



- U.S.A. : **KUBOTA TRACTOR CORPORATION**  
1000 Kubota Drive, Grapevine, TX 76051  
Telephone : 888-4KUBOTA
- Canada : **KUBOTA CANADA LTD.**  
5900 14th Avenue, Markham, Ontario, L3S 4K4, Canada  
Telephone : (905)294-7477
- France : **KUBOTA EUROPE S.A.S**  
19-25, Rue Jules Verceyruysse, Z.I. BP88, 95101 Argenteuil Cedex, France  
Telephone : (33)1-3426-3434
- Italy : **KUBOTA EUROPE S.A.S Italy Branch**  
Via Grandi, 29 20068 Peschiera Borrome (MI) Italy  
Telephone : (39)02-51650377
- Germany : **KUBOTA (DEUTSCHLAND) GmbH**  
Senefelder Str. 3-5 63110 Rodgau /Nieder-Roden, Germany  
Telephone : (49)6106-873-0
- U.K. : **KUBOTA (U.K.) LTD.**  
Dormer Road, Thame, Oxfordshire, OX9 3UN, U.K.  
Telephone : (44)1844-214500
- Spain : **KUBOTA ESPAÑA S.A.**  
Avenida Recomba No.5, Poligno Industrial la Laguna, Leganes, 28914 (Madrid) Spain  
Telephone : (34)91-508-6442
- Australia : **KUBOTA AUSTRALIA PTY LTD.**  
25-29 Permas Way, Truganina, VIC 3029, Australia  
Telephone : (61)-3-9394-4400
- Malaysia : **KUBOTA MALAYSIA SDN. BHD.**  
No.3 Jalan Sepadu 25/123 Taman Perindustrian Axis,  
Seksyen 25, 40400 Shah Alam, Selangor Darul Ehsan Malaysia  
Telephone : (60)3-736-1388
- Philippines: **KUBOTA PHILIPPINES, INC.**  
232 Quirino Highway, Baesa, Quezon City 1106, Philippines  
Telephone : (63)2-422-3500
- Taiwan : **SHIN TAIWAN AGRICULTURAL MACHINERY CO., LTD.**  
16, Fengping 2nd Rd, Taliiao Shiang Kaohsiung 83107, Taiwan R.O.C.  
Telephone : (886)7-702-2333
- Indonesia : **PT KUBOTA MACHINERY INDONESIA**  
Tower A at EightyEight@Kasablanka Lantai 16  
Jalan Raya Casablanka Kav. 88, Jakarta 12870 Indonesia  
Telephone : (62)-21-29568-720
- Thailand : **SIAM KUBOTA CORPORATION CO., LTD.**  
101/19-24 Moo 20, Navanakorn Industrial Estate, Tambon Khlongnueng, Amphur Khlongluang,  
Pathumthani 12120, THAILAND  
Telephone : (66)2-909-0300
- Korea : **KUBOTA KOREA CO., LTD.**  
41-27, Jayumuyeok-gil, Baeksan-myeon, Gimje-si, Jeollabuk-do, Korea  
Telephone : (82)-63-544-5822
- India : **KUBOTA AGRICULTURAL MACHINERY INDIA PVT. LTD.**  
No.15, Medavakkam Road, Sholinganallur, Chennai-600119, T.N., India  
Telephone : (91)44-6104-1500
- Vietnam : **KUBOTA VIETNAM CO., LTD.**  
Lot B-3A2-CN, My Phuoc 3 Industrial Park, Thoi Hoa Ward, Ben Cat Town, Binh Duong Province, Vietnam  
Telephone : (84)-274-3577-507

