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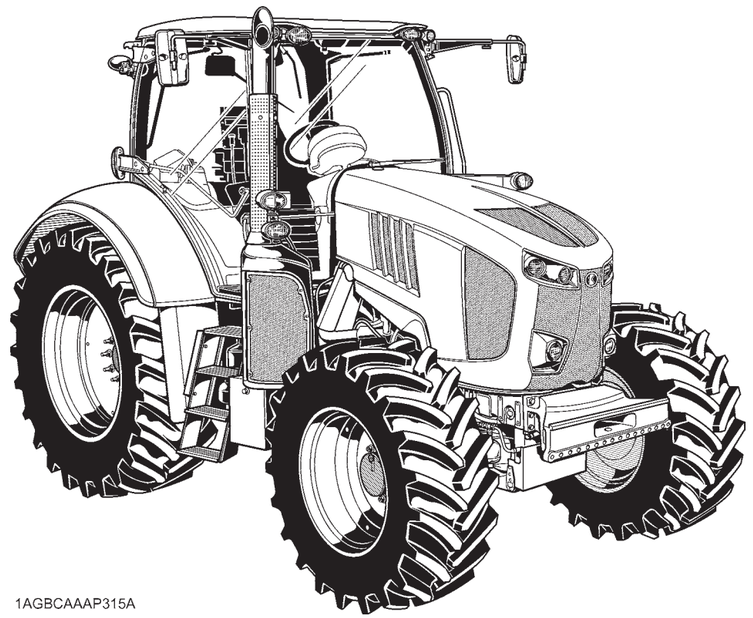
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M7-131·M7-151·M7-171

# OPERATOR'S MANUAL

# KUBOTA TRACTOR

## MODELS M7-131·M7-151·M7-171



1AGBCAAAP315A

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*READ AND SAVE THIS MANUAL*

# ABBREVIATION LIST

| Abbreviations | Definitions |
|---|---|
| 2WD | 2 Wheel Drive |
| 4WD | 4 Wheel Drive |
| API | American Petroleum Institute |
| ASABE | American Society of Agricultural and Biological Engineers, USA |
| ASTM | American Society for Testing and Materials, USA |
| CVT | Continuously Variable Transmission |
| DEF | Diesel Exhaust Fluid |
| DT | Dual Traction [4WD] |
| fpm | Feet Per Minute |
| DPF | Diesel Particulate Filter |
| GST | Glide Shift Transmission |

| Abbreviations | Definitions |
|---|---|
| Hi-Lo | High Speed-Low Speed |
| HST | Hydrostatic Transmission |
| m/s | Meters Per Second |
| PTO | Power Take Off |
| RH/LH | Right-hand and left-hand sides are determined by facing in the direction of forward travel |
| ROPS | Roll-Over Protective Structures |
| rpm | Revolutions Per Minute |
| r/s | Revolutions Per Second |
| SAE | Society of Automotive Engineers, USA |
| SCR | Selective Catalytic Reduction |
| SMV | Slow Moving Vehicle |

California Proposition 65

**⚠ WARNING ⚠**

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

## 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 35000 employees produce over 1000 different items, large and small.

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

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

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

# UNIVERSAL SYMBOLS

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

## ■ General


Safety Alert Symbol


Master System Warning


Fast


Slow


Creep


Read Operator's Manual


Lock


ON (Engaged)


OFF (Disengaged)


Service

## ■ Engine-related


Diesel Fuel


Hourmeter/Elapsed Operating Hours


Engine Coolant-Temperature


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)



Emission Control


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



4-Wheel Drive-Automatic


Headland Management System


Cruise Control


Limp Home



Escape



Auto-Transmission



Auto-Transmission-Sensitivity



Auto-Transmission-Road Control



Auto-Transmission-Field Control


Transmission Oil Filter


Low Temperature Reguration


Gear Shifting Warning


Clutch


Brake



Parking Brake


Parking Brake/Brake Oil


Air brake


Differential Lock



Differential Lock-Automatic


Steering Wheel-Tilt


Steering Wheel-Telescope



Automatic Steering Control


Steering Oil Filter


Front Suspension



Front Suspension-Automatic


Front Suspension-Down


Front Suspension-Up


Front Suspension-Lock

## ■ PTO-related


PTO-Off (Disengaged)


PTO-On (Engaged)



PTO-540 rpm



PTO-540E rpm



PTO-1000 rpm



PTO-1000E rpm


PTO-Front



PTO-Front


PTO-Rear



PTO-Rear

## ■ Hydraulic-related


Draft Control


Position Control


Hydraulic Oil Filter


Lift Arm Control-Up/Transport


Lift Arm Control-Up


Lift Arm Control-Down


Lift Arm Control-Down


Lift Arm Control-Block


Lift Arm Control-Float


Lift Arm Control-Lock


3-Point Lifting/Lowering


Lift Arm-Height


Remote Cylinder-Retract


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

 Turn Signal

 Turnsignal-Trailer

 Hazard Warning Lights

 Audible Warning Device

 Beacon Light

 Windshield Wiper

 Windshield Wiper-Intermittent

 Windshield 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

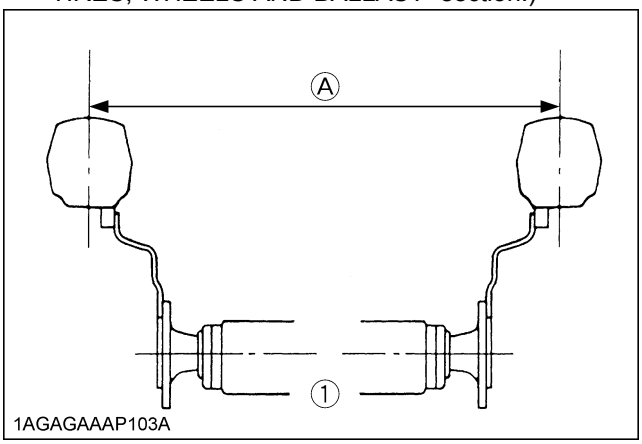
Careful operation is your best insurance against an accident.

**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.

## 1. BEFORE OPERATING THE TRACTOR

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

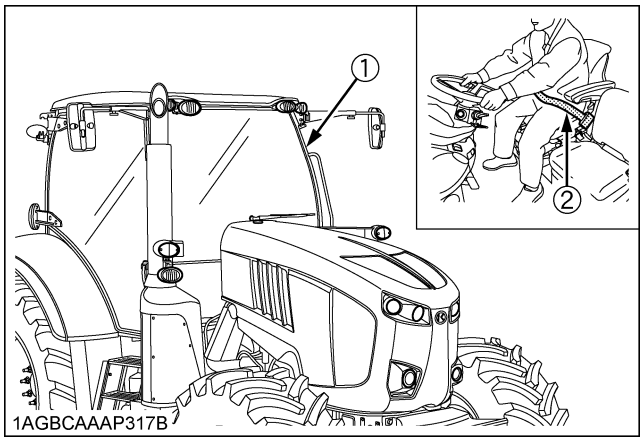



*(1) Rear wheels* *(A) Tread Width*

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

◆ **CAB, ROPS**

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




*(1) CAB*
*(2) Seat belt*

7. The CAB is not tested for FOPS (Falling Object Protection Structure).

## 2. OPERATING THE TRACTOR

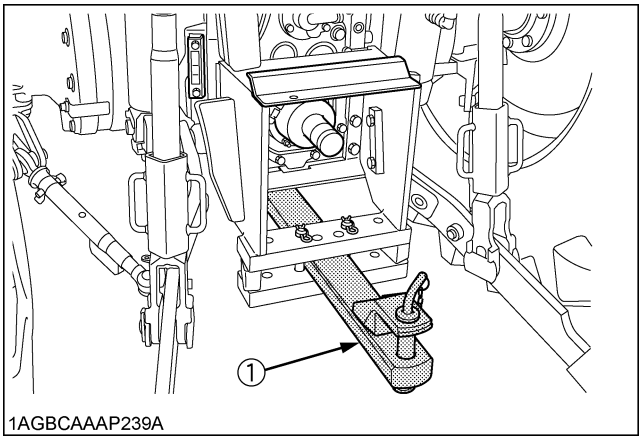
Operator safety is a priority. Safe operation, specifically with respect to overturning hazards, entails understanding the equipment and environmental conditions at the time of use. Some prohibited uses which can affect overturning hazards include traveling and turning with implements and loads carried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

◆ **Starting**

1. Always sit in the operator's seat when starting engine or operating levers or controls. Adjust seat per instructions in the operating the tractor section. Never start engine while standing on the ground.
2. Before starting the engine, make sure that all levers (including auxiliary control levers) are in their neutral positions, that the parking brake is engaged.
   Fasten the seat belt if the tractor has a CAB or a foldable ROPS in the upright and locked position.
3. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
4. Do not operate or idle engine in a non-ventilated area. Carbon monoxide gas is colorless, odorless, and deadly.
5. Check before each use that operator presence controls are functioning correctly. Test safety systems. (See "Checking Neutral Circuit" in "EVERY 50 HOURS" in "PERIODIC SERVICE" section.)
   Do not operate unless they are functioning correctly.

◆ **Working**

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




*(1) Drawbar*

2. For trailing PTO-driven implements, set the drawbar to the towing position.
3. Attach pulled or towed loads to the drawbar only.
4. Keep all shields and guards in place. Replace any that are missing or damaged.
5. Avoid sudden starts. To avoid upsets, slow down when turning, on uneven ground, and before stopping.
6. The tractor cannot turn with the differential locked and attempting to do so could be dangerous.
7. 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.
8. Watch where you are going at all times. Watch for and avoid obstacles. Be alert at row ends, near trees, and other obstructions.
9. When working in groups, always let the others know what you are going to do before you do it.
10. Never try to get on or off a moving tractor.
11. Always sit in the operator's seat when operating levers or controls.
12. Do not stand between tractor and implement or trailed vehicle unless parking brake is applied.
13. Never utilize the Headland Management System, if anyone is in the work area of the tractor.

◆ **Instructional seat (if equipped)**

1. Always wear your seat belt and stabilize your body by holding the handrail on the CAB frame.
2. It is not intended to carry children nor any other person for any other purpose.
3. The left hand door must be closed at all time whenever the instructional seat is occupied and the tractor is in motion.
4. Do not permit others to ride, except on the designated instructional seat.

5. Use caution to avoid the risks of obstructing operator's view, falling from the machine and interfering with controls.
6. Do not start and stop the tractor suddenly, nor take sharp turn.
7. Do not use the instructional seat if the seat belt or the door lock fails to function.
8. Do not use the instructional seat for transport.
9. When opening and closing the door from the instructional-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.

### ◆ Safety for children

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

1. Never assume that children will remain where you last saw them.
2. Keep children out of the work area and under the watchful eye of another responsible adult.
3. Be alert and shut your machine down if children enter the work area.
4. Never carry children on your machine. There is no safe place for them to ride. They may fall off and be run over or interfere with your control of the machine.
5. Never allow children to operate the machine even under adult supervision.
6. Never allow children to play on the machine or on the implement.
7. Use extra caution when backing up. Look behind and down to make sure area is clear before moving.

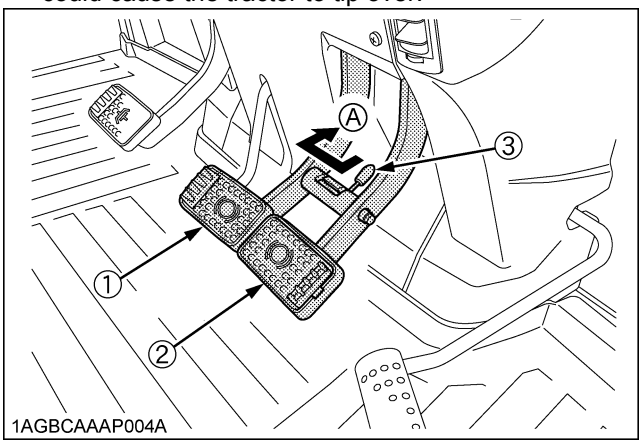
### ◆ Operating on slopes

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

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

### ◆ Driving the tractor on the road

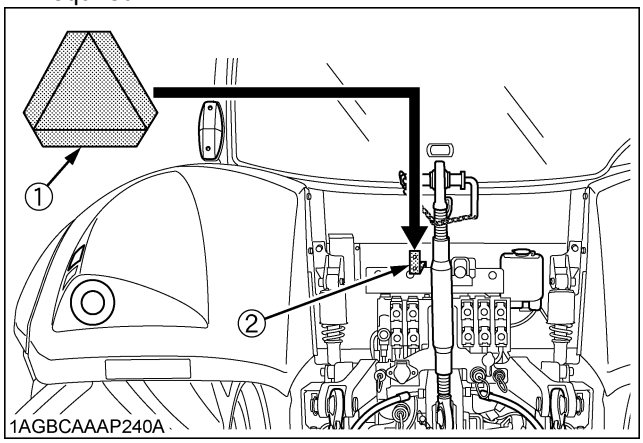
1. Lock the 2 brake pedals together to help assure straight-line stops. Uneven braking at road speeds could cause the tractor to tip over.




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

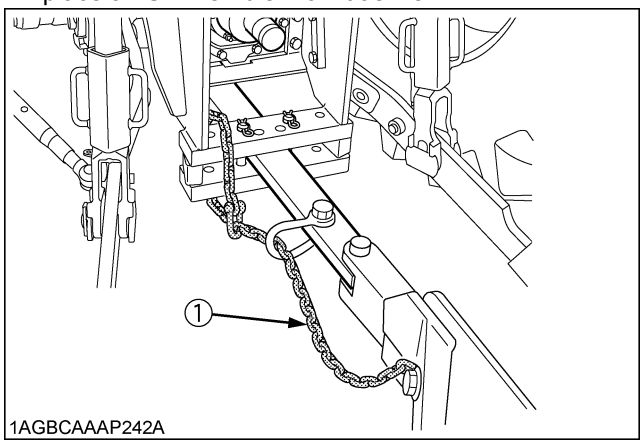
2. Check the front wheel engagement. The braking characteristics are different between 2 and 4-wheel drive. Be aware of the difference and use carefully.
3. Always slow the tractor down before turning. Turning at high speed may tip the tractor over.

4. Make sure that the Slow Moving Vehicle (SMV) sign is clean and visible. Use hazard lights and turn signals as required.



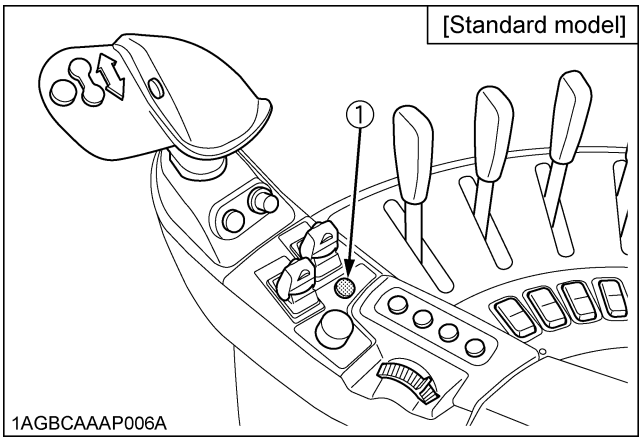

*(1) SMV emblem*
*(2) Bracket*

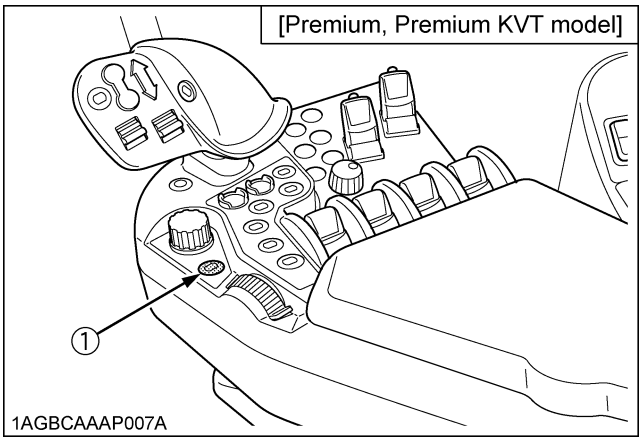
5. Observe all local traffic and safety regulations.
6. Turn the headlights on. Dim them when meeting another vehicle.
7. Drive at speeds that allow you to maintain control at all times.
8. Do not apply the differential lock while traveling at road speeds. The tractor may run out of control.
9. Avoid sudden motions of the steering wheel as they can lead to a dangerous loss of stability. The risk is especially great when the tractor is traveling at road speeds.
10. Do not operate an implement while the tractor is on the road. Lock the 3-point hitch in the raised position. For travelling with the ride control on, however, keep the 3-point hitch unlocked.
11. When towing other equipment, use a safety chain and place an SMV emblem on it as well.




*(1) Safety chain*

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




*(1) 3-point hitch lock button*

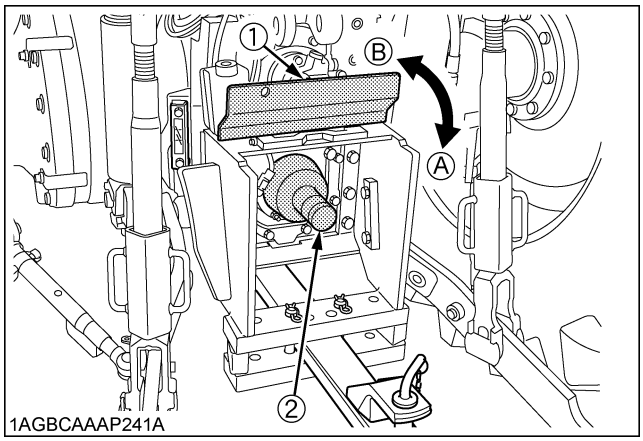
13. If you drive the tractor with a trailer loaded with something heavy in tow and step on the brake pedal, the tractor is pushed forward by the trailer due to an abrupt slowdown. This may fail to keep the tractor under control.
    Before stepping on the brake pedal, press the transmission ratio lock button for smooth slowdown in combination with the engine brake. **[Premium KVT model]**

## 3. PARKING THE TRACTOR

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

## 4. OPERATING THE PTO

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

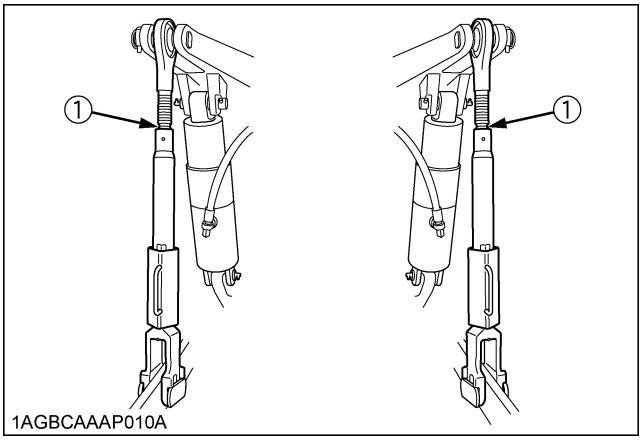



*(1) PTO Shaft cover*
*(2) PTO Shaft cap*
*(A) "NORMAL POSITION"*
*(B) "RAISED POSITION"*

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

## 5. USING 3-POINT HITCH

1. Use the 3-point hitch only with equipment designed for 3-point hitch usage.
2. When using a 3-point hitch mounted implement, be sure to install the proper counterbalance weight on the front of the tractor.
3. To avoid injury from separation:
   Do not extend lift rod beyond the groove on the threaded rod.




*(1) Groove*

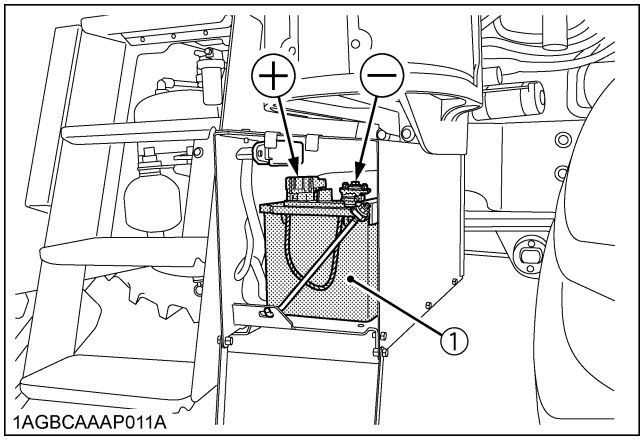
4. Use [UP-DOWN] switch or dial only on farm fields. For all other application, use depth control dial (hydraulic dial) to move attachment.

## 6. SERVICING THE TRACTOR

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

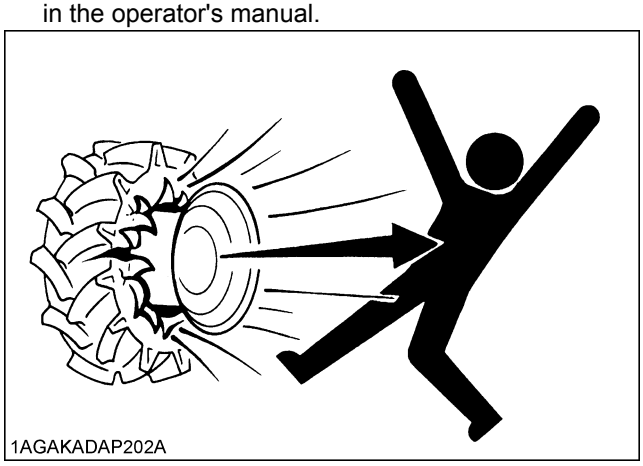
1. Allow the tractor time to cool off before working on or near the engine, muffler, radiator, etc.
2. Do not remove radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely. If the tractor has a coolant recovery tank, add coolant or water to the tank, not the radiator. (See "Checking Coolant Level" in "DAILY CHECK" in "PERIODIC SERVICE" section.)
3. Always stop the engine before refueling. Avoid spills and overfilling.
4. Do not smoke when working around battery or when refueling. Keep all sparks and flames away from battery and fuel tank. The battery presents an explosive hazard, because it gives off hydrogen and oxygen especially when recharging.
5. Before "jump starting" a dead battery, read and follow all of the instructions. (See "JUMP STARTING" in "OPERATING THE ENGINE" section.)

6. Keep first aid kit and fire extinguisher handy at all times.
7. Disconnect the battery's ground cable before working on or near electric components.
8. To avoid the possibility of battery explosion, do not use or charge the refillable type battery if the fluid level is below the LOWER ( lower limit level ) mark. Check the fluid level regularly and add distilled water as required so that the fluid level is between the UPPER and LOWER levels.
9. To avoid sparks from an accidental short circuit, always disconnect the battery's ground cable (-) first and reconnect it last.

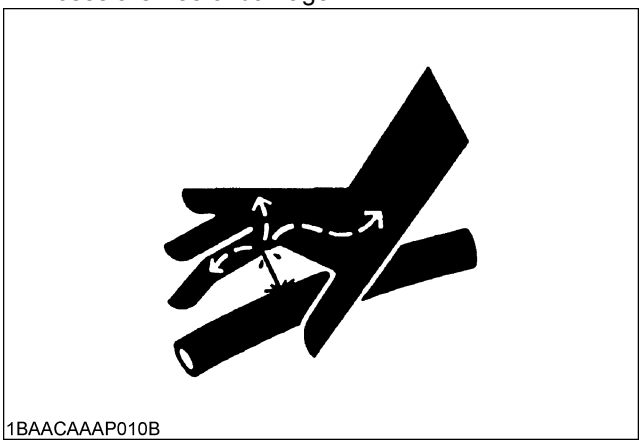



*(1) Battery*

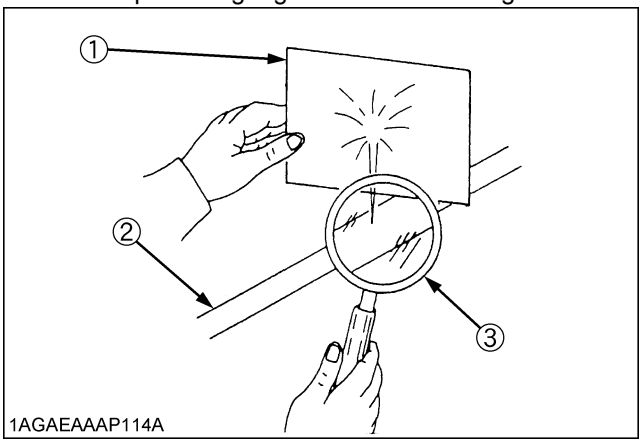
10. Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.
11. Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure shown in the operator's manual.




12. Securely support the tractor when either changing wheels or adjusting the wheel tread width.
13. Make sure that wheel bolts have been tightened to the specified torque.
14. Disconnect the battery's ground cable and stop the engine to avoid the possibility of the machine runaway due to 4WD braking system during testing, service or repair with only rear wheels off the ground.
15. Do not work under any hydraulically supported devices. They can settle, suddenly leak down, or be accidentally lowered. If it is necessary to work under tractor or any machine elements for servicing or adjustment, securely support them with stands or suitable blocking beforehand.
16. Escaping hydraulic fluid under pressure has sufficient force to penetrate skin, causing serious personal injury. Before disconnecting hydraulic lines, be sure to release all residual pressure. Before applying pressure to the hydraulic system, make sure that all connections are tight and that all lines, pipes, and hoses are free of damage.




17. Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks; use a piece of cardboard or wood. Use of safety goggles or other eye protection is also highly recommended. If injured by escaping fluid, see a medical doctor at once. This fluid will produce gangrene or severe allergic reaction.



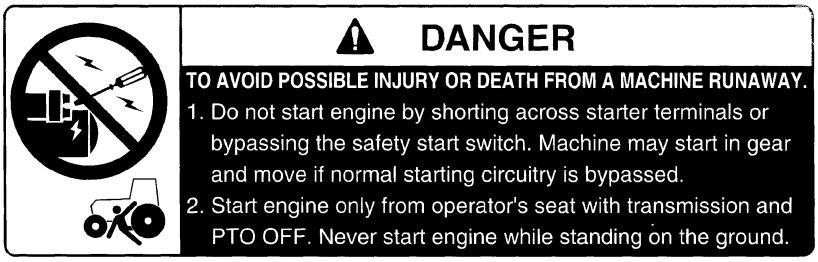

*(1) Cardboard*
*(2) Hydraulic line*
*(3) Magnifying glass*

18. Do not open high-pressure fuel system.
    High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect nor attempt to repair fuel lines, sensors, or any other components between the high-pressure fuel pump and injectors on engines with high pressure common rail fuel system.

19. To avoid hazardous high voltage, turn the key switch to the OFF position if it is necessary to check to repair the computer, harness or connectors.
20. 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.
21. Keep the tractor away from people, animals or structures which may be susceptible to harm or damage from hot exhaust gases.
22. 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)]
23. During regeneration, white exhaust gas may be visible. Do not allow regeneration in a non-ventilated space.
24. During regeneration, do not leave the tractor.
25. Before servicing a tractor equipped with the front suspension, be sure to lower the machine to the lowest position.
26. 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.

## 7. DANGER, WARNING AND CAUTION LABELS

(1) Part No. 3Y205-9835-1




1AGAIJNAP153A

(2) Part No. TC420-4956-1

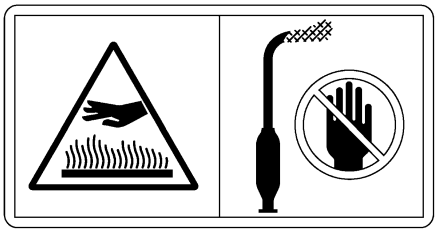
Diesel fuel only. No fire.



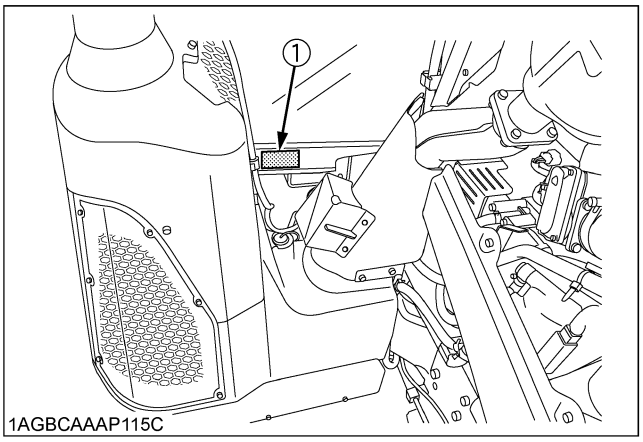

1AGAIDHAP154E

(3) Part No. TC750-4958-1

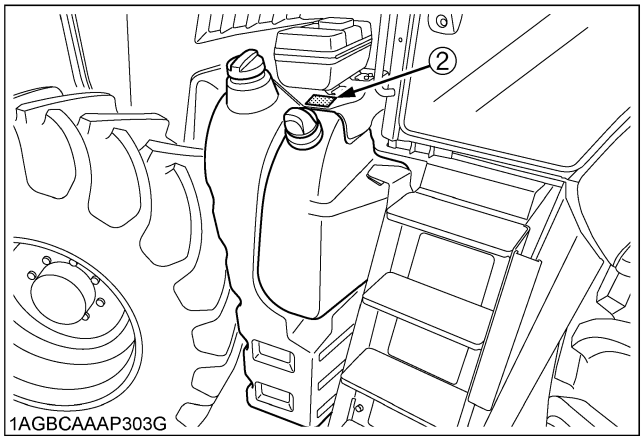
Do not touch hot surfaces.



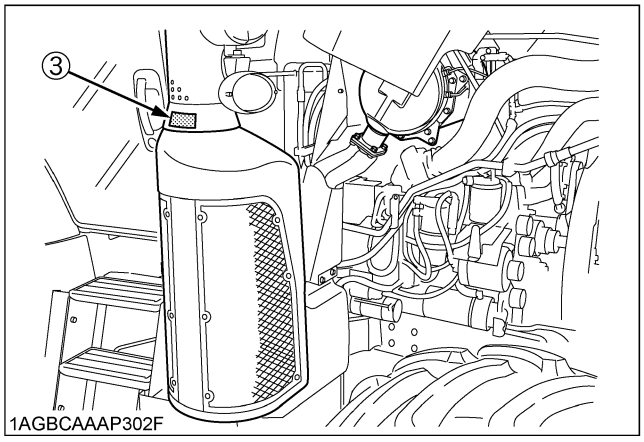
1AGBAAAP069A




1AGBCAAAP115C




1AGBCAAAP303G




1AGBCAAAP302F

1AGBCAAAP291A

(1) Part No. TA040-4957-1

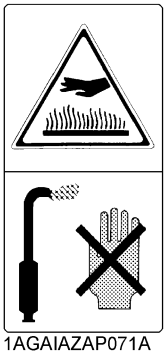
Do not open or remove safety shields while engine is running.



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.

1AGAIDXAP073A

(4) Part No. 3S205-9868-1



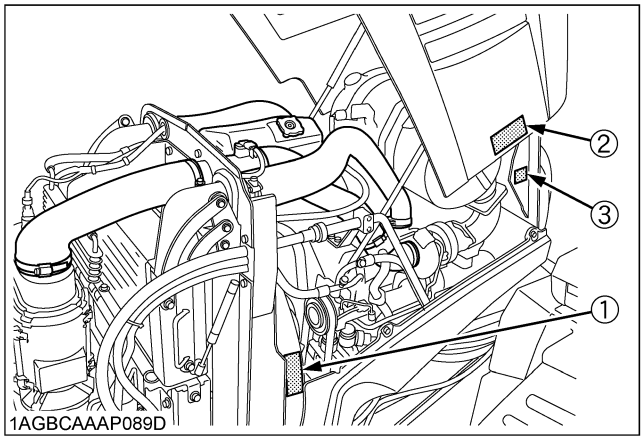

1AGBEAAAP063A

(5) Part No. 3F240-9819-1

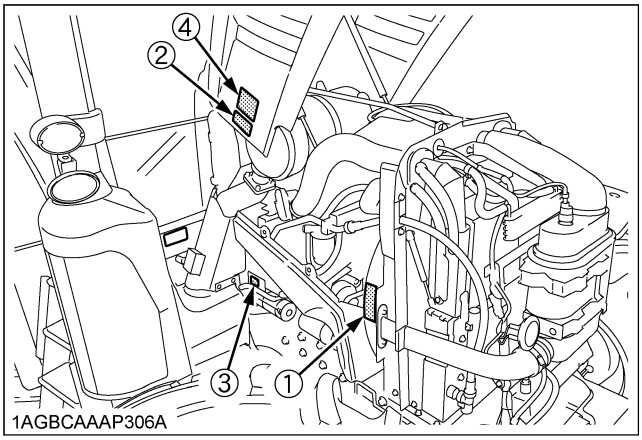
Do not stand by IMPLEMENT or between implement and tractor while operating remote hitch switch.



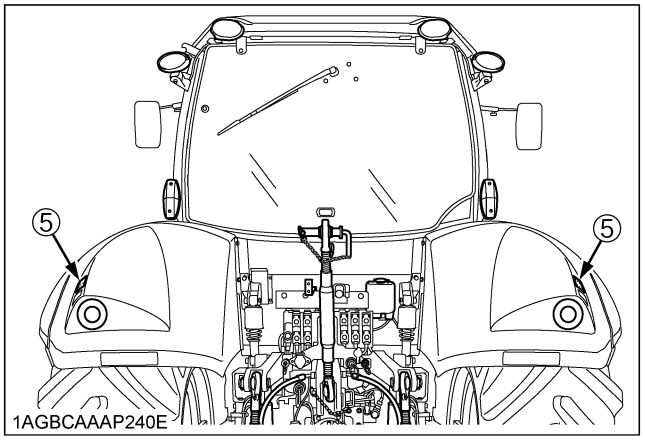
1AGAIBIAP1770




1AGBCAAAP089D




1AGBCAAAP306A




1AGBCAAAP240E

1AGBCAAAP292A

(1) Part No. 3S205-9836-2

**⚠WARNING**

**TO AVOID PERSONAL INJURY OR DEATH:**

1. Read and understand the operator's manual before operation.
2. Before starting the engine, make sure that everyone is at a safe distance from tractor and the PTO is off.
3. Do not allow passengers on the tractor at any time.
4. Before allowing other people to use the tractor, have them read the operator's manual.
5. Check the tightness of nuts and bolts regularly.
6. Keep all shields in place and stay away from all moving parts.
7. Lock the two brake pedals together before driving on the road.
8. Slow down for turns, or rough roads, or when applying individual brakes.
9. On public roads use SMV emblem and hazard lights, if required by local traffic and safety regulations.
10. Pull only from the drawbar.
11. Before dismounting, lower the implement to the ground, set the parking brake, stop the engine and remove the key.
12. Securely support tractor and implements before working underneath.

1AGBEAAAP061A

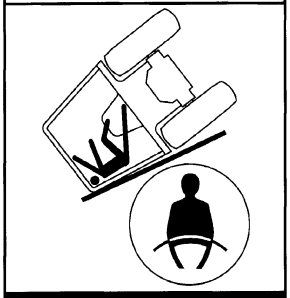
(2) Part No. 3Y205-9831-1

**⚠ WARNING**

**TO AVOID FREE WHEELING WHEN SHIFTING THE SHUTTLE LEVER WHILE ON A SLOPE:**

Stop completely by using the brake and by depressing the clutch pedal.
Start off after selecting shuttle direction by releasing the clutch pedal.

**⚠ WARNING**



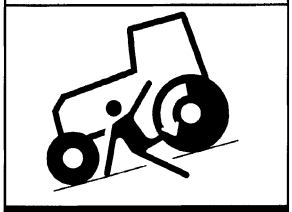
**TO AVOID INJURY OR DEATH FROM ROLL-OVER:**

Always use seat belt when driving.

1AGAIJNAP150A

(3) Part No. 3Y205-9832-2

**⚠ WARNING**



**BEFORE DISMOUNTING TRACTOR:**

1. **ALWAYS SET PARKING BRAKE.** Leaving transmission in gear with the engine stopped will not prevent tractor from rolling.
2. **PARK ON LEVEL GROUND WHENEVER POSSIBLE.** If parking on a slope, position tractor across the slope.
3. **LOWER ALL IMPLEMENTS TO THE GROUND.** Failure to comply to this warning may allow the wheels to slip, and could cause injury or death .
4. **STOP THE ENGINE.**

1AGAIJNAP151A

(4) Part No. 3S205-9778-2 [If optional instructional seat is installed]

**⚠ WARNING**

TO AVOID PERSONAL INJURY OR DEATH WHEN USING THE INSTRUCTIONAL SEAT:

- Always wear your seat belt and stabilize your body by holding the handrail on the CAB frame.
- The instructional seat is not intended to carry children nor any other person for any other purposes.
- The left hand door must be closed at all time whenever the instructional seat is occupied and the tractor is in motion.
- Do not permit others to ride, except on the designated instructional 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 instructional seat if the seat belt or the door lock fails to function.
- Do not use the instructional seat for transport.
- When opening and closing the door from the instructional-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.

1AGBEAAAP089A

(5) Part No. 3S565-9855-2 [Front suspension type]

**⚠WARNING**

**TO AVOID PERSONAL INJURY OR DEATH.**

Before operating the switches for the front suspension, make sure the area near the machine is clear of all persons and objects.

1AGBEAAAP064A

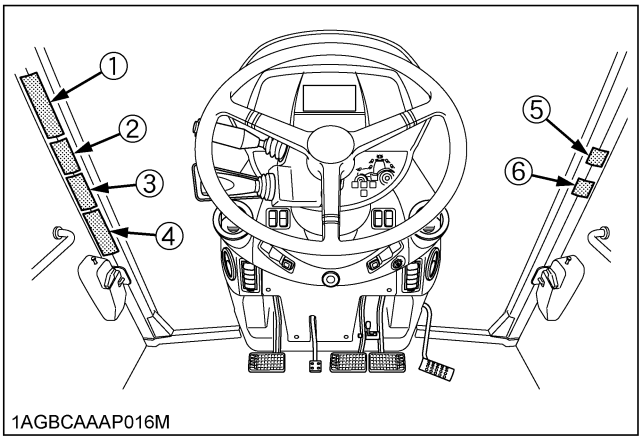
(6) Part No. 3F240-9821-1

**⚠WARNING**

**TO AVOID MACHINE RUNAWAY DUE TO 4WD BRAKING SYSTEM:**

Do not run engine with only rear wheels off ground.

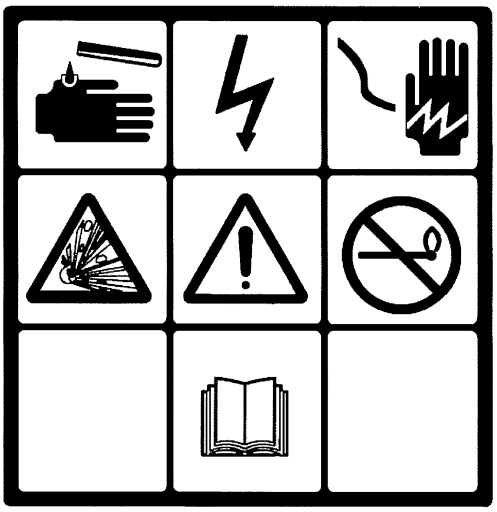
1AGAIBIAP1820




1AGBCAAAP016M

1AGBCAAAP293A

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



1AGBCAAAP284A

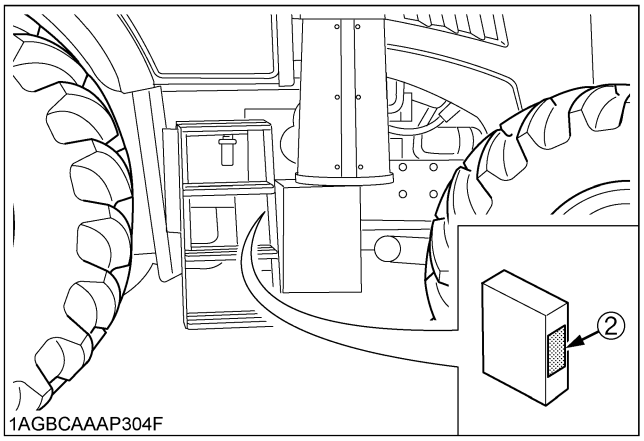
Shield Eyes, Explosive Gases can cause blindness or injury.
No Sparks, No Flames, No smoking.
Sulfuric acid can cause blindness or severe burns.
Hazardous high Voltage.
Keep away from Children.
Do not tip. Do not open battery.
Flush Eyes immediately with water.
Get medical help fast.
Battery post, Terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm.
Wash hands after handling.

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

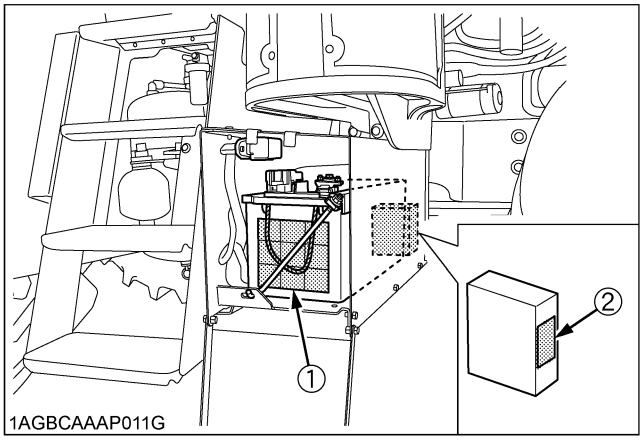



1AGAIJNAP165A

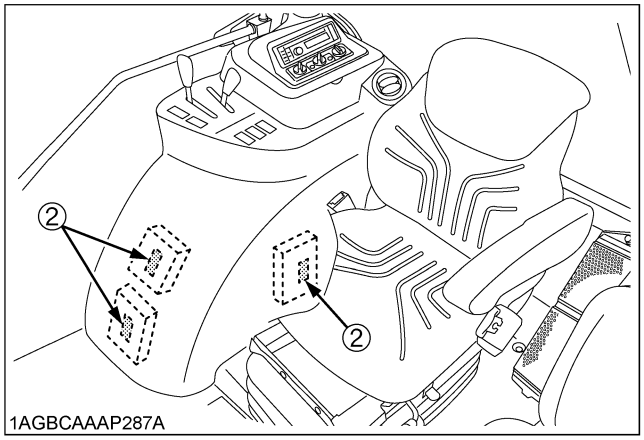
Hazardous high voltage.
Turn the starter switch to the OFF position if it is necessary to check or repair the computer, harness, or connectors.




1AGBCAAAP304F



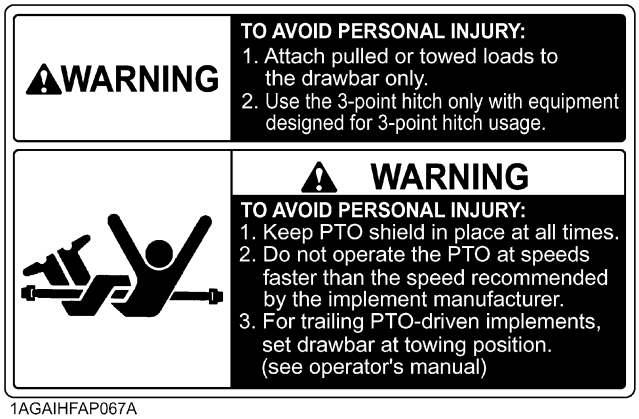

1AGBCAAAP011G




1AGBCAAAP287A

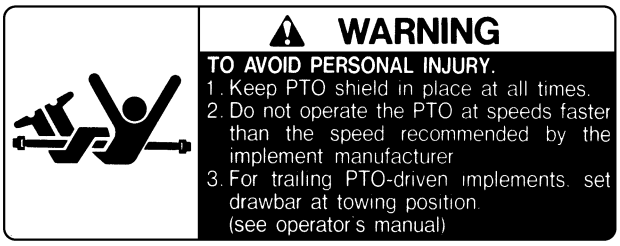
1AGBCAAAP294A

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



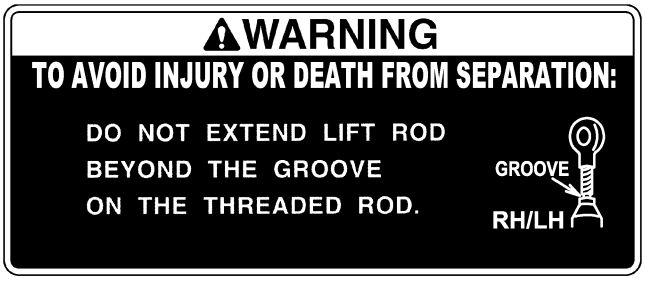

1AGAIHFAP067A

(2) Part No. TC430-4959-1

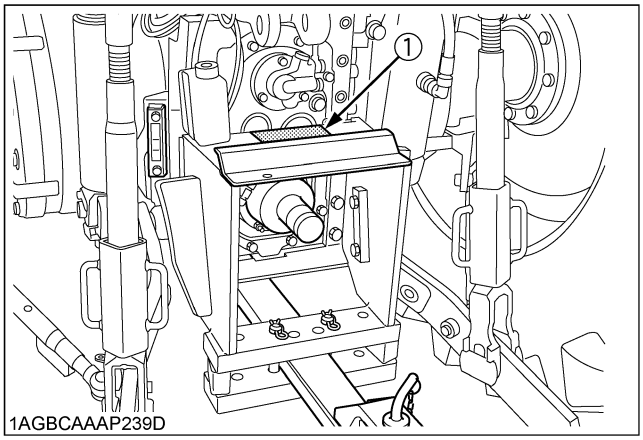



1AGAMAAAP2470

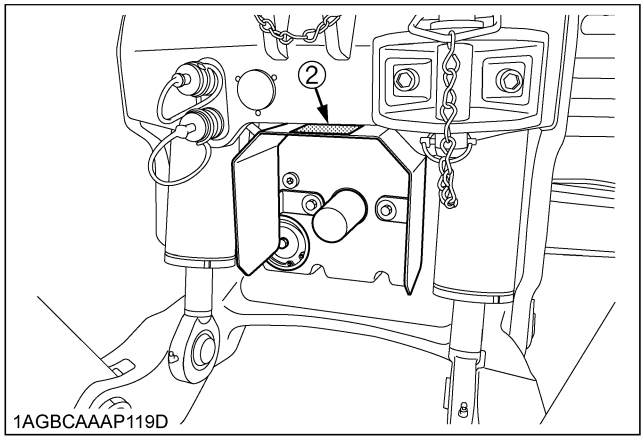
(3) Part No. 3J080-1298-1



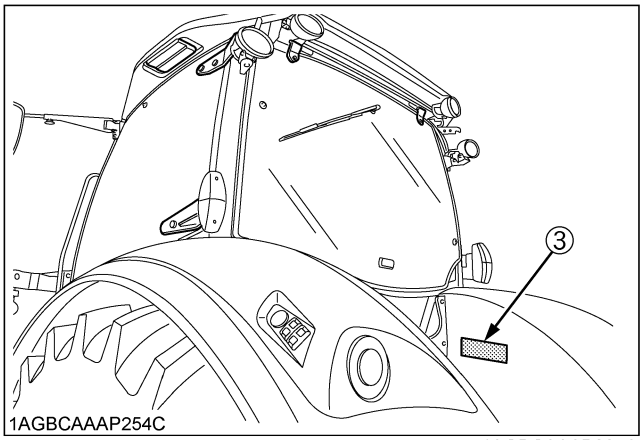

1AGBCAAAP340A




1AGBCAAAP239D




1AGBCAAAP119D




1AGBCAAAP254C

1AGBCAAAP295A

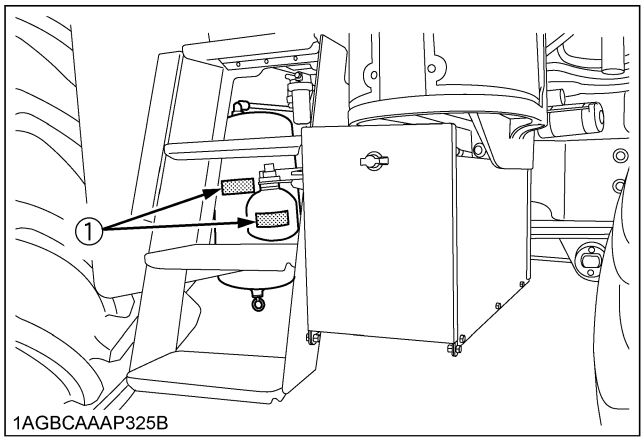
(1) Part No. 3J080-1299-1

**⚠WARNING**

**TO AVOID PERSONAL INJURY OR DEAHT:**

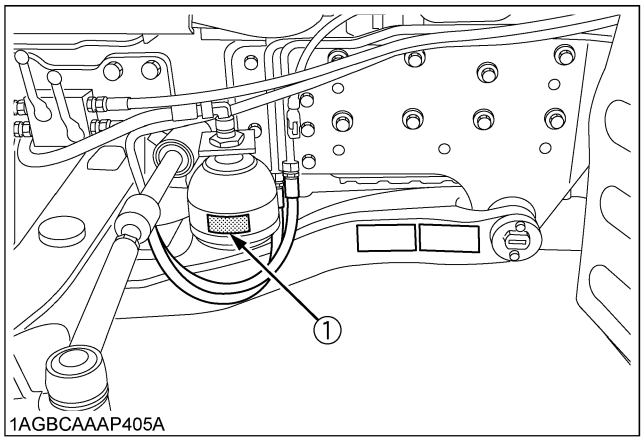
**Servicing of hydraulic accumulator or hydraulic system should be performed only by authorized Kubota dealer.**

1AGBCAAAP341A



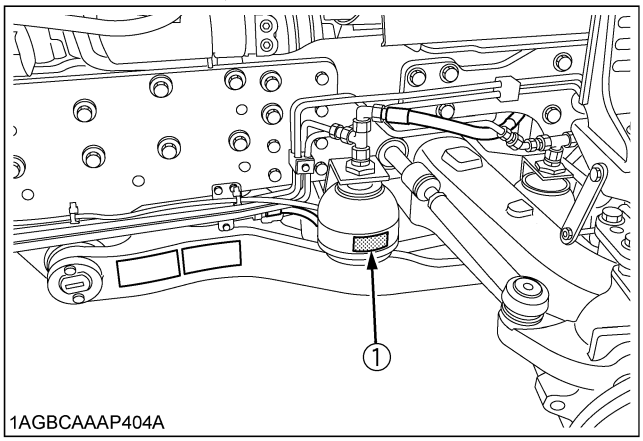

1AGBCAAAP325B

[Front suspension type]



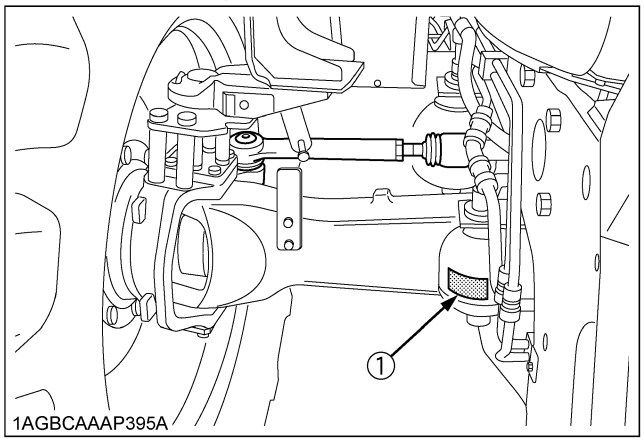

1AGBCAAAP405A

[Front suspension type]




1AGBCAAAP404A

[Front suspension type]



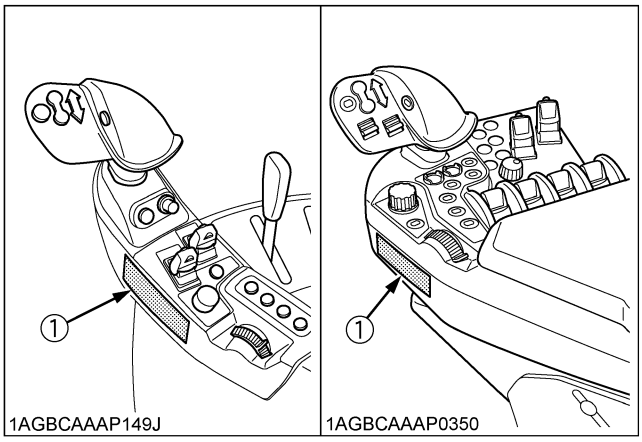

1AGBCAAAP395A

1AGBCAAAP333A

(1) Part No. 3J080-1309-1

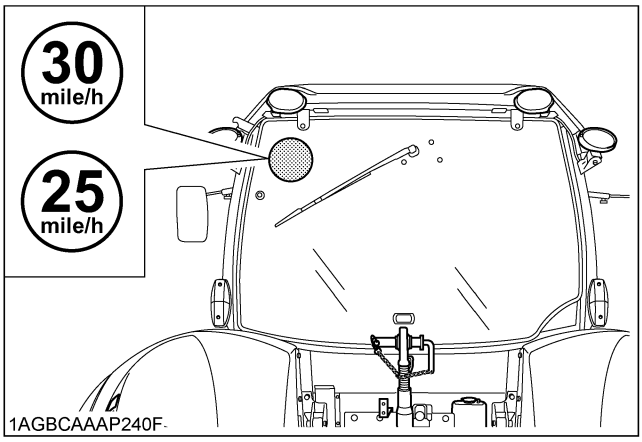



1AGBCAAAP348A




1AGBCAAAP149J 1AGBCAAAP0350

**Maximum road speed**




1AGBCAAAP240F-

1AGBCAAAP286B

## 8. CARE OF DANGER, WARNING AND CAUTION LABELS

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels from your local KUBOTA Dealer.
4. If a component with danger, warning and caution label(s) affixed is replaced with new part, make sure new label(s) is (are) attached in the same location(s) as the replaced component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

# SERVICING OF TRACTOR

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

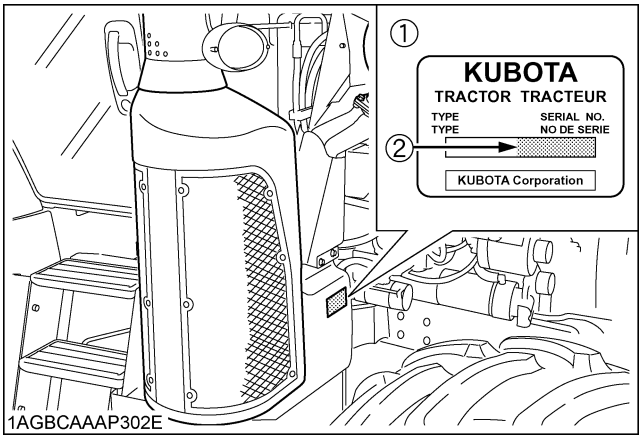
| | Type | Serial No. |
|---|---|---|
| Tractor | | |
| CAB / ROPS | | |
| Engine | | |
| Date of Purchase | | |
| Name of Dealer | | |
| (To be filled in by purchaser) | | |

### ◆ Warranty

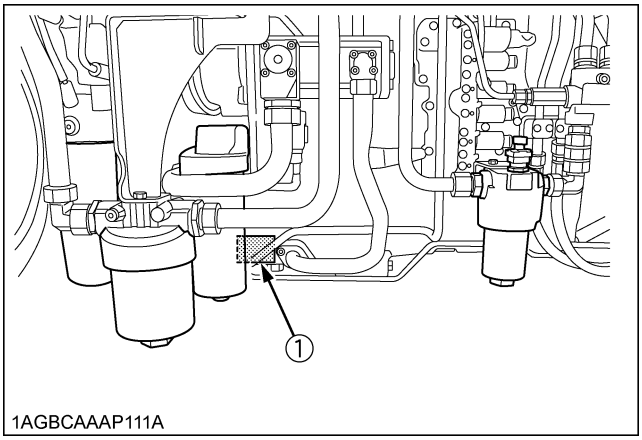
This tractor is warranted under the KUBOTA Limited Express Warranty, a copy of which may be obtained from your selling dealer. No warranty shall, however, apply if the tractor has not been handled according to the instruction given in the Operator's Manual even it is within the warranty period.

### ◆ Scrapping the tractor and its procedure

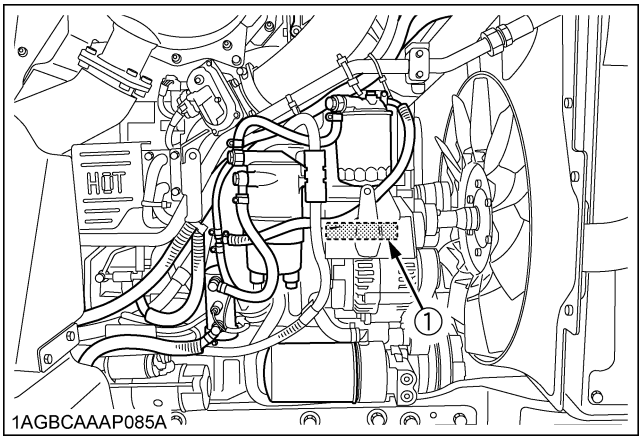
To put the tractor out of service, correctly follow the local rules and regulations of the country or territory where you scrap it. If you have questions, consult your local KUBOTA Dealer.



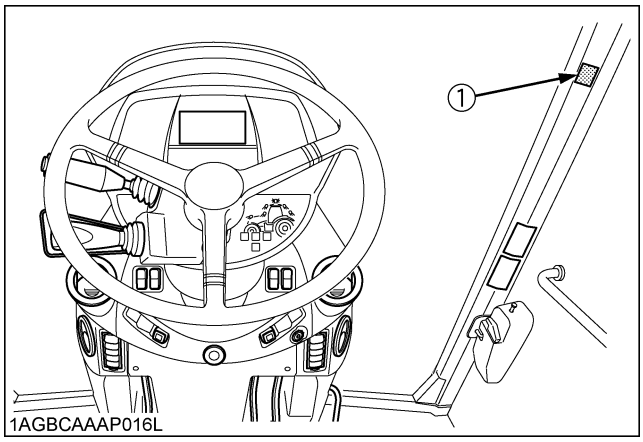

*(1) Tractor identification plate*
*(2) Tractor serial number*



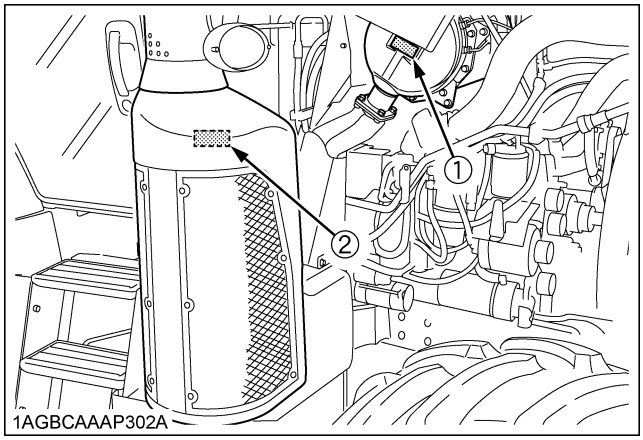

*(1) Transmission identification plate*



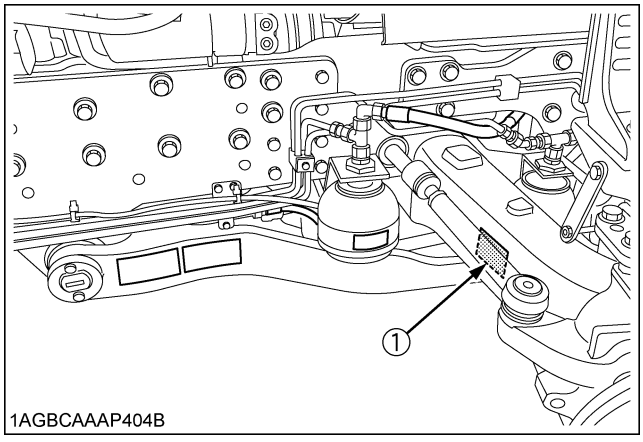

*(1) Engine serial number*




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




*(1) Diesel Particulate Filter (DPF) serial number*
*(2) Selective Catalytic Reduction (SCR) muffler serial number*




*(1) Front axle identification plate*

# SPECIFICATIONS

## SPECIFICATION TABLE

| Model | | | | Standard | | Premium | | | Premium KVT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | M7-151 | M7-171 | M7-131 | M7-151 | M7-171 | M7-131 | M7-151 | M7-171 |
| Engine | Model | | | KUBOTA V6108-CR-TIEF4 | | | | | | | |
| | Type | | | Direct Injection, with Intercooler turbocharger, water-cooled 4 cycle diesel engine | | | | | | | |
| | Number of cylinders | | | 4 | | | | | | | |
| | Total displacement | | $cm^3$ (cu.in.) | 6124 (374) | | | | | | | |
| | Bore and stroke | | mm (in.) | 118 x 140 (4.65 x 5.51) | | | | | | | |
| | Rated power *1 | | kW (HP)/ rpm | 110.4 (148)/ 2200 | 125.3 (168)/ 2200 | 95.5 (128)/ 2200 | 110.4 (148)/ 2200 | 125.3 (168)/ 2200 | 95.5 (128)/ 2200 | 110.4 (148)/ 2200 | 125.3 (168)/ 2200 |
| | PTO power *2 | | kW (HP)/ rpm | 89.5 (120)/ 2000 | 104.4 (140)/ 2000 | 74.6 (100)/ 2000 | 89.5 (120)/ 2000 | 104.4 (140)/ 2000 | 74.6 (100)/ 2000 | 89.5 (120)/ 2000 | 104.4 (140)/ 2000 |
| | Maximum torque (without boost) | | N-m/rpm | 668/ 1400 | 679/ 1400 | 588/ 1400 | 668/ 1400 | 679/ 1400 | 588/ 1400 | 668/ 1400 | 679/ 1400 |
| | Additional boost power | | kW (HP) | +14.9 (+20) | +3.7 (+5) | +14.9 (+20) | | +3.7 (+5) | +14.9 (+20) | | +3.7 (+5) |
| | Battery capacity | | | 174Ah (20 HR)/1400A | | | | | | | |
| | Fuel tank capacity | | L (U.S. gals.) | 330 (87.2) | | | | | | | |
| | Engine oil capacity | | L (U.S. gals.) | 22 (5.8) | | | | | | | |
| | Coolant capacity | | L (U.S. gals.) | 24 (6.3) | | | | | | | |
| | DEF/AdBlue® capacity | | L (U.S. gals.) | 38 (10) | | | | | | | |
| Dimen-sions | Overall length | | mm (in.) | 4770 (187.8) with ballast carrier/ 4790 (188.6) with front linkage | | | | | | | |
| | Overall width (minimum tread) | | mm (in.) | 2500 (98.4) with flange axle/ 2825 (111.2) with bar axle | | | | | | | |
| | Overall height | | mm (in.) | 3030 (119.3) | | | | | | | |
| | Wheel base | | mm (in.) | 2720 (107.1) | | | | | | | |
| | Tread | Front | mm (in.) | 1914 (75.4) | | | | | | | |
| | | Rear | mm (in.) | 1850 (72.8) with flange axle / 1524 to 3048 (60.0 to 120.0) with bar axle | | | | | | | |
| | Crop clearance | | mm (in.) | 370 to 410 (14.6 to 16.1) | | | | | | | |
| Weight | | | kg (lbs.) | 6730 (14840) | | | | | 6980 (15390) | | |

| Model | | | | Standard | | Premium | | | Premium KVT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | M7-151 | M7-171 | M7-131 | M7-151 | M7-171 | M7-131 | M7-151 | M7-171 |
| Traveling system | Standard tire size | | Front tires | 16.9R28 (420/85R28) 14.9R30 (380/85R30) 14.9R28 (380/85R28) 320/85R34 540/65R28 | | | | | | | |
| | | | Rear tires | 18.4R42 (480/80R42) 18.4R38 (460/85R38) 420/80R46 380/90R46 650/65R38 | | | | | | | |
| | Trans-mission | Type | | Power shift | | | | | CVT | | |
| | | Main gear shift | | 4-speed power shift | | | | | | | |
| | | Range gear shift | | 6-speed synchronized (GST) | | | | | | | |
| | | No. of speeds | | F24/R24 (F40/R40 with optional creep) | | | | | | | |
| | Clutch | | | Multiple wet disc, electronic-hydraulic operated | | | | | | | |
| | Steering | | | Hydrostatic power steering<br>Hydrostatic, with telescopic steering column for steering wheel height adjustment | | | | | | | |
| | 4-wheel drive change | | | Electronic hydraulically operated | | | | | | | |
| | Braking system | | | Hydraulically operated wet disk | | | | | | | |
| | Trailer brake | | | — | | Hydraulic or pneumatic for option | | | | | |
| | Differential lock | | Front/ Rear | Electronic Hydraulically operated<br>(actuated front and rear at the same time) | | | | | | | |
| Hydraulic unit | Hydraulic control system | | | Open center system | | Closed center with load sensing | | | | | |
| | Pump capacity (For rear lift and remote hydraulic)*3 | | L/min (gpm) | 80 (21.1) | | 110 (29.1) | | | | | |
| | 3-point hitch | | | Category 3/3N | | | | | | | |
| | Hydraulic lifting cylinder diameter | | mm (in.) | 100 (3.9) | | | | | | | |
| | Max. lifting force | At lifting points | kg (lbs.) | 9400 (20720) | | | | | | | |
| | | 24 in. behind lifting point *4 | kg (lbs.) | 5350 (11790) | | | | | | | |
| | Remote hydraulic control | | | Mechanical valve, max. 4 valves | | Electronic control valve, max. 5 valves | | | | | |
| | System pressure | | MPa ($kgf/cm^2$) | 20.0 (208) | | | | | | | |
| | Traction system | | | Telescopic lower link | | | | | | | |
| | Front lift (option) | Max. lifting capacity at link end | kg (lbs.) | 3900 (8598) | | | | | | | |
| | | Max. lifting capacity in full stroke | kg (lbs.) | 3200 (7055) | | | | | | | |

| Model | | | | Standard | | Premium | | | Premium KVT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | M7-151 | M7-171 | M7-131 | M7-151 | M7-171 | M7-131 | M7-151 | M7-171 |
| 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 company reserves the right to change the specifications without notice.

**NOTE:** *1 According to 97/68EC
*2 Manufacturer's estimate
*3 Theoretical value
*4 Top link mounting: upper hole

# TRAVELING SPEEDS

◆ **Standard, Premium models** (At rated engine rpm)

| | | | 40 km/h model | | | | 50 km/h model | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Tire size (Rear) | | | 650/65R38 | | | | | | | |
| Creep lever (option) | Range gear shift | Main gear shift | Forward | | Reverse | | Forward | | Reverse | |
| | | | km/h | mph | km/h | mph | km/h | mph | km/h | mph |
| ON | A | 1 | 0.45 | 0.28 | 0.51 | 0.32 | 0.45 | 0.28 | 0.51 | 0.32 |
| | | 2 | 0.54 | 0.34 | 0.62 | 0.39 | 0.54 | 0.34 | 0.62 | 0.39 |
| | | 3 | 0.65 | 0.40 | 0.70 | 0.43 | 0.65 | 0.40 | 0.70 | 0.43 |
| | | 4 | 0.78 | 0.48 | 0.84 | 0.52 | 0.78 | 0.48 | 0.84 | 0.52 |
| | B | 1 | 0.81 | 0.50 | 0.92 | 0.57 | 0.81 | 0.50 | 0.92 | 0.57 |
| | | 2 | 0.97 | 0.60 | 1.11 | 0.69 | 0.97 | 0.60 | 1.11 | 0.69 |
| | | 3 | 1.16 | 0.72 | 1.27 | 0.79 | 1.16 | 0.72 | 1.27 | 0.79 |
| | | 4 | 1.40 | 0.87 | 1.52 | 0.94 | 1.40 | 0.87 | 1.52 | 0.94 |
| | C | 1 | 1.30 | 0.81 | 1.48 | 0.92 | 1.30 | 0.81 | 1.48 | 0.92 |
| | | 2 | 1.56 | 0.97 | 1.78 | 1.11 | 1.56 | 0.97 | 1.78 | 1.11 |
| | | 3 | 1.87 | 1.16 | 2.03 | 1.26 | 1.87 | 1.16 | 2.03 | 1.26 |
| | | 4 | 2.24 | 1.39 | 2.44 | 1.52 | 2.24 | 1.39 | 2.44 | 1.52 |
| | D | 1 | 1.96 | 1.21 | 2.24 | 1.39 | 1.96 | 1.21 | 2.24 | 1.39 |
| | | 2 | 2.35 | 1.46 | 2.68 | 1.67 | 2.35 | 1.46 | 2.68 | 1.67 |
| | | 3 | 2.82 | 1.75 | 3.07 | 1.91 | 2.82 | 1.75 | 3.07 | 1.91 |
| | | 4 | 3.38 | 2.10 | 3.68 | 2.29 | 3.38 | 2.10 | 3.68 | 2.29 |
| OFF | A | 1 | 3.7 | 2.30 | 4.2 | 2.61 | 3.7 | 2.30 | 4.2 | 2.61 |
| | | 2 | 4.4 | 2.73 | 5.0 | 3.10 | 4.4 | 2.73 | 5.0 | 3.10 |
| | | 3 | 5.3 | 3.30 | 5.8 | 3.60 | 5.3 | 3.30 | 5.8 | 3.60 |
| | | 4 | 6.3 | 3.91 | 6.9 | 4.29 | 6.3 | 3.91 | 6.9 | 4.29 |
| | B | 1 | 6.6 | 4.10 | 7.6 | 4.72 | 6.6 | 4.10 | 7.6 | 4.72 |
| | | 2 | 8.0 | 4.97 | 9.1 | 5.65 | 8.0 | 4.97 | 9.1 | 5.65 |
| | | 3 | 9.5 | 5.90 | 10.4 | 6.46 | 9.5 | 5.90 | 10.4 | 6.46 |
| | | 4 | 11.4 | 7.08 | 12.4 | 7.71 | 11.4 | 7.08 | 12.4 | 7.71 |
| | C | 1 | 10.6 | 6.59 | 12.1 | 7.52 | 10.6 | 6.59 | 12.1 | 7.52 |
| | | 2 | 12.8 | 7.95 | 14.5 | 9.01 | 12.8 | 7.95 | 14.5 | 9.01 |
| | | 3 | 15.3 | 9.51 | 16.6 | 10.3 | 15.3 | 9.51 | 16.6 | 10.3 |
| | | 4 | 18.3 | 11.4 | 19.9 | 12.4 | 18.3 | 11.4 | 19.9 | 12.4 |
| | D | 1 | 16.0 | 9.94 | 18.3 | 11.4 | 16.0 | 9.94 | 18.3 | 11.4 |
| | | 2 | 19.2 | 11.9 | 21.9 | 13.6 | 19.2 | 11.9 | 21.9 | 13.6 |
| | | 3 | 23.0 | 14.3 | 25.1 | 15.6 | 23.0 | 14.3 | 25.1 | 15.6 |
| | | 4 | 27.6 | 17.2 | 30.0 | 18.6 | 27.6 | 17.2 | 30.0 | 18.6 |
| | E | 1 | 22.0 | 13.7 | 25.1 | 15.6 | 22.0 | 13.7 | 25.1 | 15.6 |
| | | 2 | 26.4 | 16.4 | 30.1 | 18.7 | 26.4 | 16.4 | 30.1 | 18.7 |
| | | 3 | 31.6 | 19.6 | 34.5 | 21.4 | 31.6 | 19.6 | 34.5 | 21.4 |
| | | 4 | 37.9 | 23.6 | 41.3 | 25.7 | 37.9 | 23.6 | 41.3 | 25.7 |
| | F | 1 | 33.7 | 20.9 | 38.4 | 23.9 | 33.7 | 20.9 | 38.4 | 23.9 |
| | | 2 | 40.0 * | 24.9 * | 40.0 * | 24.9 * | 40.5 | 25.2 | 46.1 | 28.6 |
| | | 3 | 40.0 * | 24.9 * | 40.0 * | 24.9 * | 48.4 | 30.1 | 50.0 * | 31.1 * |
| | | 4 | 40.0 * | 24.9 * | 40.0 * | 24.9 * | 50.0 * | 31.1 * | 50.0 * | 31.1 * |

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

* Maximum traveling speed 40 km/h (24.9 mph) or 50 km/h (31.1 mph) is maintained and controlled by engine speed and gear shift.

◆ **Premium KVT model**

Maximum speed 40 km/h (24.9 mph) model: 0.5 - 40 km/h (0.31 - 24.9 mph)

Maximum speed 50 km/h (31.1 mph) model: 0.5 - 50 km/h (0.31 - 31.1 mph)

**NOTE :**

- KVT transmission provides infinite ground speeds to maximum 40 or 50 km/h (24.9 or 31.1 mph) in the forward and 30 km/h (18.6 mph) reverse mode.

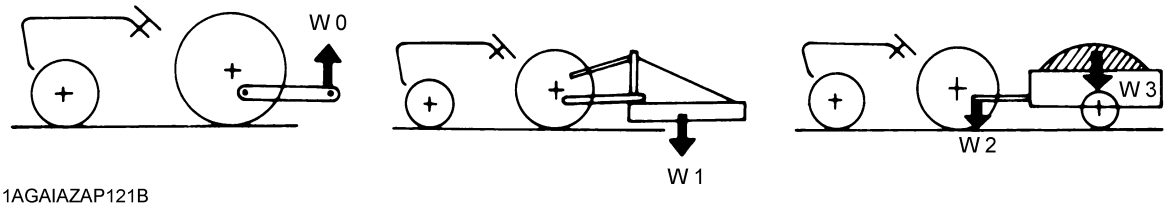
# IMPLEMENT LIMITATIONS

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

| Tread (max. width) | | Lower link end max. lifting capacity W0 |
|---|---|---|
| Front | Rear | |
| 1914 mm (75.4 in.) | 1850 mm (72.8 in.) with flange axle<br>3048 mm (120.0 in) with bar axle | 9400 kg (19840 lbs.) |

| Actual figures | | |
|---|---|---|
| Implement weight W1 and/or size | Max. Drawbar Load W2<br>1800 kg (3968 lbs.) | Trailer loading weight W3 (With trailer's weight)<br>16000 kg (35273 lbs.) |

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



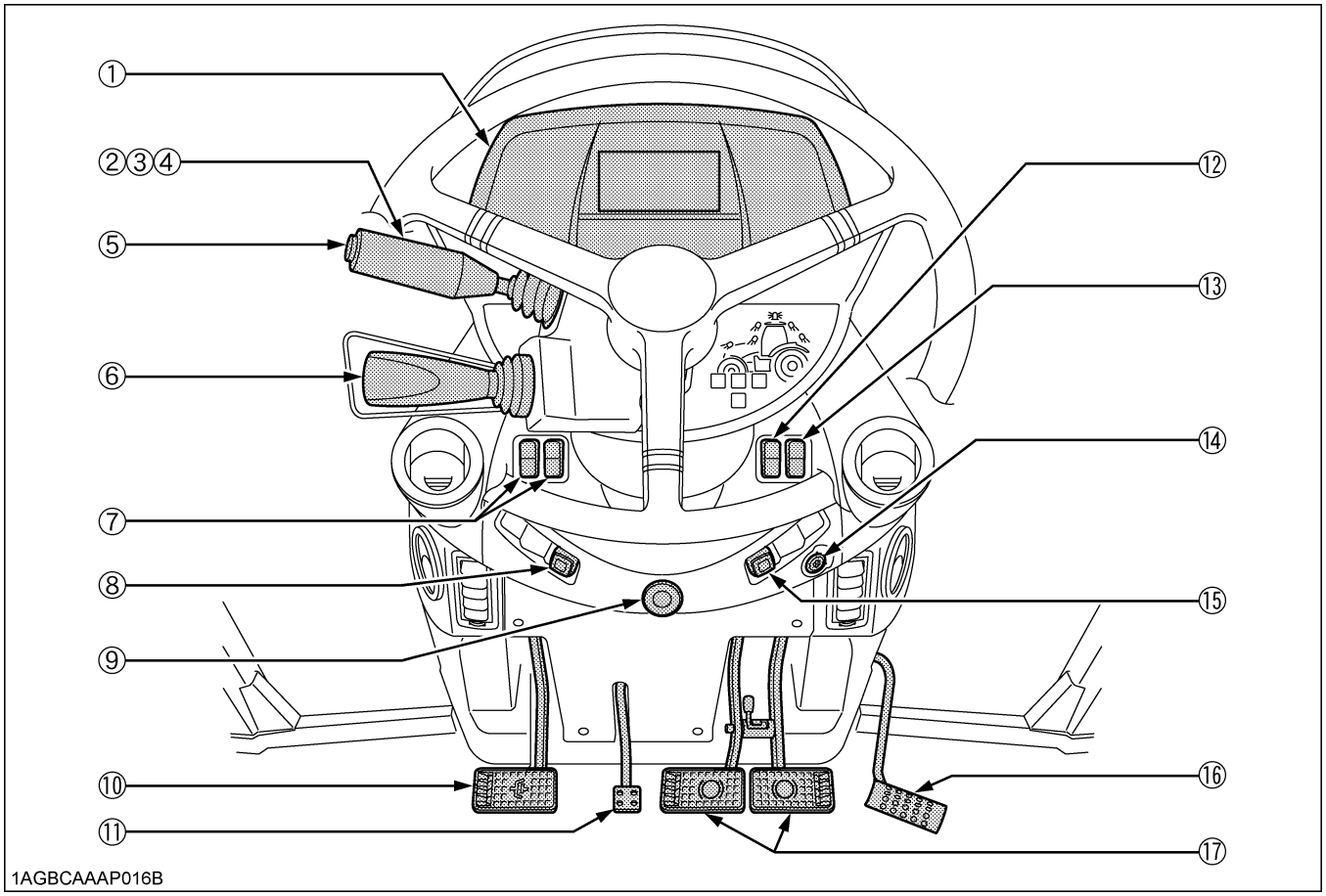

1AGAIAZAP121B

**NOTE :**

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

# INSTRUMENT PANEL AND CONTROLS

## INSTRUMENT PANEL, SWITCHES AND HAND CONTROLS

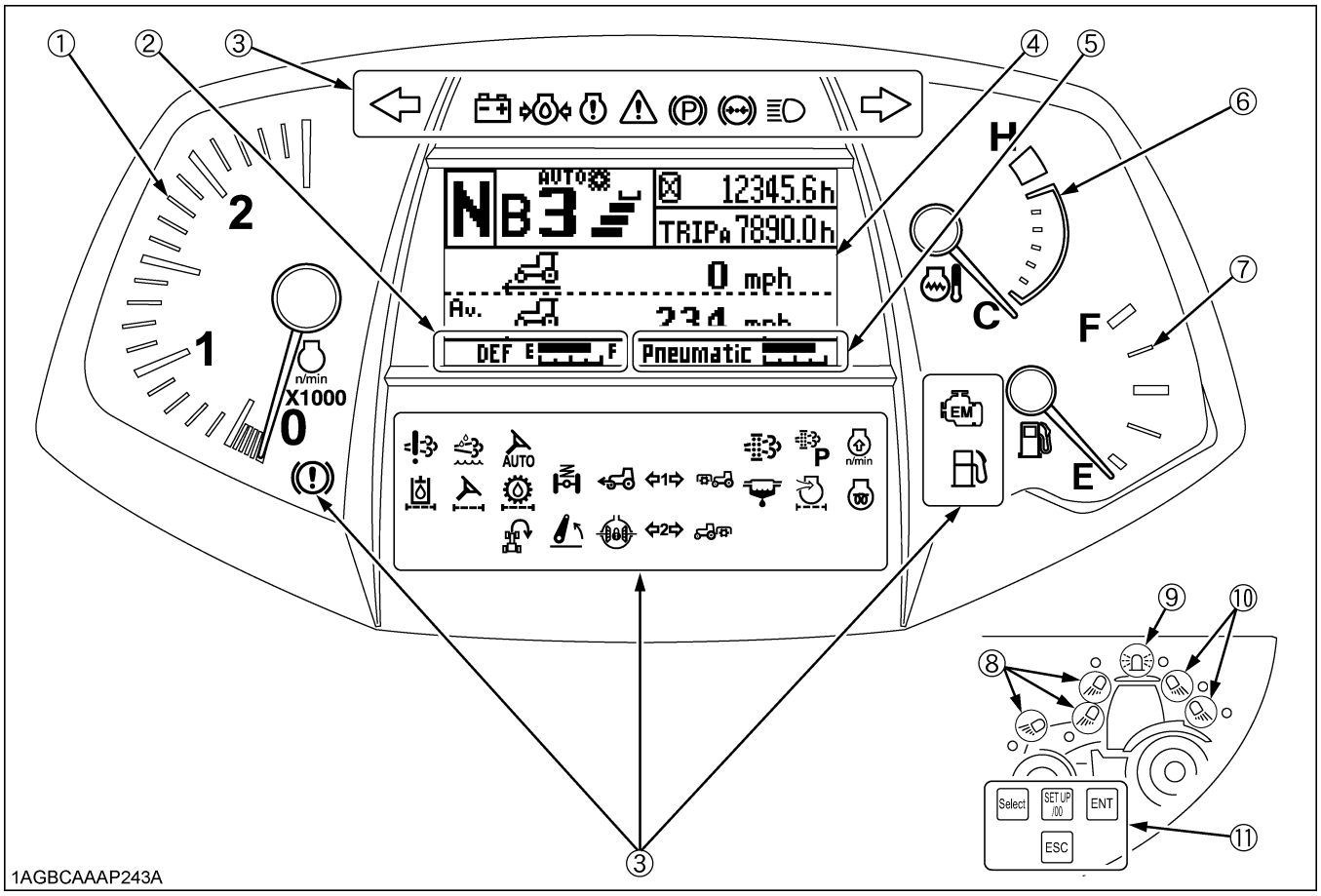



ILLUSTRATED CONTENTS


| | |
|---|---|
| *(1) Instrument panel* | *next page* |
| *(2) Turn signal light switch* | *98* |
| *(3) Front wiper/washer switch* | *182* |
| *(4) Headlight beam selection switch* | *97, 97* |
| *(5) Horn button* | *98* |
| *(6) Shuttle lever* | *103* |
| *(7) Light switch* | *97, 97* |
| *(8) DPF INHIBIT switch* | *76* |
| *(9) Hazard light switch* | *98* |


ILLUSTRATED CONTENTS


| | |
|---|---|
| *(10) Clutch pedal* | *102* |
| *(11) Steering wheel tilt/telescope pedal* | *95* |
| *(12) Battery switch* | *83* |
| *(13) Rear wiper/washer switch* | *182* |
| *(14) Key switch* | *84* |
| *(15) Parked regeneration switch* | *78* |
| *(16) Foot throttle* | *103* |
| *(17) Brake pedal* | *100* |




ILLUSTRATED CONTENTS


*(1) Tachometer* ..... *129*

*(2) DEF/AdBlue® gauge* ..... *128*

*(3) Indicator* ..... *31, 126*

*(4) Liquid crystal display* ..... *18*

*(5) Pneumatic pressure gauge (if equipped)* ..... *128*

*(6) Coolant temperature gauge* ..... *129*


ILLUSTRATED CONTENTS


*(7) Fuel gauge* ..... *128*

*(8) Front work light switch* ..... *99*

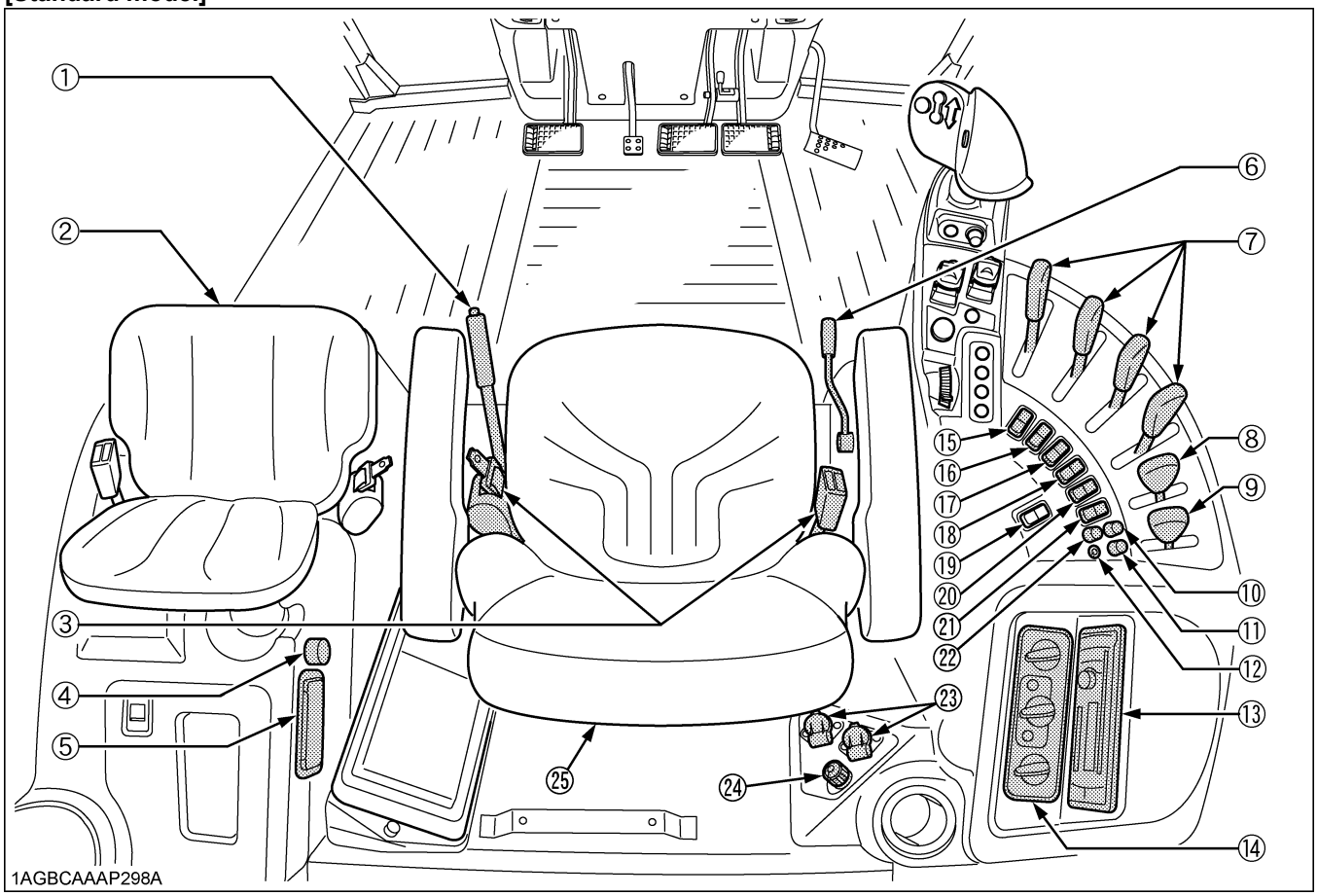
*(9) Beacon light switch* ..... *99*

*(10) Rear work light switch* ..... *99*

*(11) Display switch*..... *20*

# FOOT AND HAND CONTROLS

**[Standard model]**



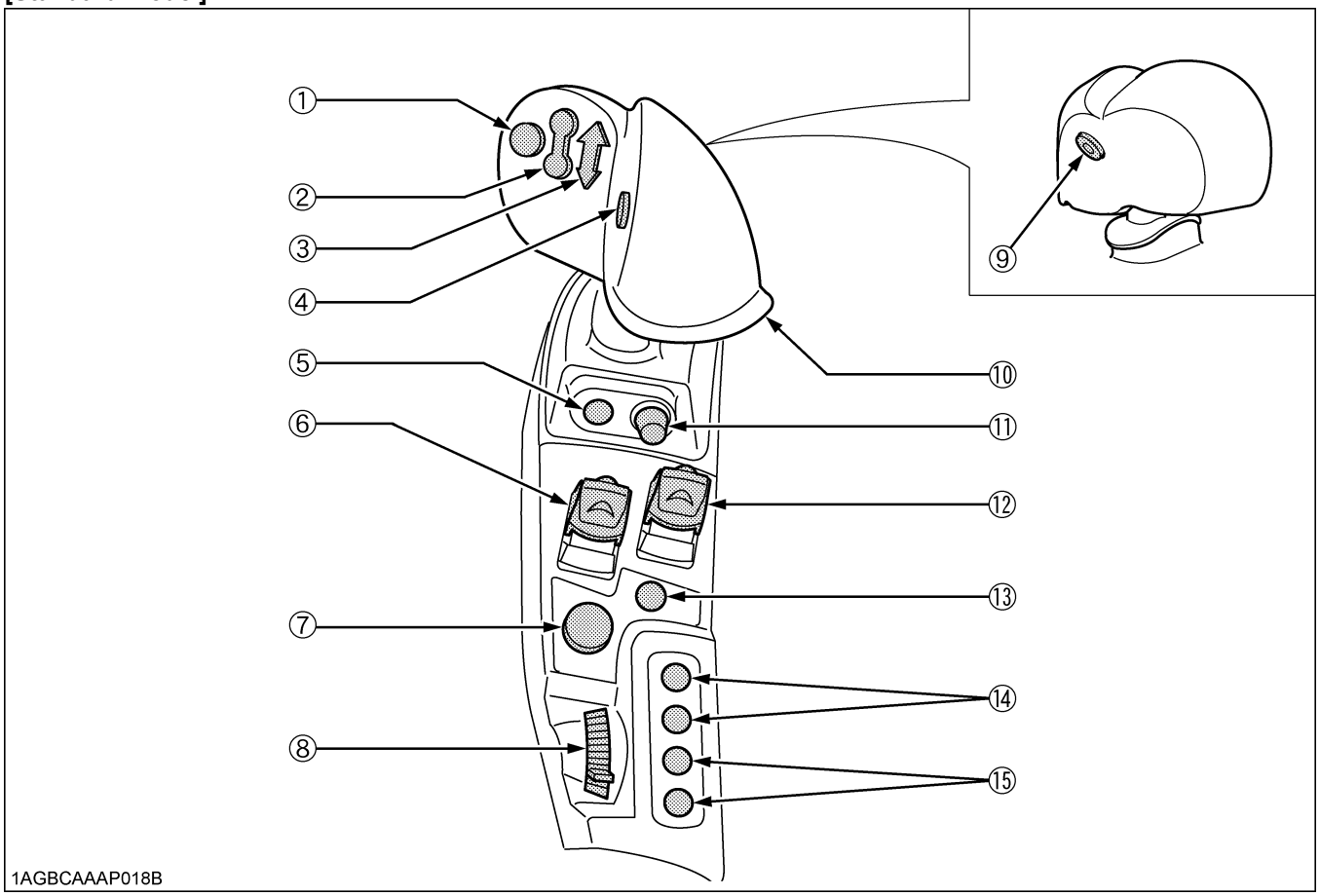

ILLUSTRATED CONTENTS


*(1) Parking brake lever* ..... *101*
*(2) Instructional seat (if equipped)* ..... *94*
*(3) Seat belt* ..... *94*
*(4) Cigarette lighter* ..... *191*
*(5) Ashtray* ..... *191*
*(6) Creep gear shift lever (if equipped)* ..... *105*
*(7) Remote control valve lever* ..... *161*
*(8) PTO operation mode selection lever* ..... *137*
*(9) PTO speed selection lever* ..... *137*
*(10) Lift arm top limit adjustment dial* ..... *155*
*(11) 3-point hitch lowering speed adjustment dial* ..... *156*
*(12) Lift arm ride control switch* ..... *158*
*(13) Radio/CD player* ..... *---*


ILLUSTRATED CONTENTS


*(14) Air conditioner control panel* ..... *184*
*(15) 4WD switch* ..... *106*
*(16) Differential lock switch* ..... *108*
*(17) Transmission mode selection switch* ..... *111*
*(18) Front suspension mode selection switch (if equipped)* ..... *133*
*(19) Rear defogger switch (if equipped)* ..... *187*
*(20) Front suspension manual switch (if equipped)* ..... *133*
*(21) Heater mirror switch (if equipped)* ..... *96*
*(22) Draft ratio adjustment dial* ..... *153*
*(23) Electrical outlet* ..... *189*
*(24) Signal socket* ..... *190*
*(25) Operator's seat* ..... *92*

**[Standard model]**



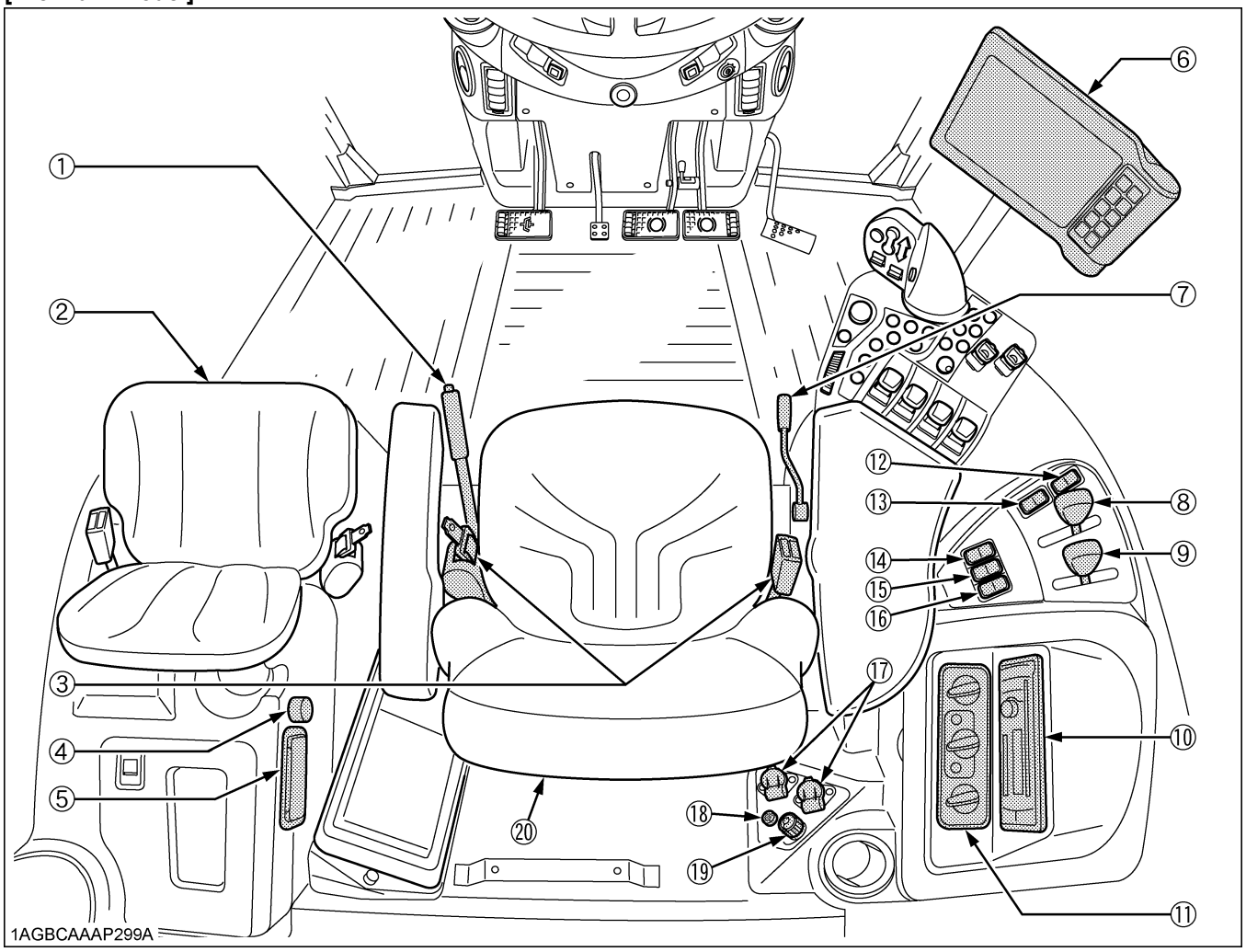

ILLUSTRATED CONTENTS

*(1) Auto shift button ..... 110*
*(2) 3-P. quick raise/lower switch ..... 157*
*(3) Shuttle button ..... 104*
*(4) Range gear shift button ..... 110*
*(5) Shuttle neutral button..... 105*
*(6) Rear PTO clutch control switch ..... 136*
*(7) Depth control dial (Hydraulic dial) ..... 154*
*(8) Hand throttle ..... 103*

ILLUSTRATED CONTENTS

*(9) Shuttle enable button ..... 104*
*(10) Ez-command center ..... 110*
*(11) Auto shift sensitivity dial ..... 117*
*(12) Front PTO clutch control switch (if equipped) ... 141*
*(13) 3-point hitch lock button ..... 152*
*(14) Engine RPM memory button ..... 85*
*(15) Engine RPM memory adjustment button ..... 85*

**[Premium model]**



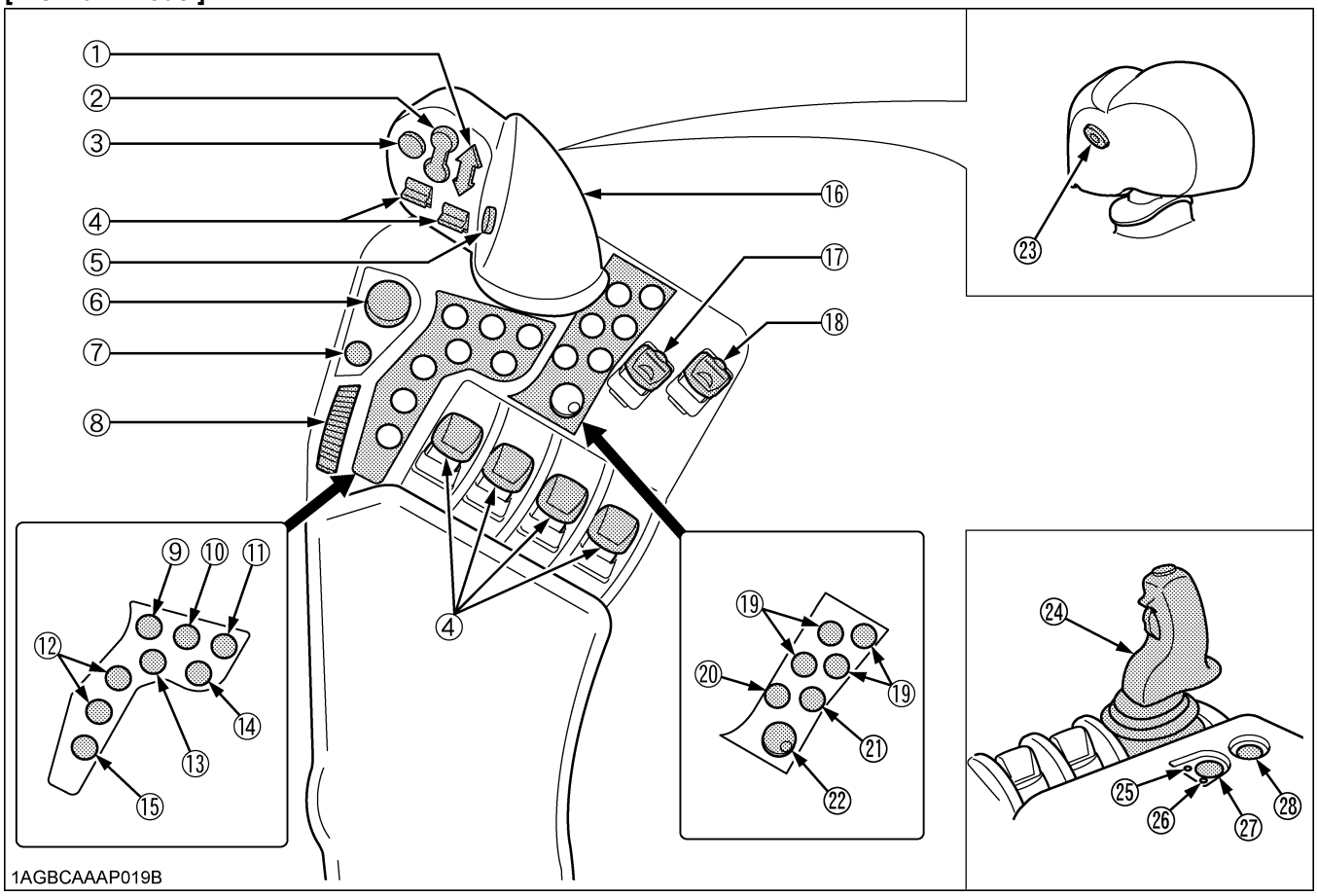

ILLUSTRATED CONTENTS


*(1) Parking brake lever ..... 101*
*(2) Instructional seat (if equipped) ..... 94*
*(3) Seat belt ..... 94*
*(4) Cigarette lighter ..... 191*
*(5) Ashtray ..... 191*
*(6) K-monitor ..... 32*
*(7) Creep gear shift lever (if equipped) ..... 105*
*(8) PTO operation mode selection lever ..... 137*
*(9) PTO speed selection lever ..... 137*
*(10) Radio/CD player ..... ---*


ILLUSTRATED CONTENTS


*(11) Air conditioner control panel ..... 184*
*(12) Rear defogger switch (if equipped) ..... 187*
*(13) Front suspension manual switch (if equipped).. 133*
*(14) Transmission mode selection switch ..... 111*
*(15) Heater mirror switch (if equipped) ..... 96*
*(16) Auto steering switch (if equipped) ..... ---*
*(17) Electrical outlet ..... 189*
*(18) ISOBUS terminal ..... 189*
*(19) Signal socket ..... 190*
*(20) Operator's seat ..... 92*

**[Premium model]**



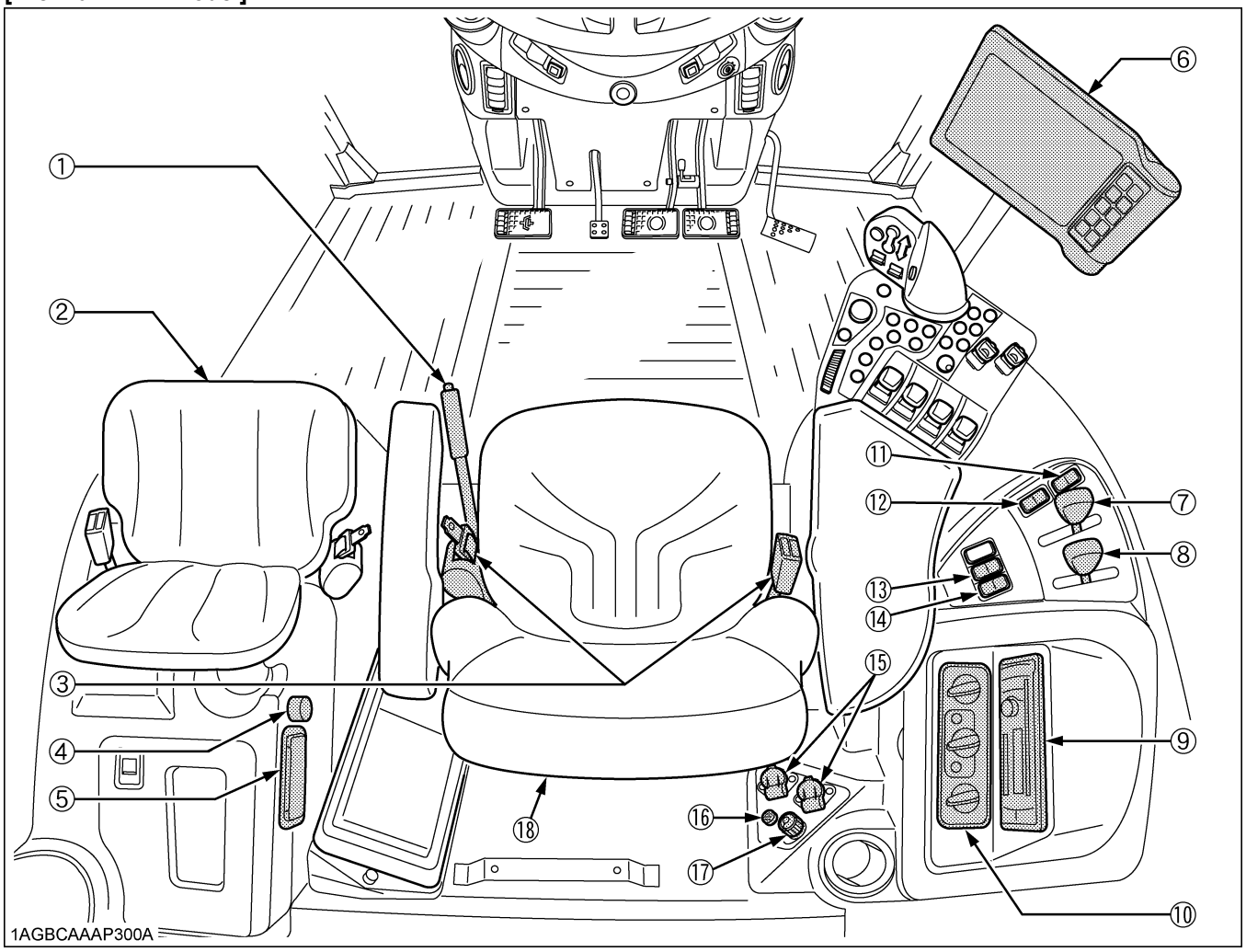

ILLUSTRATED CONTENTS


*(1) Shuttle button ..... 104*
*(2) 3-P. quick raise/lower switch ..... 157*
*(3) Auto shift button ..... 110*
*(4) Remote control valve switch ..... 164*
*(5) Range gear shift button ..... 110*
*(6) Depth control dial (Hydraulic dial) ..... 154*
*(7) 3-point hitch lock button ..... 152*
*(8) Hand throttle ..... 103*
*(9) Headland Management System field out button ... 53, 130*
*(10) Headland Management System field in button ... 53, 130*
*(11) Shuttle neutral button ..... 105*
*(12) Engine RPM memory button ..... 85*
*(13) Differential lock button ..... 108*
*(14) 4WD button ..... 106*
*(15) Remote control valve lock button ..... 163*
*(16) Ez-command center ..... 110*


