutch lever is placed in the **"OFF"** position and the range gear shift lever is placed in the **"NEUTRAL"** position from the operator's seat.
 - When the ambient temperature is below -5 °C and the engine is very cold. If the engine fails to start, turn off the key for 30 seconds. Then repeat steps 9 and 10. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.
11. Check to see that all the indicators on the Easy Checker™ are **"OFF"**.
If any indicators stay on, immediately stop the engine and determine the cause.

OPERATING THE ENGINE IN FREEZING CONDITIONS

1. Block heater (option)

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 -15 °C.

STOPPING THE ENGINE

1. After slowing the engine to idle, turn the key to **"OFF"**.
2. Remove the key.

WARMING UP THE ENGINE

WARNING

To avoid personal injury or death:

- Be sure to set the handbrake during warm-up.

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

For 5 minutes after engine start-up, allow the 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.

1. Warm-up transmission oil at low ambient temperatures

The hydraulic oil serves as transmission fluid. In cold weather, the oil may be cold, which will increase oil 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 following table:

Ambient temperature	Warm-up time requirement
Higher than 0 °C	At least 5 minutes
0 to -10 °C	5 to 10 minutes
-10 to -20 °C	10 to 15 minutes
Below -20 °C	More than 15 minutes

IMPORTANT :

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

JUMP STARTING THE ENGINE

WARNING

To avoid personal injury or death:

- Battery gases can explode. Keep cigarettes, sparks and flames away from the battery.
- If the tractor battery is frozen, do not jump start engine.
- Do not connect the other end of the negative (-) jumper cable to the negative (-) terminal of the tractor battery.
- When taking out the dead battery, putting in the battery or fixing the battery, do not allow the positive (+) terminal of the battery to touch other parts.

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

1. Bring the helper vehicle with a battery of the same voltage as the disabled tractor within easy cable reach.

IMPORTANT :

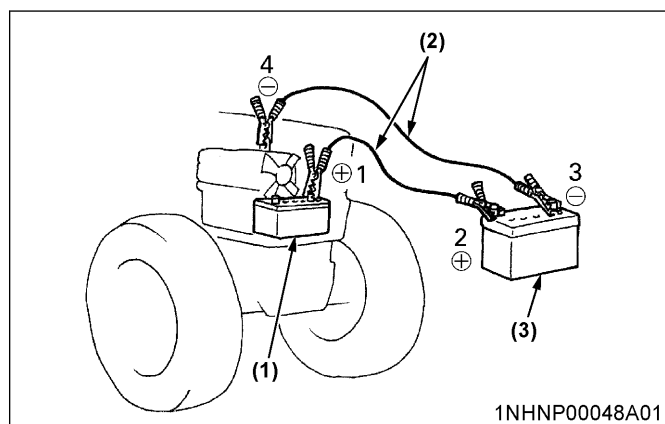
- **The vehicles must not touch.**

2. Engage the parking brakes of both vehicles and put the shift levers in "NEUTRAL". Shut both engines off.
3. Wear eye protection and rubber gloves.
4. Attach the red clamp to the positive (red, (+) or positive) terminal of the dead battery and clamp the other end of the same cable to the positive (red, (+) or positive) terminal of the helper battery.
5. Clamp the other cable to the negative (black, (-) or negative) terminal of the helper battery.
6. Clamp the other end to the engine block or frame of the disabled tractor as far from the dead battery as possible.
7. Start the helper vehicle and let its engine run for a few moments. Start the disabled tractor.
8. Disconnect the jumper cables in the exact reverse order of attachment (steps 6, 5 and 4).

Connect cables in numerical order.

Disconnect in reverse order after use.

- **Do not operate the tractor without the battery mounted.**
- **Do not operate the tractor with the battery dead. Charge the battery fully before operating the tractor.** Otherwise, the tractor might malfunction.



- (1) Dead battery
- (2) Jumper cables
- (3) Helper battery

IMPORTANT :

- **This tractor has a 12 volt negative (-) ground starting system.**
- **Use only the 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.
- **Do not operate the tractor with the battery cable disconnected from the battery.**

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 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.

1. 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 high speed.

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

2. 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 more details, read the maintenance section of this manual.

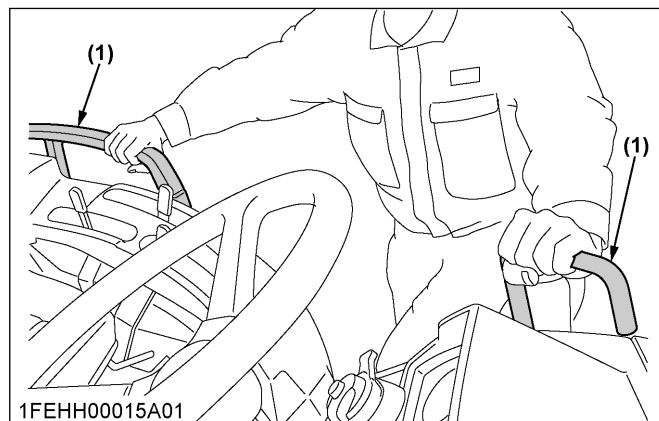
(See MAINTENANCE on page 96.)

BOARDING AND LEAVING THE TRACTOR

- Never try to get on or off a moving tractor or jump off the tractor to exit.

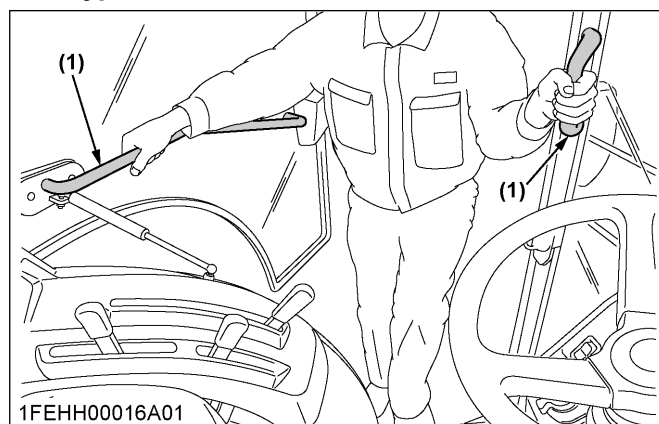
- Face the tractor when getting into or out of the tractor. Do not use the controls as hand holds to prevent inadvertent machine movements.
- Be sure to hold the handrails when getting on and off the tractor.

ROPS type



(1) Handrail

CAB type



(1) Handrail

- Always keep steps and floor clean to avoid slippery conditions.

IMPORTANT :

- Use the handrails only for getting on and off the tractor.
- Do not use the handrails for lifting and towing the tractor.

OPERATING FOLDABLE ROPS

1. For rear mount type ROPS

WARNING

To avoid personal injury or death:

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

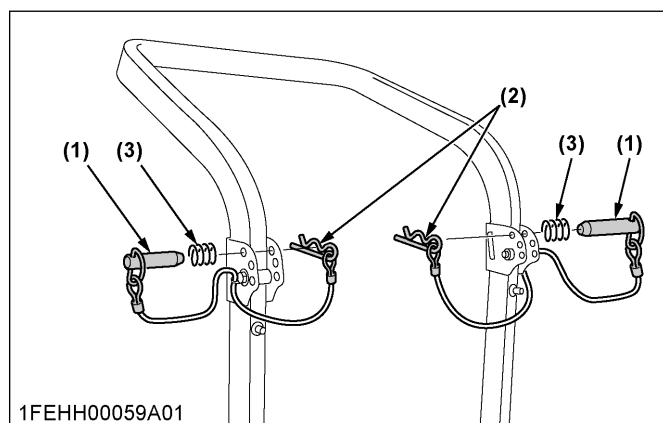
1.1 To fold the ROPS

CAUTION

To avoid personal injury:

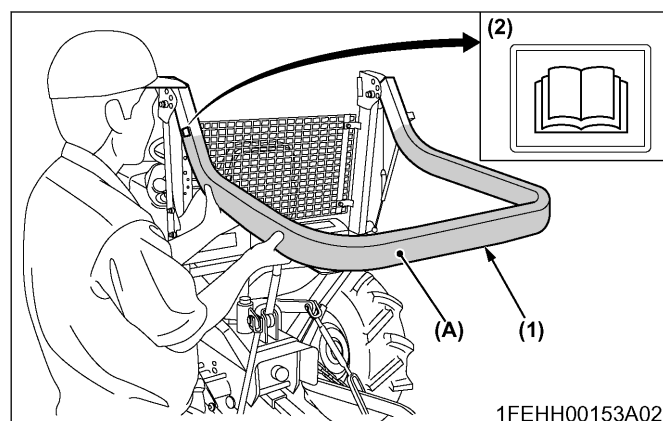
- Hold the ROPS tightly with both hands and fold the ROPS slowly and carefully.
- Make sure that both set pins are properly installed and secured with the hair pins.

1. Remove both set pins with springs, maintain a hold on the ROPS.



- (1) Set pin
(2) Hair pin
(3) Spring

2. Fold the ROPS.

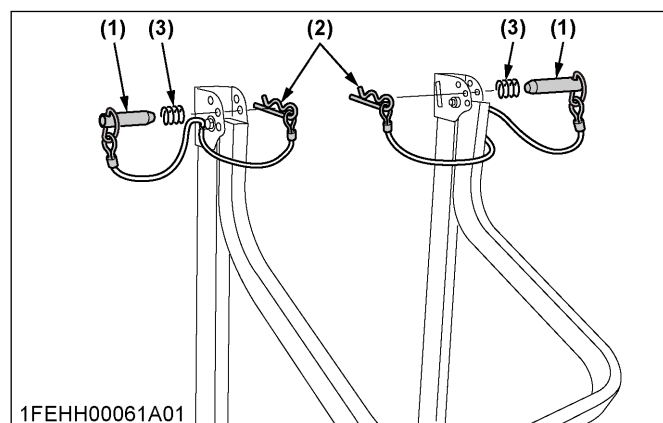


- (1) ROPS
(2) Label
(A) Holdable part of ROPS

IMPORTANT :

- When raising or folding the ROPS, hold the part of the ROPS between the label and the top of the ROPS with both hands.

3. Align set pin holes and insert both set pins with springs. Slightly tighten the set pins and secure them with the hair pins.



- (1) Set pin
(2) Hair pin
(3) Spring

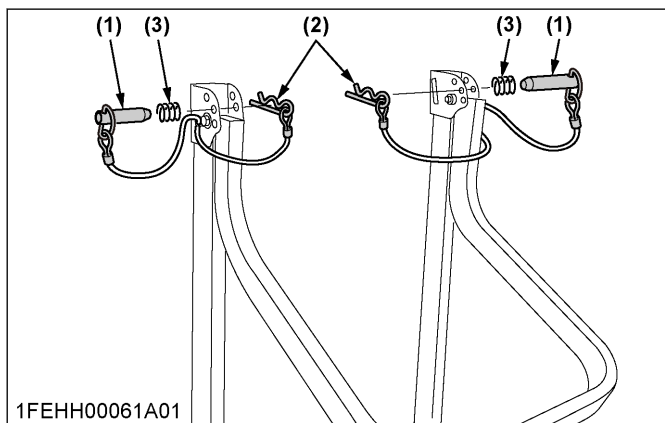
1.2 To raise the ROPS to the upright position

CAUTION

To avoid personal injury:

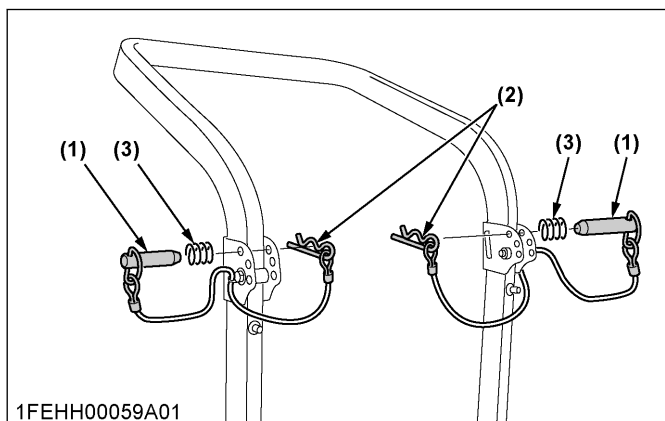
- Raise the ROPS slowly and carefully.
- Make sure that both set pins are properly installed as soon as the ROPS is in the upright position and secured with the hair pins.

1. Remove both hair pins and set pins and springs.



- (1) Set pin
- (2) Hair pin
- (3) Spring

2. Raise the ROPS to the upright position, maintain a hold on the ROPS.
3. Align the set pin holes, insert both set pins with springs. Slightly tighten the set pins and secure them with the hair pins.



- (1) Set pin
- (2) Hair pin
- (3) Spring

2. For mid mount type ROPS

WARNING

To avoid personal injury or death:

- When raising or folding the ROPS, apply the parking brake, stop the engine and remove the key.
- Always perform this function from a stable position.
- Fold the ROPS down only when absolutely necessary and raise it up and lock it again as soon as possible.

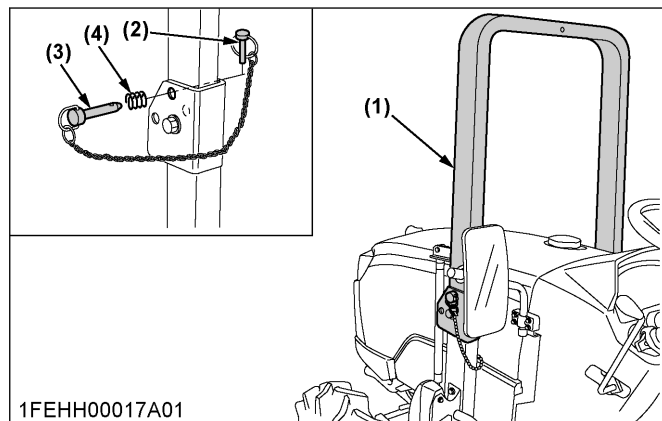
2.1 To fold the ROPS

CAUTION

To avoid personal injury:

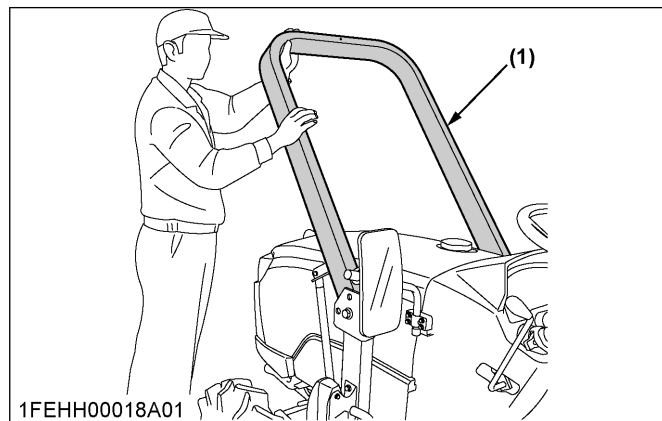
- Hold the ROPS tightly with both hands and fold the ROPS slowly and carefully.
- Make sure that both lock pins are properly installed and secured with the lynch pins.

1. Remove both lynch pins, lock pins with springs.



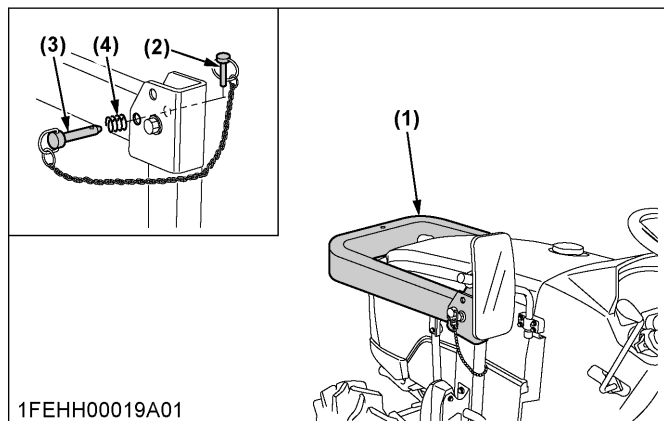
- (1) ROPS
- (2) Lynch pin
- (3) Lock pin
- (4) Spring

2. Fold the ROPS.



- (1) ROPS

- Reinstall lock pins with springs and lynch pins into holes in the ROPS frame to lock.



- ROPS
- Lynch pin
- Lock pin
- Spring

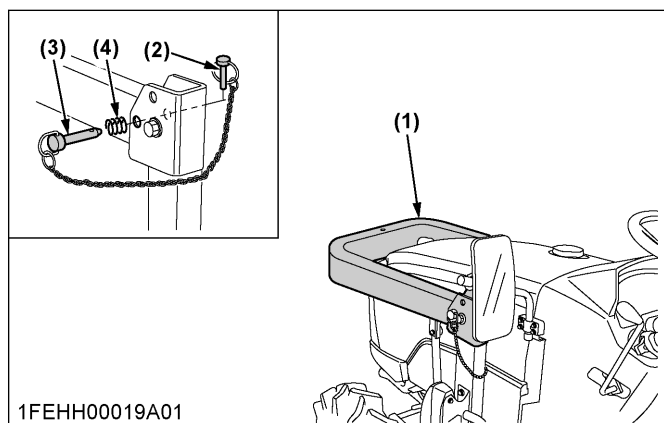
2.2 To raise the ROPS to the upright position

CAUTION

To avoid personal injury:

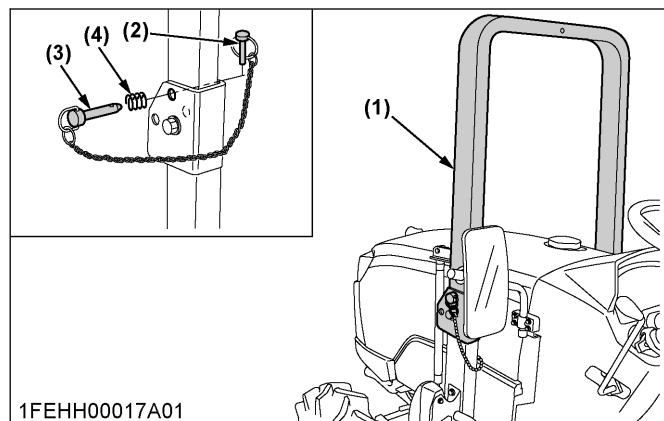
- Raise the ROPS slowly and carefully.
- Make sure that both lock pins are properly installed as soon as the ROPS is in the upright position and secured with the lynch pins.

- Remove both lynch pins and lock pins with springs.



- ROPS
- Lynch pin
- Lock pin
- Spring

- Raise the ROPS to the upright position.
- Align the lock pin holes, insert both lock pins with springs and secure them with lynch pins.



- ROPS
- Lynch pin
- Lock pin
- Spring

STARTING THE TRACTOR

WARNING

To avoid personal injury or death:

- Read and understand the safe operation section.
- Read and understand the pictorial safety 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 the PTO lever in the "OFF" position before starting the engine.

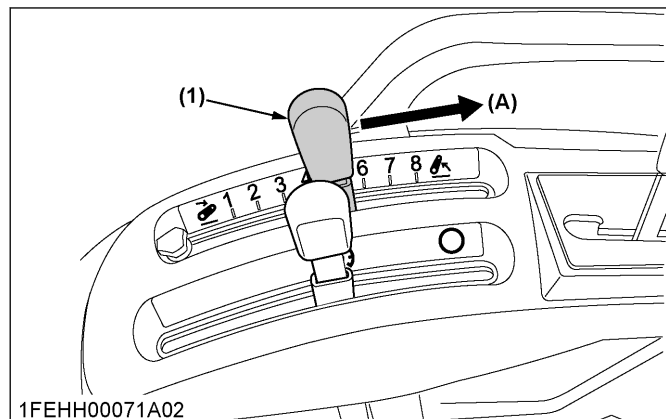
- Adjusting the operator's position.

NOTE :

- The seat and suspension should be adjusted to ensure that the controls are comfortably at hand for the operator, ensuring that the operator maintains a good posture and minimises risks from whole body vibration.
 - Operator's seat on page 48
 - Seat belt on page 50
 - Tilt steering adjustment on page 50
- Selecting light switch positions.
 - Headlight switch on page 51
 - Direction indicator switch and hazard light switch on page 51
 - Beacon light switch on page 52
 - Horn button on page 52
 - Tractor lights on page 53
 - Checking the brake pedal.
 - Brake pedals (right and left) on page 53

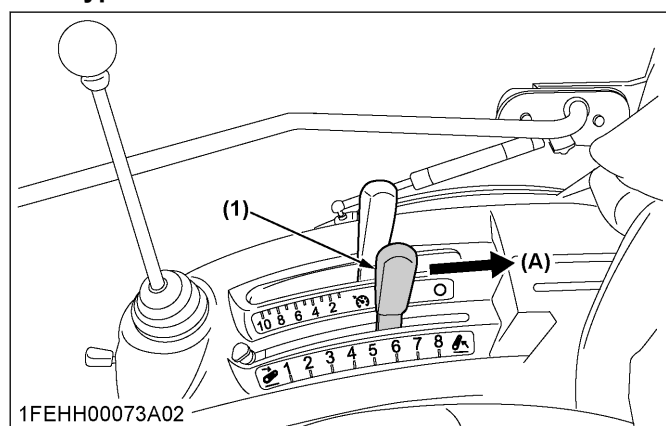
4. Raise the implement.
 - a. Pull the hydraulic control lever.

ROPS type



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

CAB type



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

(See HYDRAULIC UNIT on page 76.)

5. Depress the clutch pedal.
 - Clutch pedal (ROPS manual transmission type) on page 54
6. Selecting the travel speed.
 - Range gear shift lever (ROPS HST type and CAB HST type) on page 54
 - Main gear shift lever and range gear shift lever (ROPS manual transmission type) on page 55
 - Shuttle shift lever (ROPS manual transmission type) on page 55
 - Front wheel drive lever on page 56
 - Bi-speed turn lever (if equipped) on page 56
7. Accelerate the engine.
 - Hand throttle lever on page 57
 - Foot throttle on page 58
8. Unlock the parking brake and slowly release the clutch.
 - Parking brake lever on page 58
9. Depress the speed control pedal.
 - Speed control pedal (ROPS HST type and CAB HST type) on page 58

- Cruise control lever (ROPS HST type) on page 59
- Cruise control lever (CAB HST type) on page 60

1. Operator's seat

WARNING

To avoid personal injury or death:

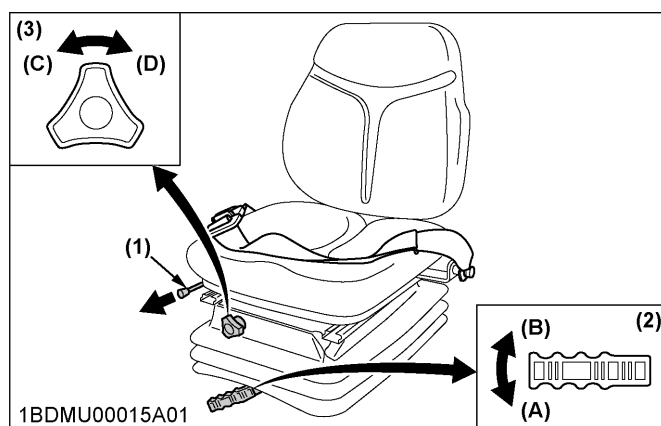
- Make sure that the operator's seat is completely secured after each adjustment.
- Do not allow any person other than the operator to ride on the tractor.

IMPORTANT :

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

1.1 Mechanical suspension seat

1.1.1 Seat type COBO SC74/M91 (ROPS type only)



- | | |
|-----------------------------|---------------------------|
| (1) Travel adjust lever | (A) "TO DECREASE TENSION" |
| (2) Suspension adjust lever | (B) "TO INCREASE TENSION" |
| (3) Height adjust knob | (C) "RAISE" |
| | (D) "LOWER" |

Travel adjustment

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

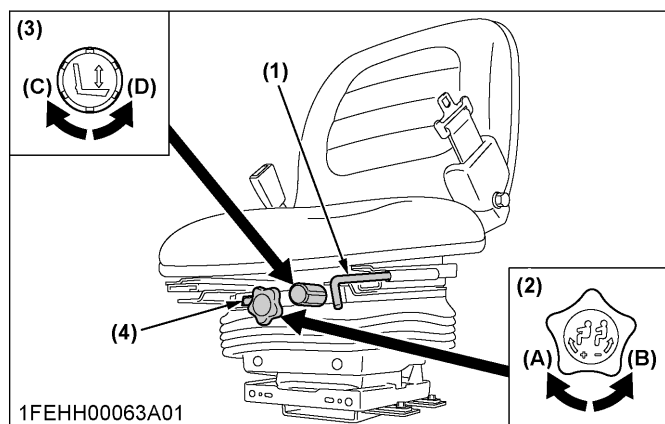
Suspension adjustment

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

Height adjustment

Turn the height adjust knob to desired position while sitting in the seat.

1.1.2 Seat type SEARS 807



- | | |
|------------------------------|---------------------------|
| (1) Travel adjust lever | (A) "TO DECREASE TENSION" |
| (2) Suspension adjust knob | (B) "TO INCREASE TENSION" |
| (3) Height adjust knob | (C) "LOWER" |
| (4) Indication of suspension | (D) "RAISE" |

Travel adjustment

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

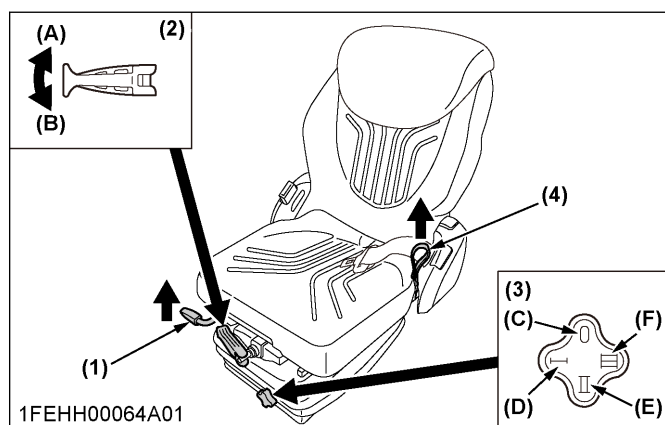
Suspension adjustment

Turn the suspension adjust knob to achieve the optimum suspension setting.

Height adjustment

Turn the height adjust knob to desired position while sitting in the seat.

1.1.3 Seat type GRAMMER MSG83/511 (except mid mount type ROPS)



- | | |
|--------------------------------|---------------------------|
| (1) Travel adjust lever | (A) "TO DECREASE TENSION" |
| (2) Suspension adjust lever | (B) "TO INCREASE TENSION" |
| (3) Height adjust knob | (C) "HIGHEST POSITION" |
| (4) Backrest tilt adjust strap | (D) LOWEST POSITION |
| | (E) SECOND POSITION |
| | (F) "THIRD POSITION" |

Travel adjustment

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

Suspension adjustment

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

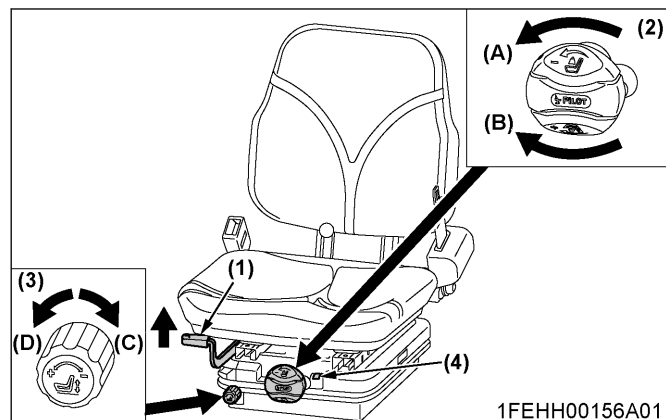
Height adjustment

Turn the height adjust knob to desired position while sitting in the seat.

Tilt adjustment

Pull the backrest tilt adjust strap and move the backrest to the desired position.

1.1.4 Seat type PiLOT P1311 BFD64/KM60X (mid mount type ROPS only)



- | | |
|------------------------------|---------------------------|
| (1) Travel adjust lever | (A) "TO DECREASE TENSION" |
| (2) Suspension adjust lever | (B) "TO INCREASE TENSION" |
| (3) Height adjust knob | (C) "LOWER" |
| (4) Indication of suspension | (D) "RAISE" |

Travel adjustment

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

Suspension adjustment

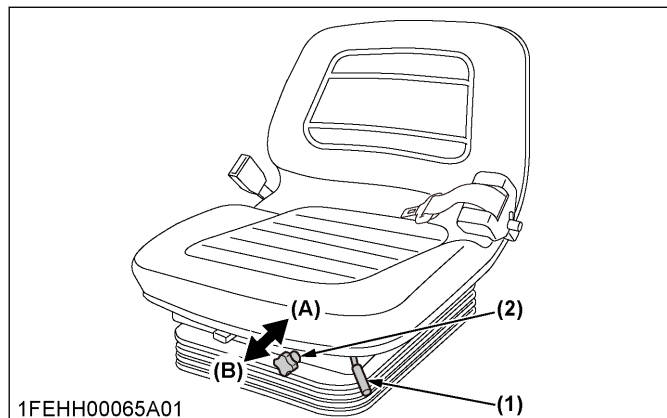
Turn the suspension adjust knob to achieve the optimum suspension setting.

Height adjustment

Turn the height adjust knob to the desired position while sitting in the seat.

1.2 Air suspension seat

1.2.1 Seat type SEARS 830



- (1) Travel adjust lever (A) "TO INCREASE TENSION"
(2) Weight and height adjust knob (B) "TO DECREASE TENSION"

Travel adjustment

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

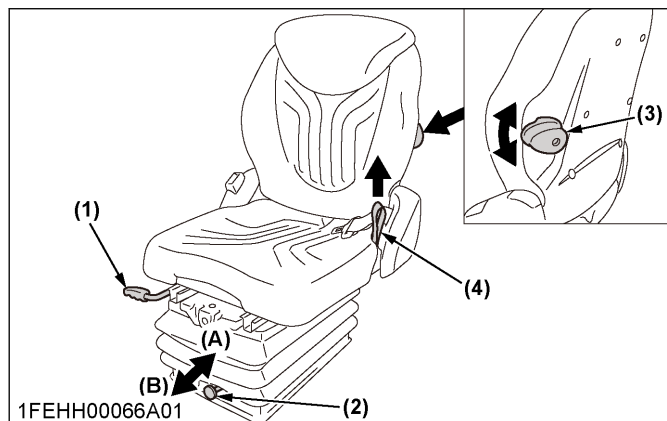
Weight and height adjustment

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

IMPORTANT :

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

1.2.2 Seat type GRAMMER MSG93/511 (except mid mount type ROPS)



- (1) Travel adjust lever (A) "TO INCREASE TENSION"
(2) Weight and height adjust button (B) "TO DECREASE TENSION"
(3) Lumbar support adjust knob
(4) Backrest tilt adjust strap

Travel adjustment

Pull 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 out or pushing in the weight and height adjust button with the tractor in a stationary position and the operator sitting on the seat.

IMPORTANT :

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

Tilt adjustment

Pull the backrest tilt adjust strap and move the backrest to the desired position.

Lumbar support adjustment

Turn the lumbar support adjust knob to the desired position.

2. Seat belt

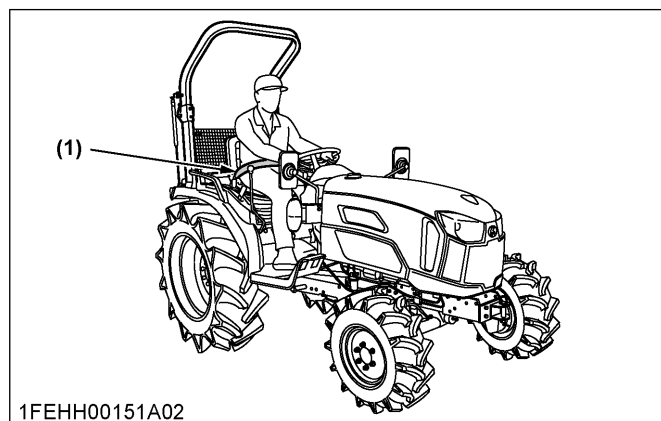


WARNING

To avoid personal injury or death:

- Always use the seat belt when any ROPS or CAB are installed.
- Do not use the seat belt if a foldable ROPS is down or there is no ROPS.

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



- (1) Seat belt

3. Tilt steering adjustment



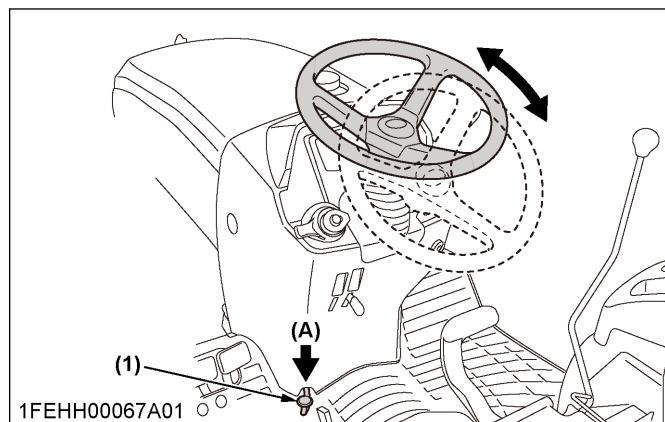
CAUTION

To avoid personal injury:

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

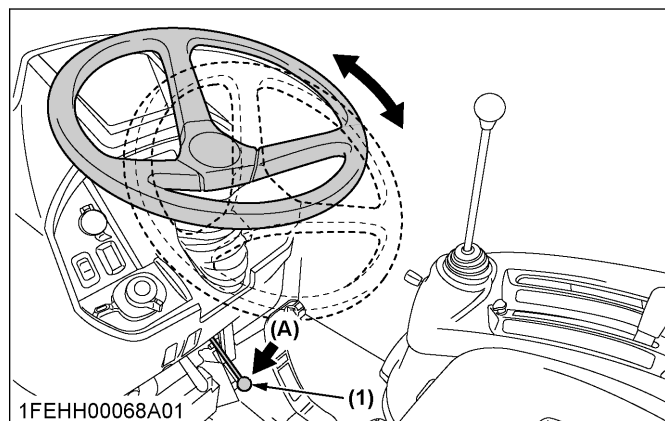
Press down the steering wheel tilt pedal, to release the lock so the steering wheel can be adjusted to the desired position.

ROPS type



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

CAB type

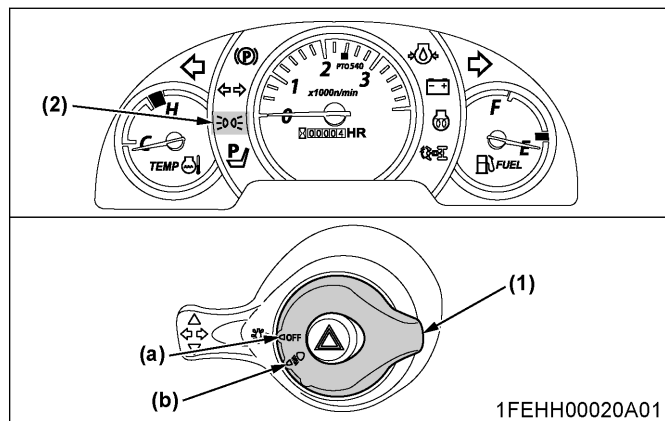


(1) Steering wheel tilt pedal (A) "PRESS DOWN"

4. Headlight switch

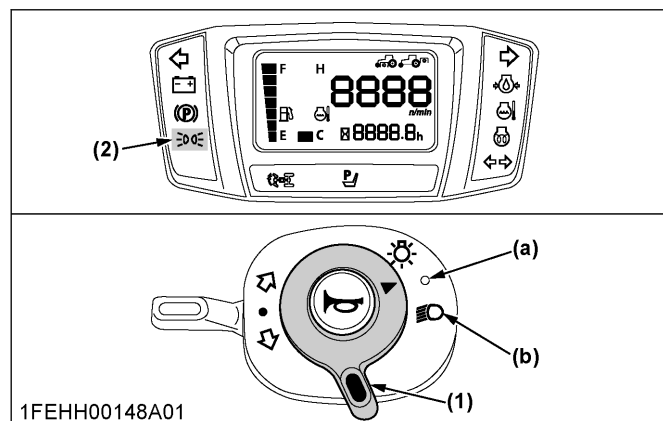
Turn the light switch clockwise, and the following lights are activated on the switch position.

ROPS type



(1) Headlight switch
(2) Position lights indicator

CAB type



(1) Headlight switch
(2) Position lights indicator

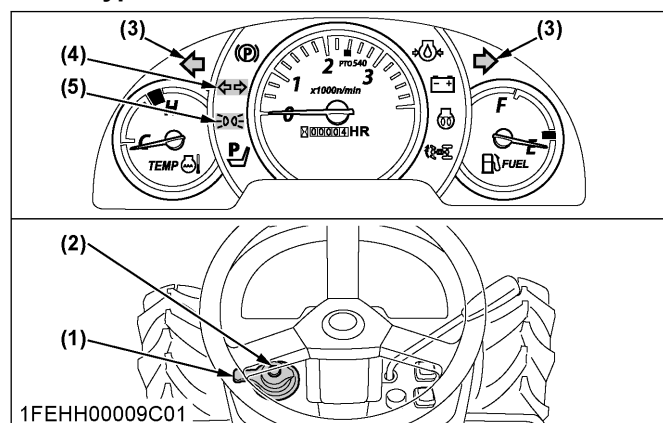
Light name	Switch position	
	(a)	(b)
Headlight	OFF	ON
Rear light	OFF	ON
Registration plate light	OFF	ON
Front position light	OFF	ON

NOTE :

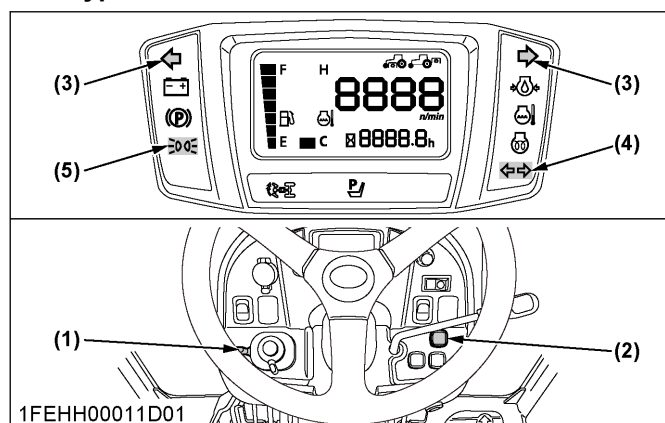
- Position (light) indicator will turn on when headlight switch is in the "ON" position.

5. Direction indicator switch and hazard light switch

ROPS type



(1) Direction indicator light switch
(2) Hazard light switch
(3) Hazard and direction indicator
(4) Trailer indicator
(5) Position lights indicator

CAB type

- 1FEHH00011D01
- (1) Direction indicator light switch
 - (2) Hazard light switch
 - (3) Hazard and direction indicator
 - (4) Trailer indicator
 - (5) Position lights indicator

Direction indicator light switch

To indicate a right turn, turn the direction indicator light switch clockwise. To indicate a left turn, turn the direction indicator light switch anticlockwise. The corresponding right and left direction indicator lights and indicator on the instrument panel will flash. Turn signal is active when the key switch is in the "ON" position.

NOTE :

- When you operate the direction indicator light switch with the trailer power connector connected, the trailer indicators in the instrumental panel start flashing.
- Be sure to return the switch to the center position after turning.
- When any one of the direction indicator light bulbs is burnt out, the direction indicator lights flash faster.

Hazard light switch

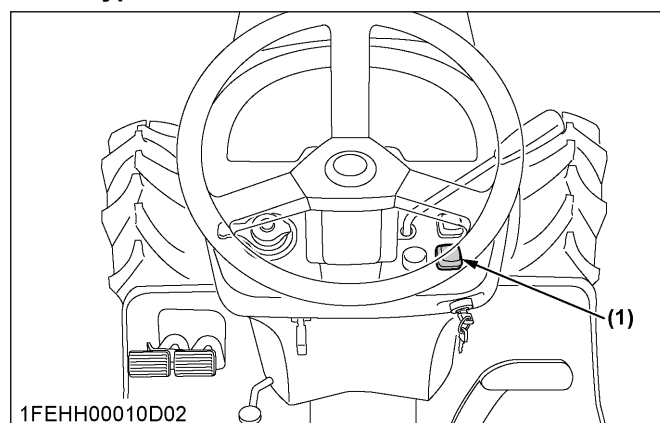
1. When the hazard light switch is pushed, the hazard lights flash, along with the indicator on the instrument panel.
2. Press the hazard light switch again to turn off the light. The hazard light switch is operative, even when the key switch is at the "OFF" position.

6. Beacon light switch

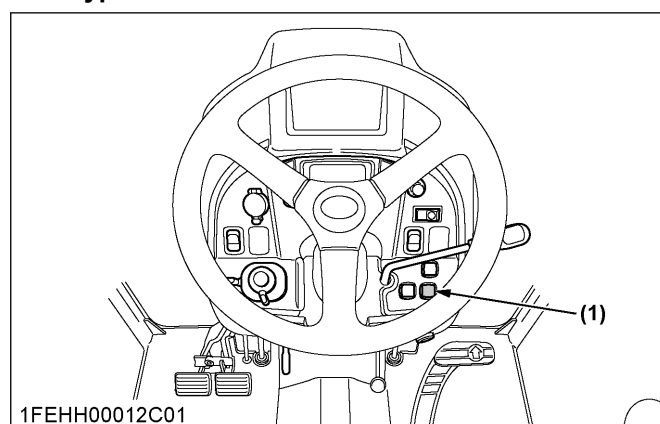
To activate the beacon light:

Press the beacon light switch, the beacon light is activated. When the switch is pressed again, the light is off.

