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# OPERATOR'S MANUAL

# KUBOTA TRACTOR

MODELS M7132·M7152·M7172



READ AND SAVE THIS MANUAL

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# ABBREVIATION LIST

Abbreviations	Definitions	Abbreviations	Definitions
2WD	2 Wheel Drive	Hi-Lo	High Speed-Low Speed
4WD	4 Wheel Drive	HST	Hydrostatic Transmission
API	American Petroleum Institute	m/s	Meters Per Second
ASABE	American Society of Agricultural and Biological Engineers, USA	PTO	Power Take Off
ASTM	American Society for Testing and Materials, USA	RH/LH	Right-hand and left-hand sides are determined by facing in the direction of forward travel
CVT	Continuously Variable Transmission	ROPS	Roll-Over Protective Structures
DEF	Diesel Exhaust Fluid	rpm	Revolutions Per Minute
DT	Dual Traction [4WD]	r/s	Revolutions Per Second
fpm	Feet Per Minute	SAE	Society of Automotive Engineers, USA
DPF	Diesel Particulate Filter	SCR	Selective Catalytic Reduction
GST	Glide Shift Transmission	SMV	Slow Moving Vehicle

## KUBOTA Corporation is ...

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

To achieve this status, the company has through the years diversified the range of its products and services to a remarkable extent. 30 plants and 35,000 employees produce over 1,000 different items, large and small.

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

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

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

### 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.

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# UNIVERSAL SYMBOLS

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

## ■ General

-  Safety Alert Symbol
-  Master System Warning
-  System Abnormality
-  Fast
-  Slow
-  Creep
-  Read Operator's Manual
-  Lock
-  ON (Engaged)
-  OFF (Disengaged)
-  Service
-  Security

## ■ Engine-related

-  Diesel Fuel
-  Hourmeter/Elapsed Operating Hours
-  Engine Coolant-Temperature
-  Low Temperature Regulation
-  Engine Intake/Combustion Air-Filter
-  Engine Oil-Pressure
-  Water Separator
-  Engine-Warning
-  Engine-Rotational Speed
-  Engine-Rev Limiter

-  Engine-Over Speed
-  Engine-RPM Memory A
-  Engine-RPM Adjuster
-  Engine-RPM Increase
-  Engine-Run
-  Engine-Start
-  Engine-Stop
-  Electrical Power-accessories
-  Diesel Preheat/Glow Plugs (Low Temperature Start Aid)
-  Regeneration
-  Regeneration inhibit
-  Regeneration (Switch)
-  Parked Regeneration
-  DEF/AdBlue®-Level
-  DEF/AdBlue®-Low Level
-  DEF/AdBlue®-Poor Quality
-  DEF/AdBlue®-Trouble
-  DEF/AdBlue®-Thawing

## ■ Vehicle body-related

-  Travel Direction-Forward
-  Travel Direction-Rearward
-  Travel Direction
-  4-Wheel Drive-On
-  4-Wheel Drive-On

## UNIVERSAL SYMBOLS

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 <b>AUTO</b>	4-Wheel Drive-Automatic
 <b></b>	Headland Management System
 <b></b>	Cruise Control
 <b></b>	Limp Home
 <b>ESC</b>	Escape
 <b>P</b>	Operator Presence Control
 <b>AUTO</b>	Auto-Transmission
 <b>AUTO</b>	Auto-Transmission-Sensitivity
 <b>AUTO</b>	Auto-Transmission-Road Control
 <b>AUTO</b>	Auto-Transmission-Field Control
 <b></b>	Transmission Oil Filter
 <b></b>	Low Temperature Regulation
 <b></b>	Gear Shifting Warning
 <b></b>	Clutch
 <b></b>	Brake
 <b>P</b>	Parking brake
 <b>!</b>	Parking brake/Brake Oil
 <b></b>	Air brake
 <b></b>	Trailer Brake
 <b>!</b>	Trailer Brake Warning
 <b></b>	Differential Lock
 <b>AUTO</b>	Differential Lock-Automatic
 <b></b>	Steering Wheel-Tilt
 <b></b>	Steering Wheel-Telescope
 <b>AUTO</b>	Automatic Steering Control
 <b></b>	Steering Oil Filter
 <b></b>	Front Suspension

 <b>AUTO</b>	Front Suspension-Automatic
 <b></b>	Front Suspension-Down
 <b></b>	Front Suspension-Up
 <b></b>	Front Suspension-Lock

### ■ PTO-related

 <b></b>	PTO-Off (Disengaged)
 <b></b>	PTO-On (Engaged)
 <b>540</b>	PTO-540 rpm
 <b>540E</b>	PTO-540E rpm
 <b>1000</b>	PTO-1000 rpm
 <b>1000E</b>	PTO-1000E rpm
 <b></b>	PTO-Front
 <b>F</b>	PTO-Front
 <b></b>	PTO-Rear
 <b>R</b>	PTO-Rear

### ■ Hydraulic-related

 <b></b>	Draft Control
 <b></b>	Position Control
 <b></b>	Hydraulic Oil Filter
 <b></b>	Lift Arm Control-Up/Transport
 <b></b>	Lift Arm Control-Up
 <b></b>	Lift Arm Control-Down
 <b></b>	Lift Arm Control-Down
 <b></b>	Lift Arm Control-Block
 <b></b>	Lift Arm Control-Float
 <b></b>	Lift Arm Control-Lock
 <b></b>	3-Point Lifting/Lowering

-  Lift Arm-Height
-  Remote Cylinder-Retракт
-  Remote Cylinder-Extend
-  Remote Cylinder-Float
-  Remote Cylinder-Lock
-  Remote Cylinder-Lock

## ■ Electric-related

-  Battery Charging Condition
-  Master Lighting Switch
-  Headlight-Low Beam
-  Headlight-High Beam
-  Head Light-Flashing
-  Work Light
-  Position Lamps
-  Direction indicator
-  Direction indicator-Trailer
-  Hazard Warning Lights
-  Audible Warning Device
-  Beacon Light
-  Windscreen Wiper
-  Windscreen Wiper-Intermittent
-  Windscreen Washer
-  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 utilize as quickly as possible every advance in our research. The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated. KUBOTA distributors and dealers will have the most up-to-date information. Please do not hesitate to consult with them.

## SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.



**DANGER :** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING :** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION :** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

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

**NOTE :** Gives helpful information.

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## 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

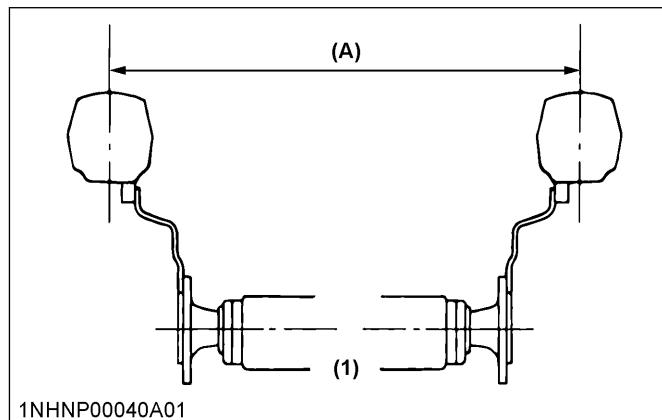
Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.

#### 1. General

- Pay special attention to the 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.
- 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 249.)
- 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 36.)
- 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 TYRES, WHEELS AND BALLAST on page 231.)



(1) Rear wheels

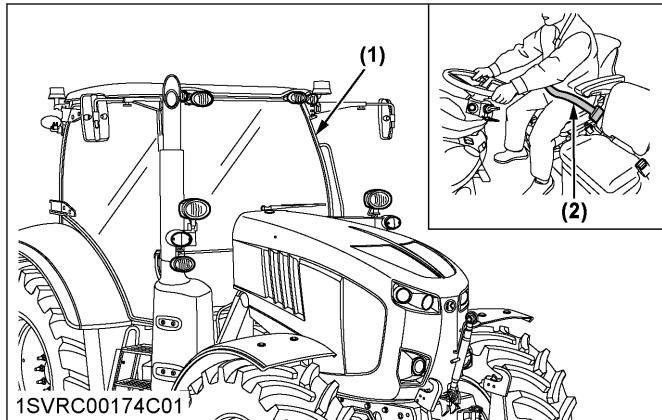
(A) Tread width

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

#### 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 the risk of serious injury or death, should the tractor be upset. Check for overhead clearance which may interfere with a CAB or ROPS.
- 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.
- Always use the seat belt if the tractor has a CAB or ROPS. Do not use the seat belt if there is no ROPS. Check the seat belt regularly and replace if frayed or damaged.

# SAFE OPERATION



(1) CAB  
(2) Seat belt

- The CAB is not tested for falling object protection structure (FOPS).
- The CAB fulfils the requirements of safety level 2 for hazardous substances.
- The CAB provides protection against dust but not against aerosols and vapours.
- The CAB cannot be used under conditions requiring protection against aerosols and vapours.

## 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.

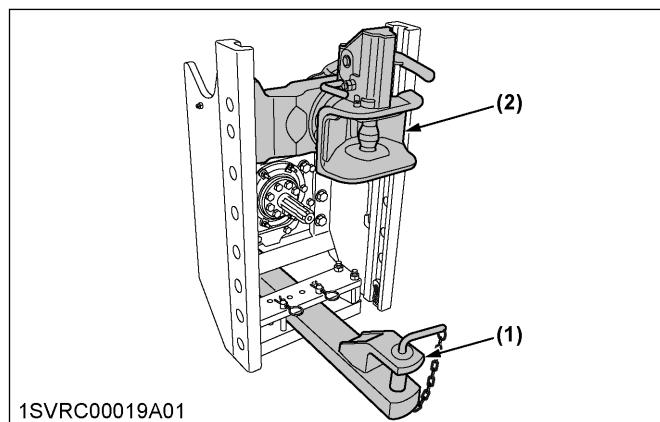
### 1. Starting to operate the tractor

- Always sit in the operator's seat when starting engine or operating levers or controls. Adjust seat per instructions in the operating the tractor section. Never start engine while standing on the ground.
- Before starting the engine, make sure that all levers (including auxiliary control levers) are in their neutral positions and that the parking brake is engaged. Fasten the seat belt if the tractor has a CAB, a fixed ROPS or a foldable ROPS in the upright and locked position.
- Do not start engine by shorting across starter terminals or bypassing the safety start switch. The machine 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 neutral circuit on page 261.) Do not operate unless they are functioning correctly.

### 2. Working the tractor

- Pull only from the hitch devices. Never hitch to 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  
(2) High-hitch

- For trailing PTO-driven implements, set the hitch devices to the towing position.
- Attach pulled or towed loads to the hitch devices only.
- 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.
- Never utilise the headband management system, if anyone is in the work area of the tractor.

## **SAFE OPERATION**

- Do not operate the tractor when there is a possibility of lightning. Even if the tractor is equipped with a CAB, the operator is not protected from lightning.

### **3. Passenger seat (if equipped)**

- Always wear your seat belt and stabilise your body by holding the handrail on the CAB frame.
- The passenger seat is intended for carrying one adult person on public roads. Do not allow any others on the passenger seat except for one adult person even on public roads. Never allow children to sit down on this seat.
- The left hand door must be closed at all time whenever the passenger seat is occupied and the tractor is in motion.
- Do not permit others to ride, except on the designated passenger seat.
- Use caution to avoid the risks of obstructing operator's view, falling from the machine and interfering with controls.
- Do not start and stop the tractor suddenly, nor take a sharp turn.
- Do not use the passenger seat if the seat belt or the door lock fails to function.
- Do not use this seat if the road shoulder is too soft or the road is too narrow.
- Fold the passenger seat when not in use, because otherwise the operator may tip over when he or she gets on or off the CAB.
- When opening and closing the door from the passenger-seat-sitting position, move the door slowly. This is to prevent his or her hand(s) from getting caught by the door or his or her body to hit against the door.

### **4. 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.

### **5. Operating on slopes**

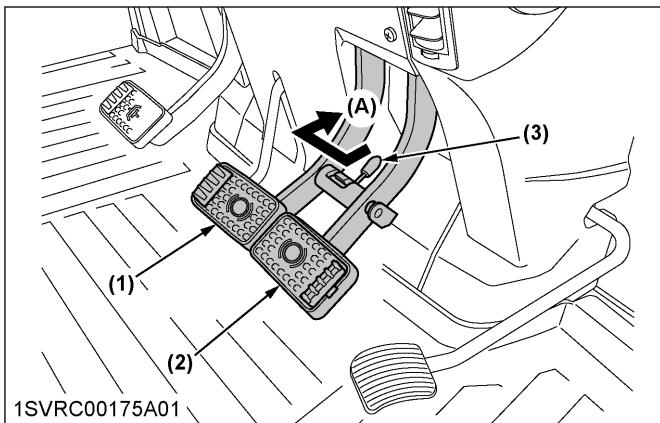
Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution.

- 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.
  - To improve stability on slopes, set the widest possible wheel tread.  
(See TYRES, WHEELS AND BALLAST on page 231.)
- Follow the recommendations for proper ballasting.
- To avoid free wheeling:
    - Do not shift the shuttle lever while on a slope.
    - Stop completely by using the brakes and by depressing the clutch pedal, then shift the shuttle lever.
    - Start off after selecting shuttle direction, by releasing the clutch pedal.
  - When driving down a slope, ensure that 4-wheel drive is engaged to increase traction (if equipped).

### **6. Driving the tractor on the road**

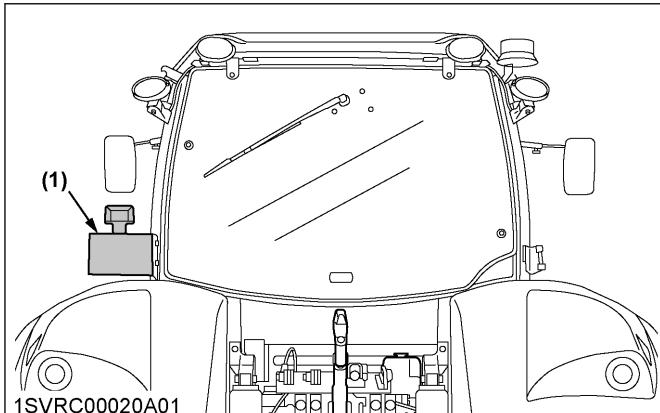
- Lock the 2 brake pedals together to help assure straight-line stops. Uneven braking at road speeds could cause the tractor to tip over.

# ⚠ SAFE OPERATION



(1) Brake pedal (LH)  
 (2) Brake pedal (RH)  
 (3) Brake pedal lock

- 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.
- When driving down a slope, ensure that the 4-wheel drive is engaged to increase traction (if equipped).
- Always slow the tractor down before turning. Turning at high speed may tip the tractor over.
- Observe all local traffic and safety regulations. Use the registration plate as required.

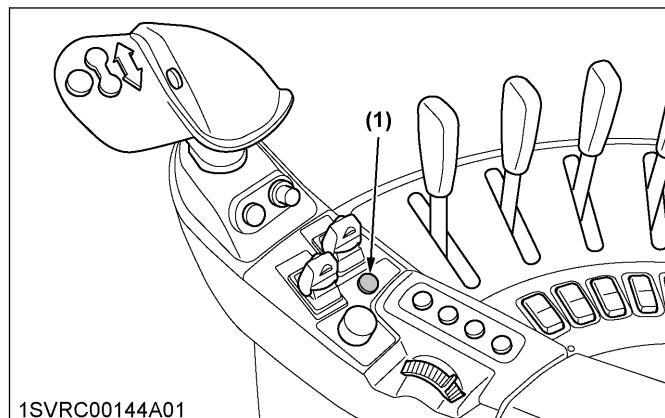


(1) Registration plate

- 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.
- Do not operate an implement while the tractor is on the road. Lock the 3-point hitch in the raised position. For travelling with the ride control on, however, keep the 3-point hitch unlocked.

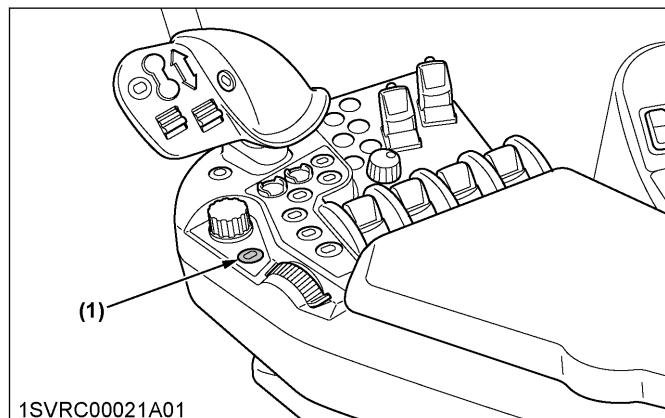
- Set the 3-point hitch lock button in the "LOCK" position to hold the implement in the raised position.

## Standard model



(1) 3-point hitch lock button

## Premium, Premium KVT model



(1) 3-point hitch lock button

- If you drive the tractor with a trailer loaded with something heavy in tow and step on the brake pedal, the tractor is pushed forward by the trailer due to an abrupt slowdown. This may fail to keep the tractor under control.

Before stepping on the brake pedal, press the transmission ratio lock button for smooth slowdown in combination with the engine brake (**Premium KVT model**).

## PARKING THE TRACTOR

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

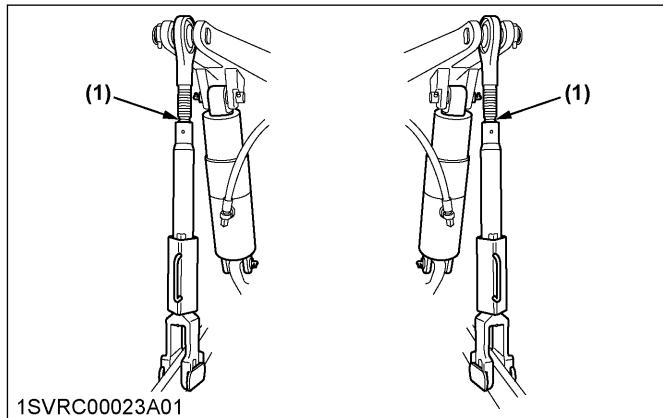
Leaving transmission in gear with the engine stopped will not prevent tractor from rolling.

- Make sure that the tractor has come to a complete stop before dismounting.

## ⚠ SAFE OPERATION

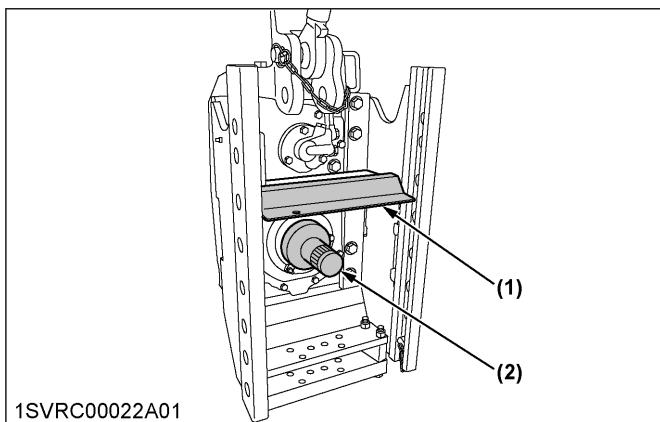
- Avoid parking on steep slopes. If at all possible, park on a firm and level surface; if not, park across a slope and chock the wheels.  
Failure to comply with this warning may allow the tractor to move and could cause injury or death.

Do not extend the lift rod beyond the groove on the threaded rod.



## 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

- 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 handbrake and place chocks behind and in front of the rear wheels. Stay clear of all rotating parts.

Never step over rotating parts.

## 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.
- To avoid injuries like pinching fingers while raising or lowering the 3-point hitch:  
Keep away from moving parts like lift arms, lifting rods, or lower links.
- To avoid injury from separation:

## TOWING A TRAILER

- Connect the trailer after carefully confirming its brake type and the tractor connector. Connection errors will inhibit full brake performance, which is extremely dangerous.

(See Trailer brake on page 153.)

Brake type of trailer	Tractor
Dual-line trailer brake	Connect to dual-line connector
Single-line trailer brake	Connect to single-line connector

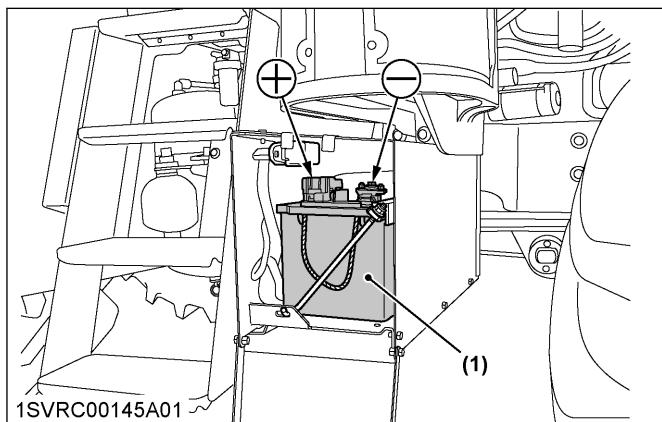
## SERVICING THE TRACTOR

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 shuttle 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 tank, not the radiator.  
(See Checking the coolant level on page 258.)
- Always stop the engine before refuelling. Avoid spills and overfilling.
- Do not smoke when working around the battery or when refuelling. Keep all sparks and flames away from the battery and fuel tank. The battery presents an explosive hazard, because it gives off hydrogen and oxygen especially when recharging.

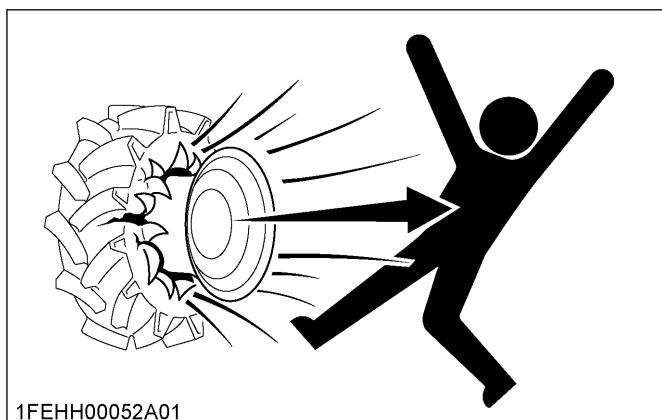
# ⚠ SAFE OPERATION

- Before “jump starting” a dead battery, read and follow all of the instructions.  
(See JUMP STARTING on page 137.)
- 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

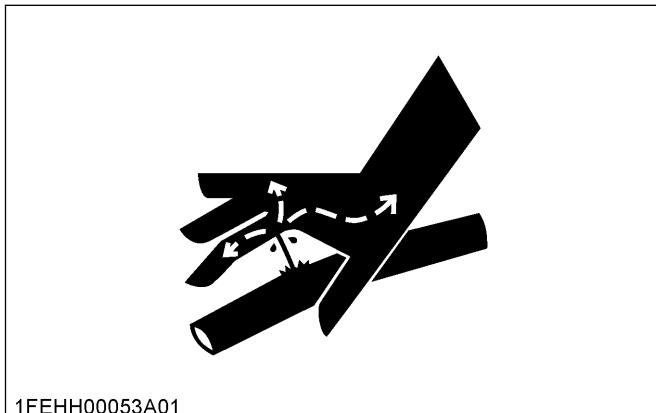
- Do not attempt to mount a tyre on a rim. This should be done by a qualified person with the proper equipment.
- Always maintain the correct tyre pressure. Do not inflate tyres above the recommended pressure shown in the operator's manual.



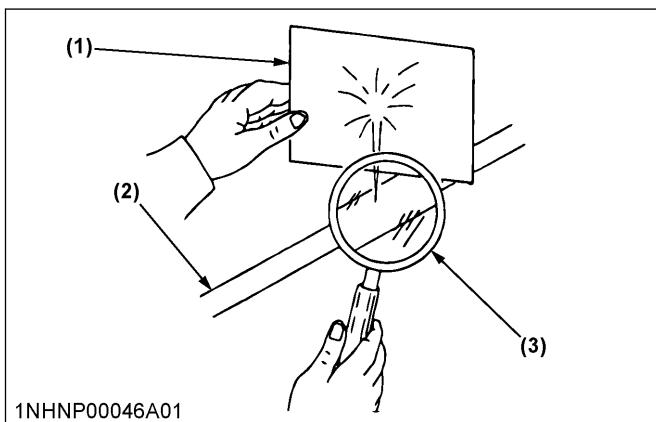
- Securely support the tractor when either changing wheels or adjusting the wheel tread width.
- Make sure that wheel bolts have been tightened to the specified torque.
- Disconnect the battery's ground cable and stop the engine to avoid the possibility of the machine runaway due to 4WD braking system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

service or repair with only rear wheels off the ground.

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



- 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

- Do not open the high-pressure fuel system. High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt to repair fuel lines, sensors, or any other components between the high-pressure fuel pump

# SAFE OPERATION

and injectors on engines with high pressure common rail fuel system.

- To avoid hazardous high voltage, turn the key switch to the "OFF" position if it is necessary to check or repair the computer, harness or connectors.
- During diesel particulate filter (hereinafter called DPF) regenerating operations, exhaust gases and exhaust filter components reach temperatures hot enough to burn people, or ignite or melt common materials.
- Keep the tractor away from people, animals or structures which may be susceptible to harm or damage from hot exhaust gases.
- To prevent fires, keep the DPF/SCR muffler and its surroundings clear of anything flammable and keep clean at all times (selective catalytic reduction - hereinafter called SCR).
- 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.
- During regeneration, white exhaust gas may be visible. Do not allow regeneration in a non-ventilated space.
- During regeneration, do not leave the tractor.
- 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, urea aqueous solution (DEF/ AdBlue<sup>®</sup>), 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.

- Before servicing a tractor equipped with the front suspension, be sure to lower the machine to the lowest position.
- The front suspension hydraulic circuit is still under high pressure after the engine has stopped. Do not disconnect the pipes and/or hoses because you may get injured by high-pressure oil. If pipes and/or hoses are found worn or damaged, consult your local KUBOTA Dealer for this service.

## USING AUTO STEERING SYSTEM

### 1. Intended use

The automatic steering system is designed to be controlled by persons working in agriculture.

Any usage beyond recommendations is therefore prohibited.

Kubota auto steering is not suitable for applications on narrow dikes or steep hillsides, when danger of tractor roll-over exists.

It should not be exposed to areas that are in danger of explosions.

Never expose the unit or individual components to chemicals such as: acids, lye, oils, lubricants or other aggressive petro-chemical materials.

The manufacturer is not responsible for any damages relating to contrary to the intended use.

The risk is the sole responsibility of the user.

The intended use also applies to recommended operator regulations as well as service and maintenance directions.

### 2. General advice

Please read this manual thoroughly.

This manual and safety labels may also be available in other languages.

Check with your dealer or our internet website.

### 3. Responsibilities of the owner

Only persons who have read and understood the complete manual should work with this system.

Only persons who are familiar with installation, service and repair of the steering system, and also aware of possible dangers in conjunction with the job, should use the system.

Regional regulations for health protection and accident prevention must be obeyed at all times and while working with the system. Never use the system on public roads or highways.

Any changes to the steering system which are not authorized by the manufacturer, void any liability of the manufacturer in the event of a malfunction.

If you do not understand any part of this manual and need assistance please contact your dealer.

### 4. Demands on operating and service personnel

Every person operating or servicing this system must meet the following minimum requirements:

- He/she is physically capable of controlling the machine.

# **⚠ SAFE OPERATION**

- He/she is able to safely perform the work with the machine and system as specified in this operating manual.
- He/she understands the functionality of the machine and system within the scope of the work and can recognize and avoid the related hazards.
- He/she has understood the operator's manual and can implement the information contained therein accordingly.
- He/she is familiar with the safe operation of tractors.

## **5. Safety regulations**

With exception of the driver, no other person should ride in the driver's area of the tractor fitted with the steering system. Additional persons could distract or block visibility of the driver and prevent him from operating and observing the steering system. The presence of a rider on a passenger seat is only acceptable for brief observations or training purpose. The passenger seat is never considered a children's seat. Only experienced persons, with the operation of the machine, should be considered for schooling on a machine which is fitted with the steering system.

Pay special attention that no children are near or on the tractor, which is fitted with the steering system. This is important to be aware of as soon as the motor is running. Children are unpredictable and supervision is limited when operating the steering system.

Before starting field work, be familiar with the use of the system and the tractor. As soon as the steering system is activated, a responsible adult must be in charge of supervision and monitoring. In dangerous situations it is always safer to turn off the system and drive by hand in order to avoid personal injury or material damage. The steering system is automatically deactivated when the driver's seat is abandoned. Use the main switch to additionally shut it off.

Be prepared to steer by hand at the end of the field or track, since the system is not able to turn the machine on the headland.

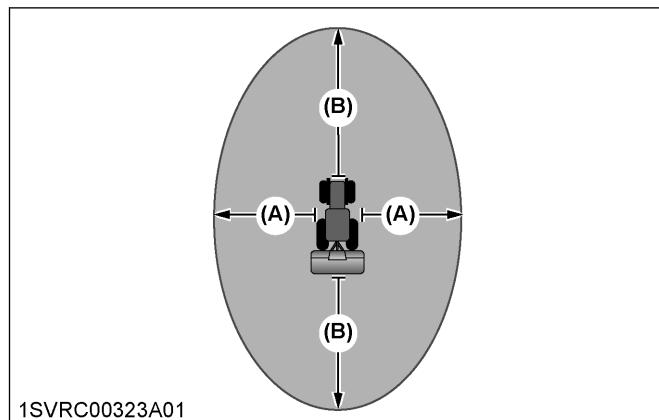
Never activate the steering system while driving on public roads. For safety reasons, it is advised to keep at least one hand on the steering wheel when using the steering system at speeds higher than 6 mph (10 km/h). In the event of a malfunction, action can be taken immediately.

## **6. Danger zone**

Never allow any person to enter within the danger zone after the steering system is activated. This danger zone is shown in the following illustration. At any sign of danger the operator should deactivate the steering system immediately. The operator can reactivate the steering system once the danger zone is clear.

For service and control duties, only authorized persons can enter the danger zone after receiving verbal conformation with the operator. Such people have to be clearly informed about possible dangers before entering the danger zone. All activities between the operator and these persons should be discussed beforehand. All service, calibrating, and control duties on the steering system should only take place, if technically possible, on a parked tractor with the engine turned off. It is the operator's responsibility that the tractor cannot be started inadvertently by untrained persons without previous verbal agreement.

### **Danger zone:**



(A) 20 m (65 ft)

(B) 50 m (165 ft)

People present within the danger zone may be exposed to serious injury or death. People could be run over in the event of a possible machine malfunction. The operator is obligated to stop the tractor as soon as people enter the danger zone.

Beware of defective or electronic lines which are not securely attached. These can cause fatal electric shocks.

Defective hydraulic lines or those which are not securely fastened can become loose and toss wildly around. High-pressure hydraulic oil can leak and cause serious injuries to the skin or face.

### **Preparations for emergencies**

Prepare for possible emergencies:

- Always have a fire extinguisher and First Aid Kit on hand.
- Always have emergency phone numbers for fire department, ambulance and doctor on hand.

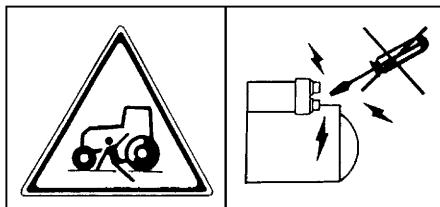
# ⚠ SAFE OPERATION

## 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. K3512-4718-1

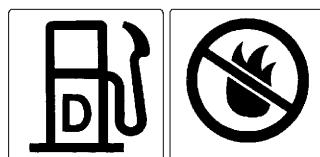
Start engine from operator's seat only.



1BDABANAP083B

(2) Part No. TA040-4956-2

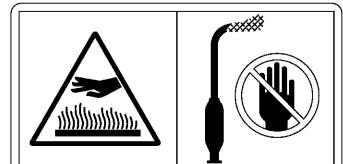
Diesel fuel     No fire.  
only.



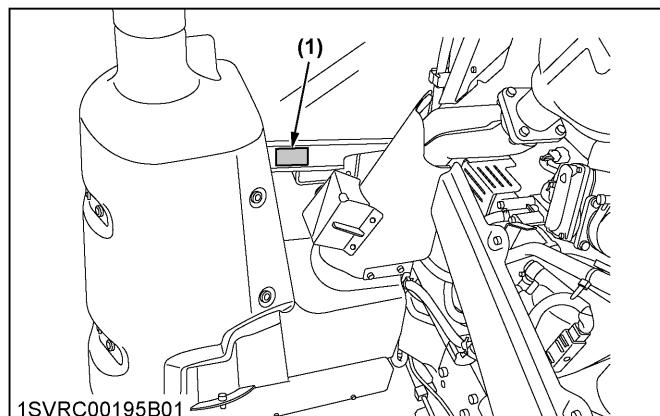
1AGAIAZAP118A

(3) Part No. TC750-4958-1

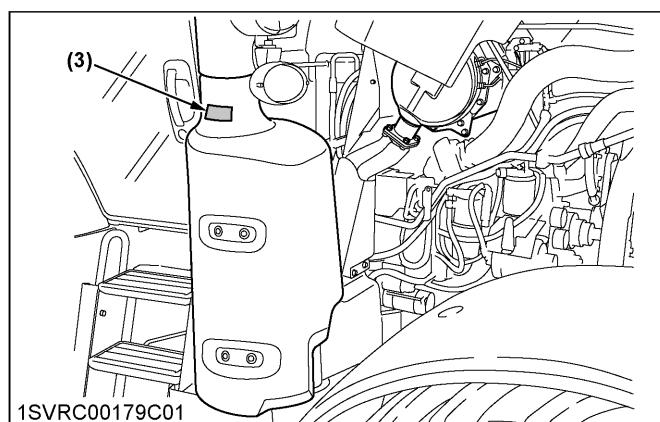
Do not touch hot surfaces.



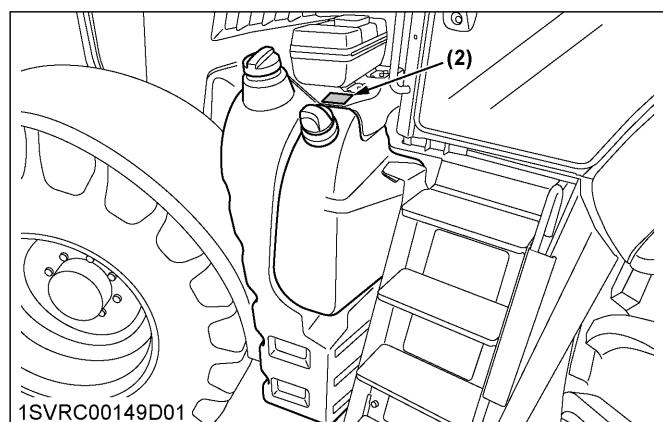
1AGBAAAAP069A



1SVRC00195B01



1SVRC00179C01



1SVRC00149D01

1SVRC00237A01enGB

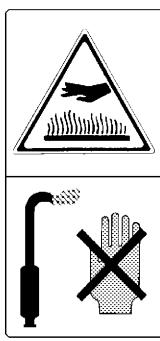
# ⚠ SAFE OPERATION

(1) Part No. TA040-4957-1  
Do not open or remove safety shields while engine is running.



1AGAIAZAP110A

(2) Part No. 3N300-4958-1  
Do not touch hot surfaces.



1AGAIAZAP071A

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

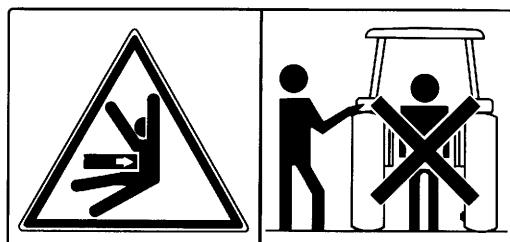


(4) Part No. 3J080-3821-1

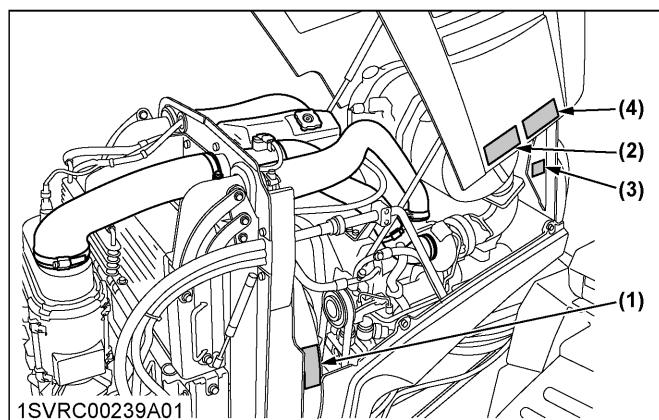


1SVRC00347A01

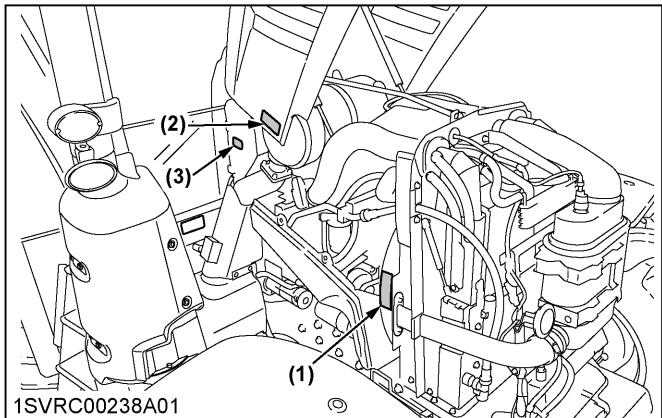
(5) Part No. 3F240-9819-1  
Do not stand by IMPLEMENT or between implement and tractor while operating remote hitch switch.



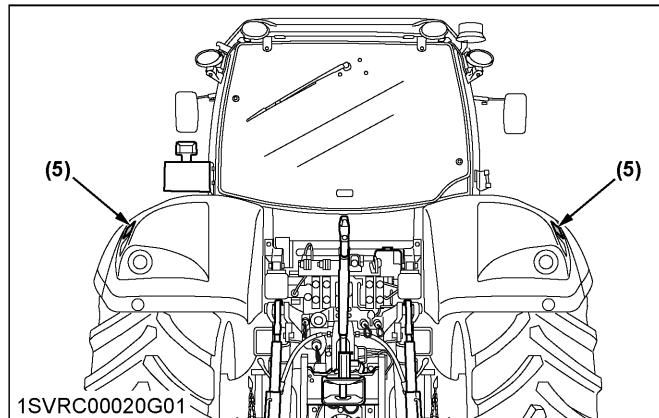
1AGAIBIAP1770



1SVRC00239A01



1SVRC00238A01



1SVRC00020G01

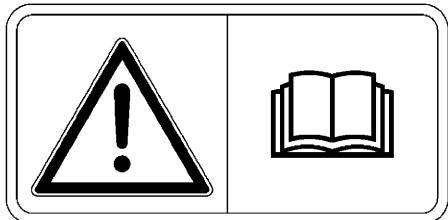
1SVRC00240A01enGB

## SAFE OPERATION

(1) Part No. 3P903-9837-1

REFRIGERANT UNDER HIGH PRESSURE  
Improper service methods may cause  
personal injury.

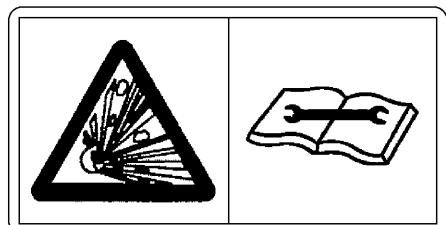
This air conditioning system should be  
serviced by your dealer or any other qualified  
service shop.



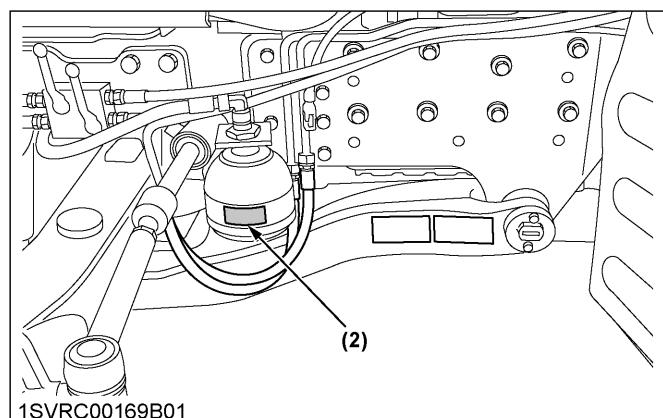
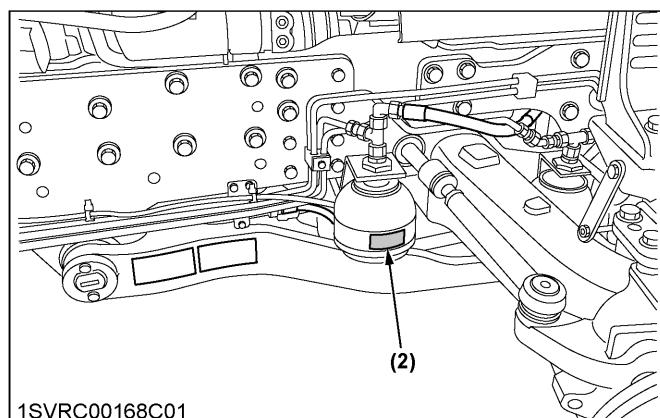
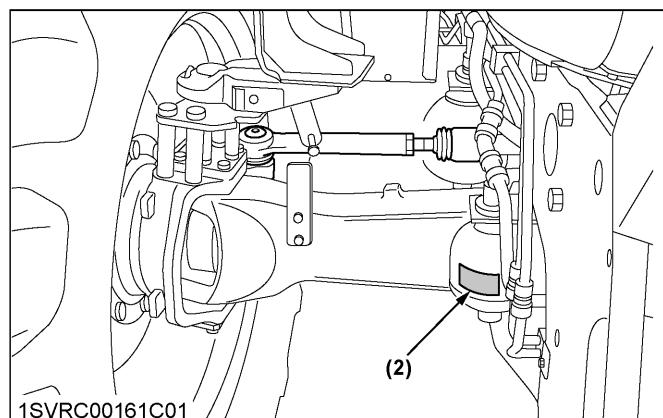
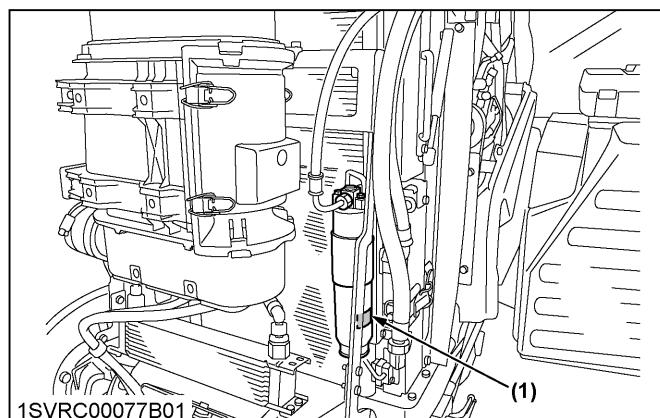
1AGAIFYAP126A

(2) Part No. 3J080-1353-1

Hydraulic accumulator contains gas and  
oil under pressure. For removal and  
repair instructions, consult your local  
Kubota Dealer.



1AGBCAAAP344A

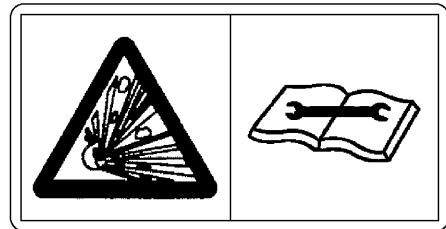


1SVRC00247A01enGB

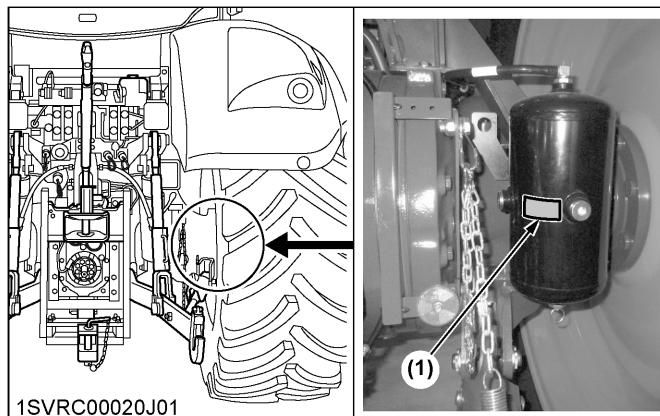
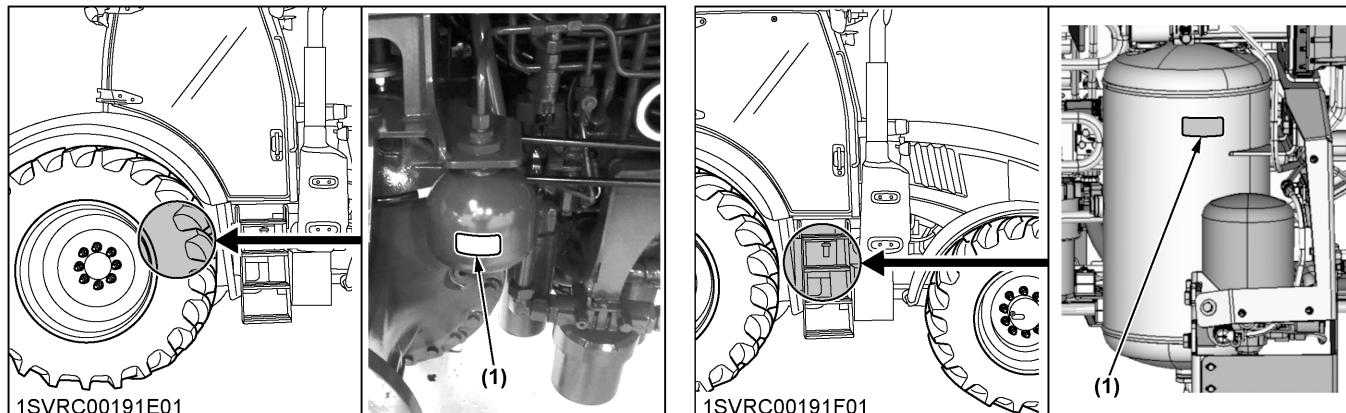
# ⚠ SAFE OPERATION

(1) Part No. 3J080-1353-1

Hydraulic accumulator contains gas and oil under pressure. For removal and repair instructions, consult your local Kubota Dealer.



1AGBCAAAP344A

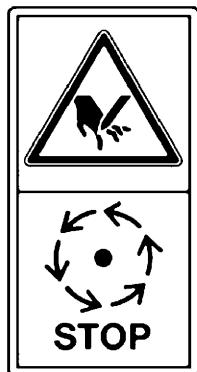


1SVRC00349A01enGB

# ⚠ SAFE OPERATION

(1) Part No. 3J036-3173-1

Wait until all machine components have completely stopped before touching them.



1AGBCAAP745A

(2) Part No. 3P903-4902-1

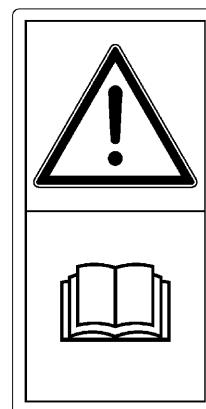
Seat belt should be used.



1AGAIFYAP086A

(3) Part No. TD179-3491-1

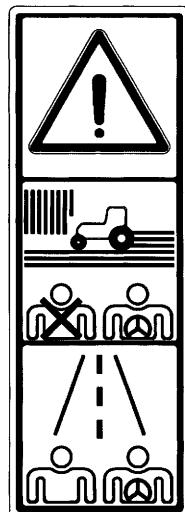
Carefully read operator's manual before handling the machine. Observe instructions and safety rules when operating.



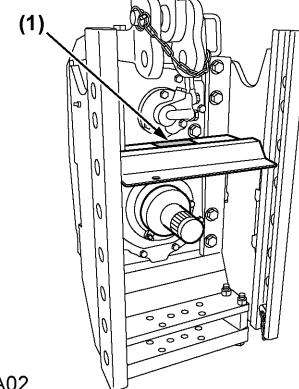
1AGAWAEAP088A

(4) Part No. 3J032-6007-1

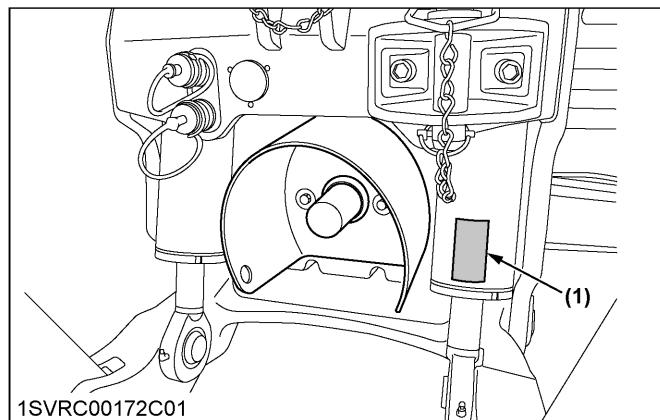
Use passenger seat on public roads, do not use on headland.



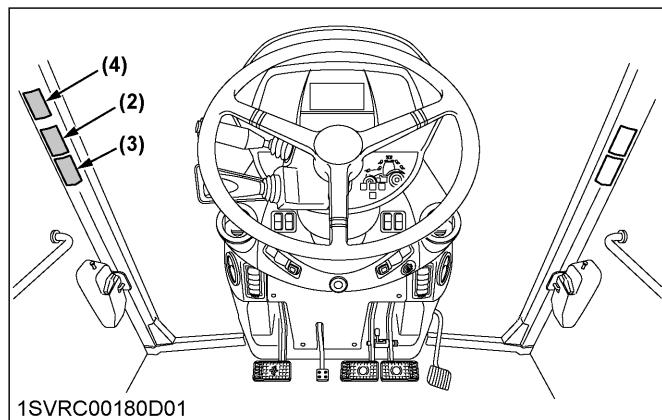
1SVRC00348A01



1SVRC00022A02



1SVRC00172C01



1SVRC00180D01

1SVRC00241A01enGB

# ⚠ SAFE OPERATION

(1) Part No. 3J032-6021-1

Shield Eyes, Explosive Gases can cause blindness or injury.

No Sparks, No Flames, No smoking. Sulphuric acid can cause blindness or severe burns.

Hazardous high Voltage.

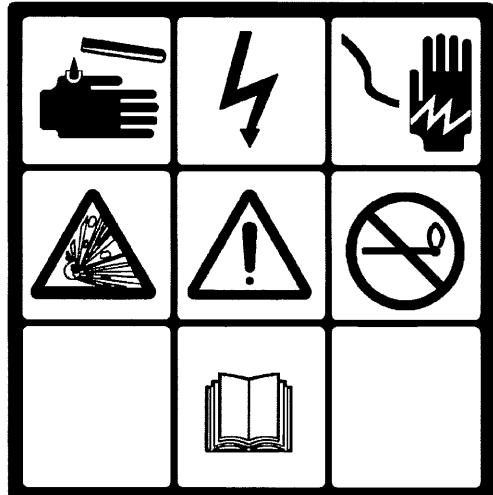
Keep away from Children.

Do not tip. Do not open battery.

Flush Eyes immediately with water.

Get medical help fast.

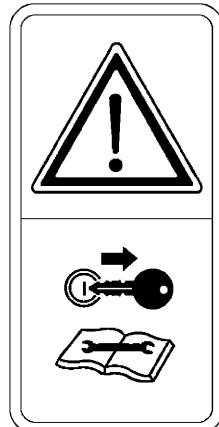
Wash hands after handling.



1AGBCAAAP284A

(2) Part No. 3P903-9883-1

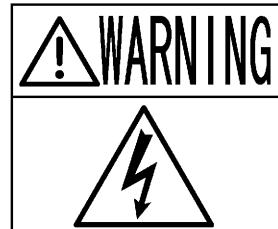
Hazardous high voltage. Turn the starter switch to the OFF position if it is necessary to check or repair the computer, harness or connectors.



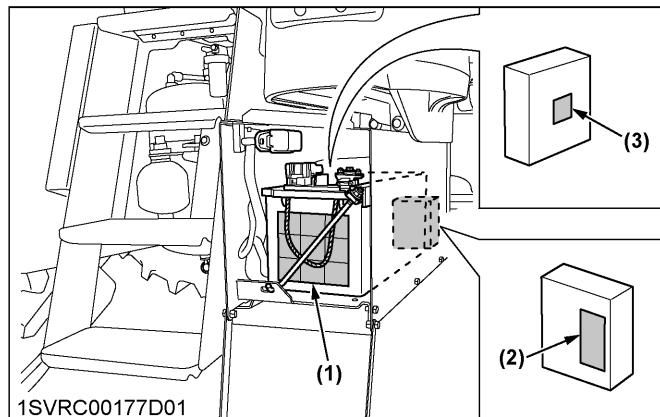
1AGAIFYAP127A

(3) Part No. 1J524-8721-1

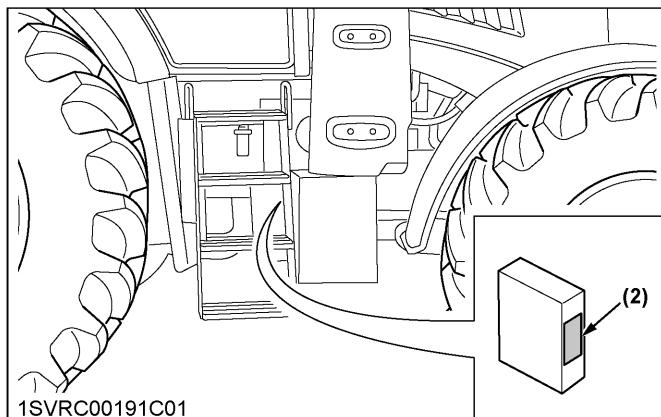
Hazardous high voltage. Turn the starter switch to the OFF position if it is necessary to check or repair the computer, harness or connectors.



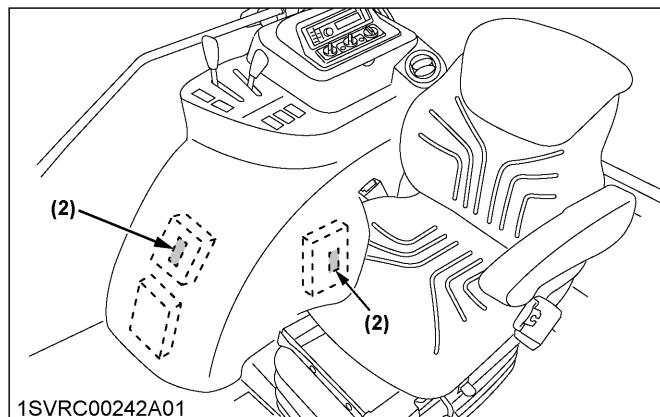
1AGAIJNAP165A



1SVRC00177D01



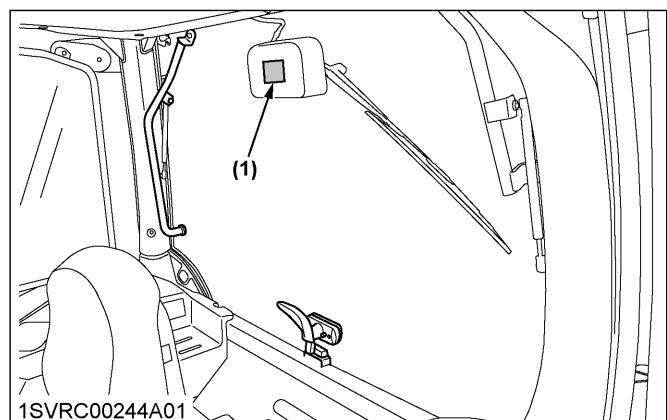
1SVRC00191C01



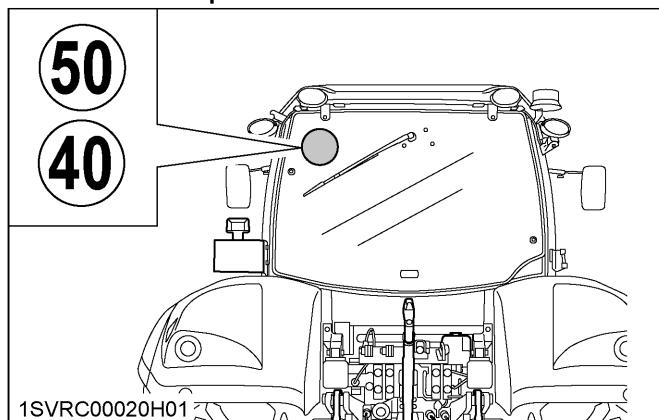
1SVRC00242A01

# ⚠ SAFE OPERATION

(1) Part No. 3S223-9839-1  
Emergency exit



Maximum road speed



1SVRC00245A01enGB

## **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 tractor and has the desire to help you get the most value from it.

After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself. However, when in need of parts or major service, be sure to see your KUBOTA Dealer.

For service, contact the KUBOTA Dealership from which you purchased your tractor or your local KUBOTA Dealer.

When in need of parts, be prepared to give your dealer the tractor, CAB/ROPS and engine serial numbers.

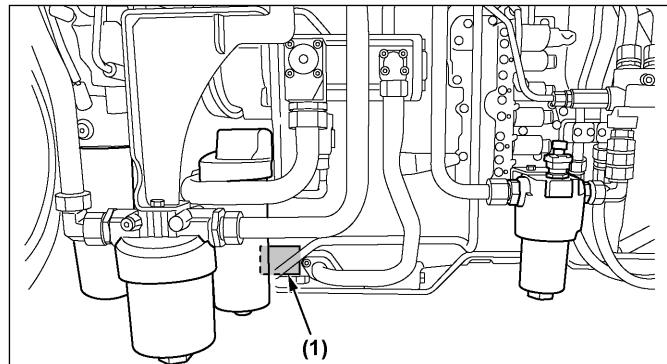
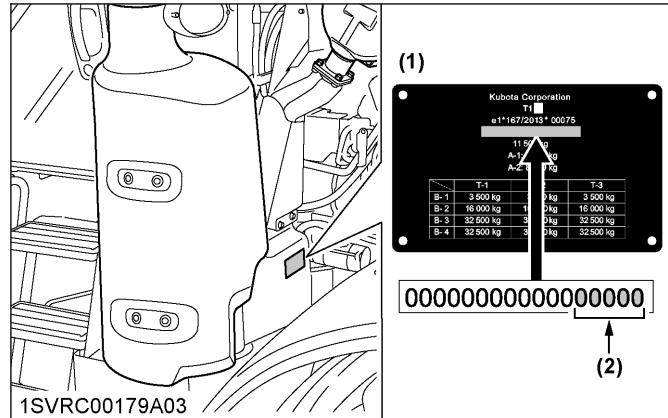
Locate the serial numbers now and record them in the space provided.

Date of purchase	
Name of dealer	

To be filled in by purchaser

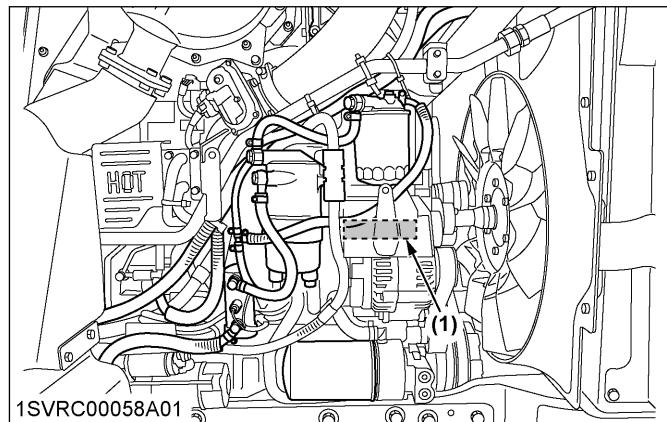
	Type	Serial No.
Tractor		
CAB/ROPS		
Engine		

To be filled in by purchaser



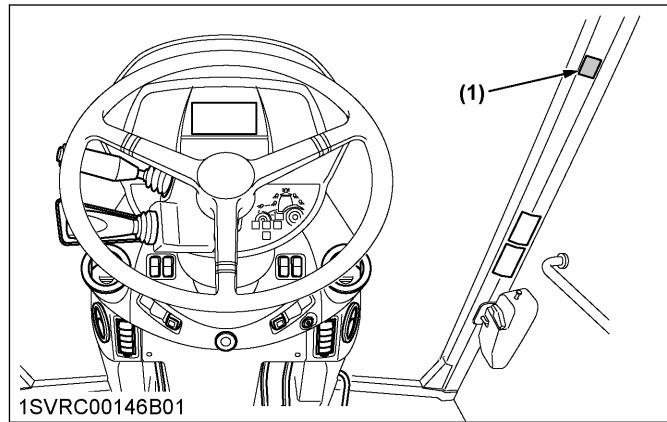
1SVRC00074A01

(1) Transmission identification plate



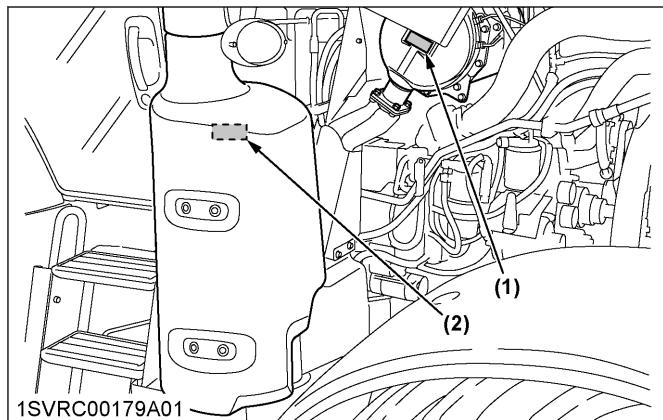
1SVRC00058A01

(1) Engine serial number

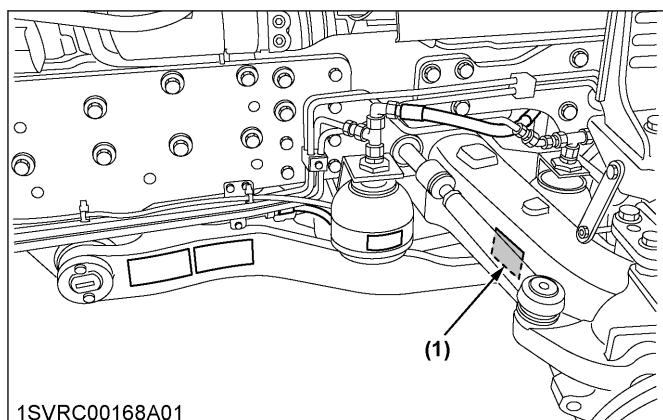


1SVRC00146B01

(1) CAB identification plate (CAB serial number)



(1) Diesel particulate filter (DPF) serial number  
(2) Selective catalytic reduction (SCR) muffler serial number



(1) Front axle identification plate

## 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

Model		Standard			Premium			Premium KVT					
		M7132	M7152	M7172	M7132	M7152	M7172	M7132	M7152	M7172			
Engine	Model	Kubota V6108-CR-TIEF4											
	Type	Direct injection, water-cooled 4 cycle diesel, common rail system, turbocharger, intercooler											
	Number of cylinders	4											
	Total displacement	cm <sup>3</sup>	6124										
	Bore and stroke	mm	118 x 140										
	Rated power* <sup>1</sup>	kW (PS) / rpm	84.6 (115) / 2100	99.3 (135) / 2100	114.0 (155) / 2100	84.6 (115) / 2100	99.3 (135) / 2100	114.0 (155) / 2100	84.6 (115) / 2100	99.3 (135) / 2100	114.0 (155) / 2100		
	Maximum torque (without boost)	N·m / rpm	594 / 1500	682 / 1500	704 / 1500	594 / 1500	682 / 1500	704 / 1500	594 / 1500	682 / 1500	704 / 1500		
	PTO power* <sup>2</sup>	kW (PS) / rpm	85.8 (117) / 2000	100.7 (137) / 2000	104.4 (142) / 2000	85.8 (117) / 2000	100.7 (137) / 2000	104.4 (142) / 2000	85.8 (117) / 2000	100.7 (137) / 2000	104.4 (142) / 2000		
	Additional boost power	kW (PS)	+14.7 (+20)	+3.7 (+5)	+14.7 (+20)	+3.7 (+5)	+14.7 (+20)	+3.7 (+5)	+14.7 (+20)	+3.7 (+5)	+3.7 (+5)		
	Battery capacity	174 Ah (20 HR) / 1400 A											
Dimensions	Fuel Tank Capacity	L	330										
	Engine oil capacity	L	22										
	Coolant capacity	L	24										
	DEF/AdBlue® capacity	L	38										
	Overall length	mm	4770 with ballast carrier / 4790 with front linkage										
	Overall width (minimum tread)	mm	2500 with flange axle										
Dimensions	Overall height	mm	3010										
	Wheel base	mm	2720										
	Tread	Front	mm	1928 to 1999									
		Rear	mm	1850 to 1980									
	Crop clearance	mm	370 to 410										
Weight			kg	6730						6980			
Travelling system	Standard tyre size	Front tyres		380/85R28, 420/70R28, 420/85R28, 480/70R28, 540/65R28									
		Rear tyres		460/85R38, 520/70R38, 520/85R38, 580/70R38, 650/65R38									
	Transmission	Type		Power shift						CVT			
		Main gear shift		6-speed power shift									
		Range gear shift		5-speed synchronized (GST)									
		No. of speeds		F30/R15 (F54/R27 with optional creep)									
		Clutch		Multiple wet disc, electronic-hydraulic operated									

(Continued)

## SPECIFICATIONS

Model			Standard			Premium			Premium KVT						
			M7132	M7152	M7172	M7132	M7152	M7172	M7132	M7152	M7172				
Travelling system	Steering			Hydrostatic power steering Hydrostatic, with telescopic steering column for steering wheel height adjustment											
	4-wheel drive change			Electronic hydraulically operated											
	Braking system			Hydraulically operated wet disc											
	Trailer brake			Hydraulic (standard) Pneumatic (option)											
	Differential lock	Front and rear	Electronic hydraulically operated (actuated front and rear at the same time)												
Hydraulic unit	Hydraulic control system			Open centre system			Closed centre with load sensing								
	Pump capacity <sup>*3</sup> (For rear lift and remote hydraulic)		L / min	80		110									
	3-point hitch			Category 3/3N											
	Hydraulic lifting cylinder diameter		mm	100											
	Max. lifting force	At lifting points	kg	9400											
		24 inches behind lifting point <sup>*4</sup>	kg	5350											
	Remote hydraulic control			Mechanical valve, max. 4 valves		Electronic control valve, max. 5 valves									
	System pressure	MPa (kgf/cm <sup>2</sup> )	20.0 (208)												
	Traction system			Quick hook type lower link											
	Front lift (option)	Max. lifting capacity at link end	kg	3900											
		Max. lifting capacity in full stroke	kg	3200											
PTO	Live PTO (independent)	Clutch		Electric controlled, multiple wet disc with independent brake											
		Direction of turning		Clockwise, viewed from tractor rear											
		PTO/ engine speed	rpm	4 speed with 6 and 21 splines: 540/2005, 540E/1608, 1000/1995, 1000E/1600											
	Front PTO (option)	Shaft diameter		1" 3/8											
		PTO shaft splines		6											
		1000 PTO engine rpm		1930											
The level of protection against hazardous substance <sup>*5</sup>				Category 2											
Noise at the operator's ear <sup>*6</sup>	CAB (door closed)	dB (A)	70			71									
	CAB (door opened)	dB (A)	80			82									

(Continued)

Model			Standard			Premium			Premium KVT				
			M7132	M7152	M7172	M7132	M7152	M7172	M7132	M7152	M7172		
Noise at the tractor in motion <sup>*7</sup>			dB (A)	81 db(A) for 40 km/h-versions. 84 db(A) for 50 km/h-versions.						78 db(A) for 40 km/h-versions. 80 db(A) for 50 km/h-versions.			
Value of the vibration level <sup>*8</sup>	Grammer MSG95AL /741	Light driver	m/s <sup>2</sup>	0.95									
		Heavy driver	m/s <sup>2</sup>	0.74									

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

The figures in "Dimensions" and "Weight" are for the tractor equipped with a drawbar (short type), a high-hitch (normal) and a piton-fix.

\*1 According to 97/68EC

\*2 Manufacturer's estimate

\*3 Theoretical value

\*4 Top link mounting: upper hole

\*5 According to EN 15695-1:2009

\*6 Measured according to Delegated Regulation (EU) No 1322/2014, article 16, annex XIII

\*7 Measured according to Delegated Regulation (EU) No 2015/96, article 9, annex III

\*8 Measured according to Delegated Regulation (EU) No. 1322/2014, article 17, annex XIV

## TRAVELLING SPEEDS

Standard, Premium models

			40 km/h model		50 km/h model	
Tyre size (rear)			650/65R38			
Creep lever (option)	Range gear shift	Main gear shift	Forward	Reverse	Forward	Reverse
			Speed (km/h)	Speed (km/h)	Speed (km/h)	Speed (km/h)
ON	A	1	0.37	0.40	0.37	0.40
		2	0.44	0.56	0.44	0.56
		3	0.51	0.78	0.51	0.78
		4	0.60	-	0.60	-
		5	0.72	-	0.72	-
		6	0.84	-	0.84	-
	B	1	0.66	0.72	0.66	0.72
		2	0.78	1.00	0.78	1.00
		3	0.92	1.40	0.92	1.40
		4	1.08	-	1.08	-
		5	1.28	-	1.28	-
		6	1.51	-	1.51	-
	C	1	1.00	1.09	1.00	1.09
		2	1.17	1.51	1.17	1.51
		3	1.38	2.11	1.38	2.11
		4	1.63	-	1.63	-
		5	1.93	-	1.93	-
		6	2.27	-	2.27	-
	D	1	1.68	1.83	1.68	1.83
		2	1.97	2.55	1.97	2.55
		3	2.33	3.55	2.33	3.55
		4	2.75	-	2.75	-
		5	3.25	-	3.25	-
		6	3.82	-	3.82	-
OFF	A	1	3.0	3.3	3.0	3.3
		2	3.6	4.6	3.6	4.6
		3	4.2	6.4	4.2	6.4
		4	4.9	-	4.9	-
		5	5.8	-	5.8	-
		6	6.9	-	6.9	-
	B	1	5.4	5.9	5.4	5.9
		2	6.4	8.2	6.4	8.2
		3	7.5	11.4	7.5	11.4

(Continued)

			40 km/h model		50 km/h model	
Tyre size (rear)			650/65R38			
Creep lever (option)	Range gear shift	Main gear shift	Forward	Reverse	Forward	Reverse
			Speed (km/h)	Speed (km/h)	Speed (km/h)	Speed (km/h)
OFF	B	4	8.8	-	8.8	-
		5	10.5	-	10.5	-
		6	12.3	-	12.3	-
	C	1	8.1	8.9	8.1	8.9
		2	9.6	12.4	9.6	12.4
		3	11.3	17.2	11.3	17.2
		4	13.3	-	13.3	-
		5	15.8	-	15.8	-
		6	18.6	-	18.6	-
	D	1	13.7	15.0	13.7	15.0
		2	16.1	20.8	16.1	20.8
		3	19.1	27.0*	19.1	27.0*
		4	22.4	-	22.4	-
		5	26.5	-	26.5	-
		6	31.3	-	31.3	-
	E	1	23.4	25.5	23.4	25.5
		2	27.5	27.0*	27.5	27.0*
		3	32.5	-	32.5	-
		4	38.3	-	38.3	-
		5	40.0*	-	45.3	-
		6	40.0*	-	50.0*	-

At rated engine rpm.

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

\* Maximum travelling speed 40 km/h or 50 km/h is maintained and controlled by engine speed and gear shift.

### Premium KVT model

Maximum speed 40 km/h model: 0.5 to 40 km/h

Maximum speed 50 km/h model: 0.5 to 50 km/h

### NOTE :

- KVT transmission provides infinite ground speeds to maximum 40 km/h or 50 km/h in the forward and 30 km/h in the reverse mode.

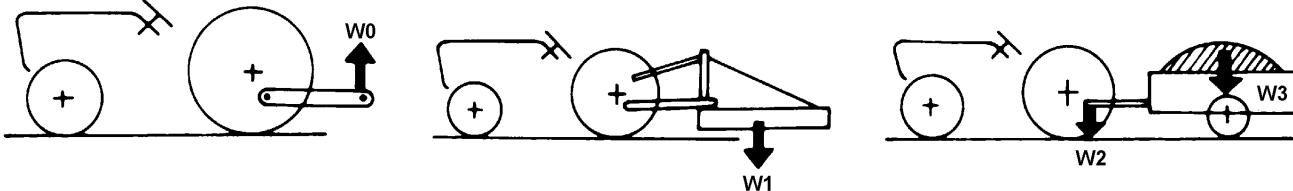
# IMPLEMENT LIMITATIONS

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.

Tread (max. width)		Lower link end max. lifting capacity: W0
Front	Rear	
1999 mm	1980 mm	9400 kg

Actual figures		
Implement weight and/or size: W1	Max. drawbar load: W2	Trailer loading weight max. capacity: W3
---	As in the following list (See TRAILER LOAD CAPACITY on page 37.)	



1SVRC00002A01

*W0 Lower link end max. hydraulic lifting capacity**W1 Implement weight-the implement's weight which can be put on the lower link**W2 Max. drawbar load**W3 Trailer loading weight-the max. loading weight for trailer***NOTE :**

- Implement size may vary depending on soil operating conditions.
- Strictly follow the instructions outlined in the operator's manual of the mounted or traileed machinery or trailer, and do not operate the combination tractor-machine or tractor-trailer unless all instructions have been followed.
- Forestry application  
Following hazards exist:
  - 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), and so on, 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.
- In case of additional attached devices on the tractor, the machinery directive 2006/42/EC has to be regarded.

# TRAILER LOAD CAPACITY

Trailer load capacity 40 km/h version

Empty tractor (without front ballast) and tires with 5600 kg rear axle load

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000
Vertical load (kg) W2	A	471	470	473	474	408	516
	B	602	602	605	605	541	646
	C	838	840	845	843	782	881
	D	1094	1099	1105	1101	1044	1135
	E	1386	1383	1386	1386	1348	1366
	F	1386	1383	1386	1386	1402	1366
	G	1386	1383	1386	1386	1402	1366
	H	1386	1883	1386	1386	1402	1366
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					
		Piton fix Type 671000	Piton fix Type 639016	Manual Clevis Type 739071	Manual Clevis non swivelling Type 739061	Manual Clevis non swivelling Type 739081	Drawbar Type 820982 (*1)
Vertical load (kg) W2	A	529	426	450	461	470	0
	B	659	560	578	592	604	0
	C	895	801	808	830	846	0
	D	1150	1064	1058	1087	1109	---
	E	1366	1366	1345	1366	1366	---
	F	1366	1366	1366	1366	1366	---
	G	1366	1366	1366	1366	1366	---
	H	1366	1366	1366	1366	1366	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	15000	6000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	21500	15000	6000

(\*1) No vertical load is authorised.

## IMPLEMENT LIMITATIONS

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)			TYPE: B (hitch made by DROMONE)		TYPE: C (hitch made by ORLANDI)
		Drawbar Type 1306	Drawbar with K80 ball Type 960291 (*1)	Drawbar with Piton Fix Type 961291 (*1)	Auto hitch	CAT 2 Drawbar A1	Hitch Type GB04
Vertical load (kg) W2	A	1359	1750	1392	1338	1424	444
	B	1333	1321	1321	1317	---	570
	C	800	---	---	---	---	797
	D	---	---	---	---	---	1042
	E	---	---	---	---	---	1324
	F	---	---	---	---	---	1361
	G	---	---	---	---	---	1361
	H	---	---	---	---	---	1361
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	26300	25000/32500	25000/32500	32500	32500	24000

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

### Empty tractor (without front ballast) and tires with 6700 kg rear axle load

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000
Vertical load (kg) W2	A	471	470	473	474	408	516
	B	602	602	605	605	541	646
	C	838	840	845	843	782	881
	D	1094	1099	1105	1101	1044	1135
	E	1390	1397	1406	1400	1348	1428
	F	1695	1706	1717	1708	1662	1730
	G	1989	2004	2017	2004	1966	2021
	H	2244	2252	2257	2250	2283	2224
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500

**IMPLEMENT LIMITATIONS**

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					Drawbar Type 820982 (*1)
		Piton fix Type 671000	Piton fix Type 639016	Manual Clevis Type 739071	Manual Clevis non swivelling Type 739061	Manual Clevis non swivelling Type 739081	
Vertical load (kg) W2	A	529	426	450	461	470	0
	B	659	560	578	592	604	0
	C	895	801	808	830	846	0
	D	1150	1064	1058	1087	1109	---
	E	1445	1368	1345	1383	1414	---
	F	1749	1683	1641	1690	1500	---
	G	2041	1986	1926	1986	1500	---
	H	2224	2278	2229	2250	1500	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	15000	6000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	21500	15000	6000

(\*1) No vertical load is authorised.

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)			TYPE: B (hitch made by DROMONE)		TYPE: C (hitch made by ORLANDI)
		Drawbar Φ31.5 Type 1306	Drawbar with K80 ball Type 960291 (*1)	Drawbar with Piton Fix Type 961291 (*1)	Auto hitch		Hitch Type GB04
					CAT 2 Drawbar A1	Towing hock A1	
Vertical load (kg) W2	A	1800	2267	2267	2088	2320	444
	B	1500	1500	1500	1400	---	570
	C	800	---	---	---	---	797
	D	---	---	---	---	---	1042
	E	---	---	---	---	---	1324
	F	---	---	---	---	---	1615
	G	---	---	---	---	---	1893
	H	---	---	---	---	---	2216
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	26300	25000/32500	25000/32500	32500	32500	24000

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

## IMPLEMENT LIMITATIONS

### Empty tractor (without front ballast) and tires with 7750 kg rear axle load

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000
Vertical load (kg) W2	A	471	470	473	474	408	516
	B	602	602	605	605	541	646
	C	838	840	845	843	782	881
	D	1094	1099	1105	1101	1044	1135
	E	1390	1397	1406	1400	1348	1428
	F	1695	1706	1717	1708	1662	1730
	G	1989	2004	2017	2004	1966	2021
	H	2331	2350	2366	2350	2320	2359
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					Drawbar Type 820982 (*1)
		Piton fix Type 671000	Piton fix Type 639016	Manual Clevis Type 739071	Manual Clevis non swivelling Type 739061	Manual Clevis non swivelling Type 739081	
Vertical load (kg) W2	A	529	426	450	461	470	0
	B	659	560	578	592	604	0
	C	895	801	808	830	846	0
	D	1150	1064	1058	1087	1109	---
	E	1445	1368	1345	1383	1414	---
	F	1749	1683	1641	1690	1500	---
	G	2041	1986	1926	1986	1500	---
	H	2381	2341	2256	2330	1500	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	15000	6000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	21500	15000	6000

(\*1) No vertical load is authorised.

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)			TYPE: B (hitch made by DROMONE)		TYPE: C (hitch made by ORLANDI)
		Drawbar Type 1306	Drawbar with K80 ball Type 960291 (*1)	Drawbar with Piton Fix Type 961291 (*1)	Auto hitch	CAT 2 Drawbar A1	Hitch Type GB04
Vertical load (kg) W2	A	1800	2340	2368	2088	2583	444
	B	1500	1500	1500	1400	---	570
	C	800	---	---	---	---	797
	D	---	---	---	---	---	1042
	E	---	---	---	---	---	1324
	F	---	---	---	---	---	1615
	G	---	---	---	---	---	1893
	H	---	---	---	---	---	2216
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	26300	25000/32500	25000/32500	32500	32500	24000

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

#### Empty tractor (without front ballast) and tires with 8000 kg rear axle load

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000
Vertical load (kg) W2	A	471	470	473	474	408	516
	B	602	602	605	605	541	646
	C	838	840	845	843	782	881
	D	1094	1099	1105	1101	1044	1135
	E	1390	1397	1406	1400	1348	1428
	F	1695	1706	1717	1708	1662	1730
	G	1989	2004	2017	2004	1966	2021
	H	2331	2350	2366	2350	2320	2359
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500

## IMPLEMENT LIMITATIONS

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)					
		High-hitch					Drawbar Type 820982 (*1)
		Piton fix Type 671000	Piton fix Type 639016	Manual Clevis Type 739071	Manual Clevis non swivelling Type 739061	Manual Clevis non swivelling Type 739081	
Vertical load (kg) W2	A	529	426	450	461	470	0
	B	659	560	578	592	604	0
	C	895	801	808	830	846	0
	D	1150	1064	1058	1087	1109	---
	E	1445	1368	1345	1383	1414	---
	F	1749	1683	1641	1690	1500	---
	G	2041	1986	1926	1986	1500	---
	H	2381	2341	2256	2330	1500	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	15000	6000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	21500	15000	6000

(\*1) No vertical load is authorised.

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)			TYPE: B (hitch made by DROMONE)		TYPE: C (hitch made by ORLANDI)
		Drawbar Type 1306	Drawbar with K80 ball Type 960291 (*1)	Drawbar with Piton Fix Type 961291 (*1)	Auto hitch		Hitch Type GB04
					CAT 2 Drawbar A1	Towing hock A1	
Vertical load (kg) W2	A	1800	2340	2368	2088	2583	444
	B	1500	1500	1500	1400	---	570
	C	800	---	---	---	---	797
	D	---	---	---	---	---	1042
	E	---	---	---	---	---	1324
	F	---	---	---	---	---	1615
	G	---	---	---	---	---	1893
	H	---	---	---	---	---	2216
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	26300	25000/32500	25000/32500	32500	32500	24000

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

**Trailer load capacity for 50 km/h versions****Empty tractor (without front ballast) and tires with 5600 kg rear axle load**

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)								TYPE: B (hitch made by DROMONE)		
		High-hitch								Drawbar Type 1306 (*1)	Auto hitch	
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000	Piton fix Type 671000	Piton fix Type 639016		CAT 2 Drawbar A1	Towing hock A1
Vertical load (kg) W2	A	471	470	473	474	408	516	529	426	1359	1338	1424
	B	602	602	605	605	541	646	659	560	1333	1317	---
	C	838	840	845	843	782	881	895	801	800	---	---
	D	1094	1099	1105	1101	1044	1135	1150	1064	---	---	---
	E	1386	1383	1386	1386	1348	1366	1366	1366	---	---	---
	F	1386	1383	1386	1386	1402	1366	1366	1366	---	---	---
	G	1386	1383	1386	1386	1402	1366	1366	1366	---	---	---
	H	1386	1383	1386	1386	1402	1366	1366	1366	---	---	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000	16000	16000	9800	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500	32500	32500	9800/12500/13500	32500	32500

remark:

- The permitted vertical load on coupling point must be calculated depending on the tyres load index and the actually axle weight.
- For further information and graphics of the different coupling types please refer to chapter APPENDICES-TRAILER LOAD CAPACITY

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

## IMPLEMENT LIMITATIONS

### Empty tractor (without front ballast) and tires with 6700 kg rear axle load

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)								TYPE: B (hitch made by DROMONE)		
		High-hitch								Drawbar Type 1306 (*1)	Auto hitch	
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000	Piton fix Type 671000	Piton fix Type 639016		CAT 2 Drawbar A1	Towing hock A1
Vertical load (kg) W2	A	471	470	473	474	408	516	529	426	1800	2088	2583
	B	602	602	605	605	541	646	659	560	1500	1400	---
	C	838	840	845	843	782	881	895	801	800	---	---
	D	1094	1099	1105	1101	1044	1135	1150	1064	---	---	---
	E	1390	1397	1406	1400	1348	1428	1445	1368	---	---	---
	F	1695	1706	1717	1708	1662	1730	1749	1683	---	---	---
	G	1989	2000	2000	2004	1966	2021	2041	1986	---	---	---
	H	2331	2000	2000	2250	2320	2359	2224	2341	---	---	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500	32500	9800/12500/13500	32500	32500	32500

remark:

- The permitted vertical load on coupling point must be calculated depending on the tyres load index and the actually axle weight.
- For further information and graphics of the different coupling types please refer to chapter APPENDICES-TRAILER LOAD CAPACITY

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

**Empty tractor (without front ballast) and tires with 7750 kg rear axle load**

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)								TYPE: B (hitch made by DROMONE)		
		High-hitch								Drawbar Type 1306 (*1)	Auto hitch	
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000	Piton fix Type 671000	Piton fix Type 639016		CAT 2 Drawbar A1	Towing hock A1
Vertical load (kg) W2	A	471	470	473	474	408	516	529	426	1800	2088	2583
	B	602	602	605	605	541	646	659	560	1500	1400	---
	C	838	840	845	843	782	881	895	801	800	---	---
	D	1094	1099	1105	1101	1044	1135	1150	1064	---	---	---
	E	1390	1397	1406	1400	1348	1428	1445	1368	---	---	---
	F	1695	1706	1717	1708	1662	1730	1749	1683	---	---	---
	G	1989	2000	2000	2004	1966	2021	2041	1986	---	---	---
	H	2331	2000	2000	2350	2320	2359	2381	2341	---	---	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000	16000	16000	9800	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500	32500	32500	9800/12500/13500	32500	32500

remark:

- The permitted vertical load on coupling point must be calculated depending on the tyres load index and the actually axle weight.
- For further information and graphics of the different coupling types please refer to chapter APPENDICES-TRAILER LOAD CAPACITY

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

## IMPLEMENT LIMITATIONS

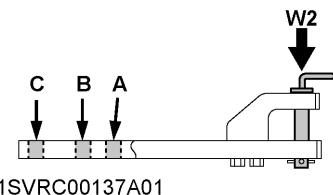
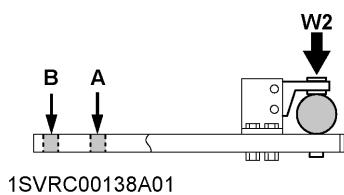
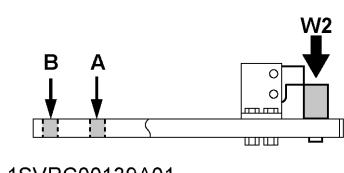
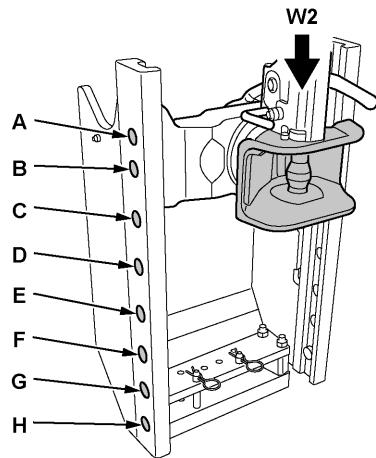
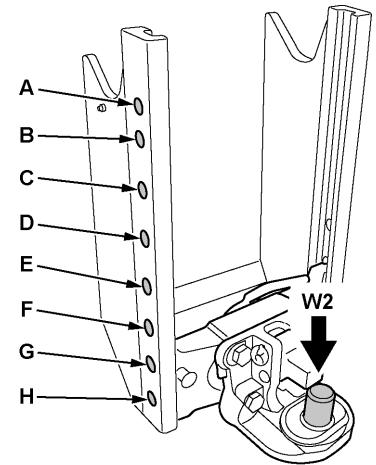
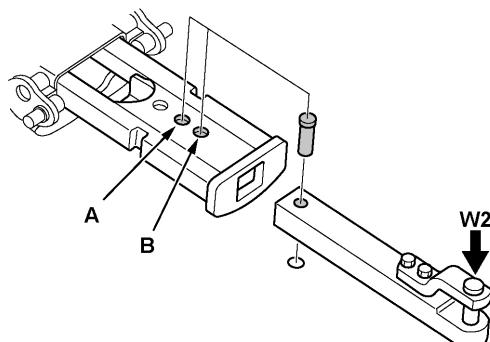
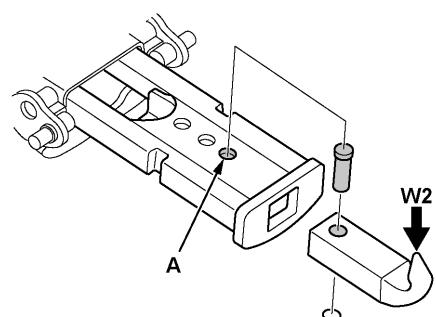
### Empty tractor (without front ballast) and tires with 8000 kg rear axle load

M7132 M7152 M7172		TYPE: A (hitch made by SCHARMÜLLER)								TYPE: B (hitch made by DROMONE)		
		High-hitch								Drawbar Type 1306 (*1)	Auto hitch	
		Automatic Clevis Type 390108	Manual Clevis Type 390506	Manual Clevis Type 390519	Automatic Clevis Type 390329	K80 ball Type 639046	K80 ball Type 670000	Piton fix Type 671000	Piton fix Type 639016		CAT 2 Drawbar A1	Towing hock A1
Vertical load (kg) W2	A	471	470	473	474	408	516	529	426	1800	2088	2583
	B	602	602	605	605	541	646	659	560	1500	1400	---
	C	838	840	845	843	782	881	895	801	800	---	---
	D	1094	1099	1105	1101	1044	1135	1150	1064	---	---	---
	E	1390	1397	1406	1400	1348	1428	1445	1368	---	---	---
	F	1695	1706	1717	1708	1662	1730	1749	1683	---	---	---
	G	1989	2000	2000	2004	1966	2021	2041	1986	---	---	---
	H	2331	2000	2000	2350	2320	2359	2381	2341	---	---	---
Trailer loading weight max. capacity (kg) W3	Unbraked towable mass	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	Inertia braked mass	16000	16000	16000	16000	16000	16000	16000	16000	16000	16000	16000
	Towable mass when fitted with hydraulic or pneumatic braking	32500	32500	32500	32500	32500	32500	32500	9800/12500/13500	32500	32500	32500

remark:

- The permitted vertical load on coupling point must be calculated depending on the tyres load index and the actually axle weight.
- For further information and graphics of the different coupling types please refer to chapter APPENDICES-TRAILER LOAD CAPACITY

(\*1) The value for the towable mass of a trailer when fitted with hydraulic or pneumatic braking depends on the pull-out position of the coupling

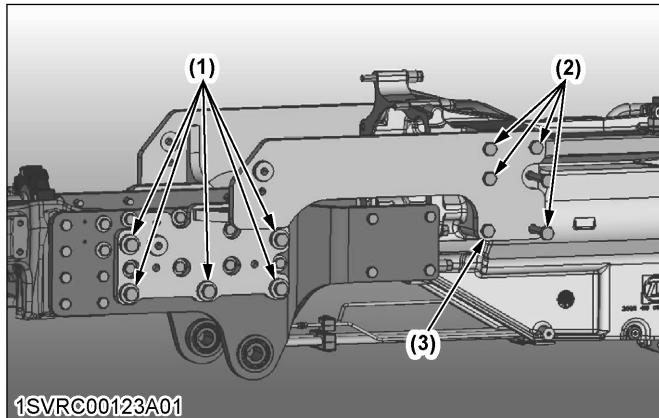
**Type: A (hitch made by SCHARMÜLLER)****Drawbar****Drawbar with K80 ball****Drawbar with piton fix****High-hitch****Piton fix****Type: B (hitch made by DROMONE)****Drawbar****Towing hook**

## FRONT LOADER

This section describes the fixation points on the body of the tractor where the front loader must be installed. Install the front loader frame to the clutch housing and the front axle frame as shown.

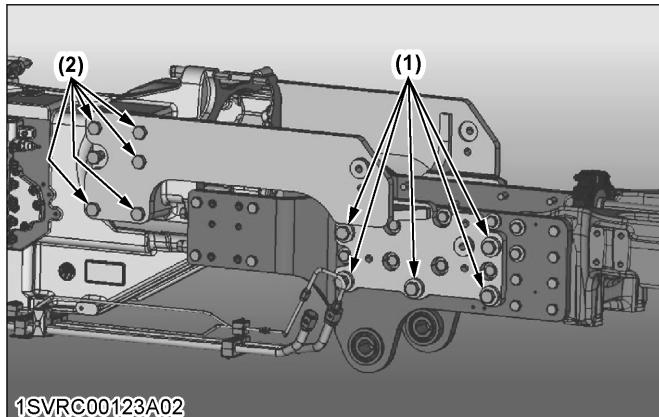
### Standard, Premium models (left side)

	(1)	(2)	(3)
Size-length	M20-60	M20-70	M20-60
Strength division	10.9	8.8	8.8
Number of pieces	5	4	1
Tightening torque N·m (kgf·m)	568.8 (58.0)	431.5 (44.0)	431.5 (44.0)



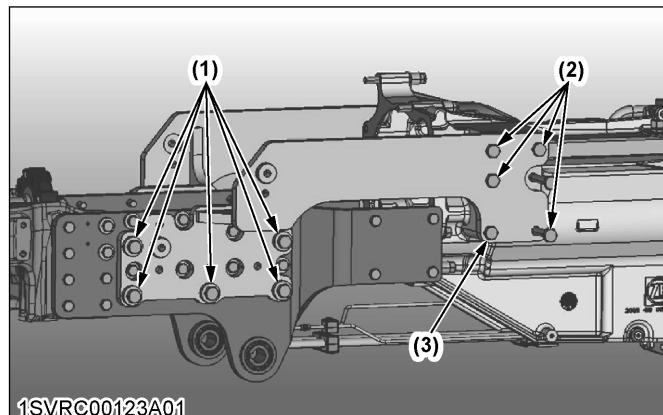
### Standard, Premium models (right side)

	(1)	(2)
Size-length	M20-60	M20-70
Strength division	10.9	8.8
Number of pieces	5	4
Tightening torque N·m (kgf·m)	568.8 (58.0)	431.5 (44.0)



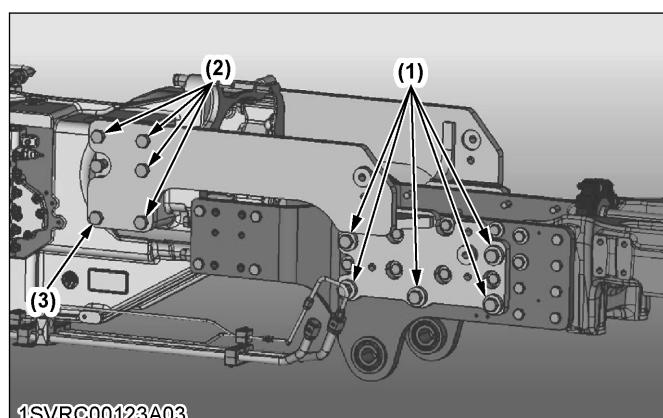
### Premium KVT models (left side)

	(1)	(2)	(3)
Size-length	M20-60	M20-160	M20-150
Strength division	10.9	8.8	8.8
Number of pieces	5	4	1
Tightening torque N·m (kgf·m)	568.8 (58.0)	431.5 (44.0)	431.5 (44.0)



### Premium KVT models (right side)

	(1)	(2)	(3)
Size-length	M20-60	M20-160	M20-240
Strength division	10.9	8.8	8.8
Number of pieces	5	4	1
Tightening torque N·m (kgf·m)	568.8 (58.0)	431.5 (44.0)	431.5 (44.0)

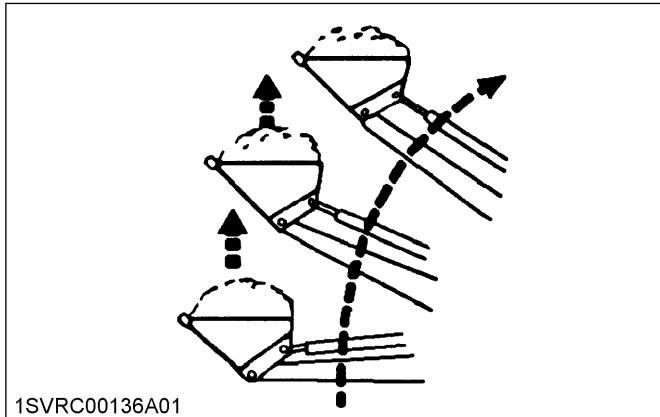


**DANGER**  
To avoid personal injury or death:

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

**NOTE :**

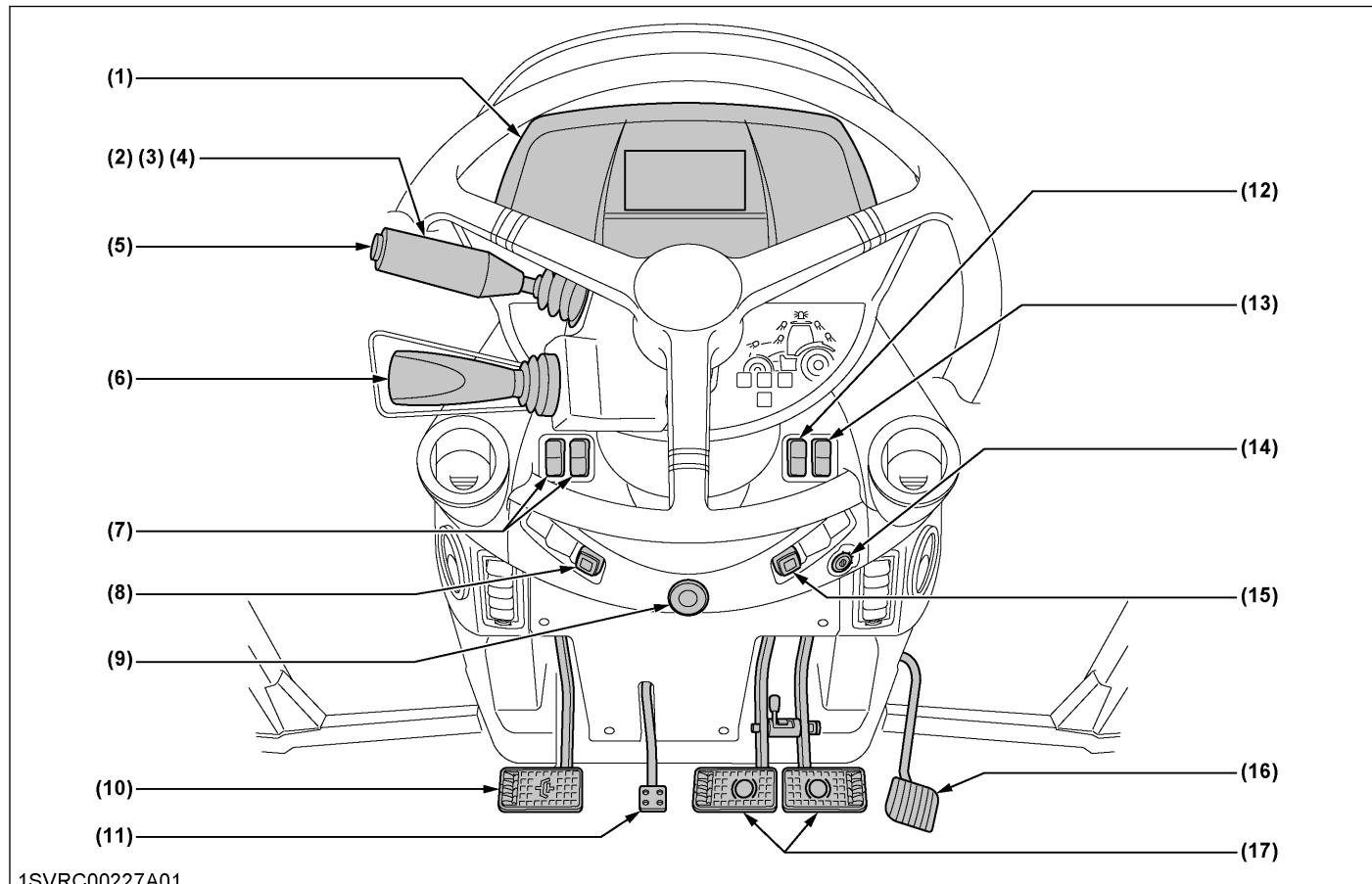
- Not all risks are listed.  
Refer to front loader operator's manual.



# INSTRUMENT PANEL AND CONTROLS

## SWITCHES AND HAND CONTROLS

All models



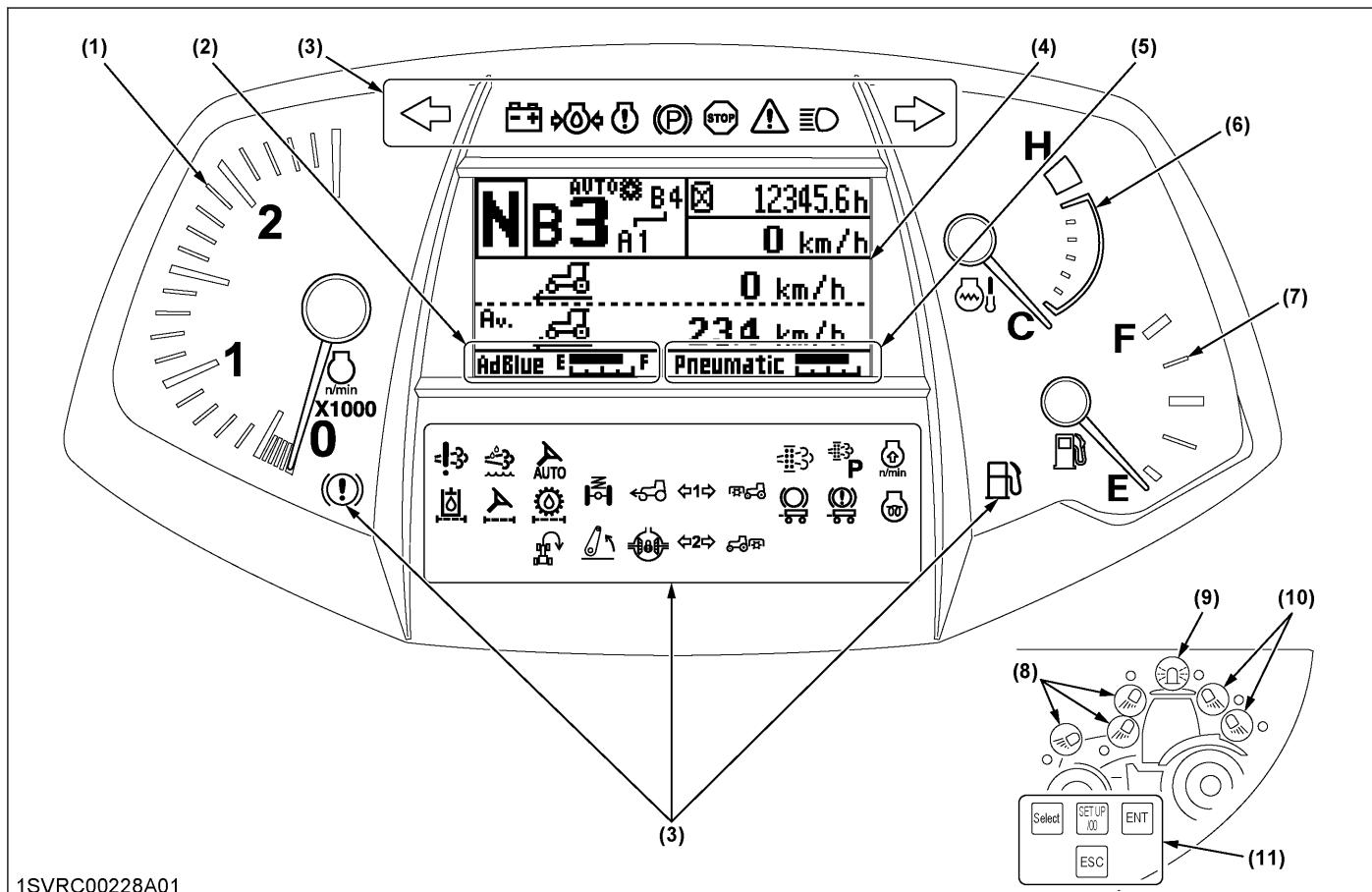
1SVRC00227A01

### Illustrated contents

(1) Instrument panel .....	51	(9) Hazard light switch .....	150
(2) Direction indicator light switch .....	150	(10) Clutch pedal .....	156
(3) Front wiper and washer switch .....	240	(11) Steering wheel tilt and telescope pedal .....	147
(4) Headlight beam selection switch .....	148	(12) Battery switch .....	134
(5) Horn button .....	149	(13) Rear wiper and washer switch .....	240
(6) Shuttle lever .....	150	(14) Key switch .....	138
(7) Light switch .....	157	(15) Parked regeneration switch .....	128
(8) DPF inhibit switch .....	148	(16) Foot throttle .....	156
	126	(17) Brake pedals .....	151

# INSTRUMENT PANEL

All models



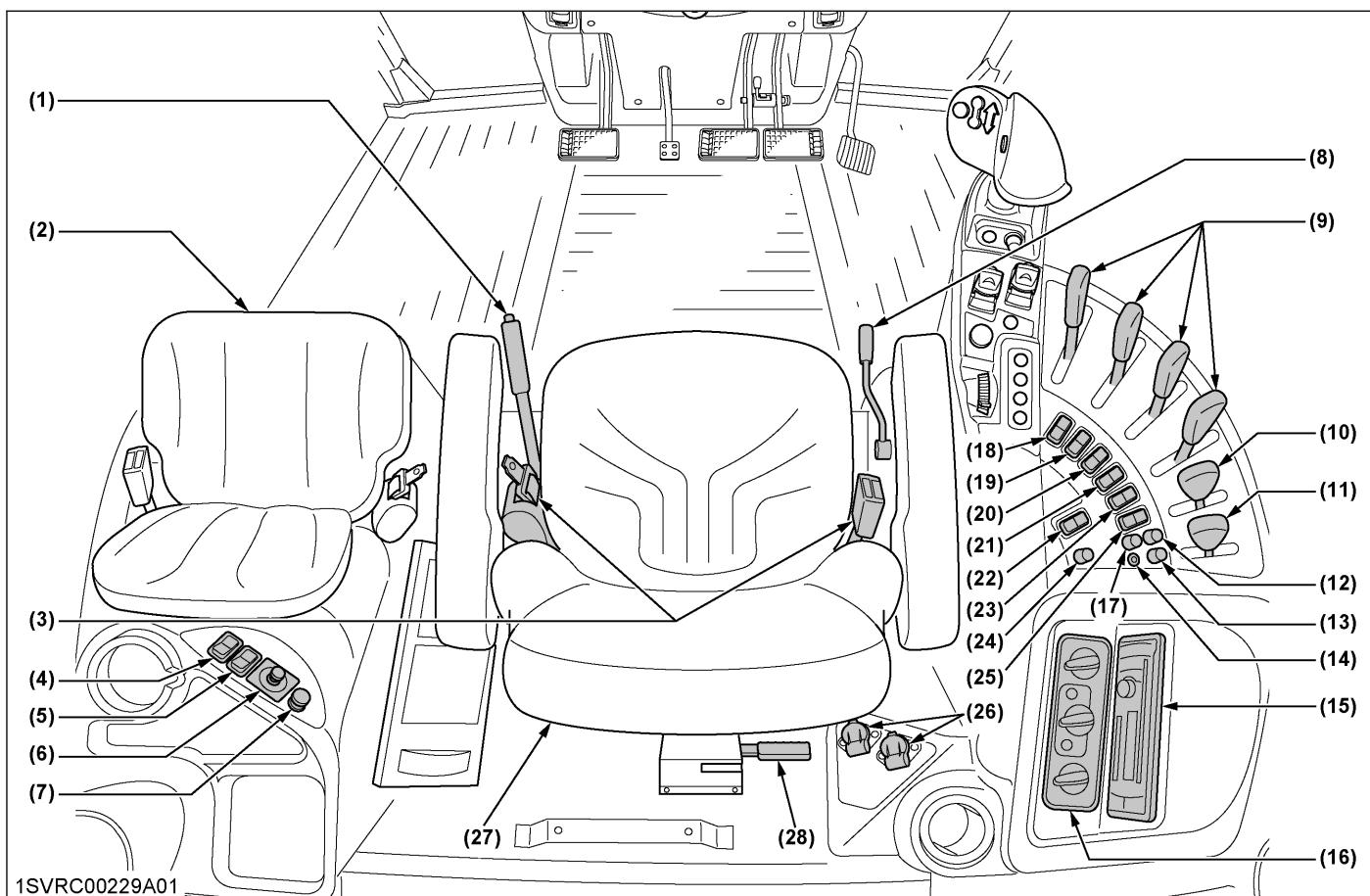
1SVRC00228A01

## Illustrated contents

(1) Tachometer.....	182	(6) Coolant temperature gauge.....	181
(2) DEF/AdBlue® gauge.....	181	(7) Fuel gauge.....	180
(3) Indicator.....	73	(8) Front work light switch.....	150
.....	179	(9) Beacon light switch.....	151
(4) Liquid crystal display.....	60	(10) Rear work light switch.....	150
(5) Pneumatic pressure gauge (if equipped).....	181	(11) Display switch .....	62

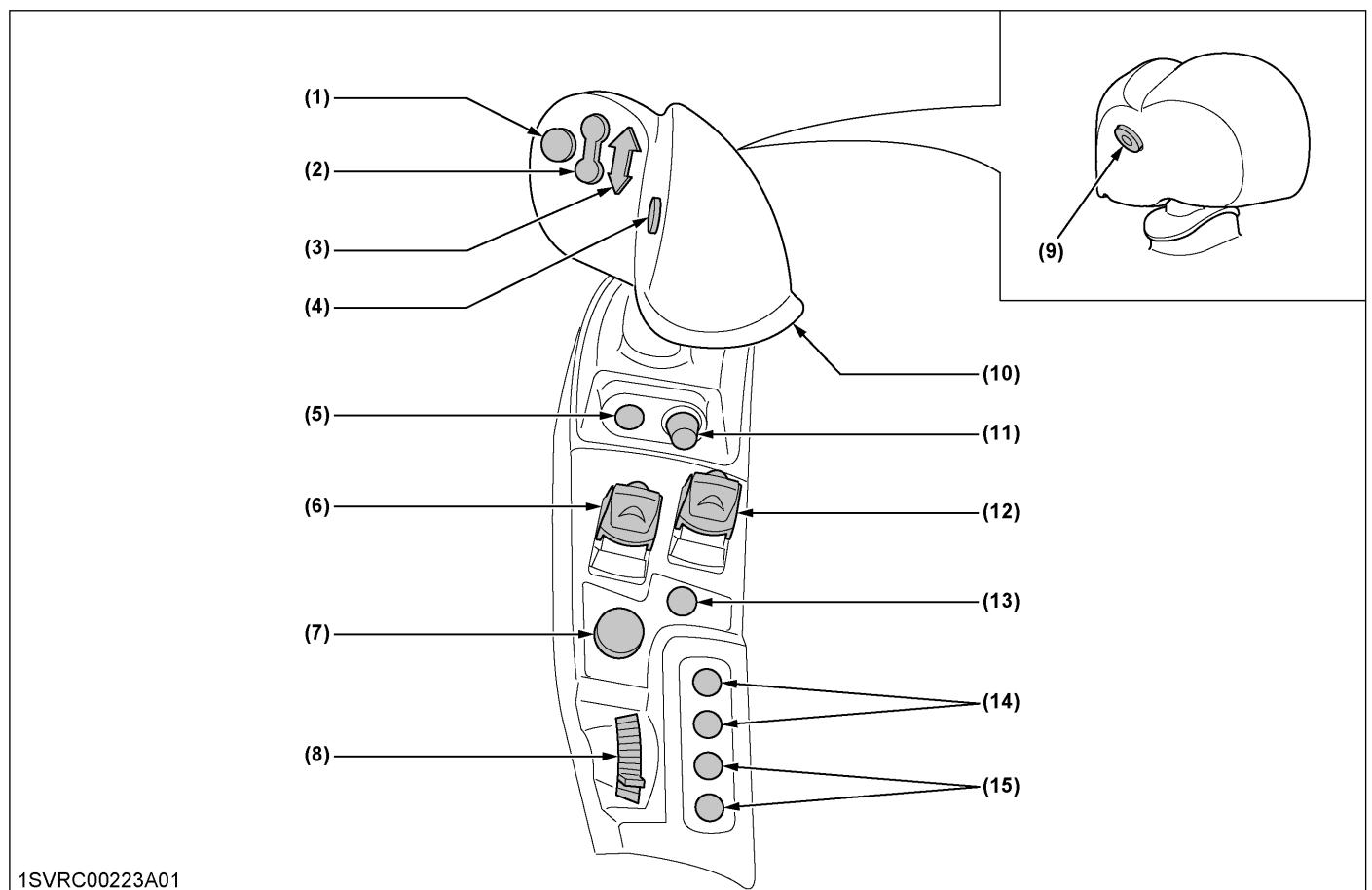
## FOOT AND HAND CONTROLS

Standard model



### Illustrated contents

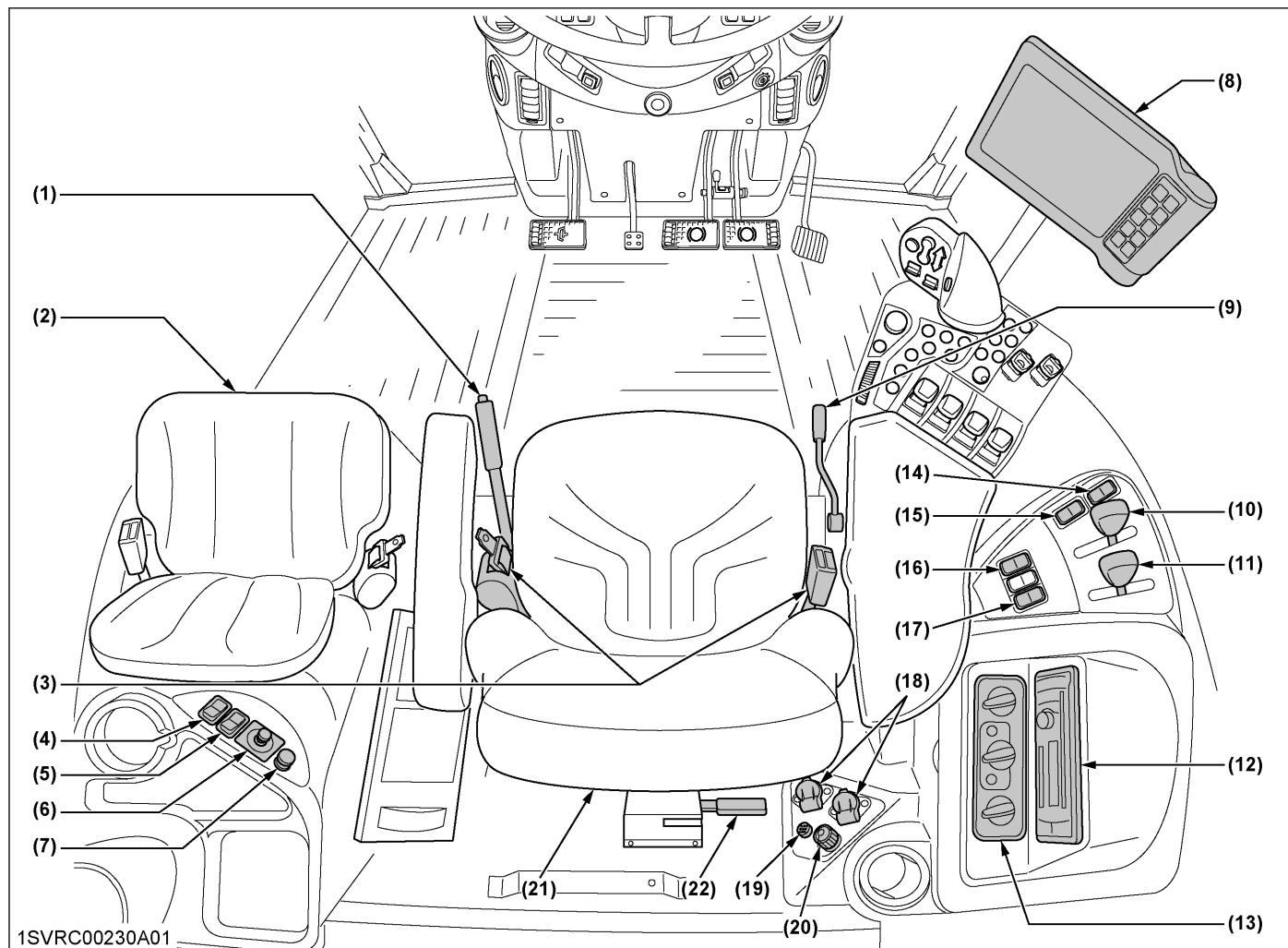
(1) Parking/secondary brake lever .....	152	(15) Radio and CD player .....	242
(2) Passenger seat (if equipped) .....	146	(16) Air conditioner control panel .....	215
(3) Seat belt .....	145	(17) Draft ratio adjustment dial .....	159
(4) Parking brake test function switch .....	155	(18) 4WD switch .....	161
(5) Heater mirror switch (if equipped) .....	147	(19) Differential lock switch .....	163
(6) Remote control mirror switch (if equipped) .....	148	(20) Transmission mode selection switch .....	244
(7) Cigarette lighter .....	247	(21) Front suspension mode selection switch (if equipped) .....	189
(8) Creep gear shift lever (if equipped) .....	158	(22) Rear demister switch (if equipped) .....	222
(9) Remote control valve lever .....	158	(23) Front suspension manual switch (if equipped) .....	189
(10) PTO operation mode selection lever .....	194	(24) Engine rev-limiter control dial .....	97
(11) PTO speed selection lever .....	194	(25) Limp home switch .....	170
(12) Lift arm top limit adjustment dial .....	217	(26) Electrical power socket .....	246
(13) 3-point hitch lowering speed adjustment dial .....	218	(27) Operator's seat .....	143
(14) Lift arm ride control switch .....	220	(28) Auto hitch release lever (if equipped) .....	208

**Standard model****Illustrated contents**

(1) Auto shift button.....	162	(9) Shuttle enable button.....	157
(2) 3-point quick raise and lower switch .....	218	(10) Ez-command centre.....	162
(3) Shuttle button.....	157	(11) Auto shift sensitivity dial.....	169
(4) Range gear shift button .....	162	(12) Front PTO clutch control switch (if equipped) .....	198
(5) Shuttle neutral button.....	158	(13) 3-point hitch lock button.....	215
(6) Rear PTO clutch control switch.....	193	(14) Engine RPM memory button.....	139
(7) Depth control dial.....	216	(15) Engine RPM memory adjustment button .....	139
(8) Hand throttle .....	156		

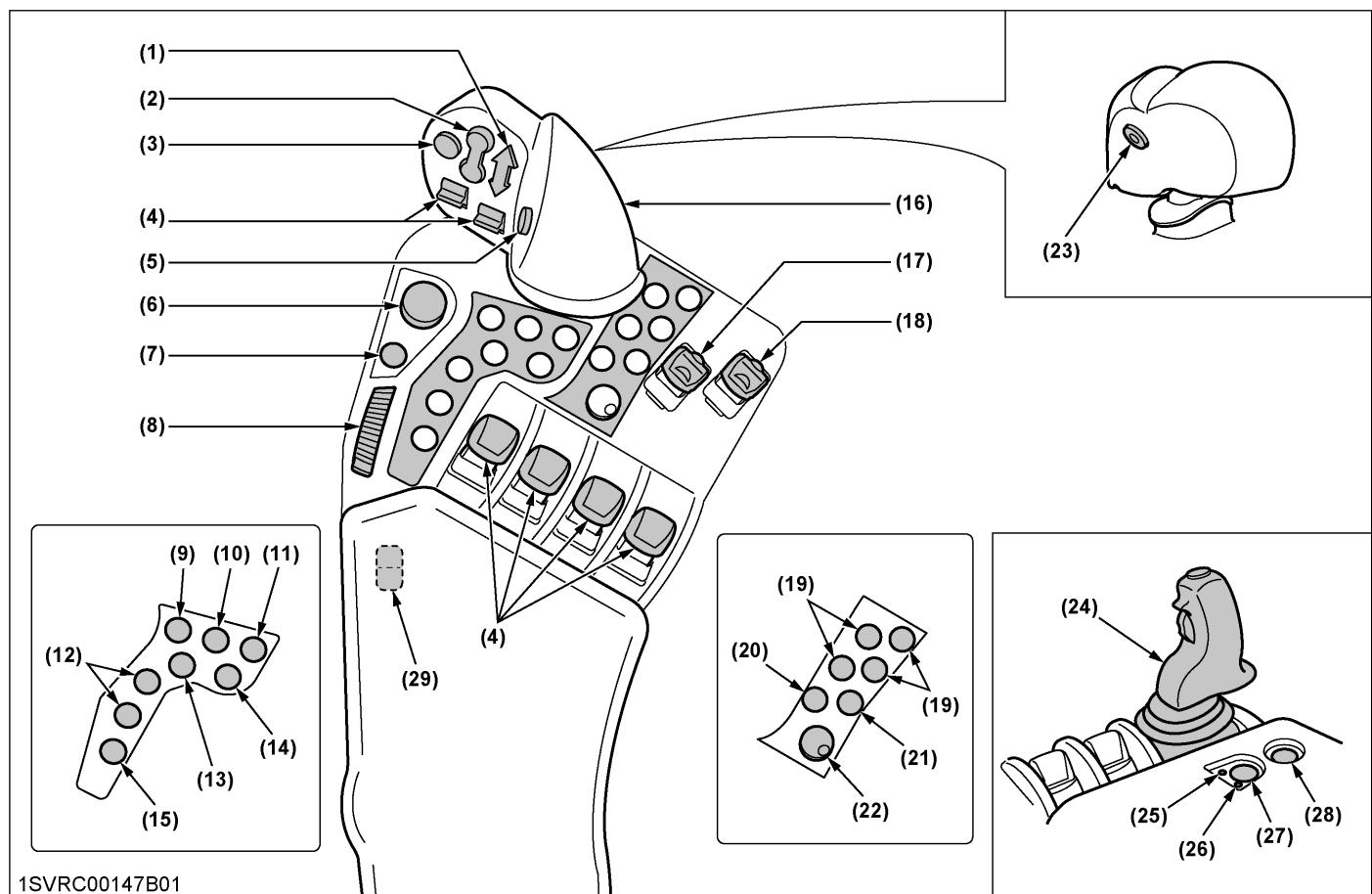
## INSTRUMENT PANEL AND CONTROLS

### Premium model



#### Illustrated contents

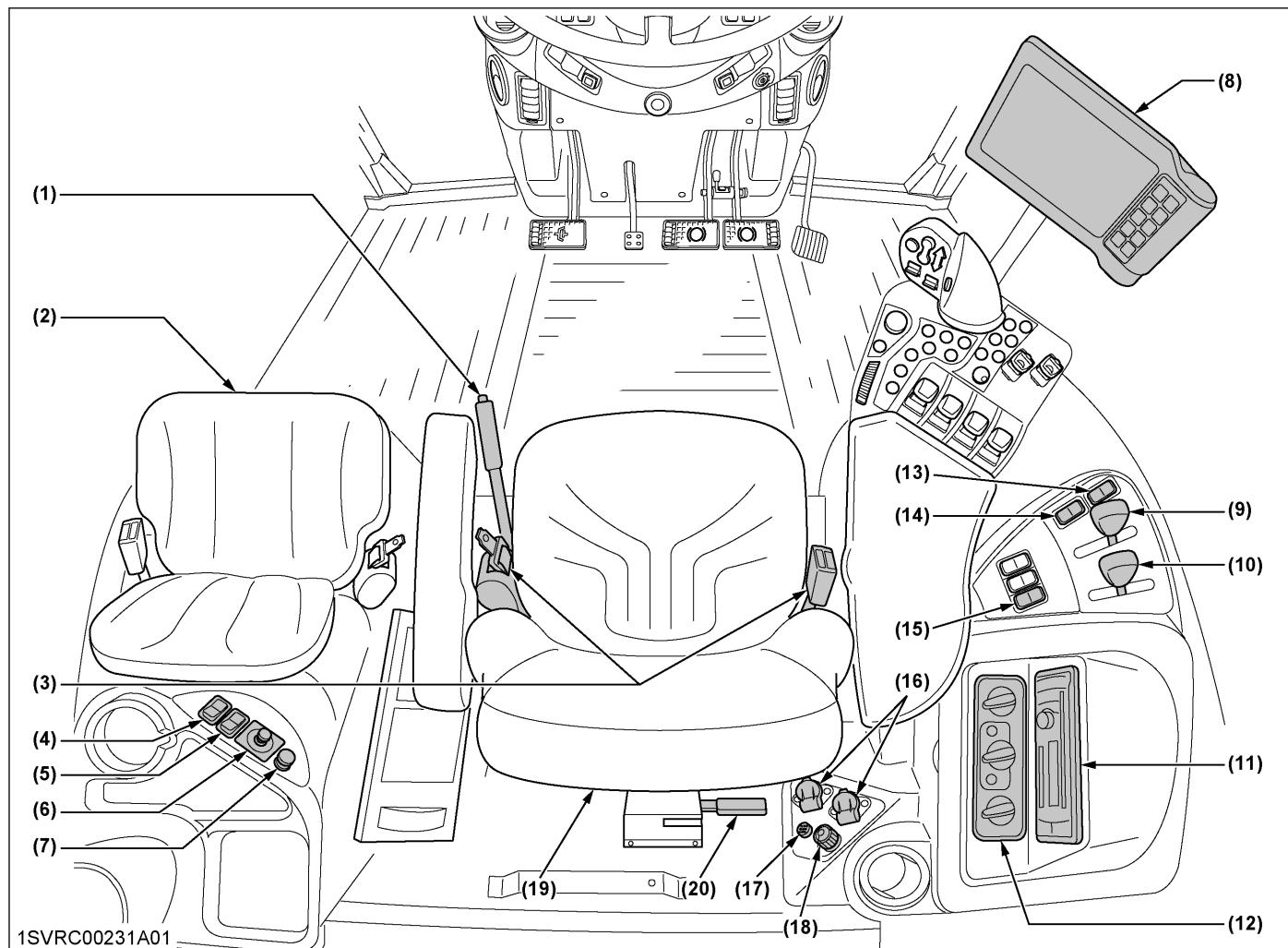
(1) Parking/secondary brake lever .....	152	(12) Radio and CD player .....	242
(2) Passenger seat (if equipped) .....	146	(13) Air conditioner control panel .....	244
(3) Seat belt .....	145	(14) Rear demister switch (if equipped) .....	244
(4) Parking brake test function switch .....	155	(15) Front suspension manual switch (if equipped) .....	189
(5) Heater mirror switch (if equipped) .....	147	(16) Transmission mode selection switch .....	163
(6) Remote control mirror switch (if equipped) .....	148	(17) Auto steering switch (if equipped) .....	
(7) Cigarette lighter .....	247	(18) Electrical power socket .....	246
(8) K-monitor .....	74	(19) ISOBUS terminal .....	247
(9) Creep gear shift lever (if equipped) .....	158	(20) Signal socket .....	247
(10) PTO operation mode selection lever .....	194	(21) Operator's seat .....	143
(11) PTO speed selection lever .....	194	(22) Auto hitch release lever (if equipped) .....	208

**Premium model****Illustrated contents**

(1) Shuttle button.....	157	(15) Remote control valve lock button.....	224
(2) 3-point quick raise and lower switch .....	218	(16) Ez-command centre.....	162
(3) Auto shift button.....	163	(17) Rear PTO clutch control switch.....	193
(4) Remote control valve switch.....	225	(18) Front PTO clutch control switch (if equipped).....	198
(5) Range gear shift button .....	162	(19) Function button .....	79
(6) Depth control dial.....	216	(20) Esc button .....	79
(7) 3-point hitch lock button.....	215	(21) Home button .....	79
(8) Hand throttle .....	156	(22) Selection dial and button .....	79
(9) Headland management system field out button .....	101	(23) Shuttle enable button.....	157
.....	185	(24) Joystick for remote control valve and loader (loader mode only) .....	225
(10) Headland management system field in button.....	101	(25) Front loader mode indicator (loader mode only) .....	225
.....	185	(26) Remote control valve mode indicator (loader mode only) .....	225
(11) Shuttle neutral button.....	158	(27) Selection button for remote control valve and loader (loader mode only) .....	225
(12) Engine RPM memory button.....	139	.....	225
(13) Differential lock button .....	161	(28) Joystick lock button (loader mode only) .....	225
(14) 4WD button.....	159	(29) Limp home switch .....	170

## INSTRUMENT PANEL AND CONTROLS

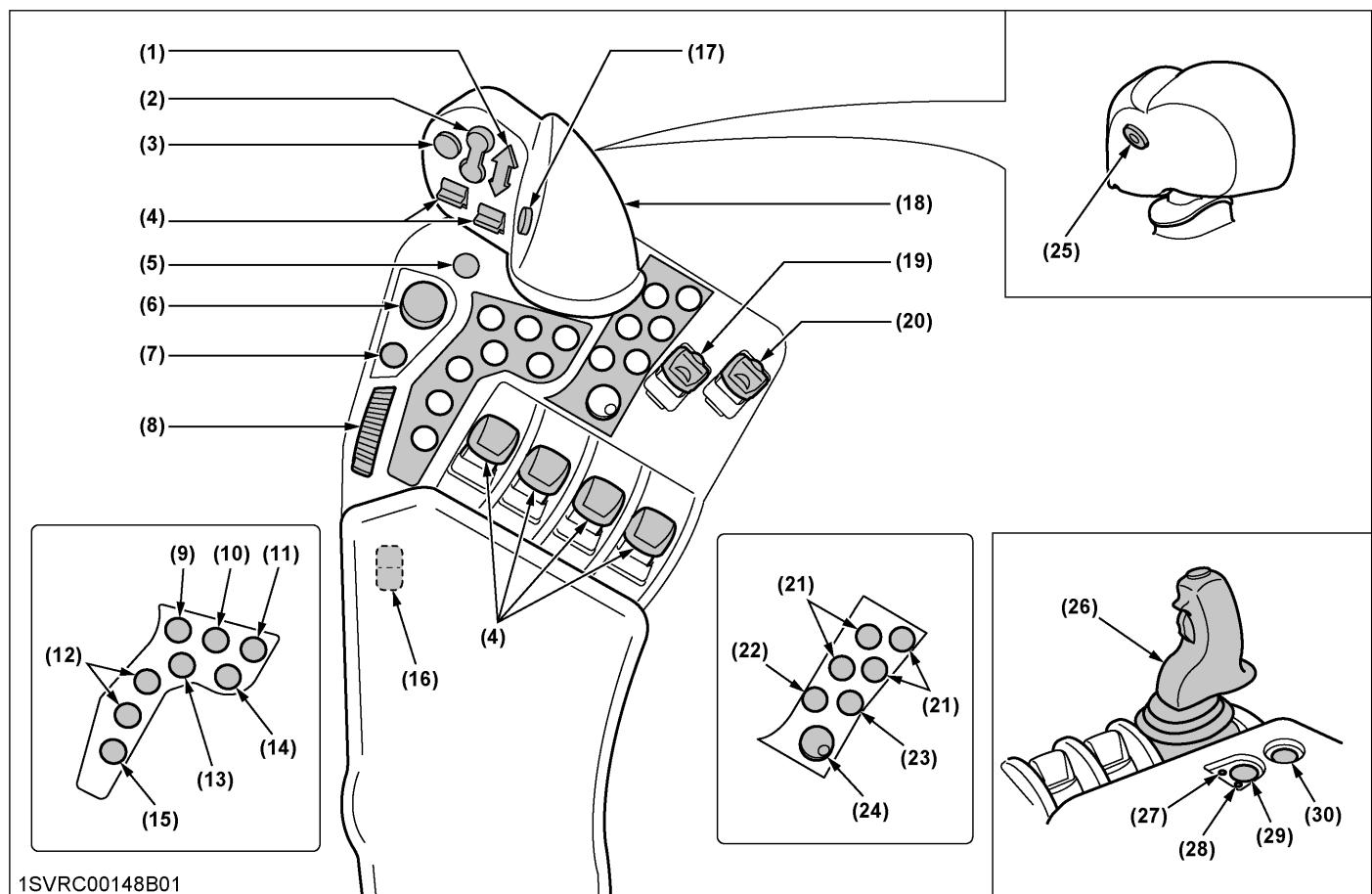
### Premium KVT model



#### Illustrated contents

(1) Parking/secondary brake lever .....	152	(11) Radio and CD player .....	
(2) Passenger seat (if equipped) .....	146	(12) Air conditioner control panel .....	242
(3) Seat belt .....	145	(13) Rear demister switch (if equipped) .....	244
(4) Parking brake test function switch .....	155	(14) Front suspension manual switch (if equipped) .....	189
(5) Heater mirror switch (if equipped) .....	147	(15) Auto steering switch (if equipped) .....	
(6) Remote control mirror switch (if equipped) .....	148	(16) Electrical power socket .....	246
(7) Cigarette lighter .....	247	(17) ISOBUS terminal .....	247
(8) K-monitor .....	74	(18) Signal socket .....	247
(9) PTO operation mode selection lever .....	194	(19) Operator's seat .....	143
(10) PTO speed selection lever .....	194	(20) Auto hitch release lever (if equipped) .....	208

## Premium KVT model

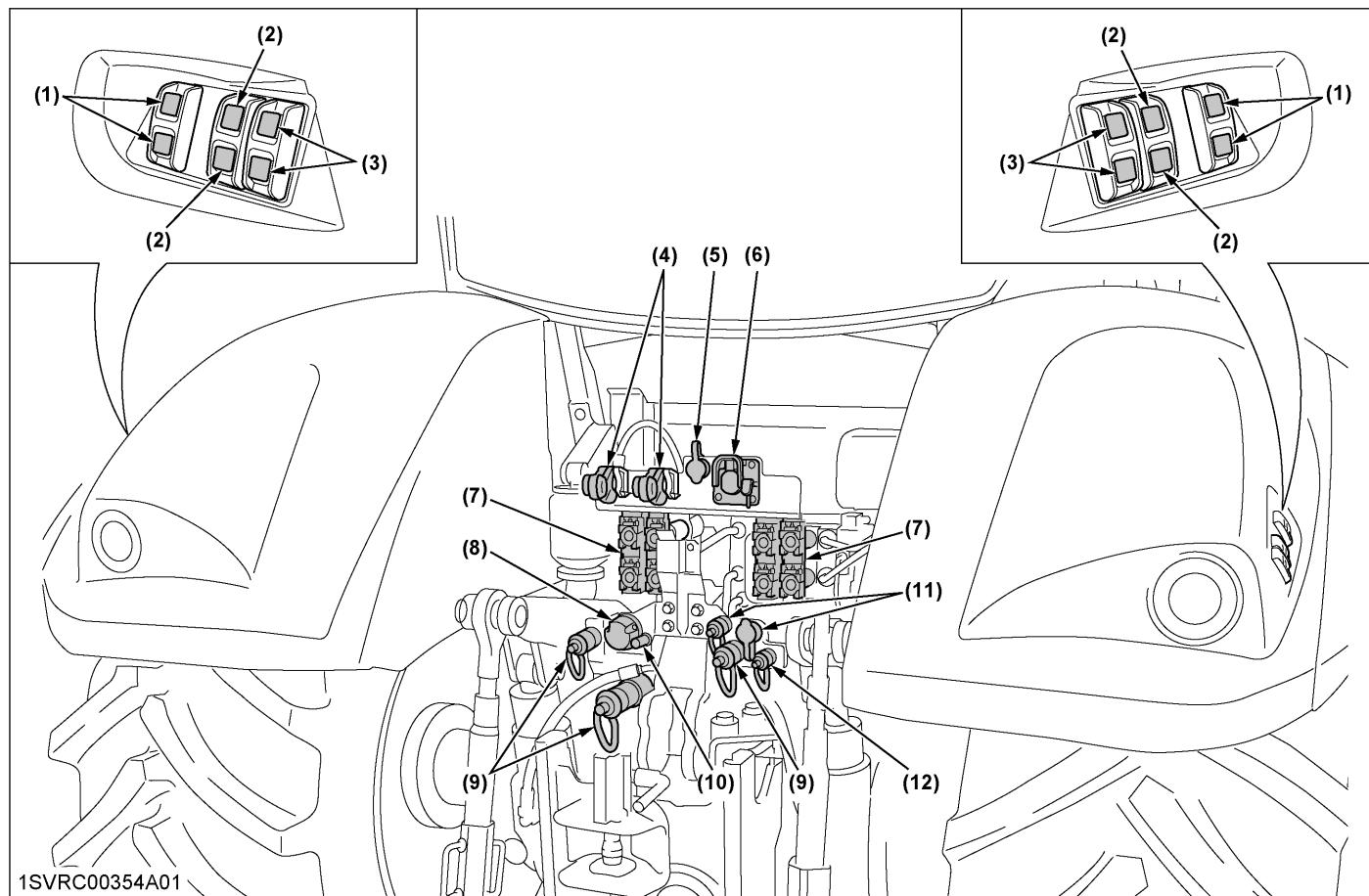


## Illustrated contents

(1) Shuttle button.....	157	(16) Limp home switch.....	177
(2) 3-point quick raise and lower switch .....	218	(17) Ratio lock button.....	177
(3) Cruise control button.....	176	(18) Ez-command centre.....	171
(4) Remote control valve switch.....	225	(19) Rear PTO clutch control switch.....	193
(5) Mode shift button.....	172	(20) Front PTO clutch control switch (if equipped).....	198
(6) Depth control dial.....	216	(21) Function button.....	79
(7) 3-point hitch lock button.....	215	(22) Esc button.....	79
(8) Hand throttle.....	156	(23) Home button.....	79
(9) Headland management system field out button .....	101	(24) Selection dial and button.....	79
.....	185	(25) Shuttle enable button.....	157
(10) Headland management system field in button.....	101	(26) Joystick for remote control valve and loader (loader mode only) .....	225
.....	185	(27) Front loader mode indicator (loader mode only).....	225
(11) Shuttle neutral button.....	158	(28) Remote control valve mode indicator (loader mode only).....	225
(12) Engine RPM memory button.....	139	(29) Selection button for remote control valve and loader (loader mode	
(13) Differential lock button .....	161	only).....	225
(14) 4WD button.....	159	(30) Joystick lock button (loader mode only).....	225
(15) Remote control valve lock button.....	224		

## INSTRUMENT PANEL AND CONTROLS

### All models

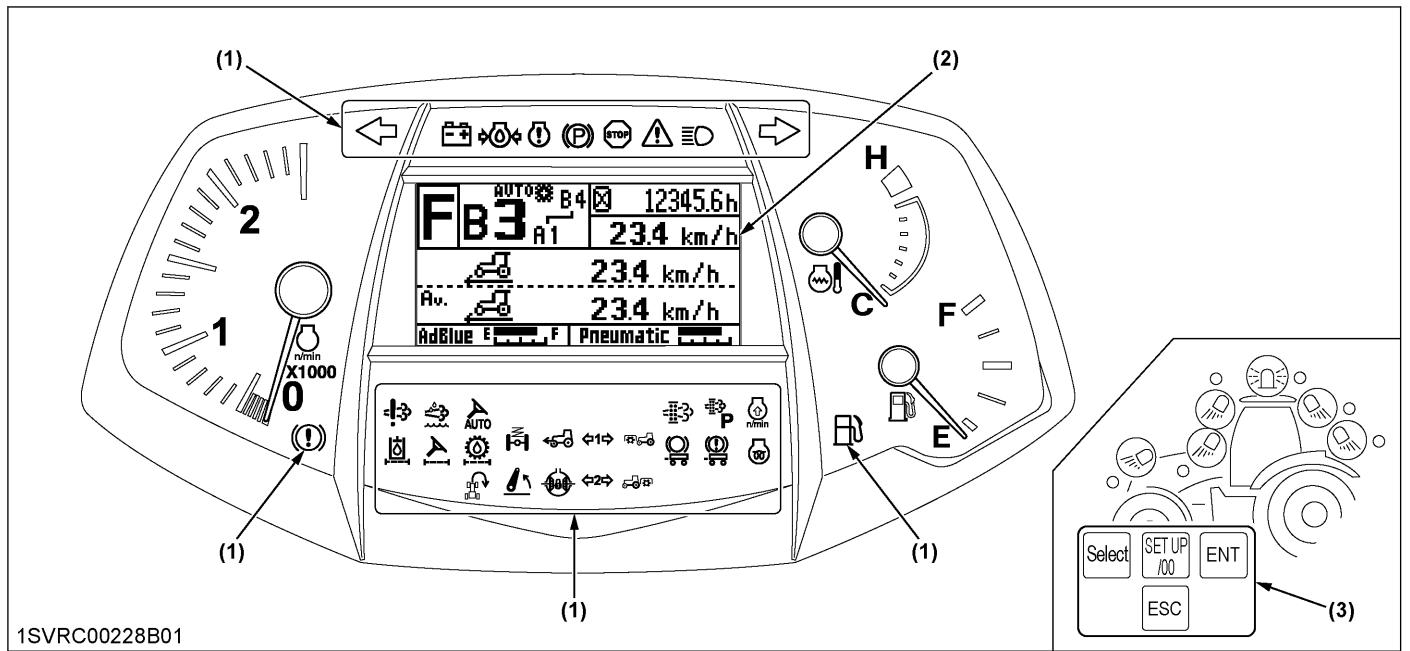


#### Illustrated contents

(1) External switch for rear PTO.....	194	(7) Remote control valve .....	221
(2) External switch for remote control valve (2nd segment) (if equipped) .....	226	(8) Trailer electrical power socket.....	245
(3) External switch for 3-point hitch.....	202	(9) Hydraulic power beyond port (if equipped) .....	220
(4) Dual-line pneumatic trailer brake (if equipped) .....	154	(10) Electrical power socket .....	246
(5) Single-line hydraulic trailer brake (if equipped).....	154	(11) Dual-line hydraulic trailer brake (if equipped) .....	153
(6) ISOBUS socket (if equipped).....	246	(12) Hydraulic drain port.....	221

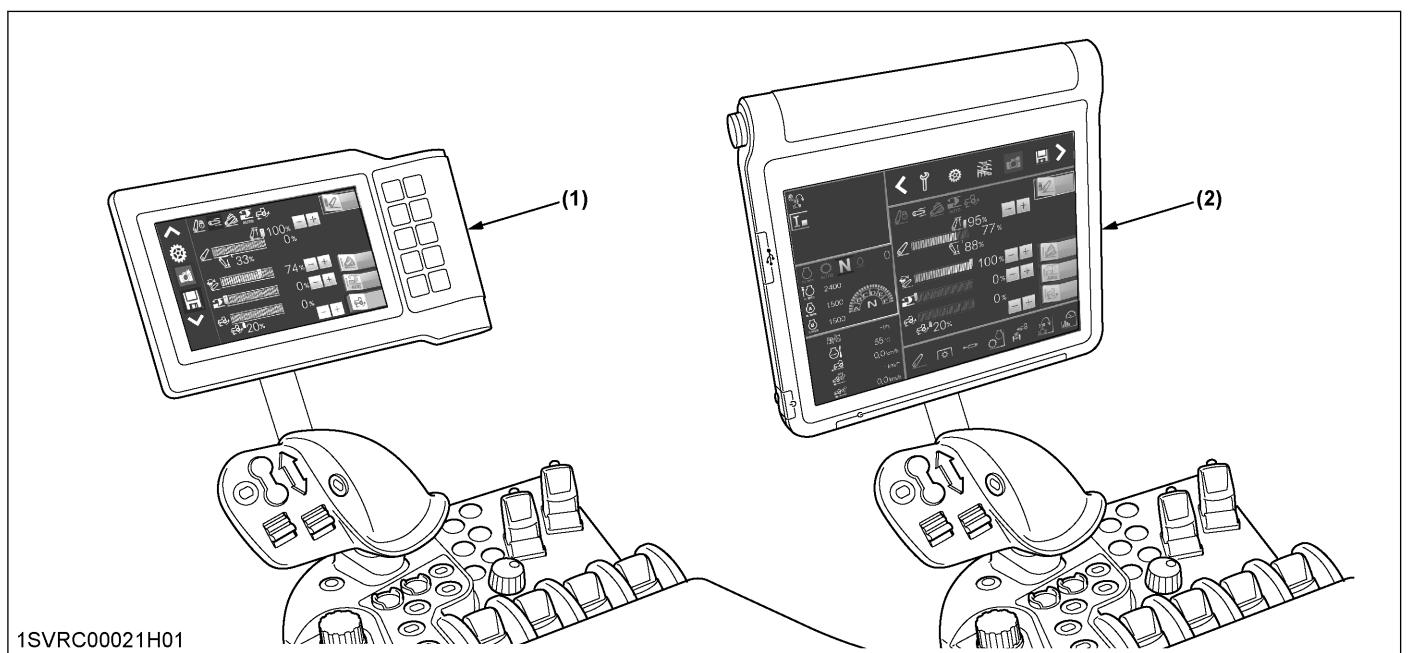
# INTELLIPANEL™ CONTROL

## INSTRUMENT PANEL



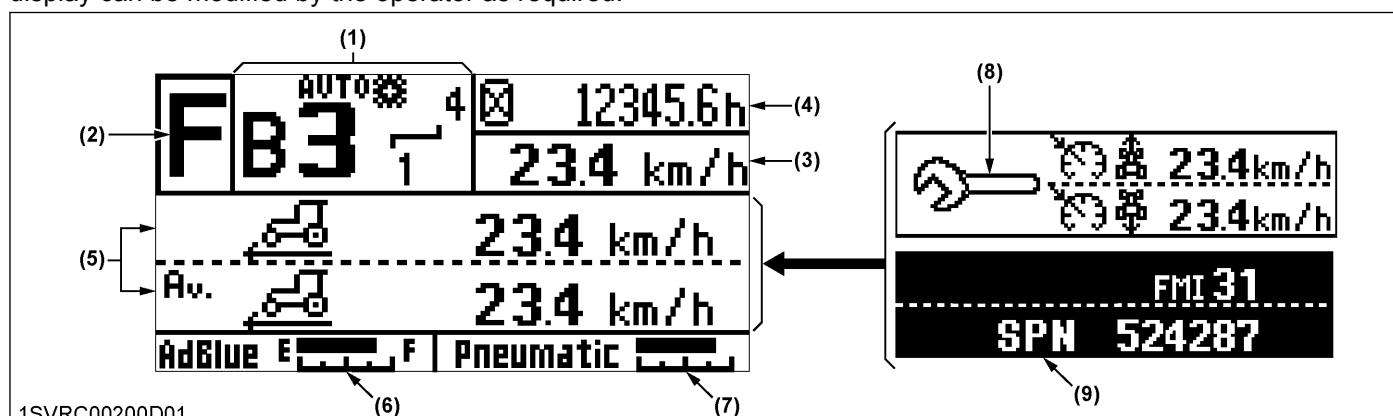
### For Premium and Premium KVT models:

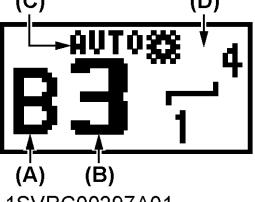
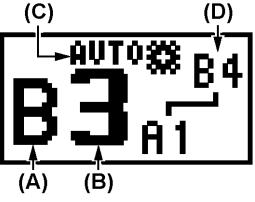
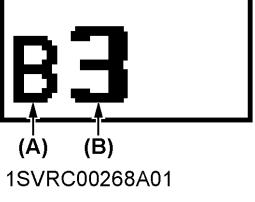
The K-monitor equipped with an LCD touch panel comes in two sizes: 7-inch and 12-inch types. Carefully check the specifications at hand to handle the K-monitor correctly.