ILLUSTRATED CONTENTS


*(17) Rear PTO clutch control switch ..... 136*
*(18) Front PTO clutch control switch (if equipped) ..... 141*
*(19) Function button ..... 36*
*(20) Esc button ..... 36*
*(21) Home button ..... 36*
*(22) Selection dial and button ..... 36*
*(23) Shuttle enable button ..... 104*
*(24) Joystick for remote control valve and loader [Loader type] ..... 165*
*(25) Front loader mode indicator [Loader type] ..... 165*
*(26) Remote control valve mode indicator [Loader type] ..... 165*
*(27) Selection button for remote control valve and loader [Loader type] ..... 165*
*(28) Joystick lock button [Loader type] ..... 165*

**[Premium KVT model]**



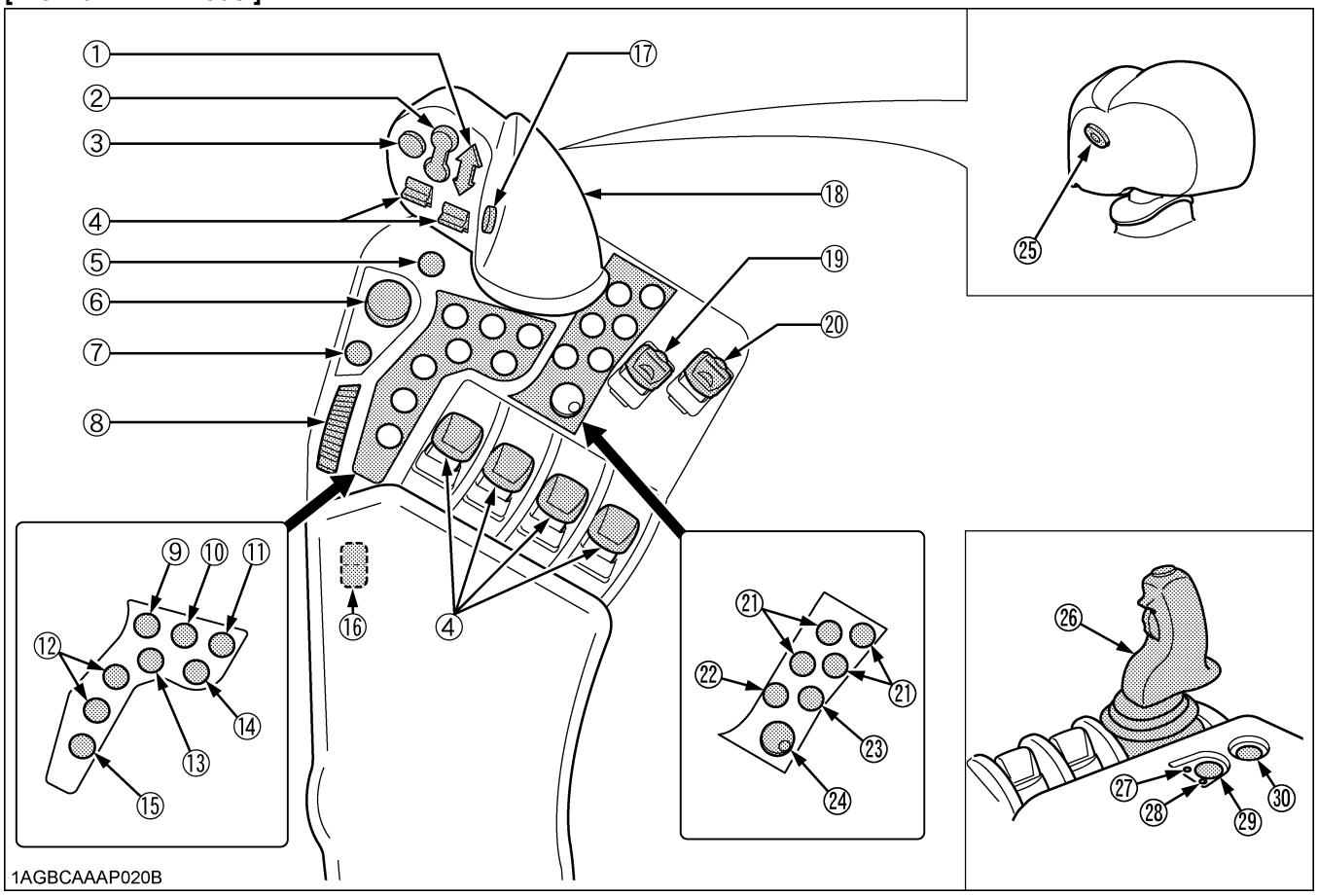

ILLUSTRATED CONTENTS


*(1) Parking brake lever* ..... *101*
*(2) Instructional seat (if equipped)* ..... *94*
*(3) Seat belt* ..... *94*
*(4) Cigarette lighter* ..... *191*
*(5) Ashtray* ..... *191*
*(6) K-monitor* ..... *32*
*(7) PTO operation mode selection lever* ..... *137*
*(8) PTO speed selection lever* ..... *137*
*(9) Radio/CD player* ..... *---*


ILLUSTRATED CONTENTS


*(10) Air conditioner control panel* ..... *184*
*(11) Rear defogger switch (if equipped)* ..... *187*
*(12) Front suspension manual switch (if equipped)..* *133*
*(13) Heater mirror switch (if equipped)* ..... *96*
*(14) Auto steering switch (if equipped)* ..... *---*
*(15) Electrical outlet* ..... *189*
*(16) ISOBUS terminal* ..... *189*
*(17) Signal socket* ..... *190*
*(18) Operator's seat* ..... *92*

**[Premium KVT model]**

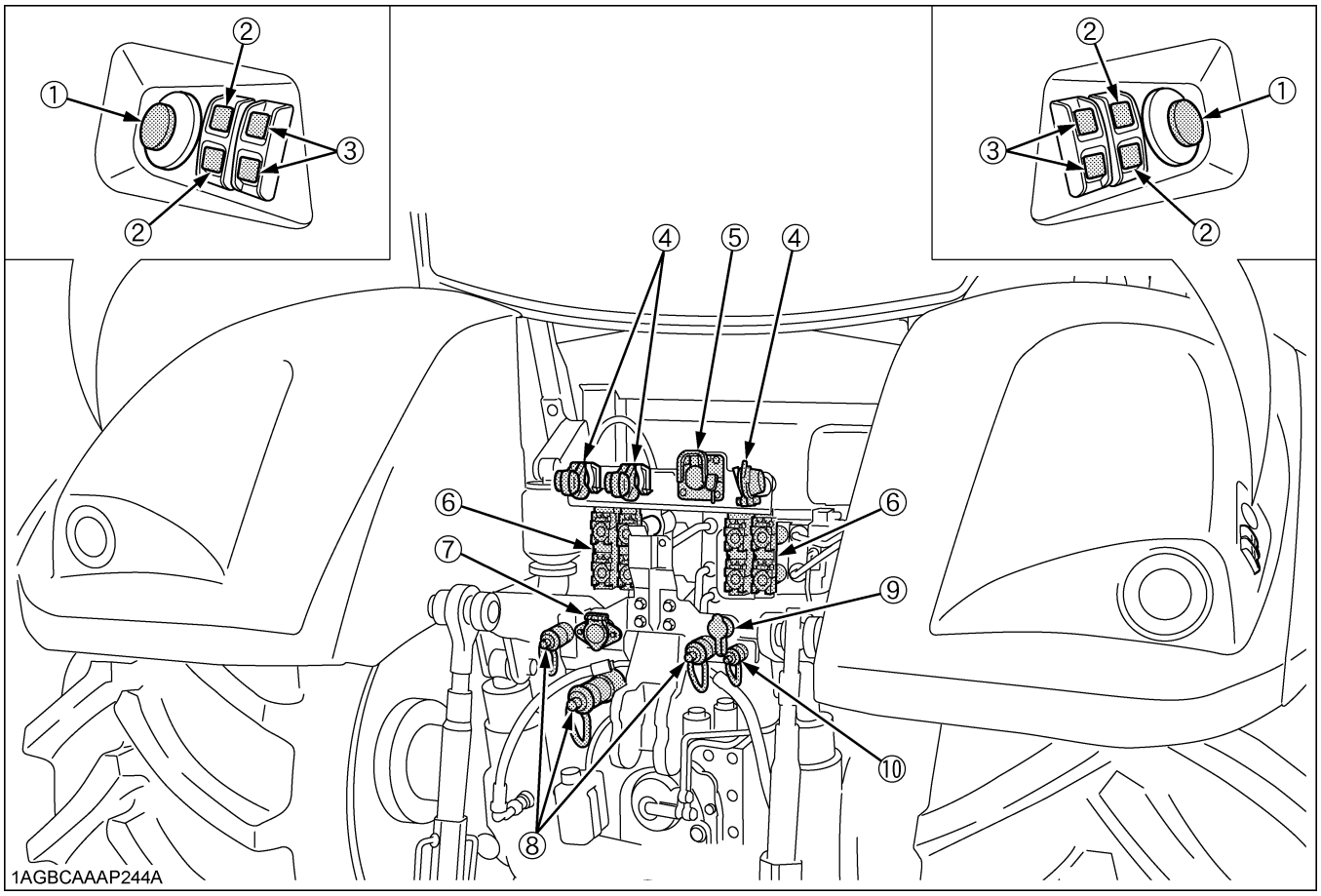



ILLUSTRATED CONTENTS


*(1) Shuttle button ..... 104*
*(2) 3-P. quick raise/lower switch ..... 157*
*(3) Cruise control button ..... 123*
*(4) Remote control valve switch ..... 164*
*(5) Mode shift button ..... 119*
*(6) Depth control dial (Hydraulic dial) ..... 154*
*(7) 3-point hitch lock button ..... 152*
*(8) Hand throttle ..... 103*
*(9) Headland Management System field out button ... 53, 130*
*(10) Headland Management System field in button ... 53, 130*
*(11) Shuttle neutral button ..... 105*
*(12) Engine RPM memory button ..... 85*
*(13) Differential lock button ..... 108*
*(14) 4WD button ..... 106*
*(15) Remote control valve lock button ..... 163*
*(16) Limp home switch ..... 124*
*(17) Ratio lock button ..... 124*


ILLUSTRATED CONTENTS


*(18) Ez-command center ..... 118*
*(19) Rear PTO clutch control switch ..... 136*
*(20) Front PTO clutch control switch (if equipped) ..... 141*
*(21) Function button ..... 36*
*(22) Esc button ..... 36*
*(23) Home button ..... 36*
*(24) Selection dial and button ..... 36*
*(25) Shuttle enable button ..... 104*
*(26) Joystick for remote control valve and loader [Loader type] ..... 165*
*(27) Front loader mode indicator [Loader type] ..... 165*
*(28) Remote control valve mode indicator [Loader type]..... 165*
*(29) Selection button for remote control valve and loader [Loader type]..... 165*
*(30) Joystick lock button [Loader type] ..... 165*



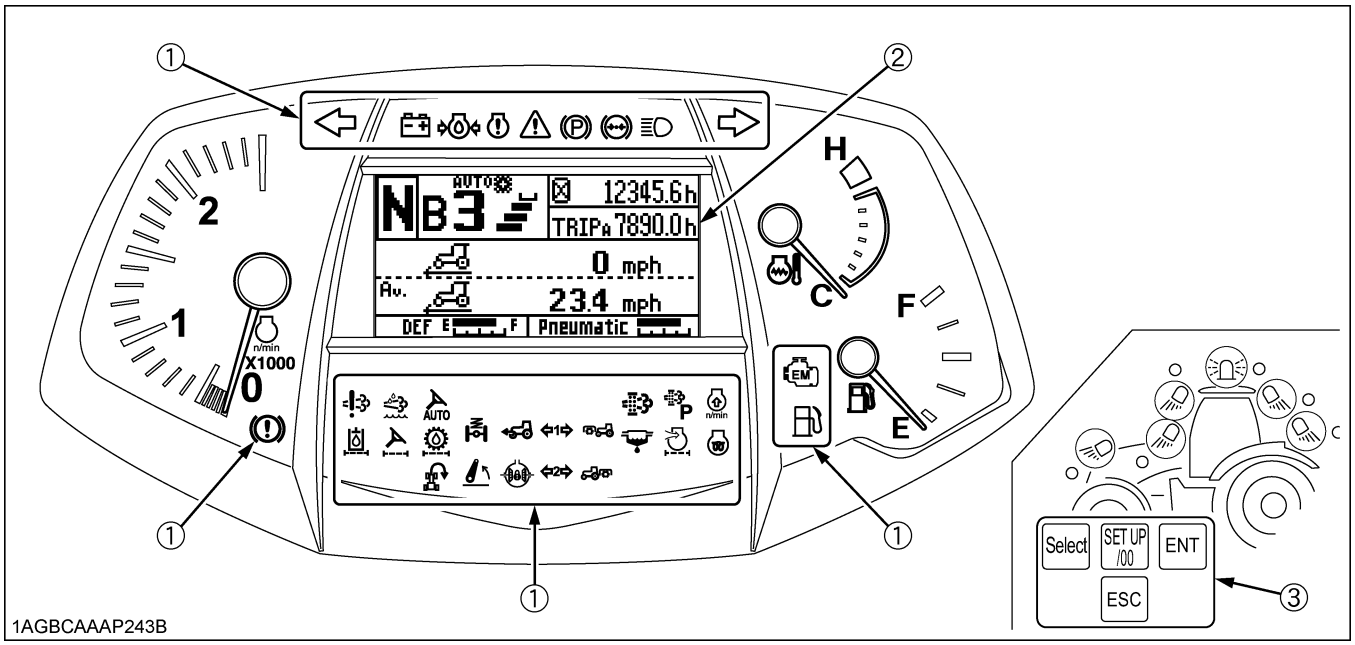

ILLUSTRATED CONTENTS

*(1) External switch for rear PTO ..... 137*
*(2) External switch for remote control valve (2nd segment) (if equipped) ..... 165*
*(3) External switch for 3-point hitch ..... 145*
*(4) Pneumatic trailer brake (if equipped)..... 101*
*(5) ISOBUS socket..... 188*

ILLUSTRATED CONTENTS

*(6) Remote control valve..... 160*
*(7) Trailer electrical outlet ..... 188*
*(8) Hydraulic power beyond port (if equipped) ..... 159*
*(9) Hydraulic trailer brake ..... 101*
*(10) Hydraulic drain port ..... 159*

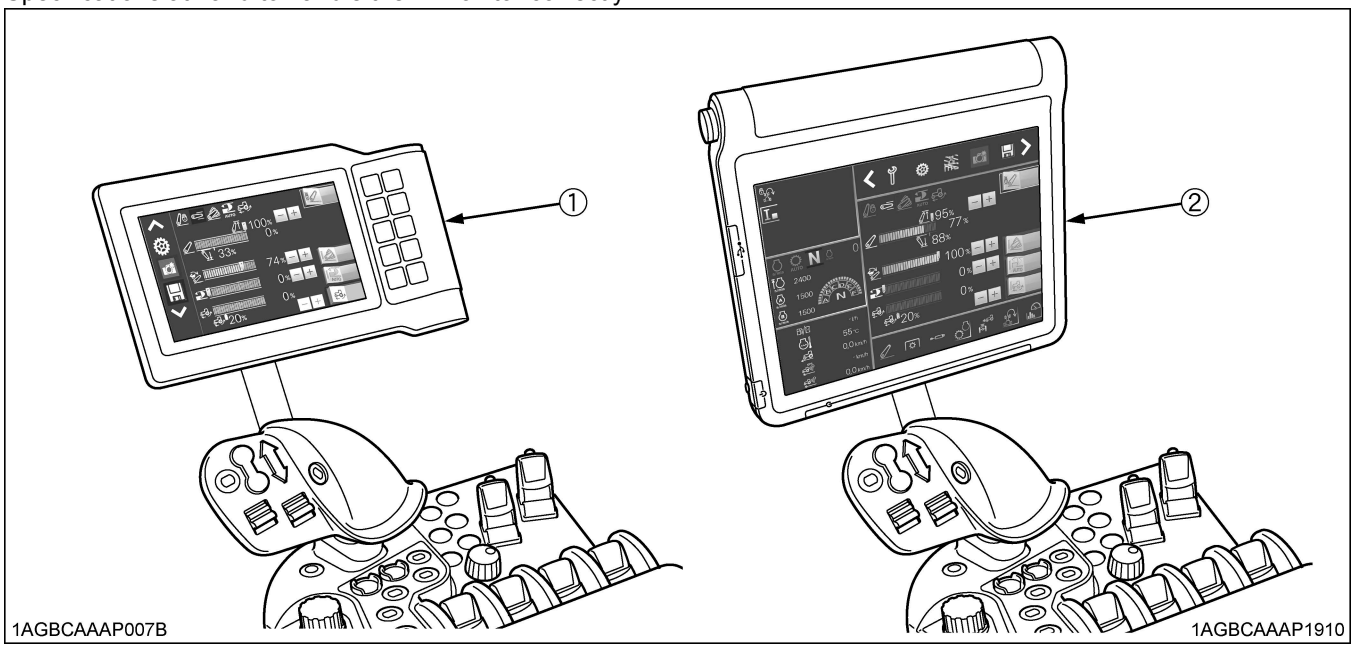
# INTELLIPANEL(TM) CONTROL




*(1) Indicator*
*(2) LCD (Liquid Crystal Display)*
*(3) Display switch*

**[Premium, Premium KVT models]**

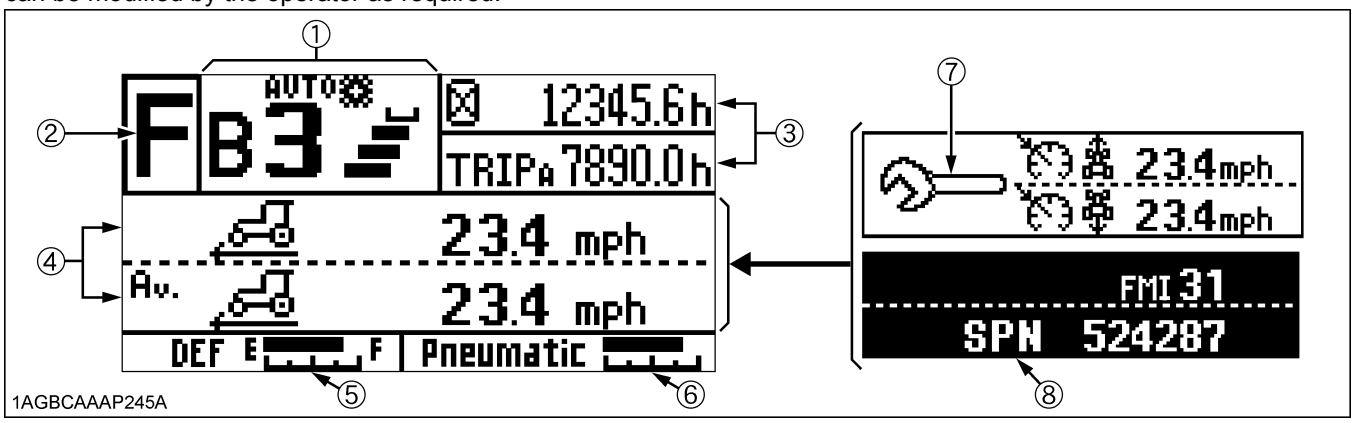
The K-monitor equipped with an LCD touch panel comes in two sizes: 7-inch and 12-inch types. Carefully check the Specifications at hand to handle the K-monitor correctly.

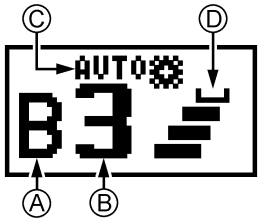
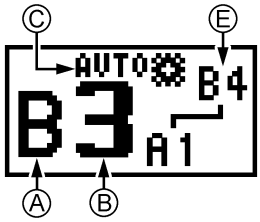
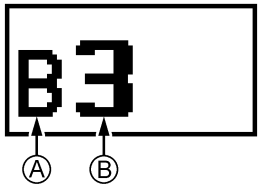
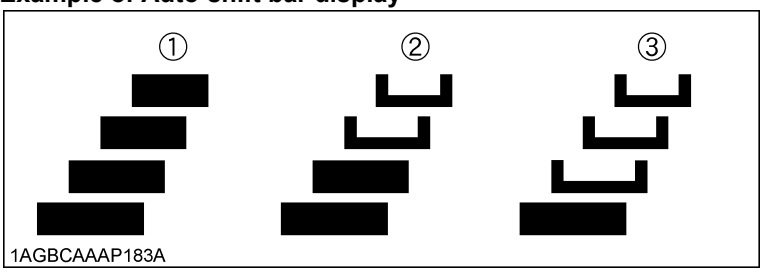


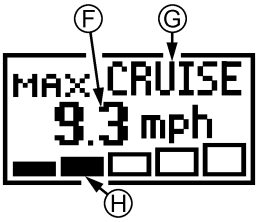
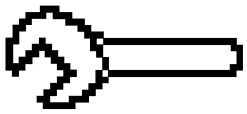
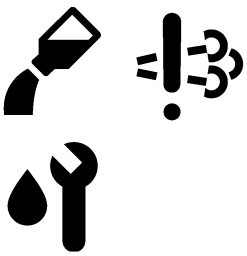

*(1) K-monitor (7-inch type)*
*(2) K-monitor Pro (12-inch type) (option)*

# LIQUID CRYSTAL DISPLAY

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 |
|---|---|---|---|
| (1) | **[Power shift model]**<br>Auto shift mode (Field mode)<br>  <br><br>Auto shift mode (Road mode)<br>  <br><br>Manual mode<br>  <br> | **(A) Displays A, B, C, D, E or F**<br>Displays the position of the range gear shift that was selected with the ez-command center.<br><br>**(B) Displays 1, 2. 3 or 4**<br>Displays the position of the main gear shift selected with the ez-command center.<br><br>**(C) Auto shift mode indicator**<br>Lights up when the auto shift mode is selected. Stays off while in the manual mode.<br><br>**(D) Auto-shift bar indicator**<br>Displays the automatic gear shift range (1 thru 4) that was preset with the main gear shift (1 thru 4) in the field mode, as well as the current gear ratio. Lights up when the field mode is selected. Stays off while in the manual mode.<br>◆ **Example of Auto-shift bar display**<br>  <br><br>(1) The current speed is the highest position of the set speeds. The load and the set speed are in balance.<br>(2) The current speed is shifted 2 speeds down from the highest position.<br>(3) The current speed is shifted 3 speeds down from the highest position.<br><br>**(E) Auto-shift indicator**<br>Displays the automatic gear shift range (A1 thru B4) that was preset with the main gear shift (1 thru 4) and the range gear shift (A thru F) in the road mode. Lights up when the road mode is selected. Stays off while in the manual mode. | 22<br>48<br>110 |

| No. | Description | | Reference page |
|---|---|---|---|
| (1) | **[CVT model]**<br>  | **(F) Displays Max speed**<br>The machine's travel speed upper limit within a selected mode is displayed.<br><br>**(G) Displays "CRUISE"**<br>Operator can see when cruise control is activated.<br><br>**(H) Target speed**<br>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)). | 51<br>118 |
| (2) | **Displays F, R or N**<br>"F" is displayed when forward operation is selected with the shuttle lever or the shuttle button.<br>"R" is displayed when reverse operation is selected with the shuttle lever or the shuttle button.<br>"N" is displayed when the shuttle lever is at neutral position or the shuttle neutral button is pressed. | | 103<br>104 |
| (3) | **Basic information monitor**<br>Of the 5 types of information, 2 types can be selected by the operator. | | 25 |
| (4) | **Performance monitor**<br>2 rows of information can be selected by the operator. | | 25 |
| (5) | **DEF/AdBlue® gauge**<br>Displays the fluid level in the DEF/AdBlue® tank. | | 128 |
| (6) | **Pneumatic pressure gauge**<br>Displays the pneumatic pressure (if equipped). | | 128 |
| (7) |  | **Service inspect indicator**<br>Service inspect indicator is displayed when the time for an engine oil change has come. | 70 |
| |  | Low temperature regulation indicator | 88<br>90 |
| |  | Gear shifting warning indicator | 125 |
| |  | Engine over speed warning indicator | 125 |
| |  | DEF/AdBlue® warning indicator | 80 |
| (8) | **Trouble display**<br>A trouble-spot-pinpointing error code and the related control unit are displayed. | | 248 |

## ■Initial Setting

**WARNING**

**To avoid personal injury or death:**

**Take the following precautions when starting initial setting.**

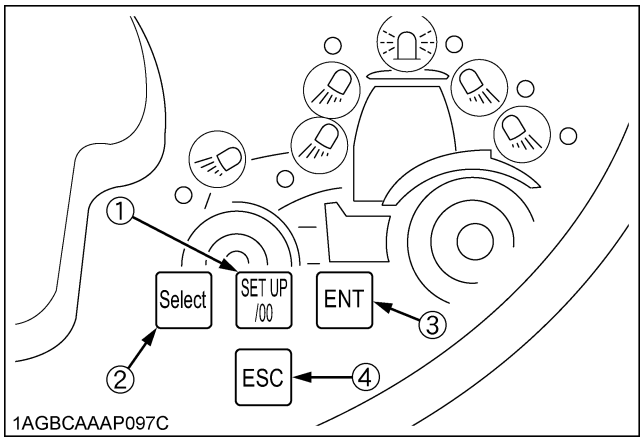
- **Park the machine on firm and level ground.**
- **Set the parking brake.**
- **Lower the implement to the ground.**

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

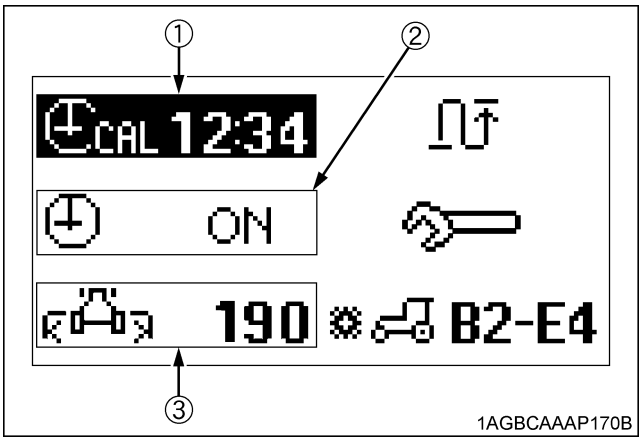
Once registered, the working range of an implement is put in memory. When the implement is changed to a different one, the latter's working range must be entered anew. Otherwise, the work area and other data will not be correctly displayed.

### ◆ Clock setting

1. Turn on the key switch.
2. Press the "SET UP/00" switch, and the setting mode screen appears in the LCD (Liquid Crystal Display) unit.

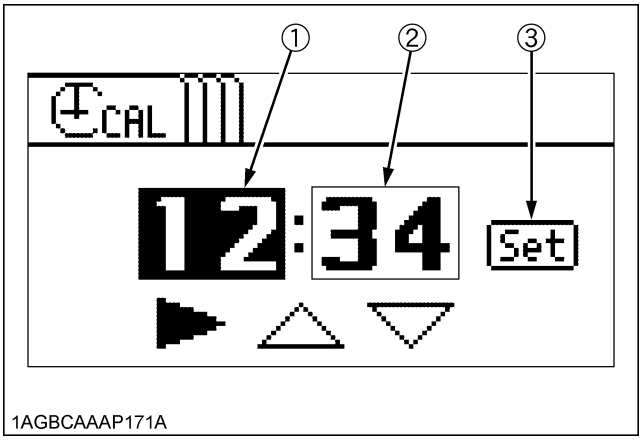



*(1) SET UP/00 switch*
*(2) Select switch*
*(3) ENT switch*
*(4) ESC switch*




*(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.



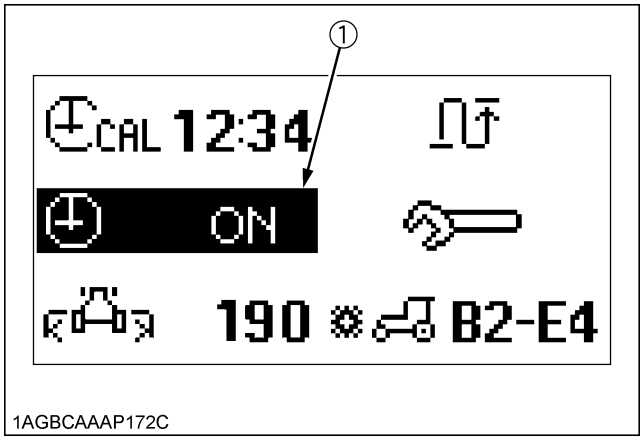

*(1) Hour*
*(2) Minute*
*(3) Set switch*

4. Setting the "Hour" of the clock:
   (1) Select "►" with the "Select" switch and then press the "ENT" switch to choose the "Hour" (highlighted).
   (2) 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.
   (3) 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:
   (1) Select "►" with the "Select" switch and then press the "ENT" switch to choose the "Minute" (highlighted).

(2) Carry out the "Minute" setting in the same way as the "Hour" setting.
(3) 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.

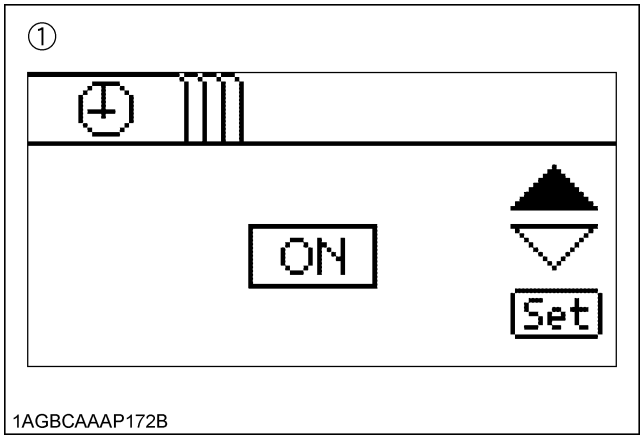
◆ **Setting the clock display ON/OFF**

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



1AGBCAAAP172C

*(1) Clock ON/OFF setting*



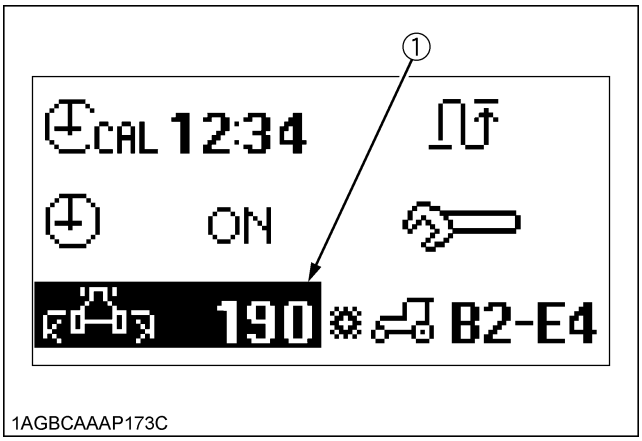
1AGBCAAAP172B

*(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.

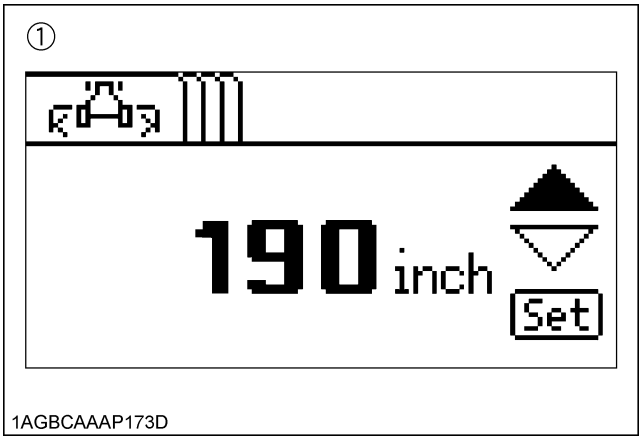
◆ **Setting the working range of implement**

1. Press the "Select" switch to choose "Working range of implement". Then press the "ENT" switch, and the implement working range setting screen appears.



1AGBCAAAP173C

*(1) Working range of implement*



1AGBCAAAP173D

*(1) Implement working range setting screen*

2. Press the "Select" switch and select "▼" or "▲". Then press the "ENT" switch, and enter "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.

## ■Setting the Power Shift Transmission

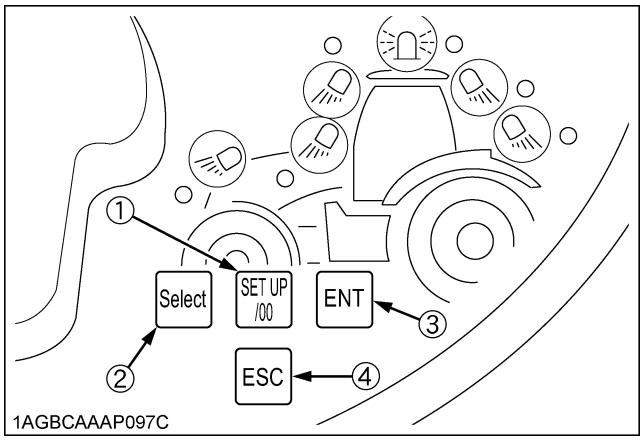
**[Standard model]**

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

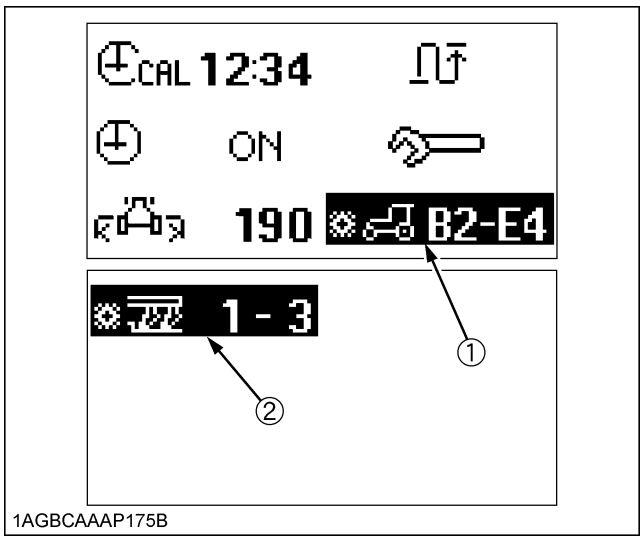
**◆ Setting the automatic gear shift (road mode)**

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

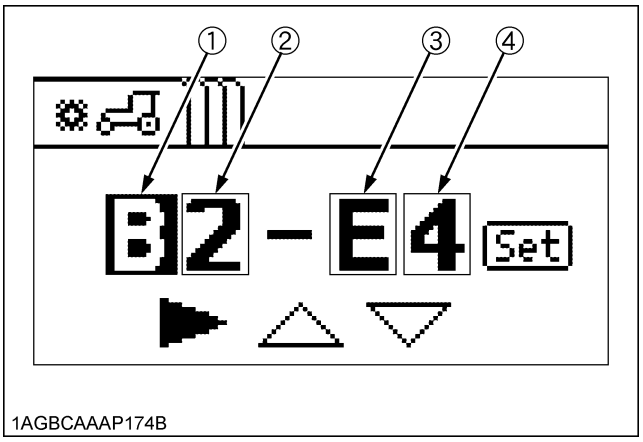
1. Turn on the key switch.
2. Press the "SET UP/00" switch to make the setting mode screen appear.
3. Select "Auto shift (road mode)" with the "Select" switch and then press the "ENT" switch.
   The auto shift (road mode) setting screen shows up.




*(1) SET UP/00 switch*
*(2) Select switch*
*(3) ENT switch*
*(4) ESC switch*




*(1) Auto shift (Road mode)*
*(2) Auto shift (Field mode)*



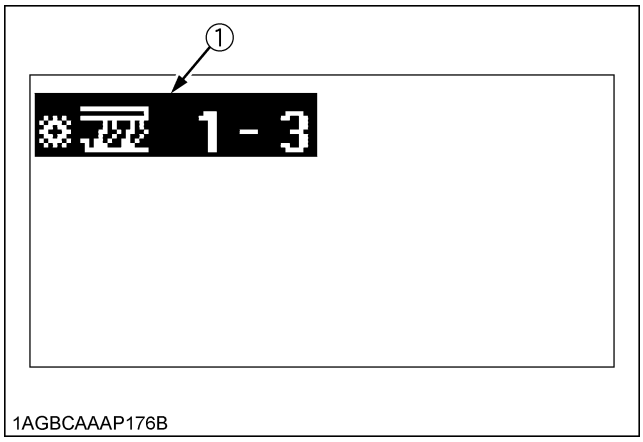

*(1) Range gear shift for minimum traveling speed*
*(2) Main gear shift for minimum traveling speed*
*(3) Range gear shift for maximum traveling speed*
*(4) Main gear shift for maximum traveling speed*

4. Select "►" with the "Select" switch and then press the "ENT" switch to choose the "range gear shift of minimum traveling speed" (highlighted).
5. Select "▼" or "▲" with the "Select" switch and then press the "ENT" switch to determine the desired "range gear shift" (from A to F).
6. Select "►" with the "Select" switch and then press the "ENT" switch to choose the "main gear shift of minimum traveling speed" (highlighted).
7. Select "▼" or "▲" with the "Select" switch and then press the "ENT" switch to determine the desired "main gear shift for minimum traveling speed" (from 1 to 4).
8. Use the same procedure to determine "Range gear shift and main gear shift of maximum traveling 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.

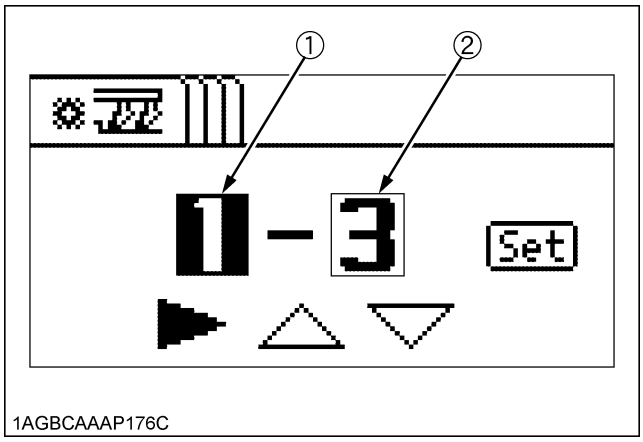
**◆ Setting the automatic gear shift (field mode)**

Referring to the traveling 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.
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)*




*(1) Minimum main gear shift*
*(2) Maximum main gear shift*

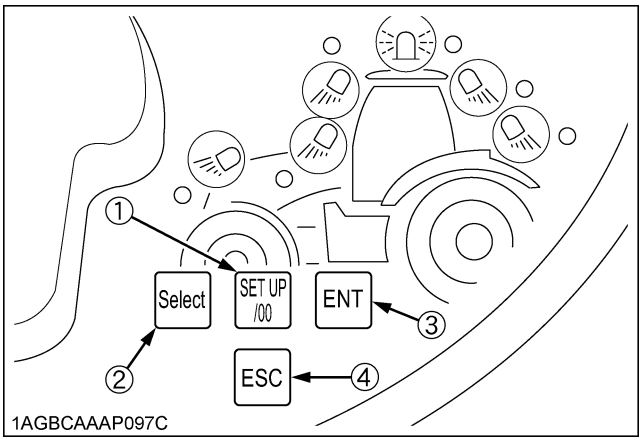
4. Select "►" with the "Select" switch and then press the "ENT" switch to choose the "main gear shift of minimum traveling speed" (highlighted).
5. Select "▼" or "▲" with the "Select" switch and then press the "ENT" switch to determine the "minimum main gear shift".
6. Select "►" with the "Select" switch and then press the "ENT" switch to choose the "main gear shift of maximum traveling speed" (highlighted).
7. Select "▼" or "▲" with the "Select" switch and then press the "ENT" switch to determine the "maximum main gear shift".
8. Select "Set" with the "Select" switch and then press the "ENT" switch. The setting is made and the setting mode screen appears again.

## ■Distance Measuring

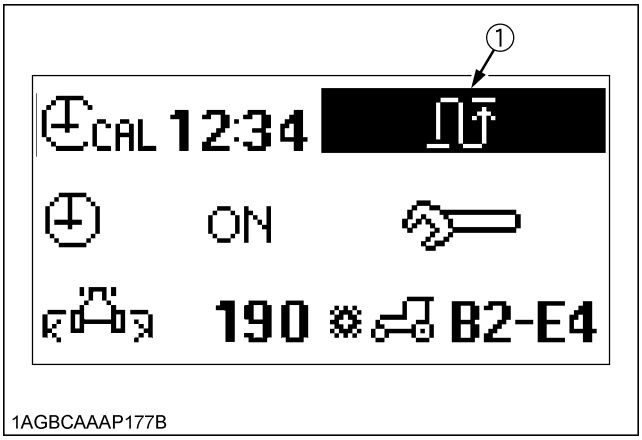
This function serves to measure the distance from your home to the field and other distances.

◆ **Measuring the distance**

1. Get the engine started.
2. Press the "SET UP/00" switch to make the various setting mode screen appear.

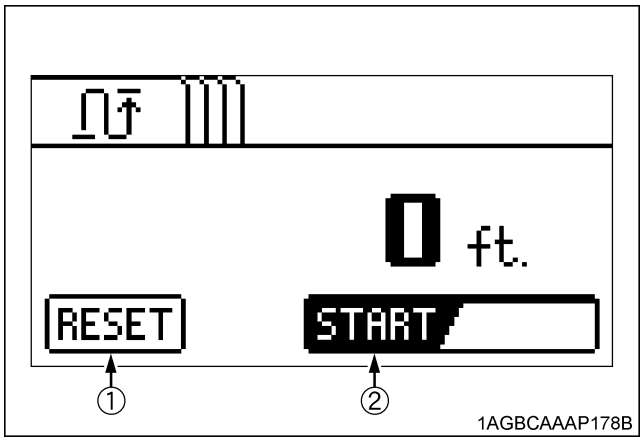



*(1) SET UP/00 switch*
*(2) Select switch*
*(3) ENT switch*
*(4) ESC switch*




*(1) Distance measuring*

3. Select "Distance measuring" with the "Select" switch and then press the "ENT" switch. The distance measuring screen shows up.

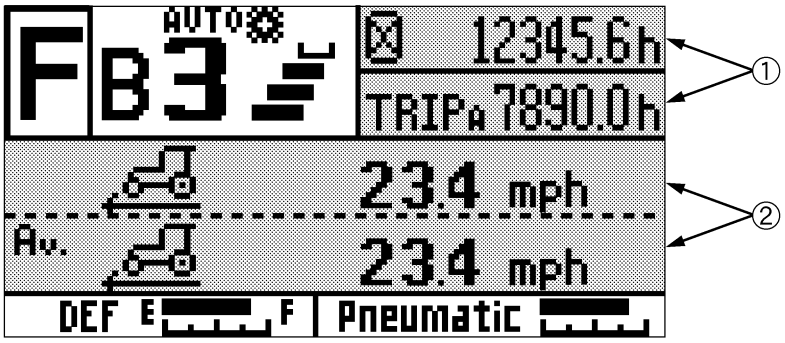



*(1) RESET*
*(2) START*

4. Select "START" with the "Select" switch and then press the "ENT" switch. Distance measuring begins. Press the "ENT" switch again, and this function is interrupted.
5. To reset the measurement to zero, select "RESET" with the "Select" switch and then press the "ENT" switch.
6. If during measurement you want to clear the past measuring data and restart measuring from the present, select "RESET" with the "Select" switch and then press the "ENT" switch. The current data gets cleared and the distance from this point is measured.
7. Press the "ESC" switch, and the setting mode screen appears again. Press this switch again, and the normal screen reappears.

## ■Basic Information Monitor/Performance Monitor

The information required for jobs can be selected and displayed on the LCD screen.
The basic information monitor serves to display 2 of the following 5 types of data.
The performance monitor serves to display 2 types of data picked up from the list below.
(Changing the display is discussed at the end of this section.)




1AGBCAAAP245C

*(1) Basic information monitor*
*(2) Performance monitor*

◆ **List of types of information displayed on the basic information monitor**

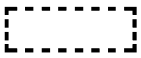
| Display | Remarks | | Reference page |
|---|---|---|---|
| 12:34 | Clock | | 20 |
| 12345.6h | Elapsed time (hour meter) | | --- |
| TRIPA 7890.0h | Trip A | ● Displays the trip measured from the previous resetting.<br>● With the "Trip" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0". | --- |
| TRIPB 0.0h | Trip B | | --- |
| 12.3 mph | Travel speed | | --- |

◆ **List of types of information displayed on the performance monitor**

| Selected screen | Display | Remarks | | Reference page |
|---|---|---|---|---|
| 1/6 | | Travel speed | ● The "Average travel speed" is based on the speed since the last reset action was performed.<br>● With the "Average travel speed" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0".<br>**NOTE :**<br>● The travel speed displayed does not account for wheel slip. | --- |
| | Av. | Average travel speed | | --- |
| | r/min | Engine rpm | | --- |

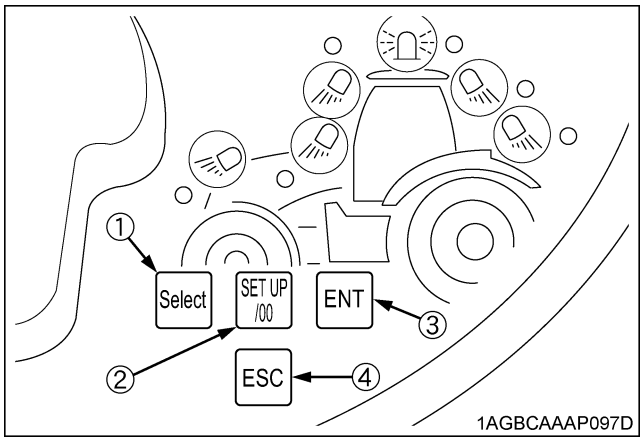
| Selected screen | Display | Remarks | | Reference page |
|---|---|---|---|---|
| 1/6 |  | Memory A rpm | | 85 |
| |  | Memory B rpm | | 85 |
| |  | Upper-limit rpm setting | | 85 |
| 2/6 | POWER | Instantaneous loading factor | ● The "Average loading factor" is measured based on the loading factor from the previous resetting.<br>● With the "Average loading factor" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0".<br>● The "Instantaneous loading factor graph" displays the instantaneous loading factor in real time. (A bar extending farther to the right shows a higher load.) | --- |
| | Av. POWER | Average loading factor | | --- |
| |  | Instantaneous loading factor graph | | --- |
| |  | Rear PTO rpm | | 47<br>136 |
| |  | Front PTO rpm | if equipped | 47<br>141 |
| |  | Instantaneous fuel consumption | ● The "Instantaneous fuel consumption" is measured per hour.<br>● The "Average fuel consumption" is measured per hour from the previous resetting.<br>● With the "Average fuel consumption" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0". | --- |
| 3/6 | Av.  | Average fuel consumption | | --- |
| |  | Mileage graph | | --- |
| |  | Total fuel consumption | ● Displays the total fuel consumption measured from the previous resetting.<br>● The maximum value which can be displayed is 999 gallons or 999 liters.<br>● With the "Total fuel consumption" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0". | --- |
| |  | Instantaneous work area fuel consumption | ● The "Average work area fuel consumption" is measured based on the fuel consumption from the previous resetting.<br>● With the "Average work area fuel consumption" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0".<br>● Preset the implement width. If not preset correctly, incorrect data will be displayed. (Refer to the "Initial setting" in "LIQUID CRYSTAL DISPLAY" in "INTELLIPANEL(TM) CONTROL" section.) | 20 |
| | Av.  | Average work area fuel consumption | | 20 |
| |  | Instantaneous work distance fuel consumption | ● The "Instantaneous work distance fuel consumption" is the work distance per fuel consumed. | --- |

| Selected screen | Display | Remarks | | Reference page |
|---|---|---|---|---|
| 4/6 |  | Average work distance fuel consumption | ● The "Average work distance fuel consumption" is measured based on the fuel consumption from the previous resetting.<br>● With the "Average work distance fuel consumption" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0". | --- |
| |  | Instantaneous work area operating efficiency | ● The "Average work area operating efficiency" is measured based on the hourly coverage from the previous resetting.<br>● With the "Average work area operating efficiency" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0".<br>● Preset the implement width. If not preset correctly, incorrect data will be displayed. (Refer to the "Initial setting" in "LIQUID CRYSTAL DISPLAY" in "INTELLIPANEL(TM) CONTROL" section.) | 20 |
| |  | Average work area operating efficiency | | 20 |
| |  | Work area | ● Displays the work area measured from the previous resetting.<br>● With the "Work area" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0".<br>● Preset the implement width. If not preset correctly, incorrect data will be displayed. (Refer to the "Initial setting" in "LIQUID CRYSTAL DISPLAY" in "INTELLIPANEL(TM) CONTROL" section.) | 20 |
| |  | Travel distance | ● Displays the travel distance measured from the previous resetting.<br>● With the "Travel distance" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0" | --- |
| |  | DPF temperature | ● Displays the DPF muffler temperature. | 73 |
| 5/6 |  | PM buildup | ● Displays the PM buildup inside the DPF muffler.<br>● Regeneration is needed when the 100% level has been reached.<br>● A bar extending farther to the right shows increased PM. | 73 |
| |  | PM buildup graph | | 73 |
| |  | Slip rate | ● The "Average slip rate" is measured based on the slip rate from the previous resetting.<br>● With the "Average slip rate" displayed and selected, hold down [SET UP/00] switch. The setting goes back to "0.0". | --- |
| |  | Average slip rate | | --- |
| |  | Cruise control forward speed setting | ● Only Premium KVT model | 123 |
| |  | Cruise control reverse speed setting | | 123 |

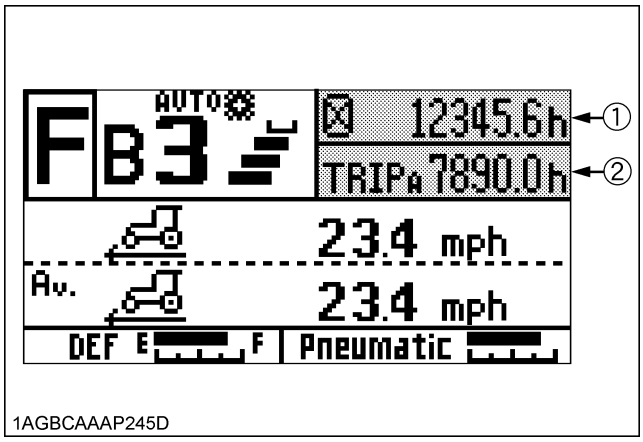
| Selected screen | Display | Remarks | | Reference page |
|---|---|---|---|---|
| 6/6 |  | 3-point hitch position | | 41<br>151 |
| |  | Travel speed with radar | ● if equipped | --- |
| |  | Blank | ● Used to delete the information displayed. | --- |

*1: The screen numbers vary with the specifications of tractors.

◆ **Modifying the information displayed on the basic information monitor**




*(1) Select switch*
*(2) SET UP/00 switch*
*(3) ENT switch*
*(4) ESC switch*

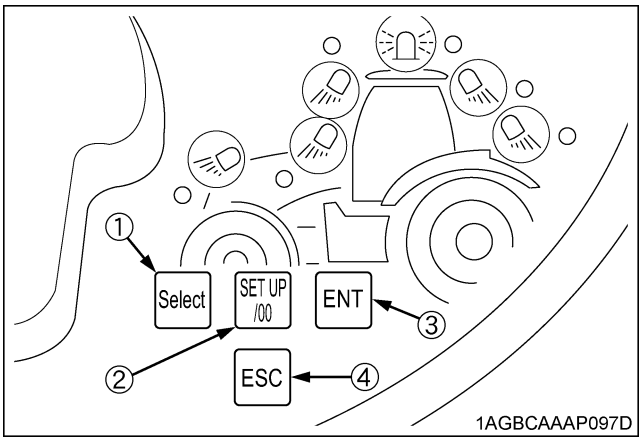



*(1) Basic information monitor 1*
*(2) Basic information monitor 2*

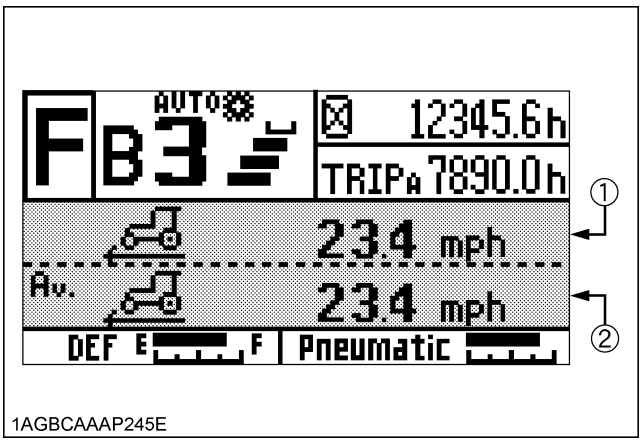
1. Turn on the key switch.
2. Press the "Select" switch to choose "Basic information monitor (1)". (It is highlighted.) Then press the "ENT" switch.
3. Every time the "Select" switch is pressed, the onscreen data switches among "Hour meter", "Trip A", "Trip B", "Travel speed" and "Clock" in that order.
   The items being displayed on the basic information monitor (2) are skipped, however.
4. Press the "ENT" switch, and the data now on the screen are finalized.
5. For the "Basic information monitor (2)", the onscreen data can be modified in the same procedure.

◆ **Modifying the information to display on the performance monitor**

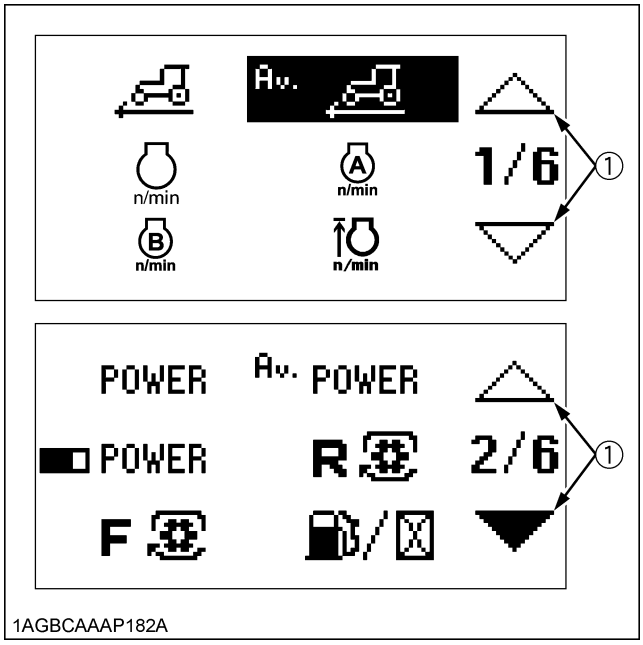
1. Turn on the key switch.
2. Press the "Select" switch to choose "Performance monitor (1)". (It is highlighted.) Then press the "ENT" switch. Now the performance monitor select screen shows up.
3. Using the "Select" switch, get a desired type of information (icon) highlighted. If the desired item (icon) is missing on the LCD screen, select "▲" or "▼" with the "Select" switch and then press the "ENT" switch. Another performance monitor screen shows up.
4. Press the "ENT" switch, and the data now on the screen are finalized. The selected type of information is now displayed on the performance monitor (1),
5. For the "Performance monitor (2)", the onscreen data can be modified in the same procedure.




*(1) Select switch*
*(2) SET UP/00 switch*
*(3) ENT switch*
*(4) ESC switch*




*(1) Performance monitor 1*
*(2) Performance monitor 2*




1AGBCAAAP182A

*(1) Screen selector switch*

# INDICATOR

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

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

◆ **Green indicator**

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

◆ **Amber indicator**

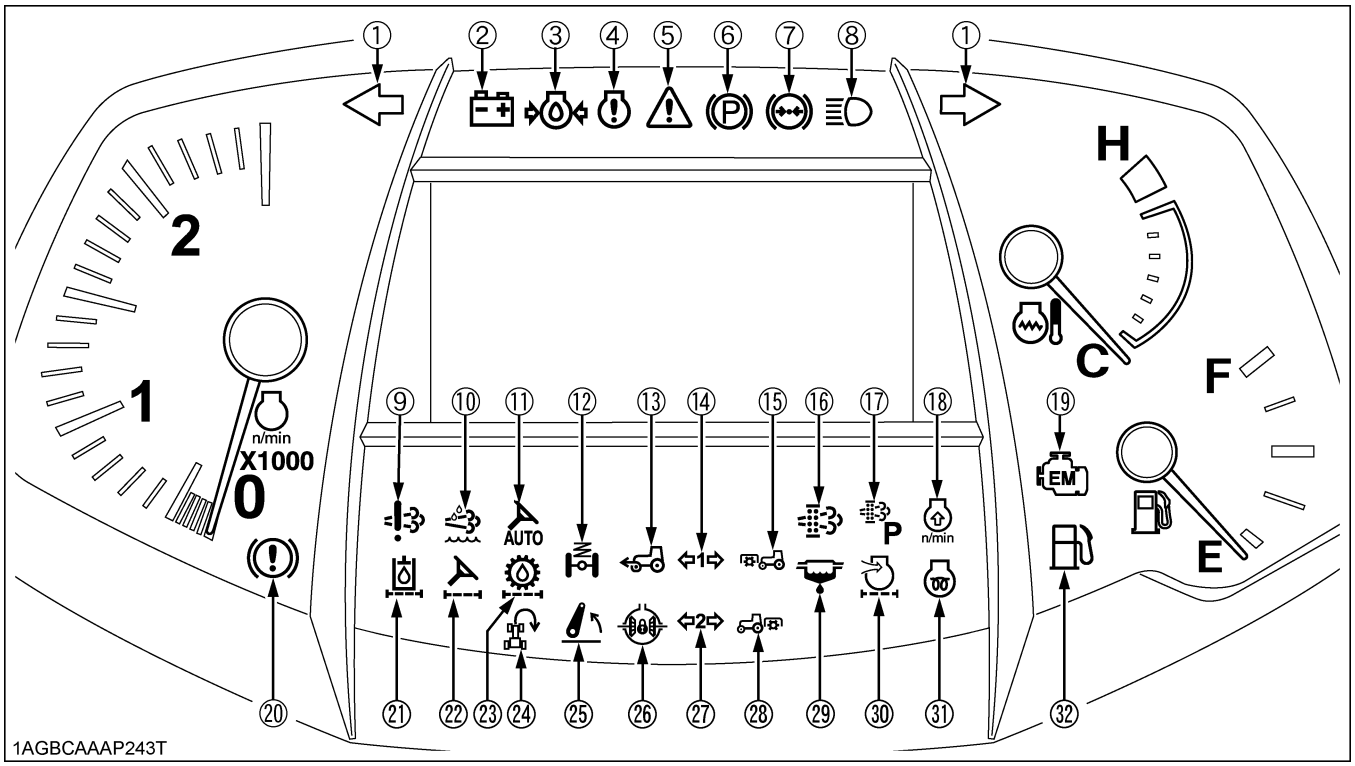
This color means that the tractor's operating condition is being monitored.

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

◆ **Red indicator**

This color 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.




ILLUSTRATED CONTENTS


| | |
|---|---|
| *(1) Turn signal / Hazard light indictor* | *98* |
| *(2) Electrical charge warning indicator* | *126* |
| *(3) Engine oil pressure warning indicator* | *126* |
| *(4) Engine warning indicator* | *126* |
| *(5) Master system warning indicator* | *126* |
| *(6) Parking brake warning indicator* | *101, 126* |
| *(7) Pneumatic trailer brake pressure warning indicator* | *126, 128* |
| *(8) High-beam indicator* | *97, 97* |
| *(9) DEF/AdBlue® system warning indicator* | *80, 126* |
| *(10) DEF/AdBlue® warning indicator* | *80, 126* |
| *(11) Auto steer indicator* | *-* |
| *(12) Front suspension indicator* | *134* |
| *(13) 4WD indicator* | *106* |
| *(14) Trailer indicator 1* | *98* |
| *(15) Front PTO indicator* | *141* |
| *(16) Regeneration indicator* | *73* |


ILLUSTRATED CONTENTS


| | |
|---|---|
| *(17) Parked regeneration indicator* | *78* |
| *(18) Engine rpm increase indicator* | *74* |
| *(19) Emission indicator* | *126* |
| *(20) Brake oil pressure warning indicator* | *126* |
| *(21) Hydraulic oil filter (suction) indicator* | *126* |
| *(22) Power steering oil filter indicator* | *126* |
| *(23) Transmission oil filter indicator* | *126* |
| *(24) Headland management system indicator* | *53, 130* |
| *(25) 3-point hitch lifting / lowering indicator* | *157* |
| *(26) Differential lock indicator* | *108* |
| *(27) Trailer indicator 2* | *98* |
| *(28) Rear PTO indicator* | *136* |
| *(29) Water separator indicator* | *126* |
| *(30) Air cleaner indicator* | *126* |
| *(31) Heater indicator* | *88* |
| *(32) Fuel level indicator* | *126* |

# K-MONITOR (Part 1)

**[Premium, Premium KVT models]**

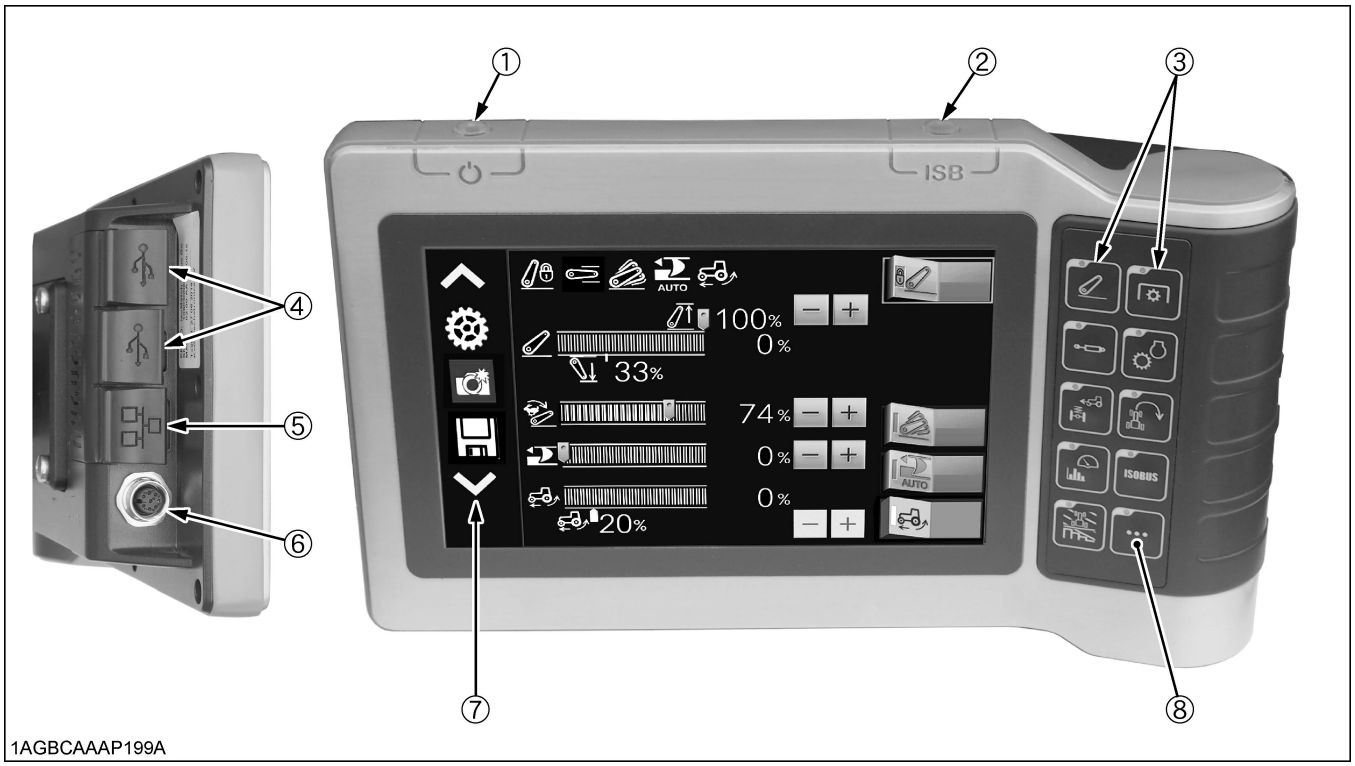
This chapter covers the handling and operation of the "Main menu" that is routinely used. To use the sub-menu, refer to the chapter on K-MONITOR (Part 2).

## ■Outline

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 (discussed later) and the optional live view camera are connected, this panel serves as their monitor screen.

## ■Names of Parts and Their Handling

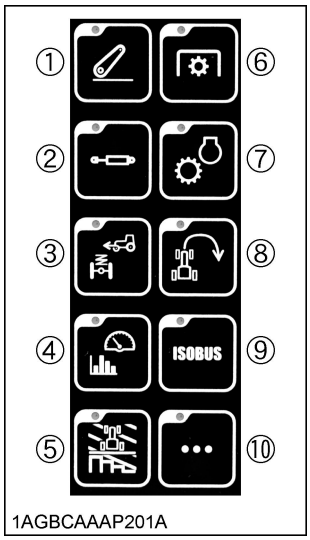
**[K-monitor]**




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

### ◆ Main menu select switch

Press the main menu select switch, and various types of information get displayed. Referring to the list below, 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.




*(1) 3-point hitch*
*(2) Remote control valve*
*(3) Drivability*
*(4) Operating conditions*
*(5) Geo control*
*(6) PTO*
*(7) Engine/transmission*
*(8) Headland Management System*
*(9) ISOBUS*
*(10) Sub-menu*

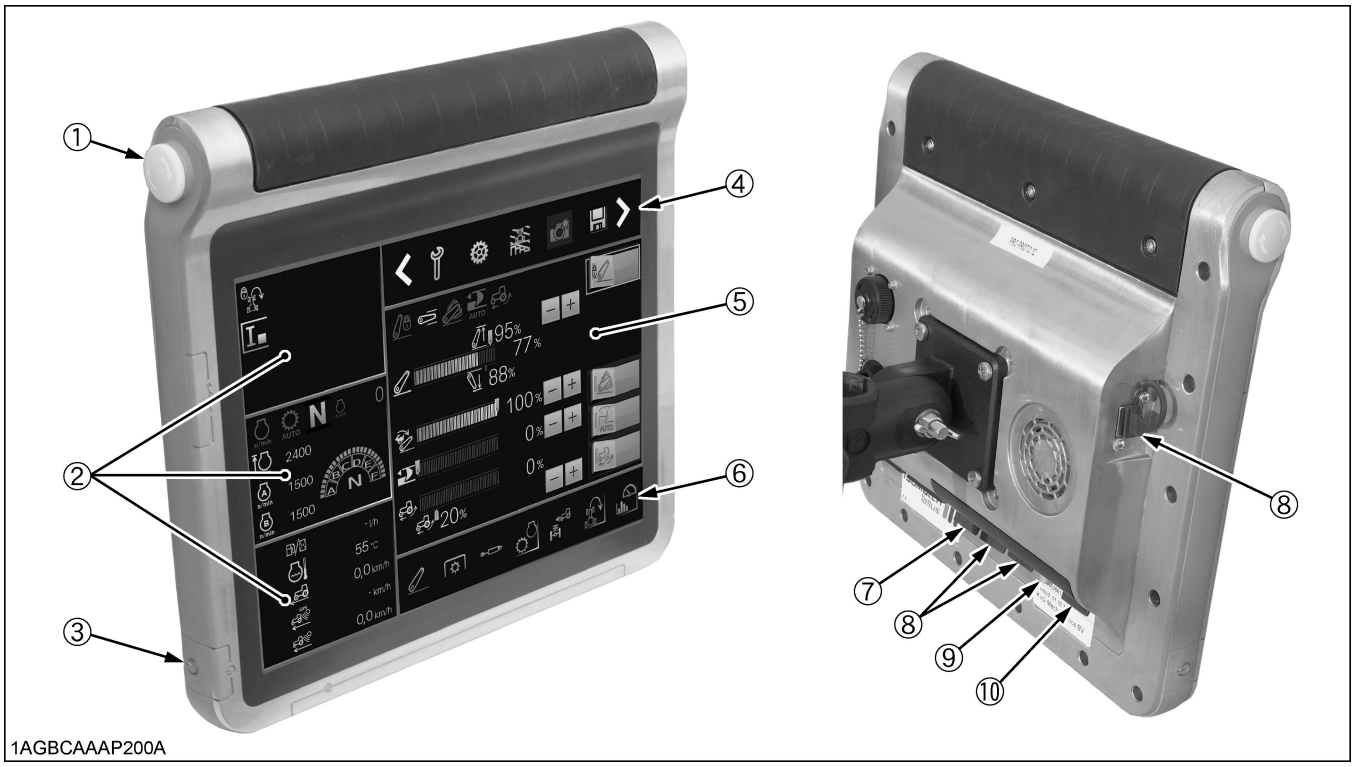
### ◆ Screen switch

Touch the switch to switch between screen ON and screen OFF.
Turn the screen OFF for night driving, etc.

### ◆ 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.

**[K-monitor Pro]**



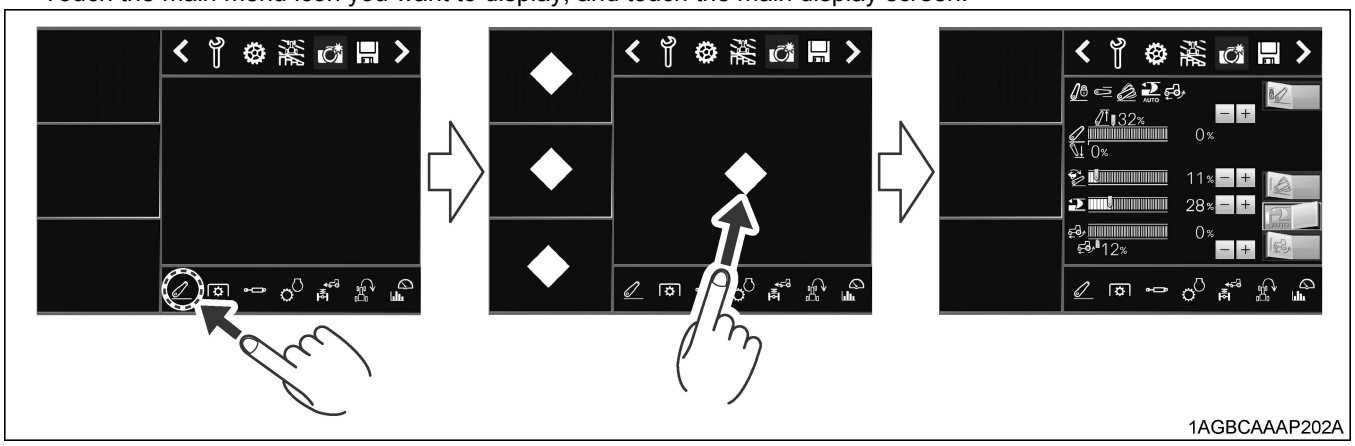

*(1) ISOBUS emergency shut-off switch*
*(2) Sub-screen display*
*(3) Screen switch*
*(4) Sub-menu select icon*
*(5) Main display screen*
*(6) Main menu select icon*
*(7) LAN port*
*(8) USB port*
*(9) External camera input terminal (S terminal)*
*(10) Microphone/earphone terminals*

### ◆ Main menu display

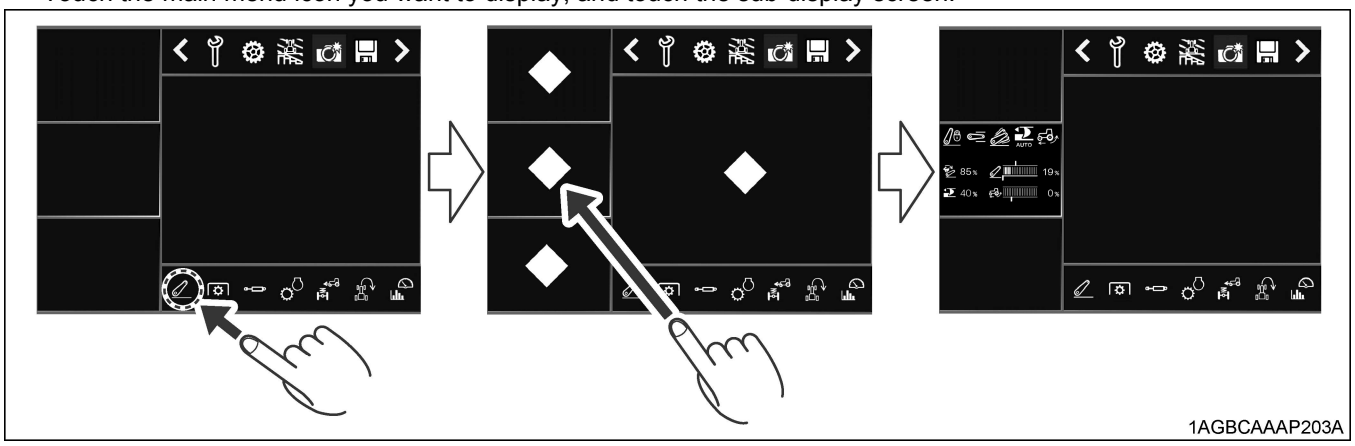
On the screen, 4 different main menus that are routinely used can be displayed. They may also be switched over easily.

- **Displaying/switching procedure**

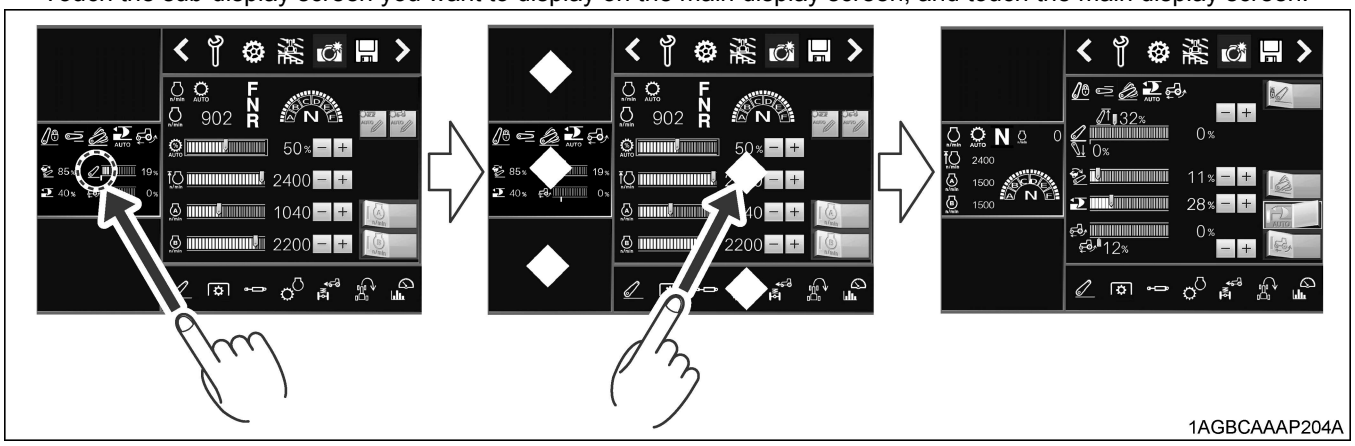
1. Going to the main display screen:
   Touch the main menu icon you want to display, and touch the main display screen.



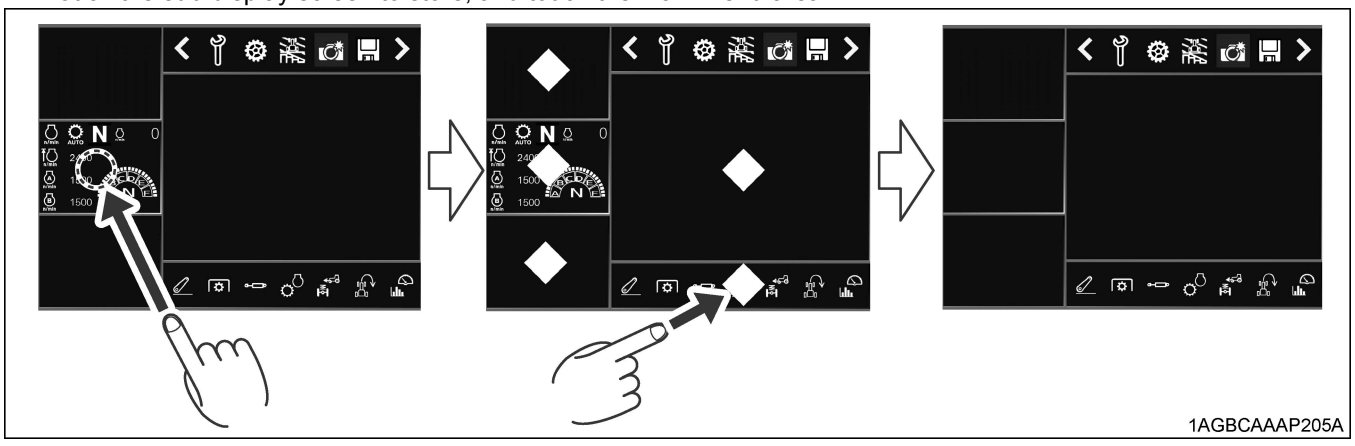
2. Going to the sub-display screen:
   Touch the main menu icon you want to display, and touch the sub-display screen.




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.




4. Storing the sub-display screen into the main menu:
   Touch the sub-display screen to store, and touch the main menu area.




◆ **Screen switch**

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

Turn the screen OFF for night driving, etc.

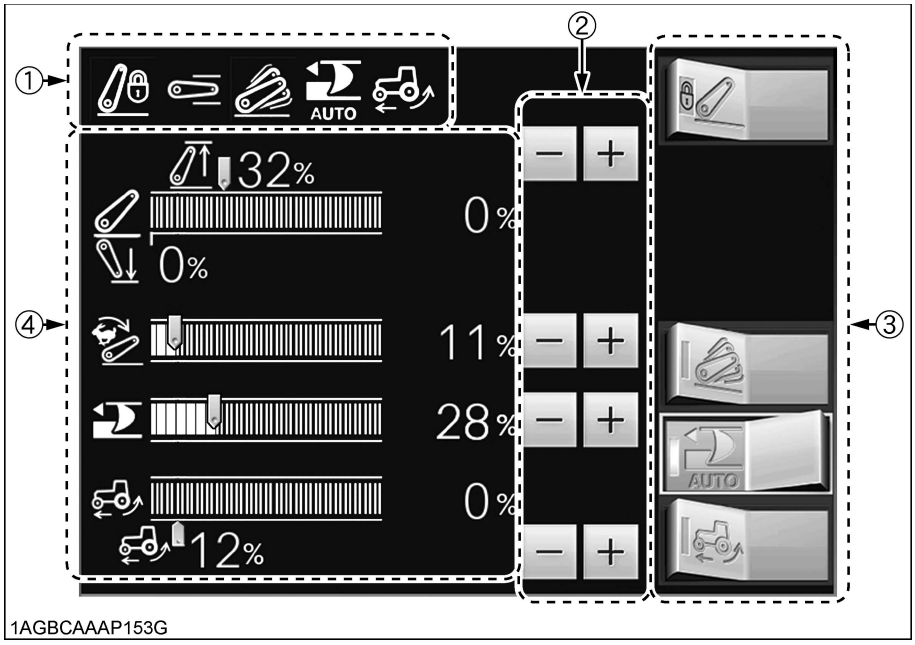
◆ **ISOBUS emergency shut-off switch**

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.

## ■Basic Procedures

The figure below shows an example in which "3-point hitch" is selected from the main menu.
Familiarize yourself with the basic procedures, such as changing the settings, as discussed below.

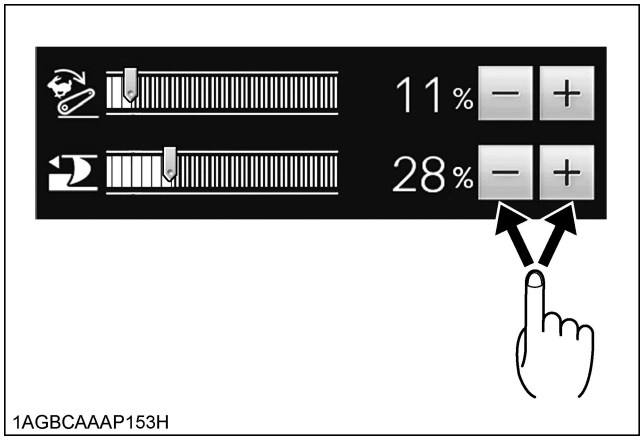


1AGBCAAAP153G

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

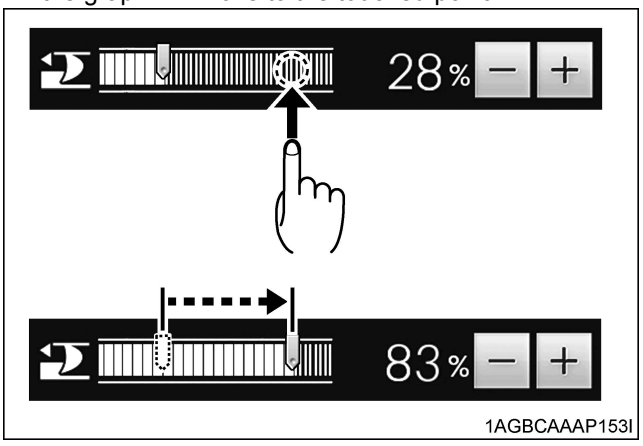
◆ **To change the settings on each screen, use any of the following procedures.**

1. Touch the "-" or "+" button.



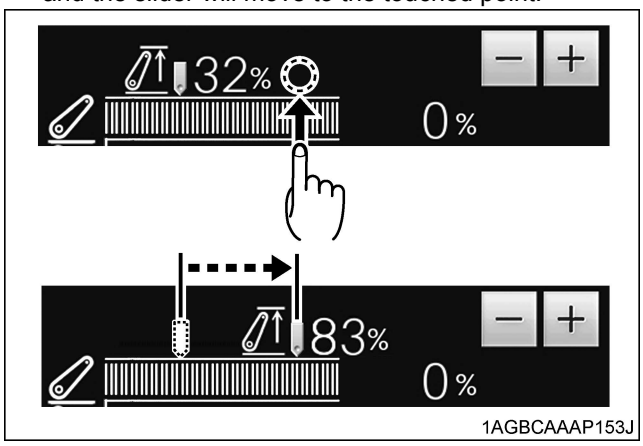
1AGBCAAAP153H

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



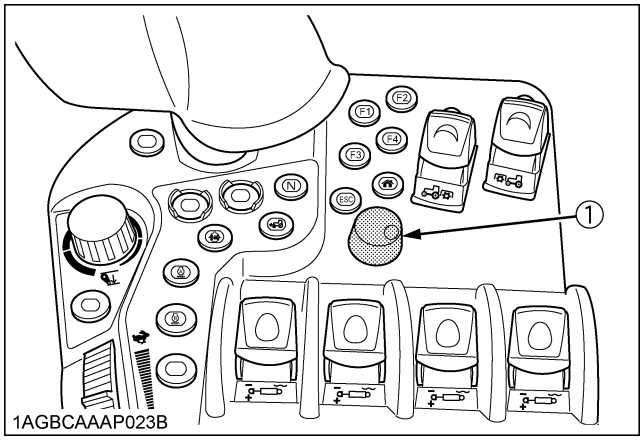
1AGBCAAAP153I

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



1AGBCAAAP153J

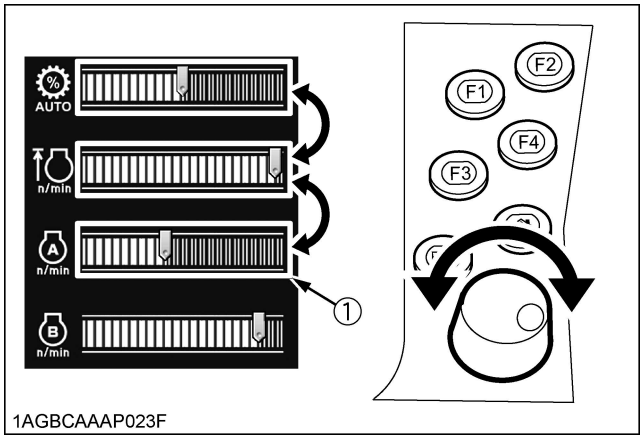
4. Use the selection dial and button.



1AGBCAAAP023B

*(1) Selection dial and button*

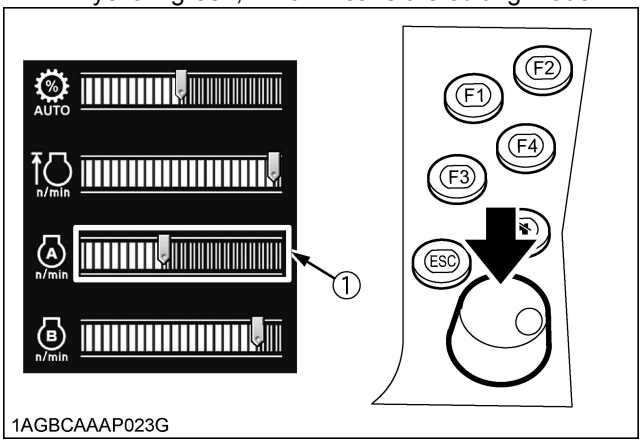
(1) Turn the selection dial and button until the orange selected frame reaches the desired item.



1AGBCAAAP023F

*(1) Orange selected frame*

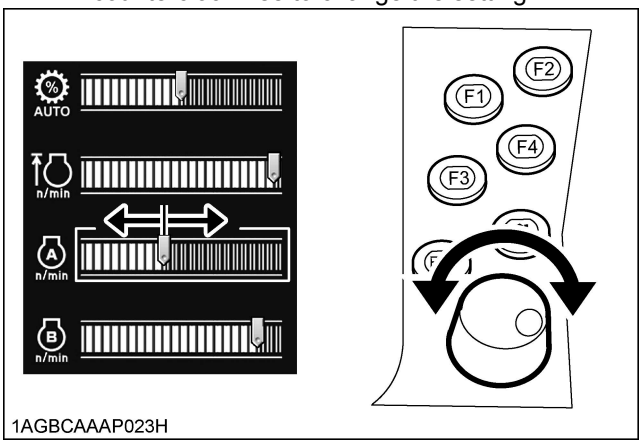
(2) Press the selection dial and button to make a selection. The orange selected frame turns yellow-green, which means the editing mode.



1AGBCAAAP023G

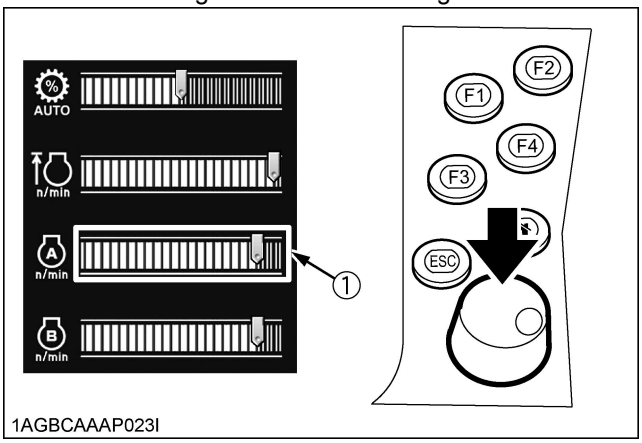
*(1) Orange selected frame turns yellow-green*

(3) Turn the selection dial and button clockwise or counterclockwise to change the setting.



1AGBCAAAP023H

(4) Press the selection dial and button to complete the setting. Now the new setting is effective.



1AGBCAAAP023I

*(1) Yellow-green selected frame turns orange*

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

◆ **Function of the F buttons**

Routinely-used setting screens can be programmed to the buttons F1 thru F4.

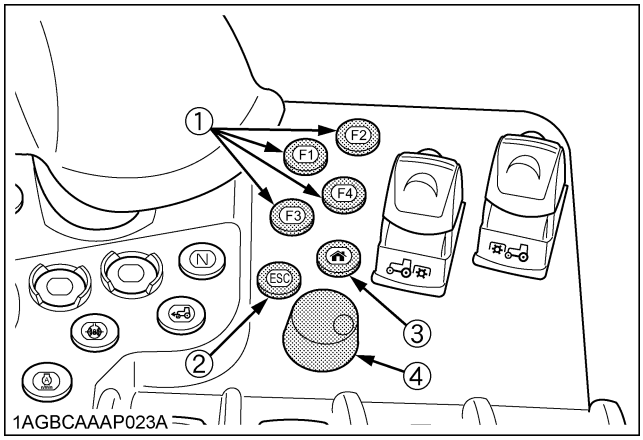
Regardless of the information currently displayed, just press an F button and the allocated setting screen appears.

You can modify and check the settings quickly.

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

◆ **Allocating the F buttons**

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



1AGBCAAAP023A

*(1) F button*
*(2) ESC button*
*(3) HOME button*
*(4) Selection dial and button*

◆ **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.

◆ **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.

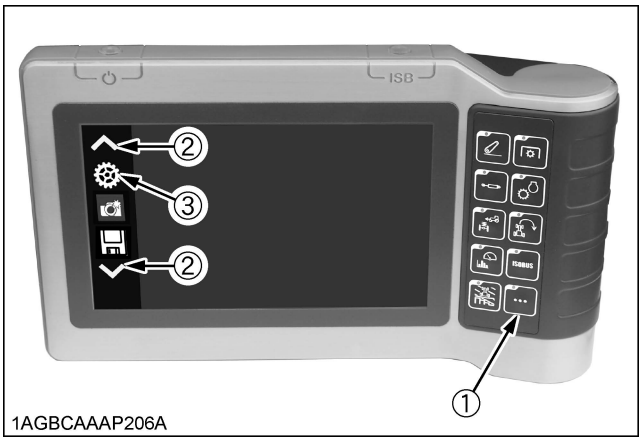
## ■System Basic Settings

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

◆ **Calling up the setting screen**

**[K-monitor]**

1. Touch the sub-menu display switch (1) to make the sub-menu appear.
2. Using the sub-menu scroll switch (2), make the gear mark icon (3) appear. Touch this icon, and the system settings screen shows up.

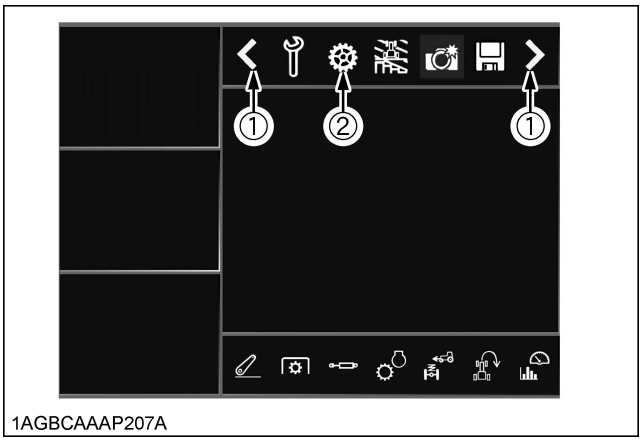


1AGBCAAAP206A

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

**[K-monitor Pro]**

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



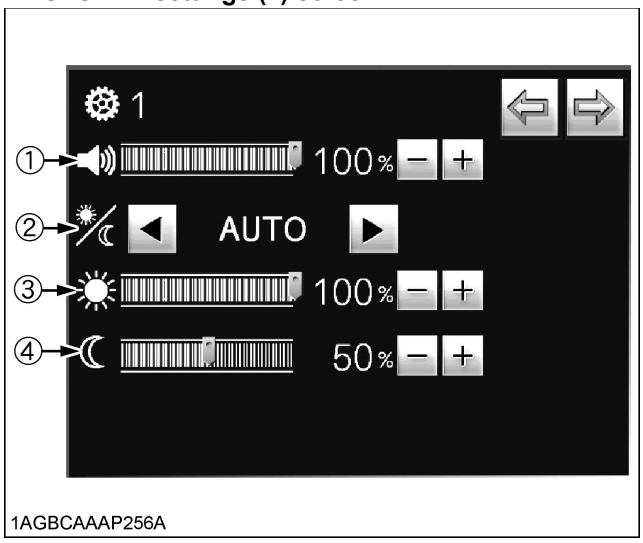
1AGBCAAAP207A

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

◆ **Setting items and adjustment of 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.

● **SYSTEM settings (1) screen**



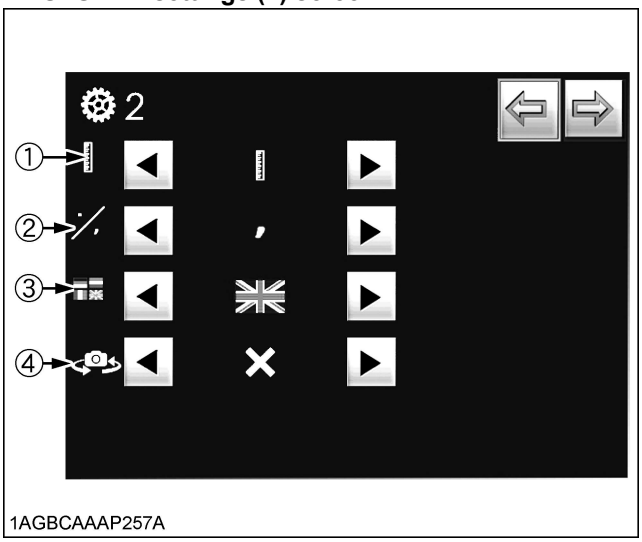

(1) **Sound volume**
Slide the graph farther to the right to increase the volume.

(2) **Screen brightness**
The brightness level can be selected from the following settings:
Sun icon: Daytime mode,
Moon icon: Nighttime mode,
AUTO: Automatic daytime/nighttime switching mode.

(3) **Daytime mode screen brightness**
Slide the graph farther to the right to increase the brightness.

(4) **Nighttime mode screen brightness**
Slide the graph farther to the right to increase the brightness.

● **SYSTEM settings (2) screen**




(1) **Unit system**
The unit system can be chosen from the following settings:

Metric unit
Imperial unit
U.S.customary unit

(2) **Decimal marker setting**
The choice is between ", (comma)" and ". (period)".

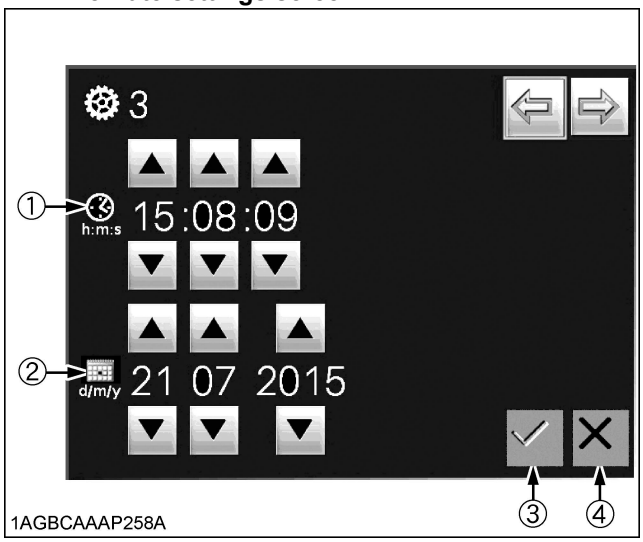
(3) **Languages**
There are 9 languages to choose from: English, Dutch, German, French, Italian, Spanish, Polish, Portuguese and Japanese.

(4) **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.

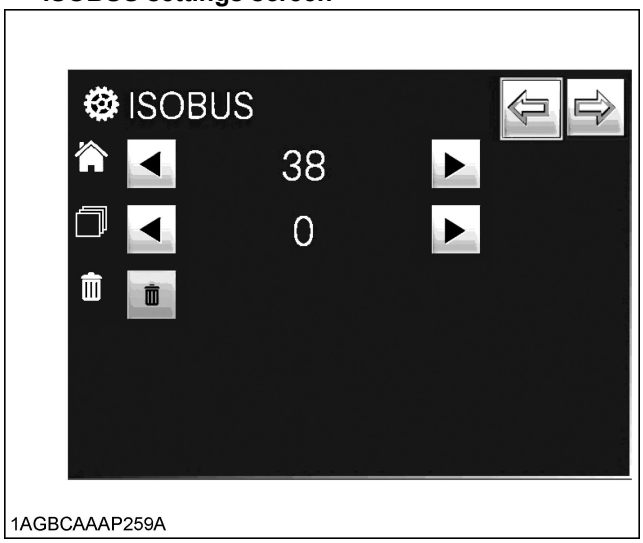
- **Time/Date settings screen**




(1) **Time**
Set "Hour", "Minute" and "Second" and press the save switch (3).
Touch the cancel switch (4) to cancel.

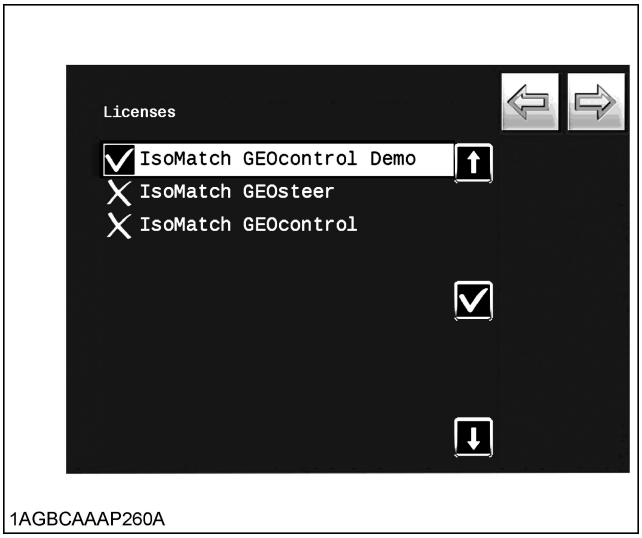
(2) **Date**
Set "Day", "Month" and "Year" and press the save switch (3).
Touch the cancel switch (4) to cancel.

- **ISOBUS settings screen**




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

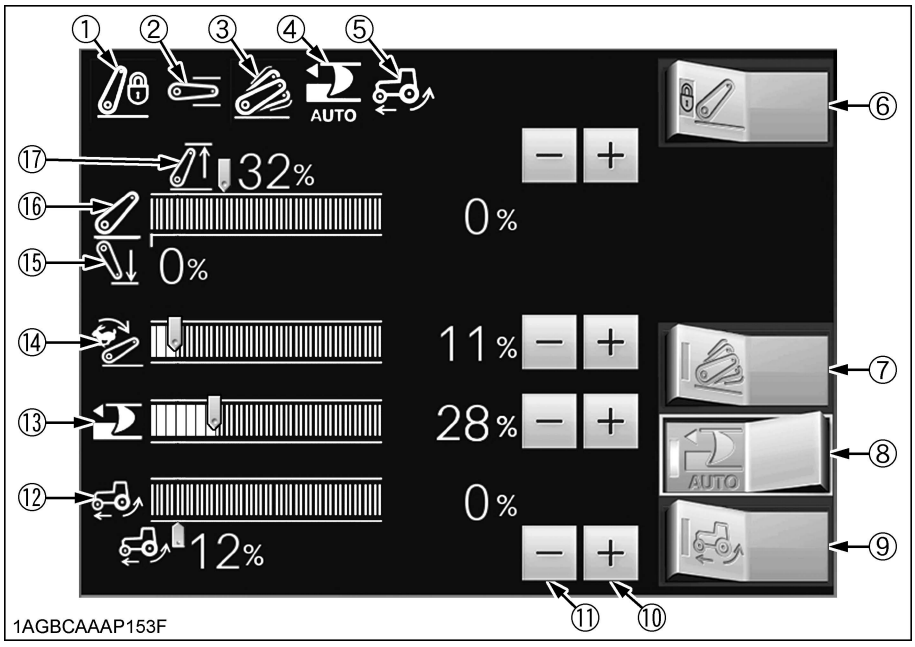
- **License confirmation screen**




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

## ■Setting the 3-Point Hitch

On the menu shown below, the 3-point hitch height and lowering speed, draft/position control, and ride control can be preset.
With the optional radar device in place, the slip control is also enabled.




*(1) 3-point hitch lock indicator*
*(2) 3-point hitch status indicator*
*(3) Ride control indicator*
*(4) Draft control indicator*
*(5) Wheel slip control indicator*
*(6) 3-point hitch lock switch*
*(7) Ride control switch*
*(8) Draft control switch*
*(9) Wheel slip control switch*
*(10) Plus (+) switch*
*(11) Minus (-) switch*
*(12) Wheel slip control*
*(13) Draft sensitivity control*
*(14) 3-point hitch lowering speed control*
*(15) Lift arm bottom limit control*
*(16) Lift arm height control, current position (height)*
*(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 (hydraulic dial), the bottom limit height can be readjusted.
Lower the percentage to decrease the bottom limit.
When the draft control 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 draft control 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 (hydraulic dial) or the 3-P. 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.

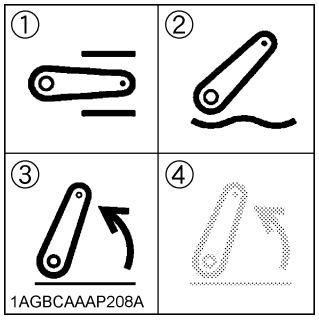
(The ride control unit activates itself if the 3-P. quick raise switch is pressed to bring the rear hitch up to its top limit and the traveling speed rises above 6 km/h (3.7 mph).)

◆ **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*

## ■Setting the Remote Control Valve

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

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, discussed later, shows up.
2. Touch the left half of the switch (2), 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 indicator (1) also lights up.

### ◆ How to use the chart (screen)

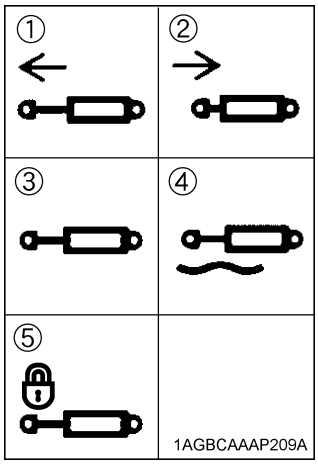
(A) The priority flow from the hydraulic pump is set for the first remote control valve.

(B) The automatic shut-off timer of the second remote control valve is set at ON.