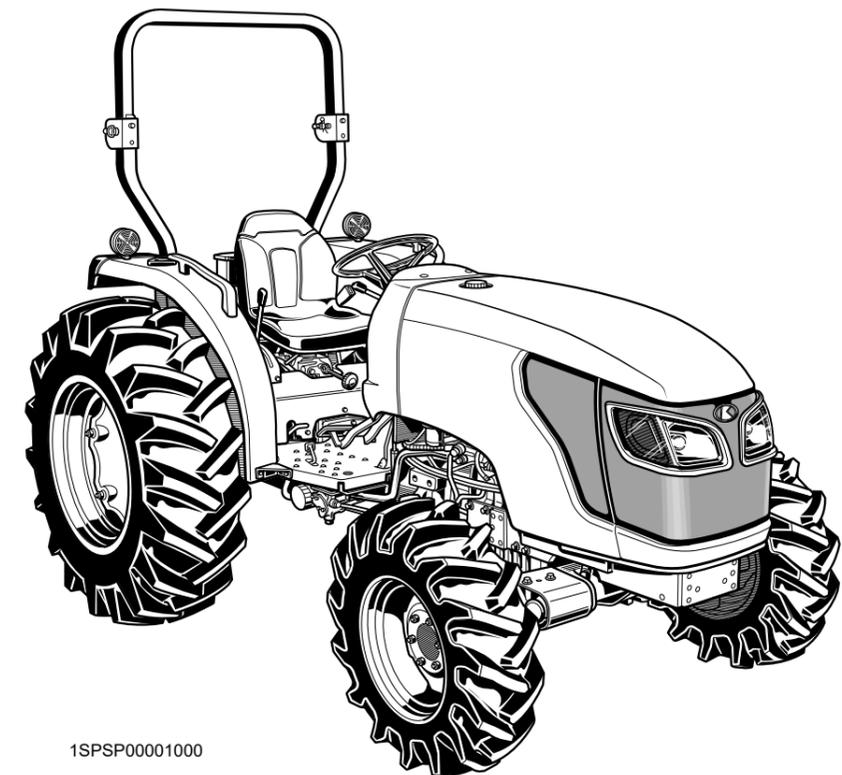
KUBOTA Corporation

English (Oceania)  
Code No. TC457-1974-2

# OPERATOR'S MANUAL

# KUBOTA TRACTOR

MODEL MX5200



1SPSP00001000

M  
X  
5  
2  
0  
0

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

## KUBOTA Corporation is ...

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

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

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

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

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

# UNIVERSAL SYMBOLS

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

 Safety Alert Symbol	 Draft Control-Shallow Position
 Master system warning	 Draft Control-Deep Position
 Fast	 Position Control-Raised Position
 Slow	 Position Control-Lowered Position
 ON (engaged)	 3-Point Lowering Speed Control
 OFF (disengaged)	 Remote Cylinder-Retract
 Diesel Fuel	 Remote Cylinder-Extend
 Engine-rotational speed	 Hazard Warning Lights
 Hourmeter/Elapsed Operating Hours	 Position Lamps
 Engine Coolant-Temperature	 Headlight-Low Beam
 Brake System	 Headlight-High Beam
 Clutch	 4-Wheel Drive-On
 Parking Brake	 4-Wheel Drive-Off
 Engine Intake/Combustion Air-Filter	 Read Operator's Manual
 Battery Charging Condition	 Steering Wheel-Tilt Control
 Engine Oil-Pressure	 Audible Warning Device
 Turn Signal	 Lock
 Diesel Preheat/Glow Plugs (Low Temperature Start Aid)	 Engine Speed Control
 Engine-stop	
 Engine-Run	
 Engine-start	
 Power Take-Off Clutch Control-Off (Disengaged) Position	
 Power Take-Off Clutch Control-On (Engaged) Position	
 Differential lock	

# 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.

# CONTENTS

<b>SAFE OPERATION</b> .....	<b>5</b>
<b>SERVICING OF THE TRACTOR</b> .....	<b>15</b>
DEALER SERVICE.....	15
1. Warranty of the tractor.....	15
2. Scrapping the tractor and its procedure.....	16
<b>SPECIFICATIONS</b> .....	<b>17</b>
SPECIFICATION TABLE.....	17
TRAVELING SPEEDS TABLE [MANUAL TRANSMISSION TYPE].....	19
TRAVELING SPEEDS TABLE [HST TYPE].....	20
<b>IMPLEMENT LIMITATIONS</b> .....	<b>21</b>
IMPLEMENT LIMITATION TABLES.....	21
<b>INSTRUMENT PANEL AND CONTROLS</b> .....	<b>23</b>
INSTRUMENT PANEL, SWITCHES, AND HAND CONTROLS.....	23
1. Head light switch.....	24
2. Hazard light switch and turn signal light switch.....	24
3. Warning lamps.....	25
4. Key switch.....	25
5. Horn button.....	26
FOOT CONTROLS AND HAND CONTROLS.....	27
1. Foot controls and hand controls [Manual transmission type].....	27
2. Foot controls and hand controls [HST type].....	28
3. Clutch pedal.....	29
4. Front wheel drive lever.....	29
5. Seat belt.....	30
6. Operator's seat.....	30
7. Hand throttle lever.....	31
8. Brake pedals (right and left).....	31
8.1 How to use the parking brake.....	31
9. Main gear shift lever [Manual transmission type only].....	32
10. Synchro-shuttle shift lever [Manual transmission type only].....	32
11. Range gear shift lever [Manual transmission type].....	32
12. Foot throttle [Manual transmission type only].....	33
13. Range gear shift lever (L-M-H) [HST type].....	33
14. Cruise control lever [HST type only].....	33
14.1 How to use the cruise control lever [HST type only].....	34
15. Speed control pedal [HST type only].....	34
ELECTRICAL OUTLET.....	35
<b>PRE-OPERATION CHECK</b> .....	<b>36</b>
DAILY CHECK ITEMS BEFORE OPERATION OF THE TRACTOR.....	36
<b>OPERATING THE ENGINE</b> .....	<b>37</b>
PRECAUTIONS FOR OPERATING THE ENGINE.....	37
STARTING THE ENGINE [MANUAL TRANSMISSION TYPE].....	37
STARTING THE ENGINE [HST TYPE].....	39
STARTING THE ENGINE IN COLD WEATHER.....	41
1. Block heater (if equipped).....	41
STOPPING THE ENGINE.....	41
WARMING UP OF THE ENGINE.....	41
1. Warm-up of the engine and transmission oil in the low temperature range.....	42
JUMP STARTING THE ENGINE.....	42