The beacon light switch is operative, only when the key switch is at the "ON" position.

ROPS type

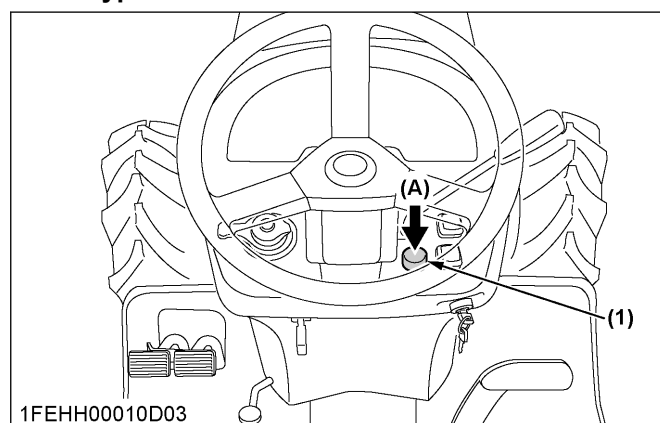
- 1FEHH00010D02
- (1) Beacon light switch

CAB type

- 1FEHH00012C01
- (1) Beacon light switch

7. Horn button

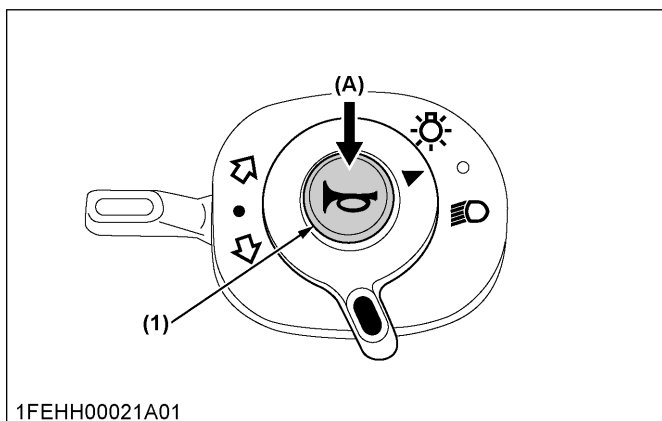
The horn will sound when the key switch is in "ON" position and horn button is pushed.

ROPS type

- 1FEHH00010D03
- (1) Horn button

(A) "PUSH"

CAB type



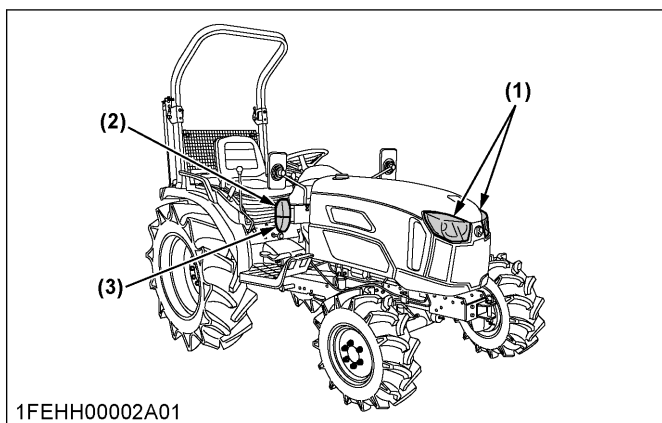
1FEHH00021A01

(1) Horn button

(A) "PUSH"

8. Tractor lights

ROPS type



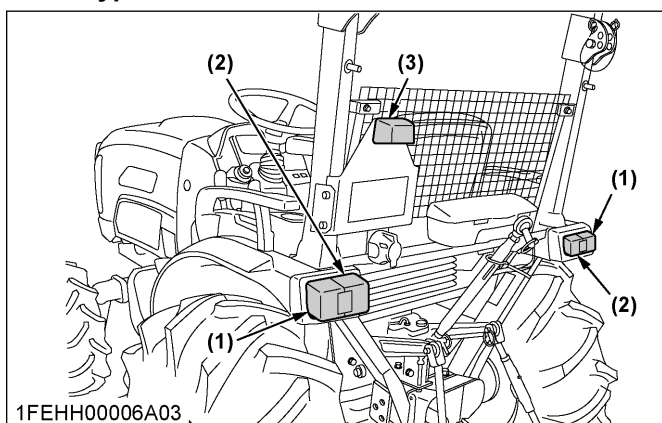
1FEHH00002A01

(1) Headlight

(2) Front turn signal and hazard warning light

(3) Front position light

ROPS type



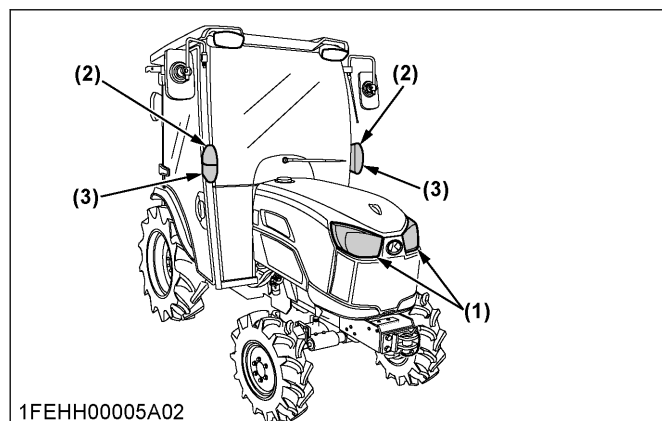
1FEHH00006A03

(1) Rear turn signal and hazard warning light

(2) Rear light and brake stop light

(3) Registration plate light

CAB type



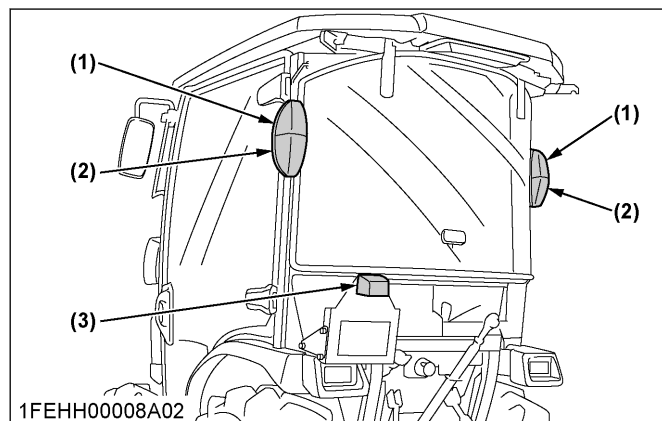
1FEHH00005A02

(1) Headlight

(2) Front turn signal and hazard warning light

(3) Front position light

CAB type



1FEHH00008A02

(1) Rear turn signal and hazard warning light

(2) Rear light and brake stop light

(3) Registration plate light

9. Brake pedals (right and left)

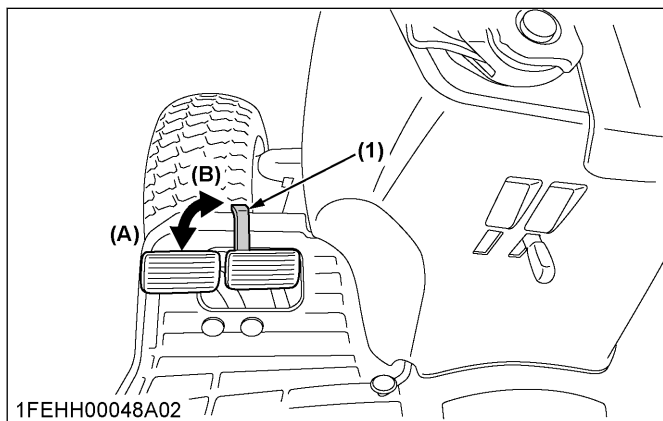
 WARNING

To avoid personal injury or death:

- Applying only one rear wheel brake at high speeds could cause the tractor to swerve or roll-over.
- An accident may occur if the tractor is suddenly braked, such as by a heavy towed load shifting forward or loss of control.
- The braking characteristics are different between a 2 and 4-wheel drive. Be aware of the difference and use carefully.
- When driving on icy, wet or loose surfaces, make sure the tractor is correctly ballasted to avoid skidding and loss of steering control. Operate the tractor at reduced speed.

1. Before operating the tractor on the road or before applying the parking brake, be sure to interlock the right and left pedals as in the following illustration.

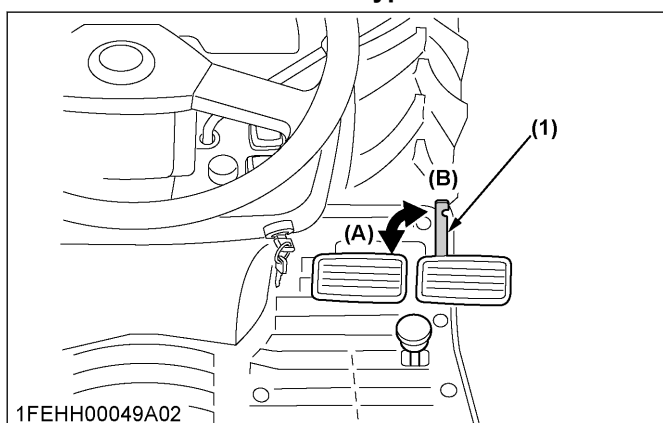
2. Use individual brakes to assist in making sharp turns at low speeds (field operation only). Disengage the brake pedal lock and depress only one brake pedal.
3. Be sure brake pedals have equal adjustment when being used locked together.

ROPS HST type

(1) Brake pedal lock

(A) "LOCK"

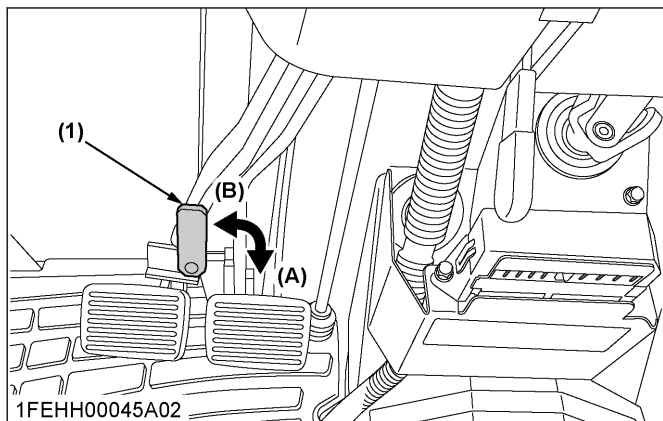
(B) "RELEASE"

ROPS manual transmission type

(1) Brake pedal lock

(A) "LOCK"

(B) "RELEASE"

CAB HST type

(1) Brake pedal lock

(A) "LOCK"

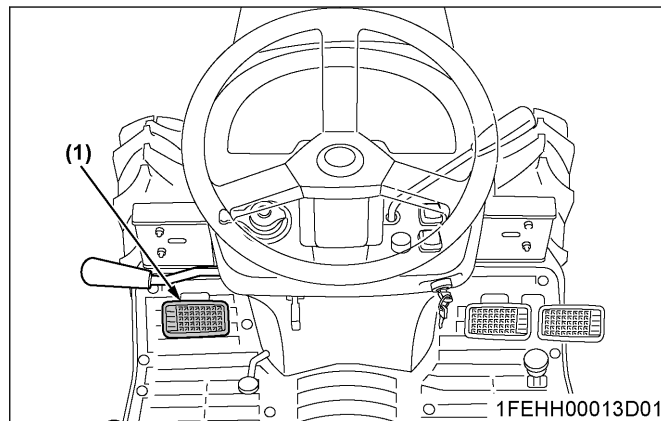
(B) "RELEASE"

10. Clutch pedal (ROPS manual transmission type)**WARNING**

To avoid personal injury or death:

- The 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.
- When starting the engine, the engine is not operate unless the clutch pedal is pressed down.

11. Range gear shift lever (ROPS HST type and CAB HST type)

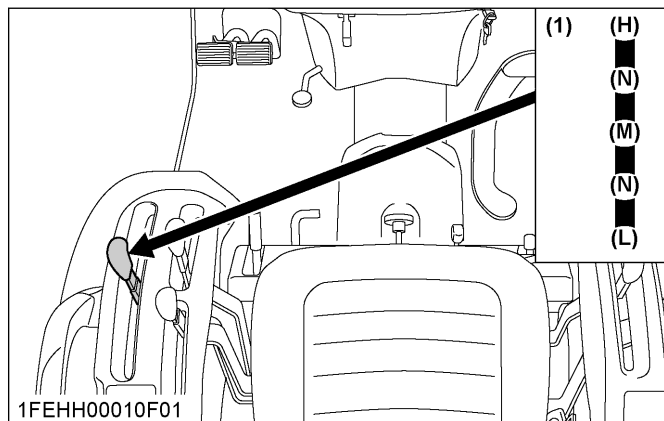
The range gear shift can only be shifted when the tractor is completely stopped.

IMPORTANT :

Do not force the range gear shift lever.

- If it is difficult to shift the range gear shift lever into the neutral position;
 1. Depress the brake pedal firmly for several seconds.
 2. Without reducing the brake pedal force, shift the range gear shift lever.
- If it is difficult to shift the range gear shift lever into [L], [M] or [H] from the neutral position;
 1. Slightly depress the speed control pedal to rotate the gears inside of the transmission.

2. Return the speed control pedal to the neutral position.
3. Shift the range gear shift lever.
 - To avoid damage of transmission, stop the tractor before shifting between ranges.
 - When starting the engine, the engine will not start unless the range gear shift lever is placed in the "NEUTRAL" position



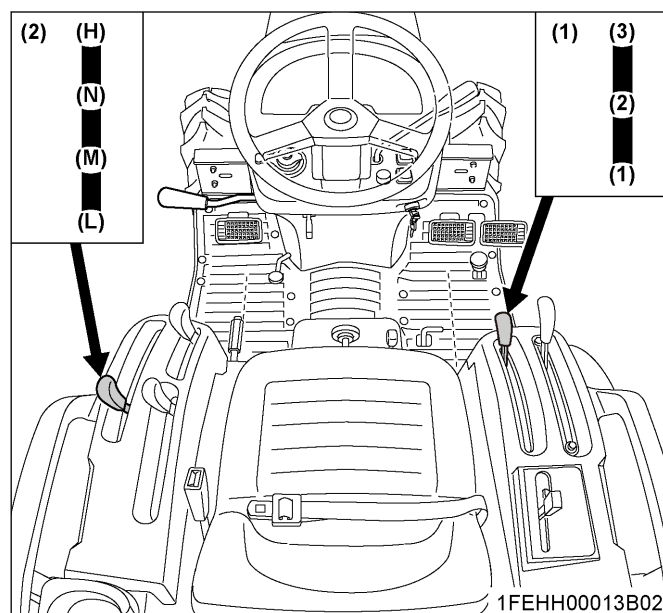
- (1) Range gear shift lever (L-M-H)
- (H) "HIGH"
(M) "MIDDLE"
(L) "LOW"
(N) "NEUTRAL"

12. Main gear shift lever and range gear shift lever (ROPS manual transmission type)

The main gear shift lever pattern is in the form of a "I" in 3 stages. The range gear shift lever moves in the form of a "I" in 3 stages, "HIGH", "MIDDLE" and "LOW". By combination of using the main gear shift lever and the range gear shift lever, 9 forward speeds and 9 reverse speeds are obtained.

IMPORTANT :

- To change speeds, press the clutch pedal completely down and stop the tractor before attempting to proceed with speed change.



- (1) Main gear shift lever (H) "HIGH"
(2) Range gear shift lever (L-M-H) (N) "NEUTRAL"
(M) "MIDDLE"
(L) "LOW"

13. Shuttle shift lever (ROPS manual transmission type)



WARNING

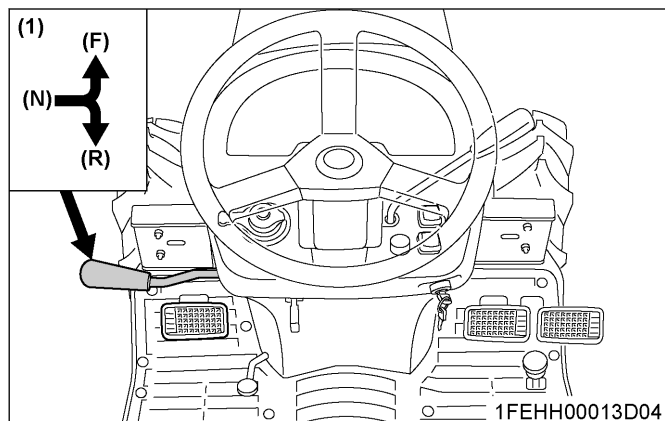
To avoid personal injury or death:

- Always set the parking brake.
- Stop the engine and remove the key.

Raise up and shift the shuttle shift lever forward to obtain forward speeds and shift it backward to obtain reverse speeds with using the clutch pedal.

IMPORTANT :

- Reduce engine speed to low idle before shifting the shuttle shift lever.
- Shuttle shift change should not be done all at one time. Move the shuttle lever to the neutral position momentarily before you accomplish the shuttle change, hard or sudden gear shift may cause transmission damage.
- When you stand up from the seat with the shuttle shift lever at engaged, the engine will stop regardless of whether the tractor is moving or not. This is because the tractor is equipped with an operator presence control system (OPC).



(1) Shuttle shift lever

(F) "FORWARD"

(R) "REVERSE"

(N) "NEUTRAL POSITION"

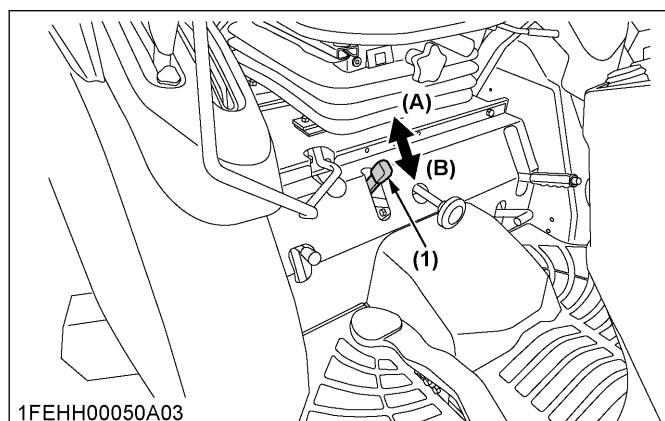
14. Front wheel drive lever

! WARNING

To avoid personal injury or death:

- Do not engage the front-wheel drive when travelling at road speed.
- When driving on icy, wet, or loose surfaces, make sure the tractor is correctly ballasted to avoid skidding and loss of steering control. Operate at reduced speed and engage front-wheel drive.
- An accident may occur if the tractor is suddenly braked, such as by heavy towed loads shifting forward or loss of control.
- The braking characteristics are different between a 2 and 4-wheel drive. Be aware of the difference and use carefully.

Use the lever to engage the front wheels with the tractor stopped. Shift the lever to "ON" to engage the front wheel drive.



(1) Front wheel drive lever

(A) "ON"

(B) "OFF"

IMPORTANT :

- To avoid damage of transmission, when the front wheel drive lever is not smoothly shifted,

slightly step forward or rearward on the speed control pedal.

- Tyres will wear quickly if the front wheel drive is engaged on paved roads.
- Depress the clutch pedal before engaging the front wheel drive lever (manual transmission type).

14.1 Front-wheel drive usage

Front-wheel drive is effective for the following jobs:

- 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.
- When working in sandy soil.
- When working on a hard soil where a rotary tiller might push the tractor forward.
- Additional braking at reduced speeds.

15. Bi-speed turn lever (if equipped)

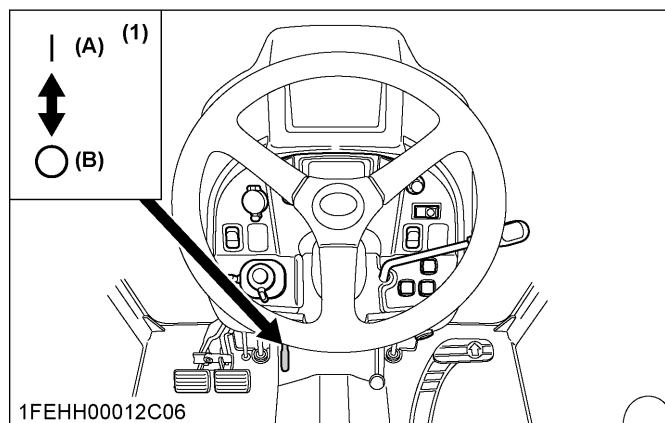
! WARNING

To avoid personal injury or death:

- Do not use "Bi-speed Turn" at high speed.
- "Bi-speed turn" enables short and fast turns, therefore, become familiar with its performance before operating in close or confined areas.

1. Make sure the front wheel drive lever is in the engaged "ON" position.
2. To activate the Bi-speed turn system, pull the Bi-speed turn lever upward.
3. The Bi-speed turn indicator comes on when the system is in Bi-speed turn mode.

4. Pull the Bi-speed turn lever downward, the Bi-speed turn system turns off and the indicator goes off.

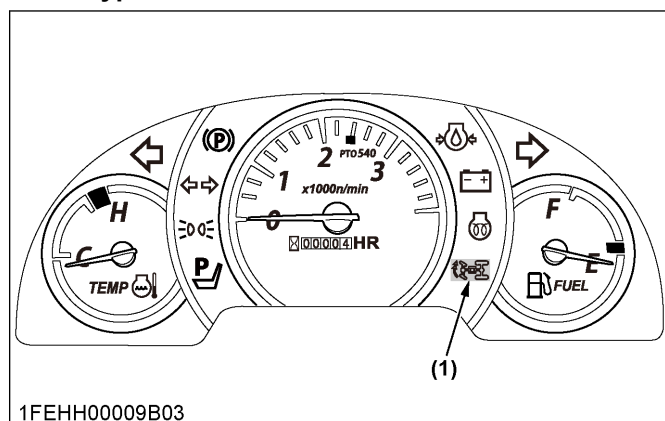


(1) Bi-speed turn lever

(A) "ON (ENGAGED)"

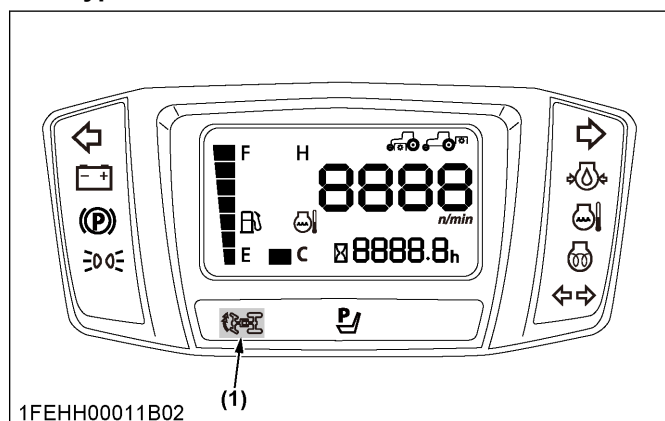
(B) "OFF (DISENGAGED)"

ROPS type



(1) Bi-speed turn indicator

CAB type



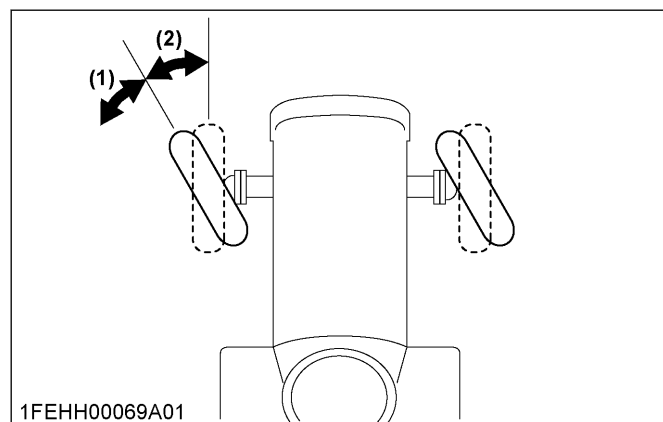
(1) Bi-speed turn indicator

NOTE :

- The Bi-speed turn system functions as follows.

When you manipulate the steering wheel to turn the tractor, the front wheels are still driven at their usual 4WD speed until they turn 42 degrees or so from the straight

position. Move the steering wheel further for a turn of 42 degrees or more, and the Bi-speed turn system is activated. This way, the front wheels start turning about 1.5 times higher for smooth turning.



(1) Bi-speed turning

(2) Usual 4WD turning (about 42 degrees)

15.1 Bi-speed turning usage

Bi-speed turning is effective for the following jobs:

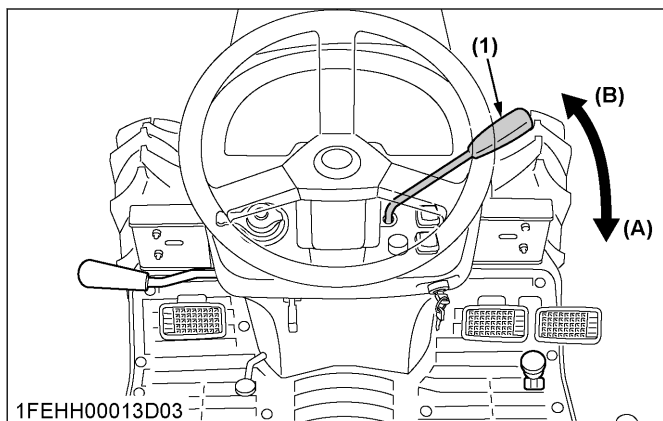
- Turning at the end of rows. (planting, cultivating, harrowing.)
- Increasing manoeuvrability when working in tight spaces.

IMPORTANT :

- When the Bi-speed turn is set to "ON" and overload is applied to the front wheels, the front wheels may stop (when the turning angle of the front wheels is 42 degrees or more). This is not a problem, but the Bi-speed clutch is slipping. Set the Bi-speed turn to "OFF" when the front wheels stop, making it difficult to continue operation.
- Do not use the bi-speed turn when operating the front end loader.

16. Hand throttle lever

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



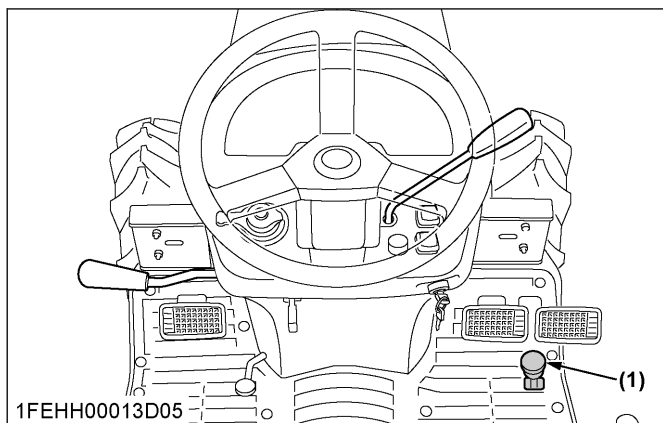
(1) Hand throttle lever

(A) "INCREASE"
(B) "DECREASE"

17. Foot throttle

Use the foot throttle when travelling 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.

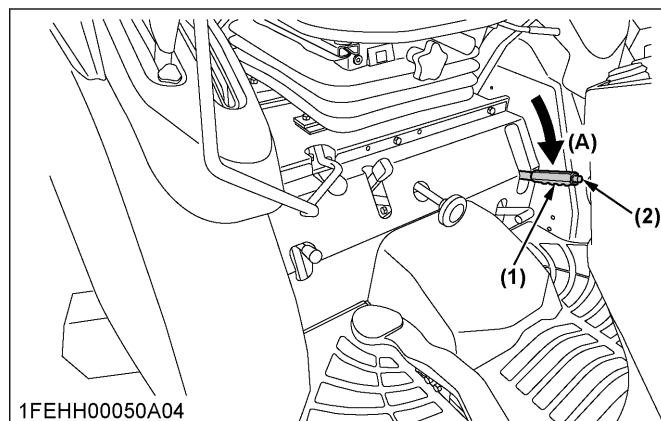
ROPS manual transmission type



(1) Foot throttle

18. Parking brake lever

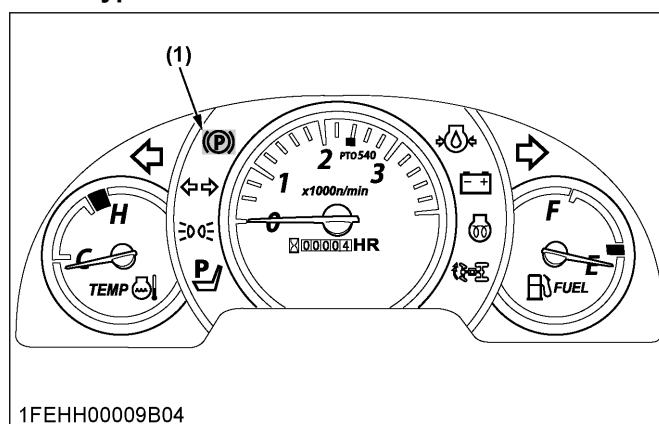
1. To set the parking brake;
 - a. Interlock the brake pedals.
 - b. Depress the brake pedals.
 - c. Pull the lever to park.
2. To release the parking brake, depress the brake pedals, push the release button and push down the parking brake lever and the indicator goes off.



(1) Parking brake lever
(2) Release button

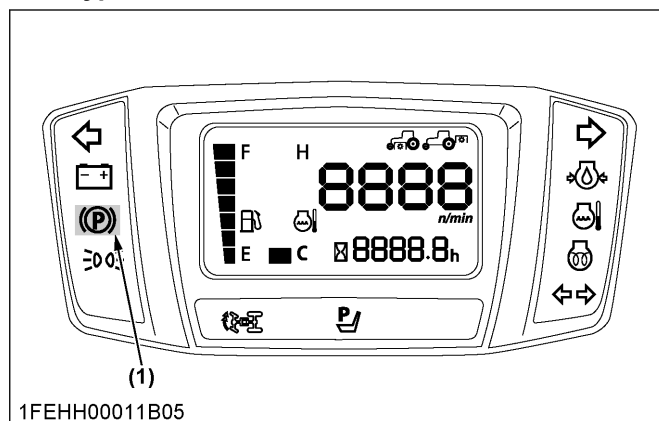
(A) "RELEASE"

ROPS type



(1) Parking brake indicator

CAB type



(1) Parking brake indicator

19. Speed control pedal (ROPS HST type and CAB HST type)



WARNING

To avoid personal injury or death:

- Do not operate if the tractor moves on level ground with the foot off of the speed control pedal.
- Consult your local KUBOTA Dealer.

IMPORTANT :

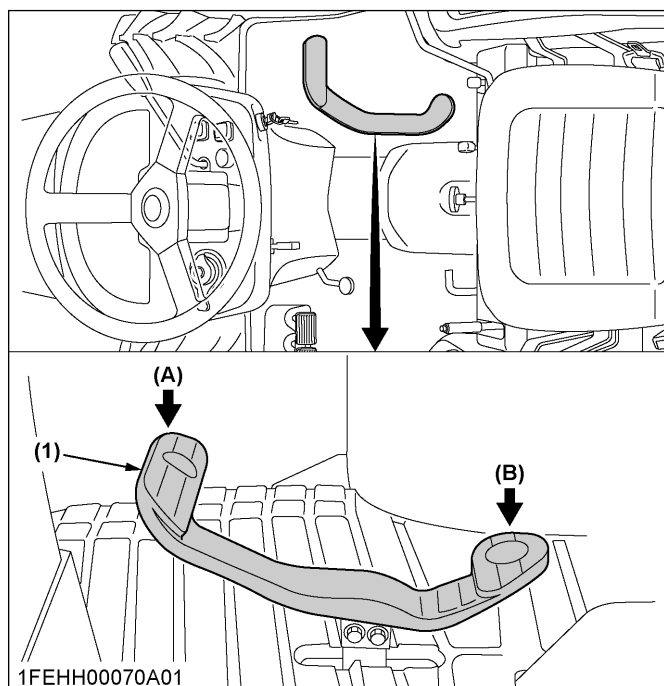
- To prevent serious damage to the HST, do not adjust the stopper bolts.

Forward

Depress the speed control pedal with the toe of your right foot to move forward.

Reverse

Depress the speed control pedal with the heel of your right foot to move forward.



(1) Speed control pedal

(A) "FORWARD"
(B) "REVERSE"

NOTE :

- When you stand up from the seat with the speed control pedal stepped on or the cruise control device engaged ("ON"), the engine will stop regardless of whether the tractor is moving or not. This is because the tractor is equipped with an Operator Presence Control (OPC) system.

20. Cruise control lever (ROPS HST type)

**WARNING**

To avoid personal injury or death:

- Pull the cruise-control-lever completely to the rear before starting the engine.

- Do not use the cruise control when driving on the road.
- Be sure to connect both the left and the right brakes to release the cruise control. The speed-cruise-control will not be released with single brake activation.

IMPORTANT :

- To prevent damage of the cruise control device, do not depress the reverse pedal when the cruise control device is engaged.

Cruise control is designed for tractor operating efficiency and operator comfort. This device will provide a constant forward operating speed by mechanically holding the cruise control lever at the selected position.

To engage the cruise control device

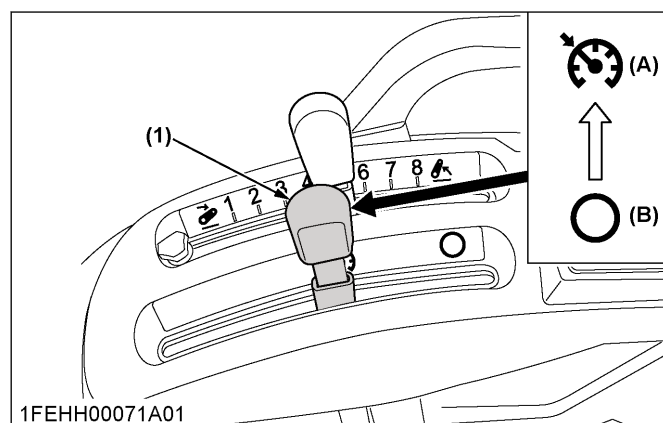
1. Accelerate speed to the desired level using the speed control pedal, and set the cruise control lever to the "ON" position.
2. Release the speed control pedal and the desired speed will be maintained.

To disengage the cruise control device

- Set the cruise control lever to the "OFF" position.
- Depress both brake pedals.

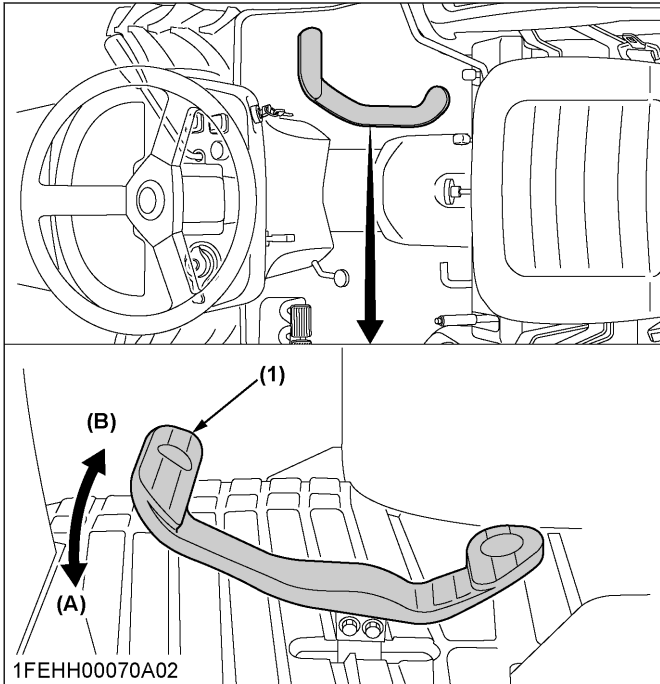
NOTE :

- If you step on the pedal on the forward acceleration side, the cruise control device will disengage.
- The cruise control device does not disengage when the individual right or left brake is applied.
- The cruise control device will not operate in reverse.



(1) Cruise control lever

(A) "ON"
(B) "OFF"



(1) Speed control pedal
(A) "INCREASE"
(B) "DECREASE"

NOTE :

- When you stand up from the seat with the speed control pedal stepped on or the cruise control device engaged ("ON"), the engine will stop regardless of whether the tractor is moving or not. This is because the tractor is equipped with an Operator Presence Control (OPC) system.

21. Cruise control lever (CAB HST type)

WARNING

To avoid personal injury or death:

- Pull the cruise-control-lever completely to the rear before starting the engine.
- Do not use the cruise control when driving on the road.
- Be sure to connect both the left and the right brakes to release the cruise control. The speed-cruise-control will not be released with single brake activation.

IMPORTANT :

- Do not depress the speed control pedal backward to disengage the cruise control.

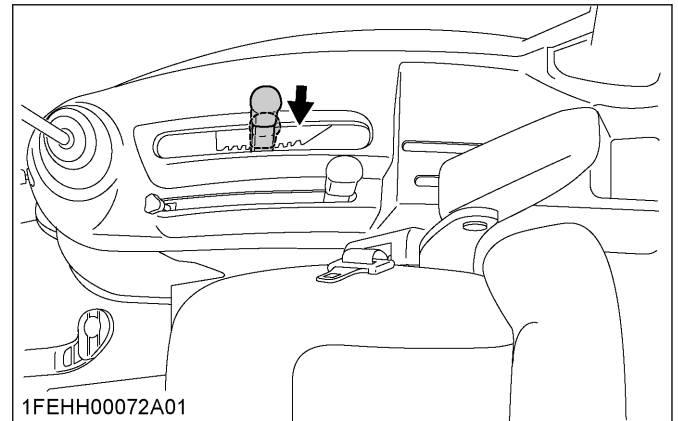
To engage the cruise control device

1. The proper forward speed will be maintained if you apply the cruise control lever at any position.

2. To operate faster than the set speed, depress the speed control pedal further down in this condition. The set speed will be resumed if you release the pedal.

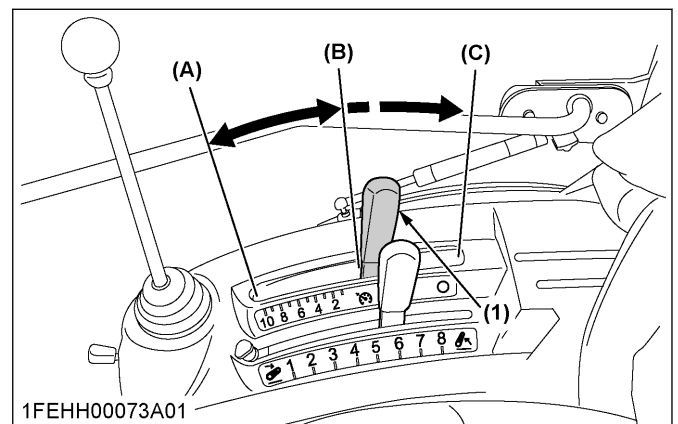
To disengage the cruise control device

- Tilt the lever toward the seat, move the lever all the way back and then to the "NEUTRAL" position to release the cruise control.
- Depress both brake pedals.



NOTE :

- The cruise control device does not disengage when the individual right or left brake is applied.
- The cruise control device will not operate in reverse.
- Preferably set the cruise control lever, while holding down the speed control pedal. This makes the setting smoother.
- When releasing the cruise mode, be sure to return the cruise control lever fully backward.



(1) Cruise control lever
(A) "INCREASE"
(B) "DECREASE"
(C) "NEUTRAL"

NOTE :

- When you stand up from the seat with the speed control pedal stepped on or the cruise control lever engaged ("ON"), the engine will stop regardless of whether the tractor is moving or not. This is because the tractor is equipped

with an Operator Presence Control (OPC) system.

STOPPING THE TRACTOR

1. Slow down the engine.
2. Step on the brake pedal.
3. Wait for the tractor to stop.
4. Disengage the PTO.
5. Lower the implement to the ground.
6. Shift the transmission to neutral.
7. Set the parking brake.

CHECK DURING DRIVING

IMPORTANT :

- **Immediately stop the engine if:**
 - The engine suddenly slows down or accelerates.
 - Unusual noises are suddenly heard.
 - Exhaust fumes suddenly become very dark.

While driving, check the following items to confirm that the all parts are functioning normally:

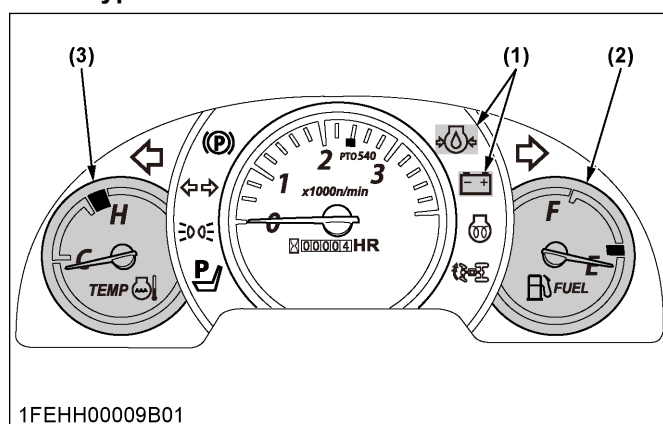
- Easy Checker™ on page 61
- Fuel gauge on page 61
- Coolant temperature gauge on page 62
- Hourmeter and tachometer on page 62

1. Easy Checker™

If the indicators on the Easy Checker™ comes on during operation, immediately stop the engine and find the cause as follows.