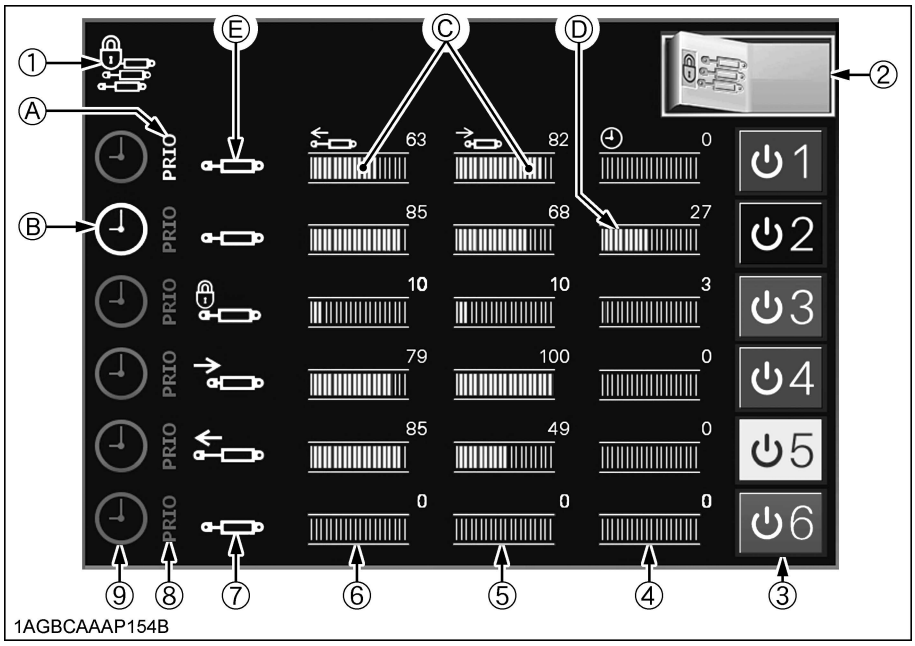
(C) The preset oil flow rate to each implement (remote control cylinder) is displayed.
(The third remote control cylinder remains locked, which means that no oil is flowing.)

(D) The automatic shut-off timer (time) of remote control is displayed.

(E) Valve action status indicator:
The oil flow to the implement (remote control cylinder) is indicated with the icon shown below.



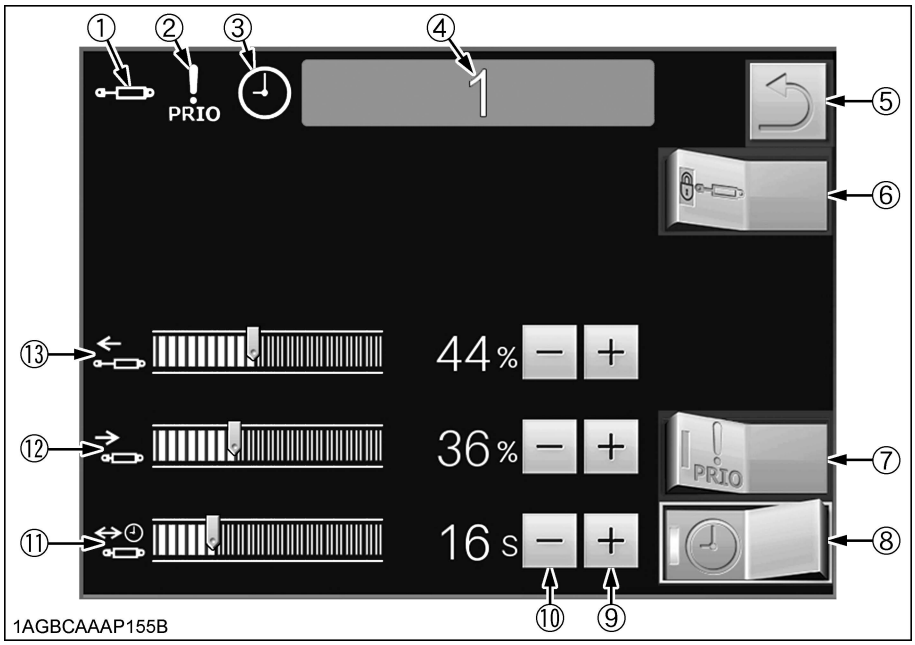

*(1) Extend*
*(2) Retract*
*(3) Blocked (Neutral)*
*(4) Float*
*(5) Lock*




*(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*

◆ **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.




*(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/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) port control*
*(13) Discharge rate from cylinder (extend) port 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**

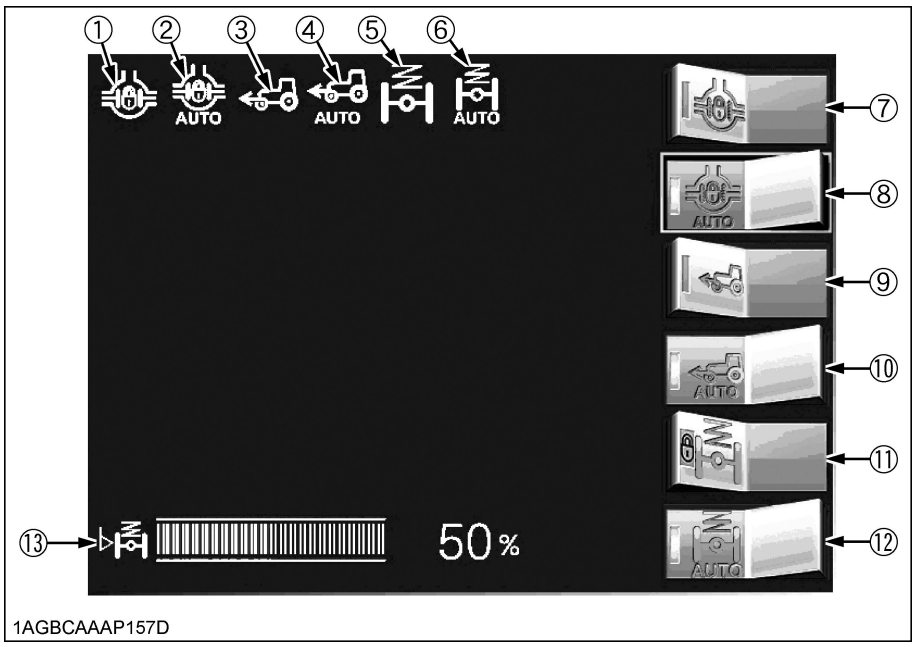
1. To adjust the oil flow rate for the implement (remote control cylinder), use the "Plus (+)" switch (9) and the "Minus (-)" switch (10).
   Raise the percentage to increase the oil flow rate.
2. The timer may be preset up to 60 seconds.
   If the timer is set to infinity (∞), the remote control valve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

## ■Setting the Drivability

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




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

### ◆ 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.
   Turn off the switch (7), and the differential gets unlocked and the indicator (1) goes off.
2. 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.
   Turn off the switch (8), and the differential gets unlocked and the indicator (2) goes off.

● **Operating conditions of the automatic differential lock:**

| Traveling speed | Front wheel turning angle | 4-wheel differential lock |
|---|---|---|
| Below 10 km/h (6.2 mph) | Approx. 15º or less | ON (*1) |
| | Approx. 15º or more | OFF |
| Between 10 and 20 km/h (6.2 and 12.4 mph) or so | Approx. 10º or less | ON (*1) |
| | Approx. 10º 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.
   Turn off the switch (9), and the front-wheel drive is disabled and the indicator (3) goes off.
2. 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.
   Turn off the switch (10), and the 2WD is abled and the indicator (4) goes off.

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

| Traveling speed | Front wheel turning angle | Front wheel drive |
|---|---|---|
| Below 10 km/h (6.2 mph) | Approx. 15º or less | ON |
| | Approx. 15º or more | OFF |
| Between 10 and 20 km/h (6.2 and 12.4 mph) or so | Approx. 10º or less | ON |
| | Approx. 10º 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 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 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).
   (For details, refer to "FRONT SUSPENSION" in "OPERATING THE TRACTOR" section.

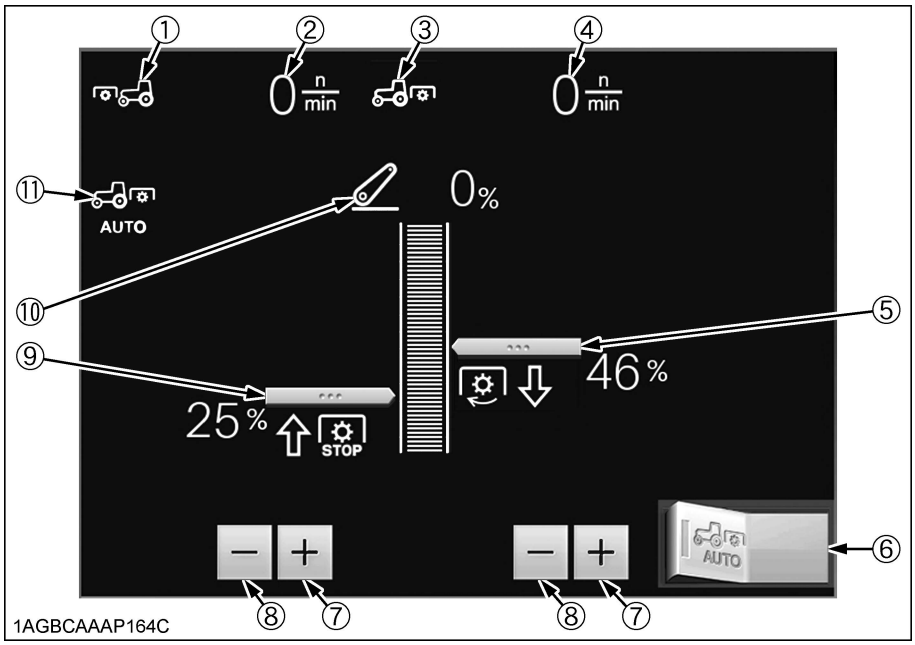
## ■Setting the PTO

**WARNING**

**To avoid personal injury or death:**

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

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.




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

◆ **Setting the 3-point-hitch-interlocked PTO function**

Start the engine and start PTO rotation.

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**

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**

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.

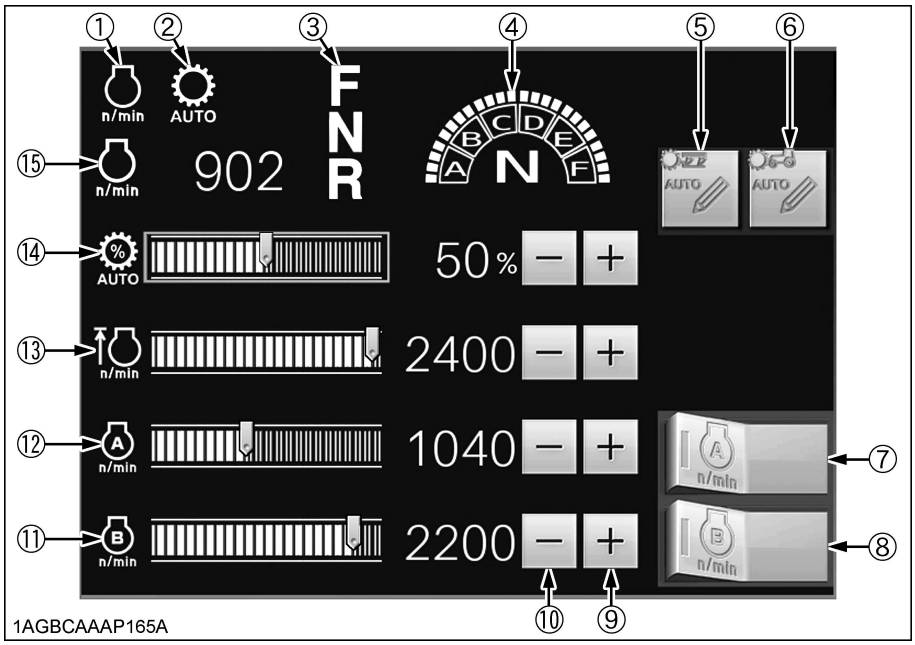
◆ **Displaying the PTO rpm**

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

## ■Setting the Engine/Transmission (Power Shift)

**Power Shift Transmission [Premium model]**

Various settings of the automatic power shift transmission can be made and checked.
Further, the engine rev-limiter, engine rpm memory and other settings may be also set.

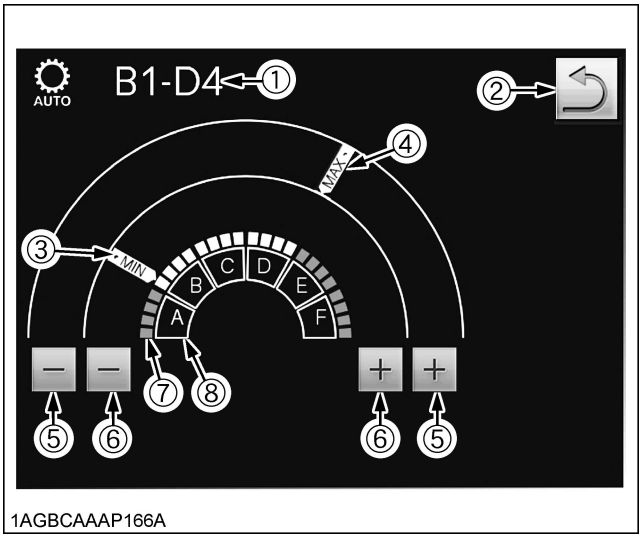



*(1) Engine RPM memory (A/B) indicator*
*(2) Auto shift mode (Road/Field) indicator*
*(3) Shuttle lever indicator*
*(4) Auto shift range indicator for road mode*
*(5) Field mode setting switch*
*(6) Road mode setting switch*
*(7) Engine RPM memory (A) switch*
*(8) Engine RPM memory (B) switch*
*(9) Plus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

◆ **Setting the traveling speed gear in the road mode**

Touch the road mode setting switch (6) in the above figure, and the "road mode" traveling speed gear setting screen shows up.

1. Referring to the traveling speed chart, determine maximum and minimum traveling speeds.
2. Setting the maximum speed gear shift
   Using the high-speed setting switch (5), preset the desired traveling speed. (The high-speed slider moves to the set position.)
3. Setting the minimum speed gear shift
   Using the low-speed setting switch (6), preset the desired traveling speed. (The low-speed slider moves to the set position.)
4. The automatic gear shift is carried on within the displayed traveling speed gear shifts (1).
5. Touch the switch (2), and the setting is completed and the previous screen reappears.



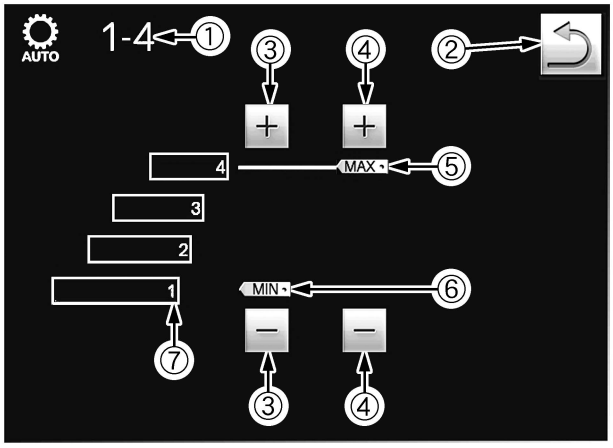

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*(1) Selected traveling speed gear shift*
*(2) Previous screen resume switch*
*(3) Low-speed slider*
*(4) High-speed slider*
*(5) High-speed setting switch*
*(6) Low-speed setting switch*
*(7) Main gear shift section*
*(8) Range gear shift section*

◆ **Setting the traveling speed gear in the field mode**

Touch the field mode setting switch (5) in the above figure, and the "field mode" traveling speed gear setting screen shows up.

1. Referring to the traveling speed chart, determine maximum and minimum main gear shifts that are best suited for the job in question.
2. Setting the maximum main gear shift
   Using the high-speed setting switch (4), preset the desired traveling speed. (The high-speed slider moves to the set position.)
3. Setting the minimum main gear shift
   Using the low-speed setting switch (3), preset the desired traveling speed. (The low-speed slider moves to the set position.)
4. The automatic gear shift is carried on within the displayed main gear shifts (1).
5. Touch the switch (2), and the setting is completed and the previous screen reappears.




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*(1) Selected traveling 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*

◆ **Setting the auto shift sensitivity**

**[When operating in the auto shift mode]**

With the auto shift sensitivity control (1), 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 traveling speed priority | ● Retract the graph leftward with the "Minus (-)" switch. | Suited for light-duty work. |
| Operation with PTO shaft speed priority | ● Extend the graph rightward with the "Plus (+)" switch. | 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 (1). If the ez-command center is used for gear shift over the range gear shift (from A to F) in such a case, the selected main gear shift works in a different way.

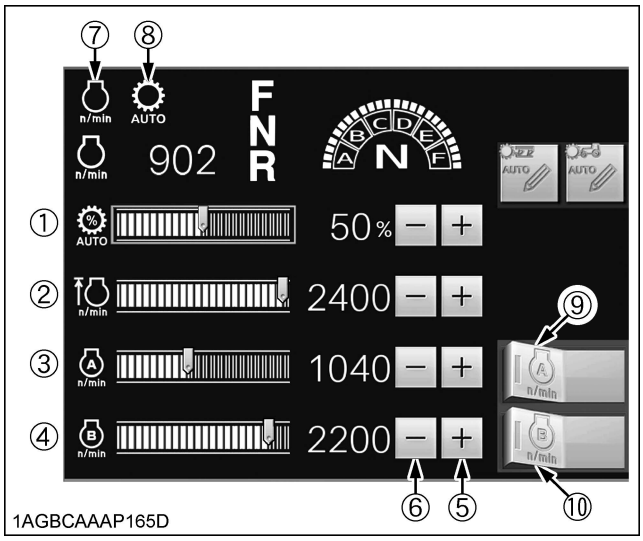
| Operating | Auto shift sensitivity control | Remarks |
|---|---|---|
| Light-duty | ● Retract the graph leftward with the "Minus (-)" switch. | Shifted to the rev-up/slow-down levels by skipping the traveling speed range. |
| Heavy-duty | ● Extend the graph rightward with the "Plus (+)" switch. | Rev-up or slowed down close to the current traveling speed. |

◆ **Setting the engine rev-limit**

1. Touch the target top engine rpm point on the engine rev-limiter control graph (2), and the slider will move to the touched point.
2. With the "Plus (+)" or "Minus (-)" switch (5 or 6), finely adjust the rev-limit.
3. When the point is set at MAX, the rev-limiter control is cancelled.

◆ **Setting the engine rpm memory**

1. Touch the target engine rpm point on the engine rpm memory control graph (3), and the slider will move to the touched point.
2. With the "Plus (+)" or "Minus (-)" switch (5 or 6), 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.

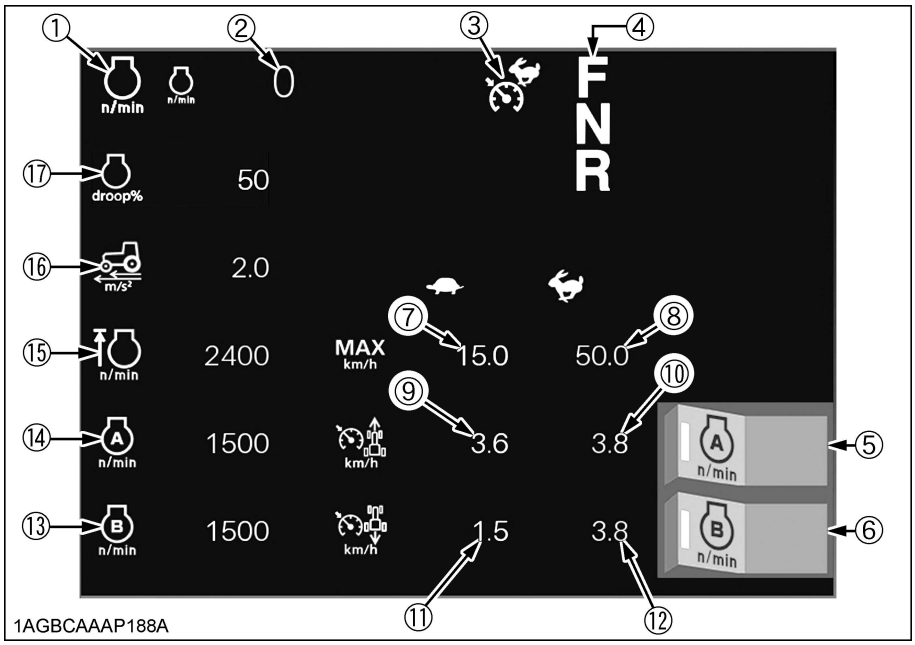



*(1) Auto shift sensitivity control*
*(2) Rev-limiter control*
*(3) Engine RPM memory (A) control*
*(4) Engine RPM memory (B) control*
*(5) Plus (+) switch*
*(6) Minus (-) switch*
*(7) Engine RPM memory (A/B) indicator*
*(8) Auto shift mode (Road/Field) indicator*
*(9) Engine RPM memory (A) switch*
*(10) Engine RPM memory (B) switch*

## ■Setting the Engine/Transmission (CVT)

**CVT transmission [Premium KVT model]**

Various settings of the CVT (Continuously Variable Transmission) can be made and checked.
In addition, the engine rev-limit and engine rpm memory settings may be preprogrammed.




*(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 max. speed*
*(8) CVT high-range max. 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*

### ◆ Modifying the CVT sensitivity setting

1. Touch the CVT sensitivity control (17) in the above figure, and the setting screen shows up.
2. Slide the 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 switch (1), and the setting is saved and the previous screen reappears.

**NOTE :**

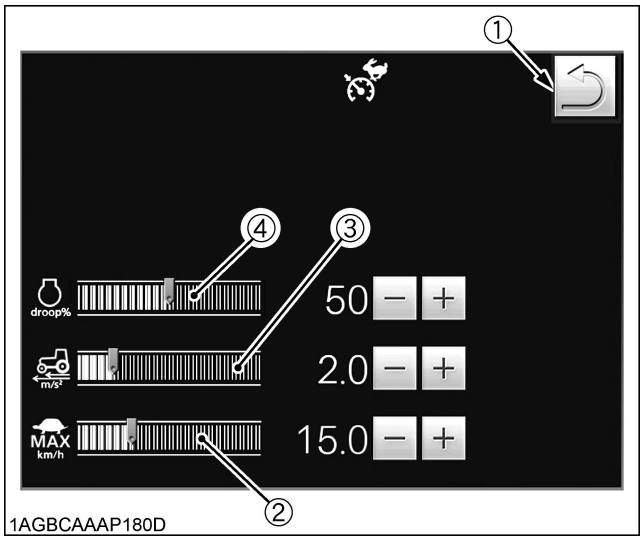
- For detailed settings of the CVT sensitivity, refer to "Setting the CVT (Continuously Variable Transmission) sensitivity" in "CVT (Continuously Variable Transmission) CONTROL" in "OPERATING THE TRACTOR" section.

### ◆ Modifying the CVT response setting

1. Touch the CVT response control (16) in the above figure, and the setting screen shows up.
2. Slide the graph farther 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 switch (1), and the setting is saved and the previous screen reappears.

### ◆ Modifying the CVT Low-range max. speed setting

1. Touch the CVT Low-range max. speed control (7) in the above figure, and the setting screen shows up.
2. Slide the graph farther to the right (increasing value) to increase the traveling speed available in the low-speed range. The traveling 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 switch (1), and the setting is saved and the previous screen reappears.




*(1) Previous screen resume switch*
*(2) CVT Low-range max. speed control*
*(3) CVT response control*
*(4) CVT sensitivity control*

◆ **Modifying the cruise control speed setting**

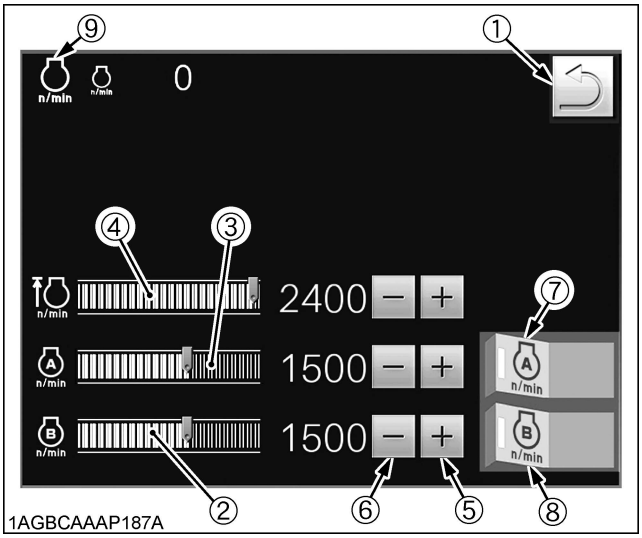
For modifying the cruise control speed setting, refer to "Cruise Control" in "CVT (Continuously Variable Transmission) CONTROL" in "OPERATING THE TRACTOR" section.

◆ **Setting the engine rev-limit**

1. Touch the engine rev-limiter control (15) in the above figure, and the setting screen shows up.
2. Slide the graph to the right (increasing the value) to increase the engine rev-limit.
3. When the rpm is set at MAX, the rev-limiter control is cancelled.
4. Press the switch (1), and the setting is saved and the previous screen reappears.

◆ **Setting the engine rpm memory**

1. Touch the target engine rpm point on the engine rpm memory control graph (3), and the slider will move to the touched point.
2. With the "Plus (+)" or "Minus (-)" switch (5 or 6), 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*
*(3) Engine RPM memory (A) control*
*(4) Engine rev-limiter control*
*(5) Plus (+) switch*
*(6) Minus (-) switch*
*(7) Engine RPM memory (A) switch*
*(8) Engine RPM memory (B) switch*
*(9) Engine RPM memory (A/B) indicator*

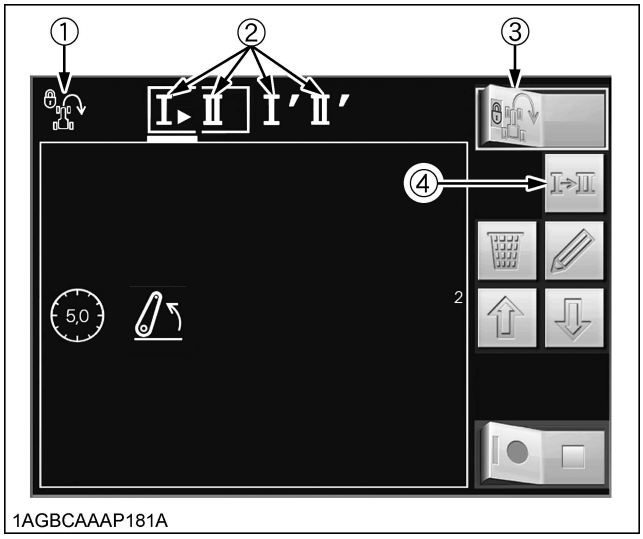
## ■Setting the Headland Management System

This chapter describes how to record, modify or delete the Headland Management System program.
Before recording this program, read the "Headland Management System Program List" below to confirm programmable actions.

### ◆ Preparations for recording the program

The program consists of 2 different types of operation, Field in and Field out, listed below. The recorded entries can be overwritten any number of times.

1. Touch the right half of the Headland Management System lock/unlock switch (3) 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 (1) goes off.
2. Using the program select switch (4), 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 (2) lights up interlocked with the select switch (4).



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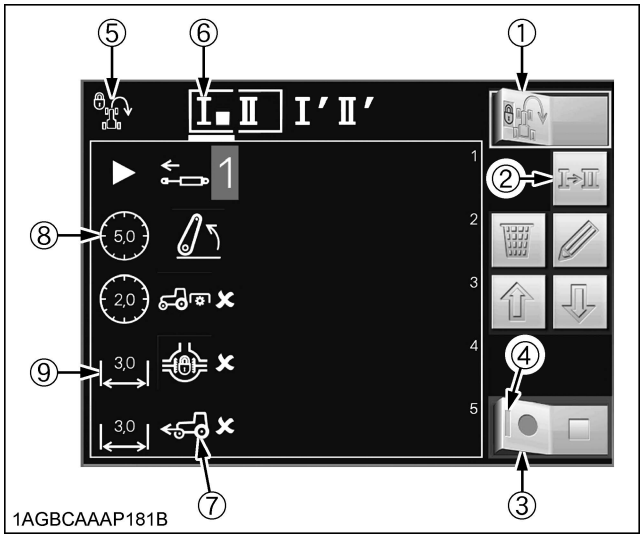
*(1) Headland Management System lock indicator*
*(2) Program code display indicator*
*(3) Headland Management System lock/unlock switch*
*(4) Program select switch*

● Recordable program

| Type of work | Program select switch | Program | Indicator |
|---|---|---|---|
| A | Code: Ⅰ | Field out | Indicator " Ⅰ " lights up (The ● circle lights up when recording) |
| | Code: Ⅱ | Field in | Indicator " Ⅱ " lights up (The ● circle lights up when recording) |
| B | Code: Ⅰ′ | Field out | Indicator " Ⅰ′ " lights up (The ● circle lights up when recording) |
| | Code: Ⅱ′ | Field in | Indicator " Ⅱ′ " lights up (The ● circle lights up when recording) |

◆ **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.

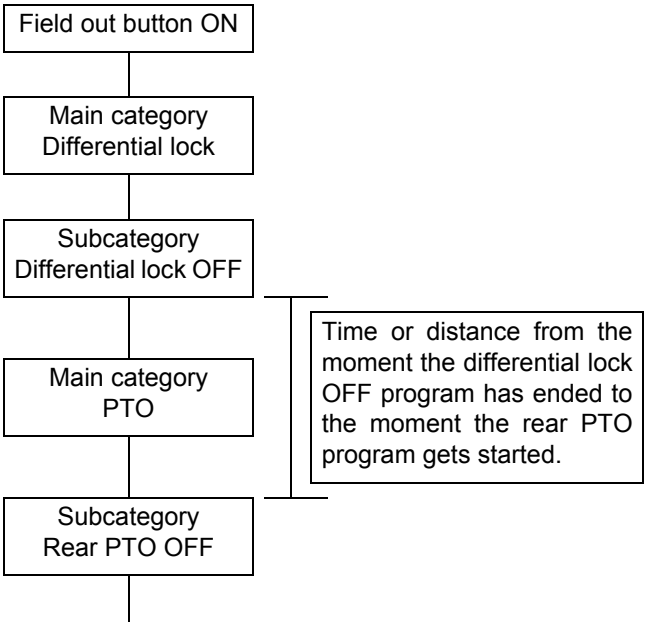



*(1) Headland Management System lock/unlock switch*
*(2) Program select switch*
*(3) Record switch*
*(4) Indicator*
*(5) Headland Management System lock indicator*
*(6) Program codes "Ⅰ" indicator*
*(7) Subcategory icon*
*(8) Pre-program lead time*
*(9) Pre-program travel distance*

◆ **What are pre-program lead time and pre-program travel distance?**

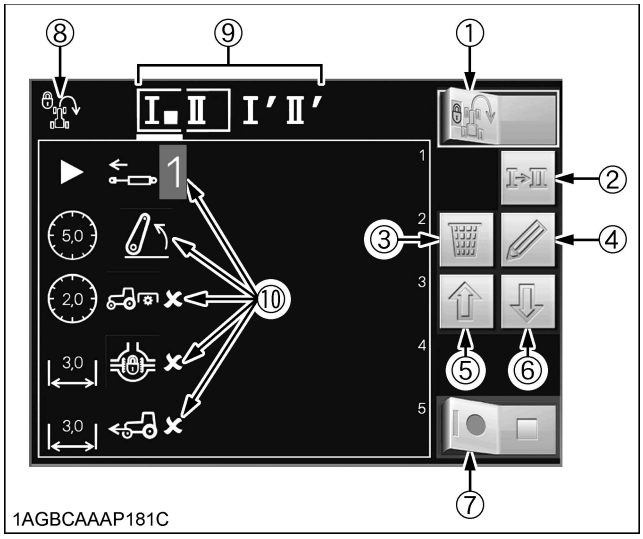
They mean the standby time and travel distance from the moment a program is executed to the moment the next program gets started.

**[Field-out program example]**



◆ **Deleting the program**

1. Make sure the Headland Management System lock indicator (8) is off.
2. 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).



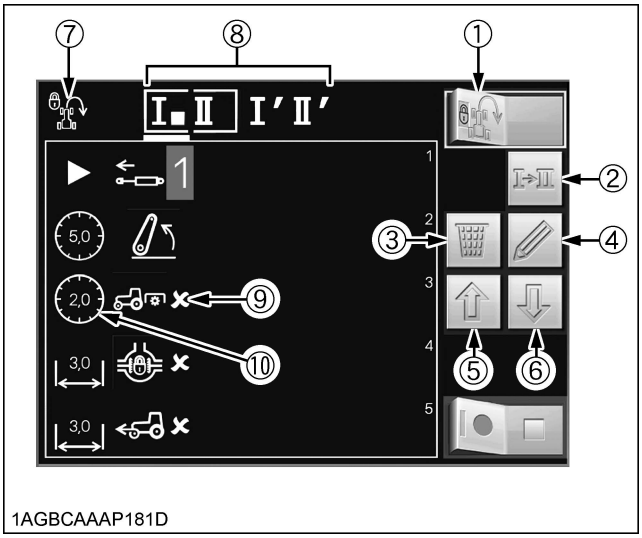
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*(1) Headland Management System lock/unlock switch*
*(2) Program select switch*
*(3) Delete switch*
*(4) Edit switch*
*(5) Scroll switch (UP)*
*(6) Scroll switch (DOWN)*
*(7) Record switch*
*(8) Headland Management System lock indicator*
*(9) Program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

◆ **Modifying the program**

Example: Modifying the lead time for the PTO shaft to stop from the current 2-second entry to a 5-second entry.

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).
   Now the following editing screen appears.



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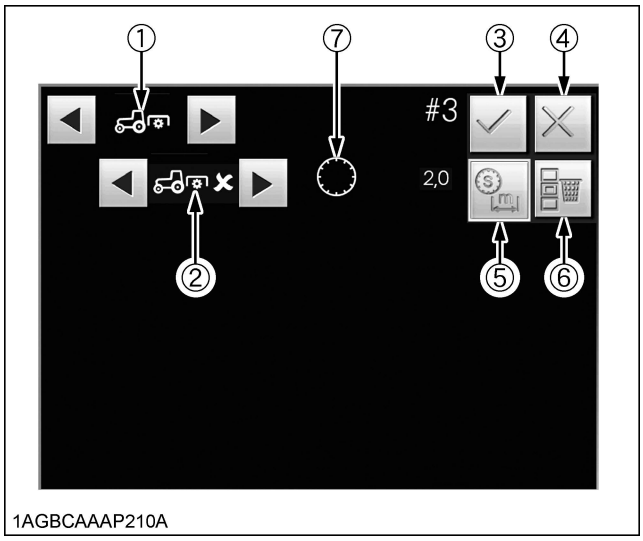
*(1) Headland Management System lock/unlock switch*
*(2) Program select switch*
*(3) Delete switch*
*(4) Edit switch*
*(5) Scroll switch (UP)*
*(6) Scroll switch (DOWN)*
*(7) Headland Management System lock indicator*
*(8) Program code indicator*
*(9) PTO-related subcategory icon*
*(10) Current lead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

4. On the editing screen, the PTO-related main category icon (1) and subcategory icon (2), selected in the above step 3, are automatically displayed.
   Make sure the lead time icon (timer) (7) is on. Then touch this icon.
5. Using the appearing [NUMERIC KEYPAD], enter a new lead time (5 seconds in this example) and save the entry.

**NOTE :**

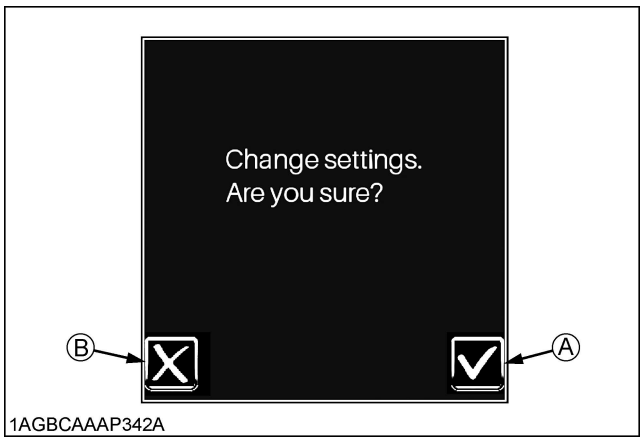
- To change the lead time to the pre-program distance, touch the distance/time select switch (5). The lead time icon (7) changes to the distance icon.
  The steps hereafter are the same as for the lead time setting.

6. Touch the save switch (3).
   The [Change settings. Are you sure?] message appears.
   If "YES" is selected, the program will be modified and the previous screen will show up again.



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*(1) PTO-related main category icon*
*(2) Subcategory icon*
*(3) Save switch*
*(4) Cancel switch*
*(5) Distance/time select switch*
*(6) Delete switch*
*(7) Lead time icon (Timer)*



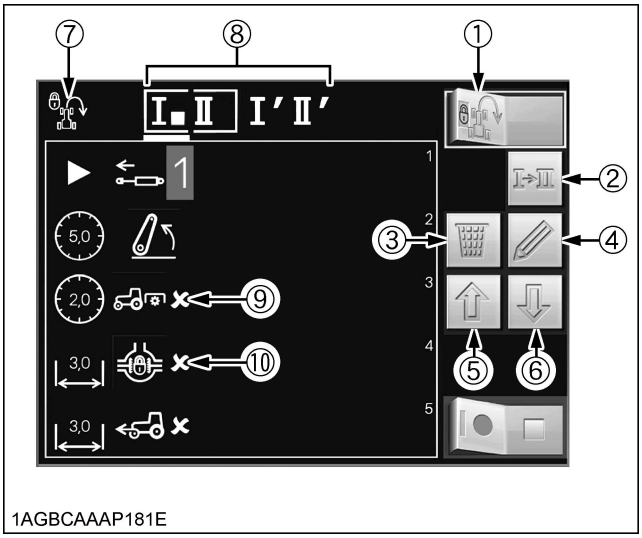
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*(A) "YES"*
*(B) "NO"*

◆ **Modifying the program**

Example: 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).
   Now the following editing screen appears



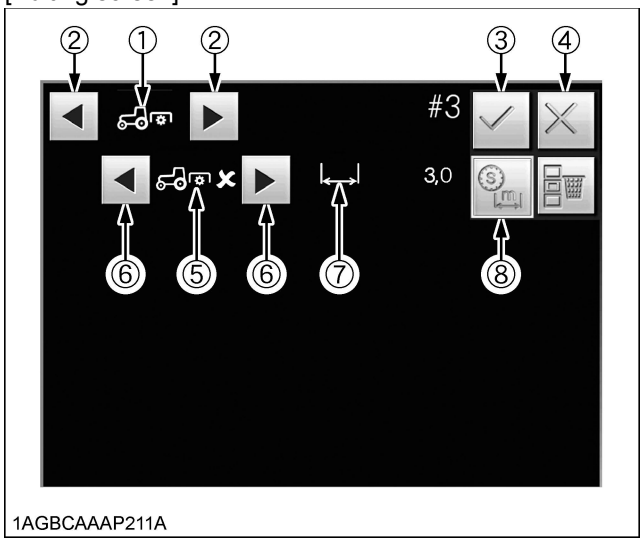
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*(1) Headland Management System lock/unlock switch*
*(2) Program select switch*
*(3) Delete switch*
*(4) Edit switch*
*(5) Scroll switch (UP)*
*(6) Scroll switch (DOWN)*
*(7) Headland Management System lock indicator*
*(8) Program code indicator*
*(9)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

4. On the editing screen, the PTO-related main category icon (1) and subcategory icon (5), selected in the above 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/time select switch (8).)
8. Using the appearing [NUMERIC KEYPAD], enter a new distance (3.0 m [10 ft.] in this example) and save the entry.

9. Touch the save switch (3).
   The [Change settings. Are you sure?] message appears.
   If "YES" is selected, 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]




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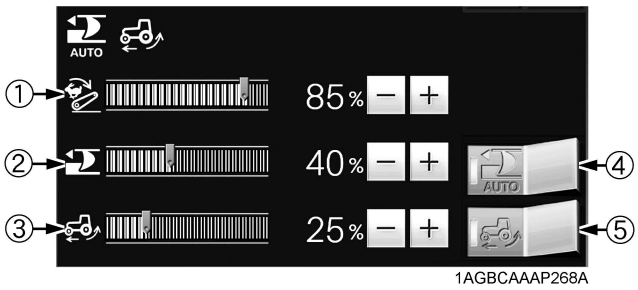
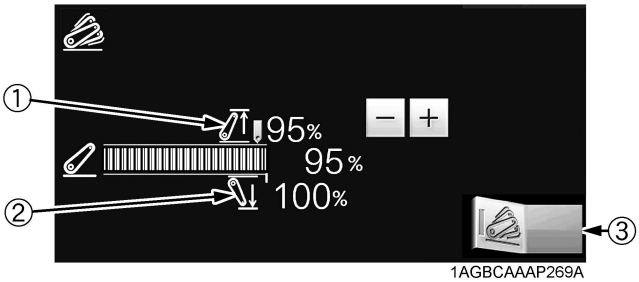
*(1) PTO-related main category icon*
*(2) Main category scroll switch*
*(3) Save switch*
*(4) Cancel switch*
*(5) Subcategory icon*
*(6) Subcategory scroll switch*
*(7) Pre-program distance icon*
*(8) Distance/time select switch*

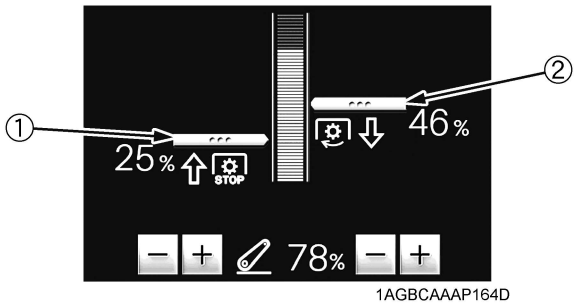



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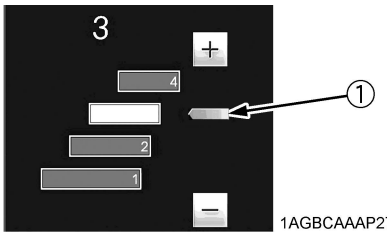
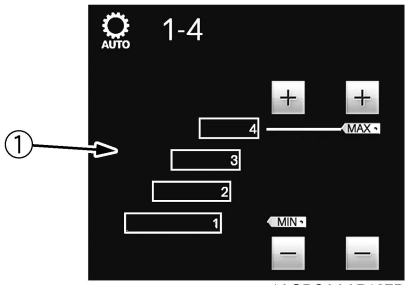
*(A) "YES"*
*(B) "NO"*

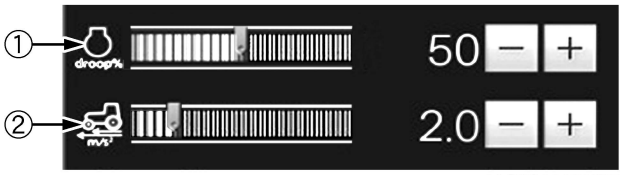
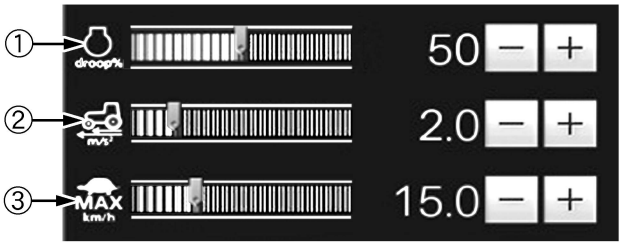
◆ Headland Management System Program List

| Main category | Subcategory | | Remark/Detailed setting |
|---|---|---|---|
| 3-point hitch | Blocked | | Set rear hitch to blocked. |
| | Work | | Move rear hitch to work position<br>  <br><br>1AGBCAAAP268A<br>*(1) Rear hitch lowering speed adjustment*<br>*(2) Draft sensitivity adjustment*<br>*(3) Wheel slip ratio adjustment*<br>*(4) Auto draft control ON/OFF*<br>*(5) Wheel slip control ON/OFF* |
| | Float | | Set rear hitch to float position.<br>  <br><br>1AGBCAAAP268B<br>*(1) Rear hitch lowering speed adjustment* |
| | Transport | | Move rear hitch to transport position.<br>  <br><br>1AGBCAAAP269A<br>*(1) Rear hitch upper limit adjustment*<br>*(2) Rear hitch bottom limit adjustment*<br>*(3) Ride control ON/OFF* |
| Differential lock | Differential lock OFF | | Switch differential lock off. |
| | Differential lock ON | | Switch differential lock on. |
| | Auto Differential lock OFF | auto | Switch auto differential lock off. |
| | Auto Differential lock ON | auto | Switch auto differential lock on. |

| Main category | Subcategory | | Remark/Detailed setting |
|---|---|---|---|
| 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.   1AGBCAAAP164D *(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.* |

| Main category | Subcategory | | Remark/Detailed setting |
|---|---|---|---|
| Hand throttle mode | Hand throttle mode ON | | Set engine speed to recorded hand throttle speed.<br>  <br><br>1AGBCAAAP270A<br>*(1) Time setting for reaching a preset engine rpm.*<br>*(2) Setting of target engine rpm.* |
| Engine rpm memory | Engine rpm memory OFF | | Switch engine rpm memory off. |
| | Engine rpm memory (A) ON | | Set engine speed to memory speed A.<br>  <br><br>1AGBCAAAP165F<br>*(1) Engine rpm setting to the memory (A)* |
| | Engine rpm memory (B) ON | | Set engine speed to memory speed B.<br>  <br><br>1AGBCAAAP165G<br>*(1) Engine rpm setting to the memory (B)* |

| Main category | Subcategory | | Remark/Detailed setting |
|---|---|---|---|
| Power shift [Premium model] | Power shift gear change | | Change gear.<br>  <br><br>1AGBCAAAP272A<br>*(1) Power shift ratio adjustment* |
| | Road mode | AUTO | Switch transmission mode to road mode.<br>  <br><br>1AGBCAAAP166B<br>*(1) Road mode gear range adjustment* |
| | Field mode | AUTO | Switch transmission mode to field mode.<br>  <br><br>1AGBCAAAP167B<br>*(1) Field mode gear range adjustment* |
| | Manual mode | auto | Switch operation mode to manual mode. |

| Main category | Subcategory | | Remark/Detailed setting |
|---|---|---|---|
| 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.<br>*(1) CVT sensitivity setting*<br>*(2) CVT response setting*<br>  <br><br>1AGBCAAAP180F |
| | Low speed range | | Set mode shift to low speed range.<br>*(1) CVT sensitivity setting*<br>*(2) CVT response setting*<br>*(3) Maximum traveling speed*<br>  <br><br>1AGBCAAAP180E |
| | Target travel speed | | Set travel speed.<br>*(1) Setting of target travel speed*<br>  <br><br>1AGBCAAAP271B |

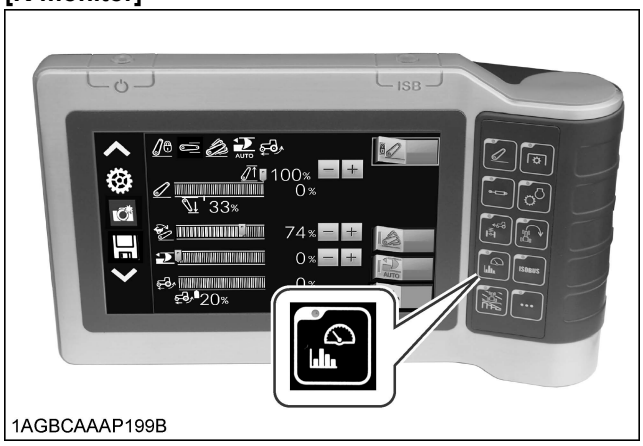
| Main category | Subcategory | | Remark/Detailed setting |
|---|---|---|---|
| Remote control valve 1 | Blocked (Neutral) | 1 | The 1st segment valve is block. |
| | Extend | 1 | The 1st segment valve is extend.<br>*(1) Flow rate (Extend)*<br>*(2) Flow timer*<br>*(3) Priority flow status*<br>  <br>1AGBCAAAP155C |
| | Retract | 1 | The 1st segment valve is retract.<br>*(1) Flow rate (Retract)*<br>*(2) Flow timer*<br>*(3) Priority flow status*<br>  <br>1AGBCAAAP155D |
| | Float | 1 | The 1st segment valve is floating.<br>*(1) Flow timer*<br>  <br>1AGBCAAAP343A |
| Front PTO | Front PTO OFF | | Switch front PTO off. |
| | Front PTO ON | | Switch front PTO on. |

## ■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.

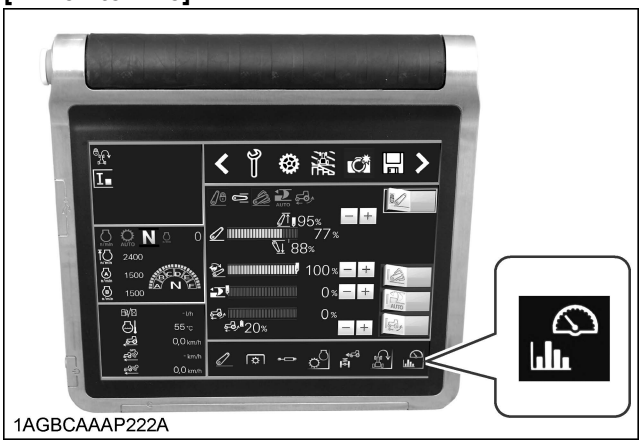
### ◆ Calling up the data screen and preparation

**[K-monitor]**



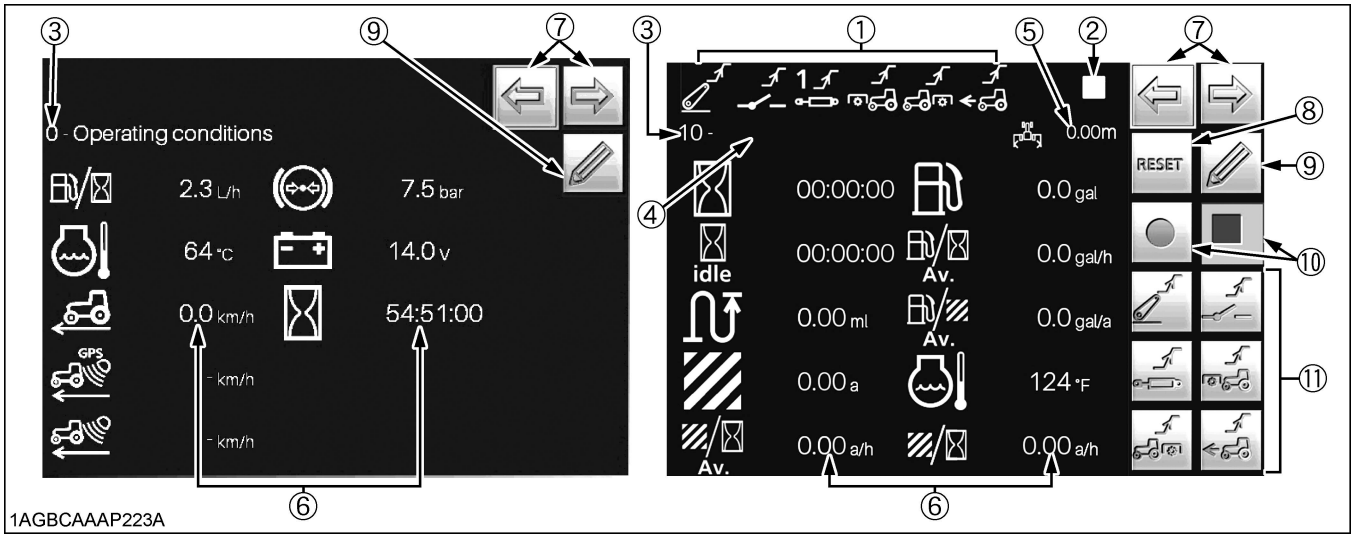

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**[K-monitor Pro]**




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1. The recording screen has 11 pages available (screens No. 1 to 11). Screen No. 0 is for information display only. Select the screen to be used for recording with the scroll switch (7). Touch the reset switch (8) to delete the recorded data from the screen.
2. Enter field names, etc. into the free text box (4) as necessary. Touch the free text box and use the displayed ten-key pad for input.
3. 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.
4. Touch the edit switch (9) to switch to the edit screen.

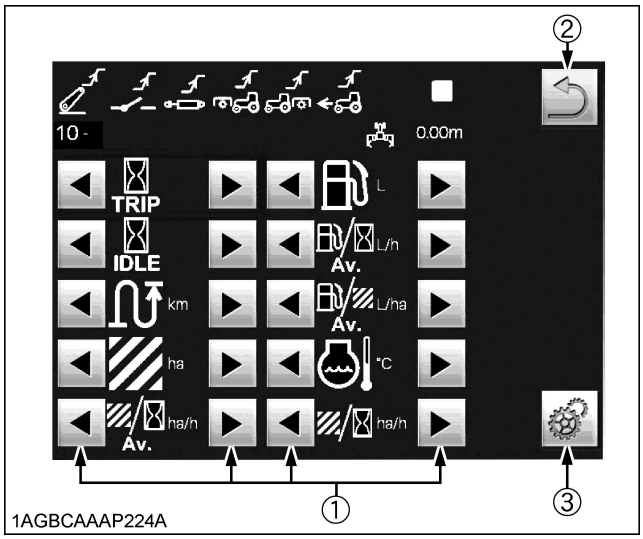



1AGBCAAAP223A

*(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/stop switch*
*(11) Record conditions switch*

◆ **Selecting and registering recorded data items**

1. Touch the edit switch (9) indicated above to switch to the edit screen shown below.
2. Touch the scroll switch icon (1) at upper left to select the icon you want to register as recorded data.
   Next, touch the scroll switch icon (1) second from upper left to select the icon you want to register.
3. Touch the switch (2), and the setting is completed and the previous screen reappears.
4. Touch the factory setting button (3) to return all icons on the displayed screen to the default display.




*(1) Scroll switch*
*(2) Return to the previous screen*
*(3) Factory setting switch*

◆ **Recordable data items**

Register data items upon confirmation with the chart below.

| 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 | ºC (ºF) | Not resettable |
| | Travel speed | km/h (mph) | Not resettable |
| GPS | 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 | Trip-operating hours | - | Resettable |
| | Trip-travel distance | km (ml) | Resettable |
| | Trip-fuel consumption | L (gal) | Resettable |
| Av. | Trip-fuel consumption per hour | L/h (gal/h) | Resettable |
| Av. | Trip-area fuel consumption | L/ha (gal/a) | Resettable |
| | Trip-area | ha (a) | Resettable |
| Av. | Trip-work area covered per hour | ha/h (a/h) | Resettable |
| idle | Trip-idle time | - | Resettable (Engine running, tractor not moving, PTO off) |

### ◆ 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) Lift arm**
Touch the switch to switch the indicator among "Lift arm raise", "Lift arm lower" and "OFF".
When you select "Lift arm lower", data will be counted only when the lift arm is lowered.
When you select "Lift arm raise", data will be counted only when the lift arm is raised.

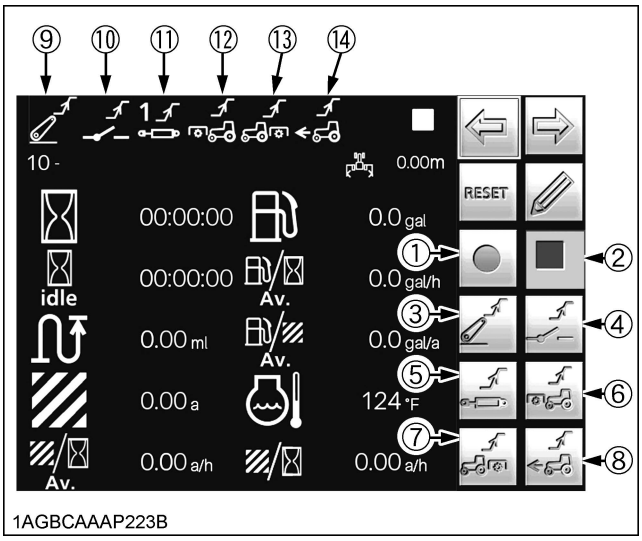
**(2) External signal input**
Touch the switch to switch between the "ON" (lit) and "OFF" (unlit) indicators.
When you select external signal input ON, data will be counted only during external signal input.
For details, consult your local KUBOTA Dealer.

**(3) 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.

**(4) 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.

**(5) 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.

**(6) 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.

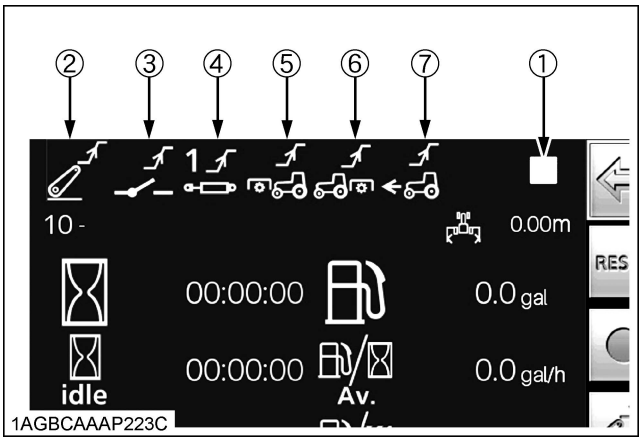



*(1) Record start switch*
*(2) Record stop switch*
*(3) Lift arm switch*
*(4) External signal input switch*
*(5) Remote control valve switch*
*(6) Front PTO switch*
*(7) Rear PTO switch*
*(8) Progress switch*
*(9) Lift arm indicator*
*(10) External signal input indicator*
*(11) Remote control valve indicator*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

### ◆ Record status indicators

Record status indicators use the following colors for identification.

1. Amber indicator lit: Data is being recorded (counted)
2. Green indicator lit: Data recording interrupted
3. Indicators off: Data recording stopped




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

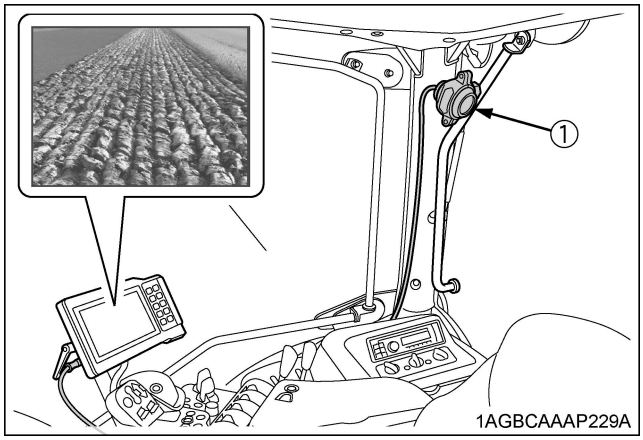
# K-MONITOR (Part 2)

**[Premium, Premium KVT models]**

This chapter covers the handling and operation of the "Sub-menu". For handling and operation of the main menu, refer to the chapter on K-MONITOR (Part 1).

## ■Live View Camera

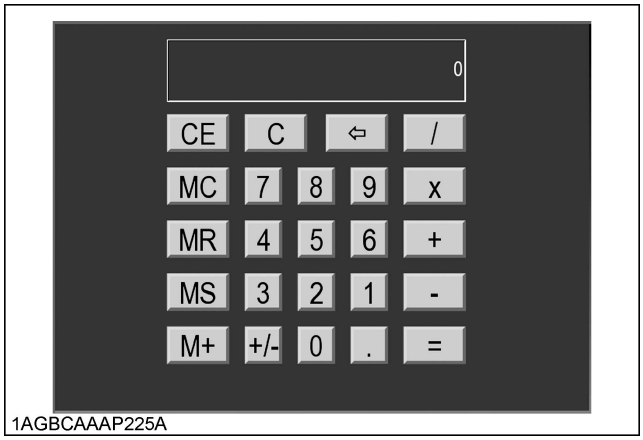
Installing a camera at an arbitrary position on the tractor or implement allows consistent checking on the work status from the operator's seat through the K-monitor.




*(1) View camera*

## ■Calculator

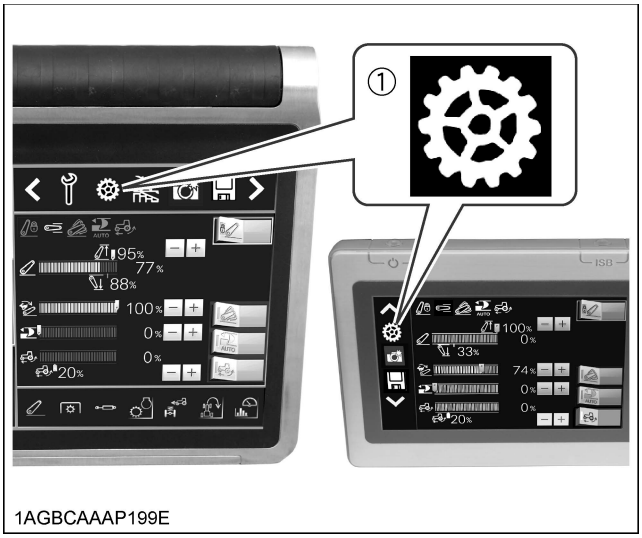
Make use of it as necessary.




*(1) Calculator*

## ■Initial Setting

Refer to the chapter on K-MONITOR (Part 1).




*(1) Gear mark icon*

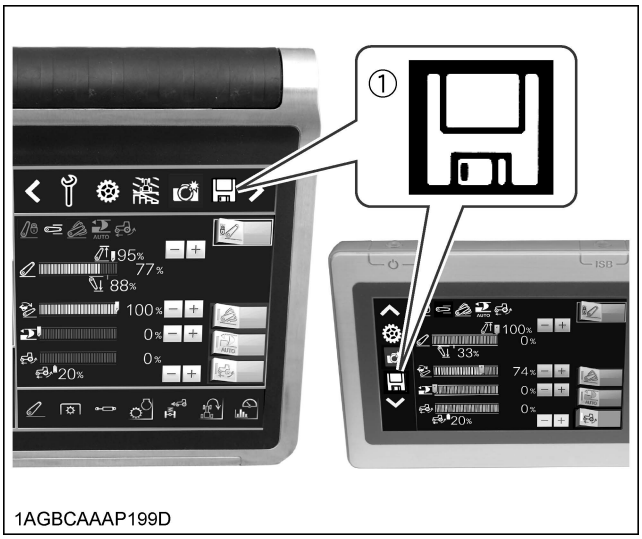
## ■Data Import and Export

Digital-format data output is possible when using this mode, meaning that data import to a computer, etc. 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.

### ◆ Export Procedure

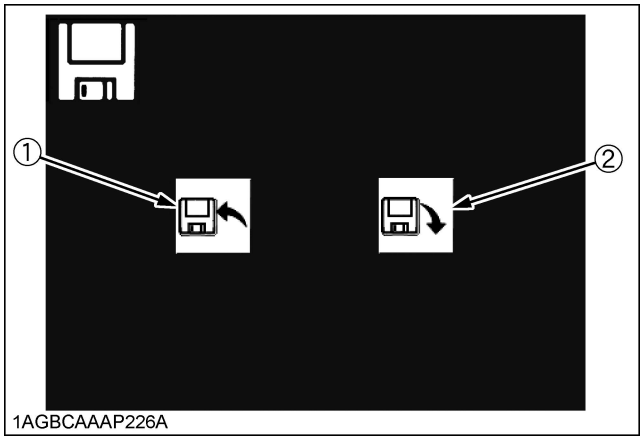
1. After setting the USB memory stick in the K-monitor, touch the floppy mark (1) in the display.




*(1) Floppy mark*

2. Touch the export switch (1) in the display to show three types of exportable data. Check off the items you want to export by touching them.

3. Touch the export switch (3) to export to the USB memory stick. Touch the switch (4) to return to the previous screen.



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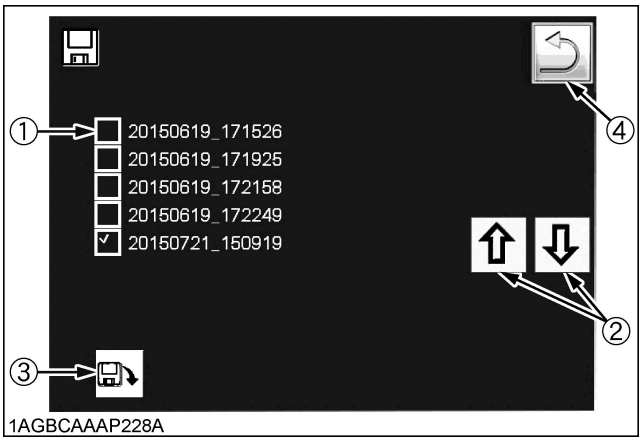


1AGBCAAAP227A

*(1) Export switch*
*(2) Import switch*
*(3) Export switch*
*(4) Return to the previous screen switch*

◆ **Import 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 (2) to select data to import from the USB memory stick data (1) at the top of the screen.
3. Touch the import switch (3) 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 part 2. of the above procedure. However, the top limit setting value of the lift arm top limit cannot be imported.



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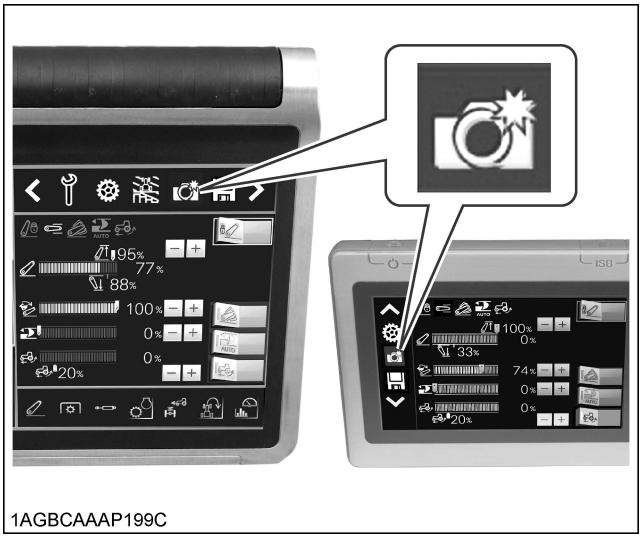
*(1) USB memory stick data*
*(2) Scroll switch*
*(3) Import switch*
*(4) Return to the previous screen switch*

## ■Screenshot

The screen data information set on each screen can be exported as is 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.

◆ **Export Procedure**

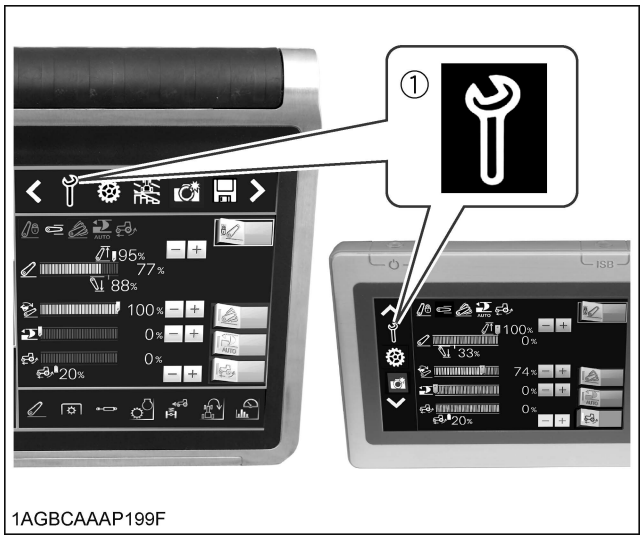
1. Display onscreen the information of which you want screenshots.
2. Set the USB memory stick.
3. Touch the camera icon at the top of the screen to copy the data to the USB memory stick.


1AGBCAAAP199C

## ■Failure Messages

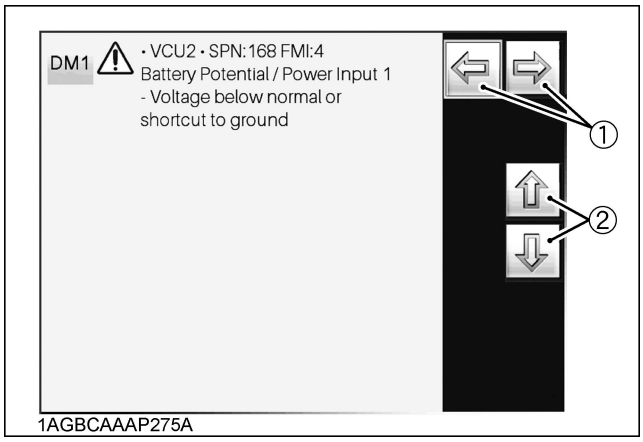
Touch the wrench icon displayed in the sub-menu to check the following two types of information.

1. **Information on current failures (DM1 message)**
2. **Failure log (DM2 message)**

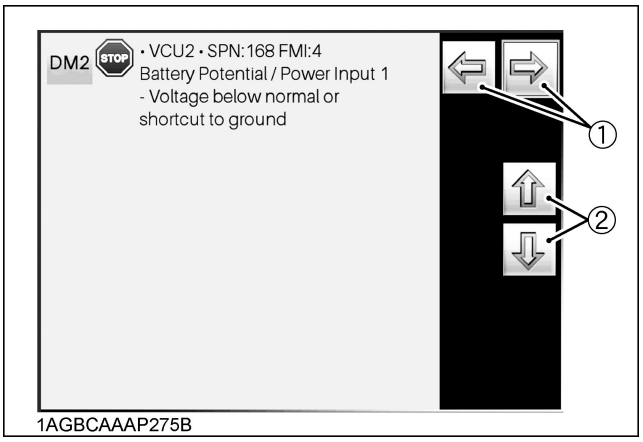



1AGBCAAAP199F

*(1) Wrench mark*




1AGBCAAAP275A




1AGBCAAAP275B

*(1) DM1 and DM2 message select switches*
*(2) Message scroll switches*

# PRE-OPERATION CHECK

## DAILY CHECK

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

**WARNING**

**To avoid personal injury or death:**

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

**Check item**

- Walk around inspection
- Check engine oil level
- Check transmission oil level
- Check coolant level
- Check water separator
- Clean grill, radiator and cooler
- Check DPF/SCR muffler
- Check brake pedal
- Check parking brake lever
- Check pneumatic brake pressure (if equipped)
- Check indicators, gauges and meter
- Check lights
- Check seat belt
- Check movable parts
- Supply DEF/AdBlue®
- Refuel

  (See "DAILY CHECK" in "PERIODIC SERVICE" section.)
- Care of danger, warning and caution labels

  (See "DANGER, WARNING AND CAUTION LABELS" in "SAFE OPERATION" section.)

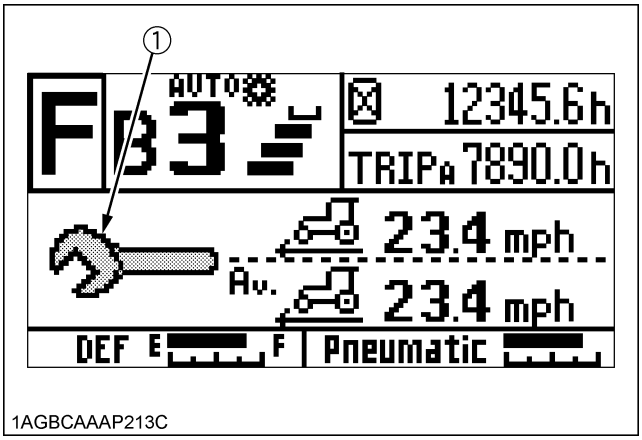
## SERVICE INSPECT INDICATOR

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

When Engine Oil, the most significant of all these, reaches its replacement time, the Service Inspect Indicator will automatically appear on the LCD.

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.

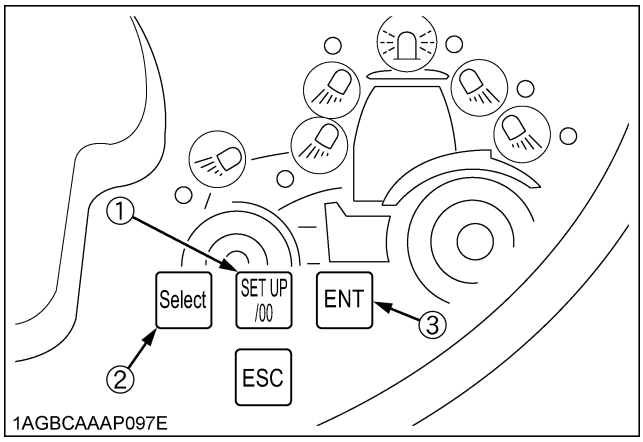



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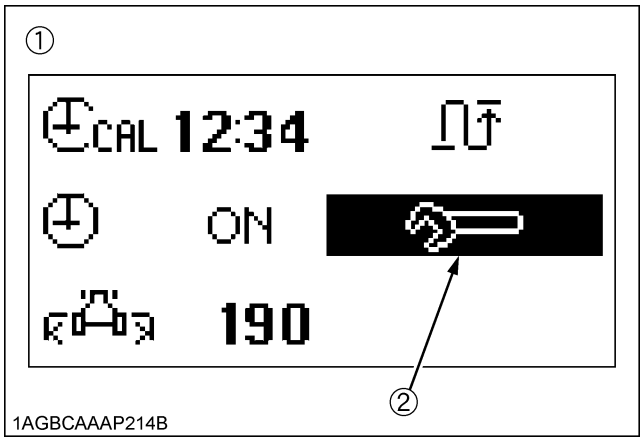
*(1) Service inspect indicator (Wrench mark)*

## ■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 "SERVICE INSPECT INDICATOR". Then press the "ENT" switch.

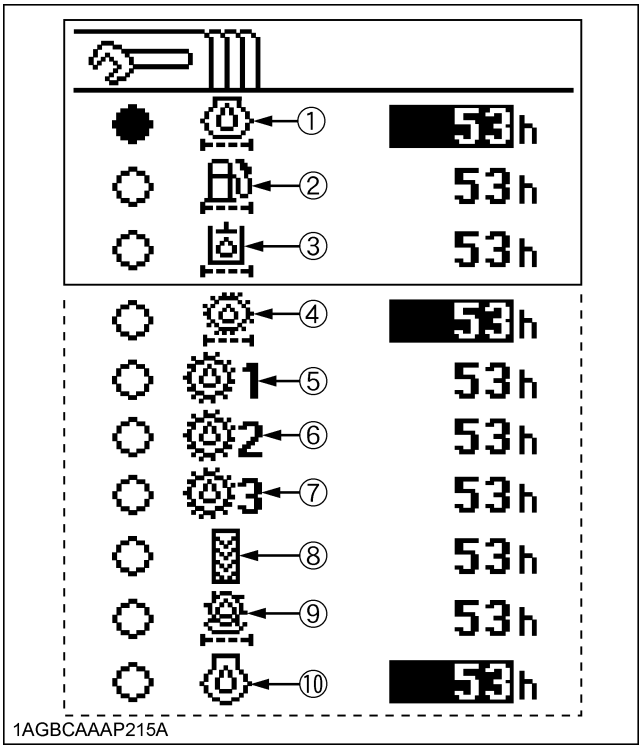



*(1) SET UP/00 switch*
*(2) Select switch*
*(3) ENT switch*




*(1) Setting mode screen*
*(2) Service inspect indicator*

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.
   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.

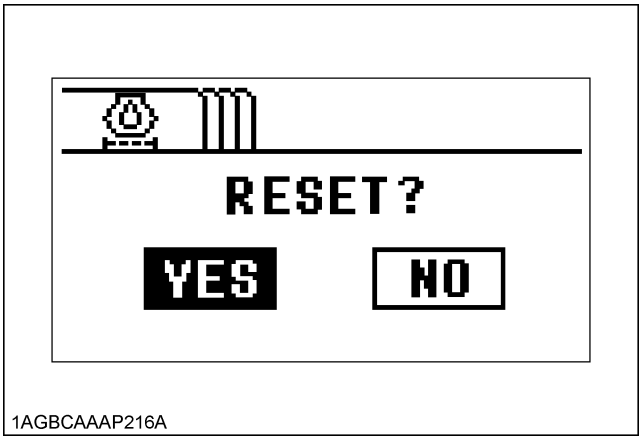



*(1) Engine oil filter*
*(2) Fuel filter*
*(3) Hydraulic suction oil filter (3-point hitch)*
*(4) Transmission filter*
*(5) Transmission fluid*
*(6) Rear axle case oil*
*(7) Front axle case oil*
*(8) Wheel bolt torque*
*(9) Engine oil separator element*
*(10) Engine oil*

## ■Resetting Procedure

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.
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.



# OPERATING THE ENGINE

## WARNING

**To avoid personal injury or death:**

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

**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 AFTERTREATMENT 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.**

### ■Dual Exhaust Aftertreatment Devices

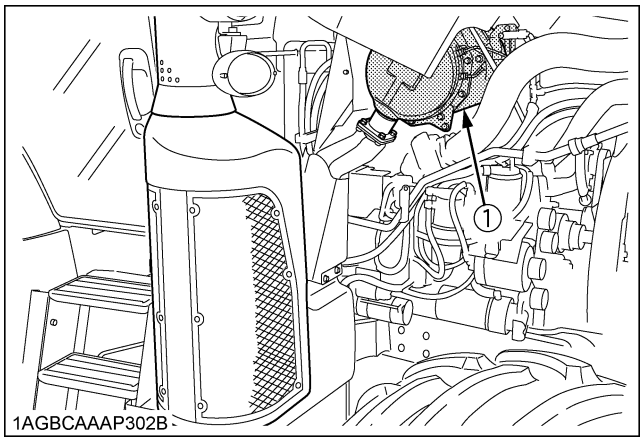
Particulate matter (PM) and black smoke contained in exhaust gases are trapped and removed by the DPF (Diesel Particulate Filter) muffler.

The SCR system then decomposes residual nitrogen oxides (NOx) into harmless nitrogen (N2) and water (H2O) 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 DPF (Diesel Particulate Filter) muffler which serves to reduce hydrocarbons, carbon monoxide and other gases, all of which are contained in diesel engine emissions, to harmless carbon dioxide and water. The DPF also traps PM (particulate matter).
Please handle exhaust aftertreatment devices correctly and in an environmentally responsible manner.




*(1) Diesel Particulate Filter (DPF)*

## ■Handling Points

When a specific amount of PM (particulate matter) 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 Sulfur Fuel (S15).

**IMPORTANT :**

- Use of diesel fuel other than Ultra Low Sulfur Fuel may adversely affect the engine and DPF performance.
  Use of fuels other than Ultra Low Sulfur 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, don't 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 continued operation by ignoring the warning signs may cause DPF and engine damage.

## ■DPF Regeneration Process

DPF regeneration process can be performed by choosing from "Auto Regeneration" or "Regeneration inhibit" mode according to your job conditions. For jobs not affected by hot gases emitted during regeneration, the "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 (See the "Tips on Diesel Particulate Filter [DPF] Regeneration"), the DPF will be automatically regenerated whether the tractor is in motion or parked.
By this way, work efficiency is improved. For details of auto regeneration, refer to "Operating Procedure for Auto Regeneration Mode" section.

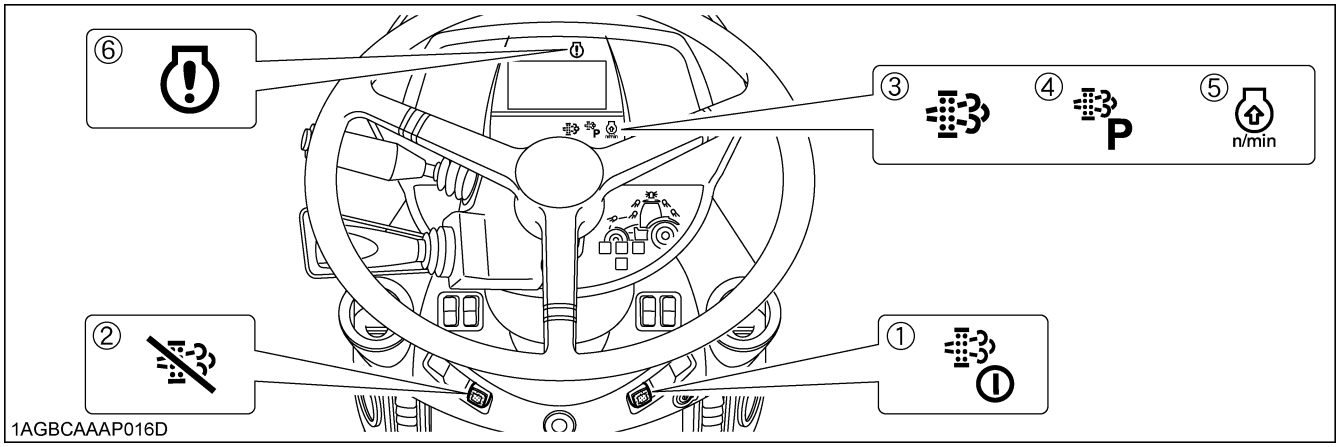
**◆ Regeneration Inhibit Mode;**

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 details of regeneration prohibition, refer to "Operating Procedure for Regeneration Inhibit Mode" section.

**NOTE :**

- If stop the engine once, the "Auto Regeneration" mode will be activated.

## ■Operating Procedure for Auto Regeneration Mode




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

### ◆ Regeneration Operating Procedure

**1.** 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.

**2.** 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.

**3.** 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 the "Tips on Diesel Particulate Filter [DPF] Regeneration")

◆ **PM Warning Level and Required Procedures**

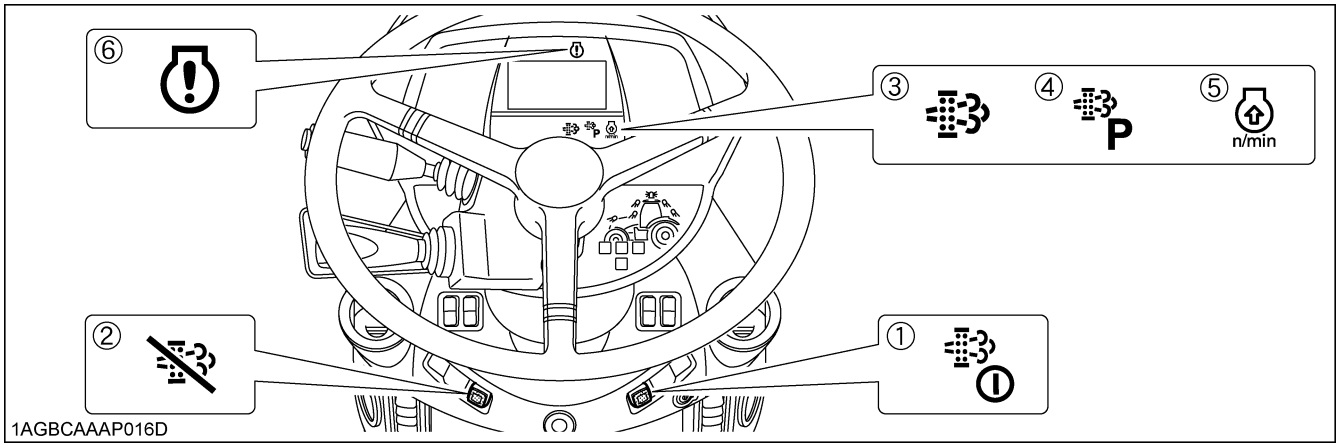
During Auto Regeneration Mode when the PM level has built up in the DPF, the regeneration cycle will begin automatically. If the regeneration cycle is interrupted or the regeneration conditions are not satisfied, the buzzer starts sounding and the indicator display changes in response to the PM level in order to prompt the operator to perform the required procedure listed below.

**IMPORTANT :**

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

| **Auto Mode** | | |
|---|---|---|
| DPF system status | | Required procedure |
| PM warning level: **1**<br>Buzzer: Not sounding |  The regeneration indicator starts flashing. | A specific amount of PM has accumulated in the DPF muffler.<br>Continue to work the tractor to raise the DPF temperature. |
| |  The RPM increase indicator starts flashing. | Continue the work and increase the engine rpm until the indicator turns "OFF". |
| |  The regeneration indicator will stop flashing and remain "ON" constantly. | The regeneration cycle begins and continues until cycle is complete then the indicator will turn "OFF". |
| PM warning level: **2-1**<br>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. | Start the regeneration, referring to PM warning level: 1 above.<br>Now the parked regeneration indicator starts flashing, and the parked regeneration can also be started.<br>If the regeneration conditions are not met, perform the parked regeneration.<br>● For the procedure, refer to "Operating Procedure for Parked Regeneration". |
| PM warning level: **2-2**<br>Buzzer: Sounding every 3 seconds |  The RPM increase indicator starts flashing. | |
| |  The parked regeneration indicator starts flashing. | |
| PM warning level: **3**<br>Buzzer: Sounding every 1 second<br>Engine output: 50% | If the regeneration fails in the warning level 2: | |
| |  The engine warning indicator starts flashing. | Immediately discontinue working the tractor and begin the parked regeneration cycle process.<br>● For the procedure, refer to "Operating Procedure for Parked Regeneration".<br>At this PM warning level, the Auto Regeneration Mode does not function.<br>If the tractor is operated further, the regeneration cycle will be disabled. |
| |  The parked regeneration indicator starts flashing. | |
| PM warning level: **4**<br>Buzzer: Sounding every 1 second<br>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 and park it there and turn the engine "OFF".<br>Contact your local KUBOTA Dealer.<br>● At this level, never continue to operate the tractor otherwise damage will result to the DPF and engine. |

## ■Operating Procedure for Regeneration Inhibit Mode




*(1) Parked regeneration switch*
*(2) DPF INHIBIT switch*
*(3) Regeneration indicator*
*(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 activates the DPF muffler. Follow the "Operating Procedure for Parked Regeneration" procedure.

◆ **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 below.

**IMPORTANT :**

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

<table>
<tr><th colspan="3">Regeneration Inhibit Mode</th></tr>
<tr><td colspan="2">DPF system status</td><td>Required procedure</td></tr>
<tr><td rowspan="2">PM warning level: 1<br><br>Buzzer: Not sounding</td><td>  </td><td>The regeneration indicator starts flashing.</td><td>A specific level of PM has built up in the DPF muffler.<br>Continue with the operation as it is.</td></tr>
<tr><td>  </td><td colspan="2">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 regeneration.</td></tr>
<tr><td>PM warning level: 2-1<br><br>Buzzer: Sounding every 5 seconds</td><td>  </td><td>The regeneration indicator starts flashing.</td><td rowspan="2">Move the tractor to a safe area, then follow the "Operating Procedure for Parked Regeneration".</td></tr>
<tr><td>PM warning level: 2-2<br><br>Buzzer: Sounding every 3 seconds</td><td>  </td><td>The Parked regeneration indicator starts flashing.</td></tr>
<tr><td rowspan="2">PM warning level: 3<br><br>Buzzer: Sounding every 1 second<br>Engine output: 50%</td><td colspan="3">If the parked regeneration cycle is interrupted or the tractor is continuously operated in the PM warning level 2:</td></tr>
<tr><td>  <br>  </td><td>The engine warning indicator starts flashing.<br><br>The parked regeneration indicator starts flashing</td><td>Immediately stop working the tractor, move the tractor to a safe area, then follow the "Operating Procedure for Parked Regeneration".<br>If the tractor is operated further and the operator ignores the warning signs, then regeneration will be disabled.</td></tr>
<tr><td rowspan="2">PM warning level: 4<br><br>Buzzer: Sounding every 1 second<br>Engine output: 50%</td><td colspan="3">If the regeneration cycle is interrupted or the tractor is continuously operated ignoring the warning signs, in the PM warning level 3:</td></tr>
<tr><td>  </td><td>The engine warning indicator remains constantly "ON".</td><td>Immediately move the tractor to a safe place and place in park, turn "OFF" engine. Contact your local KUBOTA Dealer.<br>● At this level never continue to operate the tractor, otherwise damage may result to the DPF and engine.</td></tr>
</table>

## ■Operating Procedure for Parked Regeneration

**1.** Park the tractor in a safe area away from buildings, people, and animals.

**2.** Apply the parking brake.

**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.

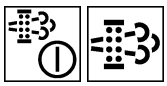
**6.** Lower the implement to the ground.

**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 above),
the parked regeneration switch lamp  start 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 an emergency stop. Otherwise, the regeneration will be interrupted.
- Never leave the tractor when 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.

### ■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, therefore 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, therefore more accumulation of PM will occur, which requires frequent regeneration, therefore avoid prolonged idling if possible.

- **Necessary conditions for "Regeneration"**
  When conditions below are all satisfied, regeneration will start. However, if even one condition is deviated during the process, the regeneration will be interrupted.
  (1) The engine coolant temperature.
  (2) The DPF temperature.
  (3) 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.

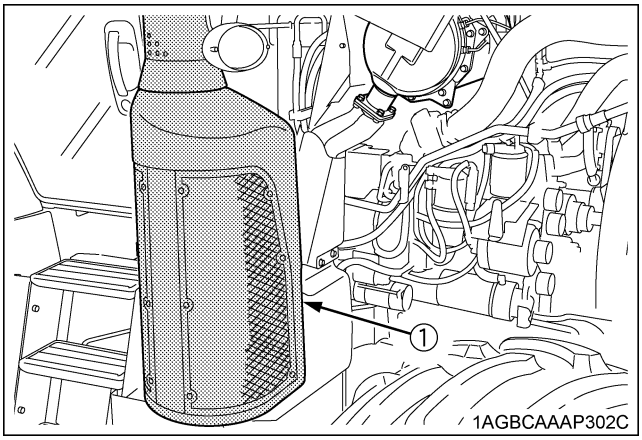
- While the DPF is being regenerated, the engine air flow rate is automatically limited to keep up the exhaust temperature. Because of this the engine may sound differently, this is normal for this engine.

- 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

### ■Outline of the SCR

The injector jets urea aqueous solution (DEF/AdBlue®) into the muffler, and the solution is hydrolyzed with the heat of exhaust gas to generate ammonia (NH3).
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 vapor.




*(1) SCR muffler*

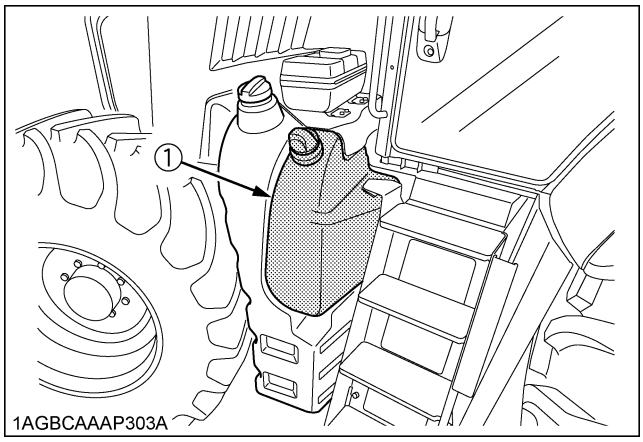
### ■DEF/AdBlue®

**CAUTION**

**To avoid personal injury:**

- **The urea aqueous solution (DEF/AdBlue®) is colorless, odorless and harmless.**
  **If the solution gets on your skin, immediately wash it away with water.**

The DEF/AdBlue®, 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 gas stations, truck stops and specialty 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® is about 5% of the fuel. Add this solution every two refueling occasions.




*(1) DEF/AdBlue® 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 DEF (Diesel Exhaust Fluid). On the European and Japanese markets, it is on sale under the trade name of AdBlue®.

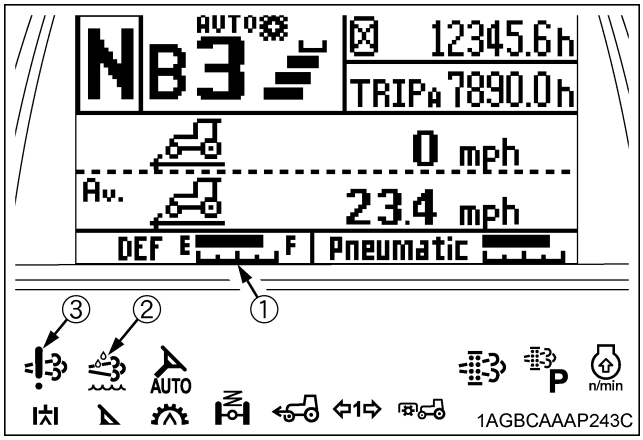
## ■Warning Indication and its Countermeasure

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.

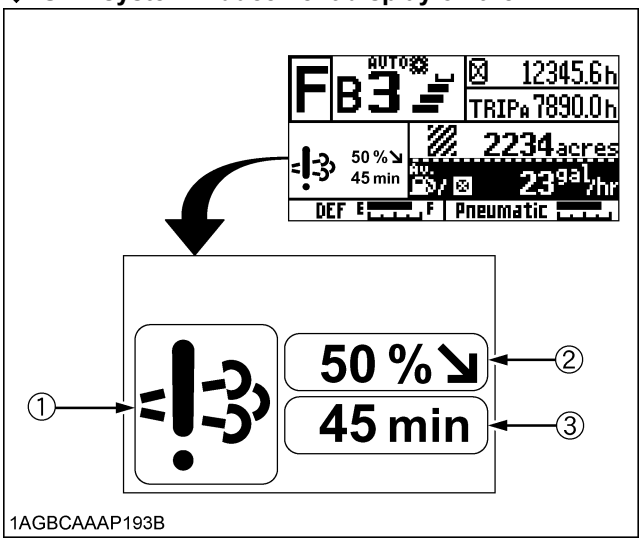
For details, look at the table below.

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*

◆ **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®*

◆ **SCR system icon appearing on inducement display**

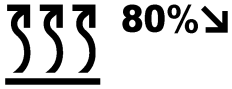
| | | | |
|---|---|---|---|
| | Low-level warning of DEF/AdBlue® | | Trouble warning of SCR system |
| | Poor-quality warning of DEF/AdBlue® | | Thawing DEF/ AdBlue® |

◆ **For SCR system inducement display appearing on LCD, refer to measures of the table below.**

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 |
|---|---|---|---|
|   |  | 1 | The amount of remaining DEF/AdBlue® has decreased up to **15%** of the maximum capacity.<br>Refill the DEF/AdBlue® tank to reset the warning system. (*1)<br>If operation is continued without refilling, the engine output will be limited. |
|   |  | 2 | The amount of remaining DEF/AdBlue® has decreased up to **5%** of the maximum capacity.<br>The engine output is **limited to 50%** (Lv.1: Level 1).<br>If operation is continued without refilling the DEF/AdBlue® tank, a countdown from Level 1 to Level 2 (25 minutes) will begin. (The time until Level 2 may be longer than 25 minutes depending on operating conditions.) |
|   |  | 3 | The engine output is limited to **Idle Status** (Lv.2: Level 2).<br>Refill the DEF/AdBlue® tank. (*1) |
|   |  | 1 | Contains **poor quality** DEF/AdBlue® or other **non-regulated** solutions.<br>After draining the tank, refill with DEF/AdBlue® to reset the warning system.<br>If operation is continued without refilling the DEF/AdBlue® tank, a countdown to Level 1 (195 minutes) will begin. |
|   |  | 2 | The engine output is limited to **50%** (Lv.1: Level 1).<br>If operation is continued without refilling the DEF/AdBlue® tank, a countdown from Level 1 to Level 2 (45 minutes) will begin. |
|   |  | 3 | The engine output is limited to **Idle Status** (Lv.2: Level 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 |
|---|---|---|---|
|   |  | 1 | The SCR system has experienced an abnormality.<br>Verify the DTC displayed on the performance monitor and contact your local KUBOTA dealer.<br>The engine output is unrestricted.<br>A countdown to Level 1 (195 minutes) will begin. |
|   |  | 1 | If there is a breakdown in the essential exhaust gas control components, engine output will be regulated even within the countdown period to Level 1.<br>The engine output is limited to 80%. (The regulation value (%) varies according to the nature of the breakdown.)<br>After 120 minutes, the engine output will be limited to 50% (Lv.1: Level 1). |
|   |  | 2 | The engine output is limited to **50%** (Lv.1: Level 1).<br>A countdown from Level 1 to Level 2 (45 minutes) will begin. |
|   |  | 3 | The engine output is limited to **Idle Status** (Lv.2: Level 2). |
|  | --- | --- | Due to low temperatures, the DEF/AdBlue® has frozen.<br>Continue the warm-up operation and the DEF/AdBlue® will thaw. |
|   | --- | --- | Due to low temperatures, the DEF/AdBlue® has frozen.<br>The engine output is limited to 80%. (The regulation value (%) varies according to the freezing status.)<br>Continue the warm-up operation and the DEF/AdBlue® will thaw. |

**NOTE :**

- 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 (Level 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: Level 2).
  (e.g. When a P204F (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 refilled 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.

## ■Storing and Handling DEF/AdBlue®

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

◆ **Storage method**

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

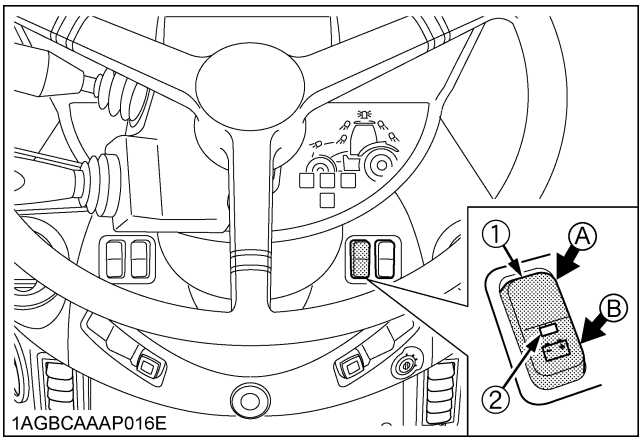
# STARTING THE ENGINE

## ■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.

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.




*(1) Battery switch* *(A) "OFF"*
*(2) Indicator* *(B) "ON"*

**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.
- To protect all the components, power will be kept up for 15 minutes or so after turning off the battery switch.
- When the battery switch is energized, the indicator will be on.

## ■Starting the Engine

1. Preheating of the engine is automatic. Make sure the heater indicator goes out and then get the engine started.
2. Set both the foot throttle and the hand throttle to the minimum speed position and start the engine.
3. 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.
4. When the engine is stalled by the heavy load applied, please key off once and re-start the engine after 5 seconds or more.
5. 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.

## ■Parking Brake

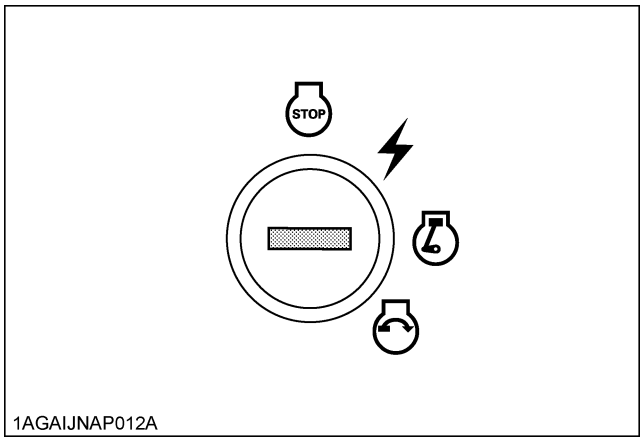
1. After stopping the machine, be sure to apply the parking brake.
2. If you leave the operator's seat with the PTO shaft turning, the buzzer starts sounding.
3. Once the parking brake has been applied, the machine sets itself in the 4-wheel drive mode. (This helps the 4 wheels to increase their gripping force on slopes.)

**NOTE :**

- When the key switch is turned off with no parking brake applied, the warning buzzer sounds for around 10 seconds.

## ■Key Switch

The starter switch has 4 positions.




*"OFF" (Engine-Stop)*

*"ON" (Engine-Run)*

*"ACC" (Electrical Power-accessories)*

*"START" (Engine-Start)*

**NOTE:**

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.

## ■Engine Power Boost

If 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.

**◆ Traction operation**

When the traveling 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.

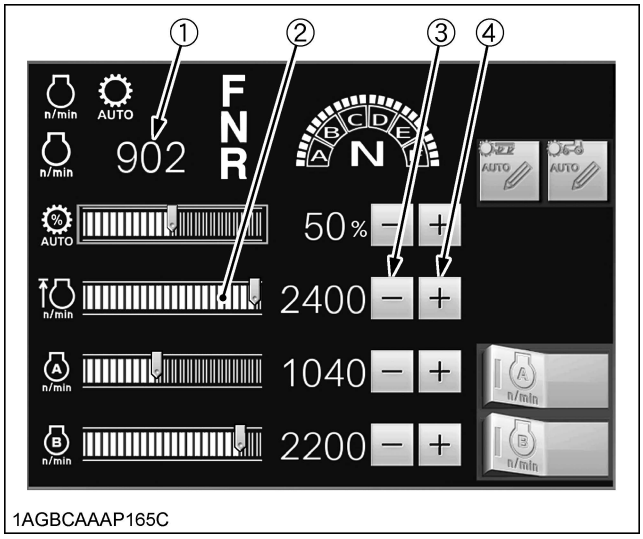
## ■Rev-limiter Control Setting

**[Premium, Premium KVT models]**

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

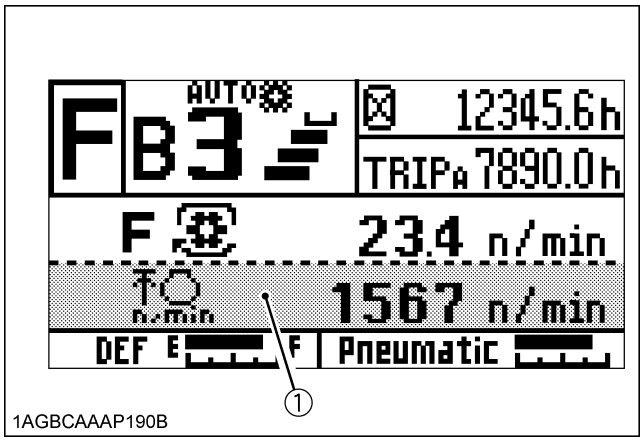
Maximum engine speed can be preset on the K-monitor. For enabling this setting, refer to "Setting the Engine/ Transmission" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.




1AGBCAAAP165C

*(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 this indicator.