## LIQUID CRYSTAL DISPLAY (LCD)

This display provides the operator with a variety of information necessary to operate the tractor. Further, part of the display can be modified by the operator as required.



No.	Description	Reference page
	<b>Power shift model, auto shift mode (field mode)</b>  <b>(A) Displays [A], [B], [C], [D] or [E]</b> Displays the position of the range gear shift that was selected with the ez-command centre. <b>(B) Displays [1], [2], [3], [4], [5] or [6] (reverse: [1], [2] or [3])</b> Displays the position of the currently selected main gear shift (3) that was preset with the automatic gear shift in the field or road mode. <b>(C) Auto shift mode indicator</b> Lights up when the auto shift mode is selected. Stays off while in the manual mode. <b>(D) Auto-shift indicator</b> Displays the automatic gear shift range (1 through 4) that was preset with the main gear shift (1 through 6) in the field mode. Lights up when the field mode is selected. Stays off while in the manual mode.	63 93 162
(1)	<b>Power shift model, auto shift mode (road mode)</b>  <b>(A) Displays [A], [B], [C], [D] or [E]</b> Displays the position of the currently selected range gear shift (B) that was preset with the automatic gear shift in the road mode. <b>(B) Displays [1], [2], [3], [4], [5] or [6] (reverse: [1], [2] or [3])</b> Displays the position of the currently selected main gear shift (3) that was preset with the automatic gear shift in the field or road mode. <b>(C) Auto shift mode indicator</b> Lights up when the auto shift mode is selected. Stays off while in the manual mode. <b>(D) Auto-shift indicator</b> Displays the automatic gear shift range (A1 through B4) that was preset with the main gear shift (1 through 6) and the range gear shift (A through E) in the road mode. Lights up when the road mode is selected. Stays off while in the manual mode.	63 93 162
	<b>Power shift model, manual mode</b>  <b>(A) Displays [A], [B], [C], [D] or [E]</b> Displays the position of the range gear shift that was selected with the ez-command centre. <b>(B) Displays [1], [2], [3], [4], [5] or [6] (reverse: [1], [2] or [3])</b> Displays the position of the range gear shift selected with the ez-command centre.	162

(Continued)

No.	Description	Reference page
(1)	<p><b>CVT model</b></p>  <p><b>(E) Displays maximum speed</b> The tractor's travel speed upper limit within a selected mode is displayed.</p> <p><b>(F) Displays [CRUISE]</b> Operator can see when cruise control is activated.</p> <p><b>(G) Target speed</b> The current lever position (speed) with respect to the above upper-limit speed is displayed as a percentage. In the LCD example, the lever is positioned at 40% of the upper-limit speed (15.0 km/h / 9.3 mph).</p> <p>1SVRC00268C01</p>	98 171
(2)	<p><b>Displays [F], [R] or [N]</b> [F] is displayed when forward operation is selected with the shuttle lever or the shuttle button. [R] is displayed when reverse operation is selected with the shuttle lever or the shuttle button. [N] is displayed when the shuttle lever is at neutral position or the shuttle neutral button is pressed.</p>	157 157
(3)	<p><b>Speedometer</b> Displays the travelling speed.</p>	182
(4)	<p><b>Basic information monitor</b> Of the 4 types of information, 1 type can be selected by the operator.</p>	66
(5)	<p><b>Performance monitor</b> 2 rows of information can be selected by the operator.</p>	66
(6)	<p><b>DEF/AdBlue® gauge</b> Displays the fluid level in the DEF/AdBlue® tank.</p>	181
(7)	<p><b>Pneumatic pressure gauge</b> Displays the pneumatic pressure (if equipped).</p>	181
(8)	<p><b>Service inspect indicator</b></p>  <p>Service inspect indicator is displayed when the time for an engine oil change has come.</p>	119
	 <p>Engine low temperature regulation indicator</p>	135
	 <p>Transmission low temperature regulation indicator</p>	137
	 <p>Gear shifting warning indicator</p>	178
	 <p>Engine over speed warning indicator</p>	178
	 <p>DEF/AdBlue® warning indicator</p>	130
	<p><b>Trouble display</b> A trouble-spot-pinpointing error code and the related control unit are displayed.</p>	302

## 1. LCD initial setting

### WARNING

To avoid personal injury or death:

Take the following precautions when starting the initial setting.

- Park the machine on firm and level ground.
- Set the parking brake.
- Lower the implement to the ground.

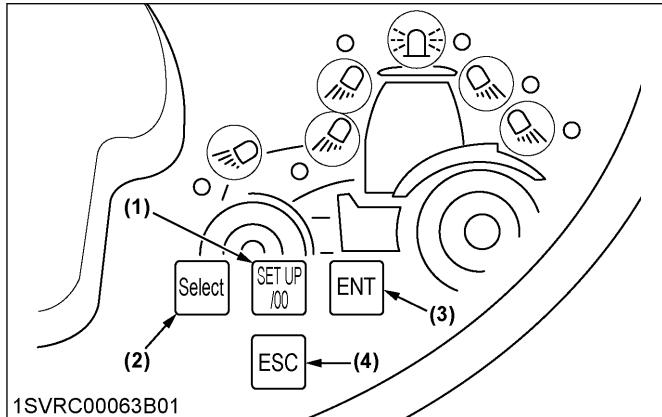
Before operation, make sure the clock and the working range of implement are set.

Once registered, the working range of an implement is put in memory. When the implement is changed to a different one, the latter's working range must be entered anew.

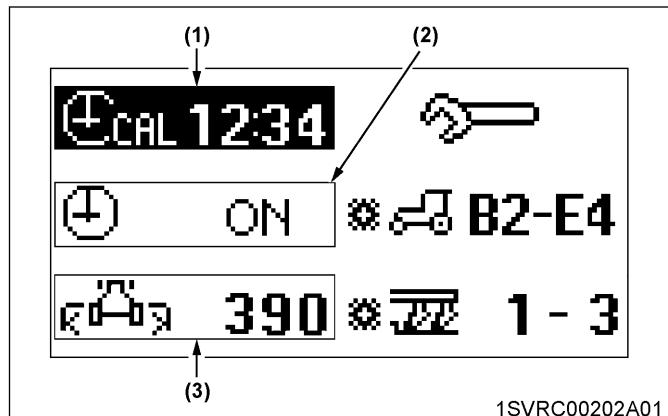
Otherwise, the work area and other data will not be correctly displayed.

### 1.1 Setting the clock

1. Turn on the key switch.
2. Press the [SET UP/00] switch, and the setting mode screen appears on the liquid crystal display (LCD) unit.

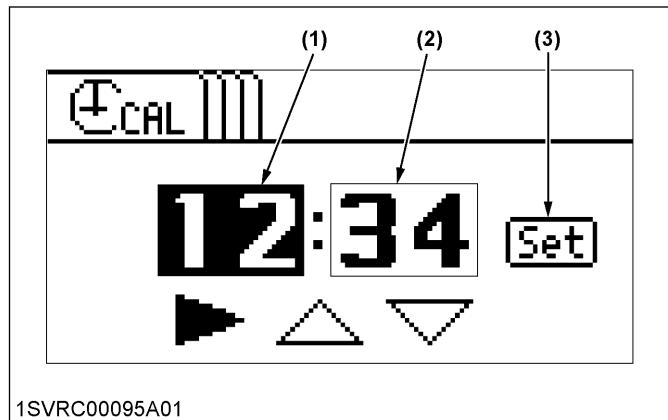


- (1) [SET UP/00] switch  
(2) [Select] switch  
(3) [ENT] switch  
(4) [ESC] switch



- (1) Clock setting  
(2) Clock display ON/OFF setting  
(3) Working range of implement

3. When the "Clock setting" has been selected with the [Select] switch and then the [ENT] switch pressed, the clock setting screen shows up.



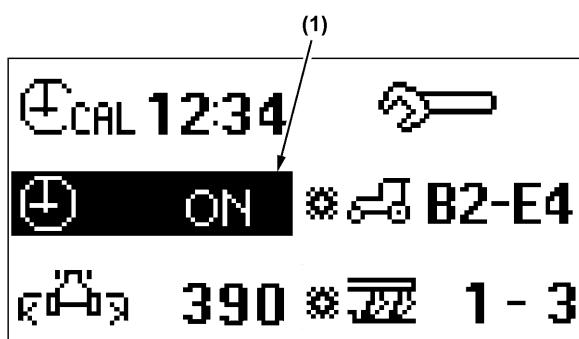
- (1) Hour  
(2) Minute  
(3) Set switch

4. Setting the "Hour" of the clock:
  - a. Select ▶ with the [Select] switch and then press the [ENT] switch to choose the "Hour" (highlighted).
  - b. To put the clock forward, select ▲ with the [Select] switch and then press the [ENT] switch. The hour continues to change if the [ENT] switch is held down.
  - c. To put the clock back, select ▼ with the [Select] switch and then press the [ENT] switch. The hour continues to change if the [ENT] switch is held down.

5. Setting the "Minute" of the clock:
  - a. Select ► with the [Select] switch and then press the [ENT] switch to choose the "Minute" (highlighted).
  - b. Carry out the "Minute" setting in the same way as the "Hour" setting.
  - c. With the "Minute" setting made, select [Set] with the [Select] switch and then press the [ENT] switch. The clock is now completely set and the setting mode screen appears again.

## 1.2 Setting the clock display ON/OFF

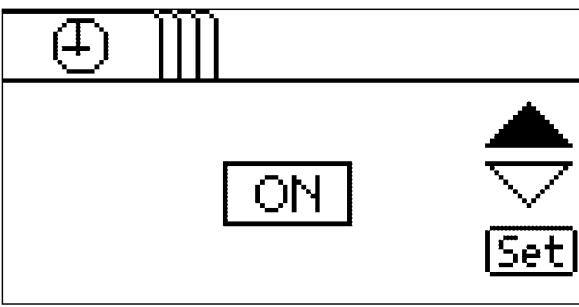
1. Press the [Select] switch to choose "Clock ON/OFF setting". Then press the [ENT] switch, and the clock ON/OFF setting screen appears.



1SVRC00202A02

(1) Clock ON/OFF setting

(1)



1SVRC00096A01

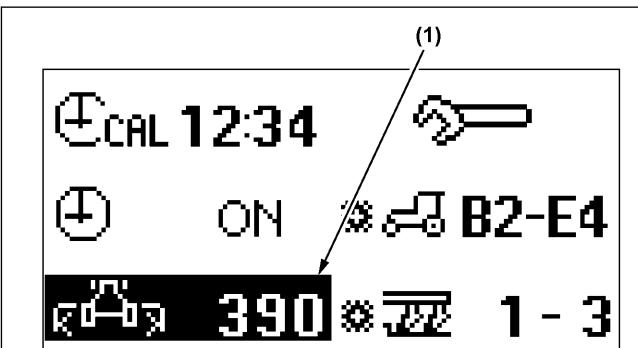
(1) Clock ON/OFF setting screen

2. Press the [Select] switch and select ▼ or ▲. Then press the [ENT] switch to select clock display ON or OFF.
3. Select [Set] with the [Select] switch and then press the [ENT] switch. The ON/OFF setting has been made and the setting mode screen appears again.

## 1.3 Setting the working range of implement

1. Press the [Select] switch to choose "Working range of implement". Then press the [ENT] switch, and

the implement working range setting screen appears.



1SVRC00202A03

(1) Working range of implement



1SVRC00097A01

(1) Implement working range setting screen

2. Press the [Select] switch and select ▼ or ▲. Then press the [ENT] switch to choose "Working range of implement".
3. Select [Set] with the [Select] switch and then press the [ENT] switch. The setting is made and the setting mode screen appears again.
4. Press the [ESC] switch, and the normal screen reappears.

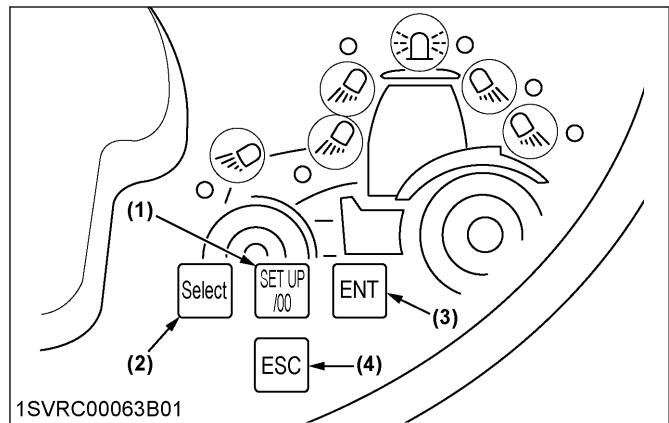
## 2. Setting the power shift transmission (Standard model)

Various settings of the automatic power shift transmission can be made and checked.

### 2.1 Setting the automatic gear shift (road mode)

Referring to the travelling speeds chart, determine the maximum and minimum gear shifts that are best suited for the job in question.

1. Turn on the key switch.
2. Press the [SET UP/00] switch to make the setting mode screen appear.



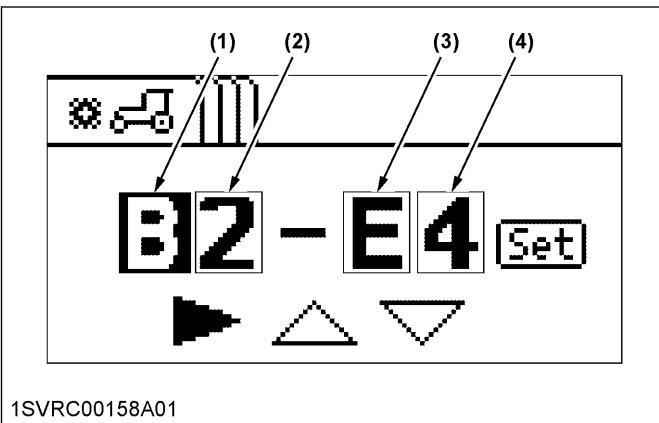
- (1) [SET UP/00] switch
- (2) [Select] switch
- (3) [ENT] switch
- (4) [ESC] switch

3. Select "Auto shift (road mode)" with the [Select] switch and then press the [ENT] switch. The auto shift (road mode) setting screen shows up.



- (1) Auto shift (road mode)
- (2) Auto shift (field mode)

4. Select ▶ with the [Select] switch and then press the [ENT] switch to choose the "Range gear shift of minimum travelling speed" (highlighted).
5. Select ▼ or ▲ with the [Select] switch and then press the [ENT] switch to determine the desired "Range gear shift of minimum travelling speed" (from A to E).
6. Select ▶ with the [Select] switch and then press the [ENT] switch to choose the "Main gear shift of minimum travelling speed" (highlighted).



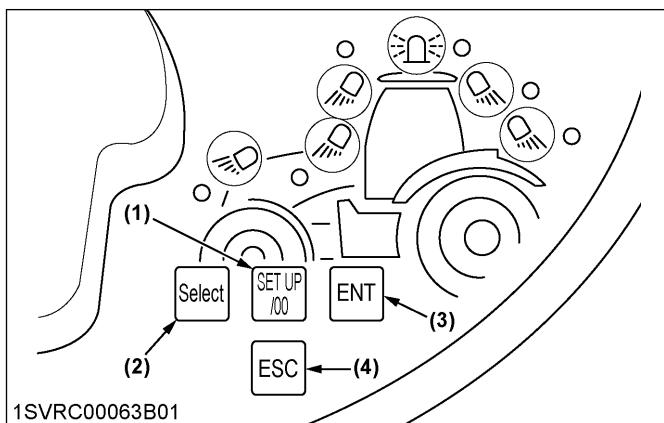
- (1) Range gear shift of minimum travelling speed
- (2) Main gear shift of minimum travelling speed
- (3) Range gear shift of maximum travelling speed
- (4) Main gear shift of maximum travelling speed

7. Select ▼ or ▲ with the [Select] switch and then press the [ENT] switch to determine the desired "Main gear shift of minimum travelling speed" (from 1 to 6).
8. Use the same procedure to determine "Range gear shift and main gear shift of maximum travelling speed".
9. Select [SET] with the [Select] switch and then press the [ENT] switch. The setting is made and the setting mode screen appears again.

## 2.2 Setting the automatic gear shift (field mode)

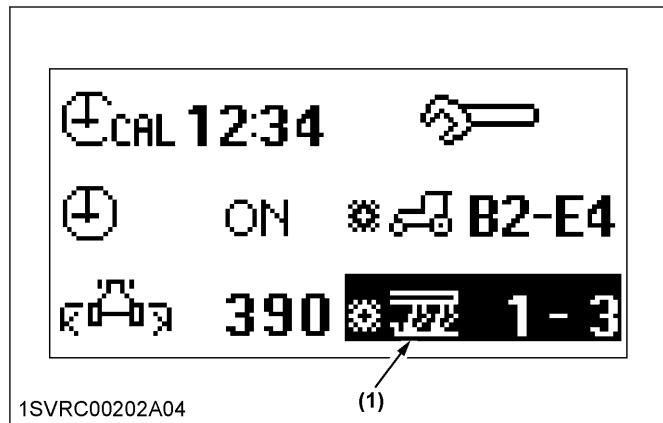
Referring to the travelling speeds chart, determine the maximum and minimum main gear shifts that are best suited for the job in question.

1. Turn on the key switch.
2. Press the [SET UP/00] switch to make the setting mode screen appear.



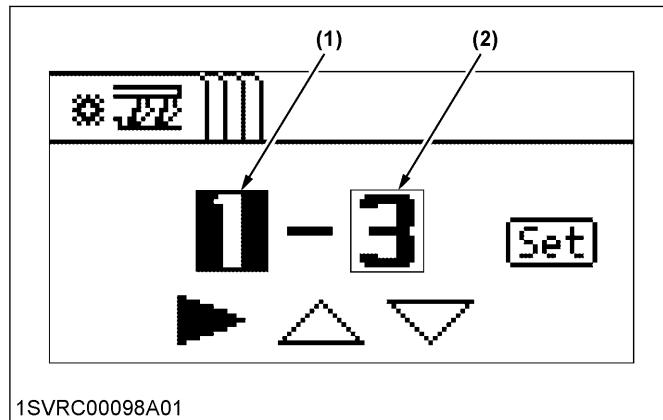
- (1) [SET UP/00] switch
- (2) [Select] switch
- (3) [ENT] switch
- (4) [ESC] switch

3. Select "Auto shift (field mode)" with the [Select] switch and then press the [ENT] switch. The auto shift (field mode) setting screen shows up.



(1) Auto shift (field mode)

- Select ► with the [Select] switch and then press the [ENT] switch to choose the “Main gear shift of minimum travelling speed” (highlighted).



1SVRC00098A01

(1) Main gear shift of minimum travelling speed

(2) Main gear shift of maximum travelling speed

- Select ▼ or ▲ with the [Select] switch and then press the [ENT] switch to determine the “Main gear shift of minimum travelling speed”.
- Select ► with the [Select] switch and then press the [ENT] switch to choose the “Main gear shift of maximum travelling speed” (highlighted).
- Select ▼ or ▲ with the [Select] switch and then press the [ENT] switch to determine the “Main gear shift of maximum travelling speed”.
- Select [SET] with the [Select] switch and then press the [ENT] switch. The setting is made and the setting mode screen appears again.

### 3. Basic information monitor and performance monitor

The information required for jobs can be selected and displayed on the LCD screen.

The basic information monitor serves to display 1 of the following 4 types of data.

The performance monitor serves to display 2 types of data picked up from the list below.



1SVRC00200E01

(1) Basic information monitor

(2) Performance monitor

#### Types of information displayed on the basic information monitor

Display	Remarks	Reference page
<b>④ 12:34</b> 1SVRC00272A01	Clock	62
<b>✉ 12345.6 h</b> 1SVRC00272B01	Elapsed time (hour meter)	---
<b>TRIP a 7890.0 h</b> 1SVRC00272C01	Trip A	<ul style="list-style-type: none"> <li>• Displays the trip measured from the previous resetting.</li> <li>• With the <b>[Trip]</b> displayed and selected, hold down <b>[SET UP/00]</b> switch. The setting goes back to <b>[0.0]</b>.</li> </ul>
<b>TRIP b 0.0 h</b> 1SVRC00272D01	Trip B	---

## Types of information displayed on the performance monitor

Selected screen	Display		Remarks	Reference page
1/6		Travel speed	<ul style="list-style-type: none"> <li>The "Average travel speed" is based on the speed since the last reset action was performed.</li> <li>With the "Average travel speed" displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.00].</li> </ul>	---
	Av.	Average travel speed	<b>NOTE :</b> <ul style="list-style-type: none"> <li>The travel speed displayed does not account for wheel slip.</li> </ul>	---
		Engine rpm		---
		Memory A rpm		139
		Memory B rpm		139
		Upper-limit rpm setting		139
2/6	<b>POWER</b>	Instantaneous loading factor	<ul style="list-style-type: none"> <li>The "Average loading factor" is measured based on the loading factor from the previous resetting.</li> <li>With the "Average loading factor" displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0].</li> <li>The "Instantaneous loading factor graph" displays the instantaneous loading factor in real time (a bar extending farther to the right shows a higher load).</li> </ul>	---
	<b>Av. POWER</b>	Average loading factor		---
		Instantaneous loading factor graph		---
		Rear PTO rpm		92 193
		Front PTO rpm (if equipped)		92 199
		Instantaneous fuel consumption	<ul style="list-style-type: none"> <li>The "Instantaneous fuel consumption" is measured per hour.</li> <li>The "Average fuel consumption" is measured per hour from the previous resetting.</li> <li>With the "Average fuel consumption" displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> </ul>	---
3/6	<b>Av. </b>	Average fuel consumption		---
		Mileage graph		---
		Total fuel consumption	<ul style="list-style-type: none"> <li>Displays the total fuel consumption measured from the previous resetting.</li> <li>The maximum value which can be displayed is 999 gallons or 999 litres.</li> <li>With the "Total fuel consumption" displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> </ul>	---
		Instantaneous work area fuel consumption		62
	<b>Av. </b>	Average work area fuel consumption		62

(Continued)

Selected screen	Display	Remarks		Reference page
3/6		Instantaneous work distance fuel consumption	<ul style="list-style-type: none"> <li>The “Instantaneous work distance fuel consumption” is the work distance per fuel consumed.</li> </ul>	---
4/6		Average work distance fuel consumption	<ul style="list-style-type: none"> <li>The “Average work distance fuel consumption” is measured based on the fuel consumption from the previous resetting.</li> <li>With the “Average work distance fuel consumption” displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> </ul>	---
		Instantaneous work area operating efficiency	<ul style="list-style-type: none"> <li>The “Average work area operating efficiency” is measured based on the hourly coverage from the previous resetting.</li> <li>With the “Average work area operating efficiency” displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> </ul>	62
		Average work area operating efficiency	<ul style="list-style-type: none"> <li>Preset the implement width. If not preset correctly, incorrect data will be displayed. (See Initial setting on page 116.)</li> </ul>	62
		Work area	<ul style="list-style-type: none"> <li>Displays the work area measured from the previous resetting.</li> <li>With the “Work area” displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> <li>Preset the implement width. If not preset correctly, incorrect data will be displayed. (See Initial setting on page 116.)</li> </ul>	62
		Odometer	<ul style="list-style-type: none"> <li>Displays the total mileage of the tractor. The mileage cannot be reset.</li> <li>The North American models display in “miles”, while the other models display in “km”.</li> </ul>	---
		Travel distance	<ul style="list-style-type: none"> <li>Displays the travel distance measured from the previous resetting.</li> <li>With the “Travel distance” displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> <li>The North American models display in “feet”, while the other models display in “m”.</li> </ul>	71
5/6		Travel distance	<ul style="list-style-type: none"> <li>Displays the travel distance measured from the previous resetting.</li> <li>With the “Travel distance” displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> <li>The North American models display in “miles”, while the other models display in “km”.</li> </ul>	---
		DPF temperature	<ul style="list-style-type: none"> <li>Displays the DPF muffler temperature.</li> </ul>	123
		PM build-up	<ul style="list-style-type: none"> <li>Displays the PM build-up inside the DPF muffler.</li> <li>Regeneration is needed when the 100% level has been reached.</li> <li>A bar extending farther to the right shows increased PM.</li> </ul>	123
		PM build-up graph		123
		Cruise control forward speed setting	<ul style="list-style-type: none"> <li>Only Premium KVT model.</li> </ul>	176
		Cruise control reverse speed setting		176
6/6		3-point hitch position		85 213

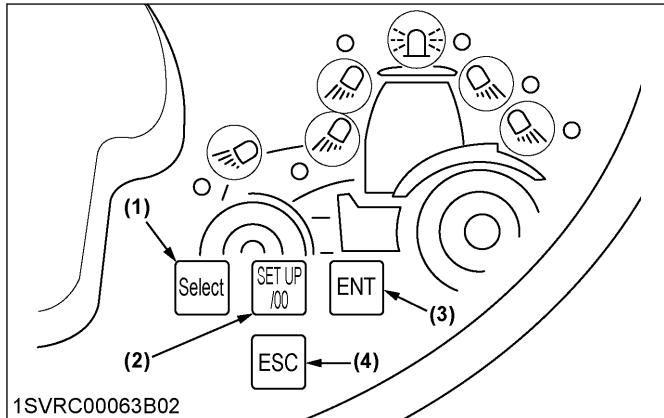
(Continued)

Selected screen	Display	Remarks		Reference page
6/6		Slip rate	<ul style="list-style-type: none"> <li>The “Average slip rate” is measured based on the slip rate from the previous resetting.</li> <li>With the “Average slip rate” displayed and selected, hold down [SET UP/00] switch. The setting goes back to [0.0].</li> </ul>	---
		Average slip rate		---
		Travel speed with radar (if equipped)		---
		Blank	<ul style="list-style-type: none"> <li>Used to delete the information displayed.</li> </ul>	---

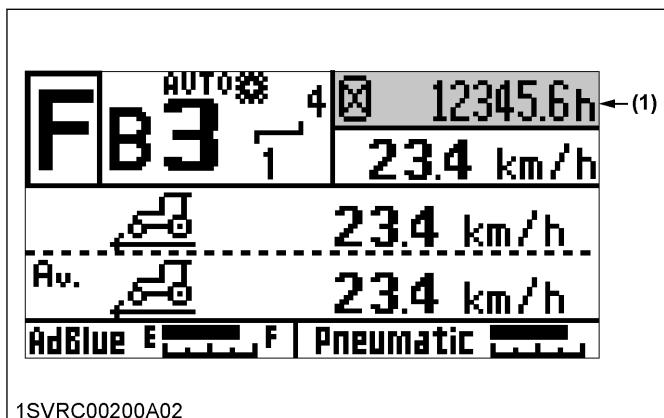
The screen numbers vary with the specifications of tractors.

### 3.1 Modifying the information displayed on the basic information monitor

1. Stop the tractor and apply the parking brake.  
The display cannot be changed while driving. Trying to make a change while driving will activate the warning buzzer.
2. Turn on the key switch.
3. Press the [Select] switch to choose "Basic information monitor" (it is highlighted). Then press the [ENT] switch.



- (1) [Select] switch  
(2) [SET UP/00] switch  
(3) [ENT] switch  
(4) [ESC] switch



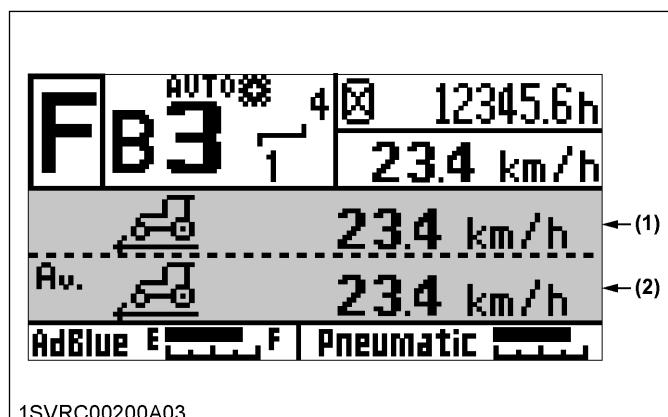
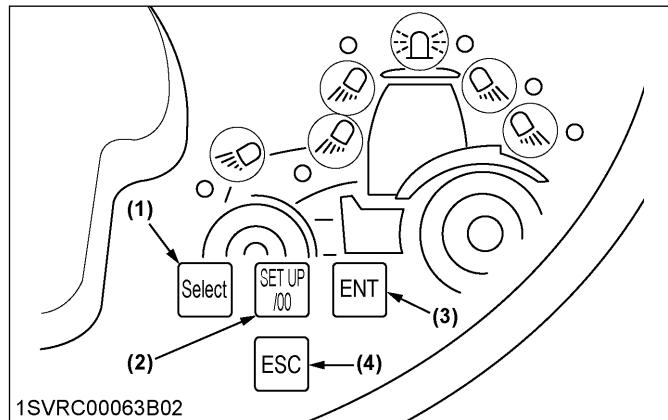
- (1) Basic information monitor

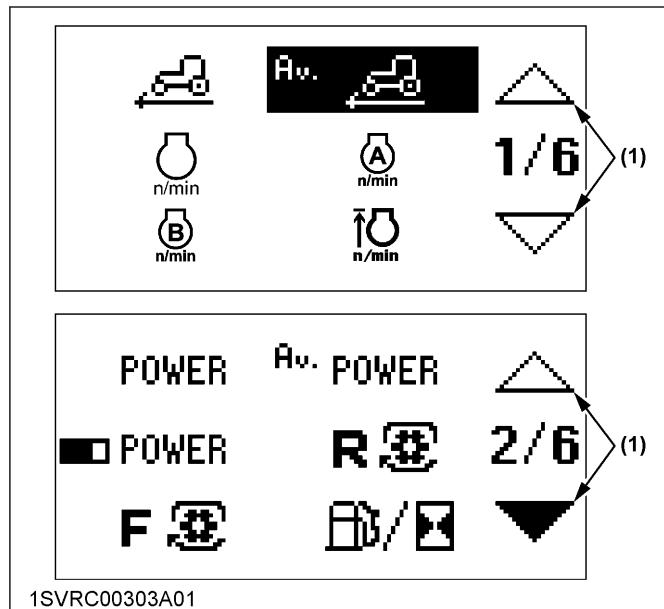
4. Every time the [Select] switch is pressed, the onscreen data switches among "Hour meter", "Trip A", "Trip B", and "Clock" in that order.
5. Press the [ENT] switch, and the data now on the screen are finalised.

### 3.2 Modifying the information to display on the performance monitor

1. Stop the tractor and apply the parking brake.  
The display cannot be changed while driving. Trying to make a change while driving will activate the warning buzzer.

2. Turn on the key switch.
3. Press the [Select] switch to choose "Performance monitor (1)" (it is highlighted). Then press the [ENT] switch. Now the performance monitor select screen shows up.





(1) Screen selector switch

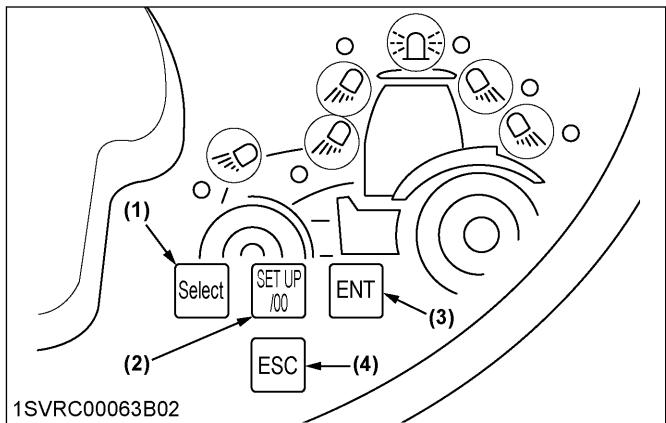
4. Using the [Select] switch, get a desired type of information (icon) highlighted. If the desired item (icon) is missing on the LCD screen, select  $\Delta$  or  $\nabla$  with the [Select] switch and then press the [ENT] switch. Another performance monitor screen shows up.
5. Press the [ENT] switch, and the data now on the screen are finalised. The selected type of information is now displayed on the performance monitor (1).
6. For the "Performance monitor (2)", the onscreen data can be modified in the same procedure.

### 3.3 Measuring distance

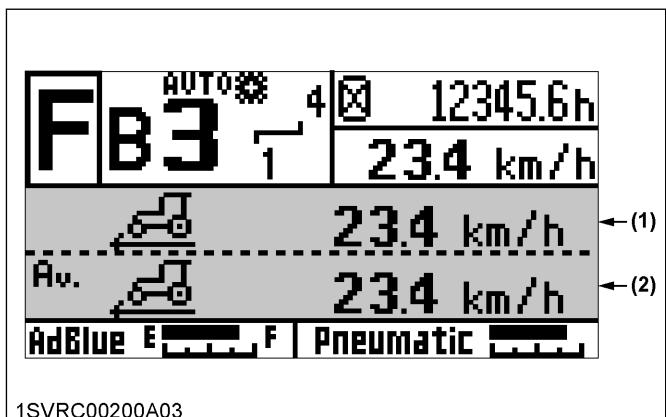
This function serves to measure the distance from your home to the field and other distances.

#### Preparation

1. Stop the tractor and apply the parking brake.
2. Turn on the key switch.
3. Press the [Select] switch to choose "Performance monitor (1)" or "Performance monitor (2)" (it is highlighted). Then press the [ENT] switch. Now the performance monitor select screen shows up.

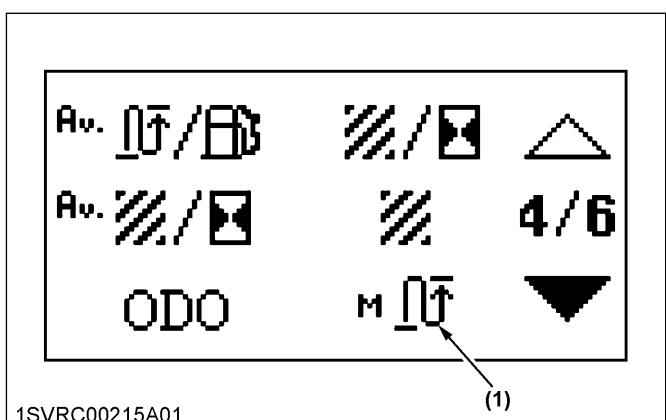


- (1) [Select] switch  
(2) [SET UP/00] switch  
(3) [ENT] switch  
(4) [ESC] switch

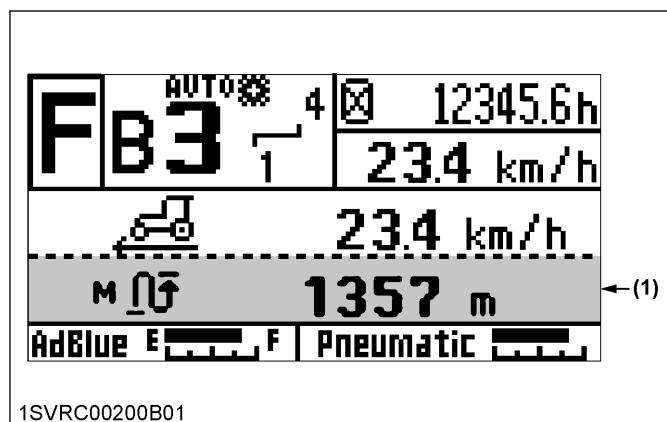


- (1) Performance monitor 1  
(2) Performance monitor 2

4. Using the select switch, get the distance measuring icon highlighted. Press the [ENT] switch. The distance measuring icon is now displayed on the performance monitor.



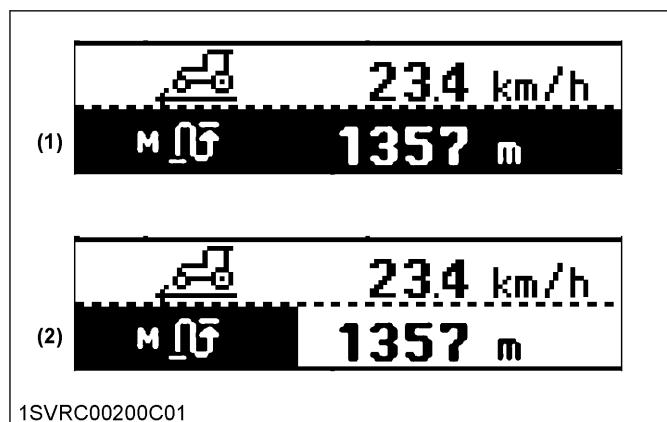
- (1) Distance measuring icon



(1) *Distance measuring*

#### How to measure distance

1. Press the [Select] switch to select the distance measurement icon on the meter panel (highlighted). In that state, press and hold the [ENT] switch to enable distance measurement.
2. Press the [ENT] switch to start distance measurement. Press the [ENT] switch again to stop distance measurement.



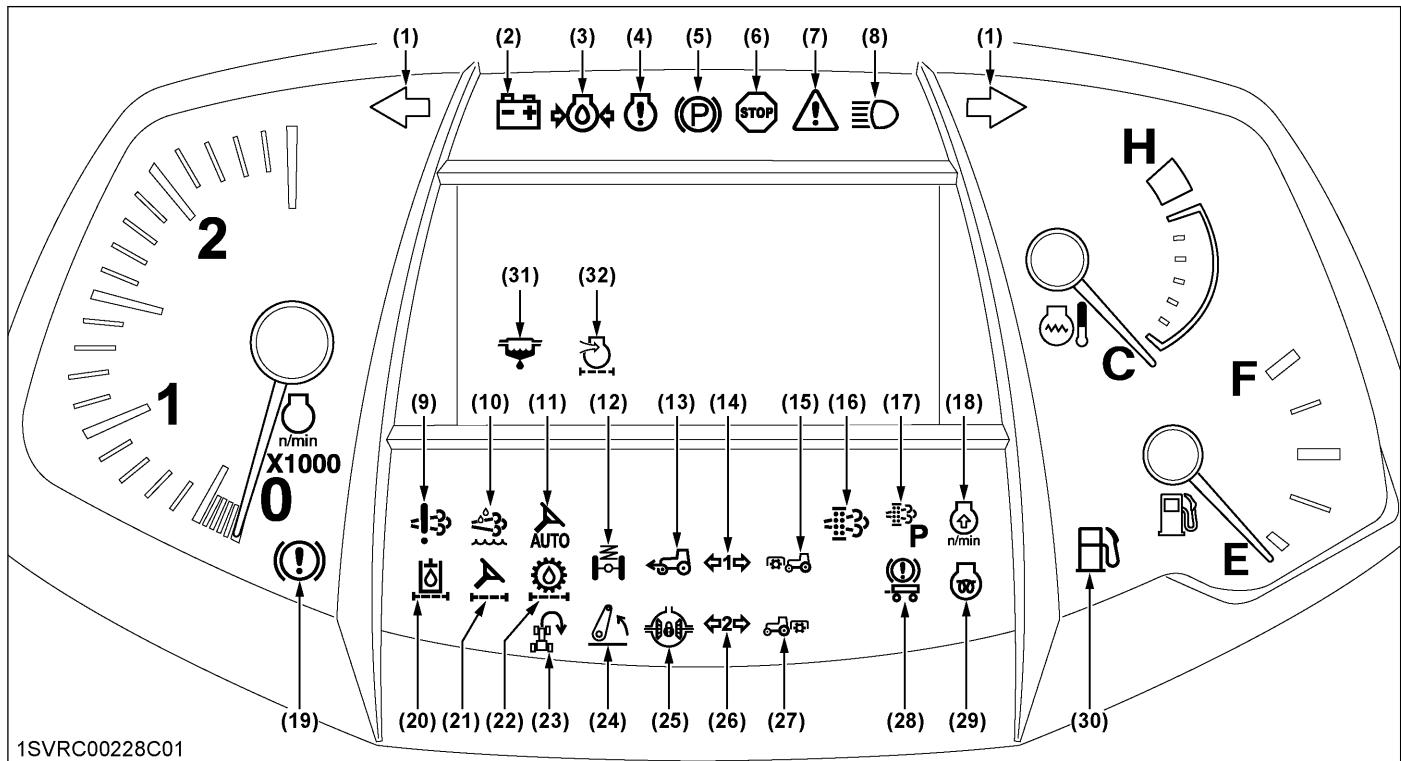
(1) *"Distance measurement stopped"*

(2) *"Measurement distance"*

3. To reset the measured value to zero, press and hold the [SET UP/00] switch while distance measurement is enabled.
4. Press [ESC] switch to return to the normal screen and stop distance measurement. Also, after stopping distance measurement, the measured value can be reset to zero by holding down the [SET UP/00] switch while the distance measurement icon on the performance monitor in the meter panel is selected.

## INDICATORS

Before operating the tractor, fully understand the meanings of the indicators. If anything is unclear, carefully reread the reference pages.



### Illustrated contents

(1) Direction indicator and hazard light indicator .....	150	(16) Regeneration indicator .....	123
(2) Electrical charge warning indicator .....	179	(17) Parked regeneration indicator .....	128
(3) Engine oil pressure warning indicator .....	179	(18) Engine rpm increase indicator .....	124
(4) Engine warning indicator .....	179	(19) Brake oil pressure warning indicator .....	179
(5) Parking brake warning indicator .....	152	(20) Hydraulic oil filter (suction) indicator .....	179
.....	179	(21) Power steering oil filter indicator .....	179
(6) Master system warning indicator .....	179	(22) Transmission oil filter indicator .....	179
(7) System abnormality indicator .....	179	(23) Headland management system indicator .....	101
(8) High-beam indicator .....	148	.....	185
.....	149	(24) 3-Point hitch lifting and lowering indicator .....	218
(9) DEF/AdBlue® system warning indicator .....	130	(25) Differential lock indicator .....	161
.....	179	(26) Trailer indicator 2 .....	150
(10) DEF/AdBlue® warning indicator .....	130	(27) Rear PTO indicator .....	193
.....	179	(28) Trailer brake warning indicator .....	155
(11) Auto steer indicator .....	190	(29) Heater indicator .....	135
(12) Front suspension indicator .....	190	(30) Fuel level indicator .....	179
(13) 4WD indicator .....	159	(31) Water separator indicator .....	179
(14) Trailer indicator 1 .....	150	(32) Air cleaner indicator .....	179
(15) Front PTO indicator .....	198	.....	

### NOTE :

- The water separator indicator (31) and air cleaner indicator (32) are displayed on the LCD when the trouble occurs.

## 1. Indicator colour

Most indicators light up in the following 3 colours for identification.

### **Green indicator**

This colour indicates that the operation-related control switches and levers are enabled or disabled.

### **Amber indicator**

This colour means that the tractor's operating condition is being monitored.

If amber indicator lights up or starts blinking, resolve the cause of the trouble as required.

### **Red indicator**

This colour gives a warning directly linked to the possibility of injuries and/or machine troubles.

If red indicator lights up or starts blinking, immediately resolve the cause of the trouble.

## K-MONITOR MAIN MENU (PREMIUM AND PREMIUM KVT MODEL ONLY)

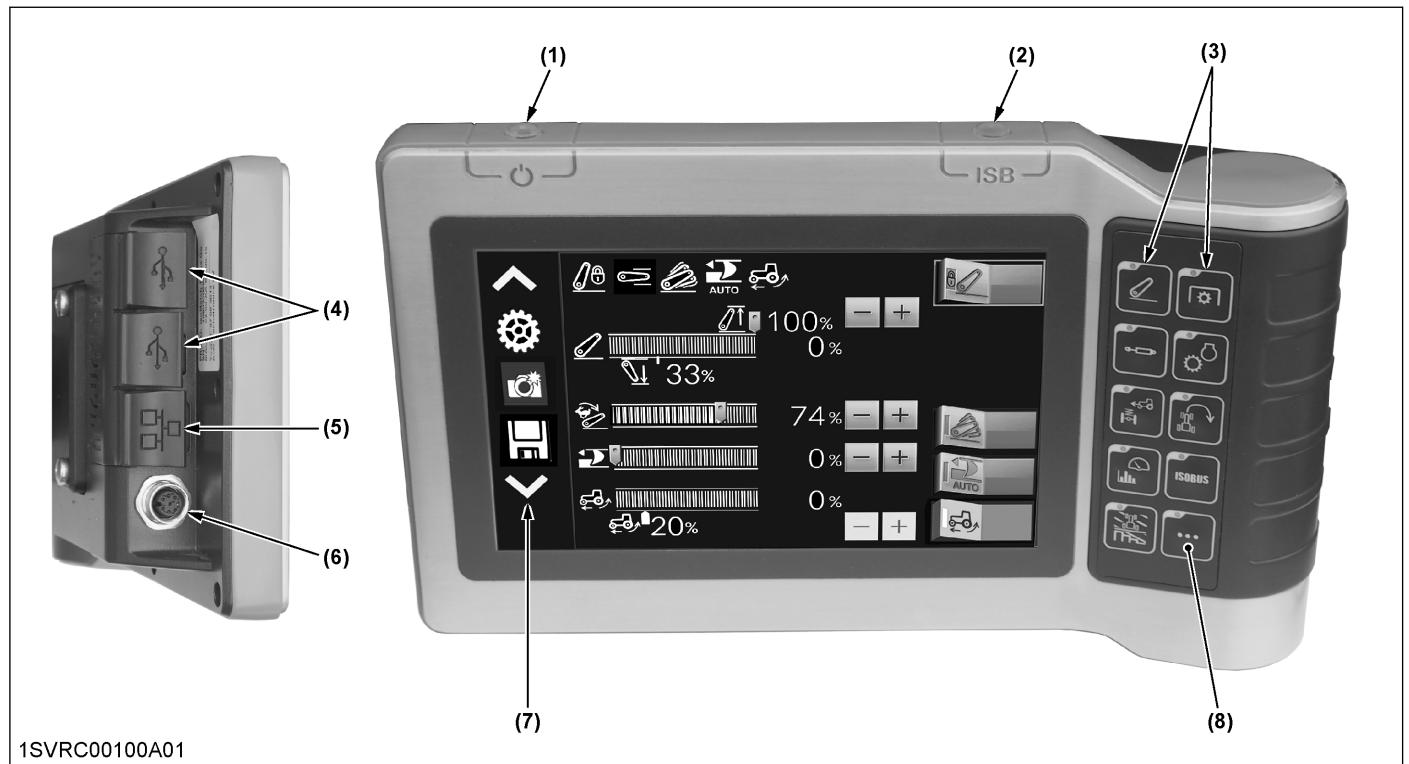
This chapter covers the handling and operation of the “*Main menu*” that is routinely used.

Details regarding the use of the sub-menu can be found in a different section.

(See K-MONITOR SUB-MENU (PREMIUM AND PREMIUM KVT MODELS ONLY) on page 116.)

On the panel, detailed settings of the differential lock, PTO, remote control valve and other functions can be made and checked. Once any setting has been made, it can also be redisplayed immediately using the function buttons. When the implement-related ISOBUS connector and the optional live view camera are connected, this panel serves as their monitor screen.

## 1. Names of parts and their handling (K-monitor)

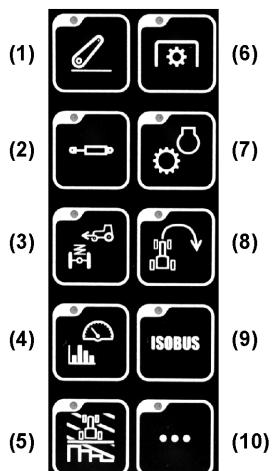


1SVRC00100A01

- |                                      |                                                 |                             |
|--------------------------------------|-------------------------------------------------|-----------------------------|
| (1) Screen switch                    | (4) USB port                                    | (7) Sub-menu select icon    |
| (2) ISOBUS emergency shut-off switch | (5) LAN port                                    | (8) Sub-menu display switch |
| (3) Main menu select switch          | (6) External camera input terminal (S terminal) |                             |

### Main menu select switch

1. Press the main menu select switch, and various types of information get displayed.
2. Referring to the following list, select your required type of information.  
If the sub-menu display switch (10) is selected, the sub-menu icons get displayed on the left of the screen.



1SVRC00102A01

- (1) 3-point hitch
- (2) Remote control valve
- (3) Driveability
- (4) Operating conditions
- (5) GEOCONTROL
- (6) PTO
- (7) Engine and transmission
- (8) Headland management system
- (9) ISOBUS
- (10) Sub-menu

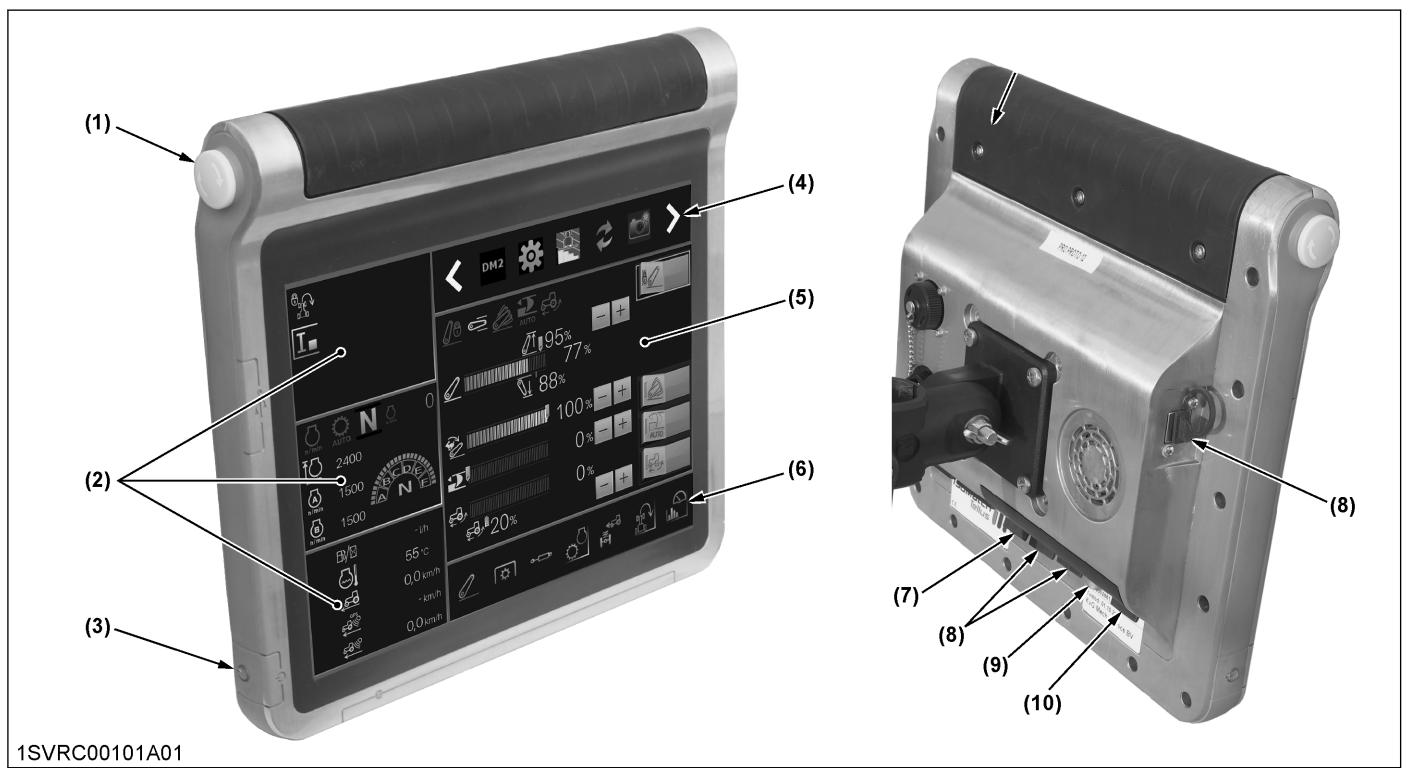
#### **Screen switch**

1. Touch the switch to switch between screen ON and screen OFF.  
Turn the screen OFF for night driving, and so on.

#### **ISOBUS emergency shut-off switch**

1. With an ISOBUS-compatible implement in motion, press this switch to stop the implement in case of emergency.  
Emergency stop methods vary according to the type of implement. For details, check with the instruction manual of the implement in question.

## 2. Names of parts and their handling (K-monitor Pro)



1SVRC00101A01

- (1) ISOBUS emergency shut-off switch  
 (2) Sub-screen display  
 (3) Screen switch  
 (4) Sub-menu select icon

- (5) Main display screen  
 (6) Main menu select icon  
 (7) LAN port  
 (8) USB port

- (9) External camera input terminal (S terminal)  
 (10) Microphone and earphone terminals

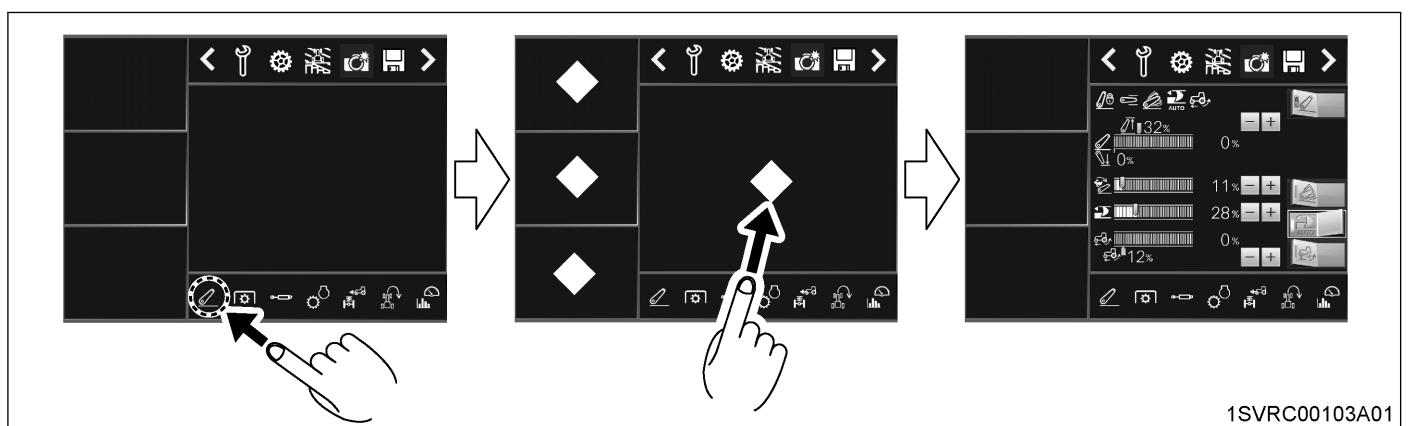
### Main menu display

On the screen, 4 different main menus that are routinely used can be displayed. They may also be switched over easily.

### Displaying and switching procedure

1. Going to the main display screen:

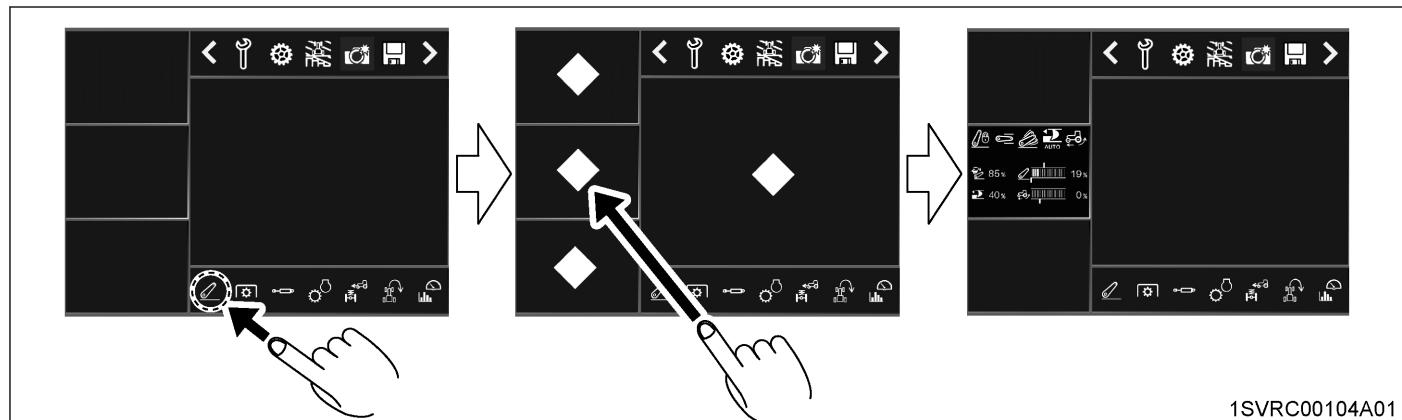
Touch the main menu icon you want to display, and touch the main display screen.



1SVRC00103A01

2. Going to the sub-display screen:

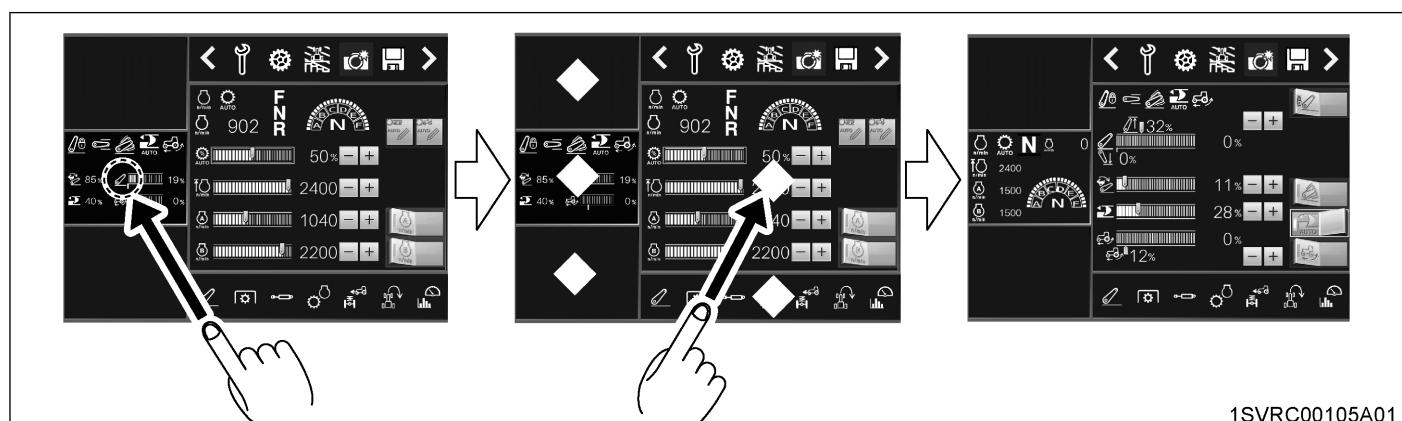
Touch the main menu icon you want to display, and touch the sub-display screen.



1SVRC00104A01

## 3. Switching between the sub-display screen and main display screen:

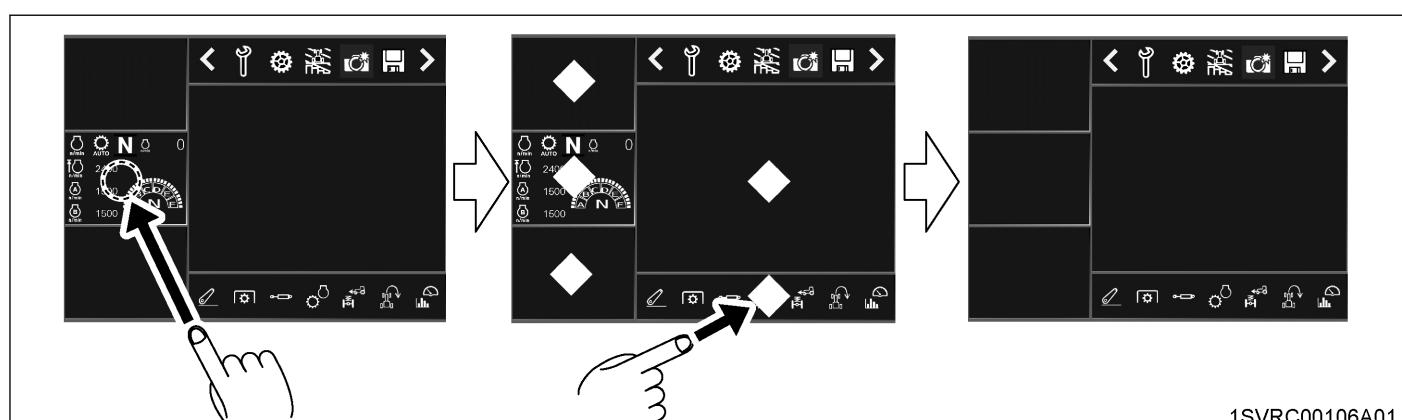
Touch the sub-display screen you want to display on the main display screen, and touch the main display screen.



1SVRC00105A01

## 4. Storing the sub-display screen into the main menu:

Touch the sub-display screen to store, and touch the main menu area.



1SVRC00106A01

**Screen switch**

Touch the switch to switch between screen ON and screen OFF.

Turn the screen OFF for night driving, and so on.

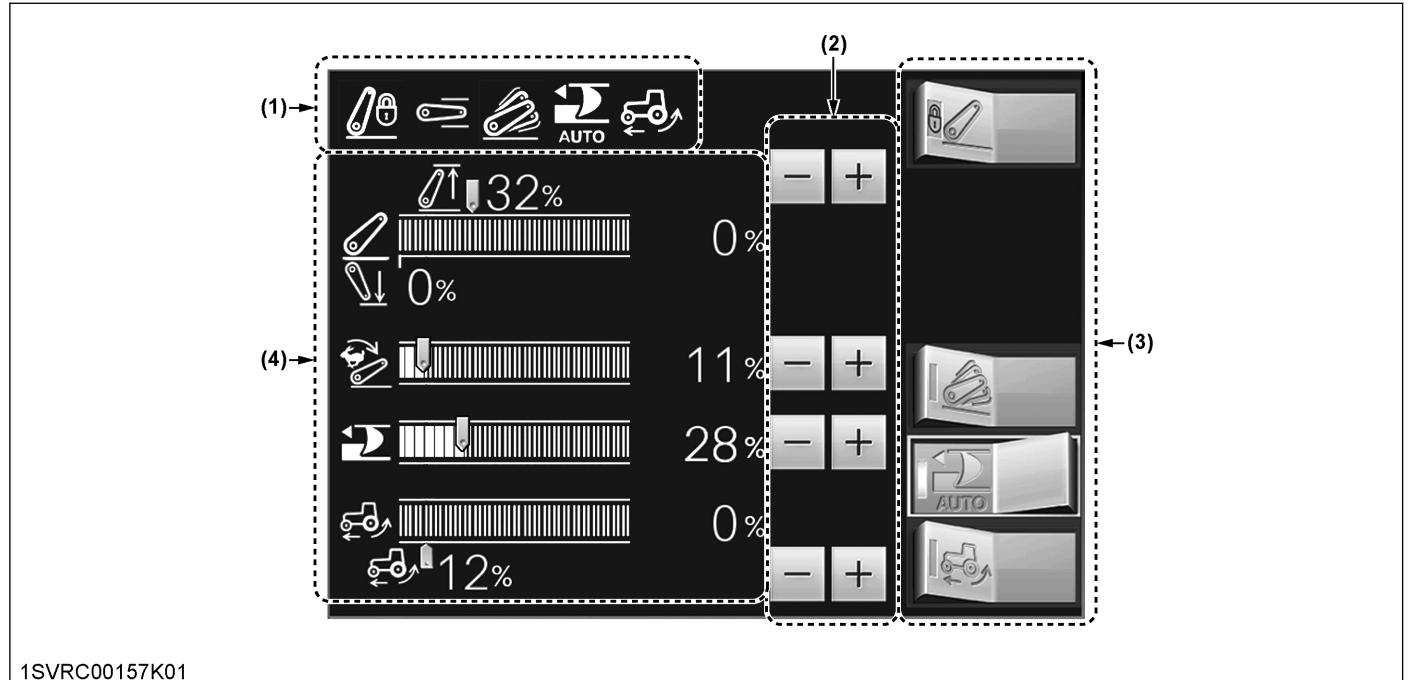
**ISOBUS emergency shut-off switch**

With an ISOBUS-compatible implement in motion, press this switch to stop the implement in case of emergency.

Emergency stop methods vary according to the type of implement. For details, check with the instruction manual of the implement in question.

### 3. Basic procedures

The following figure shows an example in which “3-point hitch” is selected from the main menu.



1SVRC00157K01

- (1) Indicator
- (2) Setting change switches
- (3) Select switches
- (4) Setting display bar graphs

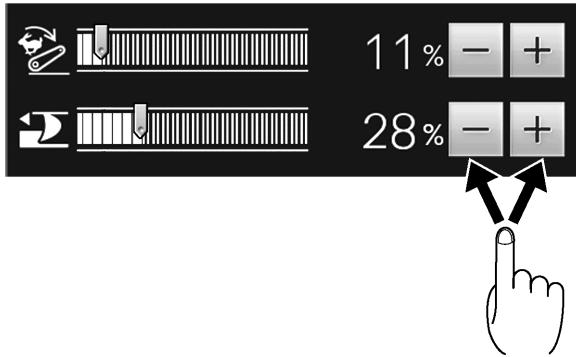
Familiarise yourself with the basic procedures, such as changing the settings, as follows:

- Changing the screen settings on page 80
- [F] buttons on page 81
- Function of the “Home” button on page 81
- Function of the [ESC] button on page 81

### 3.1 Changing the screen settings

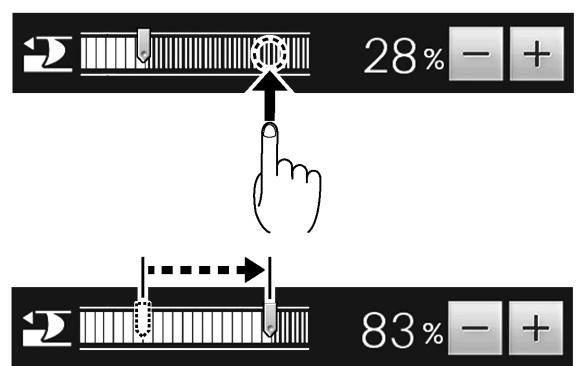
To change the settings on each screen, use any of the following procedures:

1. Touch the [-] or [+] button.



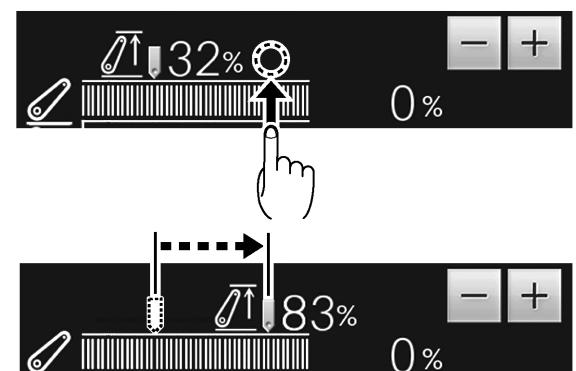
1SVRC00157A01

2. Touch a target point on the bar graph, and the slider of the graph will move to the touched point.



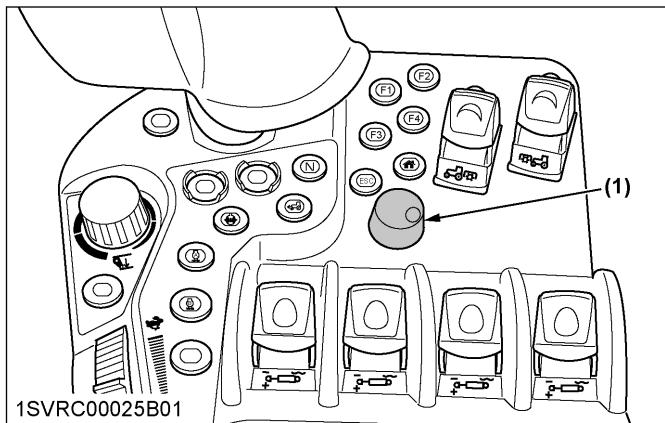
1SVRC00157B01

3. Touch the right or left side of the setting-pointing slider, and the slider will move to the touched point.



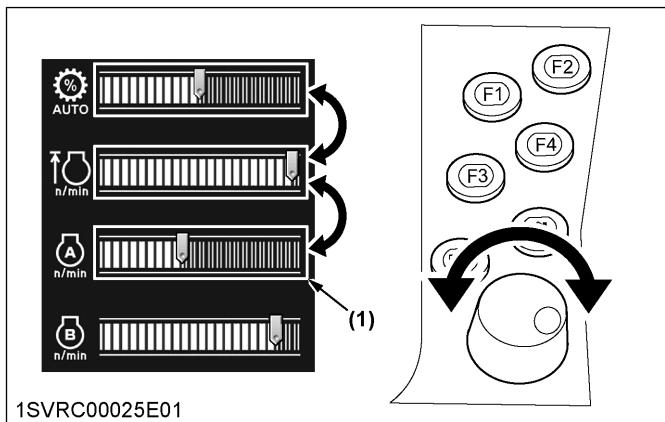
1SVRC00157C01

4. Use the selection dial and button.



(1) Selection dial and button

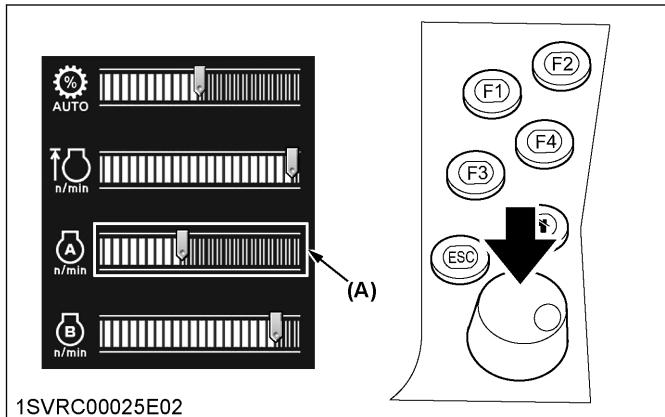
- a. Turn the selection dial and button until the orange selected frame reaches the desired item.



1SVRC00025E01

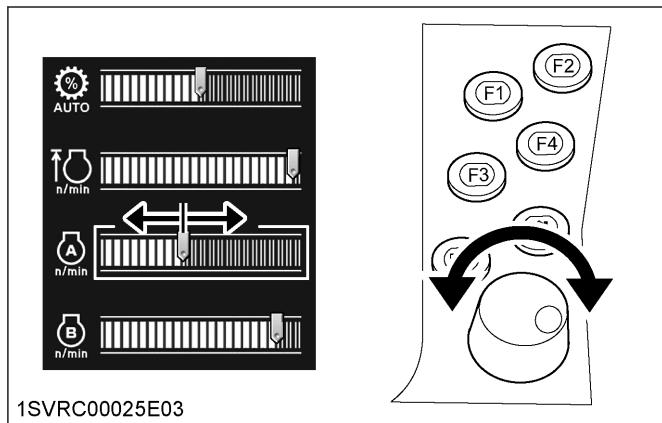
(1) Orange selected frame

- b. Press the selection dial and button to make a selection. The orange selected frame turns yellow-green, which means the editing mode.

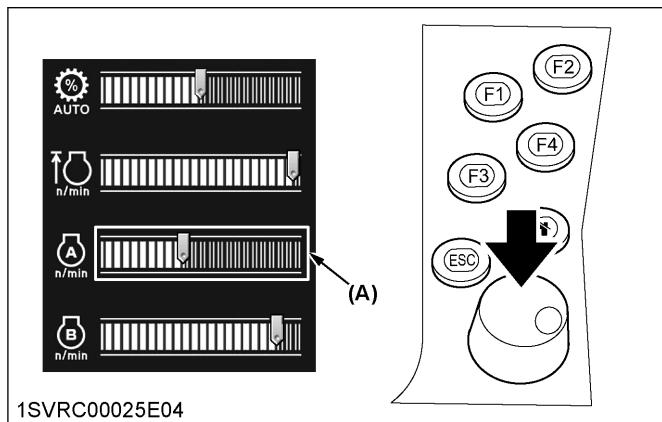


(A) Orange selected frame turns yellow-green

- c. Turn the selection dial and button clockwise or anti-clockwise to change the setting.

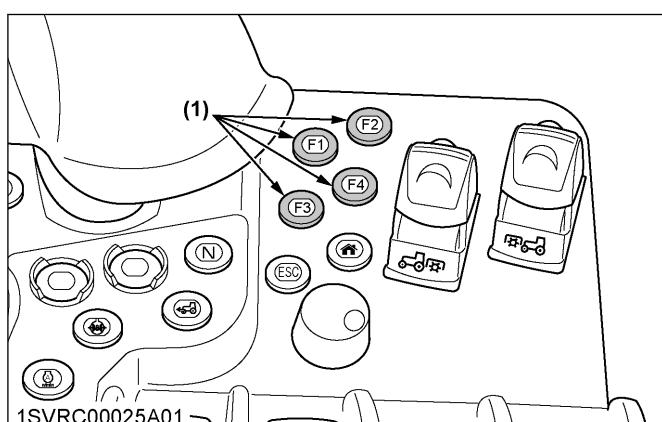


- d. Press the selection dial and button to complete the setting. Now the new setting is effective.



5. To cancel a new item or a new setting, just press the [ESC] button.

### 3.2 [F] buttons



#### Function

Routinely-used setting screens can be programmed to the buttons [F1] through [F4].

Regardless of the information currently displayed, just press an [F] button and the allocated setting screen appears.

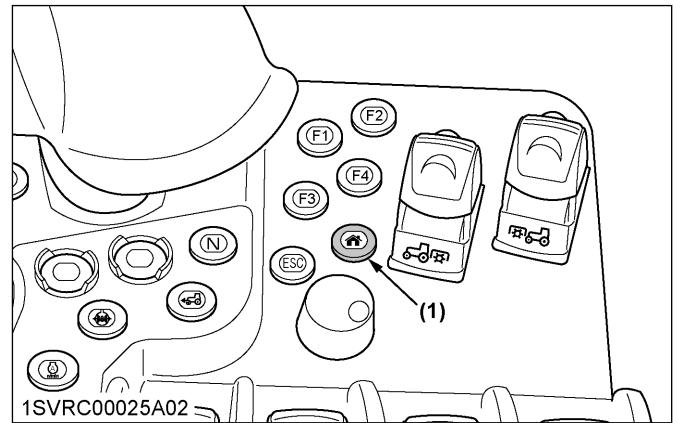
You can modify and check the settings quickly.

Press the [F] button again, and the previous screen comes back.

#### Allocation

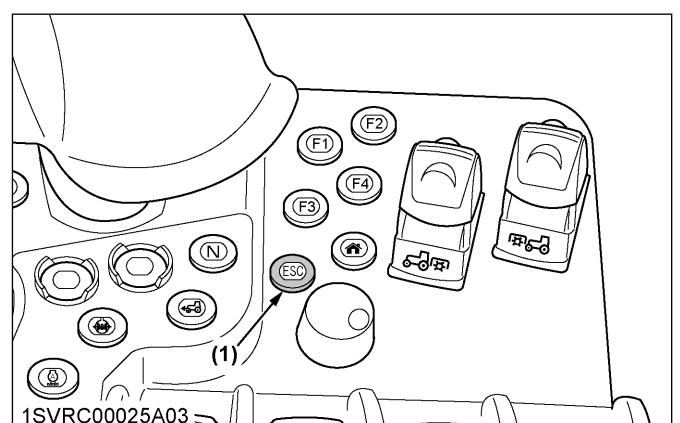
- Select the setting screen for allocation and hold down any of the [F1] through [F4] buttons 2 seconds or longer to allocate that screen.

### 3.3 Function of the “Home” button



- Hold down this button for 2 seconds, and your preset “Home” screen appears again. If you have purchased the tractor but its “Home” screen has not been made yet, the factory-set “Engine, transmission” screen reappears.
- Hold down this button between 2 and 4 seconds, and the currently shown screen replaces the “Home” screen.
- Hold down this button longer than 4 seconds, and the same “Home” screen as at the time of purchase is resumed.

### 3.4 Function of the [ESC] button



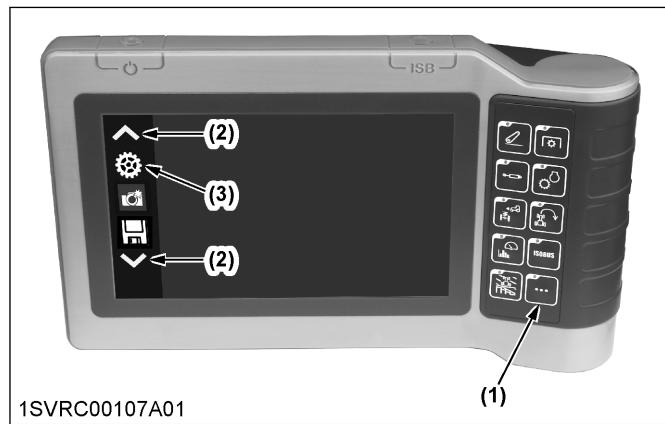
- Press this button, and the previous screen reappears. This works in the same way as with the “Previous screen resume” switch.

## 4. System basic settings

The screen brightness, sound volume and other settings can be adjusted. Modify those settings as required.

### 4.1 Calling up the setting screen (K-monitor)

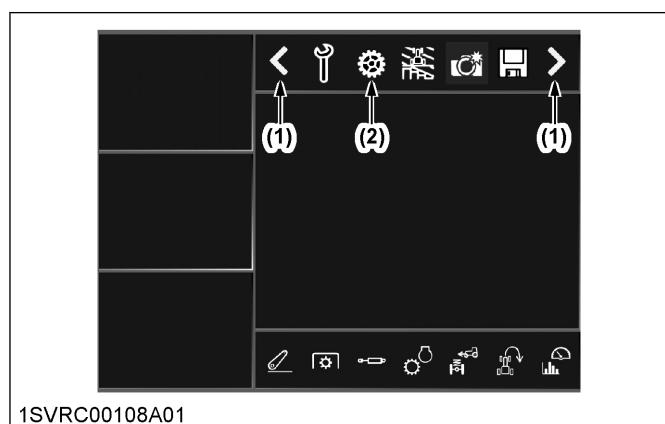
1. Touch the sub-menu display switch to make the sub-menu appear.
2. Using the sub-menu scroll switch, make the gear mark icon appear. Touch this icon, and the system settings screen shows up.



(1) Sub-menu display switch  
(2) Sub-menu scroll switch  
(3) Gear mark icon

### 4.2 Calling up the setting screen (K-monitor Pro)

1. Using the sub-menu scroll switch, make the gear mark icon appear.
2. Touch the gear mark icon first and then the main display screen, and the system settings screen shows up.

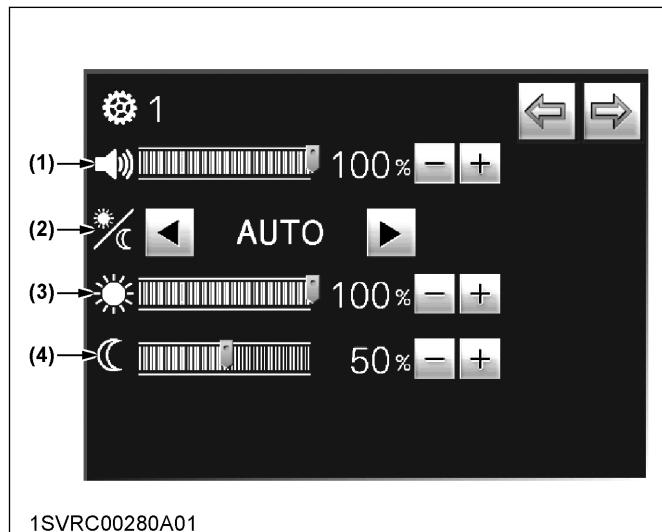


(1) Sub-menu scroll switch  
(2) Gear mark icon

### 4.3 Setting items and adjusting the setting mode screen

Touch the arrow switch to switch screens among “system settings (1)”, “system settings (2)”, “Time/ Date settings”, “ISOBUS settings” and “Licenses” in that order.

#### 4.3.1 System settings (1) screen



(1) Sound volume  
(2) Screen brightness  
(3) Daytime mode screen brightness  
(4) Night time mode screen brightness

##### Sound volume

Slide the graph farther to the right to increase the volume.

##### Screen brightness

The brightness level can be selected from the following settings:

- Sun icon: Daytime mode
- Moon icon: Night time mode
- AUTO: Automatic daytime and night time switching mode

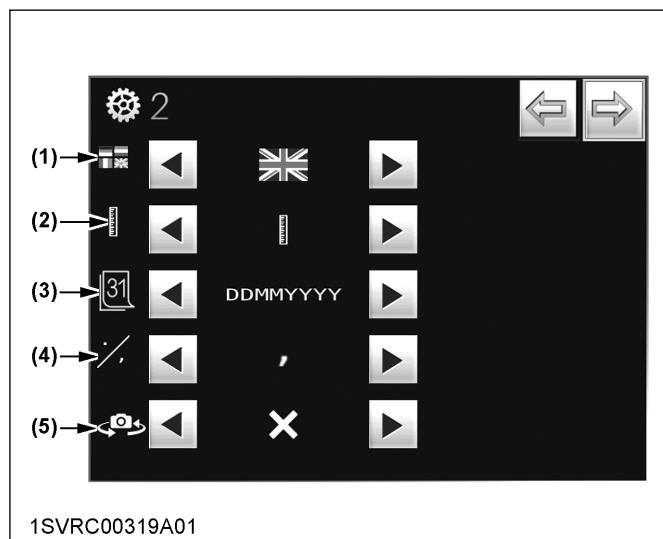
##### Daytime mode screen brightness

Slide the graph farther to the right to increase the brightness.

##### Night time mode screen brightness

Slide the graph farther to the right to increase the brightness.

### 4.3.2 System settings (2) screen



- (1) Languages
- (2) Unit system
- (3) Setting year, month, and date
- (4) Decimal marker setting
- (5) Live view camera display switching

#### Languages

There are 9 languages to choose from: English, Dutch, German, French, Italian, Spanish, Polish, Portuguese and Japanese.

#### Unit system

The unit system can be chosen from the following settings:

- |  |                     |
|--|---------------------|
|  | Metric unit         |
|  | Imperial unit       |
|  | U.S. customary unit |

#### Setting year, month, and date

The year, month, and date display can be selected from the following:

- DDM YYYY
- DD YYYY MM
- MM YYYY DD
- MM DD YYYY
- YYYY MM DD
- YYYY DD MM

#### Decimal marker setting

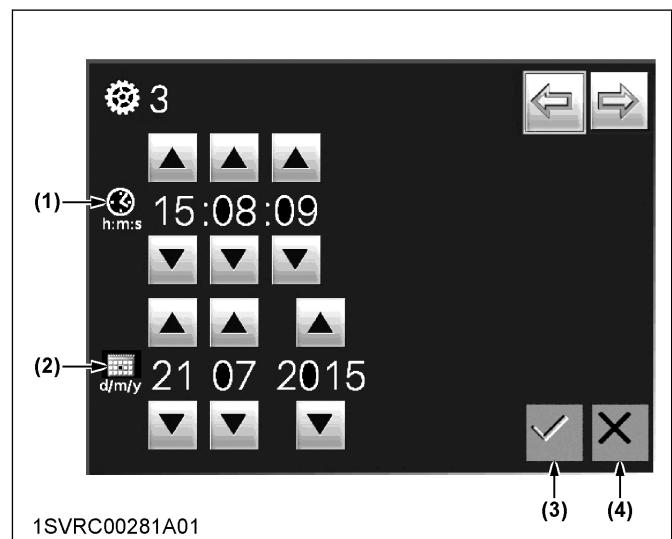
The choice is between [,] (comma) and [.] (period).

#### Live view camera display switching

Live view camera display can be chosen from the following settings:

- [X]: When the camera is installed for front view.
- [V]: When the camera is installed for rear view.

### 4.3.3 Time and date settings screen



- (1) Time
- (2) Date
- (3) Confirm switch
- (4) Cancel switch

#### Time

Set "Hour", "Minute" and "Second" and press the confirm switch.

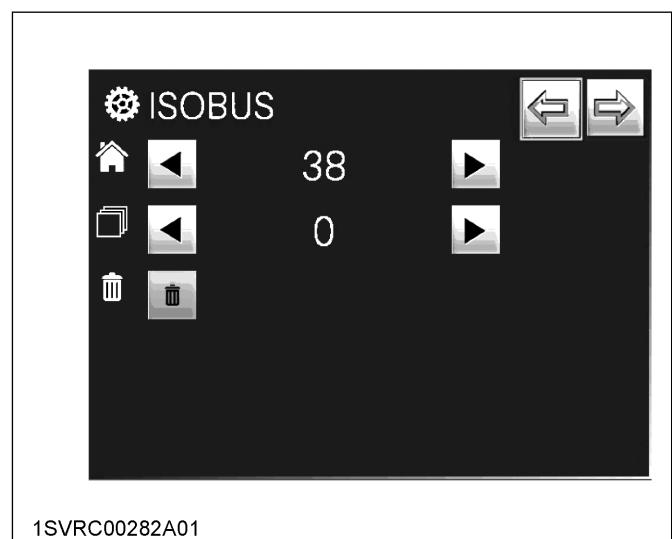
Touch the cancel switch to cancel.

#### Date

Set "Day", "Month" and "Year" and press the confirm switch.

Touch the cancel switch to cancel.

### 4.3.4 ISOBUS settings screen



Do not change the setting of this screen.  
For details, consult your local KUBOTA Dealer.

#### 4.3.5 License confirmation screen



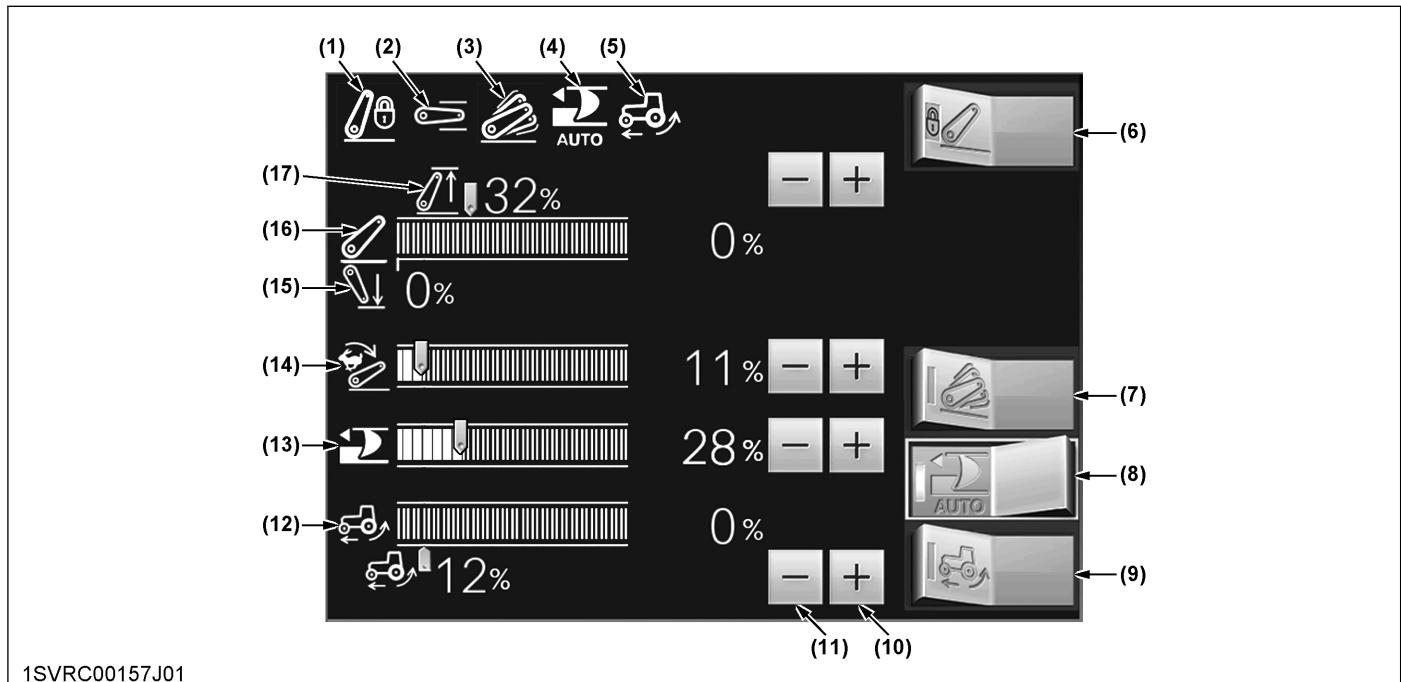
1AGEX00074A02

Setting is required when options are attached.  
For details, consult your local KUBOTA Dealer.

## 5. Setting the 3-point hitch

On the following menu, the 3-point hitch height and lowering speed, draft and position control, and ride control can be preset.

With the optional radar device in place, the slip control is also enabled.



1SVRC00157J01

- |                                    |                               |                                                |
|------------------------------------|-------------------------------|------------------------------------------------|
| (1) 3-point hitch lock indicator   | (7) Ride control switch       | (13) Draft sensitivity control                 |
| (2) 3-point hitch status indicator | (8) Auto draft mode switch    | (14) 3-point hitch lowering speed control      |
| (3) Ride control indicator         | (9) Wheel slip control switch | (15) Lift arm bottom limit control             |
| (4) Auto draft mode indicator      | (10) Plus (+) switch          | (16) Lift arm height control, current position |
| (5) Wheel slip control indicator   | (11) Minus (-) switch         | (height)                                       |
| (6) 3-point hitch lock switch      | (12) Wheel slip control       | (17) Lift arm top limit control                |

### Switching between 3-point hitch lock and unlock

Touch the left half of the 3-point hitch lock switch (6), and the 3-point hitch gets locked. A touch on the right half unlocks the 3-point hitch.

While it is locked, the indicator (1) lights up and stays on.

### Adjusting the lift arm top limit control (17)

Touch the "Plus (+)" switch (10) or the "Minus (-)" switch (11) on the right side of the lift arm top limit control (17) to readjust the top limit height.

Raise the percentage to increase the top limit.

When it has reached 100%, the top limit setting is cancelled.

### Adjusting the lift arm bottom limit control (15)

Using the depth control dial, the bottom limit height can be readjusted.

Lower the percentage to decrease the bottom limit.

When the auto draft mode switch (8) is ON, the lower link lowering position varies according to the draft sensitivity control (13) setting value.

### Displaying the lift arm height (16)

The current lift arm position (height) is automatically displayed with the bar graph and percentage.

A higher percentage shows a higher 3-point hitch height.

### Adjusting the 3-point hitch lowering speed control (14)

Extend the graph farther to the right (raise the percentage) to increase the lowering speed.

### Switching the automatic draft control

Touch the left half of the auto draft mode switch (8), and the automatic draft control gets activated. A touch on the right half deactivates it.

If a “lowering” action is made with the depth control dial or the 3-point quick lower switch in the automatic draft control mode, the indicator (4) lights up and stays on.

#### **Adjusting the draft sensitivity control (13)**

Extend the graph farther to the right (raise the percentage) to increase the draft sensitivity. Depending on the type of job, readjust the draft sensitivity.

If the draft sensitivity is set at 0%, the position control works instead.

#### **Setting the ride control**

Touch the left half of the ride control switch (7), and the ride control gets activated. A touch on the right half deactivates it.

The ride control unit serves to absorb vibrations and shocks upon the tractor, when the machine is moved equipped with a 3-point-hitched implement.

The ride control unit activates itself if the 3-point quick raise switch is pressed to bring the rear hitch up to its top limit and the travelling speed rises above 6 km/h (3.7 mph).

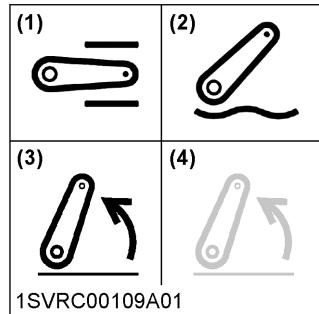
#### **Setting the wheel slip control (9)**

Used together with the optional radar device, the tractor can be constantly kept under the best control. This helps to improve your productivity.

For details, contact your local KUBOTA Dealer.

#### **3-Point hitch status indicator (2)**

The control status of the 3-point hitch is displayed all the time with the following indicators:



(1) Blocked (neutral)

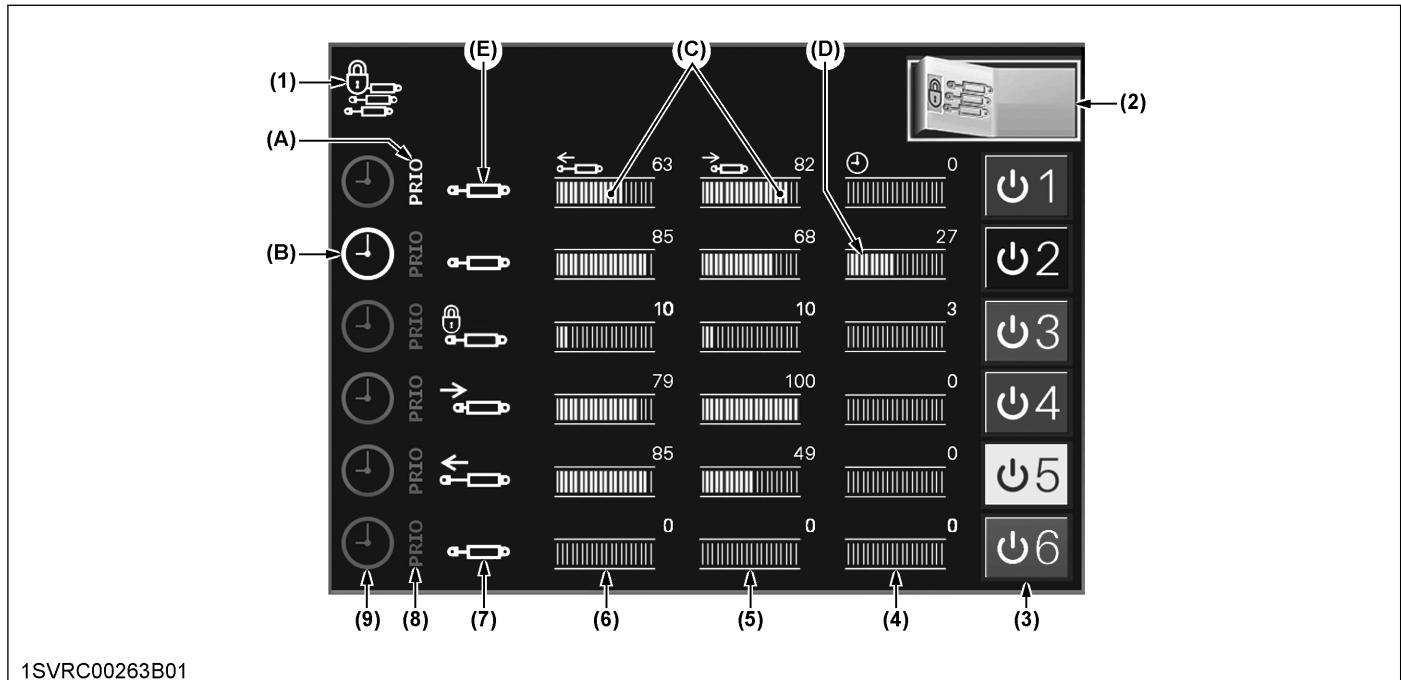
(2) Float

(3) Transport

(4) Work

## 6. Setting the remote control valve

In the following figure, the settings of all the remote control valves can be checked.



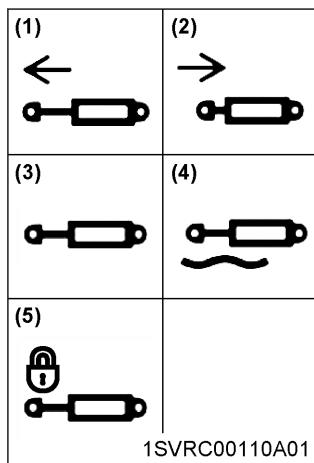
1SVRC00263B01

- (1) Collective remote control valve lock indicator
- (2) Collective remote control valve lock switch
- (3) Individual remote control valve lock/unlock switch
- (4) Valve operating time
- (5) Discharge rate from cylinder (retract) port
- (6) Discharge rate from cylinder (extend) port
- (7) Valve operating status indicator
- (8) Priority valve indicator
- (9) Timer mode indicator

- (A) The priority flow from the hydraulic pump is set for the first remote control valve.
- (B) The automatic shut-off timer of the second remote control valve is set at ON.
- (C) The preset oil flow rate to each implement (remote control cylinder) is displayed. The third remote control cylinder remains locked, which means that no oil is flowing.
- (D) The automatic shut-off timer (time) of remote control is displayed.
- (E) Valve action status indicator

### Valve action status indicator

The oil flow to the implement (remote control cylinder) is indicated with the following icons:



1SVRC00110A01

- (1) Extend
- (2) Retract
- (3) Blocked (neutral)
- (4) Float
- (5) Lock

### Modifying the settings

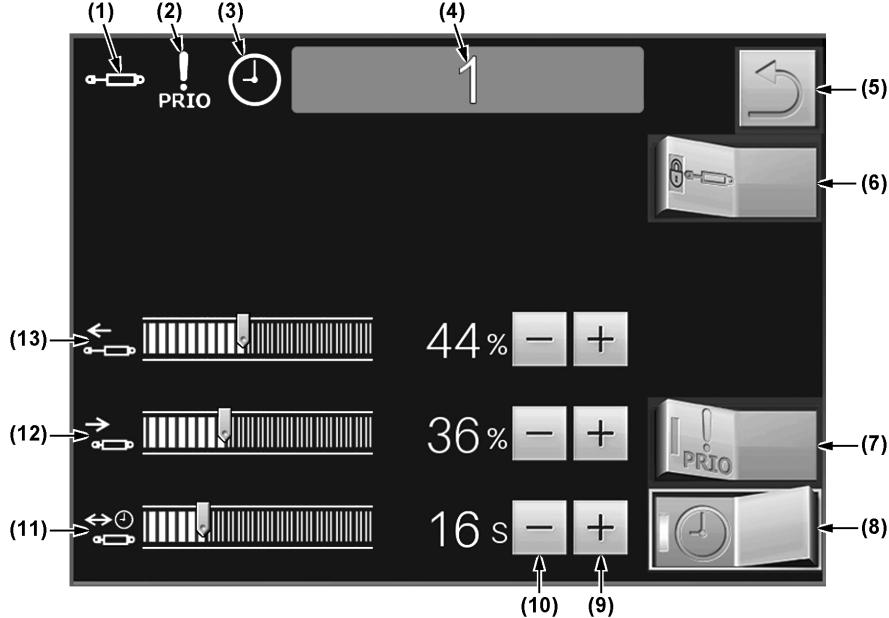
1. If you want to modify any of the settings, touch the "graph" of the relevant valve. In so doing, the "detailed settings of remote control valve" screen shows up.

(See Detailed settings of remote control valve on page 89.)

2. Touch the left half of the collective remote control valve lock switch, and all the remote control valves are collectively locked and the implement cannot be raised and lowered.  
A touch on the right half unlocks all the valves.  
In locked status, the collective remote control valve lock indicator also lights up.

## 6.1 Detailed settings of remote control valve

Each of the valves can be individually preset in detail, but only one can be set for priority flow.



1SVRC00264B01

- |                                                     |                                             |                                                          |
|-----------------------------------------------------|---------------------------------------------|----------------------------------------------------------|
| (1) Remote control valve operating status indicator | (6) Remote control valve lock/unlock switch | (12) Discharge rate from cylinder (retract) port control |
| (2) Priority flow status indicator                  | (7) Priority flow status on/off switch      | (13) Discharge rate from cylinder (extend) port control  |
| (3) Automatic shut-off timer indicator              | (8) Automatic shut-off timer on/off switch  |                                                          |
| (4) Remote control valve number                     | (9) Plus (+) switch                         |                                                          |
| (5) Previous screen resume switch                   | (10) Minus (-) switch                       |                                                          |
|                                                     | (11) Automatic shut-off timer control       |                                                          |

1. Display the valve number (4) to be set in detail.
2. To ensure the priority flow for the valve 1, touch the left half of the priority flow status on/off switch (7). A touch on the right half clears this setting.  
Once the priority flow is ensured, the indicator (2) lights up and stays on.
3. To set the automatic shut-off timer, touch the left half of the automatic shut-off timer on/off switch (8). A touch on the right half clears this setting.  
Once the timer is ensured, the indicator (3) lights up and stays on.
4. To lock the remote control valve, touch the left half of the remote control valve lock/unlock switch (6). A touch on the right half clears this setting.
5. Touch the switch (5), and the previous screen reappears.

### Setting the oil flow rate and timer

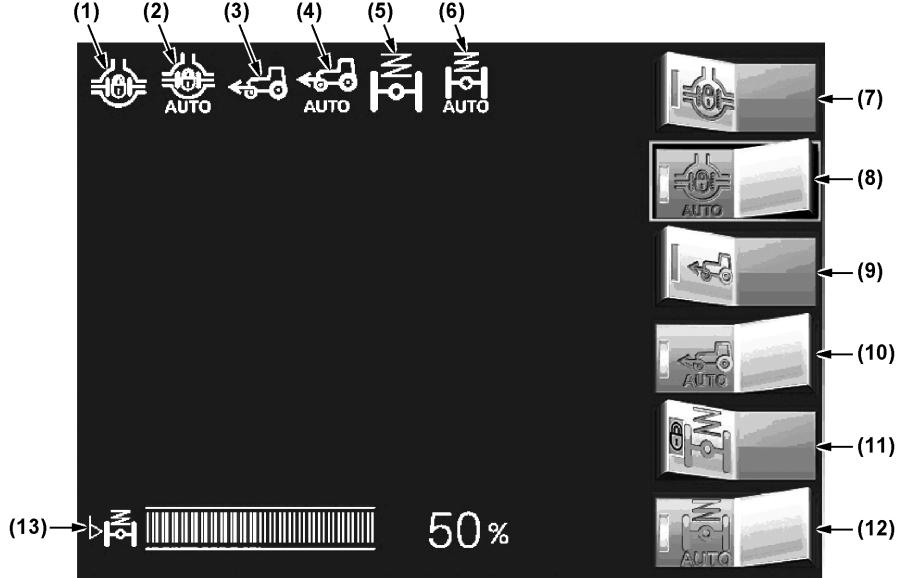
1. To adjust the oil flow rate for the implement (remote control cylinder), use the "Plus (+)" switch (9) and the "Minus (-)" switch (10).  
Raise the percentage to increase the oil flow rate.
2. The timer may be preset up to 60 seconds.  
If the timer is set to infinity ( $\infty$ ), the remote control valve will go into continuous operation.

### NOTE :

- When you have moved the remote control valve switch or lever to the "raise" or "lower" position and then released your hand from the switch or lever, the timer gets activated. When the set time is over, the oil flow to the implement is interrupted. After this stage, the timer can be set only with the switch or lever.
- If during an action the switch or lever is moved in the reverse direction, the timer setting is cancelled.

## 7. Setting the driveability

The differential lock, front wheel drive and front suspension settings can be made.



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- |                                         |                                       |                                      |
|-----------------------------------------|---------------------------------------|--------------------------------------|
| (1) Differential lock indicator         | (6) Front suspension (auto) indicator | (11) Front suspension (block) switch |
| (2) Auto differential lock indicator    | (7) Differential lock switch          | (12) Front suspension (auto) switch  |
| (3) 4WD indicator                       | (8) Auto differential lock switch     | (13) Front suspension level meter    |
| (4) Auto 4WD indicator                  | (9) 4WD switch                        |                                      |
| (5) Front suspension (active) indicator | (10) Auto 4WD switch                  |                                      |

### Setting the differential lock

1. Touch the left half of the differential lock switch (7), and the differential of the full-time front and rear wheels gets locked. The indicator (1) lights up and stays on.
2. Turn off the switch (7), and the differential gets unlocked and the indicator (1) goes off.
3. Touch the left half of the auto differential lock switch (8), and the automatic differential, listed below, gets locked. The indicator (2) lights up and stays on.
4. Turn off the switch (8), and the differential gets unlocked and the indicator (2) goes off.

### Operating conditions of the automatic differential lock:

Travelling speed	Front wheel turning angle	4-wheel differential lock
Below 10 km/h (6.2 mph)	Approx. 15° or less	ON*1
	Approx. 15° or more	OFF
Between approximately 10 and 20 km/h (6.2 and 12.4 mph)	Approx. 10° or less	ON*1
	Approx. 10° or more	OFF
Above 20 km/h (12.4 mph)	---	OFF

\*1 Step on one of the brake pedals, and the differential lock is released.

### Setting the front wheel drive

1. Touch the left half of the 4WD switch (9), and the front and rear wheels are driven. The indicator (3) lights up and stays on.
2. Turn off the switch (9), and the front-wheel drive is disabled and the indicator (3) goes off.
3. Touch the left half of the auto 4WD switch (10), and the automatic 4WD, listed below, gets activated. The indicator (4) lights up and stays on.
4. Turn off the switch (10), and the 2WD is abled and the indicator (4) goes off.

**Operating conditions of the automatic 4WD:**

Travelling speed	Front wheel turning angle	Front wheel drive
Below 10 km/h (6.2 mph)	Approx. 15° or less	ON
	Approx. 15° or more	OFF
Between approximately 10 and 20 km/h (6.2 and 12.4 mph)	Approx. 10° or less	ON
	Approx. 10° or more	OFF
Above 20 km/h (12.4 mph)	---	OFF

**Setting the front suspension**

1. The front suspension is chosen from the “Auto”, “Block” and “Manual” modes.
2. Touch the left half of the auto switch (12), and the automatic mode is selected. The auto indicator (6) lights up and stays on, whereas the indicator (5) goes off.
3. Touch the left half of the block switch (11), and the block mode is selected. The active and auto indicators (5 and 6) both go off.
4. Using the manual control switch at the operator’s seat, the manual mode may be enabled.  
In the manual mode, the suspension cylinder’s extension status can be checked on the level meter (13).  
(See FRONT SUSPENSION (IF EQUIPPED) on page 188.)

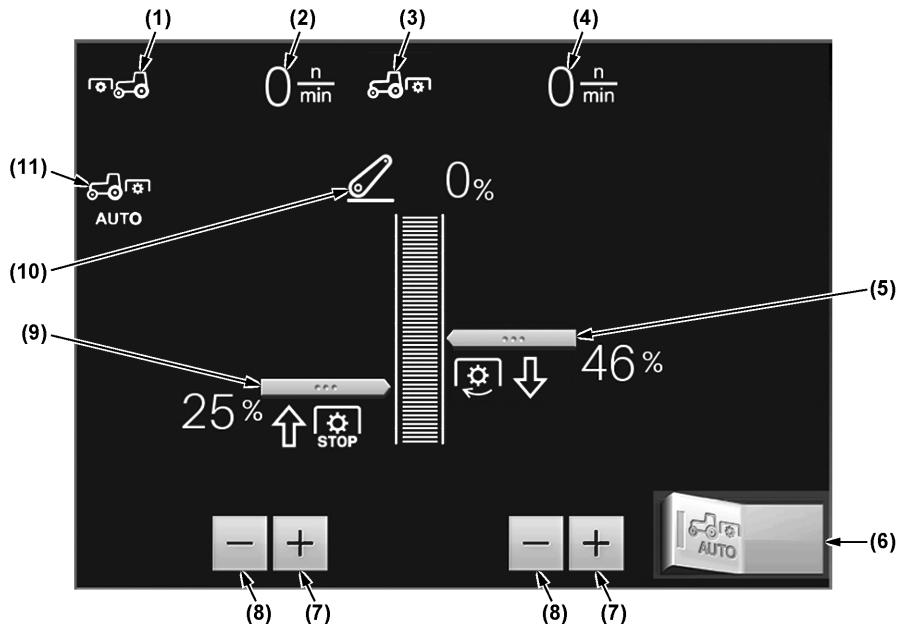
## 8. Setting the PTO

Automatic ON/OFF setting of PTO shaft revolutions, which is interlocked with the lifting height of the rear 3-point-hitched implement, can be made.

### **WARNING**

To avoid personal injury or death:

- Use caution when setting auto engagement, considering the type of implement in use.



1SVRC00266B01

- |                                                                    |                                                                   |                         |
|--------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------|
| (1) Front PTO indicator                                            | (6) Auto PTO switch                                               | (11) Auto PTO indicator |
| (2) Front PTO rpm                                                  | (7) Plus (+) switch                                               |                         |
| (3) Rear PTO indicator                                             | (8) Minus (-) switch                                              |                         |
| (4) Rear PTO rpm                                                   |                                                                   |                         |
| (5) Height at which the PTO turns on when the implement is lowered | (9) Height at which the PTO turns on when the implement is raised |                         |
|                                                                    | (10) Current lift arm height                                      |                         |

### Setting the 3-point-hitch-interlocked PTO function

1. Start the engine and start PTO rotation.
2. Touch the left half of the auto PTO switch (6), and the 3-point-hitch-interlocked PTO function is enabled. A touch on the right half disables this function.  
While the 3-point-hitch-interlocked PTO function is on, the indicator (11) lights up and stays on.

### Setting the height at which the PTO restarts turning when the implement is lowered

1. Touch the "Plus (+)" switch (7) or "Minus (-)" switch (8) on the right side to readjust the height at which the PTO shaft restarts turning.  
Raise the percentage to raise the height at which turning restarts.

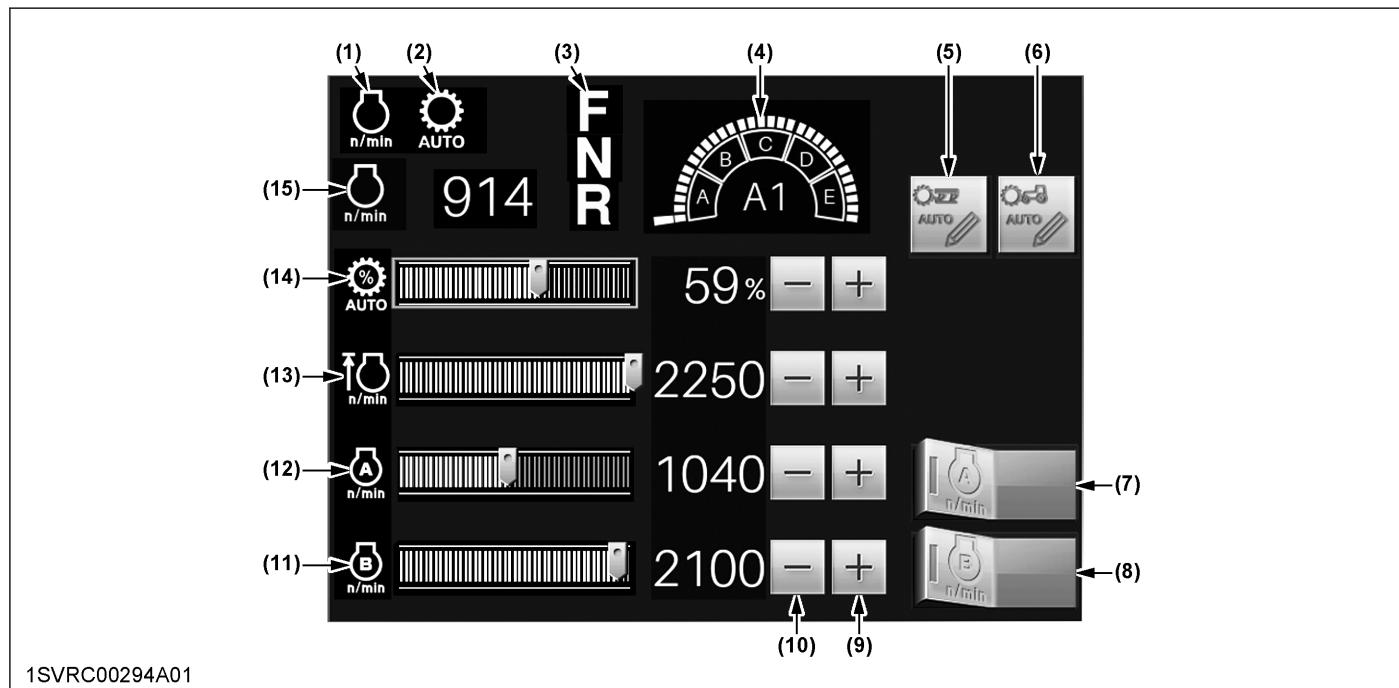
### Setting the height at which the PTO stops turning when the implement is raised

1. Touch the "Plus (+)" switch (7) or "Minus (-)" switch (8) on the left bottom to readjust the height for the PTO shaft to stop turning.  
Lower the percentage to lower the height at which turning stops.

### Displaying the PTO rpm

1. With the PTO switch at ON (engage), the front PTO rpm (2) as well as the rear PTO rpm (4) are displayed.

## 9. Setting the engine and power shift transmission (Premium model only)



1SVRC00294A01

- |                                              |                                  |                                     |
|----------------------------------------------|----------------------------------|-------------------------------------|
| (1) Engine RPM memory (A/B) indicator        | (6) Road mode setting switch     | (11) Engine RPM memory (B) control  |
| (2) Auto shift mode (road/field) indicator   | (7) Engine RPM memory (A) switch | (12) Engine RPM memory (A) control  |
| (3) Shuttle lever indicator                  | (8) Engine RPM memory (B) switch | (13) Rev-limiter control            |
| (4) Auto shift range indicator for road mode | (9) Plus (+) switch              | (14) Auto shift sensitivity control |
| (5) Field mode setting switch                | (10) Minus (-) switch            | (15) Engine rpm                     |

Various settings of the automatic power shift transmission can be made and checked, as follows:

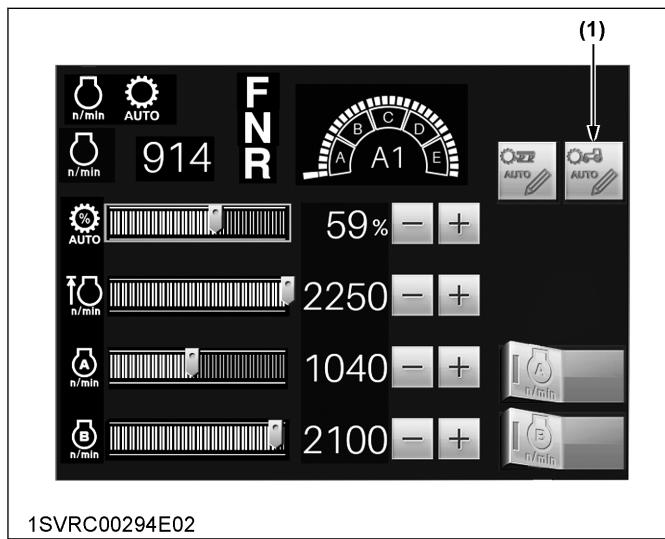
- Setting the travelling speed gear in the road mode on page 94
- Setting the travelling speed gear in the field mode on page 94
- Setting the auto shift sensitivity on page 96

Further, the engine rev-limiter, *engine rpm memory* and other settings may be also set, as follows:

- Setting the engine rev-limit on page 97
- Setting the *engine rpm memory* on page 97

## 9.1 Setting the travelling speed gear in the road mode

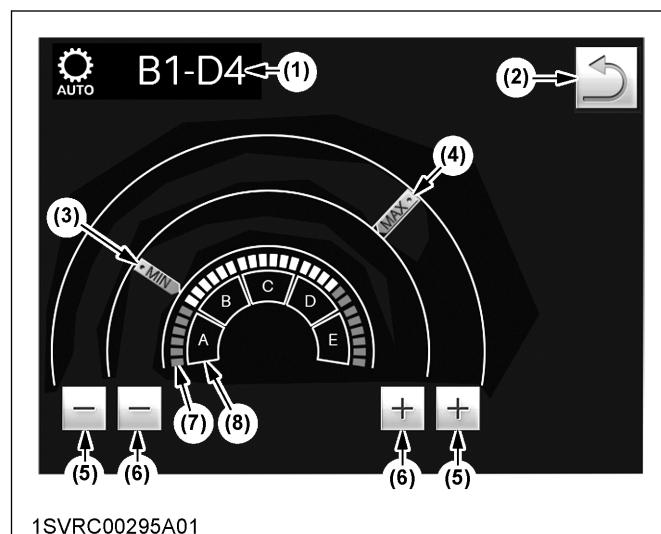
1. Touch the road mode setting switch, and the “road mode” travelling speed gear setting screen shows up.



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- (1) Road mode setting switch

2. Referring to the traveling speed chart, determine maximum and minimum travelling speeds.
3. Setting the maximum speed gear shift:  
Using the high-speed setting switch, preset the desired travelling speed (the high-speed slider moves to the set position).
4. Setting the minimum speed gear shift:  
Using the low-speed setting switch, preset the desired travelling speed (the low-speed slider moves to the set position).
5. The automatic gear shift is carried on within the displayed travelling speed gear shifts.
6. Touch the previous screen resume switch, and the setting is completed and the previous screen reappears.

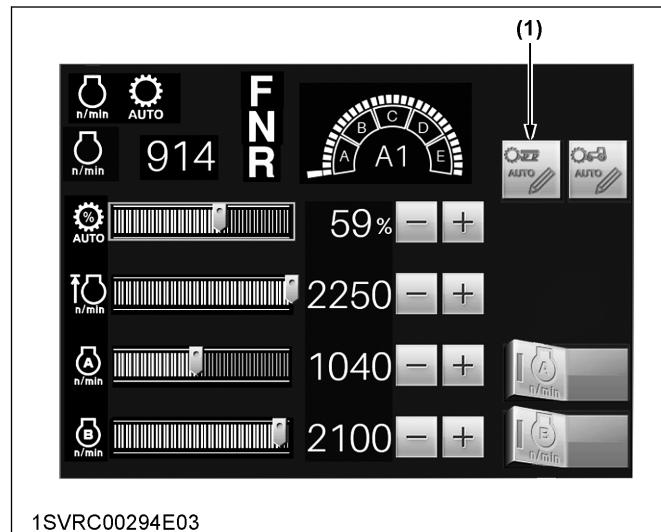


1SVRC00295A01

- |                                          |                               |
|------------------------------------------|-------------------------------|
| (1) Selected travelling speed gear shift | (5) High-speed setting switch |
| (2) Previous screen resume switch        | (6) Low-speed setting switch  |
| (3) Low-speed slider                     | (7) Main gear shift section   |
| (4) High-speed slider                    | (8) Range gear shift section  |

## 9.2 Setting the travelling speed gear in the field mode

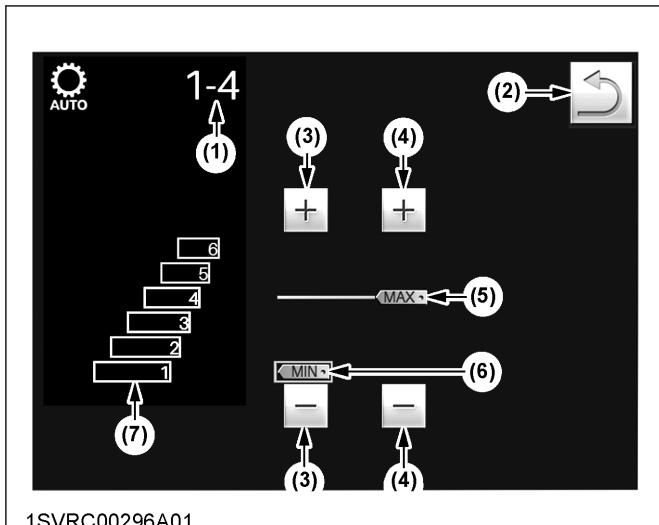
1. Touch the field mode setting switch, and the “field mode” travelling speed gear setting screen shows up.



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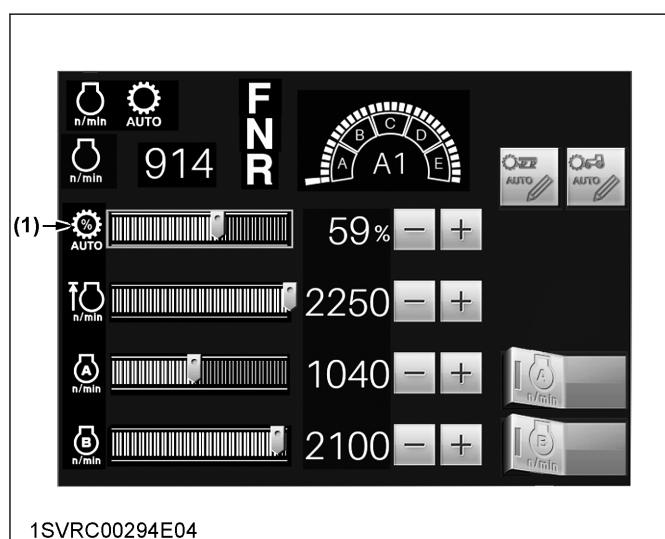
- (1) Field mode setting switch
2. Referring to the travelling speeds chart, determine the maximum and minimum main gear shifts that are best suited for the job in question.
3. Setting the maximum main gear shift:  
Using the high-speed setting switch, preset the desired travelling speed (the high-speed slider moves to the set position).