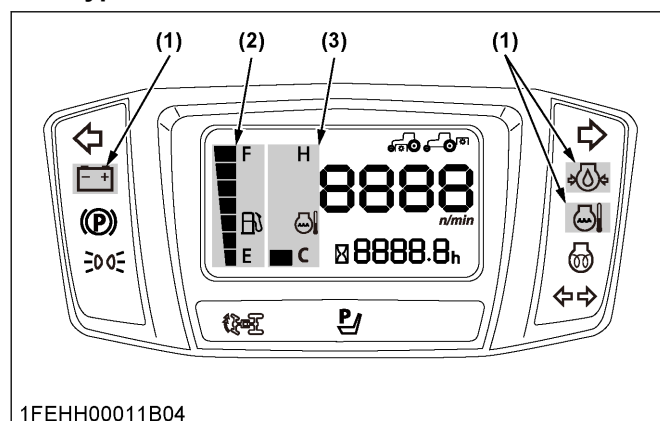
Never operate the tractor while an Easy Checker™ indicator is on.

ROPS type



- 1FEHH00009B01
- (1) Easy Checker™
(2) Fuel gauge
(3) Coolant temperature gauge

CAB type



- 1FEHH00011B04
- (1) Easy Checker™
(2) Fuel gauge
(3) Coolant temperature gauge

Engine overheat (CAB type only)

If the water temperature gauge reads an unusual level and the warning indicator on the Easy Checker™ comes on, the engine may have overheated. Check the tractor (See TROUBLESHOOTING on page 132.)

Engine oil pressure

If the oil pressure in the engine drops below the prescribed level, the indicator on the Easy Checker™ 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 the engine oil level. (See Checking engine oil level on page 103.)

Electrical charge

If the alternator is not charging the battery, the indicator on the Easy Checker™ 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.

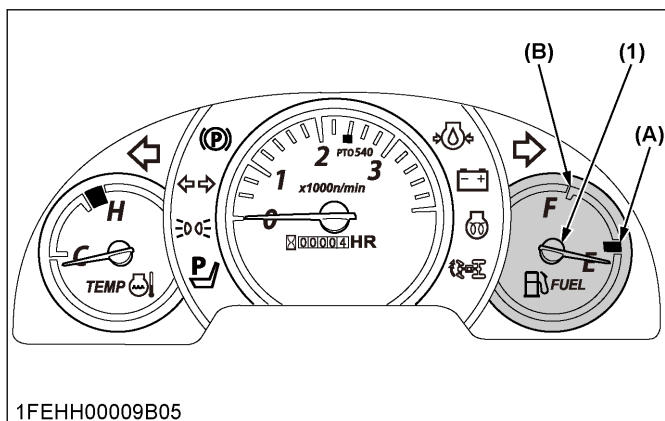
2. Fuel gauge

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 on page 126.)

ROPS type

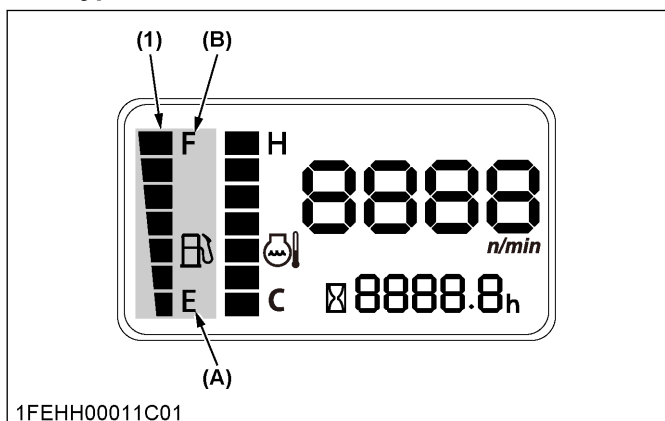


(1) Fuel gauge

(A) "EMPTY"

(B) "FULL"

CAB type

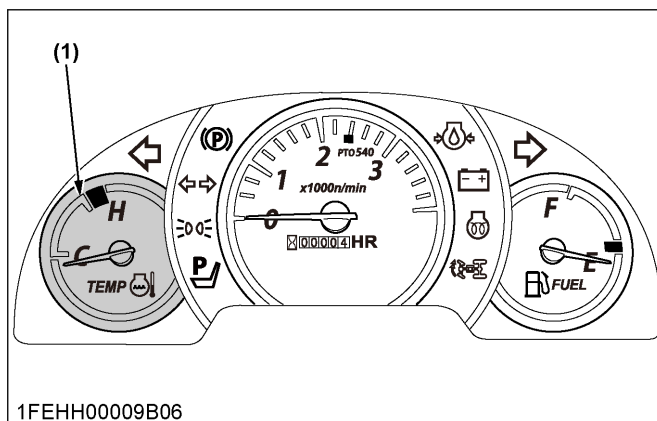


(1) Fuel gauge

(A) "EMPTY"

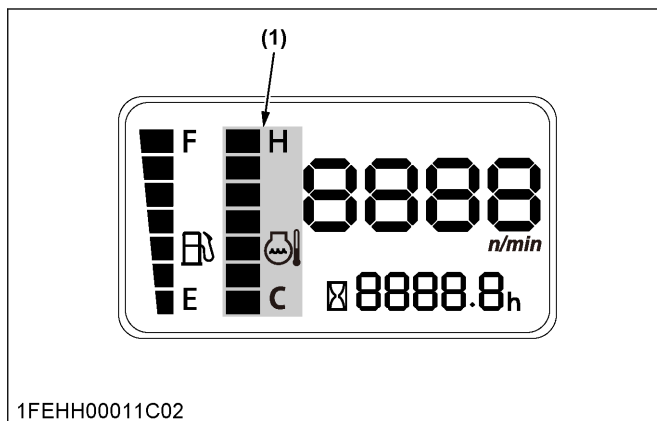
(B) "FULL"

ROPS type



(1) Coolant temperature gauge

CAB type



(1) Coolant temperature gauge

3. Coolant temperature gauge

! WARNING

To avoid personal injury or death:

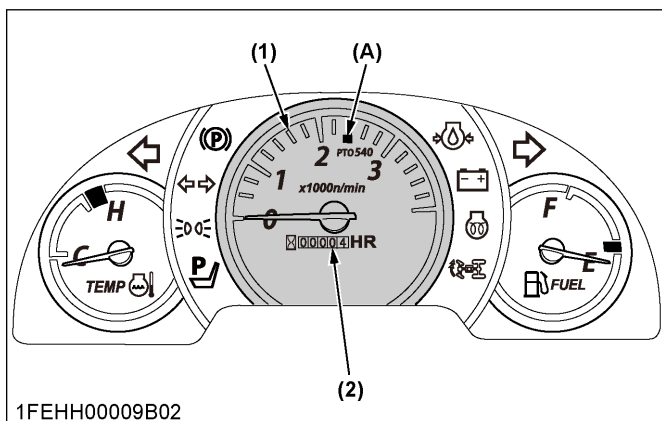
- Do not remove the radiator cap until the coolant temperature is well below its boiling point. Then, loosen the cap slightly to relieve any pressure before removing the cap completely.

- With the key switch at "ON", this gauge indicates the temperature of the coolant. [C] is for cold and [H] is for hot.
- If the indicator reaches the red zone position, the engine coolant is overheated. Check the tractor by reading the troubleshooting section of this manual. (See TROUBLESHOOTING on page 132.)

4. Hourmeter and tachometer

This meter gives readings for engine speed, PTO shaft speed and the hours the tractor has been operated.

- The tachometer indicates the engine speed and the PTO shaft speed location on the dial.
- The hourmeter indicates in 5 digits the hours the tractor has been used; the last digit indicates 1/10 of an hour.

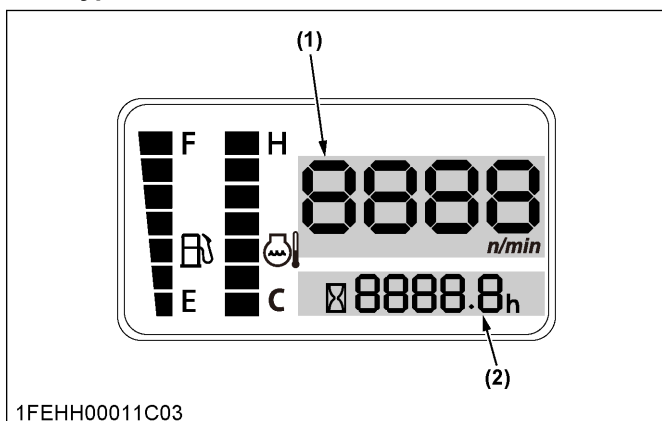
ROPS type

1FEHH00009B02

(1) Engine revolution

(A) PTO: 540 rpm

(2) Hours used

CAB type

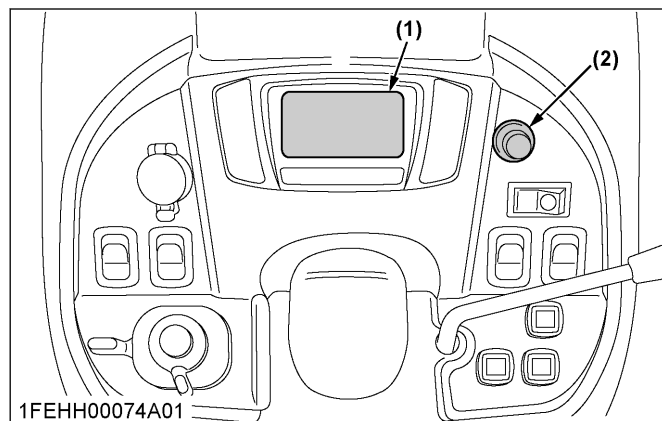
1FEHH00011C03

(1) Engine revolution

(2) Hours used

5. Changing display mode (CAB type)

1. The LCD monitor gives several different displays.
2. The LCD monitor displays "Engine rpm" normally.
3. The display switch is pressed, the display is switched to "Rear PTO speed", "Mid PTO speed", "Engine rpm".

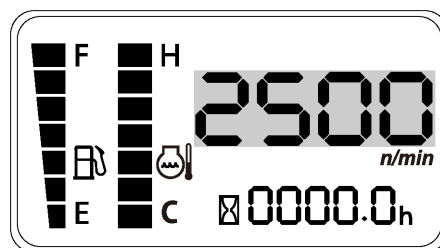


1FEHH00074A01

(1) LCD monitor

(2) Display switch

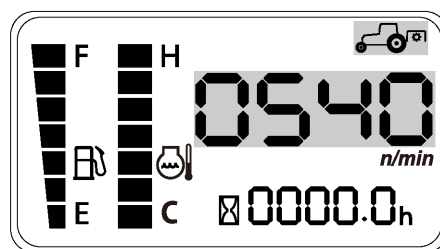
[A]



1FEHH00022A01

[A] Engine rpm

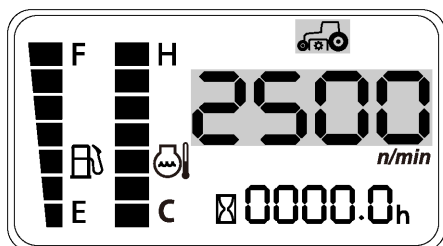
[A]



1FEHH00023A01

[A] Rear PTO speed

[A]



1FEHH00024A01

[A] Mid PTO speed

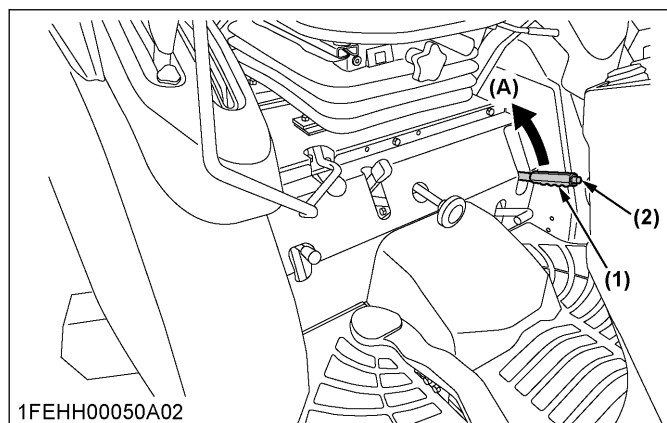
PARKING THE TRACTOR

! WARNING

To avoid personal injury or death:
Before dismounting tractor

- Always set parking brake and lower all implements to the ground.
Leaving the transmission in gear with the engine stopped will not prevent the tractor from accidental rolling.
- Stop the engine and remove the key.

- When parking, be sure to set the parking brake. To set the parking brake;
 - Interlock the brake pedals.
 - Depress the brake pedals.
 - Pull the lever to park.



1FEHH00050A02

- (1) Parking brake lever
(2) Release button

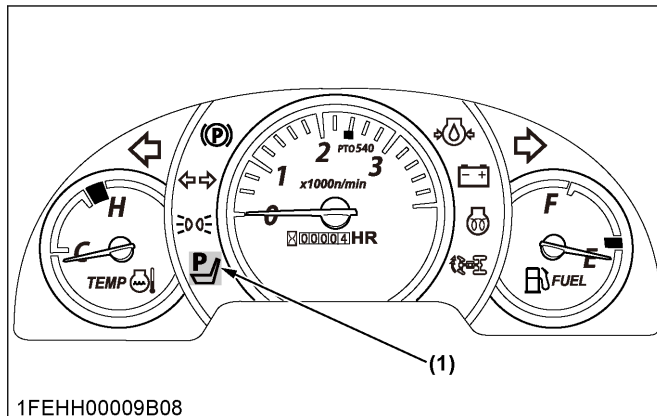
(A) "PULL"

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

NOTE :

- Suppose that you get out of the seat with the parking brake not applied. The parking OPC light lights up and the buzzer starts sounding. Be sure to apply the parking brake before getting out of the seat.
- When the key is turned on, leaving the seat without applying the parking brake, the parking OPC light turns on and rings the buzzer.

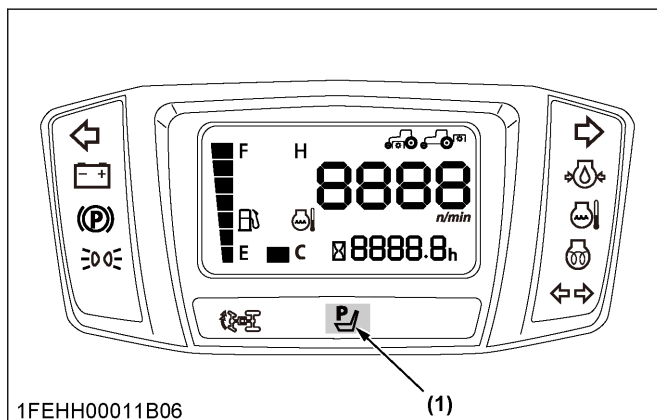
ROPS type



1FEHH00009B08

- (1) Parking OPC indicator

CAB type



1FEHH00011B06

- (1) Parking OPC indicator

OPERATING TECHNIQUES

1. Differential lock

! WARNING

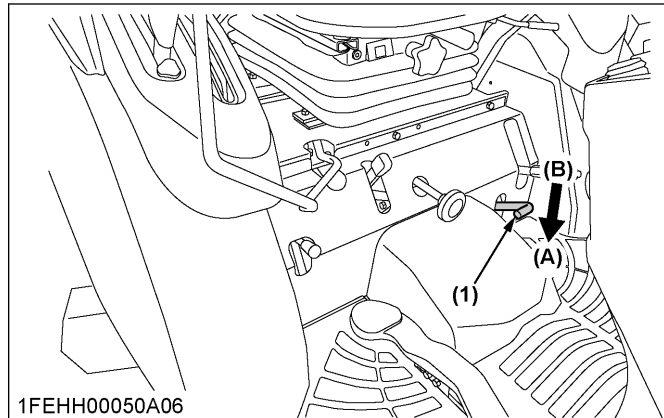
To avoid personal injury or death due to loss of steering control:

- Do not operate the tractor at high speed with differential lock engaged.
- Do not attempt to turn with the differential lock engaged.
- Be sure to release the differential lock before making a turn in field conditions.

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

The differential lock is maintained only while the pedal is depressed.

ROPS HST type

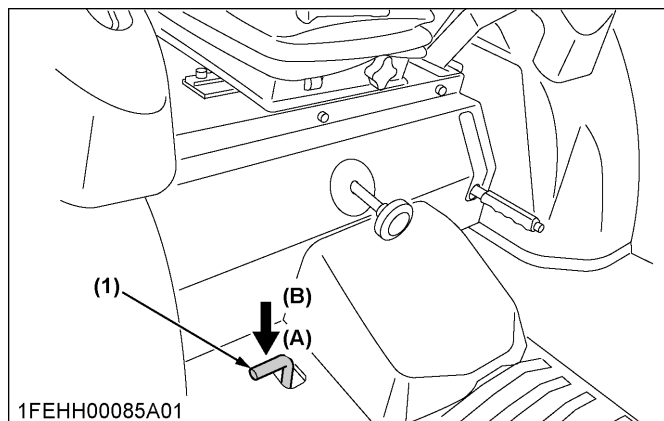


(1) Differential lock pedal

(A) Press to "ENGAGE"

(B) Release to "DISENGAGE"

ROPS manual transmission type

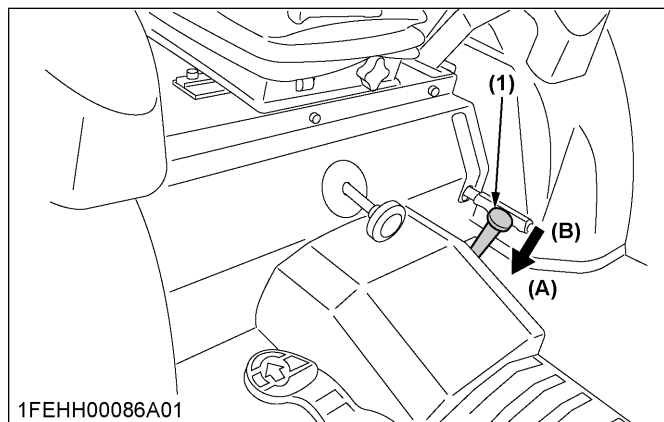


(1) Differential lock pedal

(A) Press to "ENGAGE"

(B) Release to "DISENGAGE"

CAB HST type



(1) Differential lock pedal

(A) Press to "ENGAGE"

(B) Release to "DISENGAGE"

IMPORTANT :

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

2. Operating the tractor on a road



WARNING

To avoid personal injury or death:

- 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 travelling on road with 3-point hitch mounted implement attached, be sure to have sufficient front weight on the tractor to maintain steering ability.

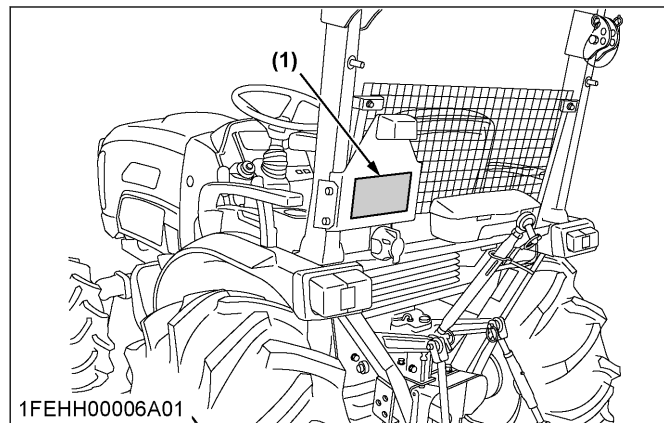
Details regarding ballast can be found in a different section.

(See BALLAST on page 86.)

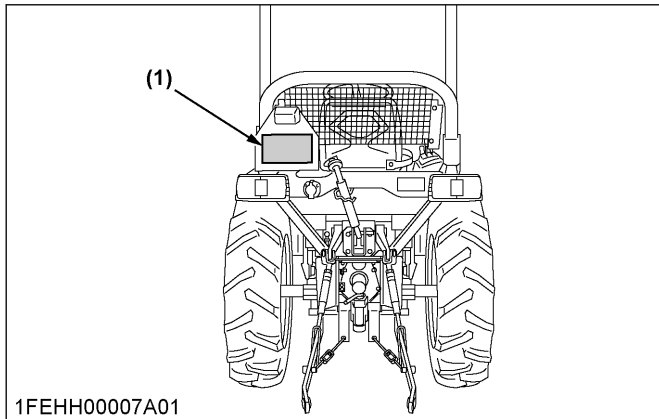
Observe all local traffic and safety regulations.

Use the registration plate.

Rear mount type ROPS

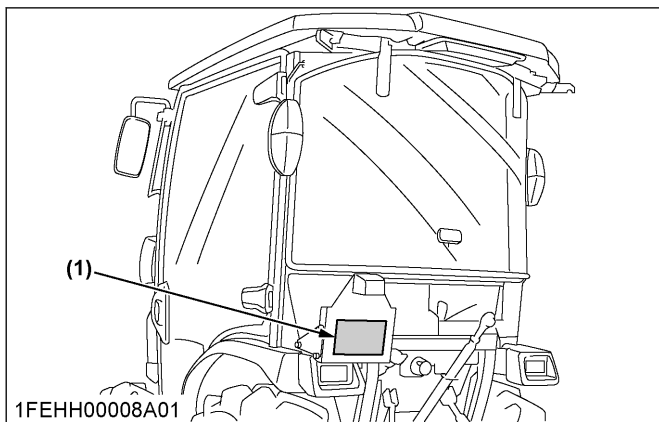


(1) Registration plate

Mid mount type ROPS

1FEHH00007A01

(1) Registration plate

CAB HST type

1FEHH00008A01

(1) Registration plate

3. Operating on slopes and rough terrain**! WARNING****To avoid personal injury or death:**

- Always reverse 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 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 on page 82.)

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 the speed without using brakes.

4. Transporting the tractor safely

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

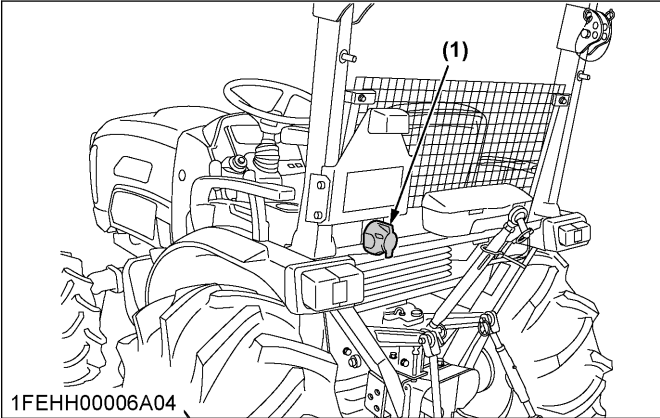
5. Directions for use of power steering

- 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.
- 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.
- Avoid turning the steering wheel while the tractor is stopped, or tyres may wear out sooner.
- The power steering mechanism makes the steering easier. Be careful when driving on a road at high speeds.

6. Trailer electrical power socket

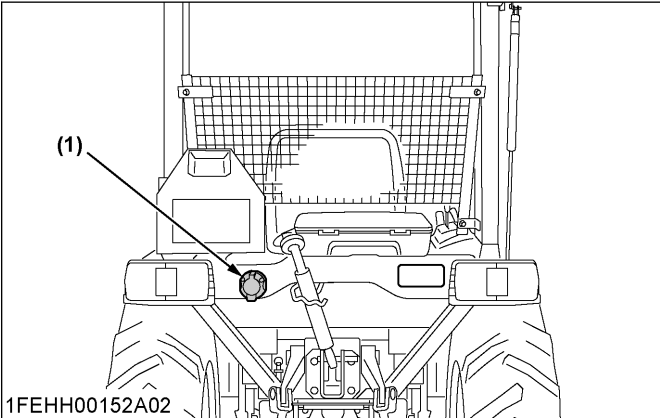
A trailer electrical power socket is supplied for use with trailer or implement.

B2311 ROPS type



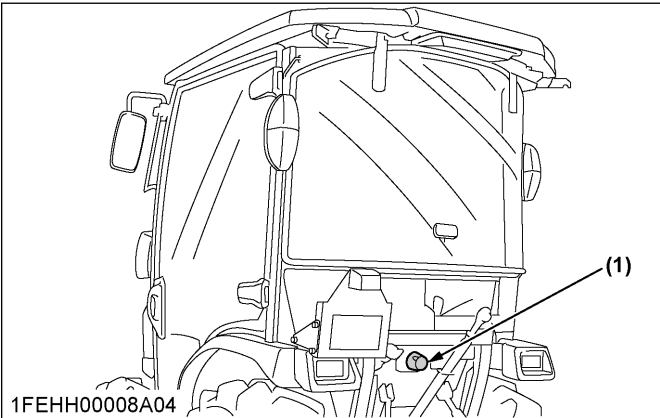
(1) Trailer electrical outlet

B2201/B2231/B2261 ROPS type



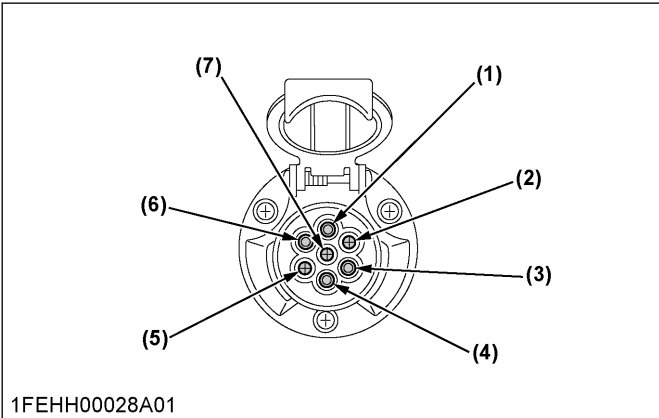
(1) Trailer electrical outlet

B2231/B2261/B2311 CAB type



(1) Trailer electrical outlet

Function of each terminal in trailer electrical power socket

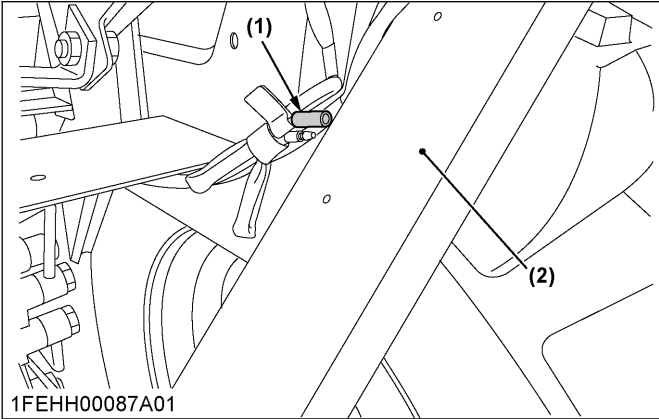


Terminal	Function	Colour of wire harness
(1)	Turn signal (LH)	Green/white
(2)	---	---
(3)	Ground	Black
(4)	Turn signal (RH)	Red/white
(5)	Rear (RH)	Yellow/red
(6)	Brake stop	Yellow
(7)	Rear (LH)	Yellow/white

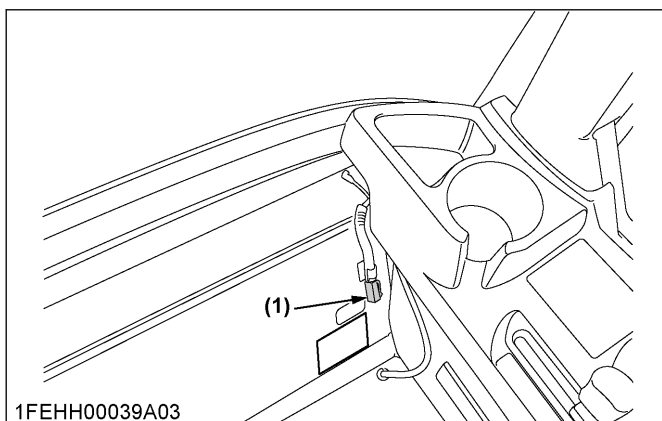
7. Electrical power socket

A power socket is supplied for use with the implement and electrical equipment.

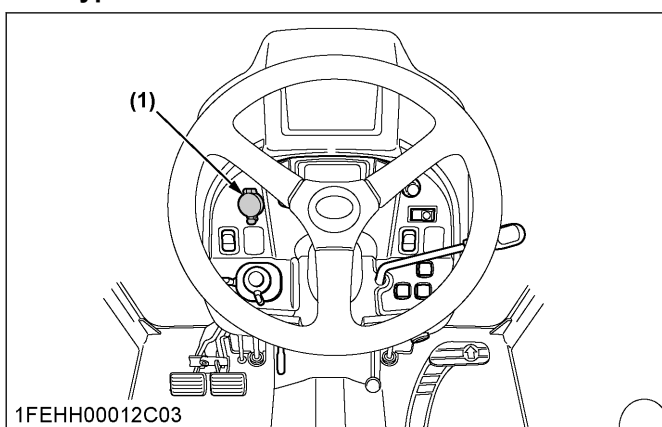
ROPS type



(1) Accessory power socket (DC 12 V, max 120 W)
(2) ROPS (right side)

CAB type

(1) Accessory power socket (DC 12 V, max 120 W)

CAB type

(1) Accessory power socket (DC 12 V, max 120 W)

PTO

PTO OPERATION

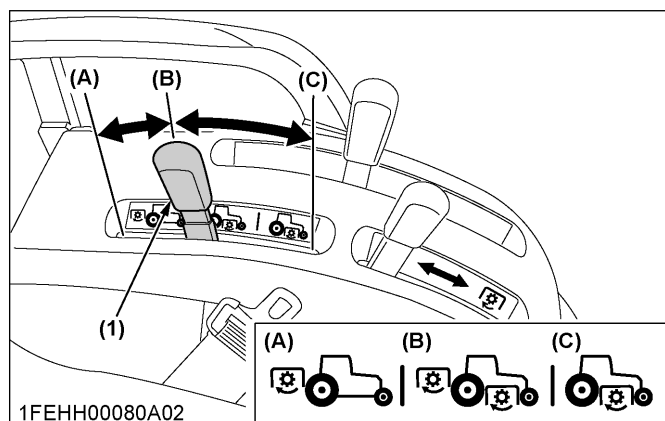
WARNING

To avoid personal injury or death:

- Before operation, be sure to select the correct PTO lever (mid, mid/rear, rear).
- Disengage the PTO, stop the engine, and allow all rotating components to come to a complete stop before connecting, disconnecting, adjusting, or cleaning any PTO driven equipment.

1. PTO select lever (if equipped)

The tractor has a 540 rpm rear PTO speed and a 2500 rpm mid PTO speed.



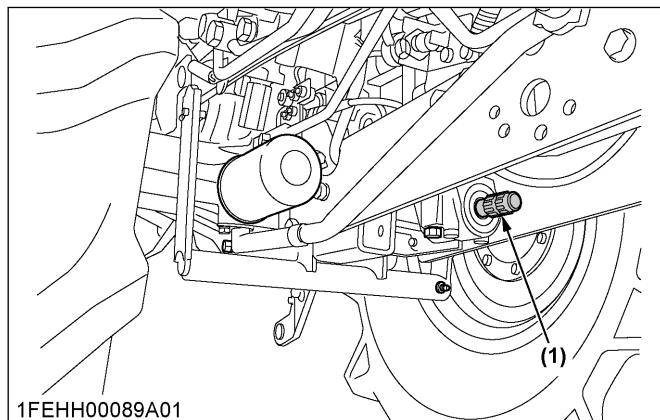
(1) PTO select lever

- (A) Rear-PTO position
(B) Mid-rear-PTO position
(C) Mid-PTO position

Mid PTO

To use the mid PTO, shift the PTO select lever to the mid PTO position and the PTO clutch lever to the "ON" position.

The mid PTO is available for KUBOTA approved implements.



(1) Mid PTO

Mid rear PTO

To use the mid and rear PTO at the same time, shift the PTO select lever to the mid PTO position and the PTO clutch lever to the "ON" position.

Rear PTO

To use the rear PTO, shift the PTO select lever to the mid PTO position and the PTO clutch lever to the "ON" position.

Mid PTO speed

	B2201/B2231/B2261/B2311
Engine speed (rpm)	2500
PTO speed (rpm)	2500

Rear PTO speed

	B2201/B2231/B2261/B2311
Engine speed (rpm)	2400
PTO speed (rpm)	540
Shaft	6-spline

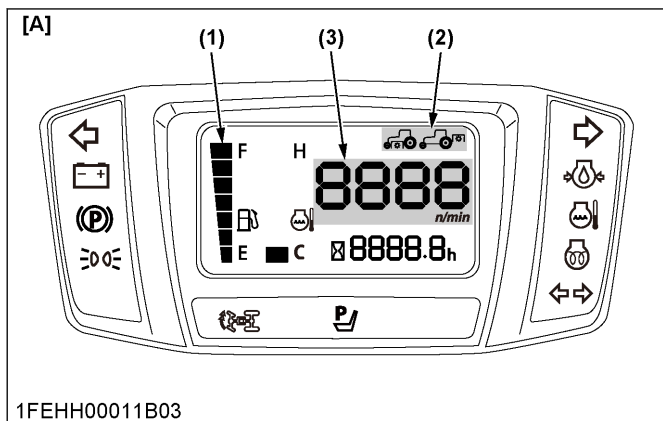
2. LCD monitor message (CAB type)

IMPORTANT :

- To avoid shock loads to the PTO, reduce the engine throttle from full to half speed by pushing up on the engine throttle when engaging the PTO, then open the throttle to the recommended speed.
- To avoid damage to the PTO clutch and implement, shift the PTO clutch lever slowly, when engaging the PTO clutch. Do not keep the PTO clutch lever half way.

- To avoid damage of transmission, when the PTO select lever is not smoothly shifted, slightly shift the PTO clutch lever.
- To avoid damage of transmission, do not shift the PTO select lever until the PTO has stopped completely.

1. The PTO rpm can be checked in the LCD monitor.
(See Changing display mode (CAB type) on page 63.)



[A] Display switch "ON"

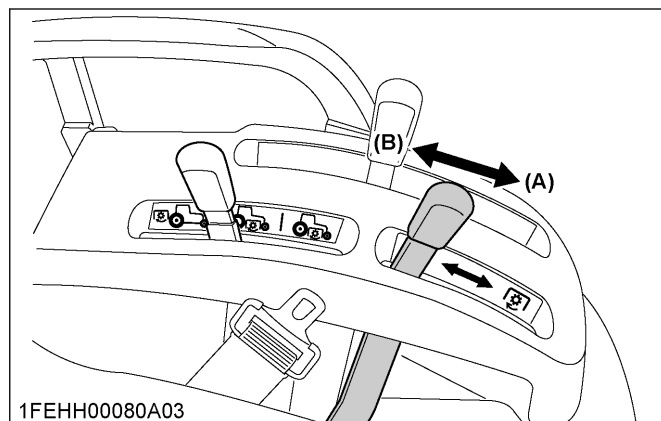
- (1) LCD monitor
(2) PTO indicator
(3) PTO speed

NOTE :

- With the PTO in the "ON" position, a numeric value is displayed on the LCD monitor even if the PTO shaft is not turning.

3. PTO clutch lever (ROPS HST type and CAB HST type)

1. The PTO clutch lever engages or disengages the PTO clutch which gives the PTO independent control.
2. Shift the lever to "ON" to engage the PTO clutch. Shift the lever to "OFF" to disengage the PTO clutch.



(1) PTO clutch lever

- (A) "ON"
(B) "OFF"

NOTE :

- The tractor engine will not start if the PTO clutch lever is in the engaged "ON" position.
- When you stand up from the seat with the PTO clutch lever in the "ON" position, the engine will stop regardless of the position of the PTO select lever.

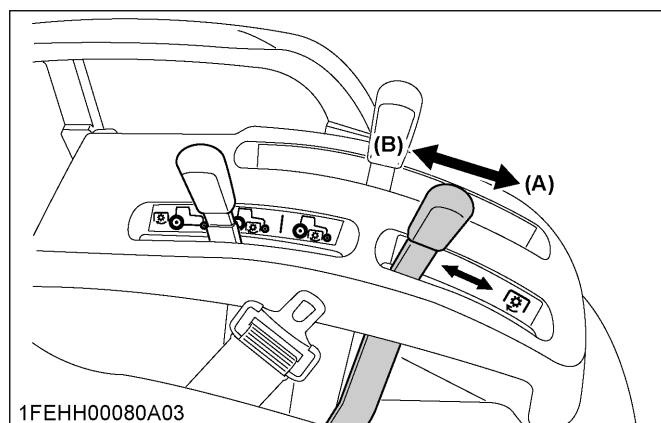
This is because the tractor is equipped with an Operator Presence Control (OPC) system.

4. PTO ON-OFF lever (ROPS manual transmission type)

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 transmission, before shifting the PTO ON-OFF lever, fully disengage the main clutch.

PTO shifting needs clutch operation, Press the clutch pedal down completely to stop the tractor movement and any PTO driven equipment movement before shifting the PTO ON-OFF lever.



(1) PTO ON-OFF lever

- (A) "ON"
(B) "OFF"

NOTE :

- The tractor engine will not start if the PTO ON-OFF lever is in the engaged “ON” position.
- When you stand up from the seat with the PTO ON-OFF lever in the “ON” position, the engine will stop regardless of the position of the PTO select lever. This is because the tractor is equipped with an Operator Presence Control (OPC) system.

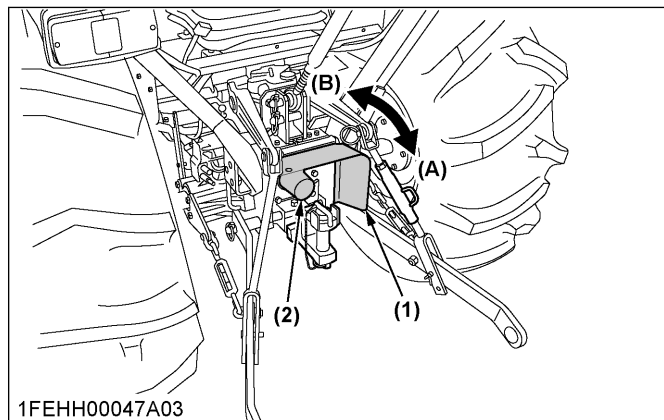
5. PTO shaft cover and shaft cap

Keep the PTO shaft cover in place at all times.

Put back the PTO shaft cap when the PTO is not in use.

Before connecting or disconnecting a drive shaft to PTO shaft, be sure engine is “OFF”. Raise up the PTO shaft cover.

Afterwards, be sure to return the PTO shaft cover to the “NORMAL POSITION”.



- (1) PTO shaft cover (A) “NORMAL POSITION”
(2) PTO shaft cap (B) “RAISED POSITION”

IMPORTANT :

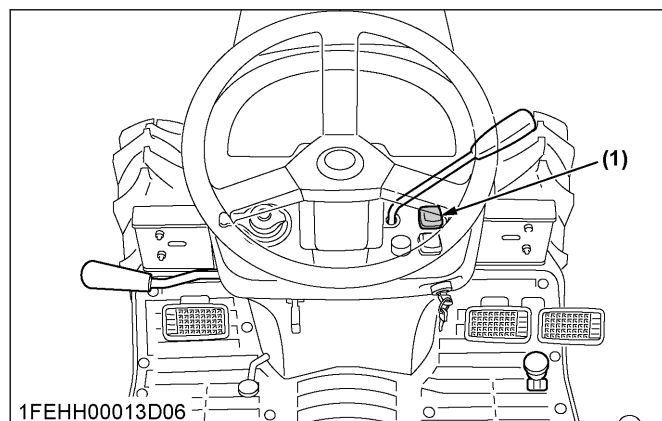
- The universal joint of the PTO drive shaft is technically limited in its moving angle. Refer to the PTO drive shaft instructions for proper use.

6. Stationary PTO

To park the tractor and use the PTO system (for chipper or pump, for example), start the PTO system in the following steps.

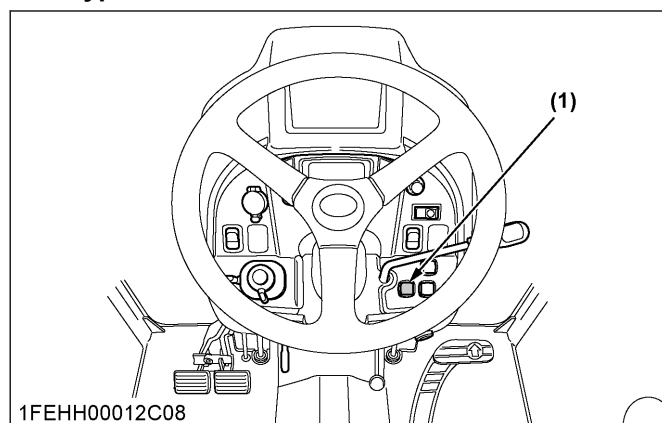
1. Apply the parking brake and place blocks at the tyres.
2. Make sure the shift levers are at neutral, and start the engine.
3. Push the stationary PTO switch (turn on the switch lamp).