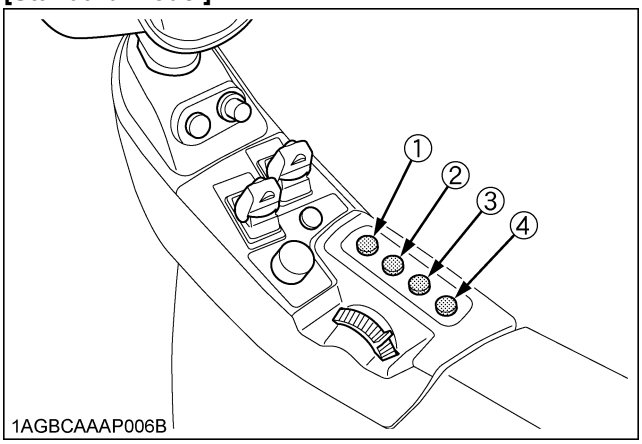

1AGBCAAAP190B

*(1) Maximum engine speed*

## ■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.

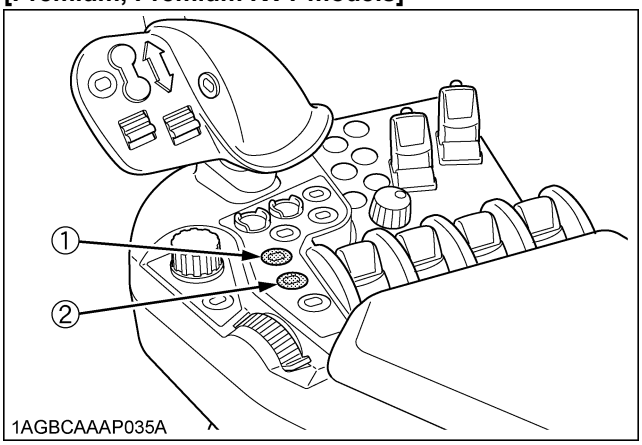
**[Standard model]**




1AGBCAAAP006B

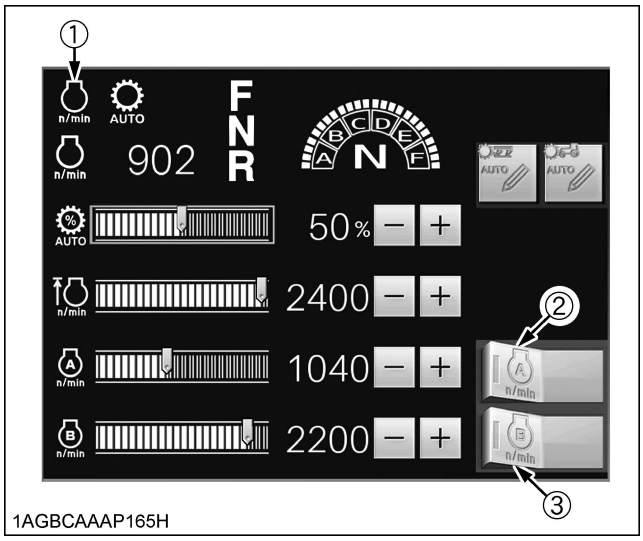
*(1) Engine RPM memory button A*
*(2) Engine RPM memory button B*
*(3) Engine RPM memory adjustment button (UP)*
*(4) Engine RPM memory adjustment button (DOWN)*

**[Premium, Premium KVT models]**




1AGBCAAAP035A

*(1) Engine RPM memory button A*
*(2) Engine RPM memory button B*



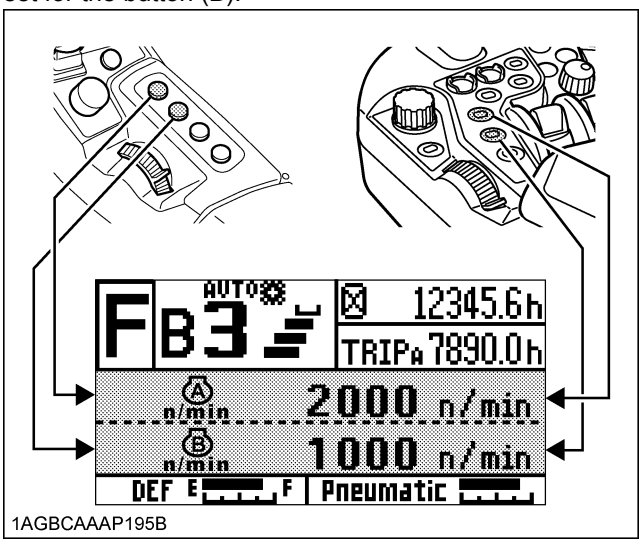

*(1) Engine RPM memory (A/B) indicator*
*(2) Engine RPM memory switch A*
*(3) Engine RPM memory switch B*

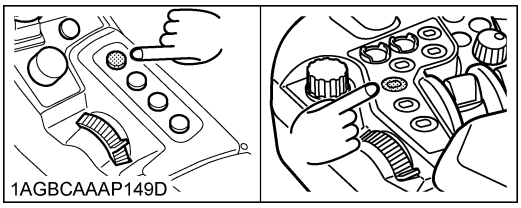
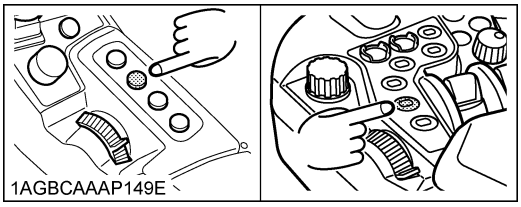
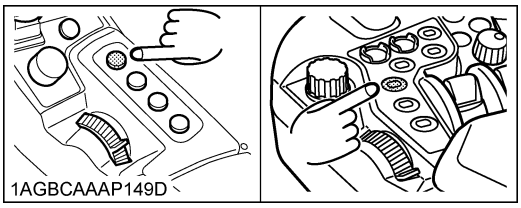
**NOTE :**

- 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 ⇩ |  1AGBCAAAP149D |
| | During work, simply press the button (A) to automatically set an engine speed of 2000 rpm. |
| Turning ⇩ |  1AGBCAAAP149E |
| | When turning, press the button (B) to lower the speed to 1000 rpm, allowing turning at low speed. |
| Work |  1AGBCAAAP149D |
| | 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 setup can not be performed.
- You can also depress the foot throttle to increase the engine speed above the set speed.

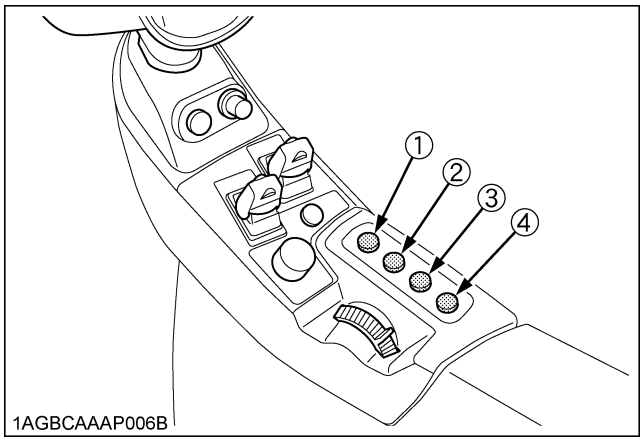
◆ **Setting the speeds**
**[Standard model]**

- **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. Then, using the hand throttle, increase the engine rpm to the desired preset level.
2. 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**

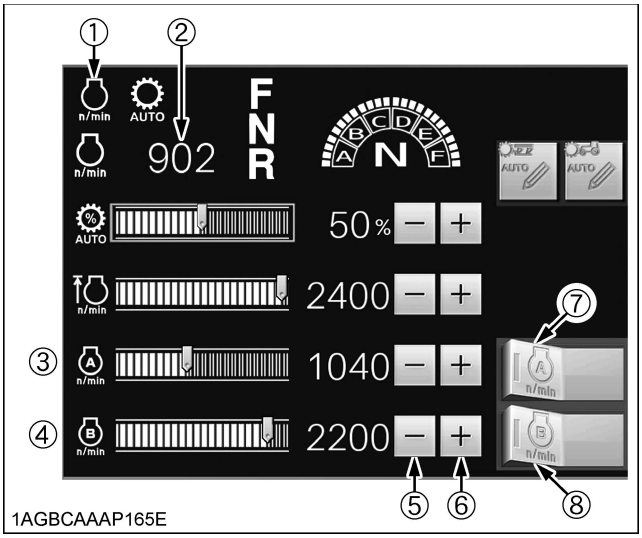
1. Before making the engine rpm memory setting with the engine off, get the memory rpm levels A and B displayed in the LCD on the instrument panel and check the levels to readjust.
   For details, refer to "Basic Information Monitor/ Performance Monitor" in "LIQUID CRYSTAL DISPLAY" in "INTELLIPANEL(TM) CONTROL" section.
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)*

◆ **Setting the speeds**
**[Premium, Premium KVT models]**

Two different engine rpm levels can be preset on the K-monitor screen.
For detailed settings, refer to "Setting the Engine/ Transmission" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.




*(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.

◆ **Canceling the setting**

Any of the actions below will cancel the rpm dual memory settings.

1. If the memory speeds are engaged to the A and/or B, press the engaged button A and/or B again to cancel. When the memory speed is canceled, the speed will return to the speed that is determined by the hand throttle (foot throttle).
2. Return the hand throttle to the lowest speed position.
3. Turn the key switch to "OFF".

**NOTE :**

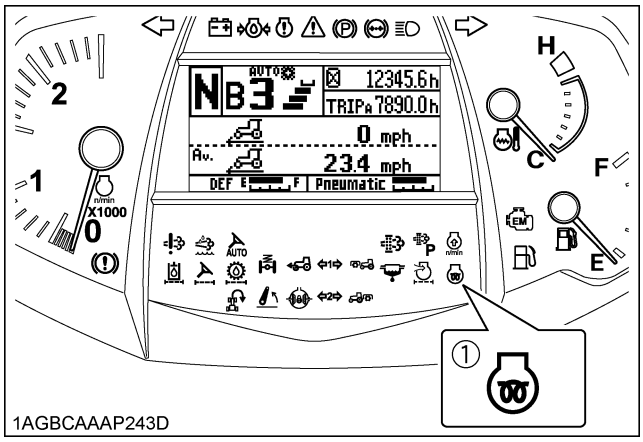
- If the memory rpm level has been preset beyond the engine rev-limiter setting, the engine rpm will not rise above the rev-limit.
  Take an example in which the engine rev-limiter is 1230 rpm and the memory speed is 2000 rpm. The engine speed will rise only up to 1230 rpm.

# COLD WEATHER STARTING

If the ambient temperature is below 0℃ (32℉) and the engine is very cold, follow the procedure below.

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

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




*(1) Heater indicator*

### 2. Turn the key to the start position and the engine should start.

(If the engine fails to start after 10 seconds, turn off the key for 30 seconds. Then repeat steps 1 and 2. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.)

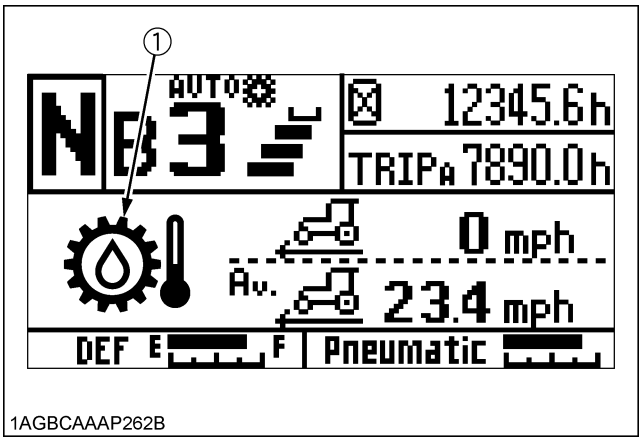
## ■Block Heater (if equipped)

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

## ■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 stop.




*(1) Low temperature regulation indicator*

**NOTE :**

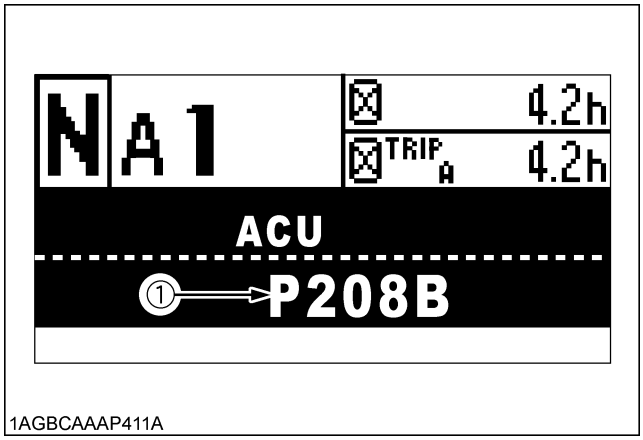
- This indicator doubles as the CVT transmission low temperature regulation indicator.
  If the transmission oil temperature is -7°C (19°F) or below when engine low temperature regulation has been released, the buzzer will stop but the indicator will remain lit.
  (For details, refer to "Transmission Low Temperature Regulation" in "WARMING UP" in the "OPERATING THE ENGINE" section.)

### ■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 ℃ (-22 ℉), 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.




*(1) Error/Warning code*

## STOPPING THE ENGINE

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

**NOTE :**

- If key does not stop the engine, consult your local KUBOTA Dealer.
- Some noise is heard for a couple of minutes after the engine has been stopped. This is because DEF/AdBlue® is still flowing through the circuit to cool down the DEF/AdBlue® injector.

# WARMING UP

## WARNING

**To avoid personal injury or death:**

- **Be sure to set the parking brake during warm-up.**
- **Be sure to set the shuttle lever to the "NEUTRAL" position and to place PTO switch in "OFF" position during warm-up.**

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

## ■Warm-up and Transmission Oil at Low Temperature Range

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

| Ambient temperature | Warm-up time requirement |
|---|---|
| Higher than 0 ℃ (32 ℉) | Approx. 5 minutes |
| 0 to -10 ℃ (32 to 14 ℉) | 10 to 20 minutes |
| -10 to -20 ℃ (14 to -4 ℉) | 20 to 30 minutes |
| Below -20 ℃ (-4 ℉) | More than 30 minutes |

**IMPORTANT :**

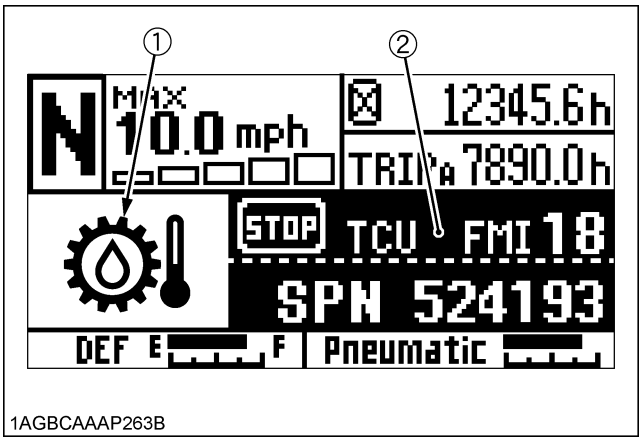
- Do not operate the tractor under full load condition until it is sufficiently warmed up.

## ■Transmission Low Temperature Regulation

**[Premium KVT model]**

In order to prevent transmission damage due to poor lubrication, etc., 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 table below. 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 | 1) No start (shuttle gear neutral)<br>2) Engine rpm kept at approx. 1100 to 1400 |
| -16°C to -20°C (4°F to -4°F). | Approx. 5 min | |
| -21°C to -30°C (-5°F to -22°F). | Approx. 7 min | |




1AGBCAAAP263B

*(1) Low temperature regulation indicator*
*(2) Message (Ex.:TCU FMI 18 SPN 524193)*

**IMPORTANT :**

- When the transmission fluid temperature is below −30°C (−22°F), the regulation of warm up operation does not function, so please wait until fluid temperature becomes more than −30°C (−22°F) with engine idling speed.
  When the temperature rises above −30°C (−22°F), the regulation will start automatically.

**NOTE :**

- This indicator doubles as the engine low temperature regulation indicator.
  (For details, refer to "Engine Low Temperature Regulation" in "COLD WEATHER STARTING" in the "OPERATING THE ENGINE" section.)

# JUMP STARTING

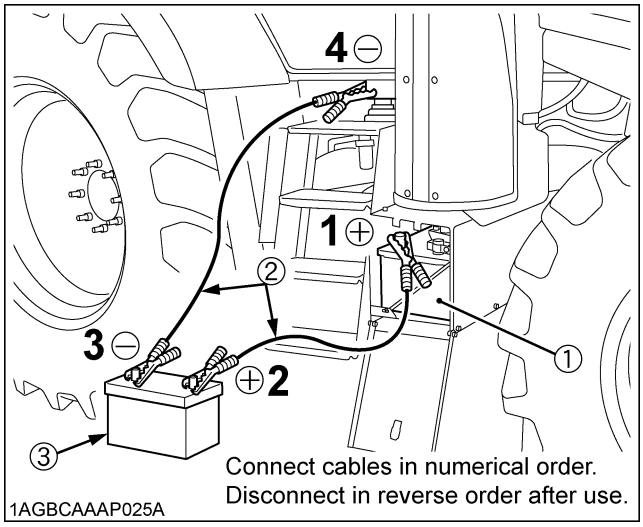
## WARNING

**To avoid personal injury or death:**

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

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 disabled tractor within easy cable reach. "THE VEHICLES MUST NOT TOUCH".
2. Engage the parking brakes of both vehicles and put the shift levers in neutral. Shut both engines off.
3. Wear eye protection and rubber gloves.
4. Attach the red clamp to the positive (red, (+) or pos.) terminal of the dead battery and clamp the other end of the same cable to the positive (red, (+) or pos.) terminal of the helper battery.
5. Clamp the other cable to the negative (black, (-) or neg.) 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).




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

**IMPORTANT :**

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

# OPERATING THE TRACTOR

## OPERATING NEW TRACTOR

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

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

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

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

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

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

### ■Changing Lubricating Oil for New Tractors

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

For further details of change interval hours.

(See "MAINTENANCE" section.)

## BOARDING AND LEAVING THE TRACTOR

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



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## OPERATOR'S POSITION CONTROLS

**NOTE :**

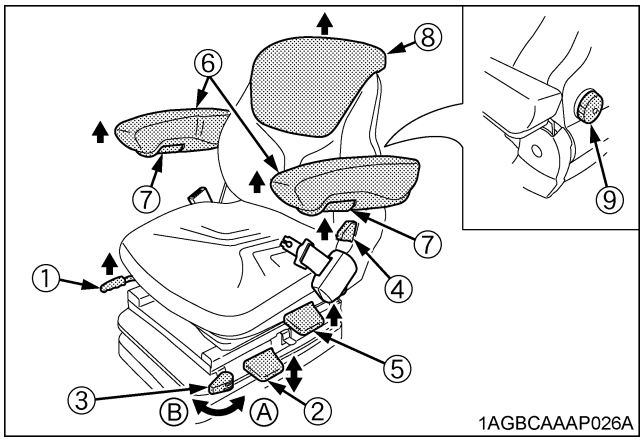
- The seat and suspension should be adjusted to ensure that the controls are comfortably at hand for the operator, ensuring that the operator maintains a good posture and minimizes risks from whole body vibration.

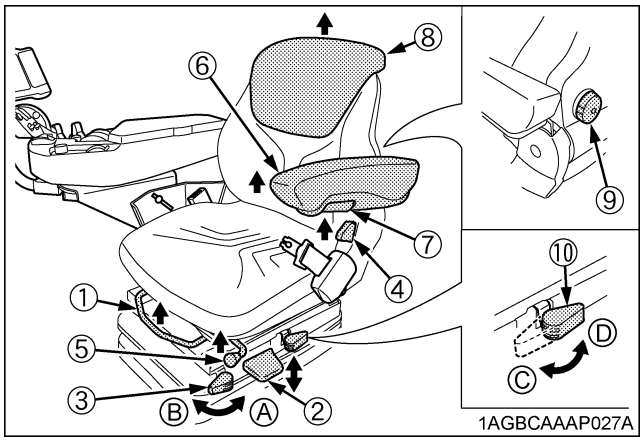
### ■Operator's Seat

**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.**




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

### ◆ 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 / 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 / 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 / height adjust lever for more than 1 minute.

### ◆ Fore / 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
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.

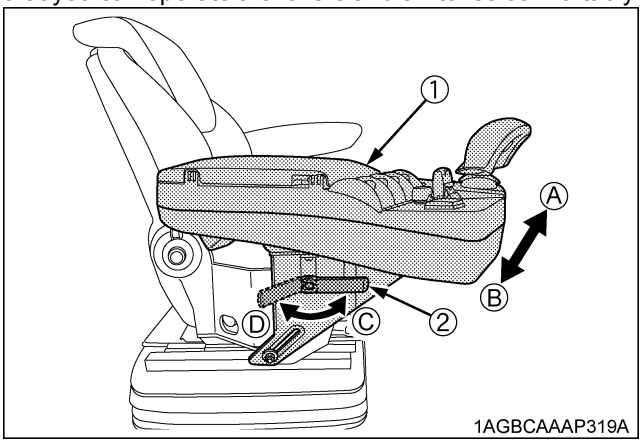
### ◆ Tilt adjustment
Pull the backrest tilt adjust lever and tilt the backrest to the desired position.

### ◆ 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.

### ◆ Arm rest (RH)
**[Premium, Premium KVT models]**
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) Arm rest (RH)*
*(2) Lock handle*
*(A) "HIGH"*
*(B) "LOW"*
*(C) "LOCK POSITION"*
*(D) "UNLOCK POSITION"*

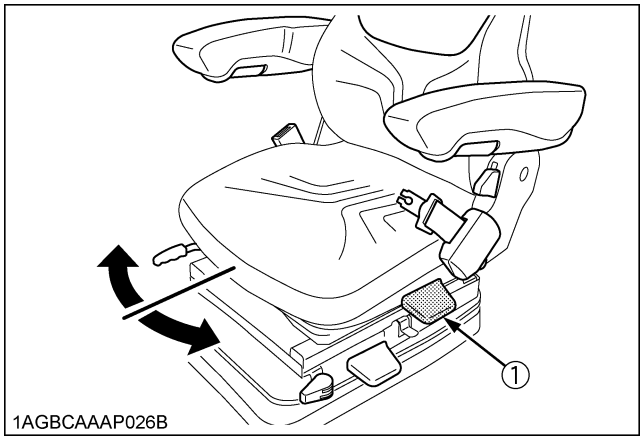
◆ **Swivel adjustment**

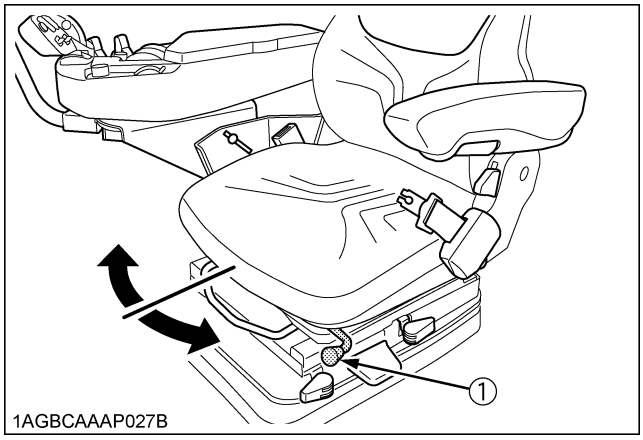
Unlock the swivel adjust lever and rotate the seat right or left as desired.

**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.




*(1) Swivel adjust lever*

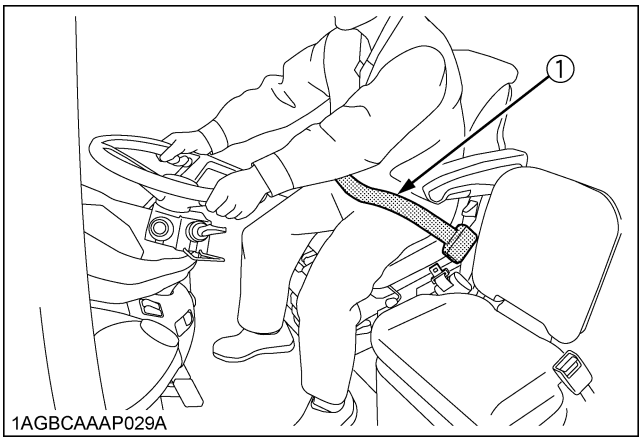
## ■Seat Belt

**WARNING**

**To avoid personal injury or death:**

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

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




*(1) Seat belt*

## ■Instructional Seat

**(if equipped)**

### ◆ Intended use

The instructional seat is intended for training purposes. A tractor instructor, a trainee or a servicing staffer is supposed to use this seat of CAB-equipped tractors on flat, safe grounds, where the potential for roll-over is practically zero. Do not drive the tractor along expressways and public ways.

Understanding the above 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.

1. Do not allow any other persons and animals than the instructor, the trainee or servicing staffer on this seat. Never allow children to sit down on this seat.
   Do not place anything on this seat for transport purpose.
2. Use this seat only for training purpose, not for anything else.
3. 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 and stopping etc.

4. Do not use this seat whenever the operator's view is affected by bad weather (rain, fog, etc.) or in the late afternoon.

## WARNING

**To avoid personal injury or death:**

- **Always wear your seat belt and stabilize your body by holding the handrail on the CAB frame.**
- **It is not intended to carry children nor any other person for any other purposes.**
- **The left hand door must be closed at all time whenever the instructional seat is occupied and the tractor is in motion.**
- **Do not permit others to ride, except on the designated instructional 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 instructional seat if the seat belt or the door lock fails to function.**
- **Do not use the instructional seat for transport.**
- **When opening and closing the door from the instructional-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.**

### ◆ Precautions in Using the Instructional Seat

- **When getting on the tractor**

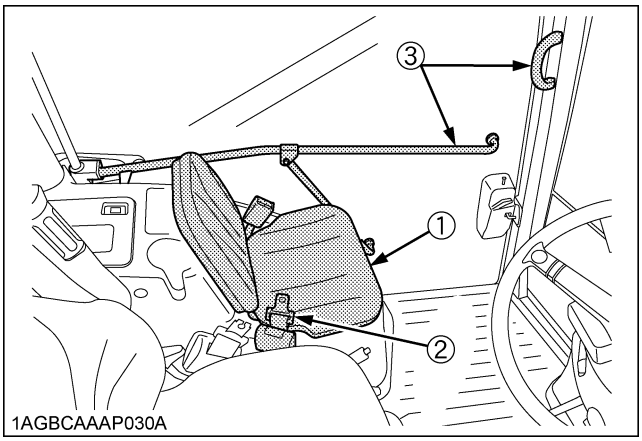
1. The operator is supposed to move the tractor onto a flat surface and to apply the parking brake for a complete stop.
2. Before use, make sure the seat is securely fixed. And get on the tractor. In getting on the tractor, stabilize yourself by holding the specified handrail with attention not to get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

- **While the machine is in motion**

1. The person on the instructional seat is supposed to get training with due care not to interfere with the operator's actions.
2. While in training, be sure to keep the seat belt fastened. The person on the instructional 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 instructional 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.




*(1) Instructional seat*
*(2) Seat belt*
*(3) Handrail*

**NOTE :**

- The instructional seat can be used only when permitted by your local laws.
  (Consult your local KUBOTA Dealer for further details.)

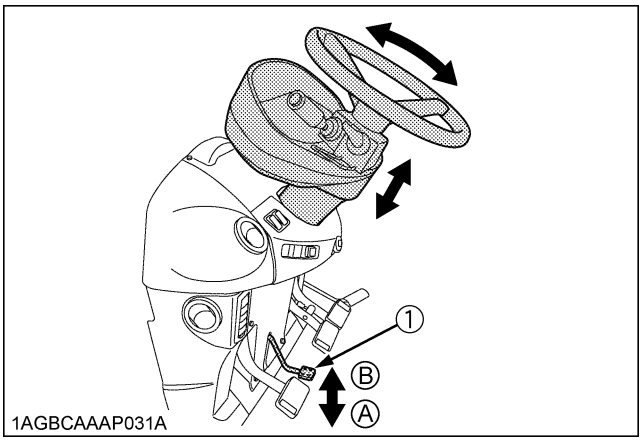
### ■Steering Adjustment

## CAUTION

**To avoid personal injury:**

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

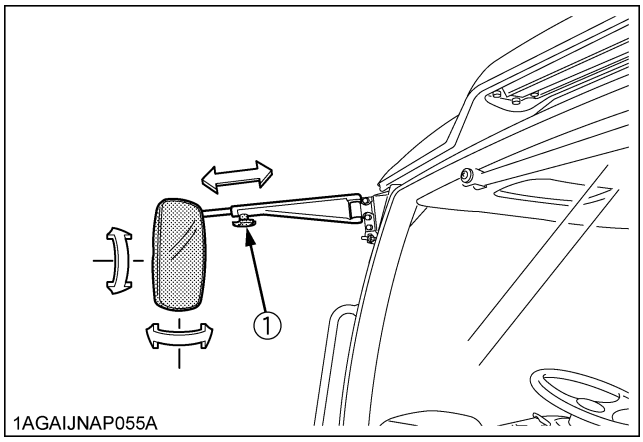
Adjust the steering wheel to the best driving position.




*(1) Lock Pedal*
*(A) "UNLOCK"*
*(B) "LOCK"*

### ■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.



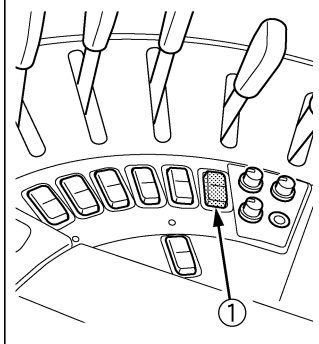
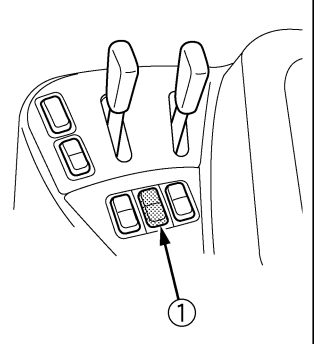

*(1) Knob bolt*

### ■Heater mirror

**(if equipped)**

These 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.

| [Standard model] | [Premium, Premium KVT model] |
|---|---|
|  |  |
| 1AGBCAAAP149A | 1AGBCAAAP0350 |

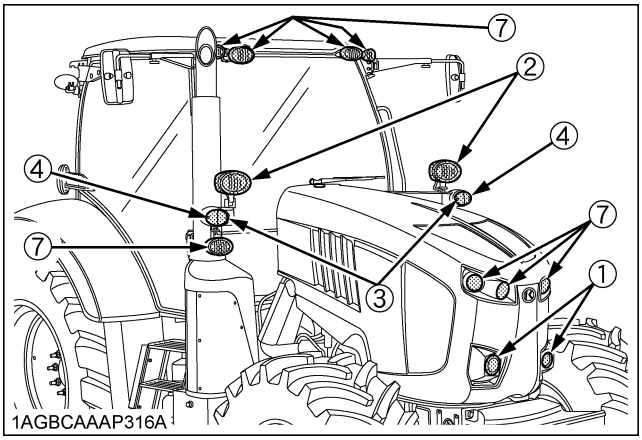


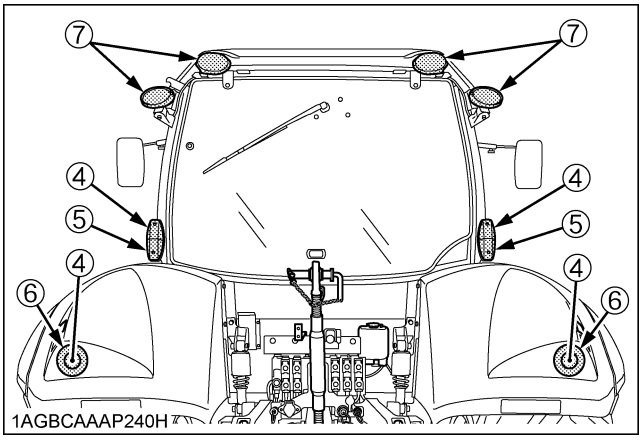
*(1) Heater mirror switch*

## LIGHT CONTROLS

### ■Light

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



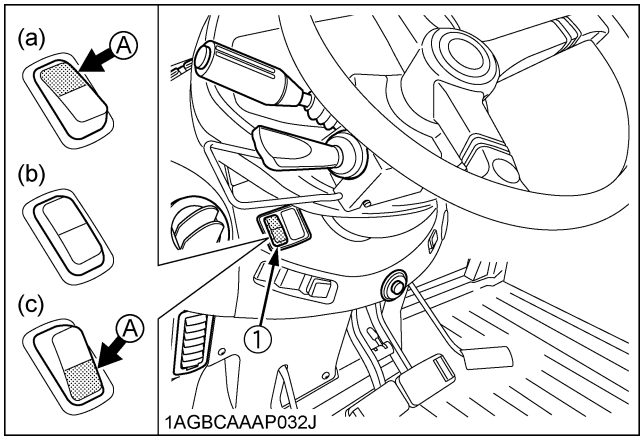




*(1) Headlight*
*(2) Repeat headlight (if equipped)*
*(3) Position light*
*(4) Turn signal/Hazard light*
*(5) Stop light*
*(6) Tail light*
*(7) Work light (if equipped)*

## ■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 table below light up.

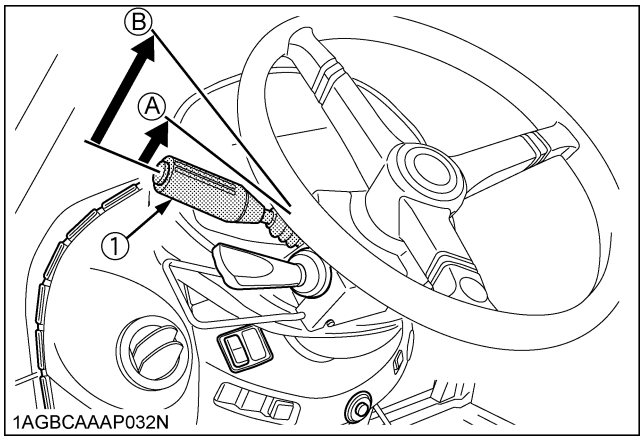



*(1) Switch (3 positions)* *(A) "PUSH"*

| | Switch position |
|---|---|
| All lights off | (a) position |
| Position light on | (b) position |
| Headlight/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/high beam switch"*

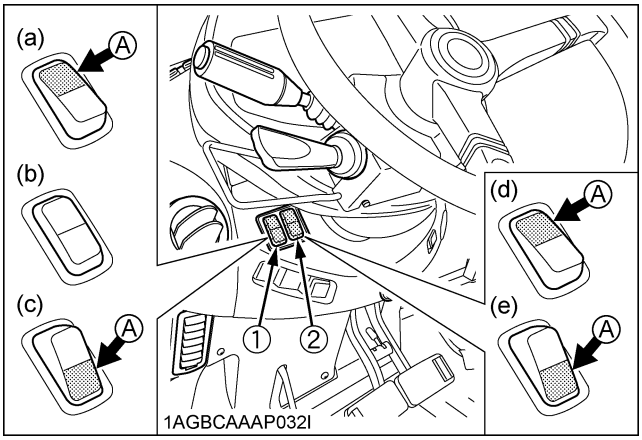
**NOTE :**

- 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.

## ■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 table below light up.

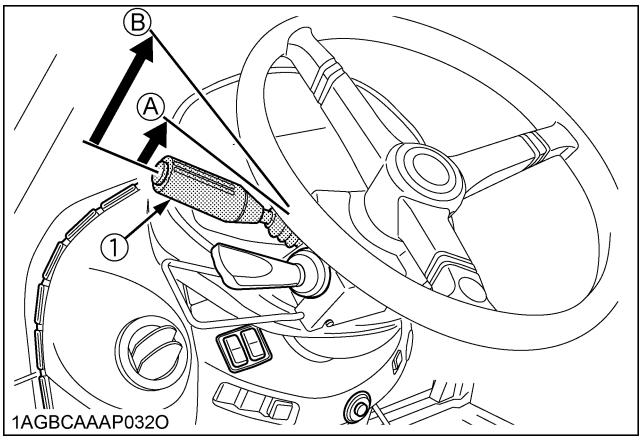



*(1) Switch 1 (3 positions)* *(A) "PUSH"*
*(2) Switch 2 (2 positions)*

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

## ■Turn Signal/Hazard Light Switch

### ◆ Hazard Light

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

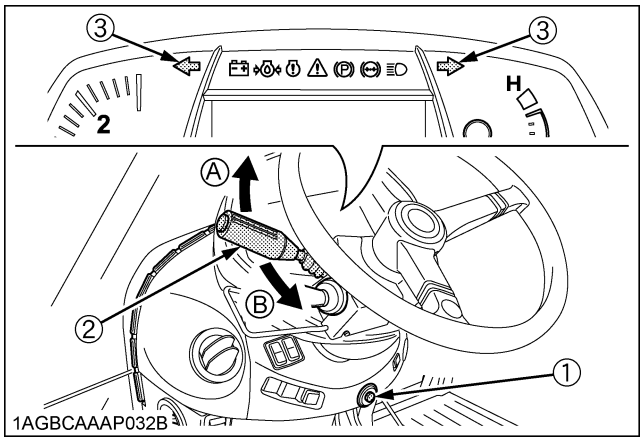
### ◆ Turn Signal with Hazard Light

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

### ◆ Turn Signal without Hazard Light

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

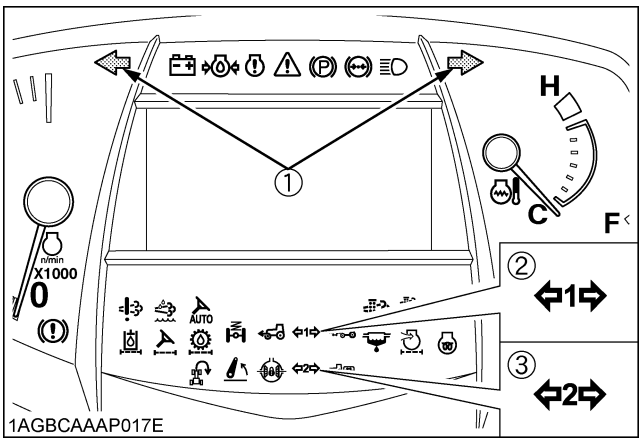
**NOTE :**
- The hazard light switch is operative when the key switch is in the "ON", "ACC" or "OFF" position.
- The turn signal light switch is only operative when the key switch is in the "ON" position.
- Be sure to return the turn signal switch to center position after turning.




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

## ■With Trailer Connector

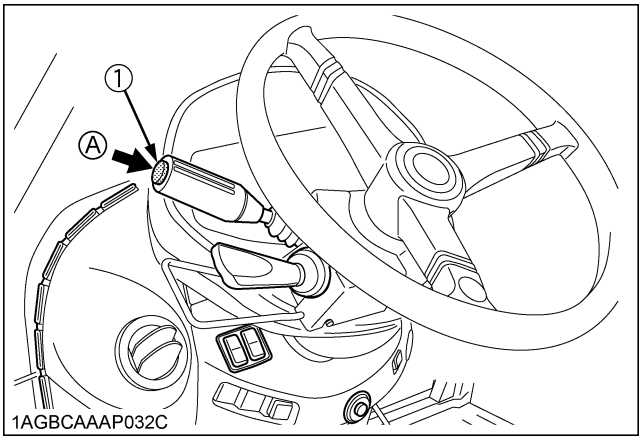
When you operate the turn signal light switch with the trailer power connector connected, the trailer indicator in the instrumental panel also starts flashing along with the turn signal indicator.




*(1) Hazard/Turn signal indicator*
*(2) Trailer 1 indicator*
*(3) Trailer 2 indicator*

## ■Horn Button

The horn will sound when a horn button is pushed.




*(1) Horn button* *(A) "PUSH"*

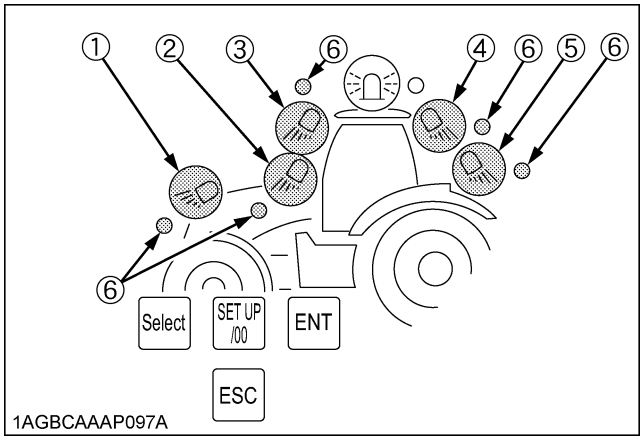
## ■Work Light Switch

**WARNING**

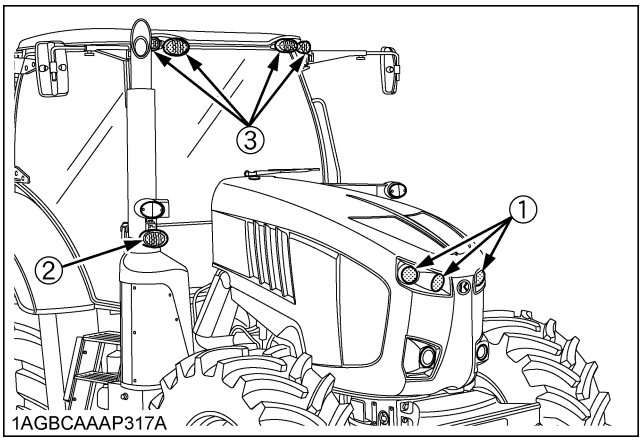
**To avoid personal injury or death:**

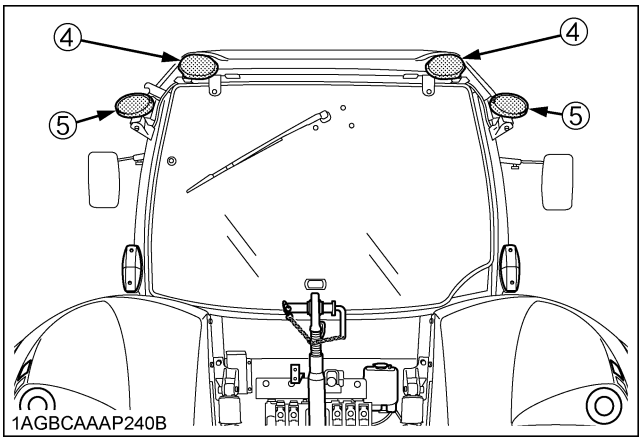
- **Do not operate on roads with work lights on. Work lights may blind or confuse operators of oncoming vehicles.**

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




*(1) Front work light switch (engine hood)*
*(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*

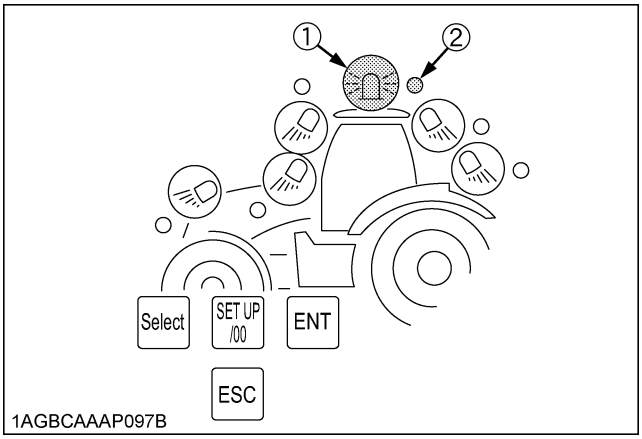



*(1) Front work light (engine hood)*
*(2) Front work light (sides of the CAB)*
*(3) Front work light (roof of the CAB)*
*(4) Rear work light (roof of the CAB)*
*(5) Rear work light (rear of the CAB)*

## ■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 to turn off the light and indicator.




*(1) Beacon light switch*
*(2) Indicator*

# BRAKE CONTROLS

## ■Brake Pedals (Right and Left)

**WARNING**

**To avoid personal injury or death:**

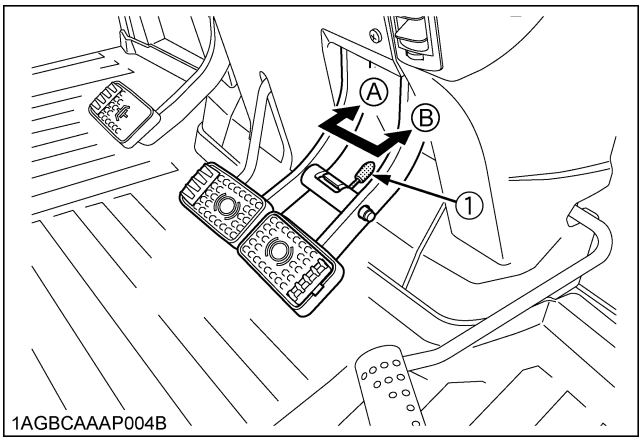
- **Be sure to interlock the right and left pedals. Applying only one rear wheel brake at high speeds could cause the tractor to swerve or roll-over.**
- **Be sure brake pedals have equal adjustment when using locked together. Incorrect or unequal brake pedal adjustment can cause the tractor to swerve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

**WARNING**

**To avoid personal injury or death:**

- **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 less of steering control when driving on icy, wet, or loose surfaces, make sure the tractor is correctly ballasted, operated at reduced speed, operated with front wheel drive engaged (If equipped).**
- **The braking characteristics are different between 2 and 4-wheel drive. Be aware of the difference and use carefully.**
- **Engage 4-wheel drive for 4-wheel braking when traveling 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) Brake pedal lock*
*(A) "LOCK"*
*(B) "RELEASE"*

**◆ 4WD Braking System [4WD model]**

4WD model tractor is equipped with 4WD braking system. When both brake pedals are applied together, the front axle is engaged for 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.

**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.**

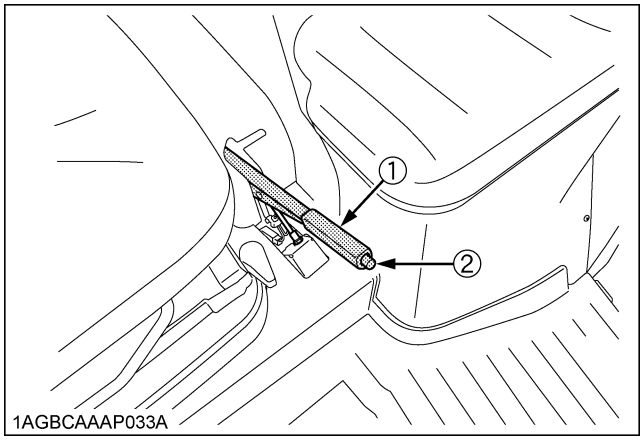
**If it is necessary to run the engine, make sure:**

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

## ■Parking Brake

Before getting off the tractor, pull the parking brake lever up to park.

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




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

**NOTE :**

- The parking brake warning indicator light on the Easy Checker(TM) will go off when 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.
- With the pneumatic trailer brake model, the trailer brake, which is interlocked with the parking brake, also gets activated.

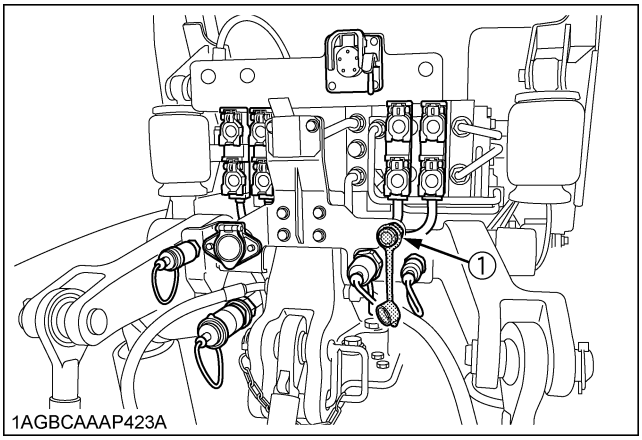
**IMPORTANT :**

- Do not attempt to put the tractor in motion before the parking brake indicator light turns off.
- If the tractor is operated with the parking brake set, the parking brake might be damaged.

## ■Hydraulic Brake for Trailer

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

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




*(1) Trailer hydraulic brake outlet*

## ■Pneumatic Trailer Brake

**(if equipped)**

The pneumatic brake is equipped with 2 air outlet lines. Carefully check the brake mechanism of the trailer, and connect the lines correctly.

**◆ Single line trailer brake:**

Connect the air hose securely to the connector (A) of the tractor.

**◆ Dual line trailer brake:**

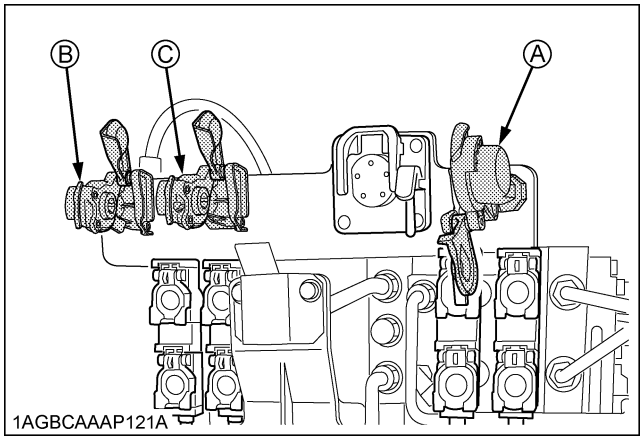
Connect the air hoses securely to the connectors (B) and (C) of the tractor.

**IMPORTANT :**

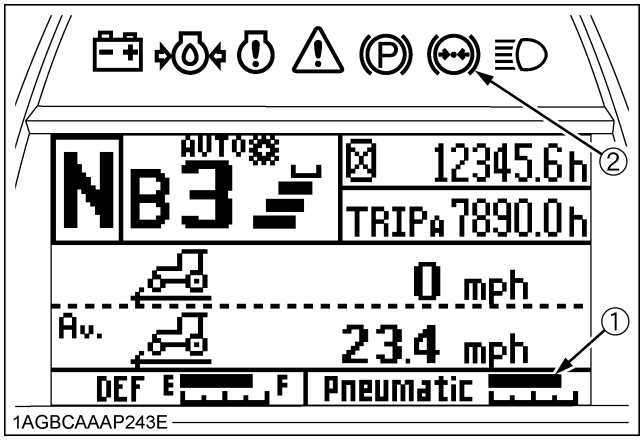
- Make sure the air hose connection(s) is(are) clean. After using the air hose(s), be sure to put its(their) protective cap(s) back in position.
- With the air hose(s) connected, step on the brake pedal several times with the engine off to make sure there is no air leak at the connection(s).

◆ **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 "pneumatic pressure warning indicator" on the instrument panel lights up.




*Connector (A), black (single-line brake)*
*Connector (B), yellow (dual-line brake)*
*Connector (C), red (dual-line brake)*




*(1) Pneumatic pressure gauge*
*(2) Pneumatic pressure warning indicator*

# TRAVEL CONTROLS

## ■Clutch Pedal

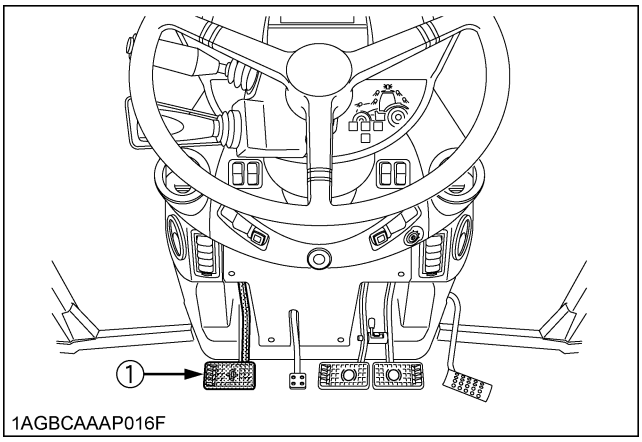
**WARNING**

**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*

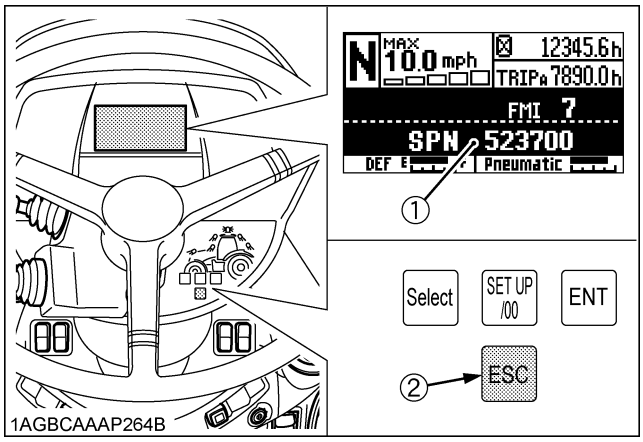
**IMPORTANT:**

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 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*

## ■Hand Throttle

Pulling the throttle 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.

## ■Foot Throttle

Use the foot throttle when traveling on the road. Press down on it for higher speed. The foot throttle is interlocked with the hand throttle; 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.
  (For details, refer to "automatic mode" in "CVT (Continuously Variable Transmission) CONTROL" in "OPERATING THE TRACTOR" section.)

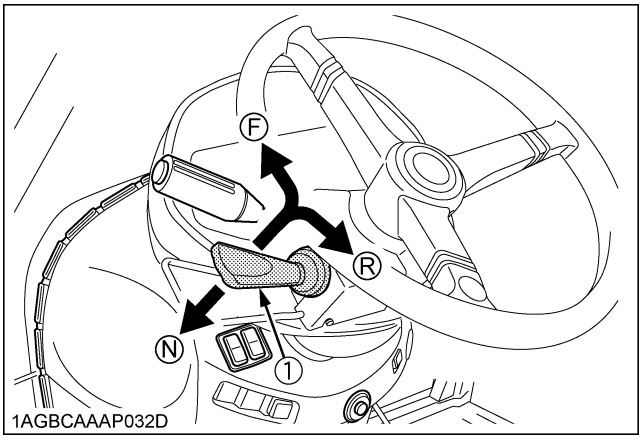
## ■Shuttle Lever

**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 :**
- Otherwise the clutch gets disengaged and the buzzer starts sounding.
  To get the clutch reengaged and clear the buzzer, take either of the following steps.
  (1) Place the shuttle lever back to the original position.
  (2) Decrease the machine speed lower than 20 km/h (12.4 mph) and use the shuttle lever.

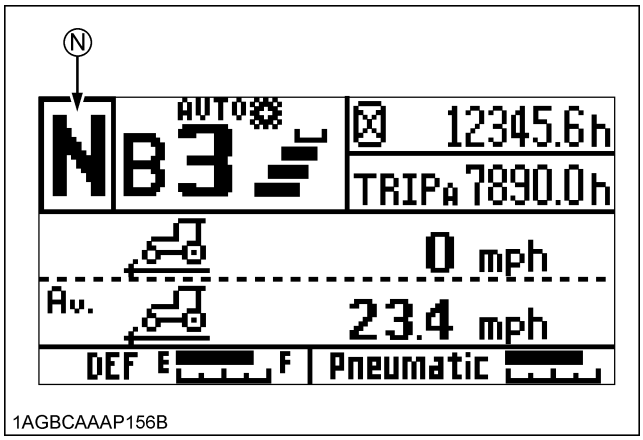
Raise up and shift the shuttle shift lever forward to obtain forward speeds and shift it backward to obtain reverse speeds without using the clutch pedal.
Whether traveling or at a stop, push down the shuttle lever and it will return to the neutral position.



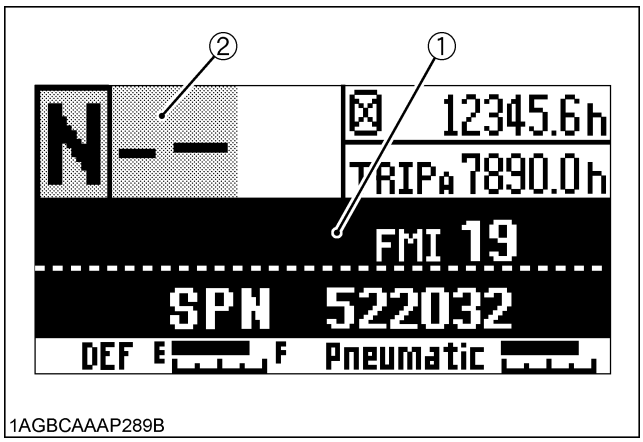

*(1) Shuttle lever*
*(F) "FORWARD"*
*(N) "NEUTRAL"*
*(R) "REVERSE"*

**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 figure above).

- 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.
  **[Power shift model:]**
  If the shuttle operation does not function with error message indicated, please stop an engine once and re-start.
  **[CVT model:]**
  If the shuttle operation does not function, please push down the shuttle lever to set Neutral, then start operation.



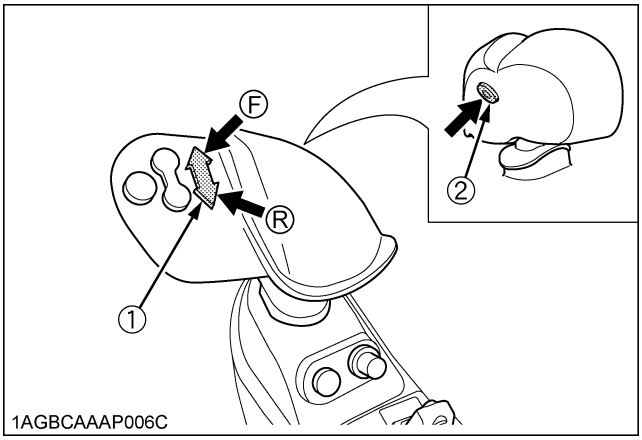

*(N) "NEUTRAL"*

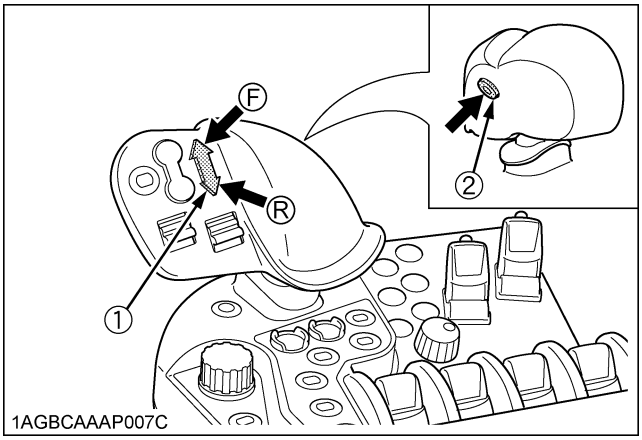



*(1) Message*
*(2) Error display (Power shift transmission)*

## ■Shuttle Button

Hold down the shuttle enable button and press the shuttle button to switch forward and reverse travel.



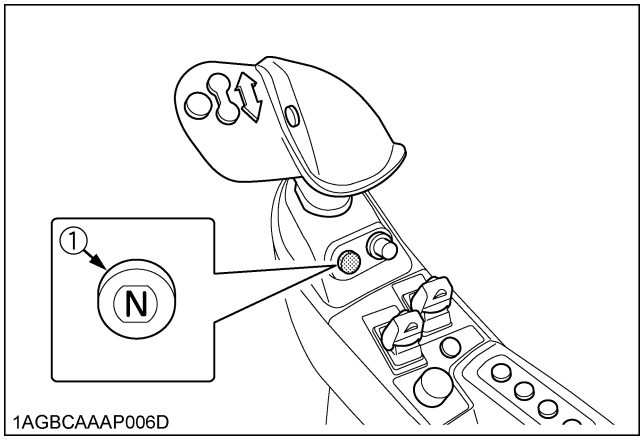

*(1) Shuttle button*
*(2) Shuttle enable button*
*(F) "FORWARD"*
*(R) "REVERSE"*

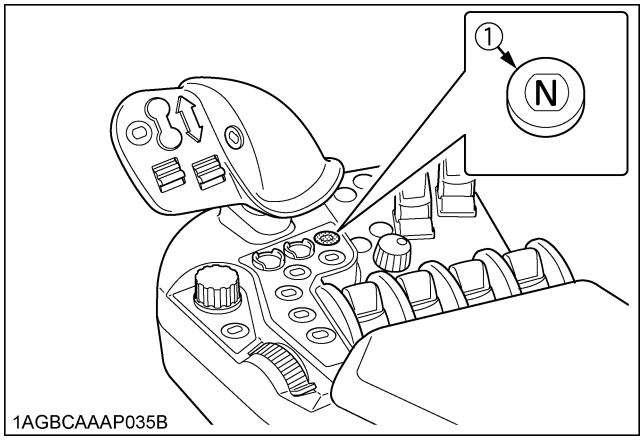
**NOTE :**

- 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.

## ■Shuttle Neutral Button

Press this button to return the transmission to the neutral position.




*(1) Shuttle neutral button*

**NOTE :**

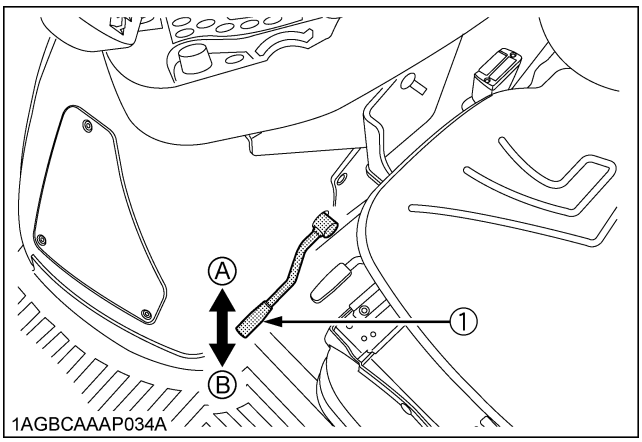
- Even when the shuttle lever is shifted to the forward or reverse position, pressing the button puts the transmission to the "neutral" position.

## ■Creep Gear Shift Lever

**(if equipped)**

◆ **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. With the creep mode on, the range gear shift works in 4 stages; A, B, C and D. (The stages E and F are not in effect.)




*(1) Creep gear shift Lever* *(A) ...Creep ON* *(B) ...Creep OFF*

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

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

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

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

**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 brakes.**
  **Misuse of the brakes may cause damage to the transmission and is therefore not acceptable to KUBOTA for coverage under the warranty.**

**IMPORTANT :**
- Press the clutch pedal completely down and stop the tractor's motion before shifting the creep gear shift lever.

**IMPORTANT :**
- 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.

## ■4WD/Auto 4WD Switch

### WARNING

**To avoid personal injury or death:**
- **Do not engage the front wheel drive when traveling at road speed.**
- **When driving on icy, wet, or loose surfaces, make sure the tractor is correctly ballasted to avoid skidding and loss of steering control. Operate at reduced speed and engage front wheel drive.**
- **4WD model tractor is equipped with 4 wheel braking and appropriate care should be taken during hard braking.**
- **An accident may occur if the tractor is suddenly braked, such as by heavy towed loads shifting forward or loss of control.**
- **The braking characteristics are different between 2 and 4-wheel drive tractor models. Be aware of the difference and use carefully.**

**◆ Selection of 4WD mode**

Select one of the following modes for driving the front wheels according to the type of job.

<table>
<tr><td>Mode</td><td colspan="3"></td></tr>
<tr><td rowspan="6">AUTO 4WD mode</td><td colspan="3">The 4WD and 2WD modes switch themselves according to the travel speed and the front wheel turning angle.</td></tr>
<tr><td>Traveling speed</td><td>Front wheel turning angle</td><td>Front wheel drive</td></tr>
<tr><td rowspan="2">Below 10 km/h (6.2 mph)</td><td>Approx. 15º or less</td><td>4WD</td></tr>
<tr><td>Approx. 15º or more</td><td>2WD</td></tr>
<tr><td rowspan="2">Between 10 and 20 km/h (6.2 and 12.4 mph) or so</td><td>Approx. 10º or less</td><td>4WD</td></tr>
<tr><td>Approx. 10º or more</td><td>2WD</td></tr>
<tr><td>Above 20 km/h (12.4 mph)</td><td>-</td><td>2WD</td></tr>
<tr><td>Manual 4WD mode</td><td colspan="3">The front and rear wheels are always driven.</td></tr>
<tr><td>2WD mode</td><td colspan="3">The rear wheels only are always driven.</td></tr>
</table>

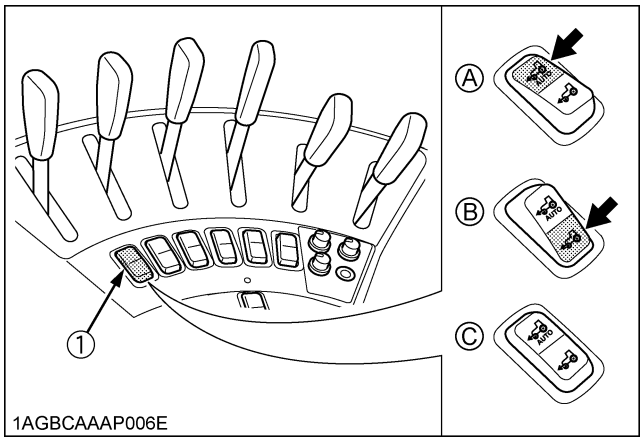
◆ **Switching of 4WD mode**

**[Standard model]**

Press the top half of the 4WD switch, and the AUTO 4WD mode is selected and the indicator on the instrument panel lights up.

Press the bottom half of the 4WD switch, and the Manual 4WD mode is selected and the indicator on the instrument panel lights up.

Return the 4WD switch to a central position, and the 2WD mode is selected and the indicator goes off.



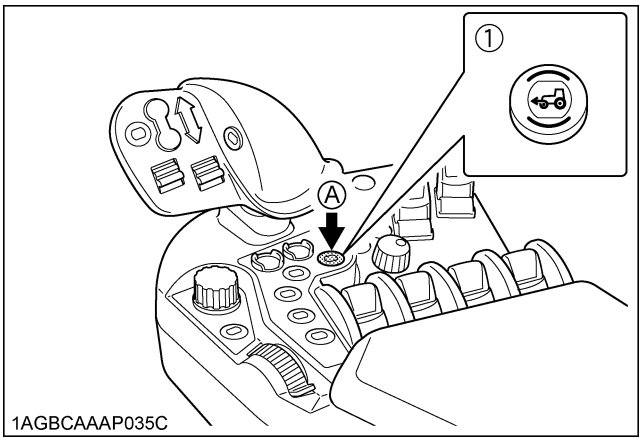

*(1) 4WD switch*
*(A) AUTO 4WD mode*
*(B) Manual 4WD mode*
*(C) 2WD mode*

**[Premium, Premium KVT models]**

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.

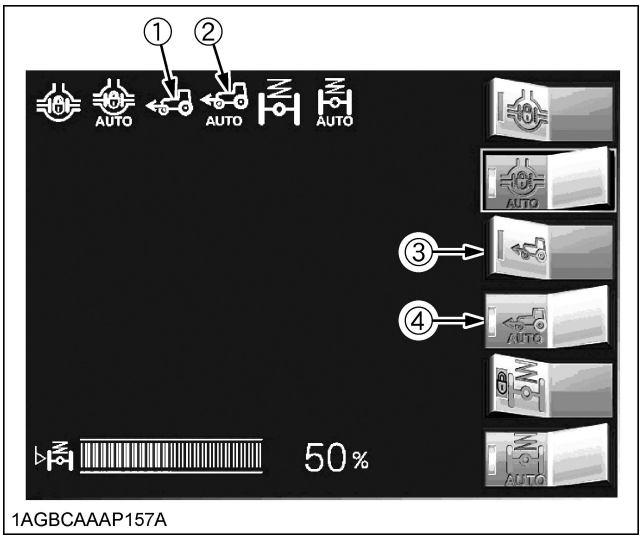
(See "Setting the Drivability" in "K-MONITOR (Part 1)" in "INTELLIPANEL(TM) CONTROL" section.)




*(1) 4WD button* *(A) "PUSH"*

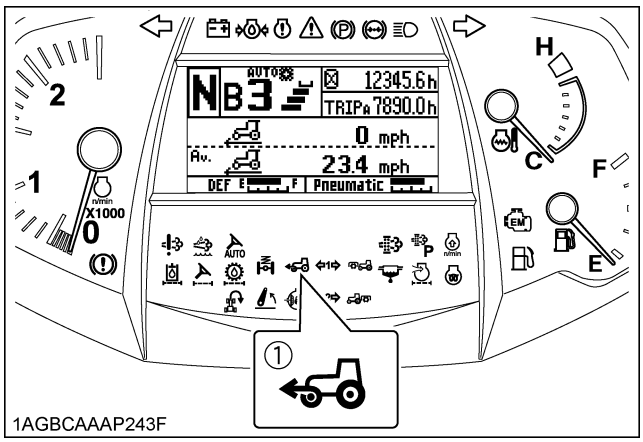
**NOTE :**

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




*(1) 4WD indicator*
*(2) Auto 4WD indicator*
*(3) 4WD switch*
*(4) Auto 4WD switch*

◆ **4WD indicator**
When the AUTO 4WD or Manual 4WD mode is selected, the indicator on the instrument panel lights up.




*(1) 4WD indicator*

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

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

## ■Differential Lock

**WARNING**

**To avoid personal injury due to loss of steering control:**
- **Do not operate the tractor at high speed with differential lock engaged.**
- **Do not attempt to turn with the differential lock engaged.**
- **Be sure to release the differential lock before making a turn in field conditions.**

◆ **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. | | |
| | Traveling speed | Front wheel turning angle | 4-wheel differential lock |
| | Below 10 km/h (6.2 mph) | Approx. 15º or less | ON |
| | | Approx. 15º or more | OFF |
| | Between 10 and 20 km/h (6.2 and 12.4 mph) or so | Approx. 10º or less | ON |
| | | Approx. 10º or more | OFF |
| | Above 20 km/h (12.4 mph) | - | OFF |
| Manual Differential lock mode | The 4 wheels are always put in the differential lock mode. | | |
| Differential lock OFF mode | The 4 wheels are always out of the differential lock mode. | | |

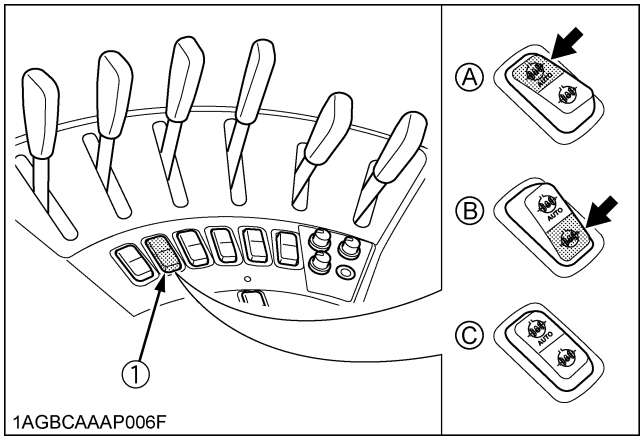
◆ **Switching of Differential Lock modes**

**[Standard model]**

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.

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.

Return the differential lock switch to a central position, and the differential lock mode turns off and the indicator goes off.



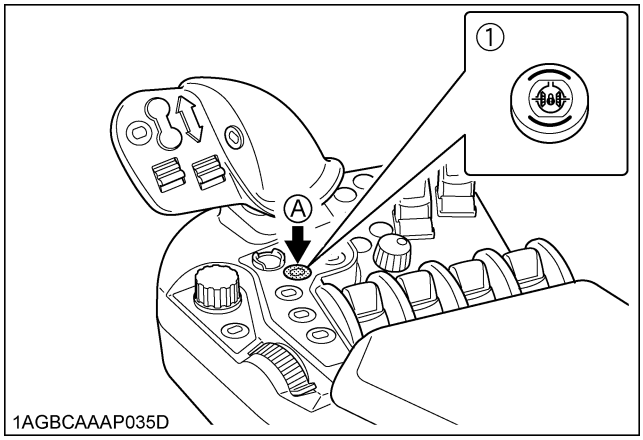

*(1) Differential lock switch*
*(A) AUTO differential lock mode*
*(B) Manual differential lock mode*
*(C) Differential Lock OFF mode*

**[Premium, Premium KVT models]**

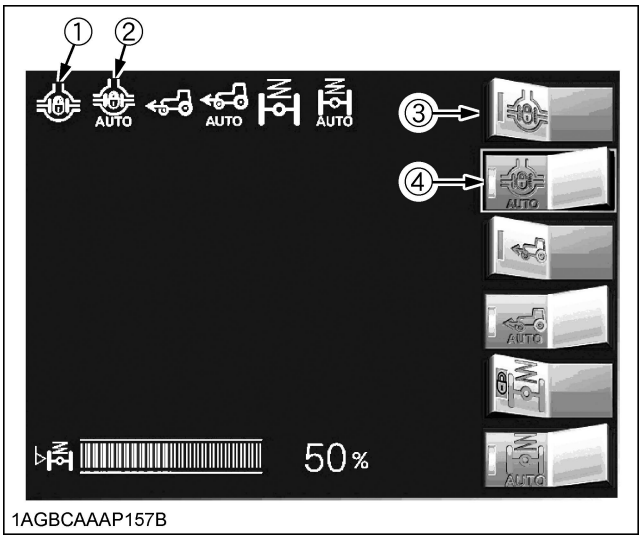
Each time the differential lock button is pressed, the Manual differential lock mode turns "ON" or "OFF". If this mode is "ON", the indicator on the instrument panel lights up.

Switching to the "AUTO differential lock" mode can be done with the K-monitor.

(See "Setting the Drivability" in "K-MONITOR (Part 1)" in "INTELLIPANEL(TM) CONTROL" section.)



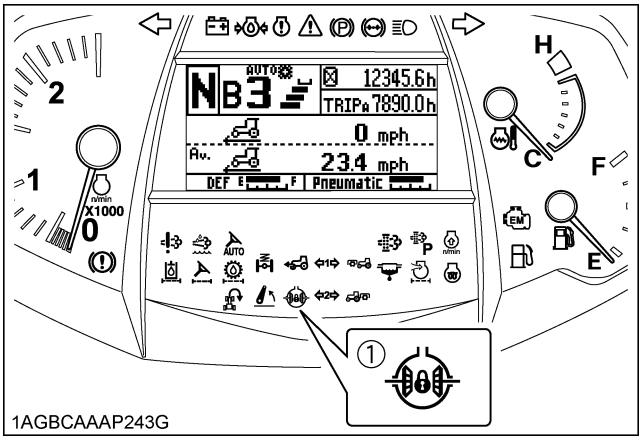

*(1) Differential lock button*
*(A) "PUSH"*




*(1) Differential lock indicator*
*(2) Auto differential lock indicator*
*(3) Differential lock switch*
*(4) Auto differential lock switch*

◆ **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 power train, do not engage differential lock when one wheel is spinning and the other is completely stopped.
- If the differential lock cannot be released, step lightly on the brake pedals alternately.

# POWER SHIFT TRANSMISSION CONTROL

## WARNING

**To avoid personal injury or death:**

- **The ez-command center has no neutral position. To bring the tractor to a complete stop, step on the brake pedal or set the shuttle lever to neutral.**

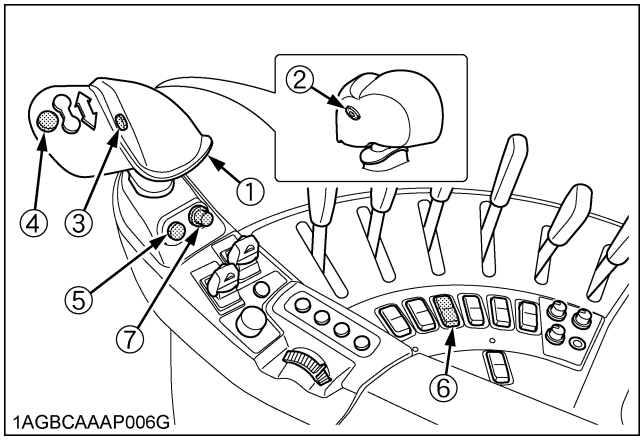
## ■Outline

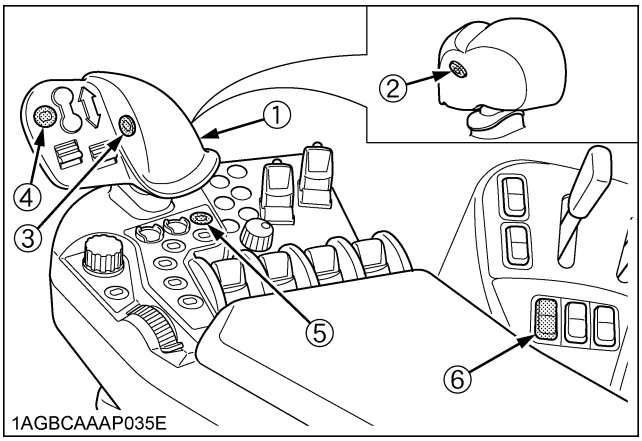
This machine is equipped with an electronic transmission for 24-speed change in both forward and reverse motion. With the optional creep device in place, the traveling speed can be changed by up to 40 stages. Further, in road and field modes, the "auto shift" mode as well as the "manual" mode may be selected.

In the auto shift mode, the optimum traveling 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 traveling 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.




*(1) Ez-command center*
*(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* ***[Standard model]***

## ■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 traveling 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.

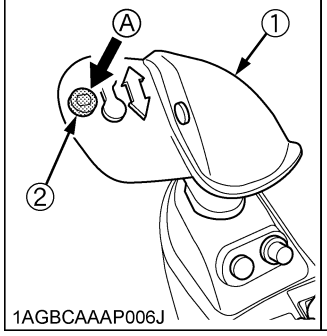
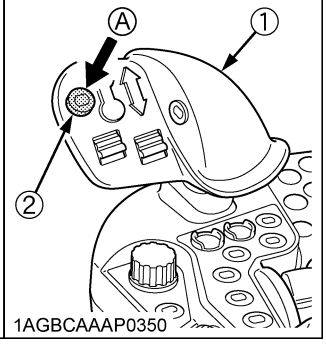
However, when the gear shift range in auto shift mode memory is other than the minimum gear shift (A-1), it will not switch to auto shift mode even when you press the auto shift button.

After switching the main gear shift and range gear shift with the ez-command center 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 B1 to B3

| Current gear shift | Press the auto shift button |
|---|---|
| A1 | Does not switch to auto shift mode |
| B1 or B2 or B3 | Switches to auto shift mode |
| B4 | Does not switch to auto shift mode |

| [Standard model] | [Premium model] |
|---|---|
|  |  |



*(1) Ez-command center*
*(2) Auto shift button*
*(A) "PUSH"*

**NOTE :**

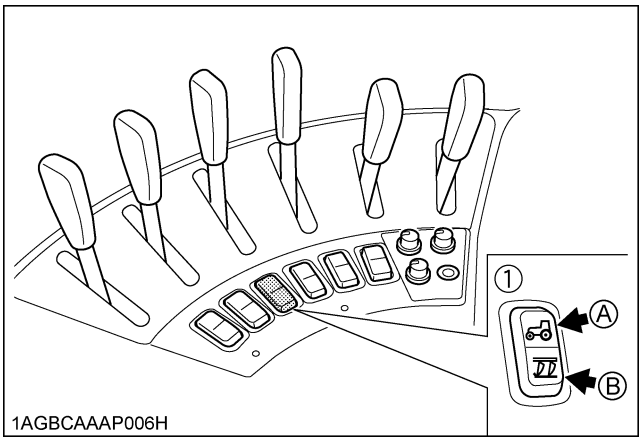
- The auto shift button functions without any clutch operation, whether the machine is running or at a stop.
- When the engine stops during work, the gear shift previous to the stop will be selected if you step on the clutch pedal after restarting without turning the key switch off. If you turn the key switch off before restarting, the minimum gear shift (A-1) will be selected.

## ■Switching the Auto Shift Modes

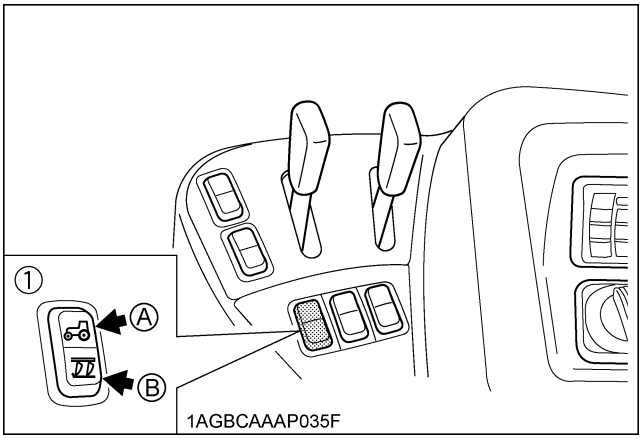
According to the type of work, switch the transmission mode select switch to the "road" mode or "field" mode. Which mode is now on can be checked with the LCD indicator on the instrument panel.

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 traveling on public roads and towing light-duty implements |
| Field mode | Used for general heavy-load implements. |

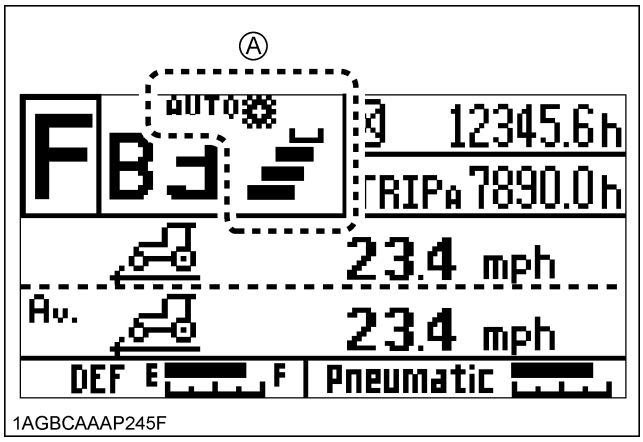




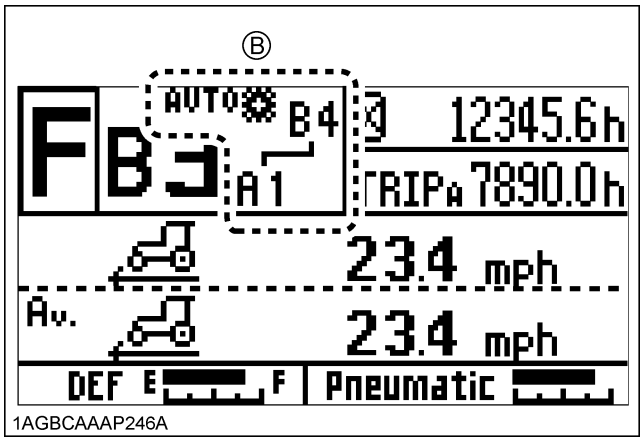




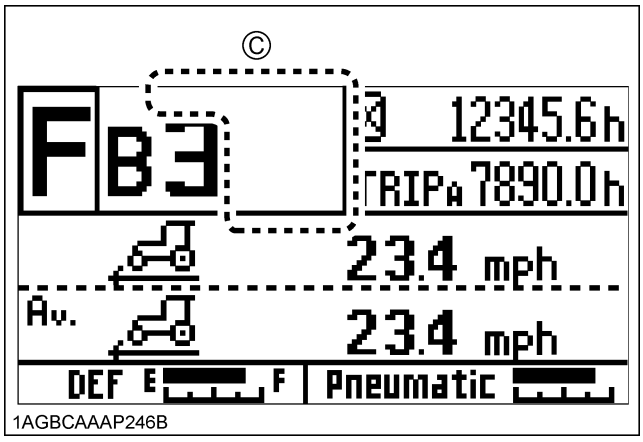
*(1) Transmission mode select switch*
*(A) "ROAD MODE"*
*(B) "FIELD MODE"*



1AGBCAAAP245F



1AGBCAAAP246A



1AGBCAAAP246B

*(A) "Auto shift-FIELD MODE"*
*(B) "Auto shift-ROAD MODE"*
*(C) "Manual mode"*

## ■Setting the Traveling Speeds

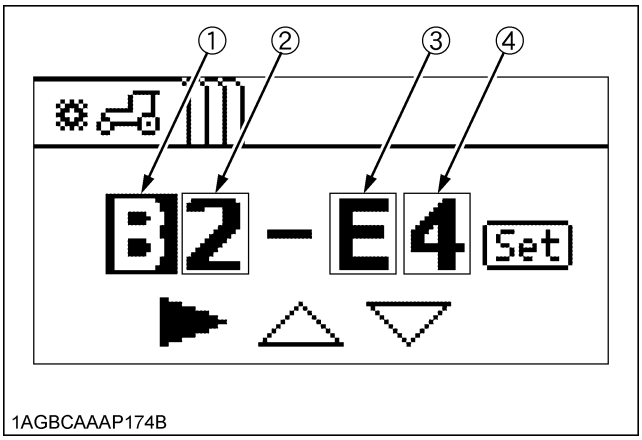
### ◆ Traveling speed ranges

| | | |
|---|---|---|
| Main gear shift | Lower speed → Higher speed | 1st → 2nd → 3rd → 4th |
| Range gear shift | Lower speed range → Higher speed range | A → B → C → D → E → F |

### ◆ Setting the traveling speed gear in the road mode [Standard model]

1. Referring to the traveling speed chart, determine maximum and minimum traveling speeds that are best suited for the type of work. On the automatic gear shift (road mode) setting screen, enter a desired traveling speed range.
2. The automatic gear shifting will be within the preset traveling speed range.

For detailed settings, refer to "Setting the Power Shift Transmission" in "LIQUID CRYSTAL DISPLAY" in "INTELLIPANEL(TM) CONTROL" section.



1AGBCAAAP174B

*(1) Range gear shift for minimum traveling speed*
*(2) Main gear shift for minimum traveling speed*
*(3) Range gear shift for maximum traveling speed*
*(4) Main gear shift for maximum traveling speed*

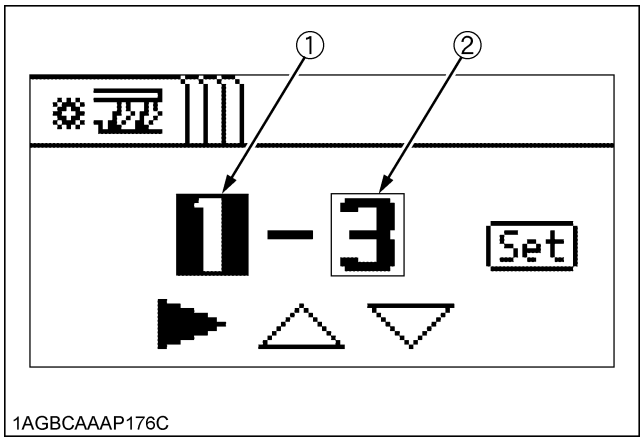
**NOTE :**

- Suppose that while the machine is running, the traveling 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 traveling speed back into the preset range and press the auto shift button again.

◆ **Setting the main gear shift range in the field mode [Standard model]**

1. Referring to the traveling speed 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 traveling speeds.
2. The automatic gear shifting will be within the preset traveling speed range.

For detailed settings, refer to "Setting the Power Shift Transmission" in "LIQUID CRYSTAL DISPLAY" in "INTELLIPANEL(TM) CONTROL" section.




*(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 traveling 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 traveling speed back into the preset range and press the auto shift button again.

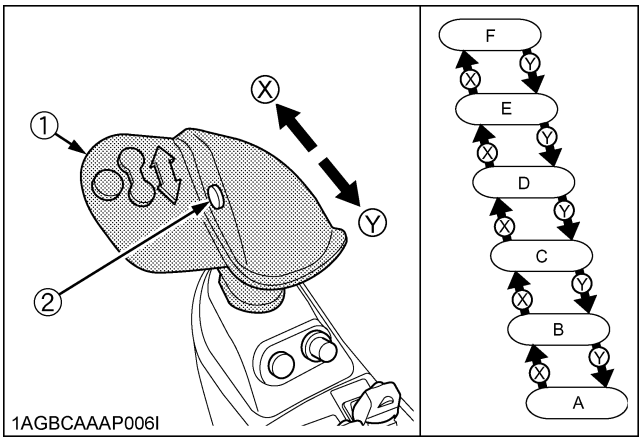
◆ **Setting the range gear shift in the field mode [Standard model]**

The range gear shift consists of 6 speeds. Determine the range gear shift range that is best suited for the working speed.

Hold down the range gear shift button and push the ez-command center 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.

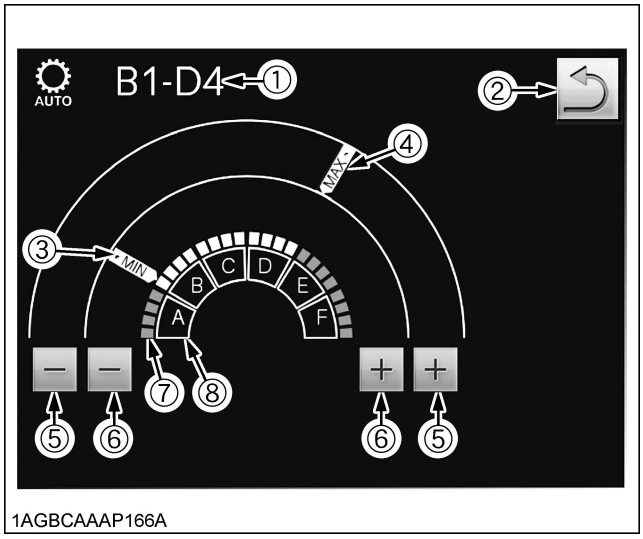



*(1) ez-command center*
*(2) Range gear shift button*
*(X) "Shift up"*
*(Y) "Shift down"*

◆ **Setting the traveling speed range in the road mode [Premium model]**

1. Referring to the traveling speed chart, determine maximum and minimum traveling speeds that are best suited for the type of work. On the K-monitor screen, enter desired traveling speeds.
2. The automatic gear shifting will be within the preset traveling speed range.

For detailed settings, refer to "Setting the Engine/ Transmission" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.




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*(1) Selected traveling 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*

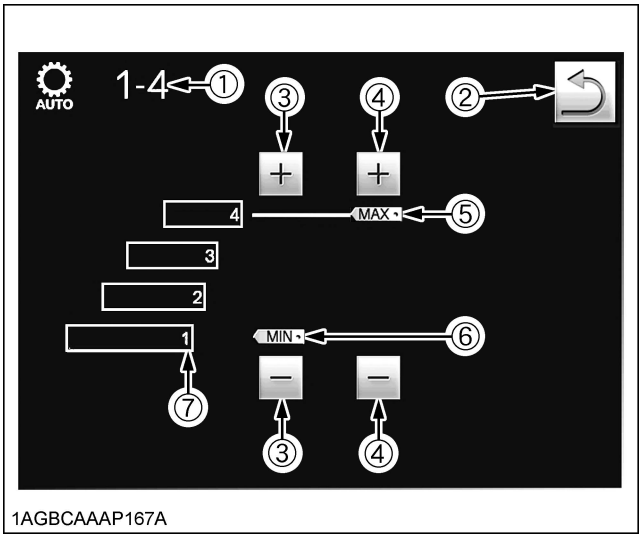
**NOTE :**

- Suppose that while the machine is running, the traveling 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 traveling speed back into the preset range and press the auto shift button again.

◆ **Setting the main gear shift range in the field mode [Premium model]**

1. Referring to the traveling speed 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.
2. The automatic gear shifting will be within the preset main gear shift range.

For detailed settings, refer to "Setting the Engine/ Transmission" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.




1AGBCAAAP167A

*(1) Selected traveling 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 section (1 to 4)*

**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 traveling 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 traveling speed back into the preset range and press the auto shift button again.

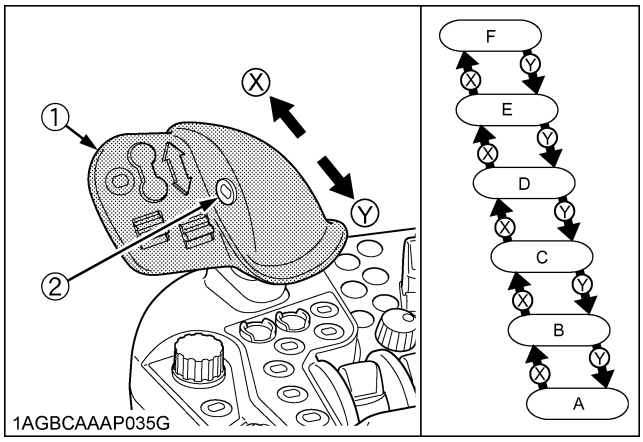
◆ **Setting the range gear shift in the field mode [Premium model]**

The range gear shift consists of 6 speeds. Determine the range gear shift range that is best suited for the working speed.

Hold down the range gear shift button and push the ez-command center 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.

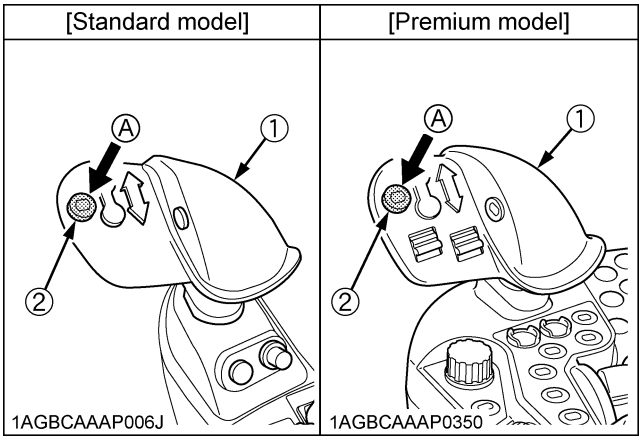



*(1) Ez-command center*
*(2) Range gear shift button*
*(X) "Shift up"*
*(Y) "Shift down"*

## ■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.




*(1) Ez-command center*
*(2) Auto shift button*
*(A) "PUSH"*

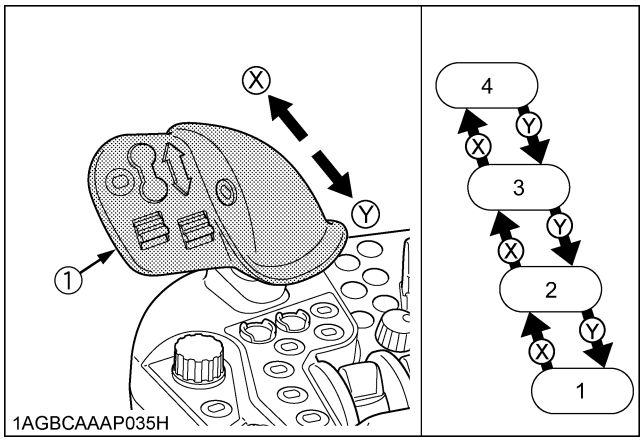
◆ **Operating the main gear shift**

This gear shift can be carried out without any clutch operation, whether the tractor is running or at a stop.

Push the ez-command center forward stage by stage, and the traveling speed shifts up one by one. Pull it backward stage by stage, and the traveling 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.

1. With field mode selected:
   Shifting is possible only among the 4 gears of the main gear shift.
2. With road mode selected:
   Shifting is possible among the 24 gears across the main gear shift and range gear shift.




*(1) Ez-command center*
*(X) "Shift up"*
*(Y) "Shift down"*

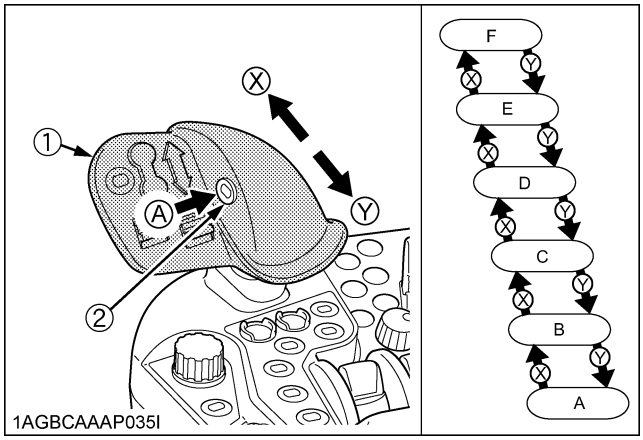
**◆ Operating the range gear shift**

The range gear shifting works for 6 speeds.

Hold down the range gear shift button. In this state, push the ez-command center forward stage by stage, and the range traveling speed shifts up one by one. Pull it backward stage by stage, the range traveling 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.




*(1) Ez-command center*
*(2) Range gear shift button*
*(A) "PUSH"*
*(X) "Shift up"*
*(Y) "Shift down"*

## ■Example of Operation in Combined Auto-Shift-and-Manual Mode

**◆ Starting the auto-shift-mode run**

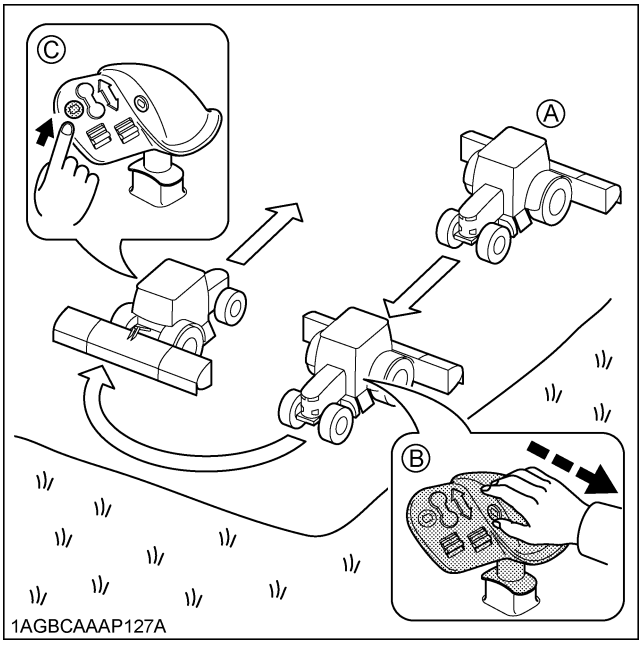
1. Set the traveling speed range (9th thru 12th, for example) according to the type of work. Then start the tractor.
2. The automatic operation will go on in response to the load within this preset traveling speed range.

**◆ Switching to the manual-mode run**

1. 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 center 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**

1. If the current traveling speed range in the manual mode is within the auto-shift-mode-preset traveling speed range (9th thru 12th), press the auto shift button, and the auto shift mode is resumed.
2. If the traveling speed is out of its preset range, first return it to its preset range. Then press the auto shift button.




*(A) "Auto shift mode"*
*(B) "Switching to the manual-mode"*
*(C) "Auto shift mode"*

## ■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 table below for settings according to the job.

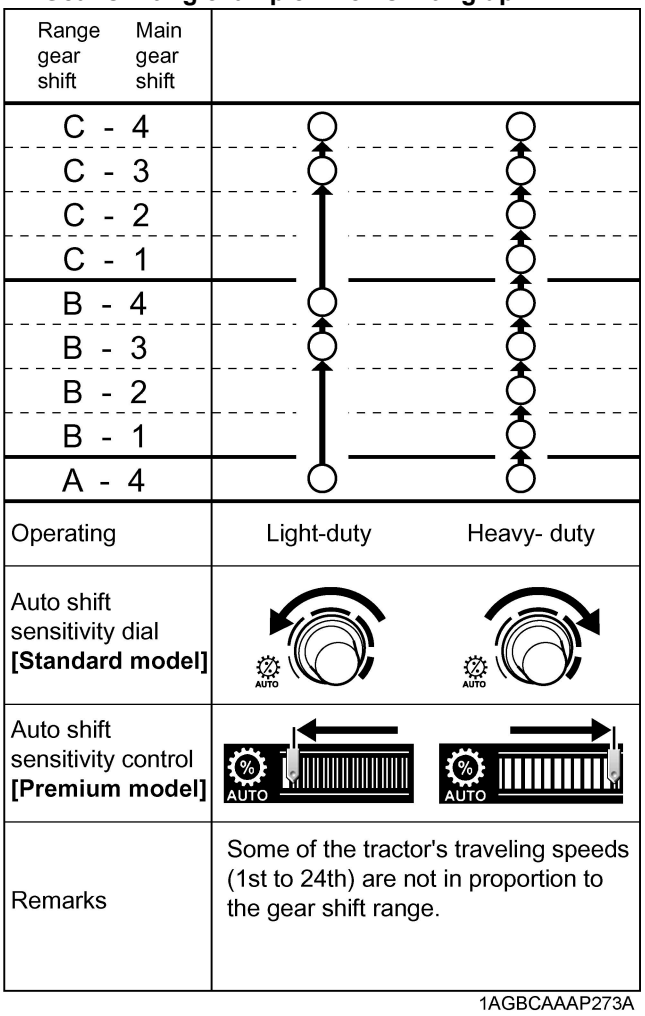
1. Eco-friendly operation
   The gear is automatically shifted up/down in lower engine rpm.
2. Power required operation
   The gear is automatically shifted up/down in higher engine rpm.

| Operating | Auto shift sensitivity dial **[Standard model]** Auto shift sensitivity control **[Premium model]** | Remarks |
|---|---|---|
| Eco-friendly operation | ● Turn the dial counterclockwise.<br>● Retract the graph leftward with the "Minus (-)" switch. | Suited for light-duty work |
| Power required operation | ● Turn the dial clockwise.<br>● Extend the graph rightward with the "Plus (+)" switch. | 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**

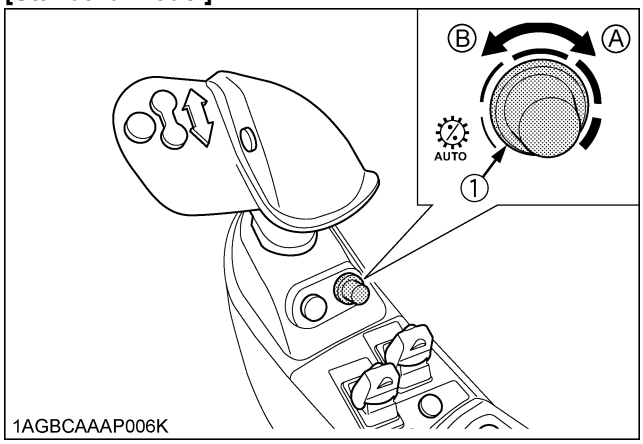



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**NOTE :**

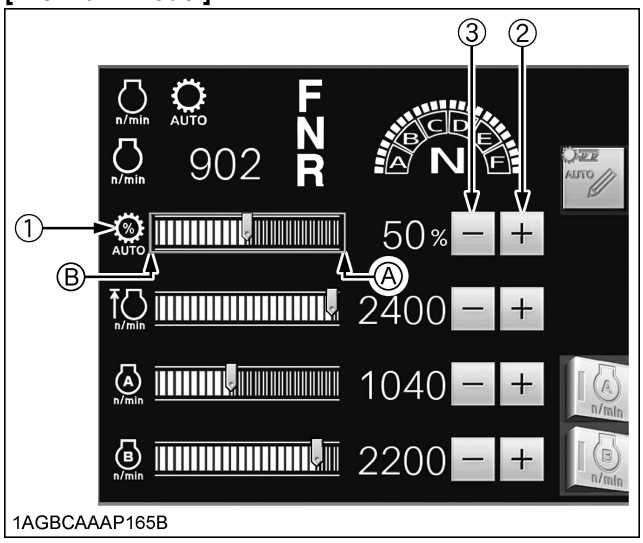
● If you step on the clutch pedal immediately after shifting the range gear shift up or down, the main gear shift may be automatically shifted as below.
   (1) The main gear shift is shifted down (4→3→2→1) as the speed decreases.
   (2) When coming to a complete stop, speed 1 is selected.

**[Standard model]**




*(1) Auto shift sensitivity dial*
*(A) "Heavy-duty"*
*(B) "Light-duty"*

**[Premium model]**




*(1) Auto shift sensitivity control*
*(2) Plus (+) switch*
*(3) Minus (-) switch*
*(A) "Heavy-duty"*
*(B) "Light-duty"*

**NOTE :**

- For detailed settings, refer to "Setting the Engine/ Transmission" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.

# CVT (Continuously Variable Transmission) CONTROL

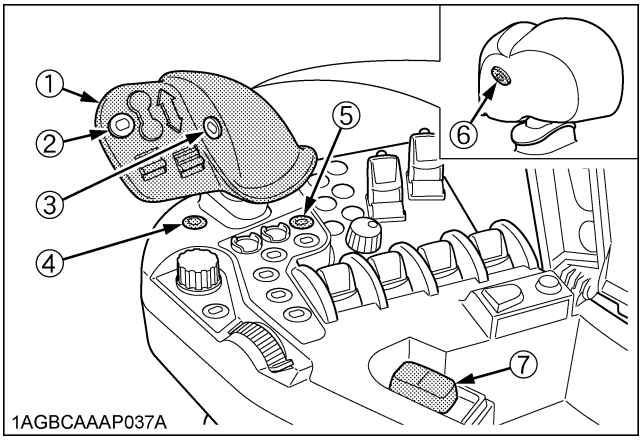
## WARNING

**To avoid personal injury or death:**

- **The ez-command center has no neutral position. To bring the tractor to a complete stop, step on the brake pedal or set the shuttle lever to neutral.**

## ■Outline

The CVT (Continuously Variable Transmission) 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 center*
*(2) Cruise button*
*(3) Ratio lock button*
*(4) Mode shift button*
*(5) Shuttle neutral button*
*(6) Shuttle enable button*
*(7) Limp home switch*

## ■Traveling Operation

Traveling speed control for a tractor with CVT transmission can be operated with either the ez-command center or the foot throttle. Choose between them according to the job.

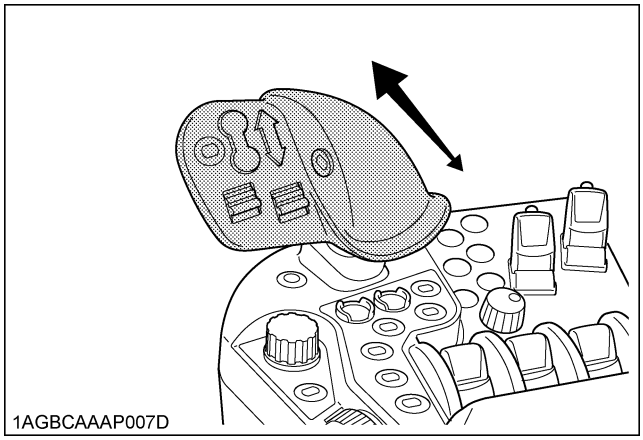
Note that control using the foot throttle requires the selection of "Automatic Mode" as discussed below. You can control both the speed and the engine power by how deeply you step on the foot throttle, as with an automatic transmission car; this enables convenient operation of the trailer and so on.

### ◆ Main shift

With the ez-command center, the machine can be "sped up" and "slowed down" easily.

Push the lever forward and pull it backward, and the traveling speed will increase and decrease respectively. The traveling speed is fixed at the position where you release the lever.

The traveling speed changes in proportion to the duration of moving the lever. The longer the lever is pushed forward, for instance, the higher the traveling speed becomes.