4. Setting the minimum main gear shift:  
Using the low-speed setting switch, preset the desired travelling speed. (the low-speed slider moves to the set position).
5. The automatic gear shift is carried on within the displayed main gear shifts.
6. Touch the previous screen resume switch, and the setting is completed and the previous screen reappears.



- (1) Selected travelling speed gear shift  
(2) Previous screen resume switch  
(3) Low-speed setting switch  
(4) High-speed setting switch  
(5) High-speed slider  
(6) Low-speed slider  
(7) Main gear shift range

### 9.3 Setting the auto shift sensitivity



(1) Auto shift sensitivity control

#### When operating in the auto shift mode

With the auto shift sensitivity control, the engine rpm for automatic gear shift up/down can be preset. Make readjustments according to the job in question for eco-friendly operation.

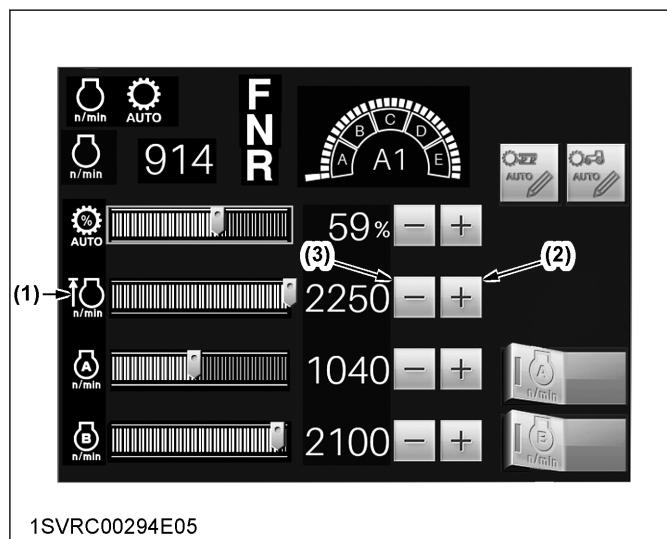
Operating	Auto shift sensitivity control	Remarks
Eco-friendly operation with travelling speed priority	<ul style="list-style-type: none"> <li>Retract the graph leftward with the "Minus (-)" switch.</li> </ul>	Suited for light-duty work.
Operation with PTO shaft speed priority	<ul style="list-style-type: none"> <li>Extend the graph rightward with the "Plus (+)" switch.</li> </ul>	Suited for heavy-duty work such as harvesting.

#### When operating in the manual operation of the road mode

Suppose that the sensitivity level has been preset with the auto shift sensitivity control. If the ez-command centre is used for gear shift over the range gear shift (from A to E) in such a case, the selected main gear shift works in a different way.

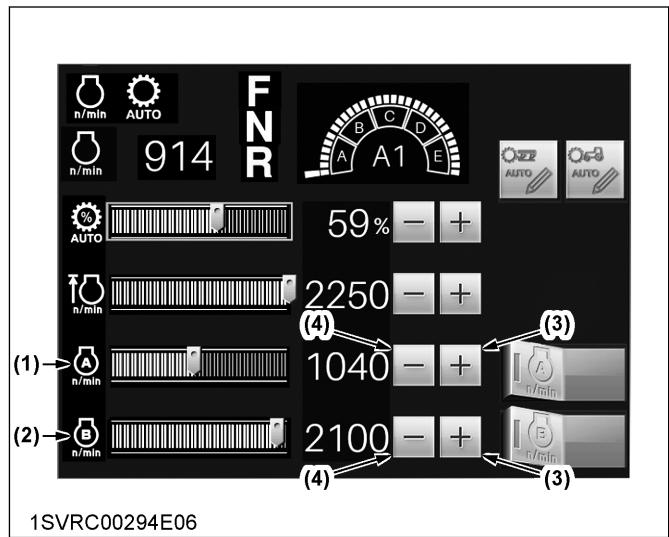
Operating	Auto shift sensitivity control	Remarks
Light-duty	<ul style="list-style-type: none"> <li>Retract the graph leftward with the "Minus (-)" switch.</li> </ul>	Shifted to the rev-up/slow-down levels by skipping the travelling speed range.
Heavy-duty	<ul style="list-style-type: none"> <li>Extend the graph rightward with the "Plus (+)" switch.</li> </ul>	Rev-up or slowed down close to the current travelling speed.

## 9.4 Setting the engine rev-limit



- (1) Engine rev-limiter control graph
- (2) "Plus (+)" switch
- (3) "Minus (-)" switch

1. Touch the target top engine rpm point on the engine rev-limiter control graph, and the slider will move to the touched point.
2. With the "Plus (+)" or "Minus (-)" switch, finely adjust the rev-limit.
3. When the point is set at MAX, the rev-limiter control is cancelled.



- (1) Engine RPM memory (A) control
- (2) Engine RPM memory (B) control
- (3) Plus (+) switch
- (4) Minus (-) switch

## 9.5 Setting the engine rpm memory

1. Touch the target engine rpm point on the *engine rpm memory* control graph, and the slider will move to the touched point.
2. With the "Plus (+)" or "Minus (-)" switch, finely adjust the *rpm memory* setting.  
Every time the switch is pressed, the speed varies in 10-rpm increments or decrements.
3. The *engine rpm memory* control (B) can also be preset in the same procedure.

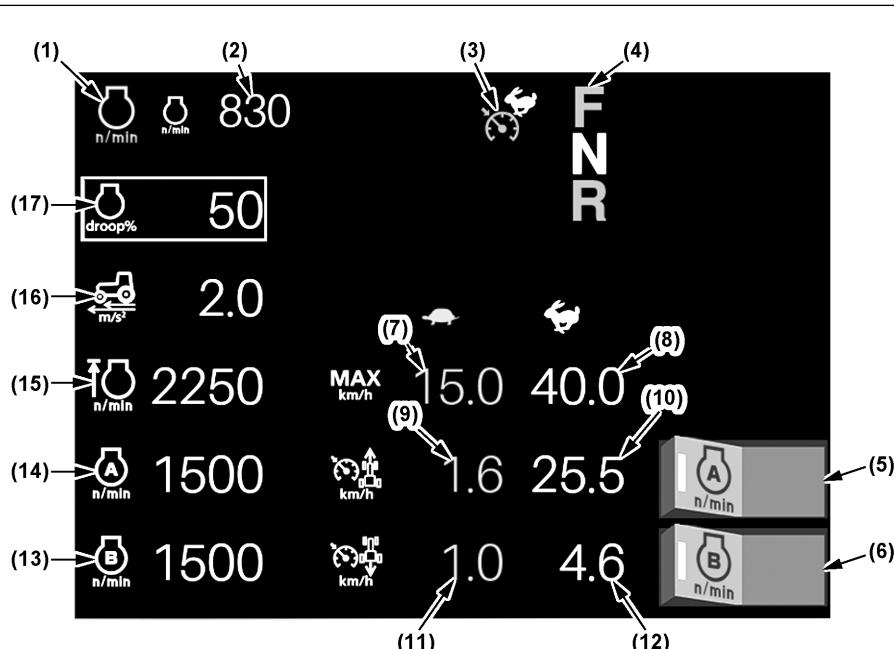
## 10. Setting the engine and CVT (Premium KVT model only)

Various settings of the continuously variable transmission (CVT) can be made and checked, as follows:

- Modifying the CVT sensitivity setting on page 99
- Modifying the CVT response setting on page 99
- Modifying the CVT low-range maximum speed setting on page 100
- Cruise control speed setting on page 100

In addition, the engine rev-limit and *engine rpm memory* settings may be pre-programmed, as follows:

- Setting the engine rev-limit on page 100
- Setting the *engine rpm memory* on page 100



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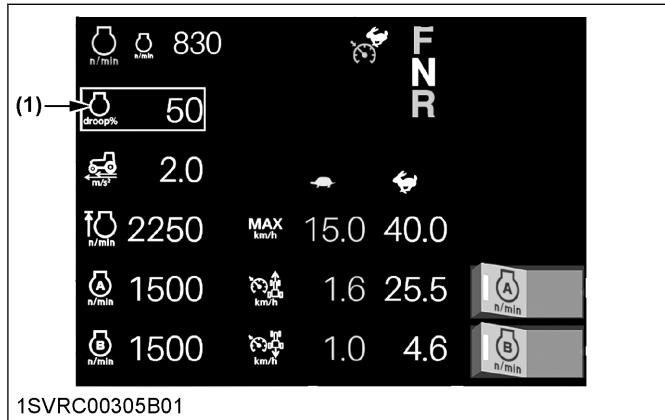
- (1) Engine rpm memory (A/B) indicator
- (2) Engine rpm
- (3) Mode shift (Hi/Lo) indicator
- (4) Shuttle lever indicator
- (5) Engine rpm memory (A) switch
- (6) Engine rpm memory (B) switch
- (7) CVT low-range maximum speed

- (8) CVT high-range maximum speed
- (9) Cruise control low-range set speed (forward)
- (10) Cruise control high-range set speed (forward)
- (11) Cruise control low-range set speed (reverse)

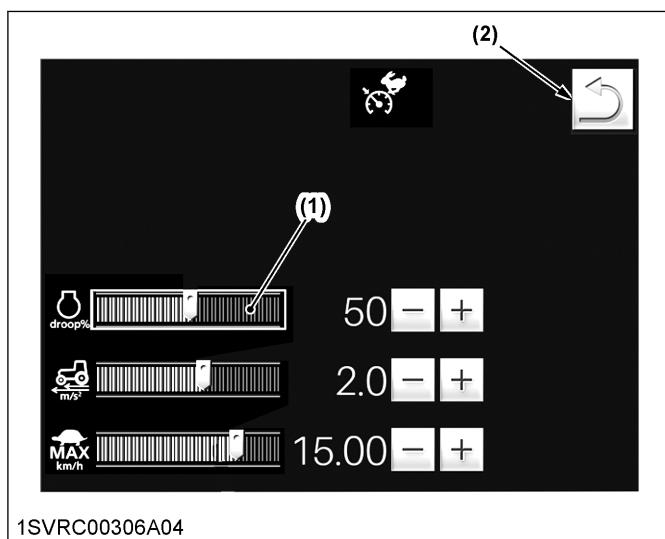
- (12) Cruise control high-range set speed (reverse)
- (13) Engine rpm memory (B) control
- (14) Engine rpm memory (A) control
- (15) Engine rev-limiter control
- (16) CVT response control
- (17) CVT sensitivity control

## 10.1 Modifying the CVT sensitivity setting

1. Touch the CVT sensitivity control and the setting screen shows up.



2. Slide the CVT sensitivity control graph farther to the right (increasing the value) to decrease the CVT sensitivity. Readjust this level according to the type of work.
3. Press the previous screen resume switch and the setting is saved and the previous screen reappears.

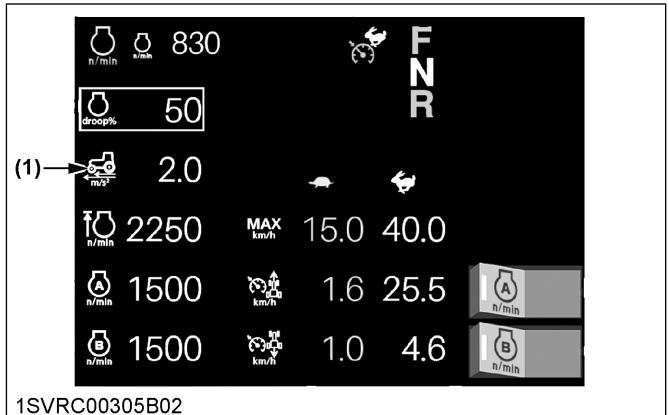


### NOTE :

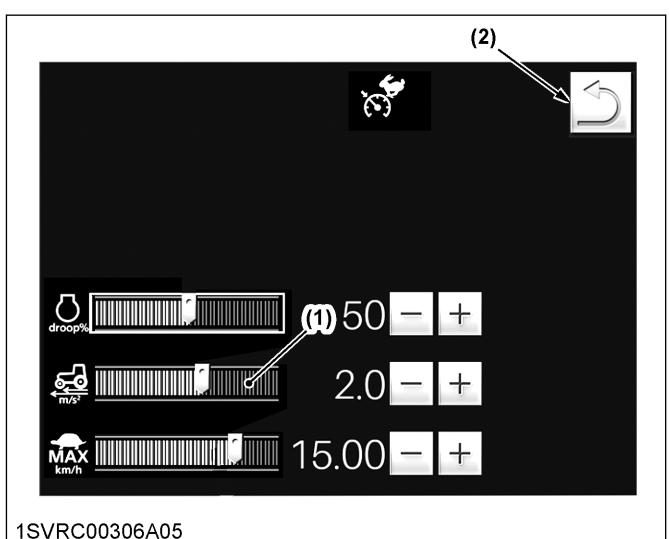
- Details regarding the CVT sensitivity settings can be found in a different section.  
(See Setting the continuously variable transmission (CVT) sensitivity on page 175.)

## 10.2 Modifying the CVT response setting

1. Touch the CVT response control and the setting screen shows up.

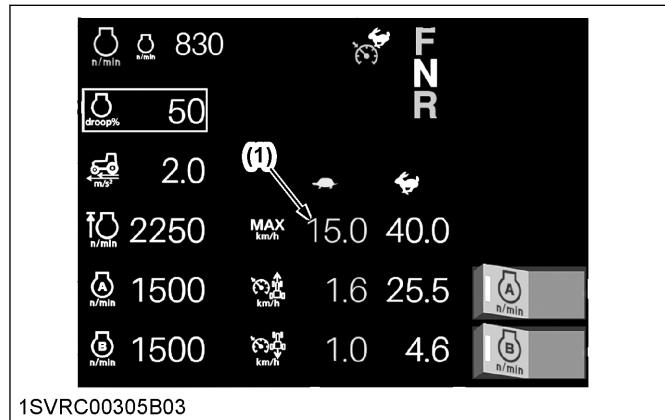


2. Slide the CVT response setting control graph further to the right (increasing the value) to increase response speed, allowing quick start and slow down. Ideally, set the response level to low for towing heavy duty implements and operating on slopes.
3. Press the previous screen resume switch and the setting is saved and the previous screen reappears.



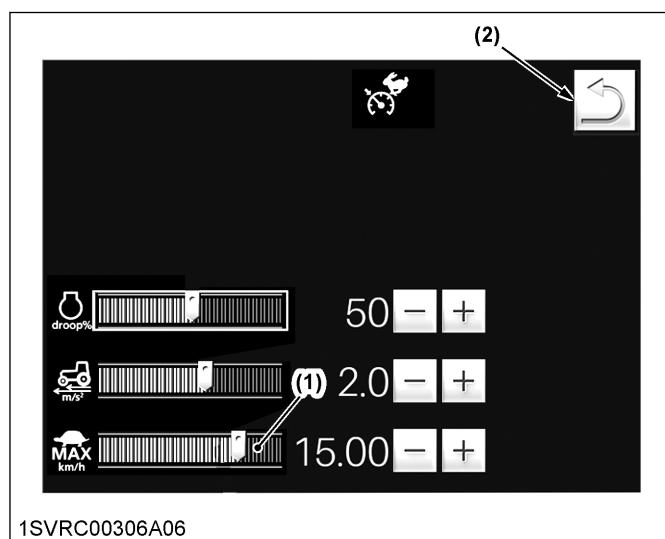
## 10.3 Modifying the CVT low-range maximum speed setting

1. Touch the CVT low-range maximum speed control and the setting screen shows up.



(1) CVT low-range maximum speed control

2. Slide the CVT low-range maximum setting control graph farther to the right (increasing value) to increase the travelling speed available in the low speed range. The travelling speed in the low-speed range may be preset up to 20 km/h (12.4 mph). This setting cannot be modified for the high-speed range.
3. Press the previous screen resume switch and the setting is saved and the previous screen reappears.



(1) CVT low-range maximum speed control graph

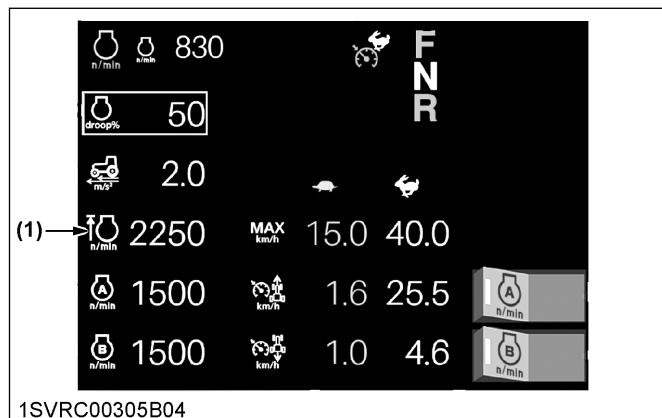
(2) Previous screen resume switch

## 10.4 Cruise control speed setting

Details regarding how to modify the cruise control speed settings can be found in a different section.  
(See Cruise control on page 176.)

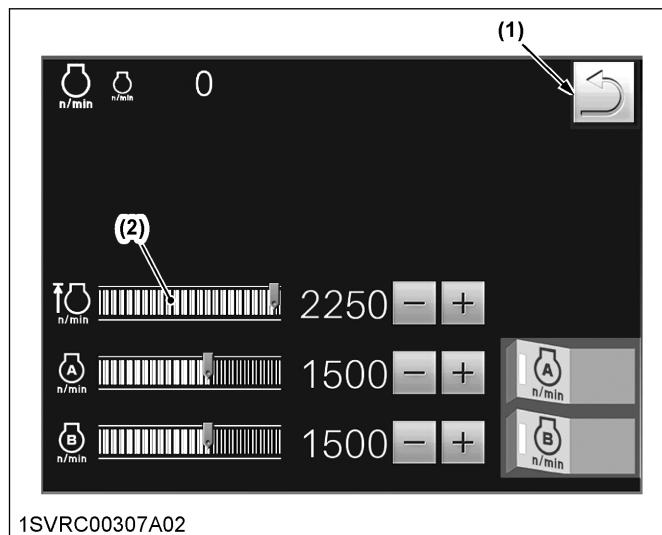
## 10.5 Setting the engine rev-limit

1. Touch the engine rev-limiter control, and the setting screen shows up.



(1) Engine rev-limiter control

2. Slide the engine rev-limit control graph to the right (increasing the value) to increase the engine rev-limit.
3. When the rpm is set at maximum, the rev-limiter control is cancelled.
4. Press the previous screen resume switch, and the setting is saved and the previous screen reappears.



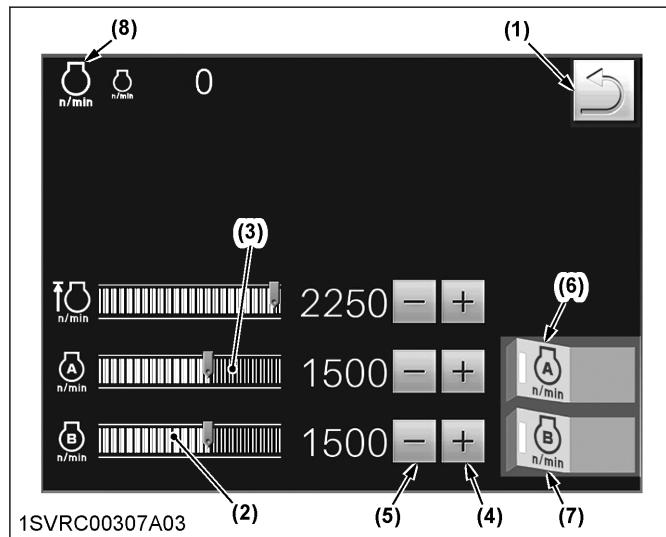
(1) Engine rev-limiter control graph

(2) Previous screen resume switch

## 10.6 Setting the engine rpm memory

1. Touch the target engine rpm point on the engine rpm memory control graph, and the slider will move to the touched point.
2. With the "Plus (+)" or "Minus (-)" switch, finely adjust the rpm memory setting.  
Every time the switch is pressed, the speed varies in 10-rpm increments or decrements.

3. The *engine rpm memory* control (B) can also be preset with the same procedure.



- (1) Previous screen resume switch
- (2) Engine rpm memory (B) control graph
- (3) Engine rpm memory (A) control graph
- (4) Plus (+) switch
- (5) Minus (-) switch
- (6) Engine rpm memory (A) switch
- (7) Engine rpm memory (B) switch
- (8) Engine rpm memory (A/B) indicator

## 11. Setting the headland management system

This chapter describes how to record, save, load, delete or modify the headland management system program, as follows:

- Preparations for recording the program on page 101
- Recording the program through actual tractor operation on page 102
- Pre-program lead time and pre-program travel distance on page 102
- Saving the program on page 103
- Loading the program on page 104
- Deleting the program on page 105
- Modifying the program (lead time) on page 105
- Modifying the program (switching) on page 106
- Headland management system program list on page 108

In addition, refer to the following section for, details regarding the handling procedure of the headland management system:

- HEADLAND MANAGEMENT SYSTEM on page 185

### 11.1 Preparations for recording the program

The program consists of 2 different types of operation, Field in and Field out, as listed in the following table.

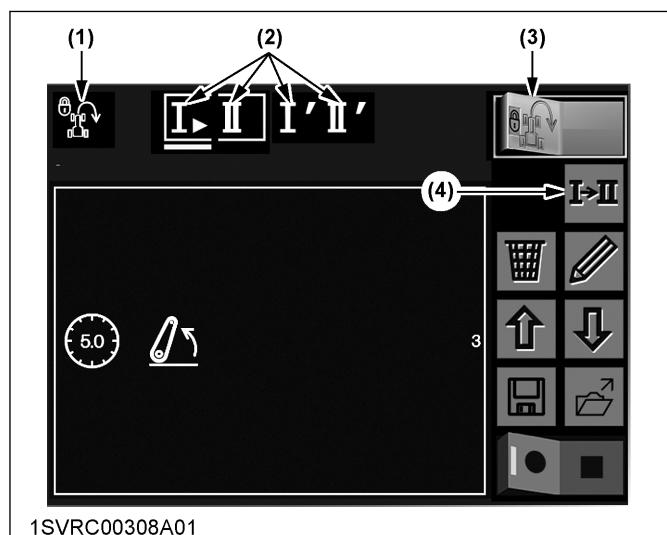
Up to 20 programs can be saved and can be overwritten any number of times.

Before recording this program, read the details regarding the headland management system program list to confirm programmable actions. (See Setting the headland management system on page 101.)

1. Touch the right half of the headland management system lock/unlock switch to unlock the program. A touch on the left half gets the program locked. When the program is unlocked, the headland management system lock indicator goes off.

2. Using the program select switch, choose the program code I. Every time the select switch is touched, the program code alternates among I, II, I', and II' in that order.

The program code display indicator lights up interlocked with the program select switch.



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- (1) Headland management system lock indicator
- (2) Program code display indicator
- (3) Headland management system lock/unlock switch
- (4) Program select switch

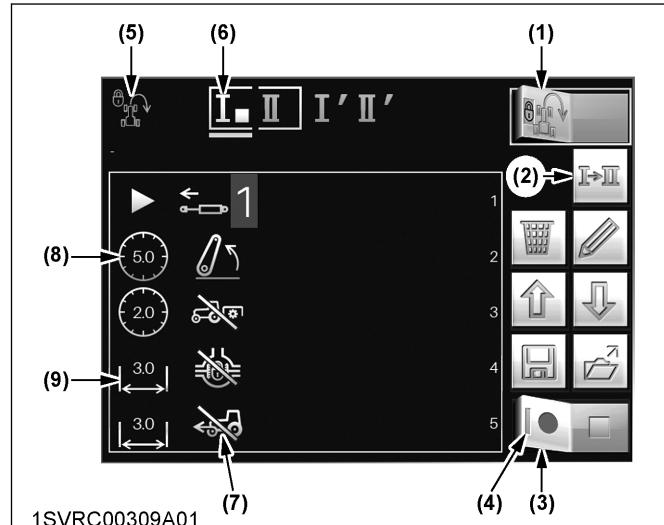
### Recordable program

Type of work	Program select switch	Program	Indicator
A	Code: I	Field out	Indicator I lights up and the • circle lights up when recording.
	Code: II	Field in	Indicator II lights up and the • circle lights up when recording.
B	Code: I'	Field out	Indicator I' lights up and the • circle lights up when recording.
	Code: II'	Field in	Indicator II' lights up and the • circle lights up when recording.

### 11.2 Recording the program through actual tractor operation

1. Make sure the headland management system lock indicator (5) is off.

2. Using the program select switch (2), be sure that the program code I (field out) is selected.
3. Touch the left half of the automatic record switch (3), and the indicator (4) of this switch lights up to show that the program is ready to be recorded. Carry out actual work in accordance with the field out operation procedure to record in the program.
4. In the monitor's LCD screen, the subcategory icons (7) get displayed one by one according to the program recording order. If the tractor stops and the procedure is still used, the interrupt duration is recorded as lead time (8). If the tractor travels and the procedure is continued, the distance (9) is recorded.
5. With the field-out operating procedure completed, touch the right half of the record switch (3) to end the recording procedure. Now the field-out operating procedure has been recorded.
6. Next, using the program select switch (2), choose the program code II (field in).
7. Record the field-in operating procedure. Now the recording for both the program codes I and II is completed. But the program has not been saved yet. Please do "save" as described in a different section.  
(See Saving the program on page 103.)



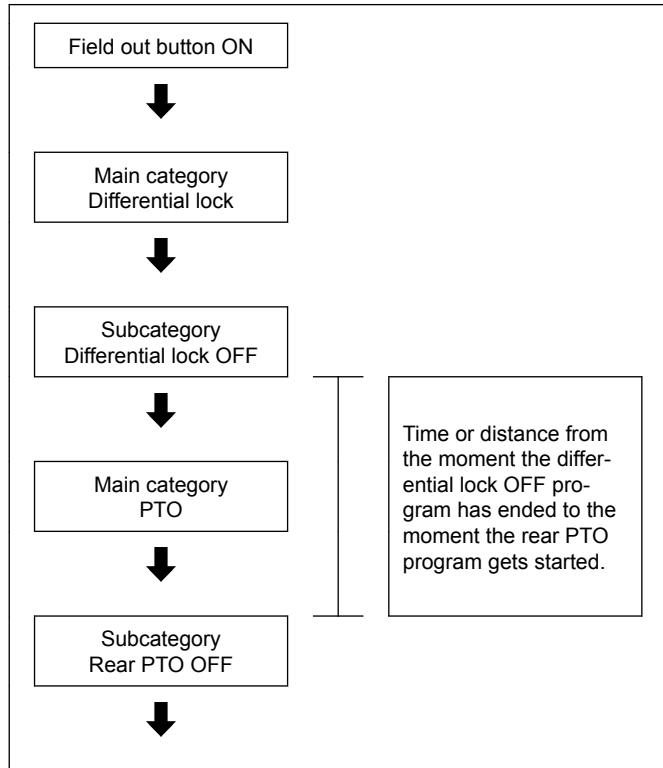
- |                                                   |                                 |
|---------------------------------------------------|---------------------------------|
| (1) Headland management system lock/unlock switch | (6) Program codes I indicator   |
| (2) Program select switch                         | (7) Subcategory icon            |
| (3) Record switch                                 | (8) Pre-program lead time       |
| (4) Indicator                                     | (9) Pre-program travel distance |
| (5) Headland management system lock indicator     |                                 |

### 11.3 Pre-program lead time and pre-program travel distance

The pre-program lead time and pre-program travel distance refer to the standby time and travel distance

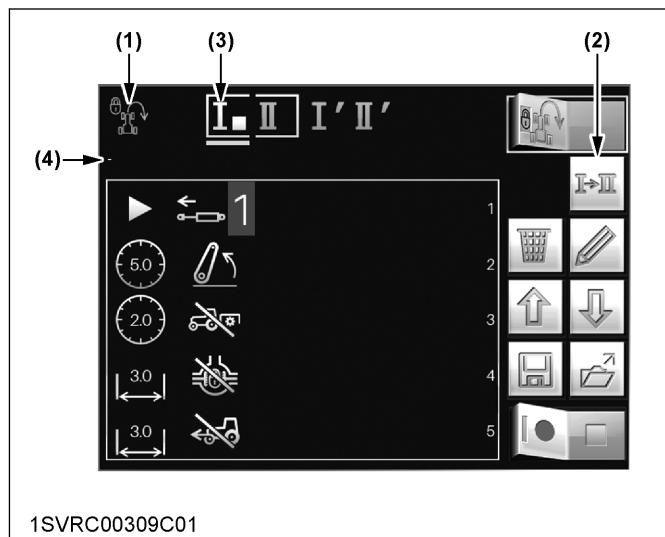
from the moment a program is executed to the moment the next program gets started.

### Field out program example



### 11.4 Saving the program

1. Make sure the headland management system lock indicator (1) is off.
2. Using the program select switch (2), choose the program code to save. The program code display indicator (3) lights up interlocked with the select switch (2).
3. Touch the program title display area (4) to display the input keypad.



1SVRC00309C01

(1) Headland management system lock indicator

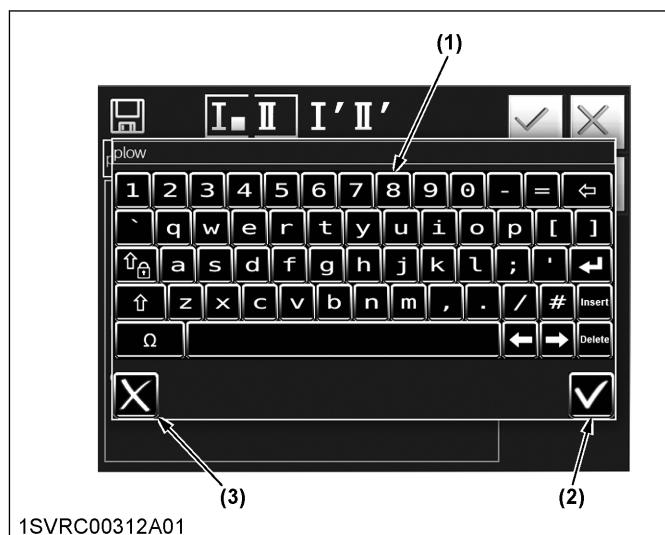
(2) Program select switch

(3) Program code display indicator

(4) Program title display area

#### 4. Entering the program title.

- a. After entering the program title, touch the confirm switch (2).



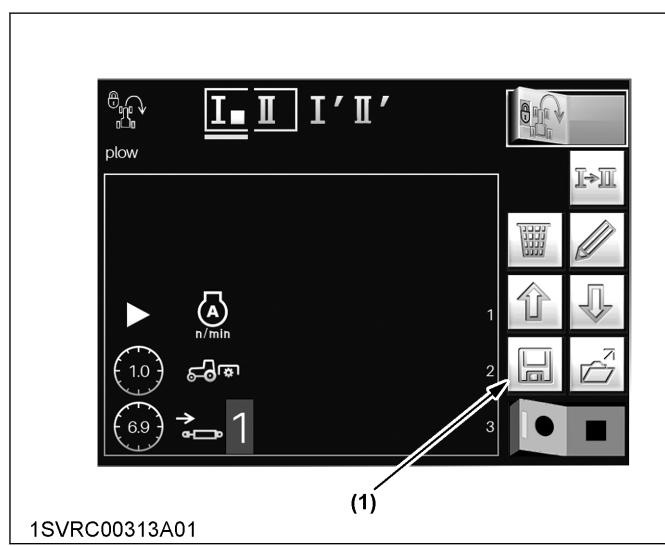
1SVRC00312A01

(1) Input keypad

(2) Confirm switch

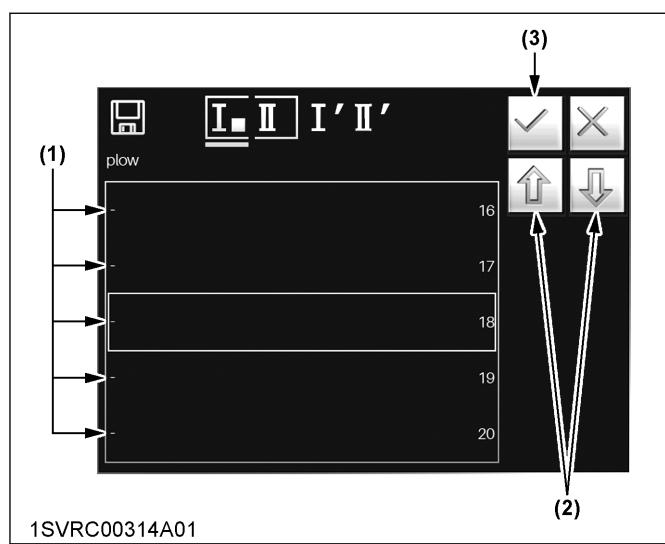
(3) Cancel switch

5. Touch the program save switch (1).



6. Now the following screen appears.

- Use the scroll switch (2) to select the blank slot (1) to save the program.
- Then touch the confirm switch (3).

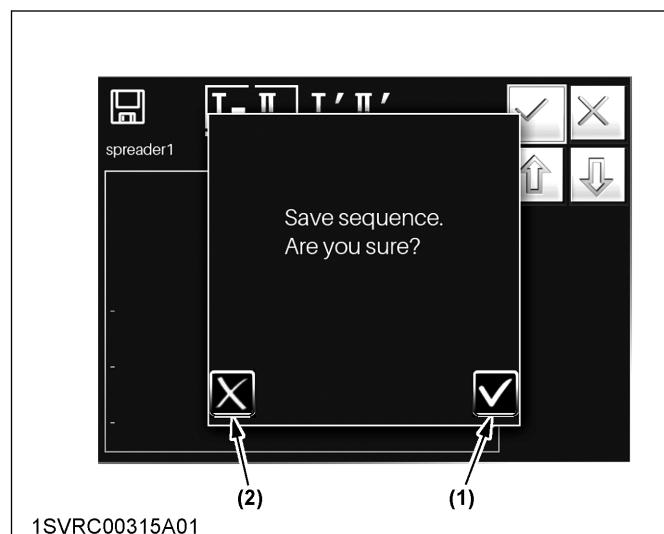


#### NOTE :

- Up to 20 programs can be saved.
- Selecting a loaded slot will overwrite the data.

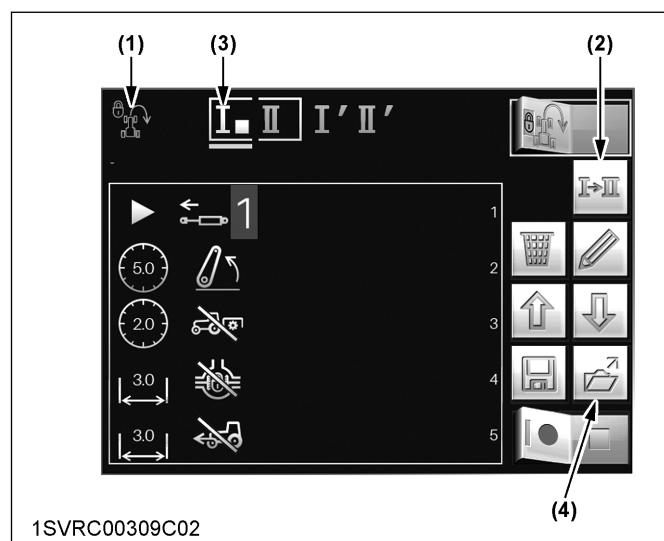
7. The "Save sequence. Are you sure?" message appears.

- If the confirm switch (1) is touched, the program will be saved.
- If the cancel switch (2) is touched, the program saving will be cancelled.



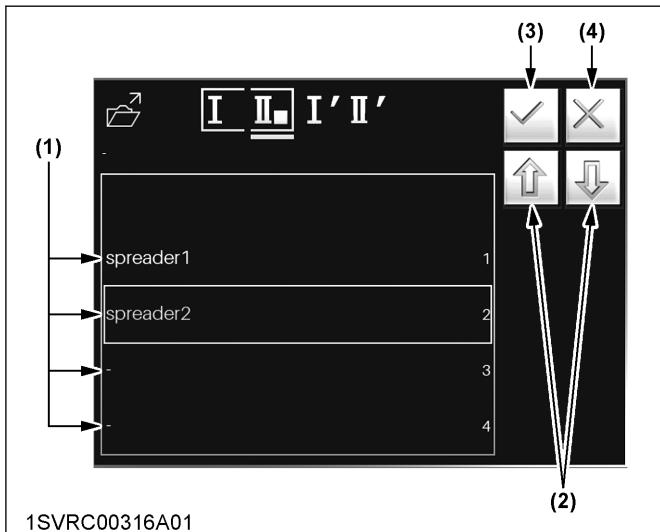
## 11.5 Loading the program

- Make sure the headland management system lock indicator (1) is off.
- Using the program select switch (2), choose the program code to load the program. The program code display indicator (3) lights up interlocked with the select switch (2).
- Touch the program load switch (4).



4. Now the following screen appears.

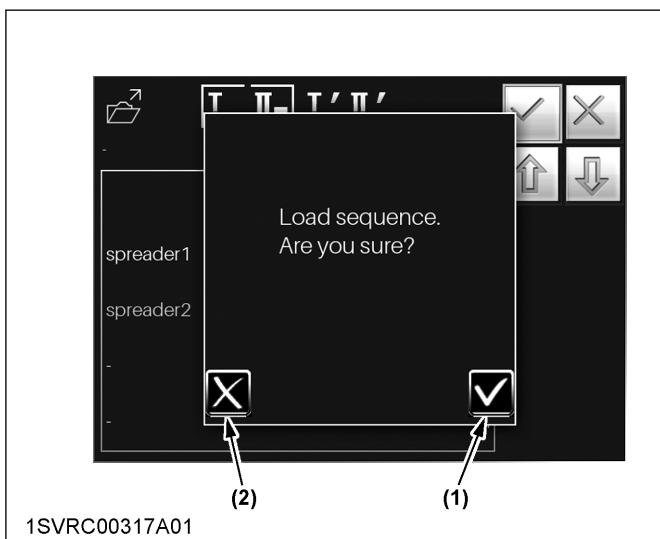
- Use the scroll switch (2) to select the slot (1) to load the program.
- Then touch the confirm switch (3).



(1) Slot  
(2) Scroll switch  
(3) Confirm switch  
(4) Cancel switch

5. The "Load sequence. Are you sure?" message appears.

- If the confirm switch (1) is touched, the program will be loaded to the selected program code.
- If the cancel switch (2) is touched, the program loading will be cancelled.



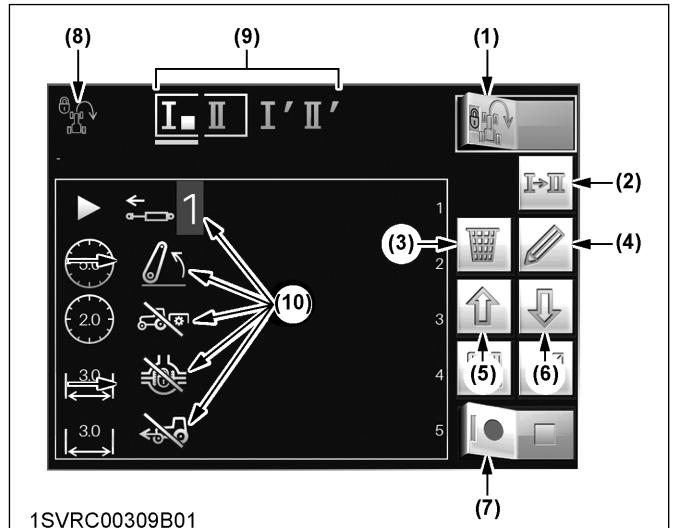
(1) Confirm switch  
(2) Cancel switch

## 11.6 Deleting the program

- Make sure the headland management system lock indicator (8) is off.
- Using the program select switch (2), choose the program code to delete.

3. To delete the entire program, touch the delete switch (3). The deleting can also be done by turning on the record switch (7) first and then immediately turning it off.

4. To delete part of the program, use the scroll switch (5 or 6) to select the subcategory icon (10) to delete. Then touch the delete switch (3).



(1) Headland management system lock/unlock switch  
(2) Program select switch  
(3) Delete switch  
(4) Edit switch  
(5) Scroll switch (UP)  
(6) Scroll switch (DOWN)  
(7) Record switch  
(8) Headland management system lock indicator  
(9) Program code indicator  
(10) Subcategory icon

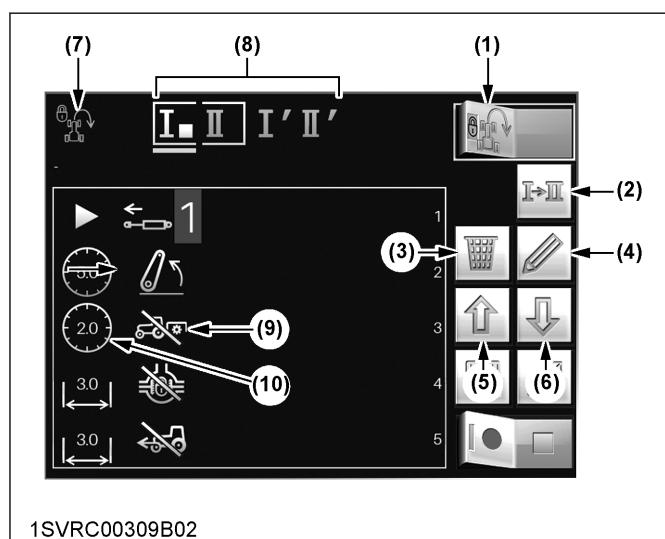
## 11.7 Modifying the program (lead time)

This section describes an example of modifying the lead time for the PTO shaft to stop from the current 2-second entry to a 5-second entry.

- Make sure the headland management system lock indicator (7) is off.
- Using the program select switch (2), choose the program code to modify.

3. Using the scroll switch (5 or 6) to select the PTO-related subcategory icon (9) to modify. Then touch the edit switch (4).

The following editing screen appears.



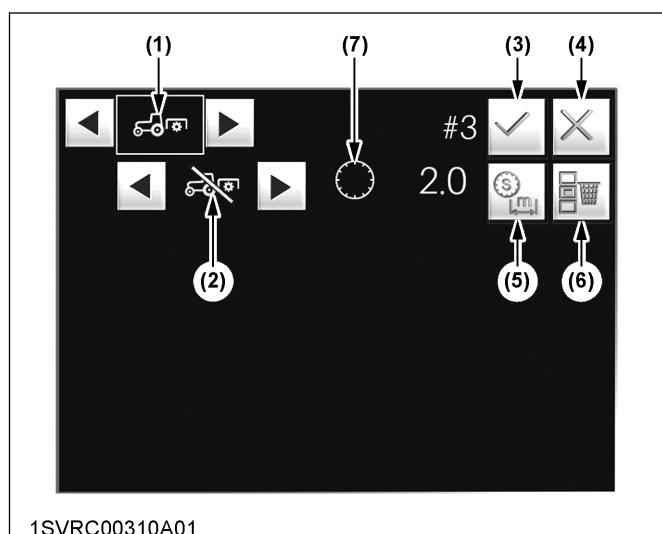
- (1) Headland management system lock/unlock switch (8) Program code indicator  
 (2) Program select switch (9) PTO-related subcategory icon  
 (3) Delete switch (10) Current lead time (2 seconds)  
 (4) Edit switch  
 (5) Scroll switch (UP)  
 (6) Scroll switch (DOWN)  
 (7) Headland management system lock indicator

4. On the editing screen, the PTO-related main category icon (1) and subcategory icon (2), selected in the previous step 3, are automatically displayed.  
 5. Using the appearing numeric keypad, enter a new lead time (5 seconds in this example) and save the entry.

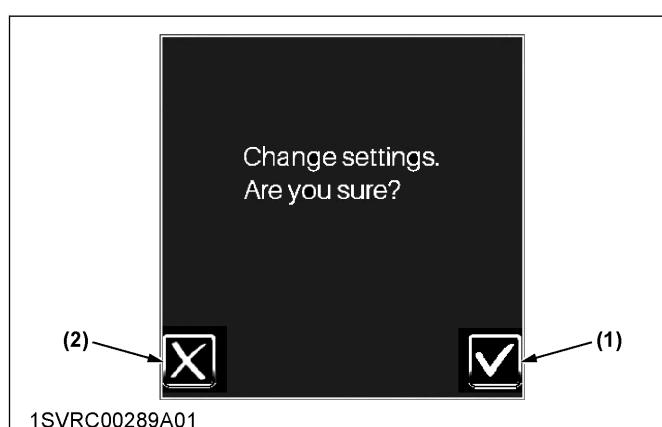
#### NOTE :

- To change the lead time to the pre-program distance, touch the distance and time select switch (5). The lead time icon (7) changes to the distance icon.
- The steps hereafter are the same as for the lead time setting.

6. Touch the confirm switch (3).  
 The "Change settings. Are you sure?" message appears.  
 If the confirm switch (1) is touched, the program will be modified and the previous screen will show up again.



- (1) PTO-related main category icon (5) Distance and time select switch  
 (2) Subcategory icon (6) Delete switch  
 (3) Confirm switch (7) Lead time icon (timer)  
 (4) Cancel switch



- (1) Confirm switch  
 (2) Cancel switch

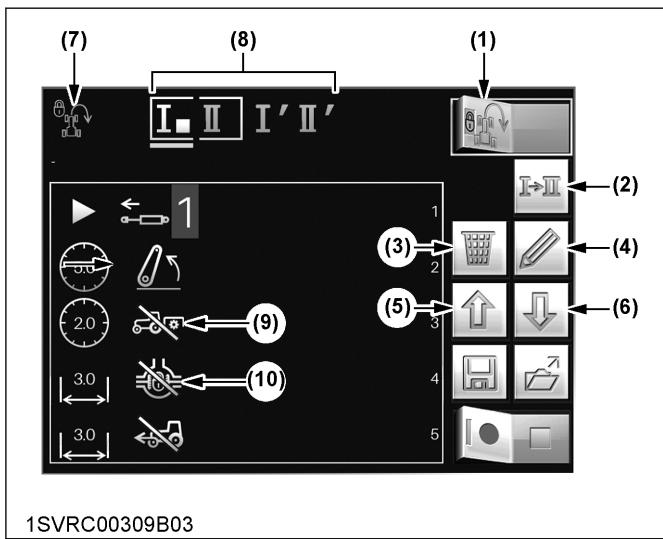
## 11.8 Modifying the program (switching)

This section describes an example of switching between the PTO program and differential lock program

1. Make sure the headland management system lock indicator (7) is off.
2. Using the program select switch (2), choose the program code to modify.

3. Using the scroll switch (5 or 6) to select the PTO-related subcategory icon (9) to modify. Then touch the edit switch (4).

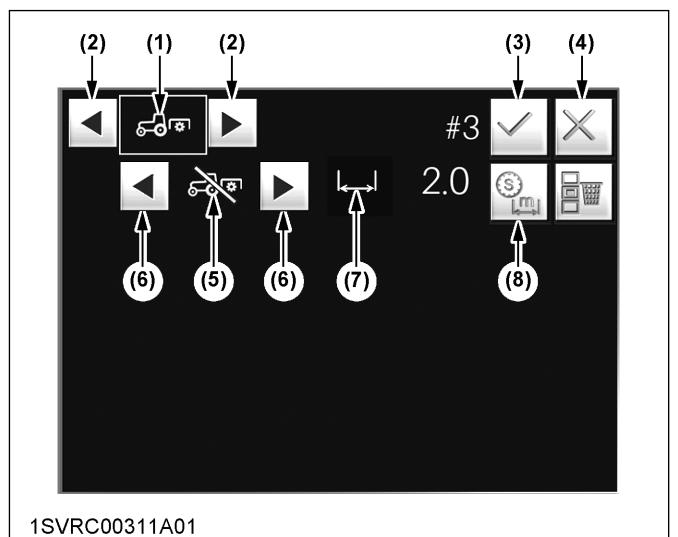
The following editing screen appears.



- |                                                   |                                               |
|---------------------------------------------------|-----------------------------------------------|
| (1) Headland management system lock/unlock switch | (7) Headland management system lock indicator |
| (2) Program select switch                         | (8) Program code indicator                    |
| (3) Delete switch                                 | (9) PTO-related subcategory icon              |
| (4) Edit switch                                   | (10) Differential lock icon                   |
| (5) Scroll switch (UP)                            |                                               |
| (6) Scroll switch (DOWN)                          |                                               |

4. On the editing screen, the PTO-related main category icon (1) and subcategory icon (5), selected in the previous step 3, are automatically displayed.
5. Using the main category scroll switch (2), select the differential lock icon.  
The subcategory icon (5) also changes itself to the differential lock icon.
6. Using the subcategory scroll switch (6), select the differential lock "OFF" icon.
7. Make sure the pre-program distance icon (7) is on. Then touch this icon.  
If the lead time icon stays on, change it to the pre-program distance icon with the distance and time select switch (8).
8. Using the appearing numeric keypad, enter a new distance, 3.0 m in this example, and save the entry.
9. Touch the confirm switch (3).  
The "Change settings. Are you sure?" message appears.  
If the confirm switch (1) is touched, the program will be modified and the previous screen will show up again.
10. Go back to step 3. Using the scroll switch (5 or 6) to select the differential lock subcategory icon (10) first and then touch the edit switch (4).
11. The editing screen shows up. Now change the differential lock program to the PTO program.

### Editing screen

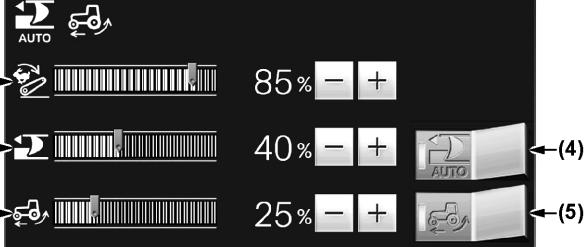


- |                                    |                                     |
|------------------------------------|-------------------------------------|
| (1) PTO-related main category icon | (6) Subcategory scroll switch       |
| (2) Main category scroll switch    | (7) Pre-program distance icon       |
| (3) Confirm switch                 | (8) Distance and time select switch |
| (4) Cancel switch                  |                                     |
| (5) Subcategory icon               |                                     |

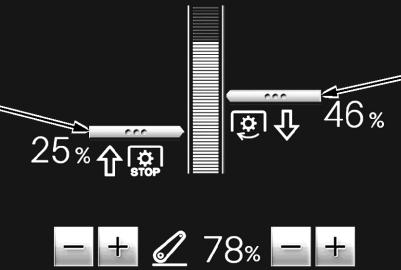


- |                    |  |
|--------------------|--|
| (1) Confirm switch |  |
| (2) Cancel switch  |  |

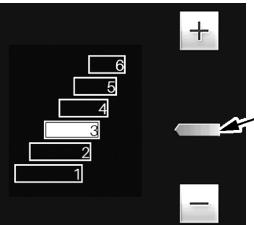
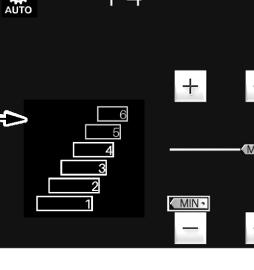
## 11.9 Headland management system program list

Main category	Subcategory		Remarks or detailed settings
	Blocked		Set rear hitch to blocked.
	Work		Move rear hitch to work position  1SVRC00283A01 (1) Rear hitch lowering speed adjustment (2) Draft sensitivity adjustment (3) Wheel slip ratio adjustment (4) Auto draft mode ON/OFF (5) Wheel slip control ON/OFF
	Float		Set rear hitch to float position.  1SVRC00283B01 (1) Rear hitch lowering speed adjustment
	Transport		Move rear hitch to transport position.  1SVRC00284A01 (1) Rear hitch upper limit adjustment (2) Rear hitch bottom limit adjustment (3) Ride control ON/OFF
	Differential lock OFF		Switch differential lock off.
	Differential lock ON		Switch differential lock on.
	Auto differential lock OFF		Switch auto differential lock off.

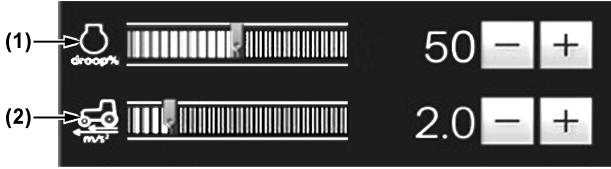
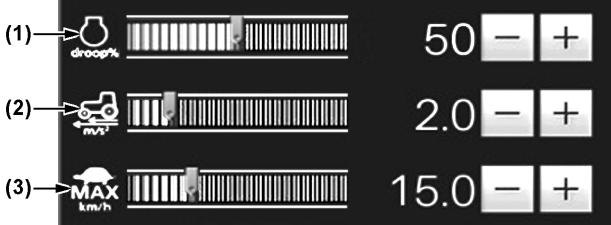
(Continued)

Main category	Subcategory		Remarks or detailed settings
Differential lock 	Auto differential lock ON	 AUTO	Switch auto differential lock on.
4WD 	4WD OFF		Switch 4WD off.
	4WD ON		Switch 4WD on.
	Auto 4WD OFF	 AUTO	Switch auto 4WD off.
	Auto 4WD ON	 AUTO	Switch auto 4WD on.
PTO 	PTO OFF		Switch rear PTO off.
	PTO ON		Switch rear PTO on.
	Auto PTO OFF	 AUTO	Switch rear auto PTO off.
	Auto PTO ON	 AUTO	Switch rear auto PTO on.   1SVRC00266C01 (1) Height setting when the rear hitch is raised for the PTO to turn off. (2) Height setting when the rear hitch is lowered for the PTO to turn on.
Hand throttle mode 	Hand throttle mode ON	 n/min	Set engine speed to recorded hand throttle speed.   1SVRC00285A01 (1) Time setting for reaching a preset engine rpm. (2) Setting of target engine rpm.
Engine rpm memory	Engine rpm memory OFF	 n/min	Switch engine rpm memory off.

(Continued)

Main category	Subcategory	Remarks or detailed settings
	Engine rpm memory (A) ON	 <p>Set engine speed to memory speed A.</p>  <p>1SVRC00267A01 (1) Engine rpm setting to the memory (A)</p>
	Engine rpm memory (B) ON	 <p>Set engine speed to memory speed B.</p>  <p>1SVRC00267B01 (1) Engine rpm setting to the memory (B)</p>
	Power shift gear change	 <p>Change gear.</p>  <p>1SVRC00320A01 (1) Power shift ratio adjustment</p>
	Road mode	 <p>Switch transmission mode to road mode.</p>  <p>1SVRC00295B01 (1) Road mode gear range adjustment</p>
	Field mode	 <p>Switch transmission mode to field mode.</p>  <p>1SVRC00296B01 (1) Field mode gear range adjustment</p>
	Manual mode	 <p>Switch operation mode to manual mode.</p>

(Continued)

Main category	Subcategory	Remarks or detailed settings		
 CVT (Premium KVT model)	Cruise control OFF		Switch cruise control off.	
	Cruise control ON		Switch cruise control on.	
	High speed range		Set mode shift to high speed range.   (1) CVT sensitivity setting      (2) CVT response setting 1SVRC00271C01	
	Low speed range		Set mode shift to low speed range.   (1) CVT sensitivity setting      (2) CVT response setting      (3) Maximum travelling speed 1SVRC00271B01	
	Target travel speed		Set travel speed.   1SVRC00286A01 (1) Setting of target travel speed	
	Remote control valve		The 1st segment valve is block.	

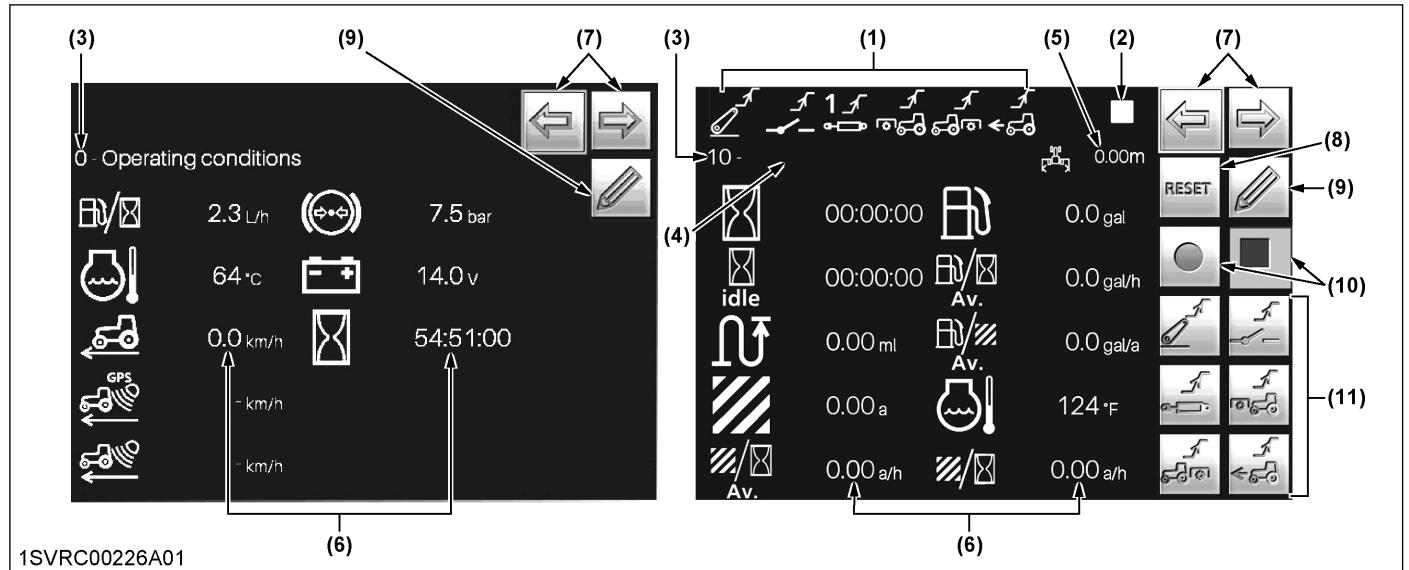
(Continued)

Main category	Subcategory		Remarks or detailed settings
Remote control valve 	Extend		<p>The 1st segment valve is extend.</p>  <p>1SVRC00264C01</p> <p>(1) Flow rate (extend) (2) Flow timer (3) Priority flow status</p>
	Retract		<p>The 1st segment valve is retract.</p>  <p>1SVRC00264D01</p> <p>(1) Flow rate (retract) (2) Flow timer (3) Priority flow status</p>
	Float		<p>The 1st segment valve is floating.</p>  <p>1SVRC00290A01</p> <p>(1) Flow timer</p>
	Front PTO OFF		Switch front PTO off.
	Front PTO ON		Switch front PTO on.

## 12. Operating conditions

The tractor is equipped with one set of screens which automatically record information arbitrarily set from among some 18 types of operation information such as fuel consumption, time worked, work efficiency and so on, and one screen for information display only.

### 12.1 Calling up the data screen and preparation

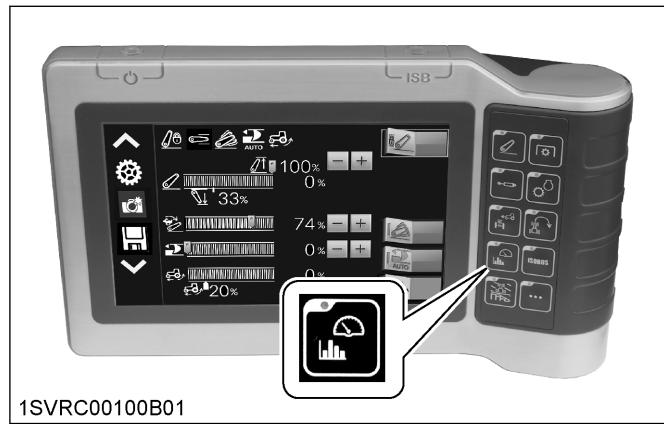


- (1) Operating conditions indicator
- (2) Data record status indicator
- (3) Screen number
- (4) Free text box

- (5) Working range of implement
- (6) Recorded data
- (7) Screen scroll switch
- (8) Reset switch

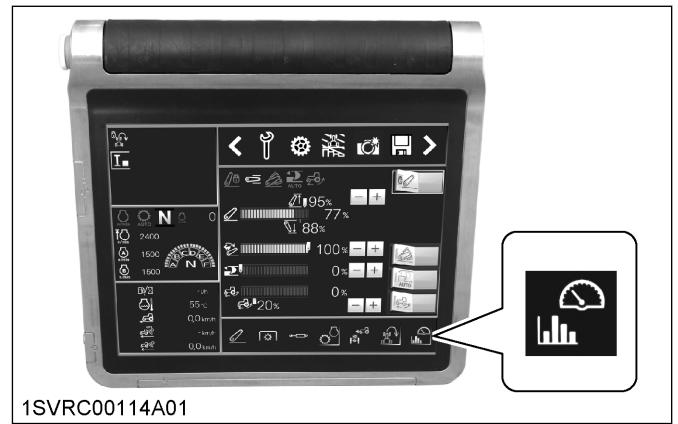
- (9) Edit switch
- (10) Record start switch and stop switch
- (11) Record conditions switch

K-monitor



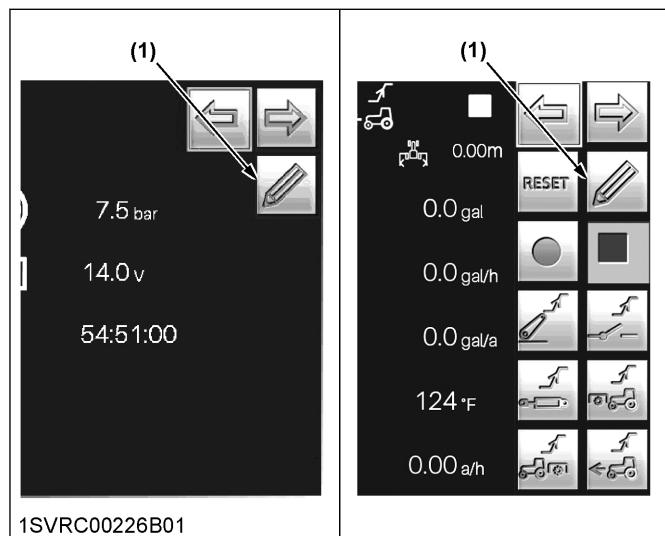
1. Select the screen to be used for recording with the scroll switch (7).  
The recording screen has 11 pages available (screens 1 to 11). Screen 0 is for information display only.
2. Touch the reset switch (8) to delete the recorded data from the screen.
3. Enter field names and so on into the free text box (4) as necessary.
4. Touch the free text box and use the displayed ten-key pad for input.
5. Touch the working range of implement icon (5) to enter the working range of the implement, using the displayed ten-key pad.  
If the working range of the implement is not correctly entered, accurate data will not be recorded.
6. Touch the edit switch (9) to switch to the edit screen.

K-monitor Pro



## 12.2 Selecting and registering recorded data items

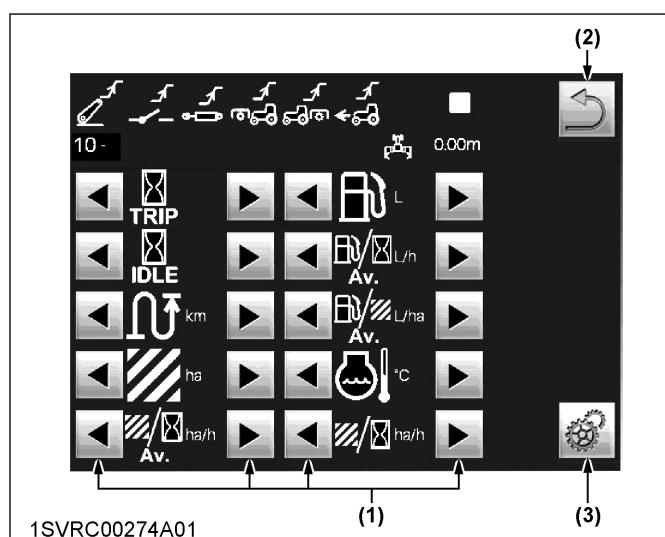
1. Touch the edit switch to switch to the edit screen.



(1) Edit switch

2. Touch the scroll switch icon at upper left to select the icon you want to register as recorded data.
3. Touch the scroll switch icon second from upper left to select the icon you want to register.
4. Touch the return to the previous screen switch, and the setting is completed and the previous screen reappears.
5. Touch the factory setting button to return all icons on the displayed screen to the default display.

### Edit screen



(1) Scroll switch

(2) Return to the previous screen

(3) Factory setting switch

## 12.3 Recordable data items

Register data items upon confirmation with the following chart.

Icon	Meaning	Unit	Remark
	Fuel consumption per hour	L/h (gal/h)	Not resettable
	Fuel consumption per work area	L/ha (gal/a)	Not resettable
	Work area covered per hour	ha/h (a/h)	Not resettable
	Engine coolant temperature	°C (°F)	Not resettable
	Travel speed	km/h (mph)	Not resettable
	Travel speed with GPS	km/h (mph)	Not resettable
	Travel speed with radar	km/h (mph)	Not resettable
	Pneumatic trailer brake pressure	bar (psi)	Not resettable
	System voltage	v	Not resettable
	Total operating hours	-	Not resettable
	Trip-operating hours	-	Resettable
	Trip-travel distance	km (mi)	Resettable
	Trip-fuel consumption	L (gal)	Resettable
	Trip-fuel consumption per hour	L/h (gal/h)	Resettable
	Trip-area fuel consumption	L/ha (gal/a)	Resettable
	Trip-area	ha (a)	Resettable

(Continued)

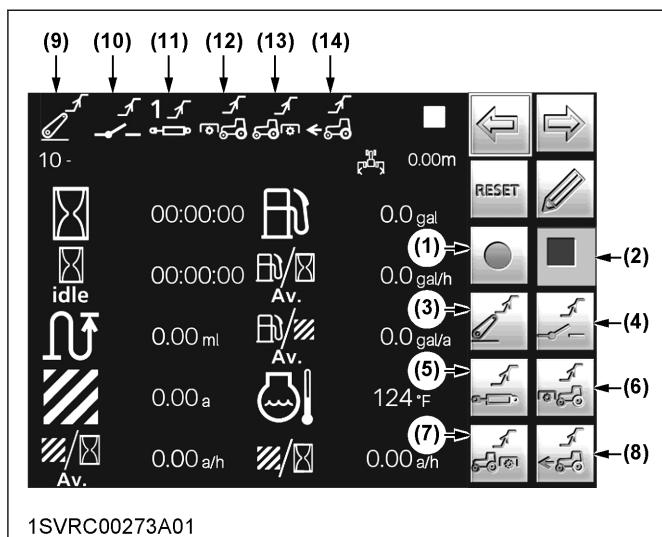
Icon	Meaning	Unit	Remark
	Trip-work area covered per hour	ha/h (a/h)	Resettable
	Trip-idle time	-	Resettable (engine running, tractor not moving, PTO off)

## 12.4 Setting the operating conditions and beginning recording

The operating conditions for which you want to record data can be set with the 6 switches at bottom right of the screen, and once set can be confirmed with indicators (9) through (14).

Simultaneous setting of multiple switches for operating conditions is also possible, but when setting for two conditions or more, data will be recorded when at least one condition has been met.

After setting, touch the record start switch (1) to begin recording, and the record stop switch (2) to end recording.



- |                                  |                                        |
|----------------------------------|----------------------------------------|
| (1) Record start switch          | (10) External signal input indicator   |
| (2) Record stop switch           | (11) Remote control valve indicator    |
| (3) Lift arm switch              | (12) Front PTO indicator               |
| (4) External signal input switch | (13) Rear PTO indicator                |
| (5) Remote control valve switch  | (14) Front wheel drive (4WD) indicator |
| (6) Front PTO switch             |                                        |
| (7) Rear PTO switch              |                                        |
| (8) Progress switch              |                                        |
| (9) Lift arm indicator           |                                        |

### Lift arm

Touch the switch to switch the indicator among "Lift arm raise", "Lift arm lower" and "OFF".

- When you select "Lift arm raise", data will be counted only when the lift arm is raised.
- When you select "Lift arm lower", data will be counted only when the lift arm is lowered.

### External signal input

Touch the switch to switch between the "ON" (lit) and "OFF" (unlit) indicators.

- When you select external signal input ON, data will be counted only during external signal input. For details, consult your local KUBOTA Dealer.

### Remote control valve

Touch the switch to switch the indicator among "Remote control valve" 1 through 6 and OFF (unlit), in that order.

- When you select "Remote control valve 1", data will be counted only when valve 1 is operating.

### Front PTO

Touch the switch to switch between the "ON" (lit) and "OFF" (unlit) indicators.

- When you select "Front PTO ON", data will be counted only when the front PTO is rotating.

### Rear PTO

Touch the switch to switch between the "ON" (lit) and "OFF" (unlit) indicators.

- When you select "Rear PTO ON", data will be counted only when the rear PTO is rotating.

### Progress

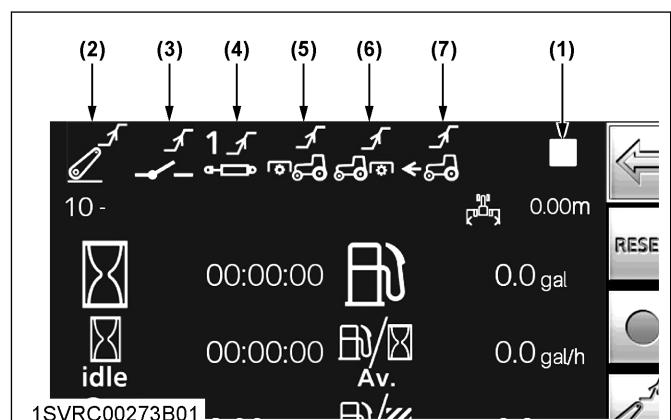
Touch the progress switch to switch between the "ON" (lit) and "OFF" (unlit) indicators.

- When you select "Progress", data will be counted only when the tractor is in progress.

## 12.5 Record status indicators

Record status indicators use the following colours for identification.

- Amber indicator lit: data is being recorded (counted)
- Green indicator lit: data recording interrupted
- Indicators off: data recording stopped



- |                                     |                         |
|-------------------------------------|-------------------------|
| (1) Counting status indicator       | (5) Front PTO indicator |
| (2) Lift arm indicator              | (6) Rear PTO indicator  |
| (3) External signal input indicator | (7) Progress indicator  |
| (4) Remote control valve indicator  |                         |

## K-MONITOR SUB-MENU (PREMIUM AND PREMIUM KVT MODELS ONLY)

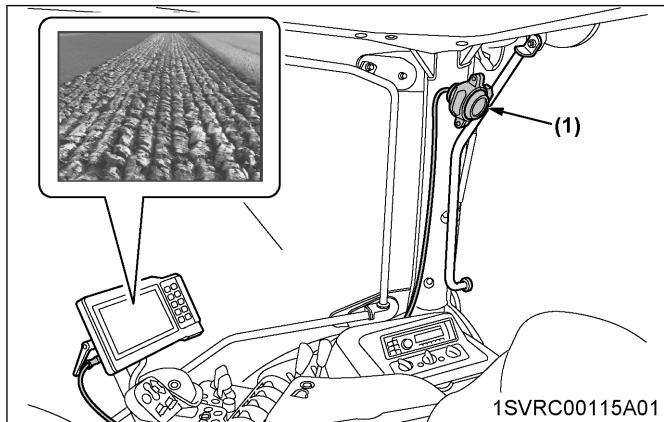
This chapter covers the handling and operation of the “sub-menu”.

Details regarding the handling and operation of the main menu can be found in a different section.

(See K-MONITOR MAIN MENU (PREMIUM AND PREMIUM KVT MODEL ONLY) on page 74.)

### 1. Live view camera

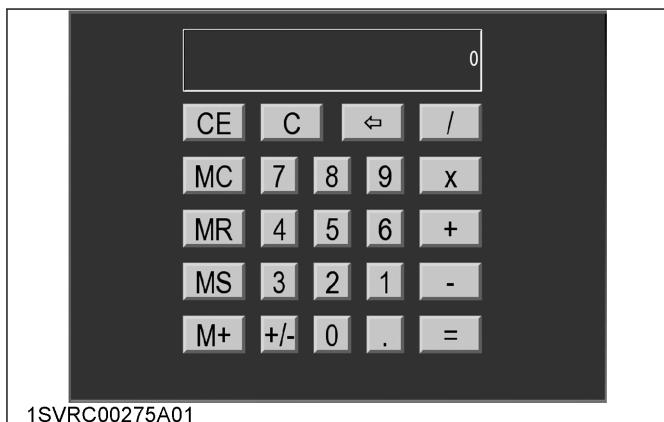
Installing a camera at an arbitrary position on the tractor or implement allows consistent checking on the work status from the operator's seat through the K-monitor.



(1) View camera

### 2. Calculator

Make use of the calculator as necessary.

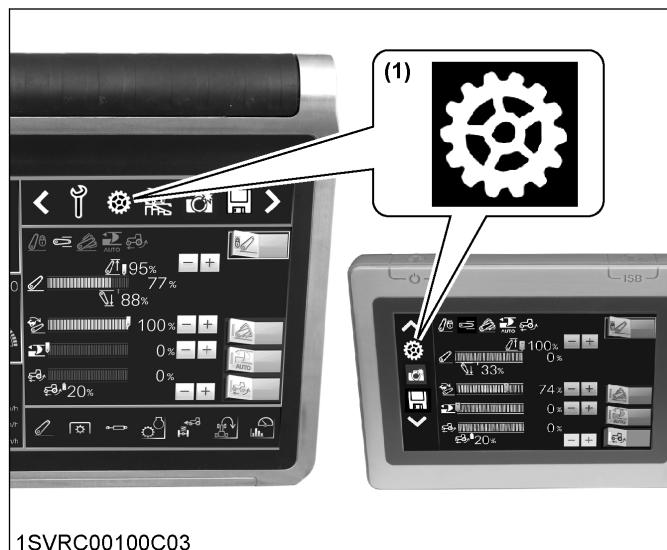


1SVRC00275A01

### 3. Initial setting

Details regarding the settings can be found in a different section.

(See System basic settings on page 82.)



(1) Gear icon

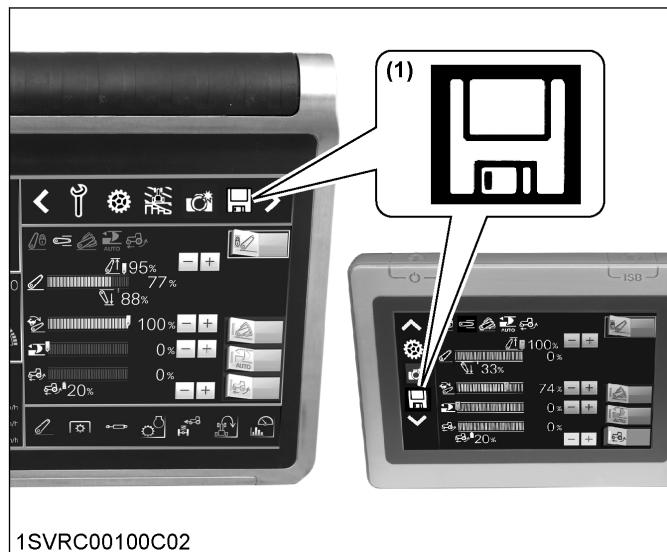
### 4. Data import and export

Digital-format data output is possible when using this mode, meaning that data import to a computer, and so on, is also easy.

This is highly convenient, since the reimportability of the exported data makes re-input of, for instance, details of the PTO and remote control valves unnecessary.

#### 4.1 Exporting procedure

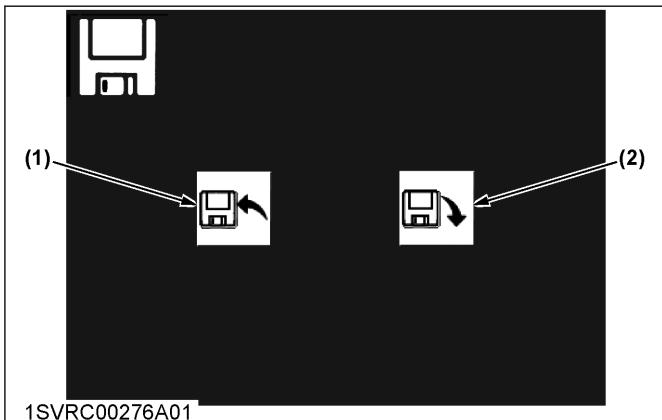
- After setting the USB memory stick in the K-monitor, touch the floppy mark on the display.



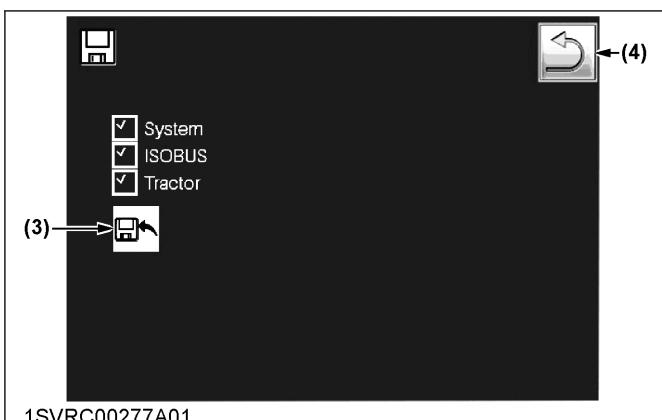
1SVRC00100C02

(1) Floppy mark

2. Touch the export switch on the display to show 3 types of exportable data.  
Check off the items you want to export by touching them.

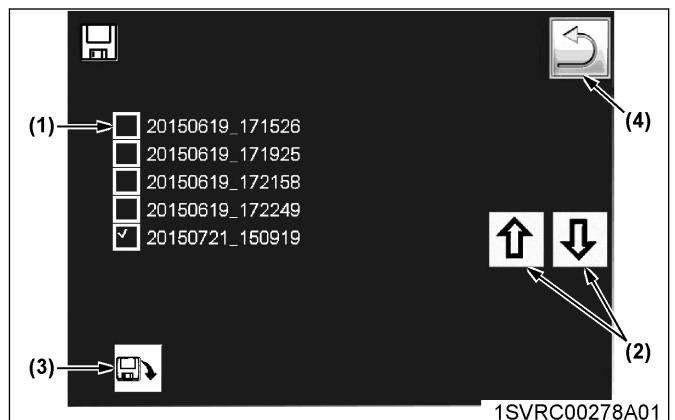


3. Touch the export switch to export to the USB memory stick.  
4. Touch the return switch to go back the previous screen.



#### 4.2 Importing procedure

1. After setting the USB memory stick in the K-monitor, touch the floppy mark in the display and then the import switch.
2. Use the scroll switch to select data to import from the USB memory stick data at the top of the screen.
3. Touch the import switch to copy the data.  
Further, note that when importing, the data within the K-monitor will be overwritten by the USB memory stick data selected in the previous step. However, the top limit setting value of the lift arm top limit cannot be imported.



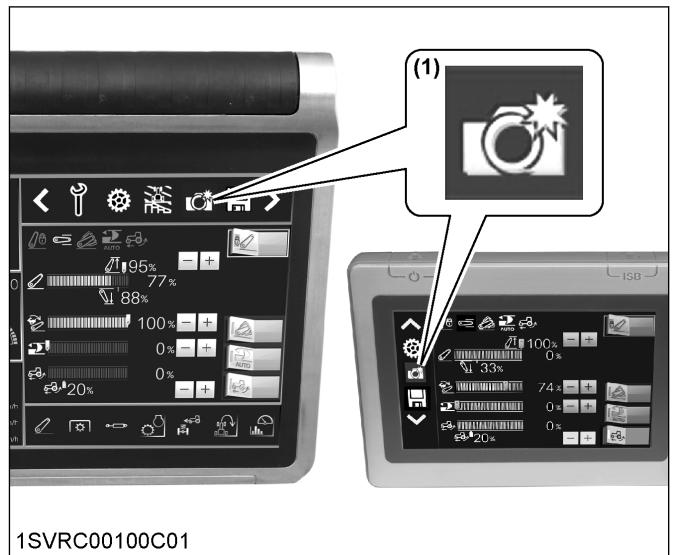
(1) USB memory stick data  
(2) Scroll switch  
(3) Import switch  
(4) Return to the previous screen switch

## 5. Screenshot

The screen data information set on each screen can be exported as graphic data (jpg format). For example, if you export the details on the PTO or remote control valves set by implement as screenshots, resetting is simple.

#### Exporting procedure

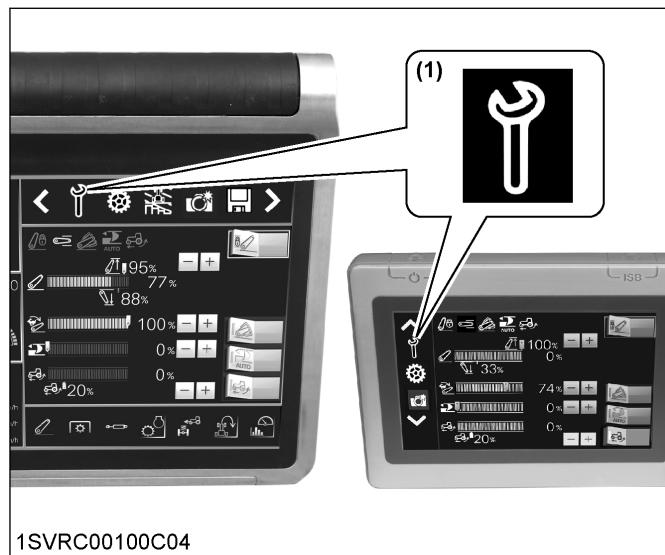
1. Display onscreen the information of which you want screenshots.
2. Set the USB memory stick.
3. Touch the camera icon at the top of the screen to copy the data to the USB memory stick.



(1) Camera icon

## 6. Failure messages

1. Touch the wrench icon displayed in the sub-menu to check the information on current failures.



(1) Wrench icon



(1) Message scroll switches

# 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

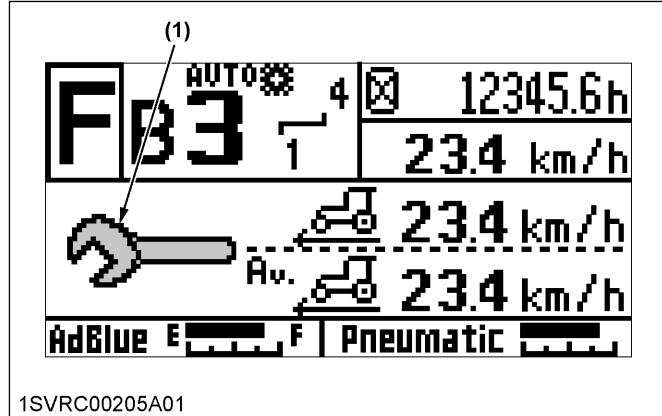
- Walk around inspection
- Check engine oil level
- Check transmission oil level
- Check coolant level
- Check water separator
- Clean grill, radiator and cooler
- Check DPF/SCR muffler
- Check brake pedal
- Check parking/secondary brake lever
- Check pneumatic brake pressure (if equipped)
- Check indicators, gauges and meter
- Check lights
- Check seat belt
- Check movable parts
- Supply DEF/AdBlue®
- Check anti-frost heater for oil separator (if equipped)
- Refuel  
(See DAILY CHECK on page 255.)
- Care of pictorial safety labels  
(See PICTORIAL SAFETY LABELS on page 21.)

## SERVICE INSPECT INDICATOR

By monitoring the LCD unit on the instrument panel, the 10 maintenance items communicating with the tractor's hour meter can be kept under accurate control.

(See Checking the items reaching the maintenance interval on page 119.)

When engine oil, the most significant of all these, reaches its replacement time, the service inspect indicator will automatically appear on the LCD.



1SVRC00205A01

(1) Service inspect indicator (wrench mark)

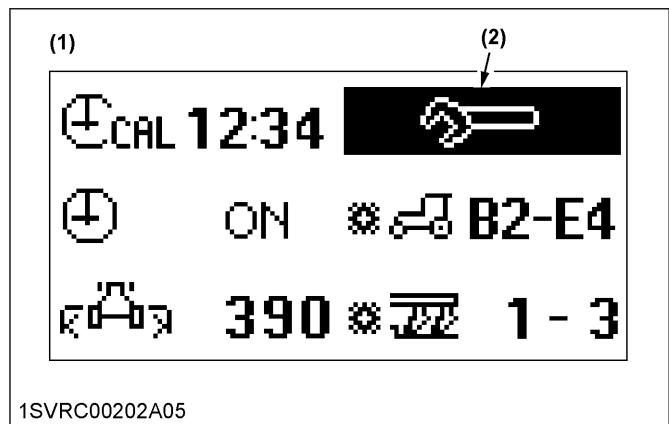
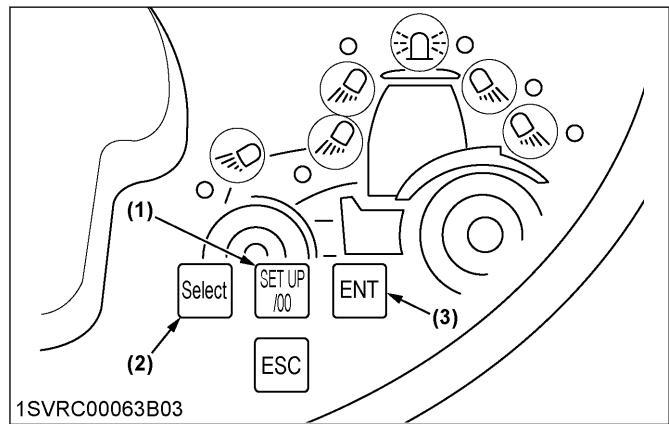
After replacing the oil, the indicator will disappear when you perform reset, but will appear when again reaching the relevant time.

Confirm the other maintenance items with the procedure below before operation as well. For this reason, act quickly when replacement and maintenance times are reached.

### 1. Checking the items reaching the maintenance interval

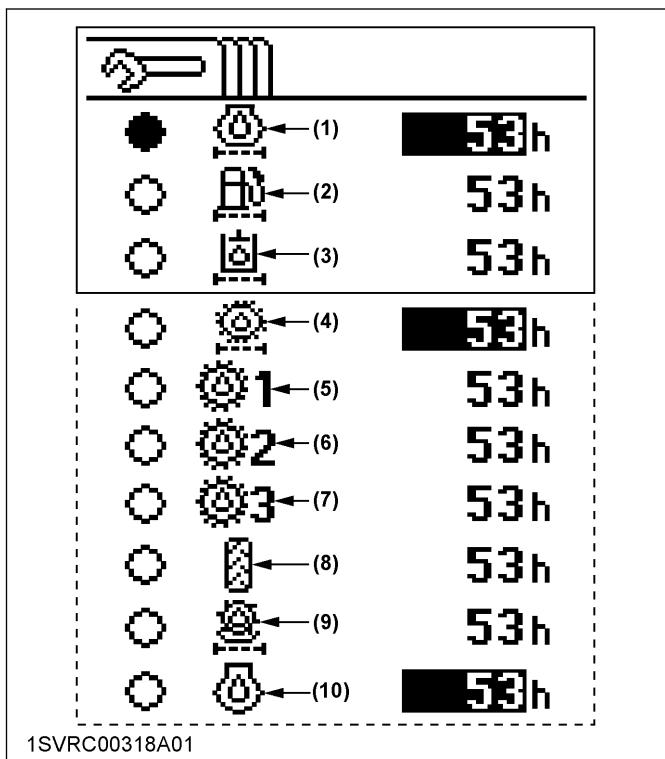
1. Press the [SET UP/00] switch on the instrument panel, and the setting mode screen appears.

2. With the [Select] switch, choose the "service inspect indicator". Then press the [ENT] switch.



3. The 10 maintenance items are displayed on the LCD unit.

The hours shown at the far right of each item indicate the duration of use after the immediately previous maintenance.



- (1) Engine oil filter  
(2) Fuel filter  
(3) Hydraulic suction oil filter (3-point hitch)  
(4) Transmission filter  
(5) Transmission fluid  
(6) Rear axle case oil  
(7) Front axle case oil  
(8) Wheel bolt torque  
(9) Engine oil separator element  
(10) Engine oil

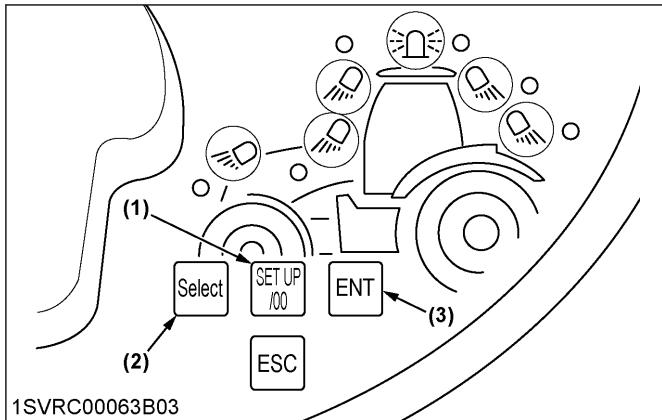
Every time the [Select] switch is pressed, the circle (●) moves down and the next items appear one by one.

Highlighted hours mean that the inspection interval or replacement interval has been reached. Immediately inspect the relevant part or replace it with a new one.

## 2. Resetting the maintenance hour

When an inspection or replacement has been made, reset the hours of the maintenance item.

1. Using the [Select] switch, move the circle (●) to the relevant maintenance item.

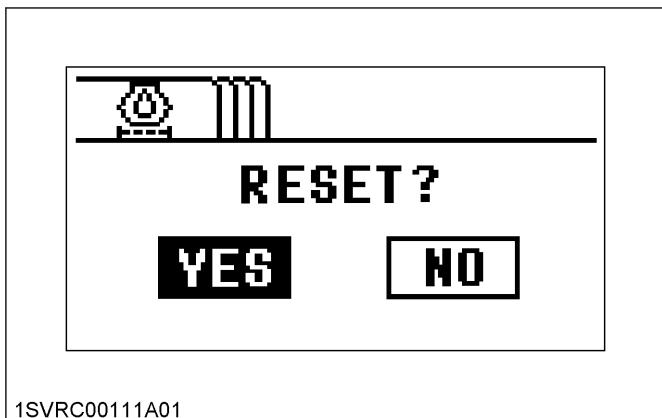


(1) [Set UP/00] switch

(2) [Select] switch

(3) [ENT] switch

2. Press the [ENT] switch, and the reset screen shown below appears. Using the [Select] switch, choose [YES]. Then press the [ENT] switch, and the displayed hours will be back to zero.



1SVRC00111A01

# OPERATING THE ENGINE

## **WARNING**

To avoid personal injury or death:

- Read and understand the safe operation section.
- Understand the 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 the engine while standing on the ground. Start the engine only from operator's seat.
- Make it a rule to set all shift levers to the "NEUTRAL" positions and to place PTO clutch control switch in "OFF" position before starting the engine.
- When the engine is started, the machine height may change unexpectedly. Before starting the tractor, make sure the area near the machine is clear of all persons and objects (Front suspension type).

Details regarding safe operation can be found in a different section

(See SAFE OPERATION on page 13.)

### **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.

## EXHAUST AFTER-TREATMENT DEVICES

## **WARNING**

To avoid personal injury or death:

- During diesel particulate filter (DPF) regenerating operations, exhaust gases and exhaust filter components reach temperatures hot enough to burn people, or ignite or melt common materials.
- Keep tractor away from people, animals or structures which may be susceptible to harm or damage from hot exhaust gases.
- During regeneration, white exhaust gases may be visible. Do not allow regeneration in a non ventilated garage or confined area.
- During regeneration, do not leave the tractor.

## 1. Dual exhaust after-treatment devices

Particulate matter (PM) and black smoke contained in exhaust gases are trapped and removed by the diesel particulate filter (DPF) muffler.

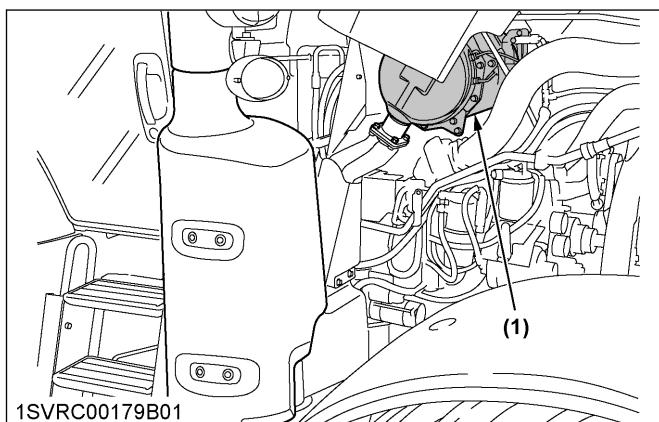
The SCR system then decomposes residual nitrogen oxides (NOx) into harmless nitrogen (N<sub>2</sub>) and water (H<sub>2</sub>O) for purification.

This dual exhaust gas purifying device provides for clean exhaust gas at low fuel consumption.

## DIESEL PARTICULATE FILTER (DPF) MUFFLER

This tractor is equipped with an engine with a diesel particulate filter (DPF) muffler which serves to reduce hydrocarbons, carbon monoxide and other toxic gases, all of which are contained in diesel engine emissions, to harmless carbon dioxide and water. The DPF also traps particulate matter (PM).

Please handle exhaust after-treatment devices correctly and in an environmentally responsible manner.



(1) Diesel Particulate Filter (DPF)

## 1. Handling points

When a specific amount of particulate matter (PM) has accumulated in the DPF muffler, it is necessary to refresh the DPF muffler by burning the PM inside it. This burning off work is called "*Regeneration*".

To extend operating time to reach this regeneration, and to avoid DPF muffler trouble, make sure to observe the following handling matters.

### Fuel

Be sure to use ultra low sulphur fuel (S15).

**IMPORTANT :**

- Use of diesel fuel other than ultra low sulphur fuel may adversely affect the engine and DPF performance.
- Use of fuels other than ultra low sulphur fuel (S15) may not meet regulations for your region.

**Engine oil**

Use DPF-compatible oil (CJ-4) for the engine.

**IMPORTANT :**

- If any engine oil other than CJ-4 is used, the DPF may become clogged earlier than expected and the fuel economy may drop.

**Prohibition of unnecessary idling operation**

Generally, the lower the engine speed, the lower the exhaust gas temperature is, so the PM contained in exhaust gas will not be burnt, and begins to accumulate. Therefore, do not idle unnecessarily.

**Regeneration**

When there is "Regeneration" instruction sign by lamp or buzzer, immediately perform the required procedure for regeneration.

**IMPORTANT :**

- Interrupting the regeneration cycle or continuing operation while ignoring the warning signs may cause DPF and engine damage.

## 2. DPF regeneration process

DPF regeneration process can be performed by choosing "Auto regeneration" or "Regeneration inhibit" mode according to your job conditions.

For jobs not affected by hot gases emitted during regeneration, "Auto regeneration" is advisable.

**Auto regeneration mode**

When starting the engine (switch operation is unnecessary), the "Auto regeneration" mode is automatically activated.

With the auto regeneration mode on, when a specific amount of PM has accumulated, and the regeneration conditions are satisfied, the DPF will be automatically regenerated whether the tractor is in motion or parked. (See Tips on diesel particulate filter (DPF) regeneration on page 129.)

In this way, work efficiency is improved. For more details, read the "Auto regeneration" section of this manual.

(See Operating procedure for auto regeneration mode on page 124.)

**Regeneration inhibit mode**

After starting the engine, if the "DPF inhibit switch" is pressed to turn on the switch lamp, the "Regeneration inhibit" mode will be activated.

With "Regeneration inhibit" mode on, the PM which has accumulated inside the DPF will not be burnt, unless the operator performs the regeneration work manually. The "Regeneration inhibit" mode is effective for work in poorly ventilated work spaces.

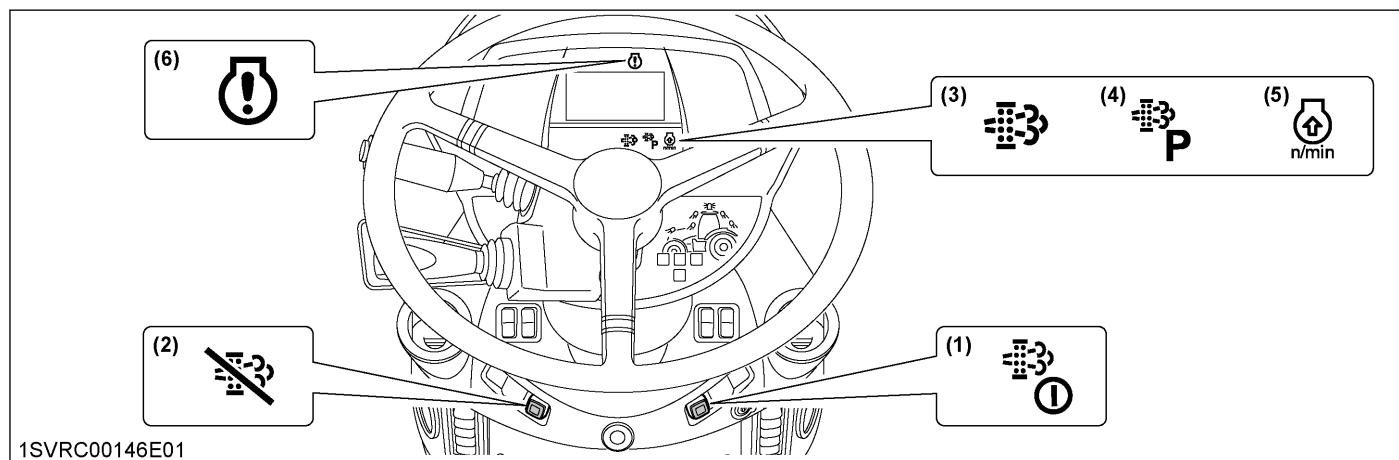
For more details, read the regeneration prohibition section of this manual.

(See Operating procedure for regeneration inhibit mode on page 126.)

**NOTE :**

- If the engine is stopped once, the "Auto regeneration" mode will be activated.

### 3. Operating procedure for auto regeneration mode



- (1) Parked regeneration switch      (3) Regeneration indicator      (5) Engine RPM increase indicator  
 (2) DPF inhibit switch      (4) Parked regeneration indicator      (6) Engine warning indicator

#### Regeneration operating procedure

- Start the engine.

Make sure that the DPF inhibit switch lamp  is "OFF".

Switch lamp "OFF": Auto regeneration mode activated.

Switch lamp "ON": Regeneration inhibit mode activated.

**NOTE :**

- When the engine is started, the "Auto regeneration" mode is automatically activated.
- "Regeneration inhibit" mode is activated when the DPF inhibit switch is pushed after the engine is started.

- When the regeneration indicator  starts flashing:

A specific amount of PM has built up in the DPF.

Continue to operate the tractor, and the regeneration process will begin automatically; make sure the working place is in a safe area as DPF and exhaust temperature will rise.

- When the engine rpm increase indicator  starts flashing:

Keep on working and increase the engine rpm until the indicator turns "OFF".

**NOTE :**

- Even if the auto regeneration mode is selected, DPF regeneration may not begin because system requirements have not been satisfied.
- The engine rpm increase indicator is used as a guide to satisfy the regeneration conditions. If the engine load is too heavy, the engine rpm increase indicator may continue to flash, even though regeneration system conditions are satisfied and regeneration may begin automatically.  
 (See Tips on diesel particulate filter (DPF) regeneration on page 129.)

### 3.1 PM warning level and required procedures

During auto regeneration mode when the PM level has built up in the DPF, the regeneration cycle will begin automatically.

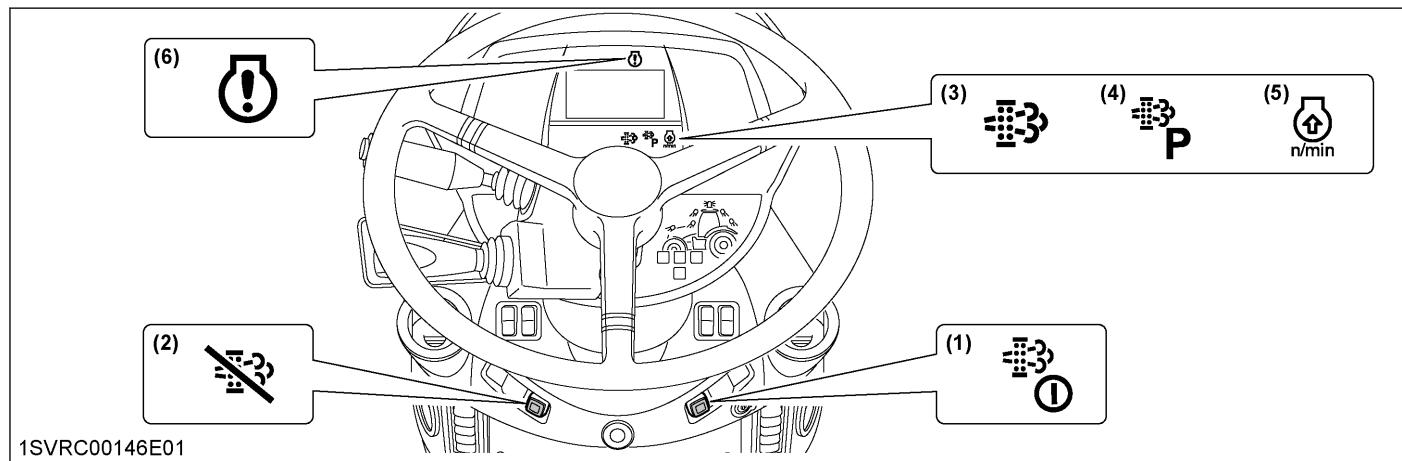
If the regeneration cycle is interrupted or the regeneration conditions are not satisfied, the buzzer starts sounding and the indicator display changes in response to the PM level in order to prompt the operator to perform the required procedure listed in the following table.

**IMPORTANT :**

- Once the regeneration level has been reached, immediately perform the required procedure for regeneration.
- Interrupting the regeneration cycle or continuing operation while ignoring the warning signs may cause DPF and engine damage.

Auto mode		
DPF system status		Required procedure
PM warning level: 1 Buzzer: Not sounding		The regeneration indicator starts flashing.
		The rpm increase indicator starts flashing.
		The regeneration indicator will stop flashing and remain "ON" constantly.
PM warning level: 2-1 Buzzer: Sounding every 5 seconds	If the regeneration cycle was interrupted or conditions are not satisfied for regeneration then DPF system is now in Level 2.	
		The regeneration indicator starts flashing.
		The rpm increase indicator starts flashing.
PM warning level: 2-2 Buzzer: Sounding every 3 seconds		The parked regeneration indicator starts flashing.
	Start the regeneration, referring to PM warning level: 1 above. Now the parked regeneration indicator starts flashing, and the parked regeneration can also be started. If the regeneration conditions are not met, perform the parked regeneration procedure. (See Operating procedure for parked regeneration on page 128.)	
	If the regeneration fails in the warning level 2:	
PM warning level: 3 Buzzer: Sounding every 1 second Engine output: 50%		The engine warning indicator starts flashing.
		The parked regeneration indicator starts flashing.
	Immediately discontinue working the tractor and begin the parked regeneration cycle process. (See Operating procedure for parked regeneration on page 128.) At this PM warning level, the auto regeneration mode does not function. If the tractor is operated further, the regeneration cycle will be disabled.	
PM warning level: 4 Buzzer: Sounding every 1 second Engine output: 50%	If the parked regeneration is interrupted or the tractor is continuously operated in the warning level 3:	
		The engine warning indicator remains constantly "ON".
	Immediately move the tractor to a safe place, park it there and turn the engine "OFF". Contact your local KUBOTA Dealer. <ul style="list-style-type: none"> <li>At this level, do not continue to operate the tractor; otherwise, damage will result to the DPF and engine.</li> </ul>	

## 4. Operating procedure for regeneration inhibit mode



- (1) Parked regeneration switch      (3) Regeneration indicator  
 (2) DPF INHIBIT switch      (4) Parked regeneration indicator  
 (5) Engine RPM increase indicator      (6) Engine warning indicator

### Regeneration operating procedure

1. Start the engine.
2. Press the DPF inhibit switch , and the switch lamp illuminates.

Switch lamp “ON”: Regeneration inhibit mode selected.

Switch lamp “OFF”: Auto regeneration mode selected.

3. When the parked regeneration indicator starts flashing:
- A specific amount of PM has accumulated in the DPF muffler.  
 Move the tractor to a safe place and activate the DPF muffler.  
 (See Operating procedure for parked regeneration on page 128.)

## 4.1 PM warning level and required procedures

In the regeneration inhibit mode, the buzzer starts sounding and the indicator display changes in response to the PM level in order to prompt the operator to perform the required procedure listed in the following table.

### IMPORTANT :

- Once the regeneration level has been reached, immediately perform the required procedure for regeneration.
- Interrupting the regeneration cycle or continuing operation while ignoring the warning signs may cause DPF and engine damage.

Regeneration inhibit mode		
DPF system status		Required procedure
PM warning level: 1 Buzzer: Not sounding		The regeneration indicator starts flashing.  A specific level of PM has built up in the DPF muffler. Continue with the operation as it is.
		At PM warning levels range from 1 to 2-2, it is also possible to change DPF inhibit switch to auto regeneration mode, then perform the regeneration.
PM warning level: 2-1 Buzzer: Sounding every 5 seconds		The regeneration indicator starts flashing.  Move the tractor to a safe area, then begin the parked regeneration cycle process. (See Operating procedure for parked regeneration on page 128.)
PM warning level: 2-2 Buzzer: Sounding every 3 seconds		The parked regeneration indicator starts flashing.
PM warning level: 3 Buzzer: Sounding every 1 second Engine output: 50%	If the parked regeneration cycle is interrupted or the tractor is continuously operated in the PM warning level 2:  	The engine warning indicator starts flashing.  Immediately stop working the tractor, move the tractor to a safe area, then begin the parked regeneration cycle process. (See Operating procedure for parked regeneration on page 128.) If the tractor is operated further and the operator ignores the warning signs, then regeneration will be disabled.
		The parked regeneration indicator starts flashing.
PM warning level: 4 Buzzer: Sounding every 1 second Engine output: 50%	If the regeneration cycle is interrupted or the tractor is continuously operated ignoring the warning signs, in the PM warning level 3:  	The engine warning indicator remains constantly "ON".  Immediately move the tractor to a safe place, park it there and turn the engine "OFF". Contact your local KUBOTA Dealer. <ul style="list-style-type: none"><li>At this level, do not continue to operate the tractor; otherwise, damage may result to the DPF and engine.</li></ul>

## 5. Operating procedure for parked regeneration

1. Park the tractor in a safe area away from buildings, people, and animals.
2. Apply the handbrake.
3. Set the shuttle shift lever to the neutral position.
4. Turn "OFF" the PTO clutch control switch.
5. Return the engine rpm to the idle speed.
6. Lower the implement to the ground.
7. Press the DPF inhibit switch  , and the switch lamp turns "OFF".
8. When the regeneration conditions are satisfied (2 to 5 and 7 mentioned previously), the parked regeneration switch lamp  starts flashing.
9. Press the parked regeneration switch  to start the regeneration cycle.  
The switch lamp will stop flashing and remain "ON" constantly during the cycle.
10. The engine rpm will automatically rise, and the regeneration process will begin.
11. Both indicators  stay "ON" while regenerating the DPF.  
They turn "OFF" when the cycle is complete.
12. After the lamp turns "OFF", normal tractor work may resume.  
When driving in "*Regeneration inhibit*" mode, press the DPF inhibit switch to turn on the switch lamp.

**NOTE :**

- During the regeneration cycle, do not touch the above levers and switches (in steps 2, 3, 4), nor change the engine rpm other than for an emergency stop. Otherwise, the regeneration will be interrupted.
- Never leave the tractor when the parked regeneration process is activated.
- If the parked regeneration cycle is interrupted, the engine rpm is fixed at the idling level for about 30 seconds. For this period, keep the hand throttle lever and foot throttle pedal at the idle position. Do not move them. They will function again in 30 seconds.

## 6. Tips on diesel particulate filter (DPF) regeneration

- Operation**

The higher in speed or load the engine operates, the higher the exhaust temperature rises. As a result, particulate matter (PM) inside the DPF is consumed and the regeneration process is required less frequently over time.

The lower in speed or load the engine operates, the lower the exhaust temperature. Accordingly, less particulate matter (PM) inside the DPF is consumed and more accumulation of PM will occur, which requires frequent regeneration. Therefore, avoid prolonged idling if possible.

- Necessary conditions for "Regeneration"**

When the conditions below are all satisfied, regeneration will start. However, if even one condition is deviated from during the process, the regeneration will be interrupted.

- The engine coolant temperature.
- The DPF temperature.
- The engine speed is 1200 rpm or higher.

- Usually it takes 15-20 minutes to complete the regeneration cycle.

Actual regeneration time may depend on ambient temperature, exhaust temperature and engine speed.

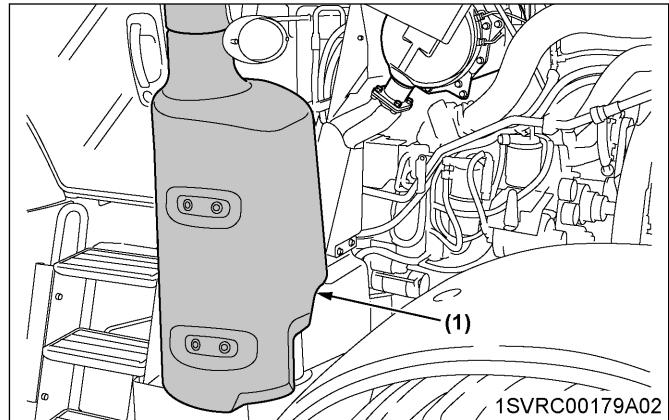
- It is recommended to do the regenerating while the engine is warm.
- Do not unnecessarily start and interrupt the regeneration process. Otherwise, a small amount of fuel becomes mixed with the engine oil, which degrades the oil quality.
- While the DPF is being regenerated, the engine air flow rate is automatically limited to keep up the exhaust temperature. Because of this, the engine may sound differently, but this is normal for this engine.
- Just after the regeneration has ended, the DPF muffler remains hot. It is advisable to keep the engine running for about 5 minutes to allow cooling of the exhaust components.

## SELECTIVE CATALYTIC REDUCTION (SCR) MUFFLER

### 1. Outline of the SCR

The injector jets urea aqueous solution (DEF/AdBlue<sup>®</sup>) into the muffler, and the solution is hydrolysed with the heat of exhaust gas to generate ammonia (NH<sub>3</sub>).

The ammonia generated thus is mixed with exhaust gas by the SCR muffler. In this way, nitrogen oxides (NOx) contained in exhaust gases are reduced by ammonia and decomposed into nitrogen and water vapour.



## 2. DEF/AdBlue<sup>®</sup>

### CAUTION

#### To avoid personal injury:

- The urea aqueous solution (DEF/AdBlue<sup>®</sup>) is colourless, odourless and harmless. If the solution gets on your skin, immediately wash it away with water.

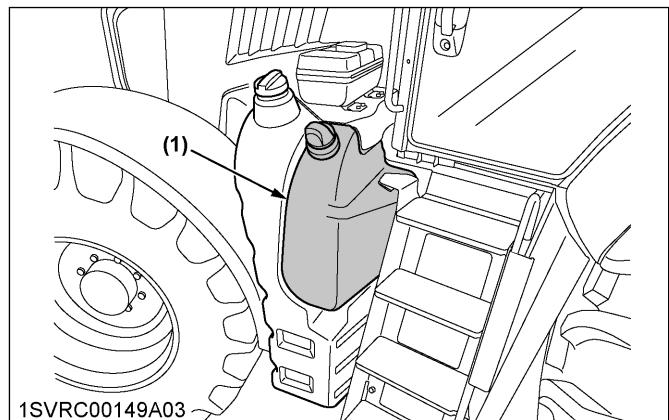
The DEF/AdBlue<sup>®</sup>, used as reducing agent of SCR, is a 32.5% urea aqueous solution.

No qualification for handling the urea aqueous solution is needed. As well, the solution is not designated as a hazardous material.

The product is available at petrol stations, truck stops and speciality shops. Be sure to use the genuine product only.

Do not use any poor-quality products, or the engine may have trouble and be damaged.

Generally speaking, the consumption of DEF/AdBlue<sup>®</sup> is about 5% of the fuel. Add this solution every two refuelling occasions.



(1) DEF/AdBlue<sup>®</sup> tank (blue cap)

#### NOTE :

- On the North American market, the high-grade NOx reducing agent called urea aqueous solution is sold in the name of diesel exhaust

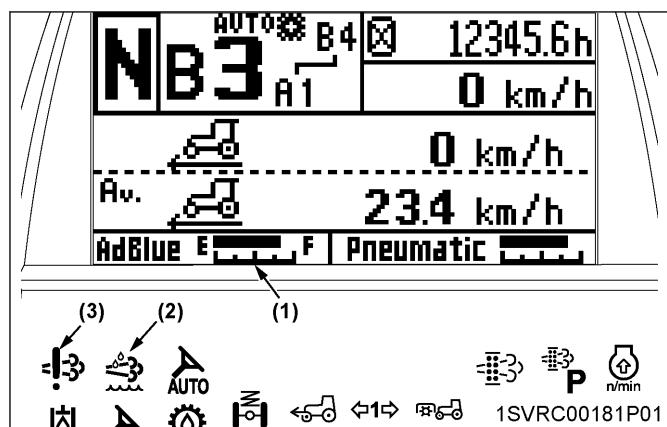
fluid (DEF). On the European and Japanese markets, it is on sale under the trade name of AdBlue®.

### 3. Warning indication and countermeasures

Before starting the day's job, check the fluid level with the DEF/AdBlue® gauge on the instrument panel.

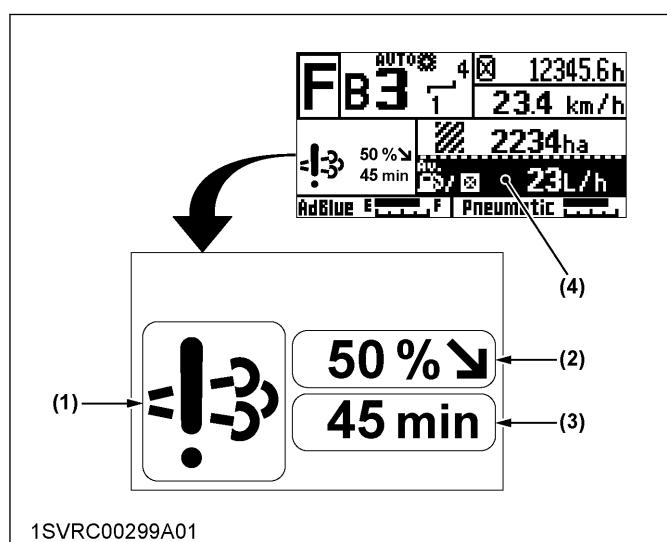
If the fluid runs short during operation, the warning indicator lights up. If you continue running the machine as it is, the engine output will be limited by 50% or so. If running is continued, the engine will be limited to idling. (See SCR system icon on inducement display on page 130.)

These limitations are stipulated in conformity with the emission controls of each country and territory.



- (1) DEF/AdBlue® gauge
- (2) DEF/AdBlue® warning indicator
- (3) DEF/AdBlue® system warning indicator

### 3.1 SCR system inducement display on the LCD



- (1) SCR system icon
- (2) Engine output level
- (3) Time limit to next level or remaining DEF/AdBlue®
- (4) Performance monitor (error code)

### 3.2 SCR system icon on inducement display

	Low-level icon of DEF/AdBlue®		Trouble icon of SCR system
	Poor-quality icon of DEF/AdBlue®		Freeze icon of DEF/AdBlue®

### 3.3 SCR system inducement display and measures

On the SCR system, the remaining amount and quality of DEF/AdBlue® as well as machine troubles are monitored. If anything goes wrong during operation, the following warnings are issued. Follow the warning contents to take proper measures.

Displays	Warning indicator	Status	Measures
 <b>15%</b>		1	The amount of remaining DEF/AdBlue® has decreased up to 15% of the maximum capacity. Refill the DEF/AdBlue® tank to reset the warning system.*1 If operation is continued without refilling, the engine output will be limited.
 <b>Lv.1</b>		2	The amount of remaining DEF/AdBlue® has decreased up to 5% of the maximum capacity. The engine output is limited to 50% (limited engine output : [Lv.1]).
 <b>Lv.1 30min</b>		2	If operation is continued without refilling, the DEF/AdBlue® tank, a countdown from [Lv.1] to [Lv.2] (30 minutes) will begin. The time until [Lv.2] may be longer than 30 minutes depending on operating conditions.
 <b>Lv.2</b>		3	The engine output is limited to idle status (limited engine output: [Lv.2]). Refill the DEF/AdBlue® tank.*1
 <b>195min</b>		1	Contains poor quality DEF/AdBlue® or other non-regulated solutions. After draining the tank, refill with DEF/AdBlue® to reset the warning system. If operation is continued without refilling the DEF/AdBlue® tank, a countdown to [Lv.1] (195 minutes) will begin.
 <b>Lv.1 45min</b>		2	The engine output is limited to 50% (limited engine output : [Lv.1]). If operation is continued without refilling, the DEF/AdBlue® tank, a countdown from [Lv.1] to [Lv.2] (45 minutes) will begin.
 <b>Lv.2</b>		3	The engine output is limited to idle status (limited engine output: [Lv.2]).

\*1 When DEF/AdBlue® has been refilled or a poor-quality solution replaced by a genuine product, the low-level warning indicator and icons go off. The engine output limitation will also be cleared.

Displays	Warning indicator	Status	Measures
 195min		1	The SCR system has experienced an abnormality. Verify the error code displayed on the performance monitor and contact your local KUBOTA dealer. The engine output is unrestricted. A countdown to [Lv.1] (195 minutes) will begin.
 80% ↘ 120min		1	If there is a breakdown in the essential exhaust gas control components, engine output will be regulated even within the countdown period to [Lv.1]. The engine output is limited to 80%. The regulation value (%) varies according to the nature of the breakdown. After 120 minutes, the engine output will be limited to 50% (limited engine output : [Lv.1]).
 Lv.1 45min		2	The engine output is limited to 50% (limited engine output : [Lv.1]). A countdown from Level 1 to Level 2 (45 minutes) will begin.
 Lv.2		3	The engine output is limited to idle status (limited engine output: [Lv.2]).
	---	---	Due to low temperatures, the DEF/AdBlue® has frozen. Continue the warm-up operation and the DEF/AdBlue® will thaw.
 80% ↘	---	---	Due to low temperatures, the DEF/AdBlue® has frozen. The engine output is limited to 80%. The regulation value (%) varies according to the freezing status. Continue the warm-up operation and the DEF/AdBlue® will thaw.

**NOTE :****• The limited engine output level:**

The text [Lv.1] and [Lv.2] displayed next to the icon represents the limited engine output level.

[Lv.1]- Level 1: Within 50% of max torque and 60% of engine speed.

[Lv.2]- Level 2: Within engine near idling speed.

**• After an error has occurred, it may be necessary for the engine output to become limited to [Lv.2].**

Depending on trouble spots and contents, the indicator-prompted warnings and the engine output limits and timings may vary accordingly.

The SCR warning status (from 1 to 3) represents the severity order of the engine output limitation. If the SCR system experiences abnormalities, an error code will be displayed, and it may be necessary to limit the engine output to idle status [Lv.2].

For example, when a [ENG P-204F (FMI 1, SPN 1761)] error code is displayed, the engine output changes from unrestricted to [Lv.2] limited.

**• Points after taking measures.**

After the engine has stopped and the DEF/AdBlue® has drained, if the amount that was refuelled is less than the pre-drain amount, the SCR system may experience a malfunction; [P20F5 (FMI 15, SPN 4350)] error code is displayed.

When the error occurs, turn the key switch to "OFF", wait for the SCR system to complete the purge process (this may take several minutes) and then turn the key switch to "ON" again in order to clear the SCR system malfunction.

**• When there is a shortage of DEF/AdBlue®, when it has been refilled with a poor-quality product, or when there is an abnormality in the SCR system, the auto and parked regeneration for diesel particulate filter (DPF) may not function.****• The time displayed on the lower right of the icon represents the minimum time until the limitation begins.****• The 40 hours warning record.**

1. Basically, warning and/or inducement reduction cancel when the fault location is repaired.

2. However, if it detects any fault within 40 hours of the restoration, it soon returns to the previous failure and the timer restarts counting down.

3. The 40 hours warning record will be reset if any fault has not been detected over 40 hours from the repair.  
If a fault is detected after the 40 hours warning record reset, then the new countdown will be stated.

## 4. Storing and handling DEF/AdBlue®

- Because DEF/AdBlue® is an urea aqueous solution, it begins to freeze at ambient temperatures below –11 °C (12 °F). In winter, handle it with sufficient care.
- DEF/AdBlue® may be stored in the tractor's tank for up to 4 months. If the storage area's ambient temperature rises above 30 °C (86 °F), however, its storage life will be markedly reduced.

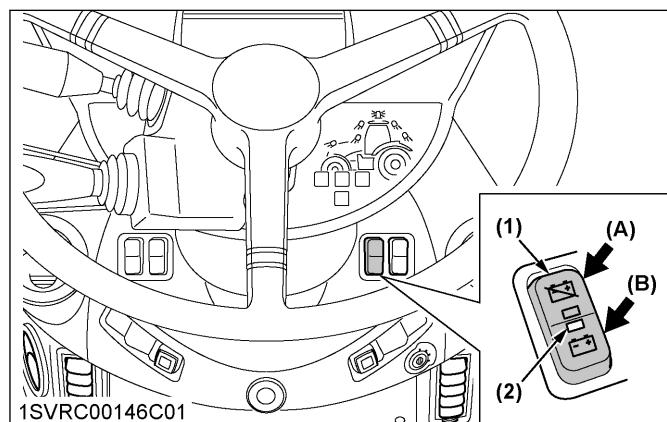
### Storage method

- Store the solution in a well-sealed container.
- Place the container in a location not exposed to direct sunlight.
- Place the container in a well-ventilated spot.
- Keep the container in a spot without violent temperature changes.
- Keep the container away from any containers of gasoline and diesel fuel.

# STARTING THE ENGINE

## 1. Setting the battery switch

- Before getting the engine started, set the battery switch to the "ON" position.  
With the switch at "OFF", the engine fails to start.
- When the battery switch is turned on, the indicator will be on.
- After the work has ended or before a temporary storage, set the battery switch to the "OFF" position.
- Before long-term storage, disconnect the battery cables from the battery terminals.



### NOTE :

- By keeping the battery switch at "OFF", there will be a smaller risk of battery fire caused by wrong cabling.

- Even when the battery switch is "OFF", small current for the clock and other devices is constantly flowing.
- After turning the key switch to "OFF" and stopping the engine, the SCR system automatically begins to cool off the system and extract DEF/AdBlue® from the lines. Even if the battery switch is turned to "OFF" in order to accomplish this task, the power will be sustained for about 15 minutes to protect the SCR system components. The indicator for the battery switch will blink while energized and turn off when energization is completed.
- Remove the battery after the indicator is turned off.

## 2. Engine starting procedure

Preheating of the engine is automatic. Make sure the heater indicator goes out and then get the engine started.

- Set both the foot throttle and the hand throttle to the minimum speed position and start the engine.
- When getting the engine started, the main gear shift and shuttle gear shift are automatically locked at the "NEUTRAL" position. The PTO clutch control switch also turns itself off.  
Before operating the machine, return these levers and switches once to "NEUTRAL (OFF)" and set them again as required.
- When the engine is stalled by the heavy load applied, please key off once and re-start the engine after 5 seconds or more.
- The lock/unlock status of the hydraulic lifting unit before stopping the machine has been put in memory. Get it locked or unlocked as required.

## 3. Security setting for engine starting

Turn on the key switch, check that password number input screen is displayed on the liquid crystal (message) monitor, and use [Select] and [ENT] switches to input a 3-digit password number.

### NOTE :

- Security function is turned "OFF" at factory shipment.
- Details regarding the security function "ON" and "OFF" and how to change or enter the password number can be found in a different section.  
(See ENGINE START SECURITY FUNCTION on page 182.)

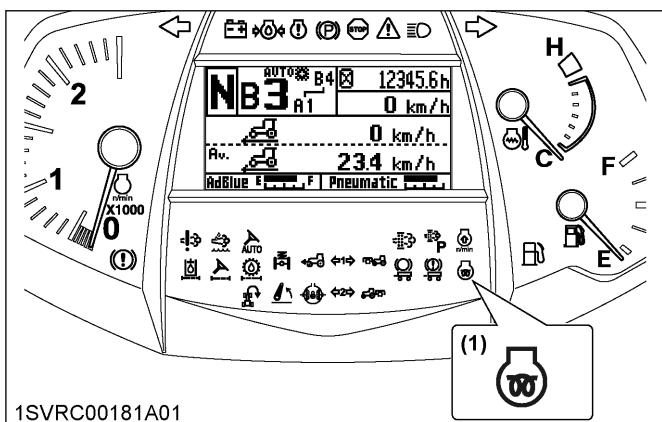
- If you enter the wrong password number 10 times in a row, [PASS - NG] is displayed on the liquid crystal (message) monitor and the engine cannot be started. In this case, consult your local KUBOTA Dealer.
- You can restart the engine without entering the password number when within 10 minutes after stopping the engine. When the battery is removed, you must enter the password number even within 10 minutes.

## STARTING THE ENGINE IN COLD WEATHER

If the ambient temperature is below 0 °C (32 °F) and the engine is very cold, perform the following procedure:

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

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



(1) Heater indicator

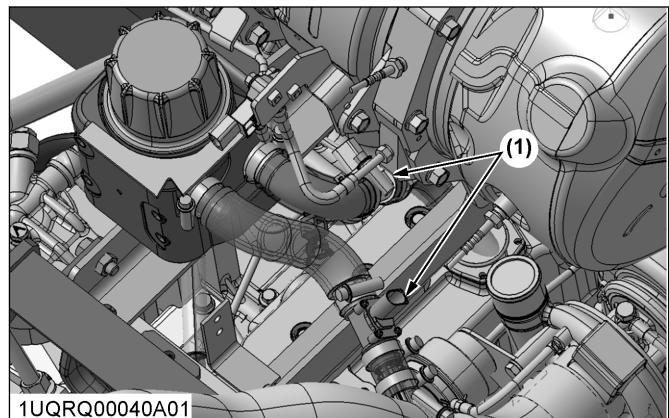
- Turn the key to the start position and the engine should start.
- If the engine fails to start after 10 seconds, turn off the key for 30 seconds and then repeat steps 1 and 2.

To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.

### 1. Anti-frost heater for oil separator (if equipped)

The heater element operates continuously when the key switch is in the "ON" or "START" position.

Due to high electrical draw, extended idle time or operations will drain the battery and stop the tractor.



(1) Heater

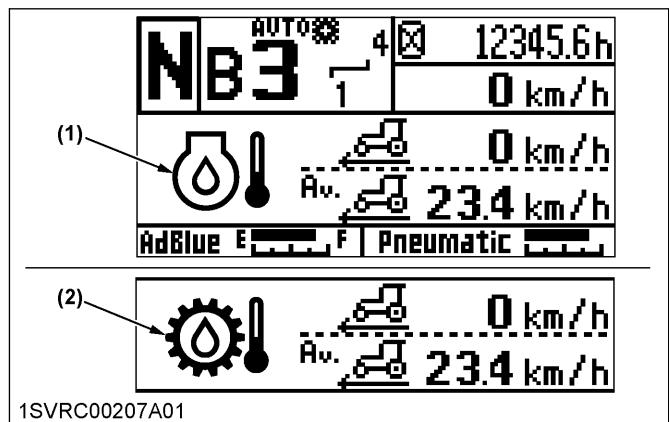
### 2. Block heater (if equipped)

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

### 3. Engine low temperature regulation

In order to prevent engine damage due to rapid acceleration, if starting the engine when coolant temperature is approximately 0 °C (32 °F) or below, the engine rpm will be kept at approximately 1400 for up to 3 minutes, and the operator will be informed by indicator and intermittent buzzer. The regulation time varies in response to the coolant temperature.

During regulation, perform warm-up operation without using the accelerator. After regulation, the engine rpm can be gradually increased. When regulation has been completely released, the indicator will go off and the buzzer will stop.



(1) Engine low temperature regulation indicator

(2) Transmission low temperature regulation indicator

#### NOTE :

The indicator lighting condition will vary depending on the specification.

- For Standard, Premium models:
  - If the cooling water temperature is 0 °C (32 °F) or below, the engine low temperature

regulation indicator will light up and the buzzer will sound.

- For Premium KVT models:

- If the cooling water temperature is 0 °C (32 °F) or below and the transmission oil temperature is -7 °C (19 °F) or more, the engine low temperature regulation indicator will light up and the buzzer will sound.
- If the cooling water temperature is 0 °C (32 °F) or below and the transmission oil temperature is also -7 °C (19 °F) or below, the engine low temperature regulation indicator and transmission low temperature regulation indicator will alternately light up and the buzzer will sound.
- If the transmission oil temperature is -7 °C (19 °F) or below when engine low temperature regulation has been released, the buzzer will stop but the transmission oil low temperature regulation indicator will remain lit.

#### 4. DEF/AdBlue® freeze warning

When operating in cold weather, the DEF/AdBlue® is automatically thawed while the engine is running. However, in weather conditions of under -30 °C (-22 °F), the DEF/AdBlue® cannot be completely thawed and thus, an error/warning code [P208B] appears on the instrument panel's LCD screen.

If the error/warning code [P208B] appears on the screen, stop the engine and restart it after 10 seconds. After restarting the engine, the error/warning code [P208B] will disappear and the thawing of the DEF/AdBlue® will resume.

In case the error/warning code [P208B] remains on the screen even after restarting the engine several times, contact your local KUBOTA Dealer.

## STOPPING THE ENGINE

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

**NOTE :**

- If removing the key does not stop the engine, consult your local KUBOTA Dealer.
- After turning the key switch to "OFF" and stopping the engine, the SCR system automatically begins to cool off the system and extract DEF/AdBlue® from the lines.

Operating sound may continue to be heard from the SCR system (for example, from the DEF/AdBlue® tank or DEF/AdBlue® pump) after stopping the engine, but this is the operating sound of the SCR system and not an abnormal sound.

## WARMING UP THE ENGINE

### ⚠ WARNING

To avoid personal injury or death:

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

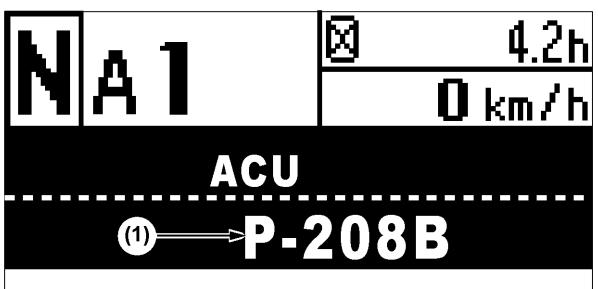
For 5 minutes after engine start-up, allow the engine to warm up without applying any load; this is to allow oil to reach every engine part. If load should be applied to the engine without this warm-up period, trouble such as seizure, breakage or premature wear may develop.

### 1. Warm-up and transmission fluid at low temperature range

Hydraulic oil serves as transmission fluid. In cold weather, the oil may be cold with increased viscosity. This can cause delayed oil circulation or abnormally low hydraulic pressure for some time after engine start-up. This in turn can result in trouble in the hydraulic system.

To prevent the above, observe the following instructions:

Warm up the engine at about 50% of rated rpm according to the following table:



1SVRC00213A01

(1) Error/warning code

Ambient temperature	Warm-up time requirement
Higher than 0 °C	Approx. 5 minutes
0 to -10 °C	10 to 20 minutes
-10 to -20 °C	20 to 30 minutes
Below -20 °C	More than 30 minutes

**IMPORTANT :**

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

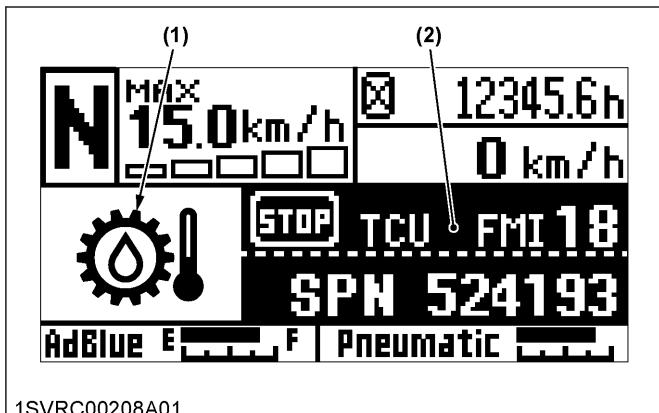
## 2. Transmission low temperature (premium KVT model only)

In order to prevent transmission damage due to poor lubrication and so on, when the transmission fluid temperature is approximately -7 °C (19 °F) or below, regulation will take place depending on the fluid temperature as in the following table. As well, the operator will be informed during regulation by indicator and message.

During regulation, perform warm-up operation without using the accelerator.

When the indicator goes off and the message disappears, gear shifting is available.

Transmission fluid temperature	Regulation time	Regulation content
-7 °C to -15 °C (19 °F to 5 °F)	Approx. 3 min	
-16 °C to -20 °C (4 °F to -4 °F)	Approx. 5 min	<ul style="list-style-type: none"> <li>• No start (shuttle gear neutral)</li> <li>• Engine rpm kept at approx. 1100 to 1400</li> </ul>
-21 °C to -30 °C (-5 °F to -22 °F)	Approx. 7 min	



1SVRC00208A01

- (1) Transmission low temperature regulation indicator  
(2) Message (for example: [TCU FMI 18 SPN 524193])

**NOTE :**

- If the cooling water temperature is 0 °C (32 °F) or below and the transmission oil temperature is

also -7 °C (19 °F) or below, the engine low temperature regulation indicator and transmission low temperature regulation indicator will alternately light up.