ROPS type



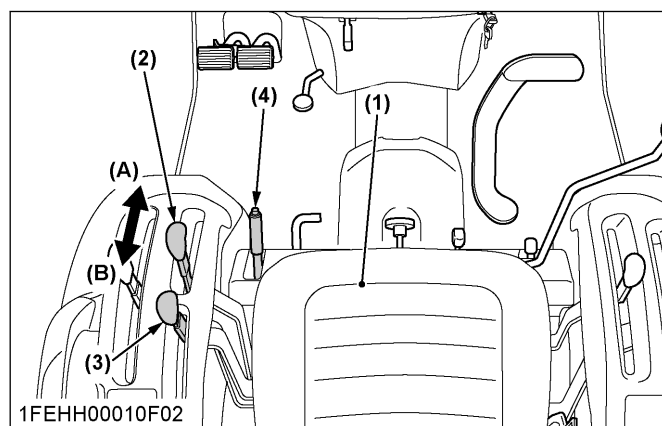
- (1) Stationary PTO switch

CAB type



- (1) Stationary PTO switch

4. Set the PTO select lever (if equipped) to the rear only position.
5. Set the PTO clutch lever or PTO ON-OFF lever to engage “ON”.
6. Set the engine speed to provide recommended rear PTO speed.
7. Get off the tractor.

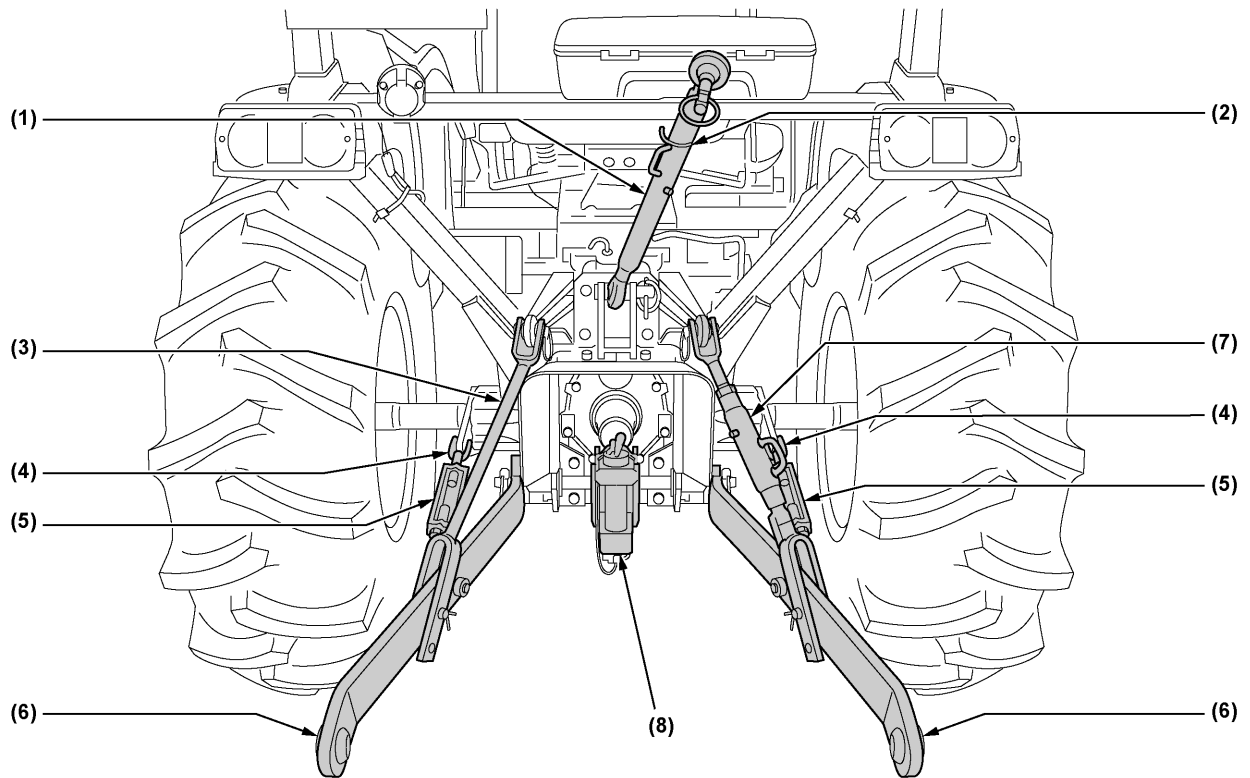


- (1) Seat (A) “ON”
(2) PTO clutch lever (B) “OFF”
(3) PTO select lever
(4) Parking brake lever

NOTE :

- If the PTO system is engaged and you stand up from the seat and release the parking brake, the engine stops automatically.

3-POINT HITCH AND DRAWBAR



1FEHH00029A01

- (1) Top link
- (2) Top link holder
- (3) Lifting rod (left)
- (4) Check chain
- (5) Turnbuckle
- (6) Lower link
- (7) Lifting rod (right)
- (8) Drawbar

THE 3-POINT HITCH SET-UP

1. Make preparations for attaching implement.
 - Selecting the top link mounting holes on page 74
 - Drawbar on page 74
2. Attaching and detaching implements.

WARNING

To avoid personal injury or death:

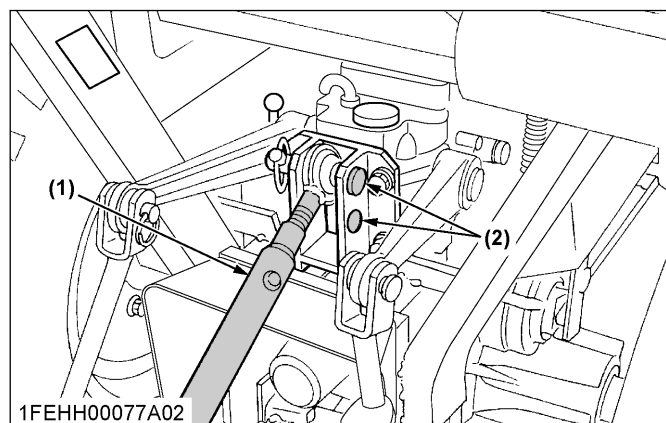
- Be sure to stop the engine and remove the key.
- Do not stand between the tractor and the implement unless the parking brake is applied.
- Before attaching or detaching the implement, place the tractor and implement on a firm, flat and level surface.
- Whenever an implement or other attachment is connected to the tractor 3-point hitch, check full range of operation for interference, binding or PTO driveline separation.

- Lifting rod (right) on page 74
- Top link on page 74
- Check chains on page 74
- Using the drawbar on page 75
- Front hitch (option) on page 75

1. Selecting the top link mounting holes

Select the proper set of holes.

(See Hydraulic control unit use-reference chart on page 81.)



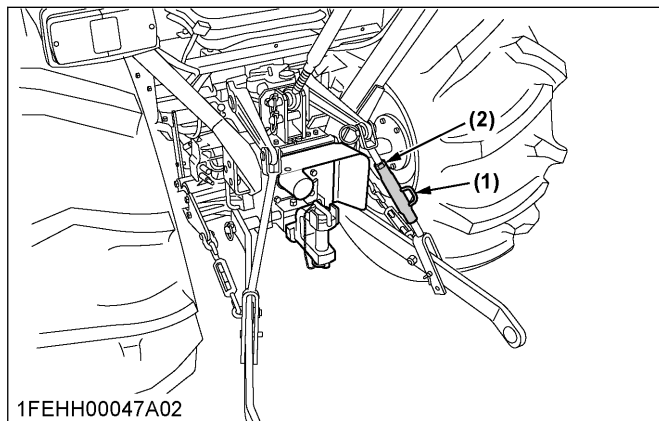
- (1) Top link
(2) Mounting hole

2. Drawbar

Remove the drawbar if a close mounted implement is attached.

3. Lifting rod (right)

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, tighten the lock nut securely.



- (1) Adjusting handle
(2) Lock nut

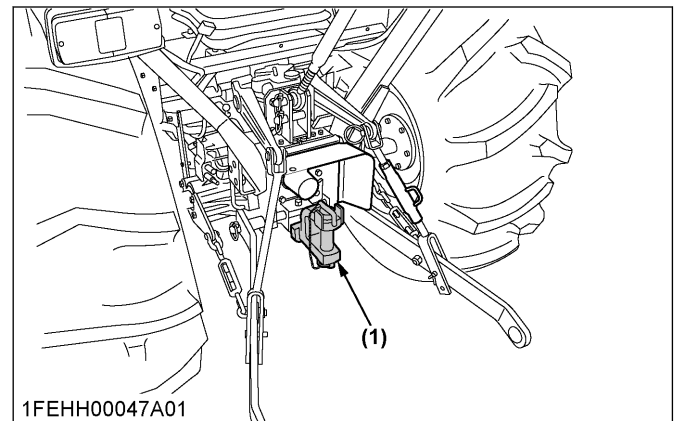
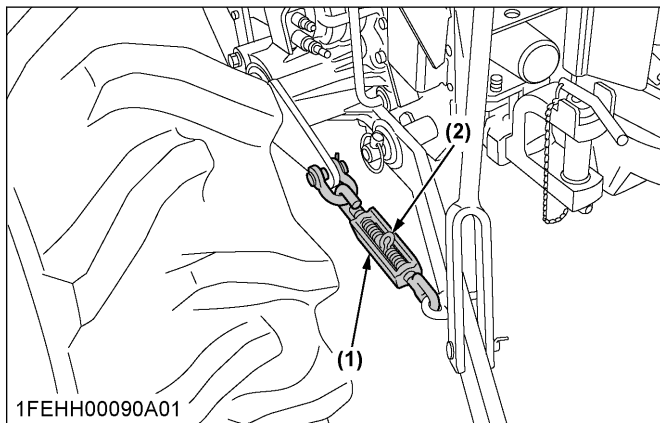
4. Top link

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.

5. Check chains

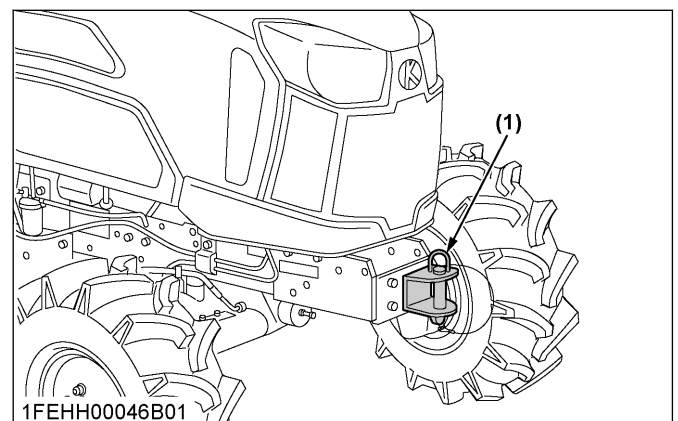
1. Remove the snap pin and adjust the turnbuckle to control the horizontal sway of the implement.

2. After adjustment, re-set the snap pin.



7. Front hitch (option)

Attaching	Detaching
1FEHH00030A01	1FEHH00031A01
(1) Turnbuckle (2) Snap pin	



6. Using the drawbar



WARNING

To avoid personal injury or death:

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

HYDRAULIC UNIT

3-POINT HITCH CONTROL SYSTEM

WARNING

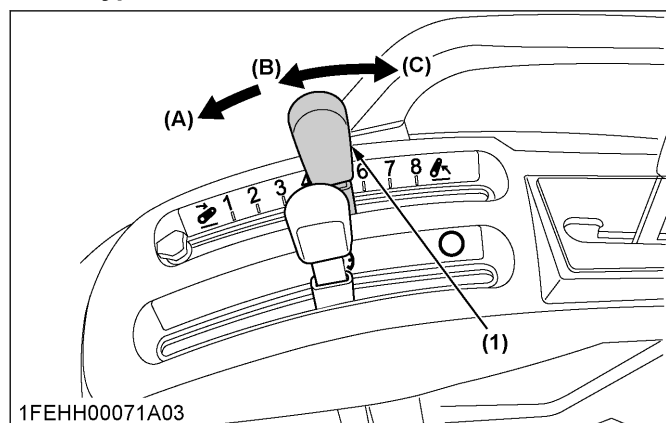
To avoid personal injury or death:

- Before using the 3-point hitch controls, ensure that no person or object is in the area surrounding the implement or 3-point hitch. Do not stand on or near the implement or between the implement and tractor when operating the 3-point hitch controls.

1. Position control

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

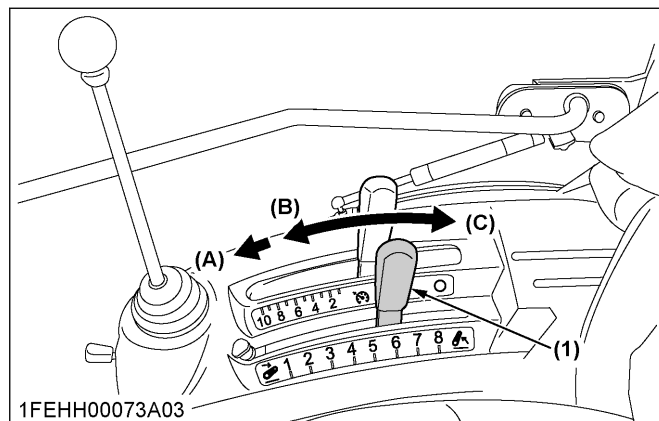
ROPS type



(1) Position control lever

(A) "FLOAT"
(B) "DOWN"
(C) "UP"

CAB type



(1) Position control lever

(A) "FLOAT"
(B) "DOWN"
(C) "UP"

IMPORTANT :

- If the 3-point hitch can not be raised by setting the hydraulic control lever to the "UP" position after long term storage or when changing the transmission oil, turn the steering wheel to the right and left several times to bleed air from the system.
- 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 the 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.

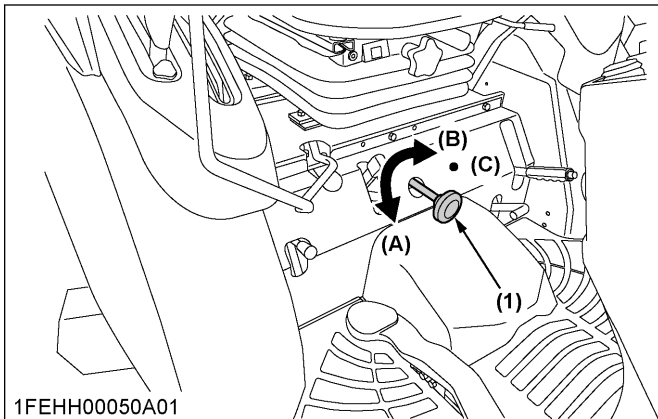
2. 3-point hitch lowering speed knob

WARNING

To avoid personal injury or death:

- A fast lowering speed may cause damage or injury. The lowering speed of the implement should be adjusted to 2 or more seconds.

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



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

AUXILIARY HYDRAULICS

A hydraulic outlet is provided on the tractor.

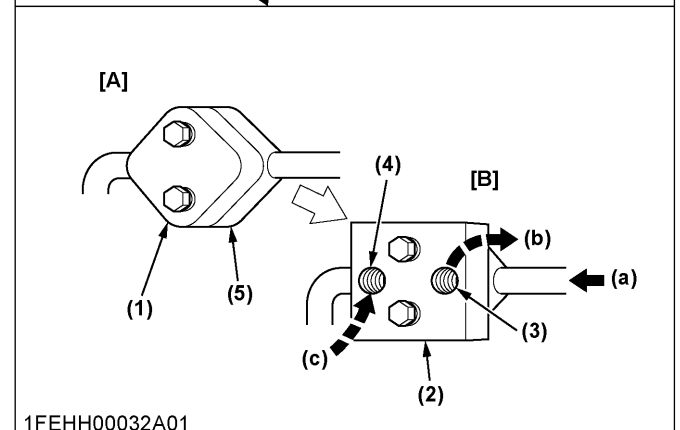
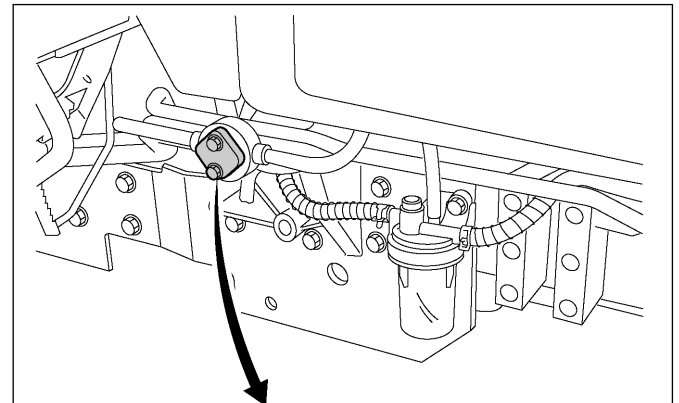
1. Hydraulic block type outlet (ROPS manual transmission type)

The hydraulic block type outlet is useful when adding hydraulically operated equipment such as a front end loader, front blade, etc.

When an implement is attached

1. Remove the block cover.
2. Attach the block outlet cover (option).

Mid outlet



[A] When an implement is not attached

[B] When an implement is attached

(1) Block cover

(2) Block outlet cover (option)

(3) Outlet

(4) Inlet

(5) Hydraulic block

(a) From gear pump

(b) To implement inlet

Max flow 20.4 L/min (B2201, B2231, B2261)

Max pressure 15.5 to 16.5 MPa (158 to 168 kgf/cm²)

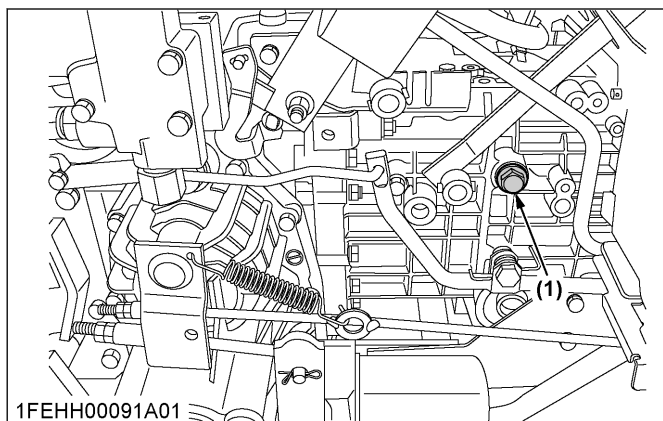
(c) From implement outlet

IMPORTANT :

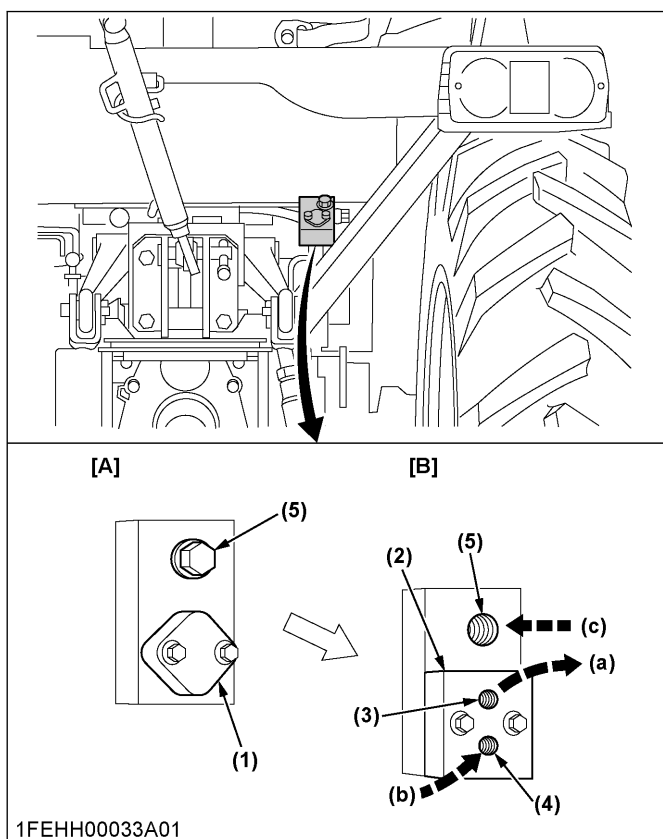
- For mid outlet, be sure to use the control valve of the "Power beyond type" (with relief valve that has a third line return to the tank).

NOTE :

- The tank port flow from the implement valve should be connected to the port located on the right hand side of the transmission case.



(1) Return port

Rear socket

[A] When an implement is not attached

[B] When an implement is attached

(1) Block cover

(2) Block outlet cover (option)

(3) Outlet

(4) Inlet

(5) Drain plug

(a) To implement inlet (inlet) Max flow 20.4 L/min (B2201, B2231, B2261)

Max pressure 15.3 to 16.0 MPa (156 to 163 kgf/cm²)

(b) from implement (outlet)

(c) from implement (drain)

NOTE :

- If the control valve of the implement has the relief valve, the tank port flow from the implement should be connected to the port (c).

2. Remote hydraulic control system (ROPS manual transmission type)**2.1 Hydraulic outlet****WARNING**

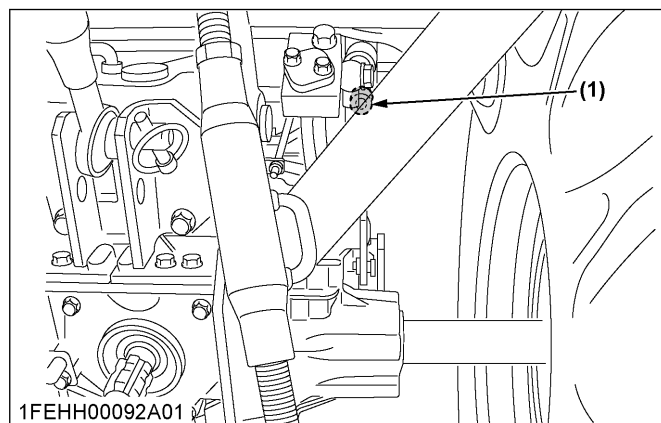
To avoid personal injury or death:

- Stop the engine and relieve pressure before connecting or disconnecting lines.
- Do not use your hands to check for leaks.

When a hydraulically operated implement is connected to the tractor, remove the plug and connect the implement's hose (screw: G3/8).

NOTE :

- Your local KUBOTA Dealer can supply parts for adapting couplers to hydraulic hoses.



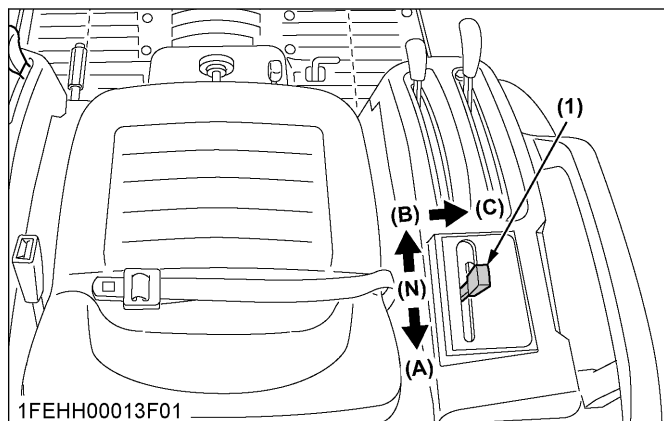
(1) Plug

2.2 Remote control valve lever

Move the lever up or down and hold. This will raise or lower the implement. The lever will return to neutral when released.

IMPORTANT :

- Do not hold the lever in the "REARWARD" 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.



(1) Remote control valve lever (N) "NEUTRAL"
(A) "UP"
(B) "DOWN"
(C) "FLOAT"

NOTE :

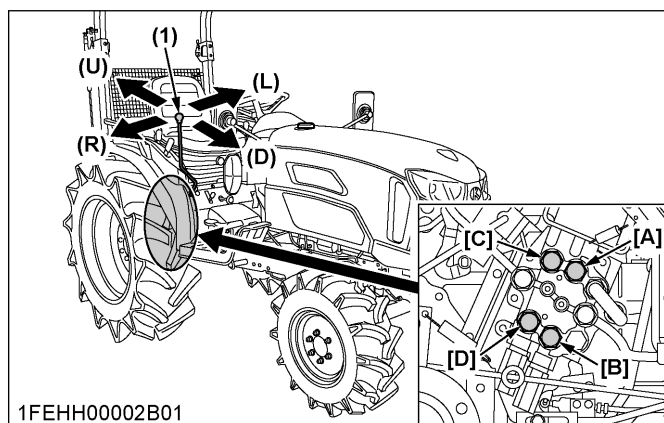
- The cylinder is free to extend or retract, and an implement such as mower floats on the ground, if a control valve lever is set to the "FLOAT" position.

3. Dual remote hydraulic control system (if equipped)

The tractor is equipped with the double-acting 2-segment hydraulic control valve for the front loader. To apply the hydraulic power take-off for general attachments, keep the following point in mind.

3.1 Control lever and hydraulic hose connections

Connect the control lever in its specified direction and the hydraulic hoses to their specified ports.



(1) Loader control lever (R) "RIGHT"
(L) "LEFT"
(U) "UP"
(D) "DOWN"

Hydraulic outlet ports of first segment

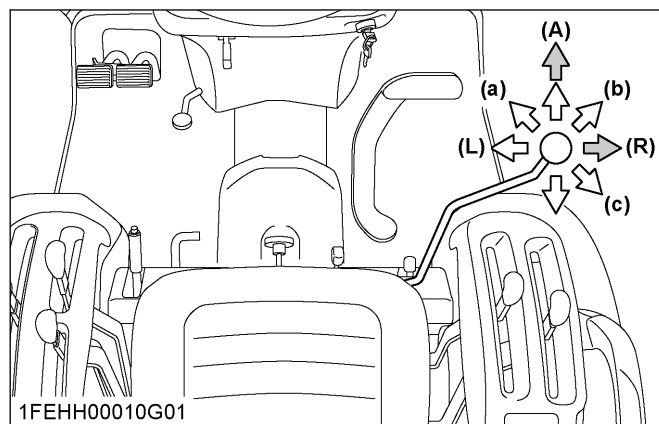
Lever		UP		DOWN	
Port	[A]	In	Returning	Out	Pressure
	[B]	Out	Pressure	In	Returning

Hydraulic outlet ports of second segment

Lever		RIGHT		LEFT	
Port	[C]	In	Returning	Out	Pressure
	[D]	Out	Pressure	In	Returning

3.2 Loader/remote control valve lever

- Before moving the lever, make sure that the hydraulic hoses for attachments are connected.
- Move the lever diagonally ((a), (b), (c) shown in the figure), and the first and second segments can be controlled simultaneously.



(A) "FLOAT"

NOTE :

- Move the lever to the "FLOAT" position, and it will be held there by the detent mechanism. To use the valve as a floating valve with detents, connect the hydraulic hoses to ports [A] and [B].

3.3 Valve lock



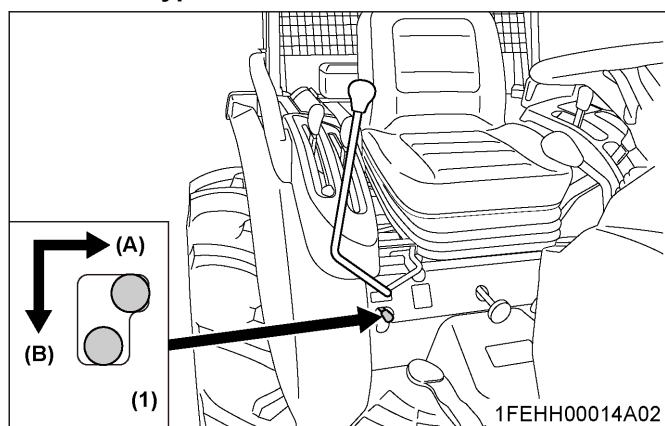
WARNING

To avoid personal injury or death from crushing:

- Do not utilise the valve lock for machine maintenance or repair.
- The valve lock is to prevent accidental actuation when implement is not in use or during transport.

The control valve is equipped with a valve lock feature. The control valve is locked in the "LOCK" position. The lock is not intended and will not prevent a leak down of the implement during the period of storage.

ROPS HST type

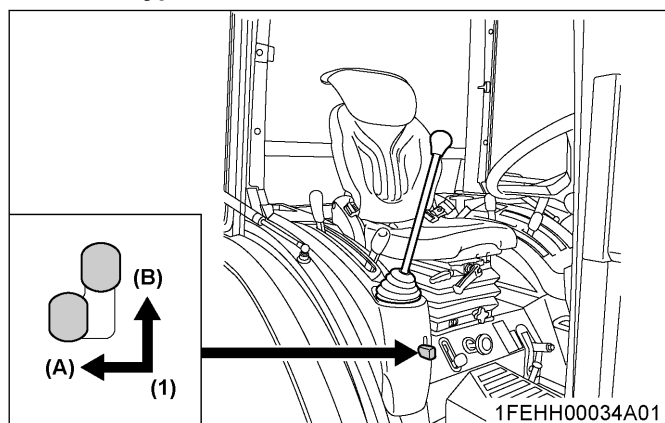


(1) Lock lever

(A) "UNLOCK"

(B) "LOCK"

CAB HST type



(1) Lock lever

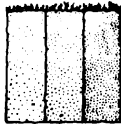
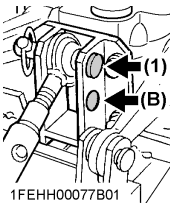
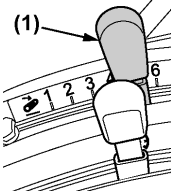
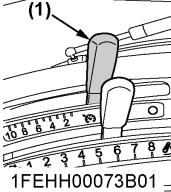
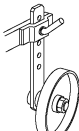
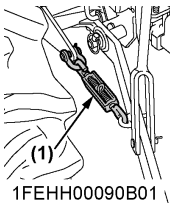
(A) "UNLOCK"

(B) "LOCK"

4. Hydraulic control unit use-reference chart

In order to handle the hydraulics properly, the operator must be familiar with the following.

Although this information may not be applicable to all types of implements and soil conditions, it is useful for general conditions.

Implement	 1FEHH00035A01 Soil condition	 1FEHH00077B01 Top link mounting holes	ROPS type  1FEHH00071B01 CAB type  1FEHH00073B01 (1) Position control lever	 1FEHH00093A01 Gauge wheel	 1FEHH00090B01 (1) Check chains	Remarks
Mouldboard plough	Light soil Medium soil Heavy soil	Hole 1: Hole 2 is used only when there is some obstacle that prevents you from using the hole 1.	Position control	Yes/No	Loose	Adjust the check chains so that the implement can move 5 to 6 cm laterally. For implements with gauge wheels, lower the implements to the ground.
Disc plough	---			Yes	Tighten	Check chains should be tight enough to prevent excessive implement movement when the implement is in raised position. For implements with gauge wheels, lower the implements to the ground.
Harrow (spike, spring-tooth, disc type)	---					
Subsoiler, etc.						
Weeder, ridger, etc.						
Earth mover, digger, scraper, manure fork, rear carrier, etc.	---			Yes/No		
Mower (mid-and rear-mount type) Hay rake, tedder, etc.						

TYRES, WHEELS AND BALLAST

TYRES

WARNING

To avoid personal injury or death:

- Do not attempt to mount a tyre on a rim. Only a qualified person with the proper equipment should mount a tyre on a rim.
- Always maintain the correct tyre pressure. Do not inflate the tyres above the recommended pressure shown in the *Inflation pressure* section.

IMPORTANT :

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

1. Inflation pressure

Although the tyre pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Thus, check it every day and inflate as necessary.

NOTE :

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

B2201, B2231, B2261

	Tyre sizes	Inflation pressure
Front	5-12, 4PR	240 kPa (2.4 kgf/cm ²)
	6-12, 4PR	200 kPa (2.0 kgf/cm ²)
	6.00-12, 4PR	180 kPa (1.8 kgf/cm ²)
	24 x 8.50-12, 4PR	160 kPa (1.6 kgf/cm ²)
	22 x 8.50-12, 4PR	160 kPa (1.6 kgf/cm ²)
Rear	8-16, 4PR	160 kPa (1.6 kgf/cm ²)
	9.5-16, 4PR	140 kPa (1.4 kgf/cm ²)
	9.5-18, 4PR (6C792-5020-1, 6C042-5020-1) *1	140 kPa (1.4 kgf/cm ²)
	9.5-18, 6PR (6C782-5020-1, 6C446-5020-1) *1	220 kPa (2.2 kgf/cm ²)
	315/75D-15, 4PR	120 kPa (1.2 kgf/cm ²)
	31 x 13.5-15, 4PR	120 kPa (1.2 kgf/cm ²)

*1 For purchasing tyres, consult your local KUBOTA Dealer.

B2311

	Tyre sizes	Inflation pressure
Front	180/85D-12, 4PR	160 kPa (1.6 kgf/cm ²)
	24 x 8.50-12, 4PR	160 kPa (1.6 kgf/cm ²)
Rear	12.4-16, 4PR	120 kPa (1.2 kgf/cm ²)
	13.6-16, 4PR	100 kPa (1.0 kgf/cm ²)

2. Dual tyres

Dual tyres are not approved.

WHEEL ADJUSTMENT

WARNING

To avoid personal injury or death:

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

1. Front wheels

The front tread width can be adjusted with the standard equipped tyres.

To change the tread width

1. Change the position of the right and left tyres.

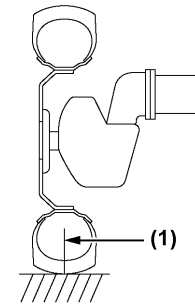
IMPORTANT :

- Do not turn front discs to obtain wider tread. In setting up the front wheels, make sure that the inflation valve stem of the tyres faces outward.

- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200 m and 10 times of shuttle movement by 5 m, and thereafter according to service interval.

(See MAINTENANCE on page 96.)

Models	Tyre	(1) Tread	
		Minimum	Maximum
B2201 B2231 B2261	5-12 farm	832 mm	970 mm
	6-12 farm	832 mm	970 mm
	6.00-12 farm	830 mm	959 mm
	22 x 8.50 -12 turf	873 mm	912 mm
	24 x 8.50 -12 turf	871 mm	900 mm
	240/60R12 garden	873 mm	889 mm
	23 x 10.50 - 12 farm	864 mm	893 mm
	7.00 - 12 farm	820 mm	950 mm
	27 x 8.50 - 15 municipal	764 mm	956 mm
B2311	180/85D - 12 farm	936 mm	1015 mm
	24 x 8.50 -12 turf	971 mm	980 mm
	240-60R12 garden	971 mm	987 mm
	26 x 12.00 - 12 farm	1072 mm	1072 mm
	24 x 12.00 -12 turf	1072 mm	1072 mm



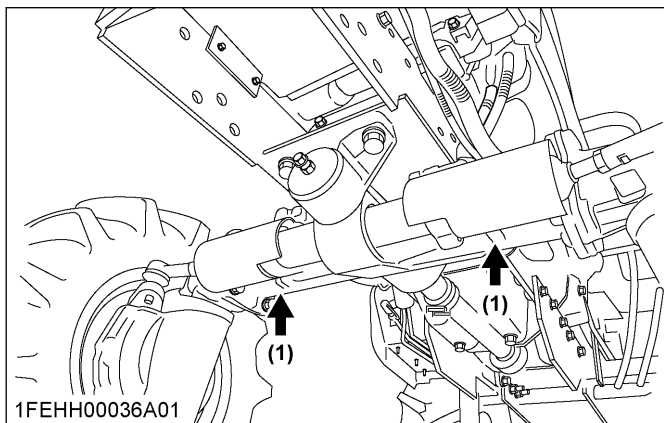
1FEHH00037A01

1.1 Front jack point

WARNING

To avoid personal injury or death:

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



(1) Jack point

2. Rear wheels

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

To change the tread width

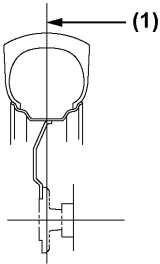
1. Change the position of the right and left tyres.

IMPORTANT :

- Always attach tyres 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 200 m and 10 times of shuttle movement by 5 m, and thereafter according to service interval.

(See MAINTENANCE on page 96.)

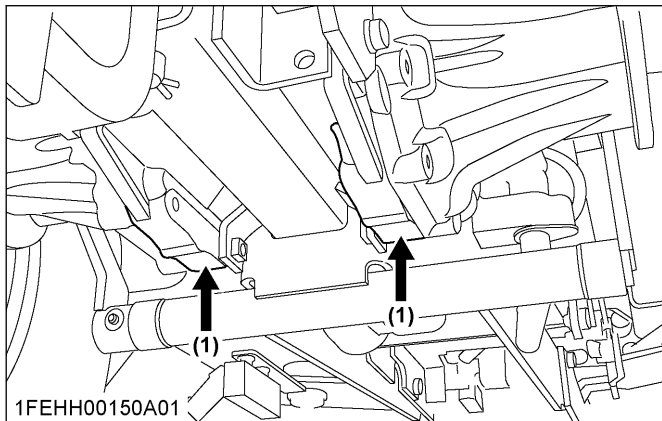
Models	Tyre	(1) Tread	 1FEHH00038A01
B2201 B2231 B2261	8-16 farm	ROPS: 830 mm CAB: 882 mm	
	9.5-16 farm	986 mm	
	9.5-18 farm	1006 mm	
	31 x 13.5 -15 turf	1056 mm	
	315/75D - 15 turf	1056 mm	
	280/70R18 garden	970 mm	
	280/70R16 farm	920 mm	
	300/70R20 farm	888 mm	
B2311	12.4-16 farm	1050 mm	
	13.6- 16 turf	1050 mm	
	300/70R20 garden	940 mm	
	320/70R20 farm	1092 mm	
	13.6- 16 turf	1072 mm	

2.1 Rear jack point

WARNING

To avoid personal injury or death:

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



(1) Jack point

BALLAST

WARNING

To avoid personal injury or death:

- 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.

1. Front ballast

Add weights if needed for stability and improved traction.

Heavy pulling and heavy rear mounted implements tend to lift up the front wheels.

Add enough ballast to maintain steering control and to prevent tipping over. Remove the weight when it is no longer needed.

1.1 Front end weights (option)

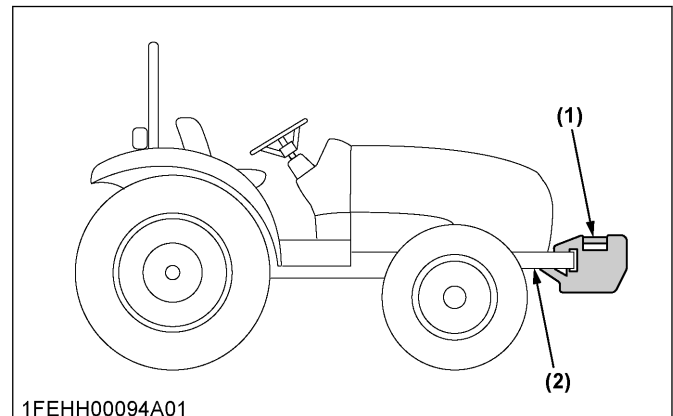
Front end weights can be attached to the bumper.

See your implement operator's manual for required number of weights or consult your local KUBOTA Dealer about their usage.

NOTE :

- (For installation of up to 3 weights, except (CAB model)) Besides the weight, mounting bolt kit(s) are required for mounting the weight.

- (For installation of up to 6 weights, Besides the weight, a front weight bracket and mounting bolt kit(s) are required for mounting the weight.



(1) Front end weights

(2) Front weight bracket (option)

IMPORTANT :

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

Maximum weight	25 kg x 6 pieces (150 kg)
----------------	---------------------------

2. 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.

2.1 Liquid ballast in rear tyres

A water and calcium chloride solution provides safe and economical ballast. Used properly, it will not damage tyres, 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 tyre companies.

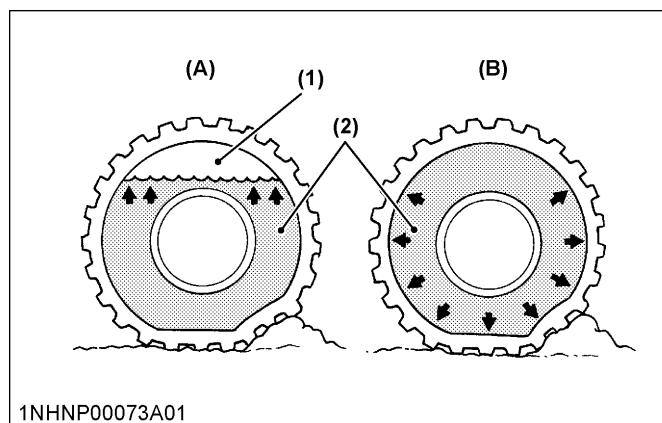
See your tyre dealer for this service.

Liquid weight per tyre (75% filled)

Tyre sizes	8-16	9.5-16	9.5-18	12.4-16
Slush free at -10 °C Solid at -30 °C Approx. 1 kg CaCl ₂ per 4 L of water	35 kg	54 kg	70 kg	85 kg
Slush free at -24 °C Solid at -47 °C Approx. 1.5 kg CaCl ₂ per 4 L of water	37 kg	57 kg	74 kg	89 kg
Slush free at -47 °C Solid at -52 °C Approx. 2.25 kg CaCl ₂ per 4 L of water	39 kg	60 kg	78 kg	94 kg

IMPORTANT :

- **Do not fill the tyres with water or solution to more than 75% of full capacity (up to the level of the valve stem at the 12 o'clock position).**



(1) Air
(2) Water

(B) Incorrect -100% full, water cannot be compressed.

(A) Correct -75% full, air compresses like a cushion.

3. Overall ballast

Overall, the tractor, depending on the job, terrain, implement and purpose should be ballasted.

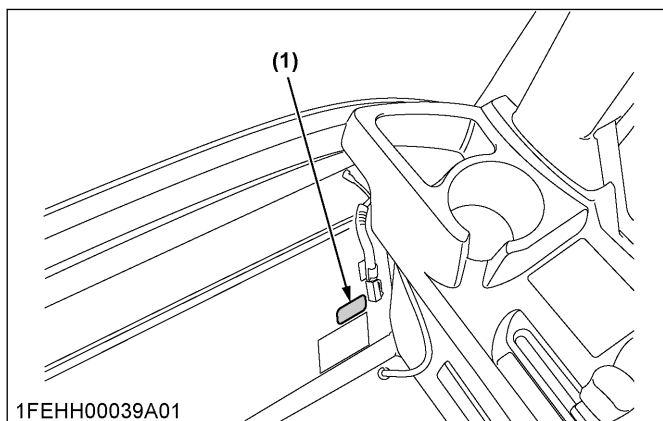
4. Maximum masses

(See APPENDICES on page 135.)