**NOTE :**

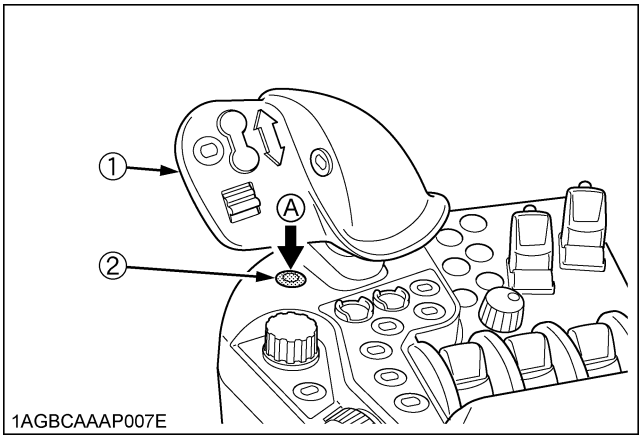
- The ez-command center has no neutral position. Even when the lever is set at the lowest speed position, the machine runs at the creep speed (about 0.5 km/h (0.3 mph). To bring the tractor to a complete stop, step on the brake pedal or set the shuttle lever to neutral.
- Allowing for conditions, use the "Cruise Mode" discussed below when you want to make fine adjustments to the traveling speed, or to keep the traveling speed steady for a job with a high traction load on the tractor.
- When the ez-command center is pushed forward during the tractor driving by using foot throttle, the traveling speed is set at the time of ez-command center operation. But this setting is effective for only when the tractor has a light load.

### ◆ Mode shift

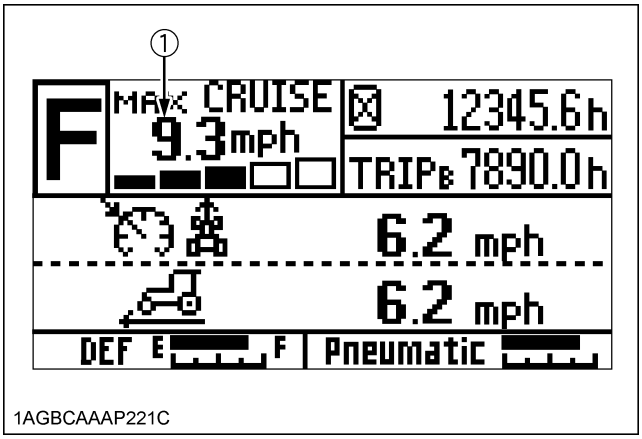
Every time the mode shift button is pressed, the "high speed" and "low speed" modes switch alternately. Depending on this selection, the "traveling enable upper limit speed", shown with the LCD indicator on the instrument panel, is also switched.

**NOTE :**

- Switching from the high speed mode to the low speed mode is not possible if the current traveling speed is higher than the maximum traveling speed set in the low speed mode; a buzzer will sound if this is tried.




*(1) Ez-command center* *(A) "PUSH"*
*(2) Mode shift button*




*(1) "Traveling enable upper limit speed"*

◆ **Modifying maximum traveling speed**

Maximum traveling speed controlled with the ez-command center has been factory-set as shown below. The mode shift's "low speed" range alone can be modified for its highest traveling speed.

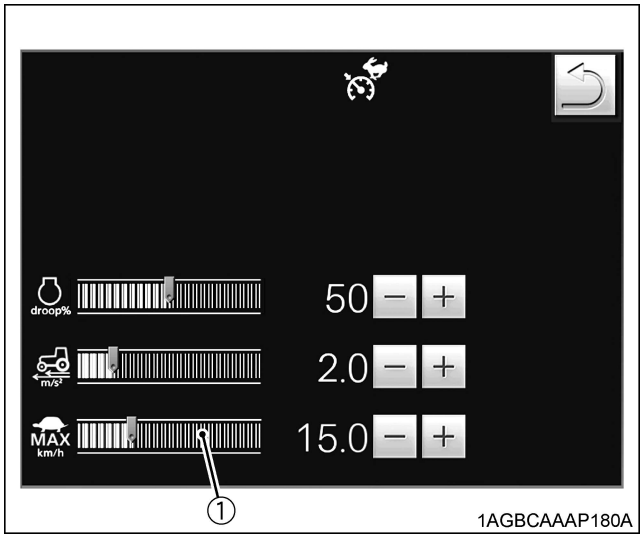
● **Factory-set traveling speeds**

Mode shift (low):
Maximum traveling speed up to 15 km/h (9 mph)

Mode shift (high):
Maximum traveling speed at 40-50 km/h (25-30 mph) (specifications vary)

● **Modifying the low-range traveling speeds**

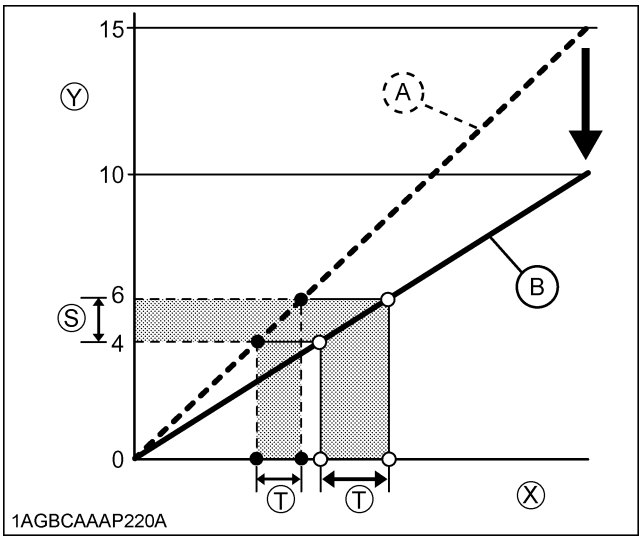
Set the desired traveling speed while confirming its digital display.




*(1) CVT low-range max. speed setting*

**NOTE :**

- For detailed settings, refer to "Setting the Engine/ Transmission" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.
- Example: In the case of working at the 4-6 km/h (3-4 mph) traveling speed, preferably set the low-range maximum traveling speed to about 10 km/h (6 mph). With this setting, the traveling speed can be kept at a nearly constant level (S) in response to the ez-command center movement (T). In this way, the speed is easy to finely adjust with the lever.




*(X) Operating times of ez-command center*
*(Y) Traveling 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))*

## ■Operation of the Automatic Mode

This mode is mainly utilized for traveling on public roads and towing plows and similar implements.

The optimum traveling speed and engine power are obtained according to the speed settings made with the ez-command center or foot throttle as well as the setting made in "Setting the CVT (Continuously Variable Transmission) sensitivity" discussed later.

(In this 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**

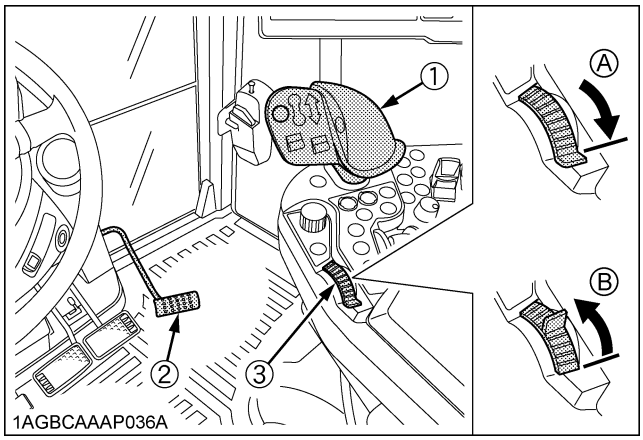
1. Set the shuttle lever to neutral. Or press the shuttle neutral button.
2. Set the hand throttle close to "Minimum speed", and the automatic mode is selected.
   (Even during operation, do not move the hand throttle.)

◆ **Foot throttle operation (ex.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 machine slows down.
3. To bring the machine to a complete halt, step on the brake pedal. When you release the brake pedal, the tractor starts running.

◆ **Ez-command center operation (ex.Plow work)**

1. Set a desired traveling speed with the ez-command center, and the engine power is controlled to keep up this speed.
2. Step on the both brake pedals to stop the tractor. When release the pedals to start, the traveling speed must be reset. When stopped with the clutch pedal, you can drive at the preset traveling speed when you release the clutch pedal.




*(1) Ez-command center*
*(2) Foot throttle*
*(3) Hand throttle*

*(A) With "AUTOMATIC" mode selected*
*(B) With "Manual Engine Speed Setting" mode selected*

## ■Operation of the Manual Engine Speed Setting Mode

This mode mainly serves for PTO-driven implements like harvesters.

The optimum traveling speed and engine power are obtained according to the engine rpm setting made with the hand throttle as well as the setting made in "Setting the CVT (Continuously Variable Transmission) sensitivity" discussed later.

◆ **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 traveling 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.

## ■Setting the CVT (Continuously Variable Transmission) Sensitivity

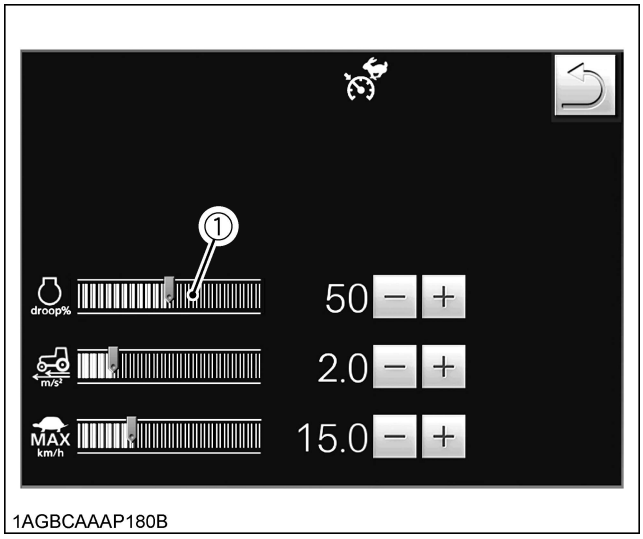
The CVT sensitivity setting varies with a selected mode, "Automatic" or "Manual Engine Speed Setting".

◆ **Automatic mode:**

1. As the sensitivity setting in the graph below is increased, the machine can be sped up or slowed down in the low-level engine rpm range.
   In case of light-duty loads, high-speed energy-saving run is allowed even in the low engine rpm range.
2. As the sensitivity setting in the graph is decreased, the machine can be sped up or slowed down in the high-level engine rpm range.
   This is suited for heavy-duty operations.

◆ **Manual Engine Speed Setting Mode:**

1. As the sensitivity setting in the graph below is increased, the traveling speed is also controlled, even in the engine rpm range below the range preset with the hand throttle.
   In case of light-duty loads, high-speed energy-saving run is allowed even in the low engine rpm range.
2. As the sensitivity setting in the graph is decreased, the traveling speed is controlled so as to remain within the rpm range of the hand throttle.
   This is suited for heavy-duty PTO-driven implements, such as harvesters, which are adversely affected by rpm fluctuations.




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*(1) CVT sensitivity setting*

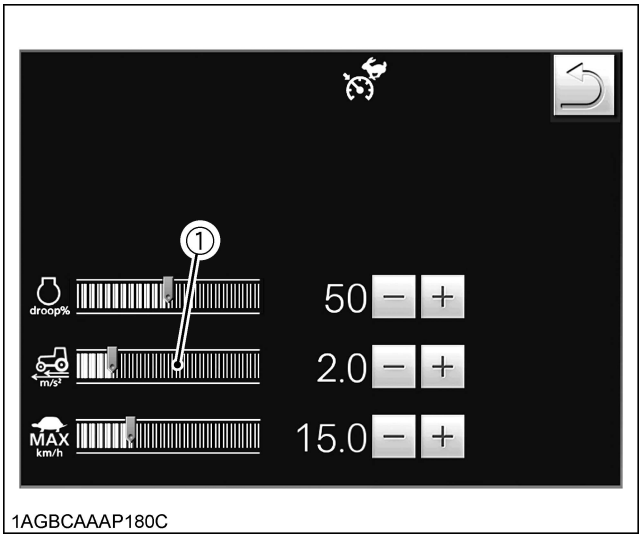
## ■Setting the CVT (Continuously Variable Transmission) Response

**WARNING**

**To avoid personal injury or death:**

- **While the trailer is running, the ez-command center 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.




1AGBCAAAP180C

*(1) CVT response setting*

**NOTE :**

- For detailed settings, refer to "Setting the Engine/ Transmission" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.

## ■Cruise Control

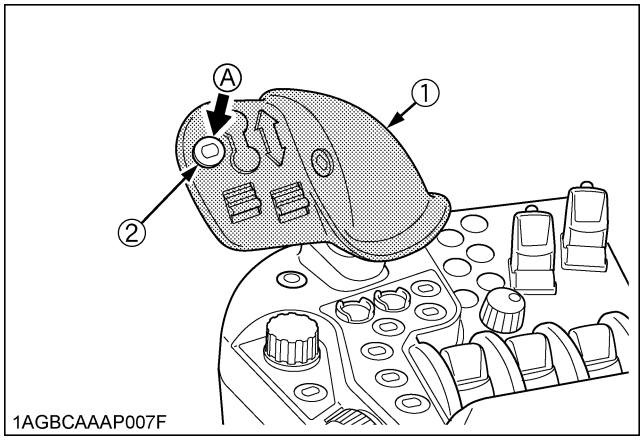
The traveling speed may be flexibly preset with the ez-command center. To keep the traveling speed at a constant level, however, make the cruise control setting.
The cruise control can be preset in 4 different conditions for high range speed and low range speed as well as for forward and reverse respectively. The respective preset speed value is memorized when the cruise control is activated once. Thus, the set speed is not memorized if there is no record for cruise activating.
Set the cruise control to "ON", and "CRUISE" and "Cruise preset speeds" appear in the LCD indicator on the instrument panel.

### ◆ Setting the cruise control

To set cruise control, use either of the following procedures.

- **Setting with the ez-command center**

1. Push the ez-command center forward until a desired traveling 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 center 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).



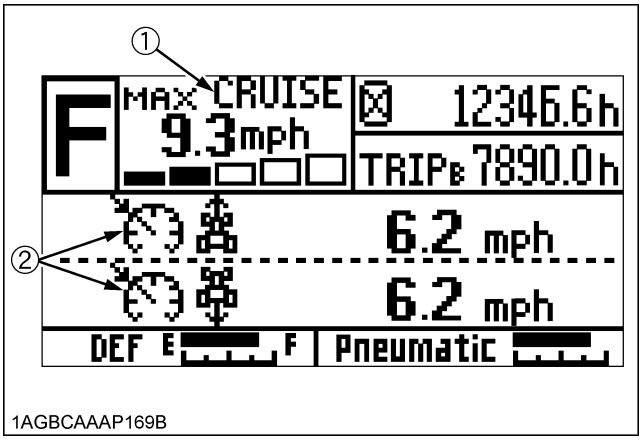

*(1) Ez-command center* *(A) "PUSH"*
*(2) Cruise button*

- **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 traveling speed with the foot throttle**

1. Step on the foot throttle until a desired traveling 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.




*(1) Display during cruise ON*
*(2) Cruise preset speeds*

### ◆ Clearing the cruise control

The cruise control can be cleared in any of the following actions.

1. Step fully on both the brake pedals.
2. Press the cruise button.
3. Set the shuttle lever to neutral.
4. Step on one brake pedal with more than 14 km/h (8.7 mph) traveling speed.

**NOTE :**

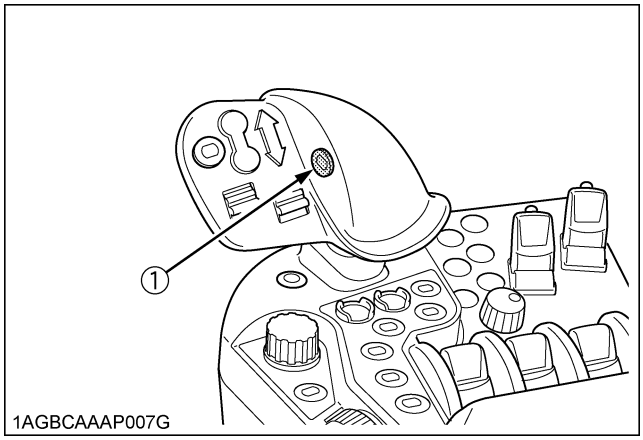
- The memory value will not be deleted whichever method you use to clear cruise control. Even if you turn the key switch off, the memory value remains.
- Press the cruise button again while running, and the cruise control turns on. The machine can be run at the preset traveling speed.
- Even during cruising, 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 (approx. 0.5 km/h (0.3 mph)).
- To activate the cruise control while driving, the tractor speed requires more than 10% of preset speed.
  For example, if the preset 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.

## ■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.




*(1) Ratio lock button*

## ■Limp Home Switch

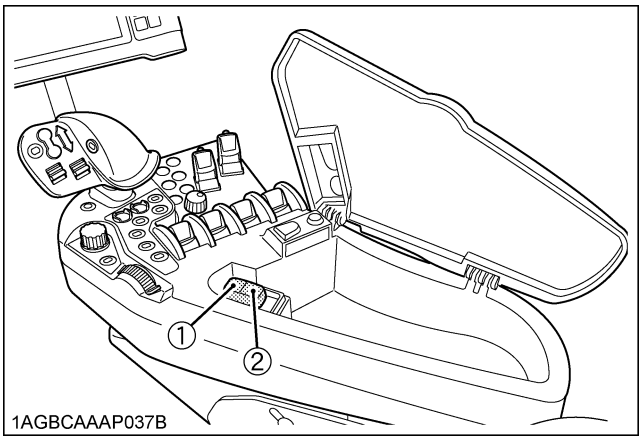
If the transmission has trouble, press this switch, and the tractor can be moved for an emergency escape.

◆ **Operating Procedure**

1. Press the F or R switch to enter limp home mode.
2. In traveling 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 traveling.
3. When switching traveling 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.




*(1) Limp home switch F (Forward)*
*(2) Limp home switch R (Reverse)*

# STOPPING

## ■Stopping

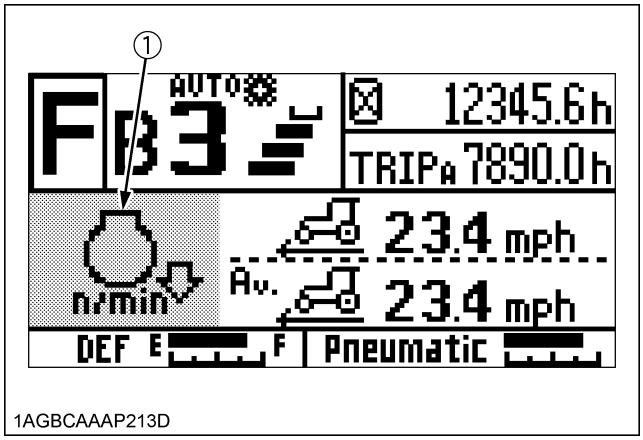
1. Slow down the engine.
2. Step on the clutch and brake pedal.
3. After the tractor has stopped, disengage the PTO, lower the implement to the ground, shift the transmission to neutral, release the clutch pedal, and set the parking brake.

# CHECK DURING DRIVING

## ■Engine Over-speed Limiting Indicator

The Engine Overspeed Limiting Indicator informs the operator of engine overspeed by indicator and warning buzzer.

If the warning sounds, immediately lower engine rpm with brakes, etc. When the engine rpm decreases, the warning will stop.




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*(1) Engine over-speed limiting indicator*

**NOTE :**

- Normal operation will not lead to overspeed, 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 overspeed.

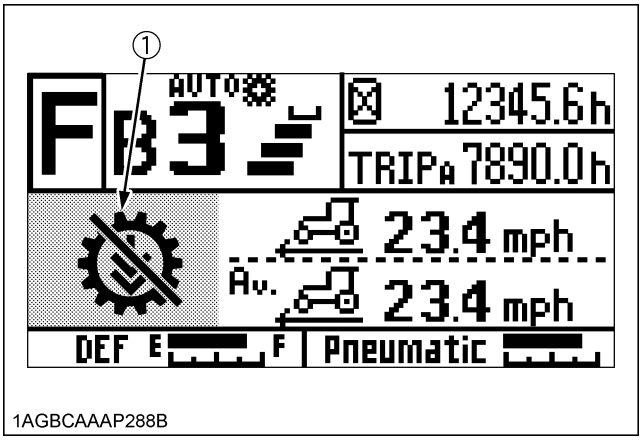
## ■Gear Shifting Warning Indicator

**[Standard, Premium models]**

As in the table below, 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. | 1) Lower the engine rpm and shift down.<br>2) Shift down with the power shift. |
| Range gear was shifted (rev-up/ slow-down), but returned to the original gear without shifting.<br>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-4 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 or F with the creep gear ON. | |




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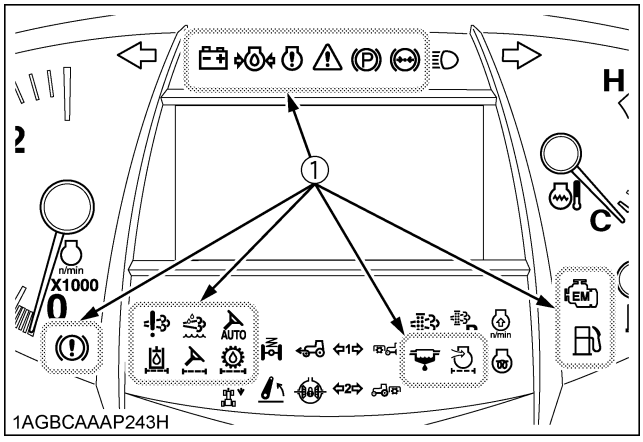
*(1) Gear shifting warning indicator*

## ■Immediately Stop the Engine if:

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

## ■Easy Checker(TM)

If the RED indicators in the Easy Checker(TM) come on or blink during operation, immediately stop the engine, and find the cause as shown below.
If any of the AMBER indicators lights up or starts blinking, remove the cause of the trouble as required.
Never operate the tractor while Easy Checker(TM) lamp is on.




*(1) Easy Checker(TM)*

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

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

**IMPORTANT :**

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

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

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

Engine oil pressure
If the oil pressure in the engine goes below the prescribed level, the warning indicator in the Easy Checker(TM) 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 level of engine oil.
(See "Checking Engine Oil Level" in "DAILY CHECK" in "PERIODIC SERVICE" section.)

Emission indicator
If this indicator lights up, take the steps to lower the water temperature. This helps keep the emission clean.

Electrical charge
If the alternator is not charging the battery, the warning indicator in the Easy Checker(TM) 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.

Parking brake
If the parking brake is applied, the warning indicator in the Easy Checker(TM) will light up.
If the indicator is on during operation, release the parking brake lever immediately.

Brake oil pressure
If a fault occurs in the tractor braking system, the warning indicator in the Easy Checker(TM) will light up.
If this should happen during operation, stop the engine and consult your local KUBOTA Dealer.

Pneumatic pressure (If equipped)
If the pneumatic pressure for the trailer brake is decreased, the warning indicator in the Easy Checker(TM) will light up.
If this should happen during operation, check the 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 in the Easy Checker(TM) 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 in the Easy Checker(TM) 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 Refueling" in "DAILY CHECK" in "PERIODIC SERVICE" section.)

**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 in the Easy Checker(TM) will light up.
If this should happen during operation, drain the water from the water separator as soon as possible.
(See "Checking Water Separator" in "DAILY CHECK" in "PERIODIC SERVICE" section.)

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(TM) will right up.
If this should happen during operation, refill or replace with DEF/AdBlue® as soon as possible.
(See "Selective Catalytic Reduction (SCR) MUFFLER" in "OPERATING THE ENGINE" section.)

Air cleaner

If the air cleaner is clogged, the indicator in the Easy Checker(TM) will light up.
If this should happen during operation, clean the air cleaner element.
(See "Cleaning Air Cleaner Primary Element" in "EVERY 100 HOURS" in "PERIODIC SERVICE" section.)

Hydraulic suction oil filter

If the hydraulic suction oil filter is clogged, the indicator in the Easy Checker(TM) will light up.
If this should happen during operation, replace the hydraulic suction oil filter.
(See "Replacing Hydraulic Oil Filter (suction)" in "EVERY 500 HOURS" in "PERIODIC SERVICE" section.)

Transmission oil filter

If the transmission oil filter is clogged, the indicator in the Easy Checker(TM) will light up.
If this should happen during operation, replace the transmission oil filter.
(See "Replacing Transmission Oil Filter" in "EVERY 1000 HOURS" in "PERIODIC SERVICE" section.)

Steering oil filter

If the steering oil filter is clogged, the indicator in the Easy Checker(TM) will light up.
If this should happen during operation, replace the steering oil filter.
(See "Replacing Power Steering Oil Filter" in "EVERY 500 HOURS" in "PERIODIC SERVICE" section.)

**NOTE :**

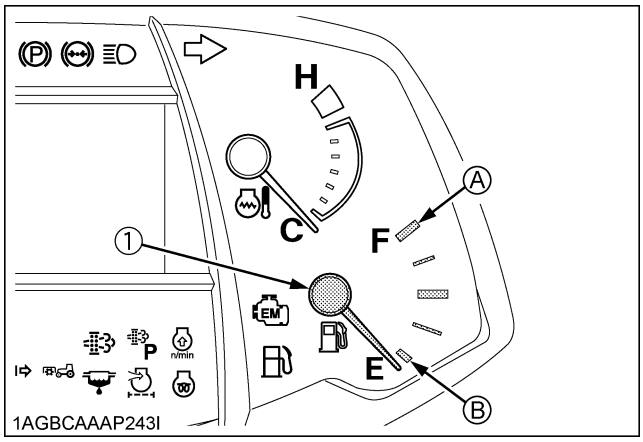
- For checking and servicing of your tractor, consult your local KUBOTA Dealer for instructions.

## ■Fuel Gauge

A 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 Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)




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

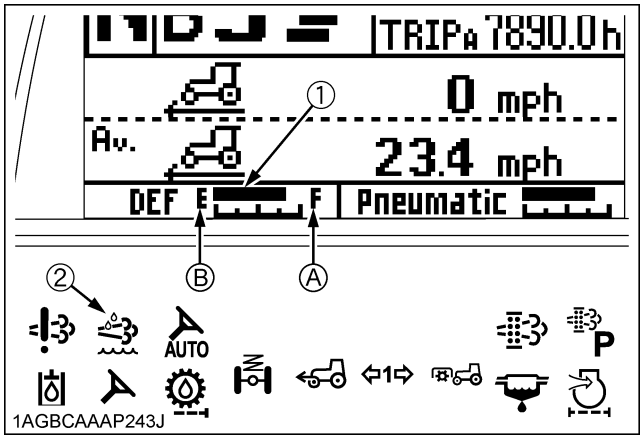
## ■DEF/AdBlue® Gauge

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"*

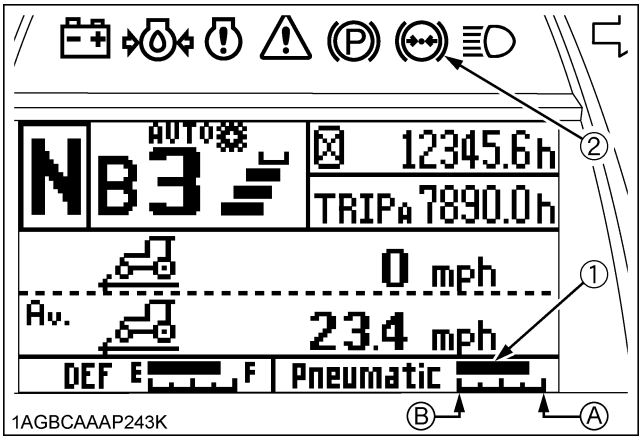
## ■Pneumatic Pressure Gauge

**(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 pneumatic pressure 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.




*(1) Pneumatic pressure gauge*
*(2) Pneumatic pressure warning indicator*
*(A) "Prescript pressure"*
*(B) "Low pressure"*

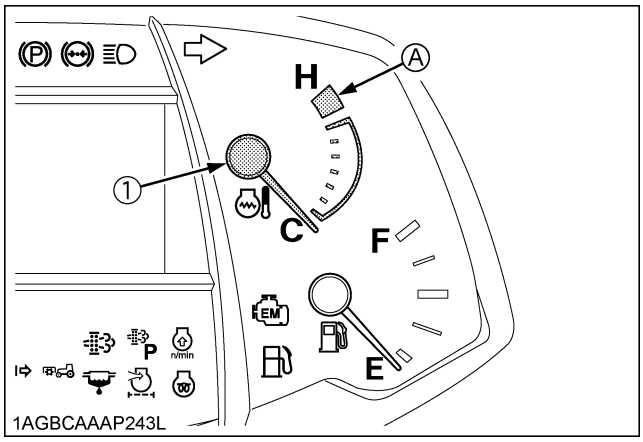
## ■Coolant Temperature Gauge

**WARNING**

**To avoid personal injury or death:**

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

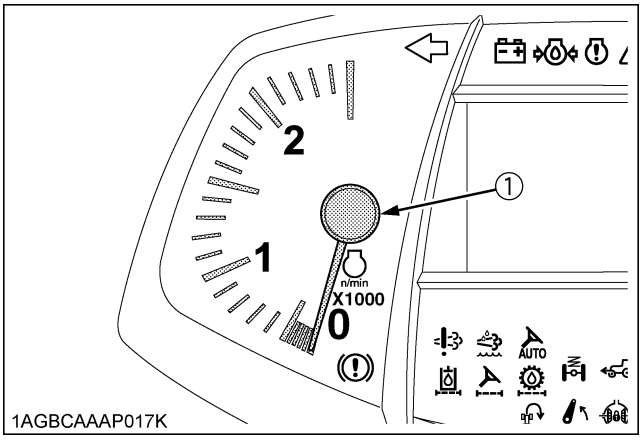
1. With the key switch at "ON", this gauge indicates the temperature of the coolant. "C" for "cold" and "H" for "hot."
2. If the indicator reaches the red zone position, engine coolant is overheated. Check the tractor by referring to "TROUBLESHOOTING" section.




*(1) Coolant temperature gauge (A) "RED ZONE"*

## ■Tachometer

The tachometer indicates the engine speed on the dial.




*(1) Engine revolution*

# HEADLAND MANAGEMENT SYSTEM

## WARNING

**To avoid personal injury or death:**

- **Never utilize the Headland Management System, if anyone is in the work area of the tractor.**

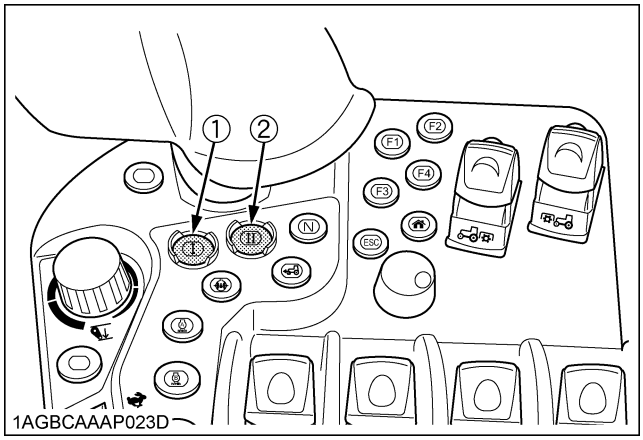
### ■What is Headland Management System?

Depending on different types of crops and working methods, your headland may require different operation. Once such procedures are preprogrammed, the operator can run the machine on headland in a simple way for better productivity and less operator fatigue.

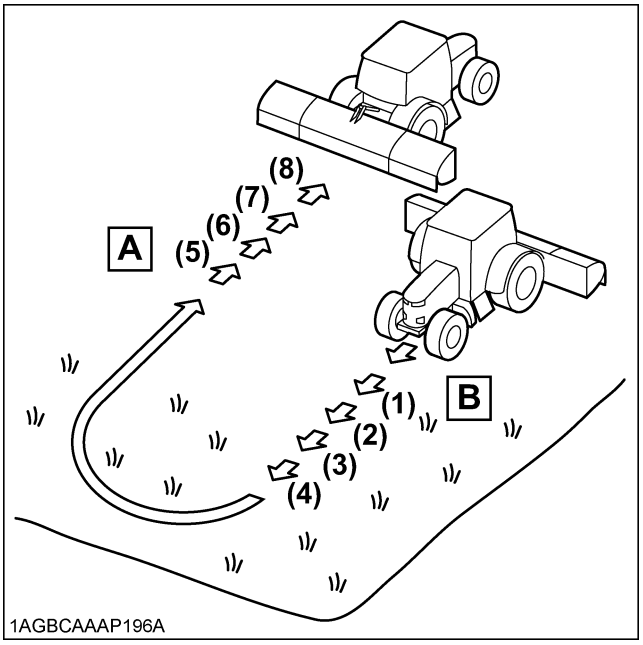
For instance, let's preprogram the operating procedure on headland as shown in the table below.

1. Press the field-out button when you reach the headland, and the steps (1) thru (4) are carried on in sequence.
2. After turning the machine, press the field-in button, and the steps (5) thru (8) are carried on in sequence.

| Operating example on headland | |
|---|---|
| Field out | Field in |
| (1) Implement [UP]<br>(2) PTO [OFF]<br>(3) Differential lock [OFF]<br>(4) 4WD [OFF] | (5) 4WD [ON]<br>(6) Differential lock [ON]<br>(7) PTO [ON]<br>(8) Implement [DOWN] |




*(1) Field out button*
*(2) Field in button*




*(A) "FIELD IN"*
*(B) "FIELD OUT"*

### ■Programming the Headland Management System

To utilize the Headland Management System, it must be preprogrammed.

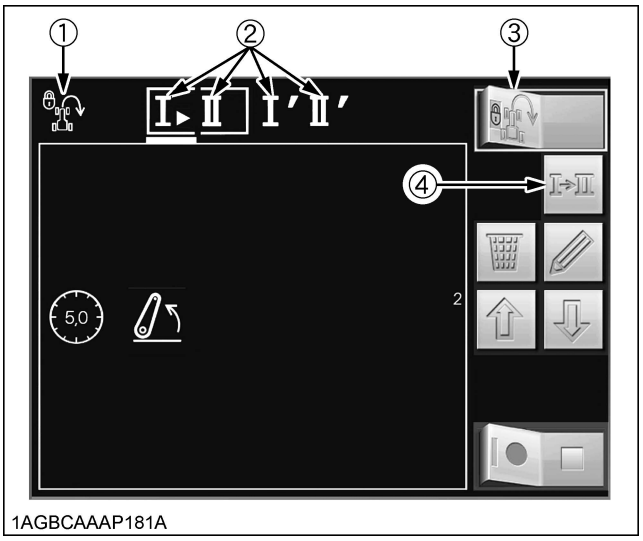
For details on initial entries and modifications for the program, refer to "Setting the Headland Management System" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.

## ■Handling the Headland Management System

1. Get the engine started and touch the right half of the Headland Management System lock/unlock switch (3) to unlock the system. Once unlocked, the indicator (1) goes off.
2. Using the program select switch (4), choose the recorded program code ( I or I′ ). Once selected, the program code display indicator (2) lights up and stays on.
3. When the headland has been reached, press the "Field out" button. The recorded program will be carried on. After swiveling 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.

**NOTE :**

- The Headland Management System is kept locked all the time when the engine gets started. To enable this system, press the switch (3) 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-P. Quick lower switch is used and then the 3-P. 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.



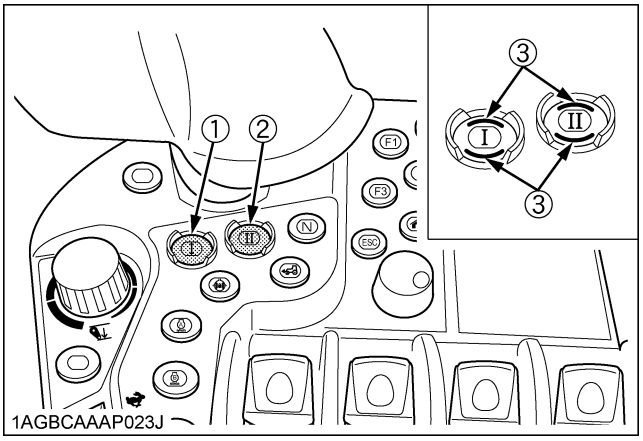
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*(1) Headland Management System lock indicator*
*(2) Program code display indicator*
*(3) Headland Management System lock/unlock switch*
*(4) Program select switch*

### ◆ 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<br>Indicator of field in button: OFF |



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*(1) Field out button*
*(2) Field in button*
*(3) Indicator*

# FRONT SUSPENSION

**(if equipped)**

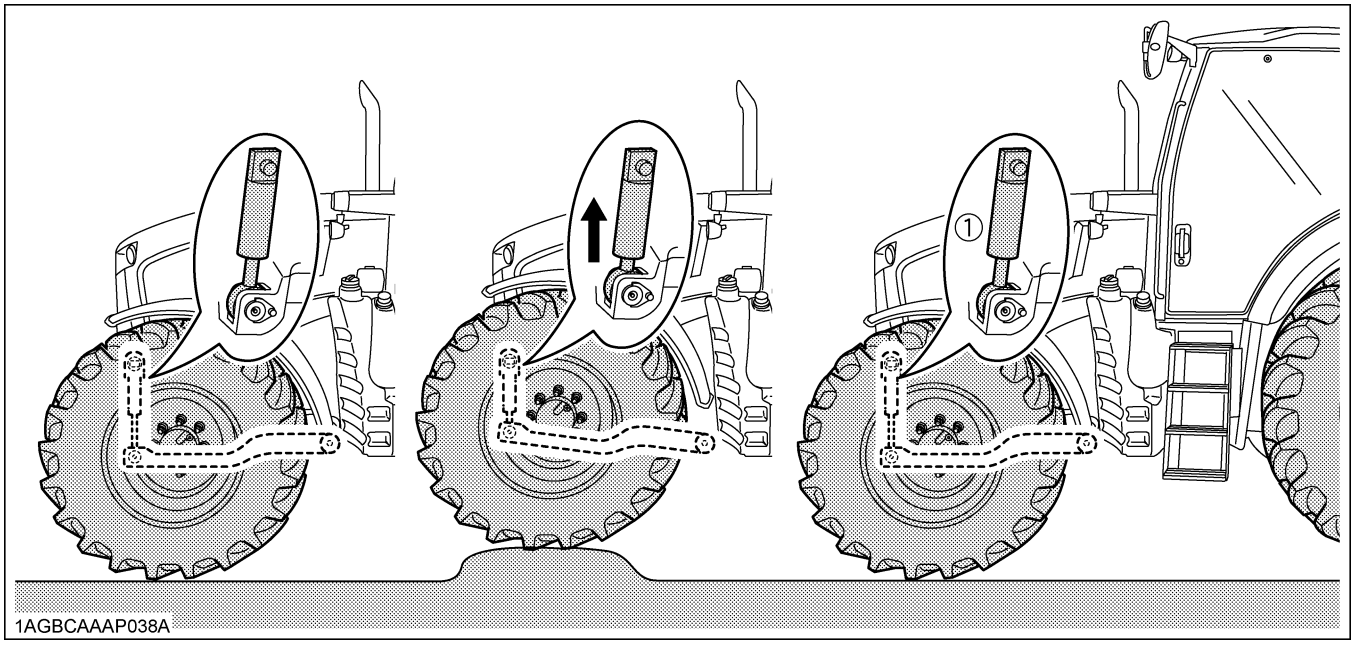
## WARNING

**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.**

## ■Outline

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/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.




*(1) Suspension cylinder*

## ■Front Suspension Mode

Choose the front suspension status from the following modes.

**(1) Auto mode:**

The front suspension functions in the entire speed range of the tractor.

This mode is recommended for general work.

**(2) Block mode:**

Under 20 km/h (12 mph) or so, the suspension cylinder is retracted and fixed at its lowest position.

When the tractor speed rises above 20 km/h (12 mph), this mode is automatically switched to the Auto mode.

This mode is recommended for work with a front loader or similar implements.

**(3) Manual mode:**

The suspension cylinder can be manually extended and retracted to readjust the tractor height.

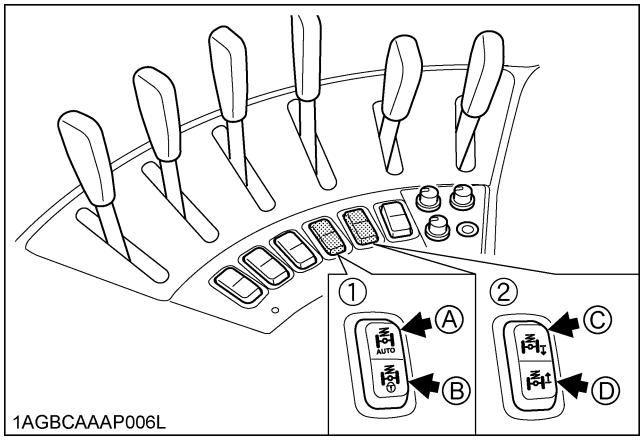
When the tractor speed rises above 2 km/h (1 mph) or so, this mode is automatically switched to the Auto mode.

This mode is recommended for attaching and detaching implements, inspecting the tractor, etc.

## ■Switching of the Modes

**[Standard model]**

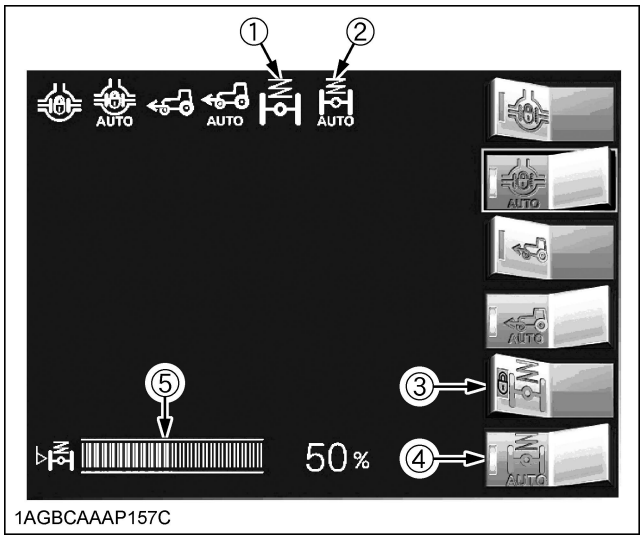
1. Press the top half of the mode selection switch, and the Auto mode is selected. Pressing its bottom half enables the Block mode.
2. Press the top half of the Manual switch in the Auto mode to select manual lowering mode. Manual raising mode can be selected by pressing the bottom half.




*(1) Front suspension mode selection switch*
*(2) Front suspension manual switch*
*(A) Auto mode*
*(B) Block mode*
*(C) "DOWN"*
*(D) "UP"*

**[Premium, Premium KVT models]**

1. On the K-monitor screen, select the Auto or Block mode.
   For the setting procedure, refer to "Setting the Drivability" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.

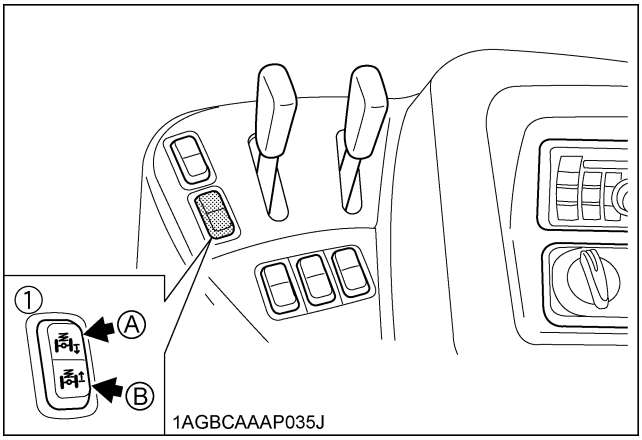



*(1) Suspension (Active indicator)*
*(2) Suspension (Auto indicator)*
*(3) Front suspension (block) switch*
*(4) Front suspension (auto) switch*
*(5) Front suspension level meter*

◆ **How to read the indicator**

| | Auto indicator | Active indicator |
|---|---|---|
| Auto mode | ON | OFF |
| Block mode | OFF | OFF |
| Manual mode | OFF | ON |

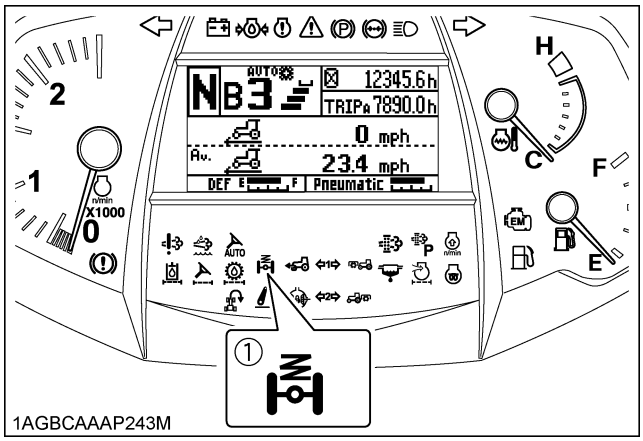
2. Press the top half of the Manual switch in the Auto mode to select manual lowering mode. Manual raising mode can be selected by pressing the bottom half.
   The tractor height in the Manual mode can also be checked with the level meter.




*(1) Front suspension manual switch*
*(A) "DOWN"*
*(B) "UP"*

### ■How to Read the Indicator

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 |

### ■Traveling Speed and Modes

The Auto, Block and Manual modes are automatically switched, as shown in the table below, according to the traveling speed.

| Mode selection switch | Manual switch | Traveling speed | | |
|---|---|---|---|---|
| | | Below 2 km/h (1 mph) | Below 20 km/h (12 mph) | Above 20 km/h (12 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 | | | |

**NOTE :**

- *1: The Manual switch is disabled during deceleration.
- 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 traveling speed is 2 km/h (1 mph) or higher, it will switch to automatic mode.)

# PARKING

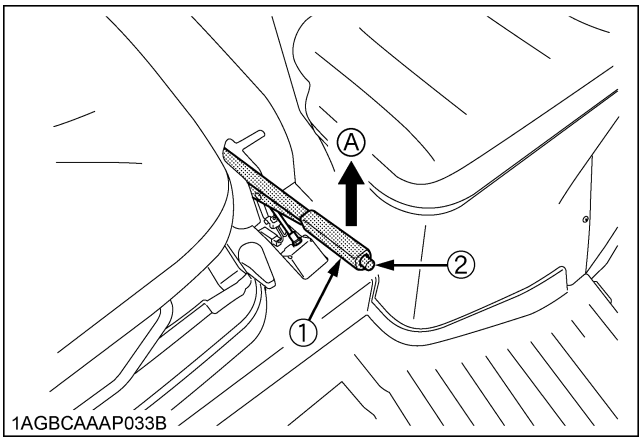
### ■Parking

**WARNING**

**To avoid personal injury or death:**
**BEFORE DISMOUNTING TRACTOR**

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

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




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

**IMPORTANT :**

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

**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.
- With the pneumatic trailer brake model, the trailer brake, which is interlocked with the parking brake, also gets activated.
- 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.)

# OPERATING TECHNIQUES

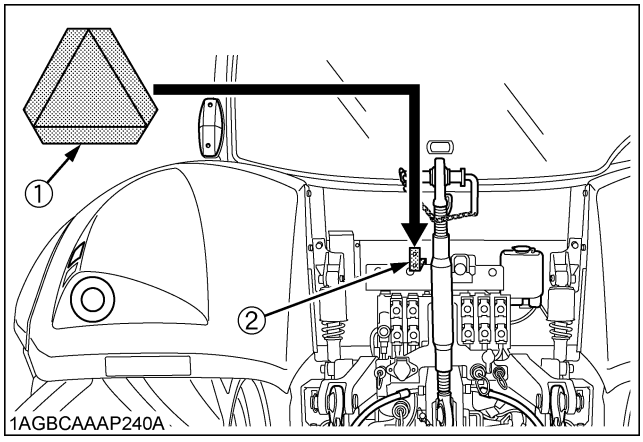
## ■Operating the Tractor on a Road

**WARNING**

**To avoid personal injury or death:**

- **To help assure straight line stops when driving at transport speeds, lock the brake pedals together. Uneven braking at road speeds could cause the tractor to roll-over.**
- **When traveling on road with 3-point hitch mounted implement attached, be sure to have sufficient front weight on the tractor to maintain steering ability.**
- **When traveling on road with trailer, you must comply with local regulation at all time.**
  **The maximum traveling speed with trailer is provided by each country and regulated speed may be different depend on the size of trailer and type of trailer brake system.**

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




*(1) SMV emblem*
*(2) Bracket*

## ■Operating on Slopes and Rough Terrain

**WARNING**

**To avoid personal injury or death:**

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

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

## ■Transport the Tractor Safely

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

## ■Directions for Use of Power Steering

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

# PTO

## PTO OPERATION

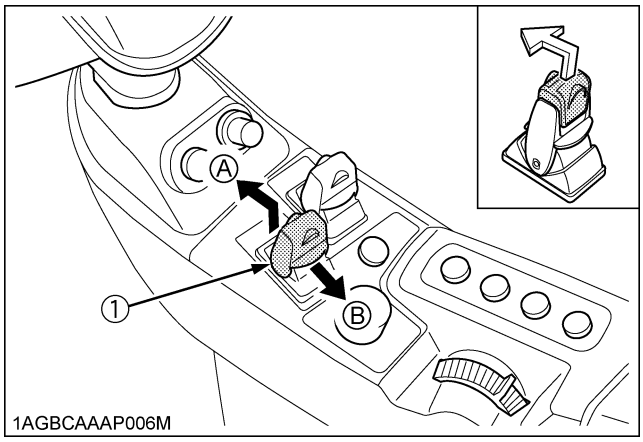
### WARNING

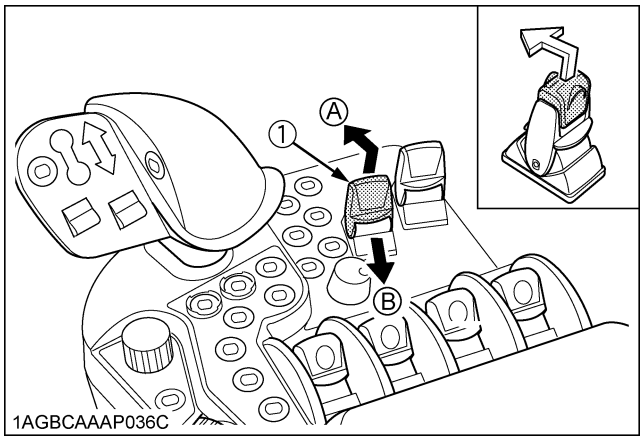
**To avoid personal injury or death:**

- **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.**

### ■PTO Clutch Control Switch

The PTO clutch control switch engages or disengages the PTO clutch which gives the PTO independent control.
Pull up the switch knob and tilt it forward, and the PTO clutch comes "ON" (engage).
Tilt the switch knob backward, and the PTO clutch comes "OFF" (disengage).




*(1) Rear PTO clutch control switch (A) "ON" (B) "OFF"*

**IMPORTANT :**

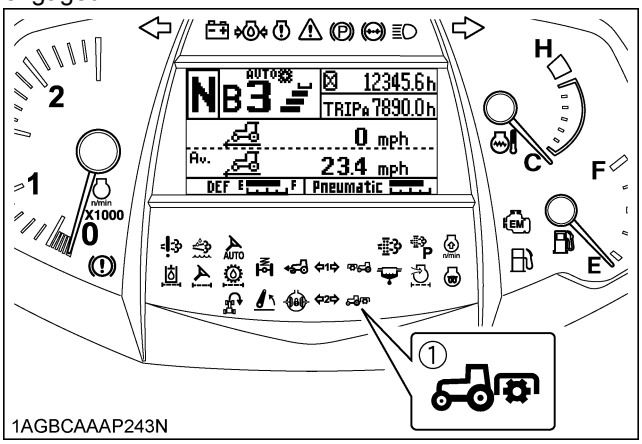
- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed.

**NOTE :**

- If the PTO system is engaged and you stand up from the seat, the warning buzzer will whistle for about 10 seconds after standing up.
  This is because the tractor is equipped with "Operator Presence Control System".
- The PTO clutch can be engaged only when the operator is seated in the operator's seat. Otherwise, the clutch cannot be engaged.

**◆ PTO Clutch Indicator**

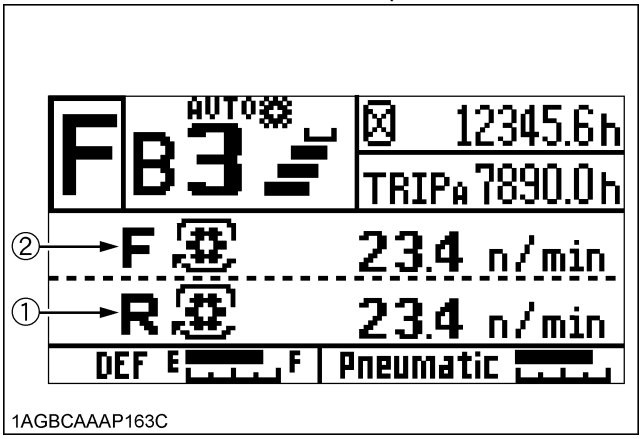
The PTO clutch indicator turns on while PTO clutch is engaged.




*(1) Rear PTO clutch indicator*

**◆ Display of the PTO rpm**

The front PTO rpm and rear PTO rpm can be displayed in the LCD screen on the instrument panel.



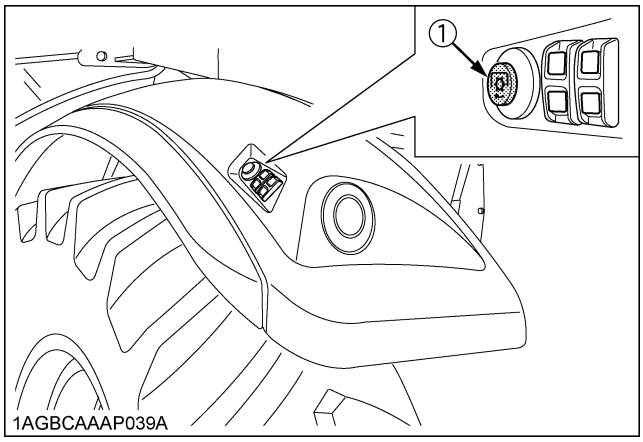

*(1) Rear PTO rpm*
*(2) Front PTO rpm*

## ■External Switch for Rear PTO

Press the external PTO clutch control switch, located on the left and right fenders, and the rear PTO starts turning. If you release the switch within 2 seconds, the PTO stops turning.

Hold down the switch longer than 2 seconds, and the PTO will keep on turning. (Once in continuous rotation mode, the warning buzzer sounds for about 10 seconds.) Press the switch again, 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*

## ■PTO Operating Mode Selector Lever/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.

Set the Mode Selector Lever to the "NORMAL" mode for general work and the "ECONOMY" mode for light-duty work only.

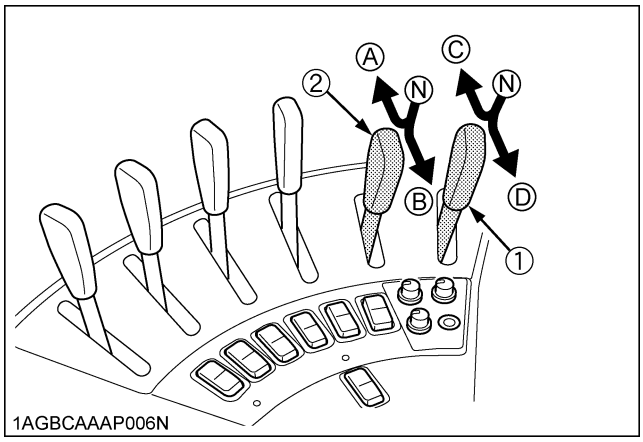
In the ECONOMY mode, the engine runs at low speed, 540 or 1000 rpm, for energy-saving operation.

Using the PTO Gear Shift Lever, select a speed to suit the implement in use.

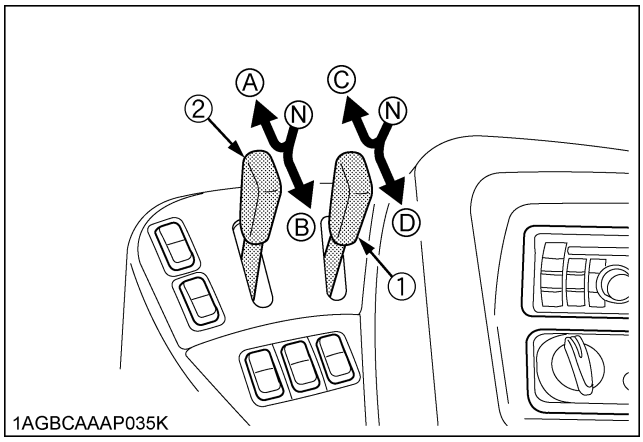
| PTO operating mode selector lever | PTO gear shift lever | |
|---|---|---|
| | C | D |
| Normal (PTO/Engine speed) | 540/2005 | 1000/1995 |
| Economy (PTO/Engine speed) | 540E/1608 | 1000E/1600 |

◆ **Handling the levers**

1. Before handling both the levers, set the PTO clutch control switch to the OFF (Disengage) position.
2. 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.
3. When returning the lever to the neutral position, there is no need to push it down.



1AGBCAAAP006N



1AGBCAAAP035K

*(1) PTO gear shift lever*
*(2) PTO operating mode selector lever*
*(A) Normal mode*
*(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.

**NOTE :**

- When using the high-speed (1000/1000E) PTO, replace with the included 1000-rpm PTO shaft.
  When accelerating the engine with the 6-spline 540-rpm PTO shaft installed, PTO rotation will automatically stop when the PTO reaches approx. 6500 rpm.

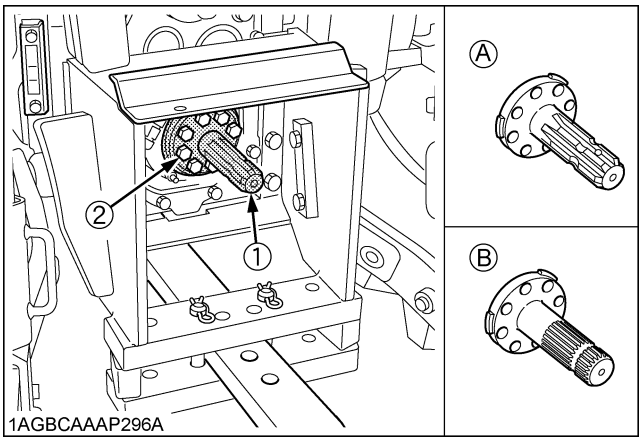
## ■1000 rpm PTO Shaft

**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.**

By interchanging the PTO shafts, 2 different PTO shaft speeds can be obtained.



1AGBCAAAP296A

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

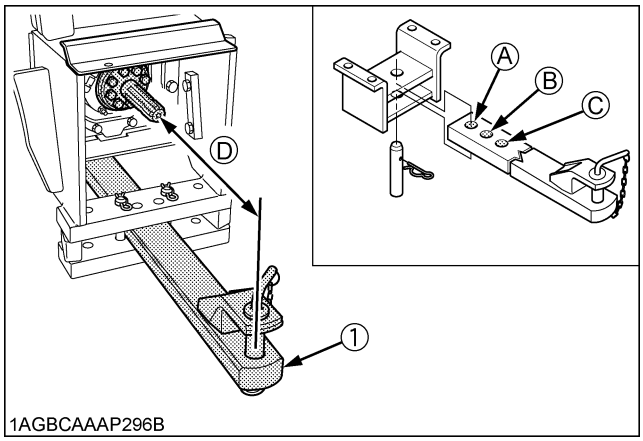
◆ **PTO shaft interchanging procedure**

1. The 6-spline 540 rpm PTO shaft is standard equipment.
2. Shifting the two PTO levers to an arbitrary position, lock the PTO shaft to keep it from rotating.
3. Remove the PTO mounting bolts and then remove the PTO shaft.
4. After cleaning the PTO shaft mounting surface, mount the 1000-rpm PTO shaft.
   Tightening torque: 115 N-m (11.7 kgf-m) (84.8 ft-lbs)
5. Set the distance from drawbar pin hole to the rear end of PTO shaft according to the following instructions.

**IMPORTANT :**

- For maximum PTO shaft speeds of various implements, see the implement Operator's Manual.
- Short position hole (Hole C) should never be used for PTO-driven implement.

| Drawbar hole | PTO shaft |
|---|---|
| Hole A | 21 spline for 1000 rpm |
| Hole B | 6 spline for 540 rpm |
| Hole C | Do not use for PTO-driven implement |




*(1) Drawbar*

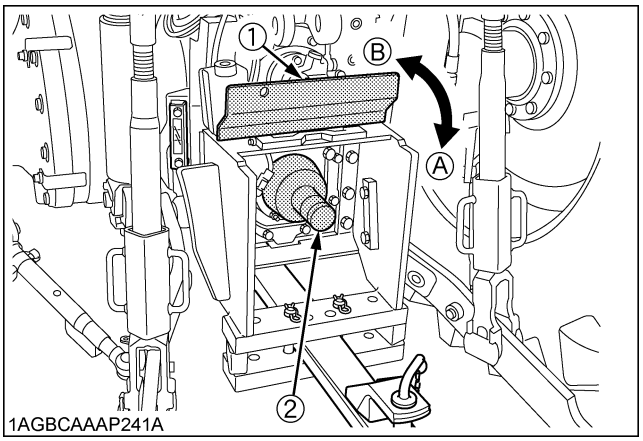
*(A) "Hole A"*
*(B) "Hole B"*
*(C) "Hole C"*
*(D) "DISTANCE"*

**NOTE :**

- When using the high-speed (1000/1000E) PTO, replace with the included 1000-rpm PTO shaft.
  When accelerating the engine with the 6-spline 540-rpm PTO shaft installed, PTO rotation will automatically stop when the PTO reaches approx. 650 rpm.
- When the engine is in overspeed due to external factors, the PTO rotation may stop temporarily.

## ■PTO Shaft Cover and Shaft Cap

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




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

*(A) "NORMAL POSITION"*
*(B) "RAISED POSITION"*

**IMPORTANT :**

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

## ■Auto PTO Operation

**[Premium, Premium KVT models]**

**WARNING**

**To avoid personal injury or death:**

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

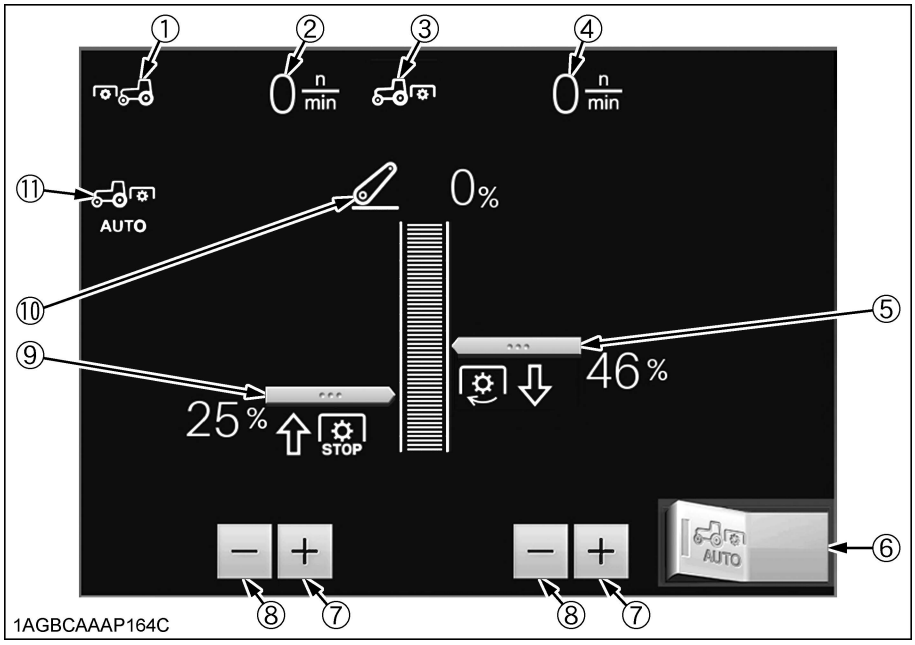
The rear-PTO can be preset to turn itself on and off, being interlocked with the lifting height of 3-point hitch mounted implement.

### ◆ 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 indicator (11) too lights up.
2. Use the 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.
   (For details, refer to "Setting the PTO" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.)

**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 (Hydraulic dial).




*(1) Front PTO indicator*
*(2) Front PTO rpm*
*(3) Rear PTO indicator*
*(4) Rear PTO rpm*
*(5) Height to turn on the PTO in lowering the implement*
*(6) Auto PTO switch*
*(7) Plus (+) switch*
*(8) Minus (-) switch*
*(9) Height to turn off the PTO in raising the implement*
*(10) Current lift arm height*
*(11) Auto PTO indicator*

# FRONT PTO OPERATION

**(if equipped)**

## 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.**

The front PTO and rear PTO are independent, and both PTOs can be operated together or individually.

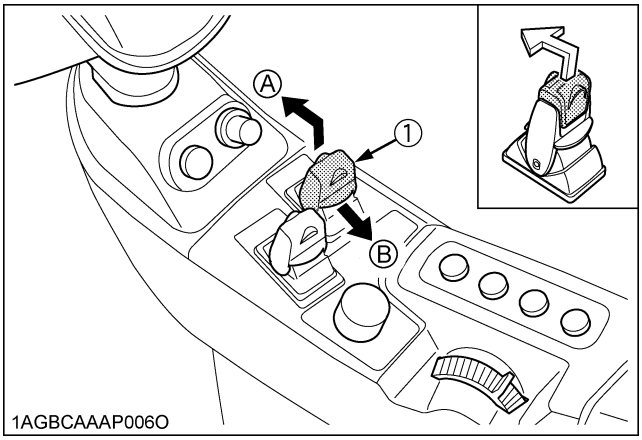
| | |
|---|---|
| Direction of turning PTO | Counter-clockwise, viewed from tractor front |
| PTO/Engine speed | 1000/2000 rpm |
| PTO shaft | 6 splines |

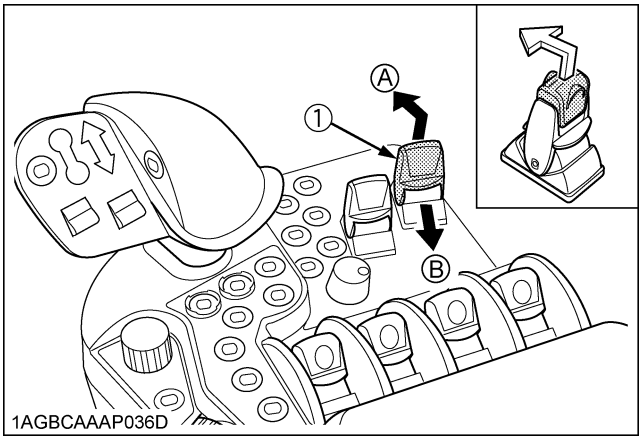
## ■PTO Clutch Control Switch

The PTO clutch control switch engages or disengages the PTO clutch which gives the PTO independent control.

Pull up the switch knob and tilt it forward, and the PTO clutch comes "ON" (engage).

Tilt the switch knob backward, and the PTO clutch comes "OFF" (disengage).




*(1) Front PTO clutch control switch (A) ON (B) OFF*

**IMPORTANT :**

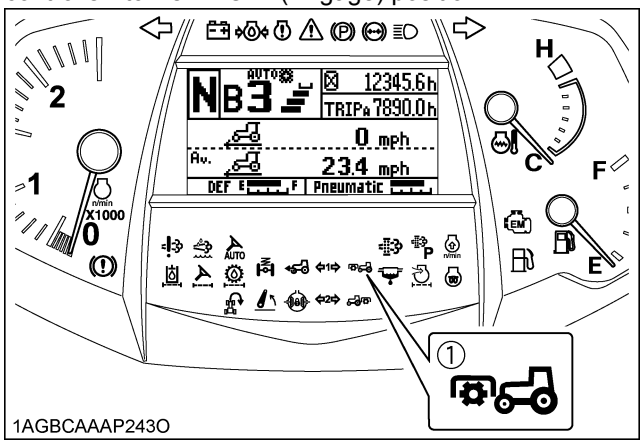
- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed.

**NOTE :**

- If the PTO system is engaged and you stand up from the seat, the warning buzzer will whistle for about 10 seconds after standing up.
  This is because the tractor is equipped with "Operator Presence Control System".

◆ **PTO Clutch Indicator**

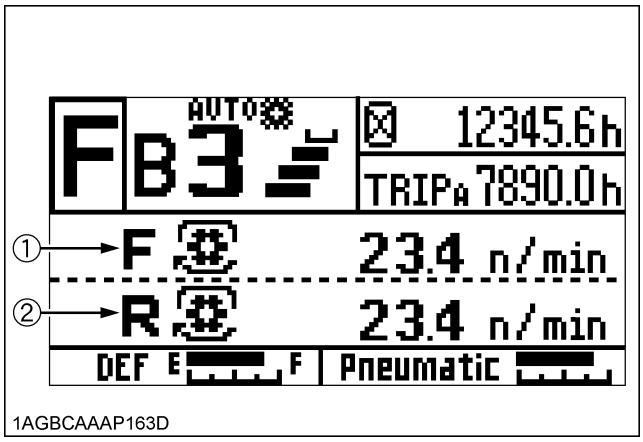
The PTO clutch indicator turns on while PTO clutch control switch is in "ON" (Engage) position.




*(1) Front PTO clutch indicator*

◆ **Display of PTO rpm**

The front PTO rpm and rear PTO rpm can be displayed in the LCD screen on the instrument panel.

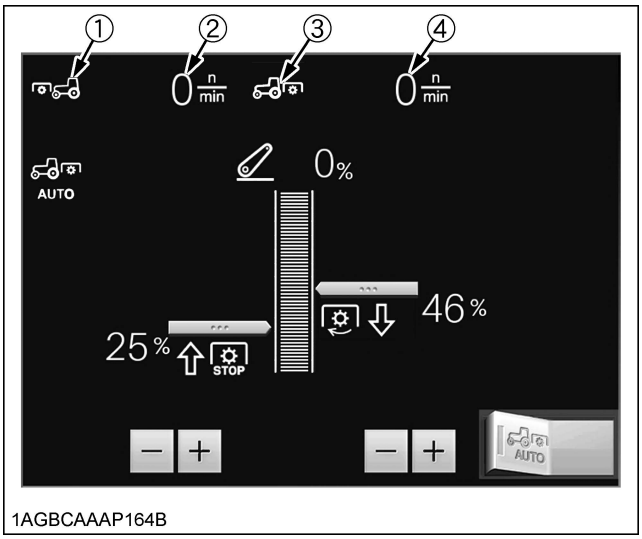



*(1) Front PTO rpm*
*(2) Rear PTO rpm*

**[Premium, Premium KVT models]**

The front PTO rpm and rear PTO rpm can be displayed on the K-monitor screen.

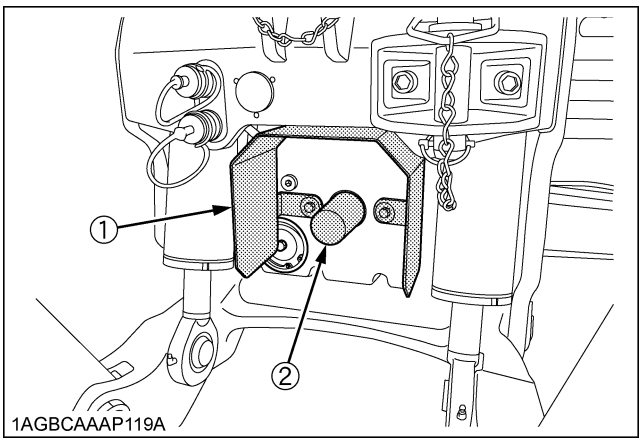
(For details, refer to "Setting the PTO" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.)




*(1) Front PTO indicator*
*(2) Front PTO rpm*
*(3) Rear PTO indicator*
*(4) Rear PTO rpm*

## ■PTO Shaft Cover and Shaft Cap

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

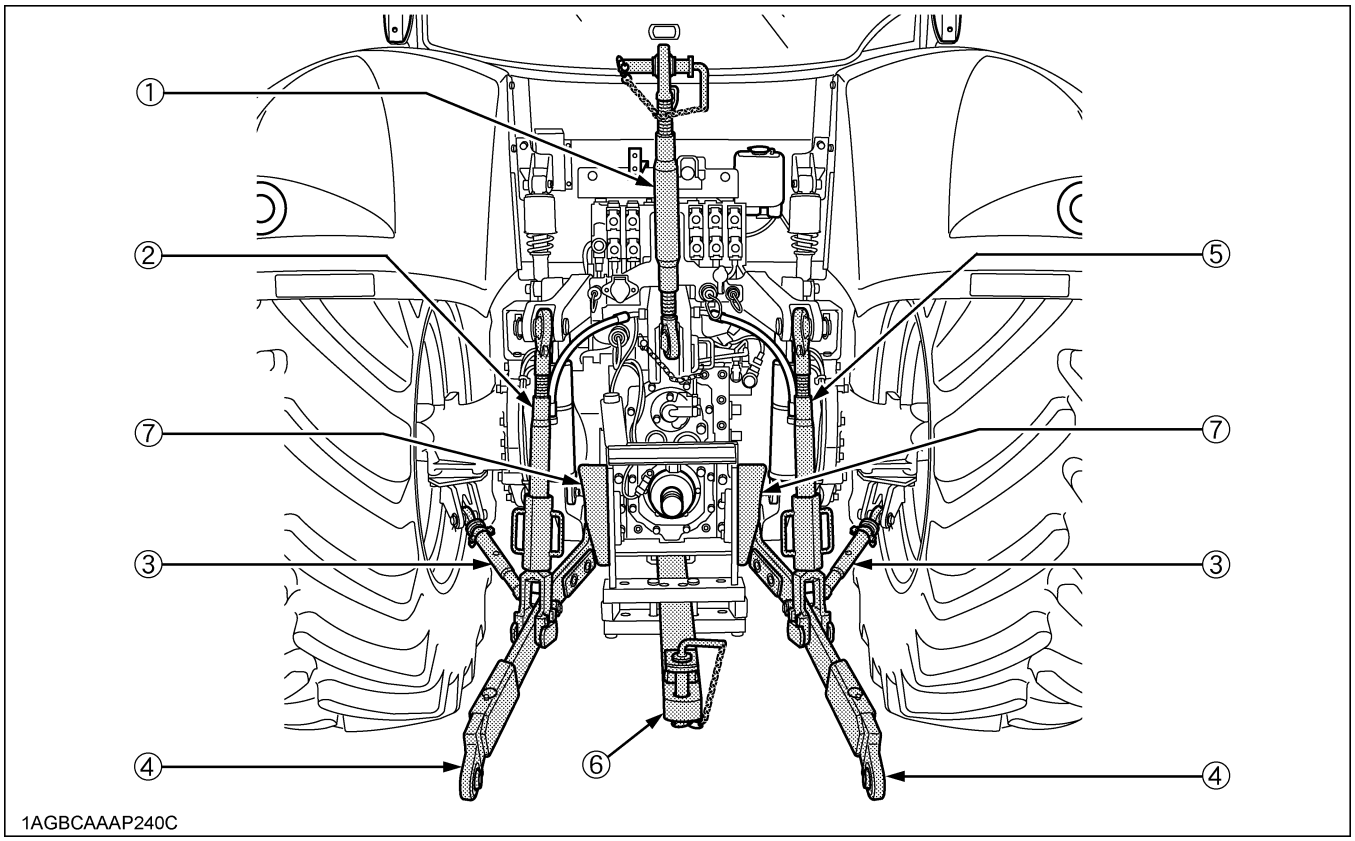



*(1) PTO shaft cover*
*(2) PTO shaft cap*

**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 & DRAWBAR




1AGBCAAAP240C

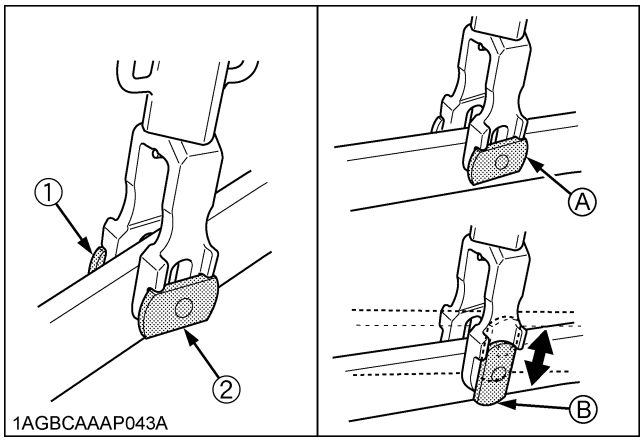
(1) Top link
(2) Lifting rod (Left)
(3) Stabilizer
(4) Lower link
(5) Lifting rod (Right)
(6) Drawbar
(7) Sway limitation plate

# 3-POINT HITCH

## 1. Make preparations for attaching implement.

### ■Adjusting Lateral Float

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

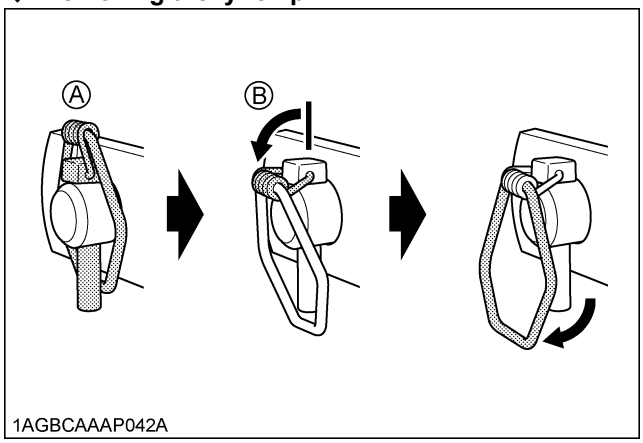



*(1) Rectangular washer*
*(2) Pin head*
*(A) Horizontal position*
*(B) Vertical position*

**◆ Floating mechanism**

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

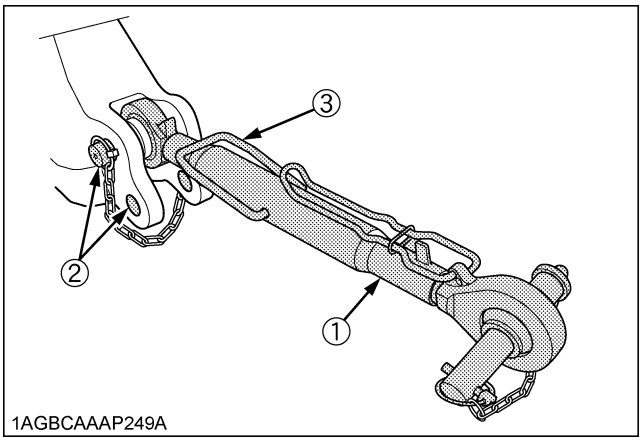
**◆ Removing the lynch pin**




*(A)"LOCK"*
*(B)"PUSH"*

### ■Selecting the Top Link Mounting Holes

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




*(1) Top link*
*(2) Mounting hole*
*(3) Handle*

### ■Drawbar

Remove the drawbar if a close mounted implement is attached.

## 2. Attaching and detaching implements

### WARNING

**To avoid personal injury or death:**

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

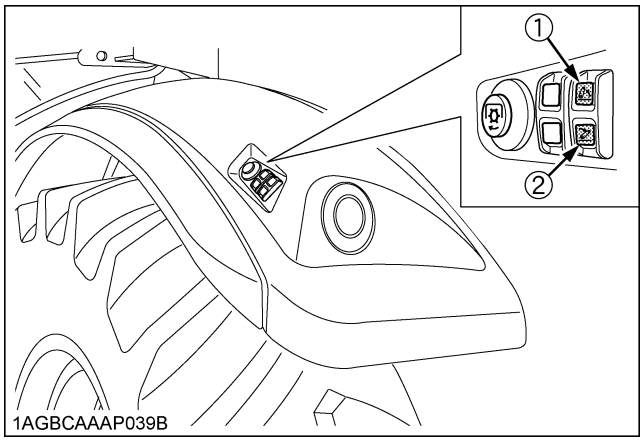
### ■Remote Hitch UP / DOWN Switch

### WARNING

**To avoid personal injury or death:**

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

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. 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-P. Lifting / Lowering indicator starts flashing (2 or so flash every second). If it flashing, press the 3-P. quick raise switch or 3-P. quick lower switch to release the position lock. (The indicator goes off or turns on.)

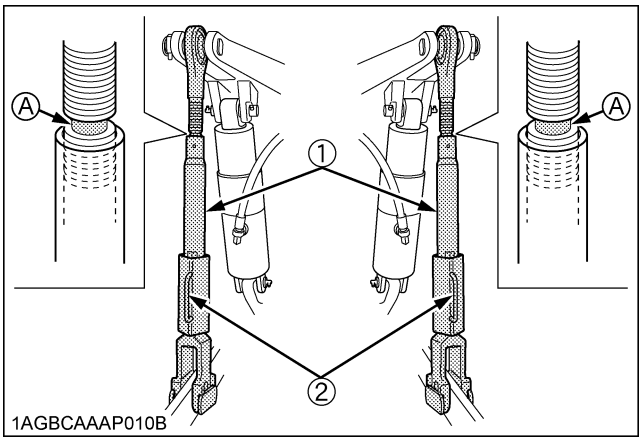
### ■Lifting Rod

### WARNING

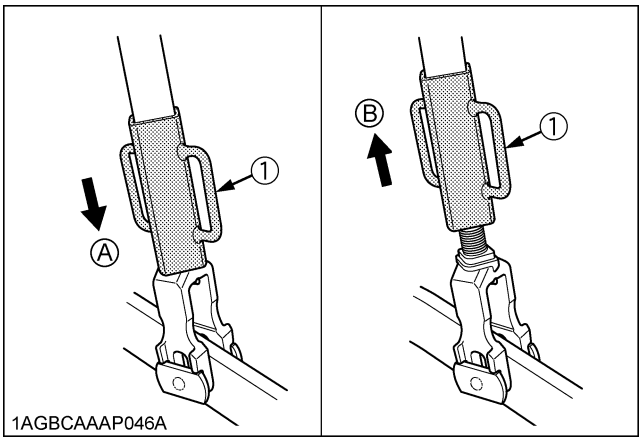
**To avoid personal injury or death:**

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

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




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




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

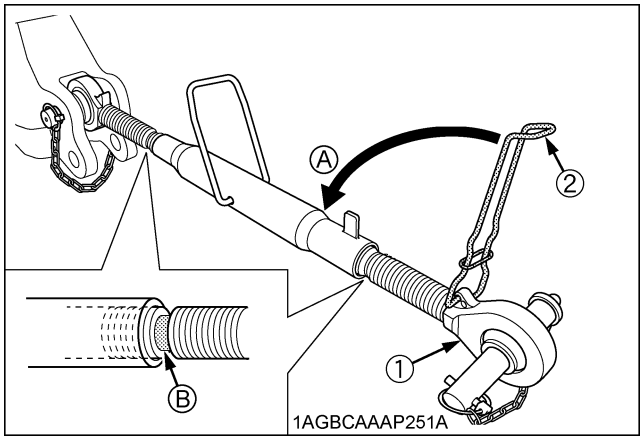
## ■Top Link

**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.**

1. Adjust the angle of the implement to the desired position by shortening or lengthening the top link.
2. Then return the lock handle to the "LOCK" position.
3. The proper length of the top link varies according to the type of implement being used.




*(1) Top link*
*(2) Lock handle*
*(A) "LOCK" position*
*(B) "GROOVE"*

## ■Stabilizer

The implements can be swung from side to side and get locked by attaching or detaching the lynch pin.

**◆ To swing the implement from side to side:**

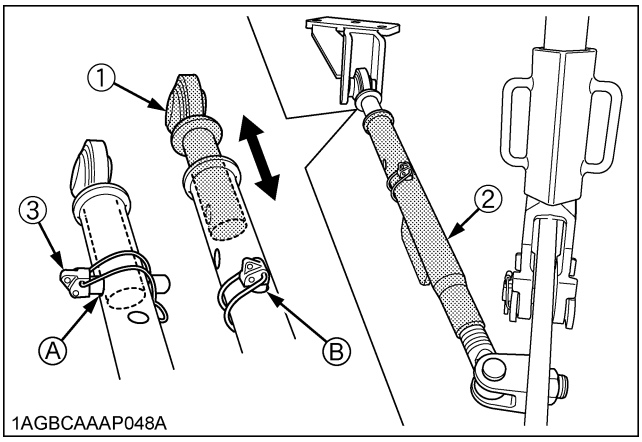
Pull the lynch pin out of the stabilizer's hole (A). Turn the stabilizer (2), as required, to readjust the swing range. (Put the drawn-out lynch pin into the hole (B) in order not to lose it.)

**◆ To keep the implement from swinging:**

Put the lynch pin into the stabilizer's hole (A). If the hole is out of alignment, turn the stabilizer (2) to realign the hole.

**◆ Adjusting the lower link's width**

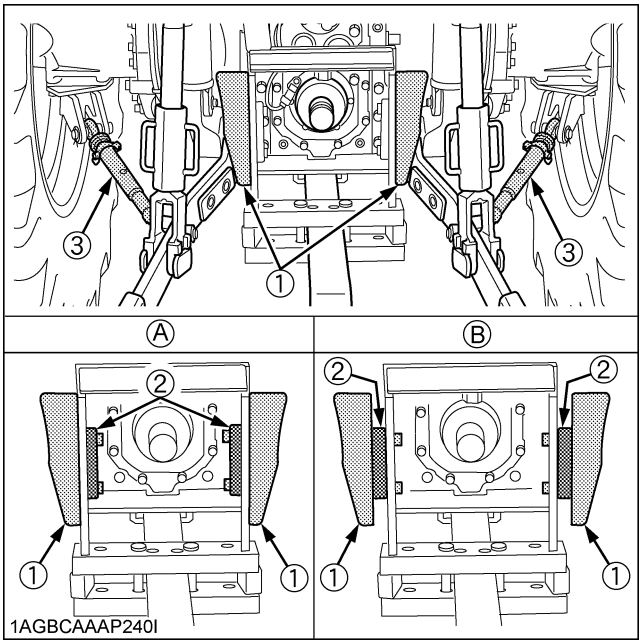
The 3-point hitch of this tractor is of Category 3. (The lower link is 1010 mm (40 in.) wide as a standard.)
Do not turn the stabilizer (2) unless otherwise necessary. The lower link's width may get out of spec.




*(1) Stabilizer (1)*
*(2) Stabilizer (2)*
*(3) Lynch pin*
*(A) A hole*
*(B) B hole*

## ■Sway Limitation Plate

When working with an implement for 3-point link (e.g. plow, disk harrow, etc.), the sway limitation plate allows the implement to move sideways when the lower link is at the work position (lowered), and regulates its sideways oscillation when lifted while swiveling, so that oscillation adjustment by an existing stabilizer is not required.
As a rule, when mounting an implement for Category 3N, where the matching width is narrow, remove the spacer; when mounting an implement for Category 3, where the matching width is wide, mount the spacer.



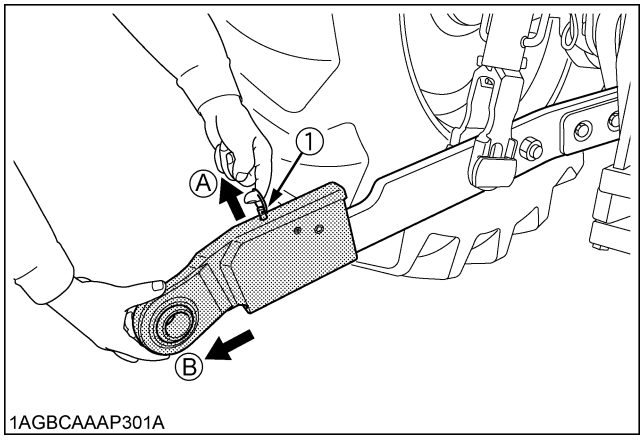

*(1) Sway limitation plate*
*(2) Spacer*
*(3) Stabilizer*
*(A) "CATEGORY 3N"*
*(B) "CATEGORY 3"*

**IMPORTANT :**
- When regulating sideways oscillation with the sway limitation plate, deactivate oscillation regulation with the stabilizer.
- Raise and lower the implement to check that the lower link does not make contact with the tires.

### ■Telescopic Lower Links

To attach an implement, follow the instructions below:

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



1AGBCAAAP301A

*(1) Lock pin*
*(A) "PULL"*
*(B) "PULL OUT"*

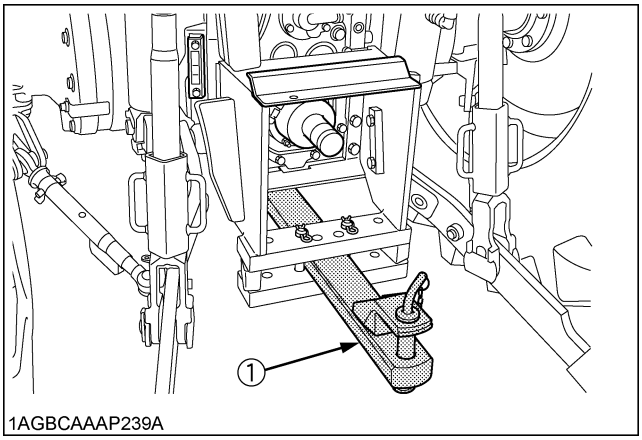
# DRAWBAR

**WARNING**

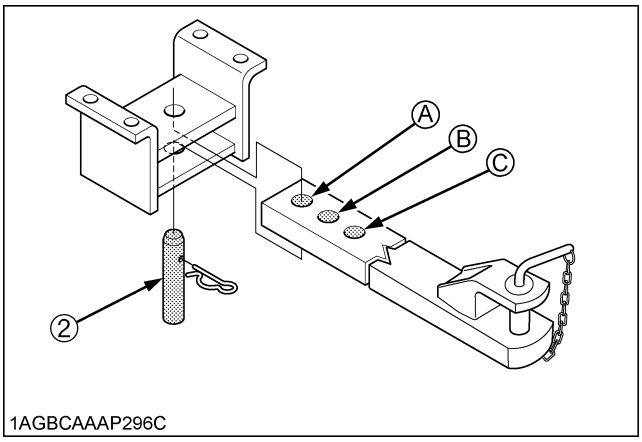
**To avoid personal injury or death:**
- **Never pull from the top link, the rear axle or any point above the drawbar. Doing so could cause the tractor to tip over rearward causing personal injury or death.**

### ■Adjusting Drawbar Length

The drawbar can be used in 3 positions.
The drawbar load is specified in the "IMPLEMENT LIMITATIONS" section.



1AGBCAAAP239A

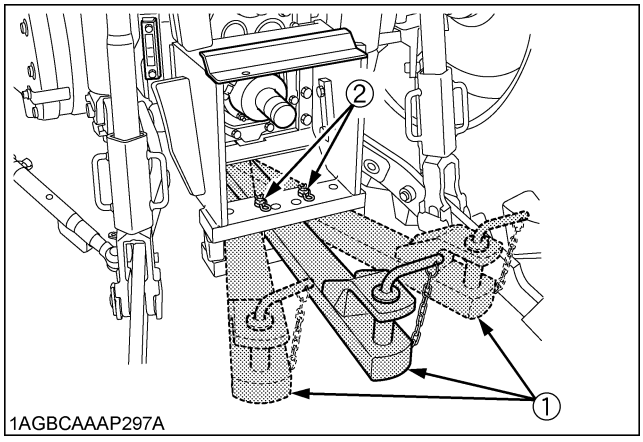


1AGBCAAAP296C

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

## ■Swing Drawbar

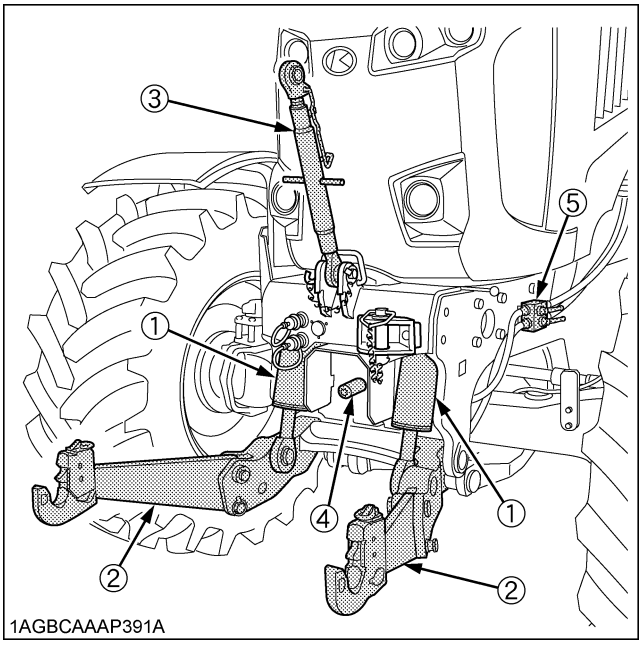
The drawbar can be used in 3 different ways as illustrated below. Assemble it correctly with locating pins.




*(1) Drawbar*
*(2) Locating pin*

# FRONT 3-POINT HITCH

**(if equipped)**




*(1) Lift cylinder*
*(2) Lower link*
*(3) Top link*
*(4) PTO*
*(5) Hydraulic selector valve*

## ■Outline

**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.

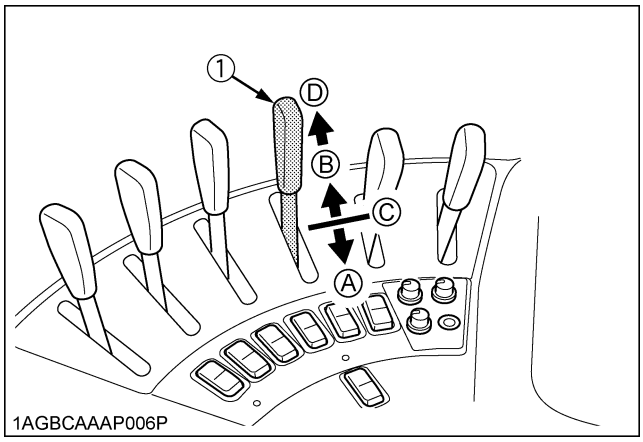
## ■Lift Control

The front 3-point hitch cylinder is connected with the remote control valve.

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.

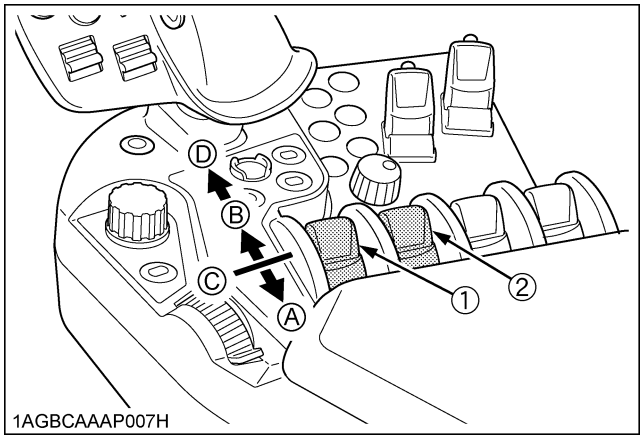
Release your hand from the lever or switch, and the lower link returns to its neutral position.

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"*

## ■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.

**◆ 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:**

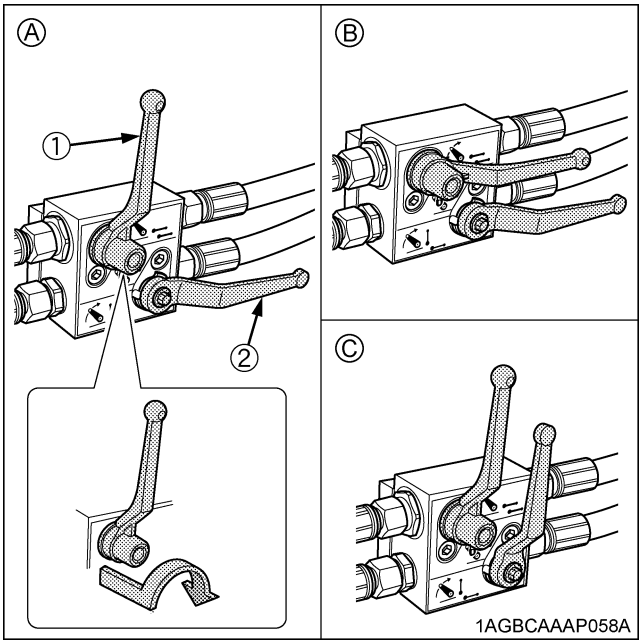
The lower link is hydraulically raised and lowered.

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 traveling on public roads and when the front 3-point hitch is not used.




*(1) Selector valve lever 1*
*(2) Selector valve lever 2*

*(A) "SINGLE-ACTING"*
*(B) "DOUBLE-ACTING"*
*(C) "LOCK"*

**NOTE :**

- For the lever (1), pull out its turning part outward and turn the lever.

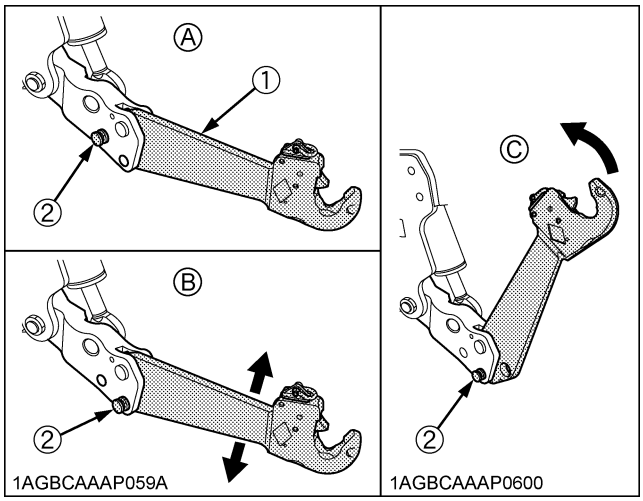
## ■Lower Link

The lower link is foldable. Set it correctly according to the relevant work.

◆ **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.).

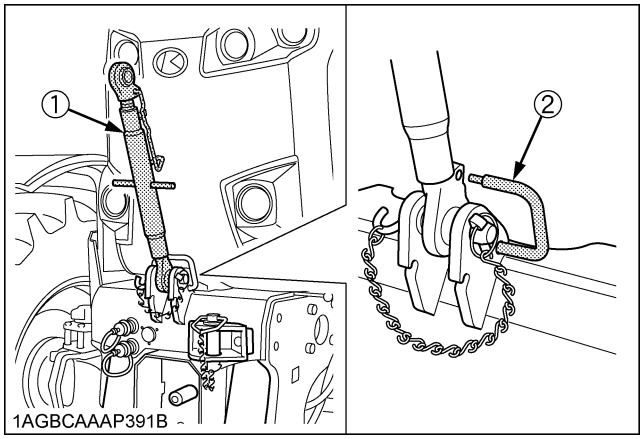
◆ **For transport and storage:**
Put the pin into the position shown below, and retract the cylinders completely.




*(1) Lower link*
*(2) Lock pin*
*(A) "GENERAL WORK"*
*(B) "FLOATING WORK"*
*(C) "TRANSPORT and STORAGE"*

## ■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.

1. Load sensing type mix draft control
2. Multiple-segment remote hydraulic control valves
3. Remote hydraulic control with flow control valve
4. Large-capacity external hydraulic power beyond port **[Premium, Premium KVT models]**
5. Load sensing variable-displacement hydraulic pump **[Premium, Premium KVT models]**

**IMPORTANT :**

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

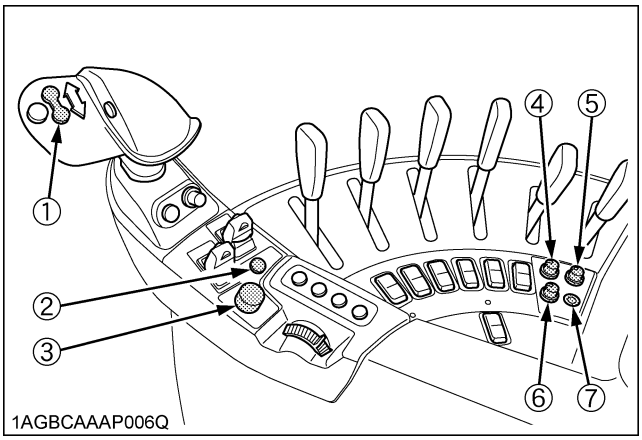
## 3-POINT HITCH CONTROL SYSTEM

### WARNING

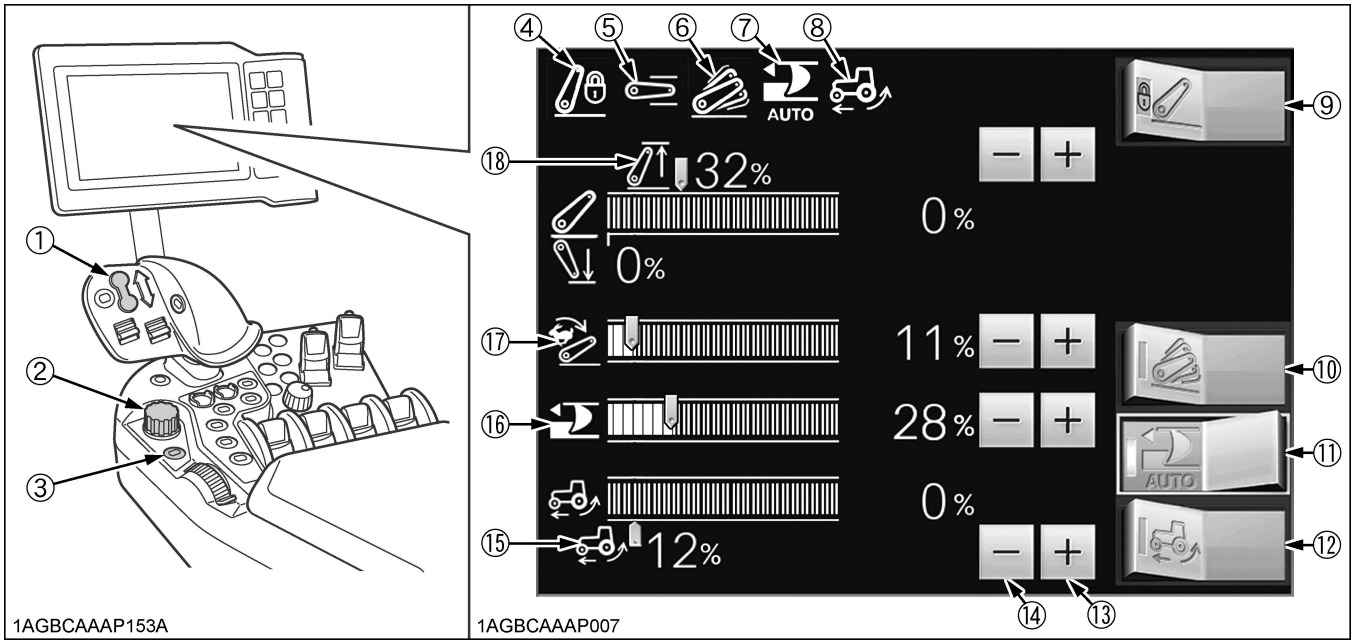
**To avoid personal injury or death:**

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

### ■Terminology




*(1) 3-P. quick raise/lower switch*
*(2) 3-point hitch lock button*
*(3) Depth control dial (Hydraulic 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*




*(1) 3-P. quick raise/lower switch*
*(2) Depth control dial (Hydraulic dial)*
*(3) 3-point hitch lock button*
*(4) 3-point hitch lock indicator*
*(5) 3-point hitch status indicator*
*(6) Ride control indicator*
*(7) Draft control indicator*
*(8) Wheel slip control indicator*
*(9) 3-point hitch lock switch*
*(10) Ride control switch*
*(11) Draft control switch*
*(12) Wheel slip control switch*
*(13) Plus (+) switch*
*(14) Minus (-) switch*
*(15) Wheel slip control*
*(16) Draft sensitivity control*
*(17) 3-point hitch lowering speed control*
*(18) Lift arm height control*

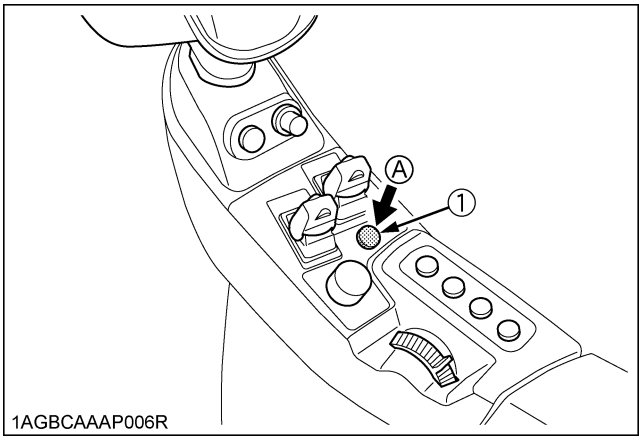
## ■3-Point Hitch Lock Button

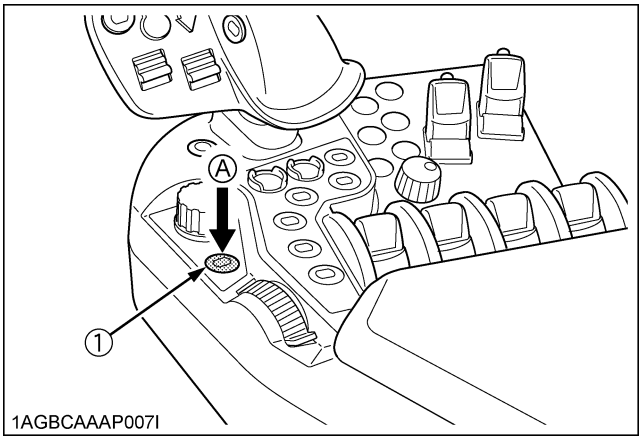
**WARNING**

**To avoid personal injury or death:**

- **Before checking 3-point mounted implement, be sure to lock the implement with the lock button. In such case, turn the depth control dial (hydraulic dial) toward down and make sure the implement does not drop.**
- **Before road traveling, be sure to lock the implement with the 3-point hitch lock button. If traveling 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 traveling on public roads, be sure to get the 3-point hitch locked to avoid accidental drop of the implement.
If traveling with the ride control (discussed later) on, unlock the 3-point hitch lock button.