- If the cooling water temperature is 0 °C (32 °F) or below when transmission low temperature regulation has been released, the engine low temperature regulation indicator will remain lit.

## JUMP STARTING

### **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 :**

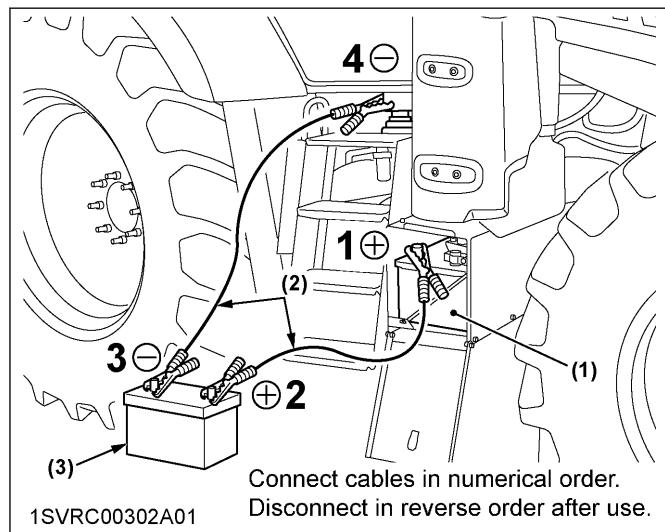
- The vehicles must not touch.

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.



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

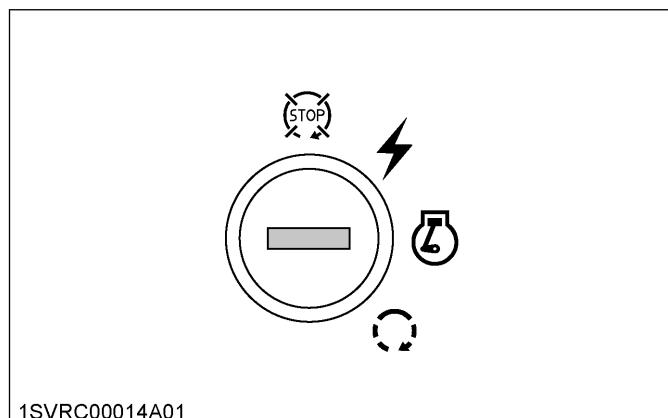
#### IMPORTANT :

- 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.
  - 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.

## ENGINE OPERATION

### 1. Key switch

The starter switch has 4 positions.



- "OFF" (engine-stop)  
 "ACC" (electrical power-accessories)  
 "ON" (engine-run)  
 "START" (engine-start)

#### NOTE :

##### Regarding ACC:

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

### 2. Engine power boost

In any of the following conditions, the engine output is boosted for higher working efficiency. For work requiring no high output, on the other hand, the machine runs at standard output level with fuel economy in mind.

#### Trailer towing work

When the travelling speed rises above 20 km/h (12.4 mph), the engine output boosts itself. When it drops below 18 km/h (11.2 mph), the power boost turns itself off.

#### PTO operation

When the PTO clutch is engaged, the engine output boosts itself.

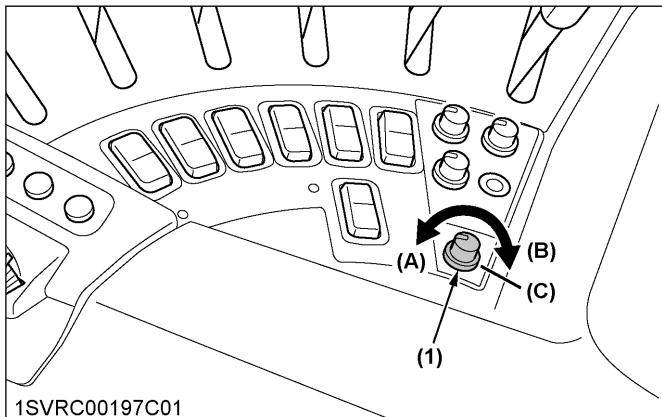
### 3. Rev-limiter control setting

When the rev-limiter control is used to restrict the maximum engine speed, the engine speed will not exceed the set speed even when the hand throttle or foot throttle is operated. This can prevent machine trouble caused by incorrect operation.

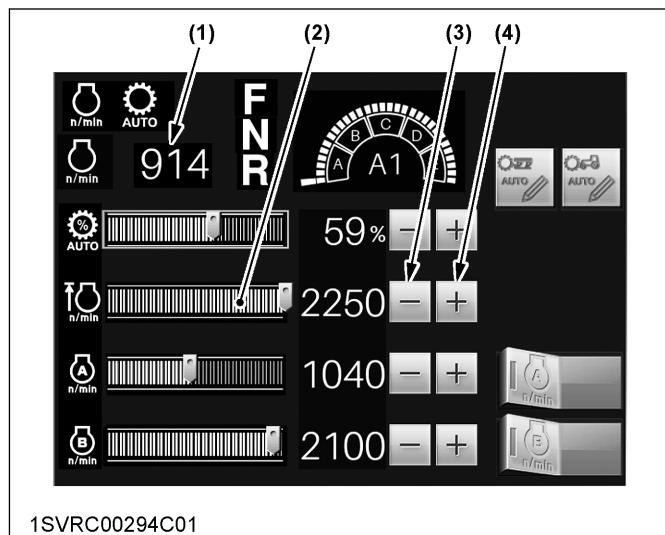
#### Setting the speed (Standard model)

The setting can be made both when the engine is running and when it is stopped.

- Set the speed by turning the dial to the left or right while watching the engine speed that is displayed on the LCD
- When the dial is turned all the way to the right, the restriction is cancelled

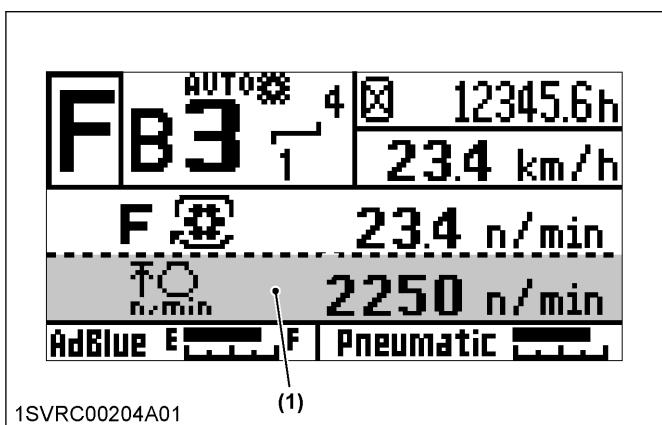


(1) Rev-limiter control dial  
 (A) "LOW-SPEED SIDE"  
 (B) "HIGH-SPEED SIDE"  
 (C) "CANCELED"



(1) Engine rpm  
 (2) Engine rev-limit control  
 (3) Minus (-) switch  
 (4) Plus (+) switch

When the engine rev-limit is preset with the LCD indicator on the instrument panel, the speed can be monitored with the following indicator.



(1) Maximum engine speed

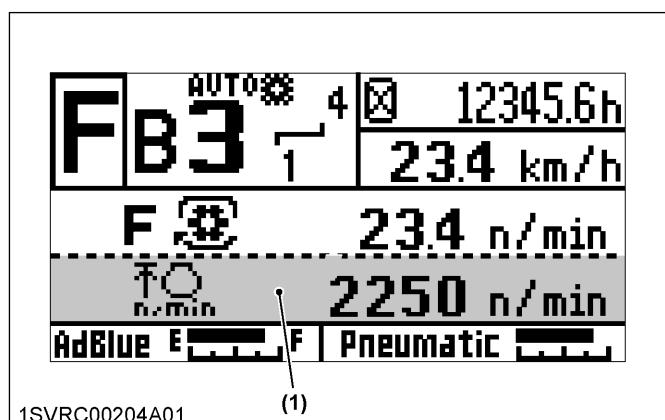
#### NOTE :

- When the engine rev-limit is preset with the LCD indicator on the instrument panel, the speed can be monitored with the following indicator.

#### Setting the speed (Premium and Premium KVT models)

Maximum engine speed can be preset on the K-monitor.

(See Setting the engine and CVT (Premium KVT model only) on page 98.)



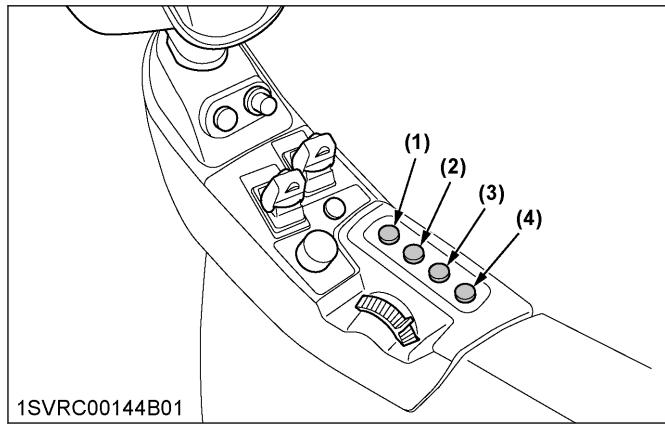
(1) Maximum engine speed

#### 4. RPM dual memory setting

Two different engine speeds can each be set with a single touch by pressing the (A) or (B) rpm memory

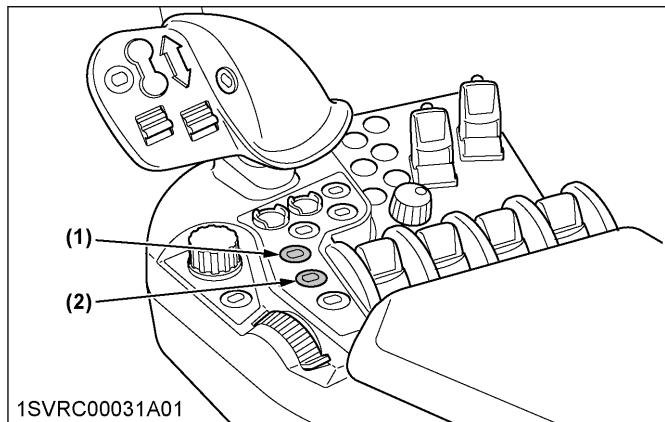
buttons or switches. This can be used to eliminate troublesome acceleration operations.

#### Standard model

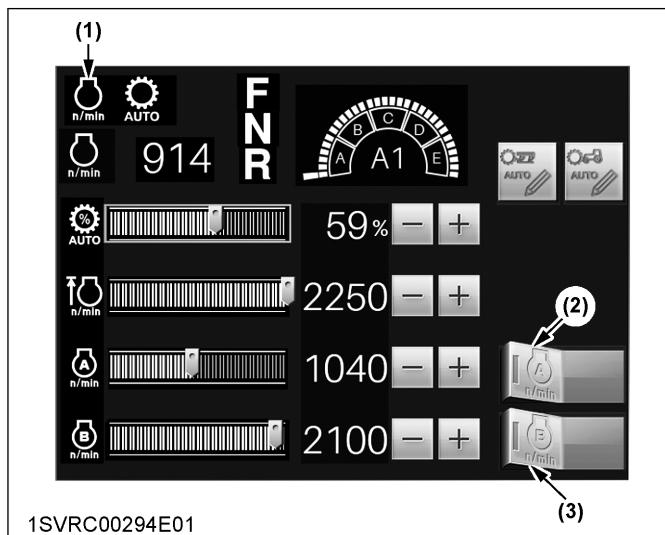


- (1) Engine rpm memory button (A)
- (2) Engine rpm memory button (B)
- (3) Engine rpm memory adjustment button (up)
- (4) Engine rpm memory adjustment button (down)

#### Premium, Premium KVT models



- (1) Engine rpm memory button (A)
- (2) Engine rpm memory button (B)



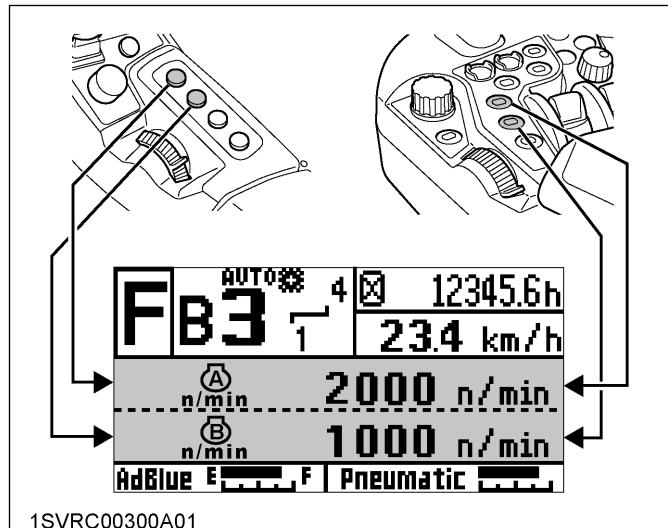
- (1) Engine rpm memory (A/B) indicator
- (2) Engine rpm memory switch (A)
- (3) Engine rpm memory switch (B)

#### NOTE :

- To activate the set engine rpm memory (A) or (B), touch the left half of the engine rpm memory switch (2) or (3). Touch the right half of switch to deactivate.

#### Example of use

Consider an example in which an engine speed of 2000 rpm is set for the button (A) and a speed of 1000 rpm is set for the button (B).



Work ↓		
During work, simply press the button (A) to automatically set an engine speed of 2000 rpm.		
Turning ↓		
When turning, press the button (B) to lower the speed to 1000 rpm, allowing turning at low speed.		
Work		
After turning, press the button (A) again to resume a speed of 2000 rpm.		

- Keep the hand throttle above the minimum speed. At the minimum speed, a memory set-up cannot be performed.
- You can also depress the foot throttle to increase the engine speed above the set speed.

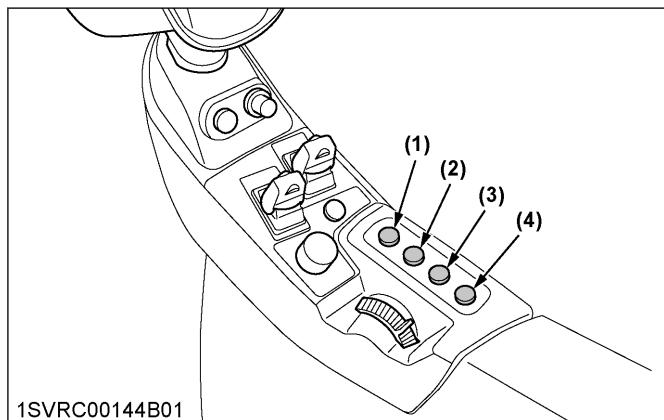
## 4.1 Setting the speeds (Standard model)

### Setting 1 (with the engine running)

1. First make sure that the indicators of the *engine rpm memory* buttons (A) and (B) are both off.
2. Using the hand throttle, increase the engine rpm to the desired preset level.
3. Hold down the *engine rpm memory* button (A), and the current rpm level is memorized in the *engine rpm memory* button (A) as memory rpm take the same procedure for the *engine rpm memory* button (B).

### Setting 2

1. Before making the *engine rpm memory* setting with the engine off, get the *memory rpm* levels (A) and (B) displayed in the LCD on the instrument panel and check the levels to readjust.  
(See Basic information monitor and performance monitor on page 66.)
  2. Make sure that the indicators of the *engine rpm memory* buttons (A) and (B) are both off. Then set the hand throttle above the minimum speed.
  3. Press the *engine rpm memory* button (A) (its indicator lights up).
  4. While checking the *memory rpm* displayed in the LCD, set a desired rpm with the *engine rpm memory* adjustment button (up) or (down). Every time the relevant button is touched, the speed changes in 10-rpm increments or decrements. Hold down the button, and the speed continuously changes.
- Use the same procedure for the *engine rpm memory* button (B).



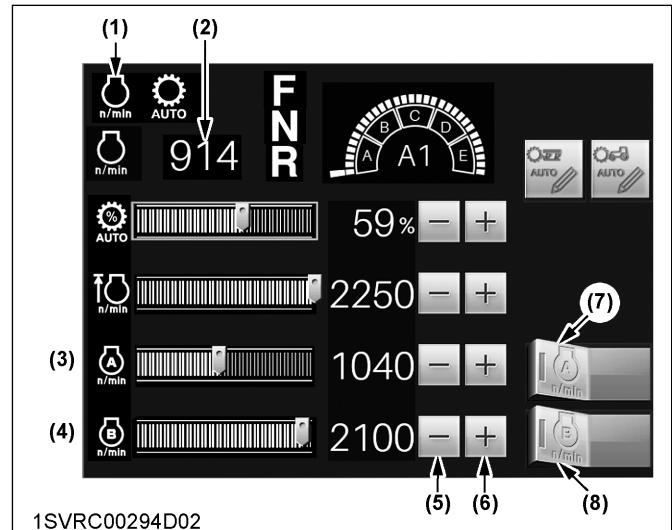
- (1) Engine rpm memory button (A)
- (2) Engine rpm memory button (B)
- (3) Engine rpm memory adjustment button (up)
- (4) Engine rpm memory adjustment button (down)

## 4.2 Setting the speeds (Premium and Premium KVT models)

Two different engine rpm levels can be present on the K-monitor screen.

Details regarding the engine transmission settings can be found in a different section.

(See INTELLIPANEL™ CONTROL on page 59.)



- (1) Engine rpm memory (A/B) indicator
- (2) Engine rpm
- (3) Engine rpm memory (A) control
- (4) Engine rpm memory (B) control
- (5) Minus (-) switch
- (6) Plus (+) switch
- (7) Engine rpm memory (A) switch
- (8) Engine rpm memory (B) switch

### NOTE :

- The set speeds will be stored even after the engine is stopped.

## 4.3 Cancelling the setting (all models)

Any of the following actions will cancel the *rpm dual memory* settings.

1. For the switch (A) side, when the memory speed is engaged, press the switch (A) again to cancel. For the switch (B) side, when the memory speed is engaged, press the switch (B) again to cancel.
2. When the memory speed is cancelled, the speed will return to the speed that is determined by the hand throttle (foot throttle).
3. Return the hand throttle to the lowest speed position.

4. Turn the key switch to “OFF”.

**NOTE :**

- If the *memory rpm* level has been preset beyond the engine rev-limiter setting, the engine rpm will not rise above the rev-limit.

Take an example in which the engine rev-limiter is 1230 rpm and the memory speed is 2000 rpm. The engine speed will rise only up to 1230 rpm.

# OPERATING THE TRACTOR

## OPERATING NEW TRACTOR

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

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

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

### 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 249.)

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



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## OPERATOR'S POSITION CONTROLS

### NOTE :

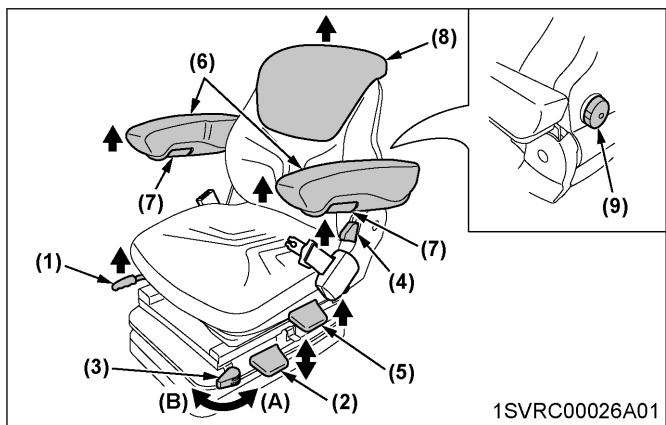
- The seat and suspension should be adjusted to ensure that the controls are comfortably at hand for the operator, ensuring that the operator maintains a good posture and minimises risks from whole body vibration.

### 1. Operator's seat

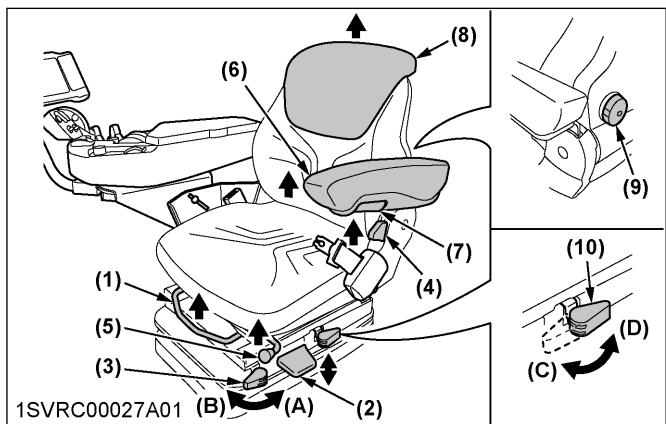
#### WARNING

##### To avoid personal injury or death:

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

**Standard model**

- (1) Travel adjust lever (A) "ON"  
 (2) Weight and height adjust lever (B) "OFF"  
 (3) Fore and aft isolator  
 (4) Backrest tilt adjust lever  
 (5) Swivel adjust lever  
 (6) Arm rest  
 (7) Armrest adjustment  
 (8) Backrest extension  
 (9) Lumbar support adjust knob

**Premium, Premium KVT model**

- (1) Travel adjust lever (A) "ON"  
 (2) Weight and height adjust lever (B) "OFF"  
 (3) Fore and aft isolator (C) "FIRM"  
 (4) Backrest tilt adjust lever (D) "SOFT"  
 (5) Swivel adjust lever  
 (6) Arm rest  
 (7) Armrest adjustment  
 (8) Backrest extension  
 (9) Lumbar support adjust knob  
 (10) Firmness adjustment knob

**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 up or pushing down the weight and height adjust lever with the tractor in a stationary position and the operator sitting on the seat. The seat can be adjusted in its adjustable range.

**NOTE :**

- If the seat is lowered below the adjustable range, it automatically comes up to the lower limit of the adjustable range just when the weight and height adjust lever is released.
- When turning on the key switch, the seat may slightly move up depending on a preset seat position (height).

**IMPORTANT :**

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

**Fore and aft isolator**

Set the isolator in "ON" position so that shock impacts in the direction of travel can be better absorbed by the seat.

**Firmness adjustment (Premium, Premium KVT models only)**

The seat suspension can be adjusted as follows:  
Turn the firmness adjustment knob to the (C) position for the firmer ride or (D) position for the softer ride.

**Lumbar support adjustment**

Turn the lumbar support adjust knob to the desired position.

**Tilt adjustment**

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

**Backrest extension**

Pull the backrest extension to the desired height.

**Arm rest**

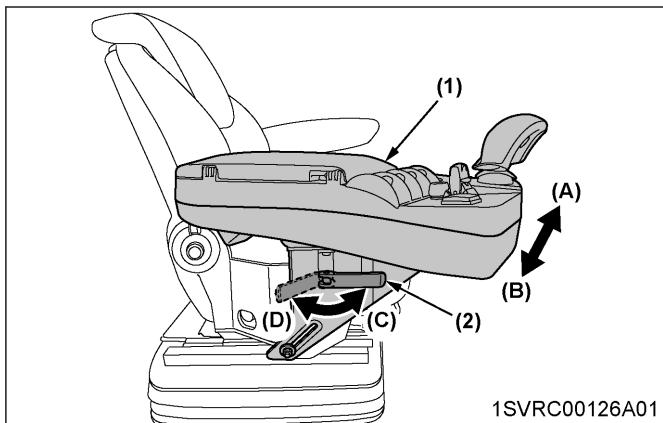
Armrest may be set at upright position if desired.

**Arm rest height adjustment**

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

**RH armrest (Premium, Premium KVT models only)**

The right arm rest height is adjustable. To reposition the arm rest height, unlock the lock handle and slide the arm rest upward or downward, and securely lock it by hand so that you can operate the levers and switches comfortably.

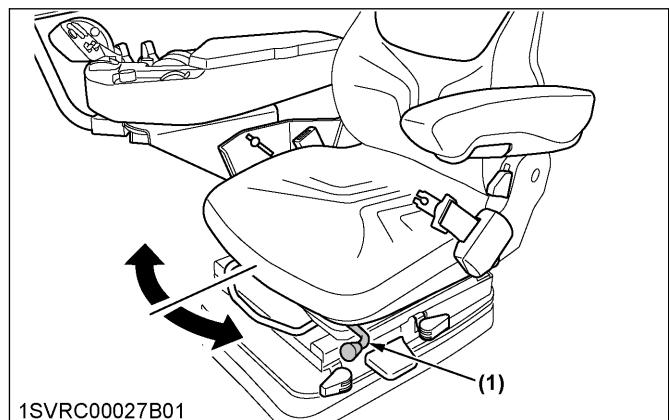


(1) RH armrest  
(2) Lock handle

(A) "HIGH"  
(B) "LOW"  
(C) "LOCK POSITION"  
(D) "UNLOCK POSITION"

1SVRC00126A01

### Premium, Premium KVT models



1SVRC00027B01

(1) Swivel adjust lever

#### Swivel adjustment

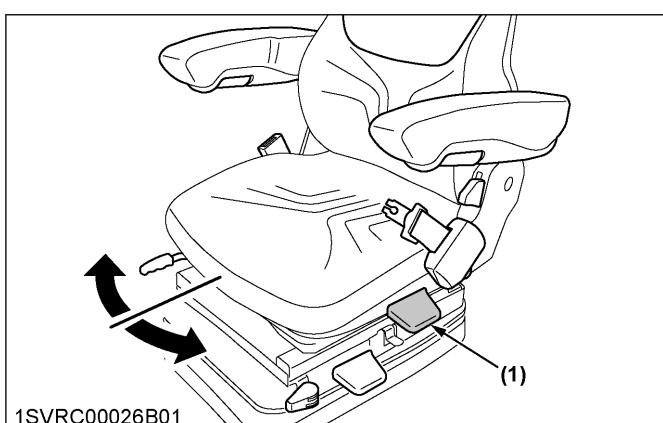
Unlock the swivel adjust lever and rotate the seat right or left as desired.

#### NOTE :

##### Using the swivel seat:

- **Swivel the seat to the right and left to position yourself comfortably for jobs in which you need to look rearwards.**
- **Turn the seat to the left to facilitate getting in and out of the tractor.**
- **The seat can swivel in both directions.**

#### Standard model



(1) Swivel adjust lever

## 2. Operator presence control (OPC) system

The tractor is equipped with a system which stops the PTO and activates a warning buzzer.

This system functions according to the conditions below.

##### When the tractor is stopped:

- Even if the PTO clutch control switch is engaged, the PTO will not start if the operator is standing up from the operator's seat.
- If the key switch is at "ON" position (engine running or not) and the parking brake is not applied, standing up from the operator's seat will set off the warning buzzer.
- If the engine is running, standing up from the operator's seat will stop the PTO.

##### When the tractor is moving:

- Standing up from the operator's seat will set off the warning buzzer and the PTO will continue rotating.

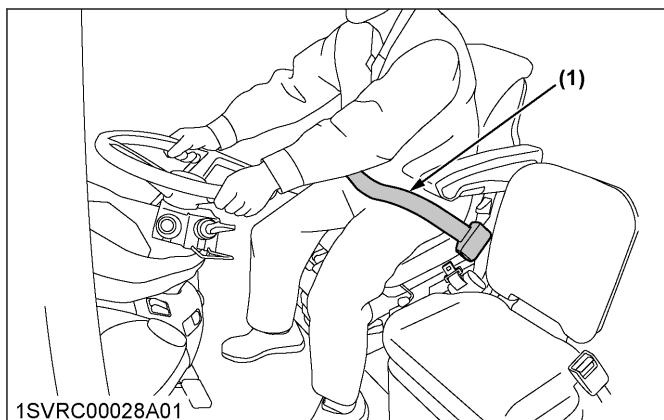
## 3. Seat belt

### WARNING

#### To avoid personal injury or death:

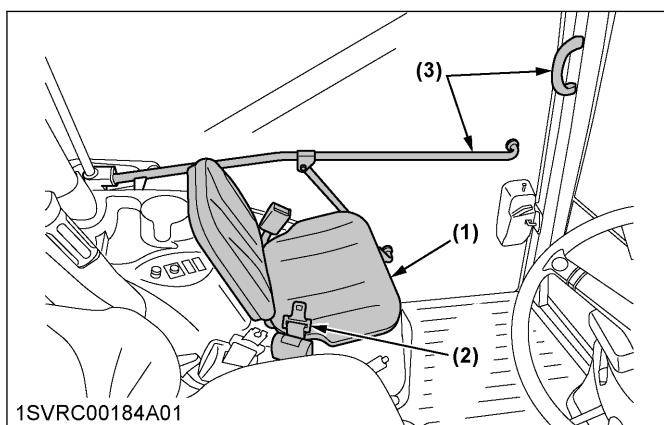
- **Always use the seat belt when a ROPS or CAB is installed.**

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



(1) Seat belt

#### 4. Passenger seat (if equipped)



(1) Passenger seat

(2) Seat belt

(3) Handrail

##### Intended use

The passenger seat is intended for carrying one adult person on public roads, not for carrying anything else. Do not transport the passenger in the field and also on the non-public roads.

Understanding the previously mentioned purposes, do not use this seat under any other conditions than specified.

The conditions which show as examples not to use this seat are as follows.

- Do not allow any others on the passenger seat except for one adult person even on public roads. Never allow children to sit down on this seat.
- Use this seat only for carrying one adult person on public roads, not for carrying anything else.
- Never use this seat on any locations where the machine might turn over. Never operate the machine prone to turn over, either. Slopes, rough terrains, high-speed running, sharp turns, towing, sudden starting, stopping, etc.
- Do not use this seat whenever the operator's view is affected by bad weather (such as rain and fog) or in the late afternoon.

## ⚠️ WARNING

To avoid personal injury or death:

- Always wear your seat belt and stabilise your body by holding the handrail on the CAB frame.
- The passenger seat is intended for carrying one adult person on public roads. Do not allow any others on the passenger seat except for one adult person even on public roads. Never allow children to sit down on this seat.
- The left hand door must be closed at all time whenever the passenger seat is occupied and the tractor is in motion.
- Do not permit others to ride, except on the designated passenger seat.
- Use caution to avoid the risks of obstructing operator's view, falling from the machine and interfering with controls.
- Do not start and stop the tractor suddenly, nor take sharp turn.
- Do not use the passenger seat if the seat belt or the door lock fails to function.
- Do not use this seat if the road shoulder is too soft or the road is too narrow.
- When opening and closing the door from the passenger-seat-sitting position, move the door slowly. This is to prevent his or her hand(s) from getting caught by the door or his or her body to hit against the door.

#### 4.1 Precautions in using the passenger seat

##### When getting on the tractor

1. The operator is supposed to move the tractor onto a flat surface and to apply the parking brake for a complete stop.
2. Before use, make sure the seat is securely fixed. And get on the tractor. In getting on the tractor, stabilise yourself by holding the specified handrail with attention not to get in contact with any control levers.
3. Fasten the seat belt and close the door. Then get the door locked.

##### While the tractor is in motion

1. The person on the passenger seat should take due care not to interfere with the operator's actions.
2. While sitting, be sure to keep the seat belt fastened. The person on the passenger seat is supposed to grip the handrail to prevent him or her from getting out of balance due to violent machine movements.
3. Run the tractor at low speed.

##### When getting off the tractor

1. The operator is supposed to move the tractor onto a flat surface and to apply the parking brake for a complete stop.

2. The person on the passenger seat is supposed to open the door, unfasten the seat belt and get out of the tractor.
3. Rewind the seat belt back into its case.

**NOTE :**

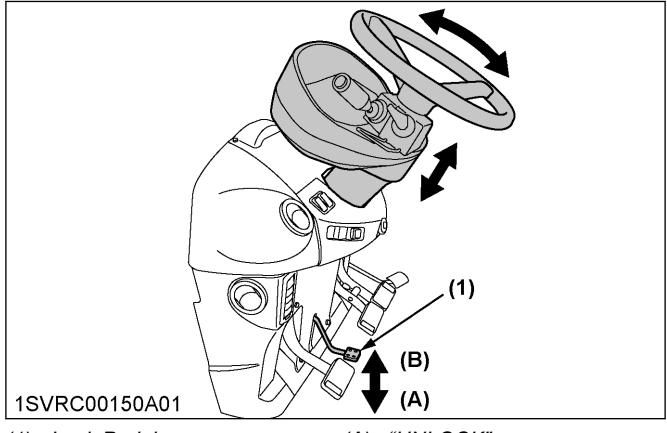
- The passenger seat can be used only when permitted by your local laws. Consult your local KUBOTA Dealer for further details.
- The passenger seat conforms to the EC regulations.

## 5. Steering adjustment

**CAUTION****To avoid personal injury:**

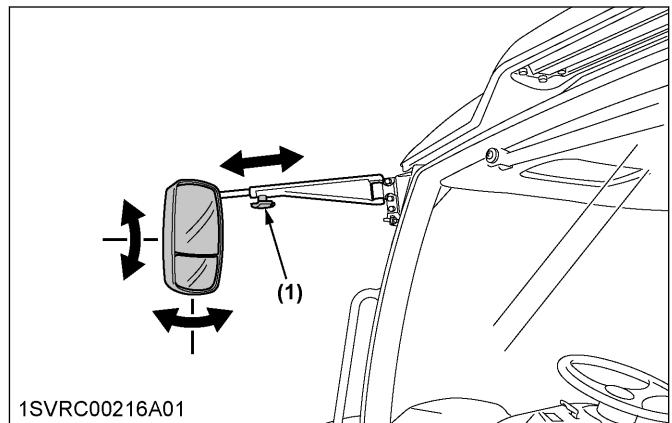
- Do not adjust the steering wheel while the tractor is in motion.

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



## 6. Extendable mirror

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



## 7. 2-sided mirror

A 2-sided mirror which greatly enlarges the field of view on both sides of the tractor is provided as standard equipment.

Adjust the angle of the upper mirror to observe the rear of the tractor and the status of near implement.

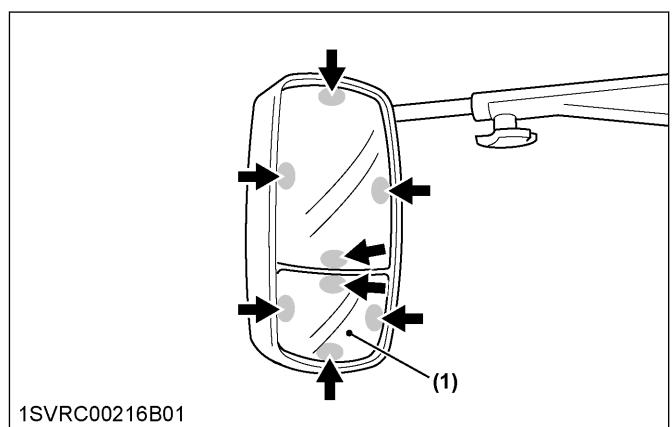
The lower mirror is a wide angle type.

Adjust the lower mirroring order to have a wider view of the rear tyres.

**Adjustment Method**

For both the upper and lower mirror, lightly press the portion highlighted by the arrow in any direction with a fingertip to adjust the angle.

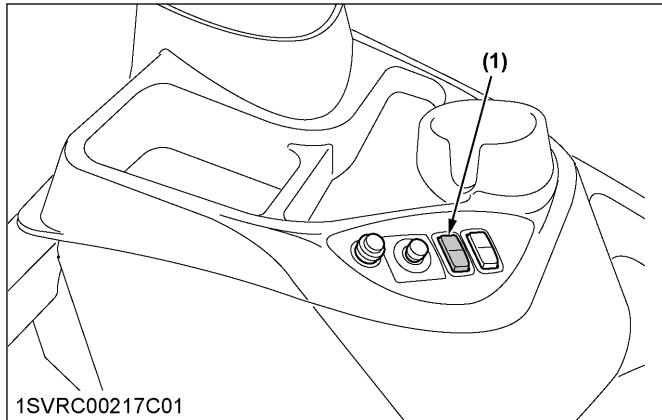
Do not adjust the angle by pressing the 4 corners of the mirror.



## 8. Heater for rear view mirror (if equipped)

The rear-view mirrors are equipped with a defogger function.

To activate defogger, press the heater mirror switch while the key switch is in the "ON" position.



(1) Heater mirror switch

## 9. Remote control mirror (if equipped)

### **!** WARNING

To avoid personal injury or death:

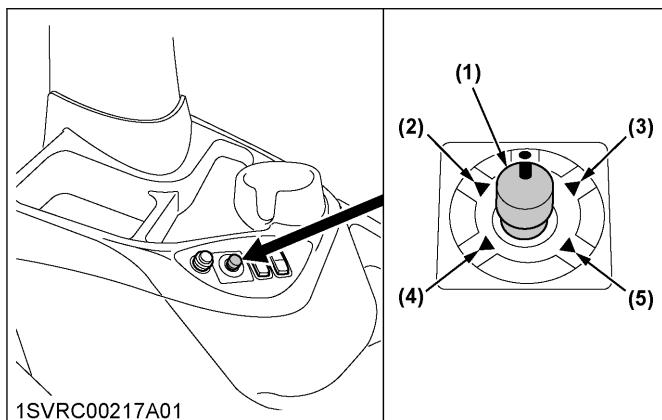
- Adjustment while driving is extremely dangerous.
- Stop the tractor before adjusting the mirrors.

The angle of the left and right rear view mirrors can be adjusted while sitting in the driver's seat.

For confirmation of implements and corps inside the field, rear view while driving on the road, etc, angle adjustment can be done with a single touch as needed.

#### Adjustment Method

1. Set the key switch to "ON" or "ACC" position
2. Use the adjustment knob to adjust the mirror.
3. Adjust the angle of the mirror by tilting the adjustment knob up, down, left or right.
4. Return the adjustment knob to the centre position after the adjustment is completed.



- (1) Adjustment knob
- (2) Upper right mirror adjustment position
- (3) Upper left mirror adjustment position
- (4) Lower right mirror adjustment position
- (5) Lower left mirror adjustment position

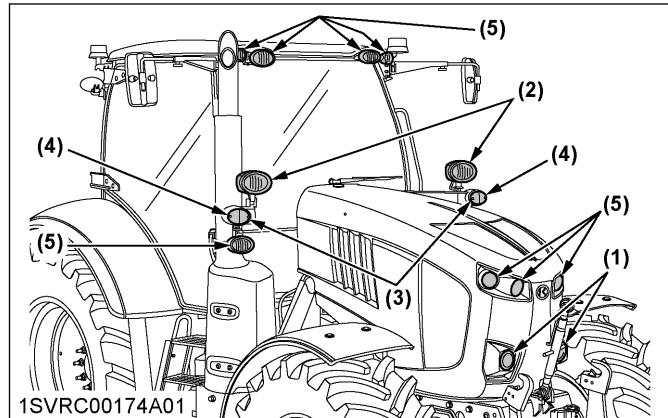
### IMPORTANT :

- Do not hold the mirror with your hand while adjusting.

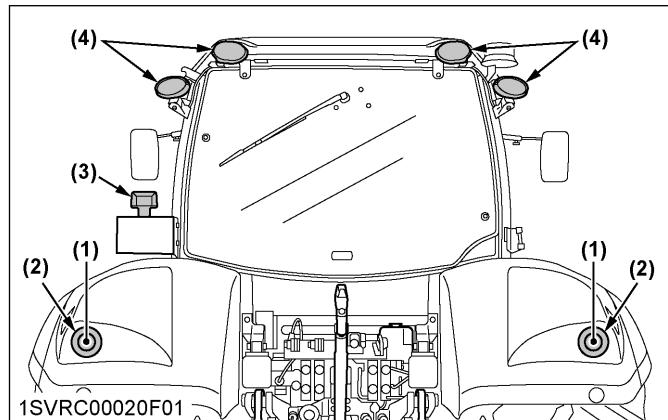
## LIGHT CONTROLS

### 1. Lights

Turn on the repeat headlight only when an implement using the front 3-point hitch obstructs the beam of the headlight.



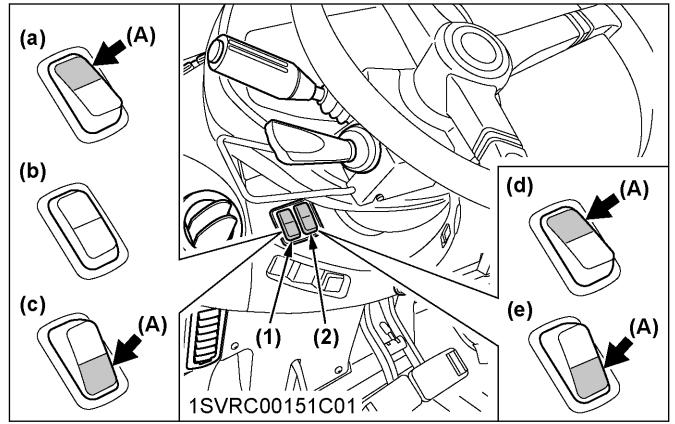
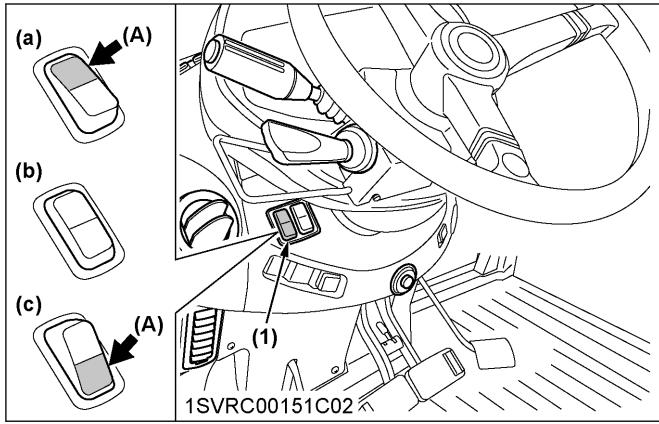
- (1) Headlight
- (2) Repeat headlight (if equipped)
- (3) Position light
- (4) Direction indicator and hazard light
- (5) Work light (if equipped)



- (1) Direction indicator and hazard light
- (2) Stop light and position light
- (3) Rear registration plate light
- (4) Work light (if equipped)

### 1.1 Light switch (without repeat headlight type)

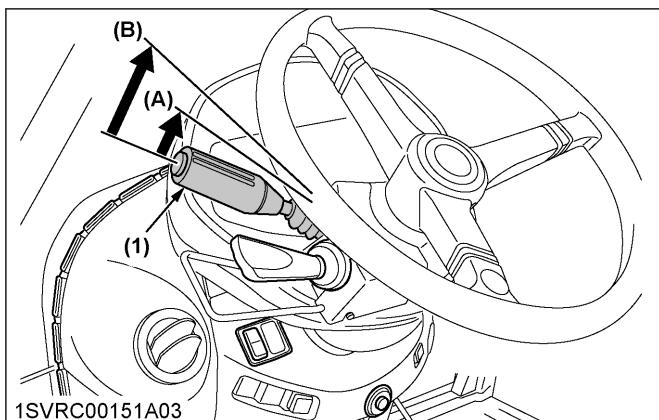
1. Turn the key to the "ON" position.
2. In accordance with the switch positions, the lights in the following table light up.



	Switch position
All lights off	(a) position
Position light on	(b) position
Headlight and position light on	(c) position

#### Headlight beam selection lever

The headlight switches between low and high beam each time you move the lever to the (B) position. When the headlight is on low beam, it will flash when the lever is moved to the (A) position.



(1) Headlight beam selection lever      (A) "Flash" (on low beam)  
 (B) "Low or high beam switch"

#### NOTE :

- High beam indicator will be on when selection lever is in "high beam" position.
- To prompt the operator to turn off the lights, the buzzer starts sounding if the key is turned to off position with lights on.

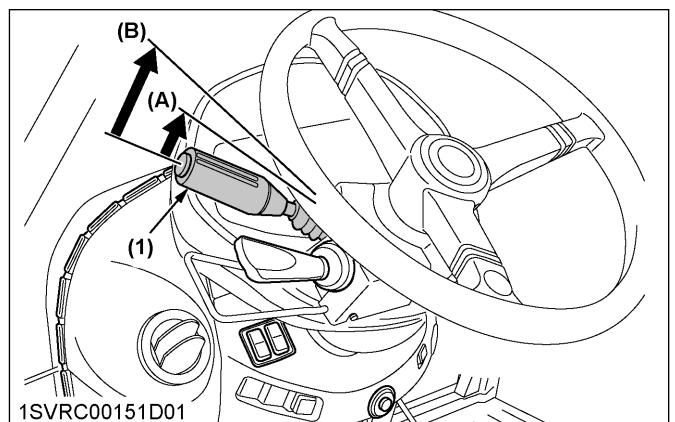
## 1.2 Light switch (with repeat headlight type)

1. Turn the key to the "ON" position.
2. In accordance with combinations of the switches 1 and 2, the lights in the following table light up.

	Switch position	
	Switch 1	Switch 2
All lights off	(a) position	---
Position light on	(b) position	---
Headlight and position light on	(c) position	(d) position
Repeat headlight and position light on	(c) position	(e) position

#### Headlight beam selection lever

The headlight switches between low and high beam each time you move the lever to the (B) position. When the headlight is on low beam, it will flash when the lever is moved to the (A) position.



(1) Headlight beam selection lever      (A) "Flash" (on low beam)  
 (B) "Low or high beam switch"

#### NOTE :

- High beam indicator will be on when selection lever is in "high beam" position.
- To prompt the operator to turn off the lights, the buzzer starts sounding if the key is turned to off position with lights on.

## 2. Direction indicator switch and hazard light switch

### Hazard light

- When the hazard light switch is pushed, the hazard lights flash, along with the LH and RH indicators on the instrument panel.
- Push the hazard light switch again to turn off the hazard lights.

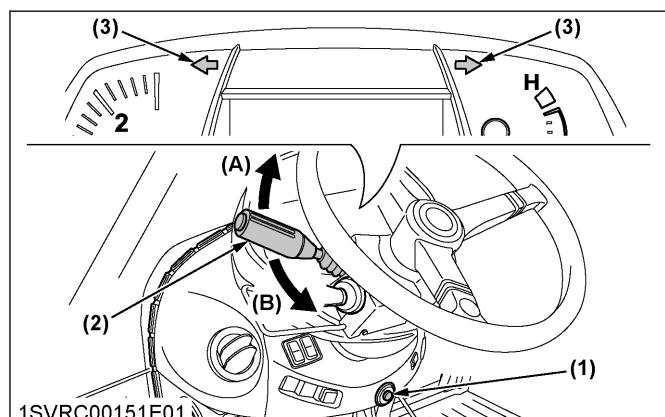
### Direction indicator light

- 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.

#### NOTE :

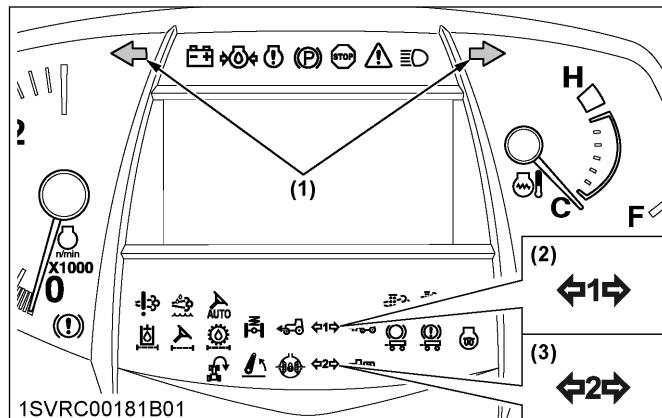
- The hazard light switch is operative when the key switch is in the "ON", "ACC" or "OFF" position.
- The direction indicator light switch is only operative when the key switch is in the "ON" position.
- Be sure to return the direction indicator switch to centre position after turning.



(1) Hazard light switch  
(2) Direction indicator light switch  
(3) Hazard and direction indicator

### Trailer indicator

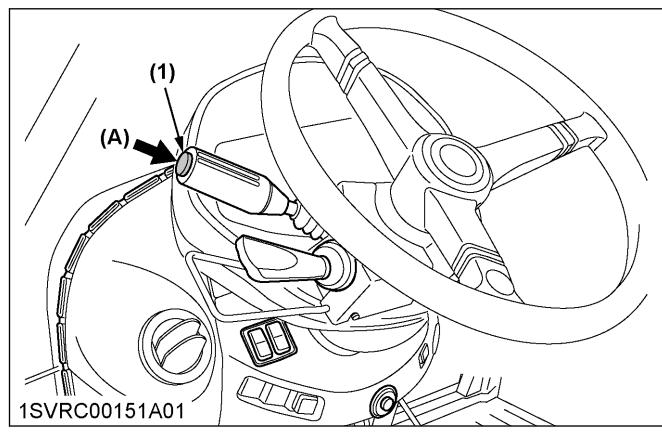
When you operate the direction indicator switch with the trailer power connector connected, the trailer indicator in the instrumental panel also starts flashing along with the direction indicator.



(1) Hazard and direction indicator  
(2) Trailer 1 indicator  
(3) Trailer 2 indicator

## 2.1 Horn button

The horn will sound when the horn button is pressed.



(1) Horn button (A) "PUSH"

## 3. Work light switch

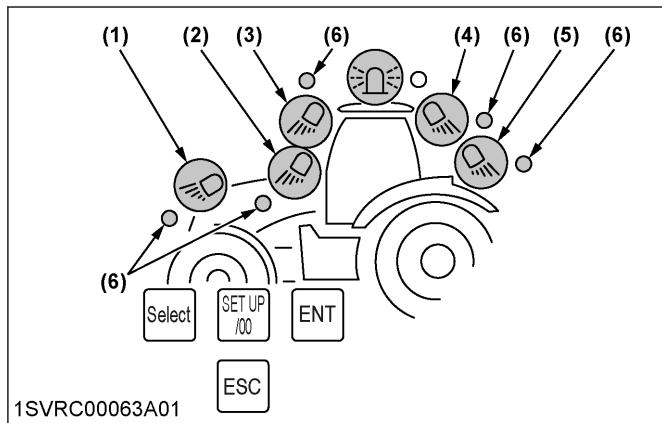
### **WARNING**

To avoid personal injury or death:

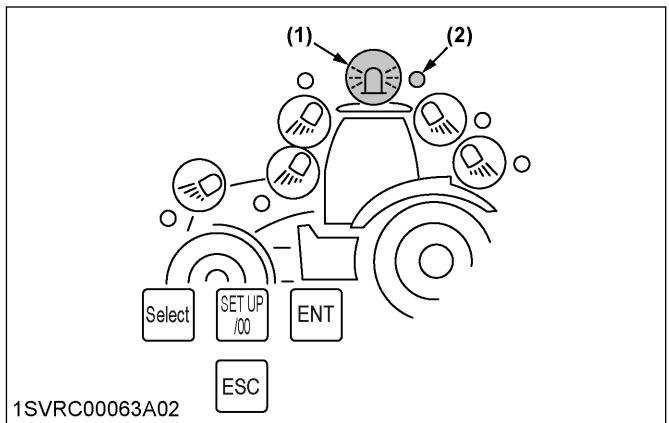
- Do not operate on roads with work lights on. Work lights may blind or confuse the drivers of oncoming vehicles.

Turn on the key switch and press each work light switch. The work light and the switch's indicator light up.

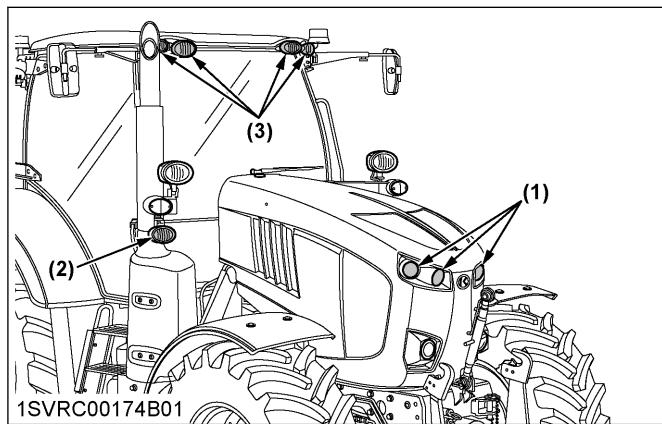
Press each work light switch again to turn off the light and indicator.



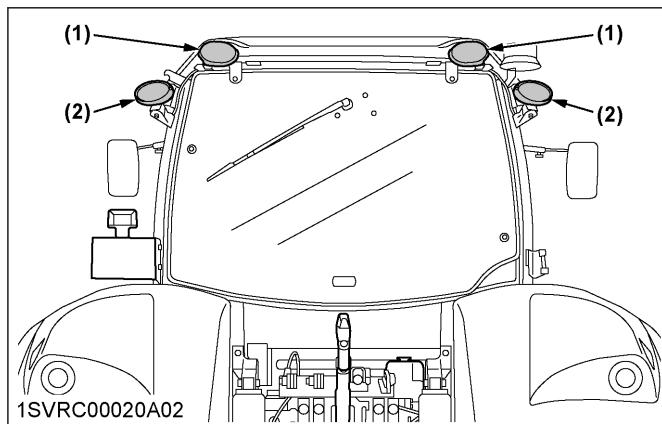
- (1) Front work light switch (engine bonnet)
- (2) Front work light switch (sides of the CAB)
- (3) Front work light switch (roof of the CAB)
- (4) Rear work light switch (roof of the CAB)
- (5) Rear work light switch (rear of the CAB)
- (6) Indicator



- (1) Beacon light switch
- (2) Indicator



- (1) Front work light (engine bonnet)
- (2) Front work light (sides of the CAB)
- (3) Front work light (roof of the CAB)



- (1) Rear work light (roof of the CAB)
- (2) Rear work light (rear of the CAB)

#### 4. Beacon light switch

Turn on the key switch and press the beacon light switch. The beacon light and the switch's indicator light up.

Press the beacon light switch, and turn off the light and the indicator.

## BRAKE CONTROLS

This machine is equipped with the following types of brakes.

Handle appropriately, referencing this manual with your tractor and attached implement(s).

### 1. Foot brake

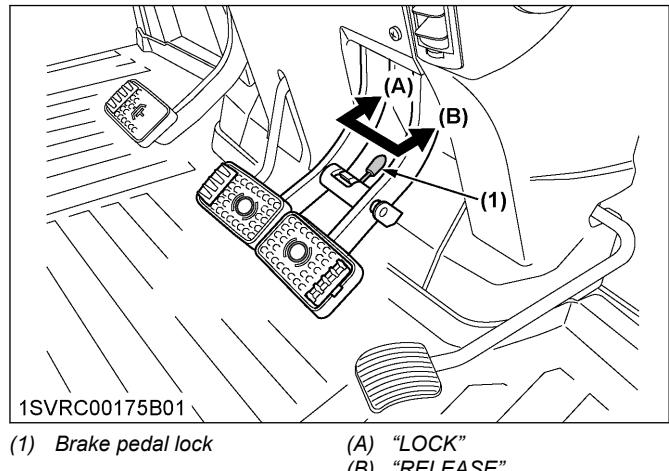
#### WARNING

To avoid personal injury or death:

- Be sure to interlock the right and left pedals. Applying only one rear wheel brake at high speeds could cause the tractor to swerve or roll-over.
- Be sure brake pedals have equal adjustment when using locked together. Incorrect or unequal brake pedal adjustment can cause the tractor to swerve or roll-over.
- Be aware of the enhanced braking characteristics of 4-wheel braking system. Appropriate care should be taken during hard braking and/or when pulling towed loads.
- Do not brake suddenly. An accident may occur as a result of a heavy towed load shifting forward or loss of control.
- To avoid skidding and loss of steering control when driving on icy, wet, or loose surfaces, make sure the tractor is correctly ballasted, operated at reduced speed, operated with front-wheel drive engaged (if equipped).
- The braking characteristics are different between a 2 and 4-wheel drive. Be aware of the difference and use carefully.
- Engage 4-wheel drive for 4-wheel braking when travelling down a slope.

1. Before operating the tractor on the road, be sure to interlock the right and left pedals as illustrated below.

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



### 1.1 4WD braking system (4WD model)

4WD model tractor is equipped with 4WD braking system.

#### **WARNING**

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

- Battery is disconnected and engine is not started.

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

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

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

### 1.2 Travelling speed limit (50 km/h model)

When the left and right brake pedal interlock is released, the travelling speed is limited to 40 km/h.

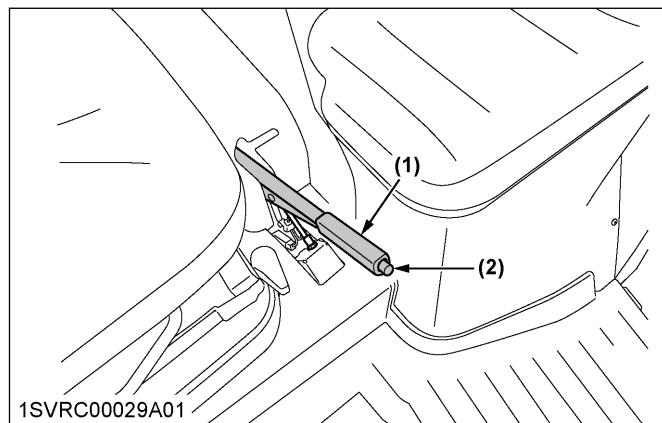
To cancel the travelling speed limit, stop the tractor and interlock the left and right brake pedals.

## 2. Parking brake

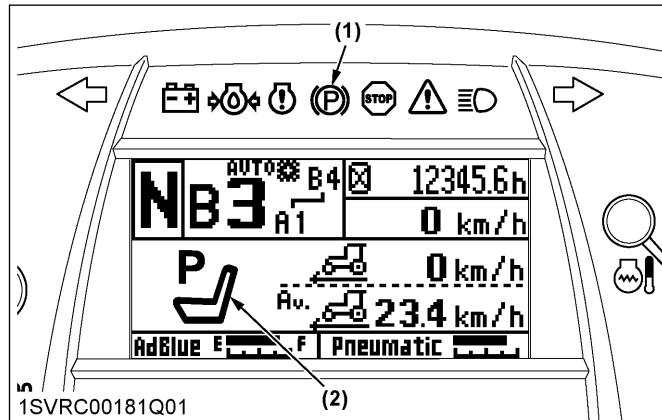
1. Before getting off the tractor, pull the parking/secondary brake lever up to park.

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

2. If you leave the operator's seat without applying the parking brake while the key switch is at "ON" position, the parking brake OPC indicator will turn on and the alarm buzzer will sound.
3. Once the parking brake has been applied, the tractor sets itself in the 4-wheel drive mode. This helps the 4 wheels to increase their gripping force on slopes.



(1) Parking/secondary brake lever  
(2) Release button



(1) Parking brake warning indicator  
(2) Parking brake OPC indicator

#### NOTE :

- When the key switch is turned off with no parking brake applied, the warning buzzer sounds for around 10 seconds.
- The parking brake warning indicator on the Easy Checker™ will turn off while the parking brake is unlocked.
- If the tractor starts moving when the parking brake is engaged, the alarm buzzer sounds and the parking brake warning indicator blinks.

#### IMPORTANT :

- Do not attempt to put the tractor in motion before the parking brake warning indicator light turns off.

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

## 2.1 When towing a dual-line trailer brake type trailer

When the parking brake is set to "ON", the brakes are applied to wheels on both the tractor and trailer sides, and the brake performance when parked improves. (See Trailer brake on page 153.)

## 3. Trailer brake

The trailer brakes are activated when using the tractor's brake pedals. It uses the pressure from the main hydraulic or air compressor circuit. The braking force while towing is proportional to the force applied on the tractor pedals.

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

### 3.1 Confirmation

This machine is equipped with connectors for pneumatic and/or hydraulic trailer brakes.

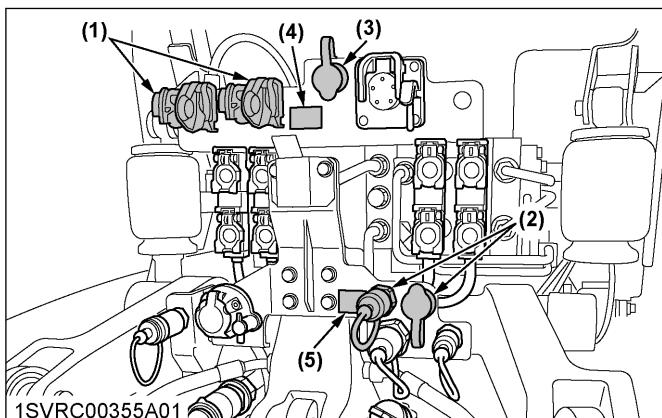
When connecting the trailer, check the trailer side brake type carefully before correctly connecting the various hoses.

Connection errors will inhibit full brake performance, which is extremely dangerous.

Confirm the trailer side brake type with the following illustration.

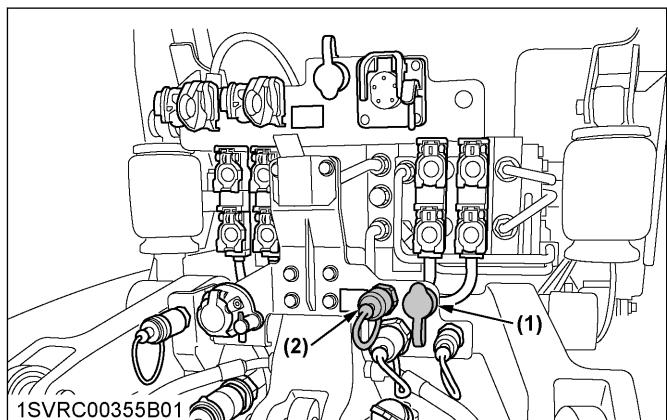
Note that some products are equipped with 2 brake types according to specifications.

(Examples: Dual-line pneumatic brake + single-line hydraulic brake, dual-line hydraulic brake + single-line hydraulic brake)



- (1) Dual-line pneumatic trailer brake
- (2) Dual-line hydraulic trailer brake
- (3) Single-line hydraulic trailer brake
- (4) Single-line label
- (5) Dual-line label

## 3.2 Dual-line hydraulic trailer brake



- (1) Hydraulic control hose (large diameter, green cap)
- (2) Hydraulic supplementary hose (small diameter, orange cap)

Connect the 2 hydraulic hoses of the towed vehicle to the outlets (large diameter and small diameter) of the tractor. If the 2 hydraulic brake hoses are not connected, the brake system may malfunction and accidents may occur. Carefully check the brake mechanism of the towed vehicle and connect the hoses correctly.

- The hydraulic control hose (large diameter, green cap) has the role of transmitting the signal from the foot brake pedal to activate the trailer brakes.
- The hydraulic supplementary hose (small diameter, orange cap) has the role of transmitting the signal of the tractor parking brake to the parking brake of the towed vehicle. This system increases the efficiency of the parking brake when parking on slopes. In addition, it also works in conjunction with the secondary brake if the foot brake has malfunctioned.

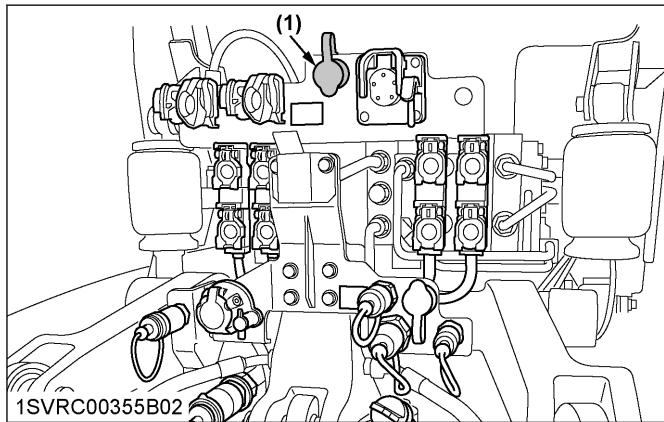
#### NOTE :

- Stop the engine and apply the parking brake before attaching and detaching the hydraulic hose.

#### IMPORTANT :

- Make sure to only connect and use a trailer with hydraulic dual-line trailer brakes.

### 3.3 Single-line hydraulic trailer brake



(1) Hydraulic control hose

Connect the hydraulic hose of the towed vehicle to the outlet of the tractor. If the hydraulic brake hose is not connected, the brake system may malfunction and accidents may occur. Carefully check the brake mechanism of the towed vehicle and connect the hoses correctly.

- The hydraulic control hose has the role of transmitting the signal from the foot brake pedal to activate the trailer brakes.

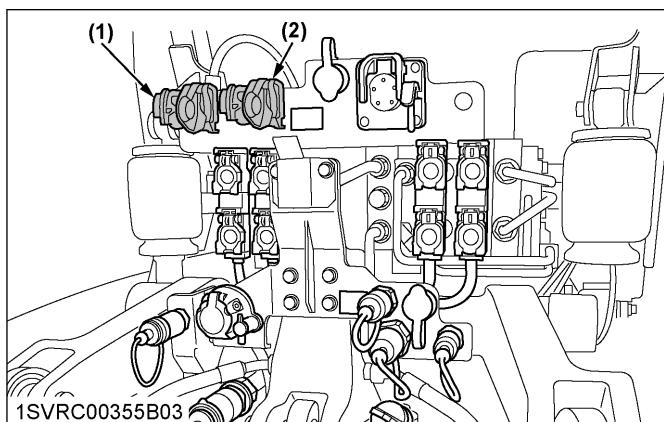
#### NOTE :

- Stop the engine and apply the parking brake before attaching and detaching the hydraulic hose.
- Be aware that even with the parking brake "applied", brakes will not be applied to the trailer wheels.

#### IMPORTANT :

- Make sure to only connect and use a trailer with hydraulic single-lines trailer brakes.

### 3.4 Dual-line pneumatic trailer brake



(1) Connector (A), yellow (dual-line brake)  
(2) Connector (B), red (dual-line brake)

#### Dual-line trailer brake:

Connect the air hoses securely to the connectors (A) and (B) of the tractor.

Air is constantly supplied to the trailer side air tank via the red connector hose.

Pneumatic pressure proportional to the force on the brake pedal is transmitted via the yellow connector hose to the trailer side brake equipment, and activates the brakes according to the pressure.

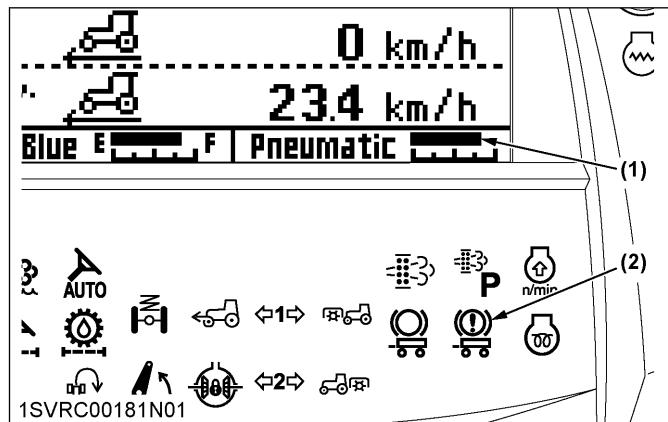
When the parking brake is applied, the internal pressure in the red connector hose drops, activating the trailer brakes.

#### IMPORTANT :

- Make sure the air hose connections are clean. After using the air hoses, be sure to put their protective caps back in position.
- With the air hoses connected, step on the brake pedal several times with the engine off to make sure there is no air leak at the connections.

#### 3.4.1 Inspecting the pneumatic pressure

The pneumatic trailer brake pressure can be checked with the "pneumatic pressure gauge" on the instrument panel. If the pressure drops below specified, the "trailer brake warning indicator" on the instrument panel lights up.

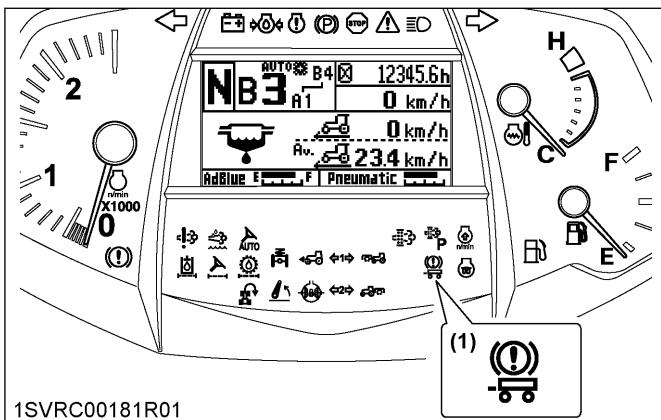


(1) Pneumatic pressure gauge

(2) Trailer brake warning indicator

### 3.5 Trailer brake warning indicator

If trouble should occur at the trailer brake system, the trailer brake warning indicator lights up.



### 4. Emergency brake (50 km/h model)

When a trailer with 2 lines trailer brake system (hydraulic or pneumatic type) is towed at 40 km/h or more, if the foot brake becomes inoperative due to problem with the foot brake system, pull up the parking/secondary brake lever to park position may cause both the tractor and trailer wheels to braked.

#### NOTE :

- The emergency brake is not available for all problems with the foot brake system. Maintain the brake system and always try to keep the brake working normally

### 5. Trailer brake test function (dual-line trailer brake model)

When a tractor with a trailer is parked on slope, pressure may drop due to the characteristics of the pneumatic or hydraulic pressure, weakening the braking force of the trailer wheels and allowing the tractor to run away.

In order to prevent this, be sure to use the "trailer brake test function" when parking on a slope.

For safety, move the tractor to a gentle slope if the tractor moves by itself.

#### Testing

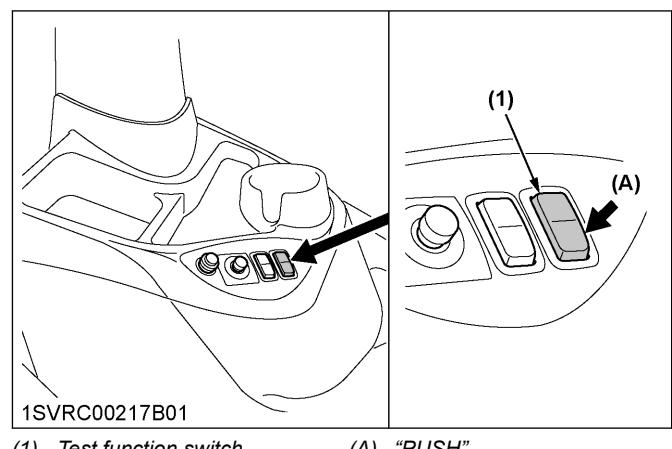
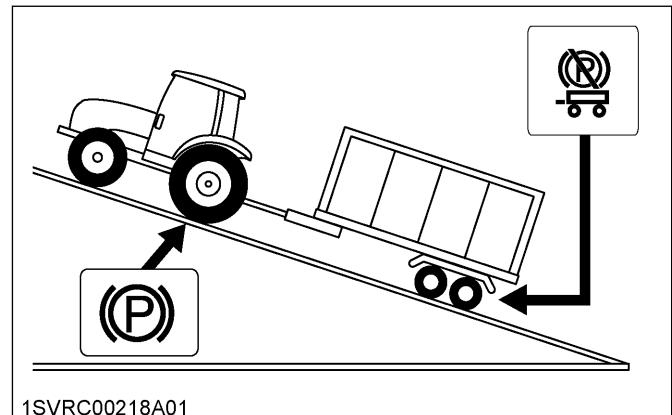


To avoid personal injury or death:

- Before testing, make sure there are no people or obstacles behind the tractor and trailer

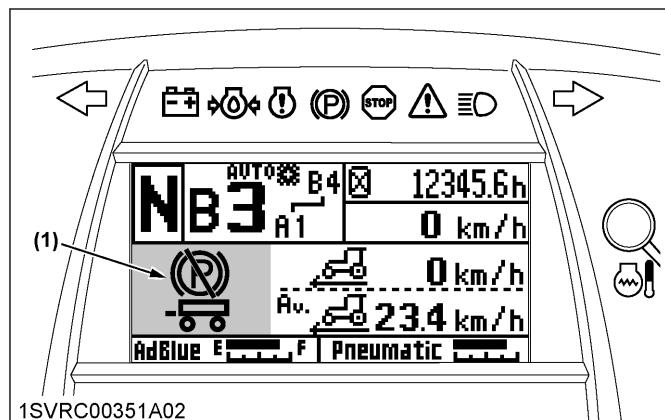
- Stop the tractor on slope, apply the parking brake and release the foot brake.

- Set the shuttle lever to neutral, with the engine running.
- Press the lower half of the test function switch and check that the tractor does not move while the switch is held.  
(The trailer wheel brakes are released only while the switch is held down.)
- When releasing the switch, the parking brake is applied to the wheels of the towed vehicle.



#### NOTE :

- While performing the trailer brake test function, the trailer brake test function indicator is displayed the LCD screen.
- If the indicator is blinking, the trailer brake test function cannot be performed. Check that following conditions are met:
  - The parking brake is engaged.
  - None of the brake pedals are being depressed.
  - The shuttle lever is at the "NEUTRAL" position or the shuttle neutral button is pressed.
  - The engine is running.
  - The trailer brake warning indicator is not lit.



(1) Trailer brake test function indicator

## TRAVEL CONTROLS

### 1. Clutch pedal

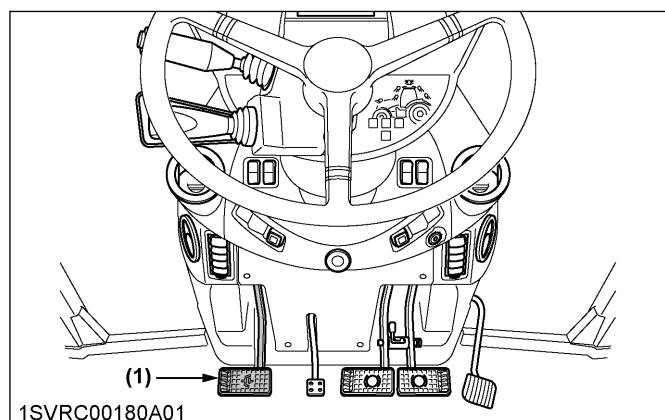
#### **WARNING**

To avoid personal injury or death:

- Sudden release of the clutch may cause the tractor to lunge in an unexpected manner.
- Always use the clutch pedal to start the tractor.

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

There is no need to operate the clutch for shifting with the main gear shift, range gear shift and shuttle shift. But clutch operation is needed for creep gear shifting (if equipped).



(1) Clutch pedal

#### IMPORTANT :

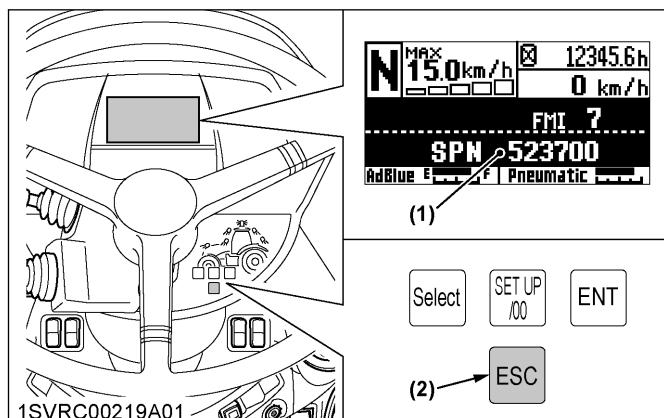
To help prevent premature clutch wear:

- The clutch pedal must be quickly disengaged and be slowly engaged.
- Avoid operating the tractor with your foot resting on the clutch pedal.
- Select the proper gear and engine speed depending on the type of job.
- If the warning buzzer sounds too often during usual job, the tractor may require

reprogramming. Consult your local KUBOTA Dealer for this service.

#### NOTE :

- If the clutch is operated in a partially engaged conditions, the warning buzzer will sound (for 1 second) and a warning code will be displayed to protect the clutch. Press the [ESC] button and the warning code will disappear.



(1) Warning code  
(2) [ESC] button

### 2. Hand throttle

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

#### NOTE :

- With the rev-limiter control on, the engine speed will not rev above the limiter-preset rpm even if the hand throttle is operated.

### 3. 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; when using the foot throttle, keep the hand throttle in low idling position.

#### NOTE :

- With the rev-limiter control on, the engine speed will not rev above the limiter-preset rpm even if the foot throttle is operated.
- Let's suppose that the "Automatic mode" is selected with the CVT type tractor. You can control both the speed and the engine power by how deeply you step on the foot throttle, as with an automatic transmission car.  
(See Operation of the automatic mode on page 173.)

## 4. Shuttle lever

### **WARNING**

To avoid personal injury or death:

- When attempting to shift the shuttle shift lever on a slope, be sure to completely stop the tractor.
- Slow down the engine speed before shifting the shuttle lever.
- Use the shuttle lever when the machine speed is below 20 km/h (12.4 mph).

**NOTE :**

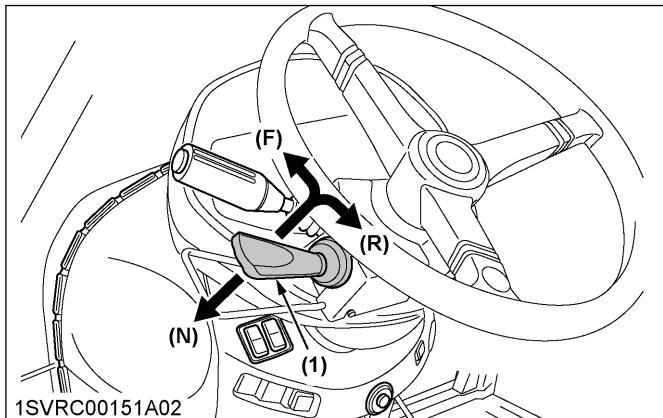
- If the previous warnings are not followed, the clutch gets disengaged and the buzzer starts sounding.

To get the clutch reengaged and clear the buzzer, take either of the following steps.

- Place the shuttle lever back to the original position.
- Decrease the machine speed lower than 20 km/h (12.4 mph) and use the shuttle lever.

Raise up and shift the shuttle shift lever forward to obtain forward speeds and shift it backward to obtain reverse speeds without using the clutch pedal.

Whether travelling or at a stop, push down the shuttle lever and it will return to the neutral position.



(1) Shuttle lever

(F) "FORWARD"  
(N) "NEUTRAL"  
(R) "REVERSE"

**NOTE :**

- Operate the shuttle lever while sitting in the operator's seat. Otherwise, the clutch will not be engaged.
- While the shuttle shift lever or shuttle neutral button is at the "NEUTRAL" position, the "N" character appears on the LCD monitor.
- When you release the shuttle lever after shifting to (F), (R), or (N) positions, the shuttle lever will always return to its original position (see the previous figure).

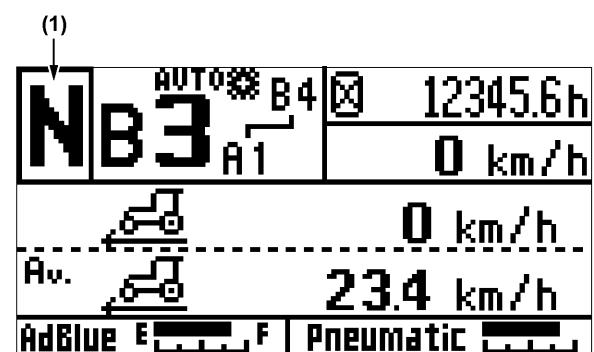
- If the shuttle lever is held at the (F), (R), or (N) positions for approximately 5 to 10 seconds, gear shifting will be cancelled and a message will be displayed on the LCD monitor. If the message is displayed, turn the key switch OFF and then operate the shuttle lever again.
- When shuttle operation is done just after the engine starting, the system is sometimes judges this as an operational error. Shuttle operation will cease to function. If this case occurs, please handle it with the following instruction.

– For power shift model:

If the shuttle operation does not function with error message indicated, please stop an engine once and re-start.

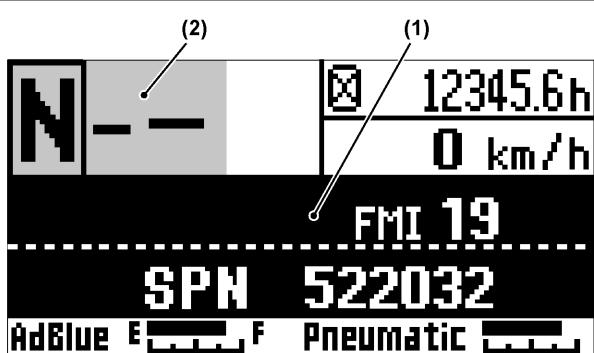
– For CVT model:

If the shuttle operation does not function, please push down the shuttle lever to set neutral, then start operation.



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(1) "NEUTRAL"



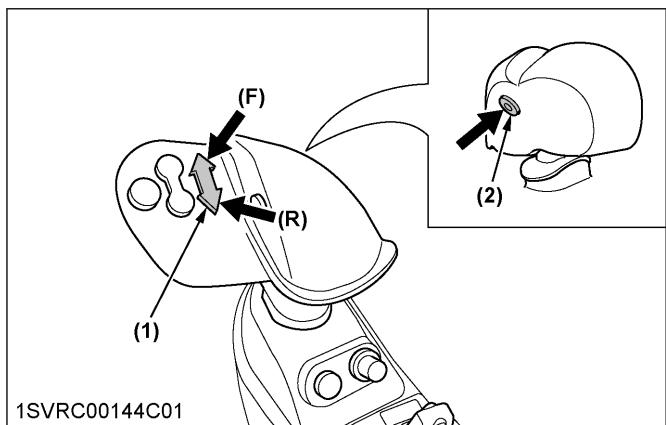
1SVRC00210A01

(1) Message

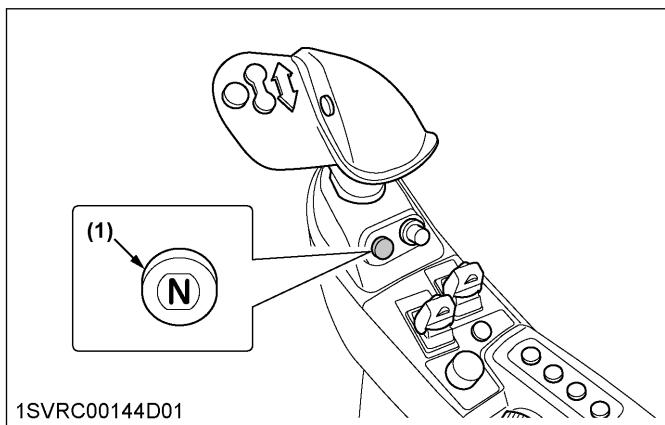
(2) Error display (power shift transmission)

## 5. Shuttle button

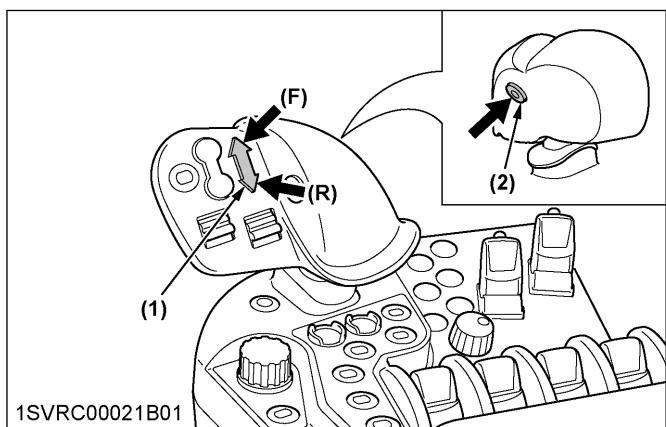
Hold down the shuttle enable button and press the shuttle button to switch forward and reverse travel.

**Standard model**

(1) Shuttle button      (F) "FORWARD"  
 (2) Shuttle enable button      (R) "REVERSE"

**Standard model**

(1) Shuttle neutral button

**Premium, Premium KVT model**

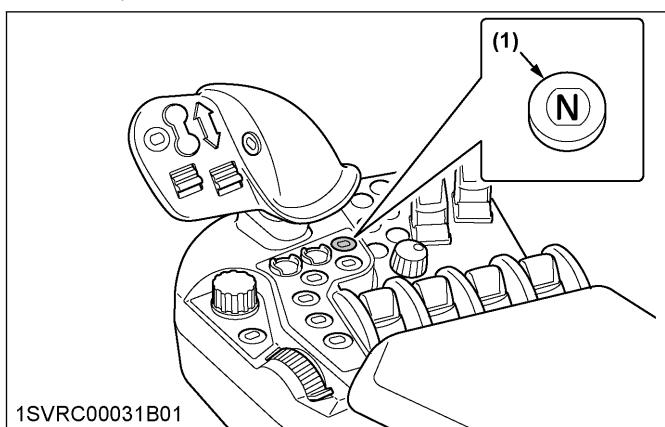
(1) Shuttle button      (F) "FORWARD"  
 (2) Shuttle enable button      (R) "REVERSE"

**NOTE :**

- Either the shuttle lever or the shuttle button, whichever is activated later, is given priority.  
 If the tractor is moving forward with the forward shuttle button and the shuttle lever is moved to reverse, for example, the tractor switches to reverse.

**6. Shuttle neutral button**

Press this button to return the transmission to the neutral position.

**Premium, Premium KVT model**

(1) Shuttle neutral button

**NOTE :**

- Even when the shuttle lever is shifted to the forward or reverse position, pressing the button puts the transmission to the "neutral" position.

**7. Creep speed (if equipped)**
** WARNING**

To avoid personal injury or death:

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

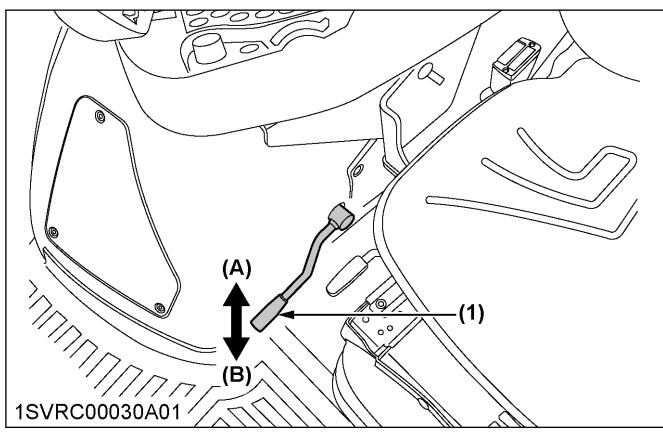
**Operating the creep gear shift lever**

1. Stop the tractor and step on the clutch pedal.
2. Pull up the creep gear shift lever, and the creep mode turns on. Push it down to turn off the creep mode.
3. In creep mode ("ON"- "OFF"), the following speed gears can be used.

Creep gear shift lever	Gear shift		Remarks
	Forward (54 speeds)	Reverse (27 speeds)	
Creep "ON"	24 speeds	12 speeds	*1
Creep "OFF"	30 speeds	15 speeds	*2

\*1 Forward: main gear shift 1 to 6th, range gear shift A to D  
Reverse: main gear shift 1 to 3rd, range gear shift A to D

\*2 Forward: main gear shift 1 to 6th, range gear shift A to E  
Reverse: main gear shift 1 to 3rd, range gear shift A to E

**IMPORTANT :**

- Press the clutch pedal completely down and stop the tractor's motion before shifting the creep gear shift lever.
- If starting is attempted with the creep gear shift lever not fully shifted, [N - -] will be displayed on the LCD monitor.  
If [N - -] is displayed, confirm that the creep gear shift lever is fully shifted, and then step on the clutch pedal to reset the gear shift.

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

- Deep rotary-tilling and harrowing
- Planting
- Turf application

**Creep speed cannot be used for any of the following:**

- Pulling a trailer
- Front-loader operation
- Front-blade operation
- Earth-moving
- Entering and leaving a field

- Loading onto and unloading from a truck

**8. 4WD and AUTO 4WD switch**

### **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.
- 4WD model tractor is equipped with 4-wheel braking and appropriate care should be taken during hard braking.
- An accident may occur if the tractor is suddenly braked, such as by heavy towed loads shifting forward or loss of control.
- The braking characteristics are different between 2 and 4-wheel drive tractor models. Be aware of the difference and use carefully.

**8.1 Selection of 4WD modes**

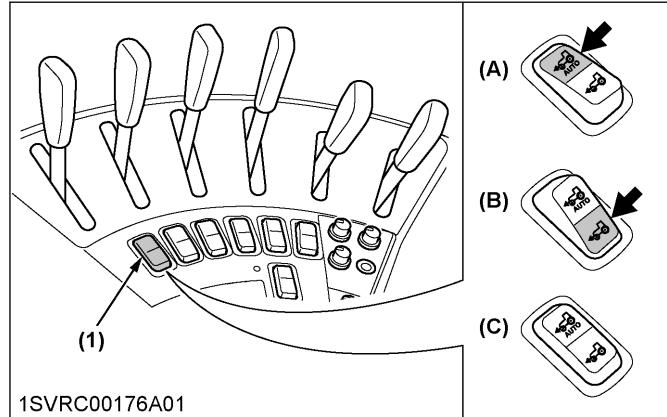
Select one of the following modes for driving the front wheels according to the type of job.

Mode			
AUTO 4WD mode	The 4WD and 2WD modes switch themselves according to the travel speed and the front wheel turning angle.		
	Travelling speed	Front wheel turning angle	Front wheel drive
	Below 10 km/h (6.2 mph)	Approx. 15° or less	4WD
		Approx. 15° or more	2WD
	Between 10 and 20 km/h (6.2 and 12.4 mph) or so	Approx. 10° or less	4WD
		Approx. 10° or more	2WD
Above 20 km/h (12.4 mph)	-		2WD
Manual 4WD mode	The front and rear wheels are always driven.		
2WD mode	The rear wheels only are always driven.		

**8.2 Switching of 4WD modes****For Standard model:**

1. Press the top half of the 4WD switch, and the AUTO 4WD mode is selected and the indicator on the instrument panel lights up.

2. Press the bottom half of the 4WD switch, and the manual 4WD mode is selected and the indicator on the instrument panel lights up.
3. Return the 4WD switch to a central position, and the 2WD mode is selected and the indicator goes off.



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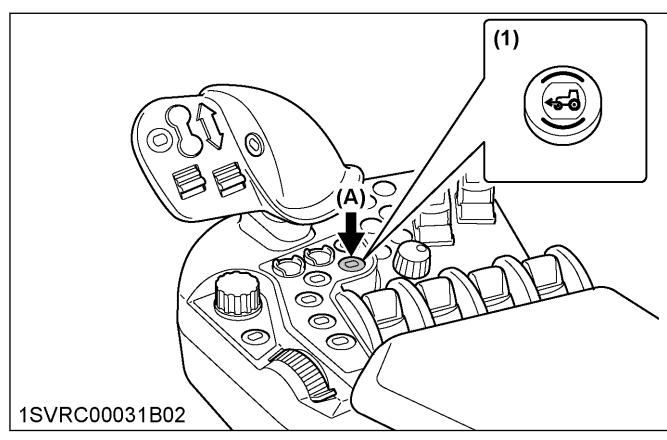
(1) 4WD switch

(A) AUTO 4WD mode  
(B) Manual 4WD mode  
(C) 2WD mode**For Premium, Premium KVT models:**

1. Each time the 4WD button is pressed, the "Manual 4WD" and "2WD" modes switch. If the 4WD mode is selected, the indicator on the instrument panel lights up.

Switching to the "AUTO 4WD" mode can be made with the K-monitor.

(See Setting the driveability on page 90.)



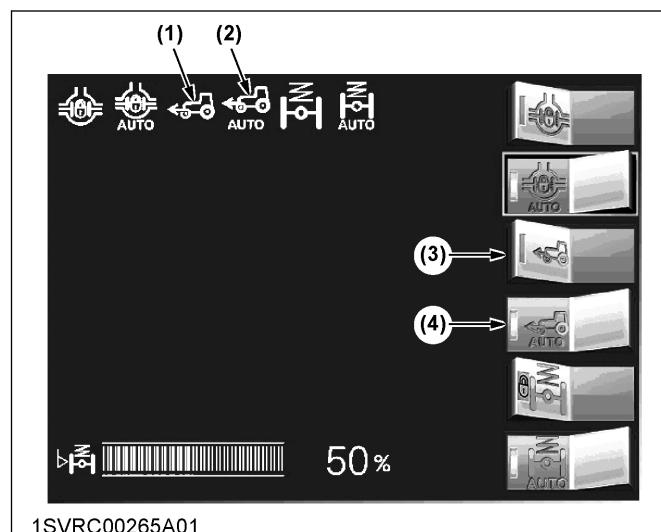
1SVRC00031B02

(1) 4WD button

(A) "PUSH"

**NOTE :**

- The 4WD button can be operated when the tractor is on the go or at rest without depressing the clutch.

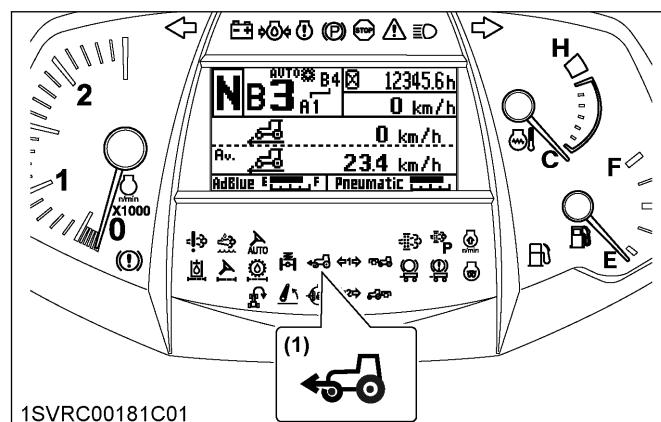


1SVRC00265A01

- (1) 4WD indicator  
(2) AUTO 4WD indicator  
(3) 4WD switch  
(4) AUTO 4WD switch

**8.3 4WD indicator**

When the AUTO 4WD or manual 4WD mode is selected, the indicator on the instrument panel lights up.



1SVRC00181C01

(1) 4WD indicator

**8.4 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 hard soil where a rotary tiller might push the tractor forward.
- For increased braking at reduced speed.

**IMPORTANT :**

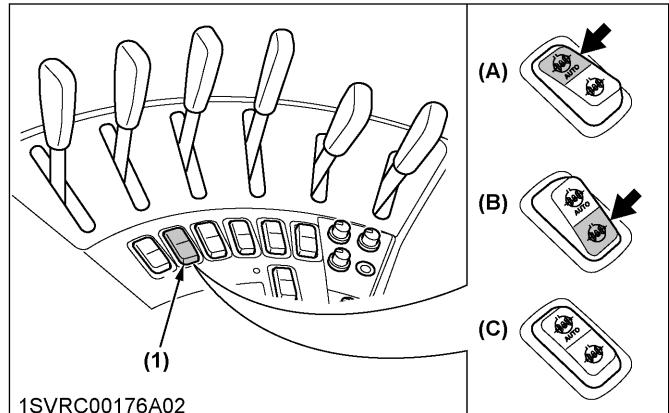
- Tyres will wear quickly if the front-wheel drive is engaged on paved roads.

## 9. Differential lock

### **WARNING**

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

- Do not operate the tractor at high speed with the 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.



1SVRC00176A02

(1) Differential lock switch

(A) AUTO differential lock mode

(B) Manual differential lock mode

(C) Differential lock OFF mode

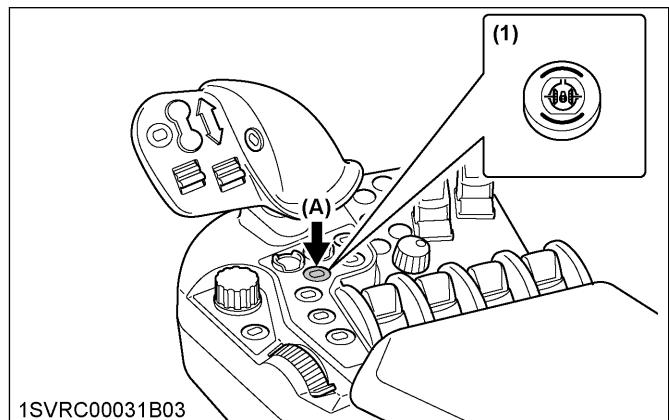
### 9.1 Selection of differential lock modes

Select any of the following differential lock modes as required.

Mode			
AUTO differential lock mode	The differential lock turns itself on and off in response to the following conditions.		
	Travelling speed	Front wheel turning angle	4-wheel differential lock
	Below 10 km/h (6.2 mph)	Approx. 15° or less	ON
		Approx. 15° or more	OFF
	Between 10 and 20 km/h (6.2 and 12.4 mph) or so	Approx. 10° or less	ON
		Approx. 10° or more	OFF
Manual differential lock mode	Above 20 km/h (12.4 mph)	-	OFF
Differential lock OFF mode	The 4 wheels are always out of the differential lock mode.		

### For Premium, Premium KVT models:

1. Each time the differential lock button is pressed, the manual differential lock mode turns "ON" or "OFF". If this mode is "ON", the indicator on the instrument panel lights up. Switching to the "AUTO differential lock" mode can be done with the K-monitor. (See Setting the driveability on page 90.)



1SVRC00031B03

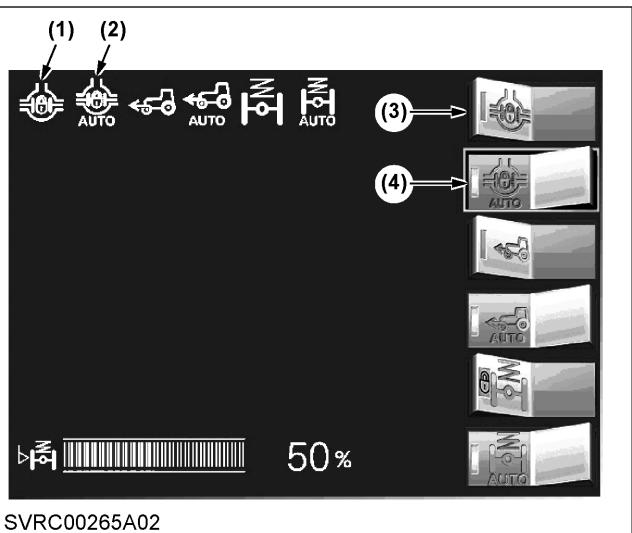
(1) Differential lock button

(A) "PUSH"

### 9.2 Switching of differential lock modes

#### For Standard model:

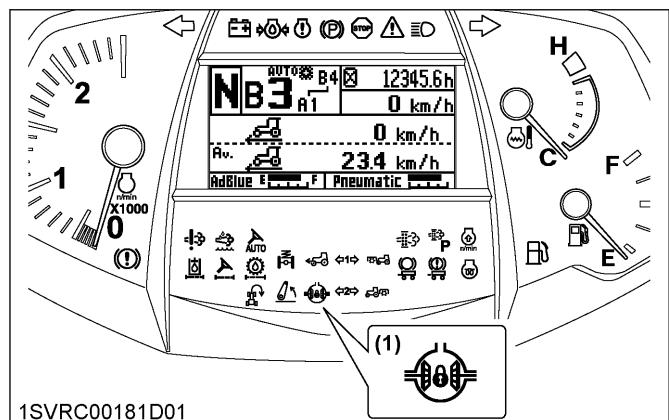
1. Press the top half of the differential lock switch, and the AUTO differential lock mode is selected and the indicator on the instrument panel lights up.
2. Press the bottom half of the differential lock switch, and the manual differential lock mode is selected and the indicator on the instrument panel lights up.
3. Return the differential lock switch to a central position, and the differential lock mode turns off and the indicator goes off.



- (1) Differential lock indicator
- (2) AUTO differential lock indicator
- (3) Differential lock switch
- (4) AUTO differential lock switch

### 9.3 Differential lock indicator

When the AUTO differential lock or manual differential lock mode is selected, the indicator on the instrument panel lights up.



- (1) Differential lock indicator

#### 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.

## POWER SHIFT TRANSMISSION CONTROL

This machine is equipped with an electronic transmission for 30-speed change in forward and 15-speed change in reverse motion.



#### WARNING

To avoid personal injury or death:

- The ez-command centre has no neutral position. To bring the tractor to a complete stop, step on the brake pedal or set the shuttle lever to neutral.

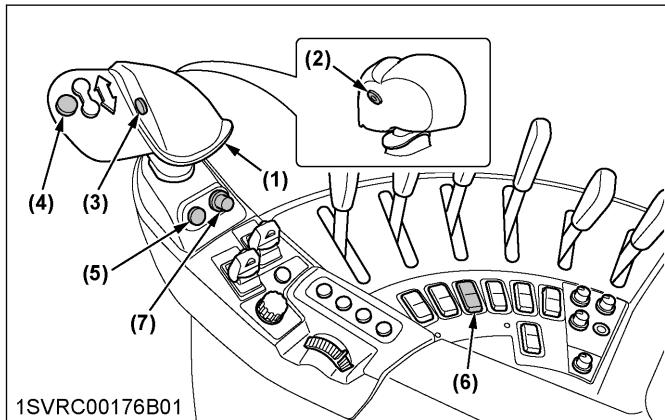
With the optional creep device in place, the travelling speed can be changed by up to 54th in forward and 27th in reverse stages. Further, in road and field modes, the "auto shift" mode as well as the "manual" mode may be selected.

In the auto shift mode, the optimum travelling speed can be automatically selected by electronic control within the operator-preset speed range. Thanks to this mode, no troublesome gear shifting is required any longer, allowing the operator to concentrate on his or her job.

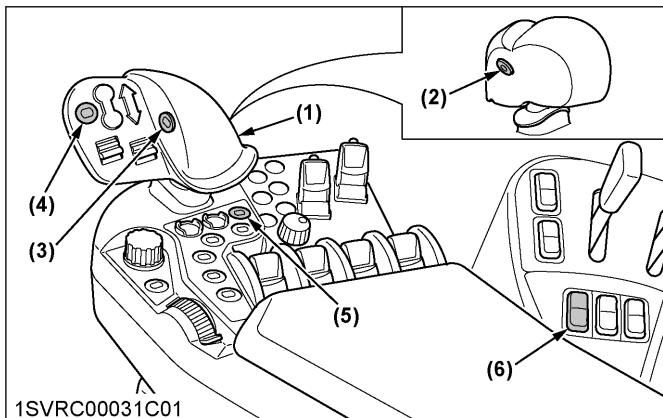
The gear shift sensitivity in response to the engine load and other settings may also be flexibly made. With this, PTO-driven and towed implements are operated with high accuracy in an eco-friendly way.

In the maximum travelling speed range, the overdrive mechanism works for the engine to run at medium rpm but for the machine to travel at maximum speed. In short, this helps to run the machine economically.

#### Standard model



- (1) Ez-command centre
- (2) Shuttle enable button
- (3) Range gear shift button
- (4) Auto shift button
- (5) Shuttle neutral button
- (6) Transmission mode select switch
- (7) Auto shift sensitivity dial

**Premium model**

- (1) Ez-command centre  
 (2) Shuttle enable button  
 (3) Range gear shift button  
 (4) Auto shift button  
 (5) Shuttle neutral button  
 (6) Transmission mode select switch

**Travelling speed limit**

When the left and right brake pedal interlock is released, the travelling speed is limited to 40 km/h. To cancel the travelling speed limit, stop the tractor and interlock the left and right brake pedals.

**1. Switching the operation modes**

When the engine gets started, the "manual" mode is selected all the time. By stepping on the clutch pedal, the minimum travelling speed (A-1) is automatically selected. To operate the machine in the auto shift mode, press the auto shift button to switch to the "auto shift" mode.

Every time the auto shift button is pressed, the auto shift mode and the manual mode are switched alternately. Which mode is now on can be checked with the LCD indicator on the instrument panel.

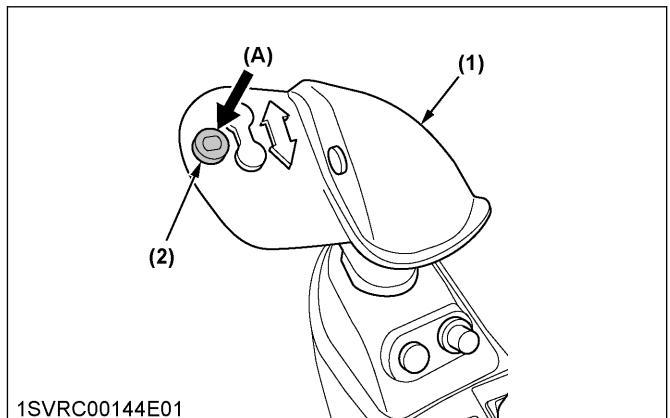
However, when the gear shift range in auto shift mode memory is other than the minimum gear shift (A-1), it will not switch to auto shift mode even when you press the auto shift button.

After switching the main gear shift and range gear shift with the ez-command centre until within the gear shift range in memory, press the auto shift button to switch to auto shift mode.

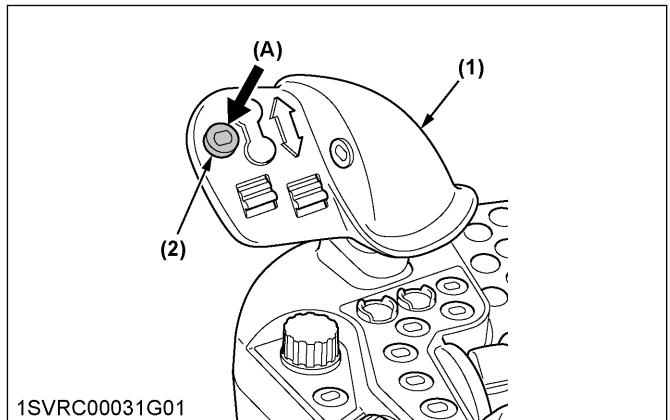
**Example:**

When the gear shift range in auto shift mode memory is B-1 to B-3

Current gear shift	Press the auto shift button
A-1	Does not switch to auto shift mode
B-1 or B-2 or B-3	Switches to auto shift mode
B-4	Does not switch to auto shift mode

**Standard model**

- (1) Ez-command centre  
 (2) Auto shift button  
 (A) "PUSH"

**Premium model**

- (1) Ez-command centre  
 (2) Auto shift button  
 (A) "PUSH"

**NOTE :**

- The auto shift button functions without any clutch operation, whether the machine is running or at a stop.
- When the engine stops during work, the gear shift previous to the stop will be selected if you step on the clutch pedal after restarting without turning the key switch off. If you turn the key switch off before restarting, the minimum gear shift (A-1) will be selected.

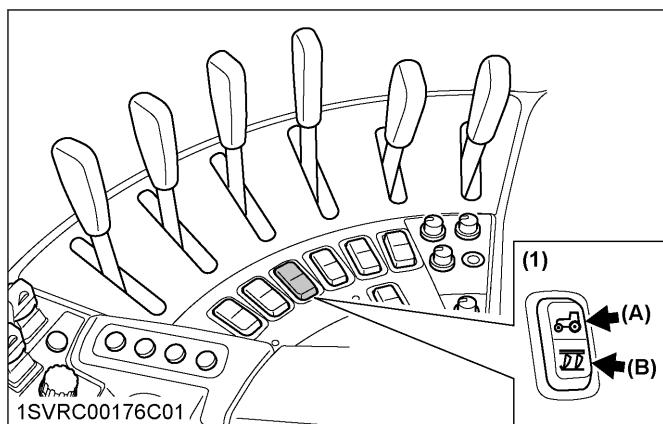
**2. Switching the auto shift modes**

According to the type of work, switch the transmission mode select switch to the "road" mode or "field" mode. The currently enabled mode can be checked with the LCD indicator on the instrument panel.

Before switching the modes, get the engine started first and then set the shuttle lever to the neutral position.

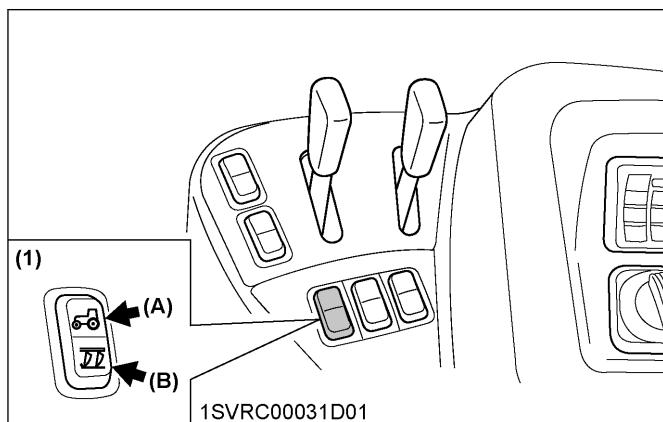
Transmission mode select switch	Type of work
Road mode	Used for travelling on public roads and towing light-duty implements
Field mode	Used for general heavy-load implements.

## Standard model



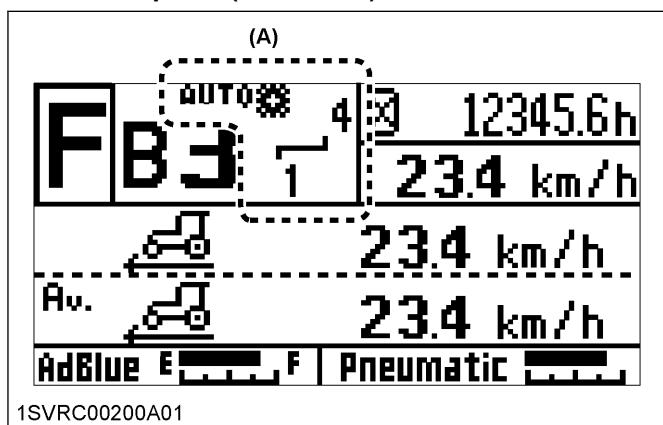
(1) Transmission mode select switch (A) "ROAD MODE"  
(B) "FIELD MODE"

## Premium model



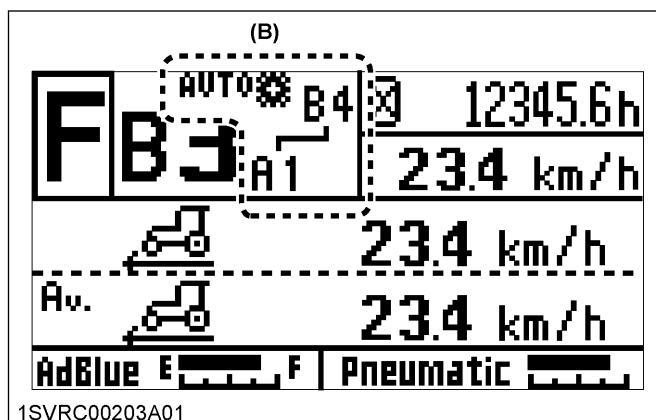
(1) Transmission mode select switch (A) "ROAD MODE"  
(B) "FIELD MODE"

## **Instrument panel (all models)**

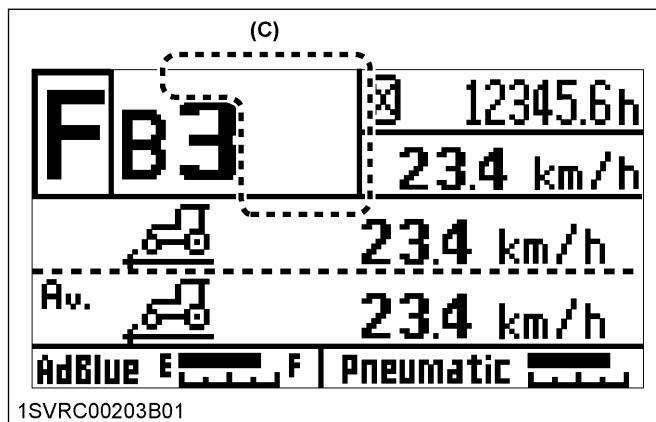


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(A) "Auto shift-FIELD MODE"



**(B) "Auto shift-ROAD MODE"**



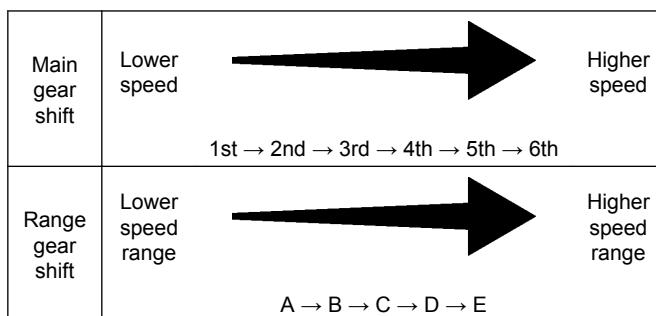
**(C) “Manual mode”**

### 3. Travelling speeds

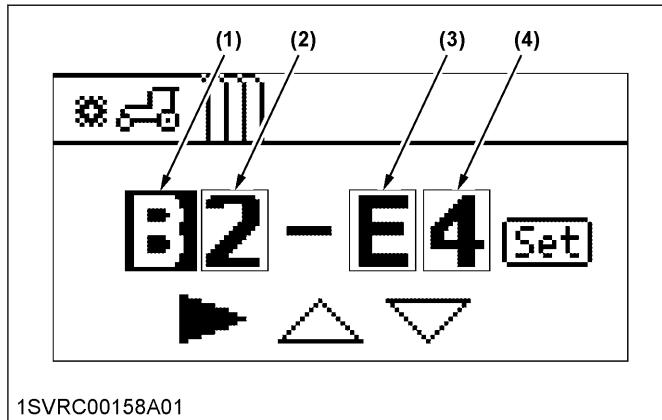
### **3.1 Setting the travelling speed gear in the road mode (Standard model)**

1. Referring to the travelling speed ranges chart, determine maximum and minimum travelling speeds that are best suited for the type of work. On the automatic gear shift (road mode) setting screen, enter a desired travelling speed range.

## Travelling speed ranges



2. The automatic gear shifting will be within the preset travelling speed range.  
 Details regarding relevant settings can be found in a different section.  
 (See POWER SHIFT TRANSMISSION CONTROL on page 162.)



1SVRC00158A01

- (1) Range gear shift for minimum travelling speed
- (2) Main gear shift for minimum travelling speed
- (3) Range gear shift for maximum travelling speed
- (4) Main gear shift for maximum travelling speed

**NOTE :**

- Suppose that while the machine is running, the travelling speed is increased or decreased out of its preset range with the ez-command center. When this happens, the manual mode is resumed. To go back to the auto shift mode, get the travelling speed back into the preset range and press the auto shift button again.

### 3.2 Setting the main gear shift range in the field mode (Standard model)

1. Referring to the travelling speed ranges chart, determine maximum and minimum main gear shifts that are best suited for the type of work. On the automatic gear shift (field mode) setting screen, enter desired travelling speeds.

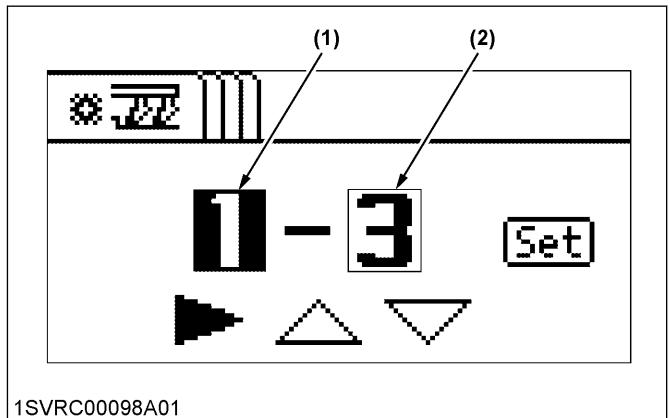
#### Travelling speed ranges

Main gear shift	Lower speed	1st → 2nd → 3rd → 4th → 5th → 6th	Higher speed
Range gear shift	Lower speed range	A → B → C → D → E	Higher speed range

2. The automatic gear shifting will be within the preset travelling speed range.

Details regarding relevant settings can be found in a different section.

(See POWER SHIFT TRANSMISSION CONTROL on page 162.)



1SVRC00098A01

- (1) Minimum main gear shift
- (2) Maximum main gear shift

**NOTE :**

- The automatic gear shift range in the field mode may be preset only for the main gear shift.
- Suppose that while the machine is running, the travelling speed is increased or decreased out of its preset range with the ez-command center. When this happens, the manual mode is resumed. To go back to the auto shift mode, get the travelling speed back into the preset range and press the auto shift button again.

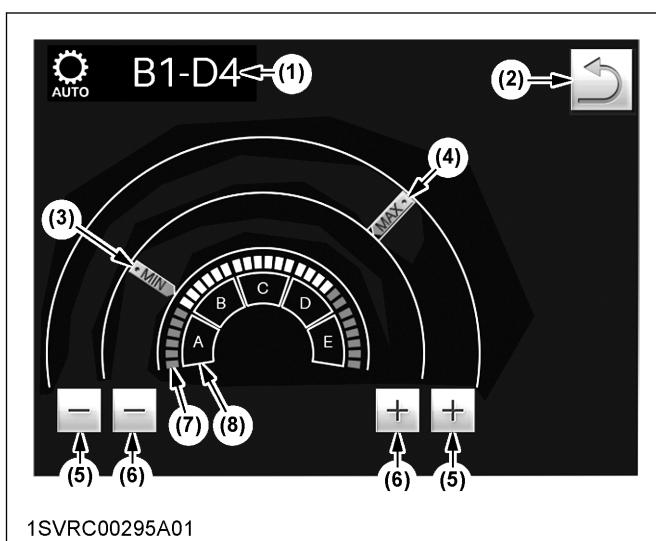
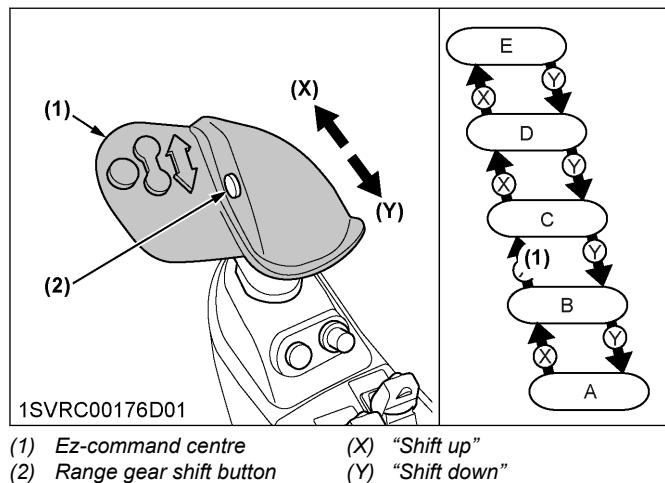
### 3.3 Setting the range gear shift in the field mode (Standard model)

1. The range gear shift consists of 5 speeds. Determine the range gear shift range that is best suited for the working speed.

2. Hold down the range gear shift button and push the ez-command centre forward, and the range gear shift goes up. Pull this lever backward, and this shift comes down.

Before setting the range gear shift in the field mode, bring the tractor to a complete stop.

The selected range gear shift stage can be checked with the LCD indicator on the instrument panel.



- (1) Selected travelling speed gear shift  
 (2) Previous screen resume switch  
 (3) Low-speed slider  
 (4) High-speed slider  
 (5) High-speed setting switch  
 (6) Low-speed setting switch  
 (7) Main gear shift section  
 (8) Range gear shift section (A to E)

#### NOTE :

- Suppose that while the machine is running, the travelling speed is increased or decreased out of its preset range with the ez-command center. When this happens, the manual mode is resumed. To go back to the auto shift mode, get the travelling speed back into the preset range and press the auto shift button again.

### 3.4 Setting the travelling speed range in the road mode (Premium model)

- Referring to the travelling speed ranges chart, determine maximum and minimum travelling speeds that are best suited for the type of work. On the K-monitor screen, enter desired travelling speeds.

#### Travelling speed ranges

Main gear shift	Lower speed		Higher speed
		1st → 2nd → 3rd → 4th → 5th → 6th	
Range gear shift	Lower speed range		Higher speed range
		A → B → C → D → E	

- The automatic gear shifting will be within the preset travelling speed range.

Details regarding relevant settings can be found in a different section.

(See Setting the engine and power shift transmission (**Premium** model only) on page 93.)

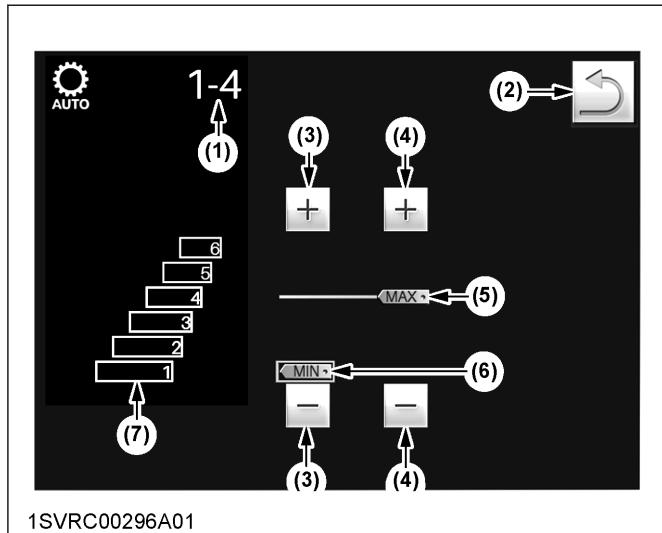
### 3.5 Setting the main gear shift range in the field mode (Premium model)

- Referring to the travelling speed ranges chart, determine maximum and minimum main gear shifts that are best suited for the type of work. On the K-monitor screen, enter a desired main gear shift range.

#### Travelling speed ranges

Main gear shift	Lower speed		Higher speed
		1st → 2nd → 3rd → 4th → 5th → 6th	
Range gear shift	Lower speed range		Higher speed range
		A → B → C → D → E	

2. The automatic gear shifting will be within the preset main gear shift range.
- Details regarding relevant settings can be found in a different section.  
(See Setting the engine and power shift transmission (**Premium** model only) on page 93.)



- |                                          |                                      |
|------------------------------------------|--------------------------------------|
| (1) Selected travelling speed gear shift | (5) High-speed slider                |
| (2) Previous screen resume switch        | (6) Low-speed slider                 |
| (3) Low-speed setting switch             | (7) Main gear shift section (1 to 6) |
| (4) High-speed setting switch            |                                      |

**NOTE :**

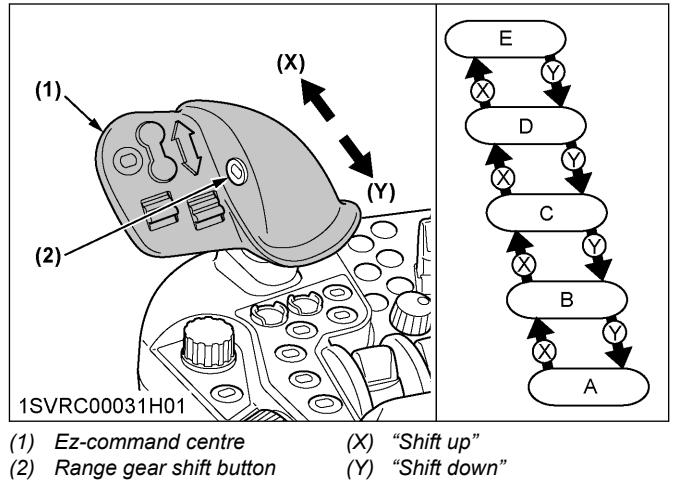
- The automatic gear shift range in the field mode may be preset only for the main gear shift.
- Suppose that while the machine is running, the travelling speed is increased or decreased out of its preset range with the ez-command center. When this happens, the manual mode is resumed. To go back to the auto shift mode, get the travelling speed back into the preset range and press the auto shift button again.

### 3.6 Setting the range gear shift in the field mode (**Premium** model)

1. The range gear shift consists of 5 speeds. Determine the range gear shift range that is best suited for the working speed.
2. Hold down the range gear shift button and push the ez-command centre forward, and the range gear shift goes up. Pull this lever backward, and this shift comes down.

Before setting the range gear shift in the field mode, bring the tractor to a complete stop.

The selected range gear shift stage can be checked with the LCD indicator on the instrument panel.



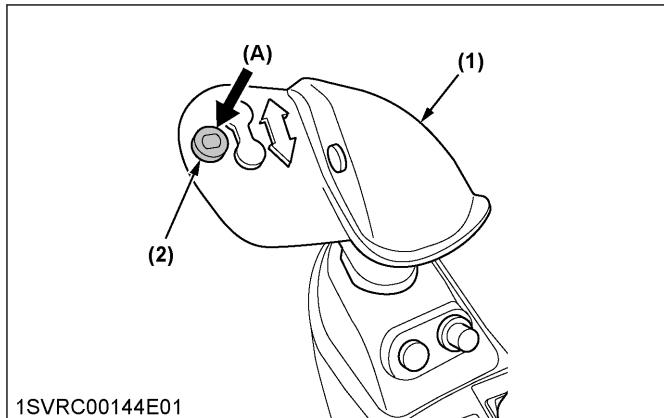
### 4. Operating in the manual mode

To operate the machine in the manual mode, it is necessary to switch from the auto shift mode to the manual mode.

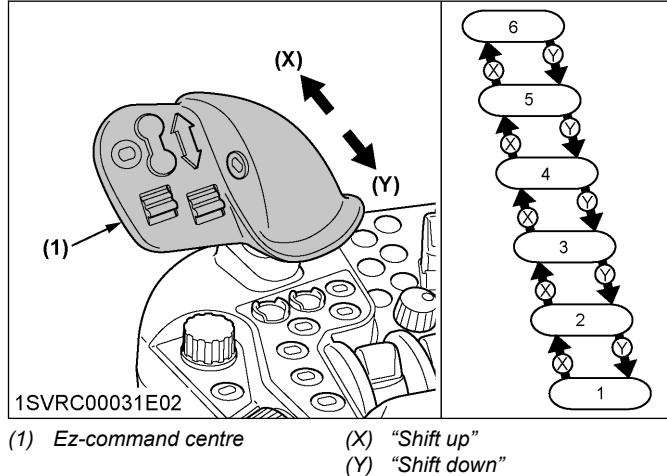
1. Hold down the auto shift button to select the "manual" mode.

2. To switch between the "road" and "field" modes, use the transmission mode select switch.

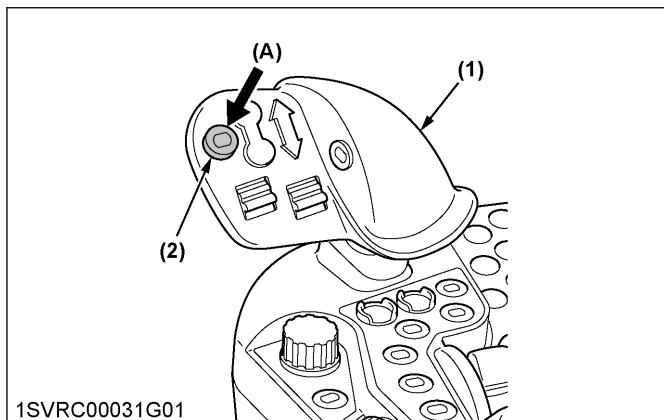
#### Standard model



Shifting is possible only among the 30 gears in forward, and 15 gears in reverse speed across the main gear shift and range gear shift.



#### Premium model



#### 4.2 Operating the range gear shift

The range gear shifting works for 5 speeds.

1. Hold down the range gear shift button.
2. In this state, push the ez-command centre forward stage by stage, and the range travelling speed shifts up one by one.

#### 4.1 Operating the main gear shift

This gear shift can be carried out without any clutch operation, whether the tractor is running or at a stop.

1. Push the ez-command center forward stage by stage, and the travelling speed shifts up one by one.
2. Pull it backward stage by stage, and the travelling speed shifts down one by one.

The selected main gear shift stage can be checked with the LCD indicator on the instrument panel.

It should be noted that the number of gear shifts varies with the modes:

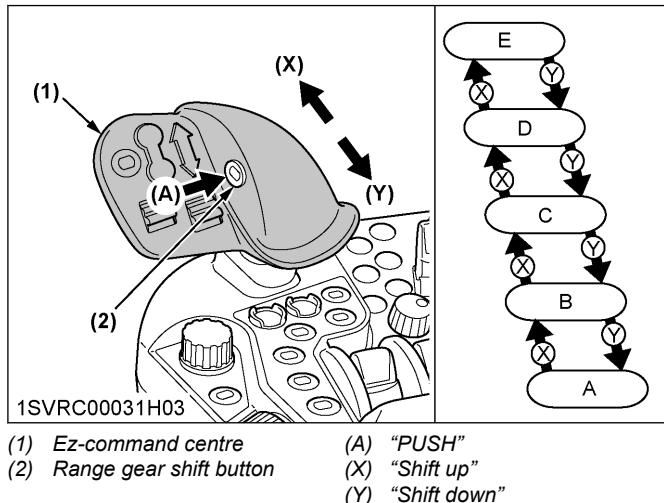
- With field mode selected:  
Shifting is possible only among the 6 gears in forward, and 3 gears in reverse speed of the main gear shift.
- With road mode selected:

- Pull it backward stage by stage, the range travelling speed shifts down one by one.

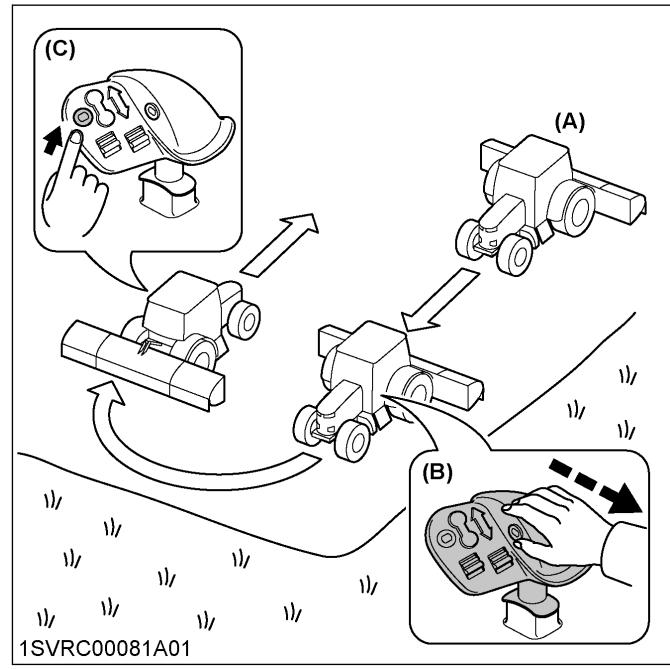
The selected range gear shift stage can be checked with the LCD indicator on the instrument panel.

#### NOTE :

- To start the tractor at a specific speed, determine the range gear shift and main gear shift settings and use the clutch pedal or the shuttle lever.
- In doing a light-duty job in the road mode, the range gear shifting can be made without having to stop the tractor. As well, you can switch the range gear shift without pressing the range gear shift button.



- If the travelling speed is out of its preset range, first return it to its preset range. Then press the auto shift button.



## 5. Example of operation on combined auto shift and manual mode

### Starting the auto-shift-mode run

- Set the travelling speed range (9th through 12th, for example) according to the type of work. Then start the tractor.
- The automatic operation will go on in response to the load within this preset travelling speed range.

### Switching to the manual mode run

- After pressing the auto shift button to switch to manual mode, shift gears according to work conditions and carry out operation.  
If you use the ez-command centre to shift up or down beyond the gear range set in auto shift mode, the mode will switch to manual.

### Returning to the auto shift mode run

- If the current travelling speed range in the manual mode is within the auto shift mode preset travelling speed range (9th through 12th), press the auto shift button, and the auto shift mode is resumed.

## 6. Setting the auto shift sensitivity

The auto shift sensitivity can maintain the engine rpm for the gear shifting up/down.

When the sensitivity is set at a lower position, the gear shifting is maintained by lower engine rpm, and when set at a higher position, the gear shifting is maintained by higher engine rpm.

### When running in the auto shift mode

Refer to the following table for settings according to the job.

- Eco-friendly operation  
The gear is automatically shifted up/down in lower engine rpm.
- Power required operation  
The gear is automatically shifted up/down in higher engine rpm.

Operating	Auto shift sensitivity dial (Standard model) Auto shift sensitivity control(Premium model)	Remarks
Eco-friendly operation	<ul style="list-style-type: none"> <li>Turn the dial anti-clockwise.</li> <li>Retract the graph leftward with the "Minus (-)" switch.</li> </ul>	Suited for light-duty work
Power required operation	<ul style="list-style-type: none"> <li>Turn the dial clockwise.</li> <li>Extend the graph rightward with the "Plus (+)" switch.</li> </ul>	Suited for heavy-duty work

### When running in the manual operation of the road mode

During operation, the main gear shift automatically selected when shifting the range gear shift up or down changes with the auto shift sensitivity setting.

### Gear shifting example when shifting up

Range gear shift	Main gear shift
C - 6	
C - 5	↑
C - 4	↑
C - 3	
C - 2	
C - 1	
B - 6	↑
B - 5	↑
B - 4	↑
B - 3	
B - 2	
B - 1	
A - 6	↑
Operating	Light-duty      Heavy-duty
Auto shift sensitivity dial (Standard model)	
Auto shift sensitivity control (Premium model)	
Remarks	Some of the tractor's travelling speeds (1st to 30th) are not in proportion to the gear shift range.

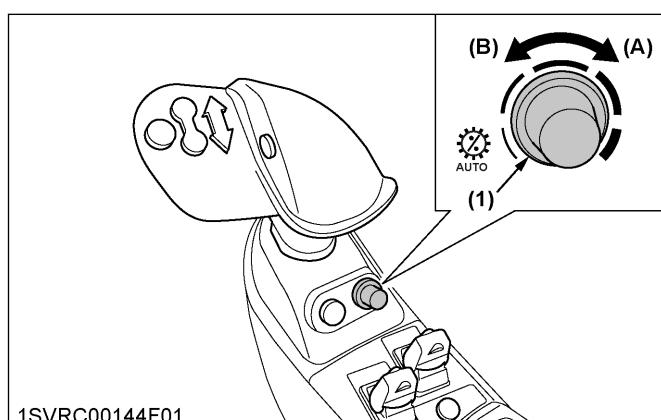
### NOTE :

- If you step on the clutch pedal immediately after shifting the range gear shift up or down, the

main gear shift may be automatically shifted as follows:

- The main gear shift is shifted down (6 to 1) as the speed decreases.
- When coming to a complete stop, speed 1 is selected.