CAB OPERATION

CAB CLASSIFICATION AND MAINTENANCE

The CAB fulfils the requirements of category type 1, as defined EN 15695-1.



(1) CAB classification label

This CAB did not carry out the tests on protection of hazardous substances in accordance with EN 15695-1, category type 2.

Therefore this tractor shall not be recommended to be used under conditions requiring protection against hazardous substances.

Make sure to follow the available instructions of the personal protective equipment (PPE), plant protection products (PPP), sprayer manufacturer and the national guidelines for worker safety and health regarding, for example:

- Using PPE
- Training and education
- Keeping used PPP out of the CAB
- Removing contaminated shoes or clothing before entering the CAB
- Keeping the CAB interior clean
- Disposal of filters

Clean the inner air filter and fresh air filter at the required service intervals to assure that the category 1 delivery and filtration system is functioning as intended. (See Cleaning the inner air filter (CAB HST type) on page 119.)

(See Cleaning the fresh air filter (CAB type) on page 119.)

DOORS AND WINDOWS

1. 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 position.

“From the inside”

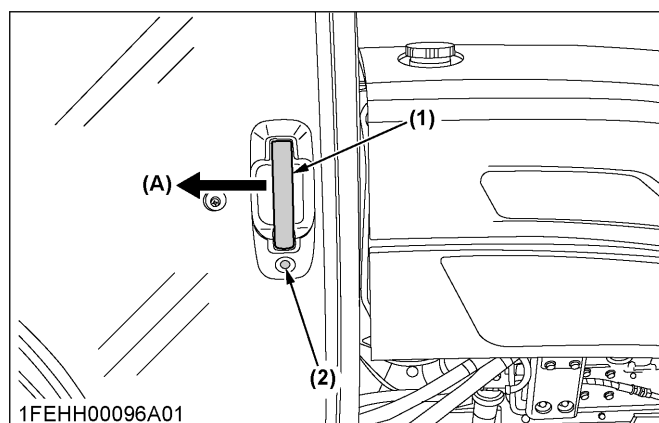
Push down the lock knob to lock the door.

Pull up the lock knob to unlock the door.

2. Opening the door

“From the outside”

Unlock the door, and pull the outer door handle.



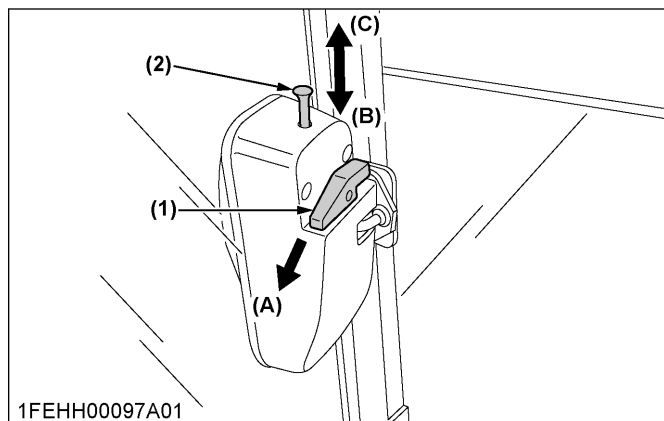
(1) Outer door handle

(2) Door lock

(A) “PULL”

“From the inside”

Unlock the door and pull the inner door handle.

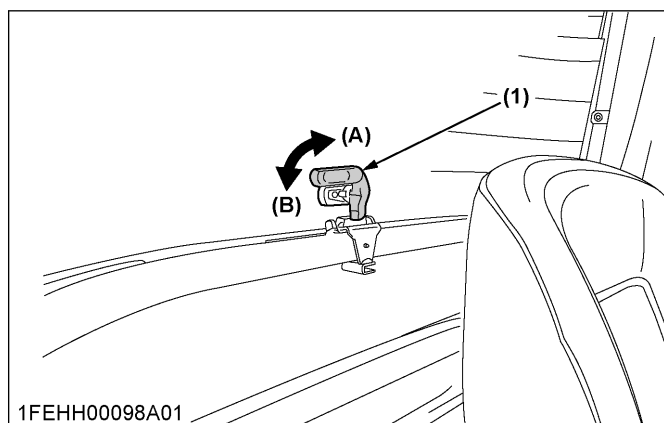


(1) Inner door handle
(2) Lock knob

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

3. 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.

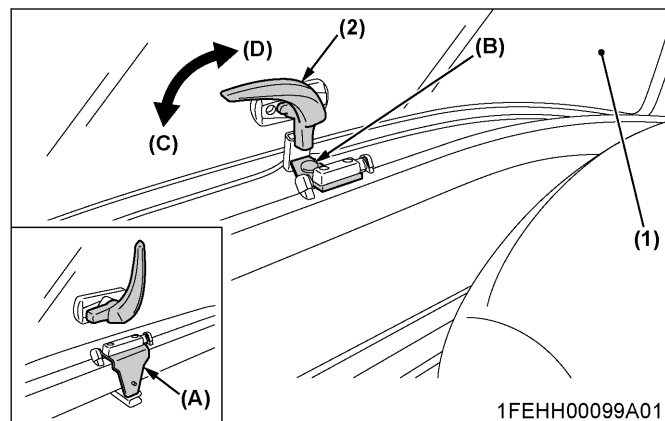


(1) Rear window handle

(A) "OPEN"
(B) "CLOSE"

4. Rear window half-lock

1. Grip the rear window handle (2) and slightly open the rear window (1).
2. Adjust the half-lock bracket to the set position (B).
3. Move back the rear window (1) a little and get the rear window handle (2) locked.



(1) Rear window
(2) Rear window handle

(A) Half-lock bracket (storage position)
(B) Half-lock bracket (set position)
(C) "LOCK"
(D) "UNLOCK"

IMPORTANT :

- When handling the half-lock mechanism, hold up the window just before being positioned and then slowly get it in position.
- Be careful not to travel the tractor in the half-lock mode on rough roads.

5. Emergency exit

1. In an emergency situation, open the right door of the CAB if the left door is blocked and vice versa.
2. Exit through the rear window if the CAB doors are blocked.

LIGHT

1. Dome light

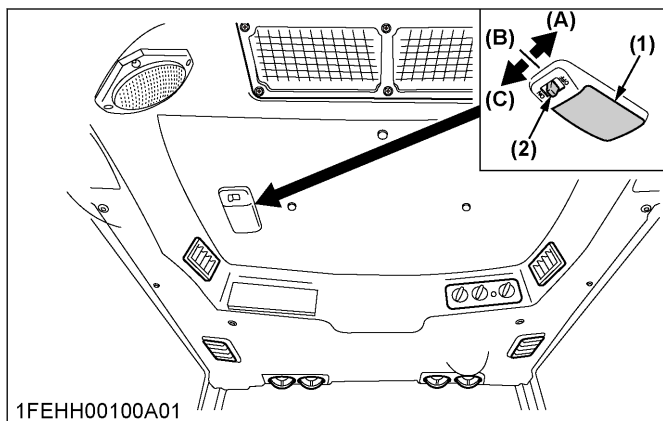
Sliding the dome light switch will give the following light condition:

[OFF]

The light does not turn on.

[ON]

The light remains on.



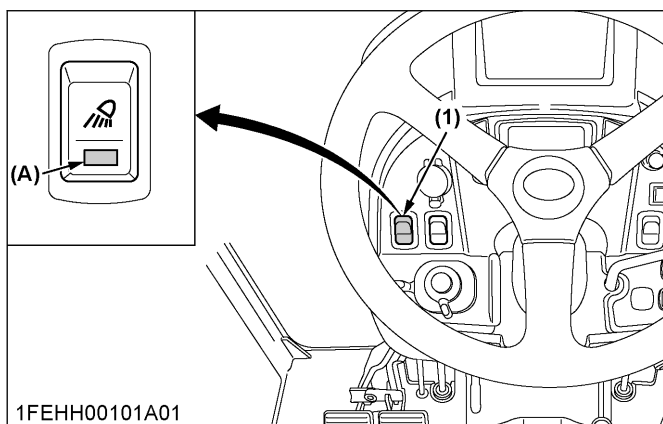
- (1) Dome light
(2) Dome light switch

- (A) "OFF"
(B) "OFF"
(C) "ON"

2. Work light switch

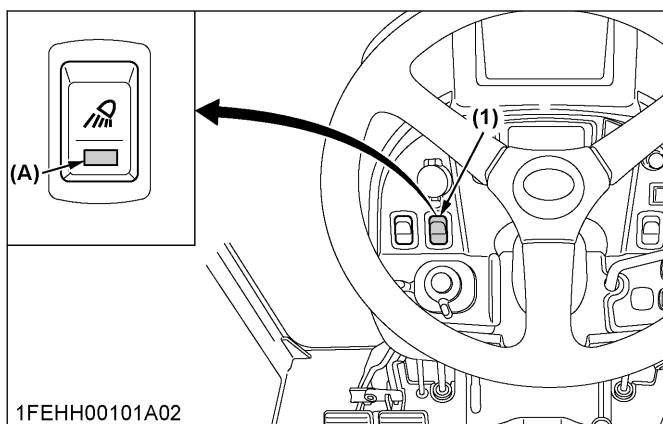
Turn on the key switch and press the top half of the work light switch.

The work light and the switch's indicator light up. Press the bottom half of the work light switch to turn off the light and indicator.



- (1) Front work light switch

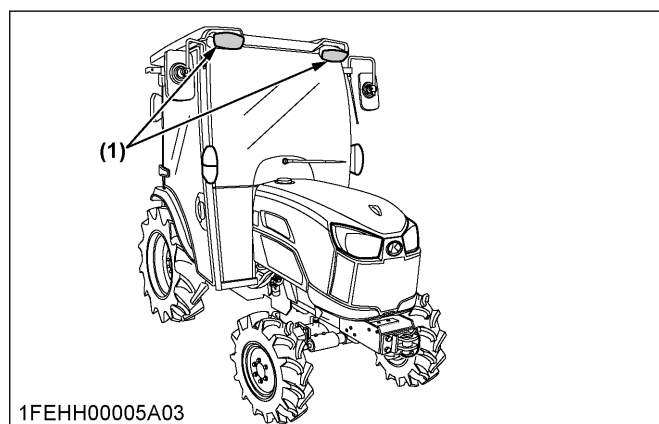
- (A) Indicator for work lights



- (1) Rear work light switch (if equipped)

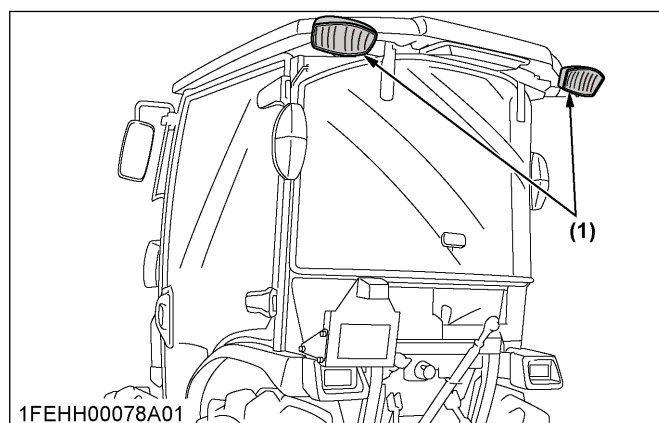
- (A) Indicator for work lights

3. Front work light



- (1) Rear work light

4. Rear work light (if equipped)



- (1) Rear work light

WIPER

1. Front wiper and washer switch

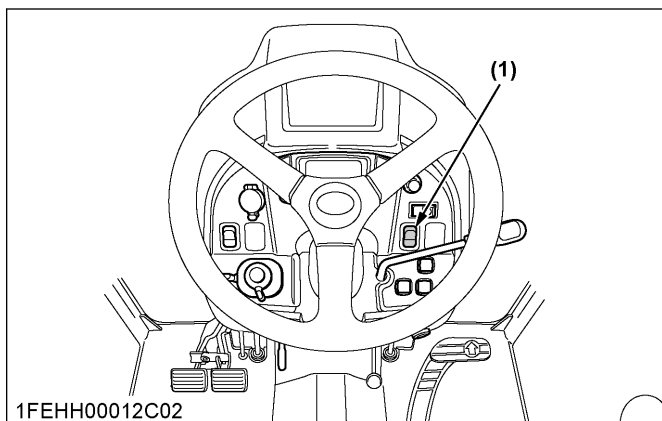
When the button is pressed to the first step, the wiper only is activated.

When the button is pressed further to the second step, washer liquid jets out.

The washing continues while the button is pressed and the wiper is activated continuously. (Washer fluid jets out to the rear window also.)

Hold down the bottom half of the switch when the front wiper is off, and the washer fluid will keep jetting out.

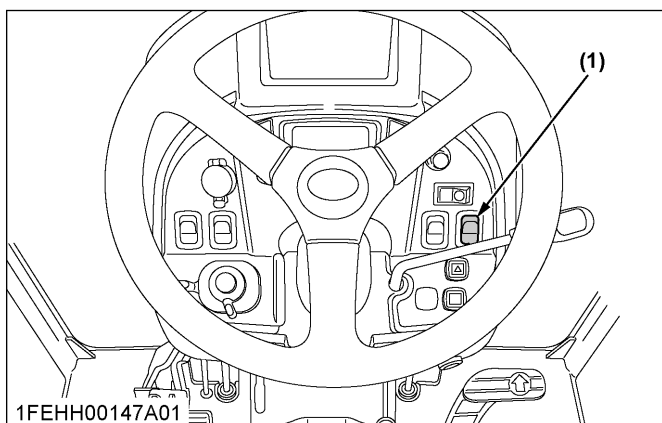
To wet the glass before activating the wipers, press the bottom half of the switch. (Washer fluid jets out to the rear window also.)



(1) Front wiper and washer switch

2. Rear wiper switch (if equipped)

Press the upper half of the wiper switch, and the wiper is activated. Press the lower half of the wiper switch, and the wiper stops at the initial position. To jet washer fluid, push the front wiper and washer switch. (Washer fluid jets out to the front window also.)



(1) Rear wiper switch

IMPORTANT :

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

3. Using the wipers in cold season

- While not used in cold season, keep the wiper blades off the windscreen to prevent them from being frozen to the windscreen.
- If the windscreen is covered with snow, scrape it off the windscreen before using the wipers.
- If the wiper blades are frozen to the windscreen and fail to move, be sure to turn the main key switch to "OFF" and remove the ice from the blades. Then place the main key switch back to "ON".

- 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.

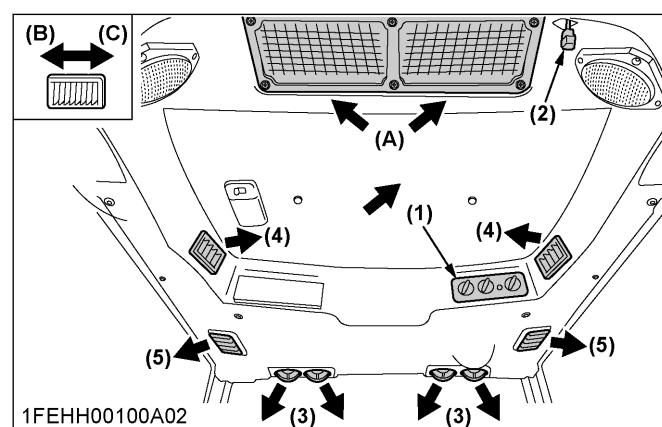
IMPORTANT :

- In the cold season, the wiper blades and the wiper motor may become overloaded, and cause damage. To avoid this, be sure to take the above precautions.

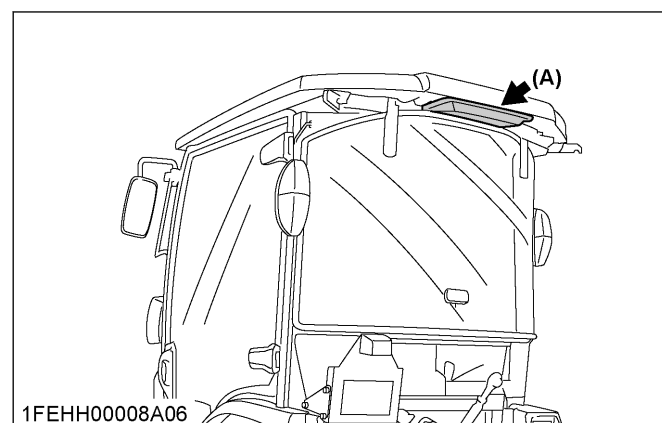
AIR CONDITIONER

1. Airflow

Air in the CAB and fresh air introduced into the CAB flows as follows. Adjust the air ports to obtain the desired condition.



- | | |
|---|-----------------------------|
| (1) Control panel | (A) Inner air recirculation |
| (2) Recirculation and fresh air selection lever | (B) "OPEN" |
| | (C) "SHUT" |
| (3) Front air outlet (defrost, windshield, foot area) | |
| (4) Side air outlet (face, back area) | |
| (5) Door air outlet (door area) | |



(A) Fresh air inlet

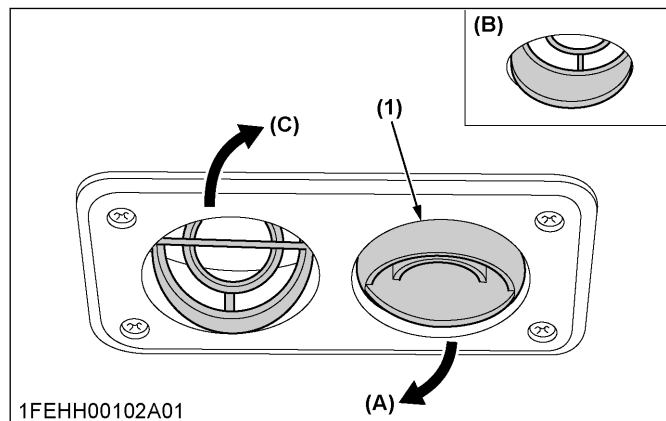
IMPORTANT :

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

2. Air control vent

2.1 Front air outlet

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

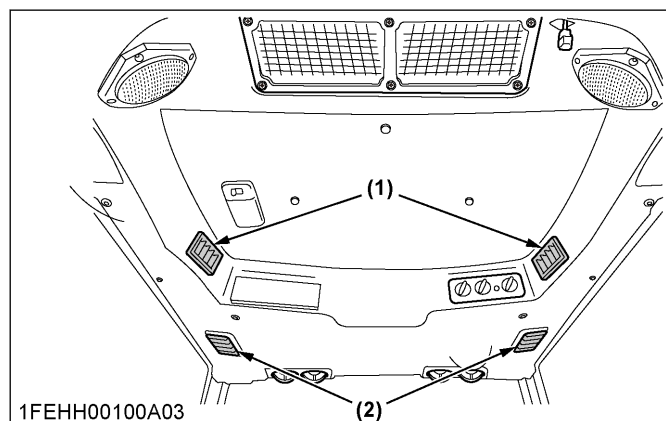


(1) Front air outlet

(A) "WINDSHIELD"
(B) "CLOSED"
(C) "CHEST AREA"

2.2 Side air outlet and door air outlet

The side and door air outlets can be adjusted to direct air on to the operator, door window or the rear of the CAB.



(1) Side air outlet
(2) Door air outlet

NOTE :

- If the airflow rate at the face is too low, close the door air outlet.

CAUTION

To avoid personal injury:

- 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 vents of the air conditioner. A problem could occur.

2.3 Recirculation or fresh air selection lever

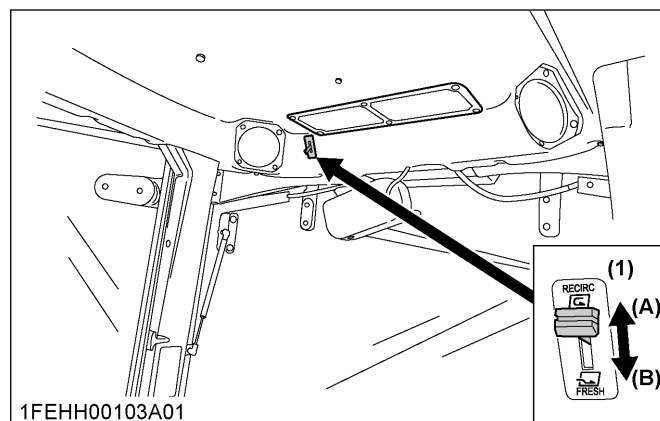
FRESH AIR:

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 misty.

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.



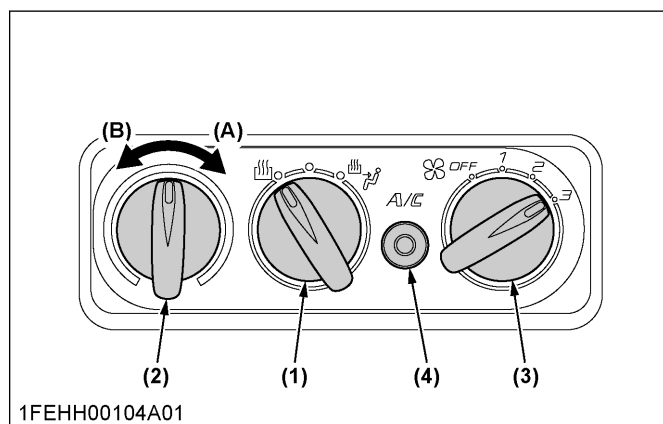
(1) Recirculation or fresh air selection lever

(A) "FRESH AIR"
(B) "RECIRCULATION"

NOTE :

- When heating, do not keep the lever at the "RECIRCULATION" position for a long time. The windscreen easily gets misty.
- While working in 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.

3. Control panel



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

3.1 Mode switch

Set the mode switch to the desired position.

Air is blown from the front and side air outlets.

Air is blown from only the front air outlets.

- With this switch at the middle position, air is blown weaker from the side air outlets (head) and stronger from the front air outlets.

3.2 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.

3.3 Blower switch

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

3.4 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 turn off.

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 become faulty.

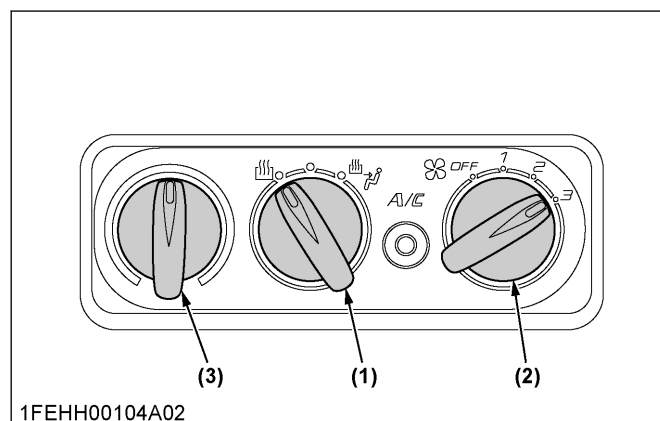
NOTE :

- 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".

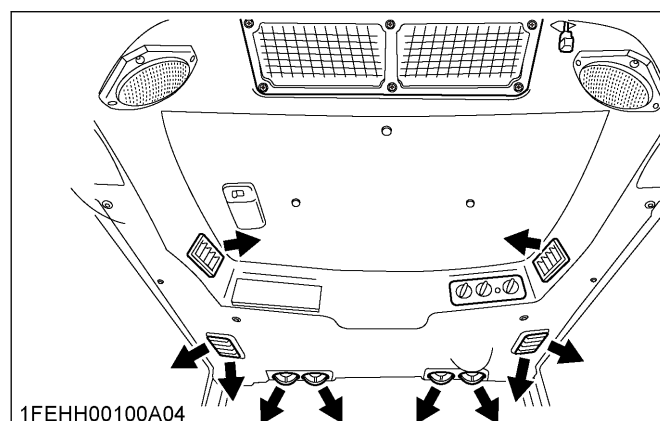
4. Operation

4.1 Heating

1. Set the mode switch to the , , or position.
2. Set the recirculation or the 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.



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



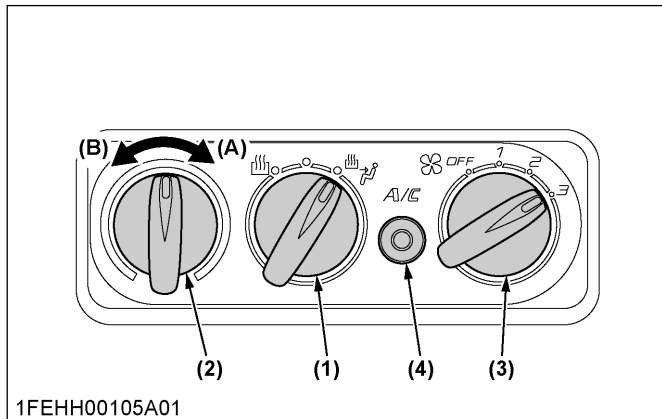
4.2 Cooling or dehumidifying-heating

1. Set the mode switch to the position.

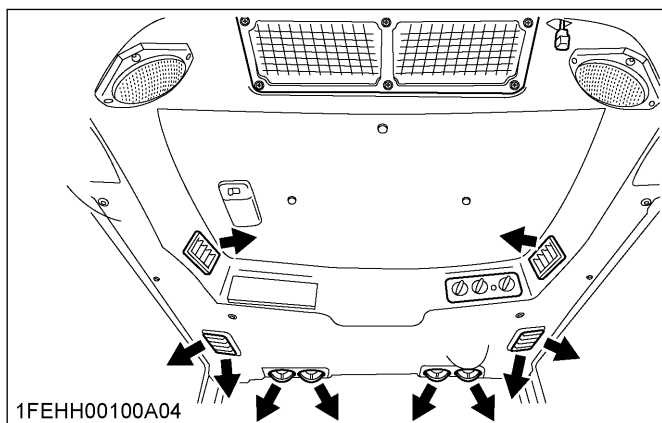
2. Set the recirculation or the fresh air selection lever to the “FRESH AIR” position. To lower the temperature in the CAB quickly, set this switch to the “RECIRCULATION” position.
3. Press and turn on the air conditioner switch with indicator.
4. Turn on the blower ([1]/[2]/[3]) switch.
5. Adjust the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

NOTE :

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



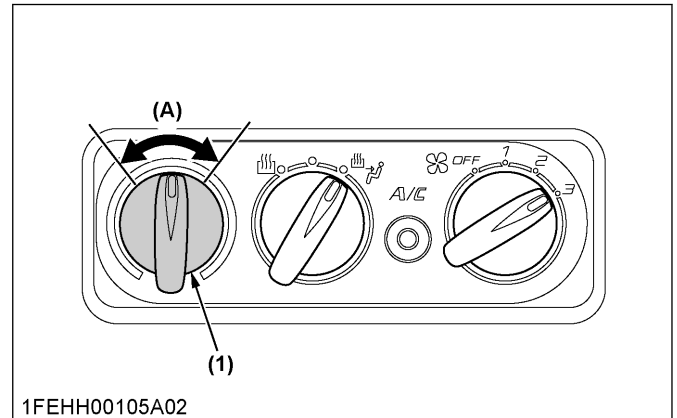
- | | |
|---|------------|
| (1) Mode switch | (A) “WARM” |
| (2) Temperature control dial | (B) “COOL” |
| (3) Blower switch | |
| (4) Air conditioner switch with indicator light | |



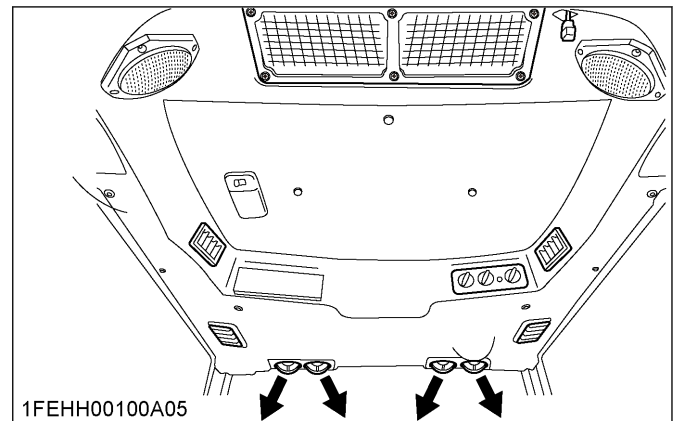
4.3 Foot warming and head cooling

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.

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.



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

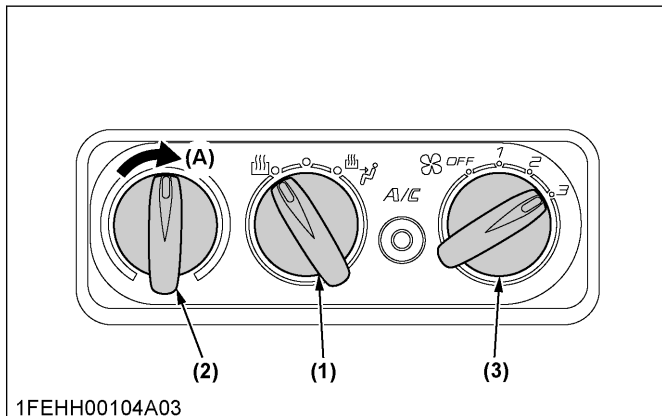


4.4 Defrosting or demisting

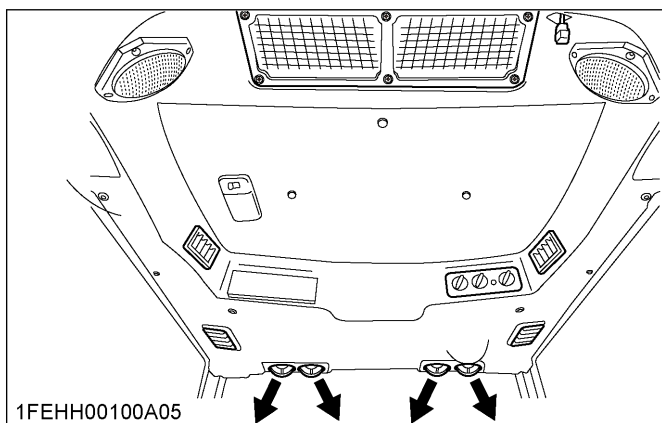
To defrost or demist the windscreen, take the following steps.

1. Set the mode switch to the position.
2. Open the front air outlet and direct it to the windshield.
3. Set the recirculation or the 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.

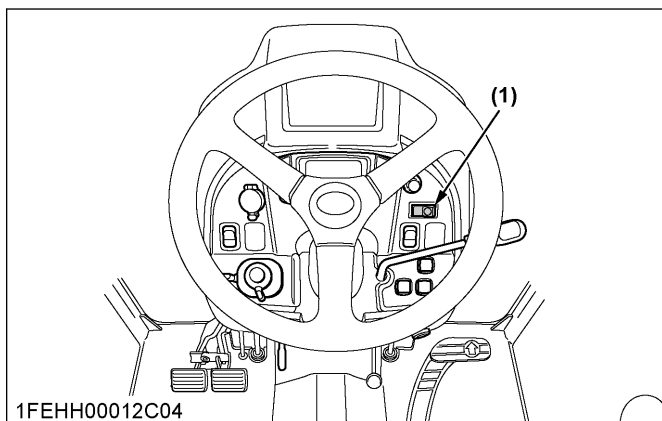


- (1) Mode switch (A) “WARM”
 (2) Temperature control dial
 (3) Blower switch



REAR DEMISTER

To activate the rear window demister, press the switch marked **[1]** while the key switch is in the “ON” position. To turn the demister off, push down the switch marked “OFF”.



- (1) Demister switch

IMPORTANT :

- The battery will discharge if the demister and the key switch remain in the “ON” or “ACC” positions with the engine stopped. Always use the demister with the engine running.

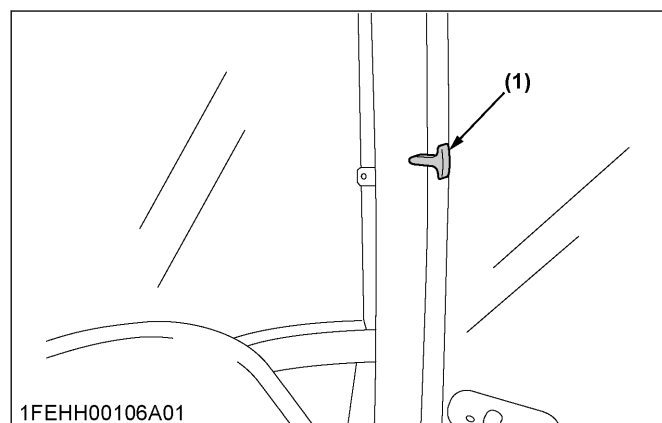
1. Hanger

CAUTION

To avoid personal injury:

- Do not hang anything that is heavier than 3 kg. The hanger may get damaged.
- Make sure anything hanging does not interfere with your operation.

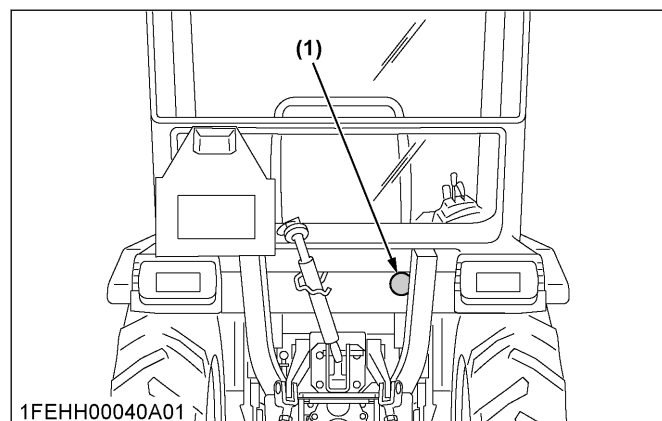
Caps and other small objects can be hung.



- (1) Hanger (both sides)

INSTALLING THE IMPLEMENT CONTROL BOX

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



- (1) Rubber cap

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	Clogging of air conditioning condenser screen (CAB type)	Clean															Daily	105	
2	Engine oil	Change	⊙			○				○				○			every 200 hours or 1 year	115	*1
3	Engine oil filter	Replace	⊙			○				○				○			every 200 hours	116	
4	Transmission oil filters (HST type)	Replace	⊙			○				○				○			every 200 hours	117	
5	Hydraulic oil filter (HST type)	Replace	⊙							○							every 400 hours	121	
6	Hydraulic oil filter (Manual transmission type)	Replace								○							every 400 hours	121	
7	Transmission fluid	Change								○							every 400 hours	120	
8	Front axle case oil	Change								○							every 400 hours	123	
9	Front axle pivot	Adjust								○							every 400 hours	122	
10	Engine start system	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hours	108 109	
11	Greasing	---	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hours	107	
12	Wheel bolt torque	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hours	110	
13	Battery condition	Check		○		○		○		○		○		○		○	every 100 hours	110	*2
14	Air cleaner element for single type	Clean		○		○		○		○		○		○		○	every 100 hours	111	*3
		Replace															every 1000 hours or 1 year	123	*4
15	Air cleaner element for double type	Primary element Clean		○		○		○		○		○		○		○	every 100 hours	112	*3
		Primary element Replace															every 1000 hours or 1 year	123	*4
		Secondary element Replace															every 1000 hours or 1 year	123	*4
16	Fuel filter element	Clean		○		○		○		○		○		○		○	every 100 hours	112	

(Continued)

No.	Items		Indication on hour meter														Interval	Ref. page	
			50	100	150	200	250	300	350	400	450	500	550	600	650	700			
16	Fuel filter element	Replace								○							every 400 hours	123	
17	Fan belt	Adjust		○		○		○		○		○		○		○	every 100 hours	113	
18	Clutch	Adjust	◎	○		○		○		○		○		○		○	every 100 hours	113	
19	Brake	Adjust		○		○		○		○		○		○		○	every 100 hours	114	
20	Parking brake	Adjust		○		○		○		○		○		○		○	every 100 hours	115	
21	Tension of air conditioning drive belt (CAB type)	Adjust				○				○				○			every 200 hours	118	
22	Clogging of inner air filter (CAB type)	Clean				○				○				○			every 200 hours	119	
23	Clogging of fresh air filter (CAB type)	Clean				○				○				○			every 200 hours	119	
24	Clogging of air conditioning condenser (CAB type)	Clean				○				○				○			every 200 hours	120	
25	Power steering oil line	Check				○				○				○			every 200 hours	117	
		Check															every 2 years	126	*5
26	Radiator hose and clamp	Check															every 1 year	125	*6
		Check															every 2 years	126	*5
27	Fuel line	Check															every 1 year	126	*6
		Check															every 2 years	126	*5
28	Intake air line	Check															every 1 year	125	*6
		Check															every 2 years	126	*5
29	Toe-in	Adjust				○				○				○			every 200 hours	118	
30	Engine valve clearance	Adjust															every 800 hours	123	*5
31	Fuel injection nozzle Injection pressure	Check															every 1500 hours	123	*5
32	Injection pump	Check															every 3000 hours	125	*5
33	Air conditioner pipes and hoses (CAB type)	Check															every 1 year	125	
		Check															every 2 years	126	*5
34	CAB isolation cushion (CAB type)	Check															every 1 year	126	
35	Cooling system	Flush															every 2000 hours or 2 years	123	*7

(Continued)

MAINTENANCE

No.	Items		Indication on hour meter														Interval	Ref. page	
			50	100	150	200	250	300	350	400	450	500	550	600	650	700			
36	Coolant	Change															every 2000 hours or 2 years	124	*7
37	Fuel system	Bleed															Service as required	126	
38	Clutch housing water	Drain																126	
39	Fuse	Replace																127	
40	Light bulb	Replace																128	
41	Lubricating points (CAB type)	---																128	
42	Washer liquid (CAB type)	Check																128	
43	Amount of refrigerant (gas) (CAB type)	Check																129	
44	Fuel line	Replace																130	*6
45	Radiator hose and clamp	Replace																129	*6
46	Intake air line	Replace																130	*6

*1 Every 200 hours or every 1 year, whichever comes first.

*2 When the battery is used for less than 100 hours per year, check the fluid level annually.

*3 The air cleaner should be cleaned more often in severe dusty conditions.

*4 Replace after 1000 hours or 1 year, whichever comes first.

*5 Consult your local KUBOTA Dealer for this service.

*6 Replace if any deterioration (crack, hardening, scar or deformation) or damage occurred.

*7 Replace after 2000 hours or 2 years, whichever comes first.

IMPORTANT :

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

LUBRICANTS, FUEL AND COOLANT

No.	Locations	Capacities						Lubricants	
		ROPS			CAB				
		B2201 B2231	B2261	B2311	B2231	B2261	B2311		
1	Fuel	27 L						No.2-D diesel fuel No.1-D diesel fuel if temperature is below -10 °C	
2	Coolant (with recovery tank)	4.6 L						Fresh clean water with antifreeze	
3	Engine crank- case	3.1 L	4.0 L	3.1 L	4.0 L	• Engine oil: refer to the following table			
						Above 25 °C	SAE30, SAE10W-30 or 15W-40		
						-10 °C to 25 °C	SAE20, SAE10W-30 or 15W-40		
						Below -10 °C	SAE10W-30		
4	Transmission case	HST type: 17 L Manual transmission type: 16.5 L				• KUBOTA UDT or SUPER UDT fluid *			
5	Front axle case	3.7 L	4.7 L	3.7 L	4.7 L	• KUBOTA UDT or SUPER UDT fluid * or SAE 80-SAE 90 gear oil			
6	Greasing	No. of greasing points				Capacity	Type of grease		
	Top link	1				Until grease overflows.	Multipurpose grease NLGI-2 or NLGI-1 (GC-LB)		
	Lift arm	2 (manual transmission type)	---						
	Lift rod (RH)	1							
	Speed control pedal	1 (HST type)	2 (HST type)						
	Brake pedal	1							
	Clutch pedal	1 (manual transmission type)	---						
	Parking brake	1							
	Battery terminals	2				Moderate amount			

* KUBOTA SUPER UDT fluid: KUBOTA original transmission hydraulic fluid

Engine oil

- The oil used in the engine should have an American Petroleum Institute (API) service classification and proper SAE engine oil according to the ambient temperatures shown in the previous table.
- With the emission control now in effect, the CF-4 and CG-4 lubricating oils have been developed for use of a low sulphur fuel on on-road vehicle engines. When an off-road vehicle engine runs on a high sulphur 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-sulphur or high-sulphur fuel).

MAINTENANCE

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

* EGR: Exhaust gas re-circulation

- The CJ-4 engine oil is intended for diesel particulate filter (DPF) type engines, and cannot be used on this tractor.

	without EGR	with external EGR
Models	B2201, B2231, B2261, B2311	---

Fuel

- Cetane number of 45 is minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20°C or elevations above 1500 m.
- If diesel fuel with sulphur content greater than 0.5% (5000 ppm) is used, reduce the service interval for engine oil and filter by 50%.
- Never use diesel fuel with a sulphur content greater than 0.05% (500 ppm) for an external EGR type engine.
- Do not use diesel fuel with sulphur content greater than 1.0% (10000 ppm).
- Diesel fuels specified to EN 590 or ASTM D975 are recommended.
- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service (SAE J313 JUN87).
- Since this engine adopts EPA tier 4 and interim tier 4 standards, the use of low sulphur fuel or ultra-low sulphur fuel is mandatory in the EPA regulated area (North America). Therefore, please use No.2-D S500 or S15 diesel fuel as an alternative to No.2-D, or use No.1-D S500 or S15 diesel fuel as an alternative to No.1-D if the outside air temperature is below -10°C .
- If the engine is to be operated within the European Union on diesel or non-road gas-oil, a fuel with sulphur content lower than 10 mg/kg (20 mg/kg at point of final distribution), a cetane number greater than 45 and a fatty acid methyl ester (FAME) content lower than 7% volume per volume (v/v) shall be used.