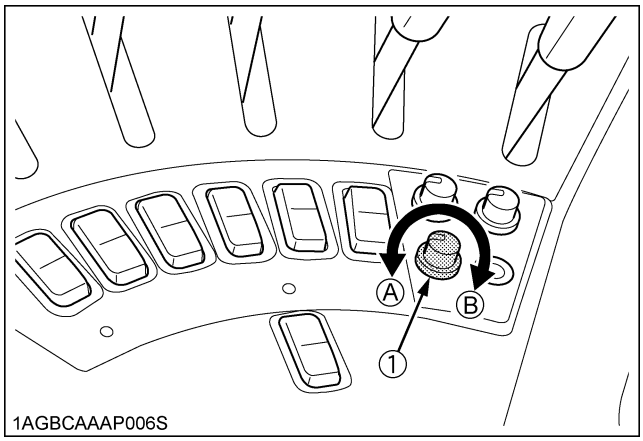

*(1) 3-point hitch lock button (A) PUSH*

## ■Position/Mix Draft Mode Select

Select the position control or the draft control depending on the types of work. Choose the draft control for jobs requiring traction such as plowing and sub-soiling.

**[Standard model]**

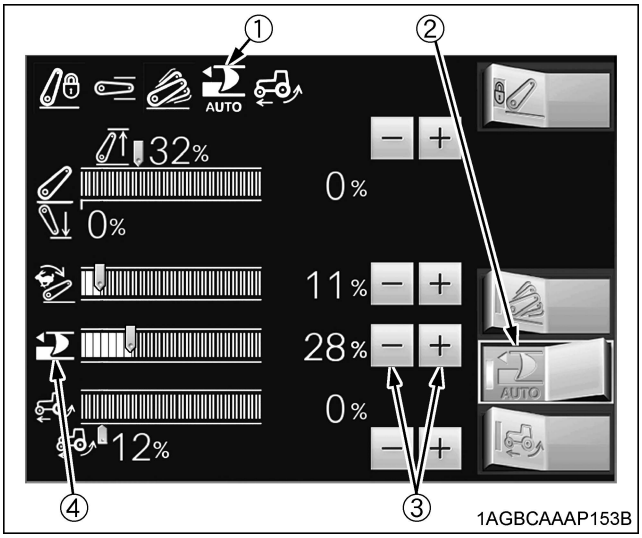
| | |
|---|---|
| ◆ Position control mode in use | Turn the dial fully counterclockwise. |
| ◆ Mix draft control mode in use | Turn the dial farther to the right to increase the percentage of work done in draft control versus that in position control. |




*(1) Draft ratio adjustment dial*
*(A) "Position control mode"*
*(B) "Mix draft mode"*

**[Premium, Premium KVT models]**

| | |
|---|---|
| ◆ Position control mode in use | Touch the right half of the draft control switch, and the position control mode is selected and the draft control indicator goes off. |
| ◆ Mix draft control mode in use | Touch the left half of the draft control switch, and the mix draft control mode is selected and the draft control indicator lights up. Extend the draft sensitivity adjustment graph farther to the right to increase the percentage of work done in draft control versus that in position control. |



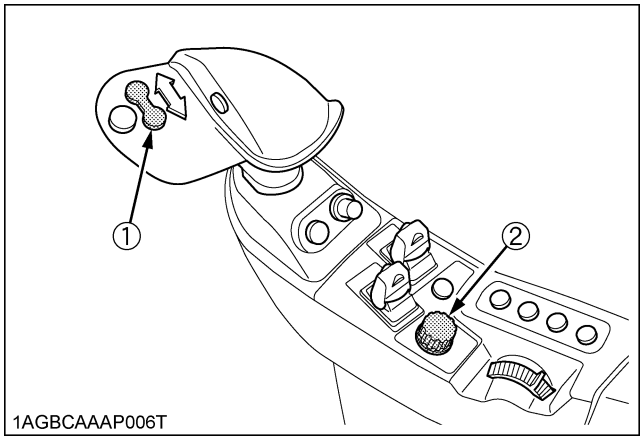

*(1) Draft control indicator*
*(2) Draft control switch*
*(3) Draft sensitivity adjustment switch*
*(4) Draft sensitivity control*

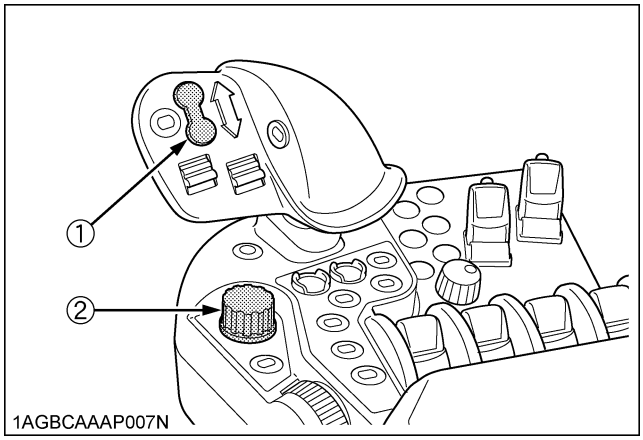
**NOTE :**

- For the setting procedure, refer to "Setting the 3-point hitch" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.

## ■Depth Control Dial (Hydraulic Dial)

1. The implement height (plowing depth) can be adjusted.
   For details, refer to the descriptions of the following position, mix draft and flow controls.
2. For traveling on public roads, keep the implement raised with the dial.
3. When the dial is preset for the implement to get to the lower limit, the 3-P. quick raise/lower switch can be used to raise and lower the implement.

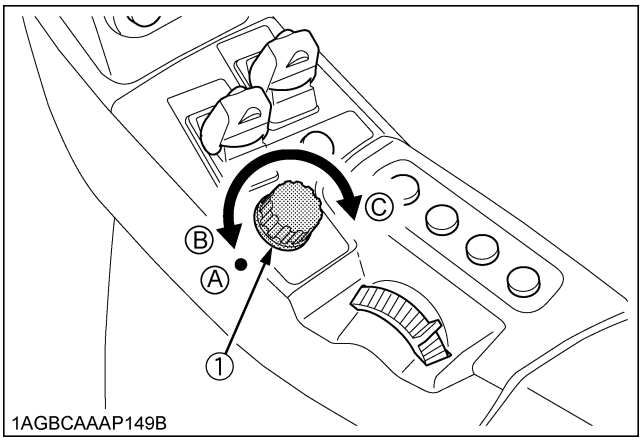


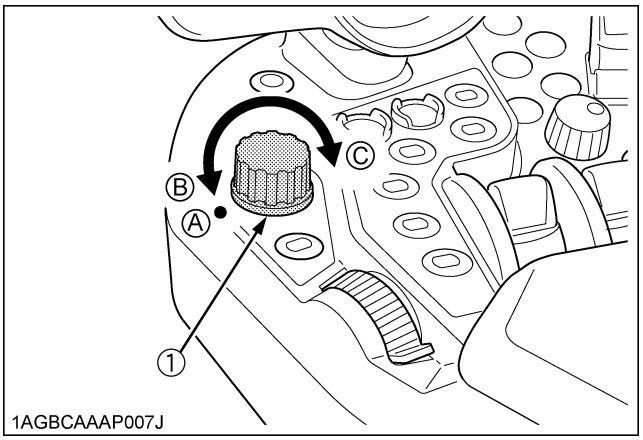




*(1) 3-P. quick raise/lower switch*
*(2) Depth control dial (Hydraulic dial)*

## ■Position Control Mode

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

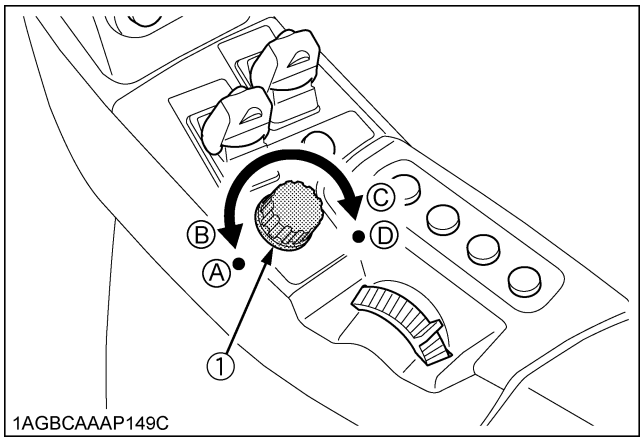


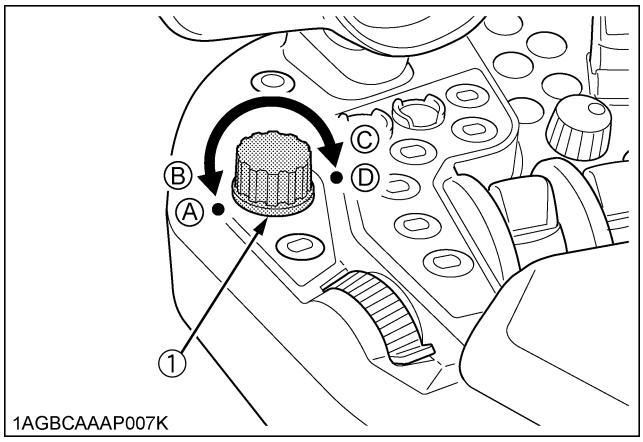

*(1) Depth control dial (Hydraulic dial)*
*(A) "FLOAT"*
*(B) "DOWN"*
*(C) "UP"*

## ■Mix Draft Control Mode

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 (hydraulic dial).



1AGBCAAAP149C



1AGBCAAAP007K

*(1) Depth control dial (Hydraulic dial)*
*(A) "FLOAT"*
*(B) "DEEP"*
*(C) "SHALLOW"*
*(D) "UP"*

◆ **Draft ratio adjustment dial**
◆ **Draft sensitivity adjustment switch**

During work in the draft mode, readjust the sensitivity with the dial or switch according to the plowing depth, the type of soil and other factors, referring to the table below.

| | | |
|---|---|---|
| Draft ratio adjustment dial **[Standard model]** | Turn the dial counterclockwise. | Turn the dial clockwise. |
| Draft sensitivity adjustment switch **[Premium, Premium KVT models]** | Retract the bar graph leftward with the (-) switch. | Extend the bar graph rightward with the (+) switch. |
| Plowing depth | Shallow | Deep |
| Type of soil | Light | Heavy |
| Field (ruggedness) | Little | Much |
| (Sensitivity) | (Low) | (High) |

## ■Float Control

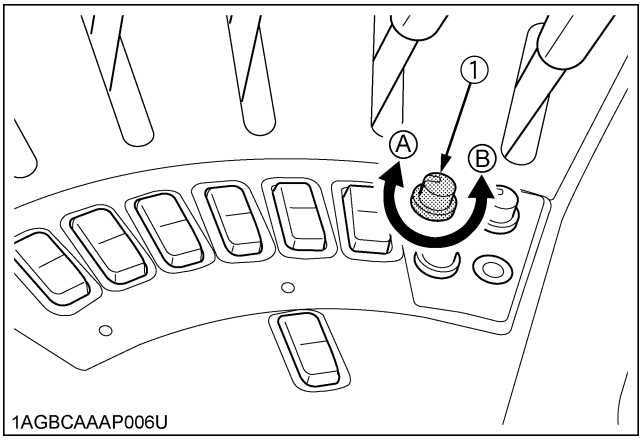
Place the depth control dial (hydraulic dial) in the float position (left-most) to make the lower links move freely along with the ground conditions.

## ■Lift Arm Top Limit Adjustment

Set for work in which a 3-point hitch top limit is required.

**[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.



1AGBCAAAP006U

*(1) Lift arm top limit adjustment dial*
*(A) "HIGH"*
*(B) "LOW"*

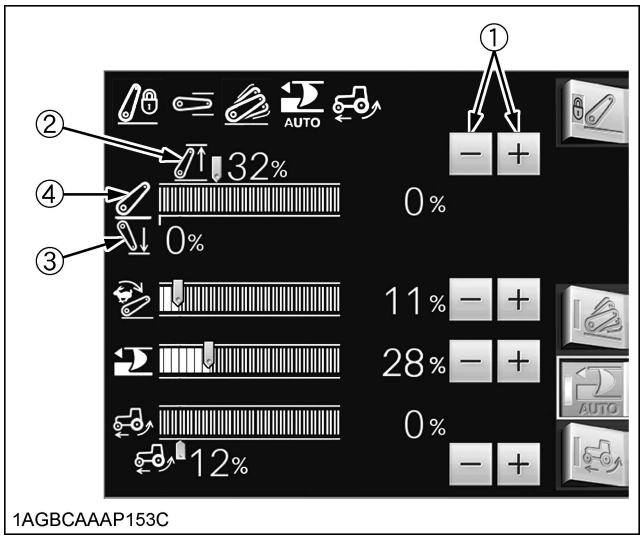
**[Premium, Premium KVT models]**

Using the (+) and (-) switches, the setting can be changed. (The setting is variable in the 30-100% range.)

Slide the slider to the right (increasing the value) to raise the top limit of the 3-point hitch.

When the setting has reached 100%, the top limit control is turned off.

For the setting procedure, refer to "Setting the 3-point hitch" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.




1AGBCAAAP153C

*(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)*

## ■3-Point Hitch Lowering Speed Adjustment

**WARNING**

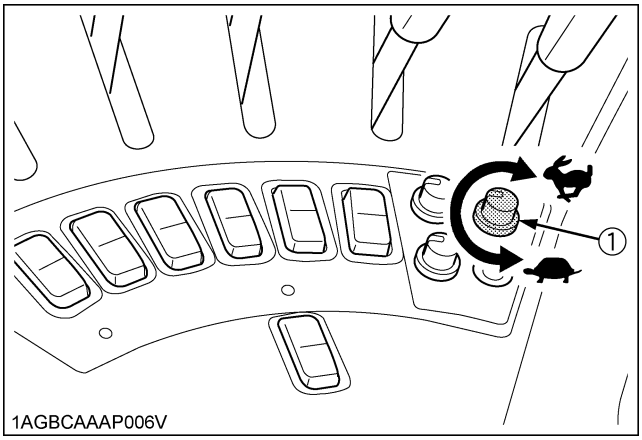
**To avoid personal injury or death:**

- **Fast lowering speed may cause damage or injury. Lowering speed of implement should be adjusted to 2 or more seconds.**

Adjust to the lowering speed suited for the implement in use.

**[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.




1AGBCAAAP006V

*(1) 3-point hitch lowering speed adjustment dial*

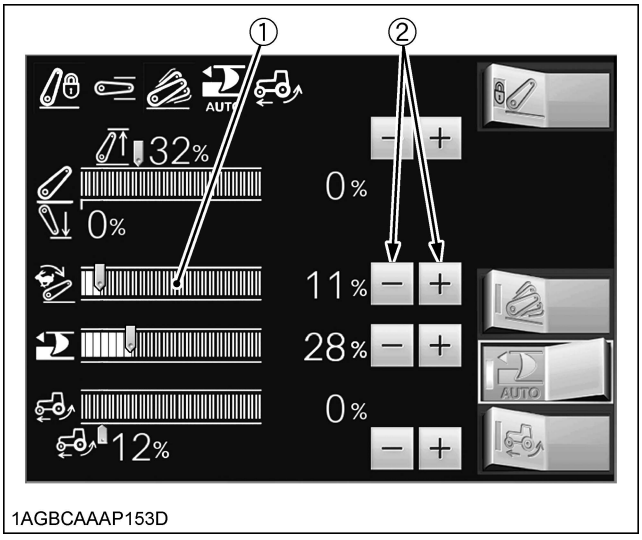
*"FAST"*
*"SLOW"*

**[Premium, Premium KVT models]**

Using the (+) and (-) switches, the setting can be changed.

The longer the bar graph is extended rightward, and the 3-point hitch's lowering speed will increase. The bar graph extracted shorter leftward, and the 3-point hitch's lowering speed will decrease.

For the setting procedure, refer to "Setting the 3-point hitch" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.




1AGBCAAAP153D

*(1) 3-point hitch lowering speed control*
*(2) 3-point hitch lowering speed adjustment switch*

## ■3-P. Quick Raise/Lower Switch

### WARNING

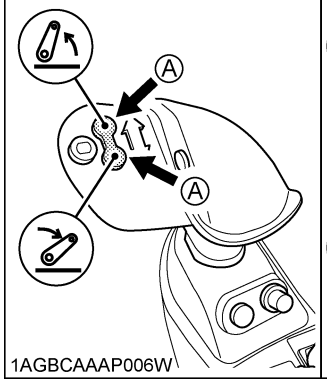
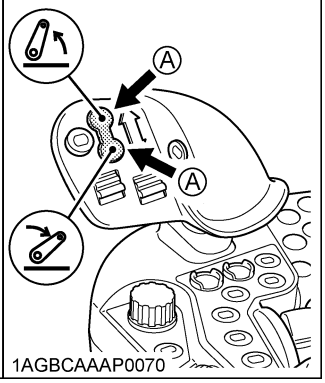
**To avoid personal injury or death:**

- **Before road traveling, be sure to lock the implement with the 3-point hitch lock button. If traveling with the ride control on, unlock the 3-point hitch lock button.**
- **Do not use the 3-P. quick raise/lower switch on road traveling.**
- **When an implement is changed, do not use the 3-P. quick raise/lower switch before checking the full range of operation for interference using the depth control dial (hydraulic dial).**

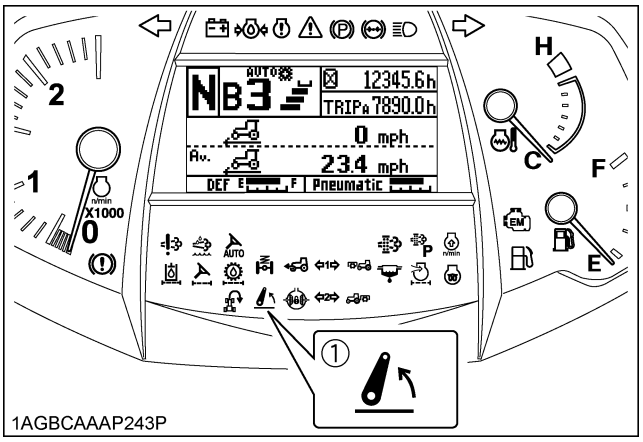
These switches are used to raise and lower the implement. This facilitates turning in the field.

Press the "RAISE" switch, the 3-P. Lifting/Lowering indicator lights up and the implement goes up. 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 (hydraulc dial) cannot function.

| [Standard model] | [Premium, Premium KVT model] |
|---|---|
|  |  |
| 1AGBCAAAP006W | 1AGBCAAAP0070 |

*3-P. Quick raise switch* *(A) "PUSH"*
*3-P. Quick lower switch*



1AGBCAAAP243P

*(1) 3-P. Lifting / Lowering Indicator*

**NOTE :**

1. 3-point hitch working range
   Set the depth control dial (hydraulic dial) for a bottom limit and the lift arm top limit adjustment dial or switch for a top limit. The 3-P. quick raise/lower switches are controls for the raising and lowering within the limits set by the depth control dial (hydraulic dial) and the lift arm top limit adjustment dial or switch.
2. One-touch floating function
   Hold down the "LOWER" switch to keep the 3-point hitch floating. This function is helpful in plowing, for example. Release the switch and the 3-point hitch returns to the draft control position.
3. "RAISE" and "LOWER" operation with the 3-point hitch going halfway
   (1) 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.
   (2) 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.
   (3) When the "RAISE" switch is pressed with the 3-point hitch going down halfway, the 3-point hitch goes up.

## ■3-Point Hitch's Position Lock

**◆ Position Lock**

If any of the following actions are made with the depth control dial (hydraulic dial) and the lower links at different heights, the position lock is activated. The 3-point hitch control is interrupted and the 3-P. Lifting/Lowering indicator starts flashing (2 or so flashes every second).

1. Starting the engine.
2. Activating the 3-P. Remote hitch Up/Down switch.
3. Unlocking the 3-point hitch lock button.

**◆ Releasing the position lock**

1. If applied, press the 3-P. quick raise switch or 3-P. quick lower switch.
2. Turn the depth control dial (hydraulic dial) to the same level as the lift arm height.

**NOTE :**

- When the position lock is released with the 3-P. Quick Raise / Lower switches, the 3-point hitch goes up or down.

## ■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.

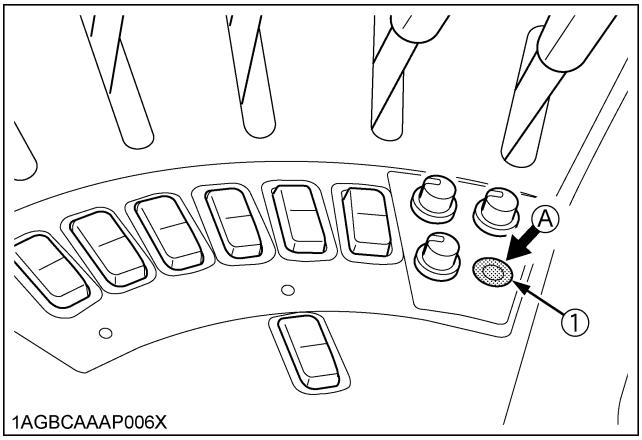
**◆ Ride control gets activated when the following conditions are met.**

1. The ride control switch is on.
2. The 3-point hitch lock button is unlocked.
3. The traveling 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.

**[Standard model]**

Press the ride control switch, and the switch indicator lights up and the ride control function gets activated.

Press the switch again, and the switch indicator goes off and the ride control function gets deactivated.




*(1) Ride control switch (A) "PUSH"*

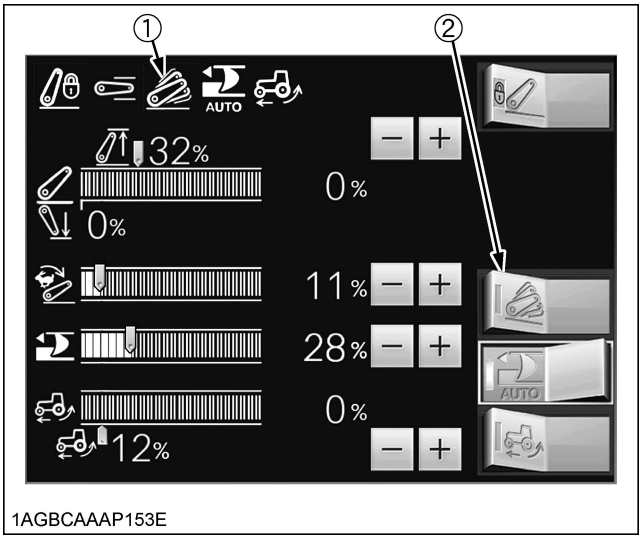
**[Premium, Premium KVT models]**

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.

Press the right half of the switch, and the indicator goes off and the ride control function gets deactivated.

For the setting procedure, refer to "Setting the 3-point hitch" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.




*(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: seizure of the transmission, for example.

## ■Power-beyond Type Hydraulic Outlet

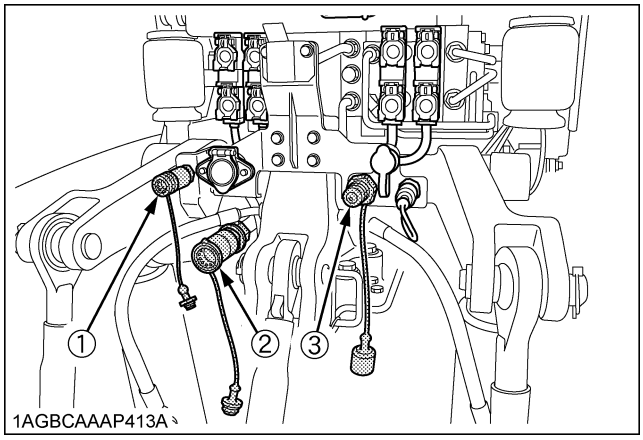
**(if equipped)**

**[Premium, Premium KVT models]**

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-center hydraulic valve, to this port.

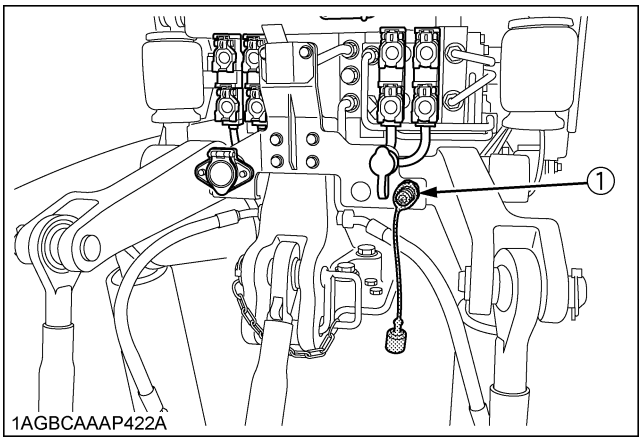
With all necessary hoses in place, the load sensing control hose serves to detect the load level as a negative one. The pump's flow rate is thus controlled to keep constant the load sensing differential pressure, which is the difference between the pump pressure and this negative pressure.




*(1) Load-sensing control hose connection*
*(2) Power-beyond connection (from pump)*
*(3) Return hose connection (from implement)*

## ■Hydraulic Drain Port

This port leads to a transmission case. When you want to return oil to a transmission case, connect the return hose to this port.




*(1) Drain hose connection (to gear box)*

# REMOTE HYDRAULIC CONTROL SYSTEM

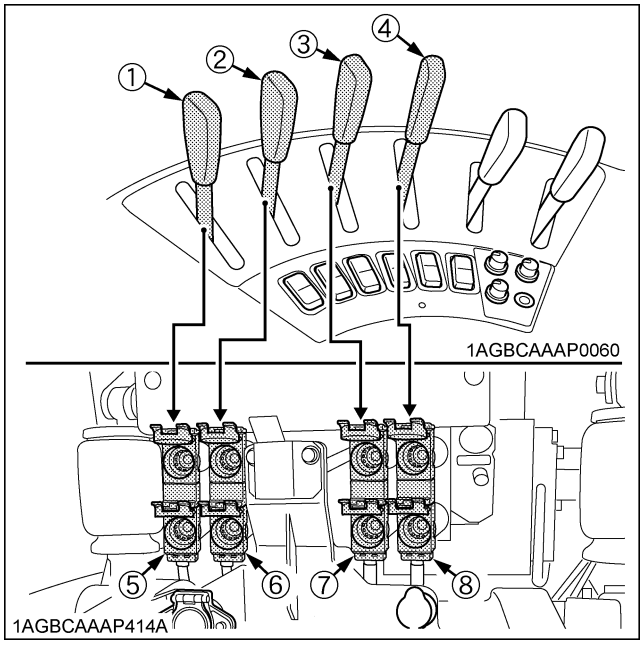
**IMPORTANT :**

- 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: seizure of the transmission, for example.

**OPERATION OF STANDARD MODEL**

## ■Remote Valve Controls

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*

## ■Remote Control Valve

There are 2 types of remote valves available for these models.

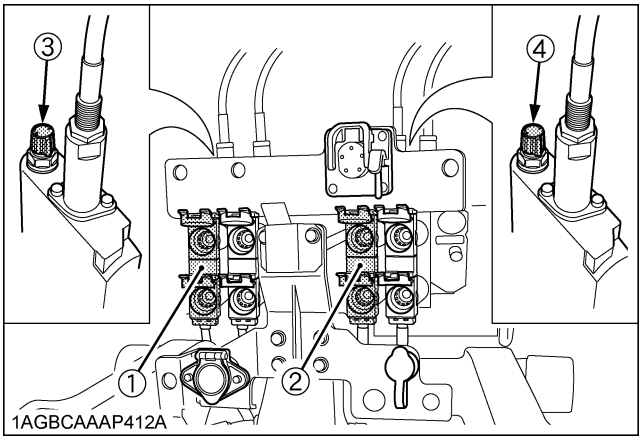
- Double acting valve with float position:
  This valve may be placed in the float mode with the control lever all the way forward. The cylinder is free to extend or retract, letting an implement such as a loader bucket follow the ground.
- Double acting valve with flow control and float position:
  This valve may be placed in the float mode with the control lever all the way forward. The cylinder is free to extend or retract, letting an implement such as a loader bucket follow the ground.
  The oil flow rate from the valve can be adjusted to suit the implement to be attached.

## ■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, flow control adjustment is changed.**



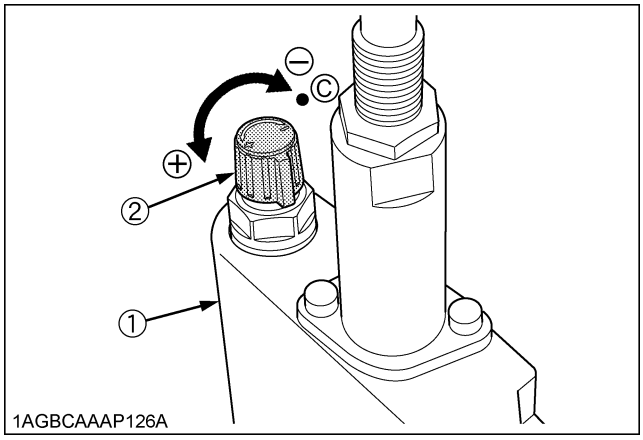

*(1) Remote control valve with flow control*
*(2) Remote control valve with flow control*
*(3) Flow control knob for valve (1)*
*(4) Flow control knob for valve (2)*

◆ **Adjusting the flow rate**

1. The flow rate for the remote control valve can be adjusted.
2. Turn the flow control knob counterclockwise (+), 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 (C), there will be no flow.
3. To adjust the flow rate, set the engine speed to the operating rpm, turn the flow control knob once all the way clockwise (C), and then turn it gradually counterclockwise until the required flow rate is reached.

**IMPORTANT :**

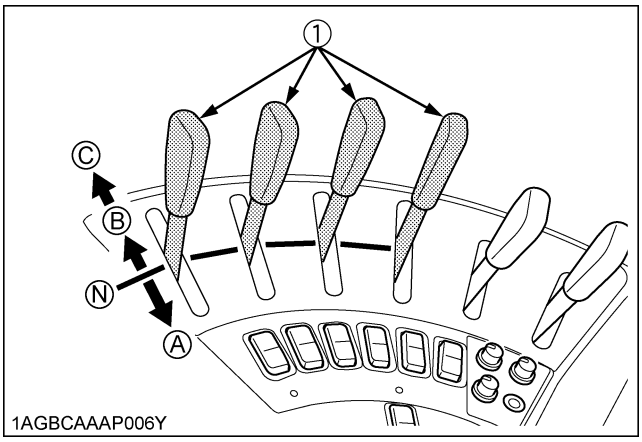
- When there is no need to adjust the flow rate, turn the flow control knob all the way counterclockwise and keep it in this position.




*(1) Remote control valve with flow control*
*(2) Flow control knob for valve*
*(+) "INCREASE"*
*(-) "DECREASE"*
*(C) "STOP"*

## ■Remote Control Valve Lever

The remote control valve lever directs pressurized 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.



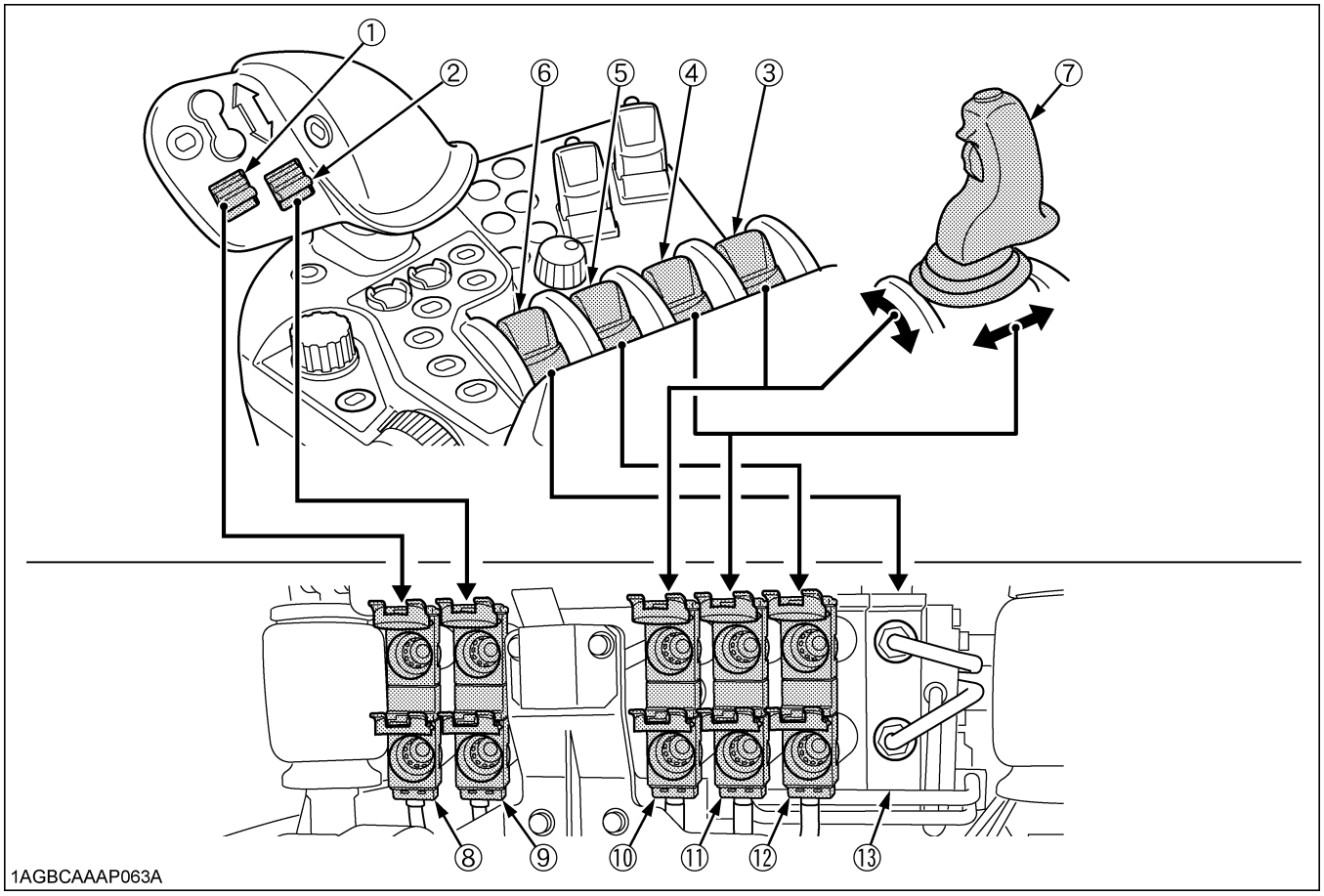

*(1) Remote control valve lever*
*(A) "EXTEND"*
*(B) "RETRACT"*
*(N) "NEUTRAL"*
*(C) "FLOAT"*

**OPERATION OF PREMIUM/PREMIUM KVT MODELS**

## ■Remote Valve Controls

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.




*(1) Remote control valve switch 1*
*(2) Remote control valve switch 2*
*(3) Remote control valve switch 3*
*(4) Remote control valve switch 4*
*(5) Remote control valve switch 5*
*(6) Remote control valve switch 6*
*(7) [Loader type]*
*Remote control valve switch (3-4)/Loader joystick*
*(8) Remote valve for switch 1*
*(9) Remote valve for switch 2*
*(10) Remote valve for switch 3*
*(11) Remote valve for switch 4*
*(12) Remote valve for switch 5*
*(13) Remote valve for switch 6*

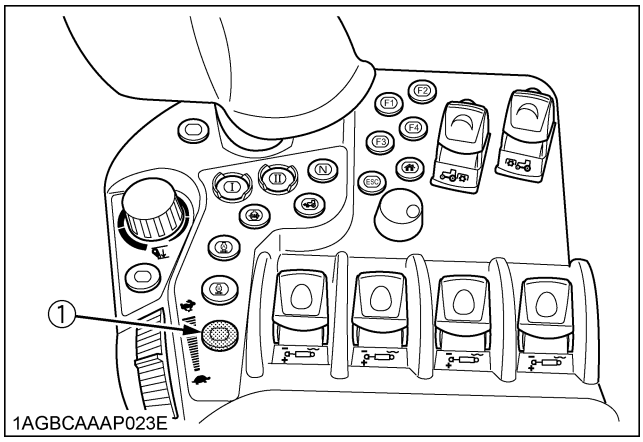
## ■Remote Control Valve Lock Button

**WARNING**

**To avoid personal injury or death:**

- **Before road traveling, 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.




*(1) Remote control valve lock button*

## ■Detailed Setting of Remote Control Valves

All the remote control valves can be preset in detail and their settings can be confirmed.

For the setting procedure, refer to "Setting the Remote Control Valve" in "K-MONITOR" in "INTELLIPANEL(TM) CONTROL" section.

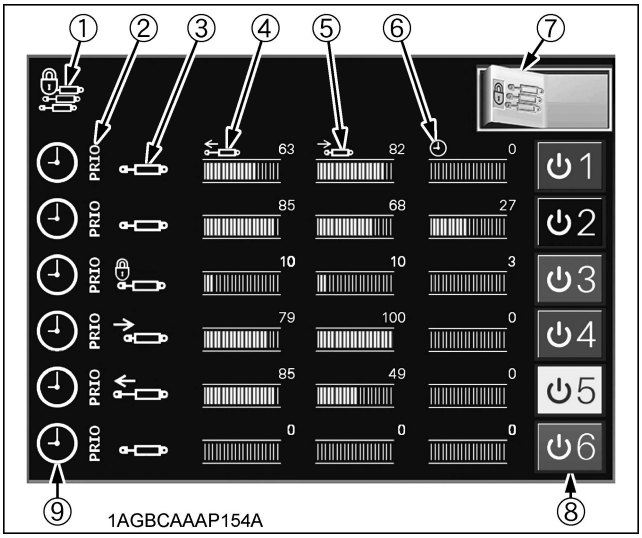
### ◆ Locking and unlocking all the remote control valves

Touch the left half of the switch (7), and all the remote control valves are locked and cannot be used for raising and lowering. 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

Touch any of the remote control valves lock/unlock switches (8), and the relevant remote control valve can be locked and unlocked. (The figure below shows that the 3rd segment is being locked.)




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

◆ **Flow rate and timer**

The flow rate in both directions of the remote control cylinders and their operating time can be preset (timer-controlled).

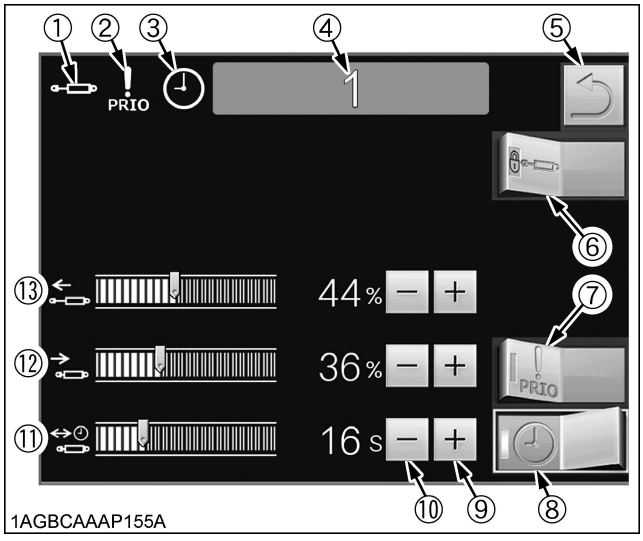
**NOTE :**

- 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 preset 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 canceling.

◆ **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 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/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*

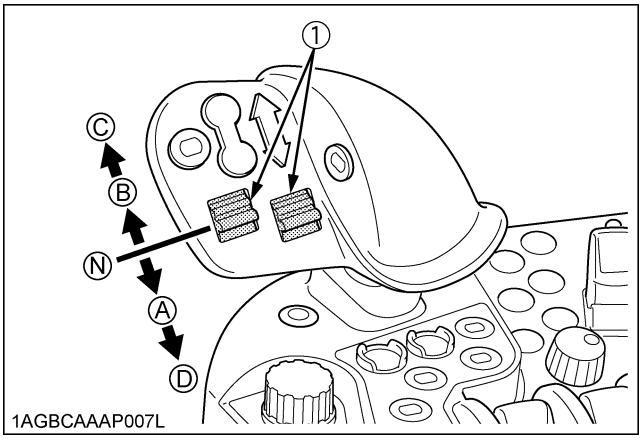
## ■Remote Control Valve Switch

The remote control valve switches direct pressurized 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.

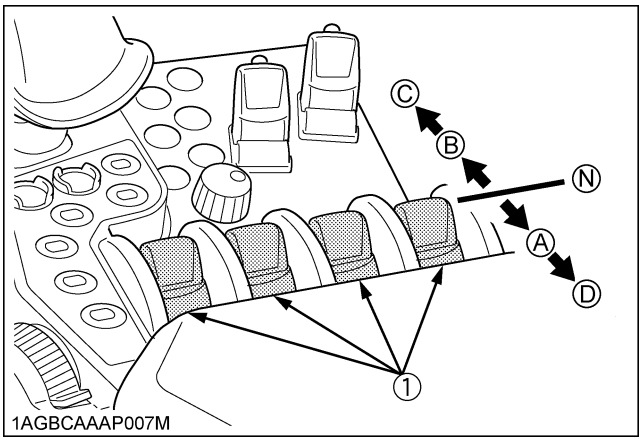



*(1) Remote control valve switch*

*(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"*

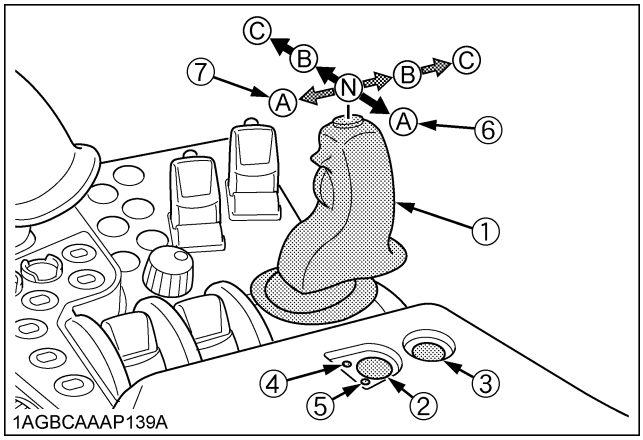
## ■Joystick for Remote Control Valve and Loader

**[Loader model]**

Using the joystick, the loader and the hydraulic remote control valves (3rd/4th) can be operated.

Each time you press the selection button, the remote control and the loader mode switch, and the respective indicator lights up.

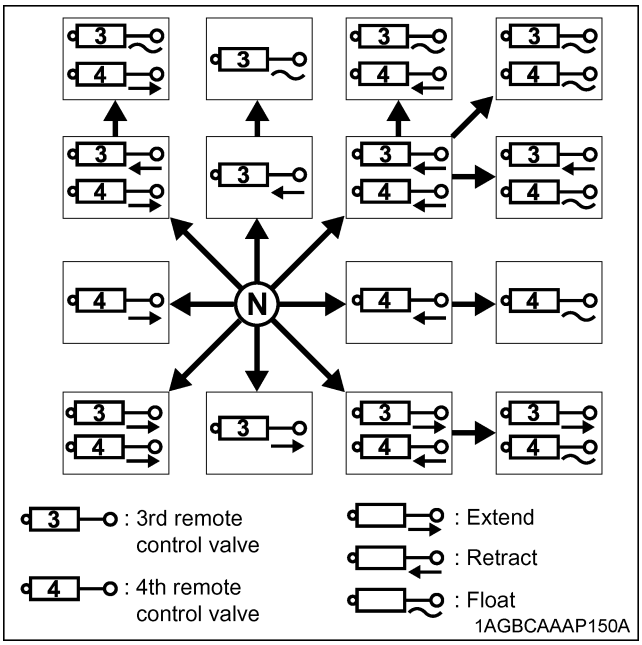
If no such operation is needed, lock the joystick with its lock button.




*(1) Joystick for remote control valve and loader*
*(2) Selection button for remote control valve and loader*
*(3) Joystick lock button*
*(4) Loader mode indicator*
*(5) Remote control valve mode indicator*
*(6) 3rd valve operation*
*(7) 4th valve operation*
*(A) "EXTEND"*
*(B) "RETRACT"*
*(N) "NEUTRAL"*
*(C) "FLOAT"*

**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.

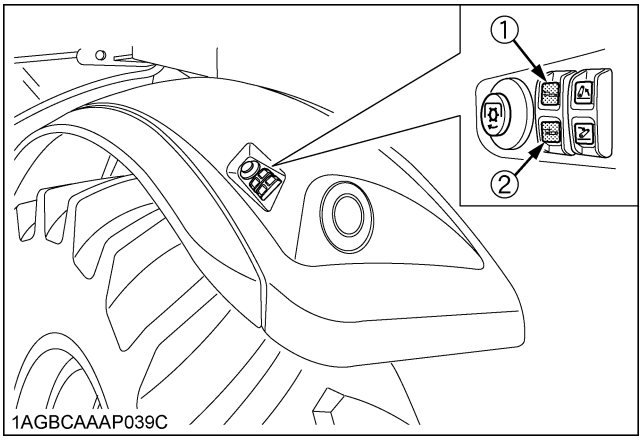



## ■Remote Control Valve Controls on the Rear Fender

The left and right tire 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*

**COMMON OPERATION OF STANDARD/PREMIUM/PREMIUM KVT MODELS**

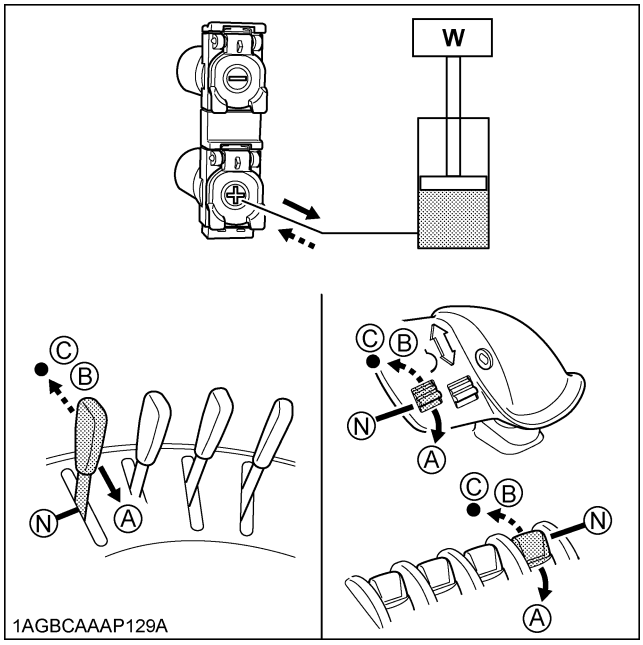
## ■Oil Flow

◆ **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.
   To retract a single-acting cylinder, move the lever or switch to float (C) position.

**IMPORTANT :**

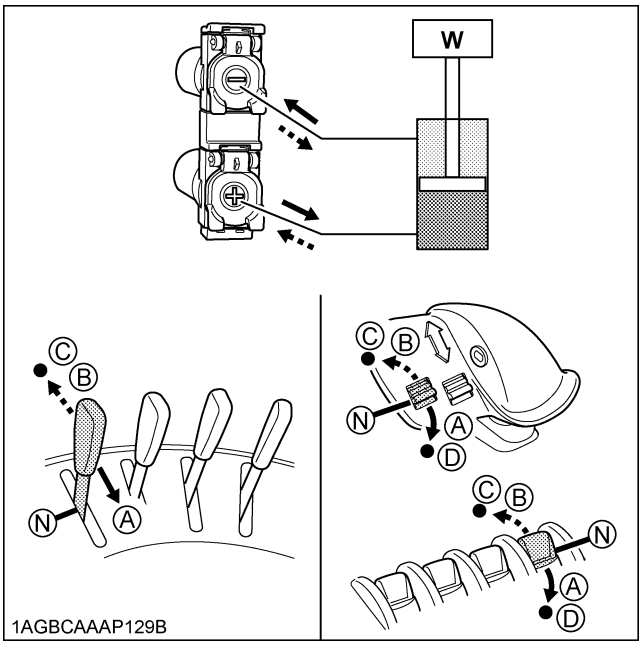
- Always use the float (C) position to lower a single acting cylinder. The retract (B) position is for double acting cylinders only.
- Do not hold the lever or switch in the extend (A) position once the remote cylinder has reached the end of the stroke, as this will cause oil to flow through the relief 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**

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)

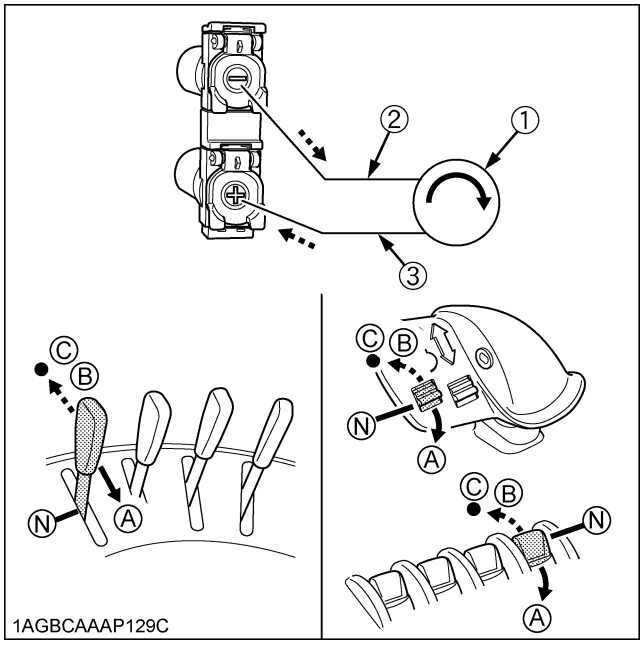
- Set the switch to the "DETENT" position, and it is held at this position unless it is returned to the "NEUTRAL" position.
  This function is useful for implements that need constant oil feed.

◆ **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.
   Move the lever or switch to retract (B) position to operate the motor.
   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"*

## ■Remote Control Valve Coupler Connecting and Disconnecting

**WARNING**

**To avoid personal injury or death:**

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

◆ **Connecting**

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

◆ **Disconnecting**

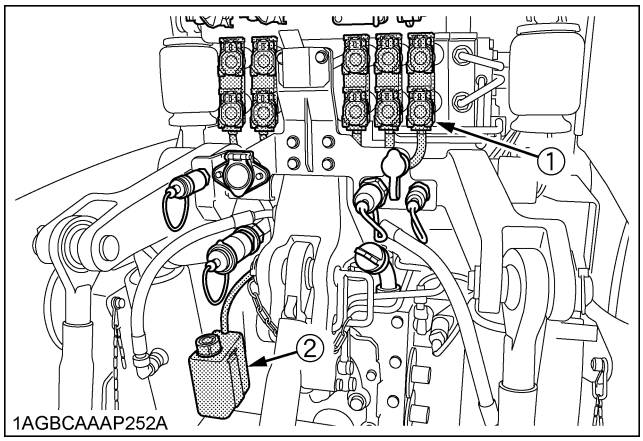
1. Lower the implement first to the ground to release hydraulic pressure in the hoses.
2. Clean the couplers.
3. Relieve pressure by moving hydraulic control levers with engine shut off. Pull the hose straight from the hydraulic coupler to release it.
4. Clean oil and dust from the coupler, then replace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

**NOTE :**

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

## ■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.




*(1) Collector cap*
*(2) Oil tank*

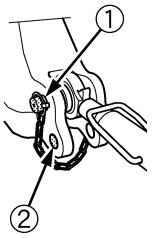
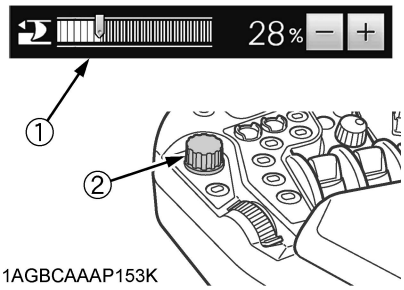
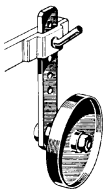
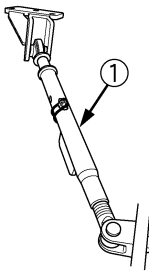
**IMPORTANT :**

- Oil recovered contains dust and water. Do not pour such oil back into the transmission case.

## ■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.

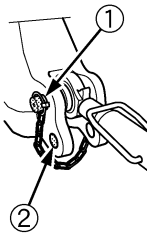
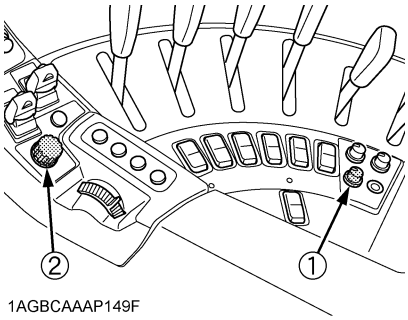
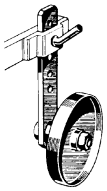
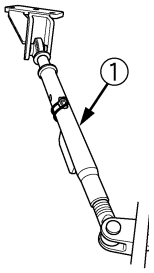
**[Premium, Premium KVT models]**

| Implement |  1AGAIAZAP122A<br>Soil condition |  1AGBCAAAP044B<br>Top link mounting holes |  1AGBCAAAP153K<br>(1) Draft sensitivity adjustment switch | (2) Depth control dial (Hydraulic dial) |  1AGAIAZAP070A<br>Gauge wheel |  1AGBCAAAP048C<br>(1) Stabilizers |
|---|---|---|---|---|---|---|
| Moldboard plow | Light soil<br>Medium soil<br>Heavy soil | 2 | Extend the graph to the right. (Readjust according to the plowing depth or the soil condition.) | Turn the dial to the suitable position | YES/NO | Un-lock |
| Disc plow | --- | | | | | |
| Harrower (spike, springtooth, disc type) | --- | | | | | |
| Sub-soiler..... | | | | | | |
| Weeder, ridger..... | --- | 1 | Set to the 0% level. | Turn the dial to the suitable position | YES | Lock |
| Earthmover, digger, scraper, manure fork, rear carrier..... | | | | | YES/NO | |
| Mower (mid- and rear-mount type) Hayrake, tedder..... | | | | | 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.

**[Standard model]**

| Implement |  <br>1AGAIAZAP122A<br>Soil condition |  <br>1AGBCAAAP044B<br>Top link mounting holes |  <br>1AGBCAAAP149F<br>(1) Draft ratio adjustment dial (Draft sensitivity adjustment) | (2) Depth control dial (Hydraulic dial) |  <br>1AGAIAZAP070A<br>Gauge wheel |  <br>1AGBCAAAP048C<br>(1) Stabilizers |
|---|---|---|---|---|---|---|
| Moldboard plow | Light soil<br>Medium soil<br>Heavy soil | 2 | Turn the dial clockwise. (Readjust according to the plowing depth or the soil condition.) | Turn the dial to the suitable position | YES/NO | Un-lock |
| Disc plow | --- | | | | | |
| Harrower (spike, springtooth, disc type) | --- | | | | | |
| Sub-soiler..... | | | | | | |
| Weeder, ridger..... | --- | 1 | Turn the dial fully counterclockwise. | Turn the dial to the suitable position | YES | Lock |
| Earthmover, digger, scraper, manure fork, rear carrier..... | | | | | YES/NO | |
| Mower (mid- and rear-mount type) Hayrake, tedder..... | | | | | 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.

# TIRES, WHEELS AND BALLAST

## TIRES

### WARNING

**To avoid personal injury or death:**

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

**IMPORTANT :**

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

### ■Inflation Pressure

Though the tire pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Thus, check it everyday and inflate as necessary.

**NOTE :**

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

| | Tire sizes | Inflation Pressure |
|---|---|---|
| Front | 14.9R28 (380/85R28) | 160 kPa (23.2 psi.) |
| | 14.9R30 (380/85R30) | 160 kPa (23.2 psi.) |
| | 16.9R28 (420/85R28) | 160 kPa (23.2 psi.) |
| | 540/65R28 | 160 kPa (23.2 psi.) |
| | 320/85R34 | 240 kPa (34.8 psi.) |
| Rear | 18.4R38 (460/85R38) | 160 kPa (23.2 psi.) |
| | 18.4R42 (480/80R42) | 160 kPa (23.2 psi.) |
| | 650/65R38 | 160 kPa (23.2 psi.) |
| | 380/90R46 | 240 kPa (34.8 psi.) |
| | 420/80R46 | 240 kPa (34.8 psi.) |

## WHEEL ADJUSTMENT

### WARNING

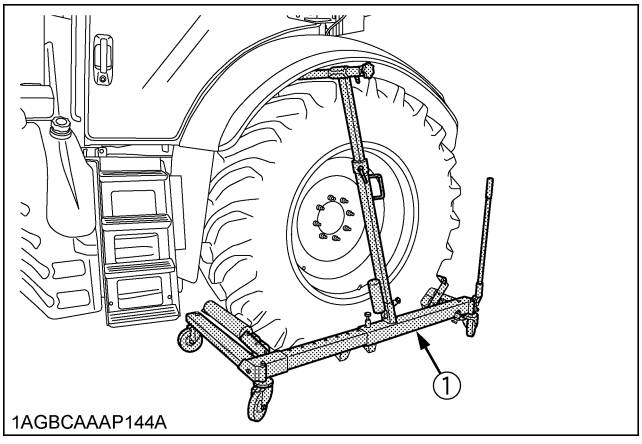
**To avoid personal injury or death:**

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

### ■Safe Replacement of the Wheel

The wheel is heavy. Take the following precautions when removing the wheel.

1. Park the tractor on a solid, level place.
2. Apply the parking brake and use chocks.
3. In detaching the rear wheels, apply a wedge in place to keep the front axle from oscillating.
4. Use a jack or the like that withstands the relevant weight.
5. Use an appropriate tire remover.
6. Tighten the bolts and nuts to their specified torques.




*(1) Tire remover*

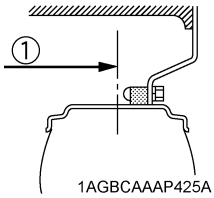
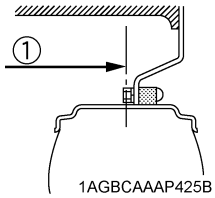
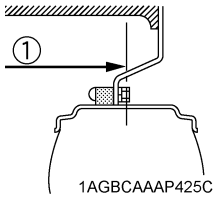
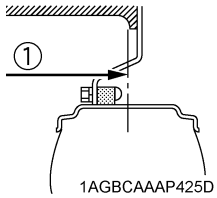
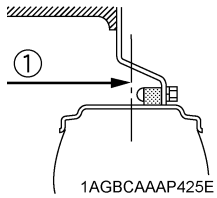
## ■Front Wheels (with 4-wheel drive)

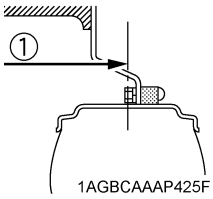
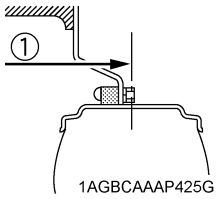
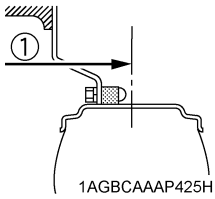
Front tread width can be adjusted as shown with the standard equipped tires.

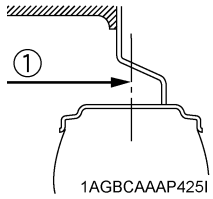
To change the tread width

1. Remove the wheel rim and disk mounting bolts.
2. Change the position of the rim and disk (right and left) to the desired position, and tighten the bolts.
3. Adjust the toe-in [0 to 8mm (0.0 to 0.3 in.)]
   See "Adjusting Toe-in" in "EVERY 200 HOURS" in "PERIODIC SERVICE" section.

**[Front]**

| *(1) Tread*  1AGBCAAAP425A |  1AGBCAAAP425B |  1AGBCAAAP425C |  1AGBCAAAP425D |  1AGBCAAAP425E |
|---|---|---|---|---|
| 380/85R28<br>320/85R34<br>380/85R30<br>420/85R28 | 1536 mm<br>(60.5 in.) | 1637 mm<br>(64.5 in.) | 1739 mm<br>(68.5 in.) | 1840 mm<br>(72.5 in.) | 1942 mm<br>(76.5 in.) * |

| *(1) Tread*  1AGBCAAAP425F |  1AGBCAAAP425G |  1AGBCAAAP425H |
|---|---|---|
| 380/85R28<br>320/85R34<br>380/85R30<br>420/85R28 | 2044 mm<br>(80.5 in.) | 2145 mm<br>(84.5 in.) | 2247 mm<br>(88.5 in.) |

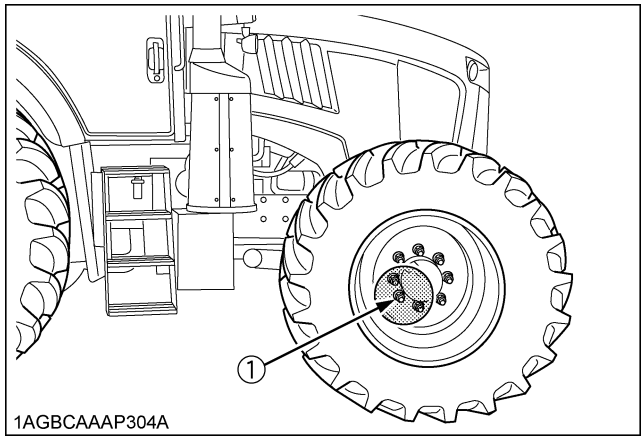
| *(1) Tread*  1AGBCAAAP425I | |
|---|---|
| 540/65R28 | 1914 mm<br>(75.4 in.) * |

*: Recommended tread width with front loader operation.

- Adjust steering stop bolt to ensure tires do not contact the tractor frame or implement.

**IMPORTANT :**

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

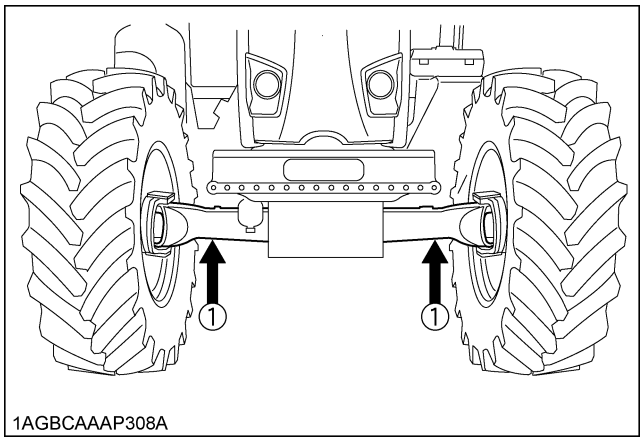



*(1) 540 N-m (55.1 kgf-m) (398 ft-lbs.)*

## WARNING

**To avoid personal injury or death:**

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



1AGBCAAAP308A

*(1) Jack points*

## ■Adjusting Front Wheel Turning Stopper Bolt

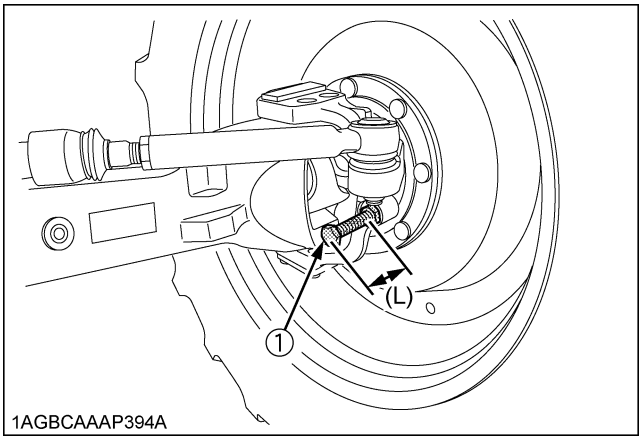
Check the front wheel turning angle each time the front wheels are changed.

Proceed as follows:

1. Apply the parking brake.
2. Immobilize the tractor using wheel chocks.
3. Raise the front of the tractor.
4. 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.

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 hood or loader frame.

If necessary, adjust the stopper bolts.



1AGBCAAAP394A

*(1) Stopper bolt*

| | Bolt length (L) |
|---|---|
| 14.9R28 (380/85R28) | 85 mm (3.35 in.) |
| 14.9R30 (380/85R30) | |
| 16.9R28 (420/85R28) | |
| 320/85R34 | |
| 540/65R28 | 65 mm (2.56 in.) |

## ■Rear Wheels with Flange Type Axle

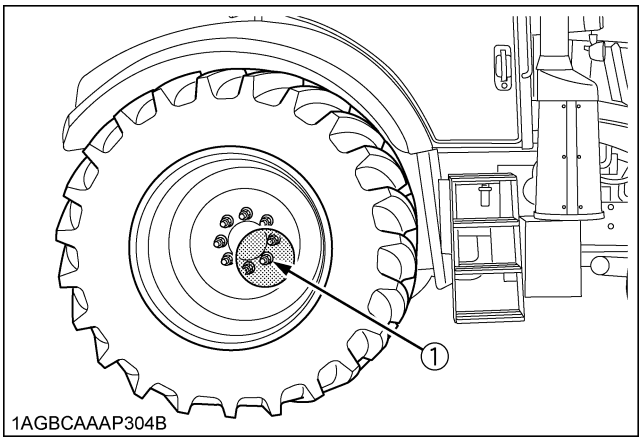
Rear tread width can be adjusted as shown with the standard equipped tires.

To change the tread width

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

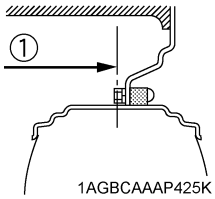
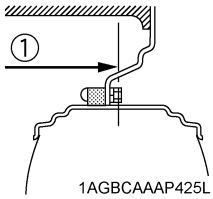
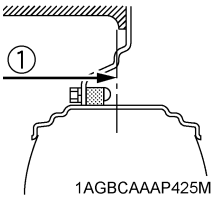
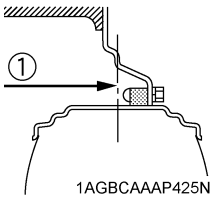
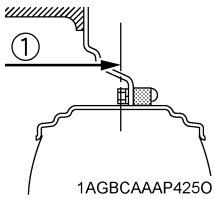
**IMPORTANT :**

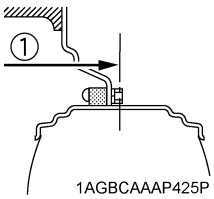
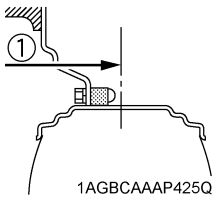
- Always attach wheels as shown in the drawing.
- If not attached as illustrated, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor 200m (200 yards) and 10 times of shuttle movement by 5 m (5 yards),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

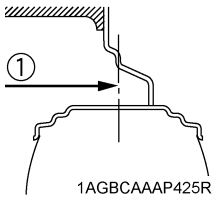



*(1) 670 N-m (68.3 kgf-m) (494 ft-lbs.)*

**[Rear]**

| *(1) Tread*   | |   |   |   |   |
|---|---|---|---|---|---|
| 460/85R38<br>380/90R46<br>420/80R46 | 1482 mm<br>(58.3 in.) | 1577 mm<br>(62.1 in.) | 1685 mm<br>(66.3 in.) | 1780 mm<br>(70.1 in.) | 1888 mm<br>(74.3 in.) * |
| 480/80R42 | - | | | | |

| *(1) Tread*   |   |
|---|---|
| 460/85R38<br>380/90R46<br>420/80R46<br>480/80R42 | 1983 mm<br>(78.1 in.) | 2091 mm<br>(82.3 in.) |

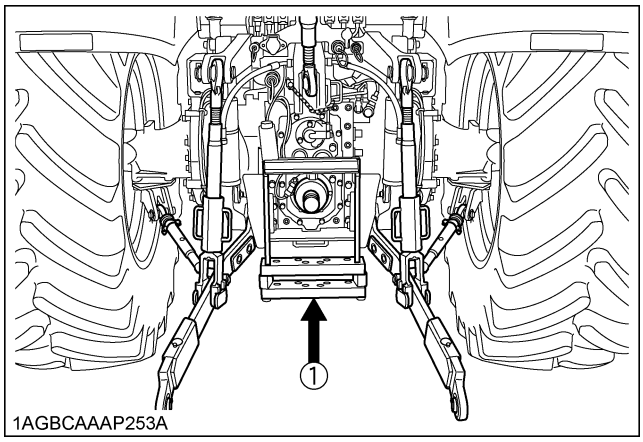
| *(1) Tread*   | |
|---|---|
| 650/65R38 | 1850 mm<br>(72.8 in.) * |

*: Recommended tread width with front loader operation.

## 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 a jack that withstands the machine weight and set it up as shown below.**



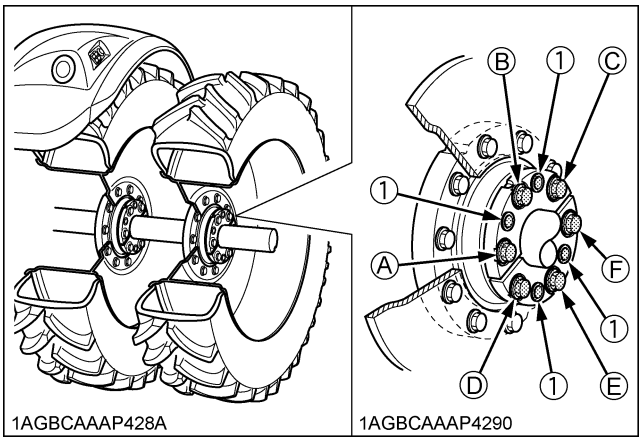

*(1) Jack point*

### ■Rear Wheels with Bar Type Axle

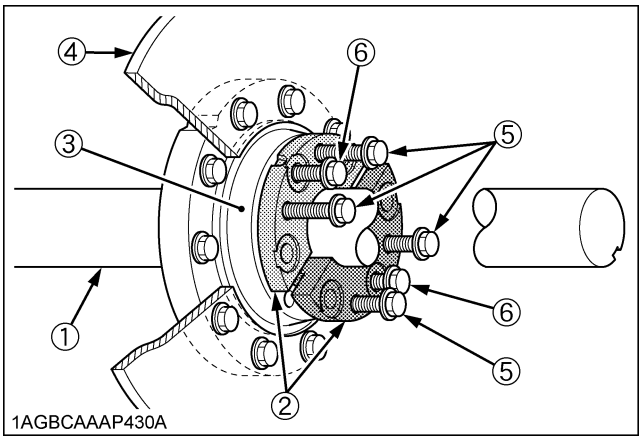
Rear tread width can be adjusted as shown with the standard equipped tires.

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 6 bolts. Remove 4 bolts (A, C, D, F) and loosen the other two (B, E).
4. Apply the removed 4 bolts into the jack bolt holes. Tighten up these 4 bolts evenly and draw out the tire flange.
5. Slide the wheel to a desired tread width.
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*



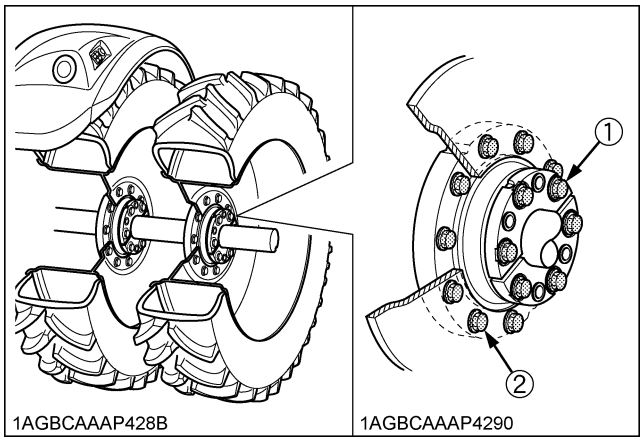

*(1) Bar axle*
*(2) Retainer*
*(3) Tire flange*
*(4) Wheel disc*
*(5) 4-Jack bolts*
*(6) Bolt*

**NOTE :**

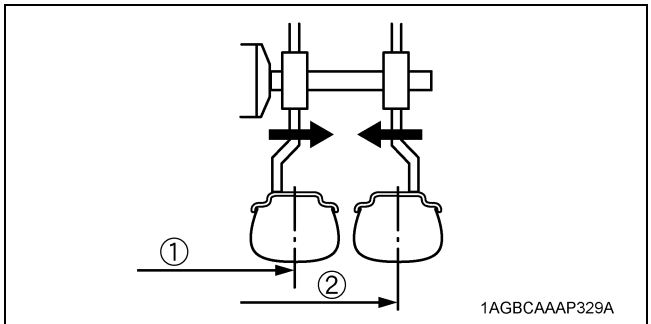
- For easy tread width readjustment, preferably dismount the rear wheel ballast to lighten the total weight of the wheel.
- After readjusting to a new tread width, make sure there is enough clearance between the tire and tire fender, as well as between the tire and lower link.

**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 200m (200 yards) and 10 times of shuttle movement by 5 m (5 yards), and thereafter according to service interval. (See "MAINTENANCE" section.)




*(1) 543 N-m (55.4 kgf-m) (400 ft-lbs.)*
*(2) 543 N-m (55.4 kgf-m) (400 ft-lbs.)*




| | (1) Minimum tread | (2) Maximum tread |
|---|---|---|
| 460/85R38 | 1524 mm (60 in.) ~ | ~ 3048 mm (120 in.) |
| 380/90R46 | 1524 mm (60 in.) ~ | ~ 3048 mm (120 in.) |
| 420/80R46 | 1524 mm (60 in.) ~ | ~ 3048 mm (120 in.) |
| 480/80R42 | 1524 mm (60 in.) ~ | ~ 3048 mm (120 in.) |

# FRONT FENDERS

**(if equipped)**

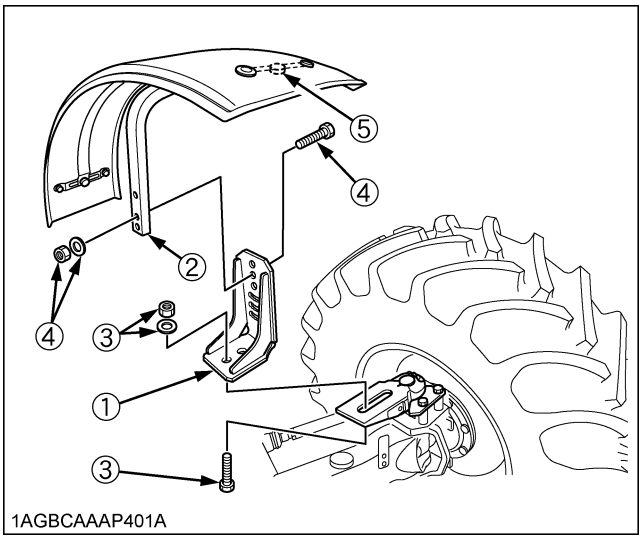
Adjust the front fender set-up position according to the front wheel tread width and tire size.

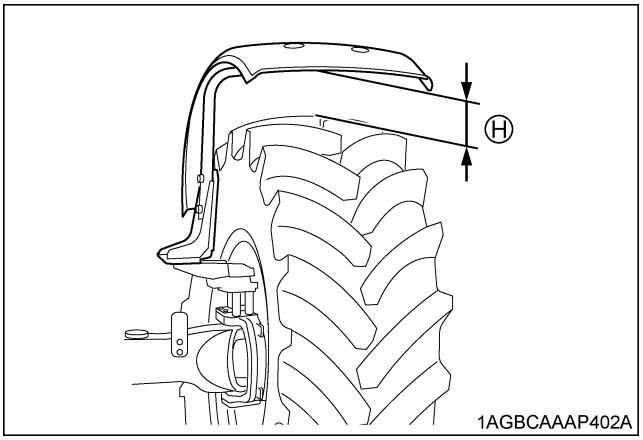
With the fenders in place, jack up the front of the tractor, turn the steering wheel full lock to the left and subsequently to the right or vice versa and pivot the axle to its position of maximum oscillation.

In so doing, be sure that the fenders do not come into contact with the tractor body.

## ■Setting Up the Front Fenders

1. Temporarily fasten the base plate (1) to the front axle with bolts and nuts (3).
2. Adjusting the height and tilt of the support (2) to maintain the clearance (H) between the front tire and the front fender, mount the support (2) to the base plate (1) with bolts and nuts (4).
3. Slide the base plate (1) to align the centers of the front tire and front fender, and tighten the bolts and nuts (3). (Fine left-right adjustment can also be done with bolt (5)).




*(1) Base plate*
*(2) Support*
*(3) Bolt, Nut*
*(4) Bolt, Nut*
*(5) Width adjustment bolt*
*(H) 60 mm (2.4 in.)*

# DUAL TIRES

**(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.

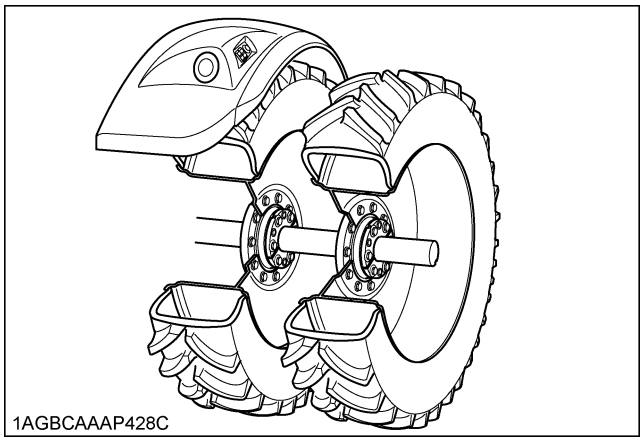
When traveling on road, you must comply with local regulation at all time.

**IMPORTANT :**

- Do not install dual wheels on the front axle.

## ■Bar Type Axle

Attach the wheels onto the rear axle.



1AGBCAAAP428C

## ■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.**

## ■Front Ballast

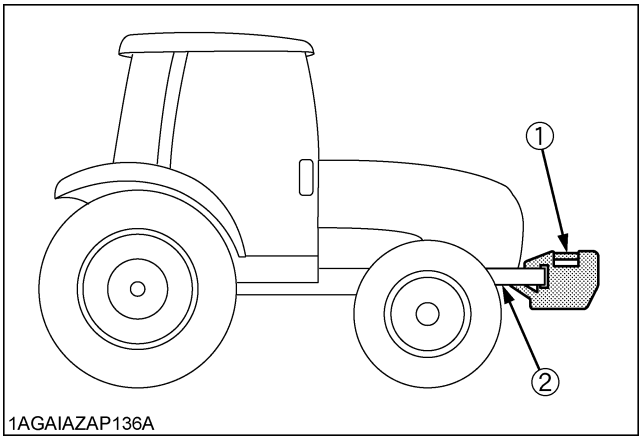
Add weights if needed for stability and improve traction. Heavy pulling and heavy rear mounted implements tend to lift front wheels.

Add enough ballast to maintain steering control and prevent tip over. Remove weight when no longer needed.

**◆ Front End Weights (option)**

The front end weights can be attached to the bumper.

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




1AGAIAZAP136A

*(1) Front end weights*
*(2) Bumper*

**IMPORTANT :**

- Do not overload tires.
- 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<br>(1389 lbs.) |

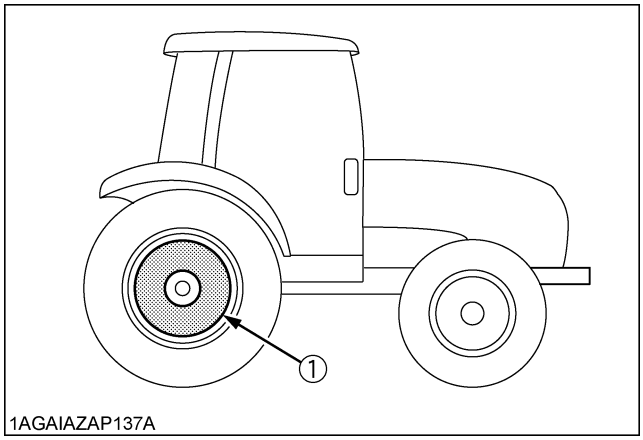
## ■Rear Ballast for Single Tires

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

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

### ◆ Rear Wheel Weights (option)

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




1AGAIAZAP137A

*(1) Rear wheel weights*

**IMPORTANT :**

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

| | |
|---|---|
| Maximum weight per wheel | 445kg (981 lbs.) |

### ◆ Liquid Ballast in Rear Tires

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

Liquid weight per tire (75 Percent filled)

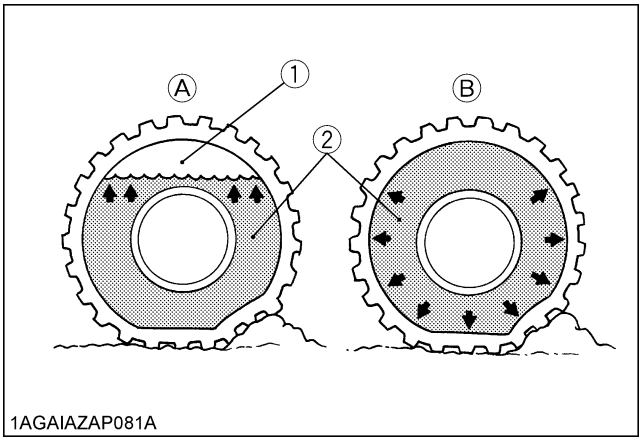
| Tire sizes | 380/ 90R46 | 420/ 80R46 | 460/ 85R38 | 480/ 80R42 | 650/ 65R38 |
|---|---|---|---|---|---|
| Slush free at -10 ℃ (14 ℉ ) Solid at -30 ℃ (-22 ℉ ) [Approx.1 kg (2 lbs.) $CaCl_2$ per 4 L (1 gal.) of water] | 272 kg (600 lbs.) | 288 kg (635 lbs.) | 411 kg (906 lbs.) | 401 kg (884 lbs.) | 575 kg (1268 lbs.) |
| Slush free at -24 ℃ (-11 ℉ ) Solid at -47 ℃ (-53 ℉ ) [Approx.1.5 kg (3.5 lbs.) $CaCl_2$ per 4 L (1 gal.) of water] | 306 kg (675 lbs.) | 324 kg (714 lbs.) | 463 kg (1021 lbs.) | 451 kg (994 lbs.) | 646 kg (1424 lbs.) |
| Slush free at -47 ℃ (-53 ℉ ) Solid at -52 ℃ (-62 ℉ ) [Approx.2.25 kg (5 lbs.) $CaCl_2$ per 4 L (1 gal.) of water] | 333 kg (734 lbs.) | 353 kg (778 lbs.) | 503 kg (1109 lbs.) | 490 kg (1080 lbs.) | 703 kg (1550 lbs.) |

**NOTE :**

- On a 50km/h (31.1mph) specifications tractor, filling tires with liquid ballast is not recommended.

**IMPORTANT :**

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



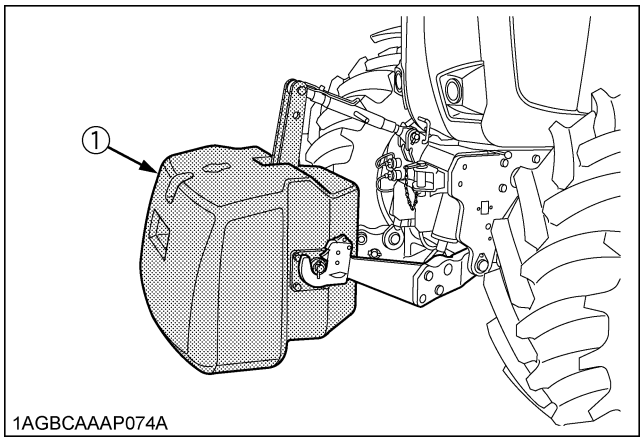

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*(1) Air (A) Correct-75% Air compresses like a cushion*
*(2) Water (B) Incorrect-100% Full Water can not be compressed*

## ■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*

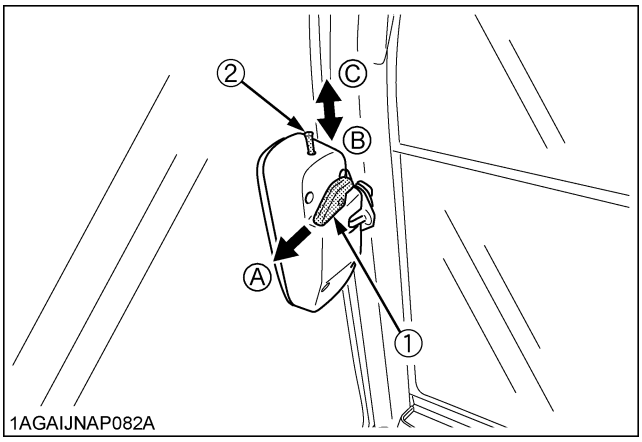
# CAB OPERATION

## DOOR AND WINDOW

### ■Locking and Unlocking the Door

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

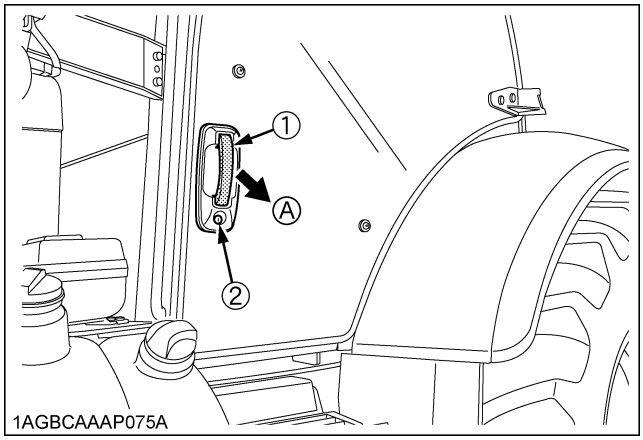
From the inside ..... Push down the lock knob to lock the door.
Pull up the lock knob to unlock the door.




*(1) Inner door handle*
*(2) Lock knob*
*(A) "PULL"*
*(B) "PUSH" (Lock)*
*(C) "PULL" (Unlock)*

### ■Opening the Door

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

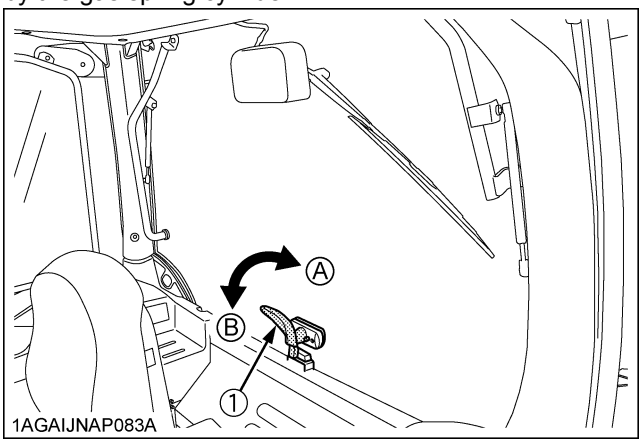



*(1) Outer door handle*
*(2) Door lock*
*(A) "PULL"*

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

### ■Rear Window

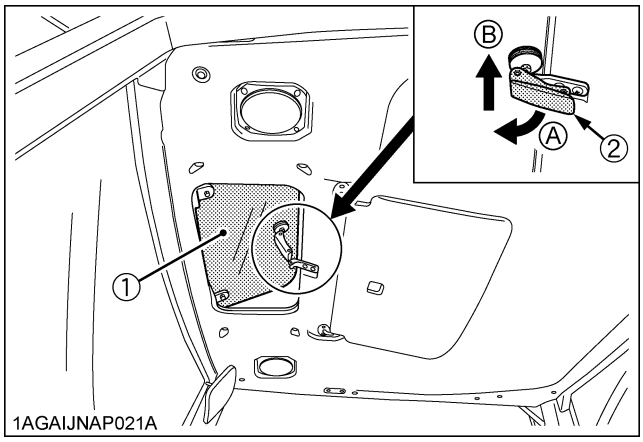
Turn the rear window handle clockwise to the vertical position and push the handle. The rear window is opened by the gas spring cylinder.




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

## ■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.




*(1) Sun roof*
*(2) Sun roof handle*
*(A) "PULL"*
*(B) "PUSH" (Open)*

**NOTE :**
- Open the sun roof, to allow outside air in.

## ■Emergency Exit

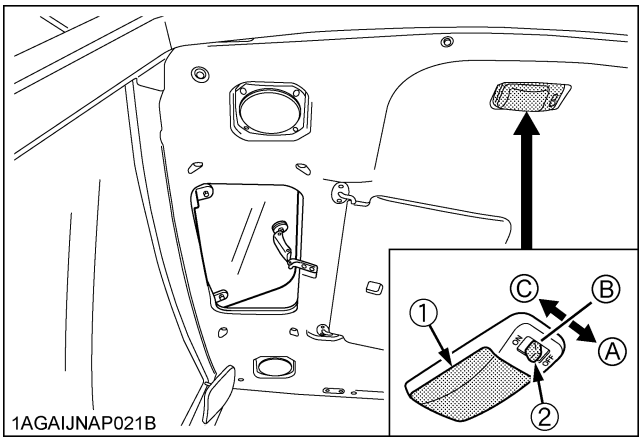
1. Open the right door of the cab if the left door is blocked, and vice versa in an emergency situation.
2. Exit through rear window if CAB doors are blocked in an emergency situation.

# DOME LIGHT

## ■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. |



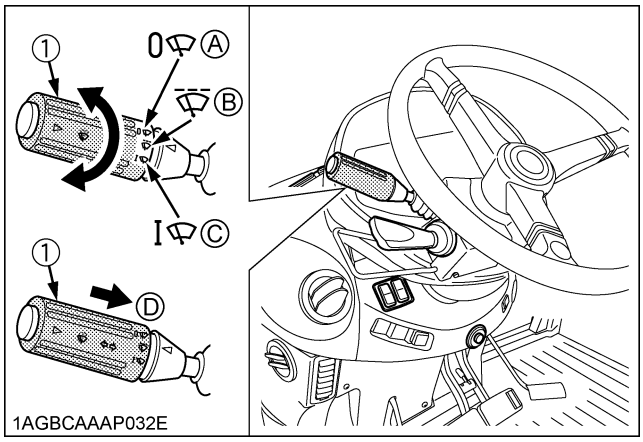

*(1) Dome light*
*(2) Dome light switch*
*(A) "OFF"*
*(B) "DOOR"*
*(C) "ON"*

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

# WIPER

## ■Front Wiper / Washer Switch

Turn on the key switch and turn the front wiper/washer switch clockwise or anti-clockwise to activate the wiper.
When the front wiper/washer switch is pressed, washer liquid jets out.

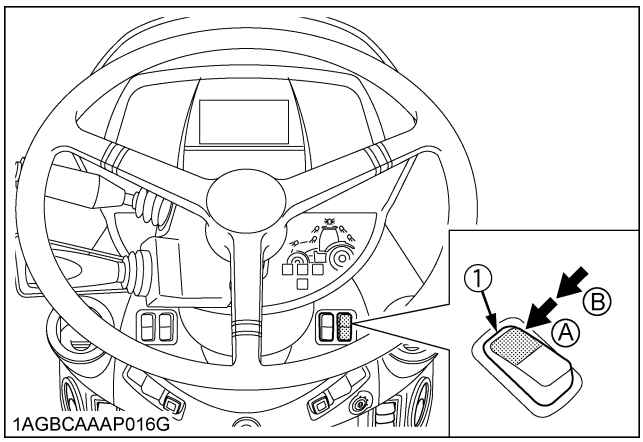



*(1) Front wiper/washer switch*

*(A) "OFF"*
*(B) "INTERMITTENT"*
*(C) "CONTINUOUS"*
*(D) "PUSH"*

## ■Rear Wiper / Washer Switch

Turn on the key switch and press the top 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.




*(1) Rear wiper/washer switch*

*(A) "WIPER"*
*(B) "WIPER and WASHER"*

**IMPORTANT :**

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

## ■Using the Wipers in Cold Season

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

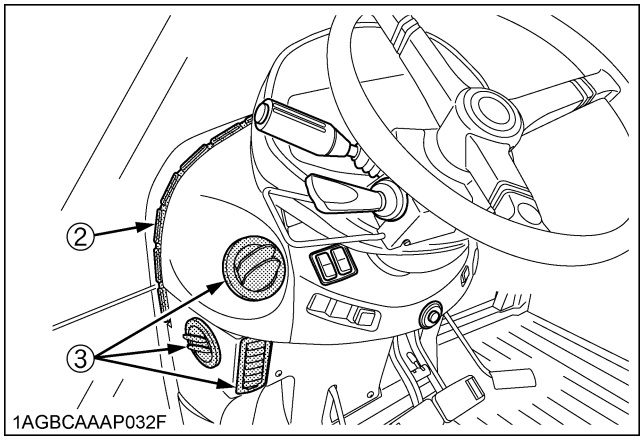
**IMPORTANT :**

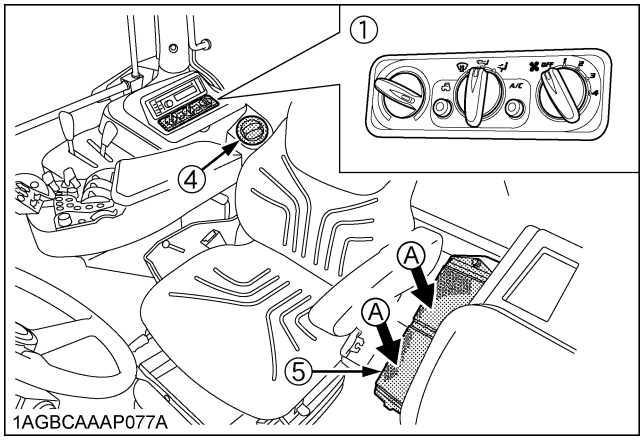
- In cold season, the wiper blades and the wiper motor might get overloaded causing damage. To avoid this, be sure to take the above precautions.

# AIR CONDITIONER

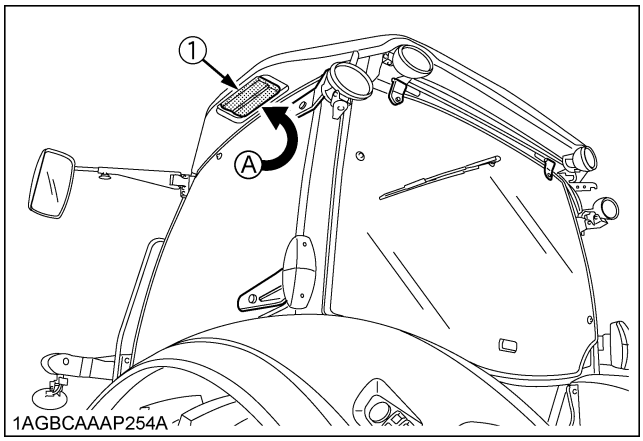
## ■Airflow

Air in the CAB and fresh air introduced into the CAB flow as shown below. Adjust the 8 air ports to obtain the desired condition.




*(1) Control panel*
*(2) Defroster air outlets*
*(3) Dashboard air outlets*
*(4) Rear air outlet*
*(5) Inner air filter*
*(A) Inner air recirculation*




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

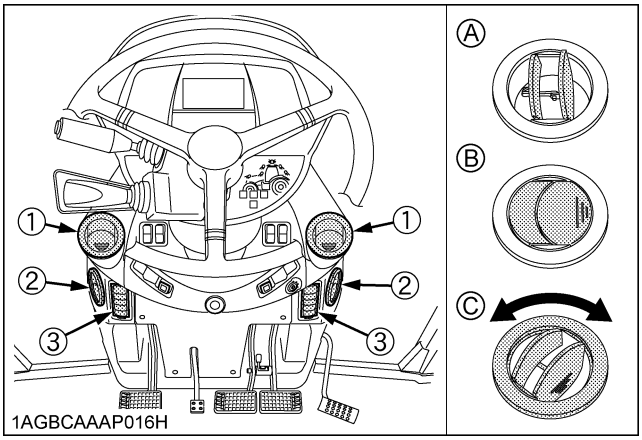
**IMPORTANT :**

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

## ■Air Control Vent

### ◆ Dashboard air outlet

The dashboard air outlets can be independently adjusted as required.

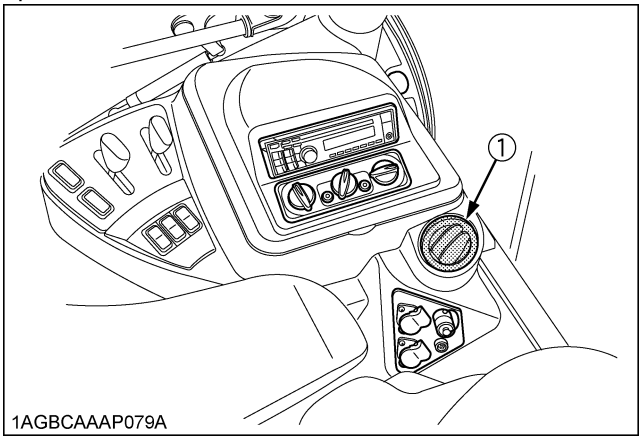



*(1) Face area air outlets*
*(2) Back area air outlets*
*(3) Feet area air outlets*
*(A) "OPEN"*
*(B) "SHUT"*
*(C) "TURN"*

### ◆ Rear air outlet

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.



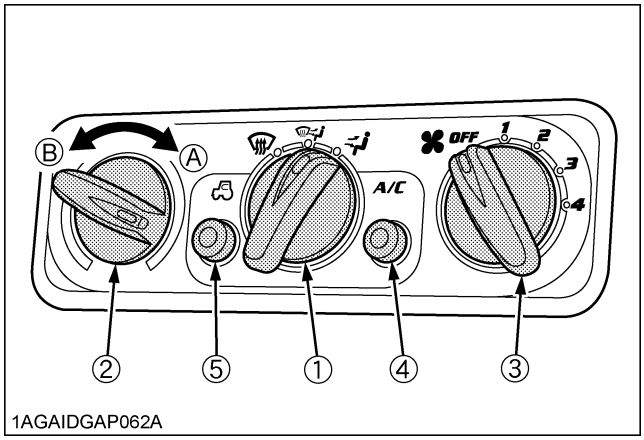

*(1) Rear air outlet*

## 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 failure.)**
  - **Scratches, cracks or swelling in water hoses.**
  - **Water leakage at water hose joints.**
  - **Missing or damaged water hose protective wrap or grommets.**
  - **Loose mounting bolts, damaged brackets.**
- **Do not touch the water hoses and the heater with your hand. You may get burned.**
- **If the window fails to defrost in extreme conditions or becomes cloudy when dehumidifying the CAB, wipe off moisture with a soft cloth.**
- **Do not block all the air outlets of the air conditioner. A problem could occur.**

## ■Control Panel




*(1) Mode switch*
*(2) Temperature control dial*
*(3) Blower switch*
*(4) Air conditioner switch with indicator light*
*(5) Recirculation / fresh air selection switch with indicator light*

*(A) "WARM"*
*(B) "COOL"*

### ◆ Mode switch

Set the mode switch to the desired position.

Air is blown from the dashboard and rear air outlets.

Air is blown from the dashboard, defroster and rear air outlets.

Air is blown from only the defroster air outlet.

### ◆ Temperature Control Dial

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

### ◆ Blower Switch

Air volume can be changed in 4 steps. At the "4" position, the largest air volume is obtained.

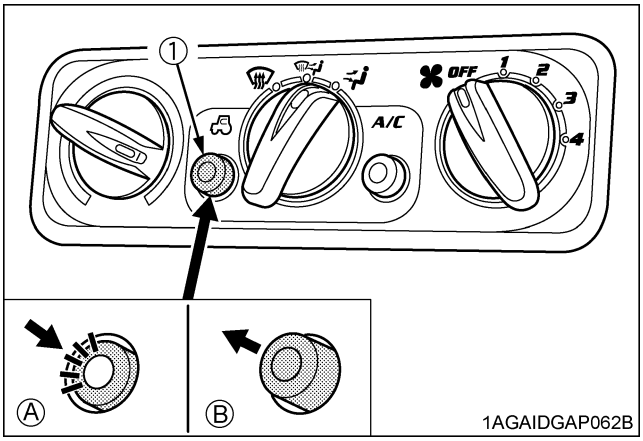
### ◆ Air Conditioner Switch

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

### ◆ Recirculation / 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:<br>(Indicator: OFF) | Fresh air will flow into the CAB. This is helpful when you work in dusty conditions or if the glass windows get foggy. |
| RECIRCULATION:<br>(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 / fresh air selection switch with indicator light*

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

**NOTE :**

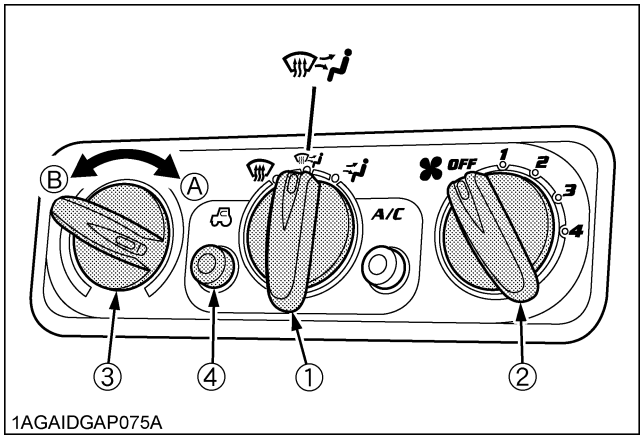
- When heating, do not keep the switch at the "RECIRCULATION" position for a long time. The windshield easily gets foggy.

- While working in a 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.

## ■Operation

### ◆ Heating

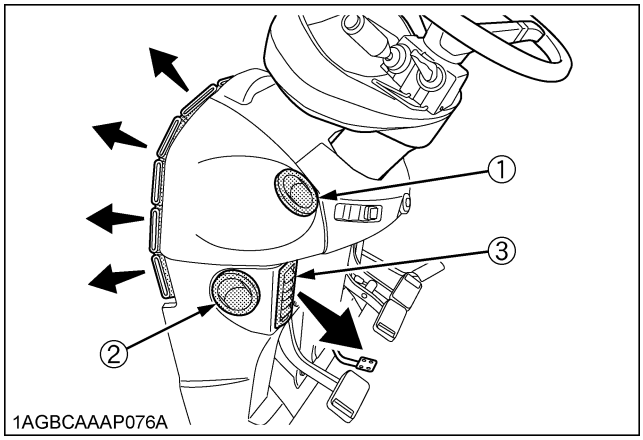
1. Set the mode switch to the position.
2. Set the recirculation / fresh air selection switch to the "FRESH AIR" position. To raise the temperature in the CAB quickly, set this switch to the "RECIRCULATION" position.
3. Adjust the blower (1/2/3/4) switch and the temperature control dial to achieve a comfortable temperature level.