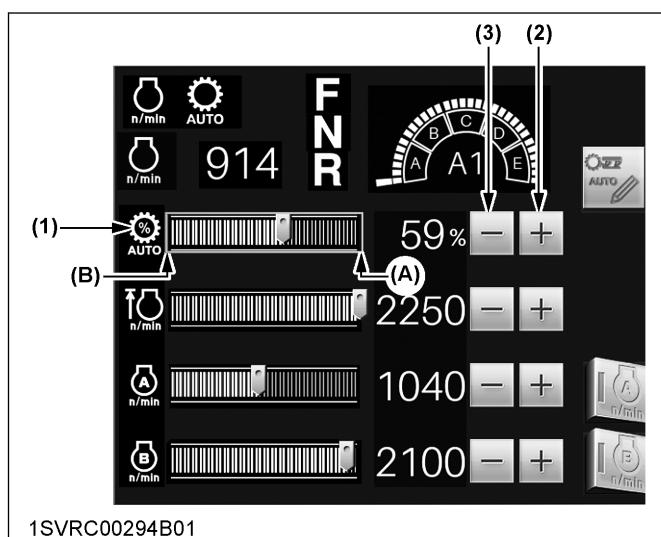
### Standard model



1SVRC00144F01 (1) Auto shift sensitivity dial

(A) "Heavy-duty"  
(B) "Light-duty"

### Premium model



1SVRC00294B01  
(1) Auto shift sensitivity control      (A) "Heavy-duty"  
(2) Plus (+) switch      (B) "Light-duty"  
(3) Minus (-) switch

### NOTE :

- Details regarding the engine and transmission settings can be found in a different section.  
(See Setting the engine and power shift transmission (Premium model only) on page 93.)

## 7. Limp home switch

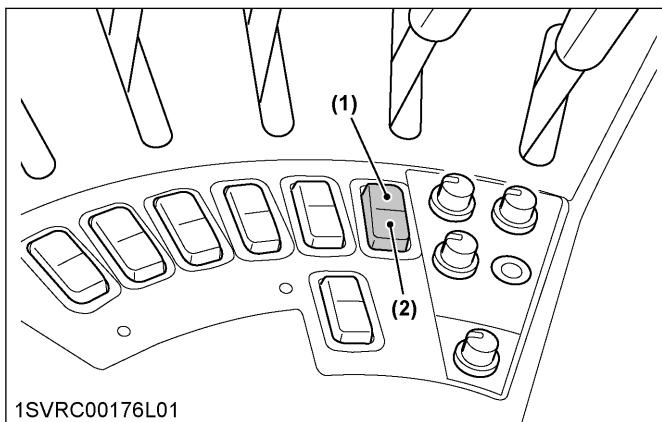
If the transmission has trouble, press this switch, and the tractor can be moved for an emergency escape.

- Press the (F) or (R) switch to enter limp home mode.

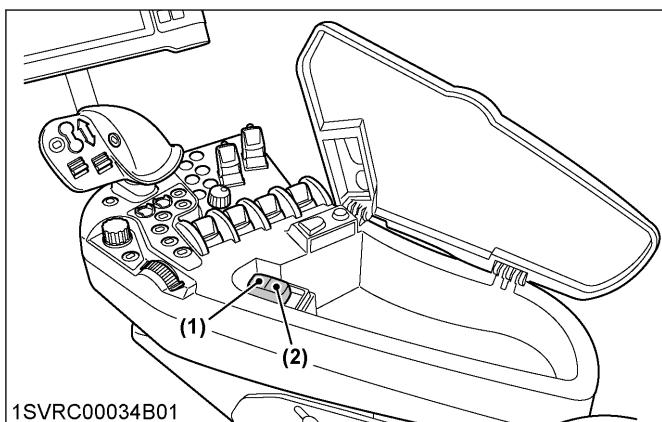
2. In travelling stop status, press the (F) or (R) switch to move at a fixed speed while the switch is held down. The speed will also increase if you step on the foot throttle while travelling.
3. When switching travelling directions, press the (F) or (R) switch after coming to a complete stop.
4. Step on the clutch pedal to stop.

**NOTE :**

- Depending on trouble spots, the tractor may fail to run as expected.
- Park it in a safe place and immediately contact your local KUBOTA Dealer.
- If you press the (F) or (R) switch by mistake, turn the key switch off to leave limp home mode.

**Standard model**

- (1) Limp home switch forward (F)  
(2) Limp home switch reverse (R)

**Premium, Premium KVT model**

- (1) Limp home switch forward (F)  
(2) Limp home switch reverse (R)

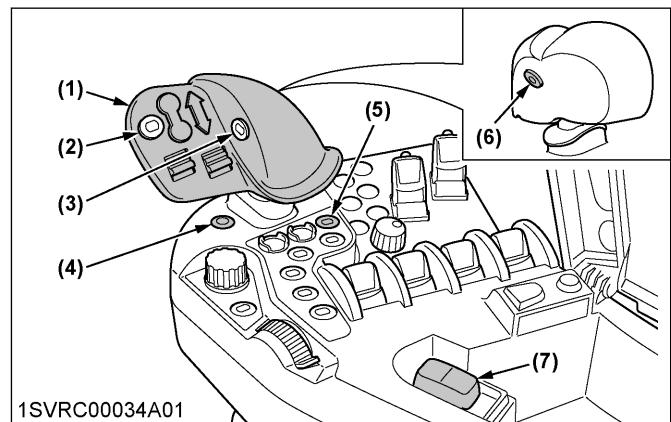
**CONTINUOUSLY VARIABLE TRANSMISSION (CVT) CONTROL** **WARNING**

To avoid personal injury or death:

- The ez-command centre has no neutral position. To bring the tractor to a complete stop, step on the brake pedal or set the shuttle lever to neutral.

The continuously variable transmission (CVT) is a fully computerized stepless type. Depending on the type of work, there are two modes to choose from: "automatic" and "*manual engine speed setting*".

Other settings are also possible at will, including CVT sensitivity in response to engine load, response control for start and stop, and cruise control among others.



- (1) Ez-command centre  
(2) Cruise button  
(3) Ratio lock button  
(4) Mode shift button  
(5) Shuttle neutral button  
(6) Shuttle enable button  
(7) Limp home switch

**Travelling speed limit**

When the left and right brake pedal interlock is released, the travelling speed is limited to 40 km/h.

To cancel the travelling speed limit, stop the tractor and interlock the left and right brake pedals.

**1. Travelling operation**

Travelling speed control for a tractor with CVT can be operated with either the ez-command centre or the foot throttle. Choose between them according to the job.

You can control both the speed and the engine power by how deeply you step on the foot throttle, as with an automatic transmission car; this enables convenient operation of the trailer, etc.

**NOTE :**

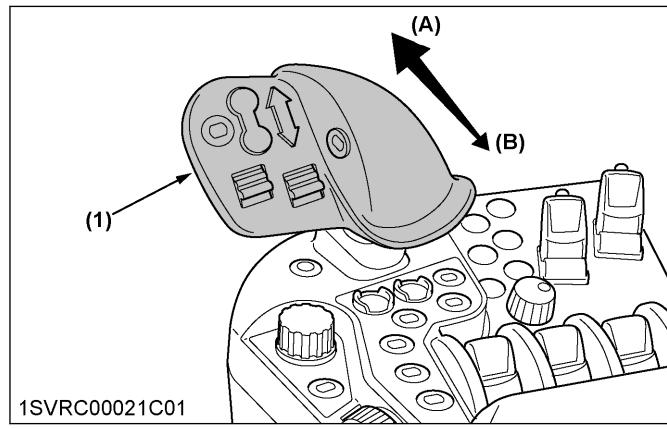
- Operating the travelling speed control using the foot throttle requires the selection of "*automatic mode*".  
(See Cruise control on page 176.)

## 1.1 Main shift

With the ez-command centre, the machine can be "sped up" and "slowed down" easily.

Push the lever forward and pull it backward, and the travelling speed will increase and decrease respectively. The travelling speed is fixed at the position where you release the lever.

The travelling speed changes in proportion to the duration of moving the lever. The longer the lever is pushed forward, for instance, the higher the travelling speed becomes.

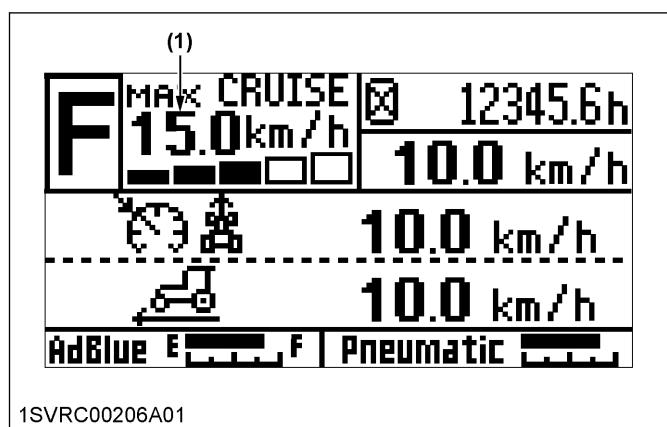
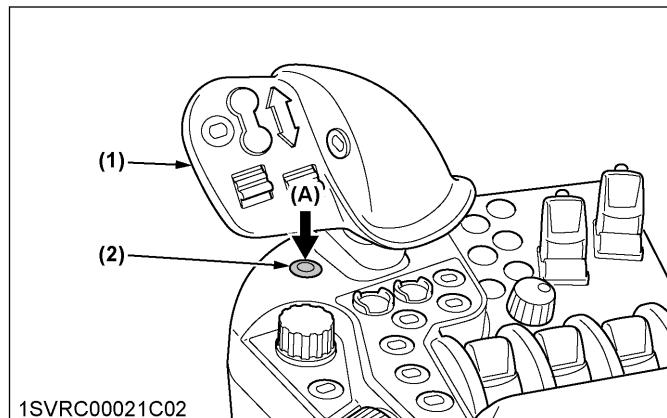


### NOTE :

- The ez-command centre has no neutral position. Even when the lever is set at the lowest speed position, the machine runs at the creep speed at about 0.5 km/h (0.3 mph). To bring the tractor to a complete stop, step on the brake pedal or set the shuttle lever to neutral.
- Allowing for conditions, use the "cruise mode" when you want to make fine adjustments to the travelling speed, or to keep the travelling speed steady for a job with a high traction load on the tractor.  
 (See Operation of the automatic mode on page 173.)
- When the ez-command center is pushed forward during the tractor driving by using foot throttle, the travelling speed is set at the time of ez-command centre operation. But this setting is effective for only when the tractor has a light load.

## 1.2 Mode shift

Every time the mode shift button is pressed, the "high speed" and "low speed" modes switch alternately. Depending on this selection, the "travelling enable upper limit speed", shown with the LCD indicator on the instrument panel, is also switched.



### NOTE :

- Switching from the high speed mode to the low speed mode is not possible if the current travelling speed is higher than the maximum travelling speed set in the low speed mode; a buzzer will sound if this is tried.

## 1.3 Modifying the maximum travelling speed

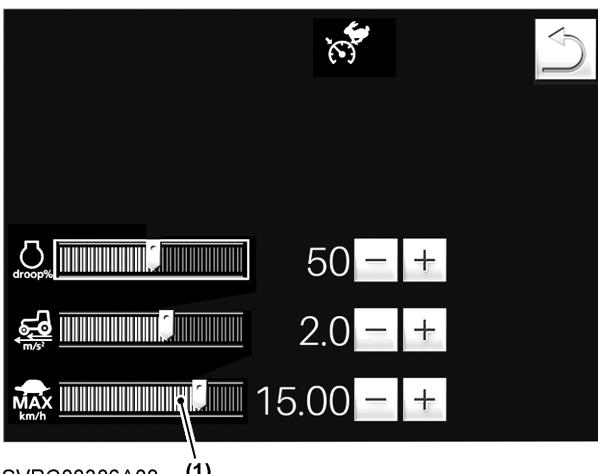
Maximum travelling speed controlled with the ez-command centre has been factory set as follows. The mode shift's "low speed" range alone can be modified for its highest travelling speed.

### Factory set travelling speeds

- Mode shift (low):  
 Maximum travelling speed up to 15 km/h (9 mph)
- Mode shift (high):  
 Maximum travelling speed up to 40-50 km/h (25-30 mph)

### Modifying the low-range travelling speeds

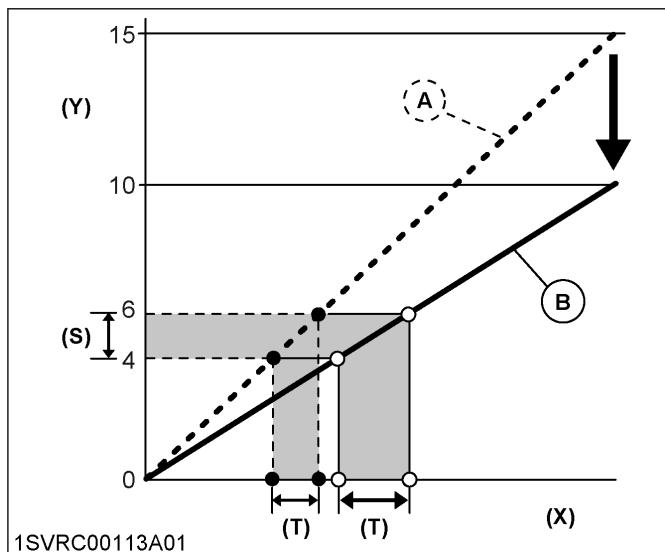
Set the desired travelling speed while confirming its digital display.



(1) CVT low-range maximum speed setting

**NOTE :**

- Details regarding relevant settings can be found in a different section.  
(See INTELLIPANEL™ CONTROL on page 59.)
- Example: In the case of working at the 4-6 km/h (3-4 mph) travelling speed, preferably set the low-range maximum travelling speed to about 10 km/h (6 mph). With this setting, the travelling speed can be kept at a nearly constant level (S) in response to the ez-command centre movement (T). In this way, the speed is easy to finely adjust with the lever.



(X) Operating times of ez-command centre

(Y) Travelling speed (km/h)

(A) Low-range speed of the factory setting (15 km/h / 9 mph)

(B) Modified low-range speed (10 km/h / 6 mph)

**2. Operation of the automatic mode**

This mode is mainly utilised for travelling on public roads and towing ploughs and similar implements.

The optimum travelling speed and engine power are obtained according to the speed settings made with the ez-command centre, foot throttle, and CVT sensitivity settings.

(See Setting the continuously variable transmission (CVT) sensitivity on page 175.)

**NOTE :**

- In the automatic mode, the engine rpm also fluctuates with changes in load. Therefore this mode is not suited for PTO-driven operations.

**Switching to the automatic mode**

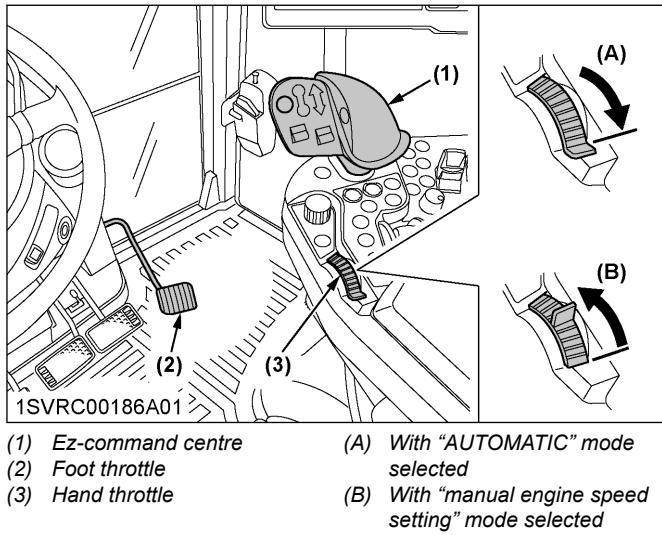
1. Set the shuttle lever to neutral or press the shuttle neutral button.
2. Set the hand throttle close to "minimum speed", and the automatic mode is selected.  
Even during operation, do not move the hand throttle.

**Foot throttle operation (for example: trailer work)**

1. You can control both the speed and the engine power by how deeply you step on the foot throttle, as with an automatic transmission car.
2. Release your foot from the foot throttle pedal, and the tractor slows down.
3. To bring the tractor to a complete stop, step on the brake pedal.  
When you release the brake pedal, the tractor starts running.

### Ez-command centre operation (for example: plough work)

1. Set a desired travelling speed with the ez-command centre, and the engine power is controlled to keep up this speed.
2. Step on the both brake pedals to stop the tractor. When releasing the pedals to start, the travelling speed must be reset. When stopped with the clutch pedal, you can drive at the pre-set travelling speed when you release the clutch pedal.



## 3. Operation of the manual engine speed setting mode

This mode mainly serves for PTO-driven implements like harvesters.

The optimum travelling speed and engine power are obtained according to the engine rpm setting made with the hand throttle, and CVT sensitivity settings.

(See Setting the continuously variable transmission (CVT) sensitivity on page 175.)

### Switching to the manual engine speed setting mode

1. Set the shuttle lever to neutral. Or press the shuttle neutral button.
2. Accelerate the engine using the hand throttle, and the manual engine speed setting mode is selected.

### Operation

1. Select the PTO shaft rpm and travelling speed according to the implement in question.
2. Even if the load is increased or decreased, a constant PTO shaft rpm is kept up.
3. Needless to say, towed implements without any PTO shaft rotation may also be used in this mode.

## 4. Setting the continuously variable transmission (CVT) sensitivity

Control content for the CVT sensitivity differs between automatic mode and manual mode.

	  1SVRC00271D01	
<b>In automatic mode</b> (with the hand throttle in idle) Engine maximum rpm can be adjusted	Engine maximum rpm increases and high power is available  ↓ Suitable for heavy-duty work requiring high power	Engine maximum rpm decreases and power is limited, but economy operation is possible  ↓ Suitable for light-duty work, travelling on roads, and energy-saving operation
<b>In manual mode</b> (with the hand throttle not in idle) Fluctuation range of engine rotation against load fluctuation can be adjusted	Engine rotation fluctuation range is smaller  ↓ Suitable for heavy-duty PTO work in which PTO rotation should remain constant	Engine rotation fluctuation range is larger  ↓ Suitable for light-duty PTO work

## 5. Setting the continuously variable transmission (CVT) response

### **WARNING**

To avoid personal injury or death:

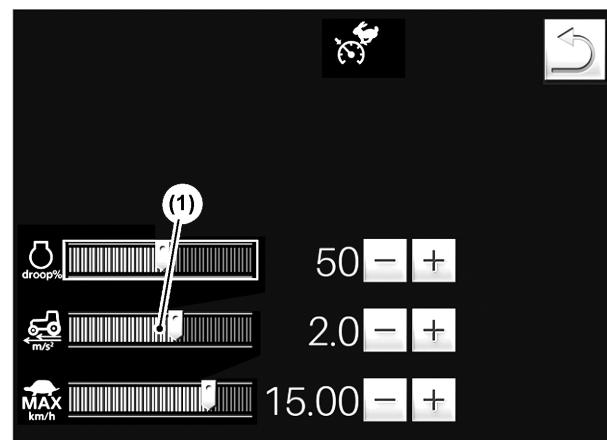
- While the trailer is running, the ez-command centre cannot be used for a sudden slow-down. For a sudden slow-down, step on the brake pedal.

1. Touch the CVT response setting graph, and the slider in the graph moves to the touched point. Then using the “+” or “-“ switch, finely adjust the setting.

2. Slide the graph farther to the right to enable more responsive rev up and slow down.

Generally speaking, when the working efficiency is enhanced in light duty jobs, increase the response sensitivity.

For heavy-duty jobs with a trailer or on grassland, decrease the response sensitivity.



1SVRC00306A03

(1) CVT response setting

#### NOTE :

- Details regarding relevant settings can be found in a different section.  
(See Setting the engine and power shift transmission (Premium model only) on page 93.)

## 6. Cruise control

The travelling speed may be flexibly pre-set with the ez-command centre.

To keep the travelling speed at a constant level, however, make the cruise control setting.

The cruise control can be pre-set in 4 different conditions for high range speed and low range speed as well as for forward and reverse respectively. The respective pre-set speed value is memorised when the

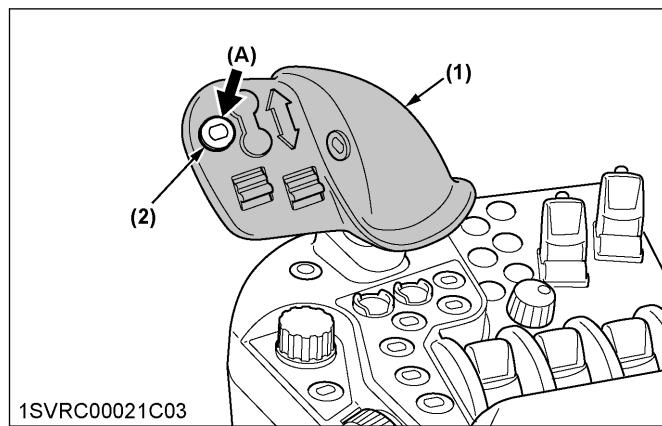
cruise control is activated once. Thus, the set speed is not memorised if there is no record for cruise activating. Set the cruise control to “ON”, and “CRUISE” and “Cruise pre-set speeds” appear in the LCD indicator on the instrument panel.

### 6.1 Setting the cruise control

To set cruise control, use either of the following procedures:

#### Setting with the ez-command centre

1. Push the ez-command centre forward until a desired travelling speed is reached.
2. Hold down the cruise button (for 3 seconds), and the cruise control is enabled. The current speed is recorded as cruise speed, and the machine runs at this speed.
3. When moving the ez-command centre forward or backward while the cruise control is enabled, the setting speed can be changed. The lowest possible speed change is 0.04 km/h (0.02 mph).



(1) Ez-command centre  
(2) Cruise button

(A) “PUSH”

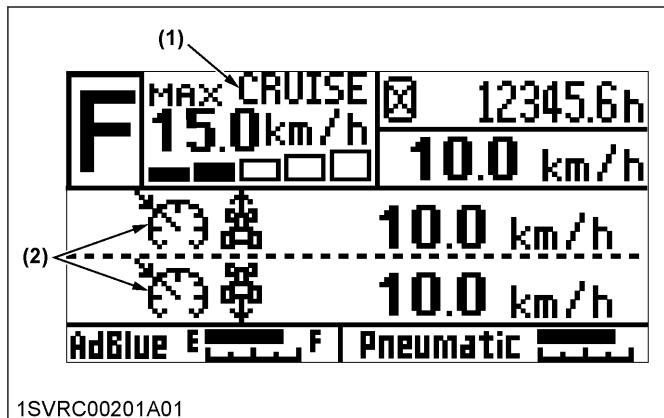
#### Calling the memory speed

A single touch on the cruise button while in motion makes the machine run at the previously set cruise speed.

Hold down the cruise button, and the current speed is recorded as cruise speed.

#### Setting the travelling speed with the foot throttle

1. Step on the foot throttle until a desired travelling speed is reached.
2. Hold down the cruise button (for 3 seconds), and the cruise control is enabled. The current speed is recorded as cruise speed. The machine runs at this speed.



## 6.2 Clearing the cruise control

The cruise control can be cleared in any of the following actions:

- Step fully on both the brake pedals.
- Press the cruise button.
- Set the shuttle lever to neutral.

### NOTE :

- The memory value will not be deleted whichever method you use to clear cruise control. Even if you turn the key switch off, the memory value remains.
- Press the cruise button again while running, and the cruise control turns on. The machine can be run at the pre-set travelling speed.
- Even during cruising, the foot throttle can be used to speed up. Release the pedal, and the previous cruise speed is resumed.
- When the cruise control is activated in the state as which speed is not memorized, the tractor will stay at creep speed (approximately 0.5 km/h / 0.3 mph).
- To activate the cruise control while driving, the tractor speed requires more than 10% of pre-set speed.

For example, if the pre-set speed is 40 km/h (24.9 mph), more than 4 km/h (2.5 mph) driving speed is required to activate the cruise control.

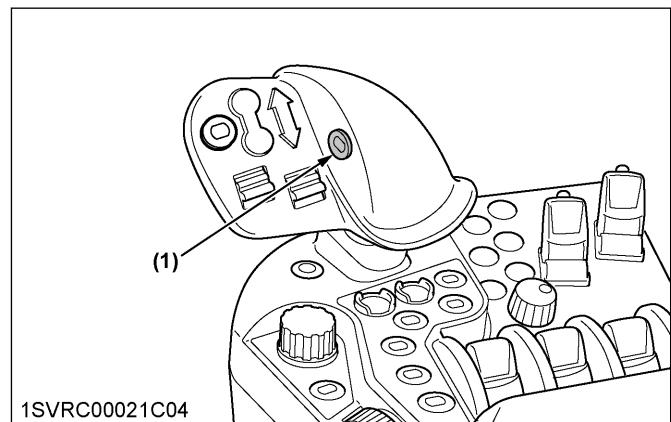
## 7. Ratio lock button

If a large trailer or the like is being towed and the foot throttle is suddenly released to stop the machine on a steep decline, a sudden transmission shift-down slows down the tractor abruptly. As a result, the tractor is pushed by the reaction force of the trailer. In some cases, the tractor may go temporarily out of control.

To prevent such unexpected situations, take the following steps. Press the ratio lock button and get the gear shift locked before releasing your foot from the

foot throttle. Then slow down the machine to some extent only with the engine brake.

Afterward, release the ratio lock button and step on the brake pedal to stop.



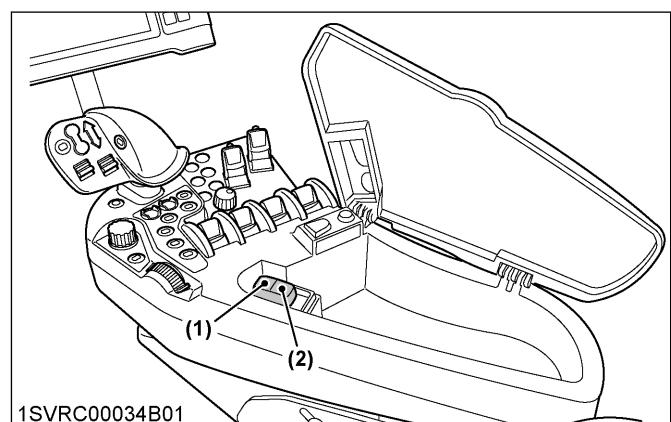
## 8. Limp home switch

If the transmission has trouble, press this switch, and the tractor can be moved for an emergency escape.

1. Press the (F) or (R) switch to enter limp home mode.
2. In travelling stop status, press the (F) or (R) switch to move at a fixed speed while the switch is held down. The speed will also increase if you step on the foot throttle while travelling.
3. When switching travelling directions, press the (F) or (R) switch after coming to a complete stop.
4. Step on the clutch pedal to stop.

### NOTE :

- Depending on trouble spots, the tractor may fail to run as expected.
- Park it in a safe place and immediately contact your local KUBOTA Dealer.
- If you press the (F) or (R) switch by mistake, turn the key switch off to leave limp home mode.



## STOPPING THE TRACTOR

1. Slow down the engine.
2. Step on the clutch and 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. Release the clutch pedal.
8. Set the handbrake.

## 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.

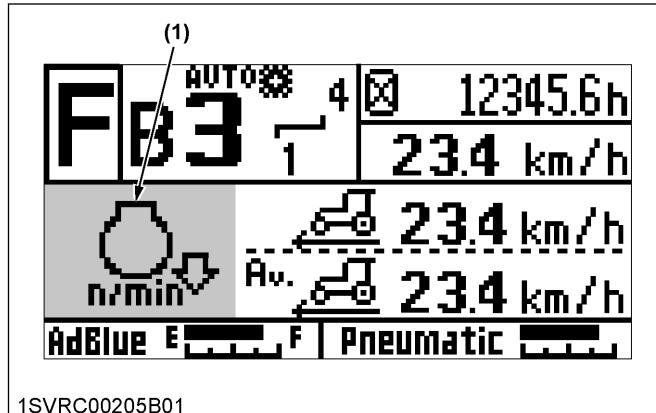
While driving, check the following items to see that the all parts are functioning normally:

- Engine over-speed limiting indicator on page 178
- Gear shifting warning indicator (**Standard, Premium models only**) on page 178
- Easy checker™ on page 179
- Fuel gauge on page 180
- DEF/AdBlue® gauge on page 181
- Pneumatic pressure gauge (if equipped) on page 181
- Coolant temperature gauge on page 181
- Tachometer on page 182

## 1. Engine over-speed limiting indicator

The engine over-speed limiting indicator informs the operator of engine over-speed by indicator and warning buzzer.

If the warning sounds, immediately lower the engine rpm with brakes and such. When the engine rpm decreases, the warning will stop.



1SVRC00205B01

(1) *Engine over speed limiting indicator*

### NOTE :

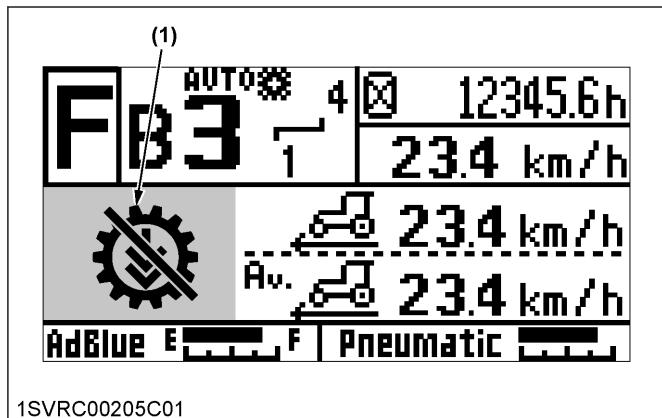
- Normal operation will not lead to over-speed, but, for instance, if suddenly shifting down when running with a trailer at full speed, the tractor will be pushed by the trailer and may go into over-speed.

## 2. Gear shifting warning indicator (Standard, Premium models only)

As in the following table, if gear shifting does not operate as desired, the operator will be informed by indicator and warning buzzer.

If the warning sounds, immediately stop the tractor and begin operation again. Upon correct operation, the warning will stop.

Gear Shifting	Measures
When running at high engine rpm in a low-speed gear, range gear was shifted to slow-down, but returned to the original gear without shifting.	<ol style="list-style-type: none"> <li>1. Lower the engine rpm and shift down.</li> <li>2. Shift down with the power shift.</li> </ol>
Range gear was shifted (rev-up or slow-down), but returned to the original gear without shifting. At high rpm, range gear was shifted from B to A in the slow-down direction, but returned to the original gear without shifting.	Lower the engine rpm and shift gears again.
When running at D-6 speed with the creep gear "ON", the gear cannot be shifted to E-1.	Switch the creep gear shift to "OFF".
Range gear was shifted to E with the creep gear "ON".	
When the engine load is within a certain range, attempting to shift the range gear from A to B or from B to A fails. The range gear does not shift and then it returns to the original position.	Disengage the clutch and/or set the shuttle lever to "NEUTRAL" (or press the shuttle neutral button) and then attempt the shift gears again.



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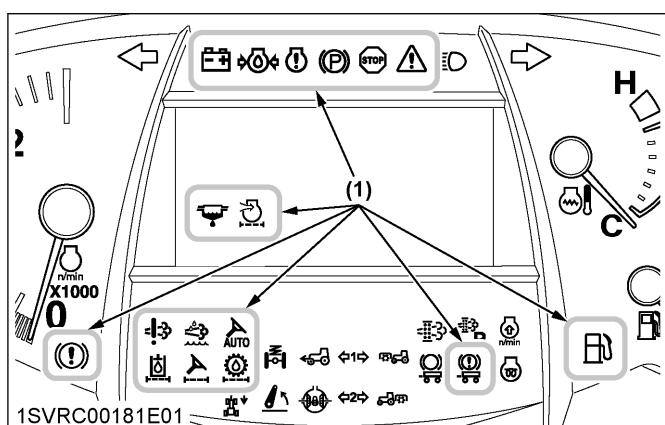
(1) Gear shifting warning indicator

### 3. Easy checker™

If the red indicators on the Easy Checker™ come on or blink during operation, immediately stop the engine, and find the cause as follows.

If any of the amber indicators light up or start blinking, remove the cause of the trouble as required.

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



(1) Easy Checker™

#### Engine warning

This indicator serves the following 2 functions. If the warning indicator lights up, pinpoint the cause and take proper measures.

##### 1. Error with the engine control system

If during operation the water temperature gauge reads an acceptable level but the warning indicator on the Easy Checker™ comes on, stop the engine and then restart it. If the error happens again, consult your local KUBOTA Dealer.

#### IMPORTANT :

- If the warning indicator lights up, the following phenomena may appear depending on the engine's trouble spot.
  - The engine stops unexpectedly.

- The engine fails to start or gets interrupted just after starting.
- The engine output is not enough.
- The engine output is enough, but the warning indicator stays on.

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

##### 2. Engine overheat

If the water temperature gauge reads an unusual level and the indicator on the Easy Checker™ comes on, the engine may have overheated.

Check the tractor by reading the troubleshooting section of this manual.  
(See TROUBLESHOOTING on page 302.)

#### Engine oil pressure

If the oil pressure in the engine goes below the prescribed level, the warning indicator on the Easy Checker™ will light up.

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 258.)

#### Electrical charge

If the alternator is not charging the battery, the warning indicator on the Easy Checker™ will light up.

If this should happen during operation, check the electrical charging system or consult your local KUBOTA Dealer.

#### Master system warning

If trouble should occur at the engine, transmission, hydraulic or other control parts, the indicator flashes and the warning buzzer whistles as a warning.

If the trouble is not corrected by restarting the tractor, consult your local KUBOTA Dealer.

#### System abnormality

If trouble should occur at the engine, transmission, hydraulic or other control parts, the indicator flashes and the warning buzzer whistles as a warning.

Move the tractor to a safe place and stop the engine.

If the trouble is not corrected by restarting the tractor, consult your local KUBOTA Dealer.

#### (P) Parking brake

If the parking brake is applied, the warning indicator on the Easy Checker™ will light up.

If the indicator is on during operation, release the parking/secondary brake lever immediately.

**(!) Brake oil pressure**

If a fault occurs in the tractor braking system, the warning indicator in the Easy Checker™ will light up.

If this should happen during operation, stop the engine and consult your local KUBOTA Dealer.

**(!) Trailer brake pressure**

If the hydraulic or pneumatic pressure for the trailer brake is decreased, the warning indicator on the Easy Checker™ will light up.

If this should happen during operation, check the hydraulic or pneumatic brake system or consult your local KUBOTA Dealer.

**(!)** DEF/AdBlue® system warning

If trouble should occur at the DEF/AdBlue® system, the warning indicator on the Easy Checker™ will light up.

If this should happen during operation, check the DEF/AdBlue® system or consult your local KUBOTA Dealer.

**(!) Fuel level**

If the fuel in the tank goes below the prescribed level, the indicator on the Easy Checker™ will light up (less than 62 L / 16.4 U.S.gals.).

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

(See Checking and refuelling on page 255.)

**IMPORTANT :**

- When the fuel indicator lights up, refuel the tank as soon as possible. If the tractor runs out of fuel and stalls, the engine and its components may be damaged.

**(!) Water separator**

If water or impurities collect in the water separator, the indicator will be displayed on the LCD monitor and the buzzer will sound.

If this should happen during operation, drain the water from the water separator as soon as possible.  
(See Checking water separator on page 257.)

**(!) DEF/AdBlue® level**

If the DEF/AdBlue® in the tank goes below the prescribed level, or if a poor-quality product is added, the indicator in the Easy Checker™ will light up.

If this should happen during operation, refill or replace with DEF/AdBlue® as soon as possible.

(See SELECTIVE CATALYTIC REDUCTION (SCR) MUFFLER on page 129.)

**(!) Air cleaner**

If the air cleaner is clogged, the indicator will be displayed on the LCD monitor.

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

(See Cleaning air cleaner primary element on page 266.)

**(!) Hydraulic suction oil filter**

If the hydraulic suction oil filter (Suction side or Return side) is clogged, the indicator on the Easy Checker™ will light up.

If this should happen during operation, replace the hydraulic suction oil filter.

(See Replacing hydraulic oil filter (suction) on page 278 and Replacing hydraulic oil filter (return) on page 280.)

**(!) Transmission oil filter**

If the transmission oil filter is clogged, the indicator on the Easy Checker™ will light up.

If this should happen during operation, replace the transmission oil filter.

(See Replacing transmission oil filter on page 287.)

**(!) Steering oil filter**

If the steering oil filter is clogged, the indicator on the Easy Checker™ will light up.

If this should happen during operation, replace the steering oil filter.

(See Replacing power steering oil filter on page 280.)

**NOTE :**

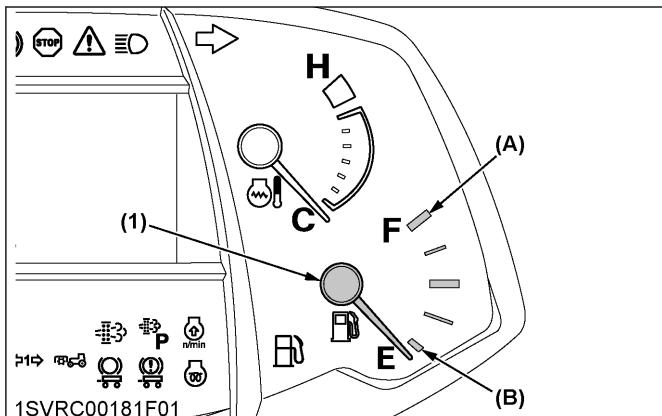
- For checking and servicing of your tractor, consult your local KUBOTA Dealer for instructions.

**4. Fuel gauge**

The needle indicates the amount of fuel left regardless of the key position.

Be careful not to empty the fuel tank. Otherwise air may enter the fuel system. Should this happen, the system should be bled.

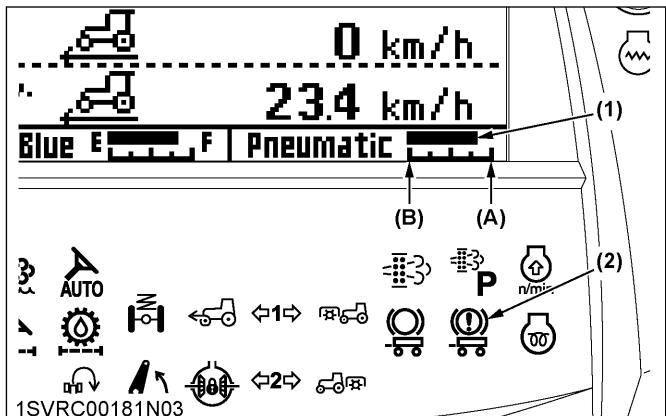
(See Bleeding the fuel system on page 294.)



(1) Fuel gauge

(A) "FULL"  
(B) "EMPTY"

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(1) Pneumatic pressure gauge  
(2) Trailer brake warning indicator  
(A) "Prescript pressure"  
(B) "Low pressure"

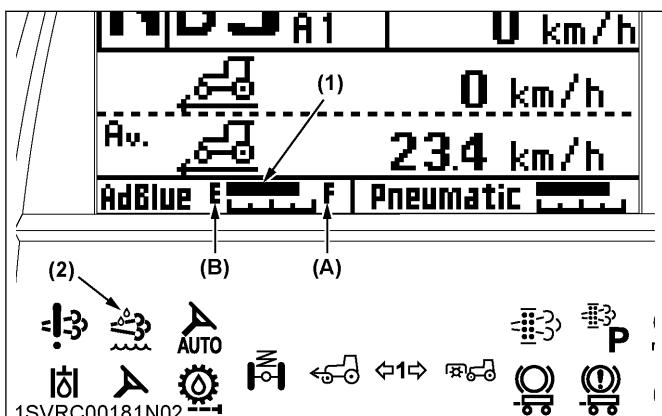
## 5. DEF/AdBlue® gauge

The DEF/AdBlue® level in the DEF/AdBlue® tank is indicated with LCD blocks.

If DEF/AdBlue® level drops too low, the engine output is restricted. With this in mind, be careful not to empty the tank.

When the fluid level in the tank has dropped below 15%, the DEF/AdBlue® warning indicator on the instrument panel lights up and stays on.

Immediately add DEF/AdBlue® to the specified level.

(1) DEF/AdBlue® gauge  
(2) DEF/AdBlue® warning indicator(A) "FULL"  
(B) "EMPTY"

1SVRC00181N02

## 6. Pneumatic pressure gauge (if equipped)

The gauge's LCD blocks show the pneumatic pressure in the trailer brake air tank.

If the pneumatic pressure has dropped too low, the trailer brake warning indicator on the instrument panel lights up and stays on.

Do not run the tractor until the air tank is charged with air and the pneumatic pressure gauge is extended to the right.

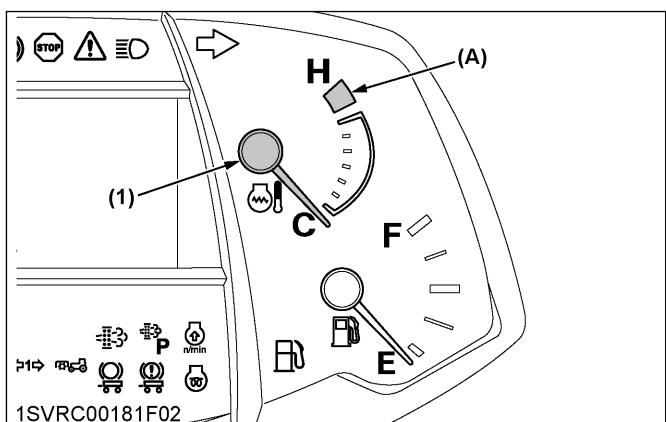
## 7. Coolant temperature gauge

### **WARNING**

To avoid personal injury or death:

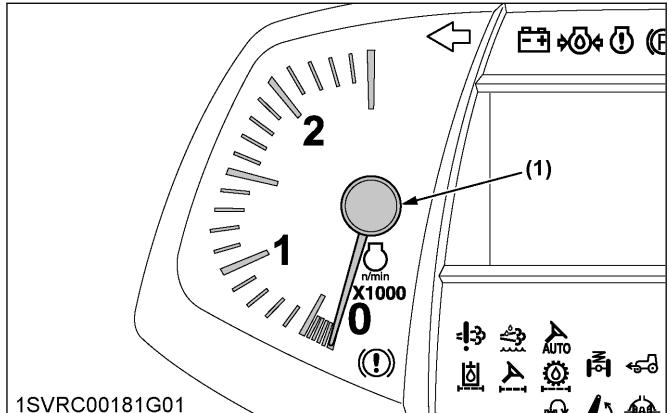
- Do not remove the radiator cap until coolant temperature is well below its boiling point. Then, loosen the cap slightly to the first stop to relieve any pressure before removing the cap completely.

1. With the key switch at "ON", this gauge indicates the temperature of the coolant. [C] is for cold and [H] is for hot.
2. 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 302.)

(1) Coolant temperature gauge  
(A) "RED ZONE"

## 8. Tachometer

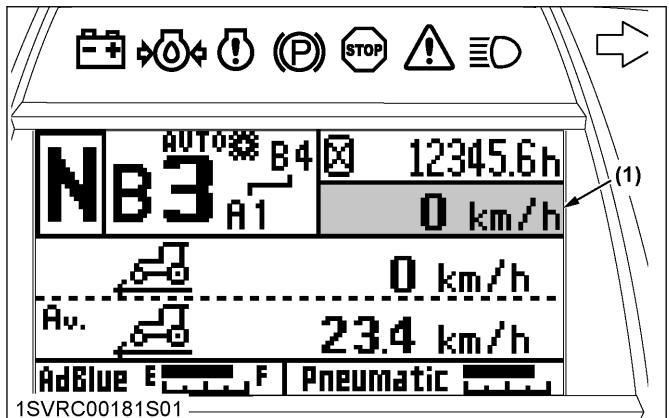
The tachometer indicates the engine speed on the dial.



(1) Engine revolution

## 9. Speedometer

The travelling speed is digitally displayed.



(1) Travelling speed

## ENGINE START SECURITY FUNCTION

This function is a system which ensures that the engine will start only when you enter a pre-set password number, preventing theft through tractor self-travel.

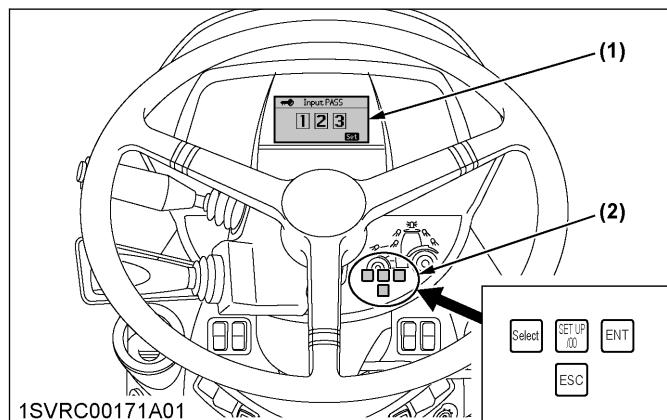
### IMPORTANT :

- This function is not directly intended for the prevention of tractor theft. Please note that we bear no responsibility for any tractor theft when this function is working (security system is "ON")
- This function can be switched by using "ON" or "OFF" switching. It has no preventive effect on theft by means of self-travel in the "OFF" state.
- If you enter the wrong password number 10 times in a row, password number input is rejected and the engine can no longer be started. In this case, or if you forget your

password number, consult your local KUBOTA Dealer.

- After releasing the engine security via password number, for 10 minutes this function is cancelled and you can restart the engine without needing to enter the password number even when key switch is "OFF". When the battery is removed, you must enter the password number even within 10 minutes after turning the key switch "OFF".
- Details regarding how to confirm the "ON" or "OFF" status of this function can be found in a different section.  
(See Setting "ON" and "OFF" the engine start security function ("OFF" by default) on page 184.)
- We recommend that you change your password number on a regular basis and avoid using the same numbers to prevent theft. Be sure not to display the password number or a hint thereto on the tractor and such.

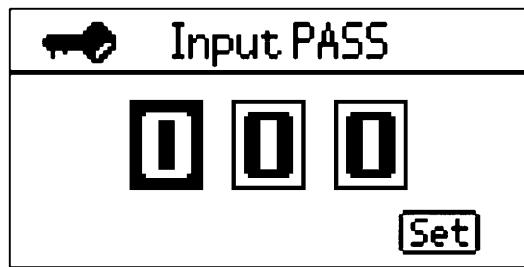
Perform operation and setting by using the switches for the LCD monitor which displays password number and message.



(1) LCD monitor  
(2) Switches for LCD monitor

## 1. Entering the password number

1. Turn the key switch "ON", and the password input screen will be displayed on LCD monitor.



1SVRC00256A01

2. Enter the password number from the hundreds digit in order. The password number should be triple-digit number.

- Briefly push the [ENT] switch:

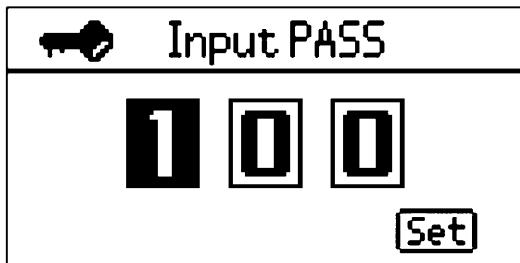
Input the number. Every time you push the switch, the number shifts to the next digit.

- Briefly push the [Select] switch:

Shift the digit. Every time you push the switch, the digit to be entered changes.

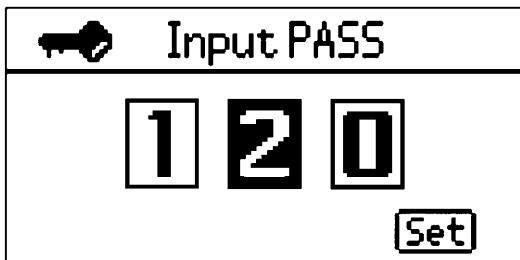
For example, when the password number is 123:

- Briefly press the [ENT] switch and enter [1] in the hundreds digit field.



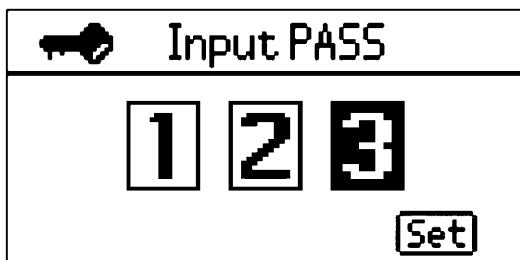
1SVRC00250A01

- Briefly press the [Select] switch to shift to the tens place.
- Briefly press the [ENT] switch and enter [2] in the tens digit field.



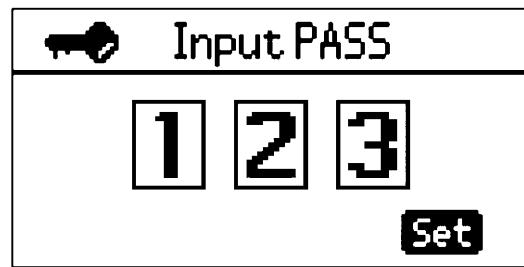
1SVRC00251A01

- Briefly press the [Select] switch to shift to the ones place.
- Briefly press the [ENT] switch and enter [3] in the ones digit field.



1SVRC00252A01

- Briefly press the [Select] switch, select [OK] and briefly press the [ENT] switch to set the password number.



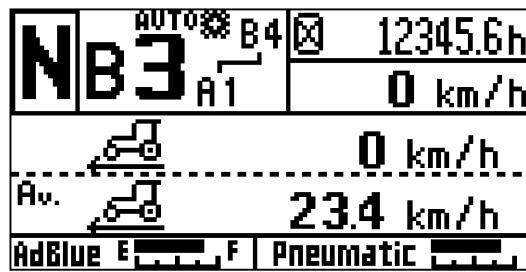
1SVRC00253A01

- When the password number matches, the screen return to the normal display and you can start the engine.

When the password number does not match, [PASS - NG] is displayed and the screen on the LCD monitor changes to the screen from the previous step 1 with the wrongly entered number. Repeat the operation from the previous step 2.

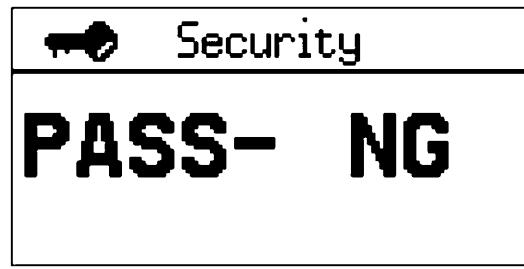
You can enter the password number 10 times, including the first one. When you enter the wrong password number 10 times in a row, [PASS - NG] is displayed on the LCD monitor and the engine cannot be started. In this case, consult your local KUBOTA Dealer.

#### When the password number is correct



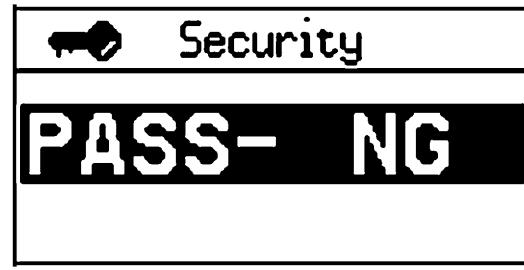
1SVRC00292A01

#### When the password number is wrong



1SVRC00254A01

#### When the wrong password number is entered incorrectly 10 times in a row



1SVRC00255A01

## 2. Setting “ON” and “OFF ” the engine start security function (“OFF” by default)

The following shows the “ON” and “OFF” status of the engine start security function.

### “ON” status

The engine will not start unless the password number is entered. The engine can be restarted without entering the password number when it is within 10 minutes after turning the key switch “OFF”. When the battery is removed, you must enter the password number even within 10 minutes after turning the key switch “OFF”.

### “OFF” status

The engine can be started after turning the key switch “ON” without requiring the password number.

1. If the password has been set, enter the password number.
2. Press the [SET UP/00] switch, and choose Security screen.
3. Press [Select] switch to select “Security” and then press the [ENT] switch



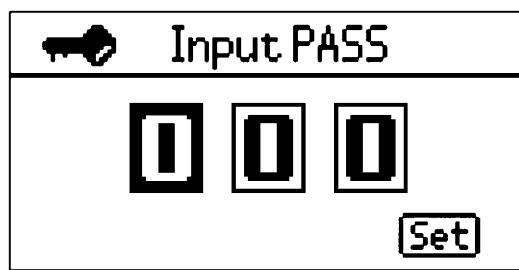
1SVRC00270A01

4. The screen will switch to the theft prevention function screen, so press [Select] switch to select “Security” and hold down the [ENT] switch



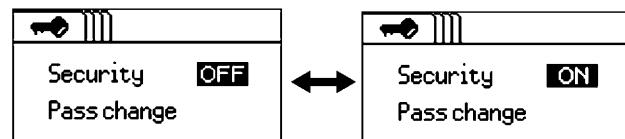
1SVRC00269A01

5. Enter the 3-digit password number on the password number input screen.  
(See Entering the password number on page 182.)



1SVRC00256A01

6. After entering the password, one of the following screens will be displayed.  
Press the [Select] switch to select “ON” or “OFF”.
7. After selecting, hold down the [ENT] switch.
  - When you switch the security function “OFF”, check that “OFF” is lit.
  - When you switch the security function “ON”, check that “ON” is lit.



1SVRC00269B01

8. After completing the setting, the screen returns to the theft prevention selection status on the “various settings” screen.



1SVRC00270A01

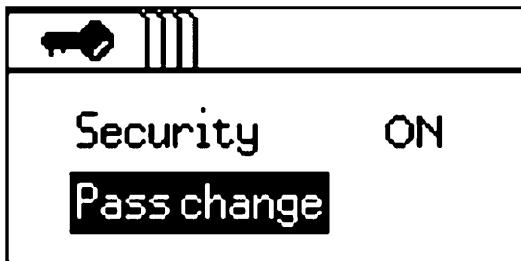
## 3. Changing the password number

1. If the password has been set, enter the password number.
2. Press the [SET UP/00] switch, and choose Security screen.
3. Press [Select] switch to select “Security” and then press the [ENT] switch.



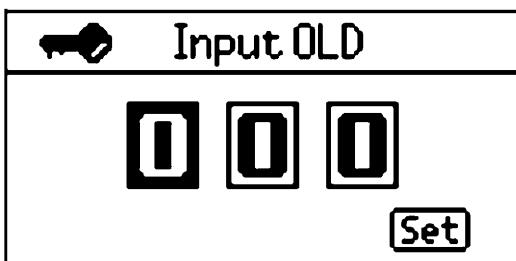
1SVRC00270A01

4. The screen will switch to the theft prevention function screen, so press the [Select] switch to select "Pass change" and hold down [ENT] switch.



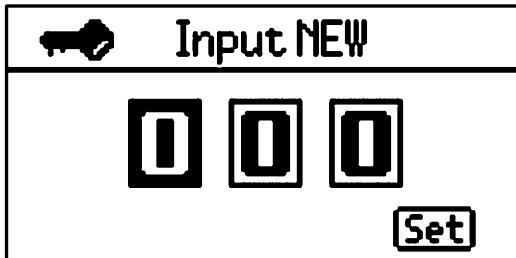
1SVRC00269C01

5. Enter the 3-digit old password number.  
(See Entering the password number on page 182.)



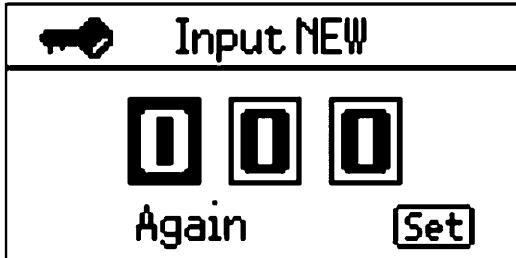
1SVRC00260A01

6. Enter the new 3-digit password number.  
(See Entering the password number on page 182.)



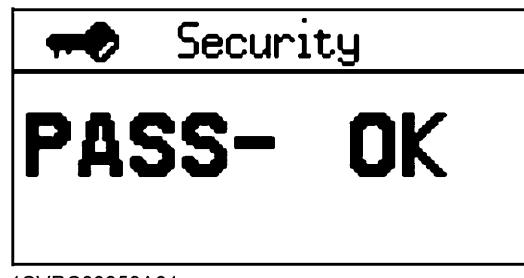
1SVRC00257A01

7. The new password number confirmation screen is displayed for re-enter.  
Enter the same 3-digit number as you entered on the new password number input screen.  
(See Entering the password number on page 182.)



1SVRC00258A01

8. When you enter the same number twice, the change complete screen will be displayed.  
When you press the [ENT] switch, the screen returns to the theft prevention selection status on the "various setting" screen



1SVRC00259A01

## HEADLAND MANAGEMENT SYSTEM

### WARNING

To avoid personal injury or death:

- Never utilise the headband management system, if anyone is in the work area of the tractor.

#### System description

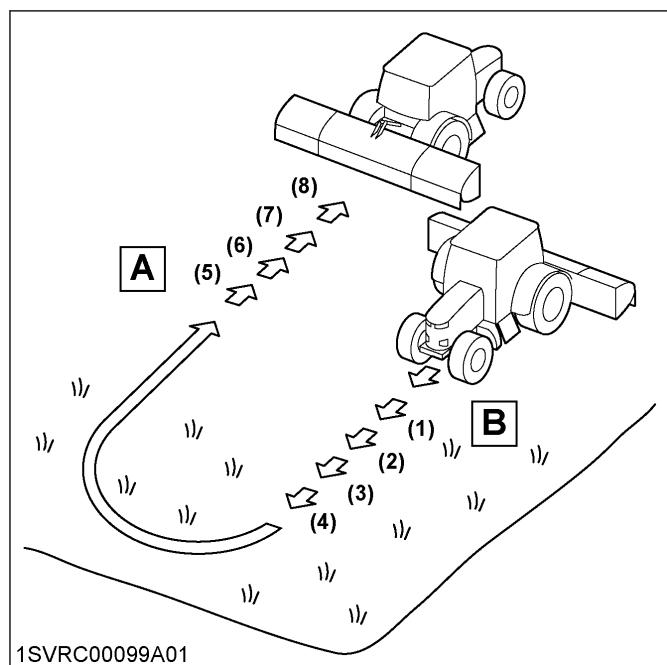
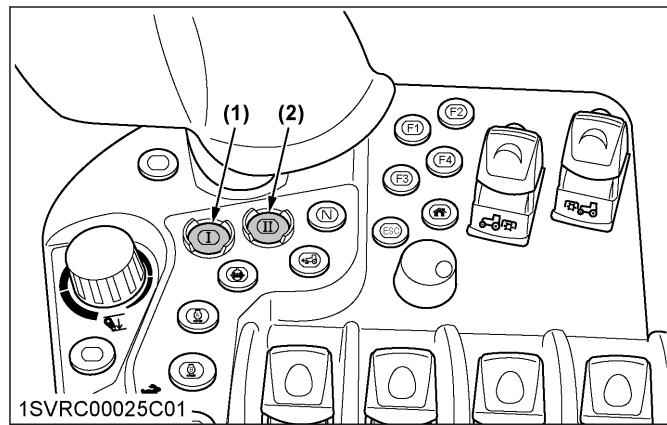
Depending on different types of crops and working methods, your headland may require different operation.

Once such procedures are pre-programmed, the operator can run the machine on headland in a simple way for better productivity and less operator fatigue.

For instance, let's pre-program the operating procedure on headland as shown in the following table.

1. Press the field-out button when you reach the headland, and the steps (1) through (4) are carried on in sequence.
2. After turning the machine, press the field-in button, and the steps (5) through (8) are carried on in sequence.

Operating example on headland	
Field out	Field in
(1) Implement "UP" (2) PTO "OFF" (3) Differential lock "OFF" (4) 4WD "OFF"	(5) 4WD "ON" (6) Differential lock "ON" (7) PTO "ON" (8) Implement "DOWN"



## 1. Programming the headland management system

To utilize the headland management system, it must be pre-programmed.

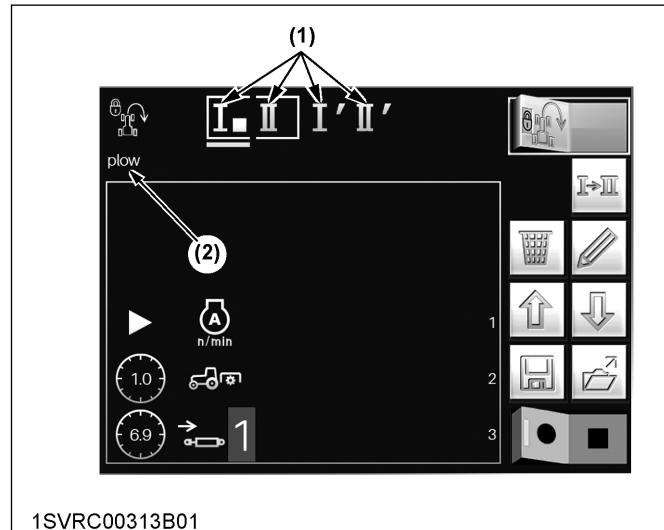
Details regarding the initial entries and modifications for the program can be found in a different section.

(See Setting the headland management system on page 101.)

## 2. Loading a program to the program code

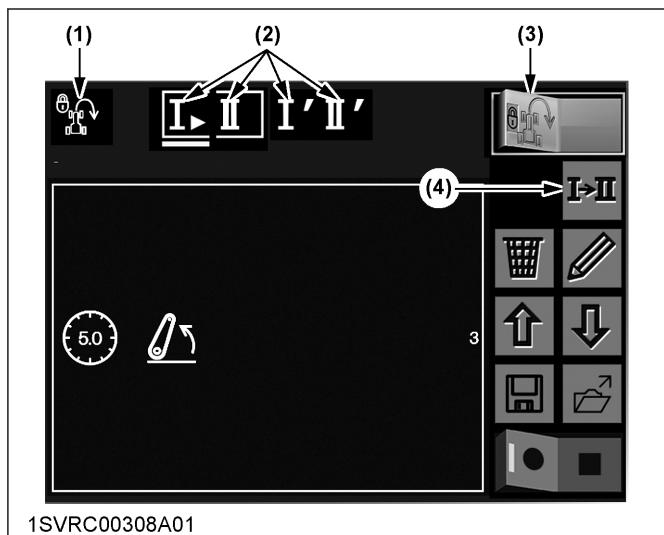
By selecting 2 types of programs that are frequently used within a loaded program and loading to the program codes (I, II, I', II'), the programs can be executed simply by touching the field out button or field in button.

For details on loading a program to a program code, refer to the section Setting the headland management system on page 101.



## 3. Handling the headland management system

1. Get the engine started and touch the right half of the headland management system lock and unlock switch to unlock the system. Once unlocked, the headland management system lock indicator goes off.
2. Using the program select switch, choose the program code (I or I').
3. When the headland has been reached, press the "Field out" button. The recorded program will be carried on. After swivelling the machine, press the "Field in" button.
4. To interrupt the program execution, press the "Field out" or "Field in" button, for which the indicator stays on.



1SVRC00308A01

- (1) Headland management system lock indicator
- (2) Program code display indicator
- (3) Headland management system lock and unlock switch
- (4) Program select switch

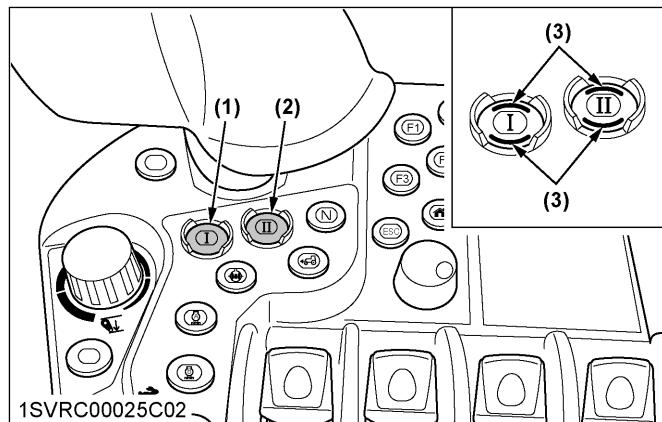
**NOTE :**

- The headland management system is kept locked all the time when the engine gets started. To enable this system, press the headland management system lock and unlock switch to unlock it.
- While the program is being executed, the manually operated levers and switches can be used. If the opposite operation takes place while the program is running, however, the program run is interrupted.  
For example, the program is interrupted if the 3-point quick lower switch is used and then the 3-point quick raise switch is pressed.
- Before turning on the PTO shaft, use the PTO gear shift lever to select the PTO shaft speed (540 or 1000 rpm) in advance.
- Before using the remote control valves, set the remote control valve switch to the neutral position.
- Work can also be started, pressing the "Field in" button as the first step.

**Field in and out buttons**

When the indicators of both buttons are on, press either of the buttons to activate the headland management system.

With the headland management system lock/unlock switch at lock position	Indicators of both buttons: "OFF"
With the headland management system program ready to run	Indicators of both buttons: "ON"
With the field out button pressed and the program running	Indicator of field out button: "ON" Indicator of field in button: "OFF"



- (1) Field out button
- (2) Field in button
- (3) Indicator

## FRONT SUSPENSION (IF EQUIPPED)

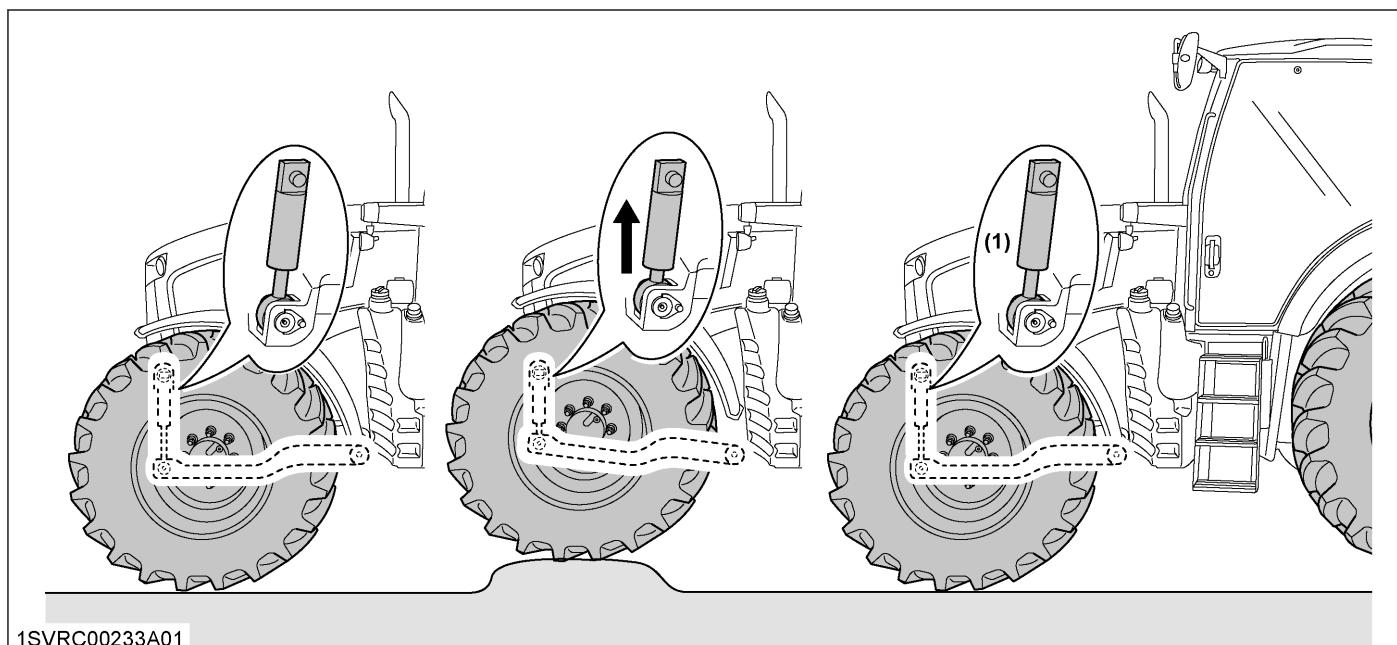
### **! WARNING**

To avoid personal injury or death:

- The front suspension control system is working when the engine is running. In the AUTO mode, the control system will subtly change the machine's height at startup or as weight changes when implements are attached. These subtle movements can be unexpected. Before starting it, make sure the area near the machine is clear of all persons and objects.

The front suspension system works to absorb shocks and vibrations that can be caused by field surface

conditions, road surface conditions, and changes in weight caused by implements. Different implements can change the way a tractor carries weight and that weight is also changed when driving in the field or driving on the road. The front suspension system provides the operator with a smoother ride, improved tractor stability, and higher productivity. The front suspension control system has two control switches that allow the operator to adjust the suspension system to operating conditions. Those switches are the auto and block mode selection switch and the suspension manual control switch. The operator can quickly adjust the suspension system to changing conditions with a touch of the switches.



1SVRC00233A01

(1) Suspension cylinder

## 1. Front suspension modes

Choose the front suspension status from the following modes.

- Auto mode:**

The front suspension functions in the entire speed range of the tractor.

This mode is recommended for general work.

- Block mode:**

Under 40 km/h (25 mph) or so, the suspension cylinder is retracted and fixed at its lowest position. When the tractor speed rises above 40 km/h (25 mph), this mode is automatically switched to the auto mode.

This mode is recommended for work with a front loader or similar implements.

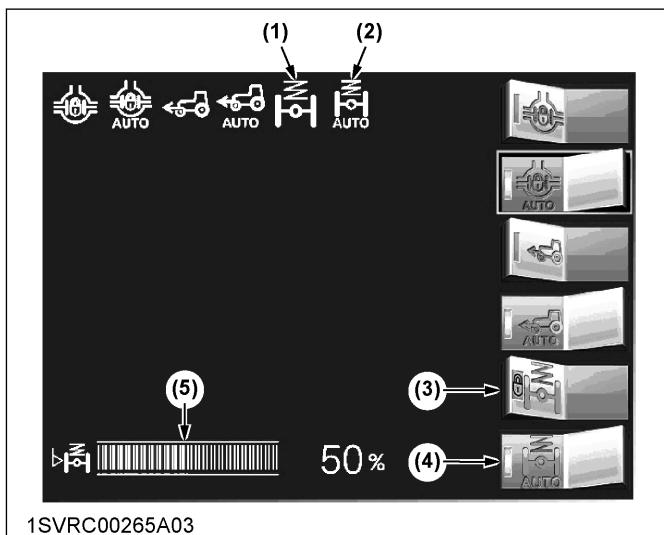
- Manual mode:**

The suspension cylinder can be manually extended and retracted to readjust the tractor height.

When the tractor speed rises above 2 km/h (1 mph) or so, this mode is automatically switched to the auto mode.

This mode is recommended for attaching and detaching implements, inspecting the tractor, etc.

(See Setting the driveability on page 90.)



(1) Suspension (active indicator)

(2) Suspension (auto indicator)

(3) Front suspension (block) switch

(4) Front suspension (auto) switch

(5) Front suspension level meter

How to read the indicator:

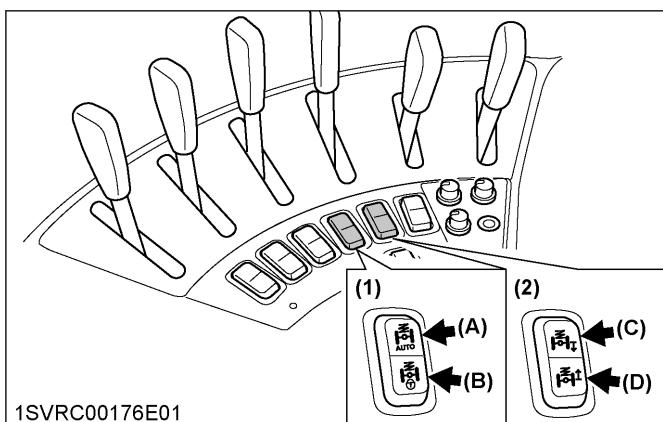
	Auto indicator	Active indicator
Auto mode	ON	OFF
Block mode	OFF	OFF
Manual mode	OFF	ON

- Press the top half of the mode selection switch, and the auto mode is selected. Pressing its bottom half enables the block mode.

## 2. Switching of the modes

### For Standard model:

- Press the top half of the mode selection switch, and the auto mode is selected. Pressing its bottom half enables the block mode.
- Press the top half of the manual switch in the auto mode to select manual lowering mode. Manual raising mode can be selected by pressing the bottom half.



(1) Front suspension mode selection switch

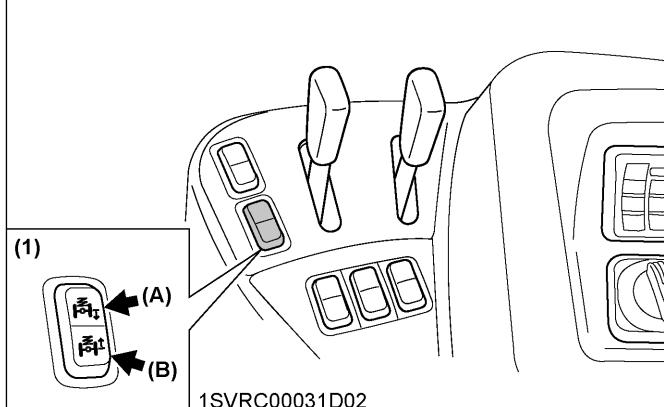
(A) Auto mode  
(B) Block mode

(2) Front suspension manual switch

(C) "DOWN"  
(D) "UP"

- Press the top half of the manual switch in the auto mode to select manual lowering mode. Manual raising mode can be selected by pressing the bottom half.

The tractor height in the manual mode can also be checked with the level meter.



(1) Front suspension manual switch

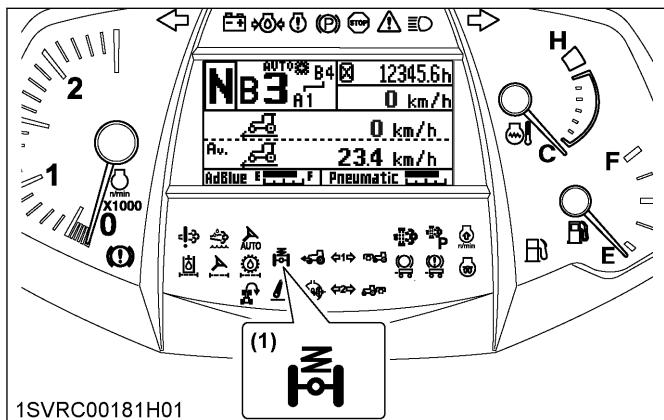
(A) "DOWN"  
(B) "UP"

### For Premium, Premium KVT models:

- On the K-monitor screen, select the auto or block mode.  
Details regarding the setting procedure can be found in a different section.

### 3. How to read the suspension indicator

The mode selector switch status can be checked with the indicator on the instrument panel.



(1) Suspension indicator

Suspension indicator	
Auto mode	ON
Block mode	OFF
Manual mode	Blinking

### 4. Travelling speed and modes

The auto, block and manual modes are automatically switched, as shown in the following table, according to the travelling speed.

Mode selection switch	Manual switch	Travelling speed		
		Below 2 km/h (1 mph)	Below 40 km/h (25 mph)	Above 40 km/h (25 mph)
Auto mode selected	OFF	Auto mode		
	ON	Manual mode (manual switch enabled)*1	Auto mode	
Block mode selected	OFF	Block mode		Auto mode
	ON			

\*1 The manual switch is disabled during deceleration.

#### NOTE :

- When restarting the engine while driving in automatic mode, the mode may remain in automatic or switch to manual, depending on the suspension cylinder stop position. If the travelling speed is 2 km/h (1 mph) or higher, it will switch to automatic mode.

### PARKING THE TRACTOR

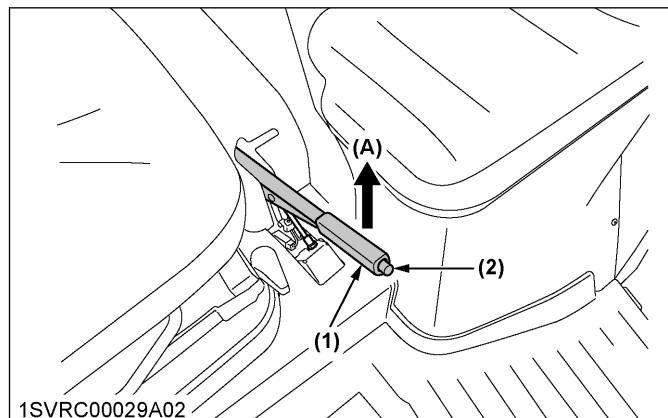
#### WARNING

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.

- Before getting off the tractor, disengage the PTO, lower all implements, place all control levers in their neutral positions, pull the parking/secondary brake lever to park, 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.



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

#### IMPORTANT :

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

#### NOTE :

- After stopping the machine, be sure to apply the parking brake.  
When the key switch is turned off with no parking brake applied, the warning buzzer sounds for around 10 seconds.
- Once the parking brake has been applied, the machine sets itself in the 4-wheel drive mode. This helps the 4 wheels to increase their gripping force on slopes.

### 1. Trailer operation

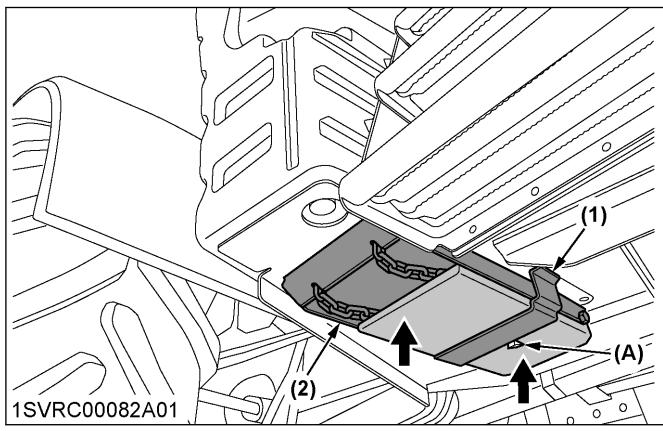
When towing a trailer with dual-line trailer brakes (hydraulic or pneumatic), brakes are applied to both

tractor and trailer wheels when the parking brake is set to "ON". However, be aware that with single-line trailer brake specifications, the parking brake will not be applied to the trailer wheels.  
(See Trailer brake on page 153.)

## 2. Chock block

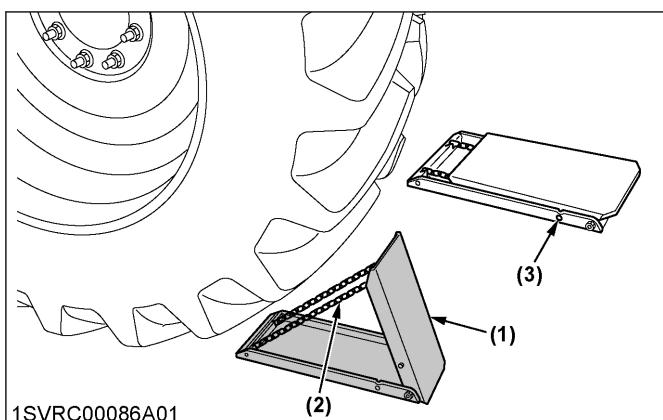
### Attaching and detaching the chock block

1. Lift the entire lower chock block until the stopper (projection) is released from the storage holder, and pull the chock block toward yourself to remove it.
2. To reattach the chock block, point the stopper downward and push it with the chain toward yourself. Now make sure the stopper (projection) stretches out of the back of the storage holder.  
A wrong storage method may cause the chock block to drop out of position.



### Using the chock block

1. While pushing the lock knob open the chock block until the chain stretches tightly. Get the longer face into contact with the ground.
2. Set the chock block's chain toward the tyre into place.



### NOTE :

- The chock block is stored below the fuel tank on the left and the battery case on the right.
- Always have the chock blocks on the tractor.

## OPERATING TECHNIQUES

### 1. Operating the tractor on a road

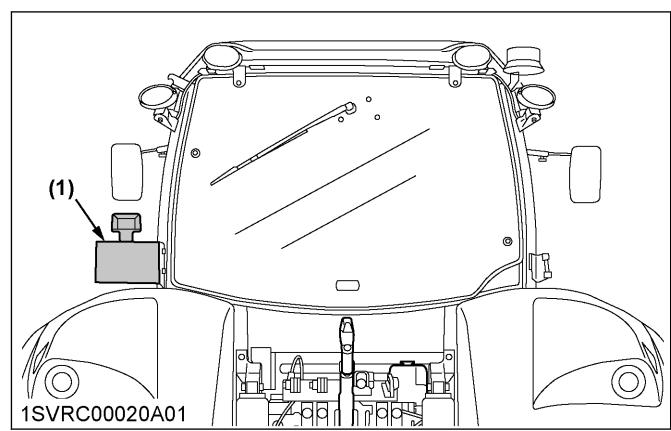


#### To avoid personal injury or death:

- 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.
- When travelling on road with or without trailer, you must comply with local regulations at all time.

The maximum travelling speed with trailer is determined by each country, and regulated speeds may vary according to the size of trailer and type of trailer brake system.

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



### 2. Operating on slopes and rough terrain



#### To avoid personal injury or death:

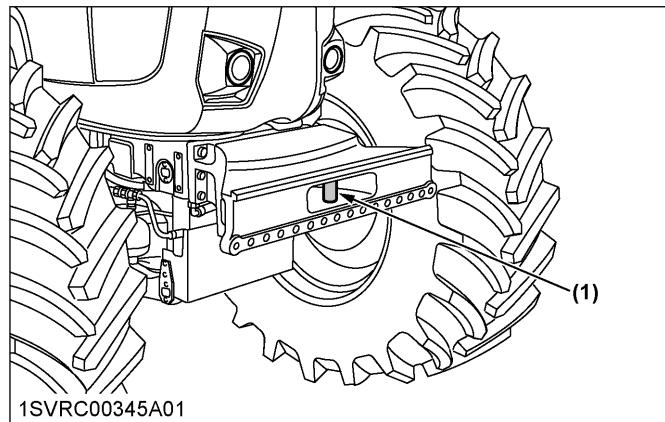
- Always reverse when going up a steep slope. Driving forward could cause the tractor to tip over backward. Stay off hills and slopes too steep for safe operation.

- Avoid changing gears when climbing or descending a slope.
- If operating on a slope, never disengage the clutch or shift levers to neutral. Doing so could cause loss of control.
- Do not drive the tractor close to the edges of ditches or banks which may collapse under the weight of the tractor, especially when the ground is loose or wet.

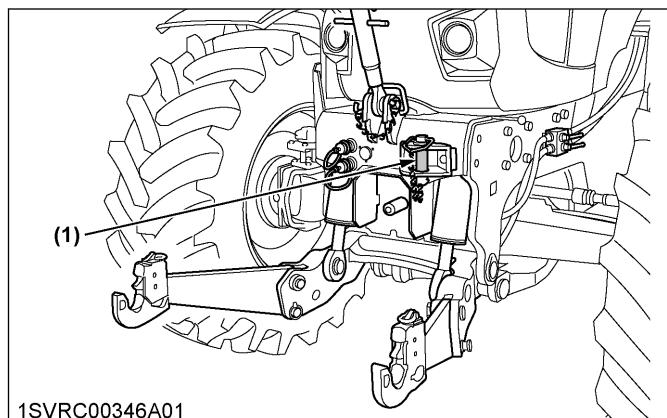
1. Be sure wheel tread is adjusted to provide maximum stability.  
(See WHEEL ADJUSTMENT on page 233.)
2. Slow down for slopes, rough ground, and sharp turns, especially when transporting heavy, rear mounted equipment.
3. Before descending a slope, shift to a gear low enough to control the speed without using brakes.

### 3. Transporting the tractor safely

1. The tractor, if damaged, must be carried on a truck.
2. Secure the tractor with chains or straps sized appropriately. Make sure all loading ramps are properly sized. Make sure all local tie-down requirements are met.
3. 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 bolt coupling (1) located at front bumper or front 3-point hitch.
  - Never tow faster than 10 km/h (6.2 mph).



(1) Bolt coupling



(1) Bolt coupling

### 4. 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.

# PTO

## REAR PTO OPERATION

### **WARNING**

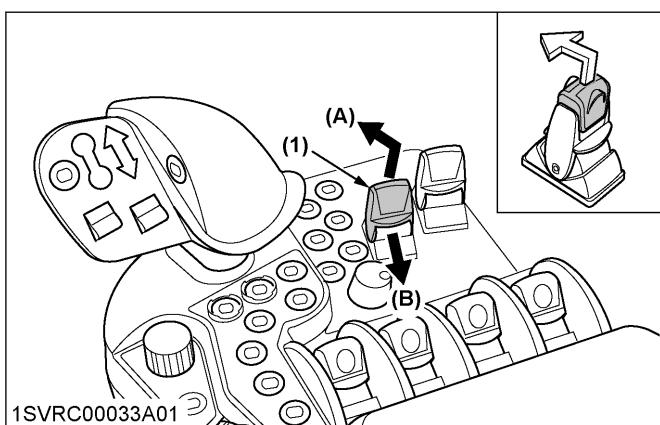
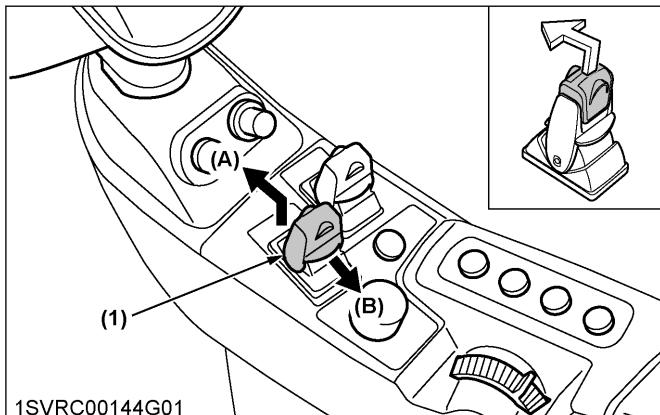
To avoid personal injury or death:

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

### 1. PTO clutch control switch

The PTO clutch control switch engages or disengages the PTO clutch which gives the PTO independent control.

1. Pull up the switch knob and tilt it forward, and the PTO clutch comes "ON" (engage).
2. Tilt the switch knob backward, and the PTO clutch comes "OFF" (disengage).



### IMPORTANT :

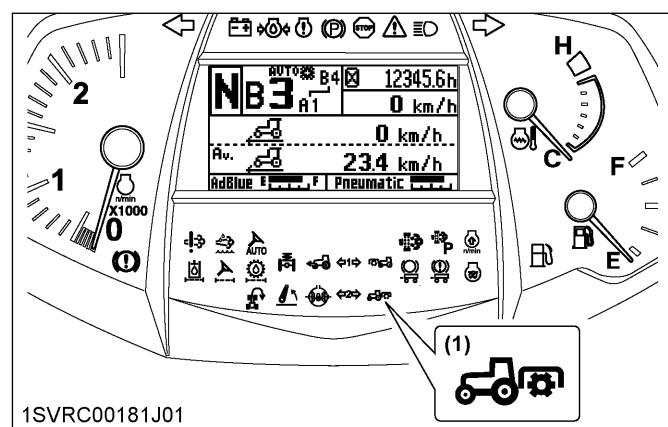
- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed.

### NOTE :

- If the tractor is travelling with the PTO running, standing up from the operator's seat will set off the warning buzzer (the PTO will continue rotating).
- If the tractor is stopped with the PTO running, standing up from the operator's seat will stop the PTO after 1 second (the warning buzzer will not sound). If the parking brake is applied, the PTO will continue rotating.
- The PTO clutch can be engaged when the operator is seated in the operator's seat. Otherwise, the clutch cannot be engaged.
- When a high load on the PTO clutch is detected, PTO clutch control switch "ON" operation (PTO start-up) will be restricted after a maximum of 5 times running. PTO start-up will be possible again 5 minutes after the restriction takes effect.

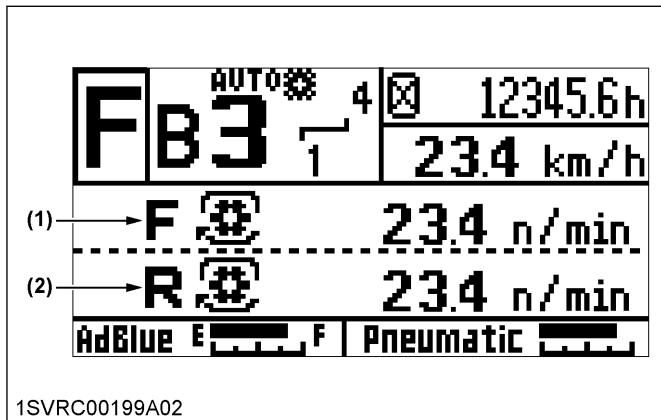
### 1.1 PTO clutch indicator

The PTO clutch indicator turns on while PTO clutch is engaged.



## 1.2 PTO rpm display

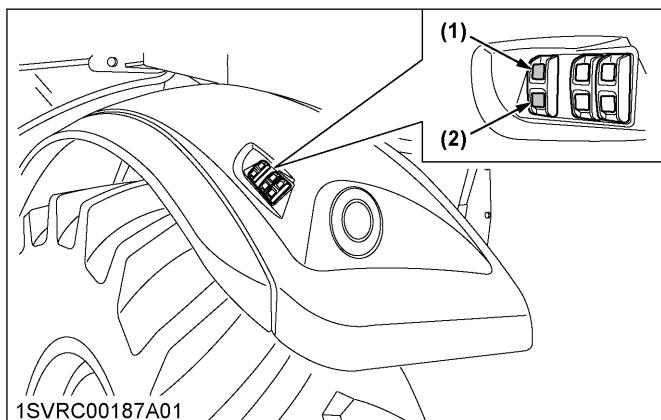
The rear PTO rpm and front PTO rpm can be displayed on the LCD screen in the instrument panel.



- (1) Rear PTO rpm  
(2) Front PTO rpm

## 2. External switch for rear PTO

1. Make sure the parking brake is applied.
2. Press the external PTO clutch control "ON" switch and the rear PTO starts turning.
  - If you release the switch within 3 seconds, the PTO stops turning.
  - Hold down the switch for more than 3 seconds and the PTO will keep on turning. Once in continuous rotation mode, the warning buzzer sounds for about 10 seconds.
3. Press the "OFF" switch, and the PTO stops turning. While the rear PTO is turning, the rear PTO indicator on the instrument panel stays on.



- (1) External switch for rear PTO "ON"  
(2) External switch for rear PTO "OFF"

## 3. PTO operating mode selector lever and PTO gear shift lever

### **WARNING**

To avoid personal injury or death:

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

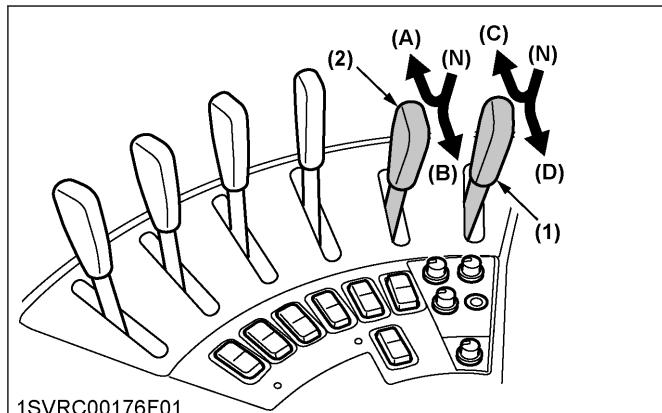
Choose from the following 4 PTO operating modes according to the type of implement or the workload.

1. Set the mode selector lever to the "NORMAL" mode for general work and the "ECONOMY" mode for light-duty work only.  
In the ECONOMY mode, the engine runs at low speed, 540 or 1000 rpm, for energy-saving operation.
2. Using the PTO gear shift lever, select a speed to suit the implement in use.

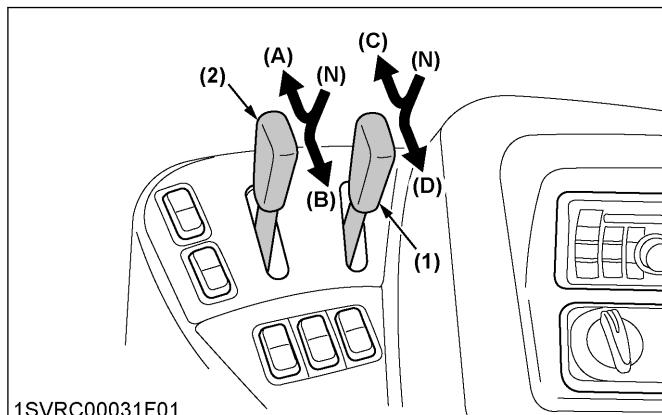
PTO operating mode selector lever	PTO gear shift lever	
	C	D
Normal (PTO and engine speed)	540/2005	1000/1995
Economy (PTO and engine speed)	540E/1608	1000E/1600

**Handling the levers**

- Before handling both the levers, set the PTO clutch control switch to the OFF (disengage) position.
- To shift, hold down the shift lever and move it to the desired position. If the lever is not pushed down, it remains locked and no gear shift can be made.
- When returning the lever to the neutral position, there is no need to push it down.

**Standard model**

- |                                       |                      |
|---------------------------------------|----------------------|
| (1) PTO gear shift lever              | (A) Normal mode      |
| (2) PTO operating mode selector lever | (B) Economy mode     |
|                                       | (C) 540/540E rpm     |
|                                       | (D) 1000/1000E rpm   |
|                                       | (N) Neutral position |

**Premium, Premium KVTmodels**

- |                                       |                      |
|---------------------------------------|----------------------|
| (1) PTO gear shift lever              | (A) Normal mode      |
| (2) PTO operating mode selector lever | (B) Economy mode     |
|                                       | (C) 540/540E rpm     |
|                                       | (D) 1000/1000E rpm   |
|                                       | (N) Neutral position |

**IMPORTANT :**

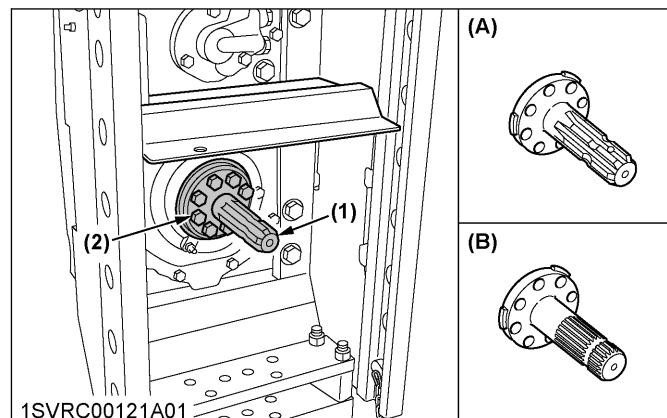
- For maximum PTO shaft speeds of various implements, see the implement operator's manual.

**4. 1000 rpm PTO shaft (if equipped)**

To avoid personal injury or death:

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

For replacement with a 21-spline 1000-rpm PTO shaft, observe the following procedure.



- |               |                        |
|---------------|------------------------|
| (1) PTO shaft | (A) 540 rpm PTO shaft  |
| (2) Bolt      | (B) 1000 rpm PTO shaft |

**PTO shaft interchanging procedure**

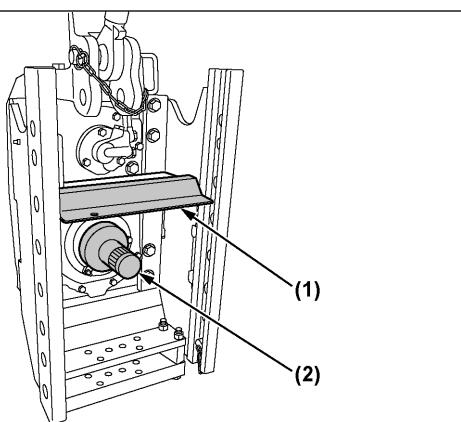
- The 6-spline 540 rpm PTO shaft is standard equipment.
- Shifting the 2 PTO levers to an arbitrary position, lock the PTO shaft to keep it from rotating.
  - Remove the PTO mounting bolts and then remove the PTO shaft.
  - After cleaning the PTO shaft mounting surface, mount the 1000-rpm PTO shaft.  
Tightening torque: 115 N·m (11.7 kgf·m)

**IMPORTANT :**

- For maximum PTO shaft speeds of various implements, see the implement operator's manual.
- implements may be driven at 540 rpm only if their power input never exceeds 60 kW (82 HP).

**5. PTO shaft cover and shaft cap**

Keep the rear 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".



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

**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. Auto PTO operation (Premium, Premium KVT models)

The rear-PTO can be pre-set to turn itself on and off, being interlocked with the lifting height of 3-point hitch mounted implement.

### **WARNING**

To avoid personal injury or death:

- Use caution when setting auto engagement, considering the type of implement in use.

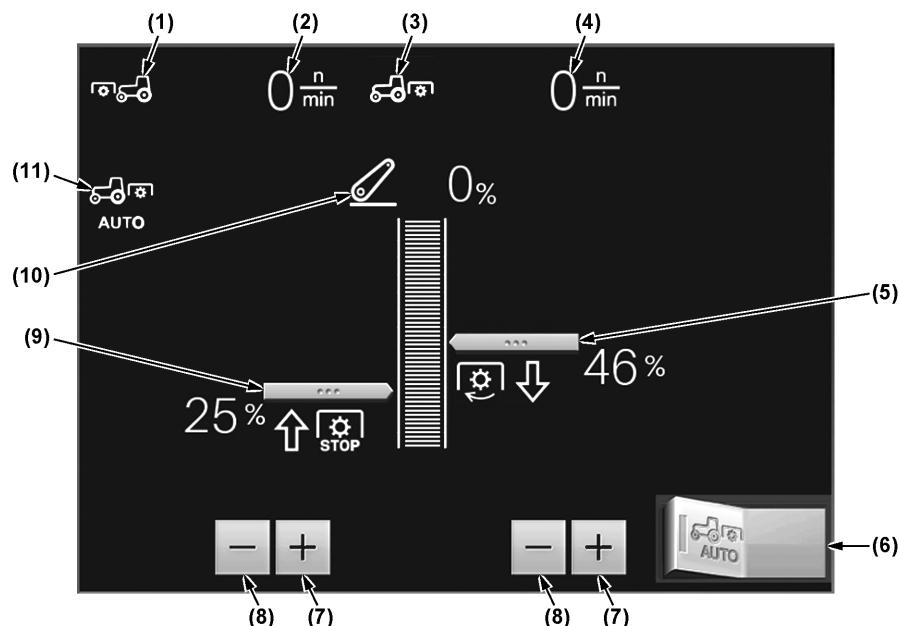
#### Setting

1. Touch the left half of the auto PTO switch (6), and the setting is enabled. By touching the right half of the switch, and the setting is disabled.  
While the auto PTO switch (6) is on, the auto PTO indicator (11) also lights up.
2. Use the plus and minus switches (7 and 8) to readjust the height for turning on the PTO in lowering the implement and the height for turning it off in raising the implement.

(See Setting the PTO on page 92.)

#### NOTE :

- When PTO turning has been stopped by the auto PTO function, the PTO indicator on the instrument panel blinks and the buzzer keeps sounding.  
The PTO starts turning by lowering the implement with the 3-point quick lower switch or depth control dial.



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- |                                                         |                                                         |
|---------------------------------------------------------|---------------------------------------------------------|
| (1) Front PTO indicator                                 | (7) Plus (+) switch                                     |
| (2) Front PTO rpm                                       | (8) Minus (-) switch                                    |
| (3) Rear PTO indicator                                  | (9) Height to turn off the PTO in raising the implement |
| (4) Rear PTO rpm                                        | (10) Current lift arm height                            |
| (5) Height to turn on the PTO in lowering the implement | (11) Auto PTO indicator                                 |
| (6) Auto PTO switch                                     |                                                         |

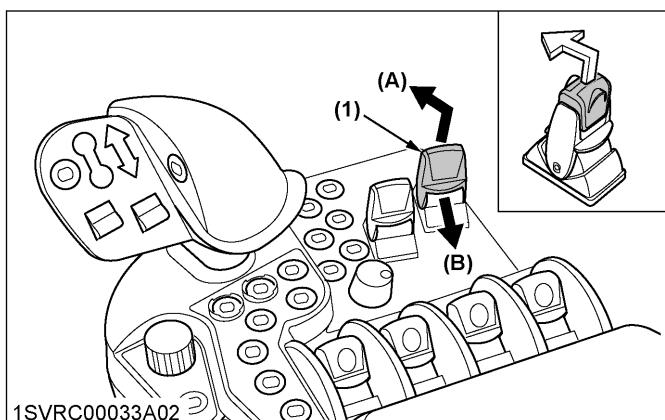
## FRONT PTO OPERATION (IF EQUIPPED)

The front PTO and rear PTO are independent, and both PTOs can be operated together or individually.

### **WARNING**

To avoid personal injury or death:

- Disengage PTO, stop engine, and allow all rotating components to come to a complete stop before connecting, disconnecting, adjusting, or cleaning any PTO driven equipment.
- When the front PTO is not used, keep it off.



(1) Front PTO clutch control switch

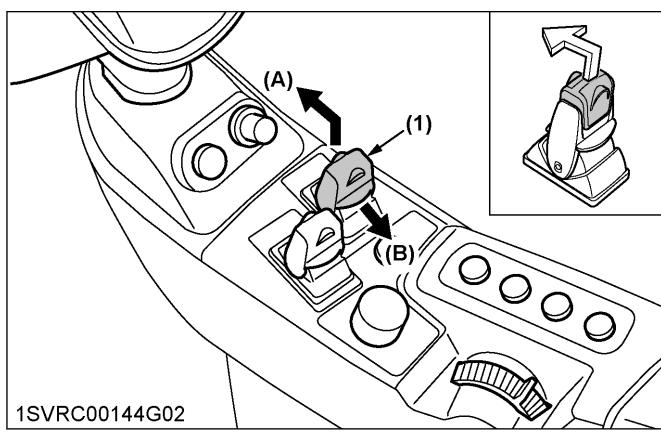
(A) "ON"  
(B) "OFF"

Direction of turning PTO	Anti-clockwise, viewed from tractor front
PTO/engine speed	1000/2000 rpm
PTO shaft	6 splines

## 1. PTO clutch control switch

The PTO clutch control switch engages or disengages the PTO clutch which gives the PTO independent control.

1. Pull up the switch knob and tilt it forward, and the PTO clutch comes "ON" (engage).
2. Tilt the switch knob backward, and the PTO clutch comes "OFF" (disengage).



(1) Front PTO clutch control switch

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

### IMPORTANT :

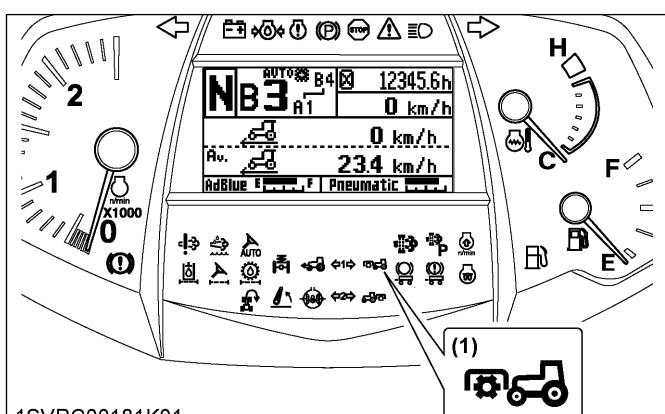
- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed.

### NOTE :

- If the tractor is travelling with the PTO running, standing up from the operator's seat will set off the warning buzzer (the PTO will continue rotating).
- If the tractor is stopped with the PTO running, standing up from the operator's seat will stop the PTO after 1 second (the warning buzzer will not sound).  
If the parking brake is applied, the PTO will continue rotating.
- The PTO clutch can be engaged when the operator is seated in the operator's seat. Otherwise, the clutch cannot be engaged.

### 1.1 PTO clutch indicator

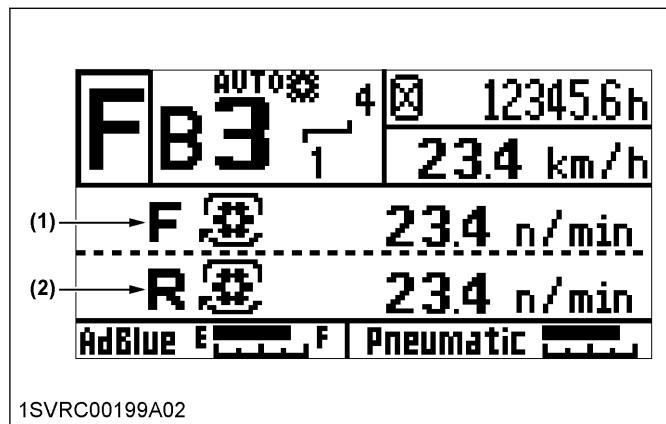
The PTO clutch indicator turns on while PTO clutch control switch is in "ON" (engage) position.



(1) PTO clutch indicator

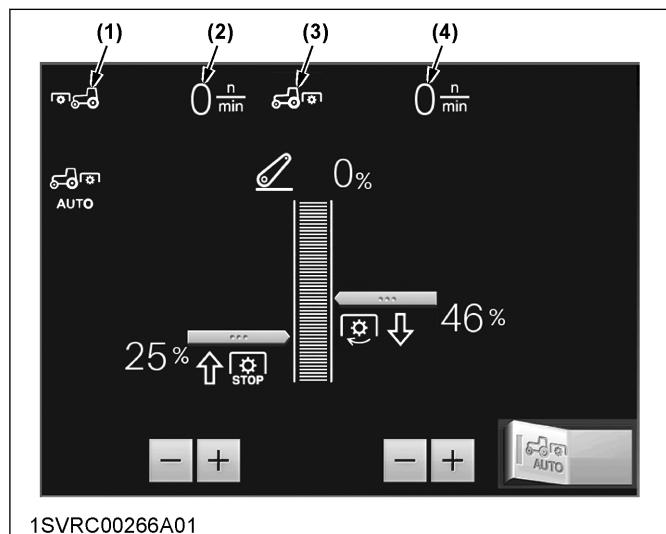
## 1.2 PTO rpm display

The front PTO rpm and rear PTO rpm can be displayed on the LCD screen on the instrument panel.



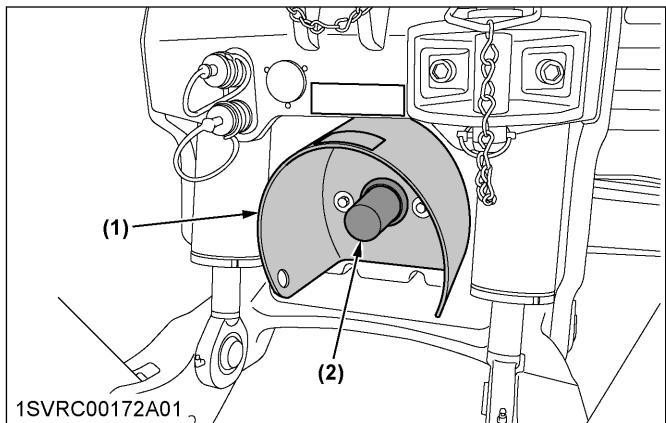
### For Premium, premium KVT models only:

The front PTO rpm and rear PTO rpm can be displayed on the K-monitor screen.  
(See Setting the PTO on page 92.)



## 2. PTO shaft cover and shaft cap

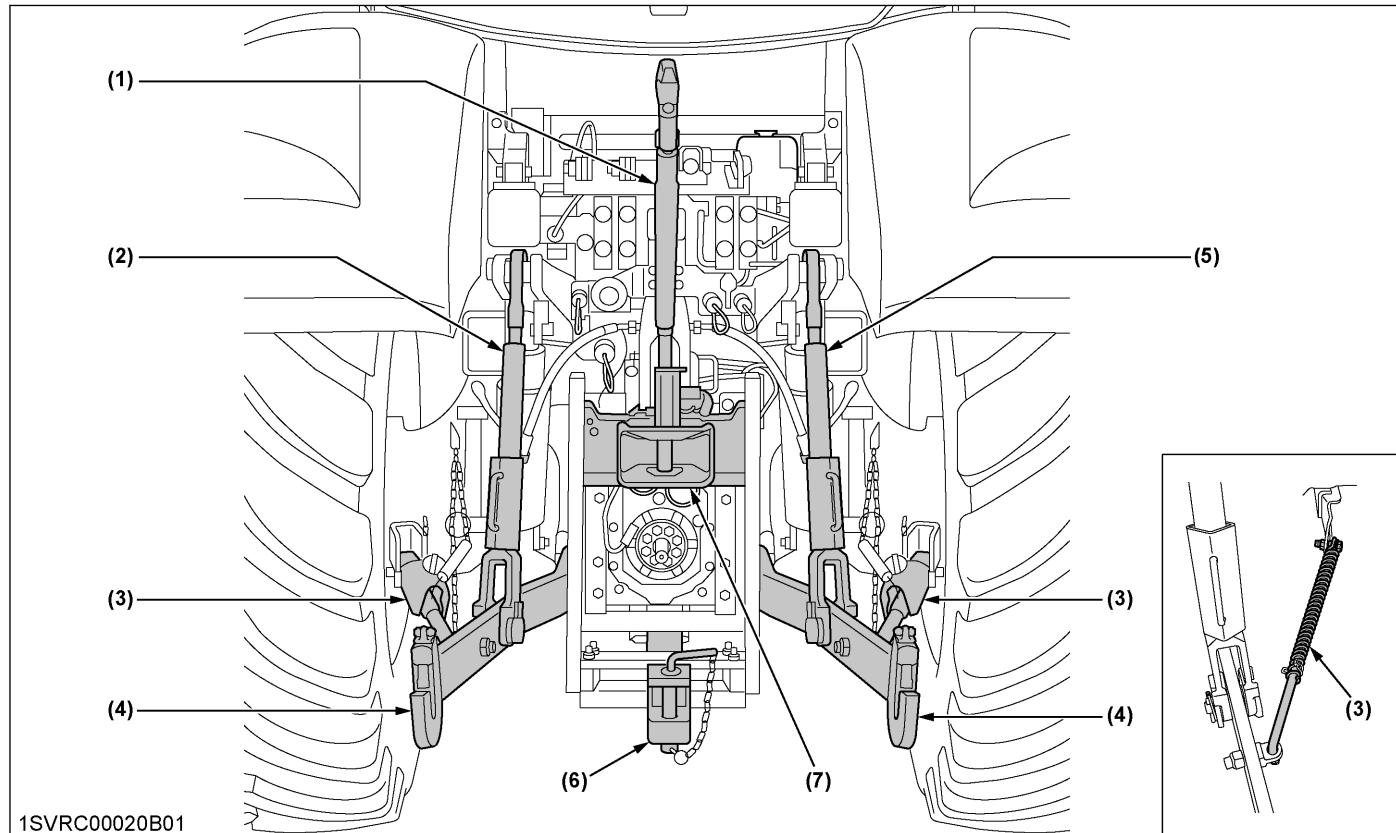
Keep the front PTO shaft cover in place at all times. Put back the PTO shaft cap when the PTO is not in use.  
Before connecting or disconnecting a drive shaft to PTO shaft, be sure engine is "OFF".



### IMPORTANT :

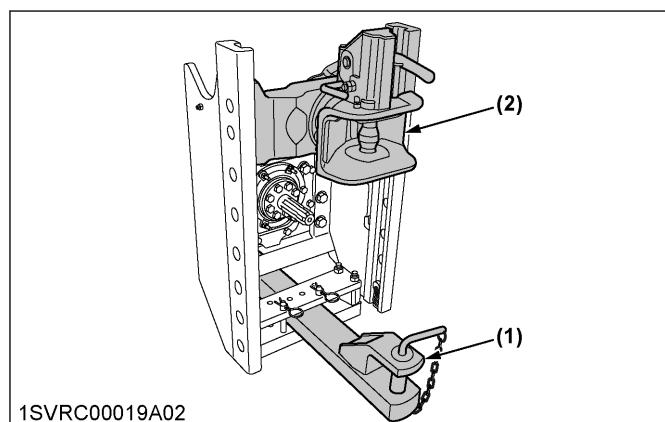
- The universal joint of the PTO drive shaft is technically limited in its moving angle. Refer to the PTO drive shaft instructions for proper use.

## 3-POINT HITCH AND DRAWBAR



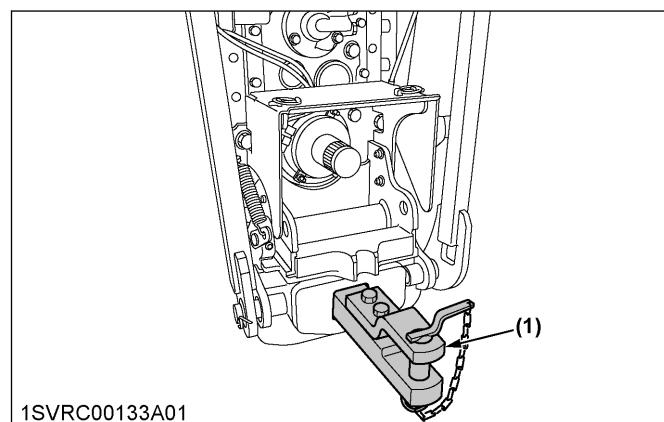
- (1) Top link
- (2) Lifting rod (left)
- (3) Stabiliser
- (4) Lower link
- (5) Lifting rod (right)
- (6) Drawbar (if equipped)
- (7) High-hitch (if equipped)

Type: A (hitch made by SCHARMÜLLER)



- (1) Drawbar (if equipped)
- (2) High-hitch (if equipped)

Type: B (hitch made by DROMONE)



- (1) Drawbar (if equipped)

## THE 3-POINT HITCH SETUP

1. Make preparations for attaching implement.
  - Adjusting lateral float on page 201
  - Selecting the top link mounting holes on page 201
  - Drawbar on page 202
2. Attaching and detaching implements

### **WARNING**

To avoid personal injury or death:

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

- Remote hitch up switch and down switch on page 202
- Lifting rod on page 202
- Top link on page 203
- Stabiliser (if equipped) on page 203
- Automatic stabiliser (if equipped) on page 203
- Quick hitch (hook type) on page 204

Type A (hitch made by **SCHARMÜLLER**)

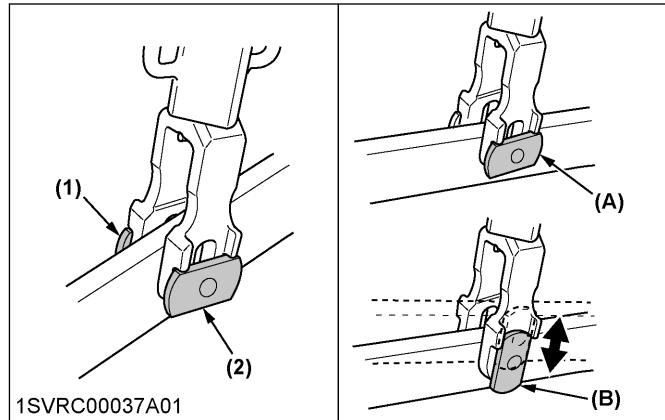
- Drawbar on page 206
- High-hitch on page 206
- Piton-fix on page 208

Type B (hitch made by **DROMONE**)

- Auto hitch (push back type) on page 208
- FRONT 3-POINT HITCH (IF EQUIPPED) on page 210

## 1. Adjusting lateral float

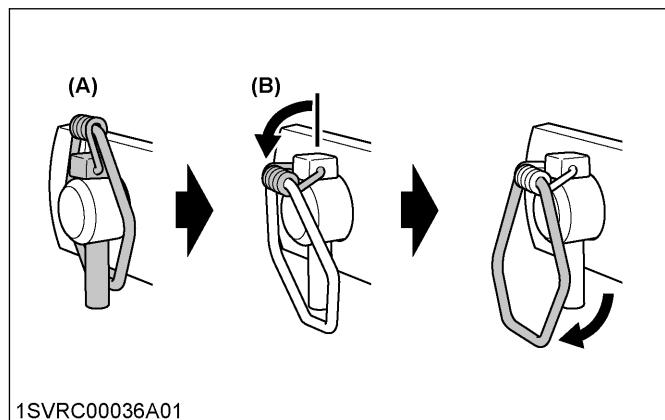
1. To allow the implement to follow ground contour, attach the rectangular washers and pin heads in vertical position.
2. To hold the implement, reset the rectangular washers and pin heads in horizontal position.



### Floating mechanism

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

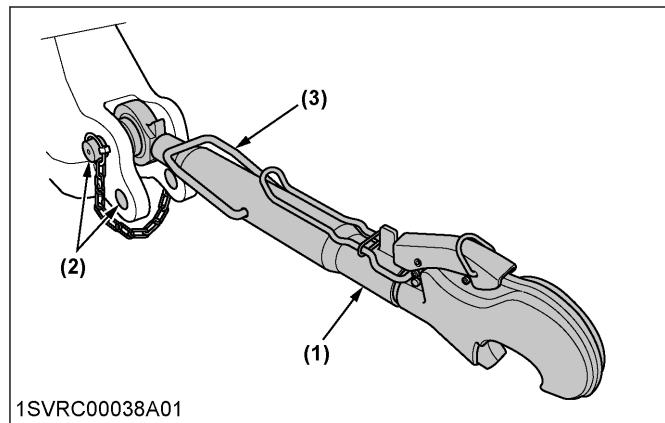
### Removing the lynch pin



## 2. Selecting the top link mounting holes

Select the proper set of holes.

(See Hydraulic control unit use reference chart on page 229.)



(1) Top link  
 (2) Mounting hole  
 (3) Handle

### 3. Drawbar

Remove the drawbar if a close mounted implement is attached.

### 4. Remote hitch up switch and down switch

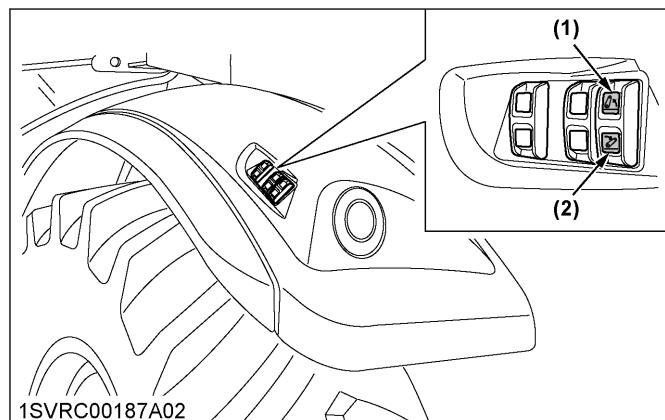
These switches provided on both of the rear fenders are used to raise and lower the 3-point hitch for aligning the arm with the implement only.

#### **! WARNING**

To avoid personal injury or death:

- Do not use the remote hitch “UP” switch and “DOWN” switch when the implement is attached on the 3-point hitch.

Press the “UP” switch and 3-point hitch goes up. Press the “DOWN” switch and the 3-point hitch comes down. Movement of the 3-point hitch stops when the switch is released.



(1) “UP” switch  
 (2) “DOWN” switch

#### NOTE :

- If these switches are pushed, the 3-point hitch’s position lock is activated and 3-point lifting or lowering indicator starts flashing (2 or so flashes every second). If it flashing, press the 3-point quick raise switch or 3-point quick lower switch to release the position lock (the indicator goes off or turns on).

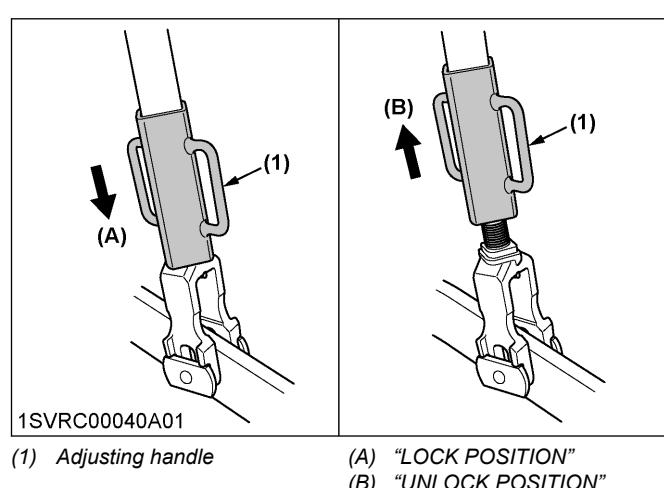
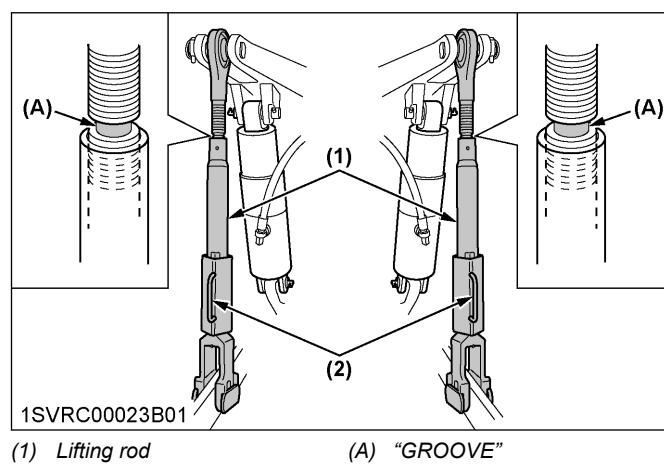
### 5. Lifting rod

#### **! WARNING**

To avoid personal injury or death:

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

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



## 6. Top link

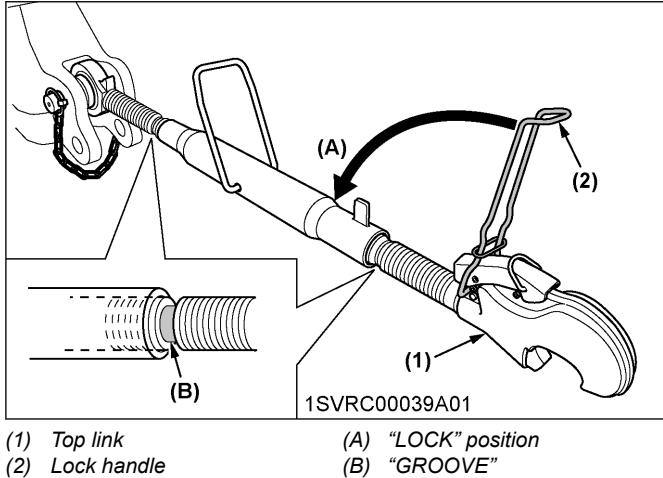


### WARNING

To avoid personal injury or death:

- When extending the top link, do not exceed the groove on the top link thread, or the top link will come apart and the 3-point equipment may fall.

- Adjust the angle of the implement to the desired position by shortening or lengthening the top link.
- Then return the lock handle to the "LOCK" position.
- The proper length of the top link varies according to the type of implement being used.

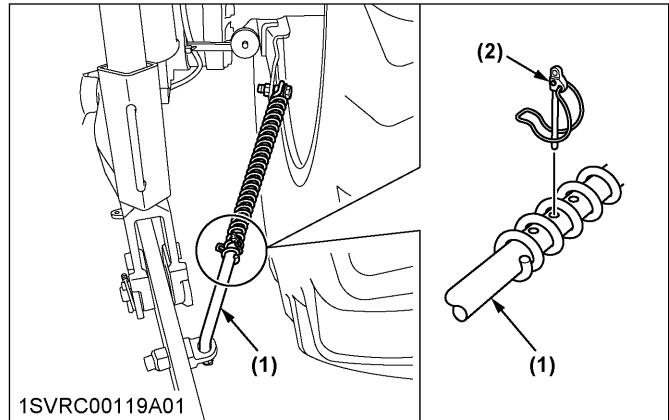


## 7. Stabiliser (if equipped)

The right-side stabiliser does not usually require adjustment.

Make sure to use the left-side automatic stabilizer for 3-point hitch mounted implement sideways movement and regulation thereof.

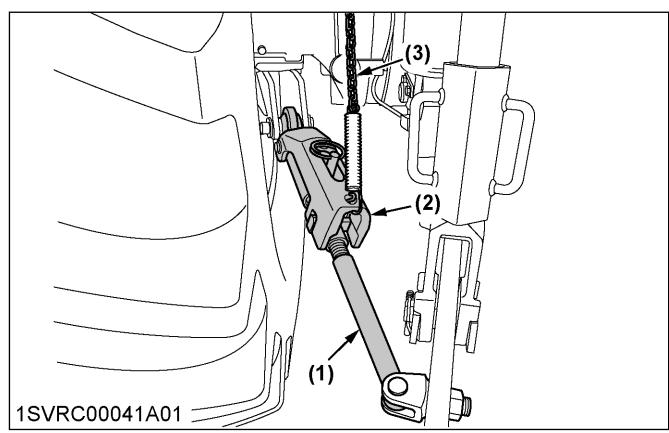
Do not remove the stabilizer lynch pin, as its removal will lead to the risk of contact between the lower link and the tyre when the implement is detached. As well, the lower link width will change when the lynch pin mounting hole position is changed.

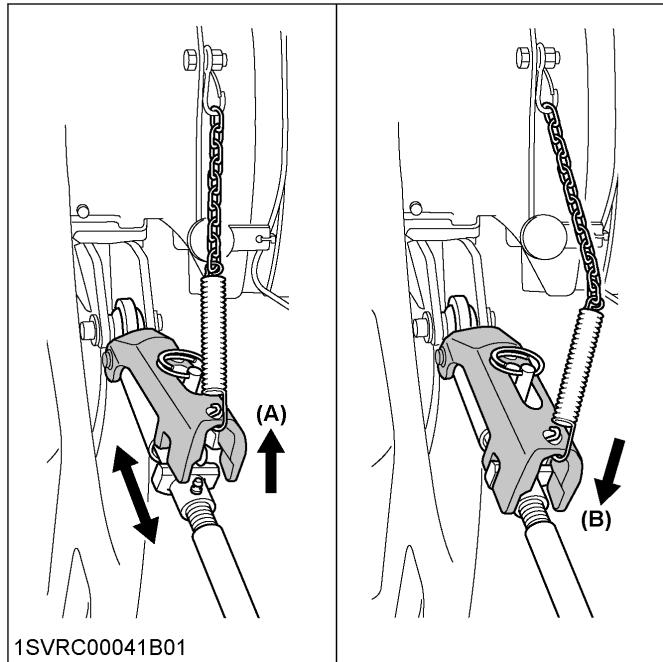


## 8. Automatic stabiliser (if equipped)

The raised or lowered implement can be automatically swung from side to side or locked.

- To swing the implement during the work and keep the raised implement locked during the tractor swivel:**
  - Readjust the chain length in the following way: so that the lock cover is "released" when the lower link is in its working range, and "locked" when the tractor is swivelled with the lower link is raised.
- To keep the implement from swinging during the work and tractor swivel alike:**
  - Readjust the chain length so that the lock cover is always "locked" even if the lower link is moved up and down.

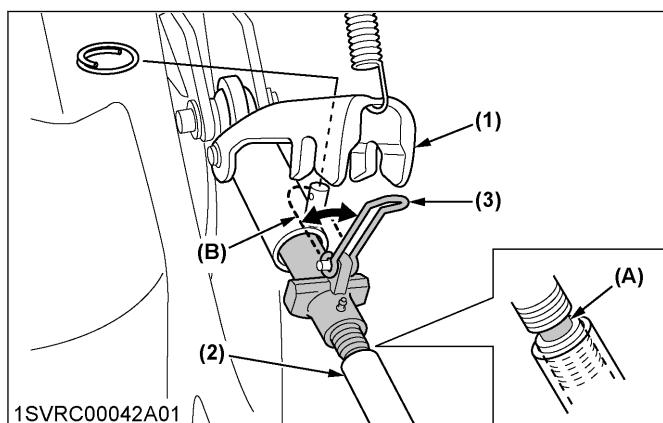




(A) "UNLOCK"  
(B) "LOCK"

#### Adjusting the lower link's width

The 3-point link of this tractor is of Category III. The lower link is 1010 mm (40 in) wide as a standard. Do not turn the adjusting handle unless otherwise necessary. The lower link's width may get out of spec. The guideline is that the groove is visible. Finally, return the handle to its storage position.



(1) Lock cover  
(2) Stabiliser rod  
(3) Adjusting handle

(A) "GROOVE"  
(B) "STORAGE POSITION"

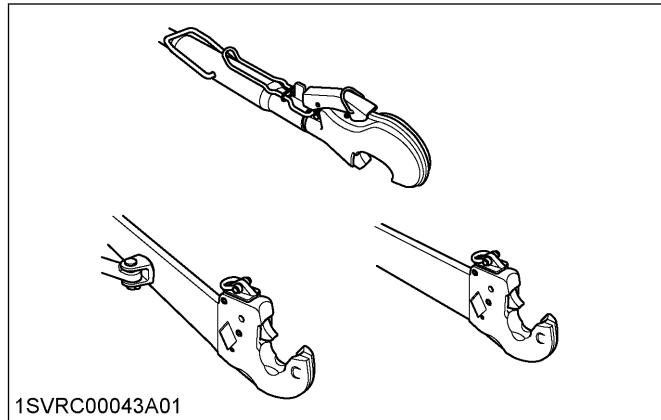
## 9. Quick hitch (hook type)

### **WARNING**

To avoid personal injury or death:

Confirm the below when installing the implement:

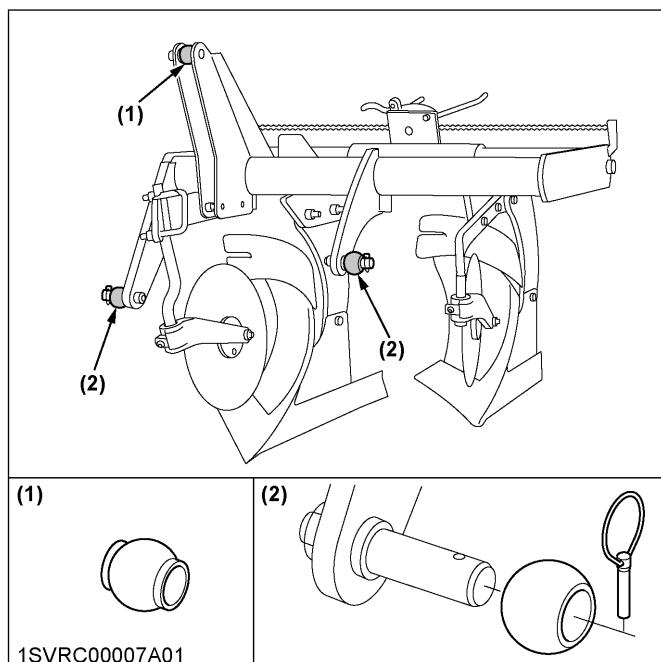
- Make sure the hook of the quick hitch is securely locked.



The 3-point hitch with quick-hitch consists of a pair of lower links and a top link, all of which have claw ends that permit rapid attaching and detaching of implements.

### 9.1 Installing ball-joint to implement

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

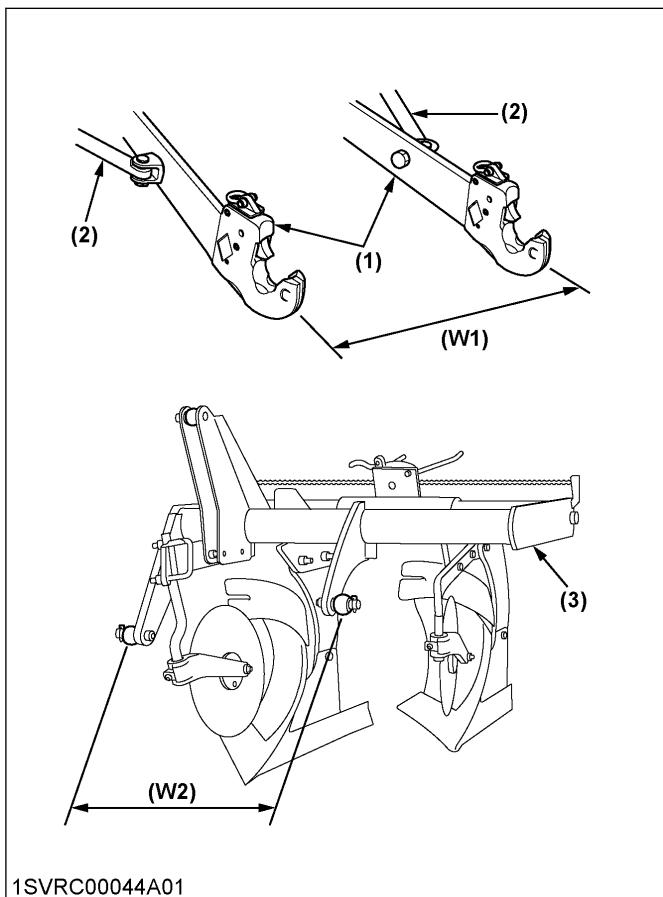


(1) Plain ball-joint (for upper hitch pin)  
(2) Ball-joint (for lower hitch pin)

## 9.2 Adjusting lower link width

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

Details regarding the adjustment of the width (W1) of the lower links can be found in a different section.  
(See Stabiliser (if equipped) on page 203.)