Transmission oil

The oil used to lubricate the transmission is also used as hydraulic fluid. To ensure 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 the manufacturer's estimate.

PERIODIC SERVICE

WARNING

To avoid personal injury or death:

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

WASTE DISPOSAL

- The improper disposal or burning of waste causes environmental pollution and can be punishable by your local laws and regulations.
 - When draining fluids from the tractor, place a container underneath the drain port.
 - Do not pour waste onto the ground, down a drain, or into any water source (such as rivers, streams, lakes, marshes, seas and oceans).
 - Waste products such as used oil, fuel, coolant, hydraulic fluid, aqueous urea solution (DEF (AdBlue)), refrigerant, solvent, filters, rubber, batteries and harmful substances, can harm the environment, people, pets and wildlife. Please dispose properly. See your local recycling centre or KUBOTA Dealer to learn how to recycle or get rid of waste products.

HOW TO OPEN THE BONNET

WARNING

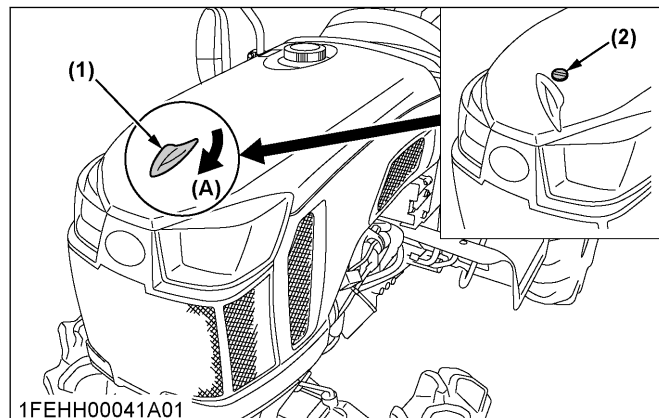
To avoid personal injury or death from contact with moving parts:

- Never open the bonnet or engine side cover while the engine is running.
- Do not touch the muffler or exhaust pipes while they are hot; severe burns could result.
- Support the bonnet with other hand while unlocking the support rod.

1. Bonnet

1.1 Open the bonnet

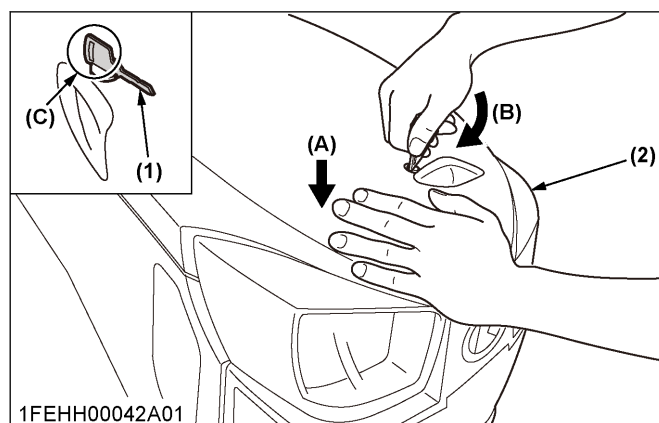
1. Twist the mascot.



- (1) Mascot
(2) Cylinder

(A) "TWIST"

2. Put the key's tab in the cylinder groove. Hold down the area (A) of the bonnet, turn the key, and the bonnet will unlock.



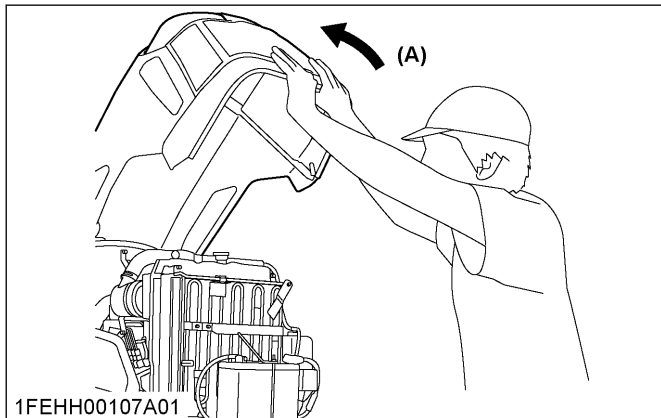
- (1) Key
(2) Bonnet

(A) "PRESS"
(B) "TWIST"

IMPORTANT :

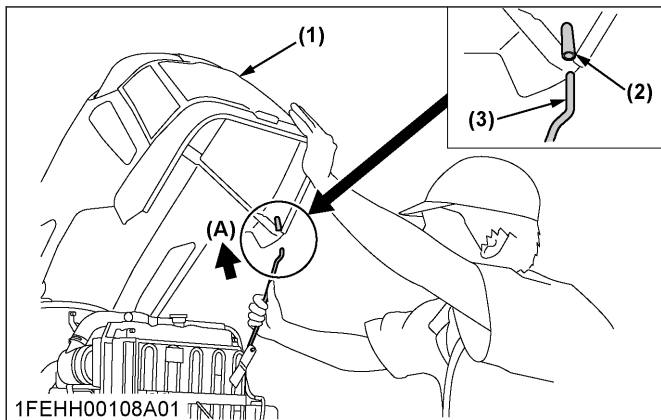
- Be sure to turn the key with its bow (C). Do not hold its tip because otherwise the key may get deformed.

- Open the bonnet by holding its bottom with both hands.



(A) "OPEN"

- Hold the bonnet and insert the support rod to the mounting hole.

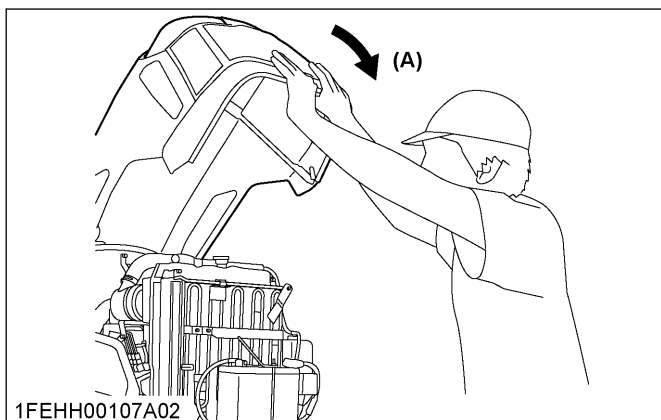


- Bonnet
- Mounting hole
- Support rod

(A) "INSERT"

1.2 Close the bonnet

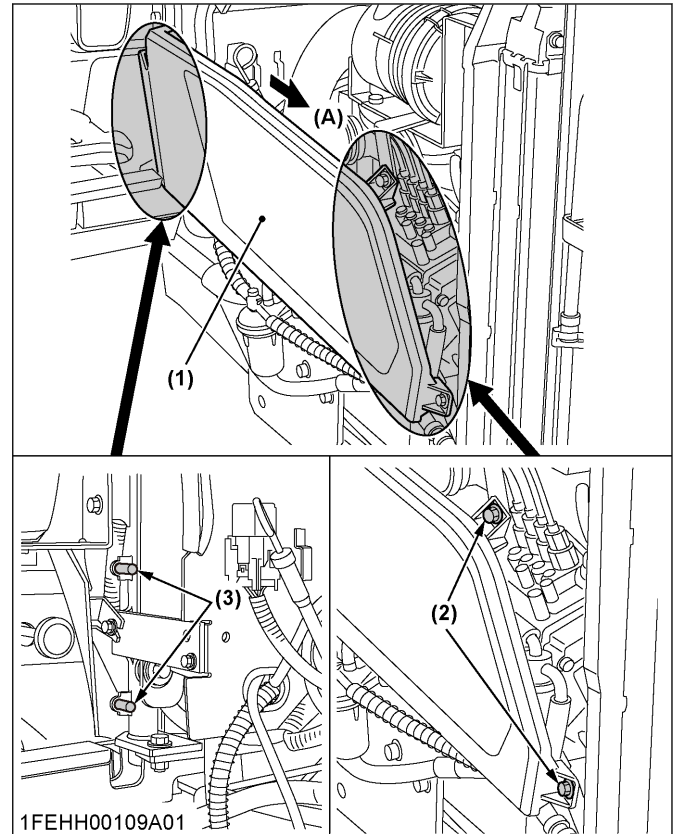
- To close the bonnet, hold the bonnet and release the support rod.
- In closing the bonnet, use both hands again.



(A) "CLOSE"

2. Engine side cover

- Remove the bolt.
- Pull the cover toward "A" and detach the notch.
- To attach the cover, take the reverse order.



- Cover
- Bolt
- Notch

(A) "PULL"

DAILY CHECK

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

! WARNING

To avoid personal injury or death:
Take the following precautions when checking the tractor.

- Park the machine on firm and level ground.
- Set the parking brake.
- Lower the implement to the ground.
- Release all residual pressure from the hydraulic system.
- Stop the engine and remove the key.

1. Walk around inspection

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

2. Checking and refuelling



WARNING

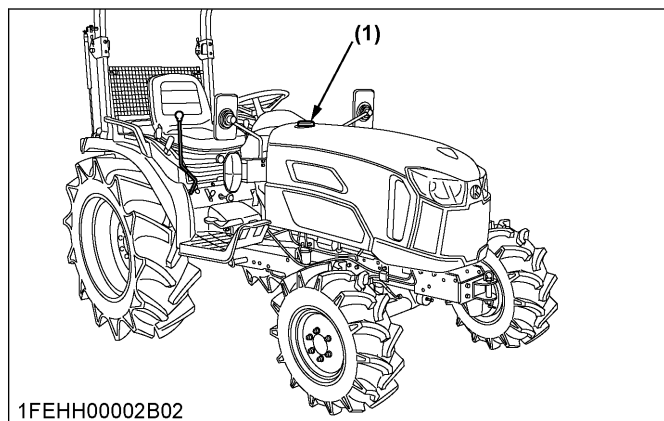
To avoid personal injury or death:

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

To avoid allergic skin reaction:

- Wash hands immediately after contact with diesel fuel.

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



1FEHH00002B02

(1) Fuel tank cap

Fuel tank capacity	27 L
--------------------	------

IMPORTANT :

- Do not permit dirt or rubbish 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 the next engine start.
- Be careful not to spill during refuelling. If a spill occurs 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.

3. Checking engine oil level



WARNING

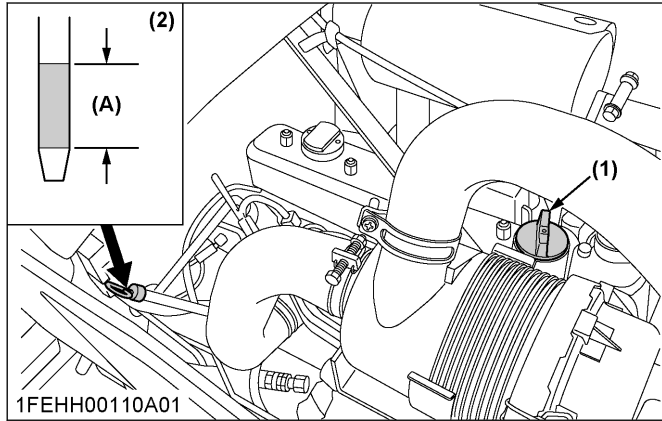
To avoid personal injury or death:

- 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.

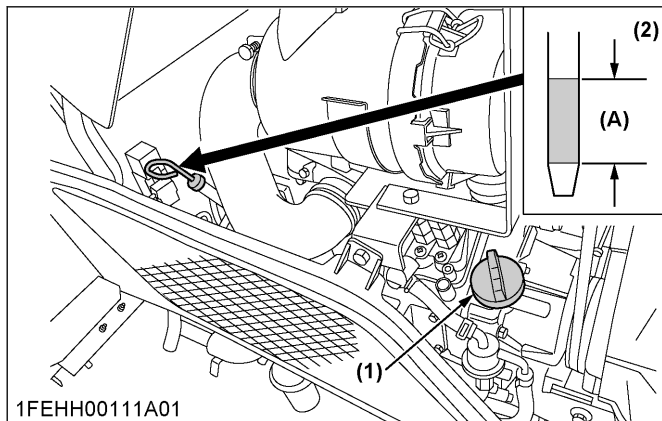
- To check the oil level, pull out the dipstick, wipe it clean, replace it, and pull it out again. Check to see that the oil level lies within the crosshatched area. If the level is too low, add new oil to the prescribed level at the oil inlet.
(See LUBRICANTS, FUEL AND COOLANT on page 99.)

B2201, B2231, B2311



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

B2261



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

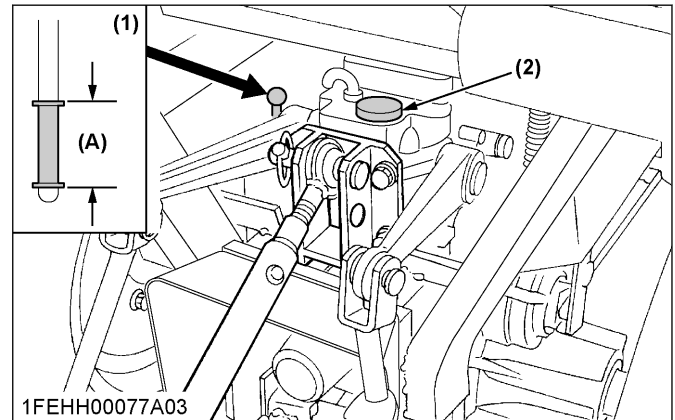
IMPORTANT :

- When using an oil of different manufacturer or viscosity from the previous one, remove all of the old oil.
Never mix 2 different types of oil.
- If the oil level is low, do not run the engine.

4. Checking transmission fluid level

- Park the machine on a flat surface, lower the implement and shut off the engine.
- To check the oil level, pull out the dipstick, wipe it clean, replace it, and pull it out again. Check to see that the oil level lies within the crosshatched area.

If the level is too low, add new oil to the prescribed level at the oil inlet.
(See LUBRICANTS, FUEL AND COOLANT on page 99.)



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

IMPORTANT :

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

5. Checking the coolant level

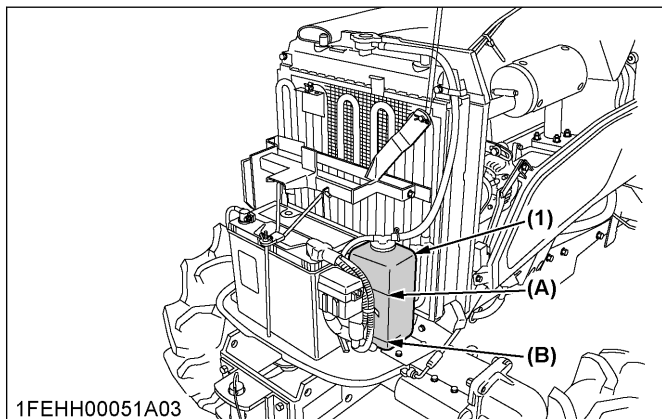
! WARNING

To avoid personal injury or death:

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

- Check to see that the coolant level is between the [FULL] and [LOW] marks of the recovery tank.

2. When the coolant level drops due to evaporation, add soft water only up to the full level. In case of leakage, add antifreeze and soft water in the specified mixing ratio up to the full level. (See Flushing cooling system and changing coolant on page 123.)



(1) Recovery tank

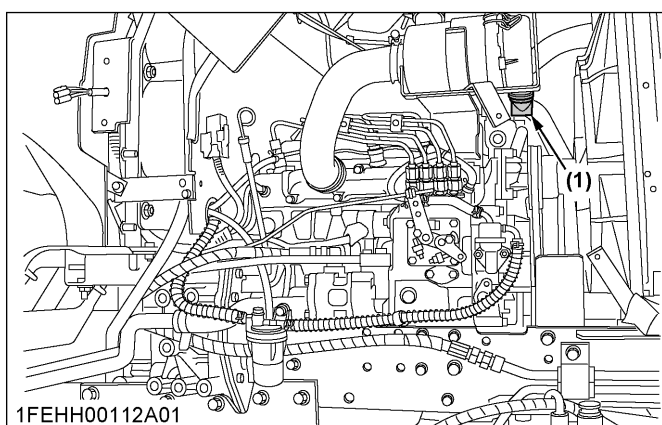
(A) [FULL]
(B) [LOW]

IMPORTANT :

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

6. Cleaning evacuator valve

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



(1) Evacuator valve

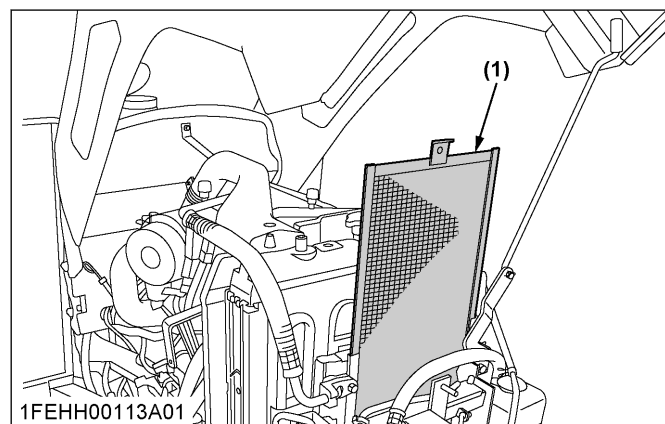
7. Cleaning the air conditioning condenser screen (CAN type)

**WARNING**

To avoid personal injury or death:

- 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.

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



(1) Air conditioner condenser screen

IMPORTANT :

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

8. Cleaning grill and radiator screen

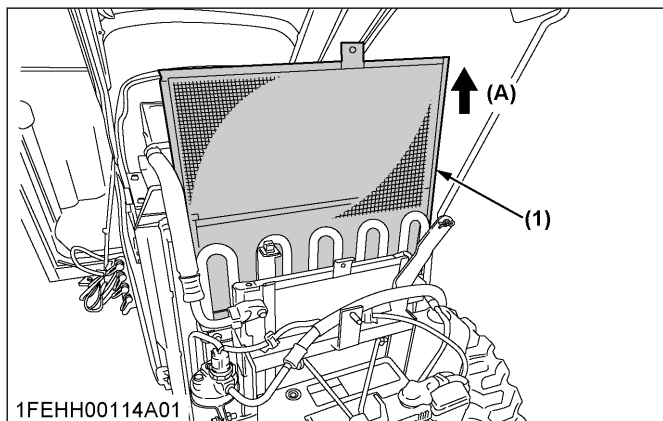
**WARNING**

To avoid personal injury or death:

- Be sure to stop the engine and remove the key 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.

1. Check front grill and side screens to be sure they are clean of debris.

- Detach the screen and remove all foreign materials and clean the front of radiator completely.



(1) Radiator screen

(A) "DETACH"

IMPORTANT :

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

9. Checking brake pedal

- Inspect the brake and clutch pedals for free travel and smooth operation.
- Adjust if incorrect measurement is found.
(See Adjusting brake pedal on page 114.)

10. Checking the clutch pedal (ROPS manual transmission type)

- Inspect the brake and clutch pedals for free travel and smooth operation.
- Adjust if incorrect measurement is found.
(See Adjusting the clutch pedal (ROPS manual transmission type) on page 113.)

11. Checking parking brake

WARNING

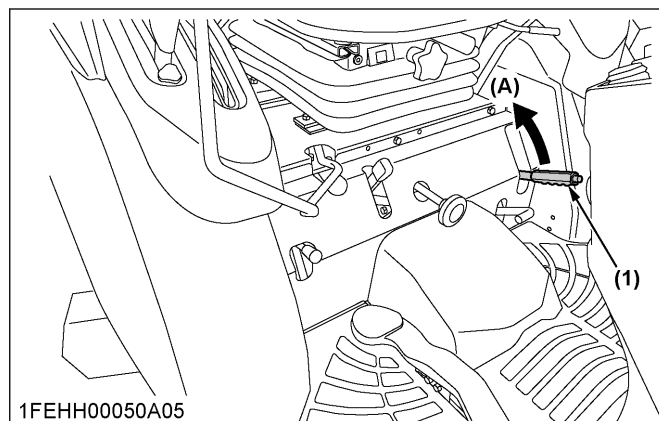
To avoid personal injury or death:

- Stop the engine and chock the wheels before checking the parking brake lever.

Proper parking brake lever free travel

2 notches (ratchet sound 2)

- Please raise the lever to the parking position while counting the ratchet sound made by the parking brake lever.
- If un-criterion, consult your local KUBOTA Dealer for this service.



(1) Parking brake lever

(A) "PULL"

12. Checking gauges, meter and Easy Checker™

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

13. Checking headlight, hazard light, and so on

- Inspect the lights for broken bulbs and lenses.
- Replace if broken.

14. Checking seat belt and ROPS

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

15. Checking and cleaning of electrical wiring and battery cables



WARNING

To avoid personal injury or death:

- A loose terminal or connector, or a damaged wire may affect the performance of the electrical components or cause short circuits. Leakage of electricity could result in a fire hazard, a dead battery or damage to electrical components.
- Replace the damaged wires or connections promptly.
- If a fuse blows soon after replacement, do not use a larger than recommended fuse or bypass the fuse system.
- Many wiring connections are protected by waterproof plugs. Plug and unplug these connections carefully and make sure they are sealed correctly after assembly.

- Accumulation of dust, chaff or spilled fuel deposits around the battery, electrical wiring, engine or exhaust system are a fire hazard. Clean these areas before starting work. To avoid premature electrical malfunctions, do not apply high pressure water directly to the battery, wiring, connectors, electrical components or instrument panel.

Inspect the following regularly

1. Check the wiring for chafed or cracked insulation.
2. Check the wiring harness clamps. Replace if necessary.
3. Check the connectors and terminals for looseness, contamination or overheated (discoloured) connections.
4. Check the instrument panel for correct operation of the switches and gauges.

Consult your KUBOTA Dealer regarding maintenance, diagnosis and repair.

16. Checking movable parts

If any of the movable parts, such as levers and pedals, are not moving smoothly because of rust or sticky material, do not attempt to force them into motion. In the above case, remove the rust or the sticky material and apply oil or grease to the relevant spot. Otherwise, the machine may be damaged.

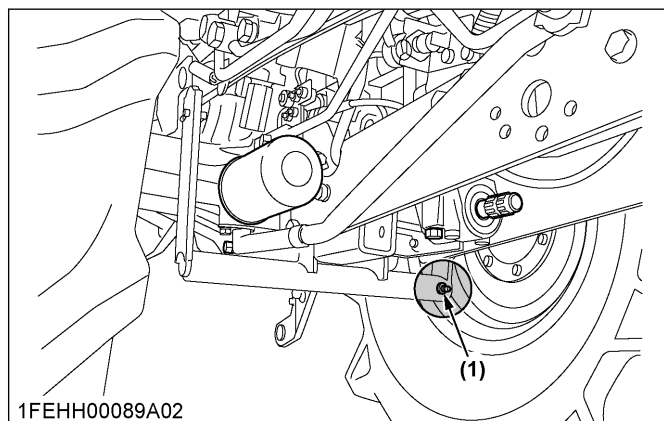
EVERY 50 HOURS

1. Lubricating grease fittings

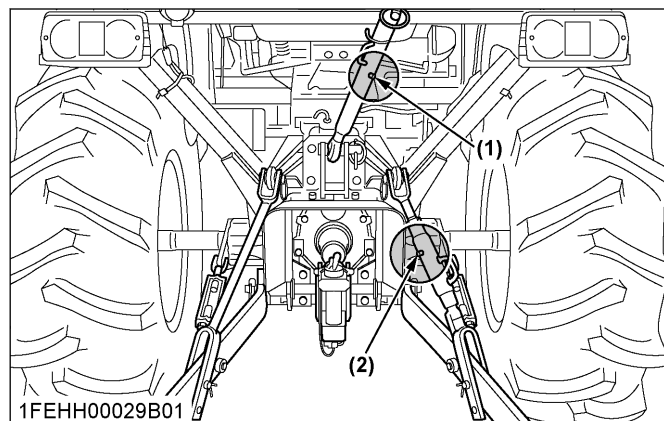
Apply a small amount of multipurpose grease to the following points every 50 hours.

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

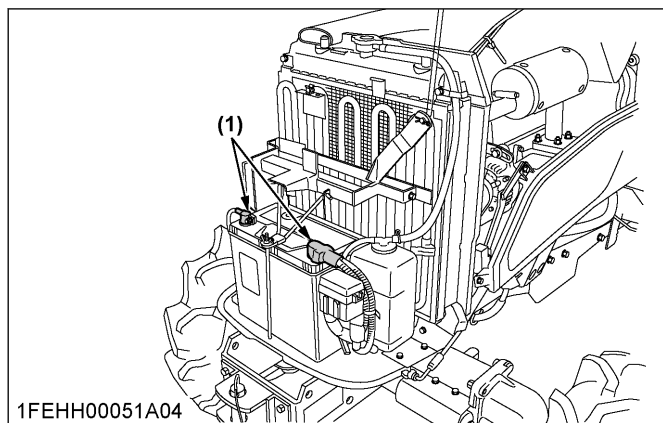
All types



(1) Grease fitting (parking brake)

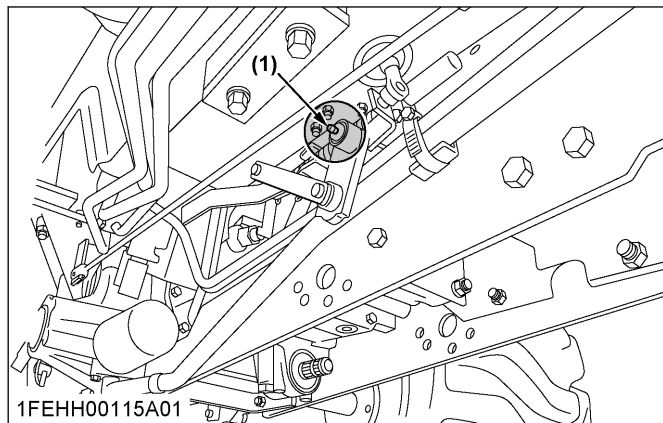


(1) Grease fitting (top link)
(2) Grease fitting (lifting rod, right)

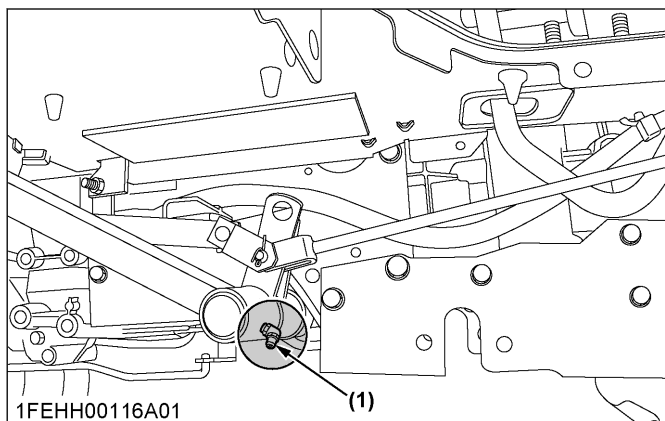


(1) Battery terminals

HST type

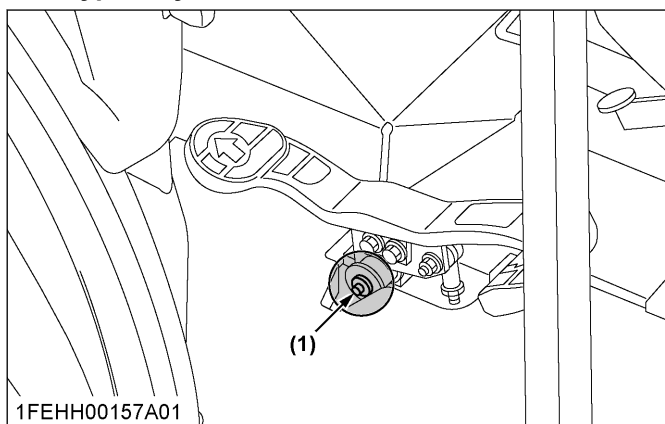


(1) Grease fitting (speed control pedal)



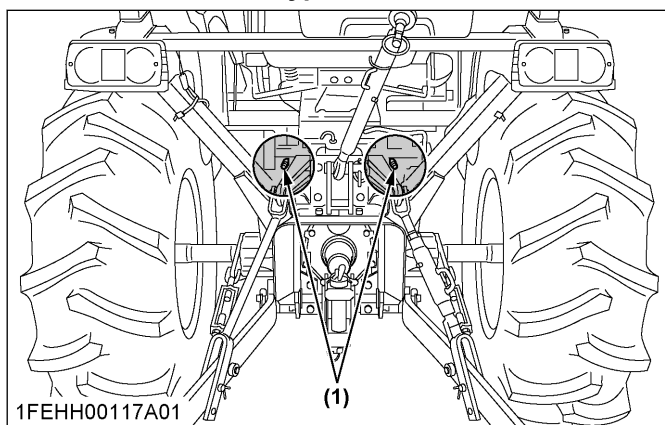
(1) Grease fitting (brake pedal)

CAB type only

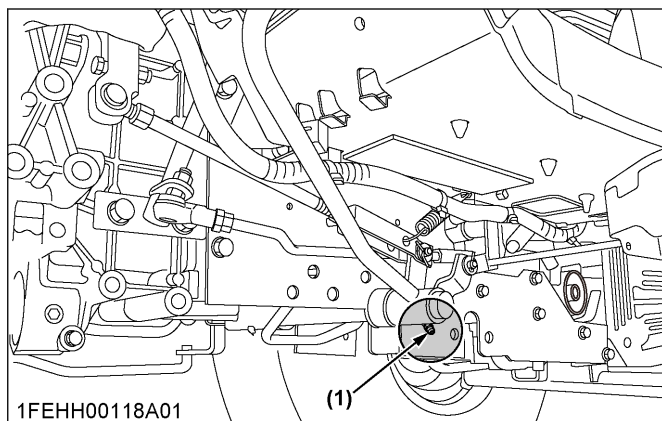


(1) Grease fitting (speed control pedal)

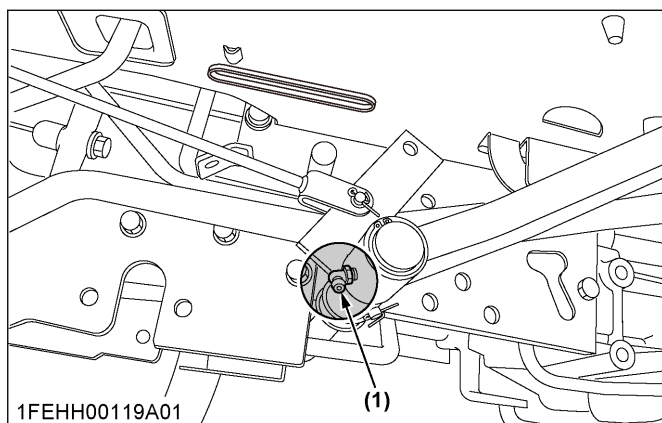
Manual transmission type



(1) Grease fitting (lift arm)



(1) Grease fitting (clutch pedal)



(1) Grease fitting (brake pedal)

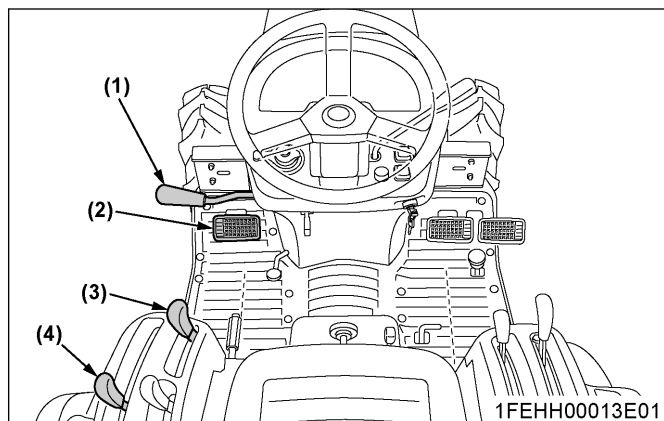
2. Checking the engine start system (ROPS manual transmission type)



WARNING

To avoid personal injury or death:

- Do not allow anyone near the tractor while testing.
- If the tractor does not pass the test, do not operate the tractor.
- Detach an implement before testing.



- (1) Shuttle shift lever
(2) Clutch pedal
(3) PTO ON-OFF lever
(4) Range gear shift lever

Preparation before testing

1. Sit on operator's seat.
2. Set the parking brake and stop the engine.
3. Shift the range gear shift lever to the "NEUTRAL" position.
4. Shift the shuttle shift lever to the "NEUTRAL" position.
5. Shift the PTO ON-OFF lever to "OFF" position.
6. Fully depress the clutch pedal.

Testing switch for the shuttle shift lever

1. Shift the shuttle shift lever to the forward position.
2. Fully depress the clutch pedal, turn the key to the "START" position.
3. The engine must not crank.
4. Reverse position of the shuttle shift lever checks similarly.
5. If it cranks, consult your local KUBOTA Dealer for this service.

Testing switch for the PTO ON-OFF lever

1. Shift the PTO ON-OFF lever to the "ON" position.
2. Shift the shuttle shift lever to the "NEUTRAL" position.
3. Fully depress the clutch pedal, turn the key to the "START" position.
4. The engine must not crank.
5. If it cranks, consult your local KUBOTA Dealer for this service.

Testing switches for the operator's seat and the PTO ON-OFF lever

1. Sit on the operator's seat.
2. Start the engine.
3. Fully depress the clutch pedal.
4. Shift the PTO ON-OFF lever to the "ON" position.
5. Release the clutch pedal and parking brake.
6. Stand up. (Do not get off the tractor.)
7. The engine must shut off after approximately 1 second.
8. If it does not stop, consult your local KUBOTA Dealer for this service.

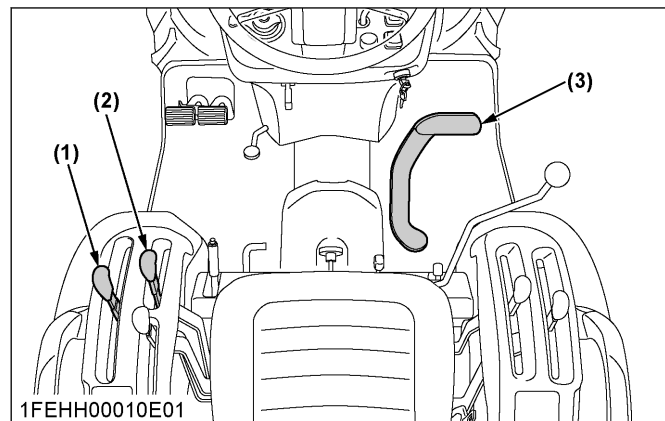
3. Checking engine start system (ROPS HST type and CAB HST type)



WARNING

To avoid personal injury or death:

- Do not allow anyone near the tractor while testing.
- If the tractor does not pass the test, do not operate the tractor.
- Detach an implement before testing.



- (1) Range gear shift lever
(2) PTO clutch lever
(3) Speed control pedal

Preparation before testing

1. Sit on operator's seat.
2. Set the parking brake and stop the engine.
3. Shift the range gear shift lever to the "NEUTRAL" position.
4. Place the speed control pedal in the "NEUTRAL" position.
5. Shift the PTO clutch lever to the "OFF" position.

Testing switch for the speed control pedal

1. Depress the speed control pedal.
2. Turn the key to "START" position.
3. The engine must not crank.
4. If it cranks, consult your local KUBOTA Dealer for this service.

Testing switch for the PTO clutch lever

1. Place the speed control pedal in the "NEUTRAL" position.
2. Shift the PTO clutch lever to the "ON" position.
3. Turn the key to "START" position.
4. The engine must not crank.
5. If it cranks, consult your local KUBOTA Dealer for this service.

Testing switches for the operator's seat and the PTO clutch lever

1. Sit on the operator's seat.
2. Start the engine.
3. Shift the PTO clutch lever to the "ON" position.
4. Release the parking brake.

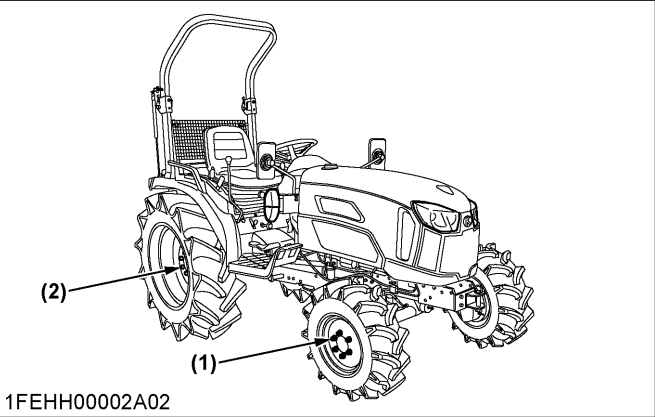
- 5. Stand up. (Do not get off the tractor.)
- 6. The engine must shut off after approximately 1 second.
- 7. If it does not stop, consult your local KUBOTA Dealer for this service.

4. Checking wheel bolt torque

! WARNING

- To avoid personal injury or death:
- Never operate the tractor with a loose rim, wheel or axle.
 - Any time bolts and nuts are loosened, retighten to the 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.



- (1) Nut: 77 to 90 N·m / 7.9 to 9.2 kgf·m
(2) (B2201, B2231, B2261)
Nut: 108 to 126 N·m / 11 to 12.8 kgf·m
(B2311)
Bolt: 196 to 225 N·m / 20 to 23 kgf·m
Nut: 167 to 191 N·m / 17 to 19.5 kgf·m

EVERY 100 HOURS

1. Checking the 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, 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.

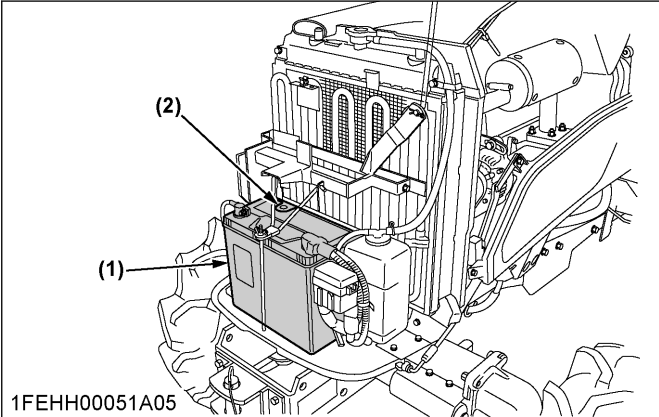
! WARNING

- To avoid personal injury or death:
- 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 seek 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 the battery.

NOTE :

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

1.1 How to read indicator

Check the battery condition by reading the indicator.

Green	Specific gravity of electrolyte and quality of electrolyte are both in good condition.
Black	Battery needs charging.
White	Battery needs replacing.

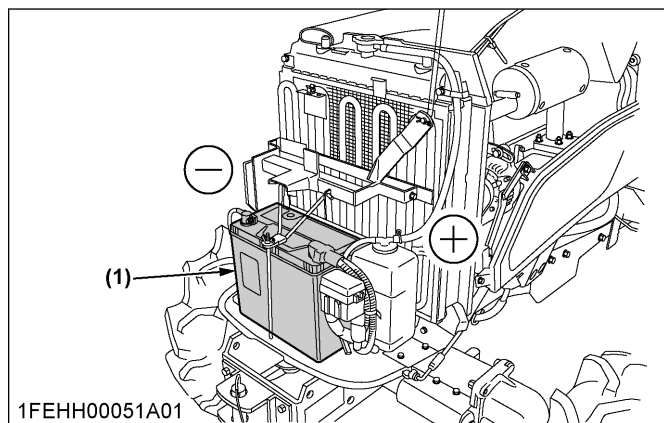
1.2 Charging the battery



WARNING

To avoid personal injury or death:

- 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 when the indicator display turns from black to green.
4. When exchanging an old battery for a new one, use a battery of equivalent specification to those shown in the following table.

Battery type	Volts (V)	Capacity at 5 hr (A.H)	Re-serve capacity (min)	Cold cranking amps (A)	Normal charging rate (A)
55B24L(S)-MF	12	36	80	SAE: 430 EN: 360	4.5

1.3 Directions for battery storage

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

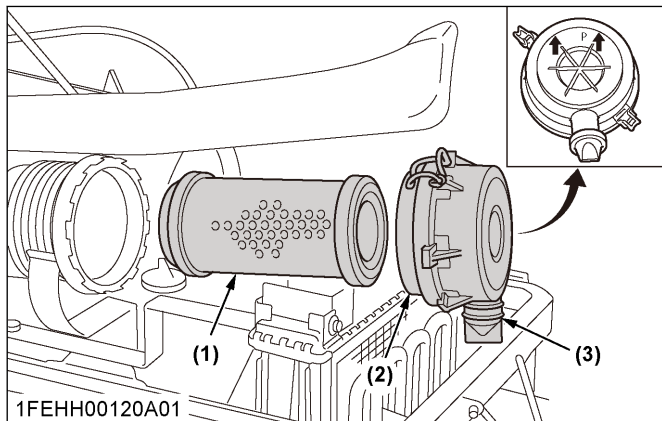
2. Cleaning the air cleaner element for the single element type (CAB type)

1. Remove the air cleaner cover and primary element.
2. Clean the primary element:
 - When dry dust adheres to the element, blow compressed air from the inside, turning the element. The pressure of compressed air must be under 205 kPa (2.1 kgf/cm², 30 psi).
 - 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 the element has fully dried, inspect inside the element with a light and check for damage.