1AGAIDGAP075A

*(1) Mode switch*
*(2) Blower switch*
*(3) Temperature control dial*
*(4) Recirculation / fresh air selection switch with indicator light*
*(A) "WARM"*
*(B) "COOL"*

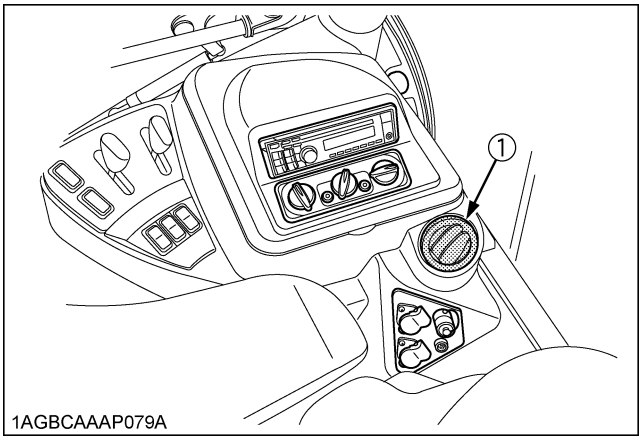
4. Adjust the air volume and air direction from the dashboard air outlets. In general, open Feet area air outlets, and shut Face / Back area air outlets.



1AGBCAAAP076A

*(1) Face area air outlets*
*(2) Back area air outlets*
*(3) Feet area air outlets*

5. To blow out warm air also from behind, open the rear air outlet and adjust the air direction.



1AGBCAAAP079A

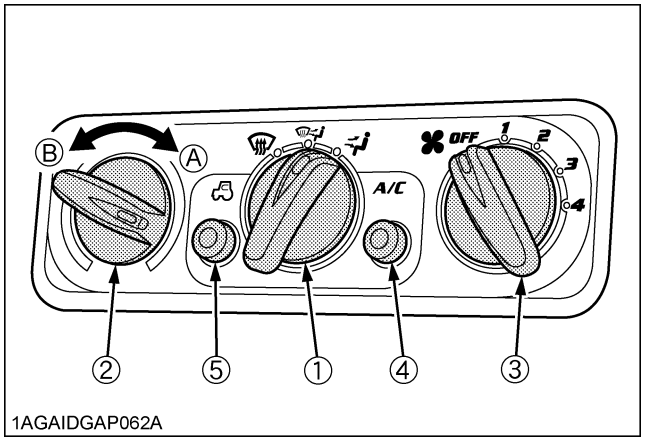
*(1) Rear air outlet*

◆ **Cooling or dehumidifying-heating**

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

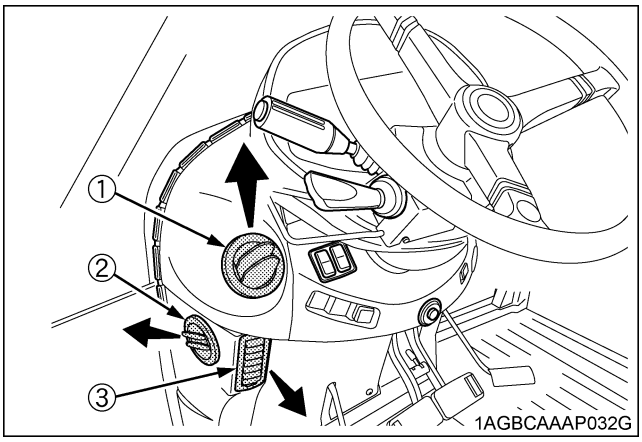
**NOTE :**

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



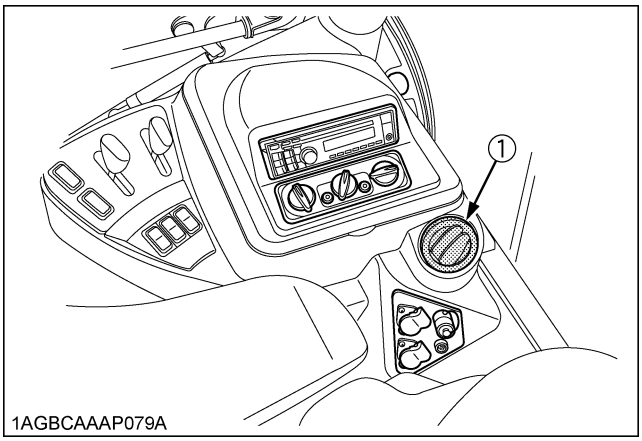

*(1) Mode switch*
*(2) Temperature control dial*
*(3) Blower switch*
*(4) Air conditioner switch with indicator light*
*(5) Recirculation / fresh air selection switch with indicator light*
*(A) "WARM"*
*(B) "COOL"*

6. Adjust the air volume and air direction from the dashboard air outlets. In general, the air volume from Face area air outlets is adjusted to increase, and the air volume from Feet / Back area air outlets is adjusted to decrease.




*(1) Face area air outlets*
*(2) Back area air outlets*
*(3) Feet area air outlets*

7. To blow cool air from behind as well, open the rear air outlet and adjust the air direction.

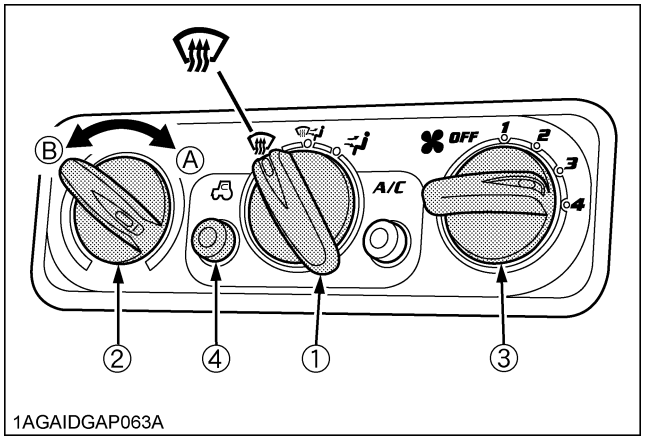



*(1) Rear air outlet*

◆ **Defrosting or demisting**

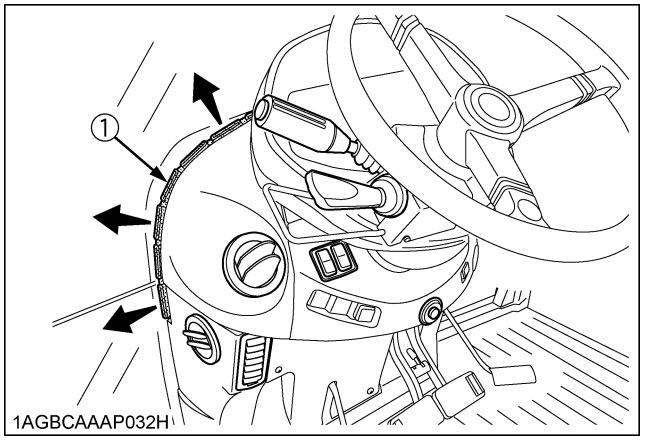
To defrost or demist the windshield, take the following steps.

1. Set the mode switch to the position.
2. Set the recirculation / 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.



1AGAIDGAP063A

*(1) Mode switch*
*(2) Temperature control dial*
*(3) Blower switch*
*(4) Recirculation / fresh air selection switch with indicator light*
*(A) "WARM"*
*(B) "COOL"*



1AGBCAAAP032H

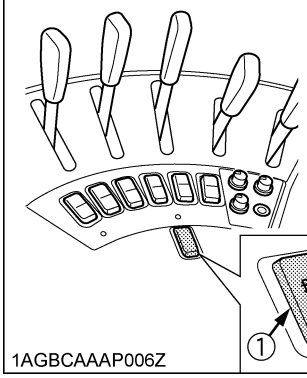
*(1) Defroster air outlet*

**NOTE :**

- If you set the mode switch to position, air will not come out from the dashboard and rear air outlets.

# REAR DEFOGGER WITH TIMER (if equipped)

To activate the rear window defogger, 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 defogger automatically turn off as well as the yellow light. To turn the defogger off, press the switch once more.

| [Standard model] | [Premium, Premium KVT model] |
|---|---|
|  |  |
| 1AGBCAAAP006Z | 1AGBCAAAP0350 |



*(1) Defogger switch*
*(2) Yellow light*

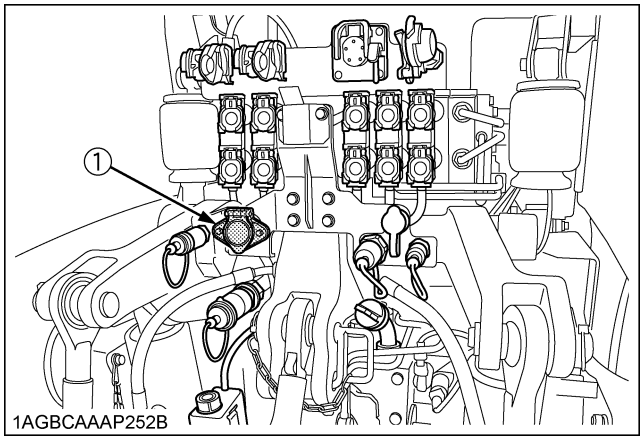
**IMPORTANT :**

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

# ACCESSORIES

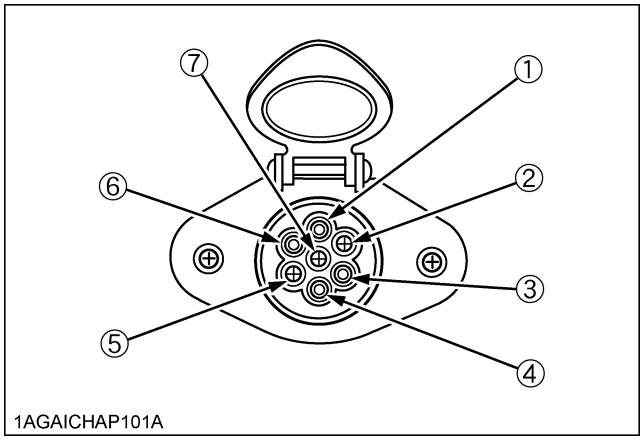
## ■Trailer Electrical Outlet

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




*(1) Trailer electrical outlet*

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

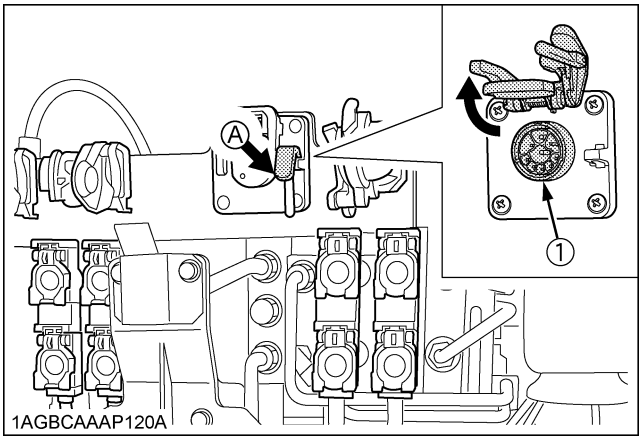



| Terminal | Function |
|---|---|
| (1) | Ground |
| (2) | Tail light<br>Sidemarker light<br>Parking light |
| (3) | Turn signal light (LH) |
| (4) | Brake stop light |
| (5) | Turn signal light (RH) |
| (6) | Registration plate light |
| (7) | --- |

## ■ISOBUS Socket

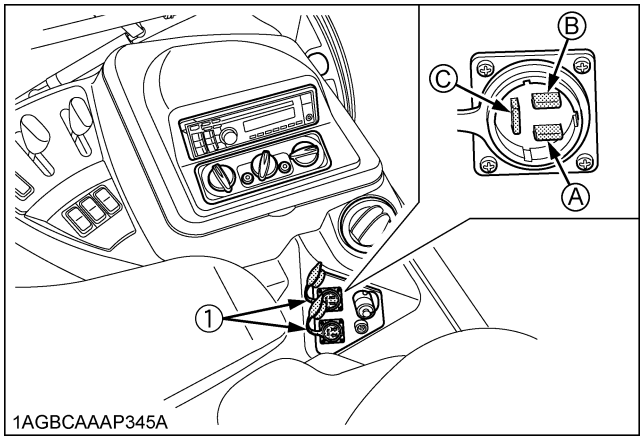
When an implement conforming to the ISO Standard 11783 guidelines is connected, various implement settings can be made through the K-monitor. This means there is no need to add any controller and another monitor for the implement in question in the cabin.

Example: When equipped with a traveling 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 traveling speed and improves the performance.
What's more, the optional GPS function may be used together to navigate the tractor's traveling 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.



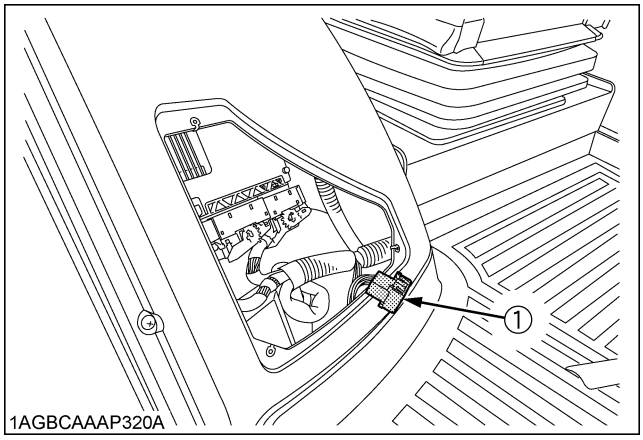

*(1) ISOBUS socket* *(A) "PUSH"*

## ■Electrical Outlet Socket

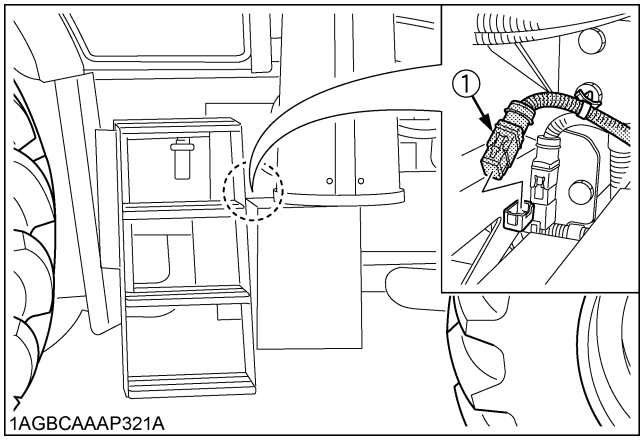



*(1) 3-terminal accessory electrical outlet*
*(A) Terminal: Through the ACC position of the key switch (5 A)*
*(B) Terminal: Through the battery direct (25A)*
*(C) Terminal: Ground*

### ◆ Loader electrical outlet




*(1) Electric connector for loader control device*

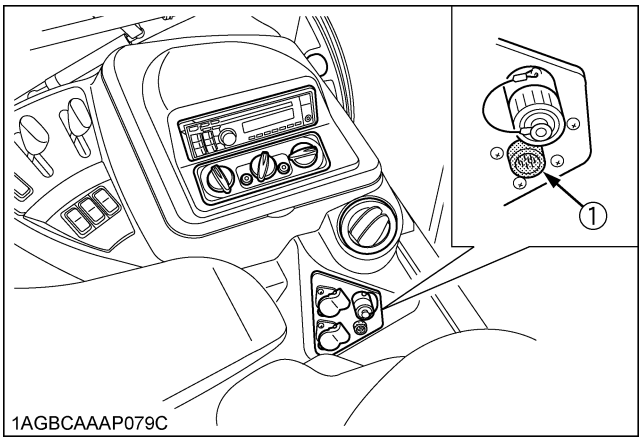



*(1) Loader electrical outlet*

**NOTE :**
- Please refer to Front Loader Operator's manual for detail of electric wiring connection.

## ■ISOBUS Monitor Socket

An implement monitor meeting ISO Standard 11783 may be connected to the socket.




*(1) ISOBUS monitor socket*

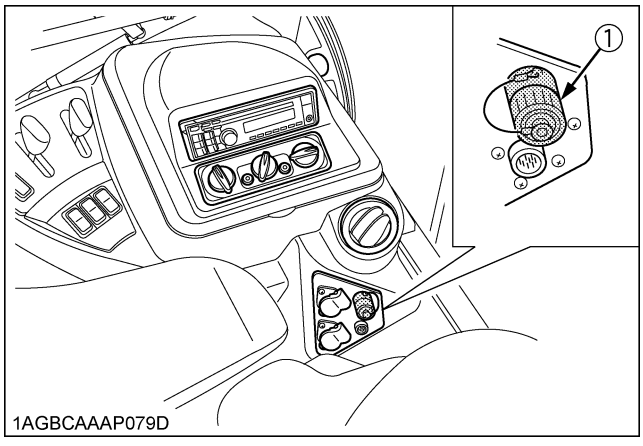
## ■Signal Socket according to ISO Standard 11786

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) etc.

**NOTE :**
- Implement side default settings are required to adjust the dispersal amount and so on.

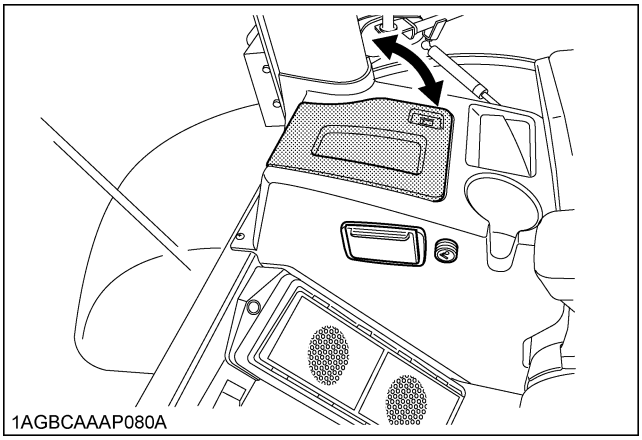
### ◆ Signals from the Signal Socket

| | Output Signals | Remarks |
|---|---|---|
| 1 | Actual traveling speed | Operation with GPS mounted |
| 2 | Travel speed | Speed calculated from engine rpm etc. |
| 3 | Rear 3-point hitch position | Lift arm height displayed by voltage |
| 4 | Operating or halted | When raising lift arm: Operation halted<br>When lowering lift arm: Operating |
| 5 | Rear PTO rpm | |
| 6 | Power supply (5 A) | |
| 7 | Ground | |



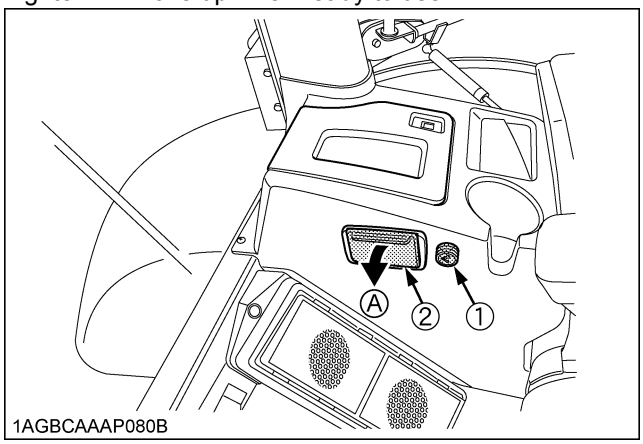

*(1) Signal socket*

## ■Glove Box



## CIGARETTE LIGHTER / ASHTRAY

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.

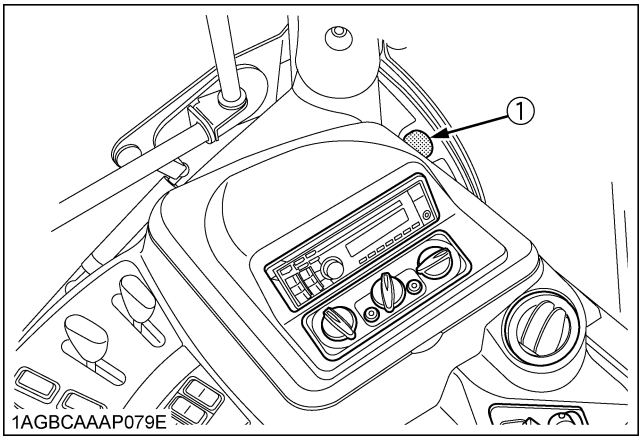



*(1) Cigarette lighter* *(A) "OPEN"*
*(2) Ashtray*

**NOTE :**
- An electrical consumer with a requirement for max. 120 watt can be connected to the cigarette lighter.

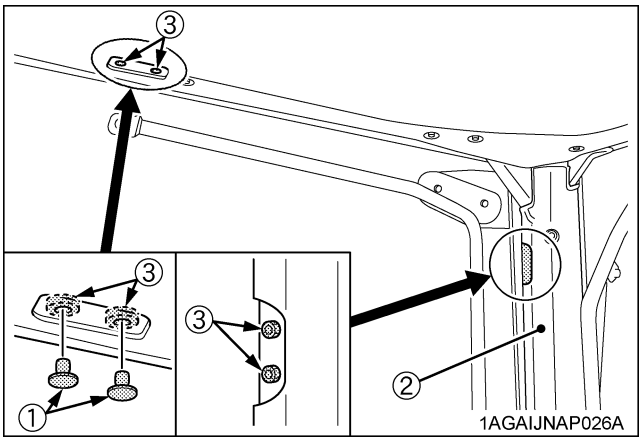
## INSTALLING THE IMPLEMENT CONTROL BOX

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.



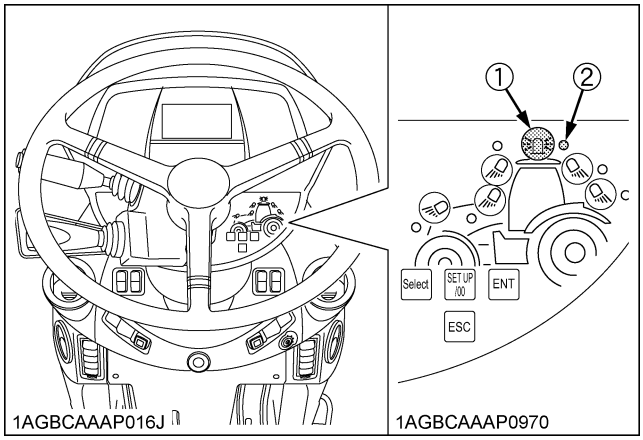

*(1) Plug*
*(2) Pillar cover*
*(3) M6 nuts*

# BEACON LIGHT

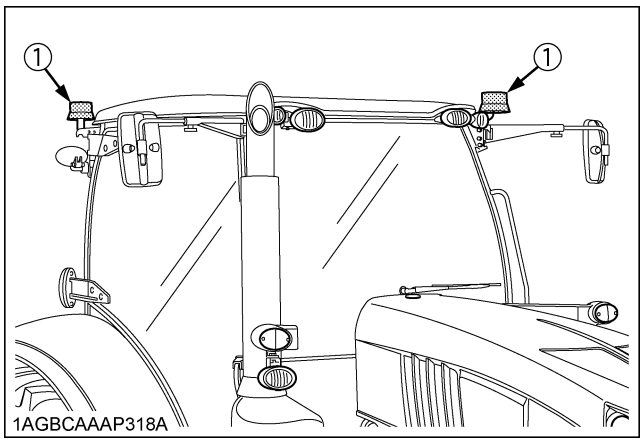
## ■Beacon Light Switch

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

Press the switch once more, and turn off the light and the indicator.




*(1) Beacon light switch*
*(2) Indicator*




*(1) Beacon light (if equipped)*

# MAINTENANCE

## SERVICE INTERVALS

| | Interval | Items | | Ref. page | | |
|---|---|---|---|---|---|---|
| A | initial 50 Hr | Engine oil | Change | 206 | | |
| | | Engine oil filter | Replace | 206 | | |
| | | Fan belt | Adjust | 206 | | |
| | | Transmission oil filter | Replace | 206 | | |
| B | every 50 Hr | Neutral circuit | Check | 206 | | |
| | | Wheel bolt torque | Check | 208 | | |
| | | Tie-rod dust cover | Check | 209 | *4 | |
| | | Air brake | Check | 209 | | |
| C | every 100 Hr | Air cleaner Primary element | Clean | 210 | *1 | |
| | | Greasing | --- | 211 | | |
| | | Brake pedal | Adjust | 213 | | |
| | | Parking brake lever | Adjust | 214 | *4 | |
| | | Battery condition | Check | 214 | | |
| | | Front PTO oil | Check | 215 | | |
| D | every 200 Hr | Fuel tank water | Drain | 216 | | |
| | | Toe-in | Adjust | 216 | | |
| | | Inner air filter | Clean | 217 | | |
| | | Fresh air filter | Clean | 217 | | |
| E | every 400 Hr | Fan belt | Adjust | 218 | | |
| | | Water separator | Clean | 220 | | |
| | | Fuel solenoid pump | Clean | 220 | | |
| F | initial 500 Hr | Transmission fluid | Change | 221 | | |
| | | Rear axle case oil | Change | 221 | | |
| | | Transmission oil filter | Replace | 221 | | |

| | Interval | Items | | Ref. page | | |
|---|---|---|---|---|---|---|
| G | every 500 Hr | Engine oil | Change | 221 | | |
| | | Engine oil filter | Replace | 222 | | |
| | | Pre-Fuel filter | Clean | 223 | | |
| | | Fuel filter | Replace | 223 | | |
| | | Hydraulic oil filter (Suction side) | Replace | 224 | | |
| | | Hydraulic oil filter (Return side) | Replace | 225 | | |
| | | Power steering oil filter | Replace | 226 | | |
| | | Radiator hose and clamp | Check | 227 | | |
| | | Fuel line | Check | 228 | | |
| | | Intake air line | Check | 228 | | |
| | | Brake hose | Check | 228 | *4 | |
| | | Differential lock hose | Check | 228 | | |
| | | Lift cylinder hose | Check | 229 | | |
| | | Power steering oil line | Check | 229 | | |
| | | Oil cooler line | Check | 229 | | |
| | | Front suspension hose [Front suspension type] | Check | 230 | *4 | |
| | | Air conditioner pipes and hoses | Check | 230 | | |
| | | Air conditioner drive belt | Check | 231 | | |
| | | Front PTO oil | Change | 232 | | |
| H | every 1000Hr | Transmission fluid | Change | 232 | | |
| | | Transmission oil filter | Replace | 233 | | |
| | | Rear axle case oil | Change | 234 | | |
| | | Front differential case oil | Change | 235 | | |
| | | Front axle gear case oil | Change | 235 | | |
| | | Engine valve clearance | Adjust | 235 | *4 | |

| | Interval | Items | | Ref. page | | |
|---|---|---|---|---|---|---|
| I | every 1000Hr or 1 year | Air cleaner primary element and secondary element | Replace | 236 | *5 | |
| | | Exhaust manifold | Check | 236 | *4 *5 | |
| J | every 1500Hr | Fuel injector nozzle tip | Clean | 236 | *4 | @ |
| | | DEF/AdBlue® injector tip | Clean | 236 | *4 | |
| | | DEF/AdBlue® line | Check | 236 | | |
| | | Oil separator element | Replace | 236 | | @ |
| | | PCV (Positive crankcase ventilation) valve (oil separator) | Check | 236 | *4 | @ |
| | | EGR cooler | Check Clean | 236 | *4 | @ |
| | | Accumulator [Front suspension type] | Check | 236 | *4 | |
| K | every 2000Hr or 2 years | Cooling system | Flush | 237 | *6 | |
| | | Coolant | Change | 237 | *6 | |
| L | every 3000Hr | Turbo charger | Check | 239 | *4 | @ |
| | | Supply pump | Check | 239 | *4 | |
| | | EGR system | Check Clean | 239 | *4 | @ |
| | | DPF muffler | Clean | 239 | *4 | @ |
| | | DEF/AdBlue® injector | Check | 239 | *4 | |
| | | DEF/AdBlue® pump filter | Replace | 239 | | |
| M | every 1 year | DPF differential pressure sensor pipe | Check | 240 | *4 | |
| | | EGR pipe | Check | 240 | *4 | |
| | | Oil separator hose | Check | 240 | *4 | |
| | | CAB isolation cushion | Check | 240 | | |
| N | every 2 years | DPF differential pressure sensor hose | Replace | 240 | *4 | |
| | | Boost sensor hose | Replace | 240 | *4 | |
| O | every 3 years | Parking brake cable | Replace | 240 | *4 | |

| | Interval | Items | | Ref. page | | |
|---|---|---|---|---|---|---|
| P | every 4 years | Radiator hose and clamp | Replace | 240 | | |
| | | Fuel line | Replace | 240 | *4 | |
| | | Intake air line | Replace | 240 | *4 | |
| | | Oil separator hose | Replace | 240 | *4 | |
| | | Oil cooler line | Replace | 240 | *4 | |
| | | Power steering oil line | Replace | 240 | *4 | |
| | | Lift cylinder hose | Replace | 240 | *4 | |
| | | Front suspension hose [Front suspension type] | Replace | 240 | *4 | |
| | | Differential lock hose | Replace | 240 | *4 | |
| | | Brake hose | Replace | 240 | *4 | |
| | | Air conditioner pipes and hoses | Replace | 240 | *4 | |
| Q | Service as required | Fuel system | Bleed | 241 | | |
| | | Brake system | Bleed | 241 | | |
| | | Fuse | Replace | 242 | | |
| | | Light bulb | Replace | 244 | | |
| | | Head lamp | Replace | 245 | | |
| | | Lubricating point | --- | 245 | | |
| | | Washer liquid | Add | 245 | | |
| | | Refrigerant (gas) | Check | 245 | | |

*1 Air cleaner should be cleaned more often in dusty conditions than in normal conditions.

*2 Every year or every 6 times of cleaning.

*3 Replace only if necessary.

*4 Consult your local KUBOTA Dealer for this service.

*5 Every 1000 hours or every 1 year whichever comes sooner.

*6 Every 2000 hours or every 2 years whichever comes sooner.

- The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in the U.S.EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.
  Please see Warranty Statement in detail.

## ■Maintenance Items Chart

### ◆ How to use the chart

1. The circles in this at-a-glance chart indicate the relevant points between the tractor's hour meter readings and the service intervals. Following these circles and the maintenance items (A thru P), keep up your tractor.
2. For details of the maintenance items, refer back to the "SERVICE INTERVALS" on the previous pages.

### ◆ Chart at a glance

| Hour meter | Maintenance items | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
| 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 | | ○ | | | | | | | | | | | | | | |
| 1600 | | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| 1650 | | ○ | | | | | | | | | | | | | | |
| 1700 | | ○ | ○ | | | | | | | | | | | | | |
| 1750 | | ○ | | | | | | | | | | | | | | |

| Hour meter | Maintenance items | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
| 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 1000Hr or 1 year | | | | | | | | | ○ | | | | | | | |
| Every 2000Hr or 2 years | | | | | | | | | | | ○ | | | | | |
| Every 1 year | | | | | | | | | | | | | ○ | | | |
| Every 2 years | | | | | | | | | | | | | | ○ | | |
| Every 3 years | | | | | | | | | | | | | | | ○ | |
| Every 4 years | | | | | | | | | | | | | | | | ○ |

# LUBRICANTS, FUEL AND COOLANT

<table>
<tr><th rowspan="2">No.</th><th rowspan="2">Locations</th><th colspan="3">Capacities</th><th colspan="2" rowspan="2">Lubricants</th></tr>
<tr><th>M7-131</th><th>M7-151</th><th>M7-171</th></tr>
<tr><td>1</td><td>Fuel</td><td colspan="3">330 L (87.2 U.S.gals.)</td><td colspan="2">No.2-D S15 diesel fuel<br>No.1-D S15 diesel fuel if temperature is below -10 ℃ (14 ℉)</td></tr>
<tr><td>2</td><td>DEF/AdBlue®</td><td colspan="3">38 L (10 U.S.gals.)</td><td colspan="2"></td></tr>
<tr><td>3</td><td>Coolant</td><td colspan="3">24 L (6.3 U.S.gals.)</td><td colspan="2">Fresh clean soft water with anti-freeze</td></tr>
<tr><td>4</td><td>Washer liquid</td><td colspan="3">2 L (2.1 U.S.qts.)</td><td colspan="2">Automobile washer liquid</td></tr>
<tr><td rowspan="4">5</td><td rowspan="4">Engine crankcase<br>(with filter)</td><td colspan="3" rowspan="4">22 L (5.8 U.S.gals.)</td><td>• Engine oil:<br>API Service Classification</td><td>CJ-4<br>[DPF type engine]</td></tr>
<tr><td>Above 25 ℃ (77 ℉)</td><td>SAE30,<br>SAE10W-30 or 15W-40</td></tr>
<tr><td>-10 to 25 ℃ (14 to 77 ℉)</td><td>SAE10W-30 or 15W-40</td></tr>
<tr><td>Below -10 ℃ (14 ℉)</td><td>SAE10W-30</td></tr>
<tr><td>6</td><td>Transmission case</td><td colspan="3">Power shift model: 85 L (22.5 U.S.gals.)<br>CVT model: 80 L (21.1 U.S.gals.)</td><td colspan="2">• KUBOTA UDT-HD fluid*<br>(CANADA market: K4-Trans Hydraulic Oil)</td></tr>
<tr><td>7</td><td>Rear axle case oil</td><td colspan="3">10 L (10.6 U.S.qts.) for each side</td><td colspan="2" rowspan="3">• KUBOTA UDT-HD fluid* or<br>KUBOTA 80W-90 gear Lubricant HD or KHD</td></tr>
<tr><td>8</td><td>Front differential case oil</td><td colspan="3">8.5 L (9.0 U.S.qts.)</td></tr>
<tr><td>9</td><td>Front axle gear case oil</td><td colspan="3">2.1 L (2.2 U.S.qts.) for each side</td></tr>
<tr><td>10</td><td>Front PTO case</td><td colspan="3">2.7 L (2.9 U.S.qts.)</td><td colspan="2">• KUBOTA UDT-HD fluid*<br>(CANADA market: K4-Trans Hydraulic Oil)</td></tr>
<tr><td rowspan="11">11</td><td>Greasing</td><td colspan="3">No. of greasing points</td><td>Capacity</td><td>Type of grease</td></tr>
<tr><td>Top link</td><td colspan="3">2</td><td rowspan="9">Until grease overflows.</td><td rowspan="10">Multipurpose Grease<br>NLGI-2 OR<br>NLGI-1(GC-LB)</td></tr>
<tr><td>Lift rod</td><td colspan="3">4</td></tr>
<tr><td>Universal joint<br>(Front axle drive shaft)</td><td colspan="3">1</td></tr>
<tr><td>Front axle support</td><td colspan="3">2</td></tr>
<tr><td>Hydraulic lift cylinder pin</td><td colspan="3">4</td></tr>
<tr><td>Hydraulic lift arm shaft</td><td colspan="3">2</td></tr>
<tr><td>Parking brake shaft</td><td colspan="3">2</td></tr>
<tr><td>Front 3-point hitch<br>(if equipped)</td><td colspan="3">7</td></tr>
<tr><td>Battery terminal</td><td colspan="3">2</td><td>A small amount</td></tr>
</table>

**NOTE :**

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

**NOTE :**

◆ **Engine Oil:**

- Oil used in the engine should have an American Petroleum Institute (API) service classification and Proper SAE Engine Oil according to the ambient temperatures as shown above:

- Refer to the following table for the suitable API classification engine oil according to the engine type (with DPF (Diesel Particulate Filter) type engines) and the fuel.

| Fuel used | Engine oil classification (API classification) |
|---|---|
| | Oil class for engines with DPF |
| Ultra Low Sulfur Fuel [<0.0015% (15 ppm)] | **CJ-4** |

◆ **Fuel:**

- Use the ultra low sulfur diesel fuel only [below 0.0015% (15 ppm)] for these engines.
- Cetane number of 45 minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20℃ (-4℉) 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 gas stations, truck stops and specialty 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, UDT-HD fluid or K4-Trans Hydraulic Oil** for optimum protection and performance.
(Consult your local KUBOTA Dealer for further detail.)
Do not mix different brands together.

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

# PERIODIC SERVICE

## WARNING

**To avoid personal injury or death:**

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

## HOW TO OPEN THE HOOD

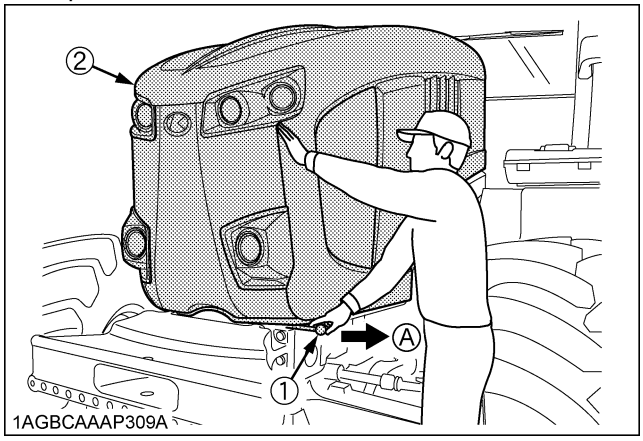
## WARNING

**To avoid personal injury or death from contact with moving parts;**

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

### ■Hood

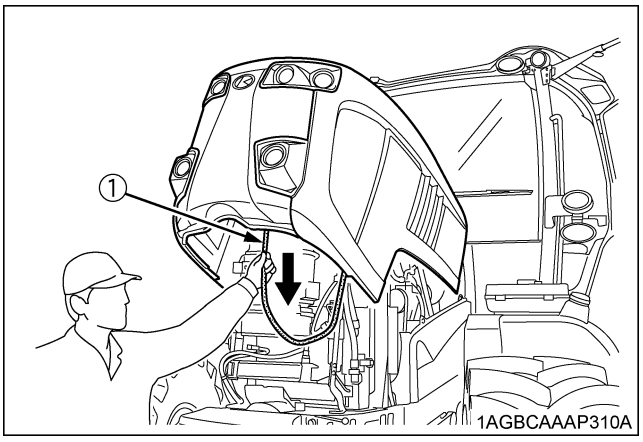
To open the hood, hold the hood and pull the release lever and open the hood.




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

**NOTE :**

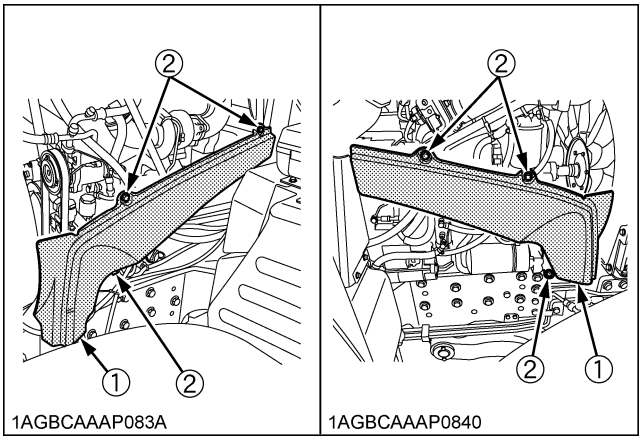
- To close the hood, pull down on the strap and push the hood into position using both hands.




*(1) Strap*

### ■Side Cover

Remove the bolts and nut as shown below.




*(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.**
- **All residual pressure of the hydraulic system released.**
- **Stop the engine and remove the key.**
- **Lower the front suspension to the lowest position. [Front suspension type]**

## ■Walk Around Inspection

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

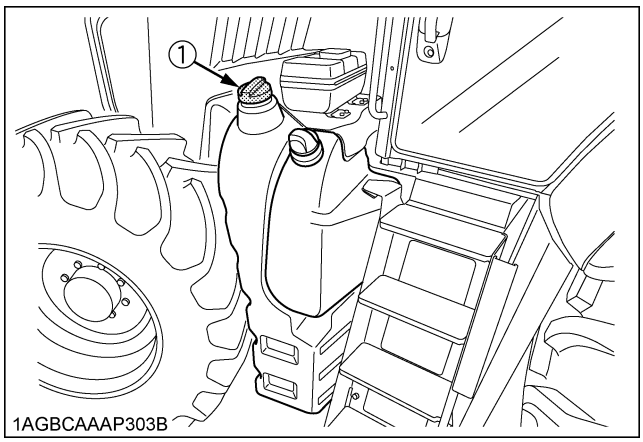
## ■Checking and Refueling

## WARNING

**To avoid personal injury or death:**

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

1. Check the amount of fuel by fuel gauge.
2. When the fuel warning indicator lights up, it is time to add fuel.
3. Before removing the fuel cap, clean dirt away from the caps and the tank openings.




*(1) Fuel tank cap*

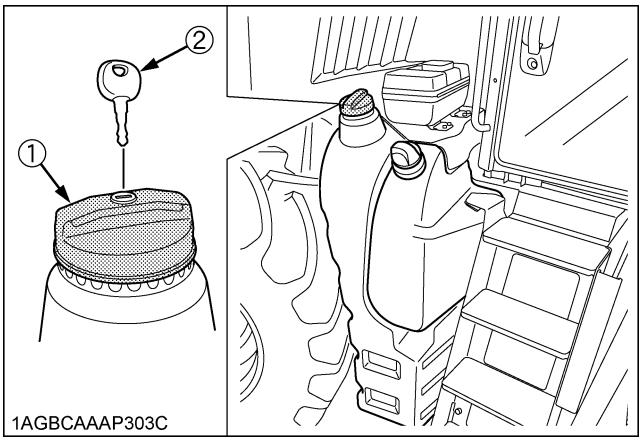
| | |
|---|---|
| Fuel tank capacity | 330 L (87.2 U.S.gals.) |

◆ **Opening the fuel tank cap**

1. Insert the key into the cap and turn the key 180º counterclockwise.
2. Turn the cap counterclockwise to open it.

◆ **Closing the fuel tank cap**

1. Turn the cap clockwise until it clicks.
2. Insert the key into the cap and turn the key 180º clockwise to get the cap locked.




*(1) Fuel tank cap*
*(2) Key*

**IMPORTANT :**

- Be sure to use Ultra Low Sulfur Fuel (S15).
- Do not permit dirt or trash to get into the fuel system.
- Be careful not to let the fuel tank become empty, otherwise air will enter the fuel system, necessitating bleeding before next engine start.
- If the engine runs out of fuel and stalls, the engine components may be damaged.
- Be careful not to spill during refueling. If a spill should occur, wipe it off at once, or it may cause a fire.
- To prevent condensation (water) accumulation in the fuel tank, fill the tank before parking overnight.

## ■Inspecting the DEF/AdBlue® level and adding the 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.**

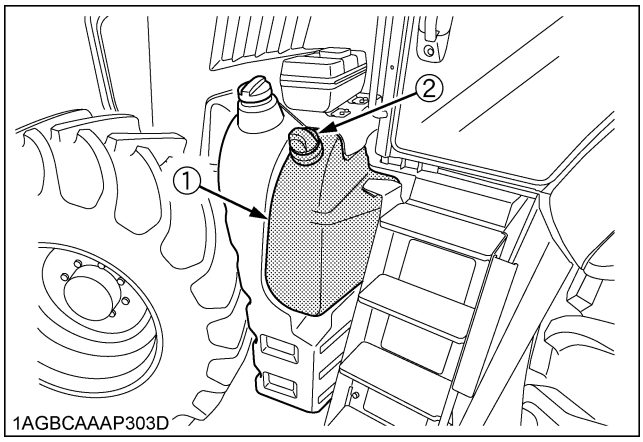
Look at the DEF/AdBlue® gauge on the instrument panel to see how much fluid remains. If the level is too low, add DEF/AdBlue® as required.

Before removing the DEF/AdBlue® cap, clean dirt away from the caps and the tank openings.

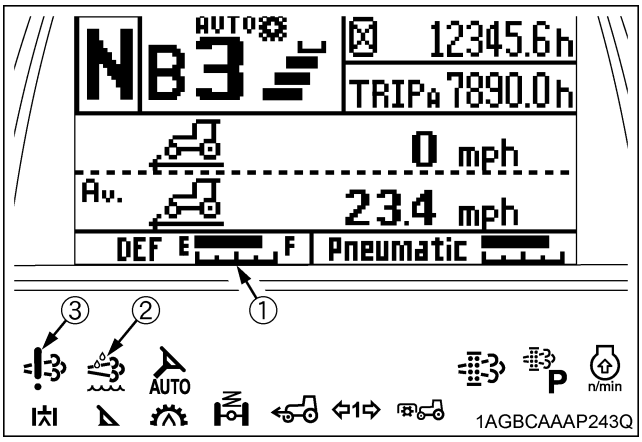
If the fluid runs short or poor-quality fluid is added, a warning sign appears on the instrument panel. If this warning is ignored and the operation continues, the engine output will be limited.

(For details, refer to "Warning Indication and its Countermeasure" in "SELECTIVE CATALYTIC REDUCTION (SCR) MUFFLER" in "OPERATING THE ENGINE" section.)

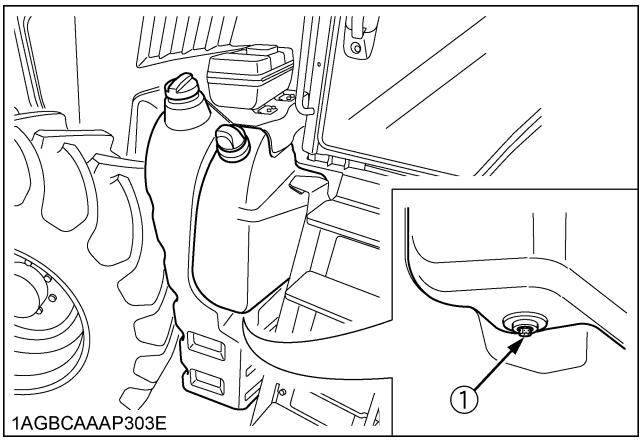
**The DEF/AdBlue® tank cap is blue. Be careful not to confuse it with the fuel tank cap.**




*(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 (10 U.S.gals.) |

**IMPORTANT :**

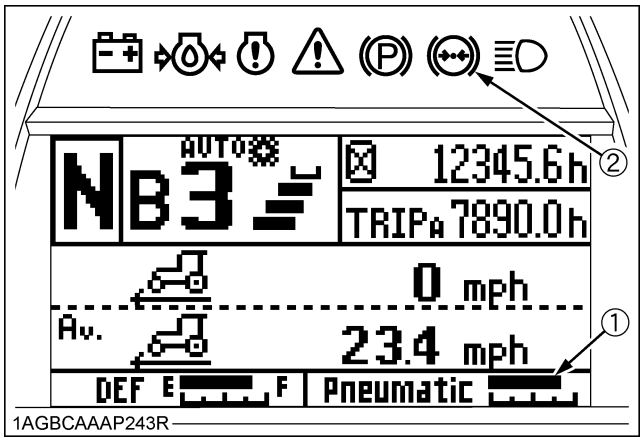
- Use exclusively DEF/AdBlue® that complies with the requirements of ISO 22241-1.
- **Do not allow fuel, oil or the like to enter the DEF/AdBlue ® tank.**
  If any other substance (gasoline/diesel/oil) is mistakenly introduced into the DEF/AdBlue® tank, do not attempt to start the engine and contact 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 aluminum areas will corrode.

## ■Checking Pneumatic Brake Pressure

**(if equipped)**

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.

If the pressure drops too low, the warning indicator lights up on the instrument panel. Do not run the tractor with this indicator on.

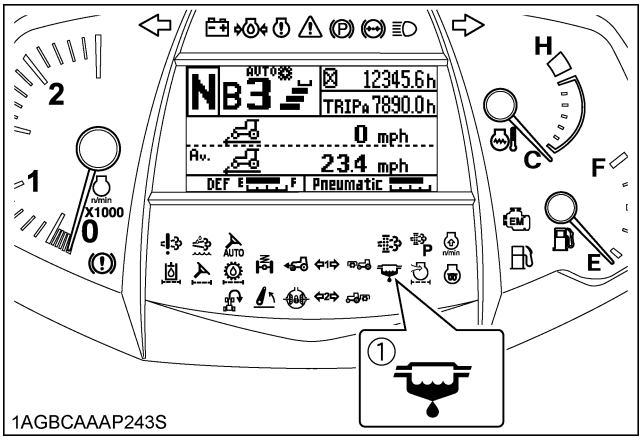



*(1) Pneumatic pressure gauge*
*(2) Pneumatic pressure warning indicator*

## ■Checking Water Separator

When water accumulates in the water separator, the water separator indicator on the instrument panel lights up and a warning buzzer sounds.

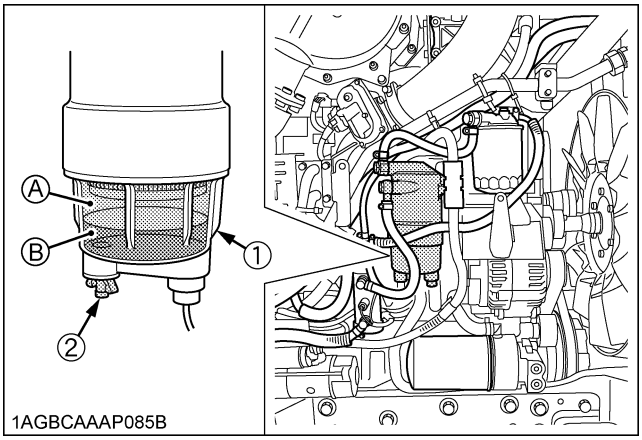
When this happens, drain the water in the below procedure.




*(1) Water separator indicator*

◆ **Drainage of 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" in "PERIODIC SERVICE" section.)




*(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 this 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.

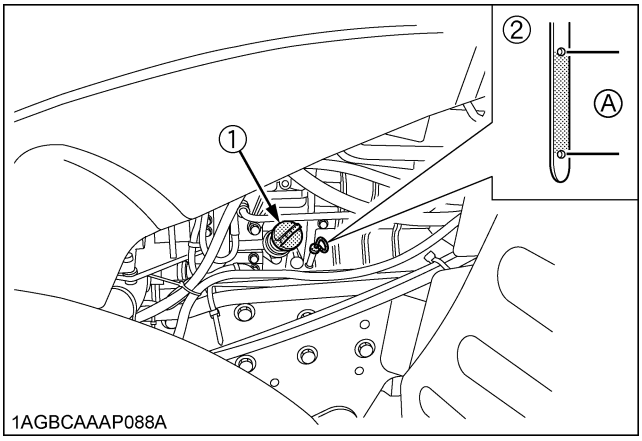
**IMPORTANT :**
- If water is drawn through to the fuel pump, extensive damage will occur.

## ■Checking Engine Oil Level

**WARNING**

**To avoid personal injury or death:**
- **Be sure to stop the engine before checking the oil level.**

1. Park the machine on a flat surface.
2. Check engine oil before starting the engine or 5 minutes or more after the engine has stopped.
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 lines between the 2 notches.
   If the level is too low, add new oil to the prescribed level at the oil inlet.
   (See "LUBRICANTS" in "MAINTENANCE" section.)



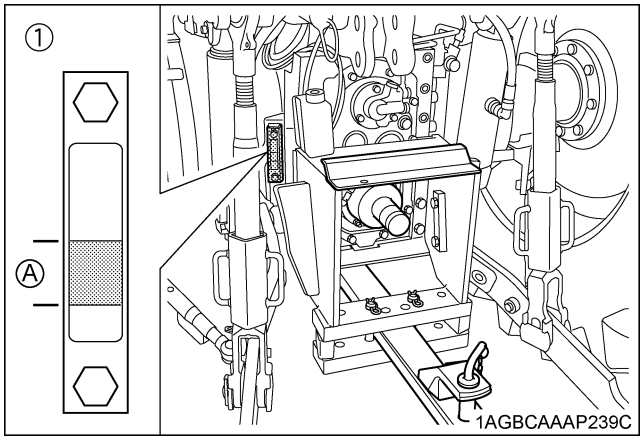

*(1) Oil inlet* *(A) Oil level is acceptable within this range.*
*(2) Dipstick*

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

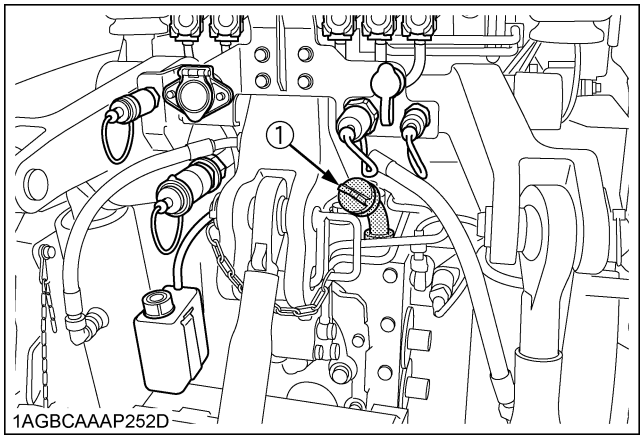
**NOTE :**
- At times a small amount of fuel, which is used to regenerate the DPF, may get mixed with the engine oil and the engine oil may increase in volume.

## ■Checking Transmission Fluid Level

1. Check the transmission fluid level under the following conditions:
   (1) Park the machine on a flat surface.
   (2) Lower the rear 3-point hitch and front end loader (if equipped).
   (3) Raise the front 3-point hitch. (if equipped)
   (4) Disconnect all remote control valve hoses.
   (5) 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" in "MAINTENANCE" section.)




*(1) Sight glass (A) Oil level is acceptable within this range.*




*(1) Oil inlet*

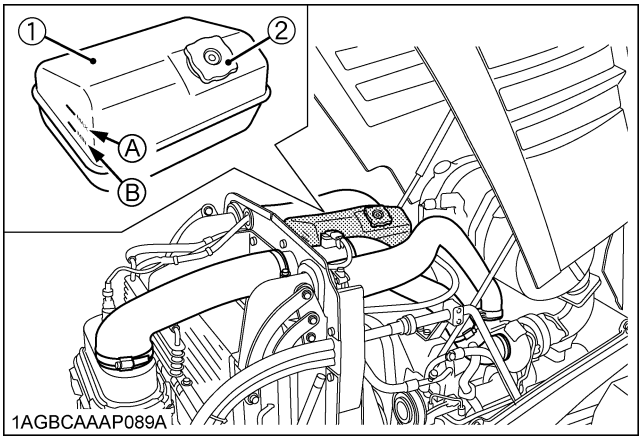
**IMPORTANT :**
- If oil level is low, do not run engine.
- More transmission oil may be needed for operations with many types of large implements equipped with hydraulic cylinder.
  (For details, consult your local KUBOTA Dealer.)

## ■Checking Coolant Level

**WARNING**

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

1. Check to see that the coolant level is between the "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 anti-freeze and soft water in the specified mixing ratio up to the max level.
   (See "Flushing Cooling System and Changing Coolant" in "EVERY 2000 HOURS or 2 YEARS" in "PERIODIC SERVICE" section.)




*(1) Recovery tank (A) "MAX"*
*(2) Radiator cap (B) "MIN"*

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

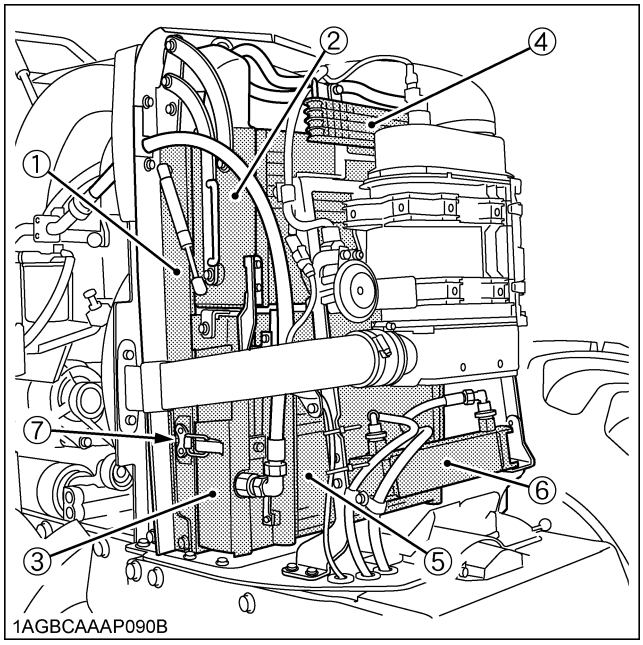
## ■Cleaning Grill, Radiator and Cooler

**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.**

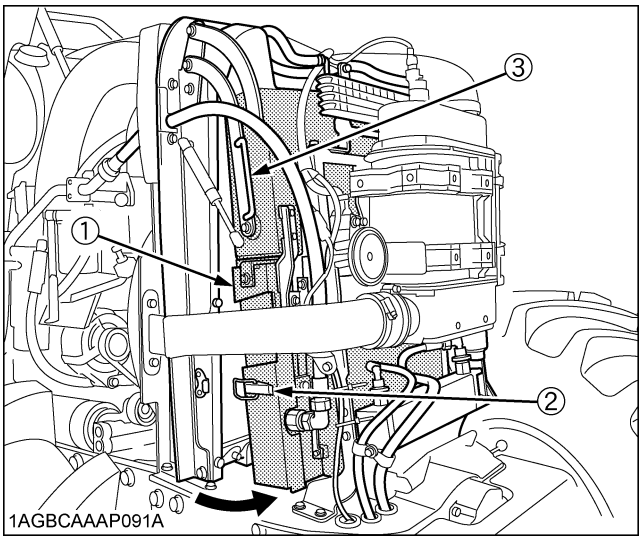
### ◆ Radiator and cooler locations




*(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

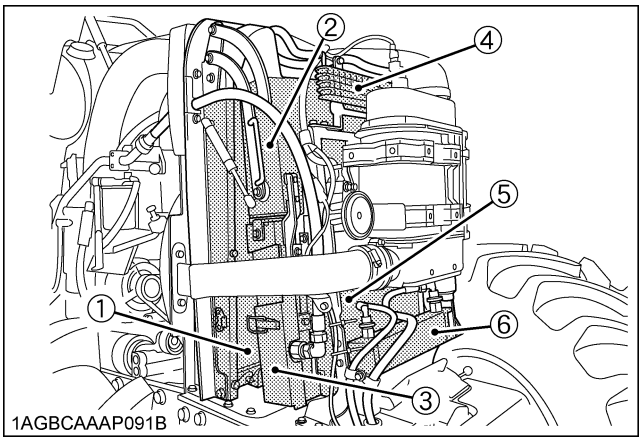
1. Undo the latches on both sides.
2. Hold the handle and open the cooler and condenser pack forward.
3. When the pack has been closed, be sure to lock the latches on both sides.




*(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.

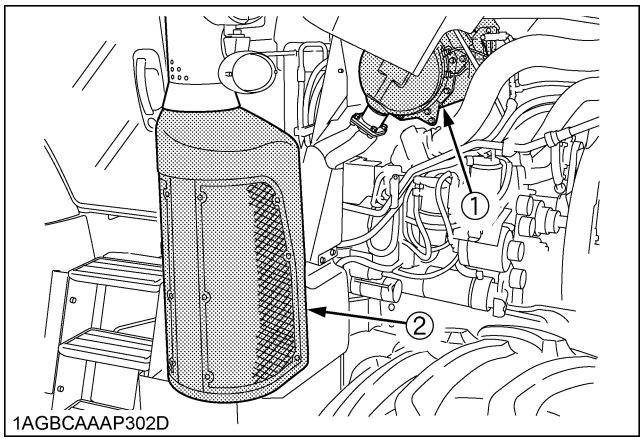
## ■Checking DPF/SCR Muffler

**WARNING**

**To avoid personal injury or death:**

- **Before checking or cleaning the DPF/SCR muffler, stop the engine and wait long enough until it is cooled down.**

Check the DPF/SCR muffler and its surroundings for accumulation of anything flammable. Otherwise a fire may result.




*(1) DPF muffler*
*(2) SCR muffler*

## ■Checking Brake Pedal

**WARNING**

**To avoid personal injury or death:**

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

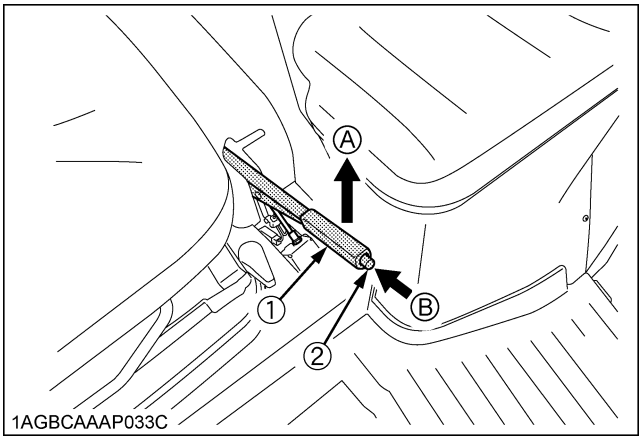
1. Inspect the brake pedals for free travel, and smooth operation.
2. Adjust if incorrect measurement is found:
   (See "Adjusting Brake Pedal" in "EVERY 100 HOURS" in "PERIODIC SERVICE" section.)

## ■Checking Parking Brake

Pull the parking brake lever to apply the brakes. With the key switch at "ON" position, the parking brake warning indicator on the instrument panel lights up.
To release the brakes, push in the button at the tip of the parking brake lever and tilt down the lever.

**NOTE :**

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




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

## ■Checking Gauges, Meter and Easy Checker(TM)

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

## ■Checking Head Light, Turn Signal / Hazard Light etc.

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

## ■Checking Seat Belt

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

## ■Checking Movable Parts

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

# INITIAL 50 HOURS

With a new machine, be sure to do the servicing, as discussed below, after the first 50 operating hours.

## ■Checking Engine Oil

(See "Changing Engine Oil" in "EVERY 500 HOURS" in "PERIODIC SERVICE" section for this service.)

## ■Replacing Engine Oil Filter

(See "Replacing Engine Oil Filter" in "EVERY 500 HOURS" in "PERIODIC SERVICE" section for this service.)

## ■Checking Fan Belt

(See "Checking Fan Belt Tension" in "EVERY 400 HOURS" in "PERIODIC SERVICE" section for this service.)

## ■Replacing Transmission Oil Filter

(See "Replacing Transmission Oil Filter" in "EVERY 1000 HOURS" in "PERIODIC SERVICE" section for this service.)

# EVERY 50 HOURS

## ■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.**

◆ **Preparation before testing**

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

◆ **Test: Engine start system**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
2. Sit on the operator's seat.
3. Depress the clutch pedal fully.
4. Turn the key to "START" position.
5. The engine must crank.
6. If it does not crank, consult your local KUBOTA Dealer for this service.

◆ **Test: Transmission (neutral) control**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
2. Sit on the operator's seat.
3. Depress the clutch pedal fully.
4. Start the engine.
5. Check to see if the shuttle shift is held in their neutral position.
6. If not, consult your local KUBOTA Dealer for this service.

◆ **Test: Hydraulic up/down (Lock) control**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
2. Sit on the operator's seat.
3. Depress the clutch pedal fully.
4. 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-P. quick raise/lower switch or the depth control dial (hydraulic 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-P. quick raise/lower switch or the depth control dial (hydraulic dial), and make sure the implement is raised and lowered.
9. If any trouble occurs, consult your local KUBOTA Dealer for this service.

◆ **Test: Remote hydraulic control**
**[Premium, Premium KVT models]**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
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.

◆ **Test: External rear PTO switch control**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
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.

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

(Do this test for the front PTO and rear PTO individually.)

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
2. Sit on the operator's seat.
3. Make sure the PTO drive shaft is disconnected from any attached implement.
4. Start the engine.
5. To check the rear PTO, select PTO rotation with the PTO operating mode selector lever and the PTO gear shift lever.
6. Engage the PTO clutch control switch or lever. The PTO should begin to rotate.
7. With the PTO is rotated, stand up from the operator's seat and make sure the buzzer starts sounding 10 seconds or so, and see if the PTO is rotating continuously.
8. If the buzzer does not sound, shut off the engine and consult your local KUBOTA Dealer for immediate servicing of the PTO OPC.
9. If the PTO OPC is operating properly, shut off the engine, and reconnect the implement drive shaft to the PTO. Restart the engine per the available instructions.

◆ **Test: Operator Presence Control (O.P.C.) System [Standard, Premium models]**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
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.

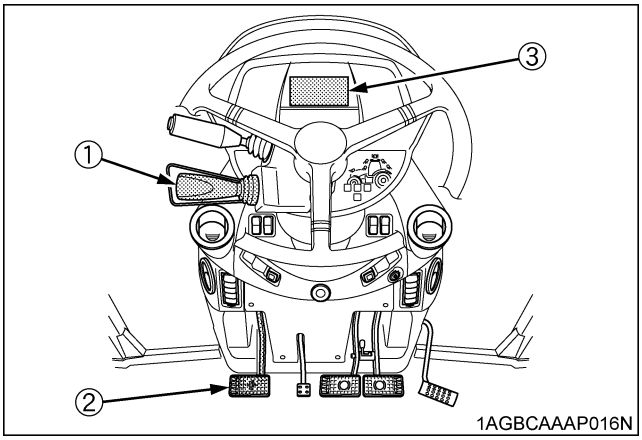
◆ **Test: Operator Presence Control (O.P.C.) System [Premium KVT model]**

1. Follow the instruction of "PARKING THE TRACTOR". (See "PARKING THE TRACTOR" in "SAFE OPERATION" section.)
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.

## WARNING

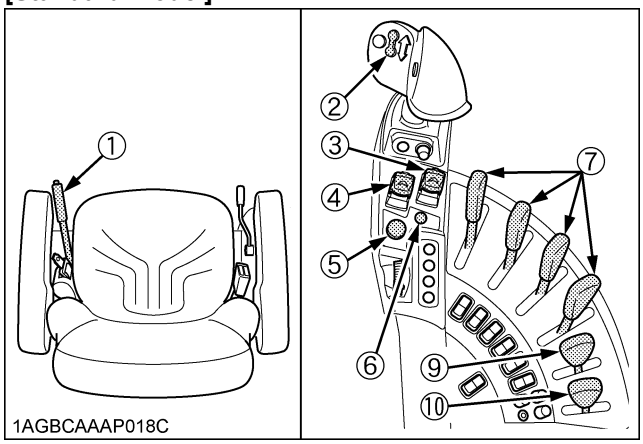
**To avoid personal injury or death:**

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

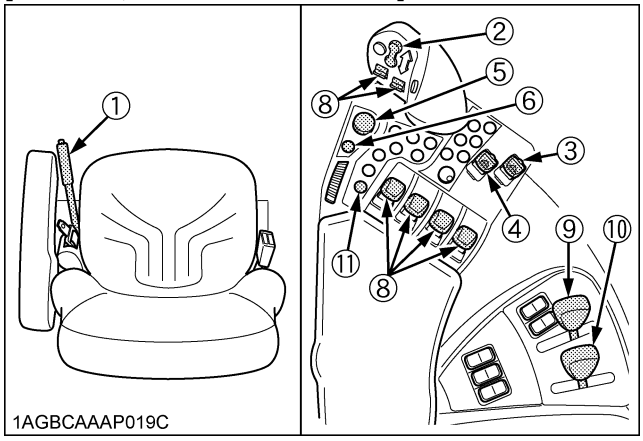



*(1) Shuttle lever*
*(2) Clutch pedal*
*(3) Liquid crystal display*

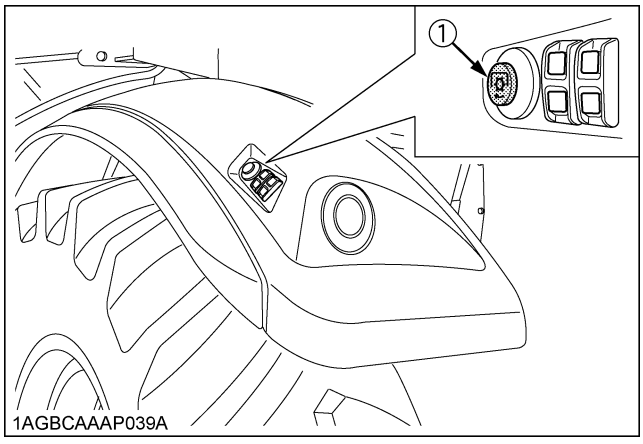
**[Standard model]**




**[Premium, Premium KVT models]**




*(1) Parking brake lever*
*(2) 3-P. quick raise/lower switch*
*(3) Front PTO clutch control switch*
*(4) Rear PTO clutch control switch*
*(5) Depth control dial (Hydraulic dial)*
*(6) 3-point hitch lock button*
*(7) Remote control valve lever*
*(8) Remote control valve switch*
*(9) PTO operation mode selection lever*
*(10) PTO speed selection lever*
*(11) Remote control valve lock button*




*(1) External switch for rear PTO*

## ■Checking Wheel Bolt Torque

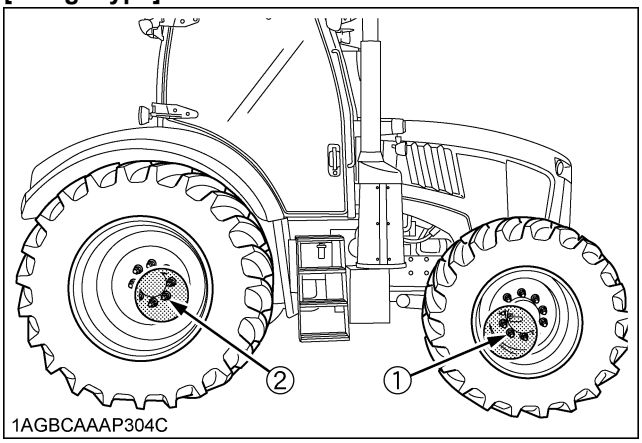
**WARNING**

**To avoid personal injury or death:**

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

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

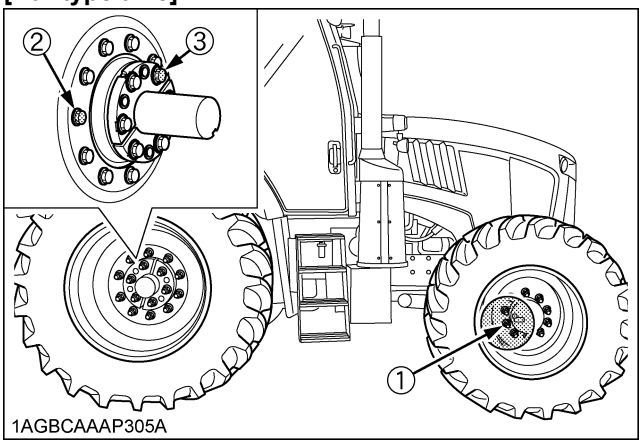
**[Flange type]**




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

| (1) | (2) |
|---|---|
| 540 (55.1) [398] | 670 (68.3) [494] |

**[Bar type axle]**

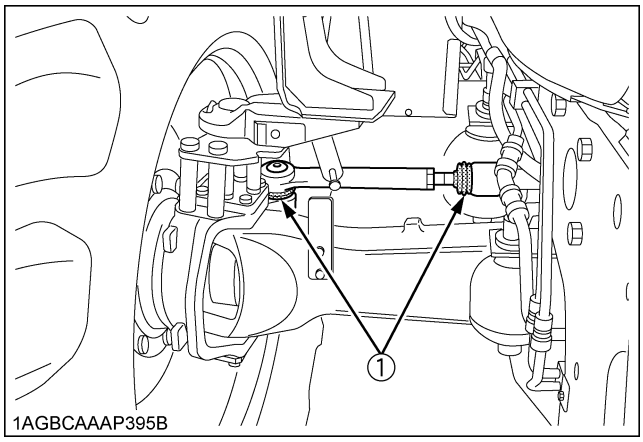



N-m (kgf-m) [ft-lbs.]

| (1) | (2) (3) |
|---|---|
| 540 (55.1) [398] | 543 (55.4) [400] |

## ■Checking Tie-rod Dust Cover

1. Check to see that dust covers are not damaged.
2. If dust covers are damaged, consult local KUBOTA Dealer for this service.




*(1) Dust cover*

**IMPORTANT :**

- If dust covers are cracked, water and dust invade into tie-rod and it will be early wear.

## ■Checking Air Brake for Trailer

**(if equipped)**

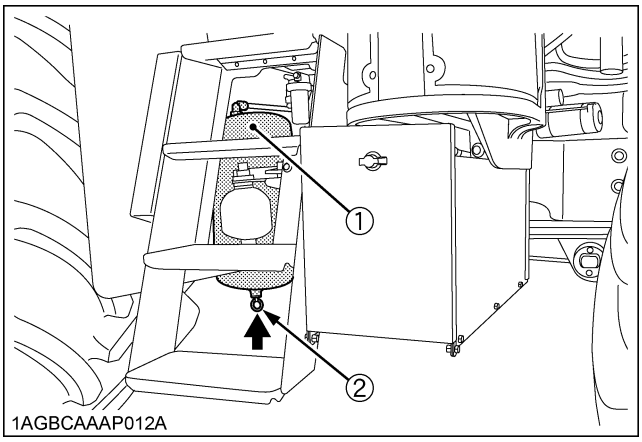
**◆ Discharging condensation (water) from the air tank**

**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.**
- **Before doing the servicing, lower the pressure in the air tank first.**

Push in the valve pin at the bottom of the air tank and check if there is a pool of condensation inside.




*(1) Air tank*
*(2) Valve pin*

**◆ Inspecting the air connector**

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.

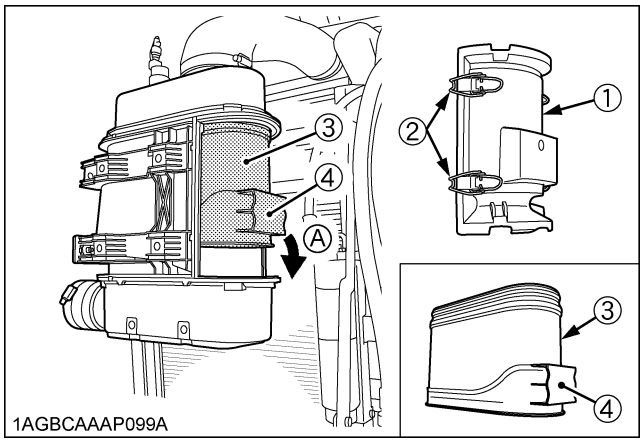
**◆ Checking also the following parts**

1. Compressor drive belt for damage
2. Compressor itself for oil leak
3. Hoses for damage

# EVERY 100 HOURS

## ■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. Then, pull out on the service handle to remove the primary element from the housing.
3. 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$^2$, 30 psi).
4. 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.
5. Replace air cleaner primary element:
   Once every 1000 hours or yearly, whichever comes first.




*(1) Housing service cover*
*(2) Latch*
*(3) Primary element*
*(4) Service handle*
*(A) "PUSH DOWN"*

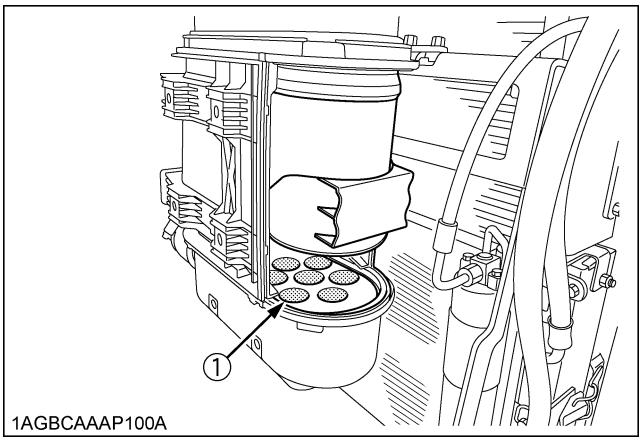
**NOTE :**

- If the housing service cover doesn't fit, remove and re-check the primary element position. The cover will be difficult to install if the element isn't installed correctly.

### ◆ 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.




*(1) Pre-cleaner tubes*

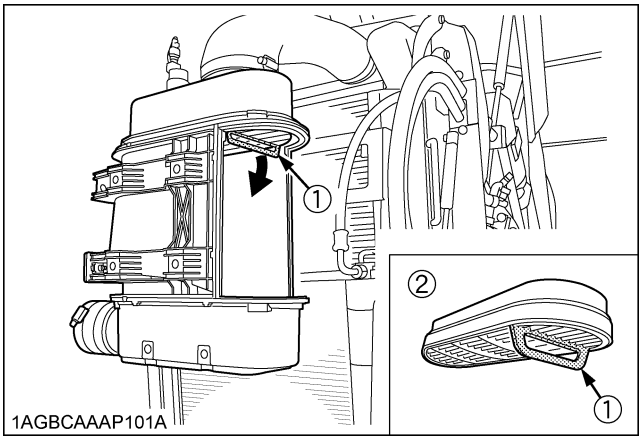
**IMPORTANT :**

- The air cleaner uses a dry element, so never apply oil.
- Do not run the engine with filter element removed.
- Do not touch the secondary element except in cases where replacing is required.

### ◆ Replacing Secondary Element

The secondary element should be replaced every 1000 hours or yearly, whichever comes first.

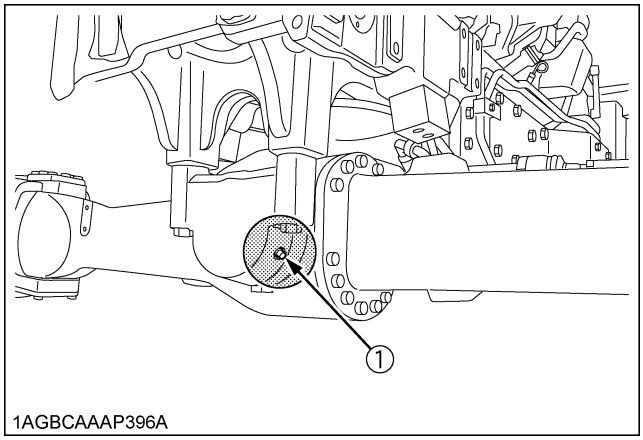
1. To remove the safety element, use the plastic handle on the face of the safety element. Pull the element toward the center of the housing and remove it. Ensure that the outlet tube sealing area is clean and undamaged.



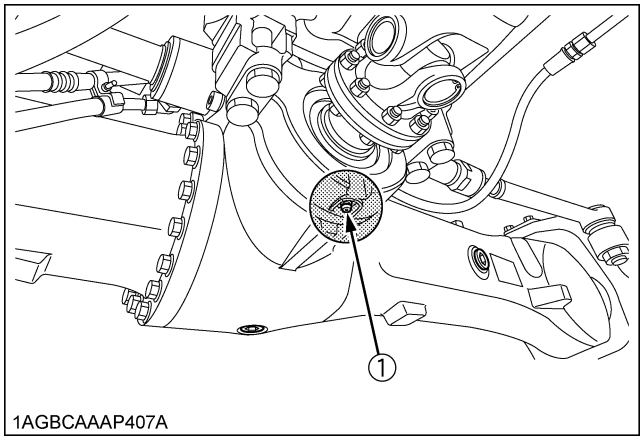

*(1) Plastic handle*
*(2) Secondary element*

## ■Lubricating Grease Fittings

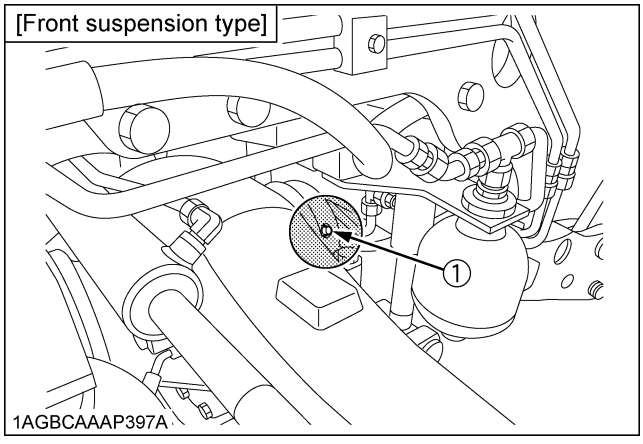
Apply a small amount of multipurpose grease to the following points every 100 hours:
If you operated the machine in extremely wet and muddy conditions, lubricate grease fittings more often.



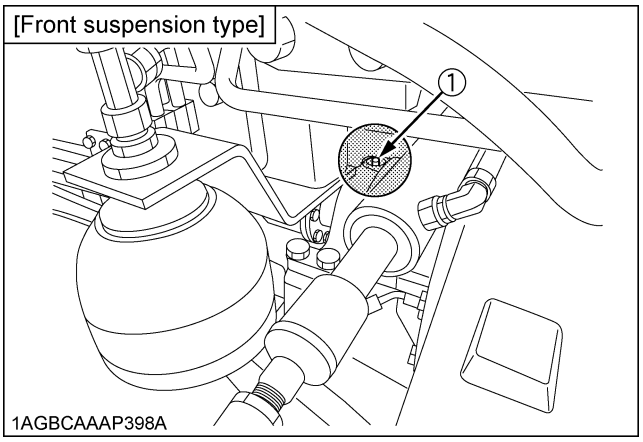

*(1) Grease fitting (Front axle support)*



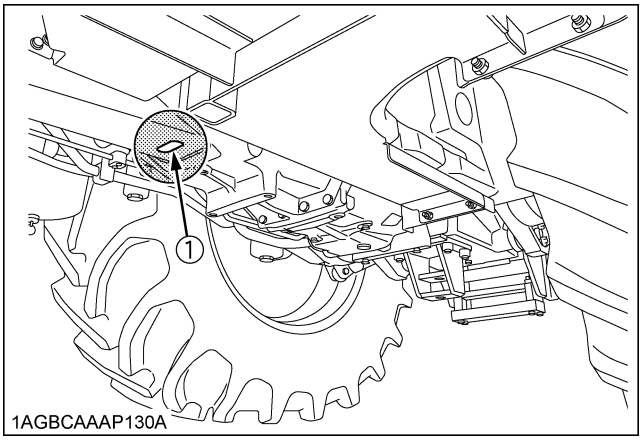

*(1) Grease fitting (Front axle support)*



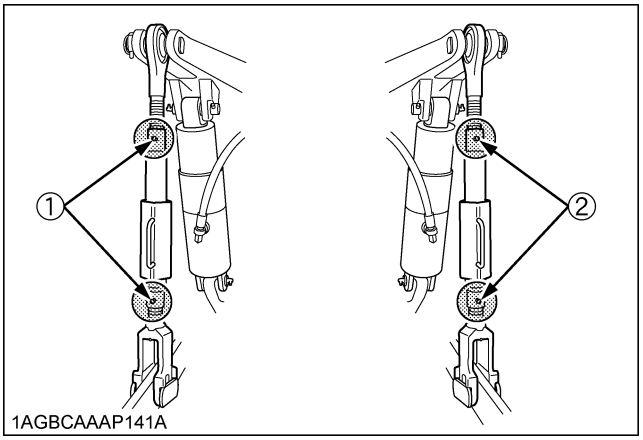

*(1) Grease fitting (Front axle support)*



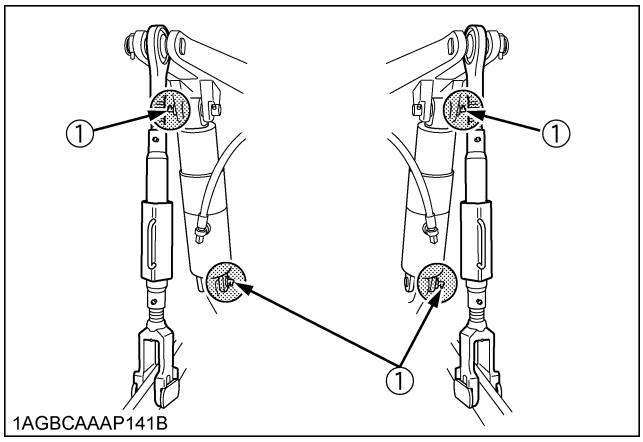

*(1) Grease fitting (Front axle support)*



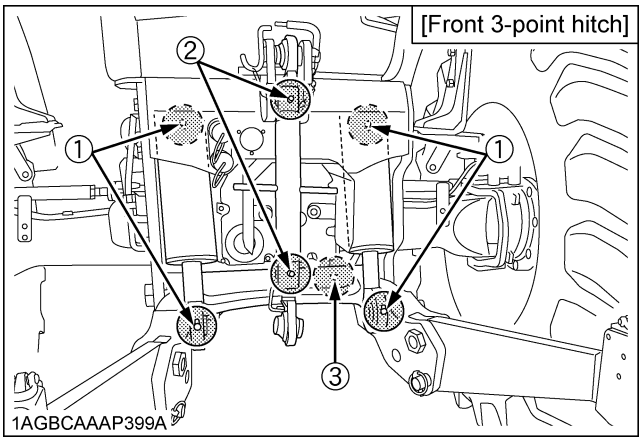

*(1) Grease fitting (Front axle drive shaft)*



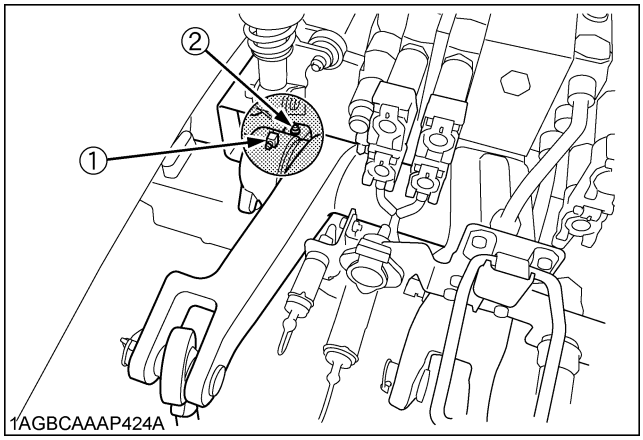

*(1) Grease fitting (Lifting rod) [LH]*
*(2) Grease fitting (Lifting rod) [RH]*



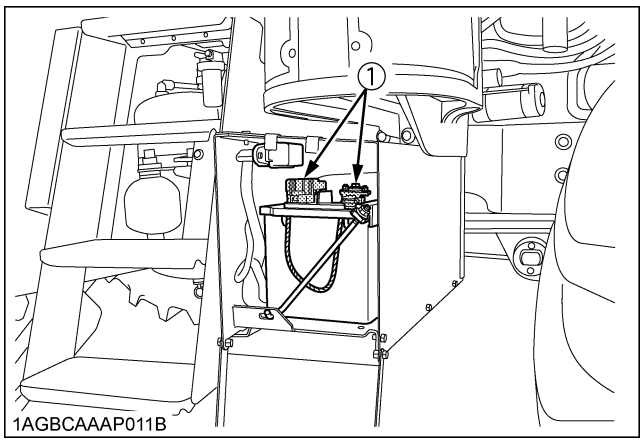

*(1) Grease fitting (Hydraulic lift cylinders pin)*




*(1) Grease fitting (Hydraulic lift cylinders pin)*
*(2) Grease fitting (Top link)*
*(3) Grease fitting (Swing arm support)*




*(1) Grease fitting (Hydraulic lift arm shaft) [LH, RH]*
*(2) Grease fitting (Parking brake shaft) [LH, RH]*




*(1) Battery terminals*

## ■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.**

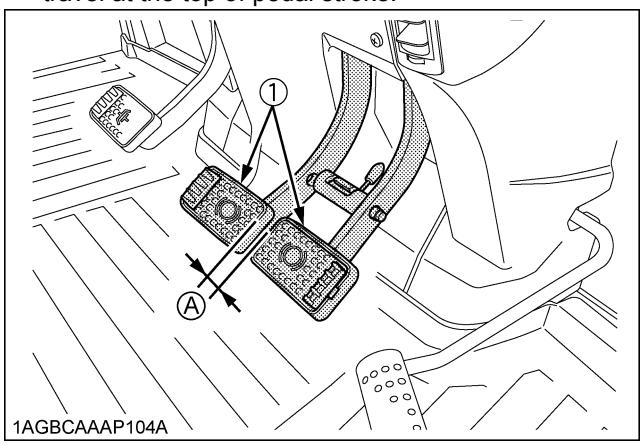
**◆ Checking the brake pedal free travel**
**[without trailer brake]**

| | |
|---|---|
| Proper brake pedal free travel | 3 to 7 mm (0.1 to 0.3 in.) on the pedal |
| | Keep the free travel in the right and left brake pedals equal. |

**[with trailer brake] (if equipped)**

| | | |
|---|---|---|
| Proper brake pedal free travel | Right brake pedal | 3 to 7 mm (0.1 to 0.3 in.) on the pedal |
| | Left brake pedal | Right brake free travel (actual value) + 9 to 11 mm (0.35 to 0.43 in.) on the pedal. |
| Step on the right brake, and the trailer hydraulic brake allows some pilot oil to flow. This means that the free travel is different between the left and right brakes. | | |

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



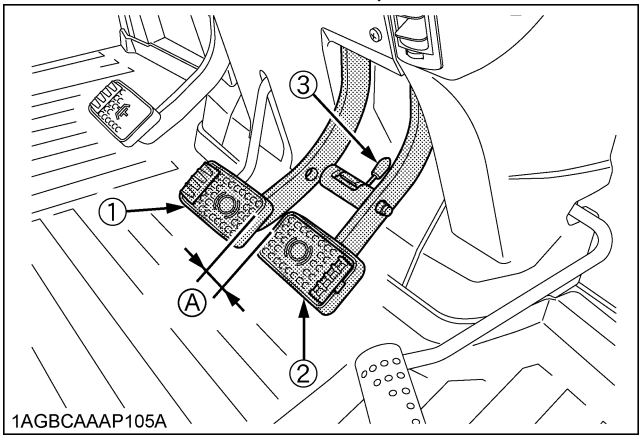

*(1) Brake pedals* *(A) "FREE TRAVEL"*

**NOTE :**
- Brake pedals should be equal when depressed.

**◆ Checking the brake pedal stroke**

| | |
|---|---|
| Pedal stroke | Less than 100 mm (3.9in.) 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.




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

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

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

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

## ■Adjusting Parking Brake Lever

Consult your local KUBOTA Dealer for this service.

## ■Checking Battery Condition

### DANGER

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

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

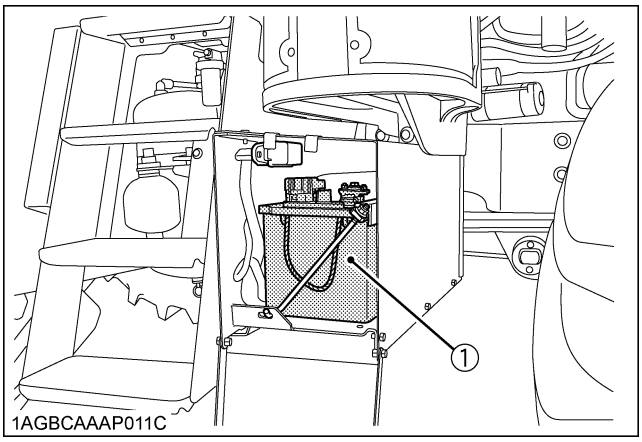
### WARNING

**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 battery.**

**The factory-installed battery is of 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.



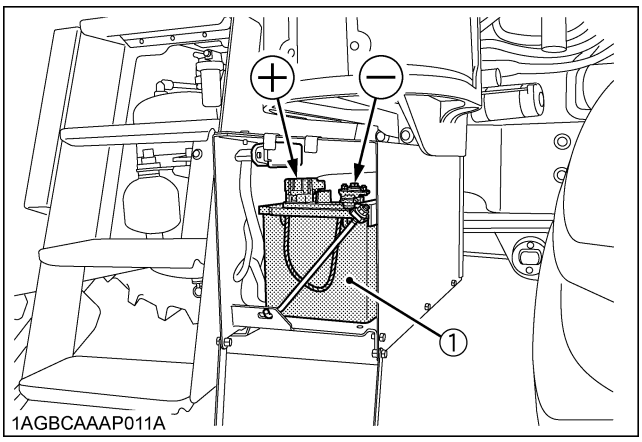

*(1) Battery*

◆ **Battery Charging**

### WARNING

**To avoid personal injury or death:**

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




*(1) Battery*

1. To slow charge the battery, connect the battery positive terminal to the charger positive terminal and the negative to the negative, then recharge in the standard fashion.

2. A boost charge is only for emergencies. It will partially charge the battery at a high rate and in a short time. When using a boost-charged battery, it is necessary to recharge the battery as early as possible. Failure to do this will shorten the battery's service life.
3. Only switch off the charger once the battery has finished charging.
4. When exchanging an old battery for a new one, use battery of equal specification shown in **table 1**.

Table 1

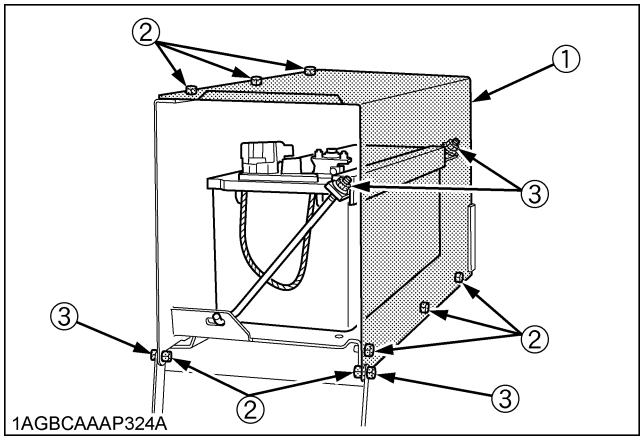
| Volts (V) | Capacity (Ah) | Reserve Capacity (min) | Cold Cranking Amps (EN) |
|---|---|---|---|
| 12 | 174 (C20/EN) | 380 | 1400 (–18ºC [0.4ºF]/EN) |

◆ **Direction for Storage**

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

◆ **How to detach the battery**

1. In order to prevent short-outs due to contact between the battery terminals (plus/minus) and the battery cover, use a rag to cover the terminals when removing or replacing the cover.
2. After removing the bolts, nuts, and battery cover as shown in the figure below, remove the battery.
3. When connecting the battery cable, confirm the cable and terminal plus/minus directions before connecting.




*(1) Battery cover*
*(2) Bolt*
*(3) Nut*

## ■Checking Front PTO Oil

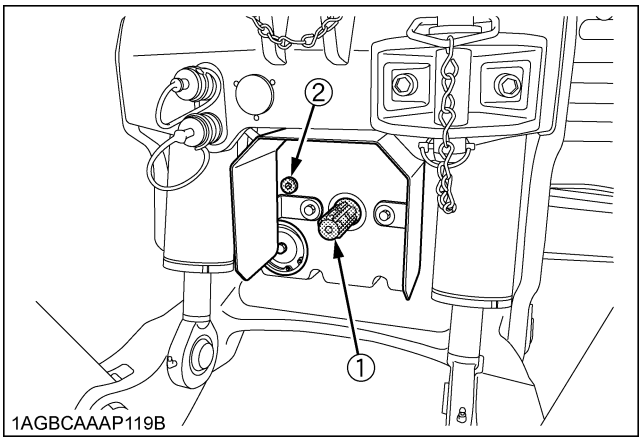
**(if equipped)**

**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. (See "LUBRICANTS" in "MAINTENANCE" section.)
2. Tighten up the filling plug in place.

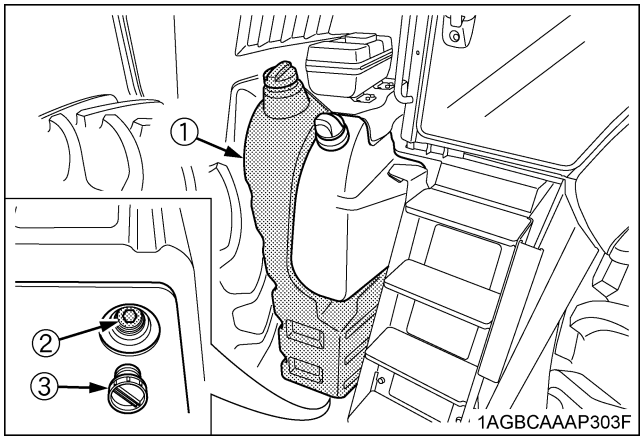



*(1) Front PTO*
*(2) Filling plug*

# EVERY 200 HOURS

## ■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*

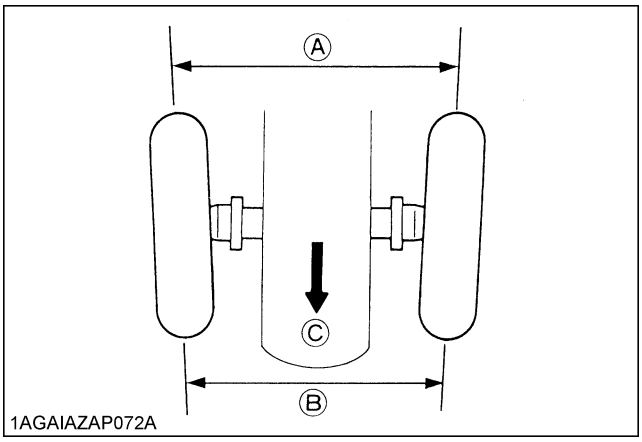
| | Tightening torque |
|---|---|
| Drain plug | 19 to 21 N-m<br>(1.9 to 2.1 kgf-m, 14.0 to 15.5 ft-lbs) |

**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.

## ■Adjusting Toe-in

| | |
|---|---|
| Proper toe-in | 0 to 8 mm (0 to 0.31 in.) |

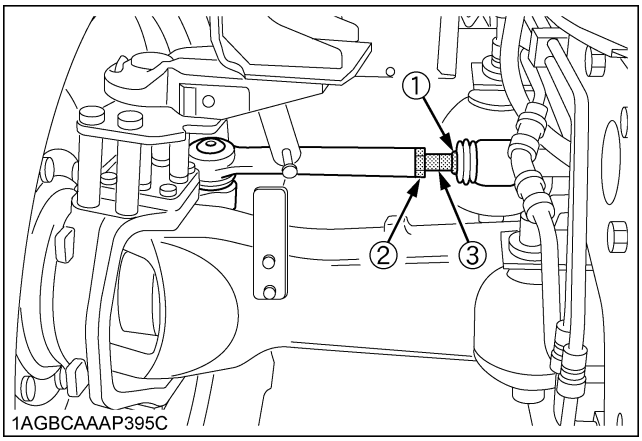
1. Park tractor on a flat place.
2. Turn steering wheel so front wheels are in the straight ahead position.
3. Lower the implement, lock the park brake and stop the engine.
4. Measure distance between tire beads at front of tire, at hub height.
5. Measure distance between tire beads at rear of tire,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




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

◆ **Adjusting procedures**

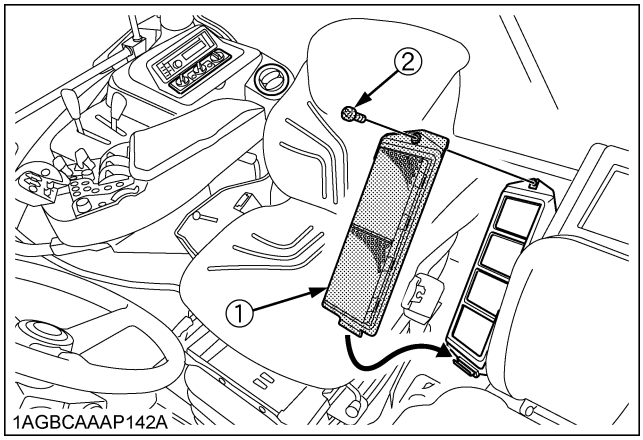
1. Detach the snap ring.
2. Loosen the tie-rod nut.
3. Turn the tie-rod joint to adjust the rod length until the proper toe-in measurement is obtained.
4. Retighten the tie-rod nut.
5. Attach the snap ring of the tie-rod joint.

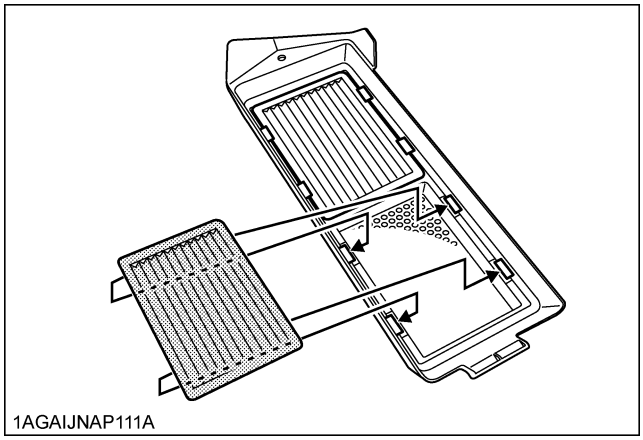



*(1) Snap ring*
*(2) Tie-rod nut*
*(3) Tie-rod joint*

## ■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$^2$, 30 psi).




*(1) Inner air filter*
*(2) Knob bolts*

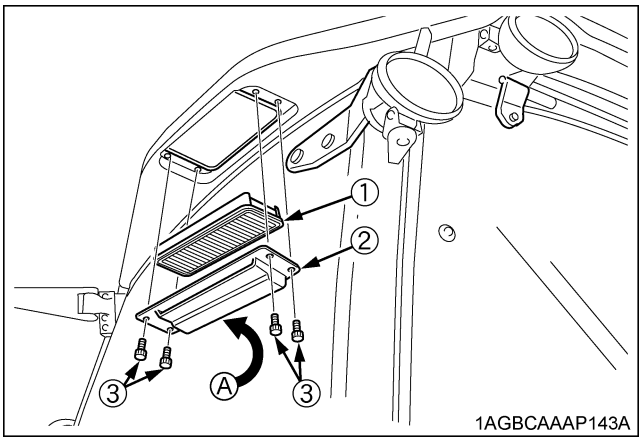
## ■Cleaning Fresh Air Filter

**WARNING**

**To avoid personal injury or death:**

- **When removing and attaching the filter, apply parking brake, stop the engine and remove the key.**
- **Check the filter using the strong and stable ladder to stand on.**
  **Never check it while standing on a tire or fender.**

Remove the knob bolts and pull out filter.




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

**NOTE :**

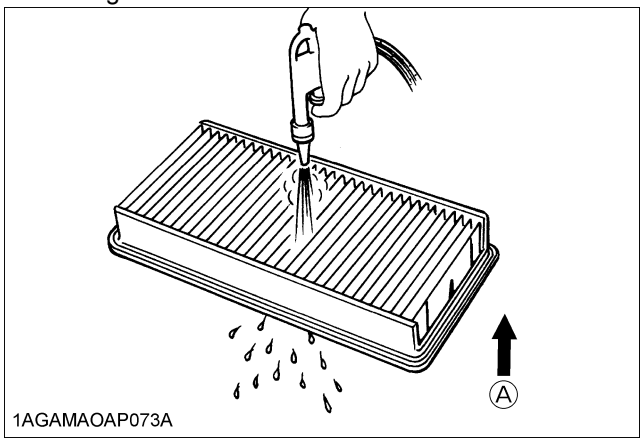
- Attach the filter and cover as the illustration above.

◆ **Cleaning the air filter**

- Normal use
  Blow air from the opposite direction to the filter's normal air flow.
  Pressure of compressed air must be under 205 kPa (2.1 kgf/cm$^2$, 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 odor in the CAB when the system is used next.

# EVERY 400 HOURS

## ■Checking Fan Belt Tension

**WARNING**

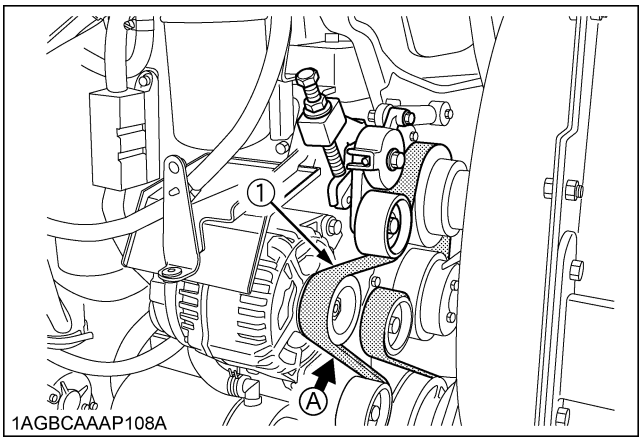
**To avoid personal injury or death:**

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

| | |
|---|---|
| Proper belt tension | A deflection of between 9 to 11 mm (0.35 to 0.43 in.) when the belt is pressed (98 N [10 kgf]) in the middle of the span.<br>(New belt: 7 to 9 mm (0.28 to 0.35 in.)) |

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 new one.