- (1) Lower link
- (2) Stabiliser
- (3) Implement

## 9.3 Attaching implement to tractor

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

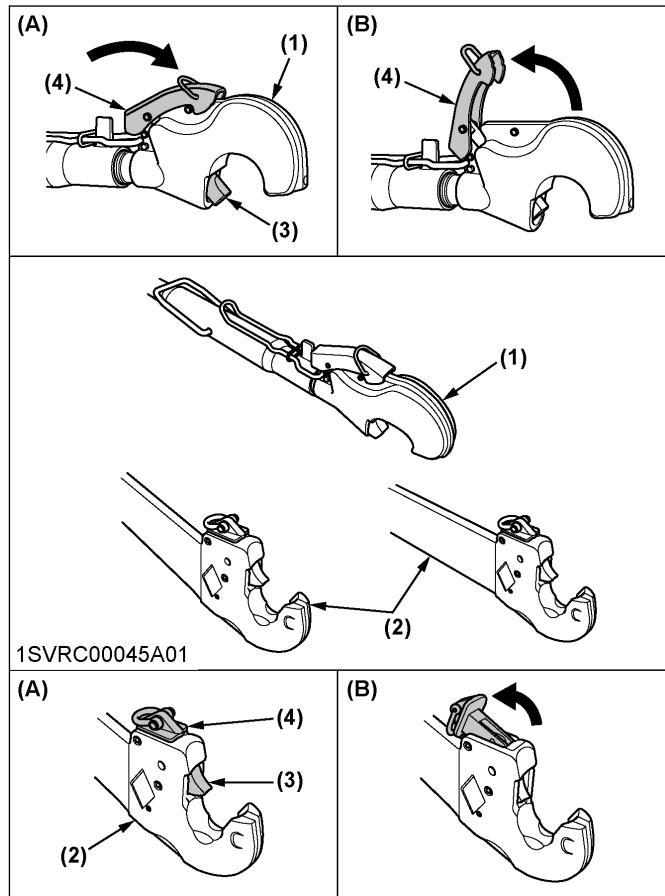
### NOTE :

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

- Lower the top link hook onto the upper implement ball-joint and press down until the latch is engaged. If necessary, adjust the top link length.

### NOTE :

- The hook of a top link is attached in a downward direction.



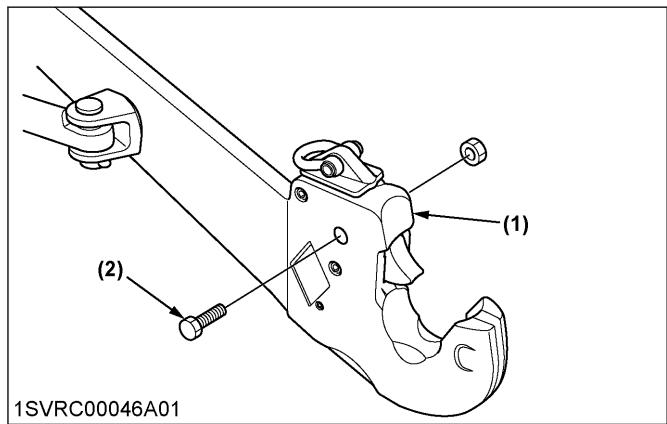
## 9.4 Detaching implement from tractor

- Fully lower the implement to the ground. Support the implement with parking stand (if equipped). If necessary, adjust the top link and or lifting rod length so that the implement may stabilise on the ground.
- Pull the release lever on the top link to release the hook from implement ball-joint. Hook the top link in the top link support.
- Pull the release levers on both lower links to the unlocked position to release the quick hitches from implement ball-joints. The latches will disengage and allow the lower links to lower and detach from the implement.

## 9.5 Quick hitch locking device

The lock bolt can be applied so that the "LATCH" does not accidentally open and the implement does not fall

off. It is useful if the load of an attached implement is not symmetrical or the work is done on a slope.



(1) Lower link  
 (2) Lock bolt (not an accessory)

## TYPE A (HITCH MADE BY SCHARMÜLLER)

### 1. Drawbar

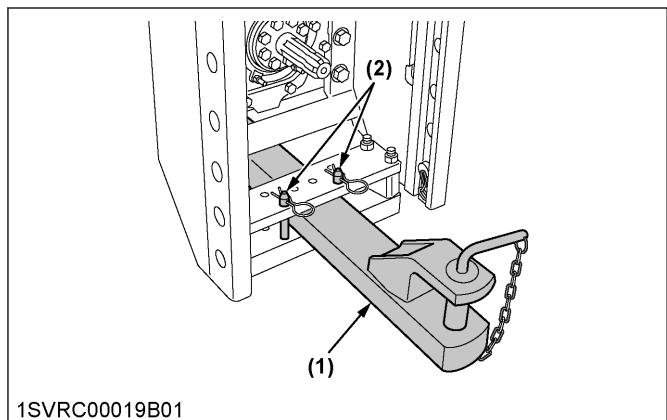
#### **⚠ WARNING**

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 causing personal injury or death.

#### NOTE :

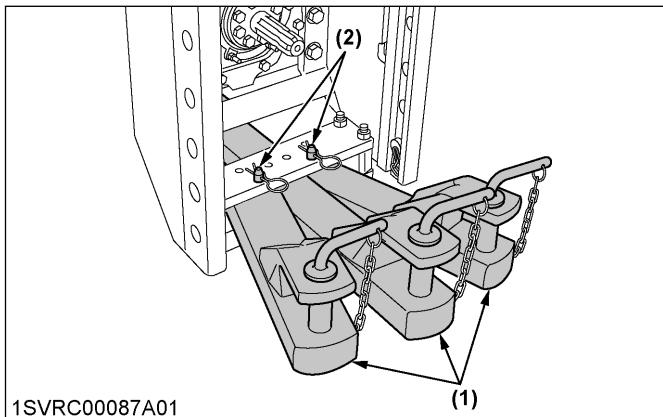
- For information about the drawbar load, read the implement limitations section of this manual.  
 (See IMPLEMENT LIMITATIONS on page 36.)



1SVRC00019B01  
 (1) Drawbar  
 (2) Locating pin

### 1.1 Swing drawbar

The drawbar can be used in 3 different ways as shown in the following illustration. Assemble it correctly with locating pins.



1SVRC00087A01  
 (1) Drawbar  
 (2) Locating pin

### 2. High-hitch

#### **⚠ WARNING**

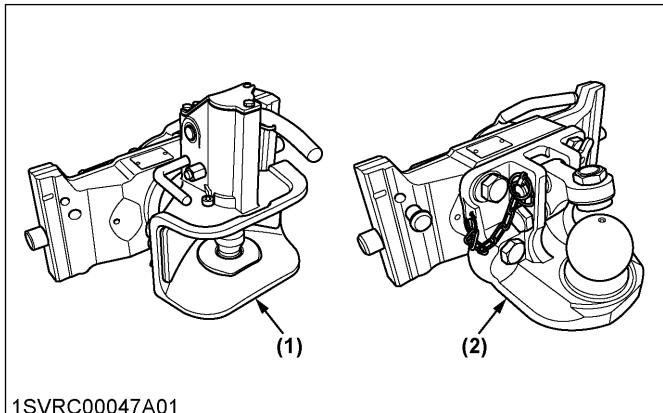
To avoid personal injury or death:

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

#### NOTE :

- For information about the high-hitch load, read the implement limitations section of this manual.  
 (See IMPLEMENT LIMITATIONS on page 36.)

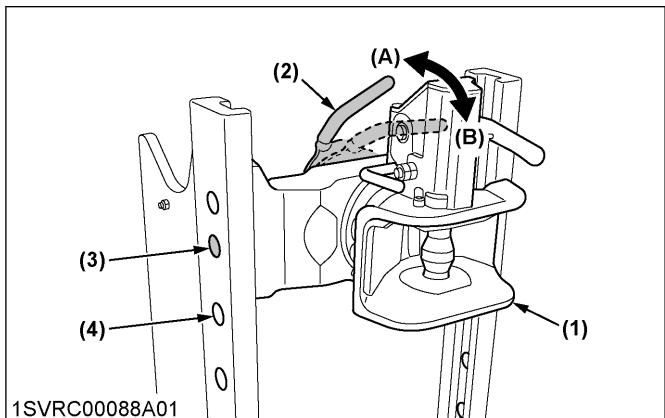
The high-hitch can be adjusted depending on an attachment to pull behind. The high-hitch may get in the way when connecting the PTO shaft. In such case, either set the high-hitch to its uppermost position or remove it.



1SVRC00047A01  
 (1) Automatic clevis  
 (2) K80 ball with grab handle

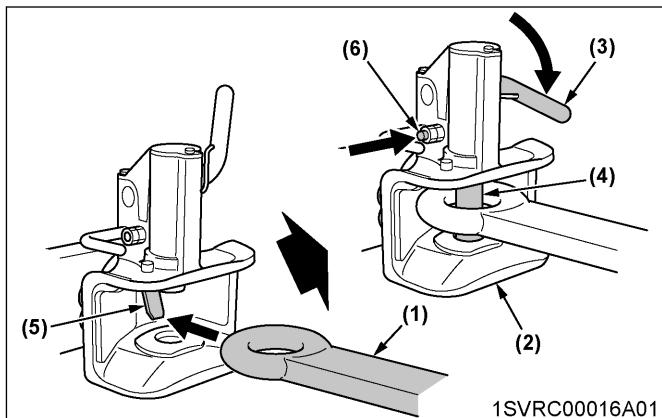
## 2.1 Adjusting the high-hitch level

1. Turn the handle upward to unlock them. Move the high-hitch bracket up and down to change the hitch height.
2. Align the lock pin with the lock hole. Return the handle horizontal to lock them.



(1) High-hitch  
(2) Handle  
(3) Lock pin  
(4) Lock hole

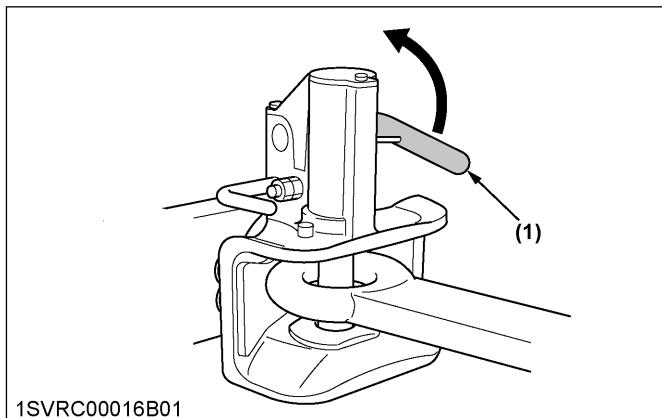
(A) "UNLOCK"  
(B) "LOCK"



(1) Drawbar eye  
(2) Hitch assembly  
(3) Operating handle  
(4) Coupling pin  
(5) Trigger lever  
(6) Security pin

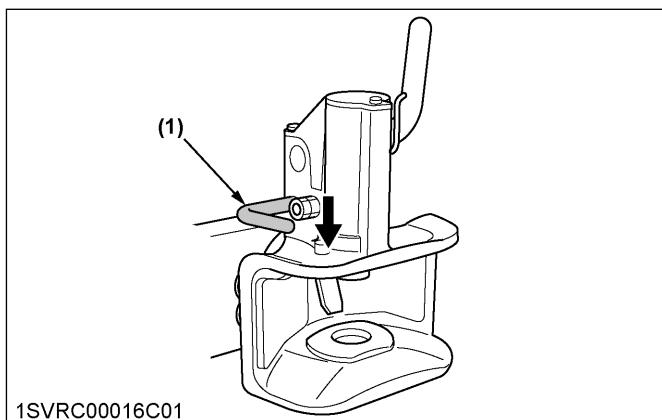
## UNCOUPLING

1. Lift the operating handle until it locks into position.
2. Travel forward the tractor until the drawbar eye is disengaged.



(1) Operating handle

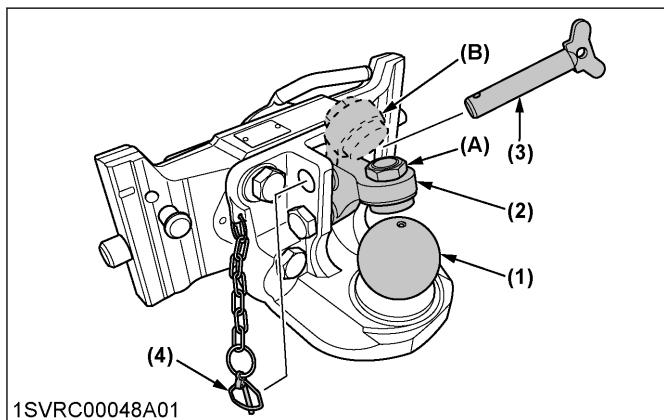
3. For safety reasons, it is hereby recommended that the drawbar coupling is kept locked at all times. To lock the drawbar coupling, act on the lock handle rotating it in the direction of the arrow, as illustrated.



(1) Lock handle

2. Slowly reverse the tractor: the drawbar eye on the trailer must fully penetrate into the hitch assembly until the trigger lever is released, whereupon the shunt force produced will cause the immediate insertion of the coupling pin as well as the automatic retraction of the security pin.

## 2.3 High-hitch with ball trailer coupling



(1) Piton-fix  
 (2) Retainer  
 (3) Pin  
 (4) Lynch pin

(A) "LOCK"  
 (B) "UNLOCK"

## 3. Piton-fix

### **WARNING**

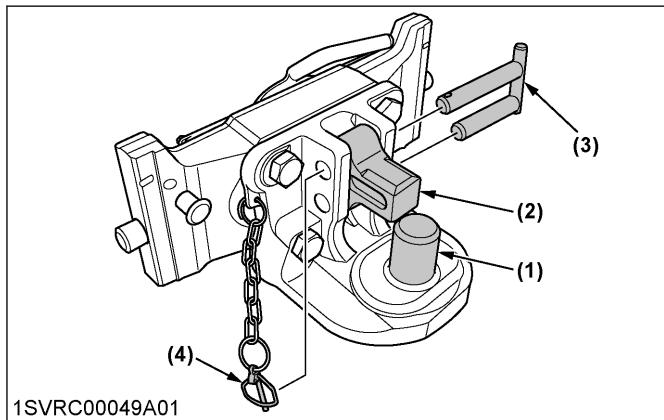
To avoid personal injury or death:

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

### NOTE :

- For information about the piton-fix load, read the implement limitations section of this manual.

(See IMPLEMENT LIMITATIONS on page 36.)



(1) Piton-fix  
 (2) Retainer  
 (3) Pin  
 (4) Lynch pin

## TYPE B (HITCH MADE BY DROMONE)

### 1. Auto hitch (push back type)

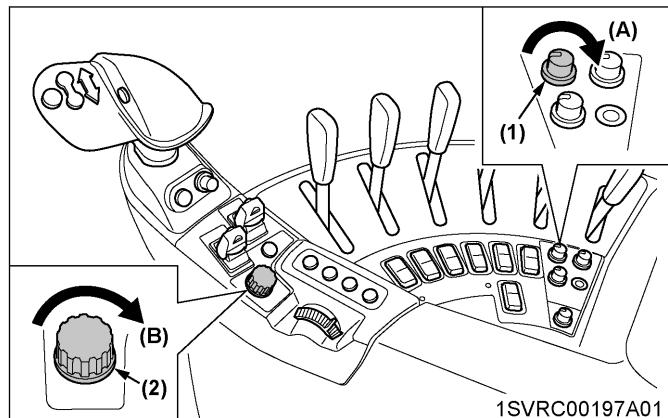
#### **WARNING**

To avoid personal injury or death:

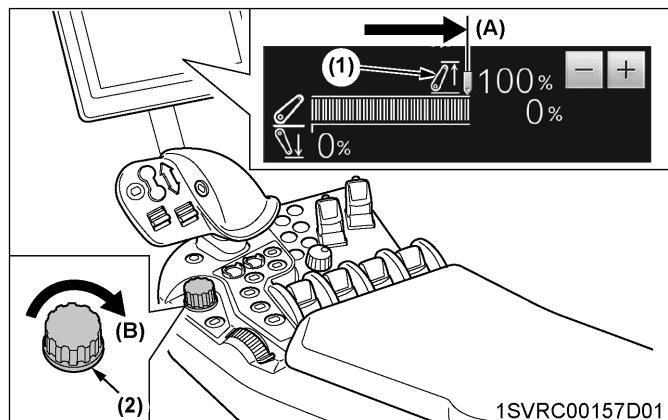
- Never pull from the top link, the rear axle or any point above the hitch. Doing so could cause the tractor to tip over rearward causing personal injury or death.
- Make sure the latch hook is locked before towing an implement.

### To lower the hitch

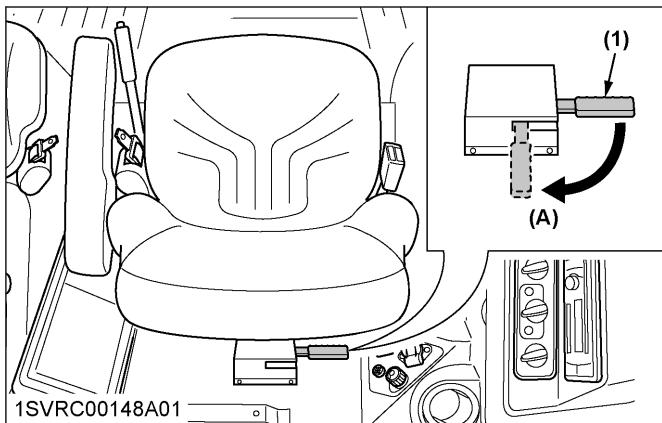
- Start the engine and set the lift arm top limit to its highest position.  
Turn the depth control dial fully clockwise to raise the lift arm to its topmost position.



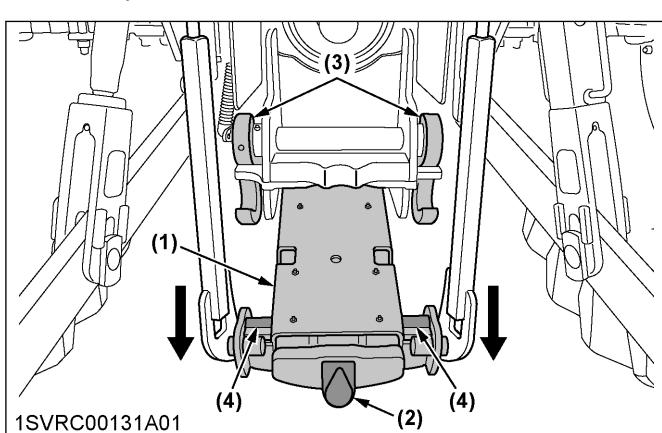
(1) Lift arm top limit adjustment dial (A) "HIGH"  
 (B) "UP"  
 (2) Depth control dial



- (1) Lift arm top limit adjustment control (A) "HIGH"  
 (B) "UP"  
 (2) Depth control dial
- Pull the auto hitch release lever to unlock the latch hooks and the latch bar from each other.

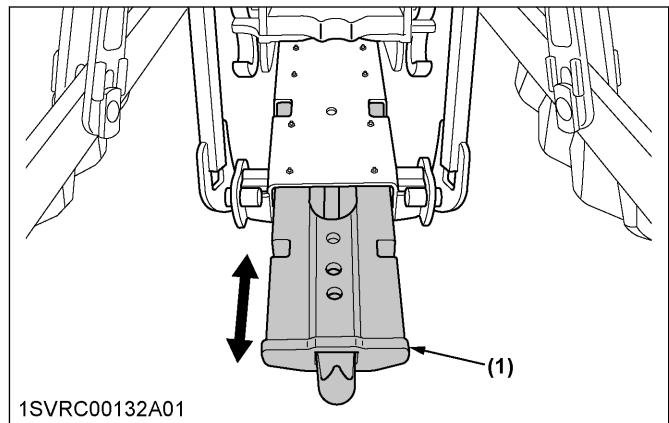
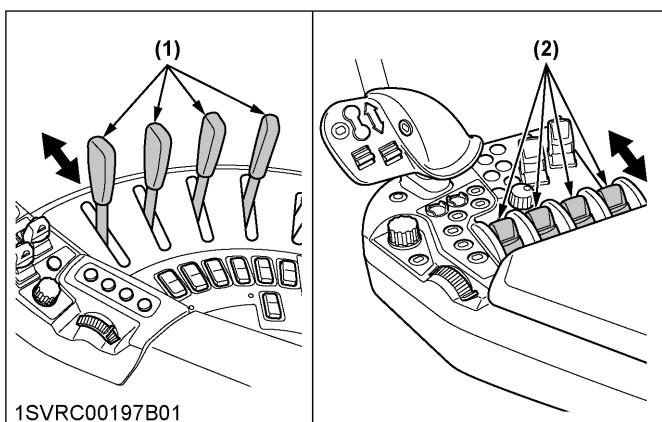


- With the auto hitch release lever being pulled, move the depth control dial to lower the auto hitch.



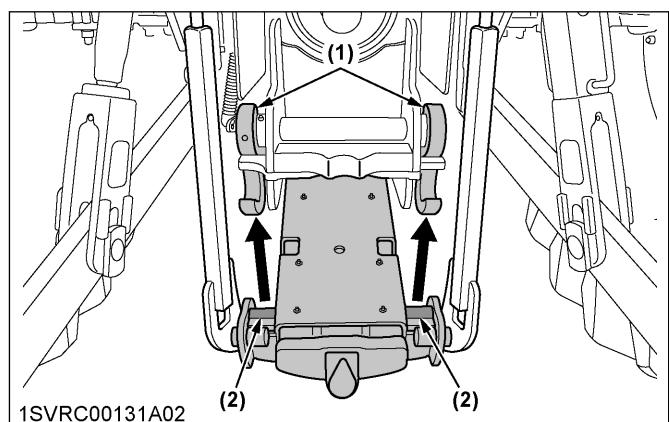
#### To extend or retract the hitch

- Operate the relevant remote control valve lever or switch to extend or retract the hitch.
- Attach or detach an implement.



#### To lift the hitch

- Make sure the implement is securely attached or detached. Turn the depth control dial fully clockwise to lift the auto hitch until the latch hooks tightly catch the latch bar.



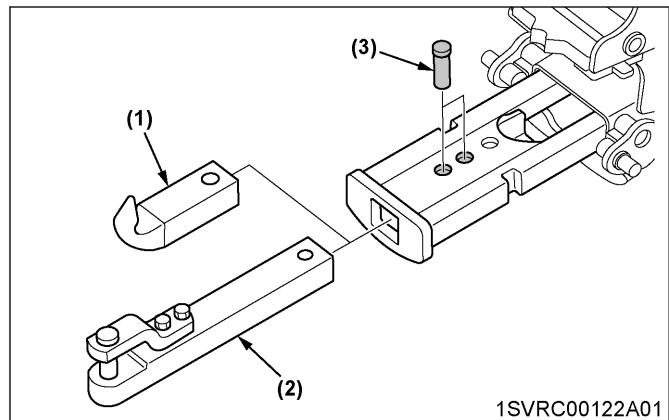
- Slightly turn the depth control dial anticlockwise to be sure that the auto hitch does not move down.

#### IMPORTANT :

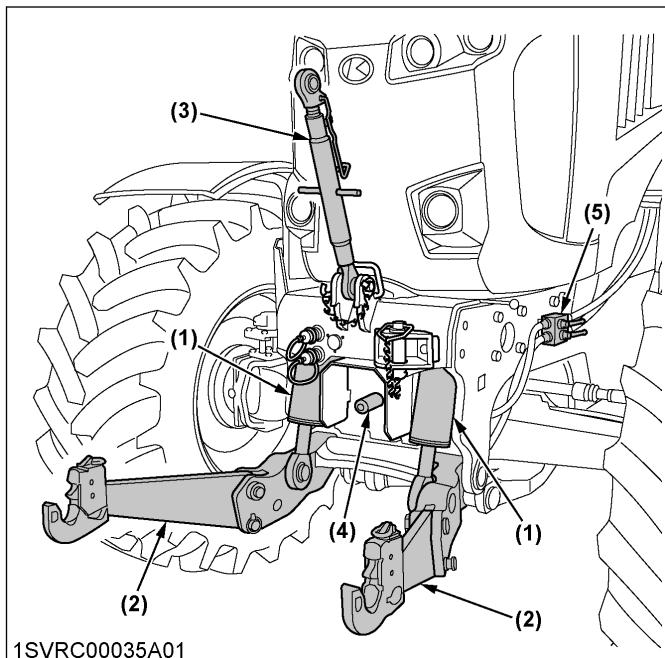
- In pulling an implement, slightly turn the depth control dial anticlockwise to have the hydraulic system free of load.

#### To change the towing hook or drawbar

- Operate the relevant remote control valve lever or switch to extend the hitch.
- Remove the pivot pin and change the towing hook or the drawbar.



(1) Towing hook  
 (2) Drawbar  
 (3) Pivot pin



(1) Lift cylinder  
 (2) Lower link  
 (3) Top link  
 (4) PTO  
 (5) Hydraulic selector valve

## FRONT 3-POINT HITCH (IF EQUIPPED)

### **WARNING**

To avoid personal injury or death:

- It is very dangerous to run the machine at high speed with a front 3-point hitch implement attached.
- It is strongly recommended to run the machine at a low speed permitting full attention to operation.
- When travelling on public roads, take anti-drop measures for front-mounted implements.
- Do not attach any implement that may block the operator's front vision or the headlight beam.

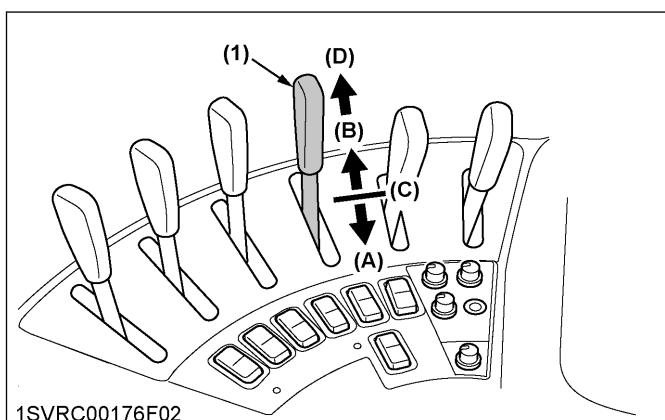
The hydraulic lifting unit of the front 3-point hitch can be switched for single-acting cylinder or double-acting cylinder. It enables a wide variety of work.

When an implement is attached at the tractor front and another one at the tractor back, the working efficiency can be dramatically improved.

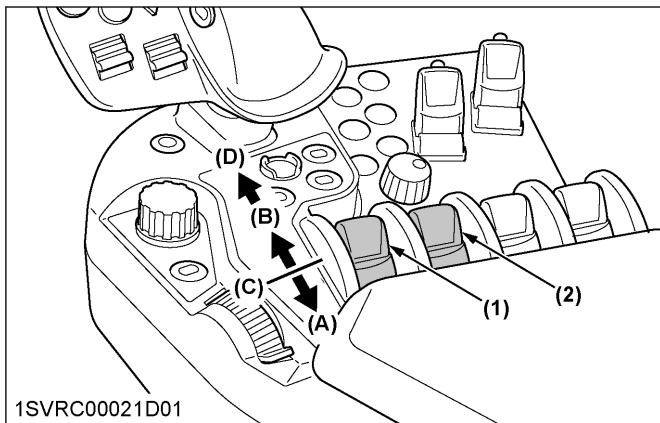
### 1. Lift control

The front 3-point hitch cylinder is connected with the remote control valve.

1. Pull the remote control valve lever or switch toward yourself, and the lower link is raised. Push it away from yourself, and the link is lowered.
2. Release your hand from the lever or switch, and the lower link returns to its neutral position.
3. When you push the lever or switch further from the lower position, the lower link is fixed at the float position. The implement will be able to follow the terrain.



(1) Front 3-point hitch control lever  
 (A) "RAISE"  
 (B) "LOWER"  
 (C) "NEUTRAL"  
 (D) "FLOAT"

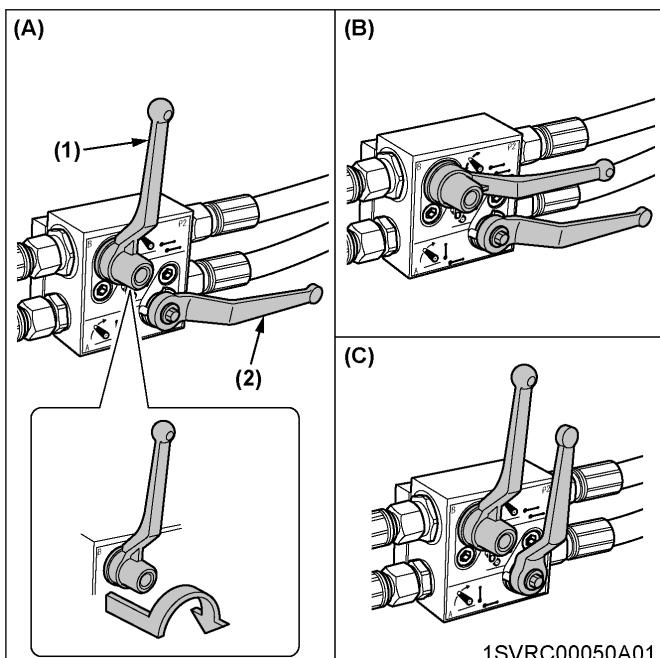


- (1) Front 3-point hitch control switch  
(6-gang remote control valves type)  
(2) Front 3-point hitch control switch  
(5-gang remote control valves type)
- (A) "RAISE"  
(B) "LOWER"  
(C) "NEUTRAL"  
(D) "FLOAT"

## 2. Switching of the hydraulic valve

Using the 2 selector levers, the hydraulic circuit can be switched to the "single-acting", "double-acting" or "lock" mode.

Switch to the circuit suited for the implement. Incorrect selection may damage the implement.



- (1) Selector valve lever 1  
(2) Selector valve lever 2
- (A) "SINGLE-ACTING"  
(B) "DOUBLE-ACTING"  
(C) "LOCK"

### NOTE :

- For the selector valve lever 1, pull out its turning part outward and turn the lever.

### Single-acting:

The lower link is hydraulically raised but lowered by its own weight.

This mode is used for mowers, cultivators and others.

### Double-acting:

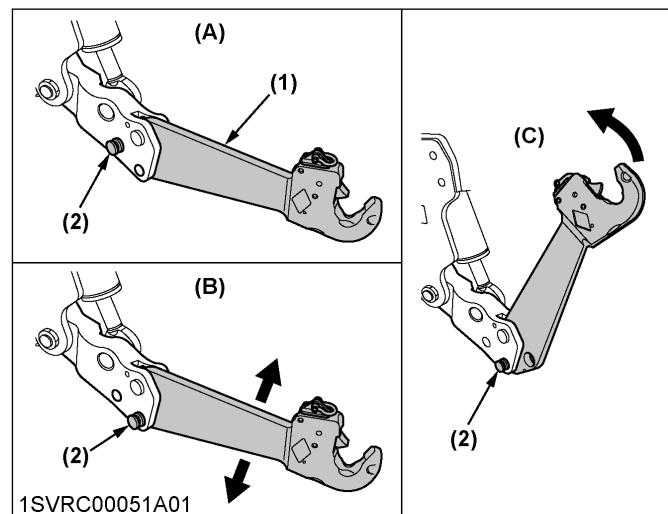
The lower link is hydraulically raised and lowered. This mode is used for snow removal with a front blade and other similar applications.

### Lock:

The hydraulic circuit to the implement is cut off. This mode is used for travelling on public roads and when the front 3-point hitch is not used.

## 3. Lower link

The lower link is foldable. Set it correctly according to the relevant work.



- (1) Lower link  
(2) Lock pin
- (A) "GENERAL WORK"  
(B) "FLOATING WORK"  
(C) "TRANSPORT and STOR-  
AGE"

### For general works:

Put the pin into the position shown below, and fix the lower link.

### For floating works:

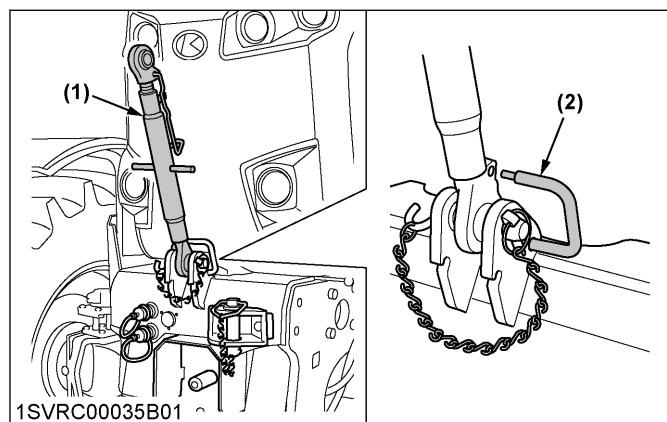
When the pin is placed in the position below, the lower link is movable up and down by about 90 mm (3.54 in).

### For transport and storage:

Put the pin into the position shown below, and retract the cylinders completely.

#### 4. Top link

When the top link is not used, fix it with the top link pin.



(1) *Top link*

(2) *Top link pin*

# HYDRAULIC UNIT

This tractor's hydraulic system is equipped with the following features, to name a few, to meet a wide variety of jobs.

- Load sensing type mix draft control
- Multiple-segment remote hydraulic control valves
- Remote hydraulic control with flow control valve
- Large-capacity external hydraulic power beyond port (**Premium, Premium KVT** models only)
- Load sensing variable-displacement hydraulic pump (**Premium, Premium KVT** models only)

**IMPORTANT :**

- Do not operate until the engine is warmed up. If operation is attempted when the engine is still cold, the hydraulic system may be damaged.
- If noises are heard when 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 adjustments.

## 3-POINT HITCH CONTROL SYSTEM

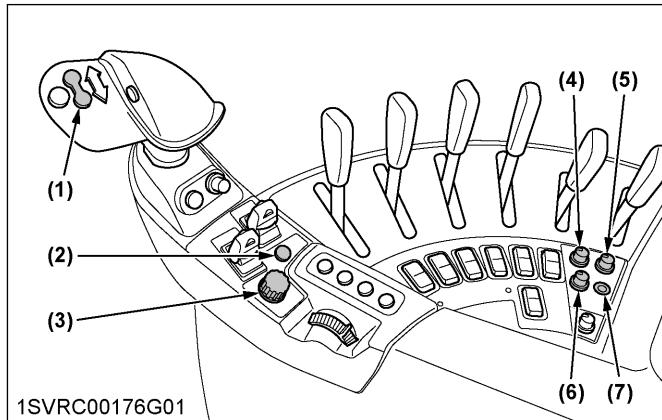


### WARNING

To avoid personal injury or death:

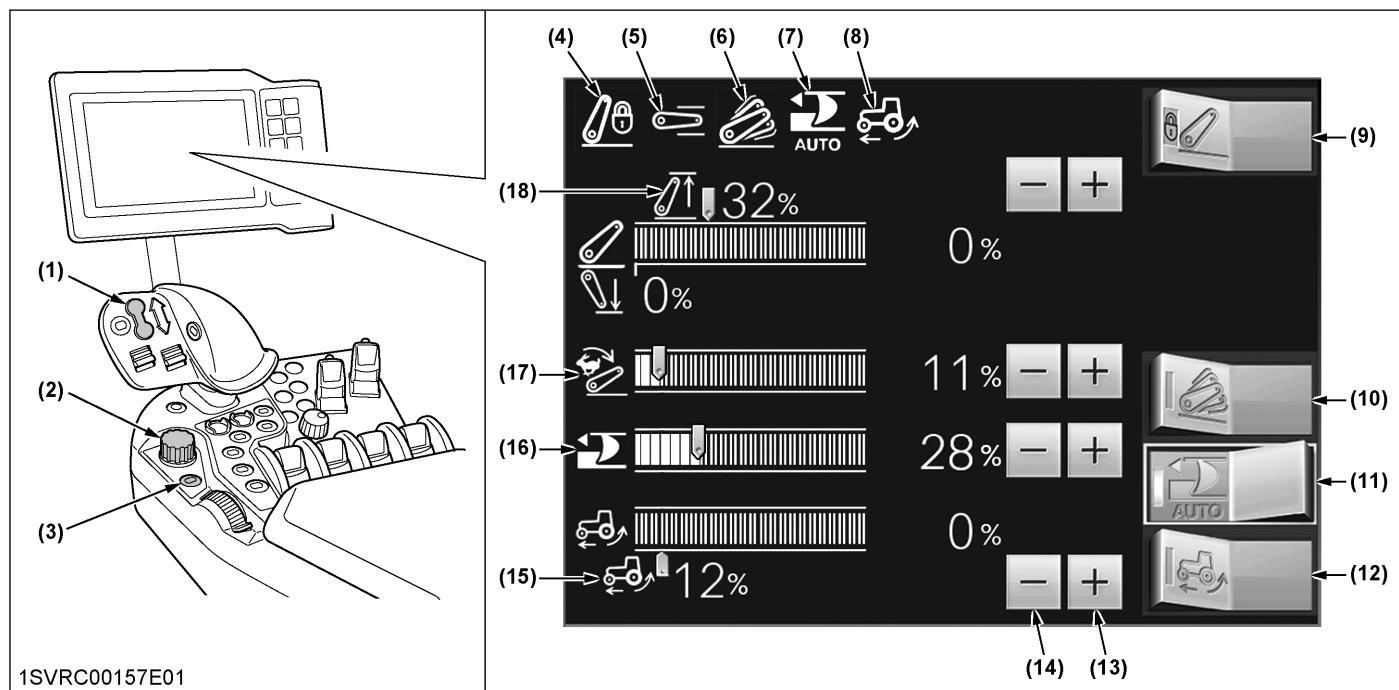
- Before using the 3-point hitch controls, ensure that no person or object is in the area surrounding the implement or 3-point hitch. Do not stand on or near the implement or between the implement and tractor when operating the 3-point hitch controls.

### 1. Terminology (Standard model)



- (1) 3-point quick raise and lower switch
- (2) 3-point hitch lock button
- (3) Depth control dial
- (4) Lift arm top limit adjustment dial
- (5) 3-point hitch lowering speed adjustment dial
- (6) Draft ratio adjustment dial
- (7) Ride control switch

## 2. Terminology (Premium, Premium KVT models)



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- |                                          |                                  |                                           |
|------------------------------------------|----------------------------------|-------------------------------------------|
| (1) 3-point quick raise and lower switch | (7) Auto draft mode indicator    | (13) Plus (+) switch                      |
| (2) Depth control dial                   | (8) Wheel slip control indicator | (14) Minus (-) switch                     |
| (3) 3-point hitch lock button            | (9) 3-point hitch lock switch    | (15) Wheel slip control                   |
| (4) 3-point hitch lock indicator         | (10) Ride control switch         | (16) Draft sensitivity control            |
| (5) 3-point hitch status indicator       | (11) Auto draft mode switch      | (17) 3-point hitch lowering speed control |
| (6) Ride control indicator               | (12) Wheel slip control switch   | (18) Lift arm height control              |

### 3. 3-point hitch lock button



#### WARNING

To avoid serious injury or death:

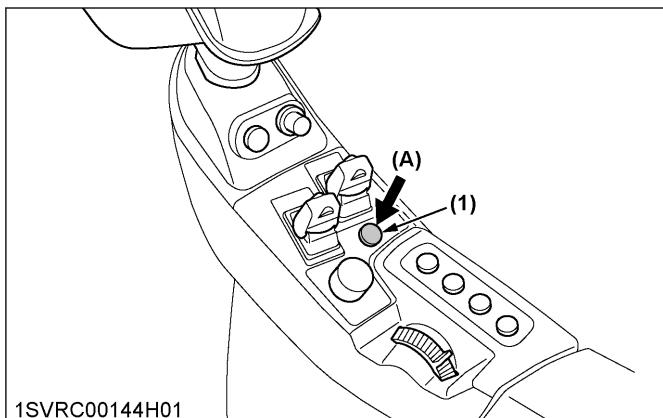
- Before checking the 3-point mounted implement, be sure to lock the implement with the lock button. In such a case, turn the depth control dial down and make sure the implement does not drop.
- Before road travelling, be sure to lock the implement with the 3-point hitch lock button. If travelling with the ride control on, unlock the 3-point hitch lock button.

Each time you press the 3-point hitch lock button, the lock and unlock status switch, and the switch indicator goes on while the lock status is on.

Before travelling on public roads, be sure to get the 3-point hitch locked to avoid accidental drop of the implement.

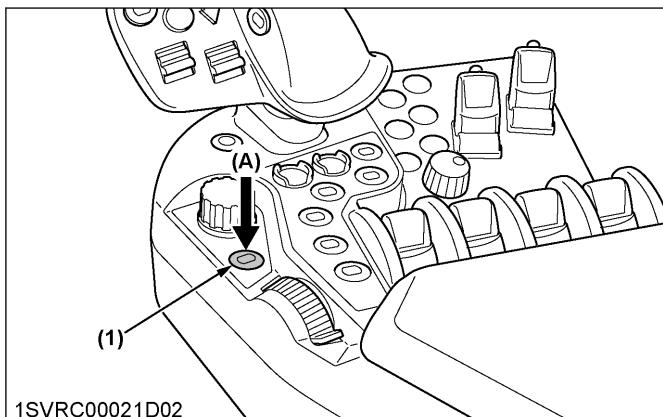
If travelling with the ride control on, unlock the 3-point hitch lock button.

#### Standard model



(1) 3-point hitch lock button (A) "PUSH"

#### Premium, Premium KVT models



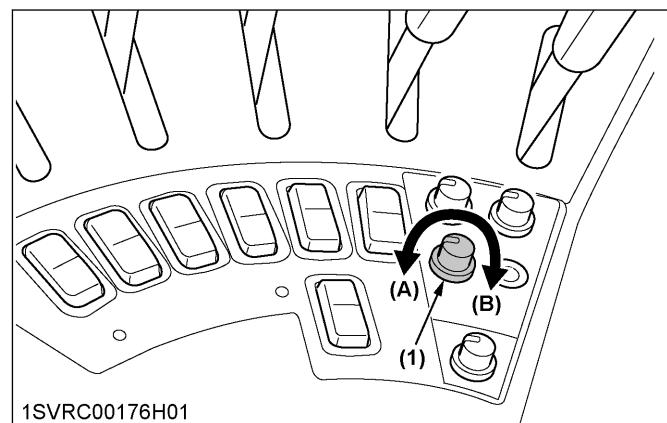
(1) 3-point hitch lock button (A) "PUSH"

### 4. Position and mix draft mode select

Select the position control or the draft control depending on the type of work. Choose the draft control for jobs requiring traction such as ploughing and sub-soiling.

#### Standard model

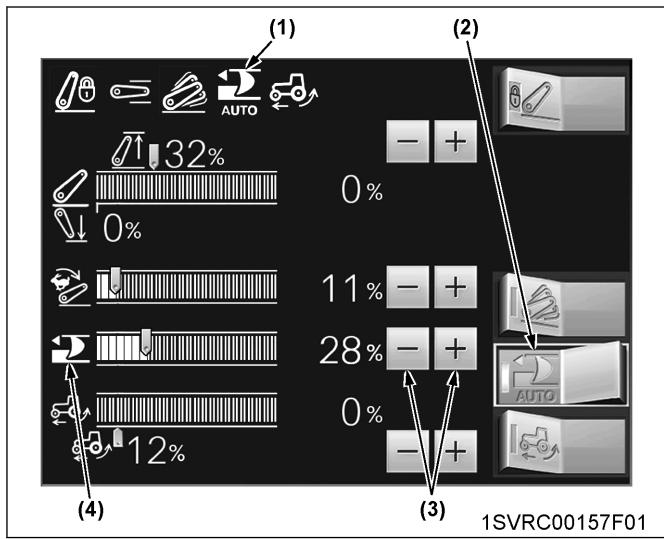
Mode in use	Method
Position control	Turn the dial fully anti-clockwise.
Mix draft control	Turn the dial farther to the right to increase the percentage of work done in draft control versus that in position control.



(1) Draft ratio adjustment dial (A) "Position control mode"  
(B) "Mix draft mode"

#### Premium, Premium KVT models

Mode in use	Method
Position control	Move the draft sensitivity slider fully to the left at 0%.
Mix draft control	Move the draft sensitivity slider further to the right to increase the percentage of work done in draft control versus that in position control.
Auto draft	Touch the left half of the auto draft mode switch, and the auto draft mode is selected and the auto draft mode indicator lights up. In auto draft mode, the percentage of the mix control is automatically adjusted although the value on the monitor does not change. Touch the right half of the auto draft mode switch, and the auto draft mode is cancelled.



- (1) Auto draft mode indicator
- (2) Auto draft mode switch
- (3) Draft sensitivity adjustment switch
- (4) Draft sensitivity control

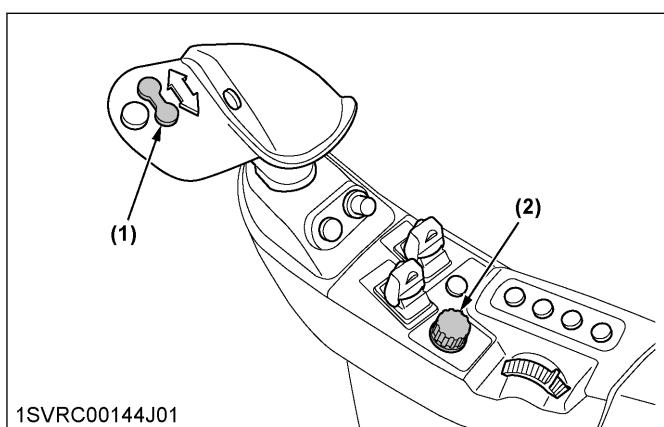
#### NOTE :

- Details regarding the setting procedure can be found in the different section.  
(See INTELLIPANEL™ CONTROL on page 59.)

## 5. Depth control adjustment dial

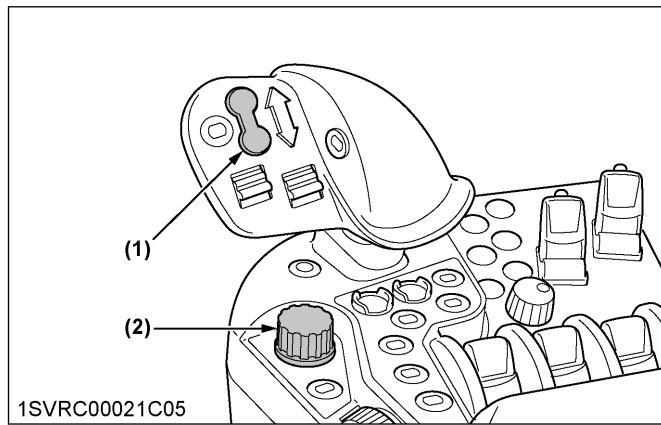
1. The implement height (ploughing depth) can be adjusted.  
Details regarding the adjustments can be found in a different section.  
(See Position control on page 216, Mix draft control on page 217, and Float control on page 217.)
2. For travelling on public roads, keep the implement raised with the dial.
3. When the dial is pre-set for the implement to get to the lower limit, the 3-point quick raise and lower switch can be used to raise and lower the implement.

#### Standard model



- (1) 3-point quick raise and lower switch
- (2) Depth control dial

#### Premium, Premium KVT models

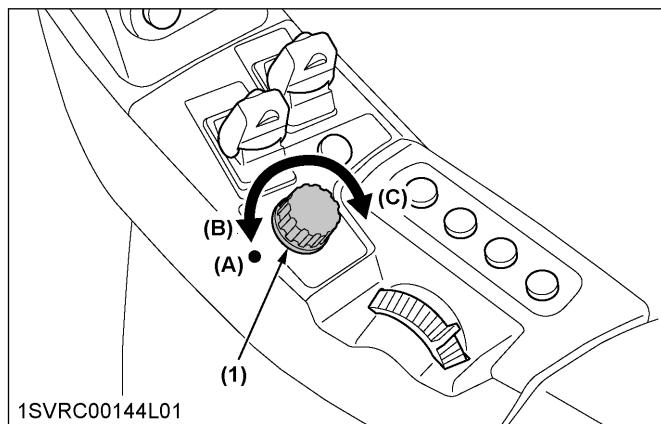


- (1) 3-point quick raise and lower switch
- (2) Depth control dial

## 6. Position control

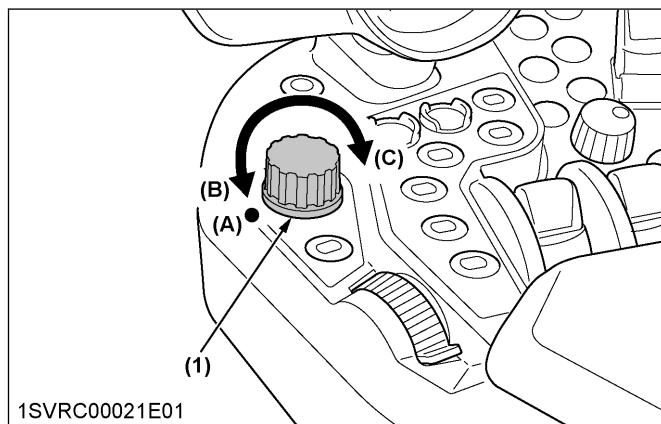
This will control the working depth of the 3-point hitch mounted implement regardless of the amount of pull required.

#### Standard model



- (1) Depth control dial
- (A) "FLOAT"
- (B) "DOWN"
- (C) "UP"

#### Premium, Premium KVT models



- (1) Depth control dial
- (A) "FLOAT"
- (B) "DOWN"
- (C) "UP"

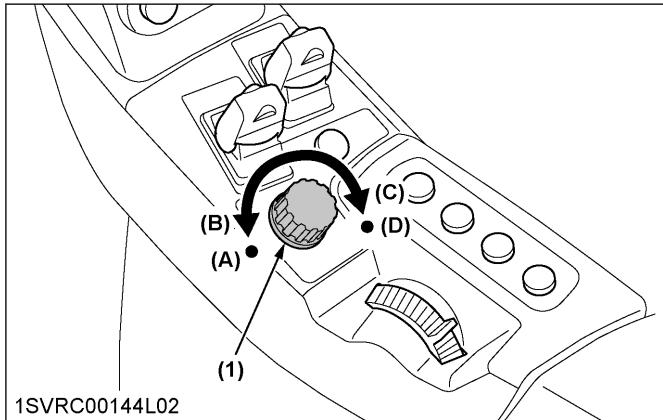
## 7. Mix draft control

This will control the pull of the 3-point implement.

As the load on the 3-point hitch changes due to various soil conditions, the draft control system automatically responds to these changes by either raising or lowering the implement slightly to maintain a constant pull.

Set the implement pull with the depth control dial.

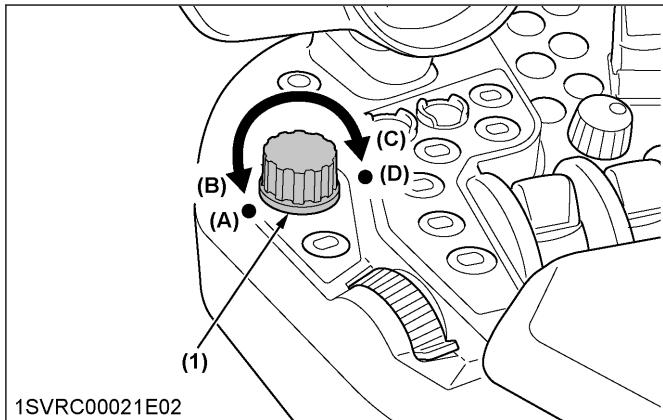
### Standard model



(1) Depth control dial

- (A) "FLOAT"
- (B) "DEEP"
- (C) "SHALLOW"
- (D) "UP"

### Premium, Premium KVT models



(1) Depth control dial

- (A) "FLOAT"
- (B) "DEEP"
- (C) "SHALLOW"
- (D) "UP"

#### Adjusting the draft sensitivity:

During work in the draft mode, readjust the sensitivity with the dial or switch according to the ploughing depth, the type of soil and other factors, referring to the following table.

Draft ratio adjustment dial <b>(Standard model)</b>	Turn the dial anti-clockwise.	Turn the dial clockwise.
Draft sensitivity adjustment switch <b>(Premium, Premium KVT models)</b>	Retract the bar graph leftward with the (-) switch.	Extend the bar graph rightward with the (+) switch.
Ploughing depth	Shallow	Deep
Type of soil	Light	Heavy
Field ruggedness	Little	Much
Sensitivity	(Low)	(High)

## 8. Float control

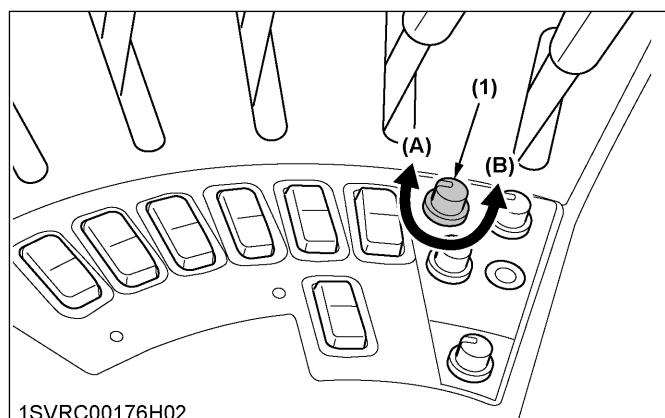
Place the depth control dial in the float position (left-most) to make the lower links move freely along with the ground conditions.

## 9. Lift arm top limit adjustment

Set for work in which a 3-point hitch top limit is required.

### For Standard model:

1. Turn the dial in the "HIGH" direction to increase the top limit of the 3-point hitch.
2. Turn the dial in the "LOW" direction to decrease the top limit of the 3-point hitch.



(1) Lift arm top limit adjustment dial

- (A) "HIGH"
- (B) "LOW"

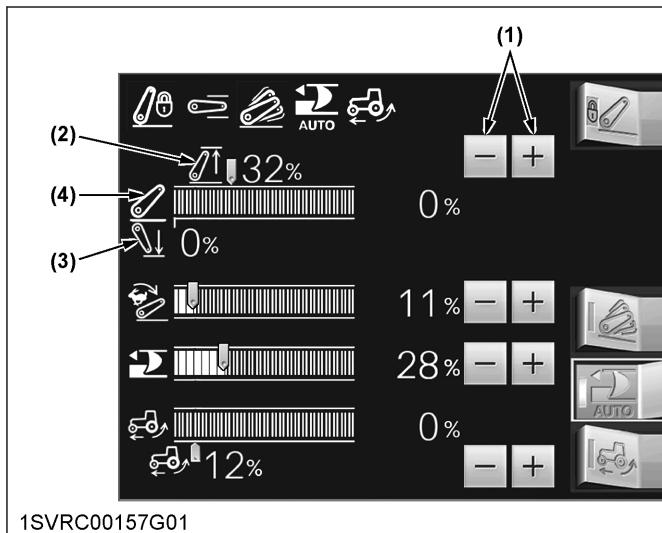
### For Premium, Premium KVT models:

Using the (+) and (-) switches, the setting can be changed (the setting is variable in the 30-100% range).

1. Slide the slider to the right (increasing the value) to raise the top limit of the 3-point hitch.
2. When the setting has reached 100%, the top limit control is turned off.

Details regarding the setting procedure can be found in a different section.

(See Setting the 3-point hitch on page 85.)



(1) Lift arm top limit adjustment switch

(2) Lift arm top limit control

(3) Lift arm bottom limit control

(4) Lift arm height control, current position (height)

## 10. 3-point hitch lowering speed adjustment

Adjust to the lowering speed suited for the implement in use.

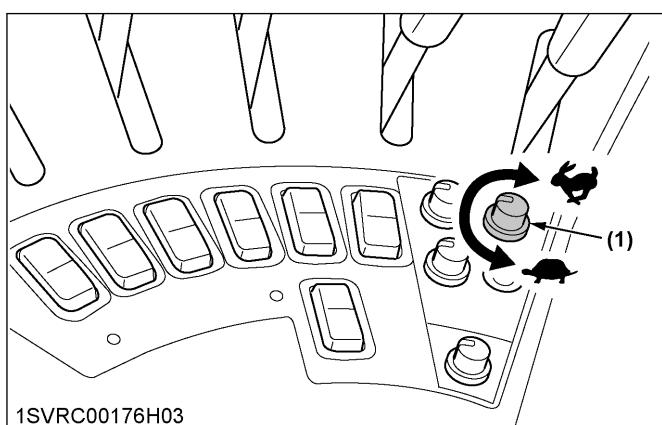
### **⚠ WARNING**

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.

For Standard model:

1. Turn the dial in the "FAST" direction, and the 3-point hitch's lowering speed will increase.
2. Turn the dial in the "SLOW" direction, and the 3-point hitch's lowering speed will decrease.



(1) 3-point hitch lowering speed adjustment dial

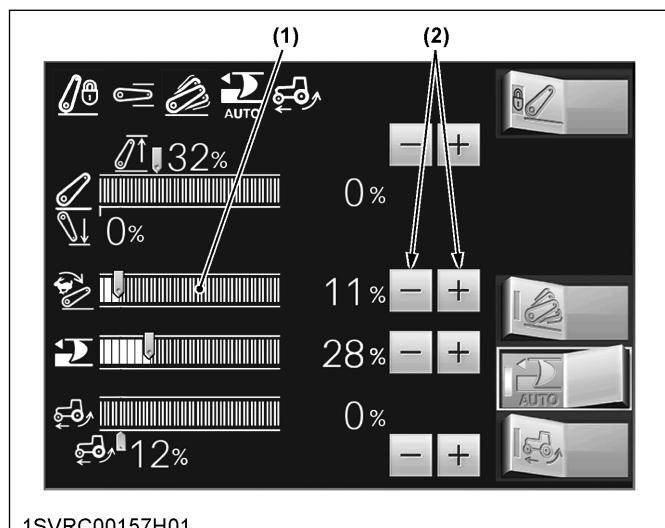
◀ "FAST"  
▶ "SLOW"

### For Premium, Premium KVT models:

1. Using the (+) and (-) switches, the setting can be changed.
  - The longer the bar graph is extended rightward, the further will the 3-point hitch's lowering speed increase.
  - The more the bar graph is shortened leftward, the further will the 3-point hitch's lowering speed decrease.

Details regarding the setting procedure can be found in a different section.

(See Setting the 3-point hitch on page 85.)



(1) 3-point hitch lowering speed control

(2) 3-point hitch lowering speed adjustment switch

## 11. 3-point quick raise and lower switches

These switches are used to raise and lower the implement. This facilitates turning in the field.

### **⚠ WARNING**

To avoid serious injury or death:

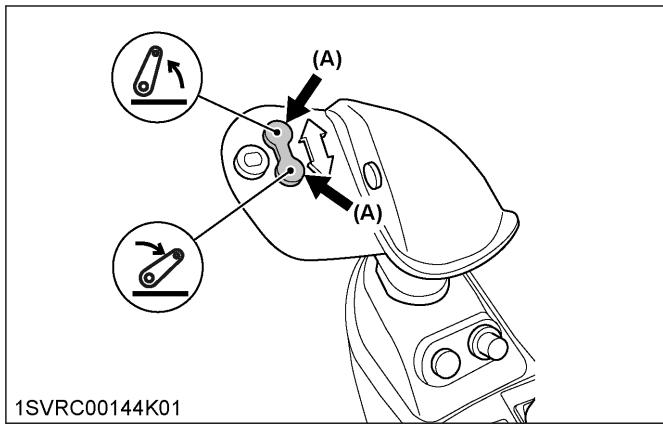
- Before road travelling, be sure to lock the implement with the 3-point hitch lock button. If travelling with the ride control on, unlock the 3-point hitch lock button.
- Do not use the 3-point quick raise and lower switch on road travelling.
- When an implement is changed, do not use the 3-point quick raise and lower switch before checking the full range of operation for interference using the depth control dial.

1. Press the "RAISE" switch, the 3-point lifting and lowering indicator lights up and the implement goes up.

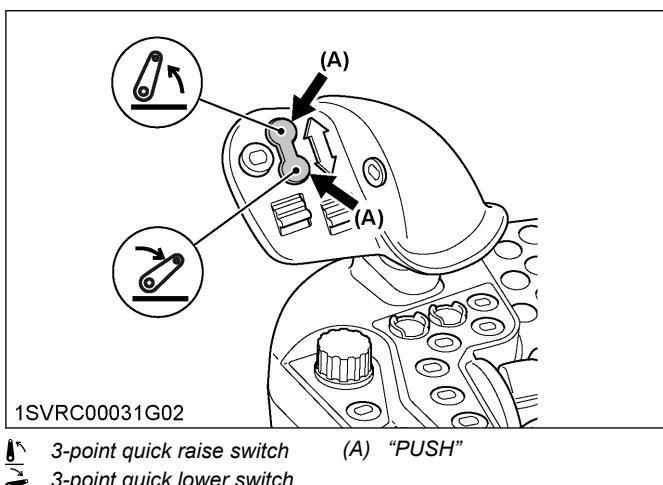
2. Press the "LOWER" switch, and the indicator goes off and the implement comes down.

When the "RAISE" switch has been pressed to raise the implement, the depth control dial cannot function.

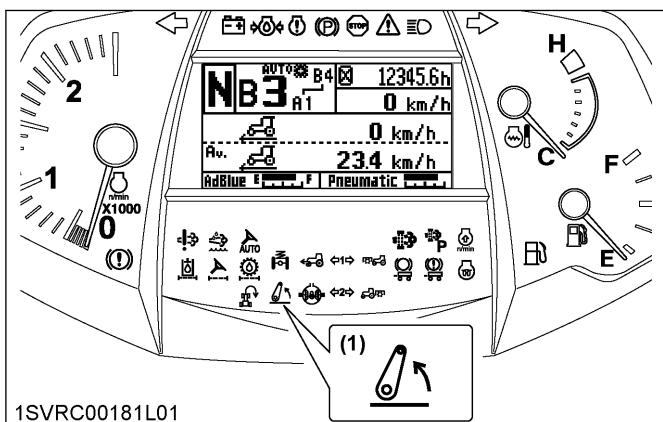
#### Standard model



#### Premium, Premium KVT model



#### All models



#### NOTE :

- 3-point hitch working range:**  
Set the depth control dial for a bottom limit and the lift arm top limit adjustment dial or switch for a top limit. The 3-point quick raise and lower switches are controls for the raising and lowering within the limits set by the depth control dial and the lift arm top limit adjustment dial or switch.
- One-touch floating function:**  
Hold down the "LOWER" switch to keep the 3-point hitch floating. This function is helpful in ploughing, for example. Release the switch and the 3-point hitch returns to the draft control position.
- "RAISE" and "LOWER" operation with the 3-point hitch going halfway:**
  - When the "RAISE" or "LOWER" switch is pressed with the 3-point hitch going up halfway, the 3-point hitch stops at this position (the indicator starts blinking). Re-push the "RAISE" or "LOWER" switch, and the 3-point hitch will go up or down respectively.
  - To lower the 3-point hitch with the 3-point hitch going up halfway, hold down the "LOWER" switch for 2 seconds or push it twice.
  - When the "RAISE" switch is pressed with the 3-point hitch going down halfway, the 3-point hitch goes up.

## 12. 3-point hitch's position lock

#### Activating the lock

If any of the following actions are made with the depth control dial and the lower links at different heights, the position lock is activated. The 3-point hitch control is interrupted and the 3-point lifting and lowering indicator starts flashing (2 or so flashes every second).

- Starting the engine.
- Activating the 3-point remote hitch up or down switch.
- Unlocking the 3-point hitch lock button.

#### Releasing the lock

- If applied, press the 3-point quick raise switch or 3-point quick lower switch.
- Turn the depth control dial to the same level as the lift arm height.

#### NOTE :

- When the position lock is released with the 3-P. quick raise or lower switches, the 3-point hitch goes up or down.

## 13. Ride control

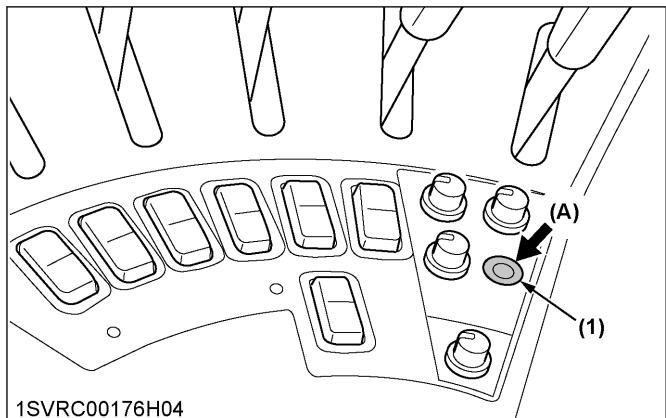
This function ensures stable run and comfortable ride when the tractor has a heavy-duty implement mounted on its rear 3-point hitch and travels along an uneven road.

Ride control gets activated when the following conditions are met:

1. The ride control switch is on.
2. The 3-point hitch lock button is unlocked.
3. The travelling speed is over 6 km/h / 3.7 mph (automatically deactivated at below 5 km/h / 3.1 mph).
4. The implement is almost at its top limit.

### For Standard model:

1. Press the ride control switch, and the switch indicator lights up and the ride control function gets activated.
2. Press the switch again, and the switch indicator goes off and the ride control function gets deactivated.

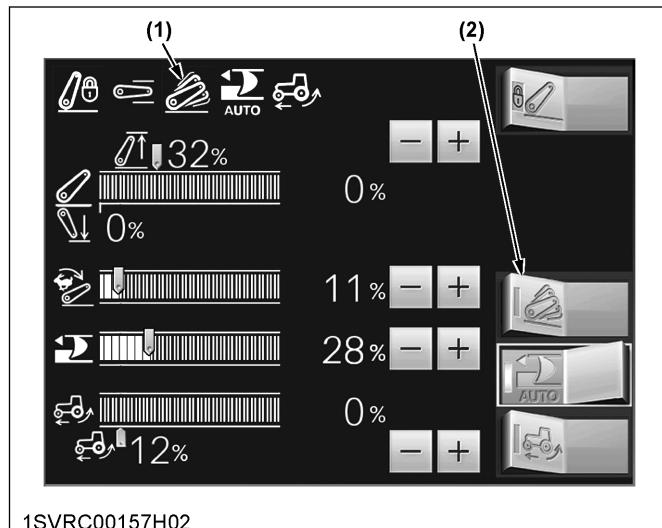


(1) Ride control switch

(A) "PUSH"

### For Premium and Premium KVT models:

1. Touch the left half of the ride control switch, and the ride control function gets activated.  
The ride control indicator stays on while the dumping control is in action.
2. Press the right half of the switch, and the indicator goes off and the ride control function gets deactivated.  
Details regarding the setting procedure can be found in a different section.  
(See Setting the 3-point hitch on page 85.)



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(1) Ride control indicator

(2) Ride control switch

### NOTE :

- Once the ride control gets started, the implement will be slightly lowered.

## AUXILIARY HYDRAULICS

### IMPORTANT :

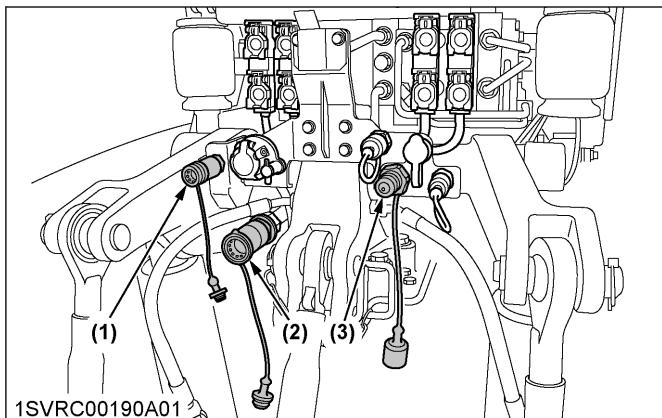
- Before letting a large amount of oil into the hydraulic cylinder, hydraulic motor or other implements, consult your local KUBOTA Dealer to confirm the possible oil quantity and additional oil quantity taken from the tractor and other requirements.

Improper handling may cause serious trouble such as seizure of the transmission.

## 1. Power-beyond type hydraulic outlet for Premium and Premium KVT models (if equipped)

The power-beyond type hydraulic outlet is a load sensing type port through which a large amount of oil can be directly taken out of the hydraulic pump. Connect an implement, equipped with a closed-centre hydraulic valve, to this port.

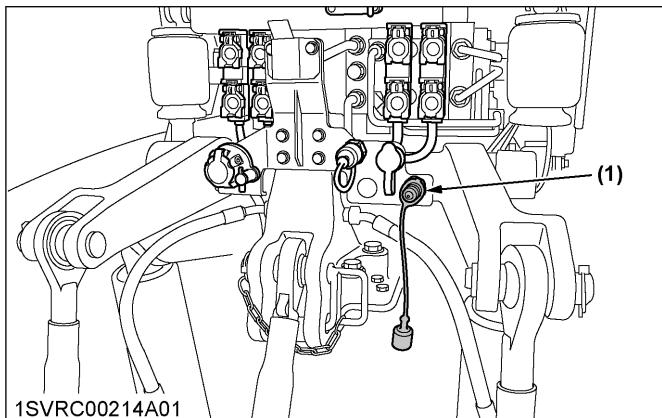
With all necessary hoses in place, the load sensing control hose serves to detect the load level as a negative one. The pump's flow rate is thus controlled to keep constant the load sensing differential pressure, which is the difference between the pump pressure and this negative pressure.



(1) Load-sensing control hose connection  
 (2) Power-beyond connection (from pump)  
 (3) Return hose connection (from implement)

## 2. Hydraulic drain port

This port leads to the transmission case. When you want to return oil to the transmission case, connect the return hose to this port.



(1) Drain hose connection (to gear box)

## REMOTE HYDRAULIC CONTROL SYSTEM

### IMPORTANT :

- Before letting a large amount of oil into the hydraulic cylinder, hydraulic motor or other implements, consult your local KUBOTA Dealer to confirm the possible oil quantity and additional oil quantity taken from the tractor and other requirements.

Improper handling may cause serious trouble such as seizure of the transmission.

## 1. Operation of Standard model

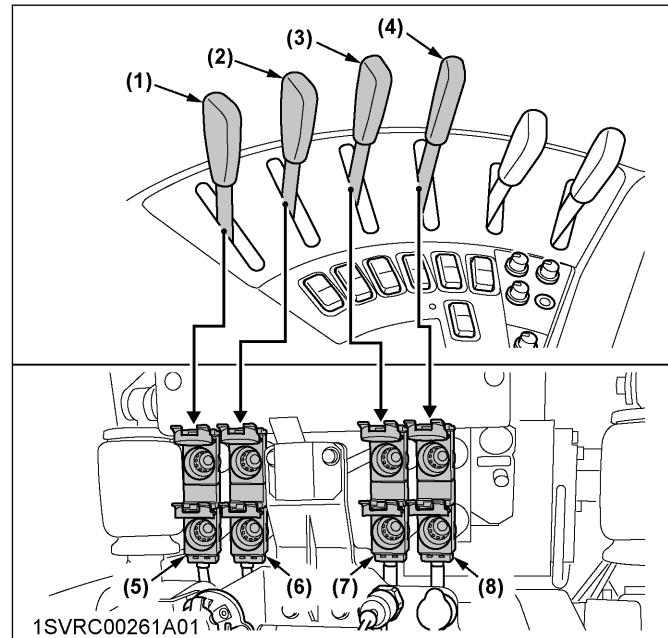
### 1.1 Controls of remote valves

The external hydraulic power can be taken out of up to 4 segments. Depending on different-destination models

and mounted options, however, the number of ports varies.

In this manual, the 4-segment system is taken as an example.

Carefully check the relation between each valve and control lever before connecting the hydraulic hoses.



(1) Remote control valve lever 1  
 (2) Remote control valve lever 2  
 (3) Remote control valve lever 3  
 (4) Remote control valve lever 4  
 (5) Remote valve for lever 1  
 (6) Remote valve for lever 2  
 (7) Remote valve for lever 3  
 (8) Remote valve for lever 4

### 1.2 Remote control valve

The auxiliary control valve type comes in 2 types A and B, as shown in the following table.

Type A valve	Double acting valve with float position and flow control.
Type B valve	Double acting valve with float position.

Factory installed valve types are as follows:

#### 3 valve model

1st	2nd	3rd
Type A	Type B	Type A

#### 4 valve model

1st	2nd	3rd	4th
Type A	Type B	Type A	Type B

#### • Float position

This type of valve may be placed in float mode with the control lever all the way forward. The cylinder is

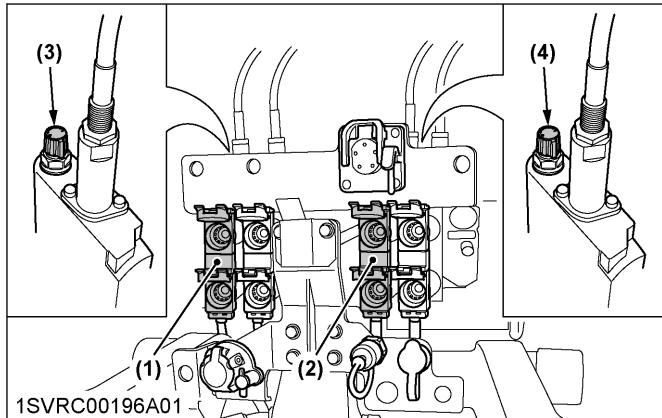
free to extend or retract, letting an implement such as a loader bucket follow the ground.

### 1.3 Flow control valve

#### **! WARNING**

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

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



- (1) Remote control valve with flow control  
(2) Remote control valve with flow control  
(3) Flow control knob for valve (1)  
(4) Flow control knob for valve (2)

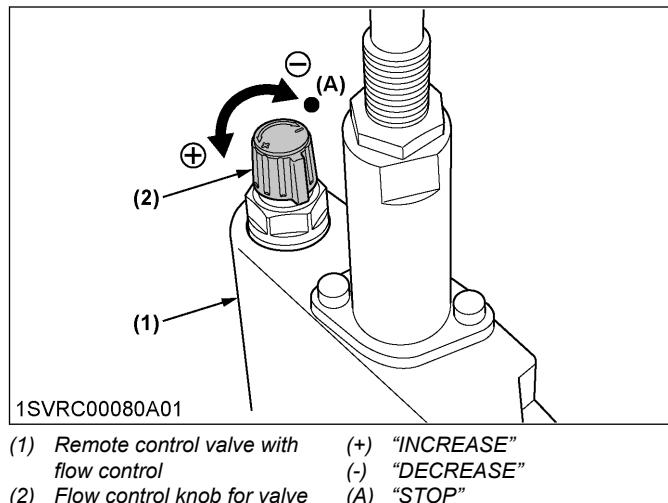
#### Adjusting the flow rate:

The flow rate for the remote control valve can be adjusted.

1. Turn the flow control knob anticlockwise (+), and the flow rate for the remote control valve increases. A clockwise turn (-) of the knob causes the flow to decrease. If the knob is turned all the way (A), there will be no flow.
2. To adjust the flow rate, set the engine speed to the operating rpm, turn the flow control knob once all the way clockwise (A), and then turn it gradually anticlockwise until a required flow rate is reached.

#### IMPORTANT :

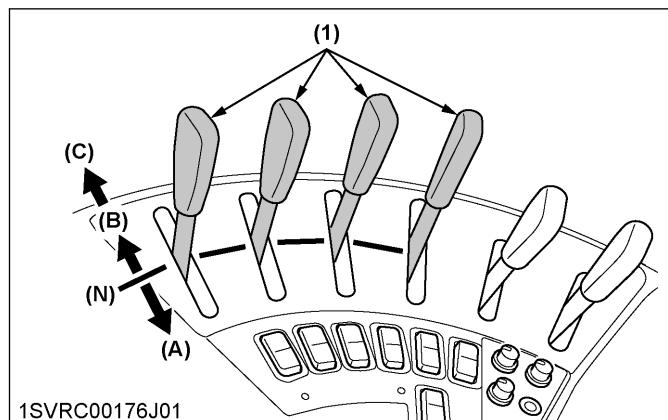
- When there is no need to adjust the flow rate, turn the flow control knob all the way anticlockwise and keep it in this position.



### 1.4 Remote control valve lever

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

Each lever can be switched among its 4 positions. Set the lever to the "FLOAT" position, and the lever is kept at that position.



- (1) Remote control valve lever      (A) "EXTEND"  
(B) "RETRACT"  
(N) "NEUTRAL"  
(C) "FLOAT"

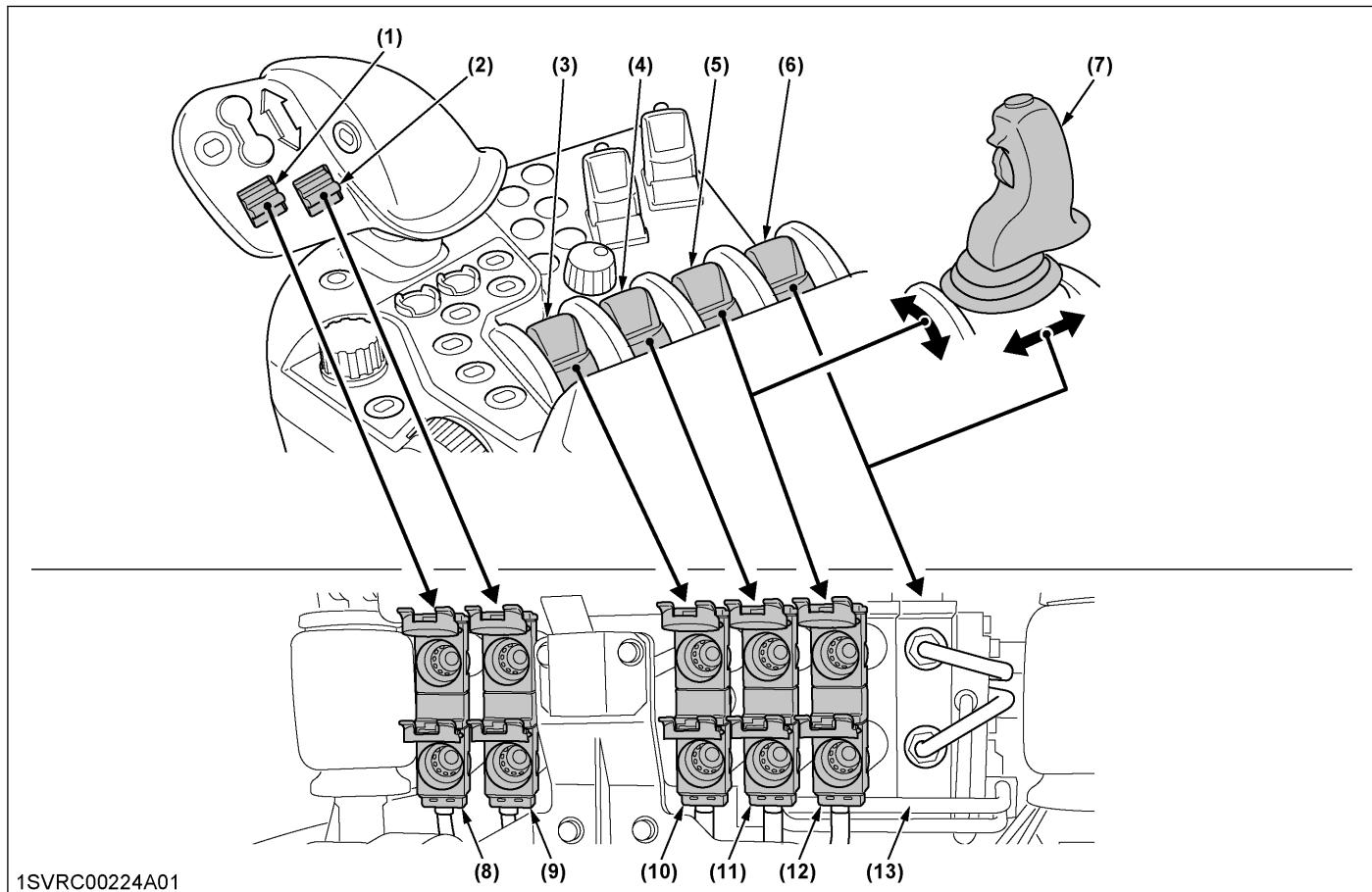
## 2. Operation of Premium and Premium KVT models

### 2.1 Controls of remote valves

The external hydraulic power can be taken out of up to 6 segments. Depending on different-destination models and mounted options, however, the number of ports varies.

In this manual, the 6-segment system is taken as an example.

Carefully check the relation between each valve and control switch before connecting the hydraulic hoses.



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- |                                   |                                           |                                |
|-----------------------------------|-------------------------------------------|--------------------------------|
| (1) Remote control valve switch 1 | (6) Remote control valve switch 6         | (9) Remote valve for switch 2  |
| (2) Remote control valve switch 2 | (7) Remote control valve switch (5-6) and | (10) Remote valve for switch 3 |
| (3) Remote control valve switch 3 | loader joystick<br>(Loader type)          | (11) Remote valve for switch 4 |
| (4) Remote control valve switch 4 |                                           | (12) Remote valve for switch 5 |
| (5) Remote control valve switch 5 | (8) Remote valve for switch 1             | (13) Remote valve for switch 6 |

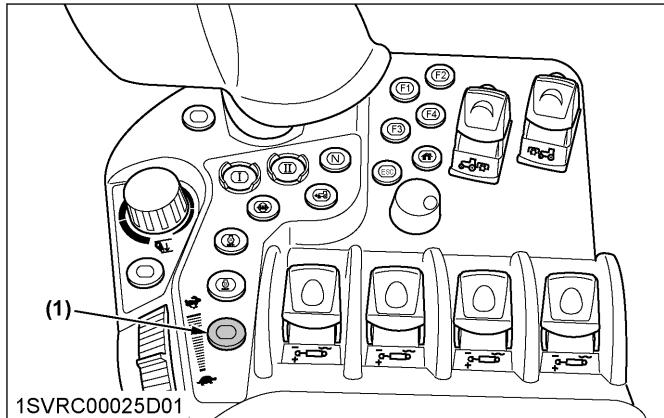
## 2.2 Remote control valve lock button

### **WARNING**

To avoid personal injury or death:

- Before road travelling, be sure to lock the remote control valve with this button to avoid accidentally dropping the implement.

Each time you press the switch, the lock and unlock status switch. The indicator of the switch stays on while in the lock status.



## 2.3 Detailed setting of remote control valve

All the remote control valves can be pre-set in detail and their settings can be confirmed.

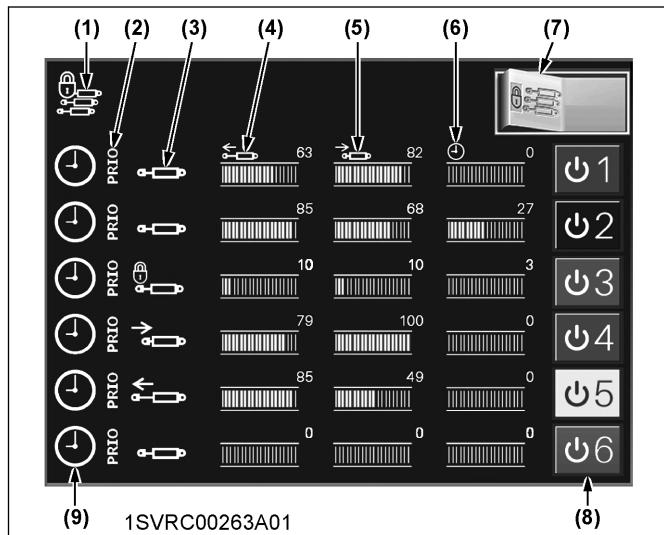
(See Setting the remote control valve on page 87.)

### Locking and unlocking all the remote control valves

1. Touch the left half of the switch (7), and all the remote control valves are locked and cannot be used for raising and lowering.
2. Touch the right half of the switch, and the valves are unlocked.  
While the remote control valves are locked, the indicator (1) lights up.

### Locking and unlocking each of the remote control valves

1. Touch any of the remote control valves lock and unlock switches (8), and the relevant remote control valve can be locked and unlocked. The following figure shows that the 3rd segment is being locked.



### Flow rate and timer

The flow rate in both directions of the remote control cylinders and their operating time can be pre-set (timer controlled).

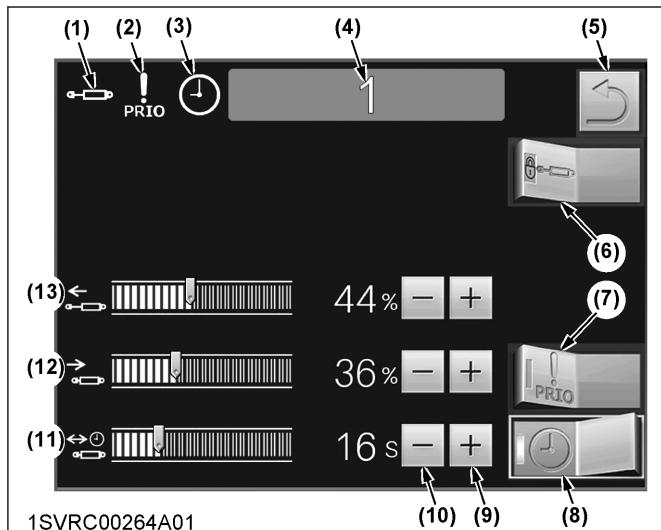
#### NOTE :

- First set the switch to the “EXTEND” or “RETRACT” position. Then release your hand, and the timer starts counting. When the time is over, the oil feed to the implement is stopped. From now on, the timer can be pre-set with the switch alone.  
If the switch is held at the “EXTEND” or “RETRACT” position, the oil feed is continued even after the timer has stopped counting.
- When the switch or the lever is operated in the opposite way, the timer counting is cancelled.
- When the timer and detent function are used together, the valve can serve as a double-acting valve with detents and self cancelling.

### Securing the priority flow

Oil is preferentially fed from the hydraulic pump to a specified remote control valve.

Once the priority flow is ensured, the priority flow status indicator (2) lights up.



- (1) Remote control valve operating status indicator
- (2) Priority flow status indicator
- (3) Automatic shut-off timer indicator
- (4) Remote control valve number
- (5) Previous screen resume switch
- (6) Remote control valve lock and unlock switch
- (7) Priority flow status on/off switch
- (8) Automatic shut-off timer on/off switch
- (9) Plus (+) switch
- (10) Minus (-) switch
- (11) Automatic shut-off timer control
- (12) Discharge rate from cylinder (retract) control
- (13) Discharge rate from cylinder (extend) control

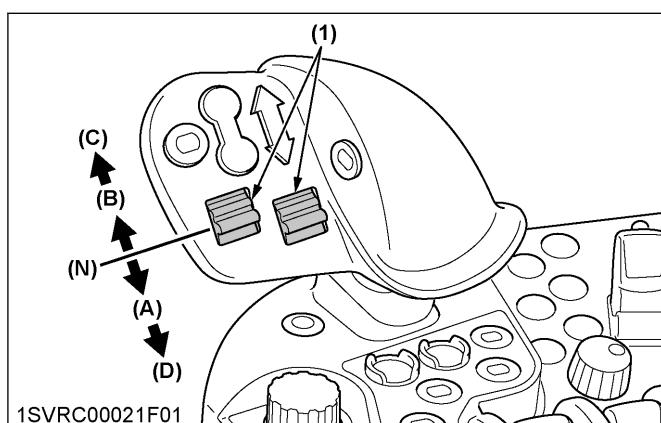
## 2.4 Remote control valve switch

The remote control valve switches direct pressurised oil flow to the implement hydraulic system.

### Use of remote valves 1 and 2

Each switch can be set at 5 positions.

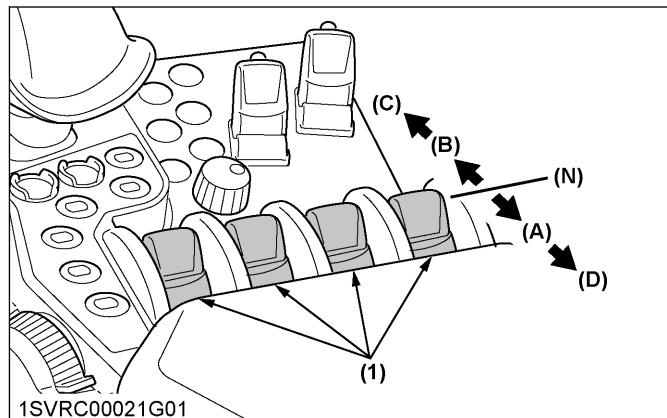
If the switch is held at the "FLOAT" or "DETENT" position, the switch is held at that position.



- (1) Remote control valve switch
- (A) "EXTEND"
- (B) "RETRACT"
- (N) "NEUTRAL"
- (C) "FLOAT"
- (D) "DETENT"

### Use of remote valves 3 to 6

Each switch can be set at 5 positions.



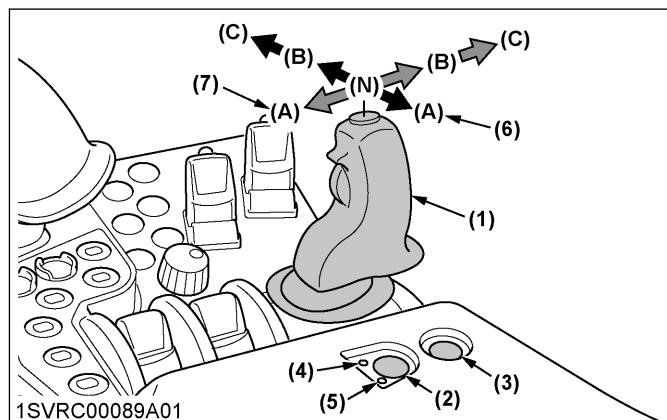
- (1) Remote control valve switch
- (A) "EXTEND"
- (B) "RETRACT"
- (N) "NEUTRAL"
- (C) "FLOAT"
- (D) "DETENT"

## 2.5 Joystick for remote control valve and loader (loader model)

Using the joystick, the loader and the hydraulic remote control valves (5th and 6th) can be operated.

Each time you press the selection button, the remote control and the loader mode switch, and the respective indicator lights up.

If no such operation is needed, lock the joystick with its lock button.

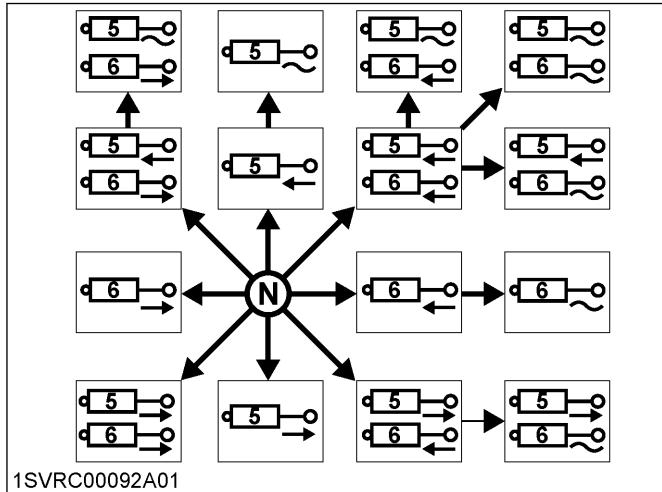


- (1) Joystick for remote control valve and loader
- (A) "EXTEND"
- (B) "RETRACT"
- (N) "NEUTRAL"
- (C) "FLOAT"
- (2) Selection button for remote control valve and loader
- (3) Joystick lock button
- (4) Loader mode indicator
- (5) Remote control valve mode indicator
- (6) 5th valve operation
- (7) 6th valve operation

### NOTE :

- Moving the joystick diagonally provides flow for two valves simultaneously in the different combinations illustrated.
- If the front loader valve is not installed, the loader mode indicator (4) and remote control

valve mode indicator (5) are blinking. When the valve is installed, the indicator blinking is stopped.



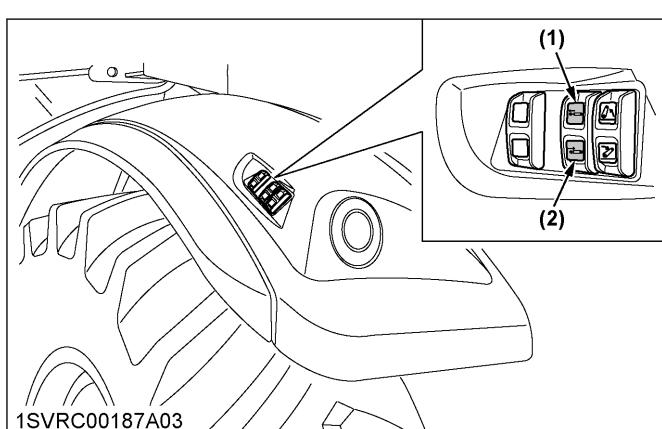
- 5th remote control valve
- 6th remote control valve
- “EXTEND”
- ← “RETRACT”
- ~ “FLOAT”

## 2.6 Controls for the remote control valves on the rear fender (if equipped)

The left and right tyre fenders are equipped with the 2nd-segment remote control valve operation switch.

Before activating the switch, make sure that there is nobody and no obstacle within the implement working range.

The valve acts only while the switch is held down.



- (1) Extend switch for 2nd remote control valve
- (2) Retract switch for 2nd remote control valve

## 3. Common operation for all models

### 3.1 Connecting cylinder and hydraulic motor

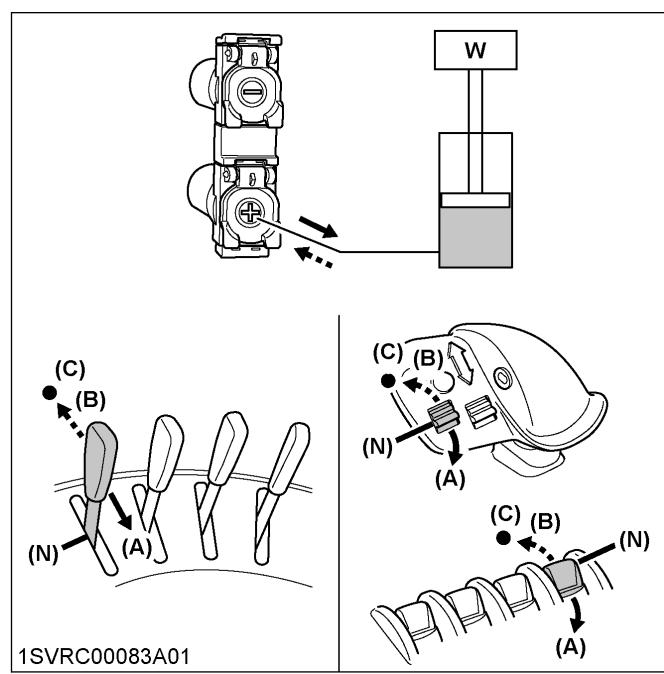
#### Connecting single-acting cylinder

1. Connect the hose to the lower coupler of the valve.

2. To extend a single-acting cylinder, move the control lever or switch to extend (A) position. Manually return the lever or switch to the neutral (N) position to stop the cylinder when it has reached the desired position.
3. To retract a single-acting cylinder, move the lever or switch to float (C) position.

#### IMPORTANT :

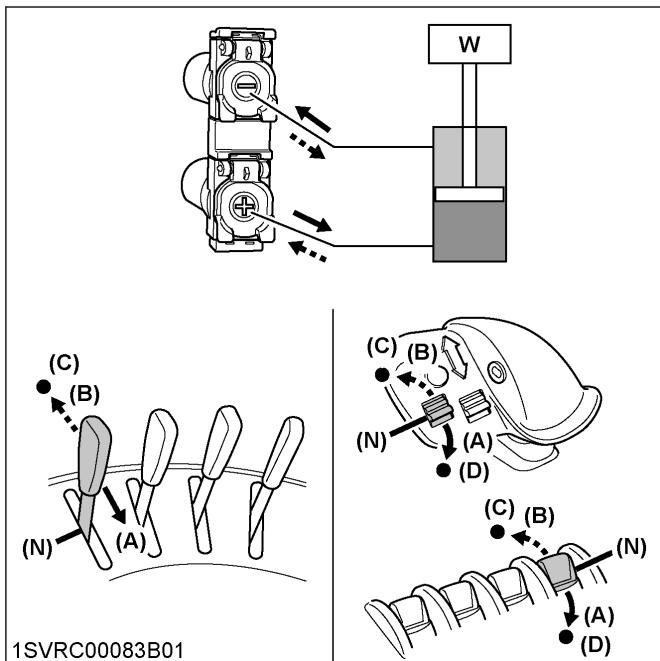
- Always use the float (C) position to lower a single acting cylinder. The retract (B) position is for double acting cylinders only.
- Do not hold the lever or switch in the extend (A) position once the remote cylinder has reached the end of the stroke, as this will cause oil to flow through the relief valve. Forcing oil through the relief valve for extended periods will overheat the oil.
- Hold the lever or switch at the float (C) position, and the remote cylinder can be fully extended and retracted. Select this float (C) position when you want to run the implement along the terrain.



- (A) “EXTEND”
- (B) “RETRACT”
- (N) “NEUTRAL”
- (C) “FLOAT”

#### Connecting double-acting cylinder

1. Connect the pressure of the load side of implement cylinders to the lower couplers of each valve, which have built in load check valves to prevent leaks.



- (A) "EXTEND"
- (B) "RETRACT"
- (N) "NEUTRAL"
- (C) "FLOAT"
- (D) "DETENT"

#### IMPORTANT :

- Do not hold the lever or switch in the extend (A) or retract (B) 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.
- Hold the lever or switch at the float (C) position, and the remote cylinder can be fully extended and retracted. Select this float (C) position when you want to run the implement along the terrain.

#### NOTE :

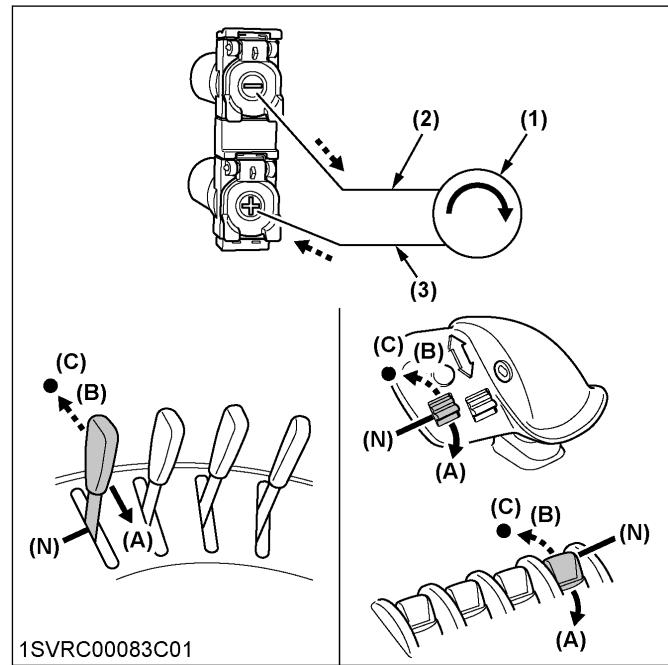
- Detent function:  
Set the switch to the "DETENT" position, and it is held at this position unless it is returned to the "NEUTRAL" position.  
This function is useful for implements that need constant oil feed.

#### Connecting hydraulic motor

1. Connect the pressure hose (2) to the upper coupler and the return hose (3) to the lower coupler of the same valve.
2. When the control lever or switch is assigned to the float (C) position, the motor is off.
3. Move the lever or switch to retract (B) position to operate the motor.
4. To stop the motor, move the lever or switch from retract (B) position to the float (C) position.

#### IMPORTANT :

- When operating continuous flow equipment, the remote control valve lever or switch must not be moved to the neutral (N) or extend (A) position as damage to the equipment may result. Always select the motor mode function when operating with hydraulic motor.



- (1) Hydraulic motor
- (2) Pressure hose
- (3) Return hose
- (A) "EXTEND"
- (B) "RETRACT"
- (N) "NEUTRAL"
- (C) "FLOAT"

### 3.2 Remote control valve coupler

#### 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.

#### Connecting

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

#### Disconnecting

1. Lower the implement to the ground to release hydraulic pressure from the hoses.
2. Clean the couplers.
3. Relieve pressure by moving the hydraulic control levers with the engine shut off. Pull the hose straight from the hydraulic coupler to release it.

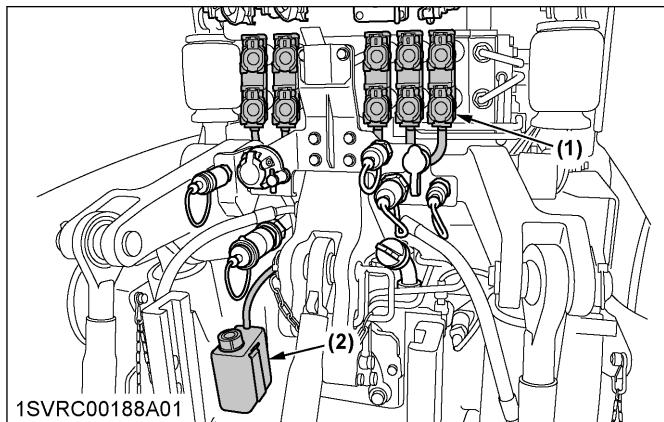
4. Clean the oil and dust from the coupler, then replace the dust plugs.

**NOTE :**

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

### 3.3 Remote couplers spillage collector

With the remote control valve coupler in place, a slight amount of oil leaking from the coupler is recovered. In this way, no oil is splashed around the tractor body.

**IMPORTANT :**

- Oil recovered contains dust and water. Do not pour such oil back into the transmission case.

## 4. Hydraulic control unit use reference chart

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

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

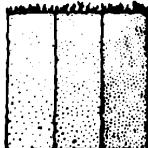
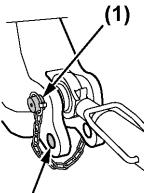
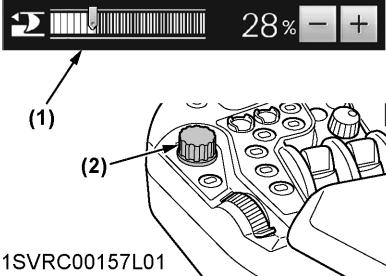
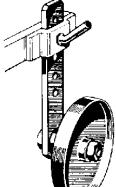
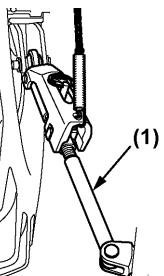
### Standard model

Implement	Soil condition	Top link mounting holes	1SVRC00038B01	1SVRC00293A01	(1) Draft ratio adjustment dial (draft sensitivity adjustment) (2) Depth control dial	Gauge wheel	(1) Stabilisers
Mouldboard plough	Light soil Medium soil Heavy soil				Turn the dial clockwise. Readjust according to the ploughing depth or the soil condition.		
Disc plough	---		2		Turn the dial to the suitable position	Yes/No	Unlock
Harrow (spike, spring-tooth, disc type).	---						
Subsoiler, etc.							
Weeder, ridge, etc.						Yes	
Earthmover, digger, scraper, manure fork, rear carrier, etc.	---		1	Turn the dial fully anti-clockwise.	Turn the dial to the suitable position	Yes/No	Lock
Mower (mid and rear-mount type) hayrake, tedder, etc.						No	

#### NOTE :

- With an implement mounted, use the top hole of the top link holder to keep the implement as horizontal as possible, and its bottom hole to keep the implement tilted forward.

## Premium, Premium KVT models

Implement					
	1AGAIAZAP122A	1SVRC00038B01	(1) Draft sensitivity adjustment switch (2) Depth control dial	1AGAIAZAP070A	1SVRC0041D01 (1) Stabilisers
Soil condition		Top link mount-ing holes		Gauge wheel	
Mouldboard plough	Light soil Medium soil Heavy soil	2	Extend the graph to the right. Readjust according to the ploughing depth or the soil condition.	Turn the dial to the suitable position	Yes/No
Disc plough	---				
Harrow (spike, spring-tooth, disc type)	---	1	Set to the 0% level.	Turn the dial to the suitable position	Lock
Subsoiler, etc.					
Weeder, ridge, etc.					
Earthmover, digger, scraper, manure fork, rear carrier, etc.	---				
Mower (mid and rear-mount type) hayrake, tedder, etc.					

## NOTE :

- With an implement mounted, use the top hole of the top link holder to keep the implement as horizontal as possible, and its bottom hole to keep the implement tilted forward.

# TYRES, WHEELS AND BALLAST

## TYRES



### WARNING

To avoid personal injury or death:

- 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.

### 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 pressure in front tyres if using a front loader or when equipped with a full load of front weights.
- When retrofitting the tractor with other tire combinations such as those described above or with special purpose tires, consult your local KUBOTA Dealer to get information regarding permitted tyre combinations, tire pressure and additional information.

	Tyre sizes	Inflation pressure
Front	380/85R28	160 kPa (1.6 kgf/cm <sup>2</sup> )
	420/70R28	160 kPa (1.6 kgf/cm <sup>2</sup> )
	420/85R28	160 kPa (1.6 kgf/cm <sup>2</sup> )
	480/70R28	160 kPa (1.6 kgf/cm <sup>2</sup> )
	540/65R28	160 kPa (1.6 kgf/cm <sup>2</sup> )
Rear	460/85R38	160 kPa (1.6 kgf/cm <sup>2</sup> )
	520/70R38	160 kPa (1.6 kgf/cm <sup>2</sup> )
	520/85R38	160 kPa (1.6 kgf/cm <sup>2</sup> )
	580/70R38	160 kPa (1.6 kgf/cm <sup>2</sup> )
	650/65R38	160 kPa (1.6 kgf/cm <sup>2</sup> )

## 2. Jack point



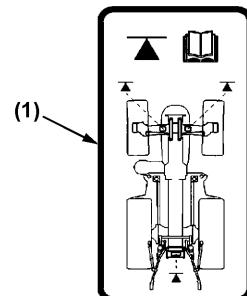
### WARNING

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 pivoting.
- Select jacks that withstand the machine weight and set them up as follows.

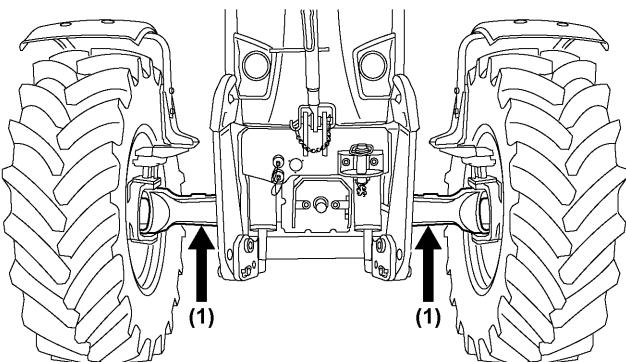
When using a jack, be sure to set the jack at the position indicated on the label and illustration.

If the jack is positioned incorrectly, it may damage the tractor.



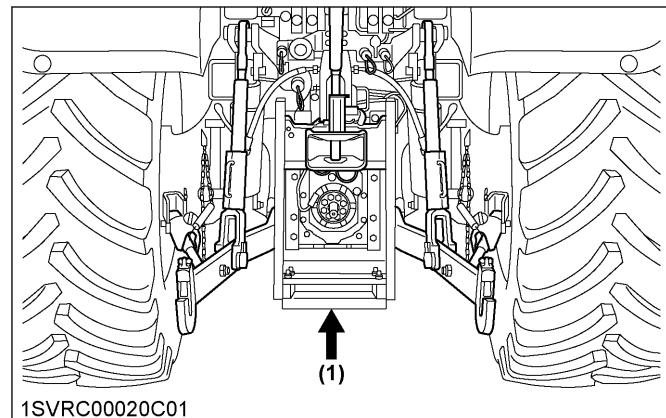
1SVRC00220A01

(1) Label

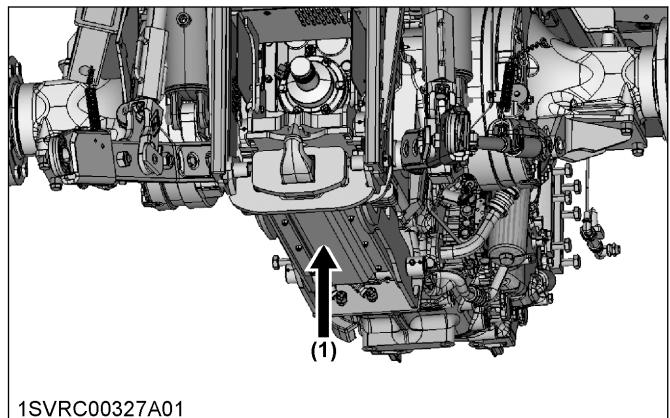
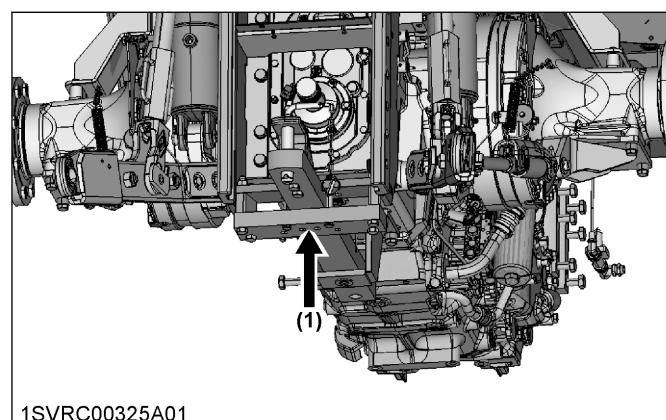


1SVRC00152A01

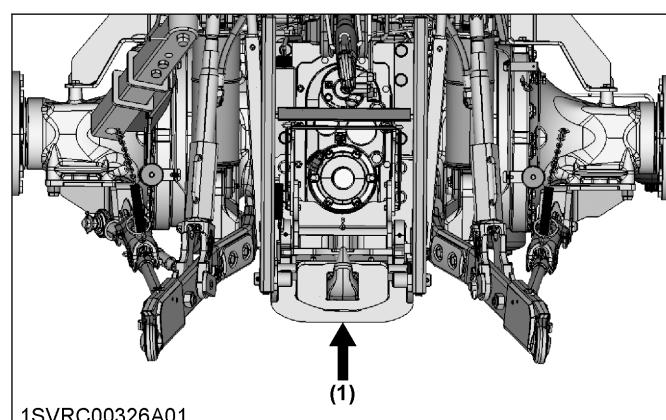
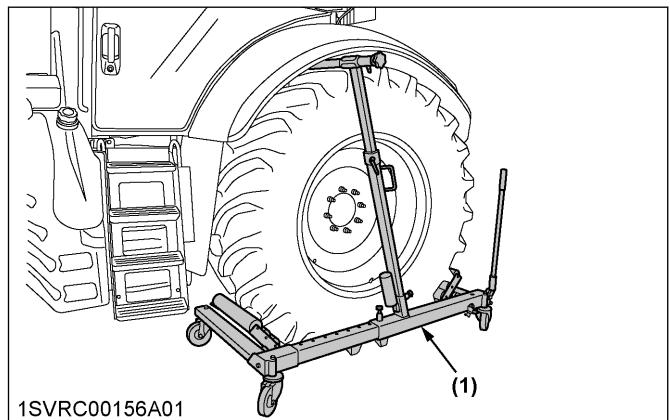
(1) Jack point



(1) Jack point for tractor equipped with ladder hitch

(1) Jack point for tractor equipped with **DROMONE** auto hitch (view from below)

(1) Jack point for tractor equipped with ladder hitch (view from below)

(1) Jack point for tractor equipped with **DROMONE** auto hitch

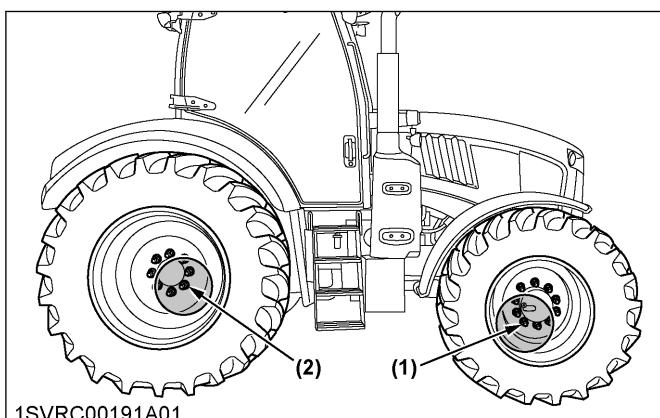
(1) Tyre remover

## 4. Treads

### IMPORTANT :

- Front and rear treads cannot be adjusted.
- Always attach the wheels as shown in the factory-shipment state, otherwise tractor 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 (200 yards) and 10 times of shuttle movement by 5 m (5 yards), and thereafter according to service interval.

(See MAINTENANCE on page 249.)

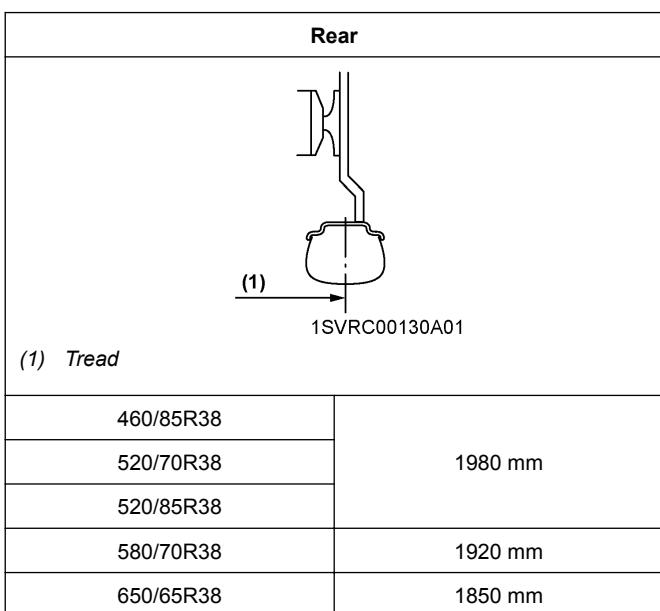


$$(1) \quad 540 \text{ N} \cdot \text{m} / 55.1 \text{ kgf} \cdot \text{m} / 398 \text{ ft} \cdot \text{lbf}$$

**Front**

(1) Tread

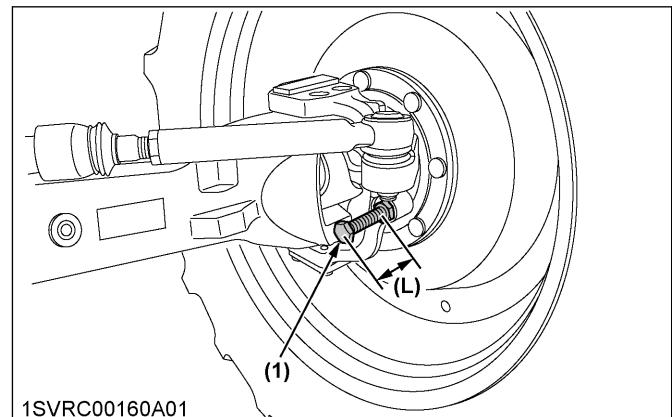
**1SVRC00130A01**



## **5. Adjusting the front wheel turning stopper bolt**

1. Check the front wheel turning angle each time the front wheels are changed.  
Proceed as follows:
    - a. Apply the parking brake.
    - b. Immobilize the tractor using wheel chocks.
    - c. Raise the front of the tractor.
    - d. Turn the steering wheel full lock to the left and subsequently to the right or vice versa and pivot the axle to its position of maximum oscillation.
  2. When the front axle is in the condition of maximum oscillation and the wheels are turned to the maximum angle, there must be no interference between the fenders or tires and engine bonnet or loader frame.  
If necessary, adjust the stopper bolts.

If necessary, adjust the stopper bolts.



(1) Stopper bolt (L) Bolt length

	<b>Turning angle</b>	<b>Bolt length (L)</b>
380/85R28	25°	47 mm
420/70R28	45°	51 mm
420/85R28	45°	64 mm
480/70R28	45°	71 mm
540/65R28	40°	83 mm

## **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.

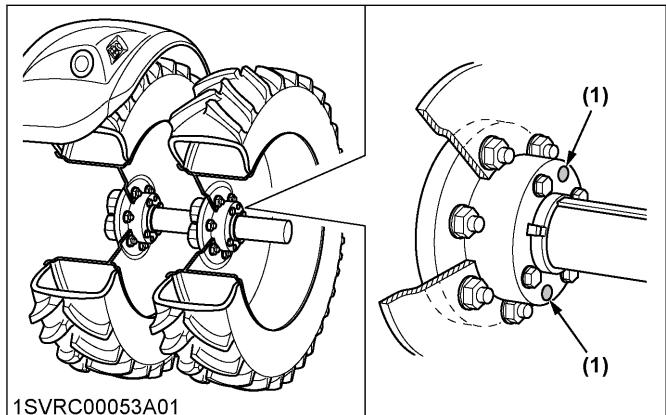
- Never operate the tractor with a loose rim, wheel or axle.

## 1. Adjusting wheels with bar type axle

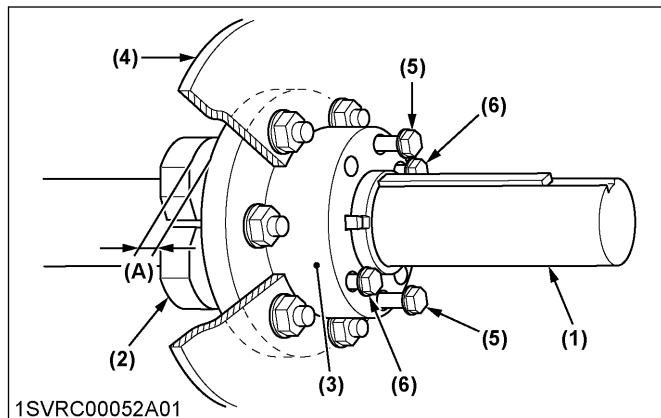
Rear tread width can be adjusted as shown with the standard equipped tyres.

To change the tread width:

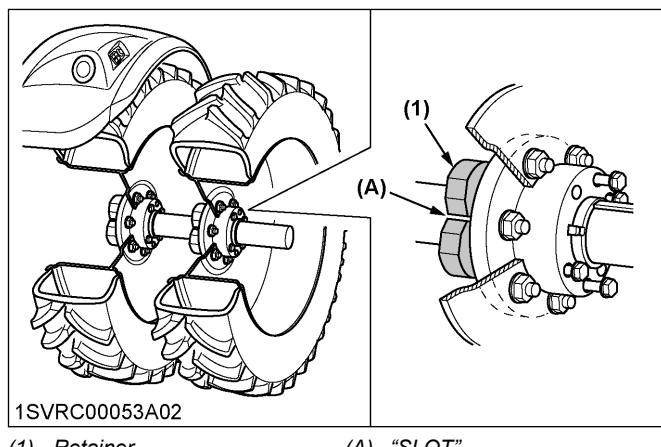
1. Clean the axle with a wire brush.
2. Keep the wheel whose tread will be readjusted slightly above the floor.
3. There are 4 flange bolts. Remove the 2 diagonally opposite to each other and loosen the other two.
4. Apply the removed 2 bolts into the jack bolt holes. Tighten up these 2 bolts evenly and draw out the tyre flange toward yourself.
5. Slide the wheel to a desired tread width. If the retainer and the bar axle are stuck too hard to slide the wheel, drive a wedge in the retainer's slot for smooth motion.
6. Remove the jack bolts and fix the tire flange and retainer with the bolts.
7. Use the same procedure for the other-side wheel.



(1) Screw hole for jack up



(1) Bar axle  
(2) Retainer  
(3) Tyre flange  
(4) Wheel disc  
(5) 2-jack bolts  
(6) Bolt  
(A) "CLEARANCE"



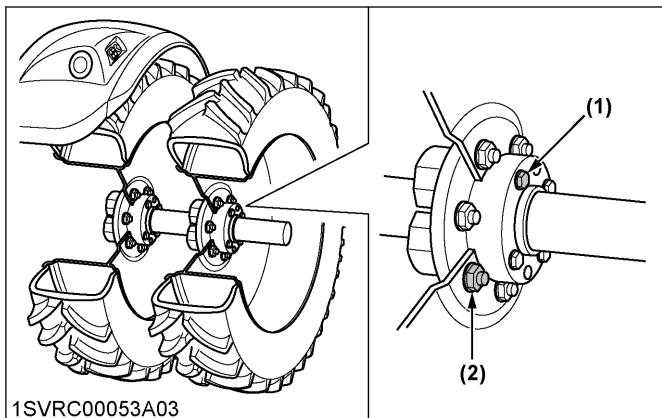
(1) Retainer  
(A) "SLOT"

### NOTE :

- For easy tread width readjustment, preferably dismount the rear wheel ballast to lighten the total weight of the wheel.
- After readjusting to a new tread width, make sure there is enough clearance between the tyre and tyre fender, as well as between the tyre and lower link.

### IMPORTANT :

- Always attach wheels as shown in the drawing.
- If not attached as illustrated, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200 m (200 yards) and 10 times of shuttle movement by 5 m (5 yards), and thereafter according to service interval.  
(See MAINTENANCE on page 249.)



- (1) 350 N·m (35.7 kgf·m)  
 (2) 670 N·m (68.3 kgf·m)

## DUAL TYRES (IF EQUIPPED)

Dual wheels may be used on the rear axles of tractors for the purpose of flotation or soil compaction reduction only. They are recommended for use in the field.

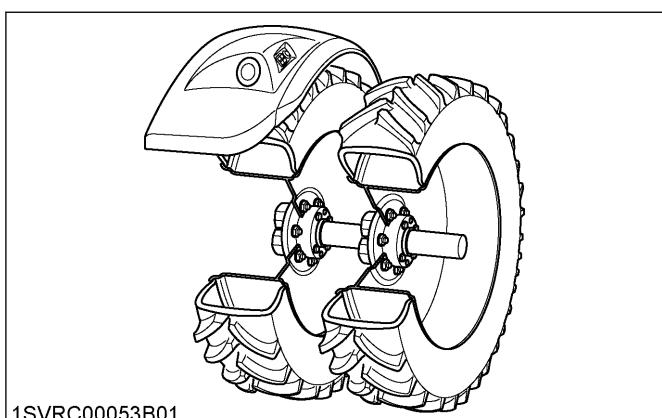
When travelling on road, you must comply with local regulations at all time.

**IMPORTANT :**

- Do not install dual wheels on the front axle.

### 1. Bar type axle

Attach the wheels onto the rear axle.



### 2. Flange type axle

A dual-tire adapter mounted to the tractor's rear wheel flange is available as an option.

## 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 to maintain steering control.

### 1. Front ballast

Add weights if needed for stability and improved traction.

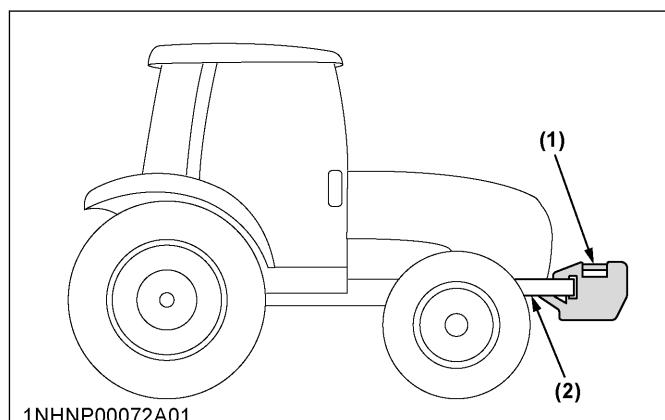
Heavy pulling and heavy rear mounted implements tend to lift up the front wheels.

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.



- (1) Front end weights  
 (2) Bumper

**IMPORTANT :**

- Do not overload tyres.
- Add no more weight than indicated in chart.
- Do not attach the front bumper when the front loader is attached.

Maximum weight	45 kg x 14 pieces
----------------	-------------------

### 2. Rear ballast for single tyres

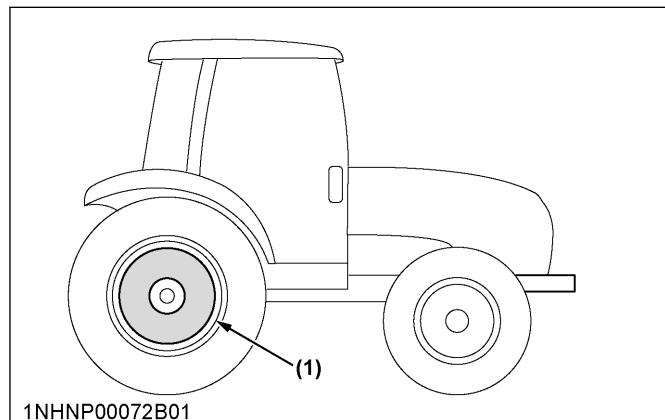
Add weight to rear wheels if needed to improve traction or for stability.

The amount of rear ballast should be matched to job and the ballast should be removed when it is not needed.

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

## 2.1 Rear wheel weights (option)

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



### IMPORTANT :

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

Maximum weight per wheel	445 kg (981 lbs.)
--------------------------	-------------------

## 2.2 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)

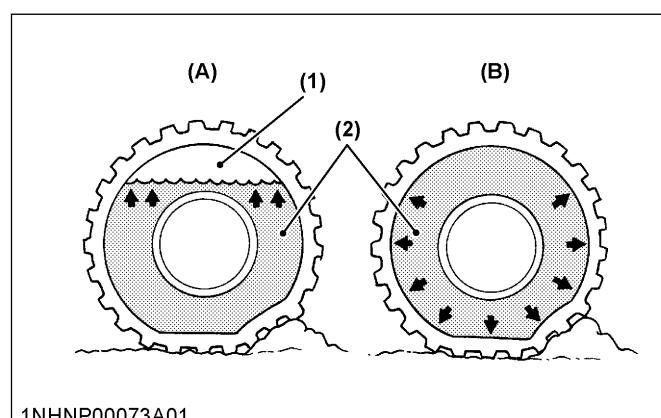
Tyre sizes	460/85 R38	520/70 R38	520/85 R38	580/70 R38	650/65 R38
Slush free at -10 °C Solid at -30 °C (Approx. 1 kg CaCl <sub>2</sub> per 4 L of water)	411 kg	442 kg	485 kg	562 kg	575 kg
Slush free at -24 °C Solid at -47 °C (Approx. 1.5 kg CaCl <sub>2</sub> per 4 L of water)	463 kg	497 kg	546 kg	633 kg	646 kg
Slush free at -47 °C Solid at -52 °C (Approx. 2.25 kg CaCl <sub>2</sub> per 4 L of water)	503 kg	541 kg	593 kg	688 kg	703 kg

### NOTE :

- On a 50 km/h (31.1 mph) specifications tractor, filling tyres with liquid ballast is not recommended.

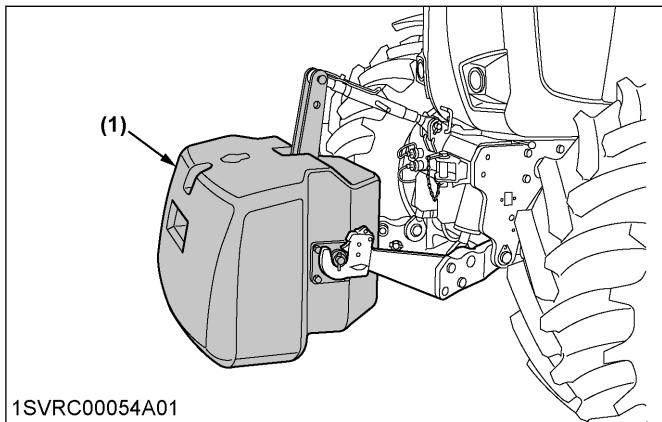
### IMPORTANT :

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



## 2.3 Monolithic block (if equipped)

The monolithic block allows the operator to install a weight at the front or rear 3-point hitch.



(1) *Monolithic block*

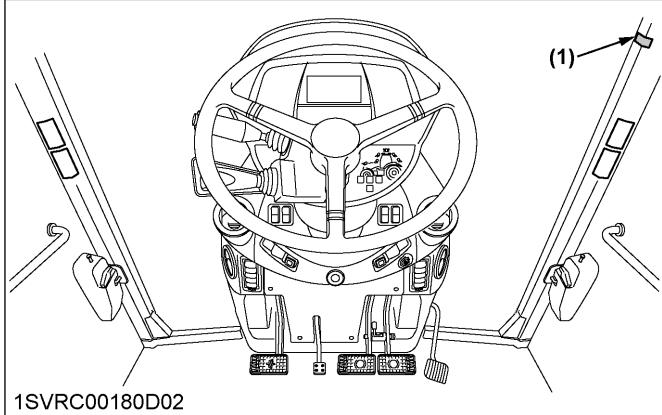
## 2.4 Maximum masses

(See APPENDICES on page 310.)

# CAB OPERATION

## CAB CLASSIFICATION AND MAINTENANCE

The CAB fulfils the requirements of category type 2, as defined EN 15695-1.



(1) CAB classification label

The air delivery and filtration system of the category 2 CAB protects against airborne and sedimented solid particles.

The system increases the pressure in the CAB, which helps prevent dust from entering the CAB. As additional protection against dust, the category 2 CAB is also equipped with a fresh air filter (EN15695-2).

However, in order for the filtration system to function as intended, the following conditions must be met:

- Door and window seals in good condition.
- Doors and windows closed.
- CAB grommets for cables properly sealed.
- Blower switch set to highest setting and recirculation/ fresh air selection switch set to "FRESH AIR" position.
- CAB air filters in good condition.

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 2 delivery and filtration system is functioning as intended. (See Cleaning inner air filter on page 273.) (See Cleaning fresh air filter on page 273.)

## 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.

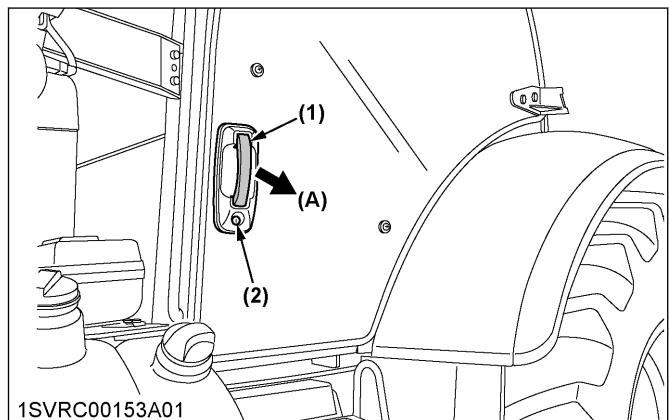
#### **"From the inside"**

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.

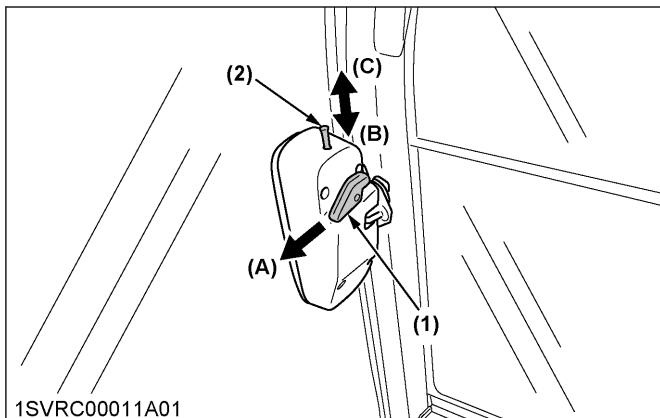


(1) Outer door handle  
(2) Door lock

(A) "PULL"

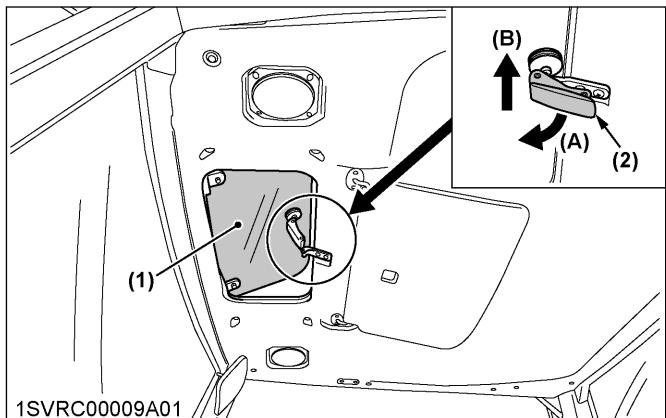
#### **"From the inside"**

Unlock the door and pull the inner door handle.



(1) Inner door handle  
(2) Lock knob

(A) "PULL"  
(B) "PUSH" (lock)  
(C) "PULL" (unlock)



(1) Sun roof  
(2) Sun roof handle

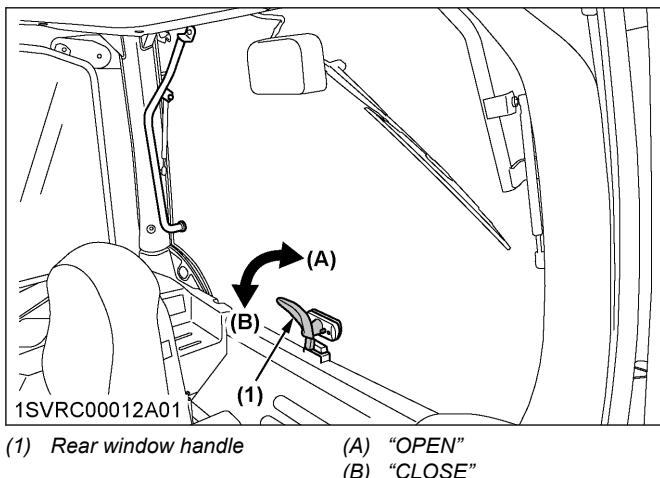
(A) "PULL"  
(B) "PUSH" (open)

#### NOTE :

- Open the sun roof, to allow outside air in.

### 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. Sun roof

Raise the front loader, and visually check to see if the tip of an attachment (bucket and fork, for example) is visible in its position or angle from the operator's seat.