3. Replace the air cleaner primary element:
Every 1000 hours or once yearly cleaning, whichever comes first.

NOTE :

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



- (1) Elements
(2) Cover
(3) Evacuator valve

IMPORTANT :

- The air cleaner uses a dry element; never apply oil.
- Do not run the engine with the filter element removed.
- Be sure to refit the cover with the arrow ↑ (on the rear) upright. If the cover is improperly fitted, dust passed by the baffle and directly adhere to the element.

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.

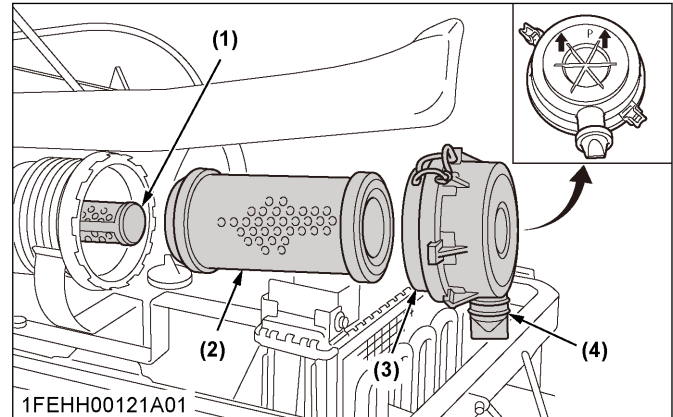
3. Cleaning the air cleaner primary element for the double element type (ROPS type)

1. Remove the air cleaner cover and primary element.
2. Clean the primary element:
 - When dry dust adheres to the element, blow compressed air from the inside, turning the element. The pressure of compressed air must be under 205 kPa (2.1 kgf/cm², 30 psi).
 - 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 the element has fully dried, inspect the element with a light and check for damage.
3. Replace the air cleaner primary element:

Every 1,000 hours or once yearly, whichever comes first.

NOTE :

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



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

IMPORTANT :

- The air cleaner uses a dry element; never apply oil.
- Do not run the engine with the filter element removed.
- Be sure to refit the cover with the arrow ↑ (of the cover) upright. If the cover is improperly fitted, the 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 primary element and secondary element on page 123.)

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.

4. Cleaning fuel filter

! WARNING

To avoid personal injury or death:

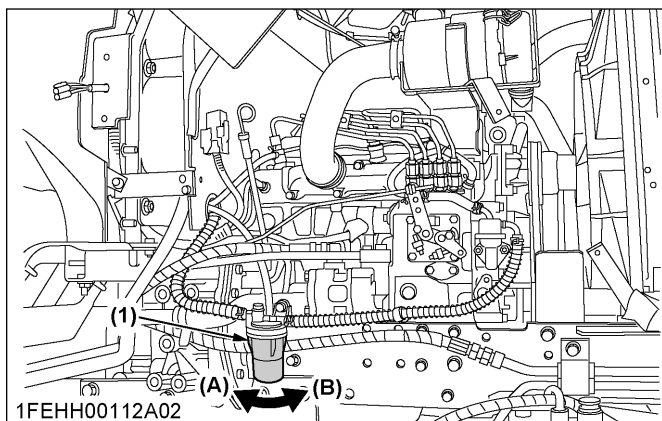
- Stop the engine and remove the key before checking the fuel lines and fuel filter.
- Check the fuel lines periodically. The fuel lines are subject to wear and ageing. Fuel may leak out onto the running engine, causing a fire.
- Protect your hands when using kerosene to clean the components.

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

1. Loosen and remove the filter bowl, and rinse the inside with kerosene.
2. Remove the element and dip it in the kerosene to rinse.
3. After cleaning, reassemble the fuel filter, keeping out dust and dirt.
4. Bleed the fuel system.
(See SERVICE AS REQUIRED on page 126.)

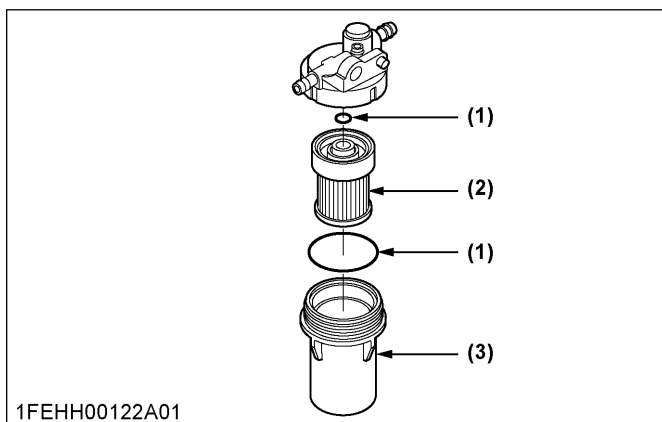
IMPORTANT :

- When the fuel filter bowl has been removed, the fuel stops flowing from the fuel tank. If the fuel tank is almost full, however, the fuel will flow back from the fuel return pipe to the fuel filter. Before checking, make sure the fuel tank is less than half-full.
- If dust, dirt or water enters the fuel system, the fuel pump and injection nozzles are subject to premature wear. To prevent this, be sure to clean the fuel filter bowl and element periodically.



(1) Fuel filter bowl

(A) "LOOSEN"
(B) "TIGHTEN"



(1) O ring
(2) Filter element
(3) Filter bowl

5. Adjusting fan belt tension

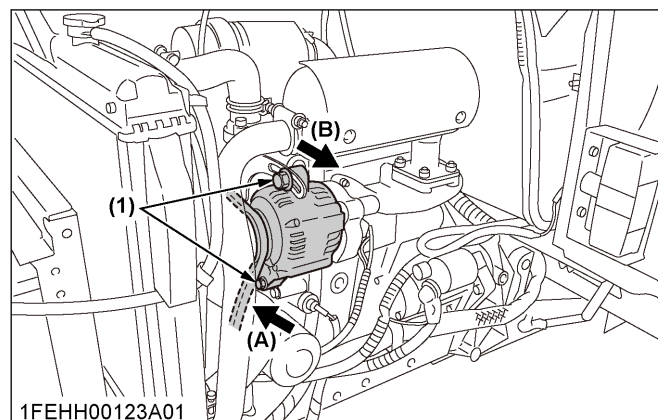
! WARNING

To avoid personal injury or death:

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

Proper fan belt tension	A deflection of between 7 to 9 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 the belt between pulleys.
3. If the 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 the fan belt if it is damaged.



(1) Bolt

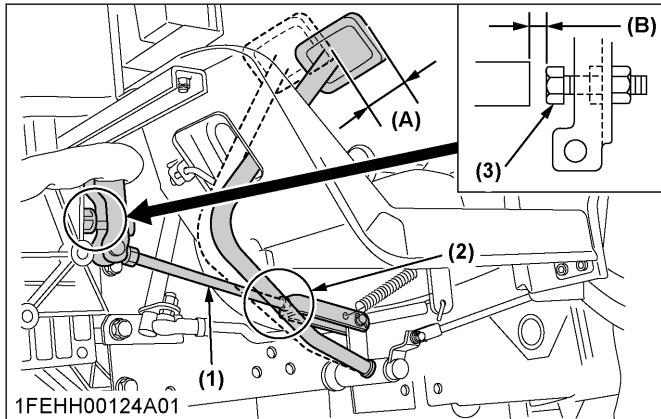
(A) Check the belt tension
(B) To tighten

6. Adjusting the clutch pedal (ROPS manual transmission type)

Proper clutch pedal free travel	10 to 17 mm on the pedal
---------------------------------	--------------------------

1. Stop the engine and remove the key.
2. Slightly depress the brake pedals and measure free travel at the top of the pedal stroke.
3. If adjustment is needed, loosen the lock nut and turn the turnbuckle to adjust the rod length within acceptable limits.
4. Retighten the lock nut.

5. After adjusting, release the clutch pedal and check the clearance (B). If adjustment is needed, adjust the clearance (B) with bolt (3).



- | | |
|----------------|-----------------|
| (1) Clutch rod | (A) Free travel |
| (2) Lock nut | (B) 8.5 mm |
| (3) Bolt | |

7. Adjusting brake pedal

WARNING

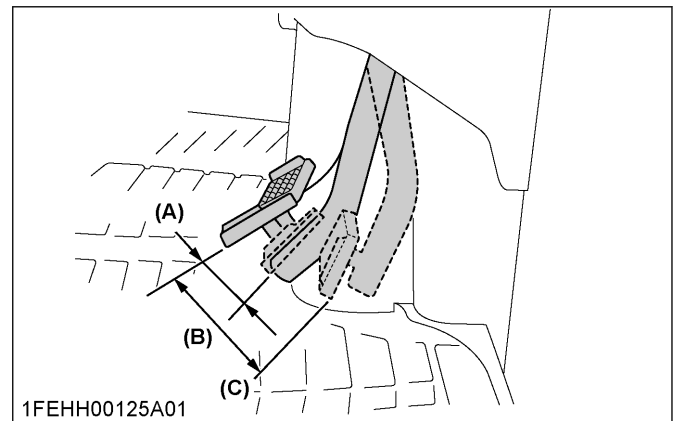
To avoid personal injury or death:

- Stop the engine and chock the wheels before checking the brake pedal.
- Make sure that the difference is 5 mm or less, when the right and left brake pedals are depressed. If the difference is large, the brake will pull to one side when braking, and cause an accident.

Proper brake pedal free travel	ROPS: 30 to 40 mm on the pedal CAB: 20 to 30 mm on the pedal
	Keep the free travel in the right and left brake pedals equal.

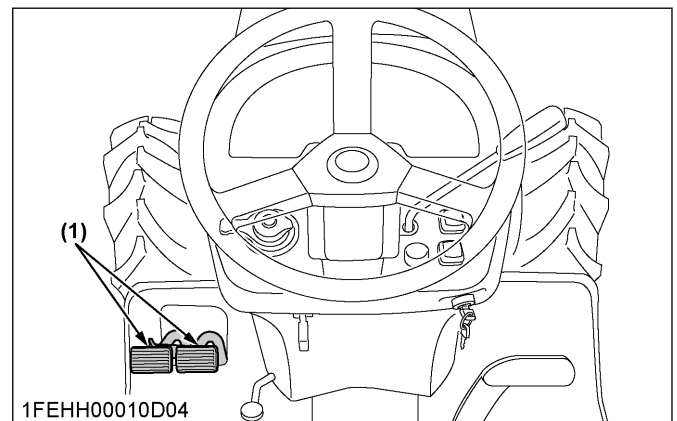
1. Slightly depress the right and left brake pedals and measure free travel at the top of the pedal stroke.
2. If adjustment is needed, turn the lock nut and adjust nut, adjust free travel.
3. Re-tighten the lock nut.
4. Check to see that the difference is 5 mm or less, when the right and left brake pedals are depressed.

Example



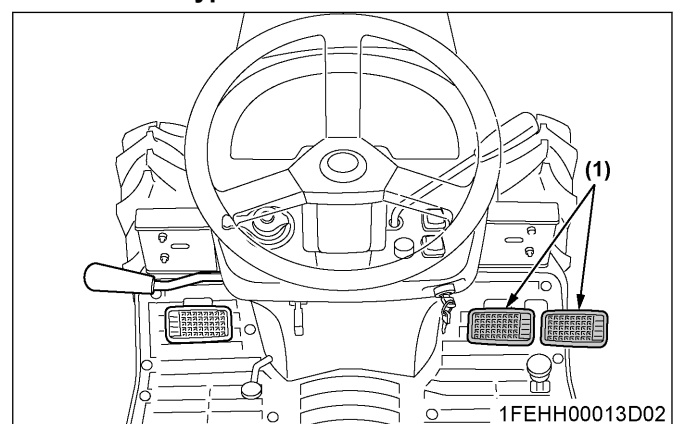
- (A) Free travel
(B) Pedal stroke
(C) Difference of the right and left pedals is 5 mm or less at position

Location of the brake pedals for ROPS type



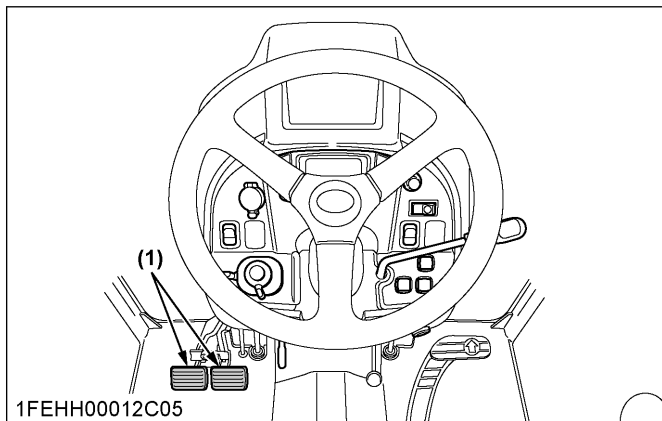
- (1) Brake pedal

Location of the brake pedals for ROPS manual transmission type



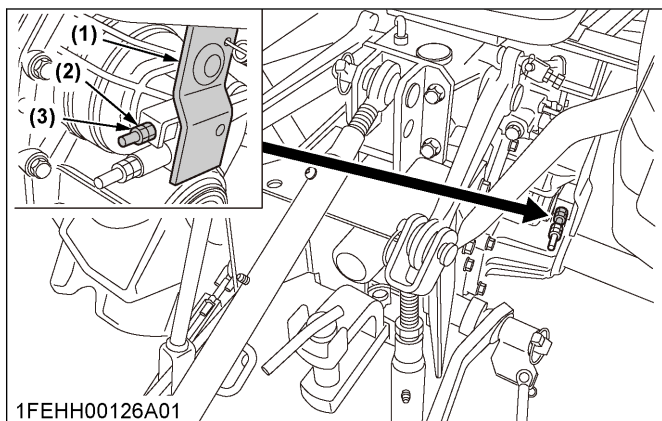
- (1) Brake pedal

Location of the brake pedals for CAB HST type



(1) Brake pedal

All types

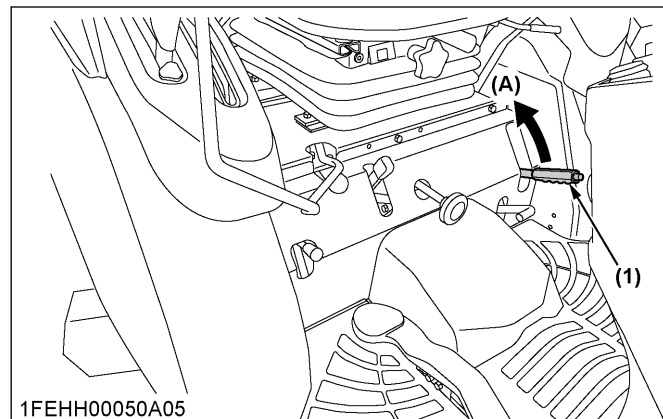


(1) Brake lever (both sides)
(2) Adjust nut (both sides)
(3) Lock nut (both sides)

8. Adjusting the parking brake lever

Proper parking brake pedal free travel	2 notches (ratchet sound 2)
--	-----------------------------

1. Please raise the lever to the parking position while counting the ratchet sound made by the parking brake lever.
2. If un-criterion, consult your local KUBOTA Dealer for this service.



(1) Parking brake lever

(A) "PULL"

EVERY 200 HOURS OR 1 YEAR

Be sure to do the following servicing once every 200 hours or yearly, whichever comes first.

1. Changing the engine oil

WARNING

To avoid personal injury or death:

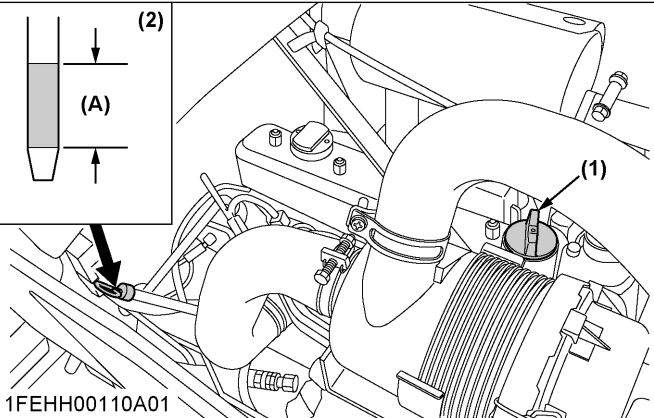
- Be sure to stop the engine before changing the oil.
- Allow the engine to cool down sufficiently; oil can be hot and can burn.

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.
2. After draining, reinstall the drain plug.

3. Fill with new oil up to the upper notch on the dipstick.
(See LUBRICANTS, FUEL AND COOLANT on page 99.)

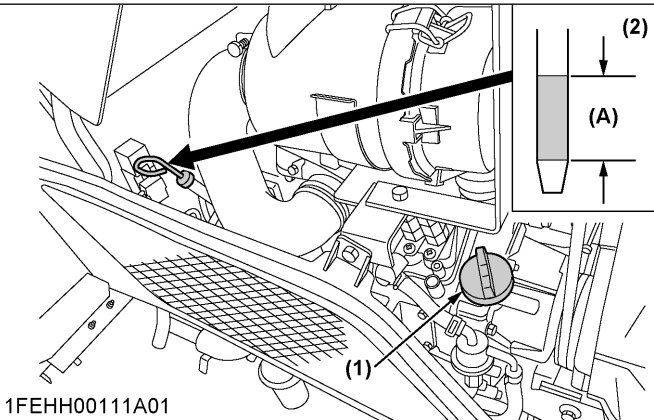
Oil capacity with filter	B2201 B2231	3.1 L
	B2261 B2311	4.0 L

B2201, B2231, B2311

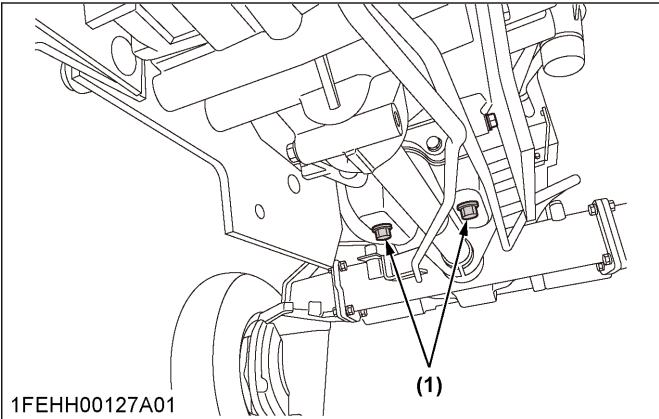


- (1) Oil inlet
(2) Dipstick
(A) Oil level is acceptable within this range.

B2261



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



- (1) Drain plug (both sides)

EVERY 200 HOURS

1. Replacing the engine oil filter

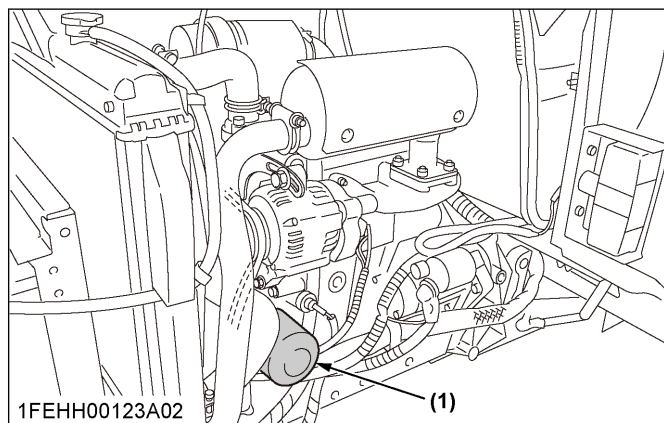
**WARNING**

To avoid personal injury or death:

- Be sure to stop the engine before replacing the oil filter cartridge.
- Allow the 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 the filter by hand an additional 1/2 turn only.
4. After the new filter has been replaced, the engine oil normally decreases by a small amount. 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.

5. Properly dispose of used oil.



(1) Engine oil filter

IMPORTANT :

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

2. Replacing the transmission oil filter (HST type)

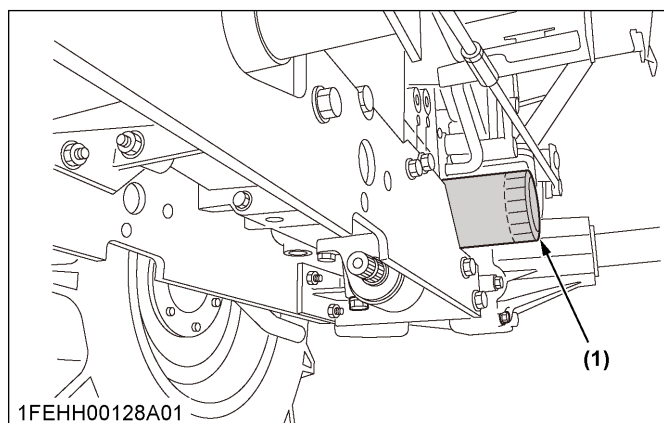


WARNING

To avoid personal injury or death:

- 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.

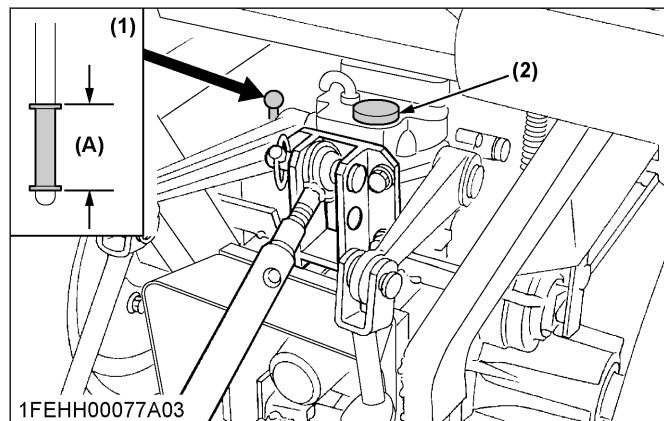
1. Place the oil pan underneath the transmission oil filter and remove the filter.
Do not remove the hydraulic oil filter. Otherwise, the oil comes out.



(1) Transmission oil filter

2. Put a film of clean transmission oil on the rubber seal of the new filter.
3. Quickly tighten the filter until it contacts the mounting surface, then, with a filter wrench, tighten it an additional 1 turn only.

4. After the new filter has been replaced, fill the transmission oil up to the upper limit on the dipstick.



(1) Dipstick
(2) Oil inlet

(A) Oil level is acceptable within this range

5. After running the engine for a few minutes, stop the engine and check the oil level again, add oil to the prescribed level.
6. Make sure that the transmission fluid does not leak past the seal on the filter.

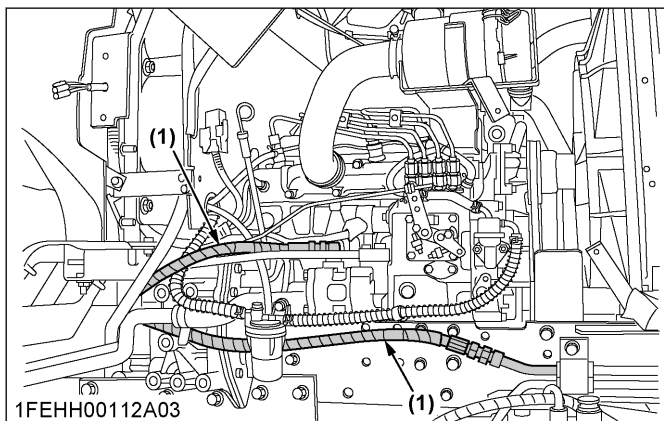
IMPORTANT :

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

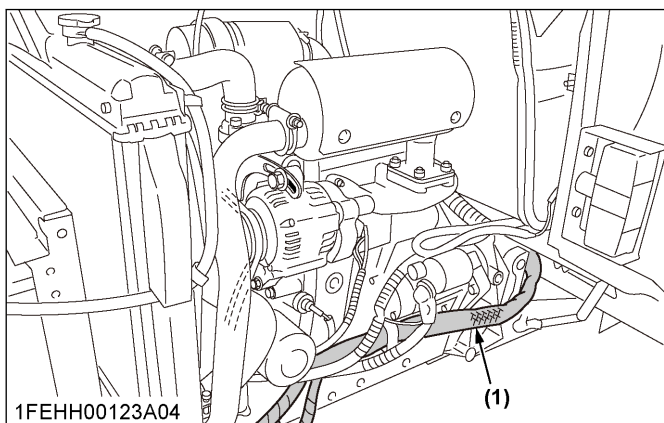
3. Checking power steering line

1. Check to see that all lines and hose clamps are tight and not damaged.

- If the hoses and clamps are found to be worn or damaged, replace or repair them at once.

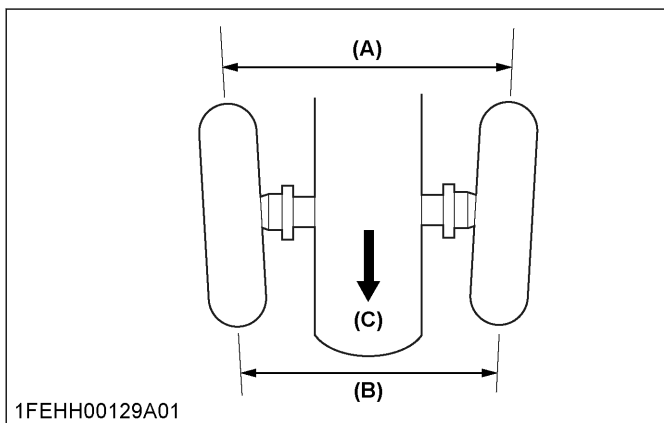


(1) Power steering pressure hoses



(1) Power steering pressure hoses

4. Adjusting toe-in



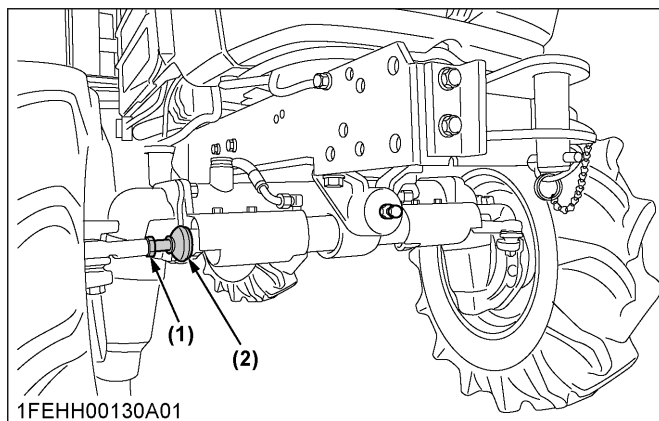
(A) Wheel-to-wheel distance at the rear
(B) Wheel-to-wheel distance at the front
(C) "FRONT"

- Park the tractor on a flat surface.
- Turn the steering wheel so that the front wheels are in the straight ahead position.
- Lower the implement, lock the park brake and stop the engine.

- Measure the distance between the tyre beads at the front of the tyre, at hub height.
- Measure the distance between the tyre beads at the rear of the tyre, at hub height.
- The front distance should be shorter than the rear distance. If not, adjust the tie rod length.

4.1 Adjusting toe-in procedure

- Loosen the tie-rod nut.
- Turn the tie-rod joint to adjust the rod length until the proper toe-in measurement is obtained.
- Retighten the tie-rod nut.



(1) Tie-rod nut
(2) Tie-rod joint

5. Adjusting air conditioner belt tension (CAB type)



WARNING

To avoid personal injury or death:

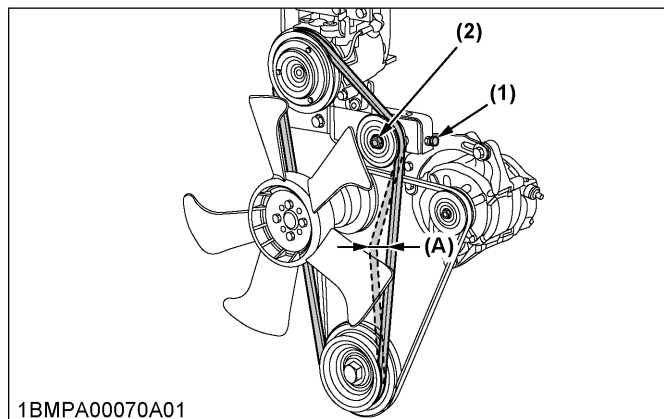
- Be sure to stop the engine before checking the belt tension.

Proper air conditioner belt tension

A proper deflection is between 18.5 mm and 19.5 mm when applying 98 N (10 kgf) pressure to the belt at the midpoint between the pulleys (at A point in the figure).

- Stop the engine and remove the key.
- Apply 98 N (10 kgf) pressure to the belt at the midpoint between the pulleys (at A point in the figure).
- If the tension is incorrect, loosen the tension pulley mounting nut and turn the adjusting bolt to adjust the belt tension within acceptable limits.

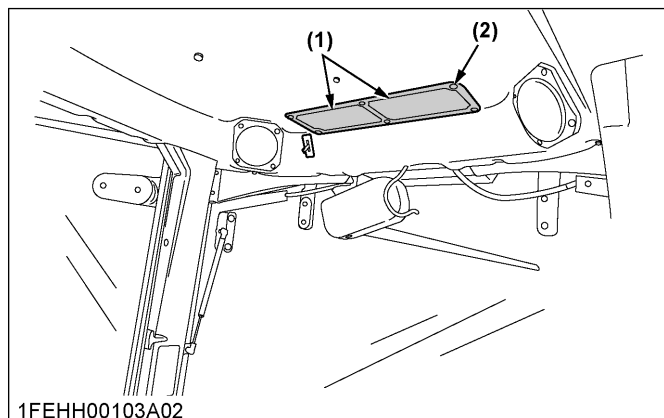
4. Replace air conditioner belt if it is damaged.
Consult your local KUBOTA Dealer.



- (1) Adjusting bolt
(2) Tension pulley mounting nut
(A) Midpoint between the pulleys

6. Cleaning the inner air filter (CAB HST type)

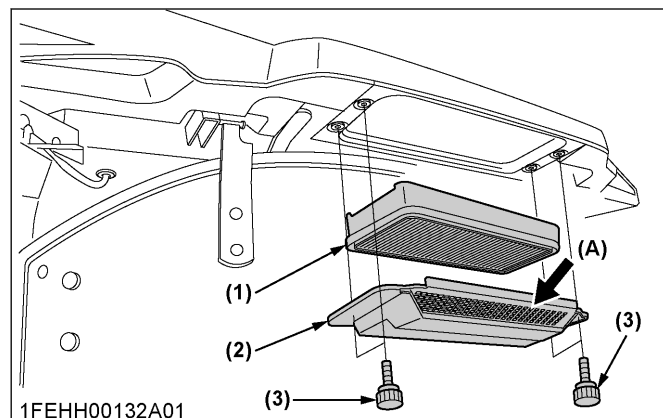
Remove the inner filter, and blow air from the direction opposite to the filter's normal air flow.
The pressure of compressed air must be under 205 kPa / 2.1 kgf/cm².



- (1) Inner air filter
(2) Screw

7. Cleaning the fresh air filter (CAB type)

Remove the knob bolts and pull out the filter.



- (1) Fresh-air filter
(2) Cover
(3) Knob bolt
(A) Air inlet port

NOTE :

- After cleaning, attach the filter and cover as in the previous illustration.

7.1 Cleaning the filter

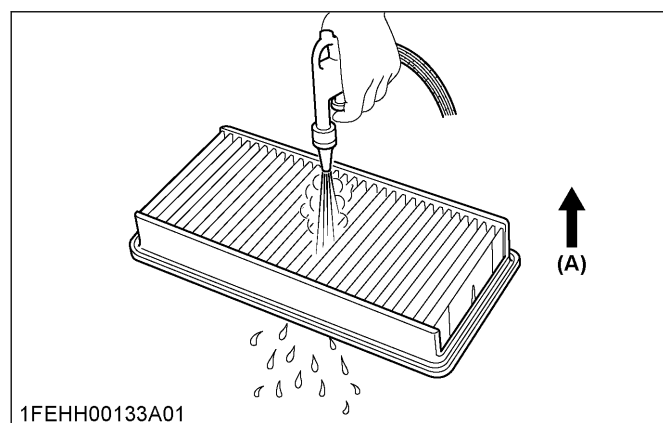
Normal use

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.



(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 odour in the CAB next time the system is used.

4. After running the engine for a few minutes, stop it and check the oil level again; add oil to the prescribed level.

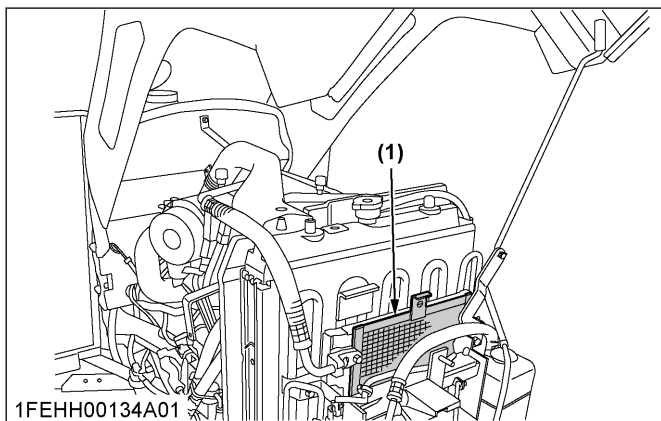
8. Checking the air conditioner condenser (CAB HST type)

WARNING

To avoid personal injury or death:

- 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.

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



(1) Air conditioner condenser

EVERY 400 HOURS

1. Changing the transmission fluid

WARNING

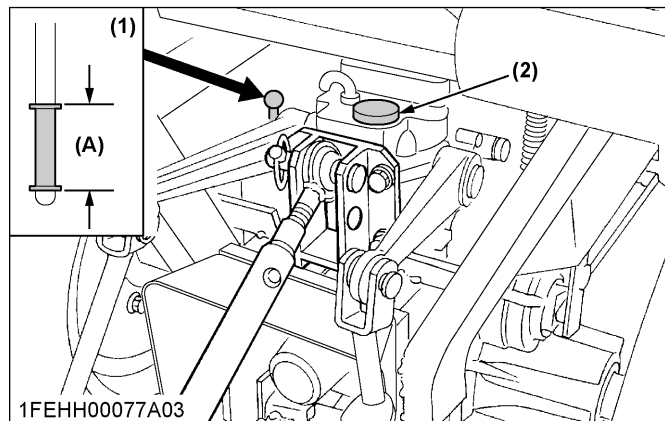
To avoid personal injury or death:

- Allow the 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 new **KUBOTA SUPER UDT** fluid up to the upper notch on the dipstick.
(See LUBRICANTS, FUEL AND COOLANT on page 99.)

5. Properly dispose of used oil.

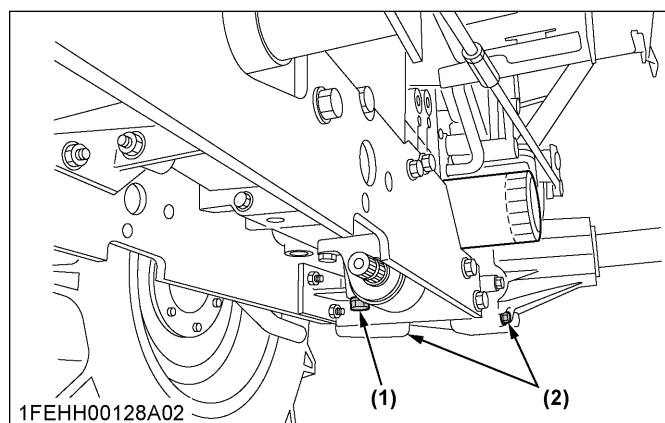
Oil capacity	B2201 B2231 B2261	Manual transmission	16.5 L
		HST	
	B2311	HST	17 L



(1) Dipstick
(2) Oil inlet

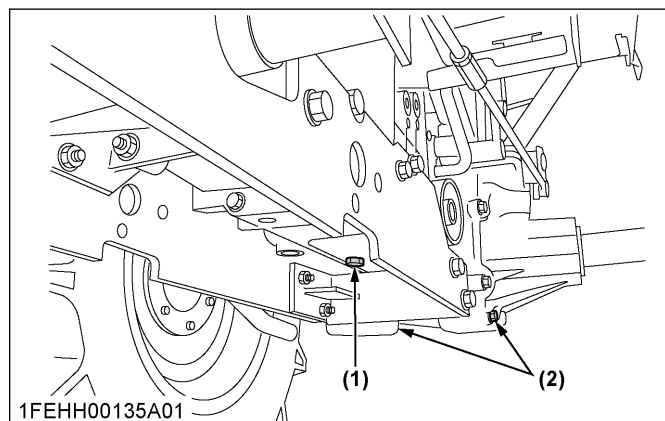
(A) Oil level is acceptable within this range

With mid-PTO



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

Without mid-PTO



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

IMPORTANT :

- If the 3-point hitch can not be raised by setting the hydraulic control lever to the UP position after long term storage or when changing the transmission oil, turn the steering wheel to the right and left several times to bleed air from the system.
- 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.

2. Replacing the hydraulic oil filter

**WARNING**

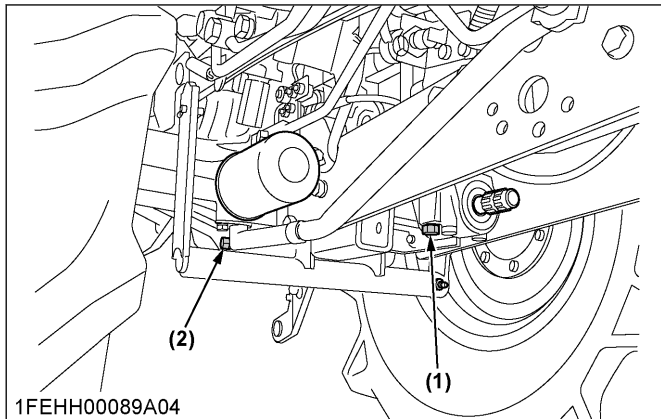
To avoid personal injury or death:

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

1. Remove the drain plugs at the bottom of the transmission case and drain the oil completely into the oil pan.

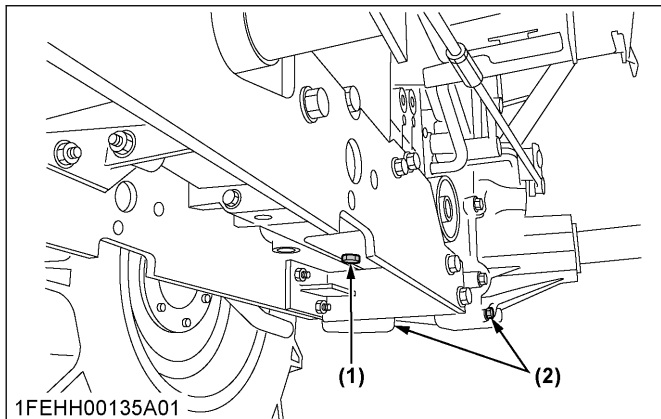
2. After draining reinstall the drain plugs.

With mid-PTO



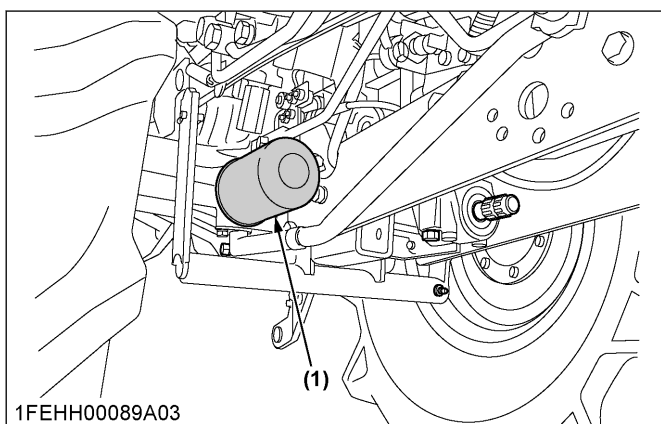
- (1) Drain plug
(2) Drain plugs (both sides)

Without mid-PTO



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

3. Remove the oil filter.

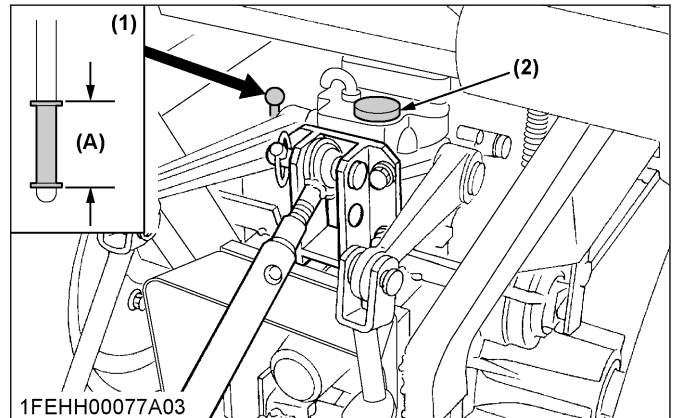


- (1) Hydraulic oil filter

4. Put a film of clean transmission oil on the rubber seal of the new filter.

5. Quickly tighten the filter until it contacts the mounting surface, then tighten it by hand an additional 1/2 turn only.