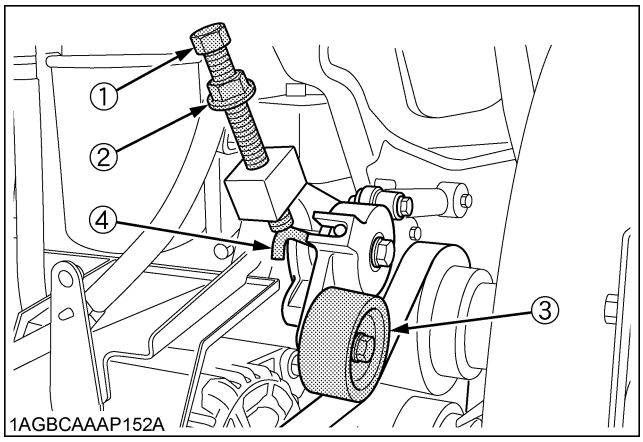
1. Stop the engine and remove the key.
2. Press on the spot indicated in the figure below to measure the deflection.




*(1) Fan belt* *(A) Check the belt tension*

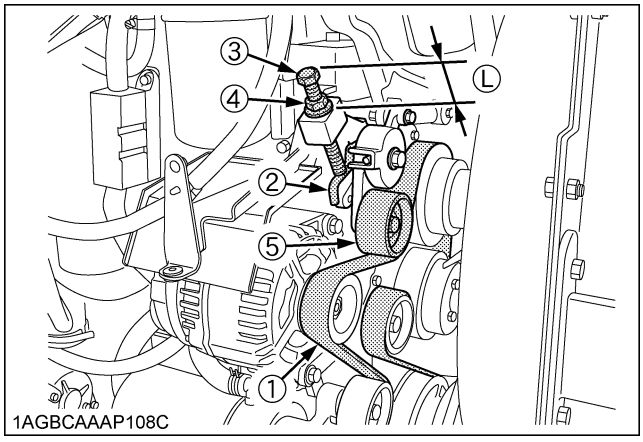
◆ **Replacing the belt**

1. Detach the air conditioner drive belt. (See "Checking Air Conditioner Drive Belt" in "EVERY 500 HOURS" in "PERIODIC SERVICE" section.)
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*

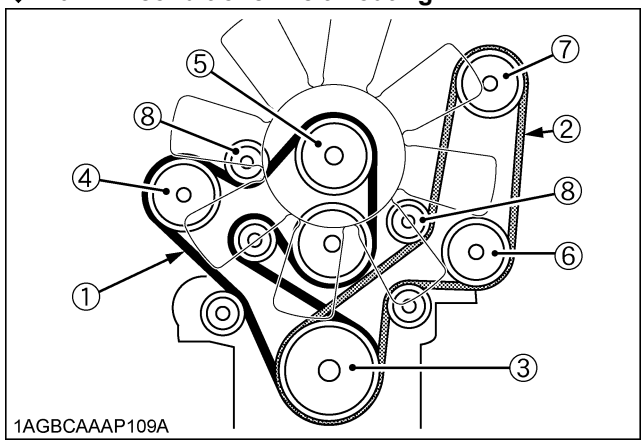
3. Lift the tension pulley and remove the belt.
4. Fit the new belt instead as shown below.
5. Tighten the tension bolt until the proper belt tension is obtained. Finally tighten up the lock nut.

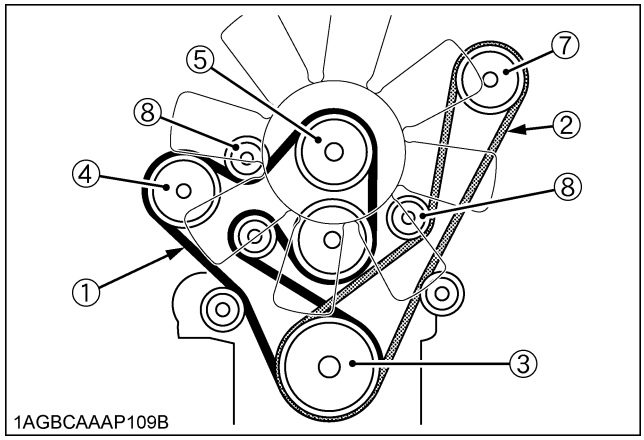



*(1) Belt*
*(2) Tension spring end*
*(3) Tension bolt*
*(4) Lock nut*
*(5) Self-tension pulley*

| Tension bolt length (L) | 30 mm (1.2 in.) (Reference) |
|---|---|
| Tightening torque of lock nut | 123.6 to 147.1 N-m<br>(12.6 to 15.0 kgf-m)<br>(91.2 to 108.5 ft-lbs.) |

◆ **Fan/Air conditioner Belt Routing**



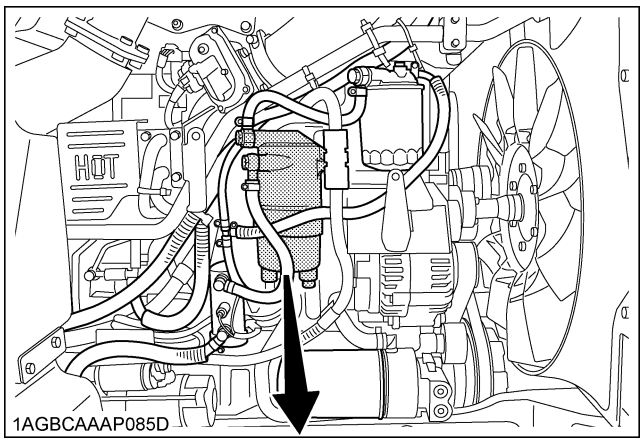



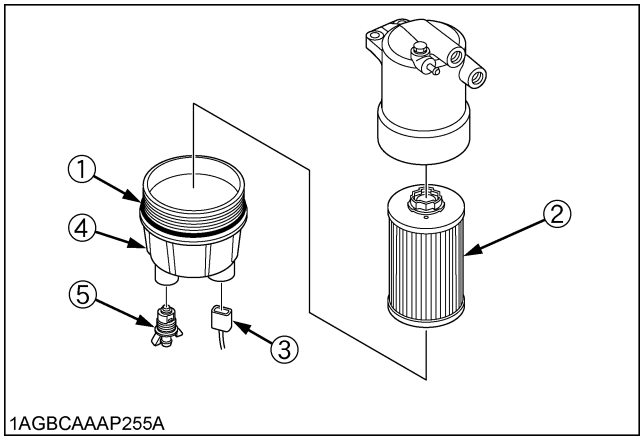

*(1) Fan belt*
*(2) Air conditioner belt*
*(3) Drive pulley*
*(4) Alternator*
*(5) Fan pulley*
*(6) Air-compressor (if equipped)*
*(7) Air conditioner compressor*
*(8) Self-tension pulley*

## ■Cleaning Water Separator

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

1. Disconnect the connector of water sensor.
2. Unscrew the cup and remove it, then rinse the inside with kerosene.
3. Take out 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" in "PERIODIC SERVICE" section.)




*(1) O ring*
*(2) Element*
*(3) Water sensor connector*
*(4) Cup*
*(5) Drain plug*

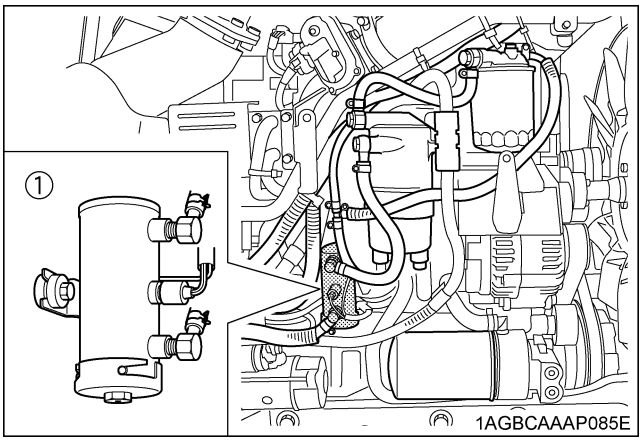
**IMPORTANT :**

- If the water separator and/or fuel filter is not well maintained, the supply pump and injector may be damaged earlier than expected.

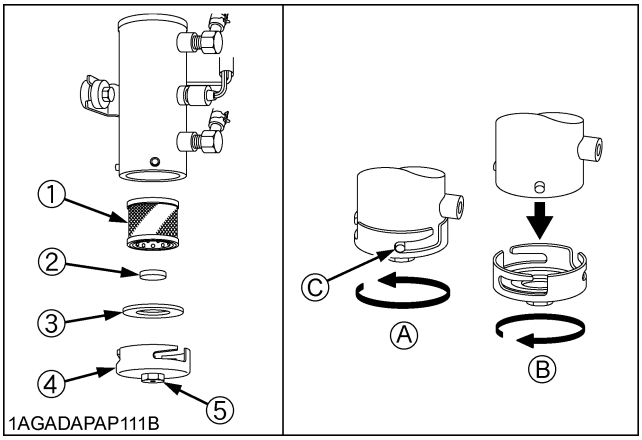
## ■Cleaning Fuel Solenoid Pump Element

**IMPORTANT :**

- When assembling the parts, be careful that no dirt or dust contacts them.
- Be sure to install the cover securely.
- After assembly, be sure to bleed the air from the fuel system. (See "Bleeding Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE".)




*(1) Fuel solenoid pump*




*(1) Element*
*(2) Magnet*
*(3) Gasket*
*(4) Cover*
*(5) Nut*
*(A) "TIGHTEN"*
*(B) "LOOSEN"*
*(C) Pin*
*"Tighten the cover until the end of the slot contacts the pin."*

# INITIAL 500 HOURS

With a new machine, be sure to do the servicing, as discussed below, after the first 500 operating hours.

## ■Changing Transmission Fluid

(See "Changing Transmission Fluid" in "EVERY 1000 HOURS" in "PERIODIC SERVICE" section for this service.)

## ■Changing Rear Axle Case Oil

(See "Changing Rear Axle Case Oil" in "EVERY 1000 HOURS" in "PERIODIC SERVICE" section for this service.)

## ■Replacing Transmission Oil Filter

(See "Replacing Transmission Oil Filter" in "EVERY 1000 HOURS" in "PERIODIC SERVICE" section for this service.)

# EVERY 500 HOURS

## ■Changing Engine Oil

**WARNING**

**To avoid personal injury or death:**

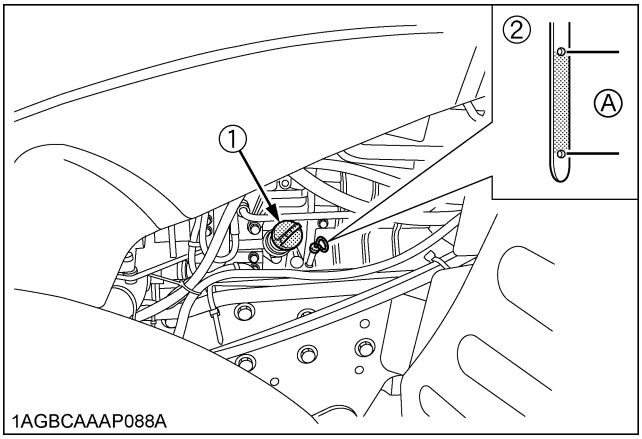
- **Be sure to stop the engine before changing the oil.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

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

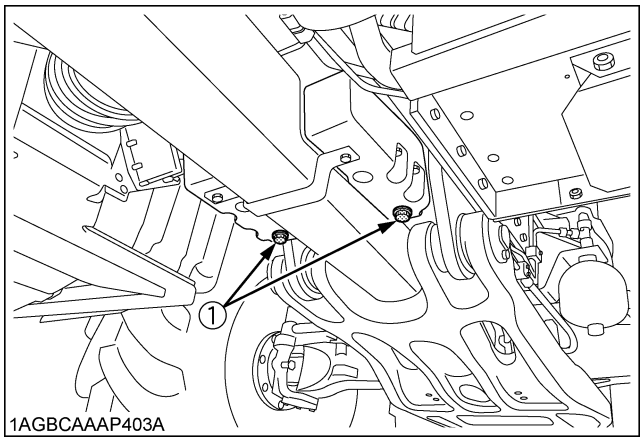
| | |
|---|---|
| Oil capacity with filter | 22.0 L (5.8 U.S.gals.) |

**IMPORTANT :**

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




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




*(1) Drain plug*

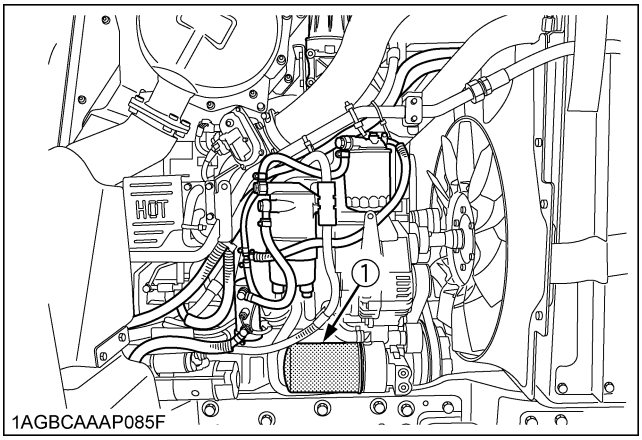
## ■Replacing Engine Oil Filter

**WARNING**

**To avoid personal injury or death:**

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

1. Remove the oil filter.
2. Put a film of clean engine oil on the rubber seal of the new filter.
3. Tighten the filter quickly until it contacts the mounting surface.
   Tighten filter by hand an additional 1/2 turn only.
4. After the new filter has been replaced, the engine oil normally decreases a little. Make sure that the engine oil does not leak through the seal and be sure to check the oil level on the dipstick. Then, replenish the engine oil up to the prescribed level.




*(1) Engine oil filter*

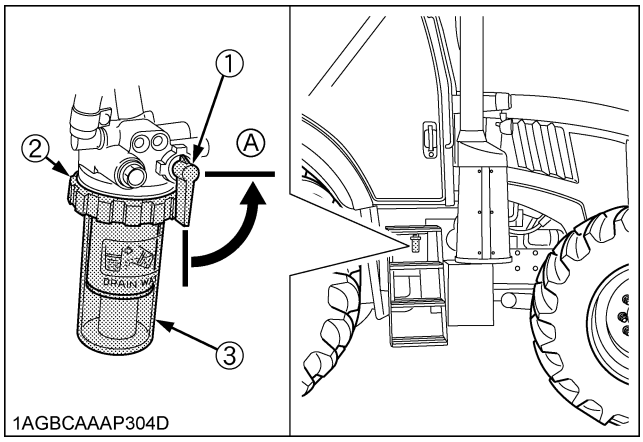
**IMPORTANT** :

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

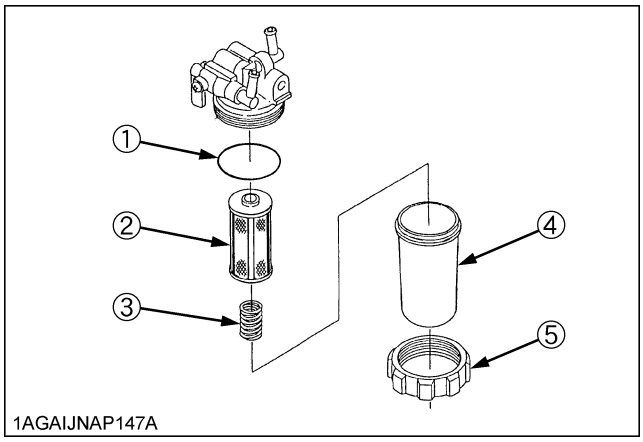
## ■Cleaning Pre-Fuel Filter

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

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



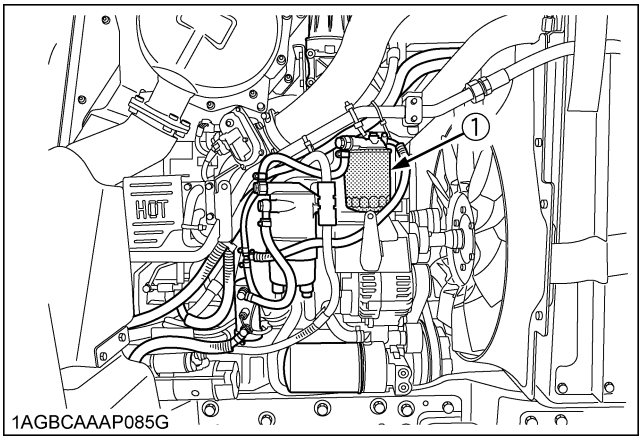

*(1) Fuel shutoff-valve*
*(2) Retainer ring*
*(3) Cup*
*(A) "CLOSE"*




*(1) O ring*
*(2) Element*
*(3) Spring*
*(4) Cup*
*(5) Retainer ring*

## ■Replacing Fuel Filter

1. Remove the fuel filter.
2. Put a film of clean fuel on rubber seal of new filter.
3. Tighten the filter quickly until it contacts the mounting surface.
   Tighten filter by hand an additional 1/2 turn only.
4. Bleed the fuel system.
   (See "Bleeding Fuel System" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)




*(1) Fuel filter*

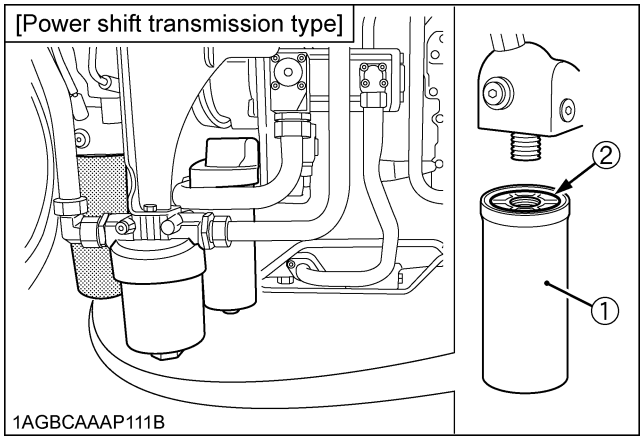
## ■Replacing Hydraulic Oil Filter (Suction)

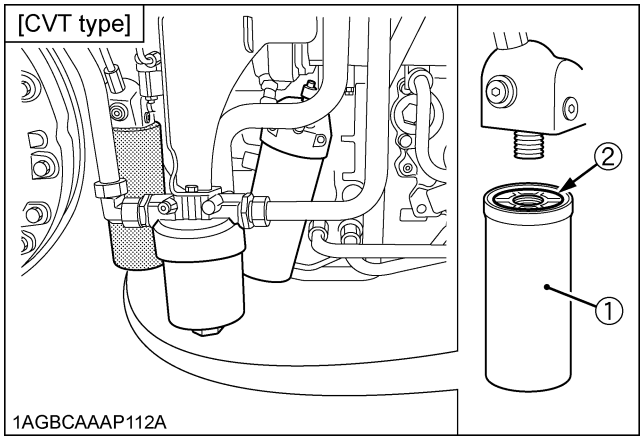
**WARNING**

**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.**

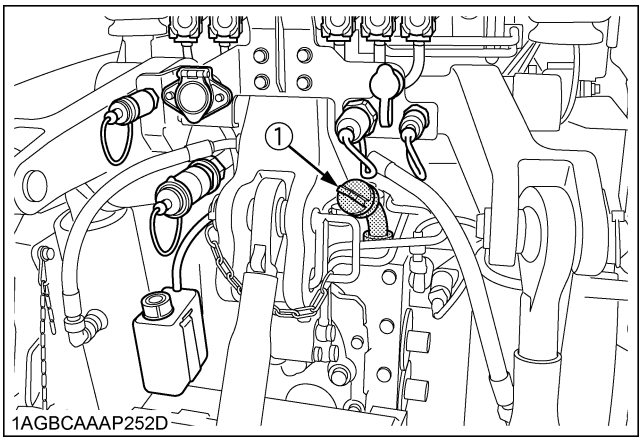
1. Place the oil pan underneath the hydraulic oil filter.
2. Remove the oil filter.



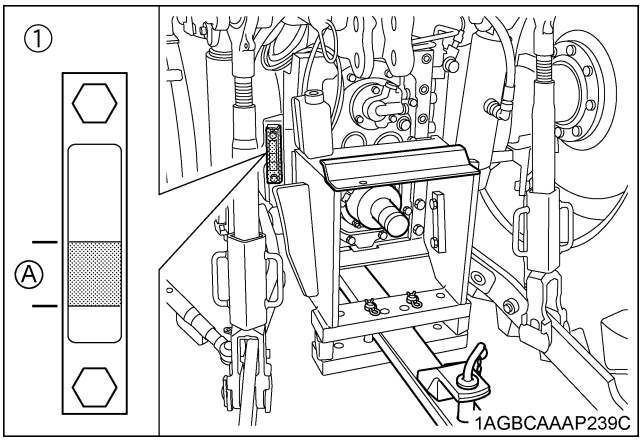




*(1) Hydraulic oil filter*
*(2) O-ring*

3. Put a film of clean transmission oil on the rubber seal of the new filter.
4. Tighten the filter quickly until it contacts the mounting surface.
   Tighten filter by hand an additional 1/2 turn only.
5. After the new filter has been replaced, 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 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:
  (1) Park the machine on a flat surface.
  (2) Lower the rear 3-point hitch and front end loader. (if equipped)
  (3) Raise the front 3-point hitch. (if equipped)
  (4) Disconnect the all remote control valve hoses.
  (5) Shut off engine and wait for 10 minutes.

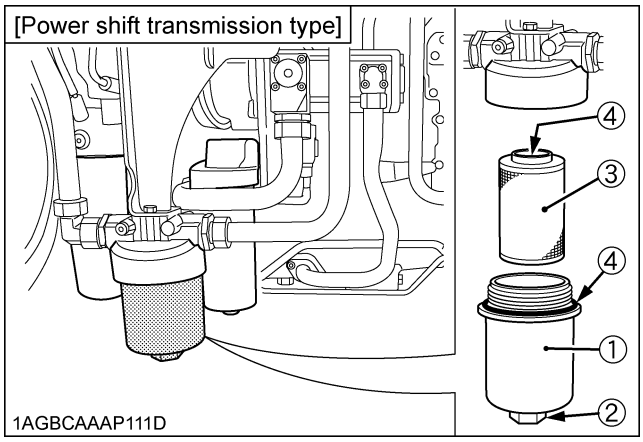
## ■Replacing Hydraulic Oil Filter (Return)

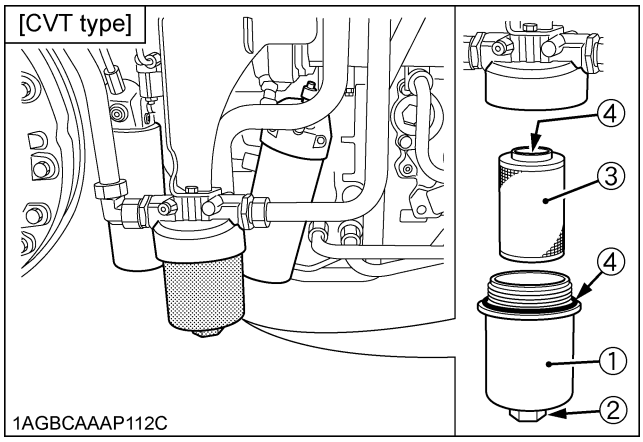
**WARNING**

**To avoid personal injury or death:**

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

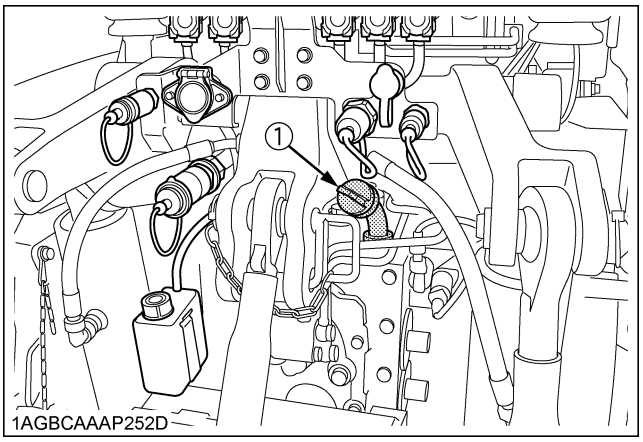
1. Place the oil pan underneath the hydraulic oil filter.
2. Using a wrench, remove the filter cover.
3. When oil is no longer dripping from the exposed area, remove the element and replace it with a new one. Make sure at this time that the O-ring is mounted on the element mounting part.



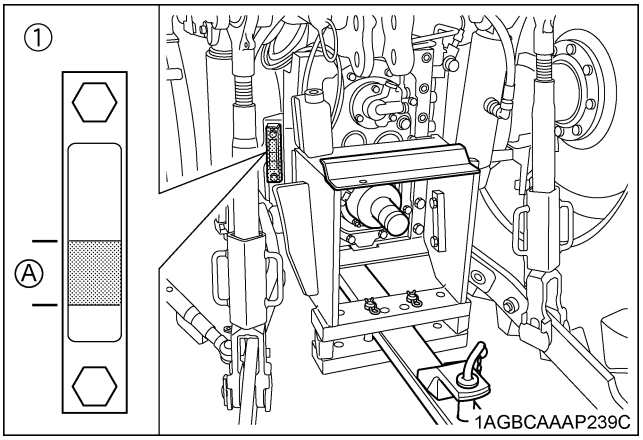




*(1) Transmission oil filter cover*
*(2) Nut*
*(3) Element*
*(4) O-ring*

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 doesn't leak past the seal on the filter.

**NOTE :**

- Check the transmission fluid level under the following conditions:
  (1) Park the machine on a flat surface.
  (2) Lower the rear 3-point hitch and front end loader. (if equipped)
  (3) Raise the front 3-point hitch. (if equipped)
  (4) Disconnect the all remote control valve hoses.
  (5) Shut off engine and wait for 10 minutes.

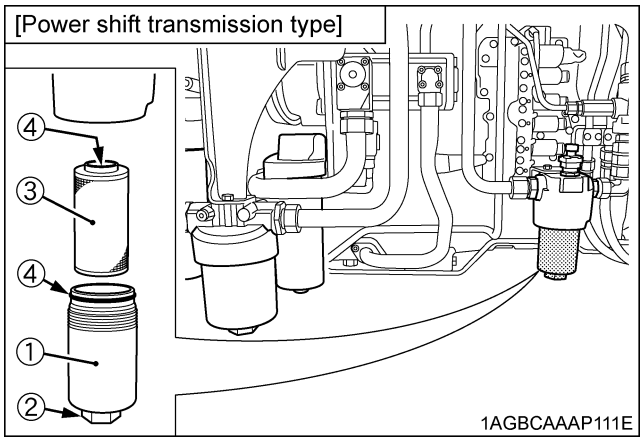
## ■Replacing Power Steering Oil Filter

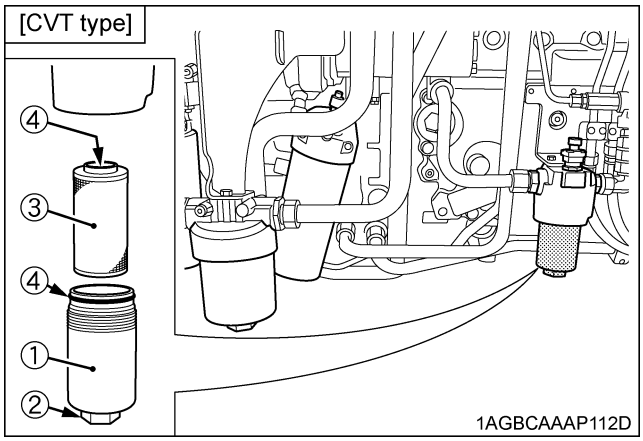
**WARNING**

**To avoid personal injury or death:**

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

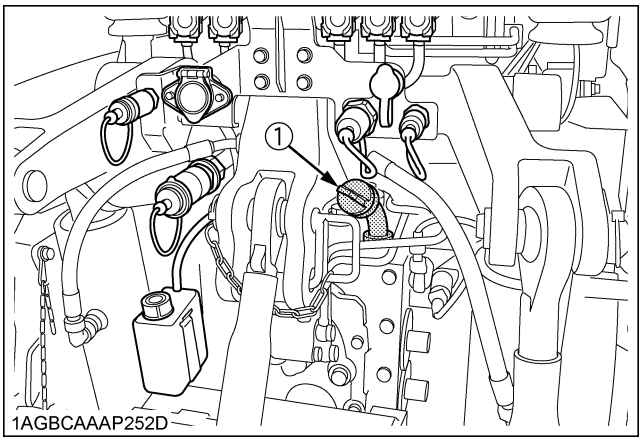
1. Place the oil pan underneath the power steering oil filter.
2. Using a wrench, remove the filter cover.
3. When oil is no longer dripping from the exposed area, remove the element and replace it with a new one. Make sure at this time that the O-ring is mounted on the element mounting part.



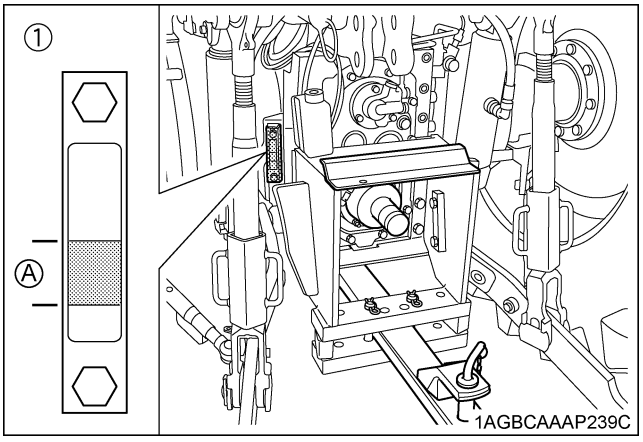




*(1) Transmission oil filter cover*
*(2) Nut*
*(3) Element*
*(4) O-ring*

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 doesn't leak past the seal on the filter.

**NOTE :**

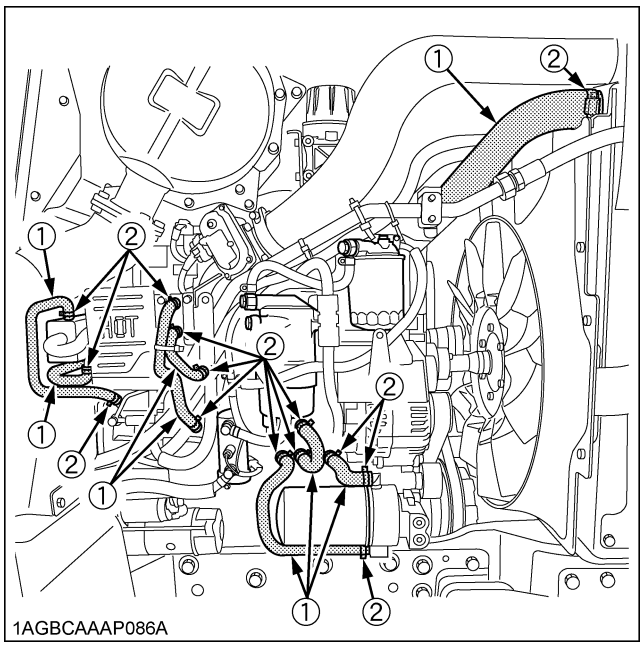
- Check the transmission fluid level under the following conditions:
  (1) Park the machine on a flat surface.
  (2) Lower the rear 3-point hitch and front end loader. (if equipped)
  (3) Raise the front 3-point hitch. (if equipped)
  (4) Disconnect the all remote control valve hoses.
  (5) Shut off engine and wait for 10 minutes.

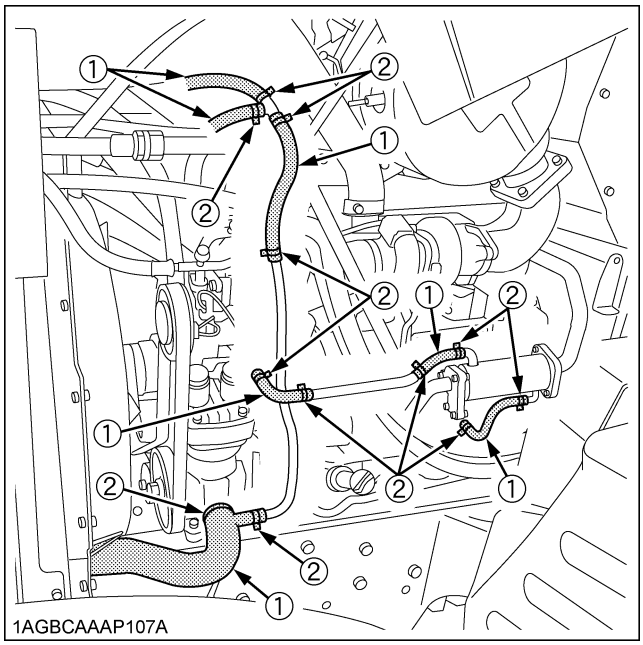
## ■Checking Radiator Hose and Clamp

Check to see if radiator hoses are properly fixed every 500 hours of operation.

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

Replace hoses and hose clamps every 4 years or earlier if checked and found that hoses are swollen, hardened or cracked.




*(1) Radiator hoses*
*(2) Hose clamps*

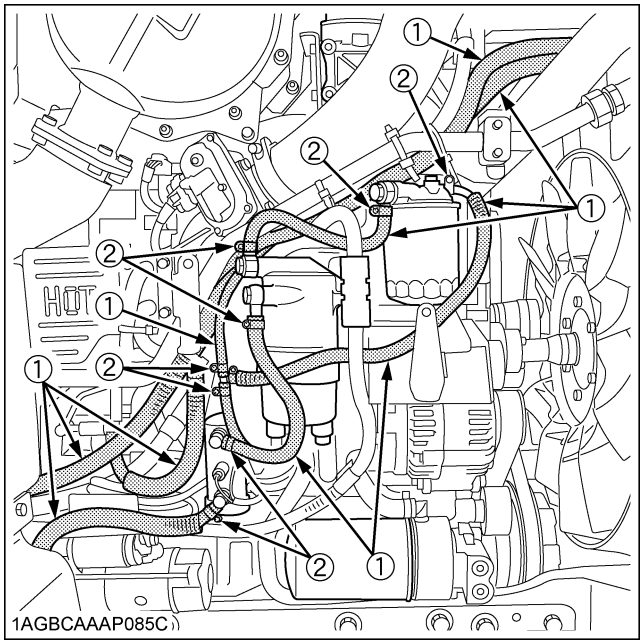
◆ **Precaution at Overheating**

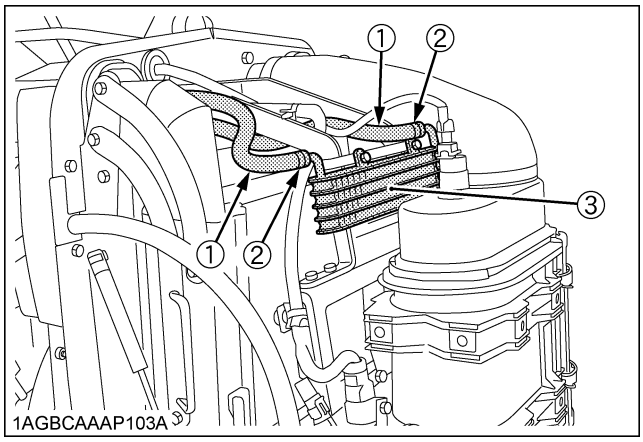
Take the following actions in the event the coolant temperature is nearly or more than the boiling point, what is called "Overheating"

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

## ■Checking Fuel Line

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



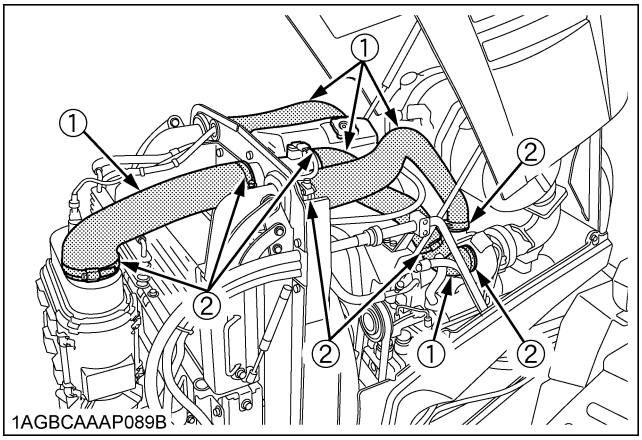

*(1) Fuel lines*
*(2) Clamp bands*
*(3) Fuel cooler*

**NOTE :**

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

## ■Checking Intake Air Line

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



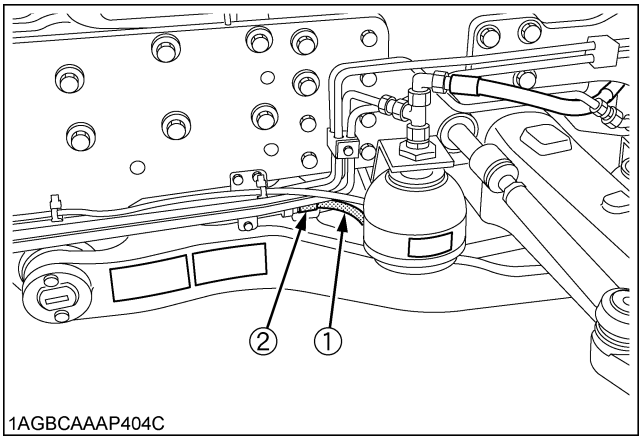

*(1) Hose*
*(2) Hose clamps*

## ■Checking Brake Hose

Consult your local KUBOTA Dealer for this service.

## ■Checking Differential Lock Hose

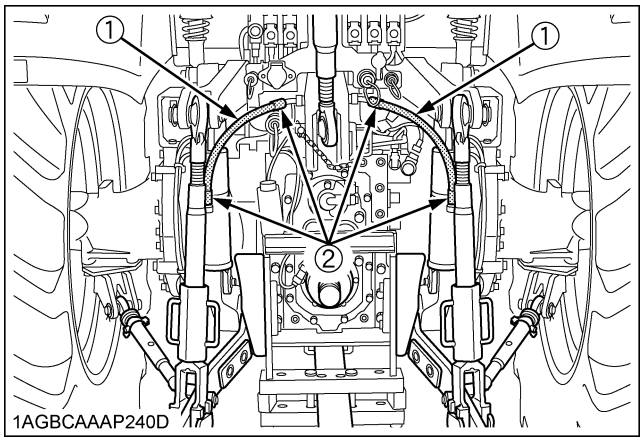
1. Check to see that hoses and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.




*(1) Front differential lock hose*
*(2) Hose clamps*

## ■Checking Lift Cylinder Hose

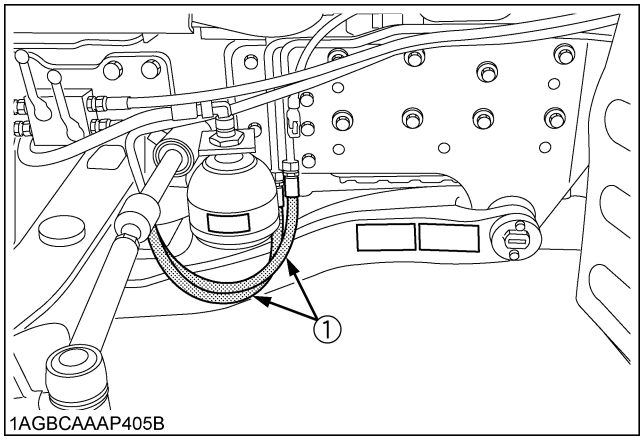
1. Check to see that hoses and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.




*(1) Hose*
*(2) Hose clamps*

## ■Checking Power Steering Line

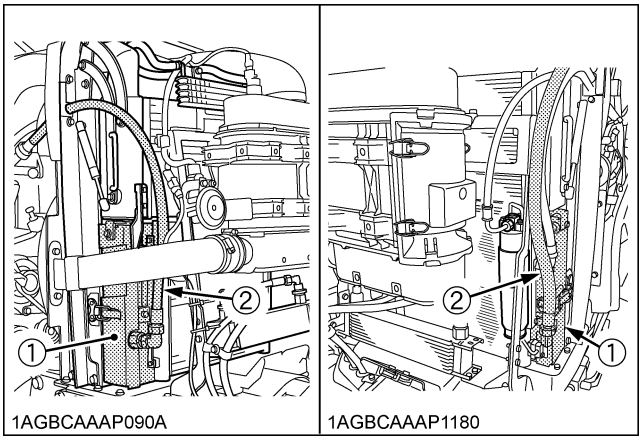
1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.




*(1) Power steering pressure hoses*

## ■Checking Oil Cooler Line

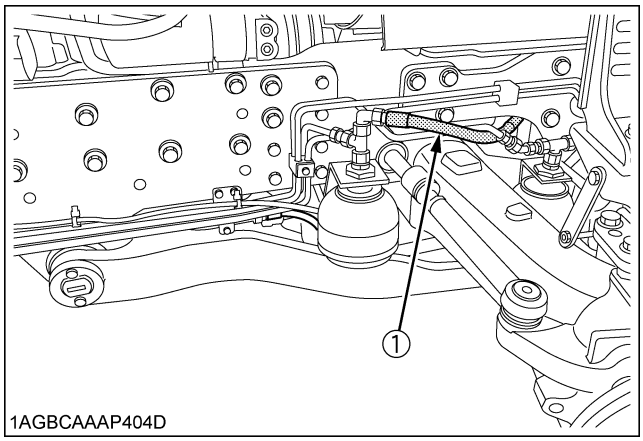
1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.

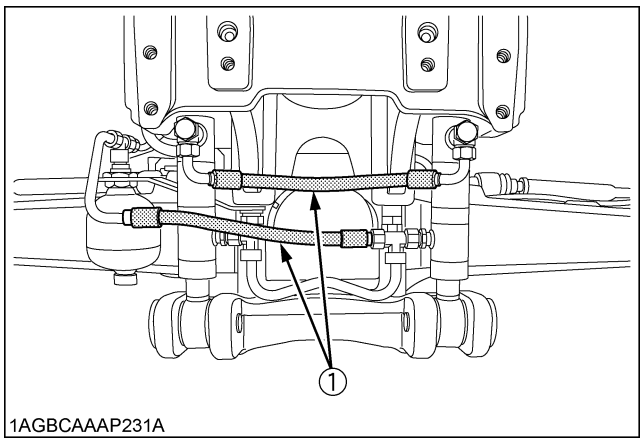



*(1) Oil cooler*
*(2) Oil cooler line*

## ■Checking Front Suspension Hose

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

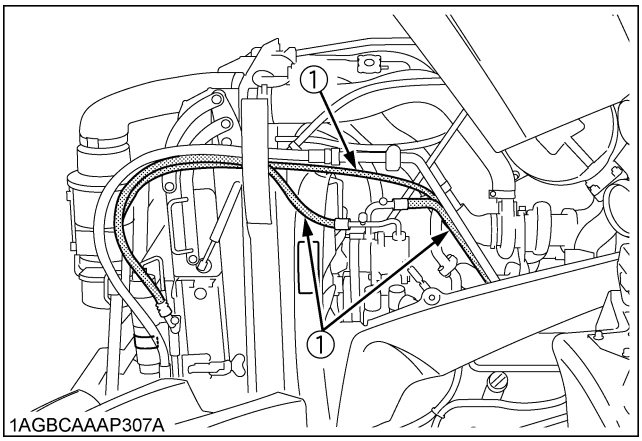



*(1) Front suspension pressure hoses*

## ■Checking Air Conditioner Pipe and Hose

1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, consult your local KUBOTA Dealer for this service.




*(1) Air conditioner hoses*

## ■Checking Air Conditioner Drive Belt

**WARNING**

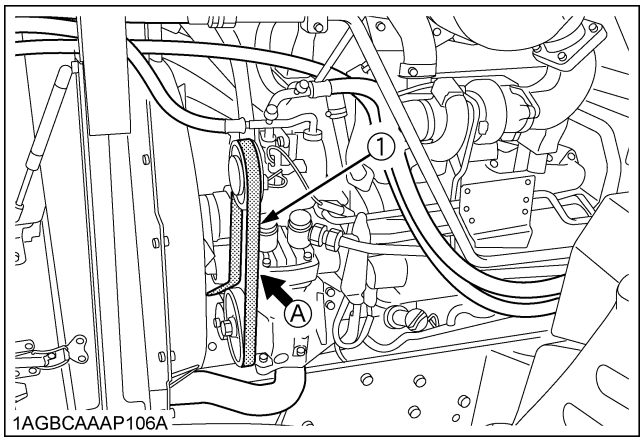
**To avoid personal injury or death:**

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

| | |
|---|---|
| Proper belt tension | A deflection of between 10 to 12 mm (0.4 to 0.5 in.) 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 to be damaged, replace it with a new one.

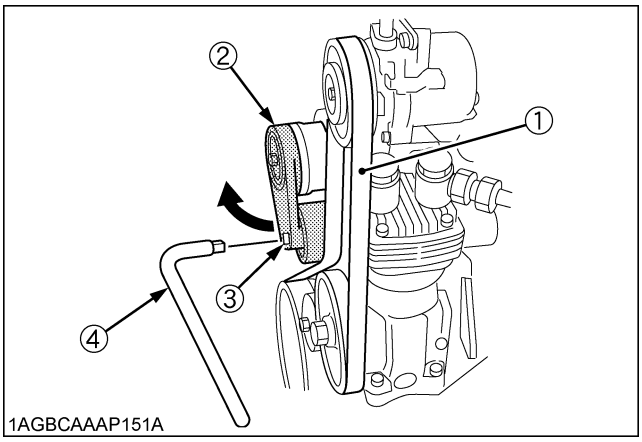
1. Stop the engine and remove the key.
2. Press on the spot indicated in the figure below to measure the deflection.




*(1) Air conditioner belt* *(A) Check the belt tension*

### ◆ Replacing the belt

1. Apply a square wrench into the square hole of the air conditioner belt self-tension arm.
2. Using the wrench in place, unlock the self-tension arm and undo the belt from the compressor pulley.
3. 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*

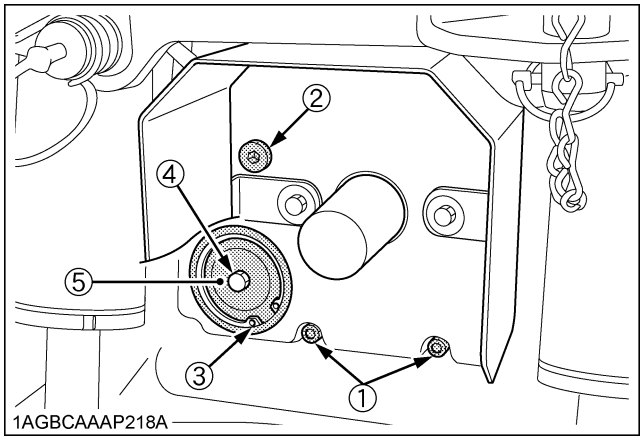
## ■Changing Front PTO Oil

**(if equipped)**

◆ **Cleaning oil filter**

1. 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.
2. After draining reinstall the drain plug.
3. Remove the internal retaining ring and loosen the M8 bolt to remove the cover.
4. Extract the oil filter from the pump unit and clean it.
5. Reassemble the removal parts.
6. Fill with the new oil up to the lower rim of filling plug port. (See "LUBRICANTS" in "MAINTENANCE" section.)
7. After filling reinstall the filling plug.

| Oil capacity | 2.7 L (2.9 U.S.qts.) |
|---|---|




*(1) Drain plug*
*(2) Filling plug*
*(3) Internal retaining ring*
*(4) M8 bolt*
*(5) Pump unit*

# EVERY 1000 HOURS

## ■Changing Transmission Fluid

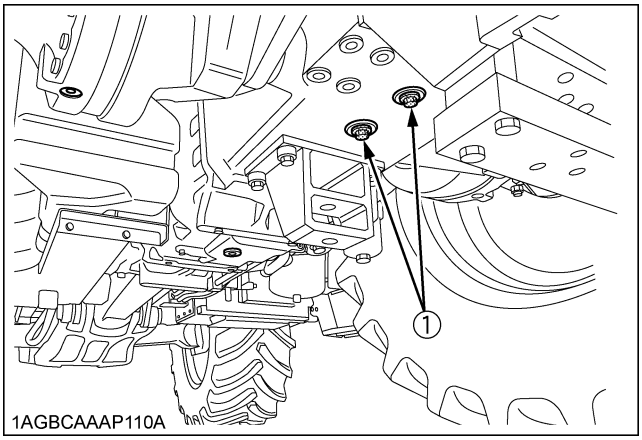
**WARNING**

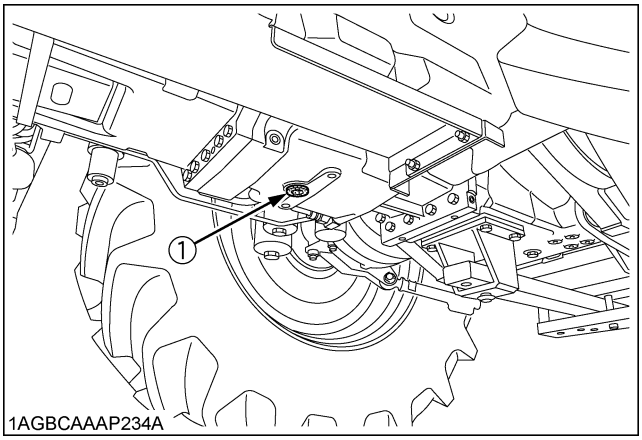
**To avoid personal injury or death:**

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

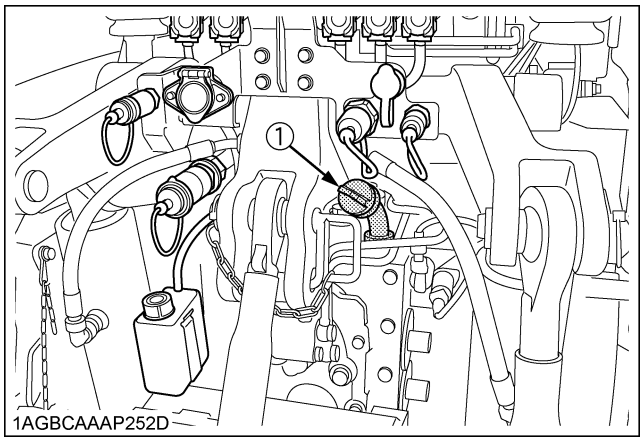
1. To drain the used oil, remove the drain plug at the bottom of the transmission case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Fill with the new oil up to the upper line of the sight glass.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
4. After running the engine for a few minutes, stop it and wait for 10 minutes.
   Check the oil level again; add oil to prescribed level.

| Oil capacity | Power shift model: 85 L (22.5 U.S.gals.)<br>CVT model: 80 L (21.1 U.S.gals.) |
|---|---|

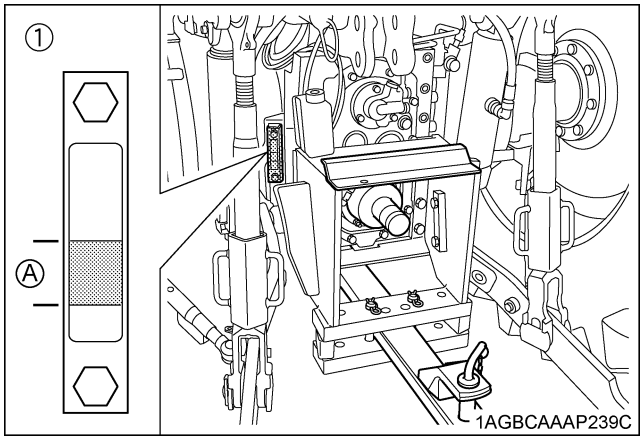



*(1) Drain plugs*




*(1) Filling plug*




*(1) Sight glass*

*(A) Oil level is acceptable within this range.*

**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.

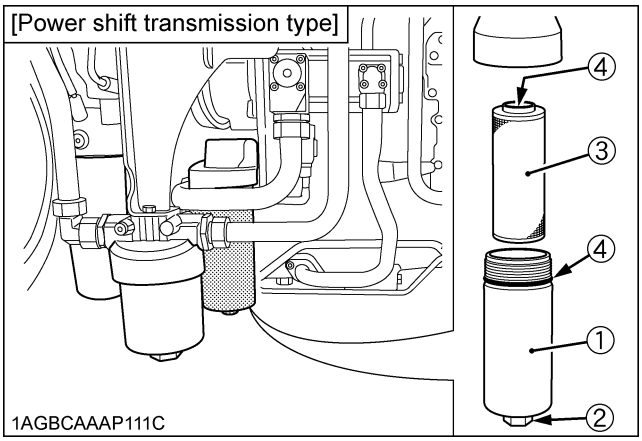
## ■Replacing Transmission Oil Filter

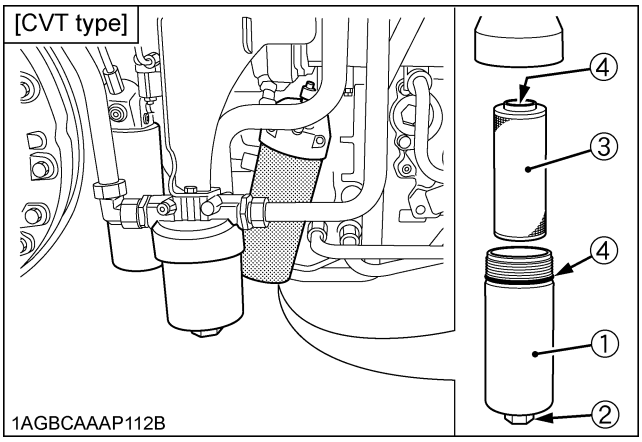
**WARNING**

**To avoid personal injury or death:**

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

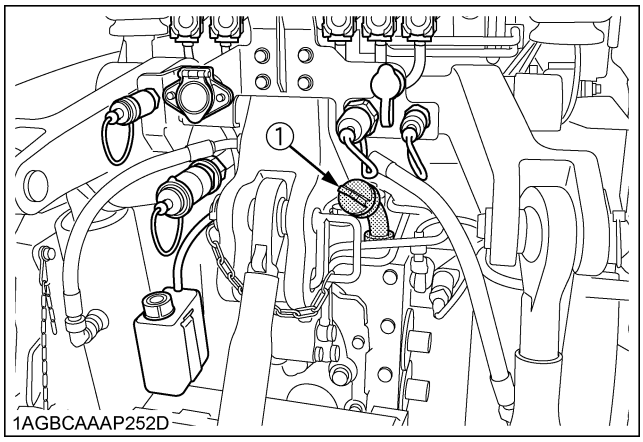
1. Place the oil pan underneath the transmission oil filter.
2. Using a wrench, remove the filter cover.
3. When oil is no longer dripping from the exposed area, remove the element and replace it with a new one.
   Make sure at this time that the O-ring is mounted on the element mounting part.



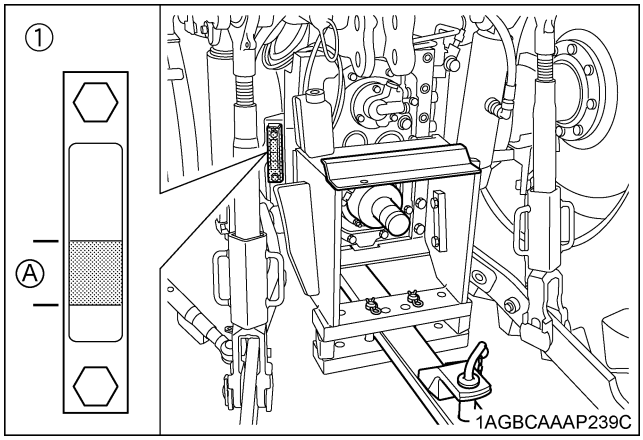




*(1) Transmission oil filter cover*
*(2) Nut*
*(3) Element*
*(4) O-ring*

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 doesn't leak past the seal on the filter.

**NOTE :**
- Check the transmission fluid level under the following conditions:
  (1) Park the machine on a flat surface.
  (2) Lower the rear 3-point hitch and front end loader. (if equipped)
  (3) Raise the front 3-point hitch. (if equipped)
  (4) Disconnect the all remote control valve hoses.
  (5) Shut off engine and wait for 10 minutes.

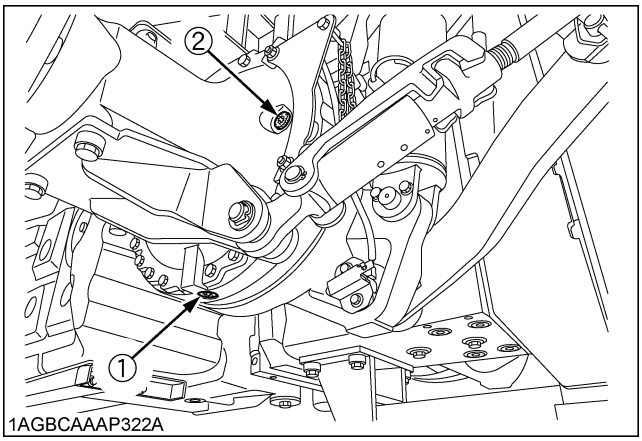
## ■Changing Rear Axle Case Oil

**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 rear 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" in "MAINTENANCE" section.)
4. After filling reinstall the filling plug.

| | |
|---|---|
| Oil capacity | 10 L (10.6 U.S.qts.) for each side |

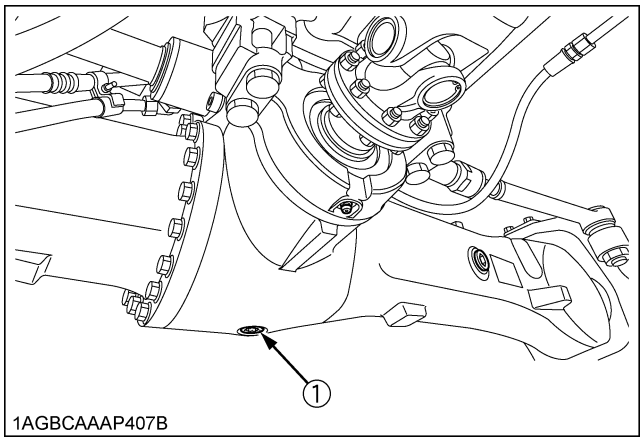


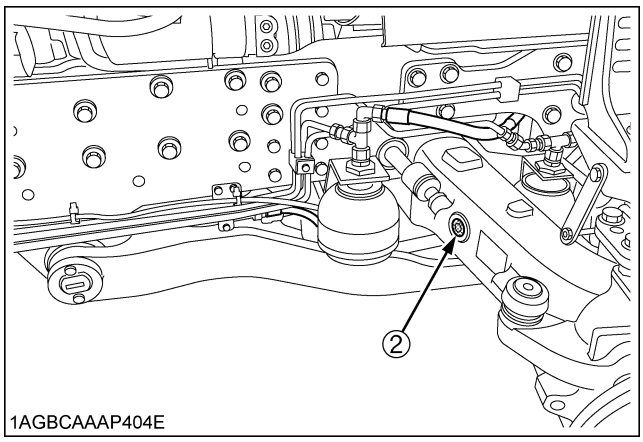

*(1) Drain plug*
*(2) Filling plug*

## ■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 the new oil up to the lower rim of filling plug port.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
4. After filling reinstall the filling plug.

| Oil capacity | 8.5 L (9.0 U.S.qts.) |
|---|---|



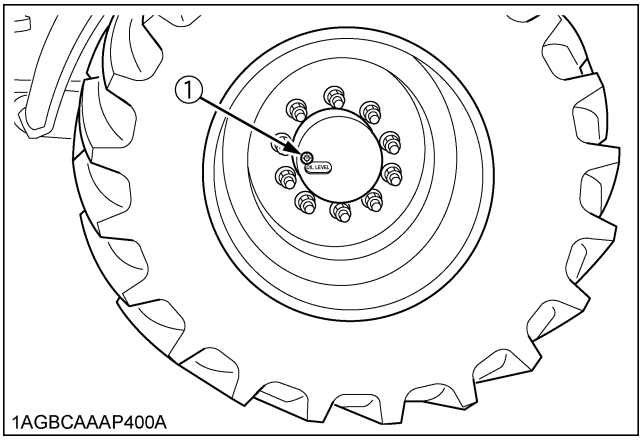




*(1) Drain plug*
*(2) Filling plug*

## ■Changing Front Axle Gear Case Oil

1. Stop the tractor so that the gear case plug is at the bottom.
2. Remove the plug and drain the oil completely into the oil pan.
3. After draining the oil, rotate the gear case so that plug is aligned horizontally with the center of the gear case.
4. Fill with the new oil up to the lower rim of the port.
   (See "LUBRICANTS" in "MAINTENANCE" section.)
5. After filling reinstall the plug.

| Oil capacity | 2.1 L (2.2 U.S.qts.) for each side |
|---|---|




*(1) Plug*

## ■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.

## ■Replacing Air Cleaner Primary Element and Secondary Element

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

## ■Checking Exhaust Manifold

Consult your local KUBOTA Dealer for this service.

# EVERY 1500 HOURS

## ■Cleaning Fuel Injector Nozzle Tip

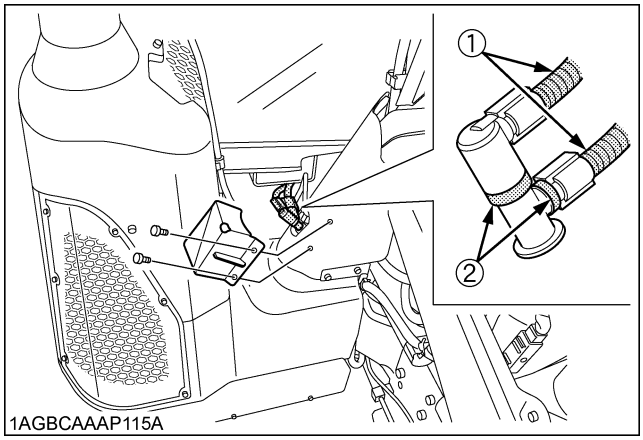
Consult your local KUBOTA Dealer for this service.

## ■Checking DEF/AdBlue® Injector Tip

Consult your local KUBOTA Dealer for this service.

## ■Checking DEF/AdBlue® Line

1. 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*

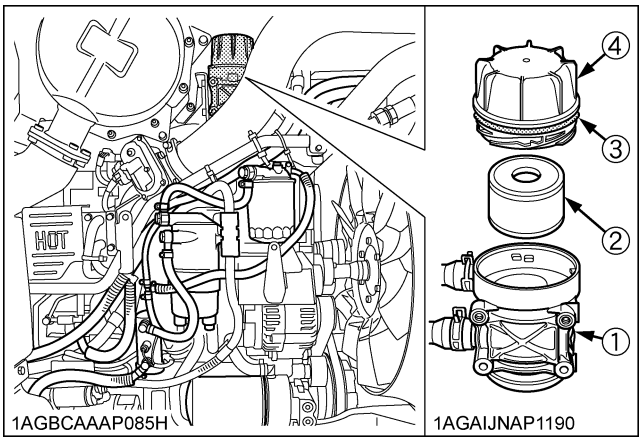
## ■Replacing Oil Separator Element

**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 oil and the carbon in the case with a clean rag.
2. Fit a new oil separator element.
3. Tighten the cover.




*(1) Body*
*(2) Oil separator element*
*(3) Gasket*
*(4) Cover*

## ■Checking PCV (Positive Crankcase Ventilation) Valve

Consult your local KUBOTA Dealer for this service.

## ■Checking and Cleaning EGR Cooler

Consult your local KUBOTA Dealer for this service.

## ■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.

## ■Flushing Cooling System and Changing Coolant

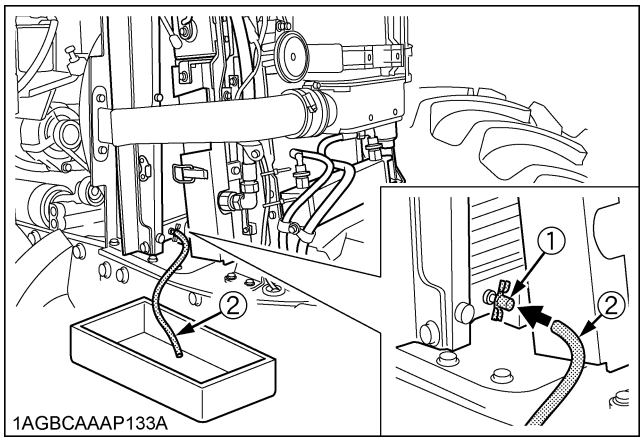
### WARNING

**To avoid personal injury or death:**

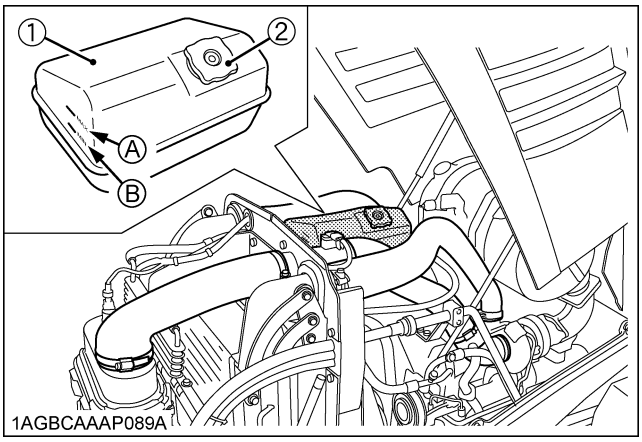
- **Do not remove radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely.**

1. Stop the engine 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 anti-freeze 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 (6.3 U.S.gals.) |
|---|---|




*(1) Drain plug*
*(2) Extension drain hose*




*(1) Recovery tank* *(A) "MAX"*
*(2) Radiator cap* *(B) "MIN"*

**IMPORTANT :**

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

**NOTE :**

- On cab type machines, coolant circulates through the heater. This means that one more liter or so of coolant is required.
  In changing coolant, pour coolant up to the filler port of the recovery tank. Turn ON the heater (shift the temperature control dial toward WARM), and run the engine for a while in order to warm coolant. Then stop the engine.
  When coolant has cooled down, some of the coolant in the recovery tank is sucked. Now the recovery tank is appropriately filled with coolant.

## ■Anti-Freeze

**WARNING**

**To avoid personal injury or death:**

- **When using antifreeze, put on some protection such as rubber gloves. (Antifreeze contains poison.)**
- **If it is swallowed, seek immediate medical help. Do NOT make a person throw up unless told to do so by poison control or a health care professional. Use standard first aid and CPR for signs of shock or cardiac arrest. Call your local Poison Control Center or 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 reaction causing harmful substances.**
- **Antifreeze is extremely flammable and explosive under certain conditions. Keep fire and children away from antifreeze.**
- **When draining fluids from the engine, place some container underneath the engine body.**
- **Do not pour waste onto the 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 fill into the radiator.
4. The procedure for the mixing of water and antifreeze differs according to the make of the antifreeze and the ambient temperature. Refer to SAE J1034 standard, more specifically also to SAE J814c.

| Vol % Anti-freeze | Freezing Point | | Boiling Point* | |
|---|---|---|---|---|
| | ℃ | ℉ | ℃ | ℉ |
| 50 | -37 | -34 | 108 | 226 |

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

5. Adding the LLC
   (1) Add only water if the mixture reduces in amount by evaporation.
   (2) If there is a mixture leak, add the LLC of the same manufacturer and type in the same mixture percentage.
   ∗ Never add any long-life coolant of different manufacturer. (Different brands may have different additive components, and the engine may fail to perform as specified.)
6. When the LLC is mixed, do not employ any radiator cleaning agent. The LLC contains anticorrosive agent. If mixed with the cleaning agent, sludge may build up, adversely affecting the engine parts.
7. Kubota's genuine long-life coolant has a service life of 2 years. Be sure to change the coolant every 2000 hours or every 2 years whichever comes faster.

**NOTE :**

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

# EVERY 3000 HOURS

## ■Checking Turbocharger

Consult your local KUBOTA Dealer for this service.

## ■Checking Supply Pump

Consult your local KUBOTA Dealer for this service.

## ■Checking and Cleaning EGR System

Consult your local KUBOTA Dealer for this service.

## ■Cleaning DPF Muffler

◆ **Removal of 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 cleaning with a specific cleaning device. Do not clean the DPF by disassembling, and attempt by yourself, consult your local KUBOTA Dealer.

## ■Checking DEF/AdBlue® injector

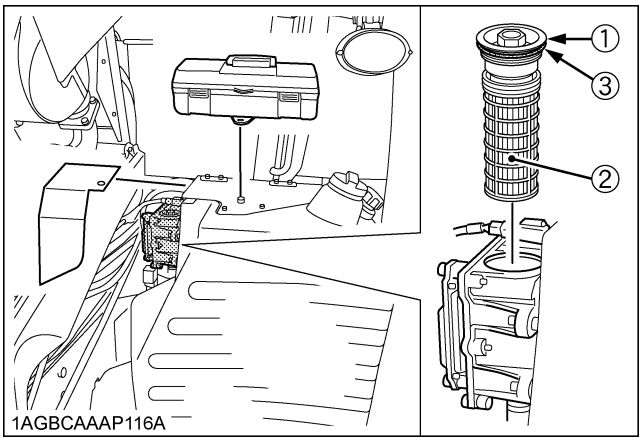
Consult your local KUBOTA Dealer for this service.

## ■Replacing DEF/AdBlue® Pump Filter

1. Clean around the filter cover.
2. 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

## ■Checking DPF Differential Pressure Sensor Pipe

Consult your local KUBOTA Dealer for this service.

## ■Checking EGR Pipe

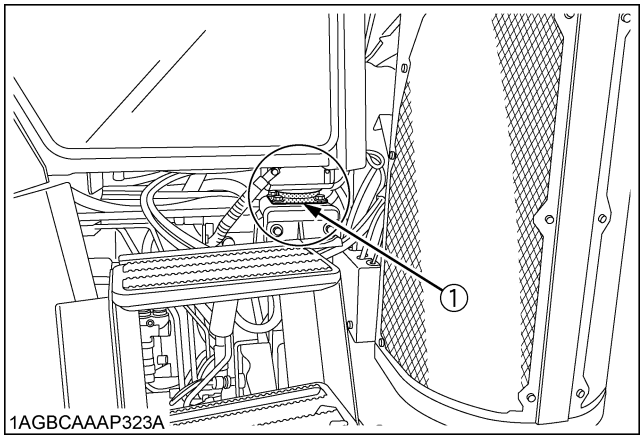
Consult your local KUBOTA Dealer for this service.

## ■Checking Oil Separator Hose

Consult your local KUBOTA Dealer for this service.

## ■Checking CAB Isolation Cushion

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




*(1) CAB isolation cushion*

# EVERY 2 YEARS

## ■Replacing DPF Differential Pressure Sensor Hose

Consult your local KUBOTA Dealer for this service.

## ■Replacing Boost Sensor Hose

Consult your local KUBOTA Dealer for this service.

# EVERY 3 YEARS

## ■Replacing Parking Brake Cable

Consult your local KUBOTA Dealer for this service.

# EVERY 4 YEARS

## ■Replacing Radiator Hose (Water pipes)

Replace the hoses and clamps.
(See "Checking Radiator Hose and Clamp" in "EVERY 500 HOURS" in "PERIODIC SERVICE" section.)

## ■Replacing Fuel Hose

Consult your local KUBOTA Dealer for this service.

## ■Replacing Intake Air Line

Consult your local KUBOTA Dealer for this service.

## ■Replacing Oil Separator Hose

Consult your local KUBOTA Dealer for this service.

## ■Replacing Oil Cooler Line

Consult your local KUBOTA Dealer for this service.

## ■Replacing Power Steering Hose

Consult your local KUBOTA Dealer for this service.

## ■Replacing Lift Cylinder Hose

Consult your local KUBOTA Dealer for this service.

## ■Replacing Suspension Hose

**[Front suspension type]**
Consult your local KUBOTA Dealer for this service.

## ■Replacing Differential Lock Hose

Consult your local KUBOTA Dealer for this service.

## ■Replacing Brake Hose

Consult your local KUBOTA Dealer for this service.

## ■Replacing Air Conditioner Hose

Consult your local KUBOTA Dealer for this service.

# SERVICE AS REQUIRED

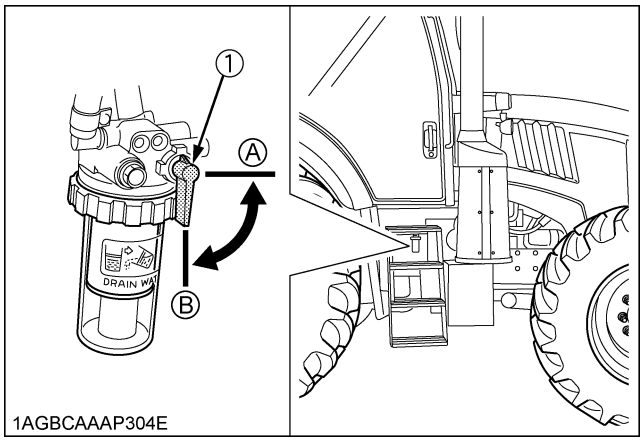
## ■Bleeding Fuel System

Air must be removed:

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

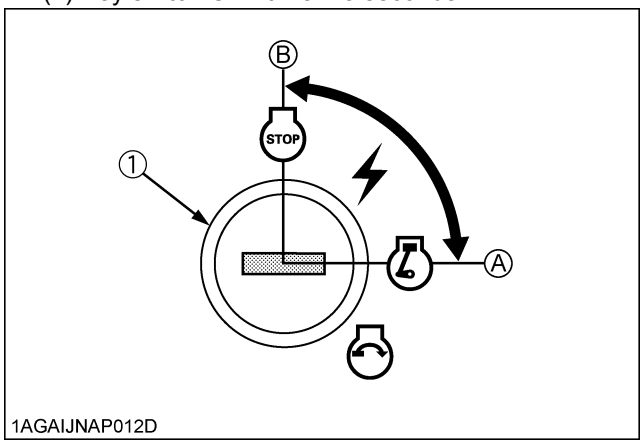
◆ **Bleeding procedure is as follows:**

1. Fill the fuel tank with fuel, and open the fuel shutoff-valve.




*(1) Fuel shutoff-valve* *(A) "CLOSE"* *(B) "OPEN"*

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




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

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

**IMPORTANT :**

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

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

## ■Bleeding Brake System

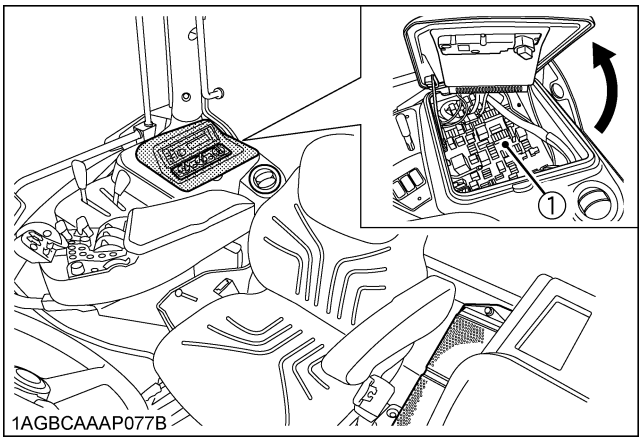
Consult your local KUBOTA Dealer for this service.

## ■Replacing Fuse

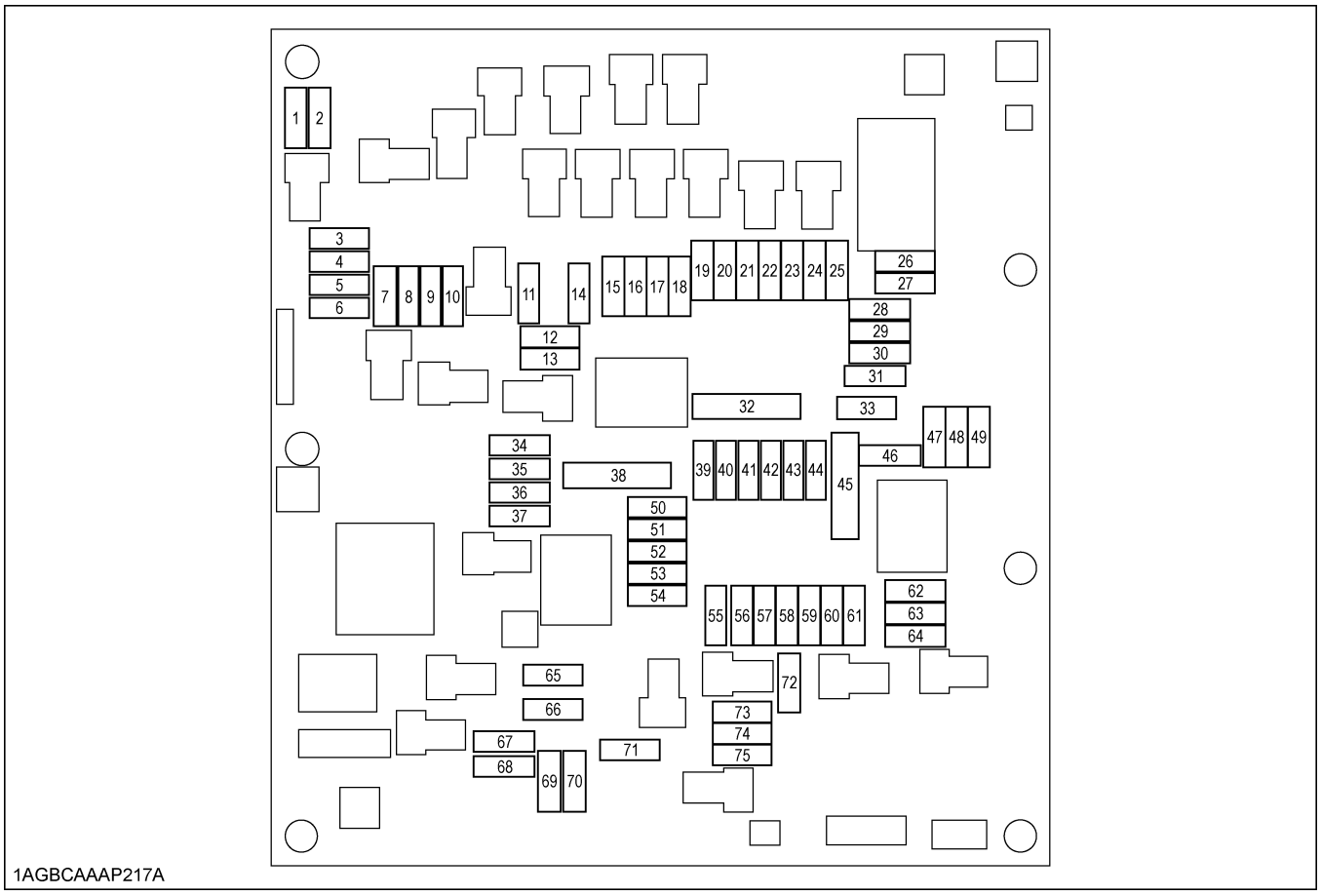
The tractor electrical system is protected from potential damage by fuses.
A blown fuse indicates that there is an overload or short somewhere in the electrical system.
If any of the fuses should blow, replace with a new one of the same capacity.

**IMPORTANT :**

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




*(1) Fuses*

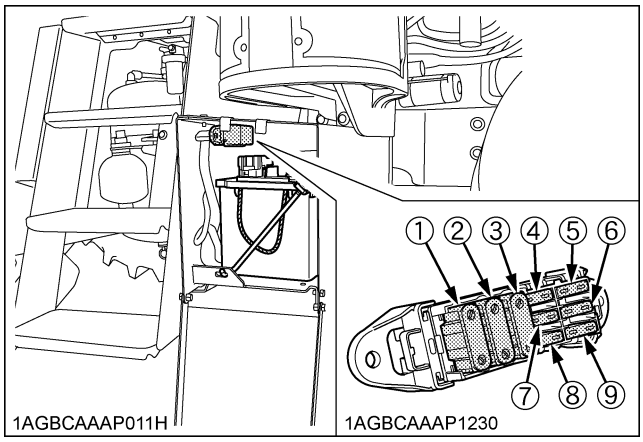



### ◆ Protected circuit

| Fuse No. | Capacity (A) | Protected circuit |
|---|---|---|
| 1 | 7.5 | Marker Lights left |
| 2 | 7.5 | Marker Lights right |
| 3 | 10 | mirror heating |
| 4 | 5 | 3P socket |
| 5 | 10 | Wiper Front |
| 6 | 1 | Alternator Excitation |
| 7 | 5 | Front loader for Standard |
| 8 | 5 | A/C System |

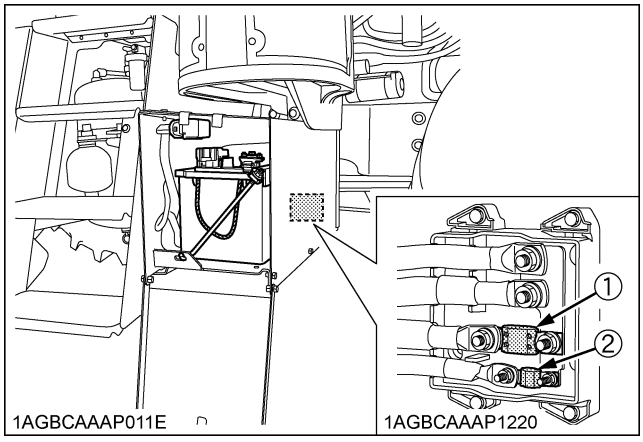
| Fuse No. | Capacity (A) | Protected circuit |
|---|---|---|
| 9 | 5 | Light Switch Supply (for ignition based lights) |
| 10 | 15 | Seat Switch |
| 11 | 30 | Main Fuse No. 1 |
| 12 | 30 | A/C-Blower |
| 13 | 10 | A/C compressor magnet clutch |
| 14 | 15 | Main Fuse |
| 15 | 5 | Battery main relais "OFF" output |
| 16 | 30 | Worklight Bonnet |
| 17 | 15 | Low Beam Bonnet and A-Pillar |
| 18 | 15 | High Beam Bonnet and A-Pillar |
| 19 | 30 | Worklight Roof Front |
| 20 | 15 | Worklight Roof Rear |
| 21 | 15 | Worklight A Pillar |
| 22 | 15 | Worklight C Pillar |
| 23 | 5 | GPS Antenna |
| 24 | 15 | Beacon Light |
| 25 | 15 | Wiper Rear / Cab-Light |
| 26 | 25 | Battery+ 3P-socket Nr. 2 |
| 27 | 20 | Spare (battery+) |
| 28 | 25 | Battery+ 3P-socket Nr. 1 |
| 29 | 7.5 | Vehicle Drivetrain Controller (VDC) battery+ |
| 30 | 7.5 | Transmission Control Unit (TCU) battery+ |
| 31 | 5 | Armrest Unit (ARU) battery+ |
| 32 | 70 | Main Fuse No. 2 |
| 33 | 30 | Vehicle Control Unit Nr. 2 (VCU2) battery+ |
| 34 | 30 | Spare (Option 1) (ignition) |
| 35 | 20 | Spare (Option 2) (ignition) |
| 36 | 15 | Spare (Option 3) (ignition) |
| 37 | 15 | Spare (Option 4) (ignition) |
| 38 | 60 | ISOBUS Actuator Power (ACT_PWR) |
| 39 | 15 | Spare Reserve 2 (battery+) |
| 40 | 15 | Trailer socket rear (battery+) |
| 41 | 15 | Cigarette lighter (battery+) |
| 42 | 7.5 | Terminal (TRM) battery+ |
| 43 | 15 | Trailer socket front (battery+) |
| 44 | 5 | VCU1 battery+ |
| 45 | 70 | Main Fuse for ignition |
| 46 | 5 | Vehicle Control Unit Nr. 2 (VCU2) battery+ |
| 47 | 5 | Radio battery+ |

| Fuse No. | Capacity (A) | Protected circuit |
|---|---|---|
| 48 | 5 | Battery main relais switch output (permanent) |
| 49 | 5 | Dashboard battery+ (permanent) |
| 50 | 15 | Front loader battery+ for Standard |
| 51 | 5 | Spare output (battery+) |
| 52 | 7.5 | Horn (battery+) |
| 53 | 15 | Spare output (battery+) |
| 54 | 10 | Ignition Switch Supply (battery+) |
| 55 | 5 | Armrest Unit (ARU) ignition |
| 56 | 7.5 | Transmission Control Unit (TCU) ignition |
| 57 | 7.5 | OSPE ignition |
| 58 | 1 | Spare output (ignition) |
| 59 | 5 | Switch Panel (SWP) ignition |
| 60 | 10 | Dashboard (DB) ignition |
| 61 | 10 | Vehicle Control Unit Nr. 1 (VCU1) ignition |
| 62 | 5 | Vehicle Control Unit Nr. 2 (VCU2) ignition |
| 63 | 1 | Terminal (TRM) ignition |
| 64 | 5 | Engine Control Unit (ECU) ignition |
| 65 | 15 | Flasher relays supply |
| 66 | 25 | ISOBUS ECU_Power |
| 67 | 5 | Front loader accumulator output |
| 68 | 7.5 | Auto Steering iBox ignition |
| 69 | 5 | Auto Steering iBox battery+ |
| 70 | 10 | Diagnostic Connector battery+ |
| 71 | 15 | Brake Light (Tractor and main supply for Trailer) |
| 72 | 10 | ISO 11786 max. 5A power supply out |
| 73 | 7.5 | Transmission Control Unit (TCU) ignition (switched OFF during cranking) |
| 74 | 7.5 | Vehicle Drivetrain Controller (VDC) ignition (switched OFF during cranking) |
| 75 | 10 | Brake Light Trailer |



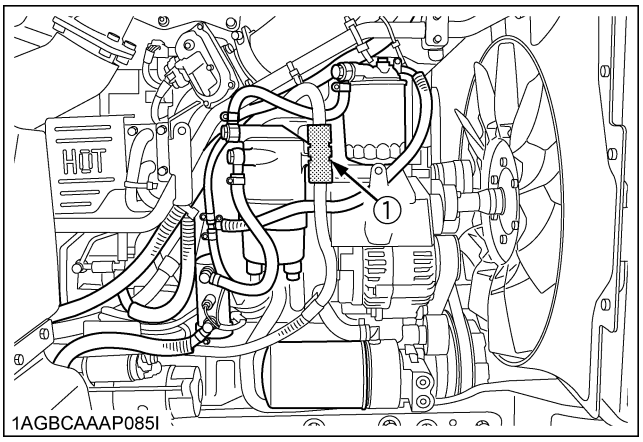

◆ **Protected circuit**

| Fuse No. | Capacity (A) | Protected circuit |
|---|---|---|
| 1 | 30A | Spare |
| 2 | 30A | ACU |
| 3 | 60A | Glow |
| 4 | 5A | Sedimenter |
| 5 | 20A | ACU comp |
| 6 | 30A | ECU |
| 7 | 10A | NOX |
| 8 | 15A | 30 Peramanen |
| 9 | 5A | EGR |




◆ **Protected circuit**

| Fuse No. | Capacity (A) | Protected circuit |
|---|---|---|
| 1 | 150A | Electrical CAB |
| 2 | 80A | Power train |




◆ **Protected circuit**

| Fuse No. | Capacity (A) | Protected circuit |
|---|---|---|
| 1 | 175A (with 150A Alternator) | Alternator |
| | 225A (with 200A Alternator) | |

## ■Replacing Light Bulb

| Light | Capacity |
|---|---|
| Head light | 60/55 W |
| Repeat head light | 60/55 W |
| Turn signal/hazard light (Front) | 21 W |
| Turn signal/hazard light (Rear fender) | LED |
| Turn signal/hazard light (CAB rear piller) | 21 W |
| Front position light | 10 W |
| Brake stop light | 5/21 W |
| Tail light | LED |
| Front work light (Hood) | 55 W |
| Front work light (CAB outer roof) | 55 W |
| Front work light (CAB front piller) | 24 W |
| Rear work light (CAB outer roof) | 55 W |
| Rear work light (CAB rear piller) | 24 W |
| Dome light (Room lamp) | 5 W |
| Instrument panel light | 3 W |

## ■Replacing Head Lamp

**CAUTION**

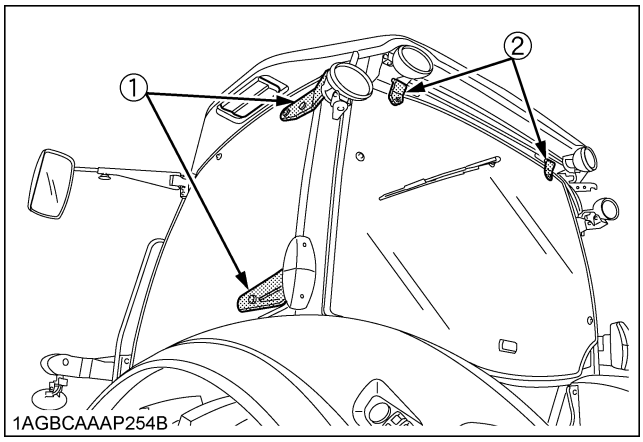
**To avoid personal injury:**

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

**IMPORTANT :**

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

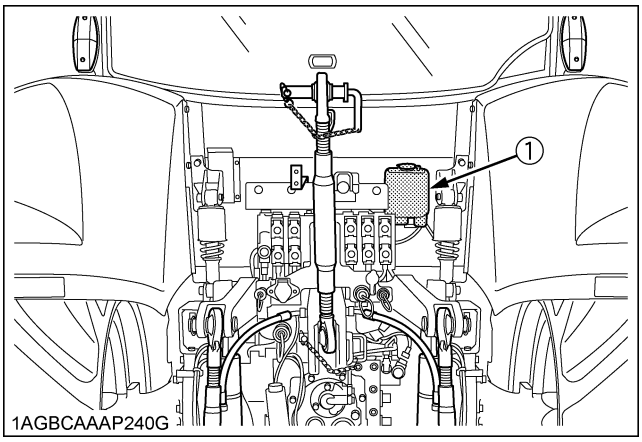
## ■Lubricating Points




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

## ■Adding Washer Liquid

Add a proper amount of automobile washer liquid.




*(1) Washer liquid tank*

| | |
|---|---|
| Washer tank capacity | 2.0 L (2.1 U.S.qts.) |

## ■Checking the Amount of Refrigerant (gas)

**WARNING**

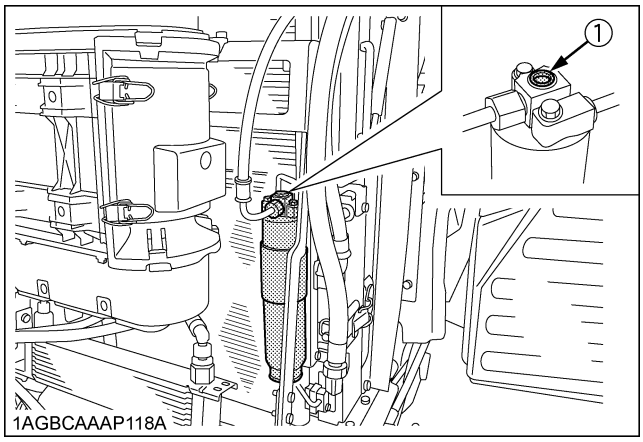
**To avoid personal injury or death:**

- **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 gives a toxic gas.**
- **Do not disconnect any part of the refrigeration circuit of the air conditioning system. Consult your local KUBOTA Dealer for assistance and service.**

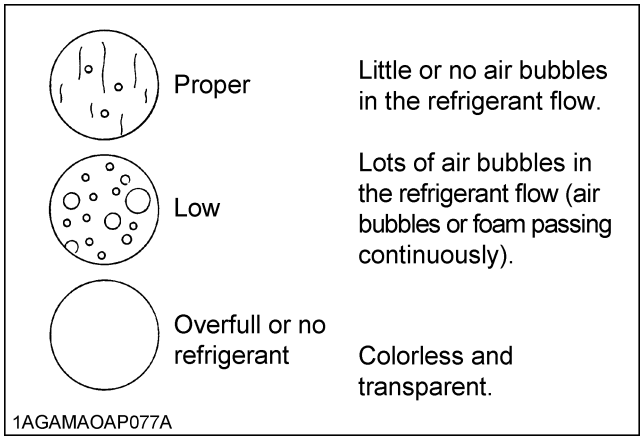
A shortage of refrigerant impairs the air-conditioner performance. Check the following points. If it is indicated that the amount of refrigerant is extremely low, ask your dealer to inspect and charge.

◆ **Checking procedure**

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




*(1) Sight glass*




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

# STORAGE

**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 in a closed building without proper ventilation.**
- **When storing, remove the key from the key switch to avoid unauthorized persons from operating the tractor and getting injured.**

## TRACTOR STORAGE

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

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

1. Check the bolts and nuts for looseness, and tighten if necessary.
2. Apply grease to tractor areas where bare metal will rust also to pivot areas.
3. Detach the weights from the tractor body.
4. Inflate the tires to a pressure a little higher than usual.
5. Change the engine oil and run the engine to circulate oil throughout the engine block and internal moving parts for about 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" in "EVERY 100 HOURS" in "PERIODIC SERVICE" section.)
9. Preferably drain the DEF/AdBlue® out of its tank and store the fluid in another specific tank.
   For long-term storage of DEF/AdBlue®, refer to "Storing and Handling the DEF/AdBlue®" in "Selective Catalytic Reduction (SCR) MUFFLER" in "OPERATING THE ENGINE" section.
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 tires are off the ground. Keep the tires out of direct sunlight and extreme heat.

**IMPORTANT :**

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

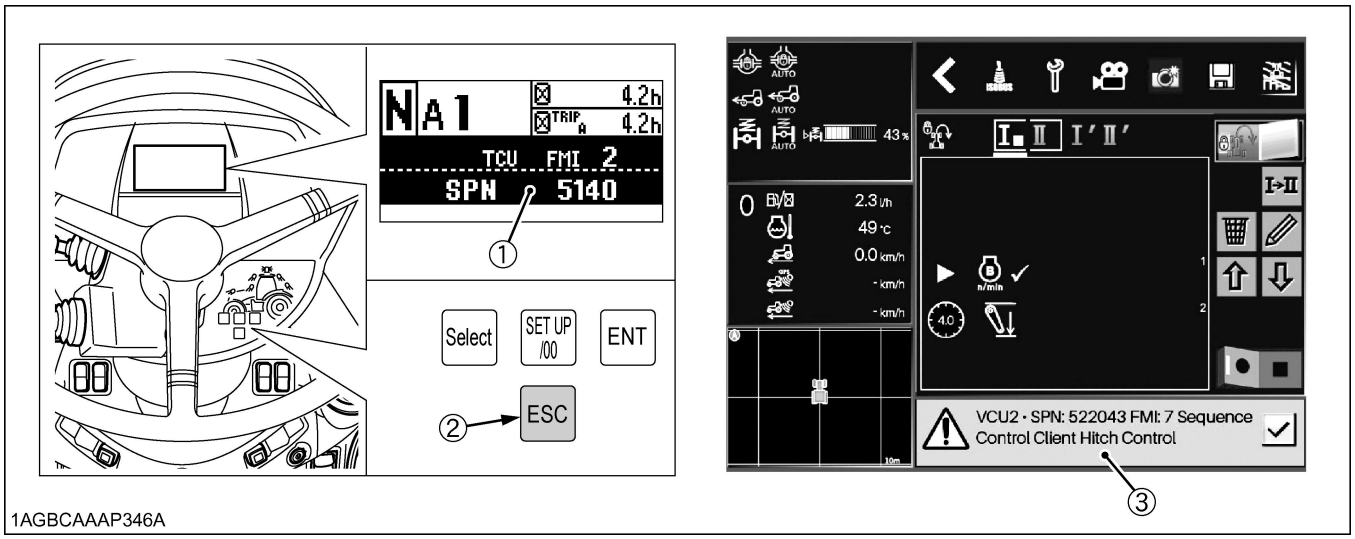
## REMOVING THE TRACTOR FROM STORAGE

1. Check the tire air pressure and inflate the tires if they are low.
2. Jack the tractor up and remove the support blocks from under the front and rear axles.
3. Install the battery. Before installing the battery, be sure it is fully charged.
4. Check the fan belt tension.
5. Check all fluid levels (engine oil, transmission/ hydraulic oil, engine coolant, DEF/AdBlue® and any attached implements).
6. Start the engine. Observe all gauges. If all gauges are functioning properly and reading normal, move the tractor outside. Once outside, park the tractor and let the engine idle for at least 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 parking brake and test the brakes for proper adjustment as you move forward. Adjust the brakes as necessary.

# TROUBLESHOOTING

## ELECTRIC CONTROLLER TROUBLE SHOOTING

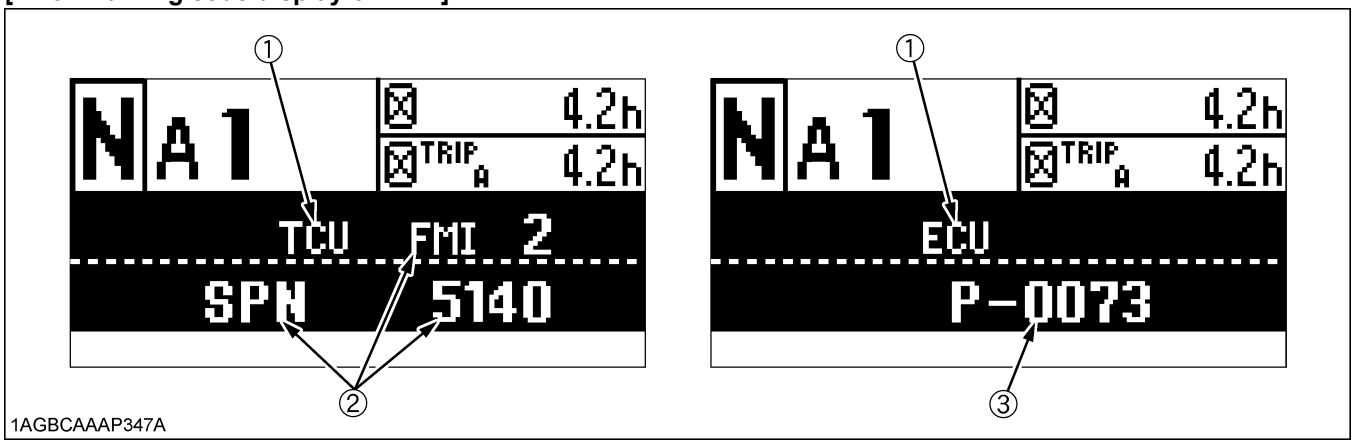
If any of the electric control system has trouble or miss-operation happens, an error/warning code appears on the LCD of the instrument panel. Also, warning/error message appears on the K-monitor (if equipped).
In some case, the buzzer starts sounding or the master caution LCD indicator light up.
If the error/warning code appears, please take the necessary action according to the following table.
An error/warning code on the LCD can be disappeared from LCD to press the ESC button. If another trouble is happened, the error/warning code re-appeared with another trouble code. When this happens, this error/warning code and the immediately previous error are both indicated at 2-seconds intervals.




1AGBCAAAP346A

*(1) Warning or error code on LCD*
*(2) ESC button*
*(3) Warning or error message on K-monitor*

**[Error/Warning code display on LCD]**




1AGBCAAAP347A

*(1) Name of Electric Control Unit*
*(2) Error/Warning Code for except engine*
*(3) Error/Warning Code for engine*

An abbreviated electric control unit name ((1) in the figure) shows which control unit is in trouble.
The Error/Warning Code is identified with combination of FMI and SPN or P or U code.

The meaning of the electric control unit name shows in (1) is listed by below table.

| Abbreviation name | Name of electric control unit | Abbreviation name | Name of electric control unit |
|---|---|---|---|
| ECU | Engine Control Unit | ARU | Arm Rest Unit |
| ACU | After Treatment Control Unit | CEU | Central Electric control Unit |
| TCU | Transmission Control Unit | TECU | Tractor ECU (ISO-BUS) |
| VDC | Vehicle Drive Control Unit | SWP | Switch Panel |
| VCU1 | Vehicle Control Unit 1 | NAC | Navigation Control |
| VCU2 | Vehicle Control Unit 2 | SC | Steering Control |

**Table of Error/Warning Code**

If the error/warning code which is not indicated on the following table is indicated, please contact your authorized local KUBOTA dealer.

| Electric control unit | Error/Warning Code | | Type of Trouble | Action |
|---|---|---|---|---|
| | SPN | FMI | | |
| ECU | P0217 | | Engine overheat. | Reduce work load.<br>Check cooling system; as coolant, radiator net, fan belt tension. |
| | 110 | 0 | | |
| ACU | P204F | | DEF/AdBlue® level is too low. | Check DEF/AdBlue® level.<br>Check tank for leakage. |
| | 1761 | 1 | | |
| ACU | P20F5 | | DEF/AdBlue® level is too low. | Check DEF/AdBlue® level.<br>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.<br>If there is no damage, contact your dealer. |
| VCU1 | 520351 | 19 | Communication error of VCU2. | Check the fuse and wiring of VCU2.<br>If there is no damage, contact your dealer. |
| VCU1 | 520352 | 19 | Communication error of ECU. | Check the fuse and wiring of ECU.<br>If there is no damage, contact your dealer. |
| VCU1 | 520353 | 19 | Communication error of SWP. | Check the fuse and wiring of switch panel.<br>If there is no damage, contact your dealer. |
| VCU1 | 520354 | 19 | Communication error of TCU. | Check the fuse and wiring of TCU.<br>If there is no damage, contact your dealer. |
| VCU1 | 520355 | 19 | Communication error of VDC. | Check the fuse and wiring of VDC.<br>If there is no damage, contact your dealer. |
| VCU1 | 520358 | 19 | Communication error of ACU. | Check the fuse and wiring of ACU.<br>If there is no damage, contact your dealer. |
| ARU | 168 | 0 | Battery voltage is too high. | Check the battery specification.<br>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.<br>If it is stuck, contact your dealer. |

| Electric control unit | Error/Warning Code | | Type of Trouble | Action |
|---|---|---|---|---|
| | SPN | FMI | | |
| 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. |

| Electric control unit | Error/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. | Re-start the engine and check message. If the message persists, contact your dealer. |
| VCU2 | 11031 | 3 or 4 | Right side of draft sensor error. | Re-start the engine and check message. If the message persists, contact your dealer. |
| VCU2 | 11032 | 0 or 1 | Left side of draft sensor error. | Re-start the engine and check message. If the message persists, contact your dealer. |
| VCU2 | 11032 | 3 or 4 | Left side of draft sensor error. | Re-start 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. |

| Electric control unit | Error/Warning Code | | Type of Trouble | Action |
|---|---|---|---|---|
| | SPN | FMI | | |
| 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. |
| 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. |

| Electric control unit | Error/Warning Code | | Type of Trouble | Action |
|---|---|---|---|---|
| | SPN | FMI | | |
| 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. |
| 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. |

| Electric control unit | Error/Warning Code | | Type of Trouble | Action |
|---|---|---|---|---|
| | SPN | FMI | | |
| 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 while 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 traveling speed to 25 KPH (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 traveling speed at 25 KPH (15 mph) or less. |
| NAC | 520196 | 31 | Operational error; Invalid Travelling Speed. | Set the traveling speed at 25 KPH (15 mph) or less. |
| NAC | 520210 | 14 | Operation Error: Auto Steering Switch. | Turn ON Auto Steering switch after engine start. |
| 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 re-start.<br>Re-check 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.<br>Otherwise, contact your dealer. |

| Electric control unit | Error/Warning Code | | Type of Trouble | Action |
|---|---|---|---|---|
| | SPN | FMI | | |
| 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.<br>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.<br>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 tire 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. |

# OPTIONS

## OPTIONS

| | | Standard | Premium | Premium KVT | Select from optional parts |
|---|---|---|---|---|---|
| Transmission | Plug-on bar axle kit | ○ | ○ | ○ | |
| | Hub kit (1set) | ○ | ○ | ○ | Classic type/Plug-on type |
| CABIN | 12 inch terminal kit | - | ○ | ○ | |
| | Instructional seat kit | ○ | ○ | ○ | |
| | Rear view mirror with heater kit | ○ | ○ | ○ | |
| Exterior | Front fender kit | ○ | ○ | ○ | Smaller/Wider |
| | Rear fender kit | ○ | ○ | ○ | |
| Electrical | Work light kit | ○ | ○ | ○ | |
| | Repeat headlight kit | ○ | ○ | ○ | |
| | Extension lamp for side marker kit | ○ | ○ | ○ | |
| | 200A Alternator kit | ○ | ○ | ○ | |
| | Beacon light kit | ○ | ○ | ○ | |
| | Speed sensor kit | - | ○ | ○ | |
| | Camera | - | ○ | ○ | 12 inch terminal only |
| Precision farming | 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 | - | ○ | ○ | |

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