### 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.

### DOME LIGHT

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

#### [OFF]

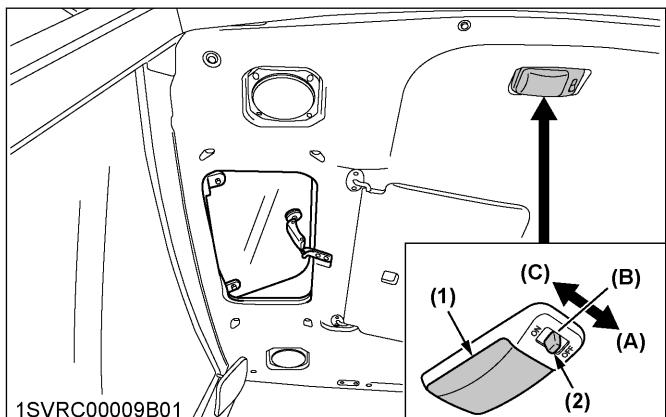
The light does not turn on when the door is opened.

#### "DOOR"

The light turns on when the door is opened. It turns off when the door is closed.

#### [ON]

The light remains on regardless of the door position.



(1) Dome light  
(2) Dome light switch

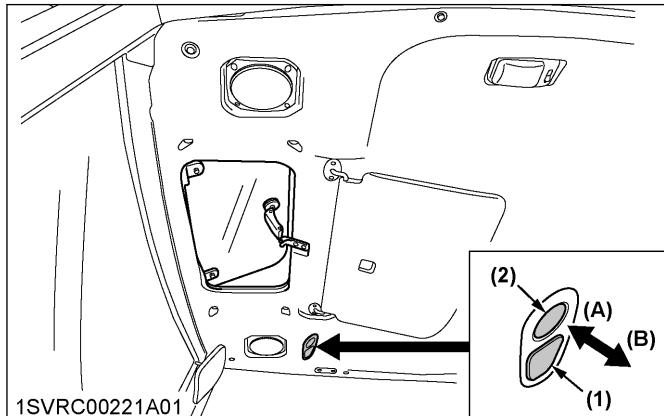
(A) [OFF]  
(B) "DOOR"  
(C) [ON]

**IMPORTANT :**

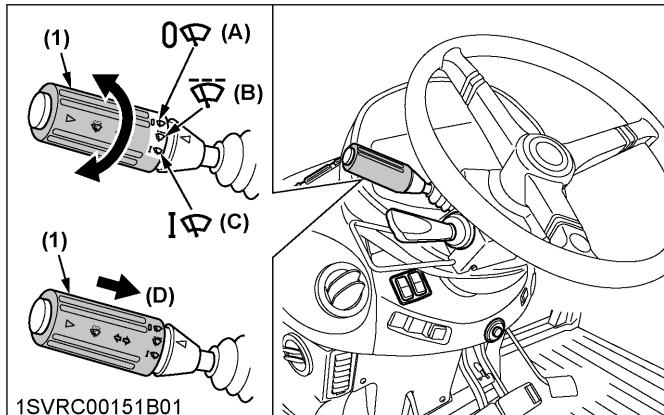
- The battery will discharge if the dome light remains on. Be sure to check the dome light switch position and/or door closure.

**SPOT LIGHT**

The spotlight is directed on the armrest and right hand console.

**WIPER****1. Front wiper and washer switch**

- Turn on the key switch and turn the front wiper and washer switch clockwise or anticlockwise to activate the wiper.
- When the front wiper and washer switch is pressed, washer liquid jets out.

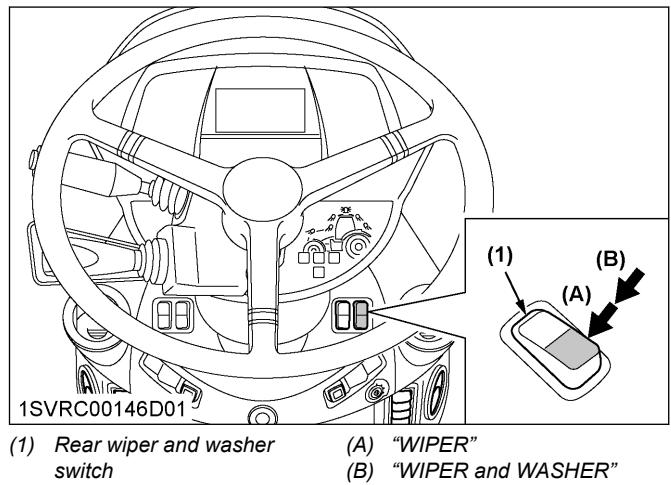


- IMPORTANT :**
- Do not activate the wipers when the windows are dry, as they may be scratched.

Be sure to jet washer liquid first and then activate the wipers.

**2. Rear wiper and washer switch**

- Turn on the key switch and press the bottom half of the wiper switch to the first stage, activating the wiper.
- When the switch is pressed down to the second stage, washer liquid jets out.  
The jetting continues while the switch is pressed and the wiper is activated continuously.



- IMPORTANT :**
- Do not activate the wipers when the windows are dry, as they may be scratched.  
Be sure to jet washer liquid 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 windscreens to prevent them from being frozen to the windscreens.
- If the windscreens are covered with snow, scrape it off the windscreens before using the wipers.
- If the wiper blades are frozen to the windscreens 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.

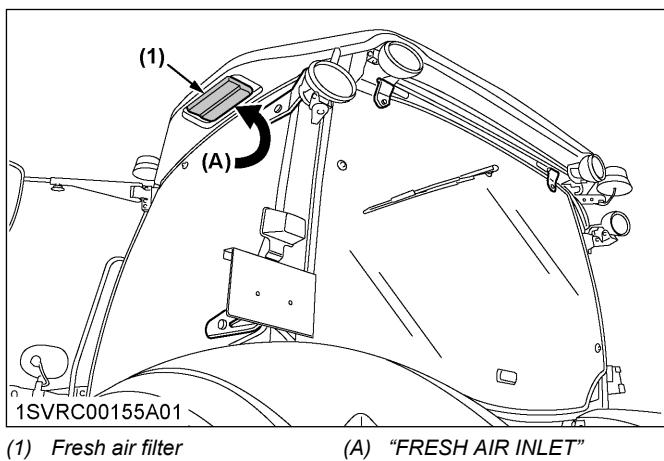
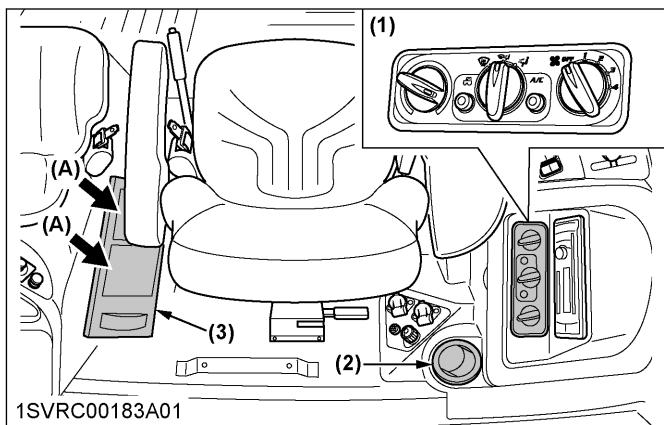
- IMPORTANT :**
- In the cold season, the wiper blades and the wiper motor may become overloaded, and cause damage. To avoid this, be sure to take the above precautions.

## AIR CONDITIONER

### **!** CAUTION

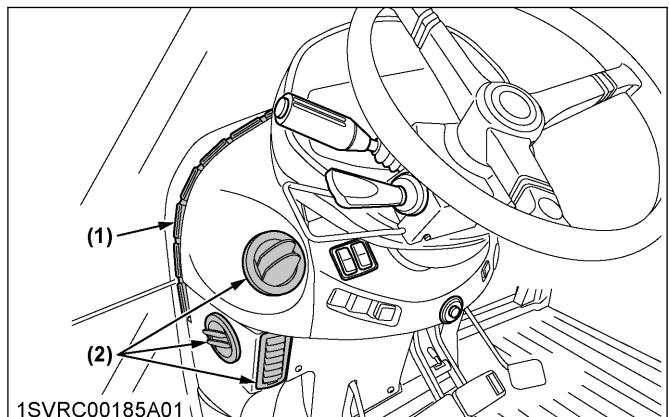
To avoid personal injury:

- Replace the water hoses every 4 years.
- Daily inspection  
Have the tractor repaired immediately if any of the following defects are discovered.  
Such defects may cause burns or injury. They may also cause engine seizure or other serious failures.
  - Scratches, cracks or swelling in water hoses.
  - Water leakage at water hose joints.
  - Missing or damaged water hose protective wrap or grommets.
  - Loose mounting bolts, damaged brackets.
- Do not touch the water hoses and the heater with your hand. You may get burned.
- If the window fails to defrost in extreme conditions or becomes cloudy when dehumidifying the CAB, wipe off moisture with a soft cloth.
- Do not block all the air vents of the air conditioner. A problem could occur.



## 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.

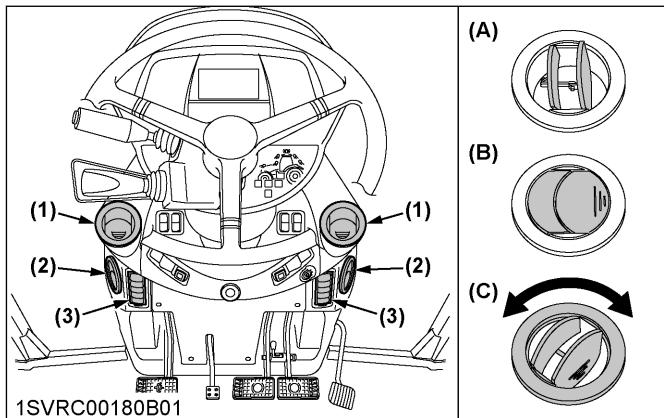


(1) Defroster air vents  
(2) Dashboard air vents

## 2. Air control vent

### 2.1 Dashboard air vent

The dashboard air vents can be independently adjusted as required.

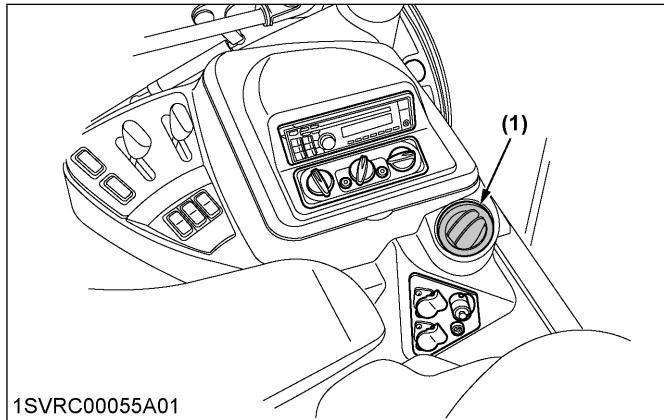


(1) Face area air vents  
(2) Back area air vents  
(3) Feet area air vents  
(A) "OPEN"  
(B) "SHUT"  
(C) "TURN"

## 2.2 Rear air vent

The rear air outlet is connected with the dashboard air outlets.

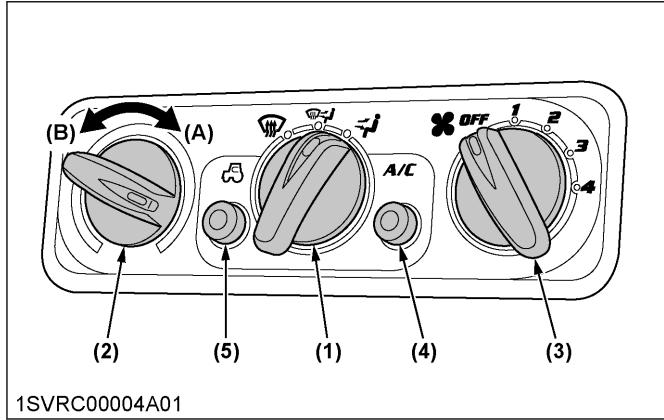
In summer when the back of the operator is exposed to sunlight, keep the rear air outlet open, and cool air is blown out of the front and rear air outlets for comfortable operation.



1SVRC00055A01

(1) Rear air vent

## 3. Control panel



1SVRC00004A01

- |                                                                       |            |
|-----------------------------------------------------------------------|------------|
| (1) Mode switch                                                       | (A) "WARM" |
| (2) Temperature control dial                                          | (B) "COOL" |
| (3) Blower switch                                                     |            |
| (4) Air conditioner switch with indicator light                       |            |
| (5) Recirculation and fresh air selection switch with indicator light |            |

### 3.1 Mode switch

Set the mode switch to the desired position.

- Ⓐ Air is blown from the dashboard and rear air vents.
- Ⓑ Air is blown from the dashboard, defroster and rear air vents.
- Ⓒ Air is blown from only the defroster air vent.

### 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 4 steps. At the [4] 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.

## 3.5 Recirculation or fresh air selection switch

Each time the switch is pressed, the air flow position changes for "RECIRCULATION" or "FRESH AIR". An indicator light will light up when the switch is set to "RECIRCULATION". And the indicator light will be off when the switch is set to "FRESH AIR".

### FRESH AIR:

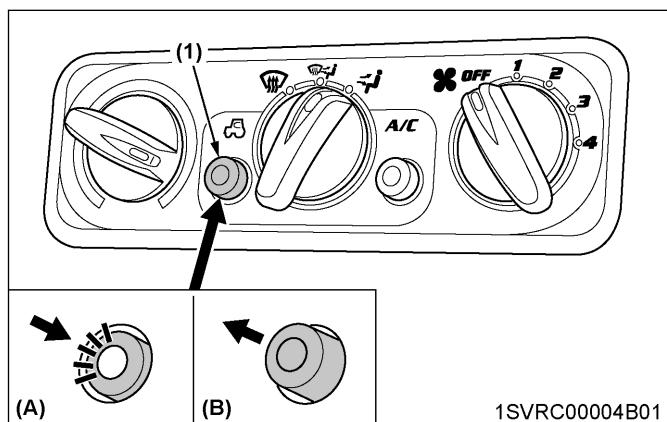
Indicator: "OFF"

Fresh air will flow into the CAB. This is helpful when you work in dusty conditions or if the glass windows get misty.

### RECIRCULATION:

Indicator: "ON"

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 switch with indicator light | (A) "RECIRCULATION" |
|                                                                      | (B) "FRESH AIR"     |

### NOTE :

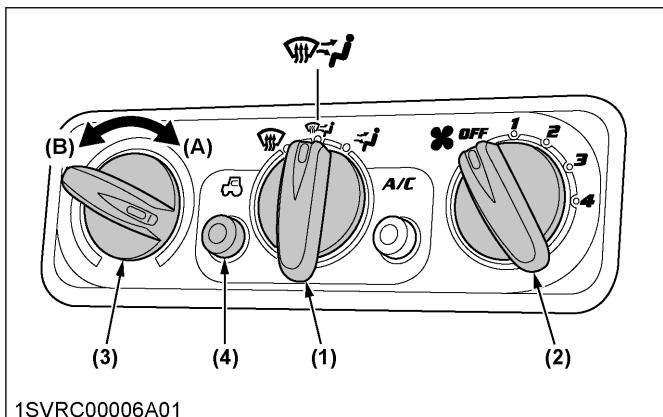
- When heating, do not keep the switch at the "RECIRCULATION" position for a long time. The windscreen easily gets misty.

- While working in dusty conditions, keep the switch at the "FRESH AIR" position. This increases the pressure in the CAB, which helps prevent dust from coming into the CAB.

## 4. Operation

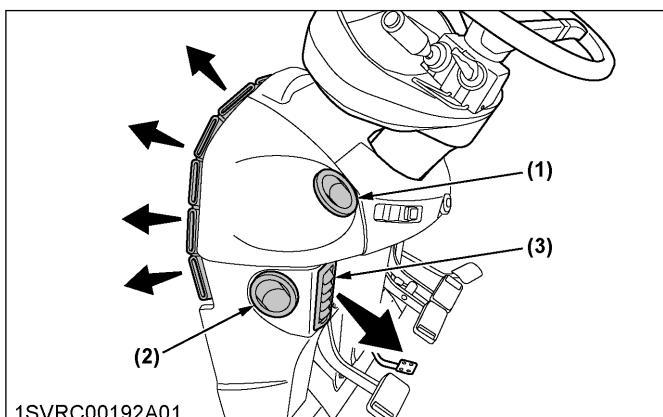
### 4.1 Heating

- Set the mode switch to the  position.
- Set the recirculation or fresh air selection switch to the "FRESH AIR" position. To raise the temperature in the CAB quickly, set this switch to the "RECIRCULATION" position.
- Adjust the blower ([1], [2], [3], or [4]) switch and the temperature control dial to achieve a comfortable temperature level.



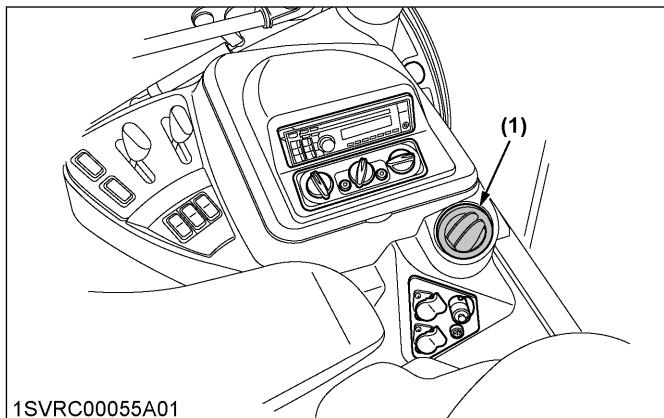
- |                                                                      |            |
|----------------------------------------------------------------------|------------|
| (1) Mode switch                                                      | (A) "WARM" |
| (2) Blower switch                                                    | (B) "COOL" |
| (3) Temperature control dial                                         |            |
| (4) Recirculation or fresh air selection switch with indicator light |            |

- Adjust the air volume and air direction from the dashboard air vents. In general, open feet area air vents, and shut face and back area air vents.



- |                         |
|-------------------------|
| (1) Face area air vents |
| (2) Back area air vents |
| (3) Feet area air vents |

- To blow out warm air also from behind, open the rear air outlet and adjust the air direction.



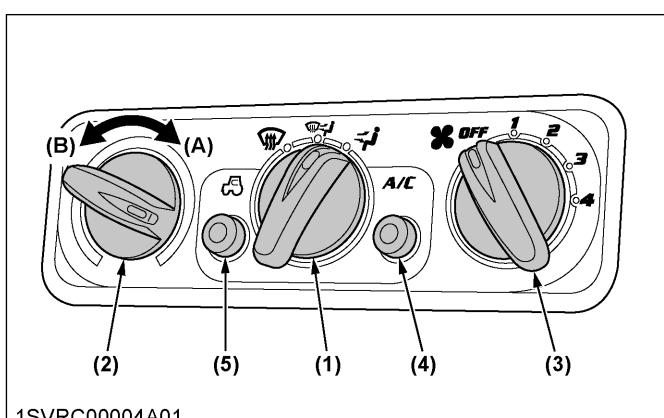
(1) Rear air vent

### 4.2 Cooling or dehumidifying-heating

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

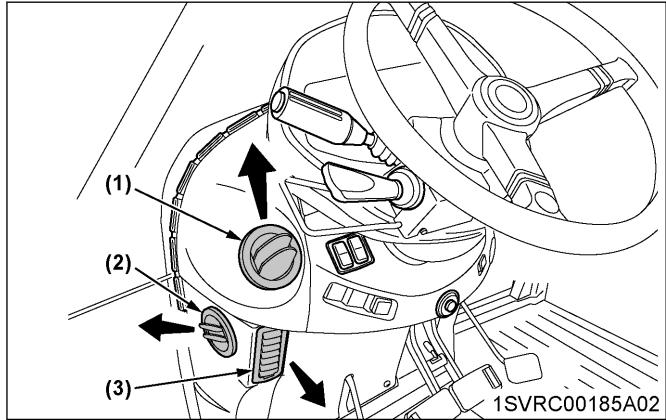
#### NOTE :

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



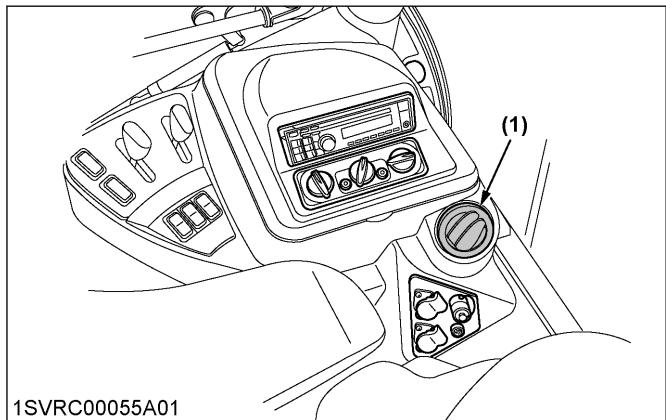
- |                                                                      |            |
|----------------------------------------------------------------------|------------|
| (1) Mode switch                                                      | (A) "WARM" |
| (2) Temperature control dial                                         | (B) "COOL" |
| (3) Blower switch                                                    |            |
| (4) Air conditioner switch with indicator light                      |            |
| (5) Recirculation or fresh air selection switch with indicator light |            |

6. Adjust the air volume and air direction from the dashboard air vents. In general, the air volume from face area air vents is adjusted to increase, and the air volume from feet and back area air vents is adjusted to decrease.



(1) Face area air vents  
 (2) Back area air vents  
 (3) Feet area air vents

7. To blow cool air from behind as well, open the rear air outlet and adjust the air direction.

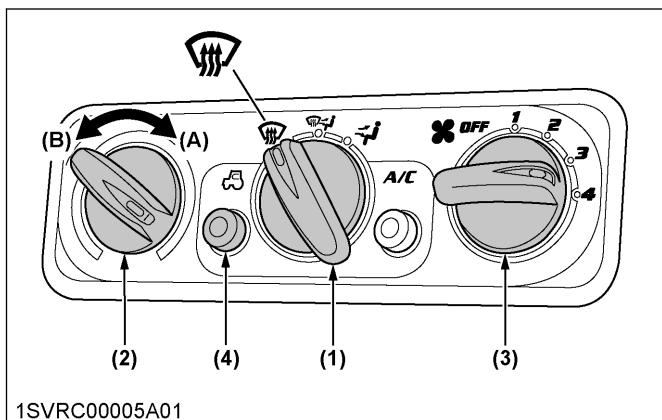


(1) Rear air vent

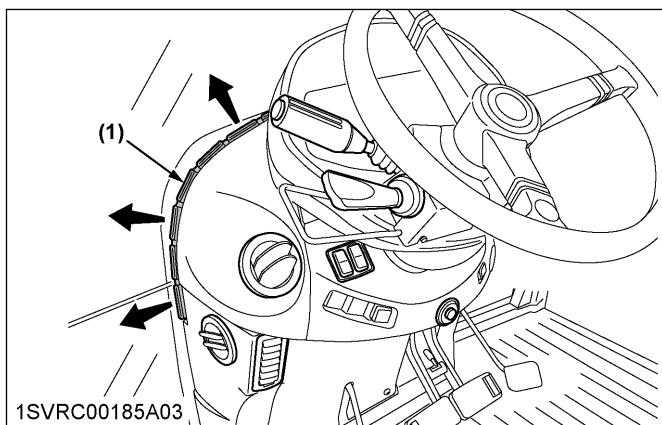
#### 4.3 Defrosting or demisting

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

1. Set the mode switch to the  position.
2. Set the recirculation or fresh air selection switch to the "FRESH AIR" position.
3. Set the blower switch and the temperature control dial to the [4] and max "WARM" (end of clockwise) positions, respectively.



(1) Mode switch (A) "WARM"  
 (3) Temperature control dial (B) "COOL"  
 (2) Blower switch  
 (4) Recirculation or fresh air selection switch with indicator light



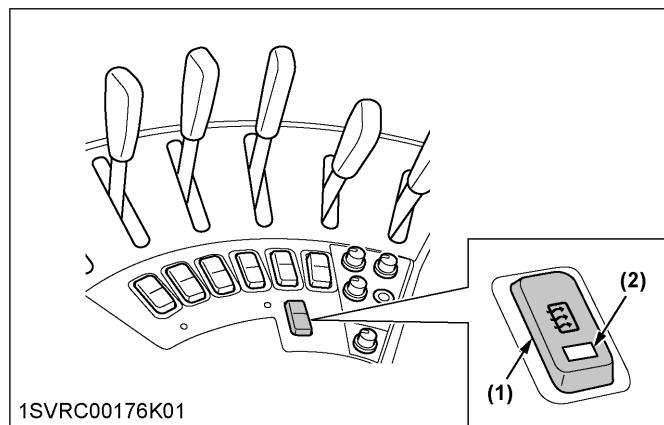
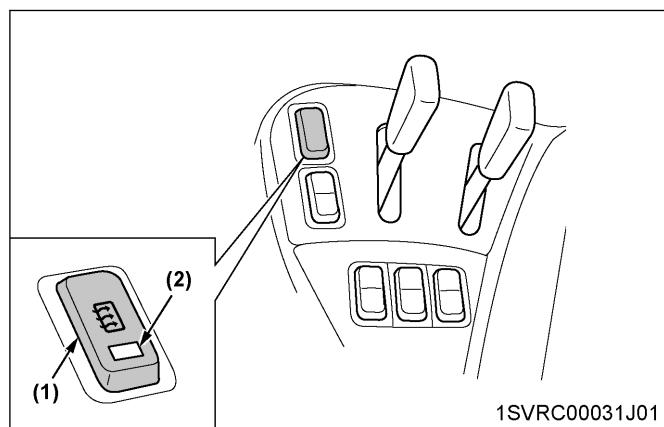
(1) Defroster air vent

#### NOTE :

- If you set the mode switch to  position, air will not come out from the dashboard and rear air vents.

#### REAR DEMISTER WITH TIMER (IF EQUIPPED)

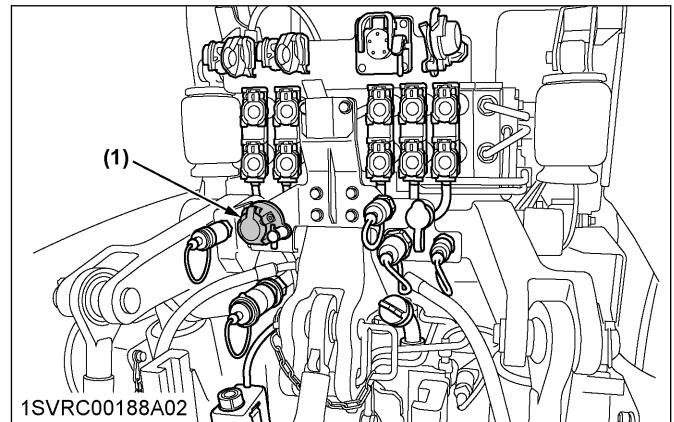
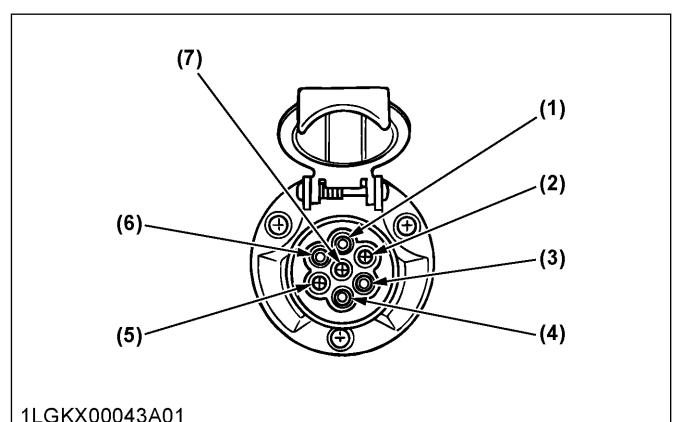
To activate the rear window demister, press the switch marked  while the key switch is in the "ON" position. Then, the yellow light on the switch turns on. After about 15 minutes, the demister and the yellow light turn off automatically. To turn the demister off, press the switch once more.

**Standard model****Premium, Premium KVT models****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.

**ACCESSORIES****1. Trailer electrical power socket**

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

**Function of each terminal in trailer electrical power socket**

Terminal	Function
(1)	Direction indicator light (LH)
(2)	---
(3)	Ground
(4)	Direction indicator light (RH)
(5)	Rear light Side marker light Parking light
(6)	Brake stop light
(7)	Registration plate light

## 2. ISOBUS socket (Premium and Premium KVT model only)

When an implement conforming to the ISO Standard 11783 guidelines is connected, various implement settings can be made through the K-monitor.

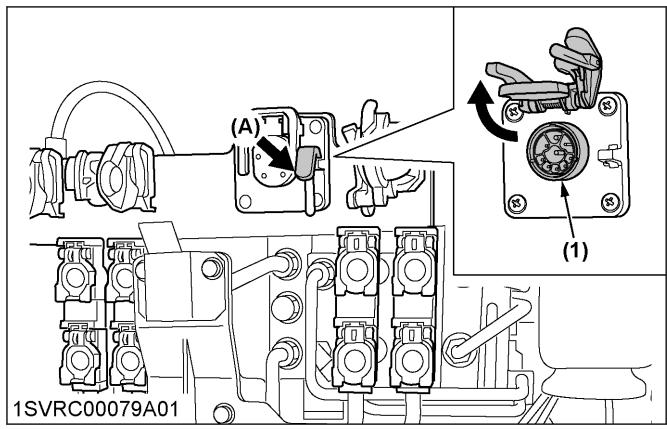
This means there is no need to add any controller and another monitor for the implement in question in the cabin.

### Example: when equipped with a travelling speed-interlocked fertilizer applicator:

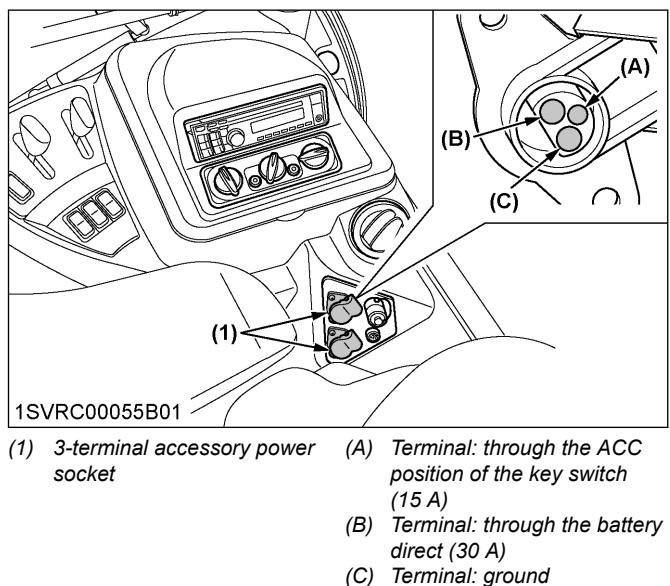
The K-monitor serves to enter the type of fertilizer, fertilizer application rate per area and other information. Once the operation gets started, the implement adjusts itself for spray volume in response to the travelling speed and improves the performance.

What's more, the optional GPS function may be used together to navigate the tractor's travelling route. In doing so, uneven and redundant spraying can be prevented.

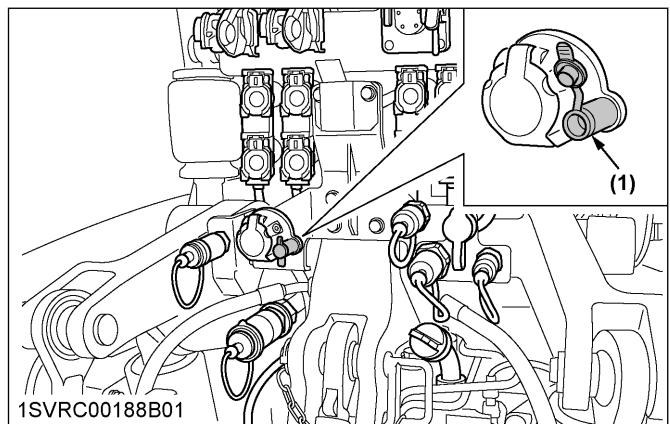
Read the operator's manual provided by the implement manufacturer and observe all safety messages in the manual and on the implement prior to use.



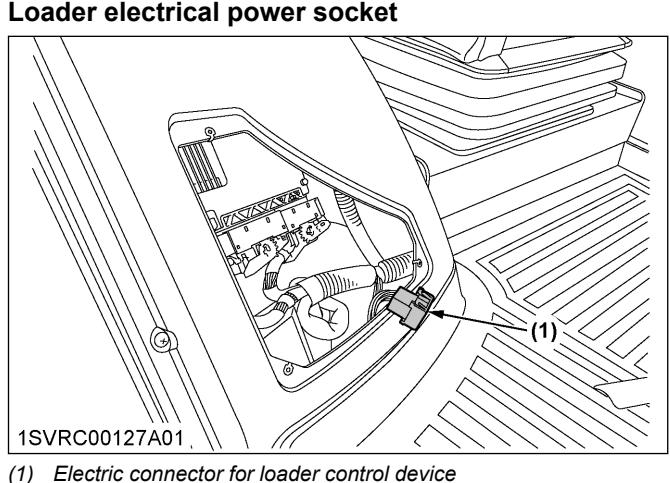
## 3. Electrical power socket

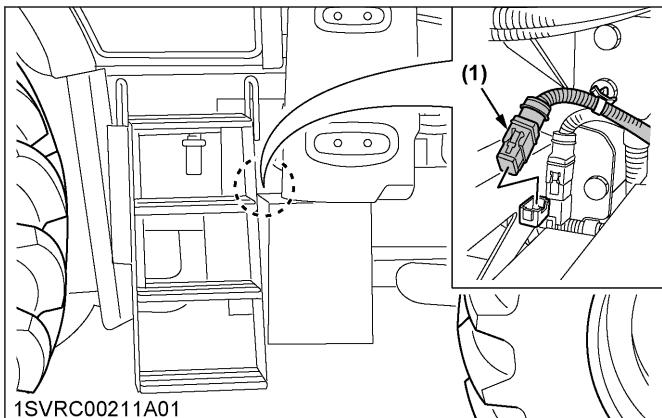


### Electrical power socket



### Loader electrical power socket





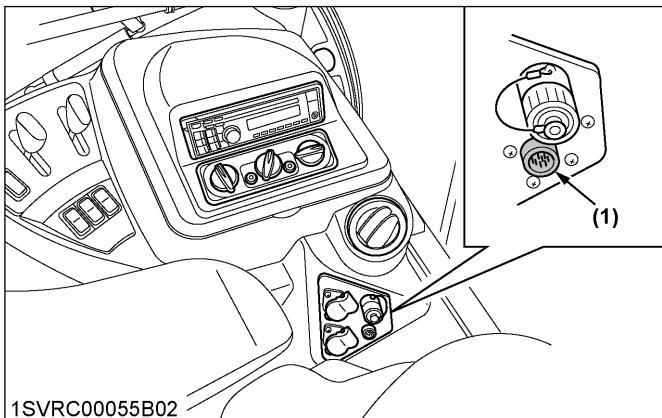
(1) Loader electrical power socket

**NOTE :**

- Please refer to front loader operator's manual for details regarding the electric wiring connection.

#### 4. ISOBUS monitor socket (Premium and Premium KVT model only)

An implement monitor meeting ISO Standard 11783 may be connected to the socket.



(1) ISOBUS monitor socket

#### 5. Signal socket according to ISO standard 11786 (Premium and Premium KVT model only)

When connecting the connectors of implements meeting ISO standard 11786 to this socket, the following signals will be transmitted from the tractor to the implement.

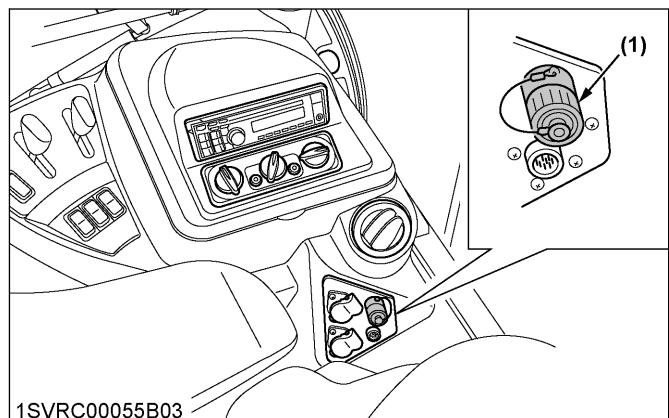
Based on the transmitted signals, the tractor can control implement operations including stopping, operation restart, adjustment of dispersal amount (fertilizer, for example) and others.

**NOTE :**

- Implement side default settings are required to adjust the dispersal amount etc.

#### Signals from the signal socket

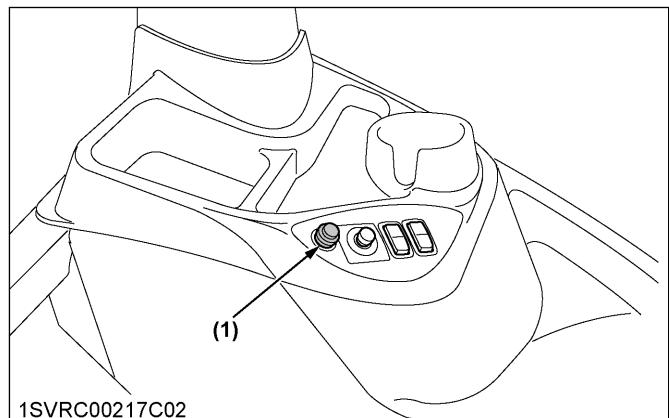
No.	Output signals	Remarks
1	Actual travelling speed	Operation with GPS mounted
2	Travel speed	Speed calculated from engine rpm and so on
3	Rear PTO rpm	
4	Operating or halted	When raising lift arm: operation halted When lowering lift arm: operating
5	Rear 3-point hitch position	Lift arm height displayed by voltage
6	Power supply (5 A)	
7	Ground	



(1) Signal socket

#### 6. Cigarette lighter

Push the lighter knob down to activate, with the key switch in the "ON" or "ACC" positions.  
Lighter will move up when ready to use.



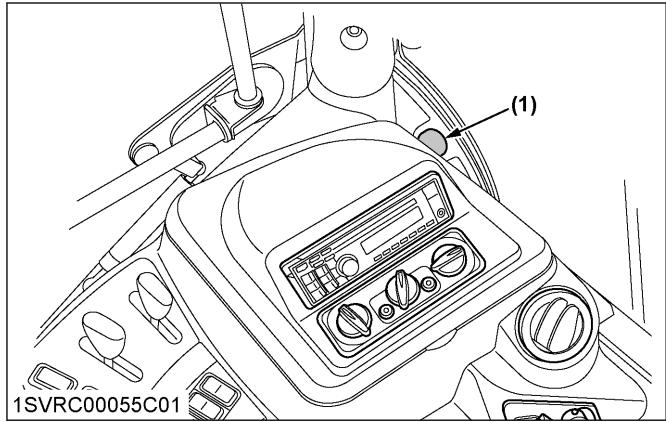
(1) Cigarette lighter

**NOTE :**

- An electrical consumer with a requirement for maximum 120 watts can be connected to the cigarette lighter.

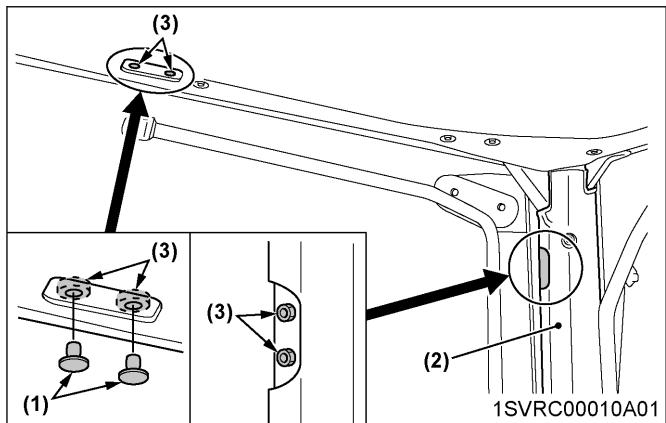
## INSTALLING THE IMPLEMENT CONTROL BOX

1. Make a slit into the corner cover. Introduce the implement control cable and hydraulic hose through this slit into the CAB.

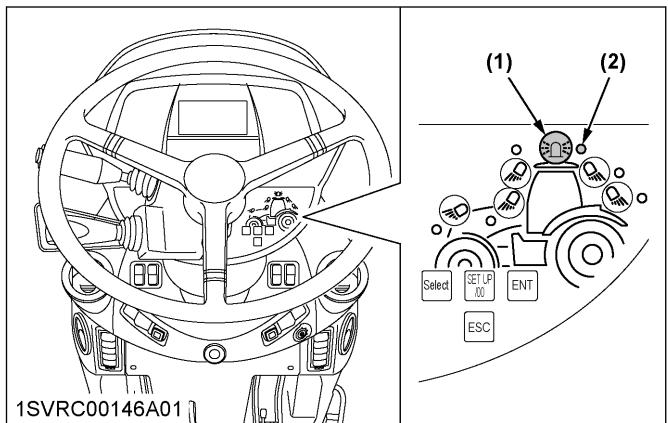


(1) Corner cover

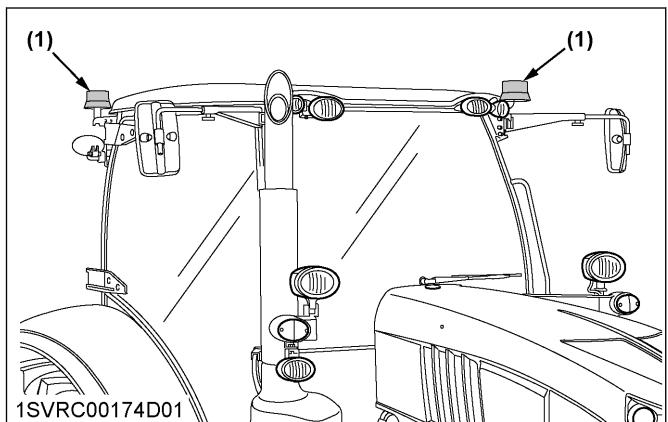
2. Remove the plugs in inner roof, and cut off the hatched zone of the rear pillar cover with a utility knife. Attach the control box stay with internal nuts.



(1) Plug  
(2) Pillar cover  
(3) M6 nuts



(1) Beacon light switch  
(2) Indicator



(1) Beacon light (if equipped)

## BEACON LIGHT

1. Turn on the key switch and press the beacon light switch. Then the beacon light and indicator of switch will be activated.
2. Press the switch once more, and turn off the light and the indicator.

# MAINTENANCE

## SERVICE INTERVALS

	Interval	Items		Ref. page	
A	initial 5, 10, 25 and 50 hours	Bar axle torque	Tighten	261	
B	initial 50 Hr	Engine oil	Change	261	
		Engine oil filter	Replace	261	
		Fan belt	Adjust	261	
		Transmission oil filter	Replace	261	
C	every 50 Hr	Neutral circuit	Check	261	
		Wheel bolt torque	Check	265	
		Tie-rod dust cover	Check	266	*1
		Air brake	Check	266	
D	every 100 Hr	Air cleaner primary ele- ment	Clean	266	*2
		Greasing	---	267	
		Brake pedal	Adjust	269	
		Parking/secondary brake lever	Adjust	270	*1
		Battery condition	Check	270	
		Front PTO oil	Check	272	
E	every 200 Hr	Fuel tank water	Drain	272	
		Toe-in	Adjust	273	
		Inner air filter	Clean	273	
		Fresh air filter	Clean	273	
F	every 400 Hr	Fan belt	Adjust	274	
		Water separator	Clean	275	
		Fuel solenoid pump	Clean	276	
G	initial 500 Hr	Transmission fluid	Change	276	
		Rear axle case oil	Change	276	
		Transmission oil filter	Replace	276	
H	every 500 Hr	Engine oil	Change	277	
		Engine oil filter	Replace	277	
		Pre-fuel filter	Clean	277	
		Fuel filter	Replace	278	
		Hydraulic oil filter (suc- tion side)	Replace	278	
		Hydraulic oil filter (return side)	Replace	280	
		Power steering oil filter	Replace	280	
		Radiator hose and clamp	Check	281	

(Continued)

	Interval	Items		Ref. page	
H	every 500 Hr	Fuel line	Check	282	
		Intake air line	Check	283	
		Brake hose	Check	283	*1
		Differential lock hose	Check	283	
		Lift cylinder hose	Check	283	
		Power steering oil line	Check	284	
		Oil cooler line	Check	284	
		Front suspension hose (front suspension type)	Check	284	*1
		Air conditioner pipes and hoses	Check	285	
I	every 1000 Hr	Air conditioner drive belt	Check	285	
		Front PTO oil	Change	285	
		Transmission fluid	Change	286	
		Transmission oil filter	Replace	287	
		Rear axle case oil	Change	288	
		Front differential case oil	Change	288	
J	every 1000 hours or 1 year*3	Front axle gear case oil	Change	289	
		Engine valve clearance	Adjust	289	*1
		Air cleaner primary ele- ment and secondary ele- ment	Replace	289	
K	every 1500 Hr	Exhaust manifold	Check	289	*1
		Fuel injector nozzle tip	Clean	289	*1
		DEF/AdBlue® injector tip	Clean	289	*1
		DEF/AdBlue® line	Check	289	
		Oil separator element	Replace	290	
		Positive crankcase venti- lation (PCV) valve (oil separator)	Check	290	*1
L	every 2000 hours or 2 years*4	EGR cooler	Check Clean	290	*1
		Accumulator (front sus- pension type)	Check	290	*1
		Cooling system	Flush	290	
M	every 3000 Hr	Coolant	Change	290	
		<b>WABCO</b> cartridge	Replace	292	
		Turbocharger	Check	292	*1
		Supply pump	Check	292	*1
		EGR system	Check Clean	292	*1
		DPF muffler	Clean	292	*1

(Continued)

	Interval	Items	Ref. page	
M	every 3000 Hr	DEF/AdBlue® injector	Check	292 *1
		DEF/AdBlue® pump filter	Replace	292
N	every 1 year	DPF differential pressure sensor pipe	Check	293 *1
		EGR pipe	Check	293 *1
		Oil separator hose	Check	293 *1
		Anti-frost heater for oil separator (if equipped)	Check	293 *1
		CAB isolation cushion	Check	293
O	every 2 years	DPF differential pressure sensor hose	Replace	293 *1
		Boost sensor hose	Replace	293 *1
P	every 3 years	Parking brake cable	Replace	293 *1
Q	every 4 years	Radiator hose and clamp	Replace	293
		Fuel line	Replace	293 *1
		Intake air line	Replace	293 *1
		Oil separator hose	Replace	293 *1
		Oil cooler line	Replace	293 *1
		Power steering oil line	Replace	294 *1
		Lift cylinder hose	Replace	294 *1
		Front suspension hose (front suspension type)	Replace	294 *1
		Differential lock hose	Replace	294 *1
		Brake hose	Replace	294 *1
		Air conditioner pipes and hoses	Replace	294 *1
R	Service as required	Fuel system	Bleed	294
		Brake system	Bleed	294
		Fuse	Replace	295
		Light bulb	Replace	298
		Head lamp	Replace	298
		Lubricating point	---	298
		Washer liquid	Add	298
		Refrigerant (gas)	Check	298

\*1 Consult your local KUBOTA Dealer for this service.

\*2 Air cleaner should be cleaned more often in dusty conditions than in normal conditions.

\*3 Every 1000 hours or every 1 year, whichever comes first.

\*4 Every 2000 hours or every 2 years, whichever comes first.

circles and the maintenance item group (A through Q), keep up your tractor.

- Details regarding maintenance items can be found in a different section.  
(See SERVICE INTERVALS on page 249.)

### Chart at a glance

Hour meter	Maintenance items															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
5	○															
10	○															
25	○															
50	○	○	○													
100		○	○													
150		○														
200		○	○	○												
250		○														
300		○	○													
350		○														
400		○	○	○	○	○										
450		○														
500		○	○				○	○								
550		○														
600		○	○	○												
650		○														
700		○	○													
750		○														
800		○	○	○	○	○	○									
850		○														
900		○	○													
950		○														
1000		○	○	○					○	○						
1050		○														
1100		○	○													
1150		○														
1200		○	○	○	○	○										
1250		○														
1300		○	○													
1350		○														
1400		○	○	○												
1450		○														
1500		○	○						○		○					
1550		○														

(Continued)

Hour meter	Maintenance items															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1600		○	○	○	○											
1650		○														
1700		○	○													
1750		○														
1800		○	○	○												
1850		○														
1900		○	○													
1950		○														
2000		○	○	○	○		○	○								
2050		○														
2100		○	○													
2150		○														
2200		○	○	○												
2250		○														
2300		○	○													
2350		○														
2400		○	○	○	○											
2450		○														
2500		○	○				○									
2550		○														
2600		○	○	○												
2650		○														
2700		○	○													
2750		○														
2800		○	○	○	○											
2850		○														
2900		○	○													
2950		○														
3000		○	○	○		○	○		○	○						
Every 1000 hours or 1 year							○									
Every 2000 hours or 2 years								○								
Every 1 year									○							
Every 2 years										○						

(Continued)

Hour meter	Maintenance items															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Every 3 years																○
Every 4 years																○

## LUBRICANTS, FUEL AND COOLANT

No.	Locations	Capacities			Lubricants	
		M7132	M7152	M7172		
1	Fuel	330 L			No.2-D S15 diesel fuel No.1-D S15 diesel fuel if temperature is below -10 °C	
2	DEF/AdBlue®	38 L				
3	Coolant	24 L			Fresh clean soft water with antifreeze	
4	Washer liquid	2 L			Car washer liquid	
5	Engine crankcase (with filter)	22 L			<ul style="list-style-type: none"> <li>• Engine oil: API Service Classification</li> </ul>	
					CJ-4 (DPF type engine)	
					Above 25 °C SAE30, SAE10W-30 or 15W-40	
					-10 to 25 °C SAE10W-30 or 15W-40	
					Below -10 °C SAE10W-30	
6	Transmission case	Power shift model: 85 L CVT model: 80 L			KUBOTA UDT fluid*	
7	Rear axle case oil	10 L for each side			<ul style="list-style-type: none"> <li>• KUBOTA UDT fluid* or KUBOTA 80W-90 gear lubricant HD or KHD</li> </ul>	
8	Front differential case oil	8.5 L				
9	Front axle gear case oil	2.1 L for each side				
10	Front PTO case	2.7 L			<ul style="list-style-type: none"> <li>• KUBOTA UDT fluid*</li> </ul>	
11	Greasing	No. of greasing points			Capacity	
	Top link	2			<p style="text-align: center;">Until grease overflows.</p> <p style="text-align: right;">Multipurpose grease NLGI-2 or NLGI-1(GC-LB)</p>	
	Lift rod	4				
	Stabiliser	2 (with automatic stabiliser)				
	Universal joint (front axle drive shaft)	1				
	Front axle support	2				
	Hydraulic lift cylinder pin	4				
	Hydraulic lift arm shaft	2				
	Parking brake shaft	2				
	Front 3-point hitch (if equipped)	7				
	Battery terminal	2			A small amount	

**NOTE :**

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

**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.
- Refer to the following table for the suitable API classification engine oil according to the diesel particulate filter (DPF) type engines and the fuel.

Fuel used	Engine oil classification (API classification)
	Oil class for engines with DPF
Ultra Low Sulphur fuel (<0.0015% (15 ppm))	CJ-4

**Fuel**

- Use the ultra-low sulphur diesel fuel only (below 0.0015% or 15 ppm) for these engines.
- Cetane number of 45 minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20 °C (-4 °F) or elevations above 1500 m (5000 ft).
- 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).

**DEF/AdBlue®:**

The DEF/AdBlue®, used as reducing agent of SCR, is a 32.5% urea aqueous solution.

The product is available at petrol stations, truck stops and speciality shops. Be sure to use the genuine product only.

- Use exclusively DEF/AdBlue® that complies with the requirements of ISO 22241-1.

**Transmission oil and rear axle case 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 **UDT-HD** fluid for optimum protection and performance.

Consult your local KUBOTA Dealer for further details.

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, urea aqueous 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:

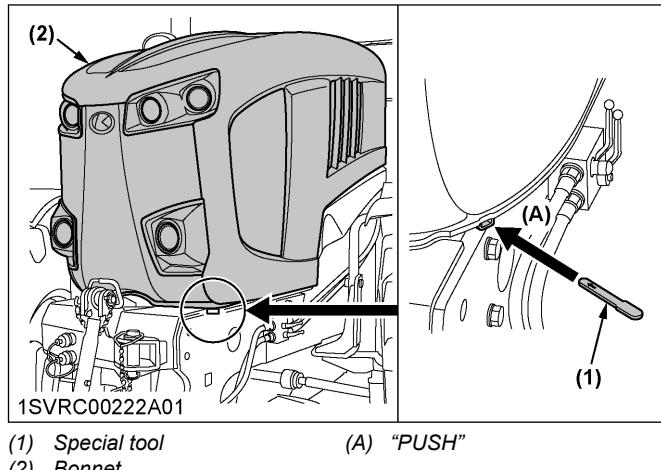
- Never open the bonnet or engine side cover while the engine is running.
- Do not touch the muffler or the exhaust pipes while they are hot. Severe burns could result.
- While unlocking the bonnet, hold the bonnet with the other hand.

### 1. Bonnet

1. To open the bonnet, use a special tool of standard accessories.
2. Insert the special tool into hole as shown below.
3. Push the special tool to unlock the bonnet latch.

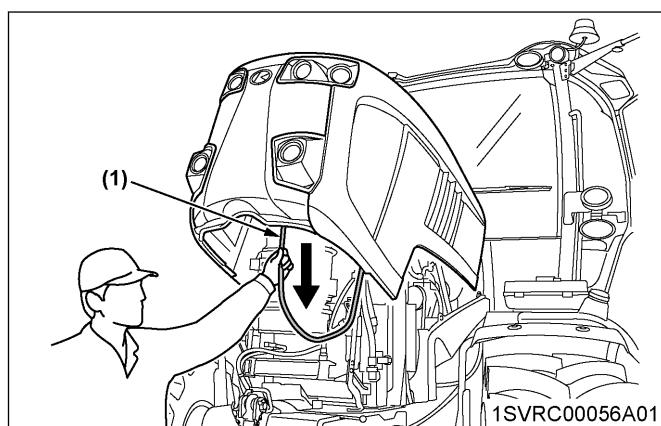
The bonnet will unlock and lifts a little.

4. Open the bonnet fully with both hands.



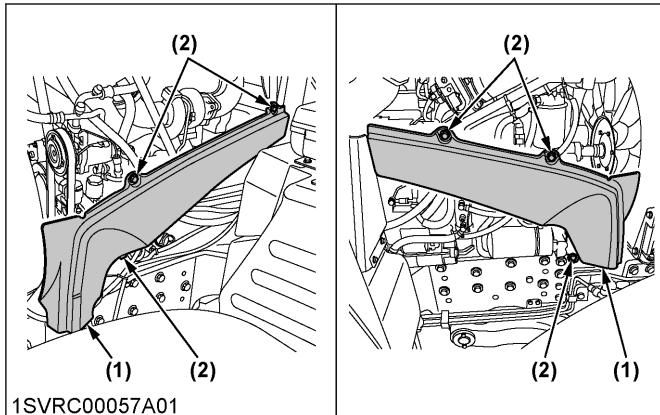
### NOTE :

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



### 2. Side cover

Remove the bolts as follows.



(1) Side cover  
(2) Bolt

## 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 of the hydraulic system.
- Stop the engine and remove the key.
- Lower the front suspension to the lowest position (front suspension type only).

### 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.

Furthermore clean tyres and front fenders if there is a rubbish build-up.

### 2. Checking and refuelling

### **⚠ WARNING**

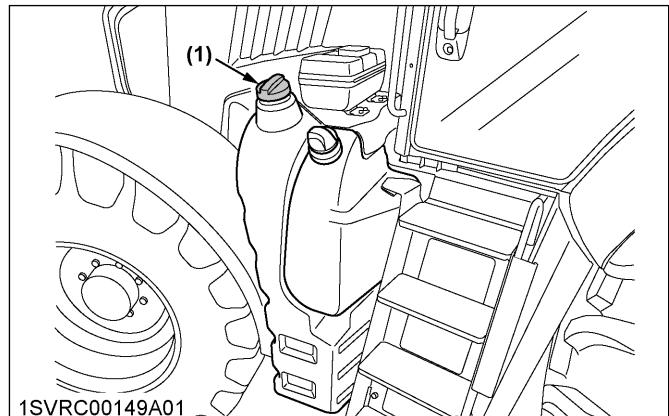
To avoid personal injury or death:

- Never use fire.
- Do not smoke while refuelling.
- Be sure to stop the engine and remove the key before refuelling.
- Use properly grounded fueling systems. Make sure that there is no static discharge.

To avoid allergic skin reaction:

- Wash hands immediately after contact with diesel fuel.

1. Check the amount of fuel by looking at the fuel gauge.
2. When the fuel warning indicator lights up, it is time to add fuel.
3. Before removing the fuel cap, clean dirt away from the caps and the tank openings.



(1) Fuel tank cap

Fuel tank capacity	330 L
--------------------	-------

### **IMPORTANT :**

- Be sure to use ultra low sulphur fuel (S15).
- 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.
- If the engine runs out of fuel and stalls, engine components may become damaged.
- 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 anti-frost heater for oil separator (if equipped)

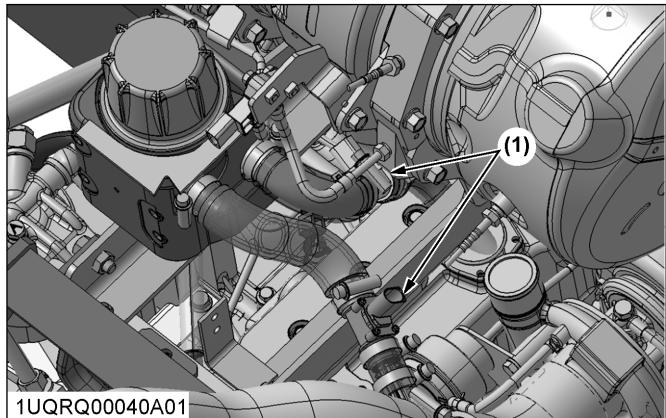
### **⚠ WARNING**

To avoid personal injury or death:

- Because there are rotating parts like the fan, and so on, near the inspection position, keep the engine off during inspection.

When operating tractors with anti-frost heaters for oil separator in cold regions (below the freezing point: 0 °C / 32 °F), carry out inspection by using the following procedure before starting work:

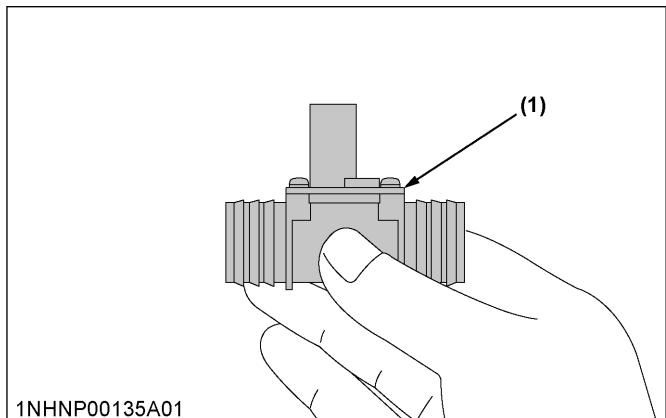
- Turn the key switch to "ON", and 1 minute later, inspect by touch whether the heater is working. If the heater is working, its temperature will rise to roughly 70 °C (158 °F), so you will be able to feel its warmth.
- If the heater is not warm, it is not working. In this case, contact your local KUBOTA Dealer without starting the engine.



(1) Heater

**NOTE :**

- Refer to the following figure for the heater inspection position.



(1) Heater

## 4. Checking DEF/AdBlue® level and adding fluid

### **WARNING**

To avoid personal injury or death:

- Before adding DEF/AdBlue®, stop the engine. When adding the fluid, preferably wear protective goggles and rubber gloves.

**NOTE :**

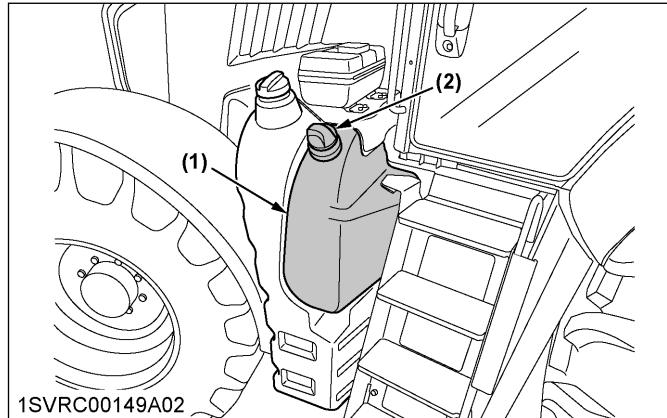
- The DEF/AdBlue® tank cap is blue. Be careful not to confuse it with the fuel tank cap.

Look at the DEF/AdBlue® gauge on the instrument panel to see how much fluid remains. If the level is too low, add DEF/AdBlue® as required.

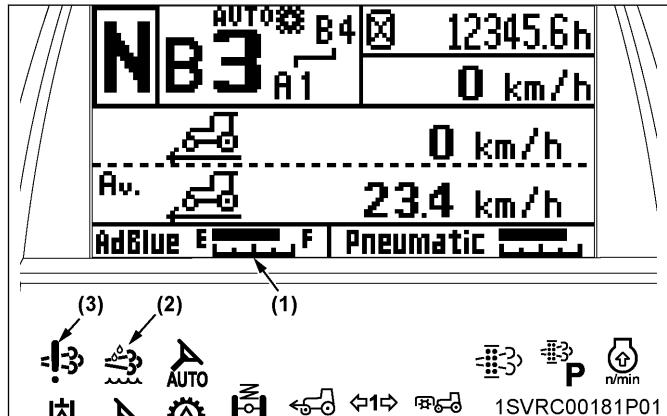
Before removing the DEF/AdBlue® cap, clean dirt away from the caps and the tank openings.

If the fluid runs short or poor-quality fluid is added, a warning sign appears on the instrument panel. If this warning is ignored and the operation continues, the engine output will be limited.

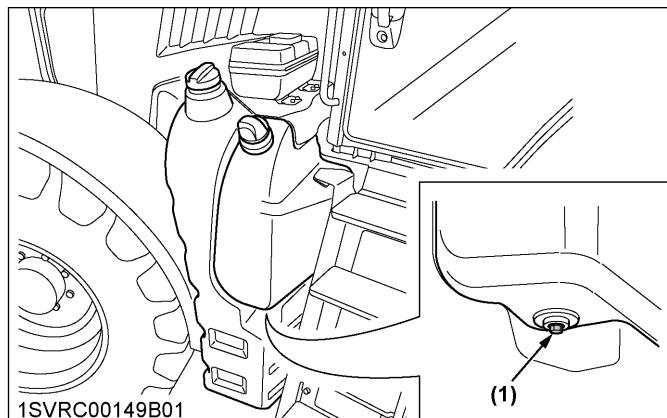
(See Warning indication and countermeasures on page 130.)



(1) DEF/AdBlue® tank  
(2) Tank cap (blue)



(1) DEF/AdBlue® gauge  
(2) DEF/AdBlue® warning indicator  
(3) DEF/AdBlue® system warning indicator



(1) Drain plug

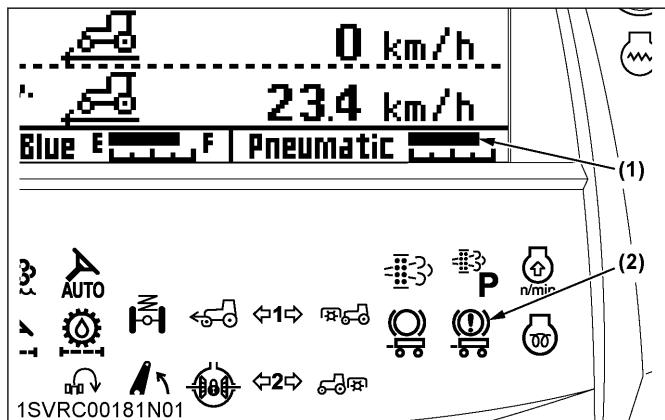
Tank capacity	38 L
---------------	------

**IMPORTANT :**

- Use exclusively DEF/AdBlue® that complies with the requirements of ISO 22241-1.
  - Do not allow fuel, oil or the like to enter the DEF/AdBlue® tank.
- If any other substance (gasoline, diesel, oil) is mistakenly introduced into the DEF/AdBlue® tank, do not attempt to start the engine and contact your local KUBOTA Dealer as soon as possible.
- Check the DEF/AdBlue® gauge regularly to avoid emptying its tank.
  - If the DEF/AdBlue® spills, wipe it with water. If spills are not wiped, metal areas will rust and the aluminium areas will corrode.

## 5. Checking pneumatic brake pressure (if equipped)

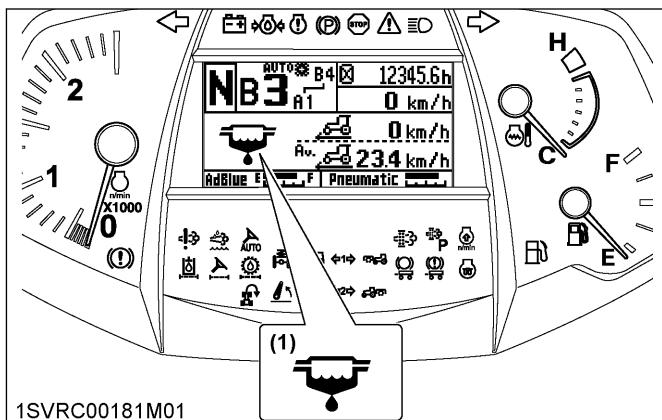
1. Check to see if the pressure in the air tank has reached the specified level. It is normal when the pneumatic pressure gauge is extended to the right.
2. If the pressure drops too low, the warning indicator lights up on the instrument panel. Do not run the tractor with this indicator on.



(1) Pneumatic pressure gauge  
(2) Trailer brake warning indicator

## 6. Checking water separator

1. When water accumulates in the water separator, the water separator indicator will be displayed on the LCD monitor and a warning buzzer will sound.



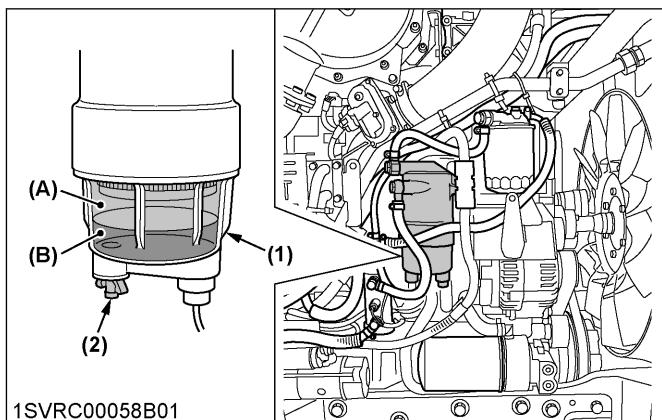
(1) Water separator indicator

2. When this happens, drain the water as follows.

### Draining the water from the water separator

1. Loosen the drain plug by several turns.
2. Allow water to drain. When no more water comes out and fuel starts to flow out, retighten the drain plug.
3. Bleed the fuel system.

(See SERVICE AS REQUIRED on page 294)



1SVRC00058B01  
(1) Cup  
(2) Drain plug

(A) "FUEL"  
(B) "WATER"

### NOTE :

- If water drainage is carried out according to the following procedure, air will be prevented from entering the fuel system, and bleeding the fuel system will not be necessary. If the following procedure is carried out, we recommend placing a sign reading "*Engine operation strictly forbidden due to ongoing maintenance*" or similar on the steering wheel for safety purposes.
  1. Keep the key switch in the "ON" position (engine will not start up), and pressurize the fuel system with the fuel feed pump.
  2. In this status, loosen the drain plug slightly and gradually drain water.

### **IMPORTANT :**

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

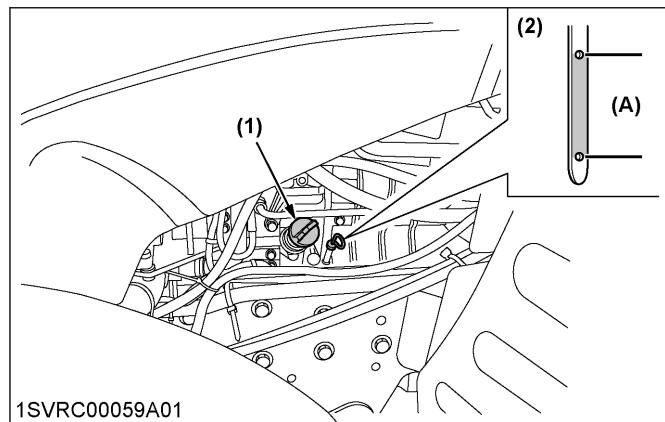
## **7. Checking engine oil level**



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.
  3. To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level lies between the 2 notches. If the level is too low, add new oil to the prescribed level at the oil inlet.  
(See LUBRICANTS, FUEL AND COOLANT on page 252.)



- (1) Oil inlet
- (2) Dipstick

**IMPORTANT :**

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

**NOTE :**

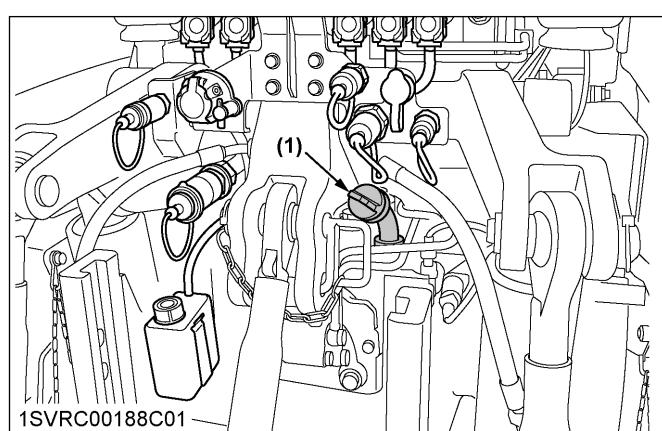
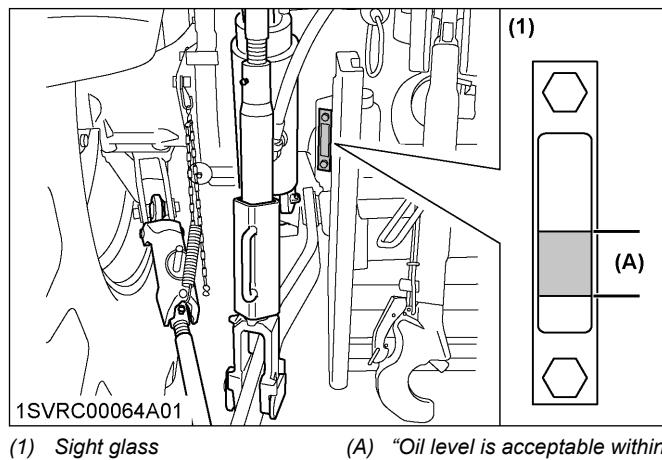
- At times, a small amount of fuel, which is used to regenerate the DPF, may get mixed with the engine oil and the engine oil may increase in volume.

- ## **8. Checking transmission fluid level**

1. Check the transmission fluid level under the following conditions:
    - a. Park the machine on a flat surface.

- b. Lower the rear 3-point hitch and front end loader (if equipped).
  - c. Raise the front 3-point hitch. (if equipped).
  - d. Disconnect all remote control valve hoses.
  - e. Shut off engine and wait for 10 minutes.

2. Check to see that the oil level lies between the 2 lines of the sight glass.  
If the level is too low, add new oil to the prescribed level at the oil inlet.  
(See LUBRICANTS, FUEL AND COOLANT on page 252.)



**IMPORTANT :**

- If the oil level is low, do not run the engine.
  - More transmission oil may be needed for operations with many types of large implements equipped with hydraulic cylinder.

**Consult your local KUBOTA Dealer for more details.**

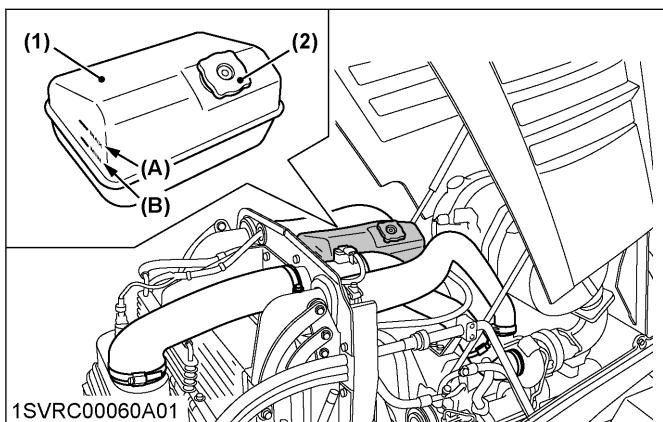
## **9. Checking the coolant level**



#### 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. Check to see that the coolant level is between the [MAX] and [MIN] marks of recovery tank.
2. When the coolant level drops due to evaporation, add soft water only up to the max level.  
In case of leakage, add antifreeze and soft water in the specified mixing ratio up to the max level.  
(See Flushing cooling system and changing coolant on page 290.)



(1) Recovery tank  
(2) Radiator cap  
(A) [MAX]  
(B) [MIN]

#### IMPORTANT :

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

## 10. Cleaning grill, radiator and cooler

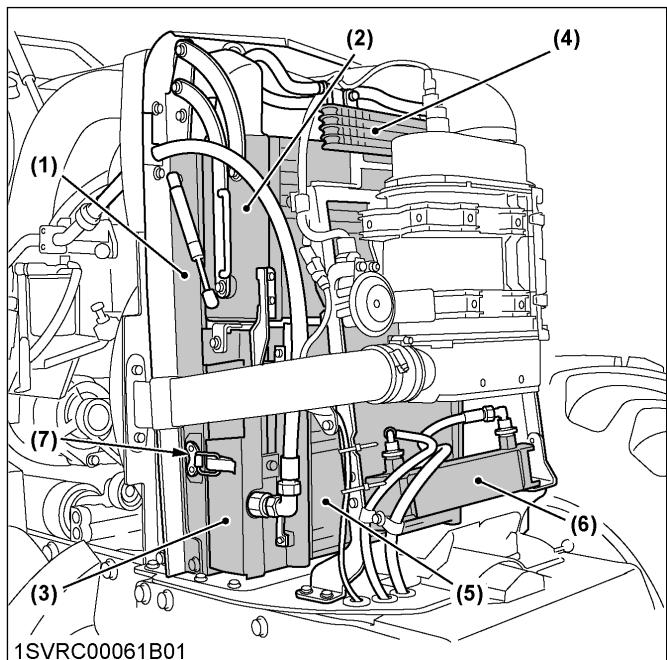


#### WARNING

To avoid personal injury or death:

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

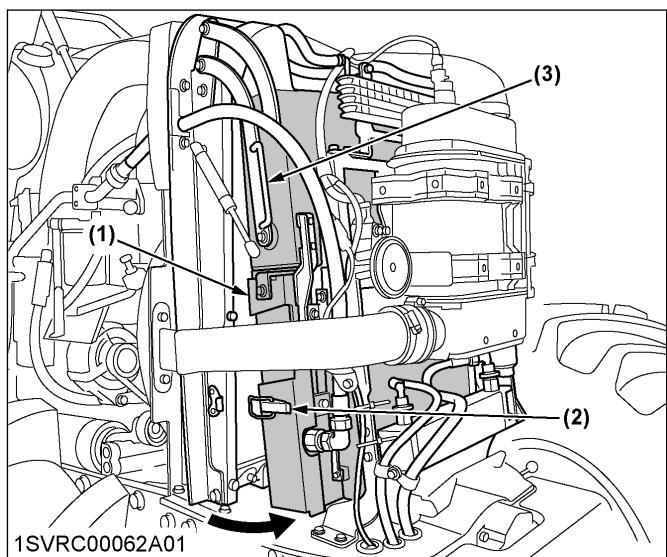
#### Radiator and cooler locations



(1) Radiator  
(2) Intercooler  
(3) Oil cooler  
(4) Fuel cooler  
(5) Air conditioner condenser  
(6) Front PTO cooler (if equipped)  
(7) Latch

#### Opening the cooler and condenser pack

1. Undo the latches on both sides.
2. Hold the handle and open the cooler and condenser pack forward.
3. When the pack has been closed, be sure to lock the latches on both sides.

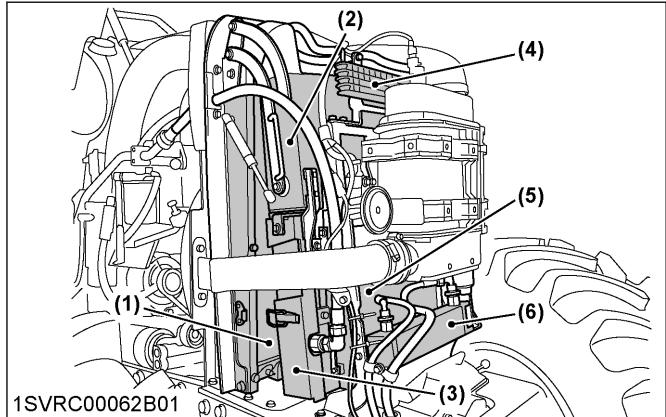


(1) Cooler and condenser pack  
(2) Latch  
(3) Handle

#### Cleaning

1. Check front grill to be sure it is clean from debris.

2. Check radiator, air conditioner condenser, intercooler, oil cooler, fuel cooler, and front PTO cooler to be sure they are clean from debris.
3. Use compressed air, low compression, and wand type air nozzle to blow debris clear of the cooling pack. Wear eye protection during this operation.



- (1) Radiator
- (2) Intercooler
- (3) Oil cooler
- (4) Fuel cooler
- (5) Air conditioner condenser
- (6) Front PTO cooler (if equipped)

**IMPORTANT :**

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

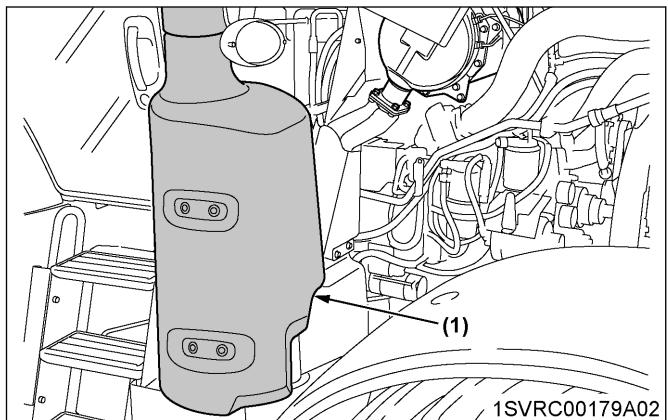
## 11. Checking DPF/SCR muffler

**WARNING****To avoid personal injury or death:**

- Before checking or cleaning the DPF/SCR muffler, stop the engine and wait until it cools down enough.

Check the DPF/SCR muffler and its surroundings for accumulation of anything flammable.

Otherwise a fire may result.



(1) DPF muffler  
(2) SCR muffler

## 12. Checking brake pedal

**WARNING****To avoid personal injury or death:**

- Make sure that the brake pedals have equal adjustments when being locked together. Incorrect or unequal brake pedal adjustments can cause the tractor to swerve or roll-over.

1. Inspect the brake pedals for free travel and smooth operation.
2. Adjust if incorrect measurement is found.  
(See Adjusting brake pedal on page 269.)

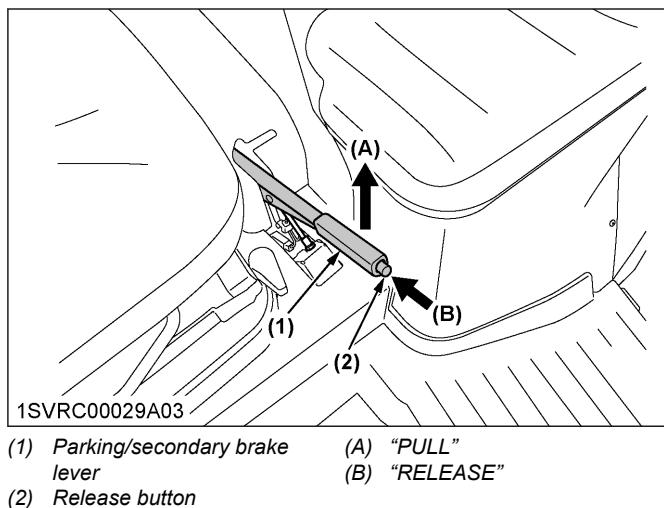
## 13. Checking parking brake

Pull the parking/secondary brake lever to apply the brakes. With the key switch at the "ON" position, the parking brake indicator on the instrument panel lights up.

To release the brakes, push in the button at the tip of the parking/secondary brake lever and tilt down the lever.

**NOTE :**

- Make sure the (P) lamp on the instrument panel goes off when the parking/secondary brake lever is unlocked.



## 14. Checking gauges, meter and Easy Checker™

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

## 15. Checking headlight, direction indicator light, hazard light, and so on

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

## 16. Checking seat belt

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

## 17. 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.

## INITIAL 5, 10, 25, AND 50 HOURS

With a new machine, be sure to do the following servicing after the first 5, 10, 25 and 50 operating hours.

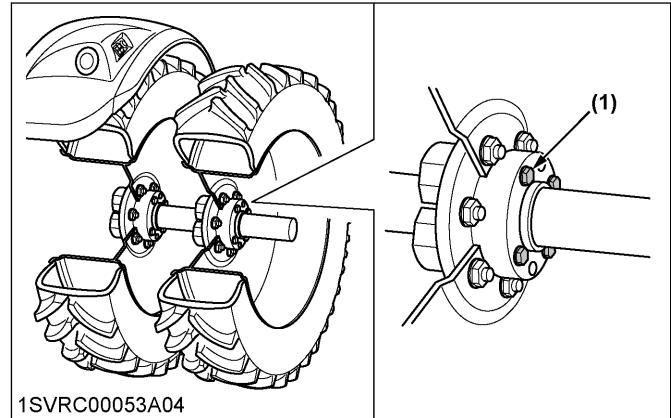
### 1. Tightening bar axle torque

#### **WARNING**

To avoid personal injury or death:

- Never operate the tractor with loose wheel bolts. Wheel bolts are critical and require retightening.

1. Retighten the bolts after operating 5 hours, 10 hours, 25 hours, and 50 hours, as follows.



## INITIAL 50 HOURS

With a new machine, be sure to do the following servicing after the first 50 operating hours.

### 1. Changing engine oil

(See Changing engine oil on page 277.)

### 2. Replacing engine oil filter

(See Replacing engine oil filter on page 277.)

### 3. Checking fan belt

(See Checking fan belt tension on page 274.)

### 4. Replacing transmission oil filter

(See Replacing transmission oil filter on page 287.)

## EVERY 50 HOURS

### 1. Checking neutral circuit

#### **WARNING**

To avoid personal injury or death:

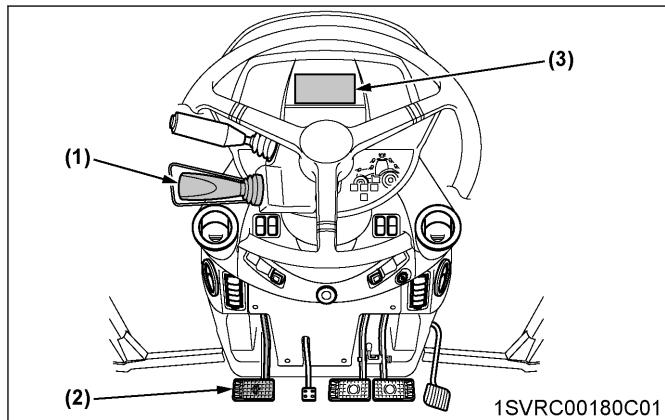
- Do not allow anyone near the tractor while testing.

- If the tractor does not pass the test, do not operate the tractor.

## 1.1 Preparation before testing

- Place all control levers in the "NEUTRAL" position.
- Set the handbrake, stop the engine and lower all implements.

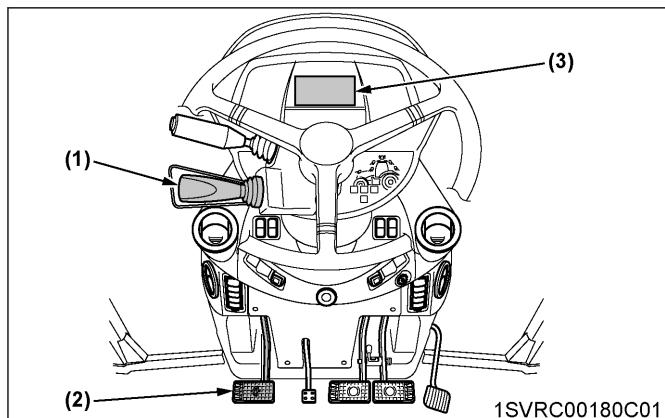
## 1.2 Testing engine start system



(1) Shuttle lever  
(2) Clutch pedal  
(3) Liquid crystal display

- Follow the instructions about parking the tractor.  
(See PARKING THE TRACTOR on page 16.)
- Sit on the operator's seat.
- Depress the clutch pedal fully.
- Turn the key to "START" position.
- The engine must crank.
- If it does not crank, consult your local KUBOTA Dealer for this service.

## 1.3 Testing transmission (neutral) control

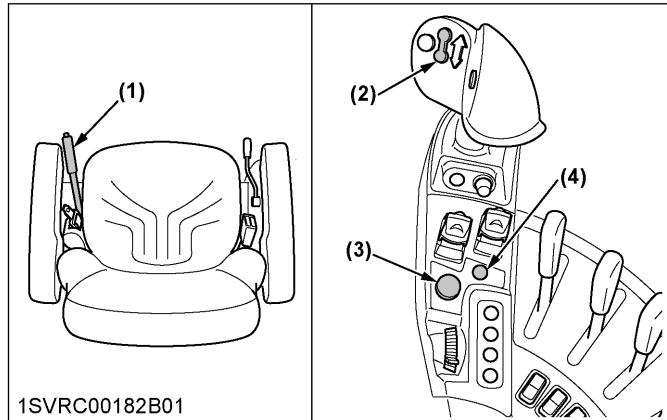


(1) Shuttle lever  
(2) Clutch pedal  
(3) Liquid crystal display

- Follow the instructions about parking the tractor.  
(See PARKING THE TRACTOR on page 16.)
- Sit on the operator's seat.
- Depress the clutch pedal fully.
- Start the engine.
- Check to see if the shuttle shift is held in their neutral position.
- If not, consult your local KUBOTA Dealer for this service.

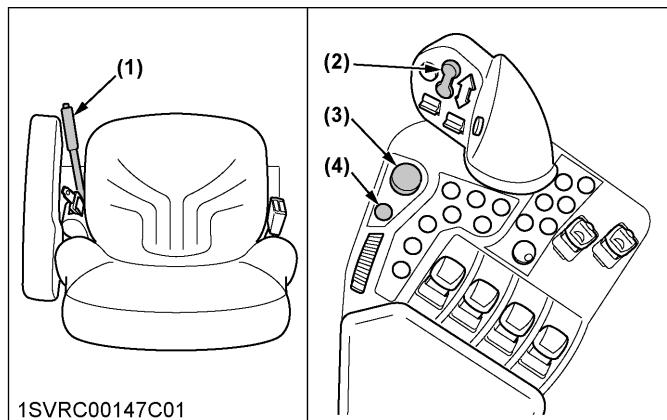
## 1.4 Testing hydraulic up/down (lock) control

### Standard model



(1) Parking/secondary brake lever  
(2) 3-P quick raise and lower switch  
(3) Depth control dial  
(4) 3-point hitch lock button

### Premium, Premium KVT models

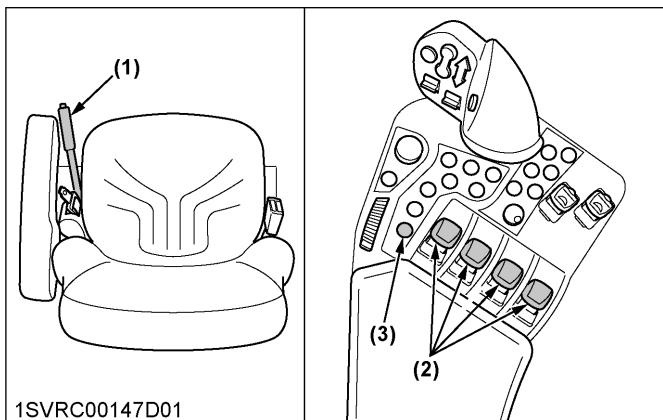


(1) Parking/secondary brake lever  
(2) 3-P quick raise and lower switch  
(3) Depth control dial  
(4) 3-point hitch lock button

- Follow the instructions about parking the tractor.  
(See PARKING THE TRACTOR on page 16.)
- Sit on the operator's seat.
- Depress the clutch pedal fully.
- Start the engine.

5. Press the 3-point hitch lock button to get the hitch locked (the indicator in the switch lights up).
6. Make sure that the implement cannot be raised or lowered even with the 3-point quick raise and lower switch or the depth control dial.
7. Release the 3-point hitch lock button to get the hitch unlocked (the indicator in the switch goes off).
8. Move the 3-point quick raise and lower switch or the depth control dial, and make sure the implement is raised and lowered.
9. If any trouble occurs, consult your local KUBOTA Dealer for this service.

## 1.5 Testing remote hydraulic control (Premium, Premium KVT models)

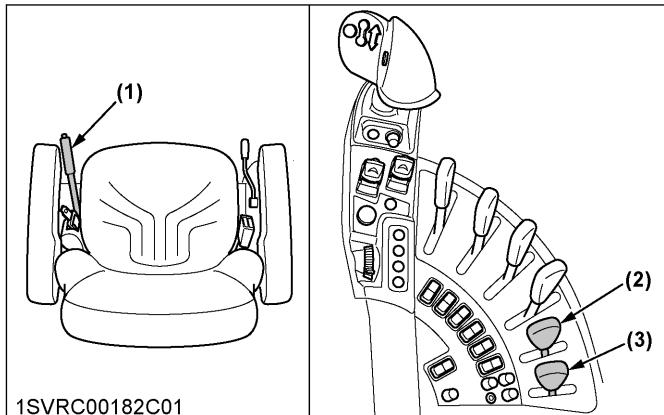


(1) *Parking/secondary brake lever*  
 (2) *Remote control valve switch*  
 (3) *Remote control valve lock button*

1. Follow the instructions about parking the tractor.  
(See PARKING THE TRACTOR on page 16.)
2. Sit on the operator's seat.
3. Depress the clutch pedal fully.
4. Start the engine.
5. Press the remote control valve lock button to get the valve locked (the indicator in the switch lights up).
6. Move the implement-linked remote control valve switch, and make sure the implement is not moved.
7. Press the remote control valve lock button to get the valve unlocked (the indicator in the switch goes off).
8. Move the remote control valve switch, and make sure the implement is moved.
9. If any trouble occurs, consult your local KUBOTA Dealer for this service.

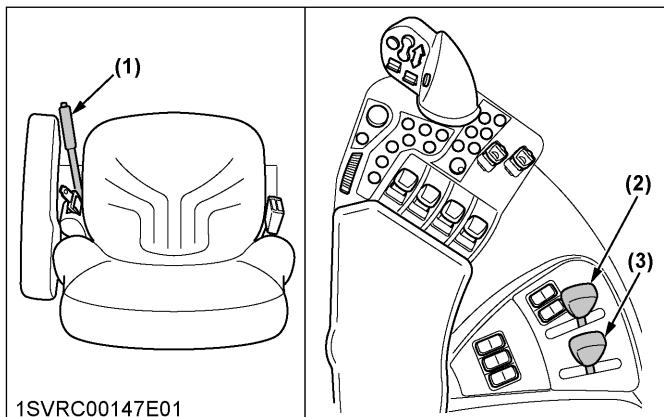
## 1.6 Testing external rear PTO switch control

### Standard model

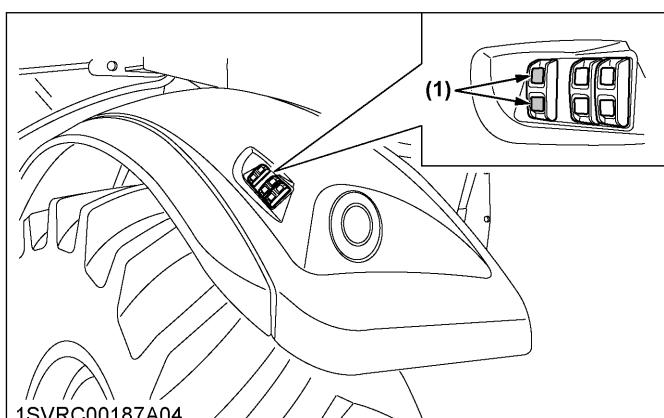


(1) *Parking/secondary brake lever*  
 (2) *PTO operation mode selection lever*  
 (3) *PTO speed selection lever*

### Premium, Premium KVT models



(1) *Parking/secondary brake lever*  
 (2) *PTO operation mode selection lever*  
 (3) *PTO speed selection lever*



(1) *External switch for rear PTO*

1. Follow the instructions about parking the tractor.  
(See PARKING THE TRACTOR on page 16.)
2. Make sure the PTO drive shaft is disconnected from attached implement.
3. Start the engine.

4. Using the PTO operating mode selector lever and the PTO gear shift lever, select the PTO 540 or 1000 rpm.
5. Press one of the external PTO clutch control switches on the right and left fenders and release your hand from the switch within 2 seconds, and make sure the PTO rotation is turned off.
6. Hold down the switch longer than 2 seconds to keep on the PTO rotation. Confirm that a warning buzzer sounds for 10 seconds or so when entering continuous rotation mode.
7. Press the switch again, and make sure the PTO rotation has stopped.
8. If any trouble occurs, consult your local KUBOTA Dealer for this service.

## 1.7 Checking operator presence control (OPC) system

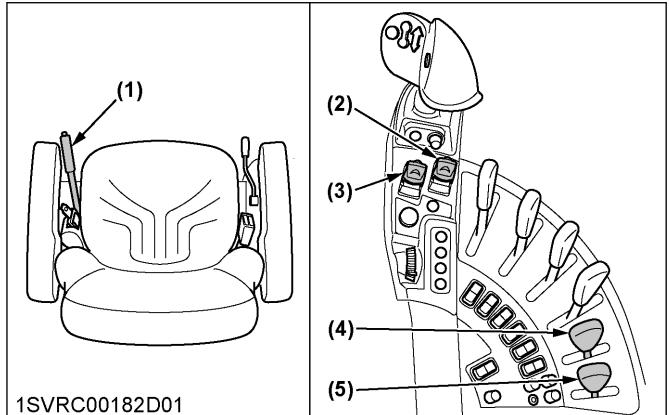
### **WARNING**

To avoid personal injury or death:

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

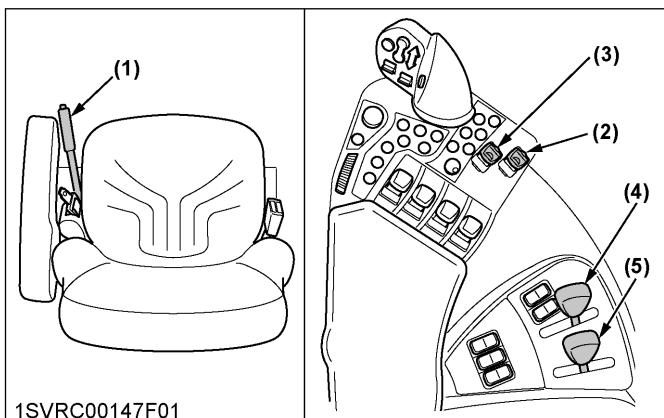
Do this test for the front PTO and rear PTO individually.

### Standard model

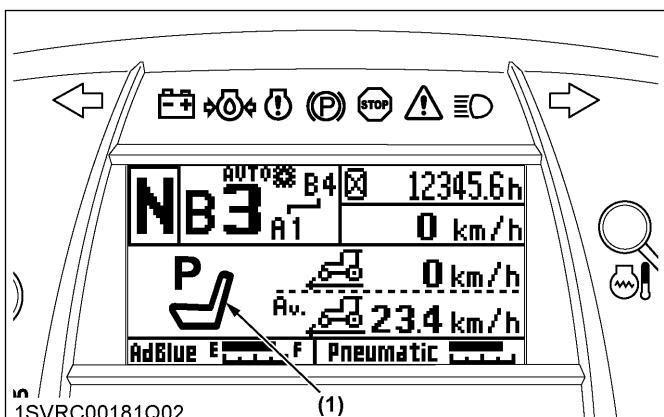


- (1) Parking/secondary brake lever
- (2) Front PTO clutch control switch
- (3) Rear PTO clutch control switch
- (4) PTO operation mode selection lever
- (5) PTO speed selection lever

### Premium, Premium KVT models



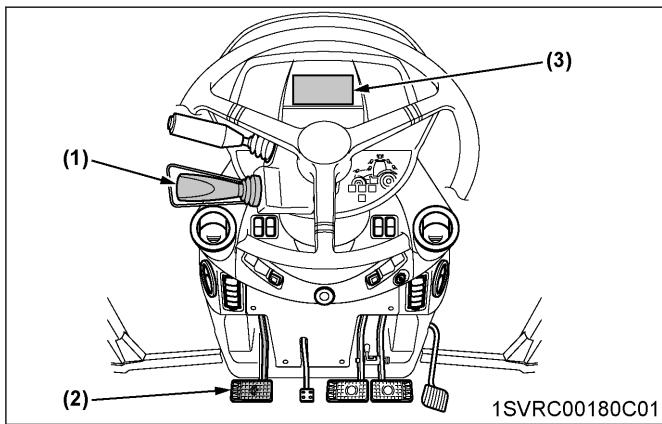
- (1) Parking/secondary brake lever
- (2) Front PTO clutch control switch
- (3) Rear PTO clutch control switch
- (4) PTO operation mode selection lever
- (5) PTO speed selection lever



- (1) Parking brake OPC indicator

1. Follow the instructions about parking the tractor. (See PARKING THE TRACTOR on page 16.)
2. Sit on the operator's seat.
3. Make sure the PTO drive shaft is disconnected from any attached implement.
4. Start the engine.
5. Check the following items.
  - a. While the tractor is stopped and PTO is rotating, standing up from the operator's seat will stop the PTO within 1 second.
  - b. Even if the PTO clutch control switch or lever is engaged, the PTO will not start if the operator is standing up from the operator's seat.
  - c. The PTO is rotating and the tractor is travelling at low speeds. Standing up from the operator's seat will set off the warning buzzer (the PTO will continue rotating).
  - d. When releasing the parking brake and when standing up from the operator's seat, check that the buzzer sounds and that the parking brake OPC indicator appears on the LCD monitor.
6. If any trouble occurs, consult your local KUBOTA Dealer.

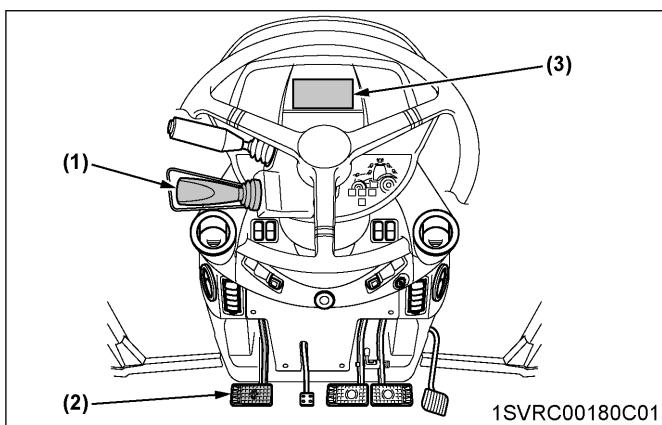
## 1.8 Testing operator presence control (OPC) system (Standard, Premium models)



- (1) Shuttle lever
- (2) Clutch pedal
- (3) Liquid crystal display

1. Follow the instructions about parking the tractor.  
(See PARKING THE TRACTOR on page 16.)
2. Sit on the operator's seat.
3. After starting the engine, release the clutch pedal.
4. Shift the shuttle lever to the forward or reverse position.
5. Check on the LCD monitor that the shuttle shift returns automatically to the neutral position when you stand up.
6. After sitting down, step on the clutch pedal.
7. Check on the LCD monitor that the shuttle shift selected in step 4 (forward or reverse) is automatically selected.
8. If any trouble occurs, consult your local KUBOTA Dealer for this service.

## 1.9 Testing operator presence control (OPC) system (Premium KVT model)



- (1) Shuttle lever
- (2) Clutch pedal
- (3) Liquid crystal display

1. Follow the instructions about parking the tractor.

(See PARKING THE TRACTOR on page 16.)

2. Sit on the operator's seat.
3. After starting the engine, release the clutch pedal.
4. Check on the LCD monitor that when you are standing, the gearshift will remain in neutral even if you try to shift gears with the shuttle lever to the forward or reverse position.
5. If any trouble occurs, consult your local KUBOTA Dealer for this service.

## 2. Checking wheel bolt torque

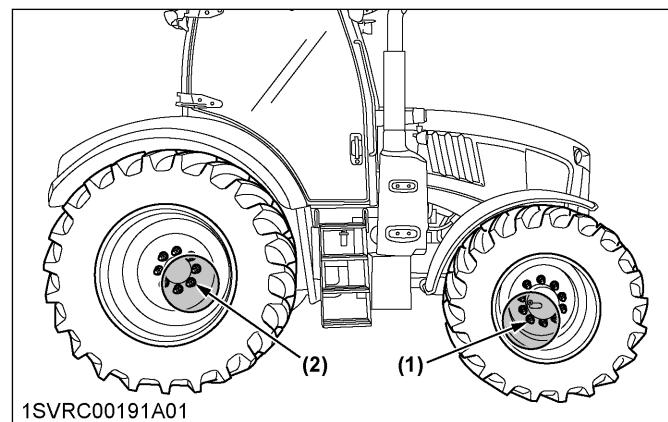
### WARNING

To avoid personal injury or death:

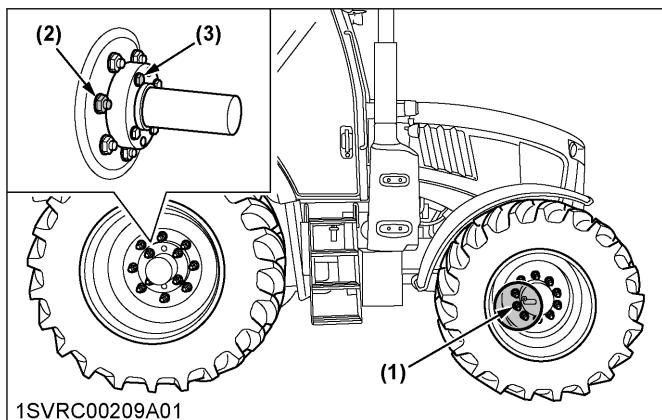
- Never operate the tractor with a loose rim, wheel or axle.
- Any time bolts and nuts are loosened, retighten to the specified torque.
- Check all bolts and nuts frequently and keep them tight.

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

### Flange type

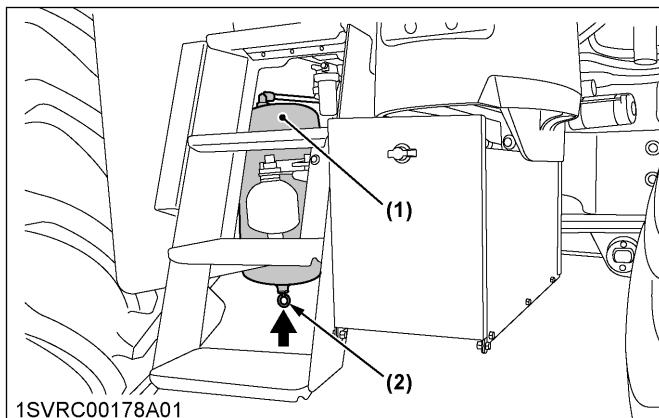


- (1) 540 N·m / 55.1 kgf·m / 398 ft·lbs
- (2) 670 N·m / 68.3 kgf·m / 494 ft·lbs

**Bar type axle**

- (1) 540 N·m / 55.1 kgf·m
- (2) 670 N·m / 68.3 kgf·m
- (3) 350 N·m / 35.7 kgf·m

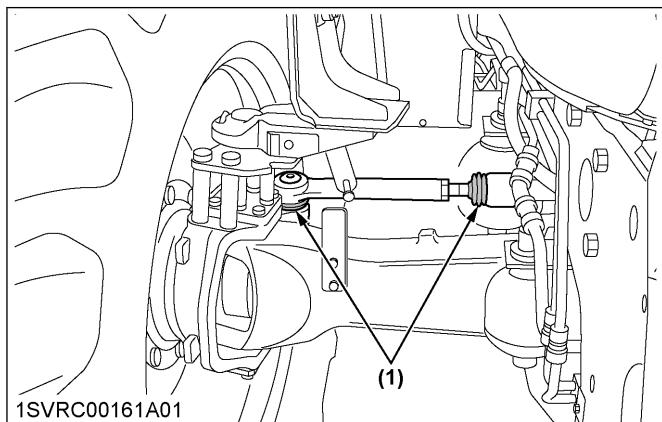
- Before doing the servicing, lower the pressure in the air tank first.



- (1) Air tank
- (2) Valve pin

**3. Checking tie-rod dust cover**

Check to see that dust covers are not damaged.  
If dust covers are damaged, consult your local KUBOTA Dealer for this service.



- (1) Dust cover

**IMPORTANT :**

- If dust covers are cracked, water and dust can cause premature wear of the tie-rod.

**4. Checking air brake for trailer (if equipped)****Discharging condensation (water) from the air tank.**

1. Push in the valve pin at the bottom of the air tank and check if there is a pool of condensation inside.

**WARNING****To avoid personal injury or death:**

- When discharging condensation (water) from the air tank, wear protective goggles to guard your eyes against sand and dust stirred up.

**Inspecting the air connector**

1. Check the sealing for damage and other abnormalities.  
Damaged sealing should be replaced in order to avoid air leaks.  
When not in use, keep the cap tight in position.

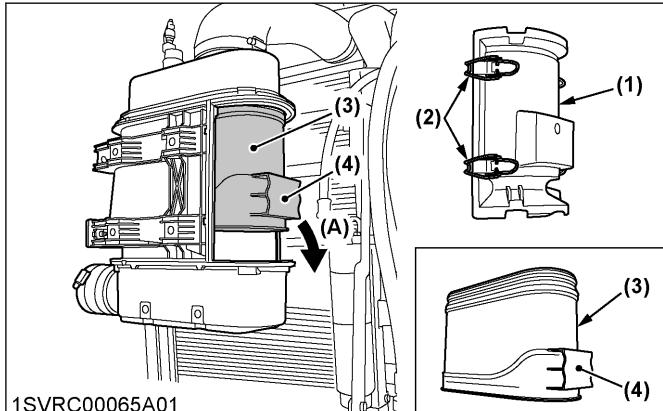
**Check the following parts as well:**

- Compressor drive belt for damage
- Compressor itself for oil leak
- Hoses for damage

**EVERY 100 HOURS****1. Cleaning air cleaner primary element**

1. Unlatch and remove the housing service cover.
2. Push down on the service handle to tilt the primary element to a 5° angle. This will loosen the seal.
3. Then, pull out on the service handle to remove the primary element from the housing.
4. Clean the primary element:  
When dry dust adheres to the element, blow compressed air from the inside, turning the element.  
Pressure of compressed air must be under 205 kPa (2.1 kgf/cm<sup>2</sup>, 30 psi).
5. Inspect the element:  
Visually check for cuts, tears or indentations on the sealing surfaces and the element before installation. If any damage is visible, do not install.

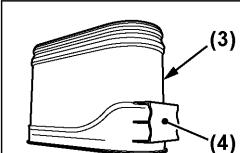
6. Replace air cleaner primary element:  
Once every 1000 hours or yearly, whichever comes first.



1SVRC00065A01

- (1) Housing service cover  
(2) Latch  
(3) Primary element  
(4) Service handle

(A) "PUSH DOWN"

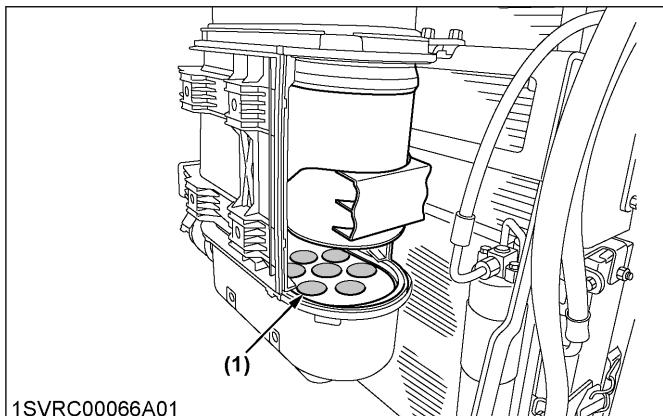


#### NOTE :

- If the housing service cover doesn't fit, remove and recheck the primary element position. The cover will be difficult to install if the element isn't installed correctly.

## 1.1 Cleaning pre-cleaner tubes

- Check to see if the pre-cleaner tubes are blocked with dust.
- To clean the pre-cleaner tubes, remove the housing service cover and leave the element installed (to prevent dust from entering the air induction outlet). Use a low volume of compressed air to gently blow out the separator tubes.



1SVRC00066A01

- (1) Pre-cleaner tubes

#### IMPORTANT :

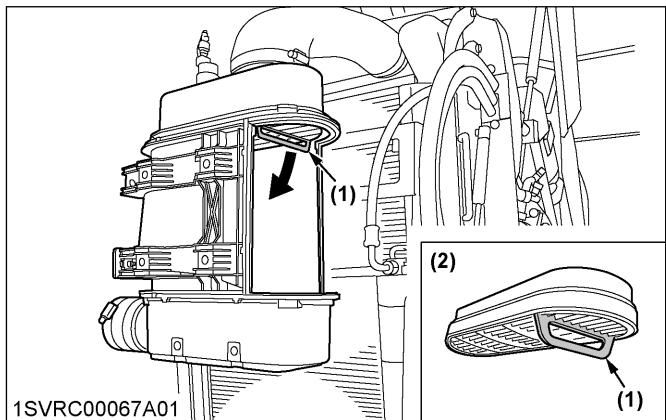
- The air cleaner uses a dry element so never apply oil.
- Do not run the engine with the filter element removed.

- Do not touch the secondary element except in cases where replacing is required.

## 1.2 Replacing secondary element

The secondary element should be replaced every 1000 hours or yearly, whichever comes first.

- To remove the secondary element, use the plastic handle on the face of the secondary element. Pull the element toward the centre of the housing and remove it. Ensure that the outlet tube sealing area is clean and undamaged.



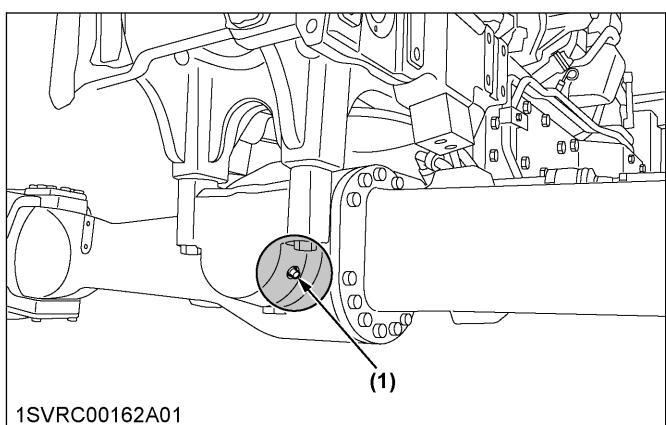
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(1) Plastic handle  
(2) Secondary element

## 2. Lubricating grease fittings

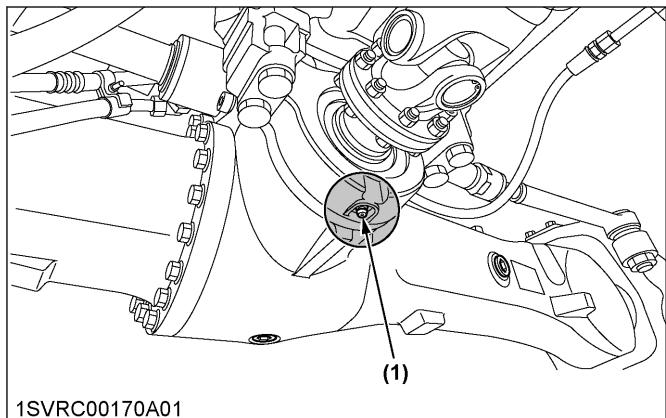
Apply a small amount of multipurpose grease to the following points every 100 hours.

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

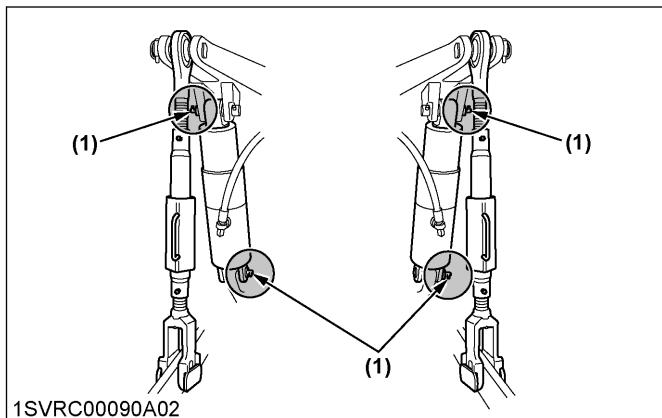


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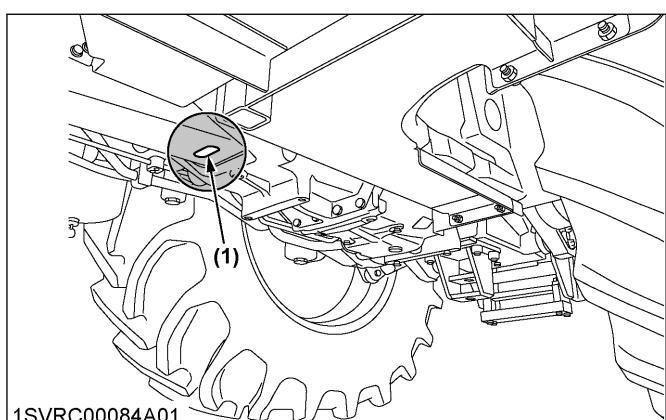
- (1) Grease fitting (front axle support)



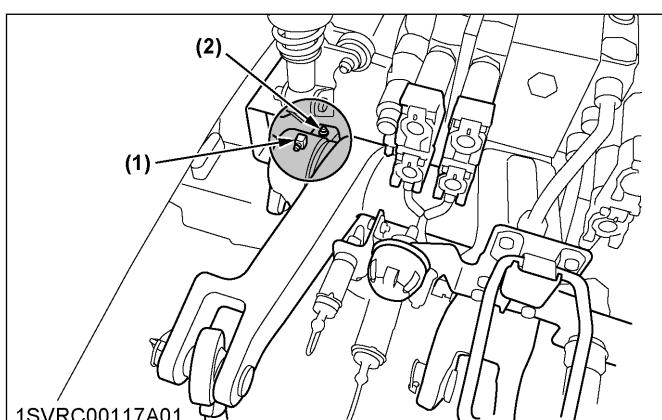
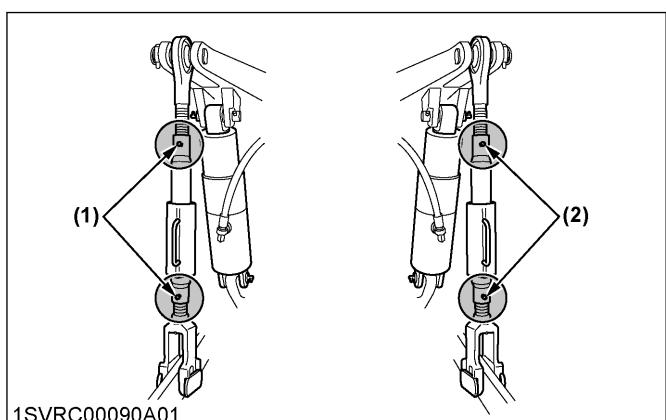
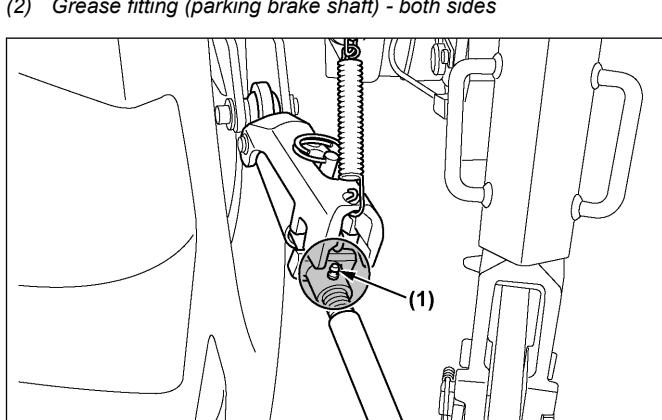
(1) Grease fitting (front axle support)



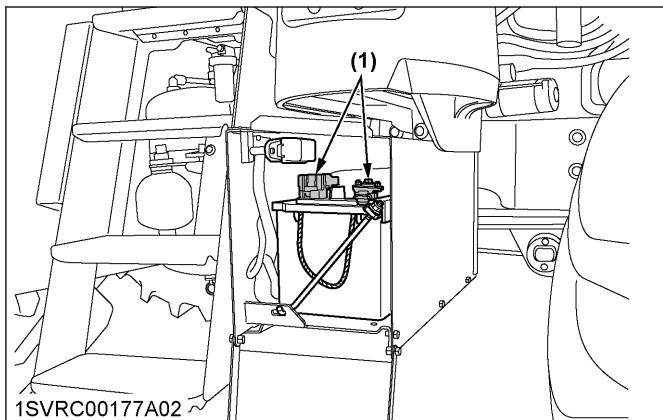
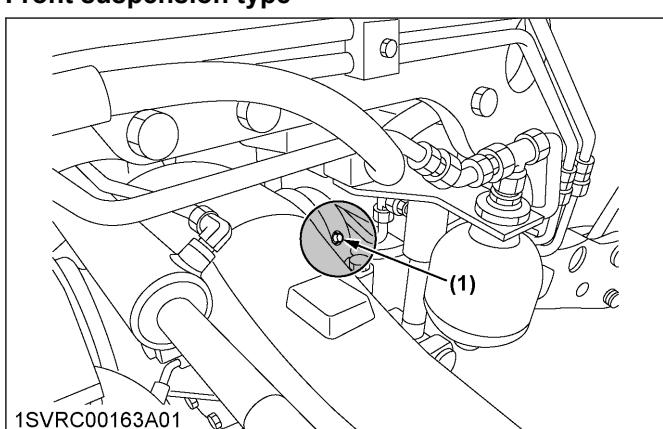
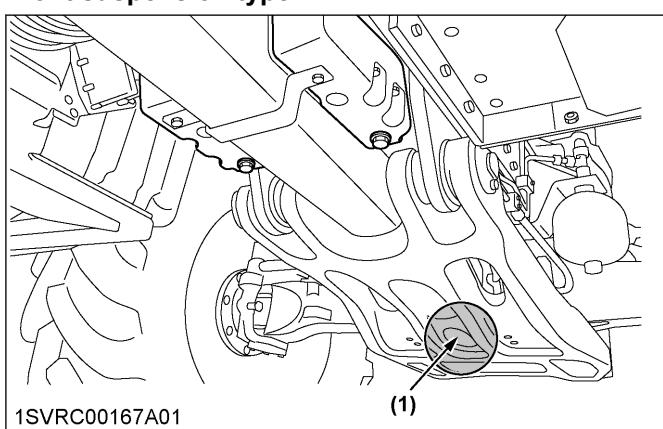
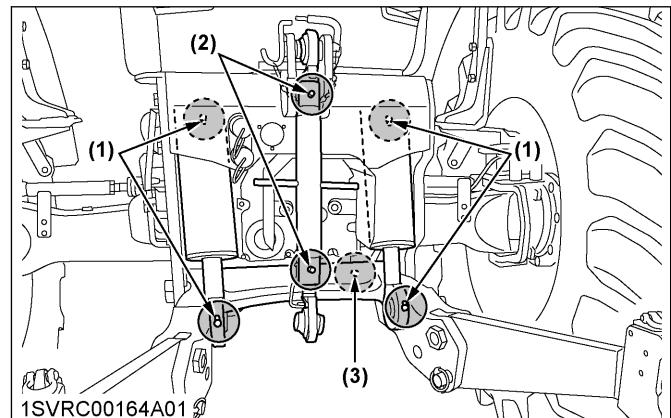
(1) Grease fitting (hydraulic lift cylinders pin)



(1) Grease fitting (front axle drive shaft)

(1) Grease fitting (hydraulic lift arm shaft) - both sides  
(2) Grease fitting (parking brake shaft) - both sides(1) Grease fitting (lifting rod) - LH  
(2) Grease fitting (lifting rod) - RH

(1) Grease fitting (stabiliser)

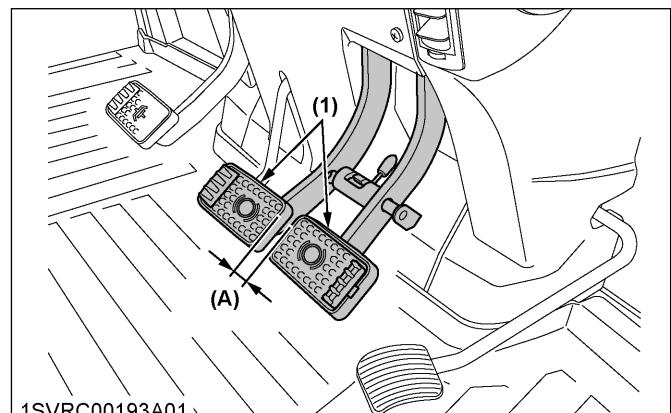
**Front suspension type****Front suspension type****Front 3-point hitch****3. Adjusting brake pedal****WARNING****To avoid personal injury or death:**

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

**3.1 Checking brake pedal free travel**

Proper brake pedal free travel	3 to 7 mm on the pedal
--------------------------------	------------------------

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

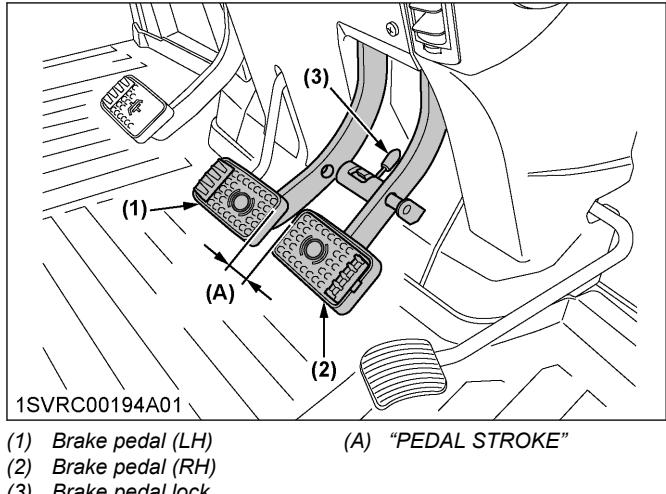
**NOTE :**

- Brake pedals should be equal when depressed.

### 3.2 Checking brake pedal stroke

Pedal stroke	Less than 100 mm at each pedal
--------------	--------------------------------

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



### 3.3 Checking equaliser working level (anti-imbalance device)

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

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

## 4. Adjusting parking/secondary brake lever

Consult your local KUBOTA Dealer for this service.

## 5. Checking battery condition

### DANGER

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

- Do not use or charge the refillable type battery if the fluid level is below the [LOWER] (lower limit level) mark. Otherwise, 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 spattered with it, wash it away completely with water immediately and get medical attention.
- Keep open sparks and flames away from the battery at all times. Hydrogen gas mixed with oxygen becomes very explosive.
- Wear eye protection and rubber gloves when working around the battery.

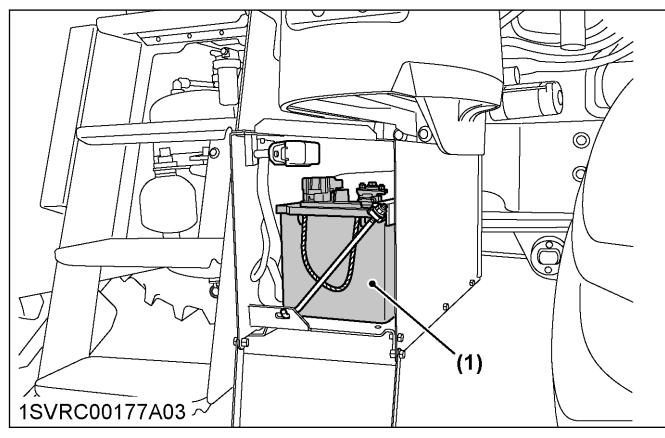
### NOTE :

- The factory installed battery is a non-refillable type.

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.



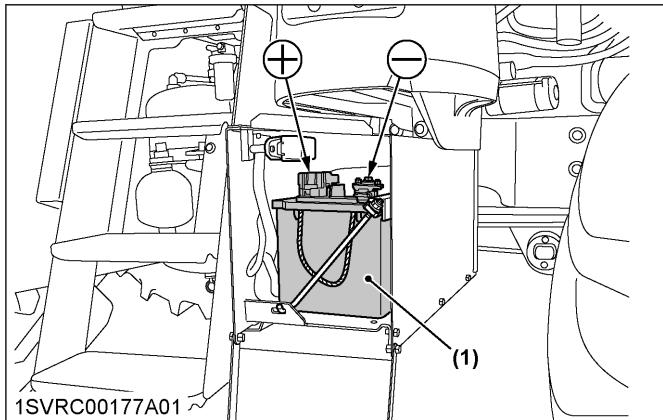
### 5.1 Charging the battery

### WARNING

To avoid personal injury or death:

- When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep the open sparks and flames away from the battery at all times, especially when charging the battery.

- When charging the battery, make sure that 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 the battery charge by placing a metal object across the posts.  
Use a voltmeter or hydrometer.



(1) Battery

- 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.
- 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.
- Only switch off the charger once the battery has finished charging.
- When exchanging an old battery for a new one, use battery of equal specification shown in the following table.

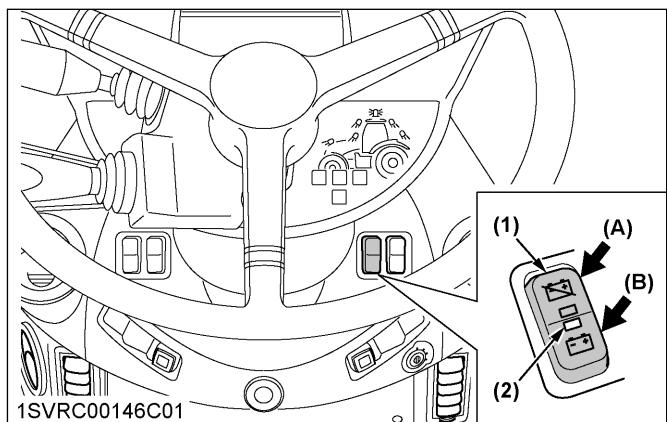
Volts (V)	Capacity (A.H)	Reserve capacity (min)	Cold cranking amps (EN)
12	174 (C20/EN)	380	1400 (-18 °C or 0.4 °F/EN)

## 5.2 Directions for battery storage

- When storing the tractor for long periods of time, remove the battery from the tractor, and store in a dry place out of direct sunlight.
- 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.

## 5.3 How to detach the battery

- Turn the battery switch to "OFF" and make sure that the battery switch indicator is off. If the indicator is lit, do not remove the battery cable until it turns off. It takes about 15 minutes to turn off.

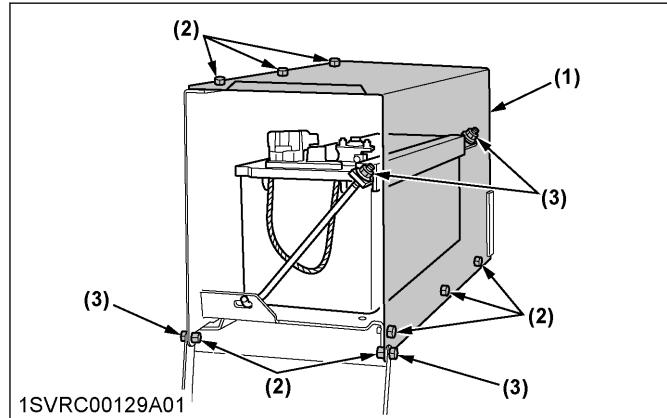


(1) Battery switch  
(2) Indicator

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

- In order to prevent short-outs due to contact between the battery terminals (plus and minus) and the battery cover, use a rag to cover the terminals when removing or replacing the cover.
- After removing the bolts, nuts, and battery cover as shown in the following figure, remove the battery.

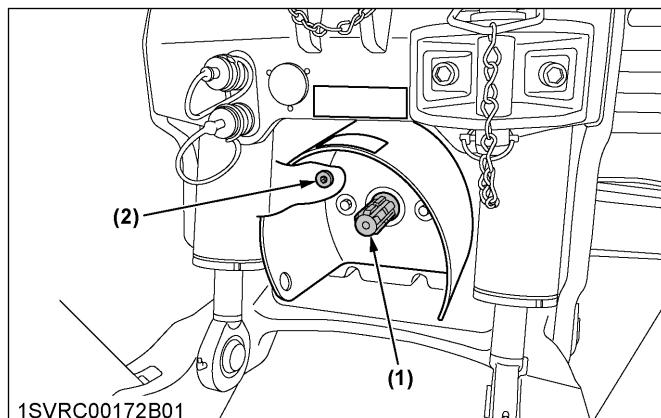
4. When connecting the battery cable, confirm the cable and terminal plus and minus directions before connecting.



(1) Battery cover  
(2) Bolt  
(3) Nut

(See LUBRICANTS, FUEL AND COOLANT on page 252.)

2. Tighten up the filling plug in place.

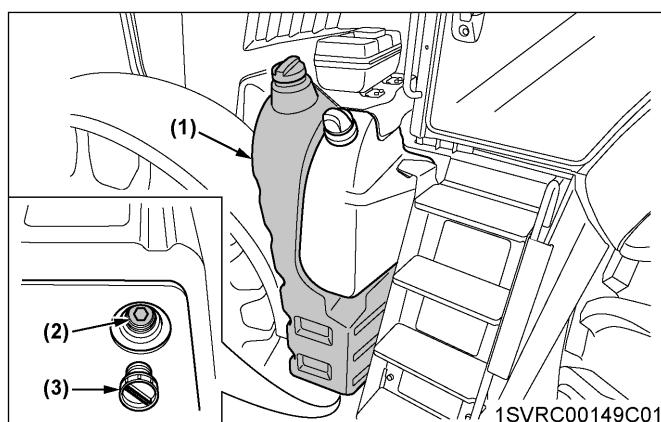


(1) Front PTO  
(2) Filling plug

## EVERY 200 HOURS

### 1. Draining fuel tank water

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



(1) Fuel Tank  
(2) Drain plug  
(3) Plug cover

	Tightening torque
Drain plug	19 to 21 N·m / 1.9 to 2.1 kgf·m / 14.0 to 15.5 ft·lbs

## 6. Checking front PTO oil (if equipped)

### WARNING

To avoid personal injury or death:

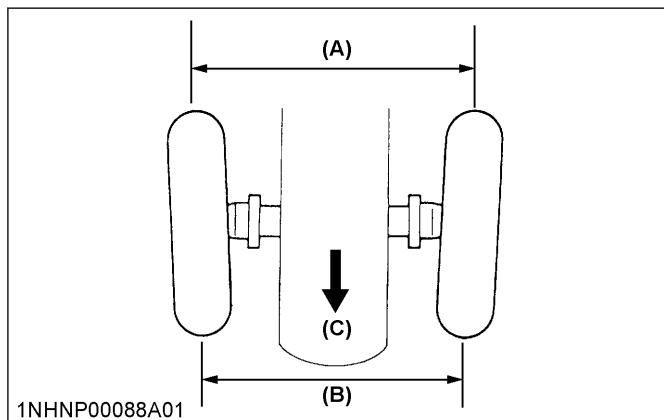
- Be sure to stop the engine before checking the front PTO oil.

1. Remove the filling plug and check to see if the oil level is up to the plug hole. If low, add oil until it flows out of the filling plug hole.

### IMPORTANT :

- If the fuel contains impurities, such as water, drain the fuel tank at shorter intervals.
- Drain the fuel tank before operating the tractor after a long period of storage.
- The fuel tank is made of plastic. Be careful not to overtighten the bolts.

## 2. Adjusting toe-in



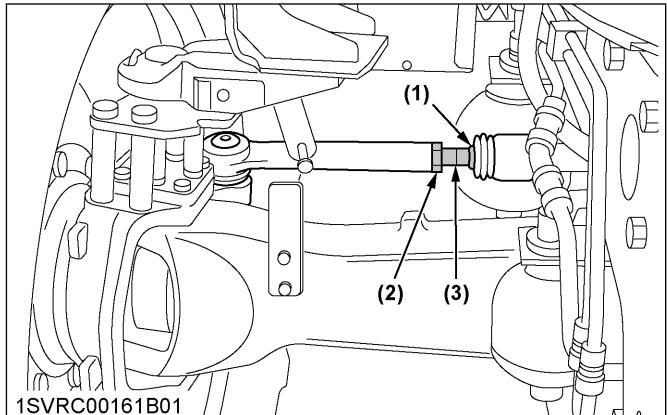
- (A) Wheel-to-wheel distance at the rear
- (B) Wheel-to-wheel distance at the front
- (C) "FRONT"

Proper toe-in	0 to 8 mm
---------------	-----------

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

### 2.1 Adjusting toe-in procedure

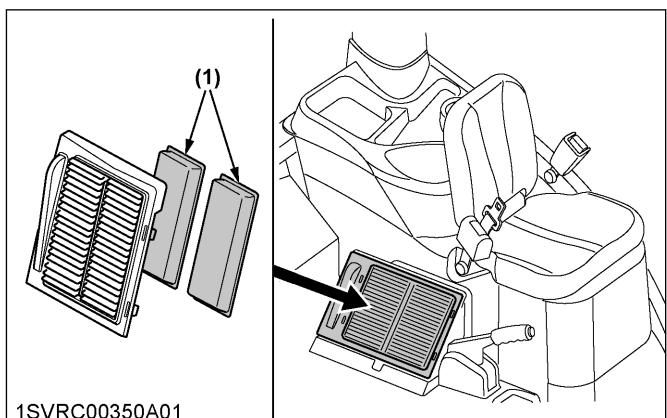
1. Detach the snap ring.
2. Loosen the tie-rod nut.
3. Turn the tie-rod joint to adjust the rod length until the proper toe-in measurement is obtained.
4. Retighten the tie-rod nut.
5. Attach the snap ring of the tie-rod joint.