6. After the new filter has been replaced, fill the transmission oil up to the upper limit on the dipstick.



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

7. After running the engine for a few minutes, stop the engine and check the oil level again, add oil to the prescribed level.

8. Make sure that the transmission fluid doesn't leak past the seal on the filter.

IMPORTANT :

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

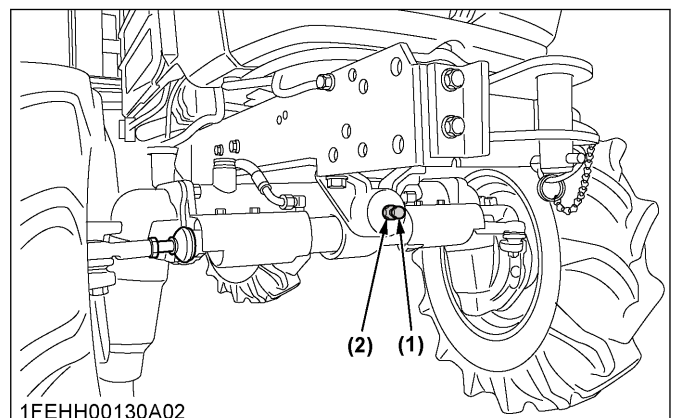
3. Adjusting front axle pivot (4WD)

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, and tighten the adjusting screw so that the oscillating load is 50 to 100 N / 5.1 to 10.2 kg / 11.2 to 22.5 lbf. (If the adjusting screw is tightened, loosened and retightened, apply liquid gasket to its tip.) Retighten the lock nut.

Consult your local KUBOTA Dealer for further details.



- (1) Adjusting screw
(2) Lock nut

4. Replacing fuel filter element

(See Cleaning fuel filter on page 112.)

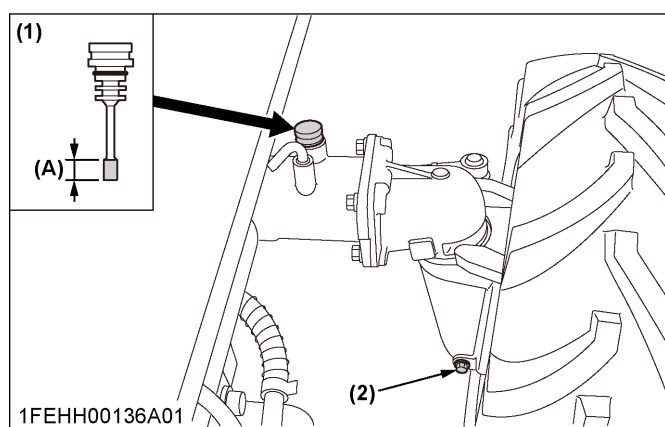
5. Changing front axle gear case oil

1. Park the tractor on a firm, flat, and level surface.
2. 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.
3. After draining, reinstall the drain plugs.
4. Fill with the new oil up to the upper notch on the dipstick.
(See LUBRICANTS, FUEL AND COOLANT on page 99.)

IMPORTANT :

- After 10 minutes, check the oil level again; add oil to the prescribed level.
5. After filling, reinstall the filling plug.
 6. Properly dispose of used oil.

Oil capacity	B2201 B2231 B2261	3.7 L
	B2311	4.7 L



(1) Filling plug with dipstick

(2) Drain plug

(A) Oil level is acceptable within this range.

EVERY 800 HOURS

1. Adjusting engine valve clearance

Consult your local KUBOTA Dealer for this service.

EVERY 1000 HOURS OR 1 YEAR

Be sure to do the following servicing once every 1000 hours or yearly, whichever comes first.

1. Replacing air cleaner element for single element type

(See Cleaning the air cleaner element for the single element type (CAB type) on page 111.)

2. Replacing air cleaner primary element and secondary element

(See Cleaning the air cleaner primary element for the double element type (ROPS type) on page 112.)

NOTE :

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

EVERY 1500 HOURS

1. Cleaning fuel injector nozzle injection pressure

Consult your local KUBOTA Dealer for this service.

EVERY 2000 HOURS OR 2 YEARS

Be sure to do the following servicing once every 2000 hours or biennially, whichever comes first.

1. Flushing cooling system and changing coolant



WARNING

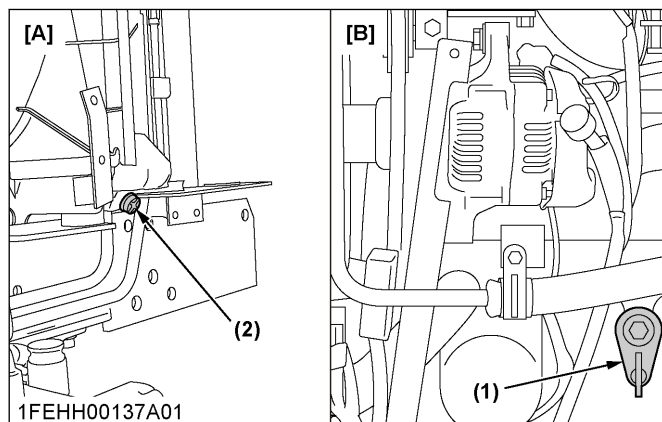
To avoid personal injury or death:

- Do not remove the radiator cap while the coolant is hot. When cool, slowly rotate the 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 shutoff-valve, and remove the radiator cap. The radiator cap must be removed to completely drain the coolant.
3. After the coolant has drained, close the drain shutoff-valve.
4. Fill with clean soft water and cooling system cleaner.
5. Follow the directions given in the cleaner instruction.

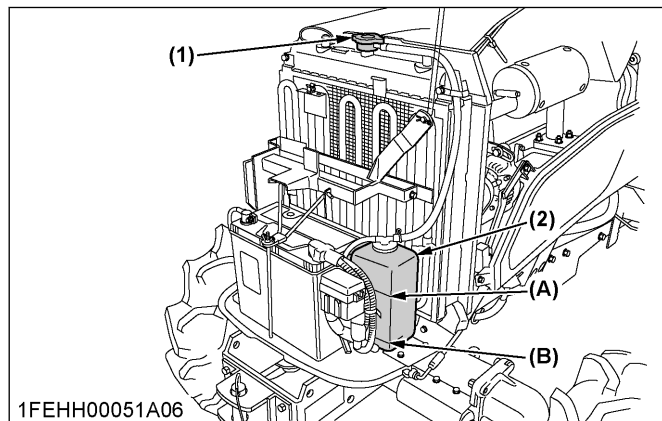
6. After flushing, fill with clean soft water and antifreeze until the coolant level is just below the radiator cap.
Install the radiator cap securely.
7. Fill with coolant up to the **[FULL]** mark of the recovery tank.
8. Start up and operate the engine for a few minutes.
9. Stop the engine, remove the key and let it cool down.
10. Check the coolant level of the recovery tank and add coolant if necessary.
11. Properly dispose of the used coolant.

Coolant capacity (with recovery tank)	4.6 L
---------------------------------------	-------



[A] Right side
[B] Left side

(1) Drain shutoff-valve
(2) Drain plug



(1) Radiator cap
(2) Recovery tank

(A) "FULL"
(B) "LOW"

IMPORTANT :

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

2. Antifreeze

! WARNING

To avoid personal injury or death:

- When using antifreeze, put on some protection such as rubber gloves (antifreeze contains poison).
- If you swallow the antifreeze, seek immediate medical help. Do not make a person throw up unless told to do so by a health care professional. Use standard first aid and CPR for signs of shock or cardiac arrest. Call your local emergency number for further assistance.
- 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 reactions resulting in harmful substances.
- Antifreeze is extremely flammable and explosive under certain conditions. Keep fire and children away from antifreeze.
- When draining fluids from the engine, place a container underneath the engine body.
- Do not pour waste onto the ground, down a drain, or into any water source.
- Also, observe the relevant environmental protection regulations when disposing of antifreeze.

Always use a 50/50 mix of long-life coolant and clean soft water in Kubota engines.

Consult your local KUBOTA Dealer concerning coolant for extreme conditions.

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
Premix 50% LLC with 50% clean soft water. When mixing, stir it up well, and then pour it 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 the SAE J1034 standard, more specifically also to SAE J814c.

Vol % antifreeze	Freezing point	Boiling point ^{*1}
	℃	℃
50	-37	108

*1 At 1.013 x 10⁵ Pa (760 mmHg) pressure (atmospheric). A higher boiling point is obtained by using a radiator pressure cap which permits the development of pressure within the cooling system.

5. Adding the LLC
 - a. Add only water if the mixture level is reduced by evaporation.
 - b. If there is a mixture leak, add LLC of the same manufacturer and type in the same mixture percentage.

IMPORTANT :

- **Never add any long-life coolant from a 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 an anti-corrosive 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 2000 hours or every 2 years, whichever comes first.

NOTE :

- **The above data represents industry standards that necessitate a minimum glycol content in the concentrated antifreeze.**

EVERY 3000 HOURS

1. Checking injection pump

Consult your local KUBOTA Dealer for this service.

EVERY 1 YEAR

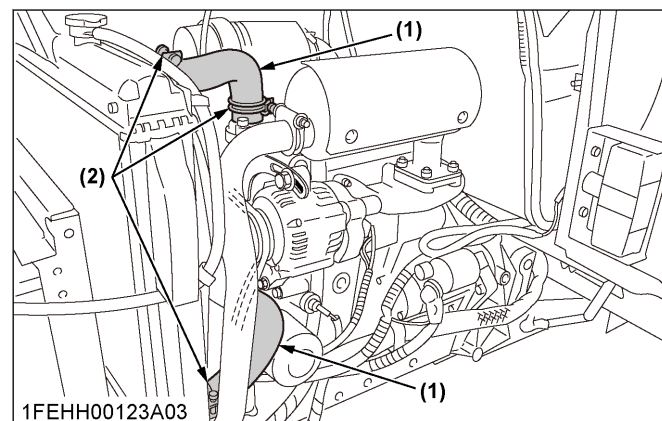
1. Checking the air conditioner pipe and hose (CAB type)

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.

2. Checking the radiator hoses and clamps

Inspect every year; replace if any deterioration (crack, hardening, scar, or deformation) or damage occurred.

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



(1) Radiator hoses (2 hoses)
(2) Clamp bands (4 clamps)

2.1 Overheating countermeasures

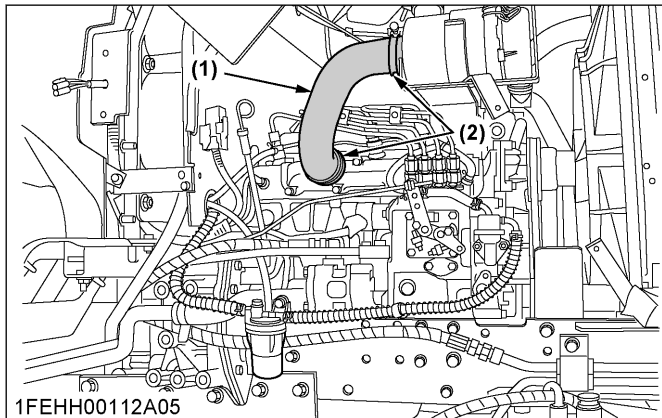
Take the following actions in the event the coolant temperature is nearly at or over the boiling point, also called "overheating".

1. Park the tractor in a safe place and keep the engine idling unloaded.
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 a 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 troubleshooting section of this manual. (See TROUBLESHOOTING on page 132.) Afterwards, restart the engine.

3. Checking intake air line

1. Check to see that hoses and hose clamps are tight and not damaged.

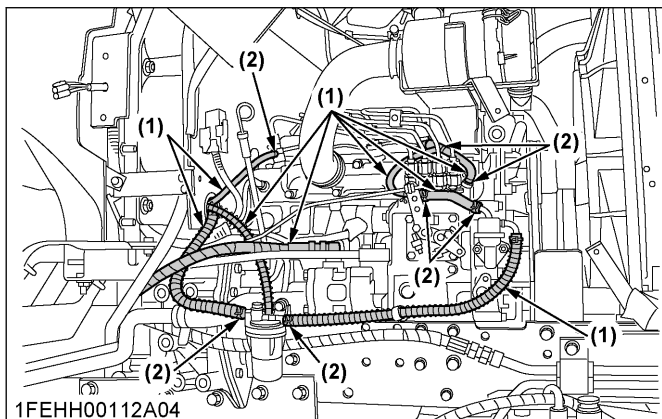
2. If the hoses and clamps are found to be worn or damaged, replace or repair them at once.



- (1) Hose
(2) Hose clamps

4. Checking fuel lines

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



- (1) Fuel lines
(2) Clamp bands

NOTE :

- If the fuel line has been replaced, be sure to properly bleed the fuel system.
(See Bleeding fuel system on page 126.)

5. Checking CAB isolation cushion

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

EVERY 2 YEARS

1. Checking the radiator hose (water pipes)

Consult your local KUBOTA Dealer for this service.

2. Checking the power steering line

Consult your local KUBOTA Dealer for this service.

3. Checking fuel lines

Consult your local KUBOTA Dealer for this service.

4. Checking the intake air line

Consult your local KUBOTA Dealer for this service.

5. Checking air conditioner hose (CAB type)

Consult your local KUBOTA Dealer for this service.

SERVICE AS REQUIRED

1. Bleeding fuel system

Air must be removed:

- When the fuel filter or lines are removed.
- When the tank is completely empty.
- After the tractor has not been used for a long period of time.

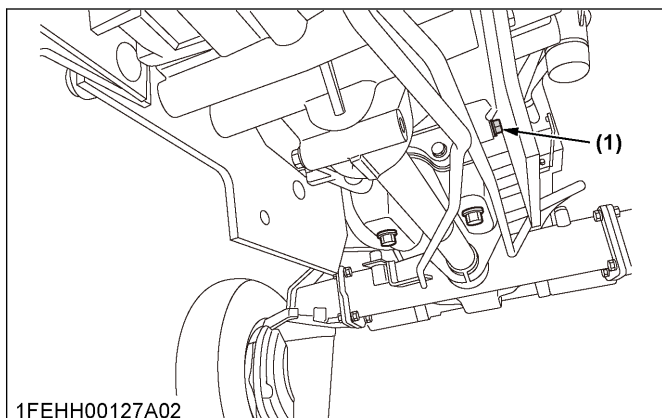
Bleeding procedure is as follows:

1. Fill the fuel tank with filter.
2. Start the engine and run for about 30 seconds, and then stop the engine.

2. Draining clutch housing water

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

After operation in the rain or snow, or if the tractor has been washed, water may get into the clutch housing. Remove the drain plug, drain the water and then reinstall the plug.



(1) Water drain plug

3. Replacing fuses

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

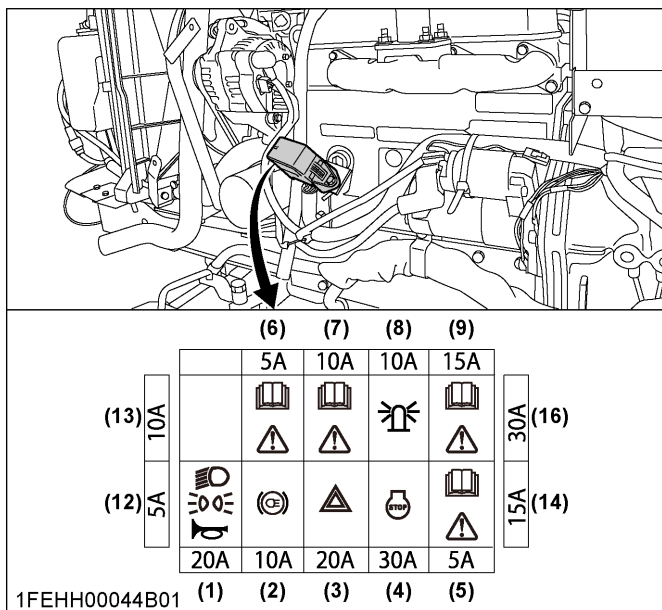
A blown fuse indicates that there is an overload or short somewhere in the electrical system.

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

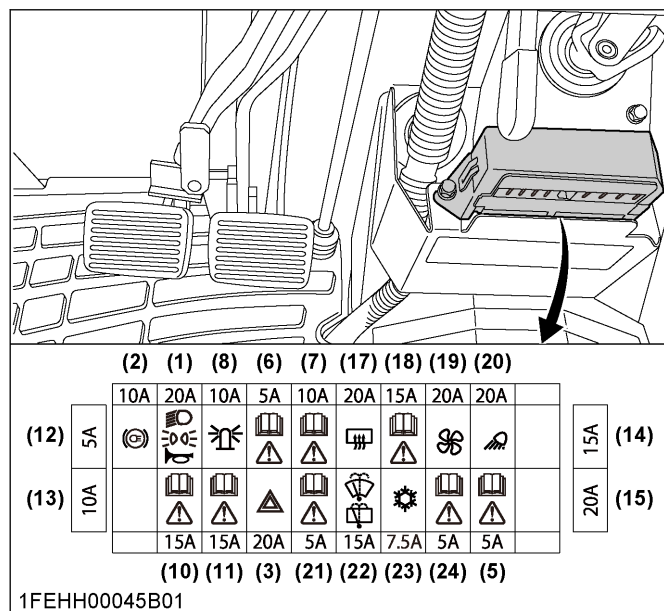
IMPORTANT :

- 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. For specific information dealing with electrical problems, read the troubleshooting section of this manual or contact your local KUBOTA Dealer.
- (See TROUBLESHOOTING on page 132.)

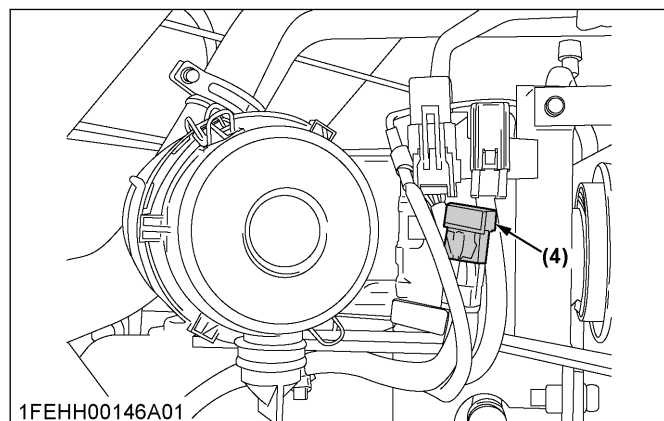
ROPS type



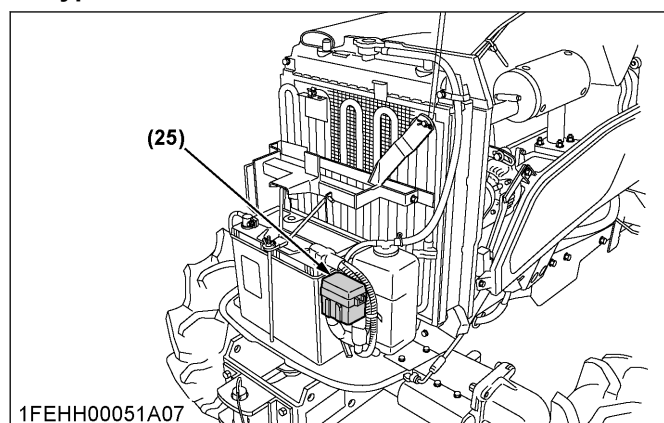
CAB type



CAB type only



All types



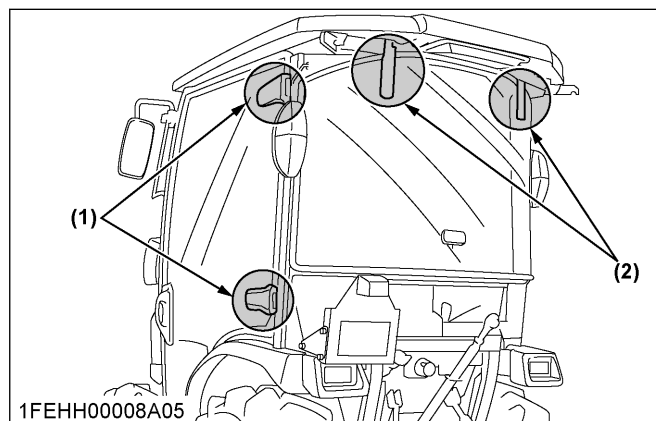
Protected circuit

Fuse No.	Capacity (A)	Protected circuit	ROPS	CAB
(1)	20	Headlight, position light, horn	○	○
(2)	10	Brake light	○	○
(3)	20	Flasher, hazard	○	○
(4)	30	Key stop	○	○
(5)	5	Glow relay	○	○
(6)	5	Panel, OPC	○	○
(7)	10	Alternator, ACC relay	○	○
(8)	10	Beacon	○	○
(9)	15	Outlet	○	---
(10)	15	Outlet (rear)	---	○
(11)	15	Outlet (front)	---	○
(12)	5	Spare fuse	○	○
(13)	10	Spare fuse	○	○
(14)	15	Spare fuse	○	○
(15)	20	Spare fuse	---	○
(16)	30	Spare fuse	○	---
(17)	20	Demister	---	○
(18)	15	Radio, dome light	---	○
(19)	20	Aircon blower	---	○
(20)	20	Worklight	---	○
(21)	5	Panel	---	○
(22)	15	Wiper	---	○
(23)	7.5	Aircon	---	○
(24)	5	Radio	---	○
(25)	Slow blow fuse	Check circuit against wrong battery connection	○	○

4. Replacing light bulb

- **Headlights:**
Take the bulb out of the light body and replace it with a new one.
- **Other lights:**
Detach the lens and replace the bulb.

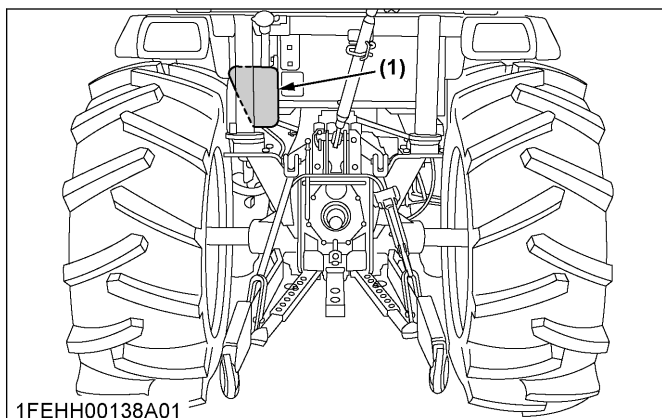
Light	Capacity	
	ROPS	CAB
Headlight	35 W	
Rear light and brake stop light	5 W/21 W	
Turn signal and hazard warning light	21 W	
Instrument panel light	1.7 W	---
Hazard light switch indicator	---	0.6 W
Worklight	---	35 W
Front position light	5 W	
Registration plate light	R 10 W	
Dome light (room lamp)	---	5 W

5. Lubricating points (CAB type)

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

6. Adding washer liquid (CAB type)

Add a proper amount of windscreen washer liquid.
Tank capacity: 1.5 L



(1) Washer liquid tank

7. Checking the amount of refrigerant (gas) (CAB type)

WARNING

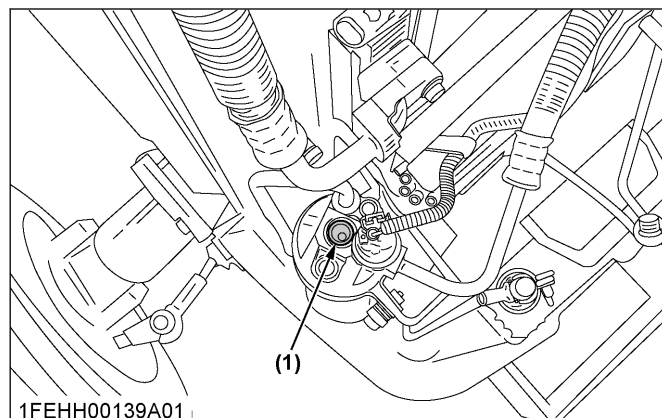
To avoid personal injury or death:

- 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 produces 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.

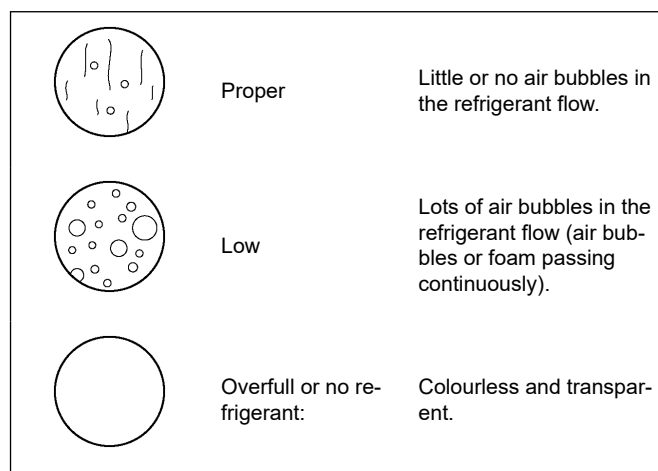
A shortage of refrigerant impairs the air-conditioner performance. Check the following points. If it is indicated that the amount of refrigerant is extremely low, ask your dealer to inspect and charge.

Checking procedure

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



(1) Sight glass



Fluorinated greenhouse gases

The air conditioner gas contains fluorinated greenhouse gases.

Industrial designation	Quantity (kg)	CO ₂ equivalent (ton)	GWP *
HFC-134a	0.68	0.98	1430

* GWP: Global warming potential

IMPORTANT :

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

8. Replacing radiator hose (water pipes)

Consult your local KUBOTA Dealer for this service.

NOTE :

- Replace the mentioned parts if any deterioration (crack, hardening, scar or deformation) or damage occurred.

9. Replacing fuel lines

Consult your local KUBOTA Dealer for this service.

NOTE :

- **Replace the mentioned parts if any deterioration (crack, hardening, scar or deformation) or damage occurred.**

10. Replacing the intake air line

Consult your local KUBOTA Dealer for this service.

NOTE :

- **Replace the mentioned parts if any deterioration (crack, hardening, scar or deformation) or damage occurred.**

STORAGE



WARNING

To avoid personal injury or death:

- Do not clean the machine while the engine is running.
- To avoid the danger of exhaust fume poisoning, do not operate the engine indoors without proper ventilation.
- When storing, remove the key from the key switch to prevent unauthorised 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 ensure 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, and also to pivot areas.
3. Detach the weights from the tractor body.
4. Inflate the tyres 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 5 minutes.
6. With all implements lowered to the ground, coat any exposed hydraulic cylinder piston rods with grease.
7. Remove the battery from the tractor. Store the battery following the battery storage procedures. (See Checking the battery condition on page 110.)
8. Keep the tractor in a dry place where the tractor is sheltered from the elements. Cover the tractor.
9. 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 4 tyres are off the ground. Keep the tyres 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 down before washing.

- Cover the tractor after the muffler and the engine have cooled down.

REMOVING THE TRACTOR FROM STORAGE

1. Check the tyre air pressure and inflate the tyres if needed.
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 and hydraulic oil, engine coolant, and any attached implements).
6. Start the engine. Observe all gauges. If all the gauges are functioning properly and have normal readings, move the tractor outside. Once outside, park the tractor and let the engine idle for at least 5 minutes. Shut the engine off and walk around the tractor and make a visual inspection looking for evidence of oil or water leaks.
7. With the engine fully warmed up, release the handbrake and test the brakes for proper adjustment as you move forward. Adjust the brakes as necessary.

TROUBLESHOOTING

ENGINE TROUBLESHOOTING

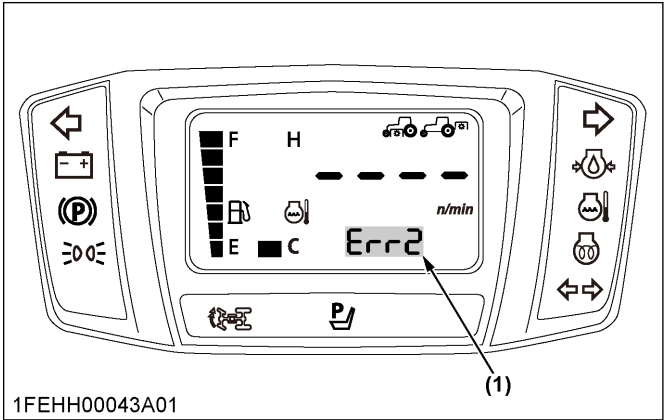
If something is wrong with the engine, refer to the following table for the cause and its corrective measure.

Trouble		Cause	Countermeasure
Engine is difficult to start or will not start.		No fuel flow.	Check the fuel tank and the fuel filter. Replace filter if necessary.
		Air or water is in the fuel system.	- Check to see if the fuel line coupler bolt and nut are tight. - Bleed the fuel system. (See Bleeding fuel system on page 126.)
		In winter, oil viscosity increases, and engine revolution is slow.	- Use oils of different viscosities, depending on ambient temperatures. - Use engine block heater (optional).
		Battery becomes weak and the engine does not turn over quick enough.	- Clean battery cables and 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.
Insufficient engine power.		- Insufficient or dirty fuel. - The air cleaner is clogged.	- Check the fuel system. - Clean or replace the element.
Engine stops suddenly.		Insufficient fuel.	- Refuel. - Bleed the fuel system if necessary.
Exhaust fumes are coloured.	Black	- Fuel quality is poor. - Too much oil. - The air cleaner is clogged.	- Change the fuel and fuel filter. - Drain excess oil if necessary. - Clean or replace the element.
	Blue White	- The inside of the exhaust muffler is damp with fuel. - Injection nozzle trouble. - Fuel quality is poor.	- Heat the muffler by applying load to the engine. - Check the injection nozzle. - Change the fuel and fuel filter.
Engine overheats.		Engine overloaded.	Shift to lower gear or reduce load.
		Low coolant level.	Fill cooling system to the correct level; check radiator and hoses for loose connections or leaks.
		Loose or defective fan belt.	Adjust or replace fan belt.
		Dirty radiator core or grille screens.	Remove all rubbish.
		Coolant flow route corroded.	Flush cooling system.

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

POWER TRAIN TROUBLE SHOOTING

If something is wrong with the power train, the error code shown below is displayed on the liquid crystal display, indicating the location of the trouble. If an error code appears, immediately contact your local KUBOTA Dealer for repairs.



(1) Error code

Displayed error code	Trouble	Operator's action
[Err1]	Water temperature sensor trouble	Contact your local KUBOTA Dealer.
[Err2]	Fuel sensor trouble	
[Err3]	Meter panel memory reading trouble	

OPTIONS

LIST OF OPTIONS

Consult your local KUBOTA Dealer for further details.

- Rear work light
high visibility for night work
- Front end weights
for front ballast
- Mounting kit (front end weights)
to mount front end weights
- Front hydraulic outlet kit for 3 cylinder ROPS
- Front hydraulic outlet kit for 4 cylinder ROPS
- Front hydraulic outlet kit for CAB
- Loader valve kit
- Rear window wiper kit with washer
- Double acting remote control valve for CAB
- Lever kit for remote control valve for CAB

APPENDICES

MAXIMUM MASSES

1. Maximum permissible load of the tyre (applicable only when running on public road)

B2311

Tyre combination 1

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		180/85D12	12.4-16	---	---
Maximum permissible load of the tyre	kg	325	730	---	---
Maximum axle load	kg	650	1460	2000 ^{*3}	845 to 1087
Minimum limit percentages	%	27	68	---	---

Tyre combination 2

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		24x8.50-12	13.6-16	---	---
Maximum permissible load of the tyre	kg	425	800	---	---
Maximum axle load	kg	850	1600 ^{*2}	2000 ^{*3}	835 to 1073
Minimum limit percentages	%	20	58	---	---

Tyre combination 3

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		240/60R12	300/70R20	---	---
Maximum permissible load of the tyre	kg	580	1060	---	---
Maximum axle load	kg	1160	1600 ^{*2}	2000 ^{*3}	850 to 1065
Minimum limit percentages	%	20	42	---	---

Tyre combination 4

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		26 x 12.00-12	320/70R20	---	---
Maximum permissible load of the tyre	kg	1150	1280	---	---
Maximum axle load	kg	880 ^{*1}	1600 ^{*2}	2000 ^{*3}	835 to 1050
Minimum limit percentages	%	20	56	---	---

Tyre combination 5

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		26 x 12.00-12	13.6-16	---	---
Maximum permissible load of the tyre	kg	775	800	---	---
Maximum axle load	kg	880 ^{*1}	1600 ^{*2}	2000 ^{*3}	820 to 1030
Minimum limit percentages	%	20	56	---	---

*1 44% of the 2000 kg which is the maximum permissible weight of the tractor.

*2 80% of the 2000 kg which is the maximum permissible weight of the tractor.

*3 1800 kg when towing a trailer.

B2201, B2231, B2261**Tyre combination 1**

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		5-12	8-16	---	---
Maximum permissible load of the tyre	kg	224	475	---	---
Maximum axle load	kg	448	950	1398	308 to 594
Minimum limit percentages	%	32	68	---	---

Tyre combination 2

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		6-12	9.5-16	---	---
Maximum permissible load of the tyre	kg	272	560	---	---
Maximum axle load	kg	544	1120	1664	664 to 945
Minimum limit percentages	%	33	67	---	---

Tyre combination 3

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		6.00-12	9.5-18	---	---
Maximum permissible load of the tyre	kg	325	600	---	---
Maximum axle load	kg	650	1200	1850 ^{*3}	737 to 1026
Minimum limit percentages	%	35	65	---	---

Tyre combination 4

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		22x8.50-12	31x13.5-15	---	---
Maximum permissible load of the tyre	kg	387	925	---	---
Maximum axle load	kg	774	1600 ^{*2}	2000 ^{*3}	905 to 1186
Minimum limit percentages	%	20	61	---	---

Tyre combination 5

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		24x8.50-12	315/75D-15	---	---
Maximum permissible load of the tyre	kg	425	690	---	---
Maximum axle load	kg	850	1380	2000 ^{*3}	898 to 1181
Minimum limit percentages	%	31	57	---	---

Tyre combination 6

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		240/60R12	280/70R18	---	---
Maximum permissible load of the tyre	kg	425	690	---	---
Maximum axle load	kg	850	1600 ^{*2}	2000 ^{*3}	895 to 1150
Minimum limit percentages	%	20	58	---	---

Tyre combination 7

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		23 x 10.50-12	280/70R16	---	---
Maximum permissible load of the tyre	kg	580	1180	---	---
Maximum axle load	kg	880 ^{*1}	1600 ^{*2}	2000 ^{*3}	905 to 1145
Minimum limit percentages	%	20	56	---	---

Tyre combination 8

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		7.00-12	300/70R20	---	---
Maximum permissible load of the tyre	kg	690	1060	---	---
Maximum axle load	kg	880 ^{*1}	1600 ^{*2}	2000 ^{*3}	845 to 1090
Minimum limit percentages	%	20	56	---	---

Tyre combination 9

		Front tyre	Rear tyre	Technically permissible maximum laden mass	Tractor payload
Tyre size		27 x 8.50-15	300/70R20	---	---
Maximum permissible load of the tyre	kg	1230	1060	---	---
Maximum axle load	kg	880 ^{*1}	1600 ^{*2}	2000 ^{*3}	840 to 1085
Minimum limit percentages	%	20	56	---	---

*1 44% of the 2000 kg which is the maximum permissible weight of the tractor.

*2 80% of the 2000 kg which is the maximum permissible weight of the tractor.

*3 1800 kg when towing a trailer.

2. Trailer load capacity**B2311**

Type	CAB						Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/ technically permissible mass on the coupling point S (kg)
	Height above ground H (mm)							
Front tyre	180/85D12	24 x 8.50-12	240-60R12	26 x 12.00-12	24 x 12.00-12			
Rear tyre	12.4-16	13.6-16	300/70R20	320/70R20	13.6-16			
Drawbar (D21)	425	441	409	435	427	335	500	
Clevis type mechanical coupling (KB2)	423	439	407	433	425	335	500	

B2311

Type	ROPS						
	Height above ground H (mm)					Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/ technically permissible mass on the coupling point S (kg)
Front tyre	180/85D12	24 x 8.50-12	240-60R12	26 x 12.00-12	24 x 12.00-12		
Rear tyre	12.4-16	13.6-16	300/70R20	320/70R20	13.6-16		
Drawbar (D21)	425	441	409	435	427	335	500
Clevis type mechanical coupling (KB2)	423	439	407	433	425	335	500

B2231, B2261

Type	CAB						
	Height above ground H (mm)					Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/ technically permissible mass on the coupling point S (kg)
Front tyre	5-12	6-12	6.00-12	22 x 8.50-12	24 x 8.50-12		
Rear tyre	8-16	9.5-16	9.5-18	31 x 13.5-15	315/75D-15		
Drawbar (D21)	345	372	397	339	376	335	500
Clevis type mechanical coupling (KB2)	343	370	395	337	374	335	500
Clevis type mechanical coupling (520092)	255 to 507	282 to 534	307 to 559	249 to 501	286 to 538	370	500

B2231, B2261

Type	CAB					
	Height above ground H (mm)				Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/technically permissible mass on the coupling point S (kg)
Front tyre	240/60R12	23 x 10.50-12	7.00-12	27 x 8.50-15		
Rear tyre	280/70R18	280/70R16	300/70R20	300/70R20		
Drawbar (D21)	376	353	417	417	335	500
Clevis type mechanical coupling (KB2)	374	351	415	415	335	500
Clevis type mechanical coupling (520092)	286 to 538	263 to 515	327 to 579	327 to 579	370	500

B2201, B2231, B2261

Type	Rear ROPS (HST type)						
	Height above ground H (mm)					Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/ technically permissible mass on the coupling point S (kg)
Front tyre	5-12	6-12	6.00-12	22 x 8.50-12	24 x 8.50-12		
Rear tyre	8-16	9.5-16	9.5-18	31 x 13.5-15	315/75D-15		
Drawbar (D21)	345	372	397	339	376	335	500
Clevis type mechanical coupling (KB2)	343	370	395	337	374	335	500
Clevis type mechanical coupling (520092)	255 to 507	282 to 534	307 to 559	249 to 501	286 to 538	370	500

B2201, B2231, B2261

Type	Rear ROPS (HST type)					
	Height above ground H (mm)				Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/technically permissible mass on the coupling point S (kg)
Front tyre	240/60R12	23 x 10.50-12	7.00-12	27 x 8.50-15		
Rear tyre	280/70R18	280/70R16	300/70R20	300/70R20		
Drawbar (D21)	376	353	417	417	335	500
Clevis type mechanical coupling (KB2)	374	351	415	415	335	500
Clevis type mechanical coupling (520092)	286 to 538	263 to 515	327 to 579	327 to 579	370	500

B2201, B2231, B2261

Type	Rear ROPS (manual transmission type)						
	Height above ground H (mm)					Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/ technically permissible mass on the coupling point S (kg)
Front tyre	5-12	6-12	6.00-12	22 x 8.50-12	24 x 8.50-12		
Rear tyre	8-16	9.5-16	9.5-18	31 x 13.5-15	315/75D-15		
Drawbar (D21)	345	372	397	339	376	335	500
Clevis type mechanical coupling (KB2)	343	370	395	337	374	335	500
Clevis type mechanical coupling (520092)	255 to 507	282 to 534	307 to 559	249 to 501	286 to 538	370	500

B2201, B2231, B2261

Type	Rear ROPS (manual transmission type)					
	Height above ground H (mm)				Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/technically permissible mass on the coupling point S (kg)
Front tyre	240/60R12	23 x 10.50-12	7.00-12	27 x 8.50-15		
Rear tyre	280/70R18	280/70R16	300/70R20	300/70R20		
Drawbar (D21)	376	353	417	417	335	500
Clevis type mechanical coupling (KB2)	374	351	415	415	335	500
Clevis type mechanical coupling (520092)	286 to 538	263 to 515	327 to 579	327 to 579	370	500

B2201, B2261

Type	Centre ROPS (manual transmission type)						
	Height above ground H (mm)					Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/ technically permissible mass on the coupling point S (kg)
Front tyre	5-12	6-12	6.00-12	22 x 8.50-12	24 x 8.50-12		
Rear tyre	8-16	9.5-16	9.5-18	31 x 13.5-15	315/75D-15		
Drawbar (D21)	345	372	397	339	376	335	500
Clevis type mechanical coupling (KB2)	343	370	395	337	374	335	500
Clevis type mechanical coupling (520092)	255 to 507	282 to 534	307 to 559	249 to 501	286 to 538	370	500

B2201, B2261

Type	Centre ROPS (manual transmission type)					
	Height above ground H (mm)				Distance from the vertical plane passing through the axis of the rear axle C (mm)	Maximum static vertical load/technically permissible mass on the coupling point S (kg)
Front tyre	240/60R12	23 x 10.50-12	7.00-12	27 x 8.50-15		
Rear tyre	280/70R18	280/70R16	300/70R20	300/70R20		
Drawbar (D21)	376	353	417	417	335	500
Clevis type mechanical coupling (KB2)	374	351	415	415	335	500
Clevis type mechanical coupling (520092)	286 to 538	263 to 515	327 to 579	327 to 579	370	500

Drawbar (D21)

	Permissible towable masses	Total technically permissible mass of the tractor-trailer combination
Unbraked towable mass	1500 kg	2800 kg
Independently braked towable mass	3000 kg	4500 kg
Inertia-braked towable mass	3000 kg	4500 kg
Towable mass when fitted with hydraulic or pneumatic braking	---	---

Drawbar (KB2)

	Permissible towable masses	Total technically permissible mass of the tractor-trailer combination
Unbraked towable mass	1500 kg	2800 kg
Independently braked towable mass	3000 kg	4500 kg
Inertia-braked towable mass	3000 kg	4500 kg
Towable mass when fitted with hydraulic or pneumatic braking	---	---

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