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

## 3. Cleaning inner air filter

Remove the inner filter, and blow air from the direction opposite to the filter's normal air flow. Pressure of compressed air must be under 205 kPa (2.1 kgf/cm<sup>2</sup>, 30 psi). When reassembling, adjust the 4 clasps to fix the filter in its correct position.



(1) Inner air filter

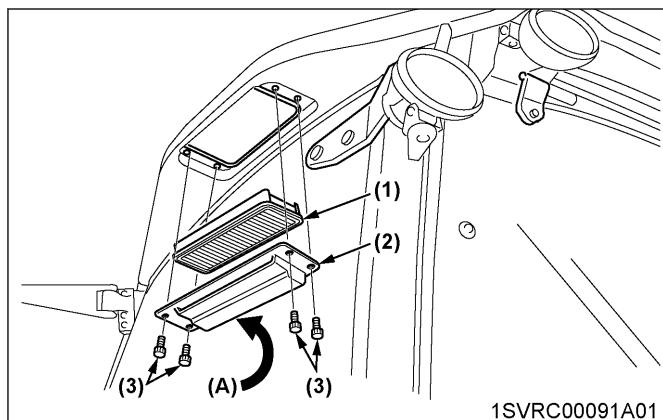
## 4. Cleaning fresh air filter

### WARNING

To avoid personal injury or death:

- When removing and attaching the filter, apply the parking brake, stop the engine and remove the key.
- Check the filter using a strong and stable ladder to stand on.  
Never check it while standing on a tyre or fender.

1. Remove the knob bolts and pull out the filter.



**NOTE :**

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

#### **4.1 Cleaning the filter**

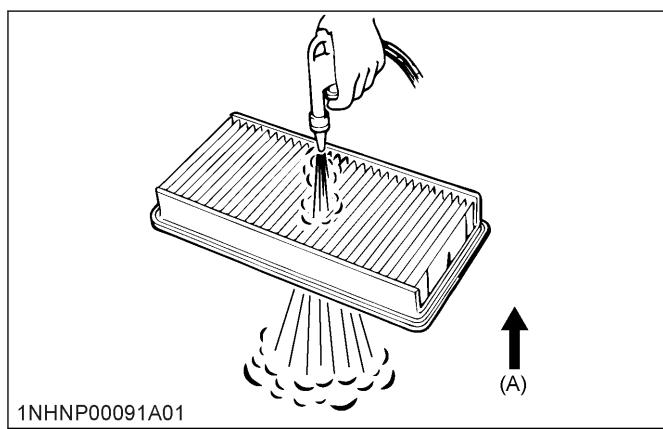
### **Normal use**

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/cm<sup>2</sup> / 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.

## **EVERY 400 HOURS**

## 1. Checking fan belt tension



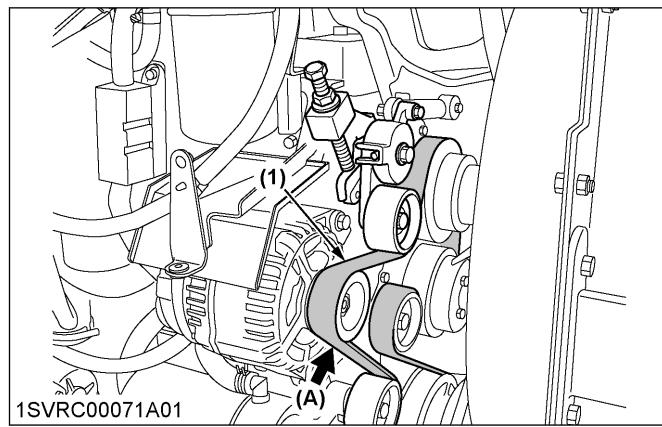
#### To avoid personal injury or death:

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

Proper belt tension	A deflection of between 9 to 11 mm (for a new belt: 7 to 9 mm) when the belt is pressed (98 N / 10 kgf) in the middle of the span.
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The belt is of self-tension type and needs no readjustment. Check the belt tension in the following procedure. If the deflection is out of spec or the belt itself is found damaged, replace it with a new one.

1. Stop the engine and remove the key.
  2. Press on the spot indicated in the following figure to measure the deflection.

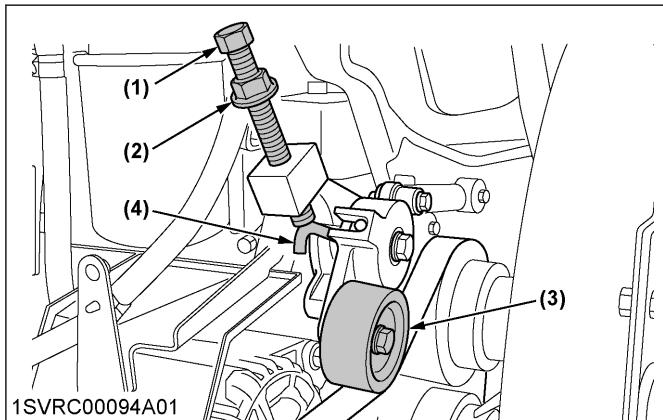


(1) *Fan belt* (A) *Check the belt tension*

## 1.1 Replacing the belt

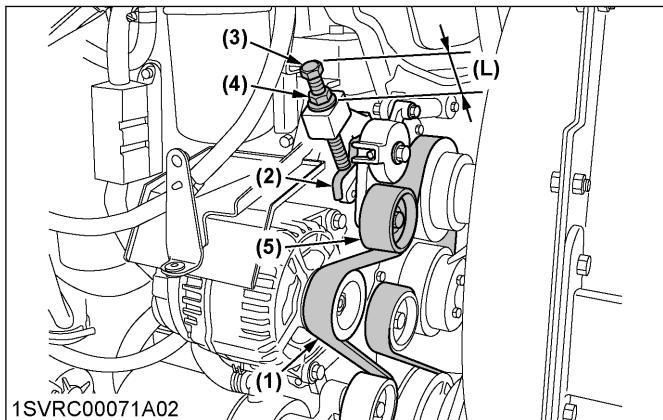
1. Detach the air conditioner drive belt.  
(See Checking air conditioner pipe and hose on page 285.)

2. Loosen the lock nut first and then fully loosen the tension bolt.



(1) Tension bolt  
 (2) Lock nut  
 (3) Self-tension pulley  
 (4) Self-tension spring

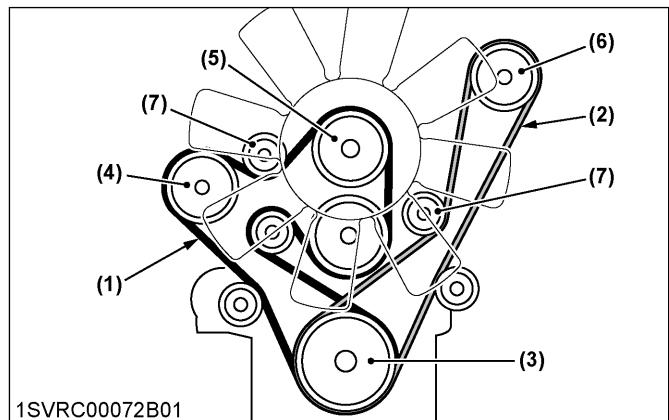
3. Lift the tension pulley and remove the belt.  
 4. Fit the new belt instead as shown in the following illustration.  
 5. Tighten the tension bolt until the proper belt tension is obtained. Finally tighten up the lock nut.



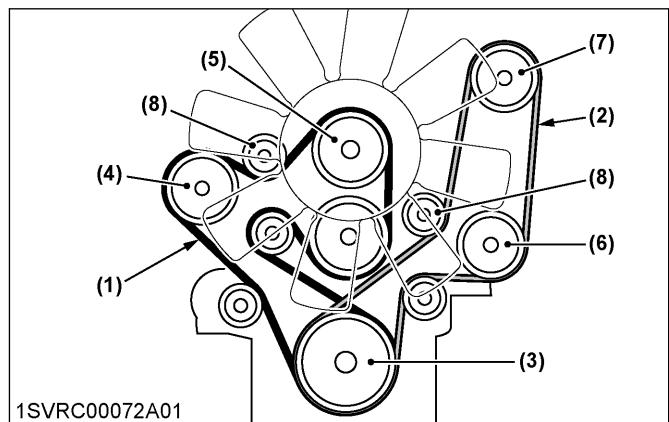
(1) Belt  
 (2) Tension spring end  
 (3) Tension bolt  
 (4) Lock nut  
 (5) Self-tension pulley

Tension bolt length (L)	40 mm (1.6 in.) as reference
Tightening torque of lock nut	60 to 80 N·m / 6.12 to 8.16 kgf·m / 44.3 to 59.0 ft·lbs

### Fan belt and air conditioner belt routing



(1) Fan belt  
 (2) Air conditioner belt  
 (3) Drive pulley  
 (4) Alternator  
 (5) Fan pulley  
 (6) Air conditioner compressor  
 (7) Self-tension pulley



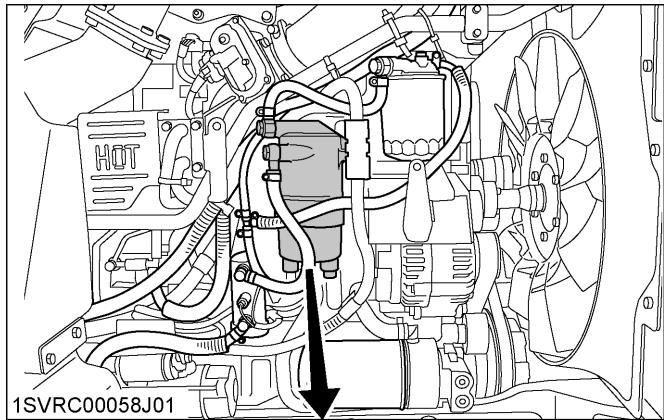
(1) Fan belt  
 (2) Air conditioner belt  
 (3) Drive pulley  
 (4) Alternator  
 (5) Fan pulley  
 (6) Air-compressor (if equipped)  
 (7) Air conditioner compressor  
 (8) Self-tension pulley

## 2. Cleaning water separator

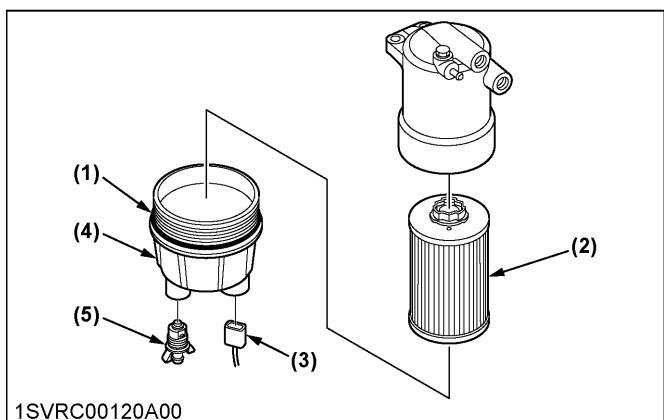
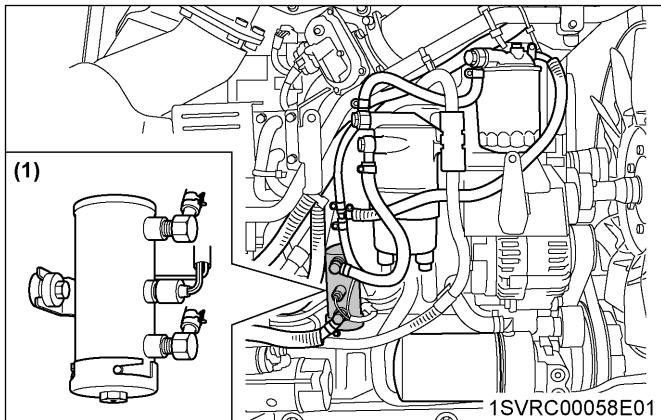
This job should not be done in the field, but in a clean environment.

1. Disconnect the water sensor connector.
2. Remove the cup and remove it, then rinse the inside with kerosene.
3. Remove the element and replace it with a new one.
4. After cleaning, reassemble the water separator, keeping out dust and dirt.

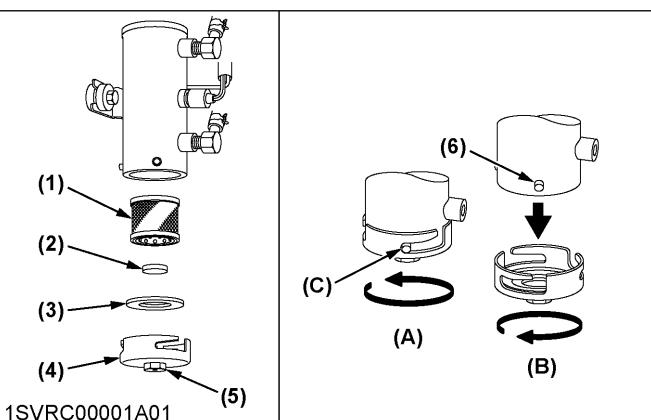
5. Bleed the fuel system.  
(See SERVICE AS REQUIRED on page 294.)



- After assembly, be sure to bleed the air from the fuel system.  
(See Bleeding the fuel system on page 294.)



- (1) O-ring  
(2) Element  
(3) Water sensor connector  
(4) Cup  
(5) Drain plug



- (1) Element  
(2) Magnet  
(3) Gasket  
(4) Cover  
(5) Nut  
(6) Pin
- (A) "TIGHTEN"  
(B) "LOOSEN"  
(C) "Tighten the cover until the end of the slot contacts the pin."

**IMPORTANT :**

- If the water separator and/or fuel filter is not well maintained, the supply pump and injector may be damaged earlier than expected.

### 3. Cleaning fuel solenoid pump element

1. Close the fuel shut-off valve.
2. Unscrew the cover's nut and remove the cover from the fuel solenoid pump.
3. Remove the cover, magnet, and element and clean with kerosene.
4. Refer to the following diagram and reassemble the parts as they were before.
5. Open the fuel shut-off valve.

**IMPORTANT :**

- When assembling the parts, be careful that no dirt or dust contacts them.
- Be sure to install the cover securely.

## INITIAL 500 HOURS

With a new machine, be sure to do the following servicing after the first 500 operating hours.

### 1. Changing transmission fluid

(See Changing transmission fluid on page 286.)

### 2. Changing rear axle case oil

(See Changing rear axle case oil on page 288.)

### 3. Replacing transmission oil filter

(See Replacing transmission oil filter on page 287.)

## EVERY 500 HOURS

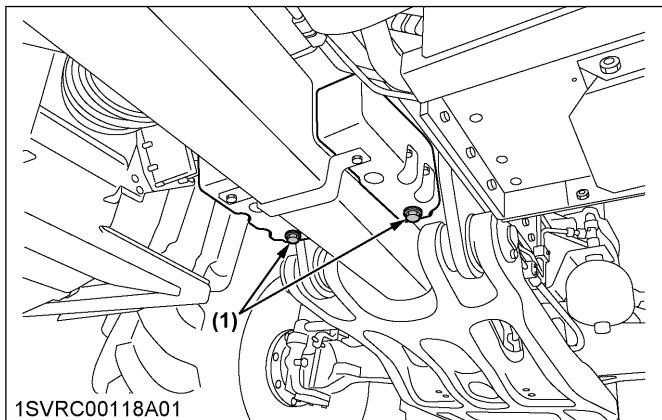
### 1. Changing engine oil

#### **WARNING**

To avoid personal injury or death:

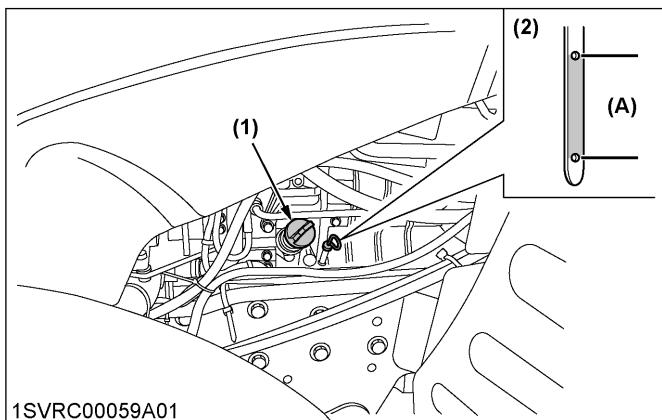
- Be sure to stop the engine before changing the oil.
- Allow the engine to cool down sufficiently; oil can be hot and can burn.

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.



- (1) Drain plug
2. After draining reinstall the drain plug.
3. Fill with the new oil up to the upper notch on the dipstick.  
(See LUBRICANTS, FUEL AND COOLANT on page 252.)

Oil capacity with filter	22.0 L
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**IMPORTANT :**

- Use DPF-compatible oil (CJ-4) for the engine.

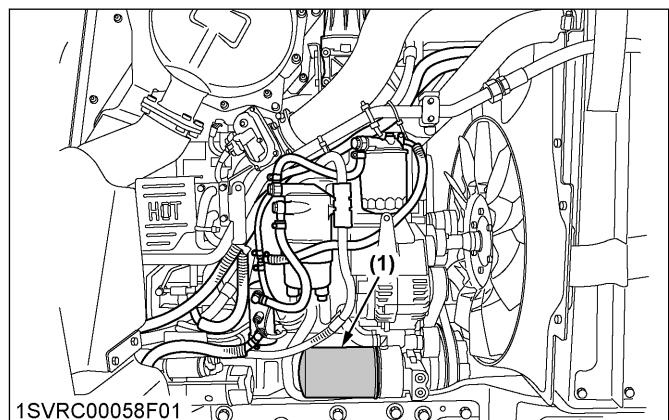
### 2. Replacing engine oil filter

#### **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.



**IMPORTANT :**

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

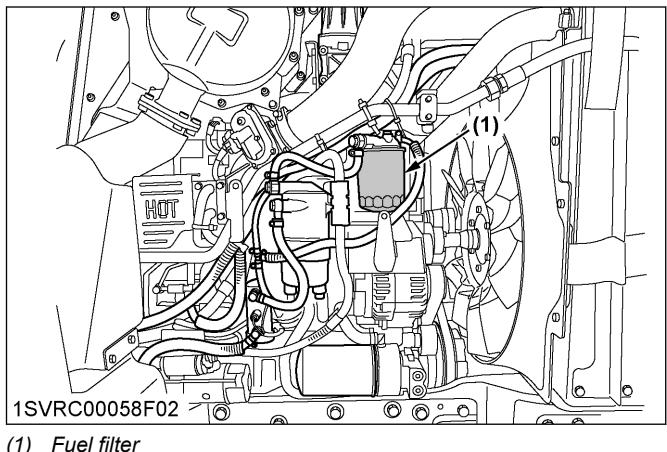
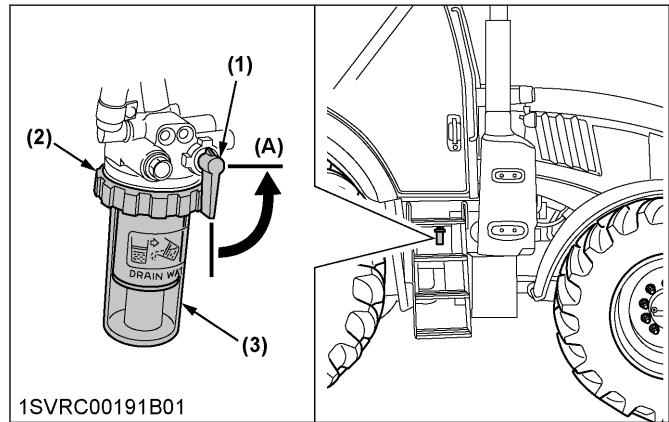
### 3. Cleaning pre-fuel filter

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

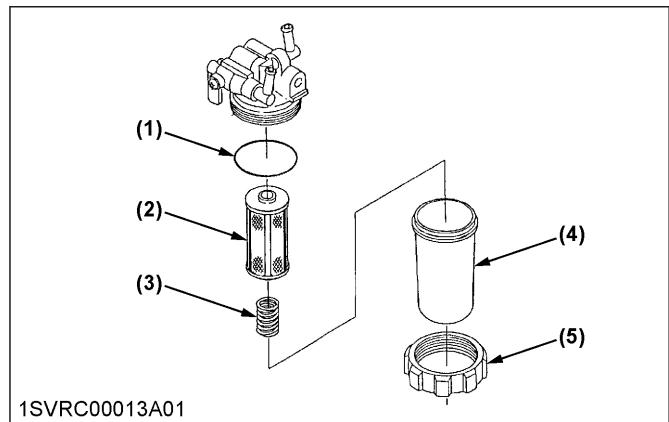
1. Close the fuel shut-off valve.
2. Unscrew the retainer ring and remove the cup, and rinse the inside with kerosene.
3. Remove the element and dip it in the kerosene to rinse.
4. After cleaning, reassemble the pre-fuel filter, keeping out dust and dirt.

## 5. Bleed the fuel system.

(See Bleeding the fuel system on page 294.)



## 5. Replacing hydraulic oil filter (suction)

 **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.

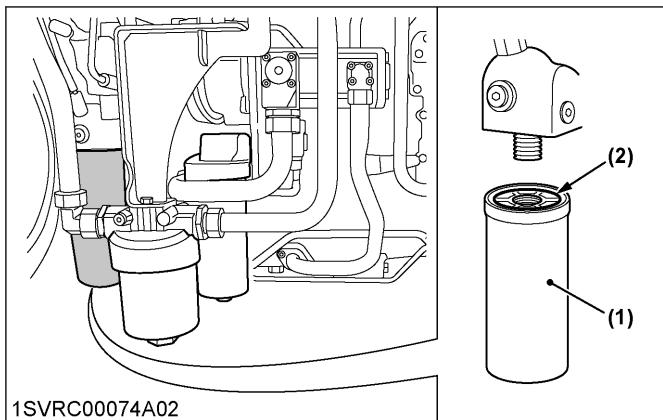
1. Place the oil pan underneath the hydraulic oil filter.

## 4. Replacing fuel filter

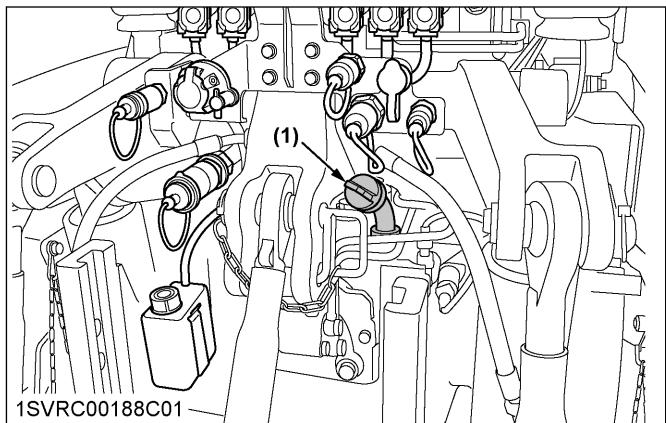
1. Remove the fuel filter.
2. Put a film of clean fuel on the rubber seal of the new filter.
3. Tighten the filter quickly until it contacts the mounting surface.  
Tighten the filter by hand an additional 1/2 turn only.
4. Bleed the fuel system.  
(See Bleeding the fuel system on page 294.)

- Remove the oil filter.

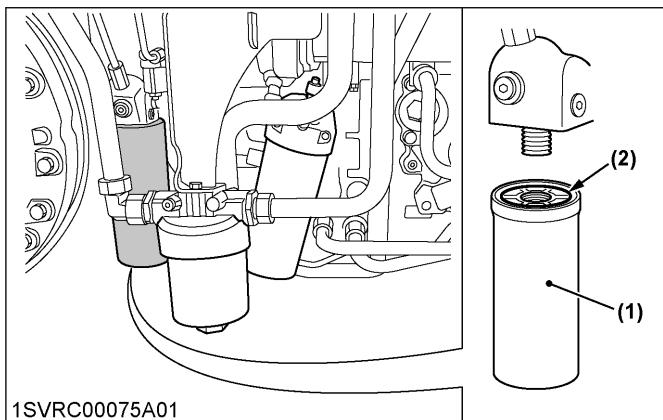
#### Power shift transmission type



(1) Hydraulic oil filter  
(2) O-ring

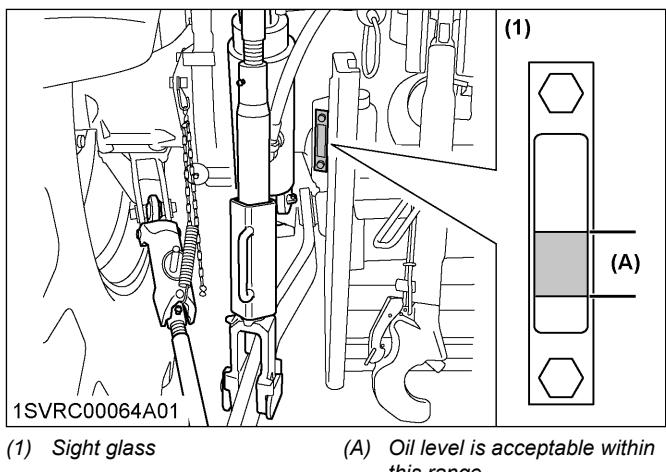


#### CVT type



(1) Hydraulic oil filter  
(2) O-ring

- Put a film of clean transmission oil on the rubber seal of the new filter.
- Tighten the filter quickly until it contacts the mounting surface.  
Tighten filter by hand an additional 1/2 turn only.
- After the new filter has been replaced, fill the transmission oil up to the upper limit of the sight glass.



- After running the engine for a few minutes, stop the engine, wait for 10 minutes and check the oil level again, add oil to the prescribed level.
- 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.

#### NOTE :

- Check the transmission fluid level under the following conditions:
  - Park the machine on a flat surface.
  - Lower the rear 3-point hitch and front end loader (if equipped).
  - Raise the front 3-point hitch (if equipped).
  - Disconnect all the remote control valve hoses.
  - Shut off engine and wait for 10 minutes.

## 6. Replacing hydraulic oil filter (return)

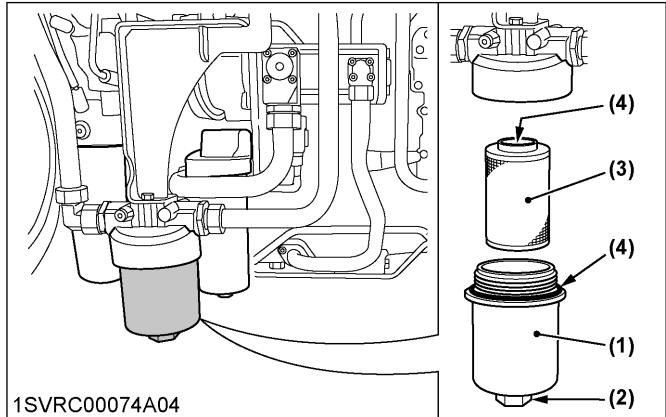
### **⚠ WARNING**

To avoid personal injury or death:

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

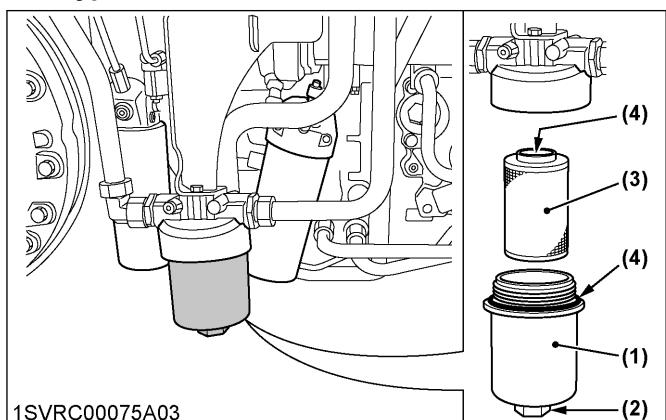
1. Place the oil pan underneath the hydraulic oil filter.
  2. Using a wrench, remove the filter cover.
  3. When oil is no longer dripping from the exposed area, remove the element and replace it with a new one.
- Make sure at this time that the o-ring is mounted on the element mounting part.

### Power shift transmission type



- (1) Hydraulic oil filter cover
- (2) Nut
- (3) Element
- (4) O-ring

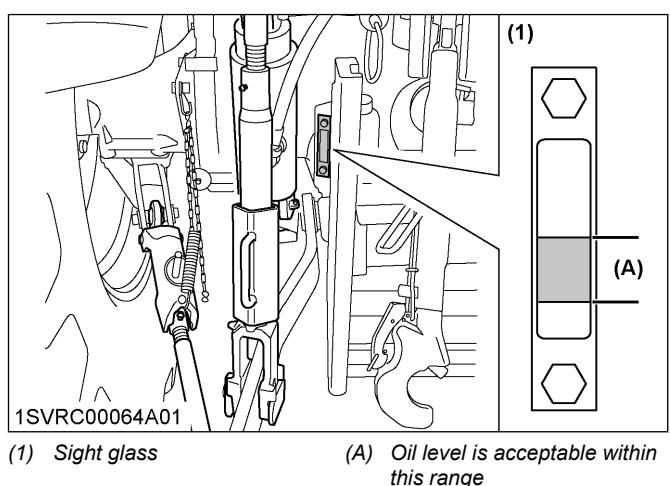
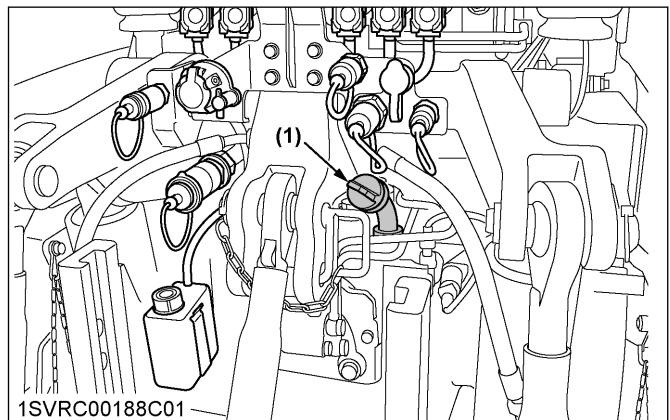
### CVT type



- (1) Hydraulic oil filter cover
- (2) Nut
- (3) Element
- (4) O-ring

4. Mount after cleaning the filter cover. If the o-ring is damaged, make sure to replace it.

5. Fill the transmission oil up to the upper line of the sight glass.



6. After running the engine for a few minutes, stop the engine, wait for 10 minutes and check the oil level again, add oil to the prescribed level.
7. Make sure that the transmission fluid doesn't leak past the seal on the filter.

### NOTE :

- Check the transmission fluid level under the following conditions:
  - a. Park the machine on a flat surface.
  - b. Lower the rear 3-point hitch and front end loader (if equipped).
  - c. Raise the front 3-point hitch (if equipped).
  - d. Disconnect all the remote control valve hoses.
  - e. Shut off engine and wait for 10 minutes.

## 7. Replacing power steering oil filter

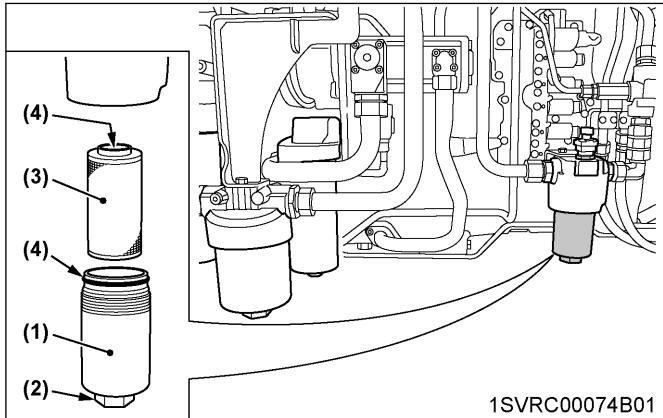
### **⚠ WARNING**

To avoid personal injury or death:

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

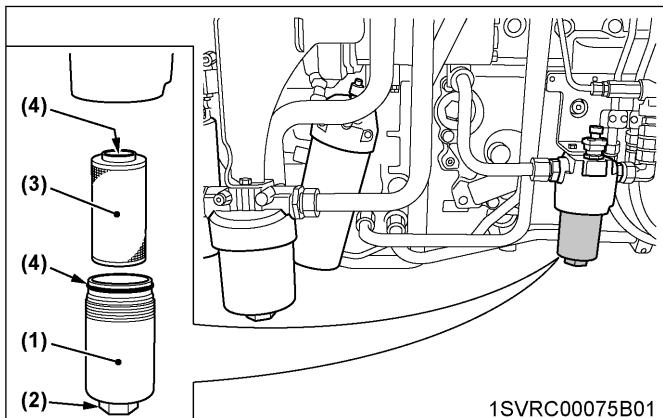
1. Place the oil pan underneath the power steering oil filter.
2. Using a wrench, remove the filter cover.
3. When oil is no longer dripping from the exposed area, remove the element and replace it with a new one.  
Make sure at this time that the o-ring is mounted on the element mounting part.

#### Power shift transmission type



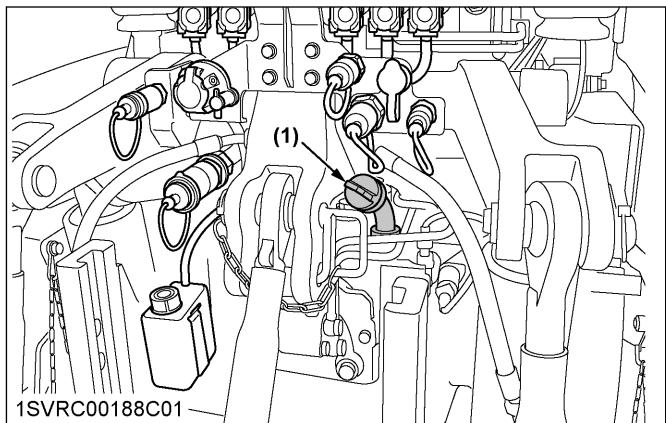
- (1) Power steering oil filter cover  
 (2) Nut  
 (3) Element  
 (4) O-ring

#### CVT type

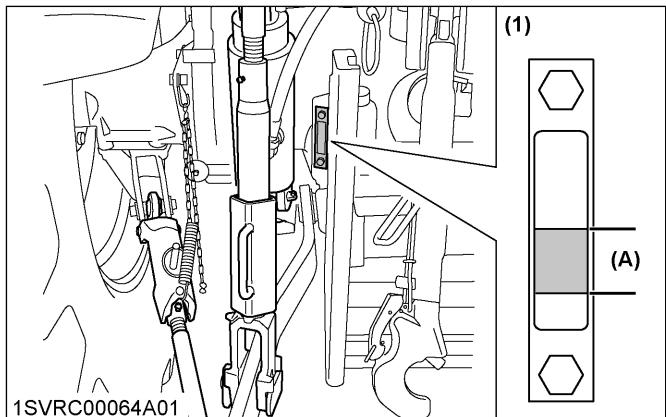


- (1) Power steering oil filter cover  
 (2) Nut  
 (3) Element  
 (4) O-ring

4. Mount after cleaning the filter cover. If the o-ring is damaged, make sure to replace it.
5. Fill the transmission oil up to the upper line of the sight glass.



(1) Filling plug



- (1) Sight glass  
 (A) Oil level is acceptable within this range

6. After running the engine for a few minutes, stop the engine, wait for 10 minutes and check the oil level again, add oil to the prescribed level.
7. Make sure that the transmission fluid does not leak past the seal on the filter.

#### NOTE :

- Check the transmission fluid level under the following conditions:
  - a. Park the machine on a flat surface.
  - b. Lower the rear 3-point hitch and front end loader (if equipped).
  - c. Raise the front 3-point hitch (if equipped).
  - d. Disconnect all the remote control valve hoses.
  - e. Stop engine and wait for 10 minutes.

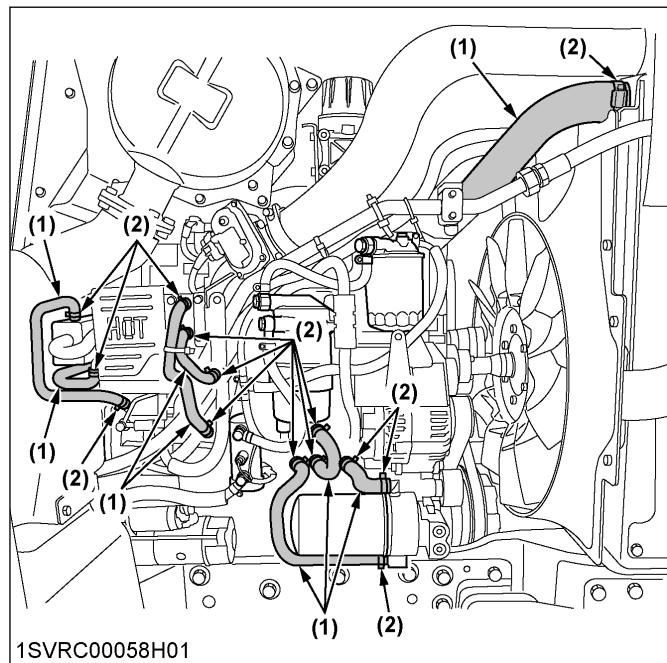
## 8. Checking radiator hose and clamp

Check to see if the radiator hoses are properly fixed every 500 hours of operation.

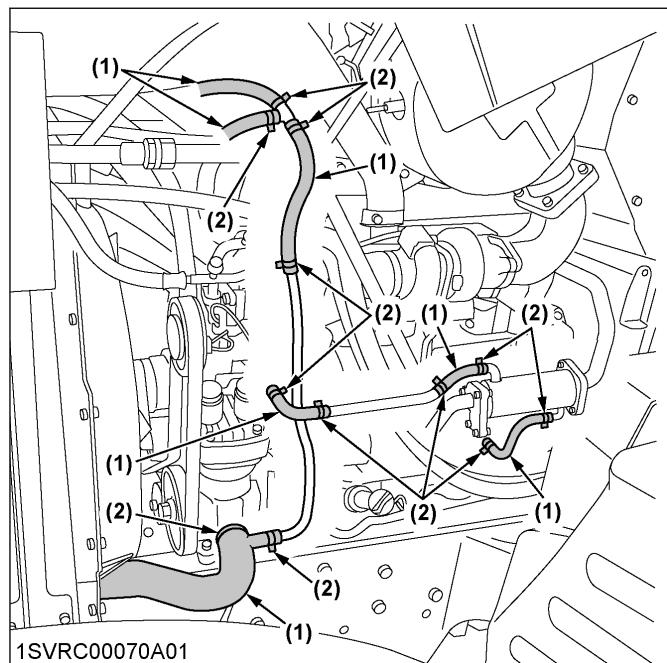
1. If the hose clamps are loose or water leaks, tighten the bands securely.

2. Replace the hoses and tighten the hose clamps securely, if the radiator hoses are swollen, hardened or cracked.

Replace the hoses and hose clamps every 4 years or earlier if they are found to be swollen, hardened or cracked.



(1) Radiator hoses  
(2) Hose clamps



(1) Radiator hoses  
(2) Hose clamps

## 8.1 Overheating countermeasures

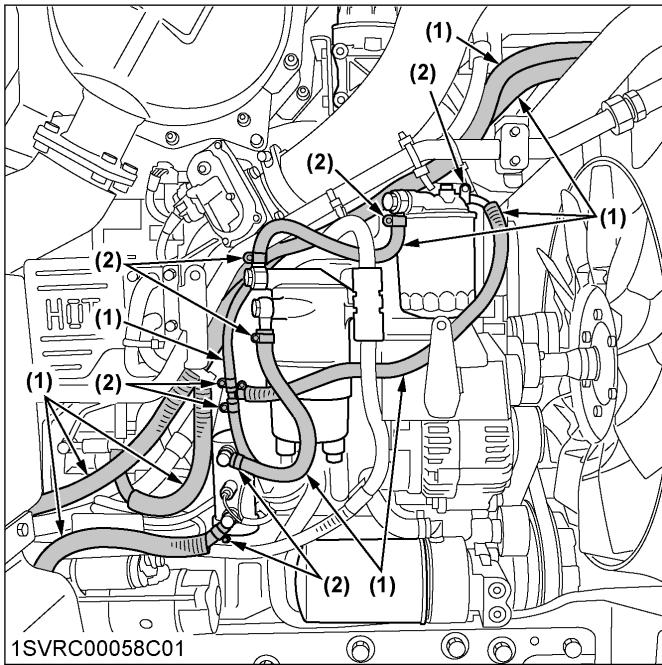
Take the following actions in the event the coolant temperature is nearly at or over the boiling point, also called "overheating".

1. Park the tractor in a safe place and keep the engine idling unloaded.
2. Allow the engine to idle unloaded for about 5 minutes before stopping it, rather than stopping it suddenly.
3. Keep away from the machine for another 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 302.)  
Afterwards, restart the engine.

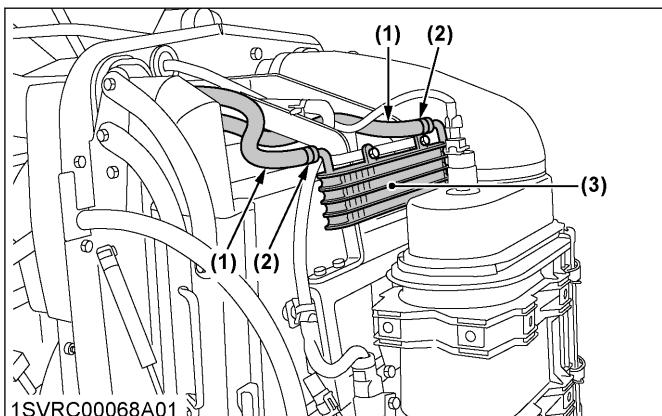
## 9. Checking fuel line

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) Fuel lines  
(2) Clamp bands



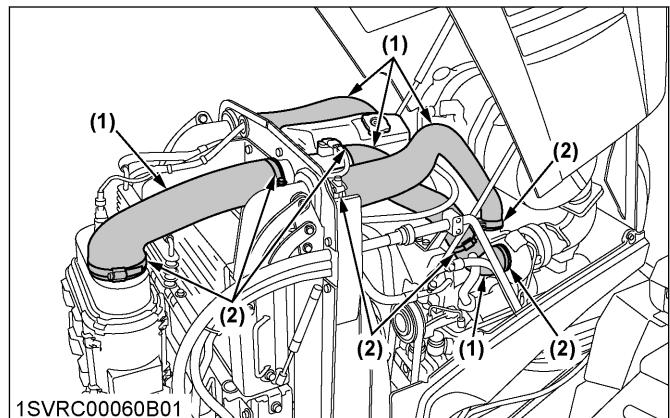
(1) Fuel lines  
(2) Clamp bands  
(3) Fuel cooler

#### NOTE :

- If the fuel line has been replaced, be sure to properly bleed the fuel system.  
(See Bleeding the fuel system on page 294.)

## 10. Checking intake air line

- Check to see that hoses 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.



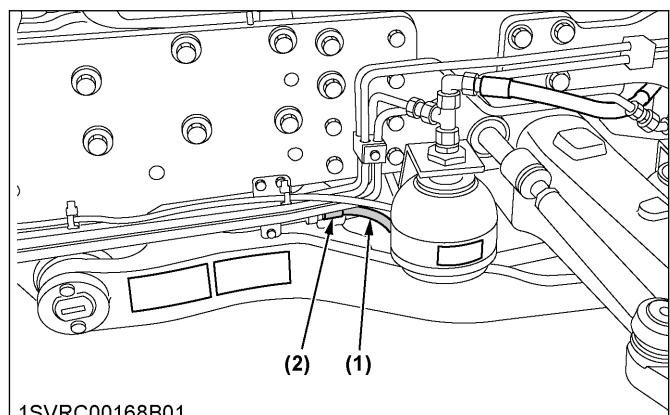
(1) Hose  
(2) Hose clamps

## 11. Checking brake hose

Consult your local KUBOTA Dealer for this service.

## 12. Checking differential lock hose

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

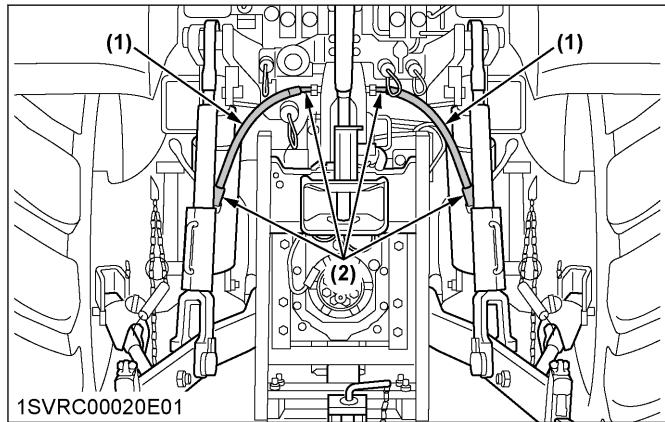


(1) Front differential lock hose  
(2) Hose clamps

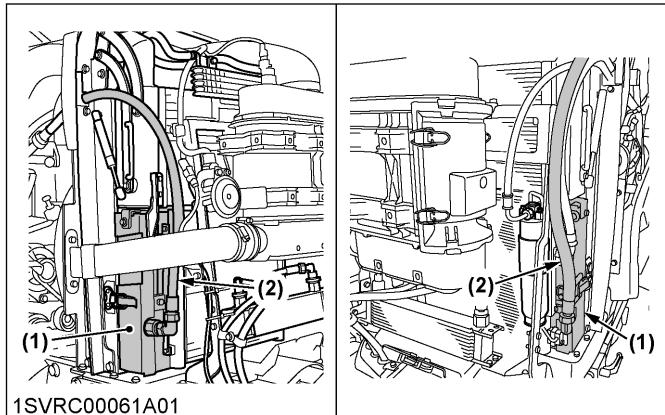
## 13. Checking lift cylinder hose

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

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



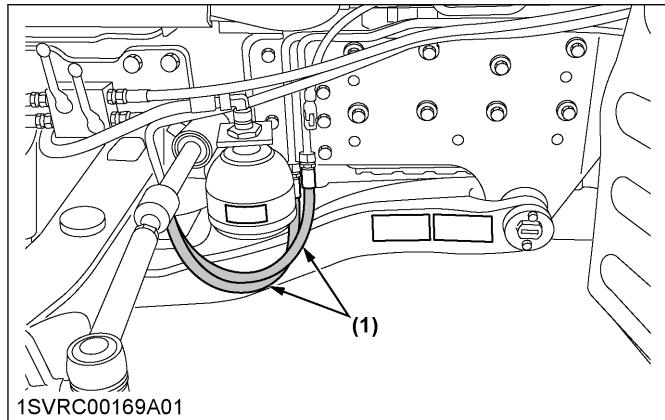
(1) Hose  
(2) Hose clamps



(1) Oil cooler  
(2) Oil cooler line

## 14. Checking power steering line

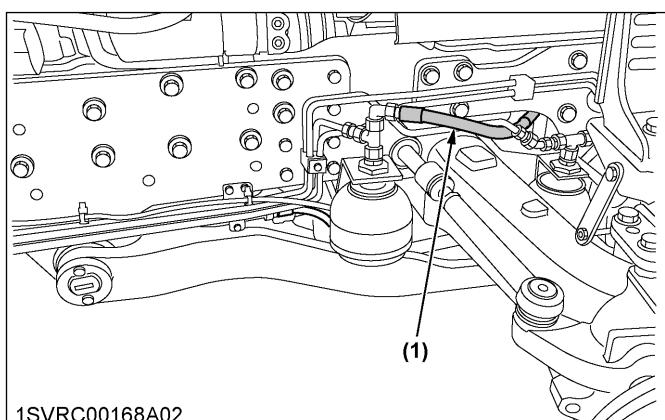
- Check to see that all lines and hose clamps are tight and not damaged.
- If the hoses and clamps are found to be worn or damaged, replace or repair them at once.



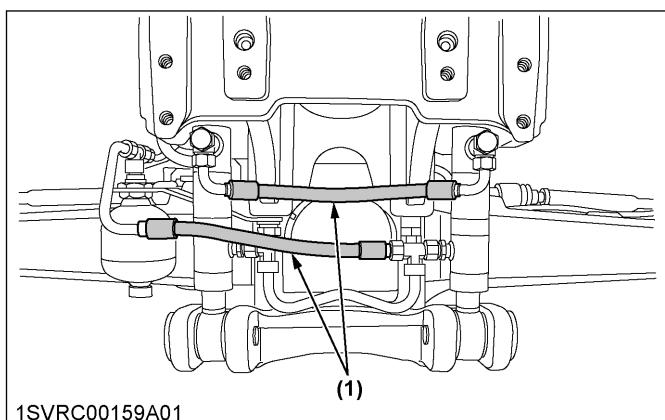
(1) Power steering pressure hoses

## 15. Checking the oil cooler line

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



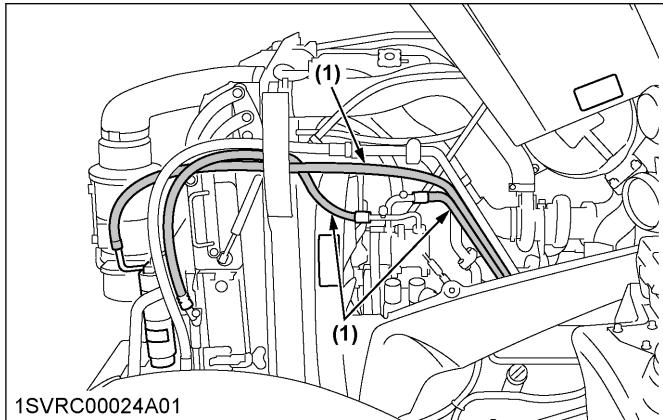
(1) Front suspension pressure hoses



(1) Front suspension pressure hoses

## 17. Checking air conditioner pipe and hose

- Check to see that all lines and hose clamps are tight and not damaged.
- If hoses and clamps are found to be worn or damaged, consult your local KUBOTA Dealer for this service.



(1) Air conditioner hoses

## 18. Checking air conditioner drive belt

### **WARNING**

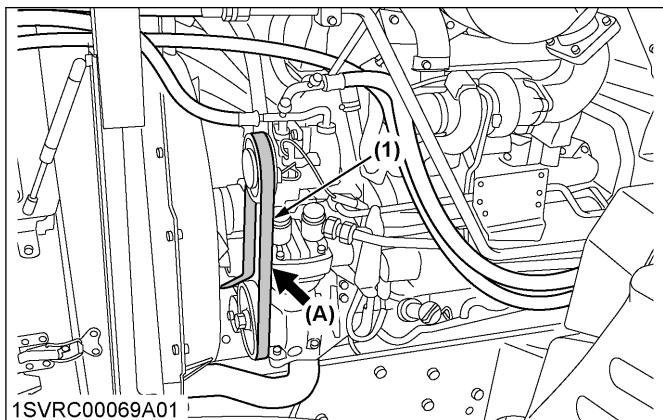
To avoid personal injury or death:

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

Proper belt tension	A deflection of between 10 to 12 mm when the belt is pressed (98 N / 10 kgf) in the middle of the span.
---------------------	---------------------------------------------------------------------------------------------------------

The belt is of self-tension type and needs no readjustment. Check the belt tension in the following procedure. If the deflection is out of spec or the belt itself is found damaged, replace it with a new one.

- Stop the engine and remove the key.
- Press on the spot indicated in the following figure to measure the deflection.

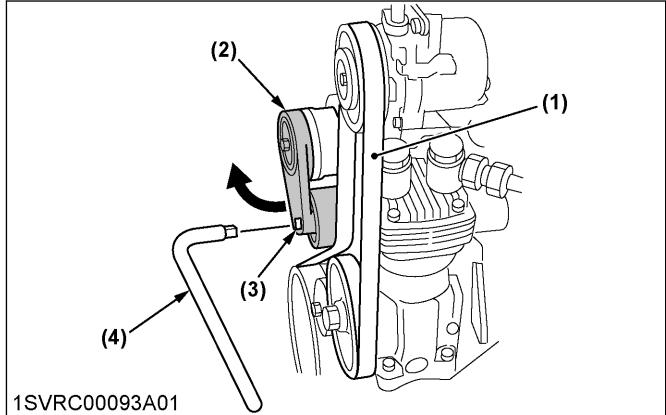


(1) Air conditioner belt

(A) Check the belt tension

### 18.1 Replacing the belt

- Apply a square wrench into the square hole of the air conditioner belt self-tension arm.
- Using the wrench in place, unlock the self-tension arm and undo the belt from the compressor pulley.
- In applying a new belt, also unlock the self-tension arm with the same wrench.



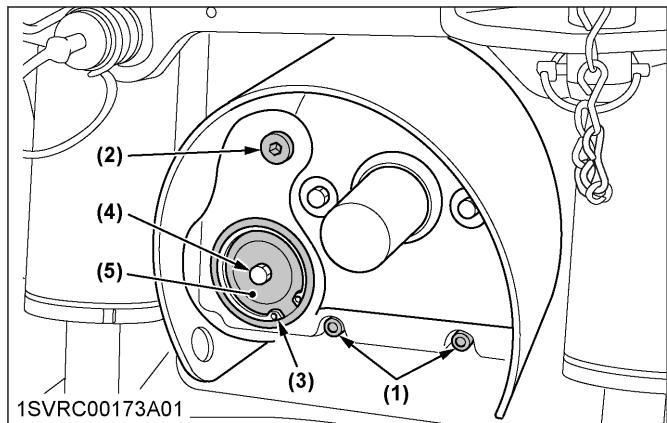
(1) Air conditioner belt  
 (2) Self-tension arm  
 (3) Square hole  
 (4) Square wrench

## 19. Changing front PTO oil (if equipped)

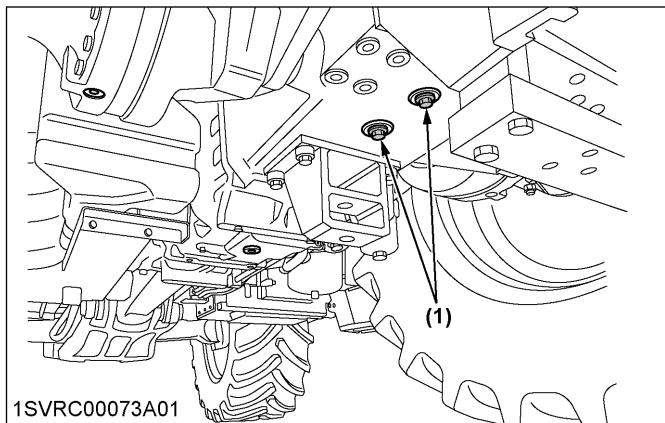
### Cleaning oil filter

- To drain the used oil, remove the drain and filling plug at the front PTO case and drain the oil completely into the oil pan.
- After draining, reinstall the drain plug.
- Remove the internal retaining ring and loosen the M8 bolt to remove the cover.
- Extract the oil filter from the pump unit and clean it.
- Reassemble the removal parts.
- Fill with the new oil up to the lower rim of filling plug port.  
(See LUBRICANTS, FUEL AND COOLANT on page 252.)
- After filling reinstall the filling plug.

Oil capacity	2.7 L
--------------	-------



- (1) Drain plug
- (2) Filling plug
- (3) Internal retaining ring
- (4) M8 bolt
- (5) Pump unit



(1) Drain plug

## EVERY 1000 HOURS

### 1. Changing transmission fluid

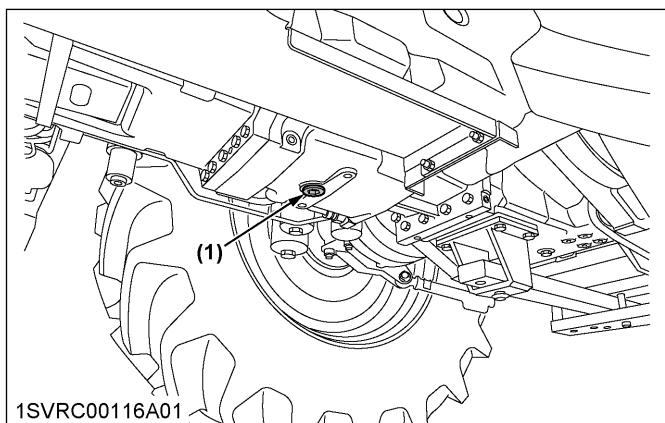
#### **WARNING**

To avoid personal injury or death:

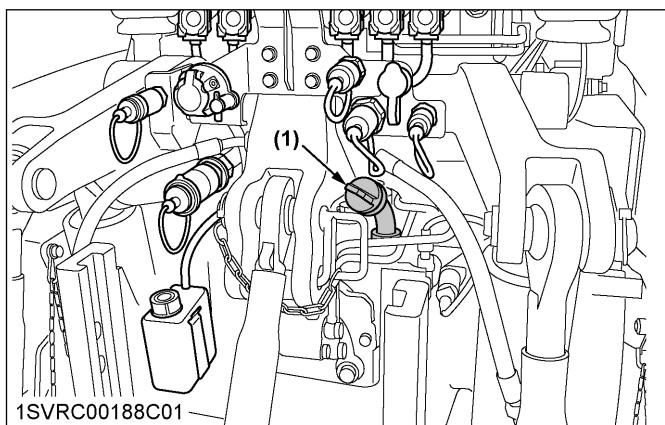
- Allow the engine to cool down sufficiently; oil can be hot and can burn.

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 oil up to the upper line of the sight glass.  
(See LUBRICANTS, FUEL AND COOLANT on page 252.)
4. After running the engine for a few minutes, stop it and wait for 10 minutes.  
Check the oil level again, add oil to the prescribed level.

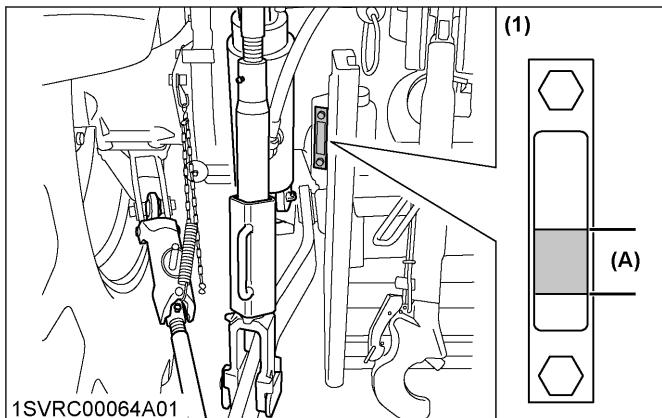
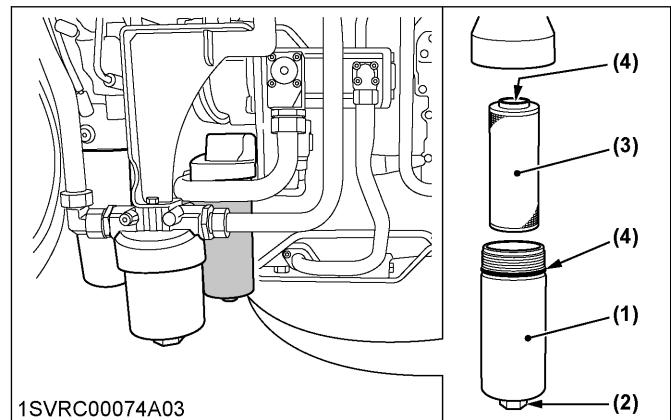
Oil capacity	Power shift model: 85 L CVT model: 80 L
--------------	--------------------------------------------



(1) Drain plug



(1) Filling plug

**Power shift transmission type****IMPORTANT :**

- Do not operate the tractor immediately after changing the transmission fluid.

Run the engine at medium speed for a few minutes to prevent damage to the transmission.

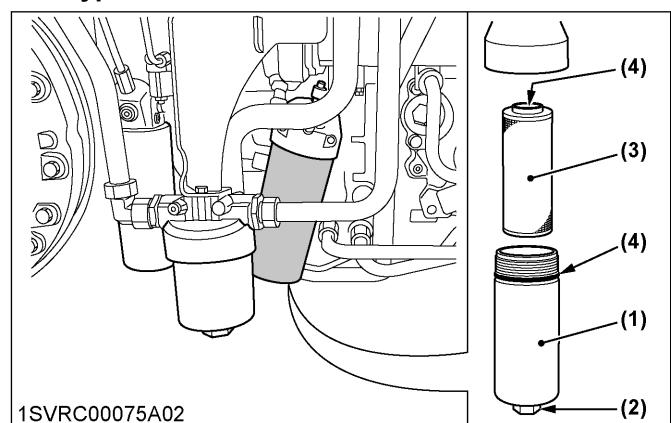
## 2. Replacing transmission oil filter

### **⚠ WARNING**

To avoid personal injury or death:

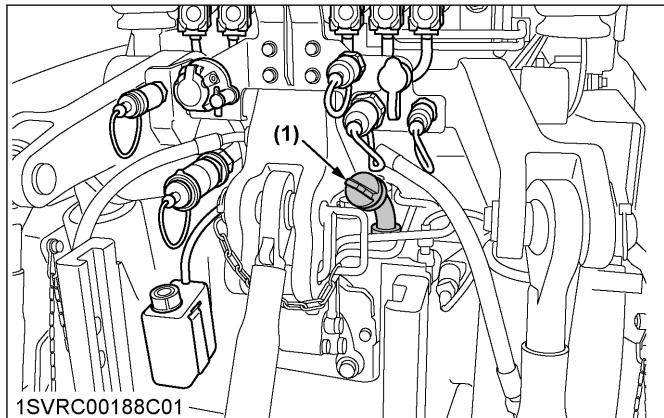
- Be sure to stop the engine before changing the oil filter.
- Allow engine to cool down sufficiently, oil can be hot and can burn.

1. Place the oil pan underneath the transmission oil filter.
2. Using a wrench, remove the filter cover.
3. When oil is no longer dripping from the exposed area, remove the element and replace it with a new one.  
Make sure at this time that the o-ring is mounted on the element mounting part.

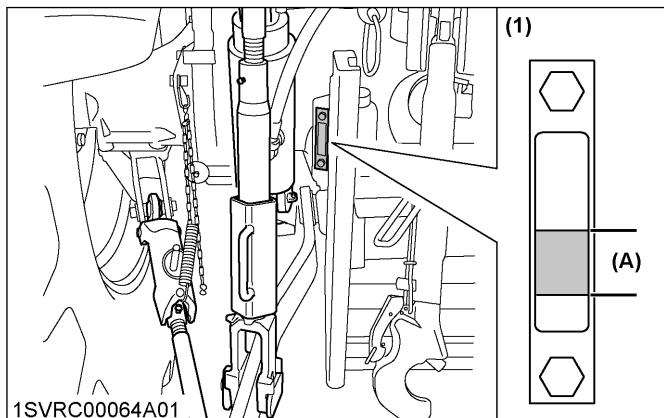
**CVT type**

4. Mount after cleaning the filter cover. If the o-ring is damaged, make sure to replace it.

5. Fill the transmission oil up to the upper line of the sight glass.



(1) Filling plug



(1) Sight glass

(A) Oil level is acceptable within this range

6. After running the engine for a few minutes, stop the engine, wait for 10 minutes and check the oil level again, add oil to the prescribed level.  
 7. Make sure that the transmission fluid does not leak past the seal on the filter.

**NOTE :**

- Check the transmission fluid level under the following conditions:
  - a. Park the machine on a flat surface.
  - b. Lower the rear 3-point hitch and front end loader (if equipped).
  - c. Raise the front 3-point hitch (if equipped).
  - d. Disconnect all remote control valve hoses.
  - e. Stop engine and wait for 10 minutes.

### 3. Changing rear axle case oil

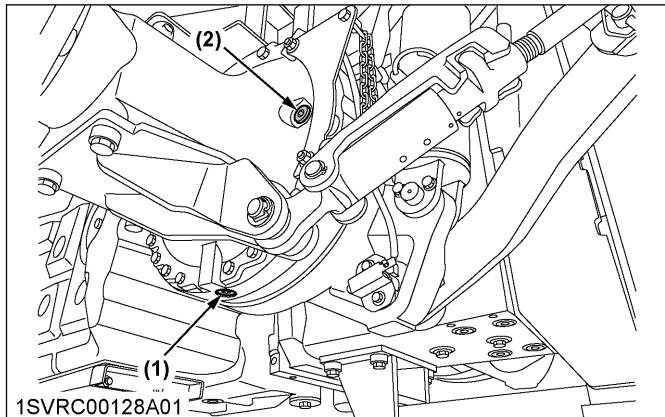
#### **WARNING**

To avoid personal injury or death:

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

1. To drain the used oil, remove the drain plug and filling plug at the front axle case and drain the oil completely into the oil pan.
2. After draining, reinstall the drain plug.
3. Fill with the new oil up to the lower rim of filling plug port.  
 (See LUBRICANTS, FUEL AND COOLANT on page 252.)
4. After filling, reinstall the filling plug.

Oil capacity	10 L for each side
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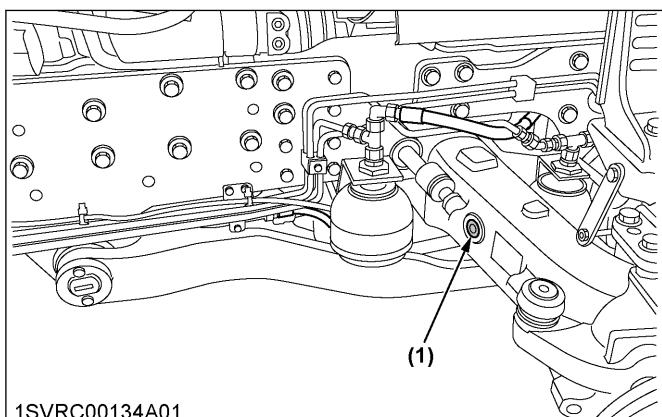
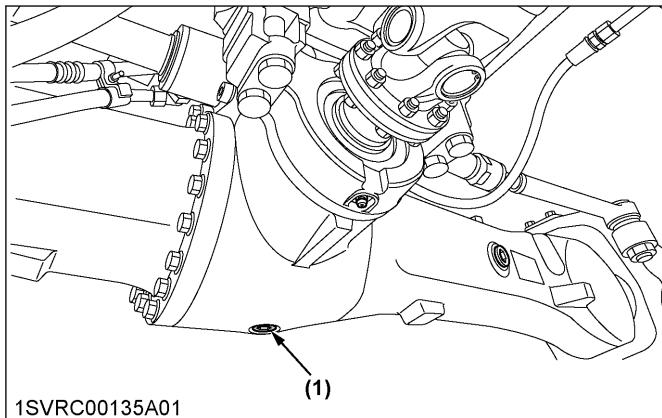
(1) Drain plug  
 (2) Filling plug

### 4. Changing front differential case oil

1. To drain the used oil, remove the drain and filling plug at the front differential case and drain the oil completely into the oil pan.
2. After draining, reinstall the drain plug.
3. Fill with new oil up to the lower rim of filling plug port.  
 (See LUBRICANTS, FUEL AND COOLANT on page 252.)

- After filling, reinstall the filling plug.

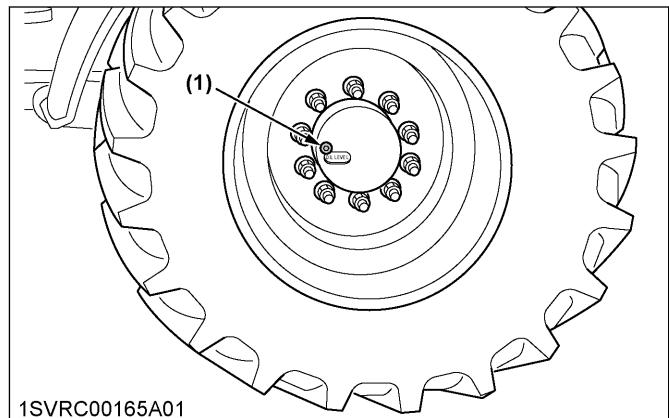
Oil capacity	8.5 L
--------------	-------



## 5. Changing front axle gear case oil

- Stop the tractor so that the gear case plug is at the bottom.
- Remove the plug and drain the oil completely into the oil pan.
- After draining the oil, rotate the gear case so that plug is aligned horizontally with the centre of the gear case.
- Fill with new oil up to the lower rim of the port.  
(See LUBRICANTS, FUEL AND COOLANT on page 252.)
- After filling, reinstall the plug.

Oil capacity	2.1 L for each side
--------------	---------------------



## 6. 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 primary element and secondary element

(See Cleaning air cleaner primary element on page 266.)

### 2. Checking exhaust manifold

Consult your local KUBOTA Dealer for this service.

## EVERY 1500 HOURS

### 1. Cleaning fuel injector nozzle tip

Consult your local KUBOTA Dealer for this service.

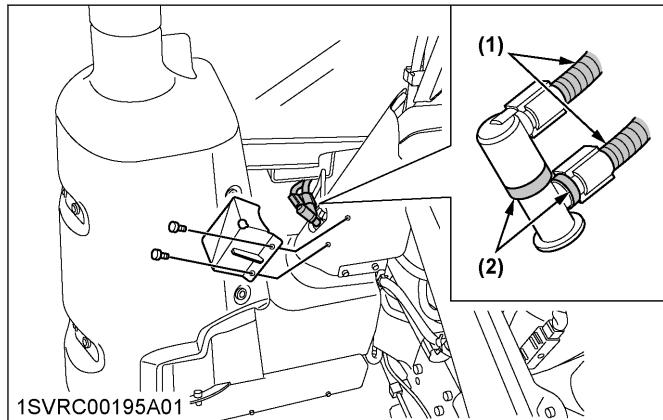
### 2. Checking DEF/AdBlue® injector tip

Consult your local KUBOTA Dealer for this service.

### 3. Checking DEF/AdBlue® line

- Check to see that all lines from the DEF/AdBlue® injector to the tank are securely connected and not damaged.

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



(1) DEF/AdBlue® lines  
(2) Clamp bands

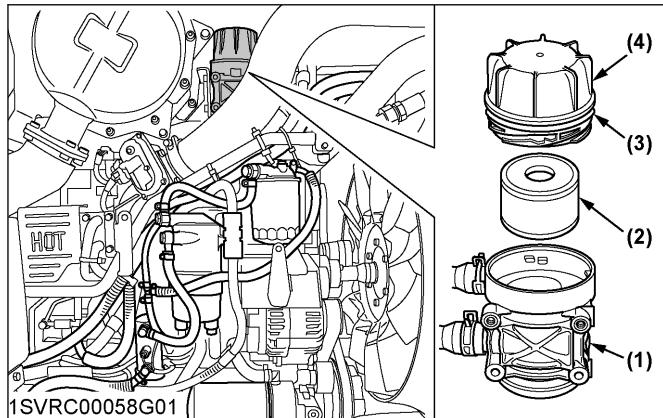
## 4. Replacing oil separator element

### **WARNING**

To avoid personal injury or death:

- Be sure to stop the engine before replacing the oil separator element.

1. Remove the cover and take out the element. Wipe off the oil and the carbon from inside the case with a clean rag.
2. Fit in a new oil separator element.
3. Tighten the cover.



(1) Body  
(2) Oil separator element  
(3) Gasket  
(4) Cover

## 5. Checking positive crankcase ventilation (PCV) valve

Consult your local KUBOTA Dealer for this service.

## 6. Checking and cleaning EGR cooler

Consult your local KUBOTA Dealer for this service.

## 7. Checking accumulator (front suspension type)

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**

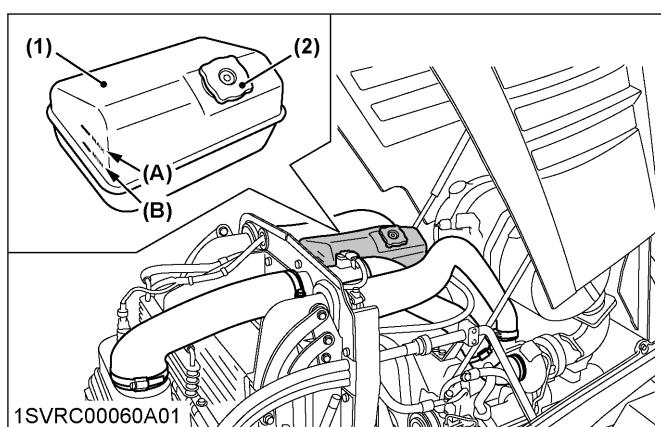
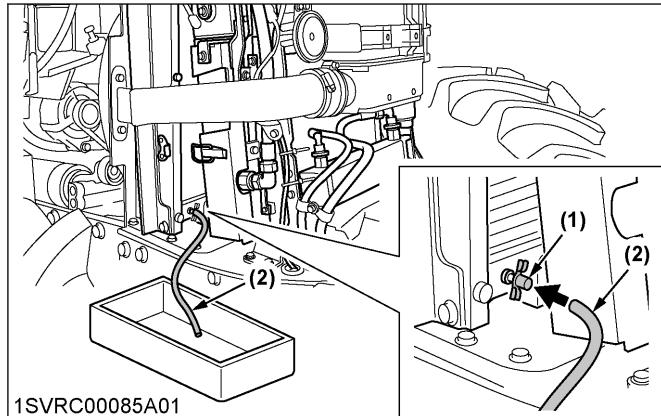
To avoid personal injury or death:

- 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 and let it cool down.
2. Connect the extension drain hose to the drain plug.
3. To drain the coolant, loosen the drain plug and remove the radiator cap. The radiator cap must be removed to completely drain the coolant.
4. After all coolant is drained, tighten the drain plug securely.
5. Fill with clean soft water and cooling system cleaner.
6. Follow directions of the cleaner instruction.
7. After flushing, fill with clean soft water and antifreeze up to the upper line of recovery tank.
8. Install the radiator cap securely.
9. Start and operate the engine for a few minutes.
10. Stop the engine. Check coolant level and add coolant if necessary.

## 11. Properly dispose of used coolant.

Coolant capacity	24 L
------------------	------

**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.

**NOTE :**

- On CAB type machines, coolant circulates through the heater. This means that one more litre or so of coolant is required. In changing coolant, pour coolant up to the filler port of the recovery tank. Turn on the heater (shift the temperature control dial toward "WARM"), and run the engine for a while in order to warm the coolant. Then stop the engine. When the coolant has cooled down, some of the coolant in the recovery tank is sucked.

Now the recovery tank is appropriately filled with coolant.

**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 SAE J1034 standard, more specifically also to SAE J814c.

Vol % antifreeze	Freezing point	Boiling point *
	°C	°C
50	-37	108

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

5. Adding the LLC
- Add only water if the mixture level is reduced by evaporation.
  - 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 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.

### 3. Replacing WABCO cartridge

Consult your local KUBOTA Dealer for this service.

## EVERY 3000 HOURS

### 1. Checking turbocharger

Consult your local KUBOTA Dealer for this service.

### 2. Checking supply pump

Consult your local KUBOTA Dealer for this service.

### 3. Checking and cleaning EGR system

Consult your local KUBOTA Dealer for this service.

### 4. Cleaning DPF muffler

- Remove the ash.

The longer the DPF operates, the more ash (burnt residue) is collected in the filter. Too much ash build-up adversely affects the DPF performance. Consult your local KUBOTA Dealer to clean the filter.

**IMPORTANT :**

- The DPF needs to be cleaned with a specific cleaning device. Do not disassemble the DPF for cleaning or attempt to clean it yourself. Consult your local KUBOTA Dealer.

### 5. Checking DEF/AdBlue® injector

Consult your local KUBOTA Dealer for this service.

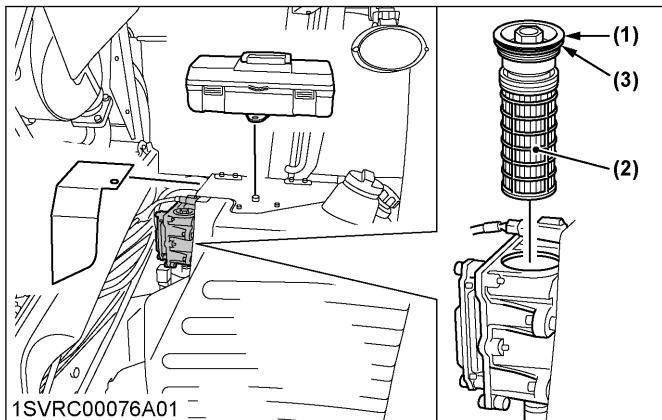
### 6. Replacing DEF/AdBlue® pump filter

- Clean around the filter cover.
- Loosen the filter cover and detach the cover and the element together.

3. Draw the element out of the cover and replace the element with a new one.

**NOTE :**

- Even after stopping the engine, the injector cooling DEF/AdBlue® fluid continues to circulate through the circuit for a couple of minutes.
- When this circulation has ended, do the replacement job. During cooling, the fluid's circulating noise is heard.
- Do not apply oil to the o-ring of the cover.



(1) Filter cover  
(2) Element  
(3) O-ring

**EVERY 1 YEAR****1. Checking DPF differential pressure sensor pipe**

Consult your local KUBOTA Dealer for this service.

**2. Checking EGR pipe**

Consult your local KUBOTA Dealer for this service.

**3. Checking oil separator hose**

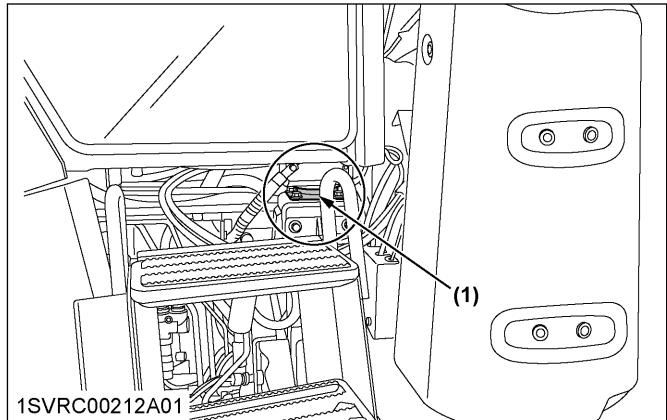
Consult your local KUBOTA Dealer for this service.

**4. Checking anti-frost heater for oil separator (if equipped)**

Consult your local KUBOTA Dealer for this service.

**5. Checking CAB isolation cushion**

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



(1) CAB isolation cushion

**EVERY 2 YEARS****1. Replacing DPF differential pressure sensor hose**

Consult your local KUBOTA Dealer for this service.

**2. Replacing boost sensor hose**

Consult your local KUBOTA Dealer for this service.

**EVERY 3 YEARS****1. Replacing handbrake cable**

Consult your local KUBOTA Dealer for this service.

**EVERY 4 YEARS****1. Replacing radiator hose (water pipes)**

Replace the hoses and clamps.  
(See Checking radiator hose and clamp on page 281.)

**2. Replacing the fuel hose**

Consult your local KUBOTA Dealer for this service.

**3. Replacing intake air line**

Consult your local KUBOTA Dealer for this service.

**4. Replacing oil separator hose**

Consult your local KUBOTA Dealer for this service.

**5. Replacing the oil cooler line**

Consult your local KUBOTA Dealer for this service.



### 3. Replacing fuses

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

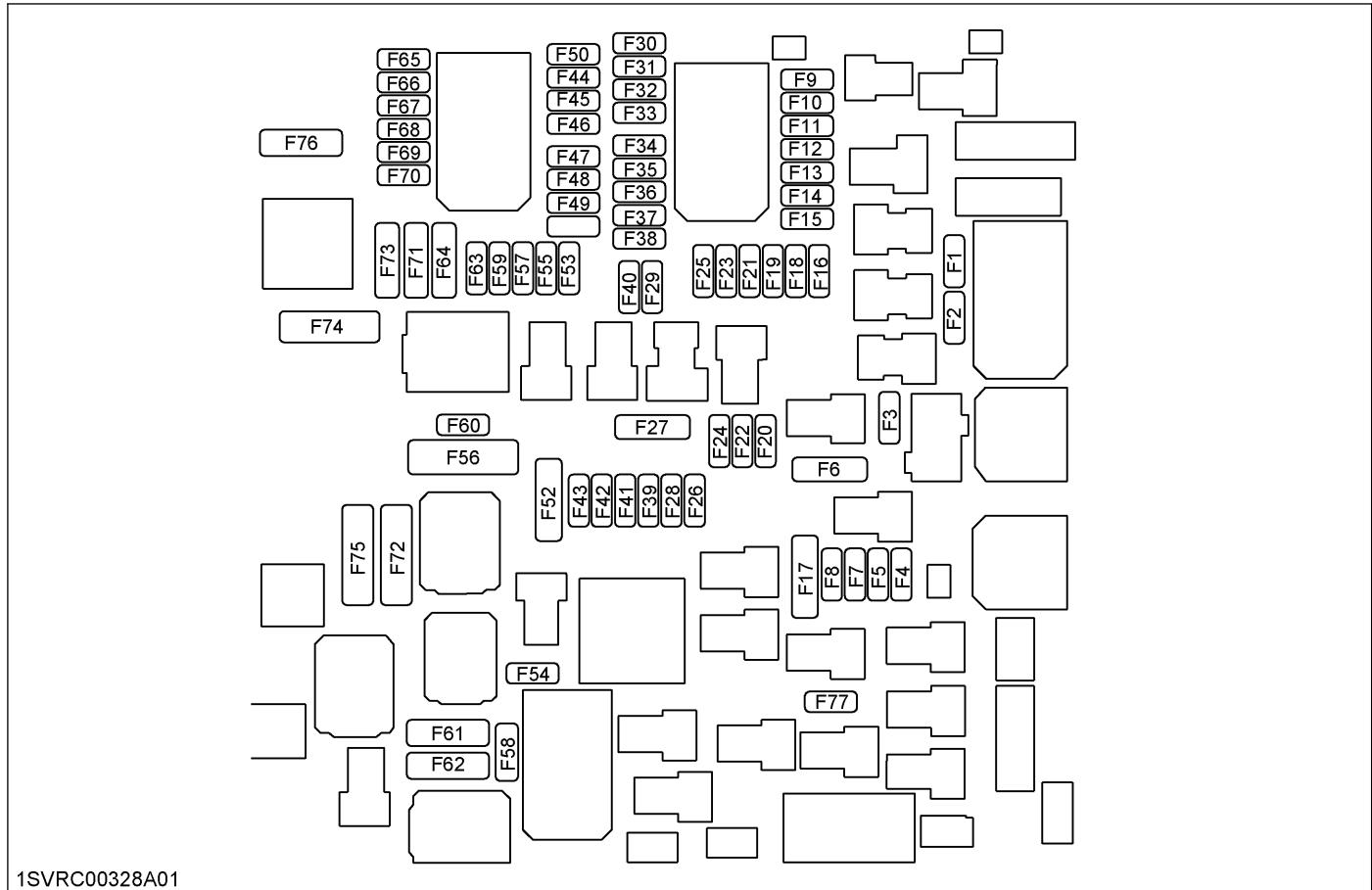
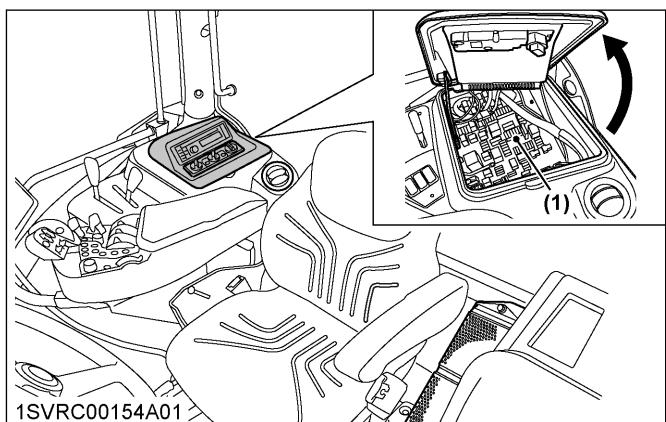
A blown fuse indicates that there is an overload or short somewhere in the electrical system.

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 302.)



#### Protected circuit

Fuse No.	Capacity (A)	Protected circuit
F1	10	Brake light trailer
F2	7.5	Marker lights right
F3	7.5	Marker lights left

(Continued)

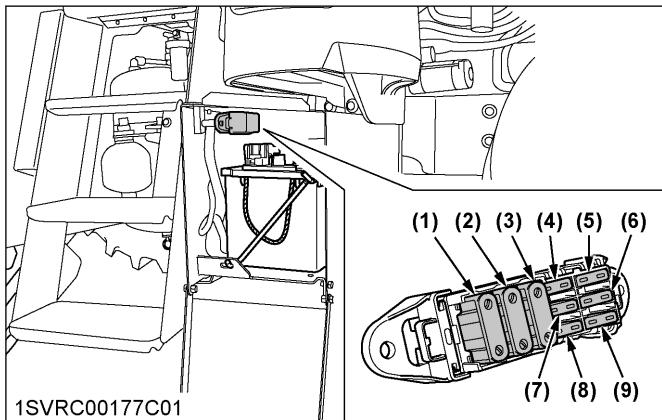
Fuse No.	Capacity (A)	Protected circuit
F4	5	Auto steering
F5	10	Diagnostic connector
F6	25	ISOBUS ecu power
F7	15	High beam

(Continued)

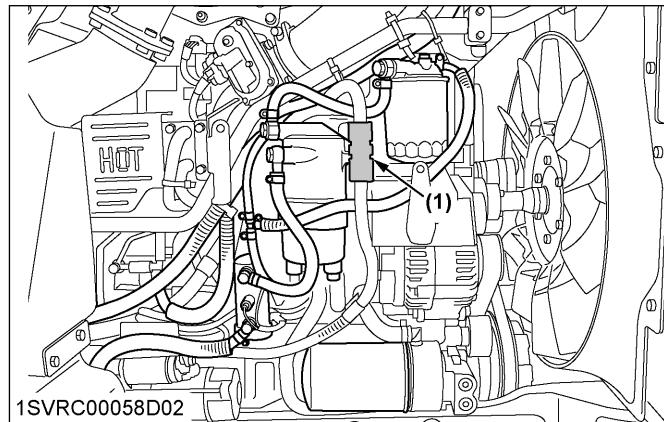
Fuse No.	Capacity (A)	Protected circuit
F8	15	Low beam
F9	7.5	TCU
F10	7.5	VDC
F11	2	Alternator
F12	5	3P socket
F13	5	Front loader
F14	5	Light switch
F15	5	A/C-system
F16	10	Wiper front and demister
F17	30	Work light roof front
F18	10	Mirror heating
F19	15	Seat
F20	15	Main fuse
F21	5	Ignition
F22	15	Brake light
F23	10	Signal socket
F24	10	A/C-compressor
F25	7.5	Auto steering iBox
F26	15	Work light C-pillar
F27	30	Main fuse
F28	15	Work light A-pillar
F29	10	Dashboard
F30	15	Back lamp
F31	2	Terminal
F32	5	VCU2
F33	5	Switch panel
F34	5	Armrest unit
F35		
F36	5	ECU
F37	7.5	TCU
F38	7.5	Auto steer valve
F39	15	Work light roof rear
F40	10	VCU1
F41	15	Beacon light
F42	15	Wiper rear/CAB light
F43	5	GPS antenna
F44	5	Battery main relay
F45	5	Dashboard
F46	5	Radio

(Continued)

Fuse No.	Capacity (A)	Protected circuit
F47		
F48	5	Armrest unit
F49	5	VCU1
F50	5	Battery main switch OFF
F51	5	VCU2
F52	30	Work light bonnet
F53	7.5	TCU
F54		
F55	7.5	VDC
F56	40	A/C blower
F57	7.5	Horn
F58	15	Trailer brake pneumatic
F59	7.5	Terminal
F60	15	Flasher relay
F61	20	Air dryer
F62	30	Demister
F63	10	Ignition switch
F64		
F65	15	Cigarette lighter
F66	15	Front loader
F67	15	Trailer socket rear
F68	15	Trailer socket front
F69	15	Trailer brake pneumatic
F70		
F71	25	3P-socket
F72	70	Main fuse
F73	30	VCU 2
F74	70	Main fuse ignition
F75	60	ISOBUS actuator power
F76	25	3P-socket No. 2
F77	5	TECU

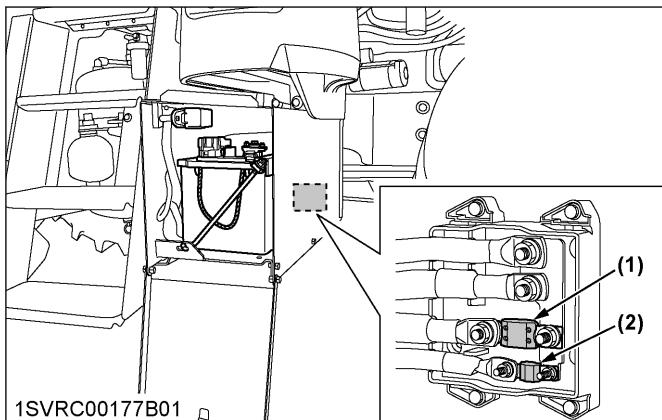
**Protected circuit**

Fuse No.	Capacity (A)	Protected circuit
1	150 A	Electrical CAB
2	80 A	Power train

**Protected circuit**

Fuse No.	Capacity (A)	Protected circuit
1	30 A	Spare
2	30 A	ACU
3	60 A	Glow
4	5 A	Sedimentter
5	20 A	ACU comp
6	30 A	ECU
7	10 A	NOX
8	15 A	30 Peramanen
9	5 A	EGR

Fuse No.	Capacity (A)	Protected circuit
1	175 A (with 150 A alternator)	Alternator
	225 A (with 200 A alternator)	

**Protected circuit**

## 4. Replacing light bulb

Light	Capacity
Headlight	60/55 W
Repeat headlight	60/55 W
Direction Indicator and hazard light (front)	21 W
Direction Indicator and hazard light (rear fender)	LED
Front position light	10 W
Brake stop light	LED
Rear light	LED
Rear registration plate light	5 W
Front work light (bonnet)	55 W
Front work light (CAB outer roof)	55 W
Front work light (CAB front pillar)	24 W
Rear work light (CAB outer roof)	55 W
Rear work light (CAB rear pillar)	24 W
Dome light (room lamp)	5 W
Instrument panel light	3 W

## 5. Replacing head lamp

### CAUTION

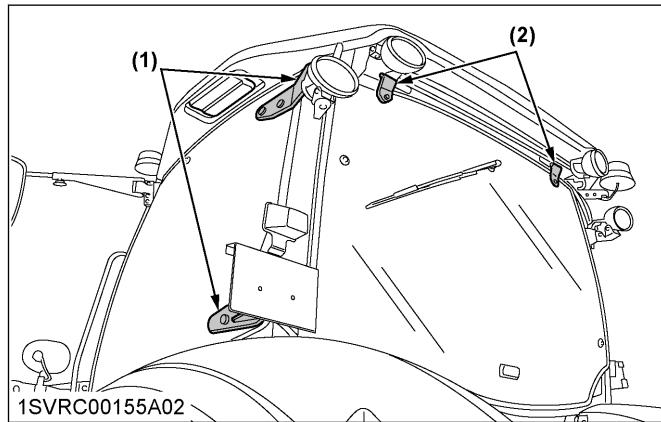
To avoid personal injury:

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

### IMPORTANT :

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

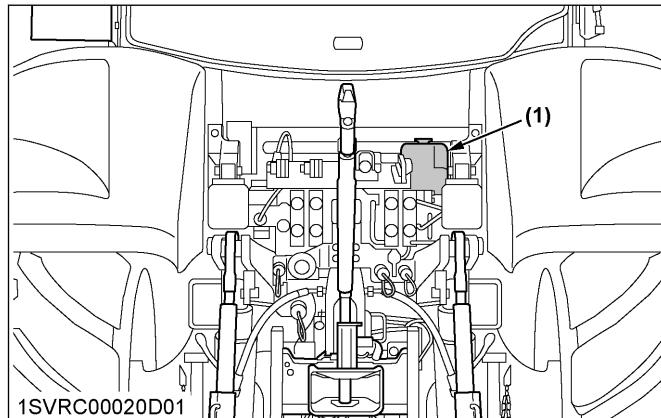
## 6. Lubricating points for door and window



(1) Door hinge  
(2) Rear window hinge

## 7. Adding washer liquid

Add a proper amount of windscreens washer liquid.



(1) Washer liquid tank

Washer tank capacity	2.0 L
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## 8. Checking amount of refrigerant (gas)

### WARNING

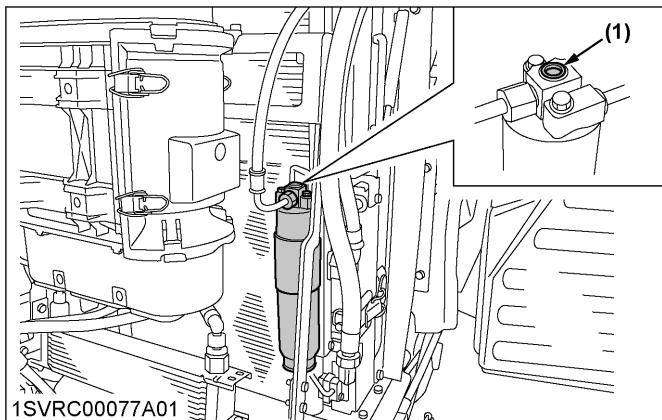
To avoid personal injury or death:

- 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 refill.

#### Checking procedure

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



(1) Sight glass

	Proper	Little or no air bubbles in the refrigerant flow.
	Low	Lots of air bubbles in the refrigerant flow (air bubbles or foam passing continuously).
	Overfull or no refrigerant:	Colourless and transparent.

#### Fluorinated greenhouse gases

Air conditioner gas contains fluorinated greenhouse gases.

Industrial designation	Quantity (kg)	CO <sub>2</sub> equivalent (ton)	GWP
HFC-134a	1.0	1.43	1430

(Global warning potential: GWP)

#### IMPORTANT :

- Charge only with R134a not R12 refrigerant.

## 9. Washing the tractor

Misuse of the high pressure washer may cause personal injury or machine damage, as well as the failure or malfunction of the machine. Follow the instruction manual and the labels on the high pressure washer, and use it properly.

### CAUTION

#### To avoid personal injury:

- To prevent the machine from being damaged, set the washing nozzle to spreading water, and keep the distance 2 m away from the machine to clean it. When the water is directed at a pin point area, or when the machine is washed from too close a position with a high pressure flow:
  - The cover of the wirings may be damaged or the wiring may be cut off, causing fire.
  - The hydraulic hose may be damaged, causing a high pressure oil blow out. This may cause injury.

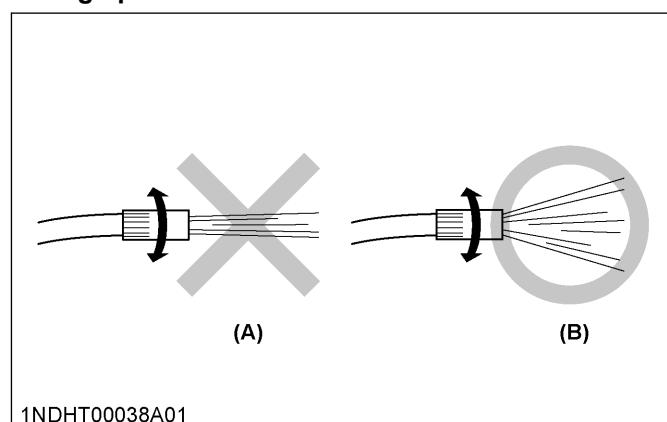
#### IMPORTANT :

- If the machine is not washed as specified, the following peel-off, damage or malfunction may result.

#### Examples:

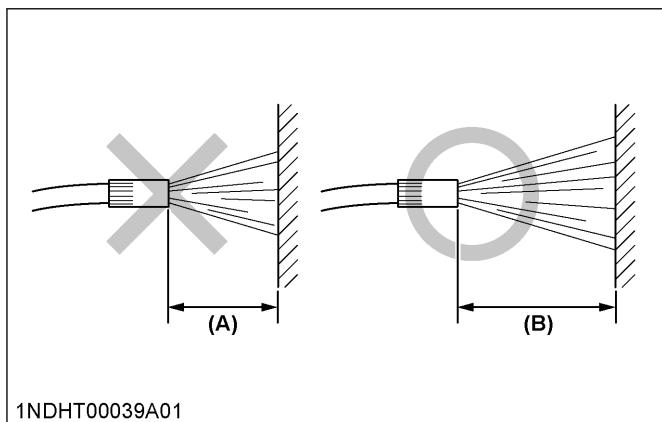
- The stickers or labels may peel away.
- The electronic components, engine compartment, transmission case, CAB and others may get wet inside and adversely affected.
- The crawlers, tyres, oil seals and other rubber based components, the decorative covers and other plastic-based components, and the windows and other glass-based components may get damaged.
- The paints, coatings and platings may peel away.

#### No high pressure washer



1NDHT00038A01

- (A) High pressure  
(B) Low pressure

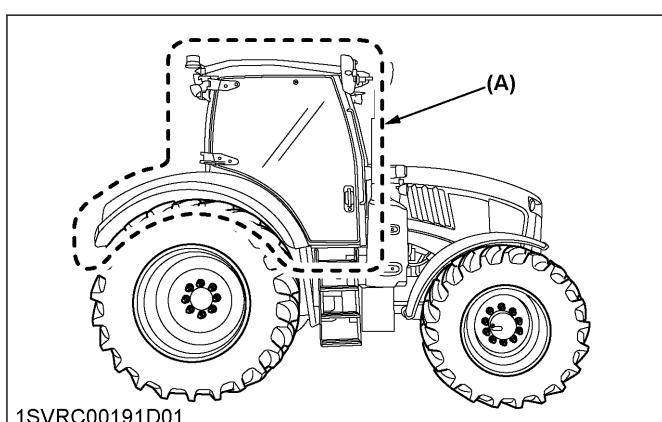
**No pressure washer at short range**

(A) Less than 2 m

(B) More than 2 m

**IMPORTANT :**

- Do not apply high pressure water to the glass part of the CAB or the roof part while washing. Please lower the pressure or spread the water flow.  
It will cause water leakage inside the CAB and cause damage to electrical parts.



(1) No high pressure washer

# 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. Park tractors equipped with the front suspension system with the suspension cylinders in the lowest position using manual control mode.
8. Remove the battery from the tractor. Store the battery following the battery storage procedures.  
(See Checking battery condition on page 270.)
9. Preferably, drain the DEF/AdBlue® out of its tank and store the fluid in another specific tank.  
Details regarding the long-term storage of DEF/AdBlue® can be found in a different section.  
(See Storing and handling DEF/AdBlue® on page 134.)
10. Keep the tractor in a dry place where the tractor is sheltered from the elements. Cover the tractor.
11. 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.
- Before removing the battery cable, make sure that the battery switch indicator is off. Do not remove the cable while the indicator is lit or blinking. For handling of the battery switch, refer to Setting the battery switch on page 134.
- 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, DEF/AdBlue® 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 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

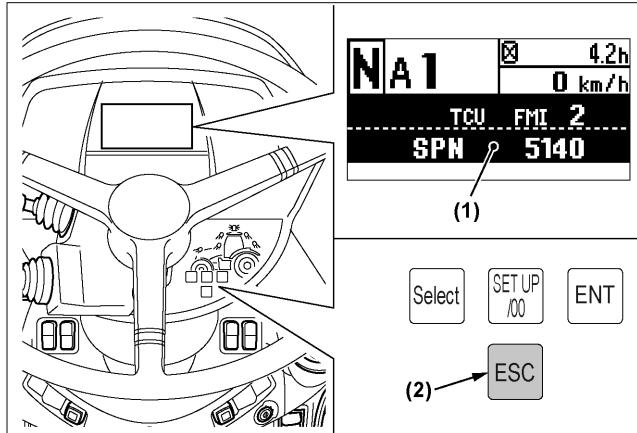
## ELECTRIC CONTROLLER TROUBLE SHOOTING

If any of the electric control system has trouble or miss-operation happens, an error or warning code appears on the LCD of the instrument panel. An error/warning message appears on the K-monitor as well (if equipped).

In some case, the buzzer starts sounding or the master caution LCD indicator lights up.

If the error/warning code appears, please take the necessary action according to the following table.

An error/warning code on the LCD can be made to disappear from the LCD by pressing the [ESC] button. If another trouble happens, the error/warning code re-appears with another trouble code. When this happens, this error/warning code and the immediately previous error are both indicated at 2-seconds intervals.

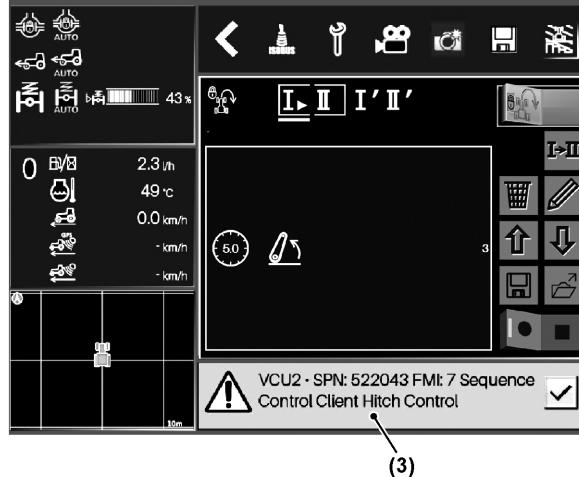


1SVRC00234A01

(1) Warning or error code on LCD

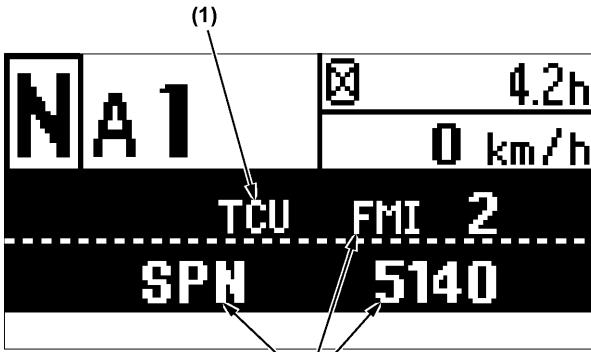
(2) ESC button

(3) Warning or error message on K-monitor

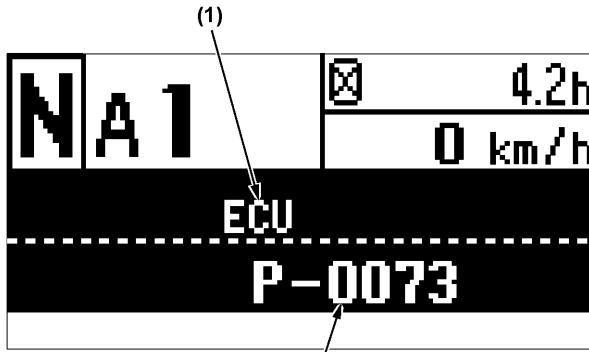


(3)

### Error and Warning code display on LCD



1SVRC00235A01



(1) Name of electric control unit

(2) Error or warning code for except engine

(3) Error or warning code for engine

The abbreviated electric control unit name shows which control unit is in trouble.

The error/warning code is identified with a combination of FMI and SPN or P or U code.

The meaning of each electric control unit name is listed in the following table.

Abbreviation name	Name of electric control unit
ECU	Engine control unit
ACU	After treatment control unit
TCU	Transmission control unit
VDC	Vehicle drive control unit
VCU1	Vehicle control unit 1
VCU2	Vehicle control unit 2
ARU	Armrest unit
CEU	Central electric control unit
TECU	Tractor ECU (ISO-BUS)
SWP	Switch panel
NAC	Navigation control
SC	Steering control
eTCV	Electric trailer control valve

**Table of error/warning code**

If an error/warning code which is not indicated in the following table is indicated, please contact your authorized local KUBOTA Dealer.

Engine control unit	Error or warning code		Type of trouble	Action
	SPN	FMI		
ECU	P0217		Engine overheat.	Reduce work load. Check cooling system; as coolant, radiator net, fan belt tension.
	110	0		
ACU	P204F		DEF/AdBlue® level is too low.	Check DEF/AdBlue® level. Check tank for leakage.
	1761	1		
ACU	P20F5		DEF/AdBlue® level is too low.	Check DEF/AdBlue® level. Check tank for leakage.
	4350	15		
ACU	P208B		DEF/AdBlue® freeze warning.	Please stop the engine once and restart it after 10 seconds. If the error code remains, please contact your dealer.
	5435	12		
VCU1	520350	19	Communication error of DBM.	Check the fuse and wiring of the dashboard. If there is no damage, contact your dealer.
VCU1	520351	19	Communication error of VCU2.	Check the fuse and wiring of VCU2. If there is no damage, contact your dealer.
VCU1	520352	19	Communication error of ECU.	Check the fuse and wiring of ECU. If there is no damage, contact your dealer.
VCU1	520353	19	Communication error of SWP.	Check the fuse and wiring of switch panel. If there is no damage, contact your dealer.
VCU1	520354	19	Communication error of TCU.	Check the fuse and wiring of TCU. If there is no damage, contact your dealer.
VCU1	520355	19	Communication error of VDC.	Check the fuse and wiring of VDC. If there is no damage, contact your dealer.
VCU1	520358	19	Communication error of ACU.	Check the fuse and wiring of ACU. If there is no damage, contact your dealer.
VCU1	521586	19	Communication error of eTCV	Check the fuse and wiring of eTCV. If there is no damage, contact your dealer.

(Continued)

## TROUBLESHOOTING

Engine control unit	Error or warning code		Type of trouble	Action
	SPN	FMI		
ARU	168	0	Battery voltage is too high.	Check the battery specification. Check charging system.
ARU	168	1	Battery voltage is too low.	Charge or replace.
ARU	581	23	Ratio lock button malfunction.	Ratio lock button may be stuck. If it is stuck, contact your dealer.
ARU	604	23	Shuttle neutral button malfunction.	Shuttle neutral button may be stuck. If it is stuck, contact your dealer.
ARU	522001	23	Remote control valve lock button malfunction.	Remote control valve lock button may be stuck. If it is stuck, contact your dealer.
ARU	522003	23	3-point hitch lock button malfunction.	3-point hitch lock button may be stuck. If it is stuck, contact your dealer.
ARU	522004	23	Engine rpm memory button A malfunction.	Engine rpm memory button A may be stuck. If it is stuck, contact your dealer.
ARU	522005	23	Engine rpm memory button B malfunction.	Engine rpm memory button B may be stuck. If it is stuck, contact your dealer.
ARU	522007	23	Headland management system field in button malfunction.	Headland management system field "IN" button may be stuck. If it is stuck, contact your dealer.
ARU	522008	23	Headland management system field out button malfunction.	Headland management system field "OUT" button may be stuck. If it is stuck, contact your dealer.
ARU	522010	23	Cruise control button malfunction.	Cruise control button may be stuck. If it is stuck, contact your dealer.
ARU	522011	23	3-point quick raise button malfunction.	3-point quick raise button may be stuck. If it is stuck, contact your dealer.
ARU	522012	23	3-point quick lower button malfunction.	3-point quick lower button may be stuck. If it is stuck, contact your dealer.
ARU	522013	23	Shuttle forward button malfunction.	Shuttle forward button may be stuck. If it is stuck, contact your dealer.
ARU	522014	23	Shuttle reverse button malfunction.	Shuttle reverse button may be stuck. If it is stuck, contact your dealer.
ARU	522015	23	[ESC] button malfunction.	[ESC] button may be stuck. If it is stuck, contact your dealer.
ARU	522016	23	Limp home switch malfunction.	Limp home switch may be stuck. If it is stuck, contact your dealer.
ARU	522027	23	Selection button for remote control valve and loader malfunction.	Selection button for remote control valve and loader may be stuck. If it is stuck, contact your dealer.
ARU	522028	23	Joystick lock button malfunction.	Joystick lock button may be stuck. If it is stuck, contact your dealer.
ARU	522029	23	Mode shift button malfunction.	Mode shift button may be stuck. If it is stuck, contact your dealer.
ARU	522030	23	Shuttle enable button malfunction.	Check shuttle enable button. If it is stuck, contact your dealer.
ARU	522034	23	4WD button malfunction.	Check the 4WD button. If it is stuck, contact your dealer.
ARU	522035	23	Differential lock button malfunction.	Differential lock button may be stuck. If it is stuck, contact your dealer.
ARU	522042	23	Loader 3rd/4th function button malfunction.	Loader 3rd/4th function button may be stuck. If it is stuck, contact your dealer.

(Continued)

Engine control unit	Error or warning code		Type of trouble	Action
	SPN	FMI		
ARU	522117	23	[F1] function button malfunction.	[F1] function button may be stuck. If it is stuck, contact your dealer.
ARU	522217	23	[F2] function button malfunction.	[F2] function button may be stuck. If it is stuck, contact your dealer.
ARU	522317	23	[F3] function button malfunction.	[F3] function button may be stuck. If it is stuck, contact your dealer.
ARU	522417	23	[F4] function button malfunction.	[F4] function button may be stuck. If it is stuck, contact your dealer.
ARU	523037	23	Engine rpm memory adjustment button up malfunction.	Engine rpm memory adjustment button up may be stuck. If it is stuck, contact your dealer.
ARU	523038	23	Engine rpm memory adjustment button down malfunction.	Check the engine rpm memory adjustment button down. If it is stuck, contact your dealer.
VCU2	566	9	Signal error; differential lock switch.	Check if the differential lock switch is stuck open. If the message persists after the switch is closed, contact your dealer.
VCU2	696	19	Communication error of engine speed.	The foot throttle pedal was depressed when engine was started. Release the foot throttle pedal when starting the engine.
VCU2	1873	2, 3 or 4	Rear lift arm sensor error.	Rear lift arm sensor or wiring may be defective; contact your dealer
VCU2	2612	9	Signal error; 4WD switch.	Check if the 4WD switch is stuck open. If the message persists after the switch is closed, contact your dealer.
VCU2	11014	9	Signal error; external switch for 3-point hitch lifting.	Check if the external switch for 3-point hitch lifting is stuck. If not, contact your dealer.
VCU2	11015	9	Signal error; external switch for 3-point hitch lowering.	Check if the external switch for 3-point hitch lowering is stuck. If not, contact your dealer.
VCU2	11031	0 or 1	Right side of draft sensor error.	Restart the engine and check message. If the message persists, contact your dealer.
VCU2	11031	3 or 4	Right side of draft sensor error.	Restart the engine and check message. If the message persists, contact your dealer.
VCU2	11032	0 or 1	Left side of draft sensor error.	Restart the engine and check message. If the message persists, contact your dealer.
VCU2	11032	3 or 4	Left side of draft sensor error.	Restart the engine and check message. If the message persists contact your dealer.
VCU2	521004	19	Communication error of remote valve 1.	Remote valve 1 wiring may be defective; contact your dealer.
VCU2	521005	19	Communication error of remote valve 2.	Remote valve 2 wiring may be defective; contact your dealer.
VCU2	521006	19	Communication error of remote valve 3.	Remote valve 3 wiring may be defective; contact your dealer.
VCU2	521007	19	Communication error of remote valve 4.	Remote valve 4 wiring may be defective; contact your dealer.
VCU2	521008	19	Communication error of remote valve 5.	Remote valve 5 wiring may be defective; contact your dealer.
VCU2	521009	19	Communication error of remote valve 6.	Remote valve 6 wiring may be defective; contact your dealer.
VCU2	521010	9	Signal error; remote control valve switch.	Check if the remote control valve switch is stuck. If the message persists after the switch is released, contact your dealer.

(Continued)

## TROUBLESHOOTING

Engine control unit	Error or warning code		Type of trouble	Action
	SPN	FMI		
VCU2	521011	9	Signal error; remote control valve switch.	Check if the remote control valve switch is stuck. If the message persists after the switch is released, contact your dealer.
VCU2	522004	7	Operational error for PTO lever and PTO switch.	Ensure the PTO gear shift lever and PTO operating mode select lever position are not in neutral position, when the PTO switch is on.
VCU2	522005	9	Signal error; external rear PTO switch left is kept being pressed.	Check if the external rear PTO switch left is stuck. If the message persists after the switch is released, contact your dealer.
VCU2	522006	9	Signal error; external rear PTO switch right.	Check if external rear PTO switch right is stuck. If the message persists after the switch is released, contact your dealer.
VCU2	522007	9	Signal error; rear PTO switch.	Check if the rear PTO switch is stuck. If the message persists after the switch is released, contact your dealer.
VCU2	522015	9	Signal error; front PTO switch.	Check if the front PTO switch is stuck. If the message persists after the switch is released, contact your dealer.
VCU2	522017	3 or 4	Wheel angle sensor error.	Wheel angle sensor or wiring may be defective; contact your dealer.
VCU2	522029	2, 3, 4, 5 or 9	Shuttle lever forward position error.	This happens when the shuttle lever is held in forward position for a long time. If the problem persists, contact your dealer.
VCU2	522030	2, 3, 4, 5 or 9	Shuttle lever reverse position error.	This happens when the shuttle lever is held in reverse position for a long time. If the problem persists, contact your dealer.
VCU2	522031	2, 3, 4, 5 or 9	Shuttle lever neutral position error.	This happens when the shuttle lever is held in neutral position (lever down) for a long time. Please stop the engine once, and restart. If the problem persists, contact your dealer.
VCU2	522032	2, 3 or 9	Shuttle lever safety position error.	This happens when the shuttle lever is held in safety position (lever up) for a long time. If the problem persists, contact your dealer.
VCU2	522034	24	No record input of headland management system.	When programming the headland management system, push the recording button again and operate the tractor.
VCU2	522035	25	Headland management system operation is being stopped.	Replay headland management system during driving.
VCU2	522035	26	Headland management system operation is being stopped.	Check if the rear hitch is blocked. Replay headland management system after releasing the hydraulic block.
VCU2	522078	3 or 4	Front suspension stroke sensor error.	Front suspension sensor or wiring may be defective; contact your dealer.
VCU2	522078	13	Front suspension stroke sensor error.	Front suspension sensor or wiring may be defective; contact your dealer.
VCU2	522081	9	Signal error; front suspension auto mode switch.	Check if the front suspension auto mode switch was held in on for a long time. Otherwise, contact your dealer.
VCU2	522082	3	Signal error; front suspension block mode switch.	Check if the front suspension block mode switch was held in on for a long time. Otherwise, contact your dealer.
VCU2	522083	3	Signal error; front suspension "UP" switch.	Check if the front suspension "UP" switch was held in on for a long time. Otherwise, contact your dealer.

(Continued)

Engine control unit	Error or warning code		Type of trouble	Action
	SPN	FMI		
VCU2	522083	9	Signal error; front suspension "UP" switch.	Check if the front suspension "UP" switch was held in on for a long time. Otherwise, contact your dealer.
VCU2	522084	3	Signal error; front suspension "DOWN" switch.	Check if the front suspension "DOWN" switch was held in on for a long time. Otherwise, contact your dealer.
VCU2	522084	9	Signal error; front suspension "DOWN" switch.	Check if the front suspension "DOWN" switch was held in on for a long time. Otherwise, contact your dealer.
VCU2	523001	31	Operational error; shuttle enable button.	Check if the shuttle enable button was pressed while operator was away from operator's seat. Otherwise, contact your dealer.
VCU2	523003	31	Operational error; shuttle button.	Check if the shuttle forward button and reverse button are being pressed at the same time. Otherwise, contact your dealer.
VCU2	523008	31	Operational error; rear PTO operation.	Please stay in the operator's seat while operating the rear PTO.
VCU2	523009	31	Operational error; PTO switches.	Check if the PTO switch of EZ-command centre and external PTO switch are being operated at the same time. Otherwise, contact your dealer.
VCU2	523010	31	Operational error: engine rpm memory adjustment button.	Check if the engine rpm memory adjustment button down and up are being operated at the same time. Otherwise, contact your dealer.
VCU2	523011	31	Operational error: headland management system function.	Stay in operator's seat while operating the headland management system.
VCU2	523012	31	Operational error; handbrake being applied.	Release hand brake.
VCU2	523013	31	Operational error; engine rpm memory function.	Set the hand throttle to above idling.
VCU2	523014	31	Operational error; rear PTO.	Rear PTO operation is stopped due to engine rpm drop.
VCU2	523017	31	Operational error; front PTO.	Front PTO operation is stopped due to engine rpm drop.
VCU2	523018	31	Operational error; front PTO operation.	Stay in the operator's seat when operating the front PTO.
NAC	520192	8	GPS signal error.	Wait for GPS signal.
NAC	520192	9	GPS setting error.	Check the GPS setting again.
NAC	520192	12	No GPS signal.	Wait for GPS signal.
NAC	520193	2	GPS setting error.	Check the GPS setting again.
NAC	520194	2	GPS setting error.	Check the GPS setting again.
NAC	520195	2	Over travelling speed.	Lower the travelling speed to 25 km/h (15 mph) or less and re-set the auto steering.
NAC	520196	10	GPS setting error.	Check the GPS setting again.
NAC	520196	15	Invalid travelling speed.	Set the travelling speed at 25 km/h (15 mph) or less.
NAC	520196	31	Operational error; invalid travelling speed.	Set the travelling speed at 25 km/h (15 mph) or less.
NAC	520210	14	Operation error: auto steering switch.	Turn on auto steering switch after engine start.

(Continued)

## TROUBLESHOOTING

Engine control unit	Error or warning code		Type of trouble	Action
	SPN	FMI		
SC	520200	2	Operation error: auto steering switch.	Turn on auto steering switch after engine start.
SC	520203	31	Safety function; auto steering system.	Turn off auto steering switch.
SC	520210	30	Operation error: auto steering switch may be stuck.	Turn on auto steering switch after engine start.
TCU	171	15	Transmission oil temperature is too high.	Stop tractor operation and allow transmission to cool down.
TCU	171	16	Transmission oil temperature is too high.	Stop tractor operation and allow transmission to cool down.
TCU	5140	2	Shuttle lever signal error.	Shut off the engine and restart. Recheck operation and if problem persists, contact your dealer.
TCU	5225	2	Long time clutch inching operation.	Return the clutch pedal or shift shuttle lever to neutral.
TCU	5226	2	Long time clutch inching operation.	Return the clutch pedal or shift shuttle lever to neutral.
TCU	5231	2	PTO clutch slippage.	Check PTO gear shift lever and PTO operating mode select lever position. When turning on the PTO switch, set both levers to selected position.
TCU	5711	2	Shuttle button signal error.	Check if the shuttle button of EZ-command centre was held down for a long time. Otherwise, contact your dealer.
TCU	524193	17	Transmission oil is too cold.	Warm up the transmission oil by increasing engine rpm.
TCU	524193	18	Transmission oil is too cold.	Warm up the transmission oil by increasing engine rpm.
TCU	524218	12	Operational error; shuttle lever operation with parking brake applied.	Release the parking brake while shuttle lever is in operation.
VDC	520323	10	Operational error; long time brake pedal switch left activation.	Safely release the brake pedal. If the error message persists even if the brake pedal is released, contact your dealer.
VDC	520324	10	Operational error; long time brake pedal switch right activation.	Safely release the brake pedal. If the error message persists even if the brake pedal is released, contact your dealer.
VDC	521005	19	Operational error; PTO lever and PTO switch.	Check PTO gear shift lever and PTO operating mode select lever position. When turning on the PTO switch, set both levers to selected position.
VDC	521049	19	Data input error of tyre circumference.	Check the setting of the tire circumference figure.
VDC	521280	31	Operation error: shuttle lever.	Return the shuttle lever to neutral once, then shift the lever again.
VDC	521280	31	Operation error: shuttle lever.	Shift the shuttle lever again.
VDC	521289	31	Operational error; PTO lever and PTO switch.	Check PTO gear shift lever and PTO operating mode select lever position. When turning on the PTO switch, set both levers to selected position.
eTCV	1067	2	Brake pedal sensor error	Please slightly weaken the depression on the brake pedal during full brake. If the problem persists, contact your KUBOTA dealer.

# OPTIONS

## OPTIONS

		Standard model	Premium model	Premium KVT model	Select from optional parts
Transmission	Plug-on bar axle kit	○	○	○	
	Hub kit (1set)	○	○	○	For plug-on bar axle
CAB	12 inch terminal kit	-	○	○	
	Passenger seat kit	○	○	○	
	Rear view mirror with heater kit	○	○	○	
3-point hitch	Hitch coupler kit (manual)	○	○	○	
	Hitch coupler kit (auto)	○	○	○	
	Hitch coupler kit (K80)	○	○	○	
	Hitch coupler kit (piton)	○	○	○	
	Drawbar frame kit	○	○	○	
	Drawbar kit	○	○		
	Drawbar K80 kit	○	○	○	
	Drawbar fixed piton kit	○	○	○	
	Double acting hydraulic top link kit	○	○	○	
Exterior	Front fender kit	○	○	○	Smaller or wider
	Rear fender kit	○	○	○	
Electrical	Work light kit	○	○	○	2 front and 2 rear
	Repeat headlight kit	○	○	○	
	200 A alternator kit	○	○	○	
	Beacon light kit	○	○	○	
	Speed sensor kit	-	○	○	
	Camera	-	○	○	12 inch terminal only
Precision framing	Auto steering kit	-	○	○	12 inch terminal only
	GPS antenna kit	-	○	○	
Brake	Hydraulic trailer brake kit	○	○	○	
Hydraulic	Front hydraulic outlet kit for CCLS	-	○	○	
	Front hydraulic outlet kit for mecha	○	-	-	
	Hydraulic power beyond kit	-	○	○	
PTO	PTO 21 spline kit	○	○	○	

# APPENDICES

## MAXIMUM MASSES

### 1. Maximum permissible load of the tyre

Maximum axle load (kg)	Front axle	Type DANA 745:5200
	Rear axle	8000
	Technically permissible maximum laden mass	11500
	Tractor payload	4900-4150
Minimum limit percentages	Front axle	Type DANA 745:45%
	Rear axle	56%
	Technically permissible maximum laden mass	100%

Tyre dimensions for front axle	Load index	Speed-index		Maximum permissible load of the tyre (kg)	Inflation pressure (kPa) at maximum permissible load of the tyre	Tyre dimensions for rear axle	Load index	Speed-index		Maximum permissible load of the tyre (kg)	Inflation pressure (kPa) at maximum permissible load of the tyre
		40 km/h-versions	50 km/h-versions (*1)					40 km/h-versions	50 km/h-versions (*1)		
270/95R32	136	A8	B	2240	400	270/95R48	144	A8	B	2800	400
270/80R36	134	A8	B	2120	400	270/95R48	144	A8	B	2800	400
14.9R28	128	A8	B	1800	160	18.4R38	146	A8	B	3000	160
380/85R28	133	A8	B	2060	160	460/85R38	149	A8	B	3250	160
420/70R28	133	A8	B	2060	160	520/70R38	150	A8	B	3350	160
420/75R28	135	A8	B	2180	160	520/75R38	151	A8	B	3450	160
480/65R28	136	A8	B	2240	160	600/65R38	153	A8	B	3650	160
320/85R34	133	A8	B	2060	240	320/90R50	148	A8	B	3150	320
380/85R30	135	A8	B	2180	160	380/90R46	149	A8	B	3250	240
380/85R30	135	A8	B	2180	160	420/80R46	151	A8	B	3450	240
14.9R30	129	A8	B	1850	160	18.4R42	151	A8	B	3450	160
380/85R30	135	A8	B	2180	160	480/80R42	151	A8	B	3450	160
420/85R28	139	A8	B	2430	160	520/85R38	155	A8	B	3875	160
16.9R28	136	A8	B	2240	160	20.8 R38	153	A8	B	3650	160
480/70R28	140	A8	B	2500	160	580/70R38	155	A8	B	3875	160
480/75R28	142	A8	B	2650	160	580/70R38	155	A8	B	3875	160
540/65R28	142	A8	B	2650	160	650/65R38	157	A8	B	4125	160
400/80R28 (*2)	151	A8	B	3450	320	480/80R38 (*2)	166	A8	B	5300	320
440/80R28 (*2)	156	A8	B	4000	320	540/80R38 (*2)	172	A8	B	6300	320
540/65R28 (*2)	160	A8	B	4500	320	650/65R38 (*2)	175	A8	B	6900	320
VF520/60R28	138	A8	B	2360	100	VF650/60R38	155	A8	B	3875	100
VF600/60R28	146	A8	B	3000	100	VF710/60R38	160	A8	B	4500	100

(\*1) If you drive radial and metric diagonal tyres with speed category A8 at a speed level of 50 km/h the load capacity will be 9% less! If there is a tyre designation A8 and B shown on the sidewall of the tire the Load index for B can be less or equal to the Load index at A8. In that case please check the documents of the tyre manufacturer or contact your local KUBOTA Dealer.

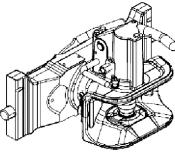
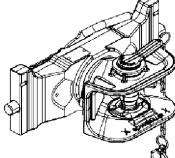
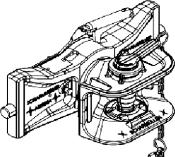
(\*2) manufacturer: Nokian TR2

## 2. Trailer load capacity

	Permissible towable masses	Total technically permissible mass of the tractor-trailer combination
Unbraked towable mass	3500	15000
Inertia-braked towable mass	16000	27500
Towable mass when fitted with hydraulic or pneumatic braking	32500	40000

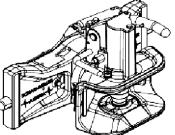
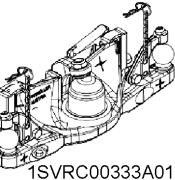
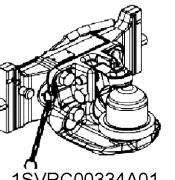
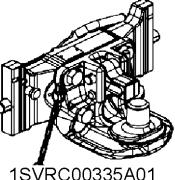
(unit: kg)

### Trailer coupling loads

Trade make and type	Version specification	Maximum static vertical load/technically permissible mass on the coupling point (daN)		Distance from the vertical plane passing through the axis of the rear axle c (mm)	Vertical position	Height above ground (mm)	
		40 km/h-versions	50 km/h-versions				
<b>Scharmüller Type 390108</b>   1SVRC00329A01	Clevis type: automatical coupling $\Phi$ 38 mm (height adjustable)	2000	2000	734	A	1027	
					B	977	
					C	892	
					D	807	
		2500	2500		E	717	
					F	632	
					G	557	
					H	477	
<b>Scharmüller Type 390506</b>   1SVRC00330A01	Clevis type: mechanical coupling $\Phi$ 38 mm (height adjustable)	2000	2000	722	A	1029	
					B	979	
					C	894	
					D	809	
		2500	2500		E	719	
					F	634	
					G	559	
					H	479	
<b>Scharmüller Type 390519</b>   1SVRC00331A01	Clevis type: automatical coupling $\Phi$ 38 mm (height adjustable)	2000	2000	715	A	1029	
					B	979	
					C	894	
					D	809	
		2500	2500		E	719	
					F	634	
					G	559	
					H	479	

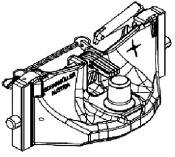
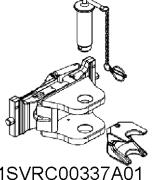
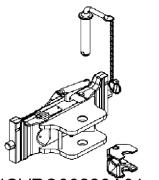
remark: The effective permissible vertical load on coupling point must be calculated depending on the tires load on the axle weight.

**Trailer coupling loads**

Trade make and type	Version specification	Maximum static vertical load/ technically permissible mass on the coupling point (daN)		Distance from the vertical plane passing through the axis of the rear axle c (mm)	Vertical posi- tion	Height above ground (mm)	
		40 km/h-ver- sions	50 km/h-ver- sions				
<b>Scharmüller Type</b> 390329   1SVRC00332A01	Clevis type: automatical coupling $\Phi$ 38 mm (height adjustable)	2000	2000	726	A	1027	
					B	977	
					C	892	
					D	807	
		2500	3000		E	717	
					F	632	
					G	557	
					H	477	
<b>Scharmüller Type</b> 639046   1SVRC00333A01	Clevis type: coupling ball 80 (height adjusta- ble)	2000	2000	676	A	1059	
					B	1009	
					C	924	
					D	839	
		3000	3000		E	749	
					F	664	
					G	589	
					H	509	
<b>Scharmüller Type</b> 670000 with Type 739042   1SVRC00334A01	Clevis type: coupling ball 80 assembled with mounting frame (height adjustable)	2000	2000	765	A	1005	
					B	955	
					C	870	
					D	785	
		2500	2500		E	695	
					F	610	
					G	535	
					H	455	
<b>Scharmüller Type</b> 671000 with Type 739042   1SVRC00335A01	Clevis type: towing pin/ Piton Fix assembled with mounting frame (height adjustable)	2000	2000	765	A	1000	
					B	950	
					C	865	
					D	780	
		2500	2500		E	690	
					F	605	
					G	530	
					H	450	

remark: The effective permissible vertical load on coupling point must be calculated depending on the tires load on the axle weight.

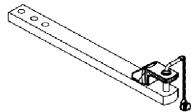
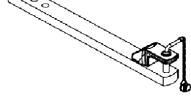
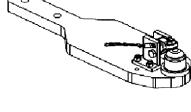
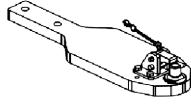
## Trailer coupling loads

Trade make and type	Version specification	Maximum static vertical load/technically permissible mass on the coupling point (daN)		Distance from the vertical plane passing through the axis of the rear axle c (mm)	Vertical position	Height above ground (mm)		
		40 km/h-versions	50 km/h-versions					
<b>Scharmüller Type 639016</b>  1SVRC00336A01	Clevis type: towing pin/PitonFix assembled with mounting frame (height adjustable)	2000	2000	683	A	1051		
					B	1001		
					C	916		
					D	831		
		3000	3000		E	741		
					F	656		
					G	581		
					H	501		
<b>Scharmüller Type 739071</b>  1SVRC00337A01	Non-swivel clevis type: mechanical coupling $\Phi$ 50 mm (height adjustable)	2000	(*1)	758	A	1032		
					B	982		
					C	897		
					D	812		
		2500			E	722		
					F	637		
					G	562		
					H	482		
<b>Scharmüller Type 739061</b>  1SVRC00338A01	Non-swivel clevis type: mechanical coupling $\Phi$ 43 mm (height adjustable)	2000	(*1)	764	A	1032		
					B	982		
					C	897		
					D	812		
		2500			E	722		
					F	637		
					G	562		
					H	482		
<b>Scharmüller Type 739081</b>  1SVRC00339A01	Non-swivel clevis type: mechanical coupling $\Phi$ 28 mm (height adjustable)	1500	(*1)	700	A	1032		
					B	982		
					C	897		
					D	812		
					E	722		
					F	637		
					G	562		
					H	482		

remark: The effective permissible vertical load on coupling point must be calculated depending on the tires load on the axle weight.

(\*1) This coupling type is not approved for the 50 km/h-version!

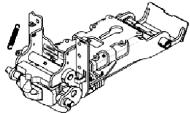
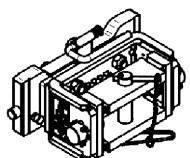
**Trailer coupling loads**

Trade make and type	Version specification	Maximum static vertical load/ technically permissible mass on the coupling point (daN)		Distance from the vertical plane passing through the axis of the rear axle c (mm)	Vertical posi- tion	Height above ground (mm)
		40 km/h-vers- ions	50 km/h-vers- ions			
<b>Scharmüller Type</b> 820982   1SVRC00340A01	Drawbar Ø 28 mm	0	(*1)	782	-	482
		0		852		
		0		932		
		-	-	-	-	-
<b>Scharmüller Type</b> 1306   1SVRC00340A01	Drawbar Ø 31.5 mm	1800	1800	782	-	482
		1500	1500	852		
		800	800	932		
		-	-	-	-	-
<b>Scharmüller Type</b> 960291   1SVRC00341A01	Heavy duty drawbar coupling ball 80	3000	(*1)	699	-	493
		1500		884		493
		-	-	-	-	-
		-	-	-	-	-
<b>Scharmüller Type</b> 961291   1SVRC00342A01	Heavy duty drawbar Piton Fix	3000	(*1)	699	-	487
		1500		884		
		-	-	-	-	-
		-	-	-	-	-

remark: The effective permissible vertical load on coupling point must be calculated depending on the tires load on the axle weight.

(\*1) This coupling type is not approved for the 50 km/h-version!

## Trailer coupling loads

Trade make and type	Version specification	Maximum static vertical load/ technically permissible mass on the coupling point (daN)		Distance from the vertical plane passing through the axis of the rear axle c (mm)	Vertical posi- tion	Height above ground (mm)		
		40 km/h-ver- sions	50 km/h-ver- sions					
<b>Dromone 6xxx Series</b>  1SVRC00343A01	Towing hock A1	3000	3000	622	-	484		
	CAT 2 Drawbar A1	2100	2100	838	-	484		
		1400	1400	893	-			
		-	-	-	-	-		
<b>ORLANDI Hitch Type GB04</b>  1SVRC00344A01	Non-standard coupling hitch device	2000	(*1)	777	A	1032		
					B	982		
					C	897		
					D	812		
		2500			E	722		
					F	637		
					G	562		
					H	482		

remark: The effective permissible vertical load on coupling point must be calculated depending on the tires load on the axle weight.

(\*1) This coupling type is not approved for the 50 km/h-version!

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