<b>OPERATING THE TRACTOR</b> .....	<b>44</b>
OPERATION OF NEW TRACTOR .....	44
PRECAUTIONS FOR BOARDING AND LEAVING THE TRACTOR.....	44
OPERATION OF THE FOLDABLE ROPS (IF EQUIPPED).....	44
1. Folding the ROPS (if equipped).....	45
2. Raising the ROPS to upright position (if equipped).....	45
3. Adjusting the foldable ROPS (if equipped).....	46
STARTING THE TRACTOR [MANUAL TRANSMISSION TYPE].....	46
STARTING THE TRACTOR [HST TYPE].....	49
STOPPING THE TRACTOR.....	53
CHECK DURING DRIVING .....	55
1. Cases to stop the engine immediately.....	55
2. Easy Checker™ .....	55
3. Fuel gauge.....	55
4. Coolant temperature gauge.....	56
4.1 Dealing with overheated coolant temperature.....	56
5. Hour meter.....	56
6. Tachometer.....	56
PARKING THE TRACTOR.....	57
TECHNIQUES FOR OPERATING THE TRACTOR .....	57
1. Differential lock .....	57
2. Precautions for operating the tractor on a road .....	58
3. Precautions for operating the tractor on slopes and rough terrain .....	58
4. Directions for use of the power steering .....	59
<b>POWER TAKE-OFF (PTO)</b> .....	<b>60</b>
PTO OPERATION.....	60
1. PTO clutch control switch .....	60
2. How to use the stationary PTO.....	61
3. PTO shaft cover and PTO shaft cap.....	61
<b>3-POINT HITCH AND DRAWBAR</b> .....	<b>62</b>
OVERVIEW OF THE 3-POINT HITCH AND DRAWBAR.....	62
3-POINT HITCH.....	63
1. Preparations for attaching the 3-point hitch implement .....	63
1.1 Changing the category 1 and 2 of 3-point hitch implement.....	63
1.2 Selecting the holes to mount the top link .....	63
1.3 Dealing with the drawbar.....	63
2. Attaching methods of 3-point hitch implement.....	63
2.1 Precautions for attaching and detaching the 3-point hitch implement.....	63
2.2 Adjusting the lifting rod (right) .....	64
2.3 Adjusting the top link .....	64
2.4 Adjusting the telescopic stabilizers .....	64
2.5 Adjusting the telescopic lower links.....	64
DRAWBAR.....	65
1. Adjusting the drawbar length .....	65
2. Swing drawbar.....	65
<b>HYDRAULIC UNIT</b> .....	<b>66</b>
3-POINT HITCH CONTROL SYSTEM.....	66
1. Position control of 3-point hitch mounted implement.....	66
2. Draft control of 3-point hitch mounted implement (if draft control lever is equipped) .....	66
3. Mixed control of position and draft of 3-point hitch mounted implement .....	67
4. Float control of lower link .....	67
5. 3-point hitch lowering speed.....	68
AUXILIARY HYDRAULICS .....	68
1. How to use the hydraulic block type outlet when the hydraulically operated implement is attached.....	68
REMOTE HYDRAULIC CONTROL SYSTEM (IF EQUIPPED) .....	69

1. Remote control valve (if equipped).....	69
2. Remote control valve lever (if equipped).....	69
3. How to use the remote control valve coupler (if equipped).....	70
4. Hydraulic control unit use reference chart.....	71
<b>TIRES, WHEELS, AND BALLAST.....</b>	<b>72</b>
TIRES.....	72
1. Inflation pressure of tires.....	72
2. Dual tires.....	72
WHEEL ADJUSTMENT.....	72
1. Front wheels with 4-wheel drive.....	72
2. Rear wheels.....	74
2.1 Adjusting the rear wheels.....	75
BALLAST.....	75
1. Front ballast.....	75
1.1 Front end weights (option).....	75
2. Rear ballast.....	75
2.1 Rear wheel weights (option).....	76
3. Liquid ballast in rear tires.....	76
<b>MAINTENANCE.....</b>	<b>77</b>
SERVICE INTERVALS TABLE.....	77
LUBRICANTS, FUEL, AND COOLANT.....	79
<b>PERIODIC SERVICE.....</b>	<b>81</b>
OPENING THE HOOD.....	81
DAILY CHECK.....	81
1. Walk around inspection.....	81
2. Checking the fuel tank and refueling.....	81
3. Checking the engine oil level.....	82
4. Checking the transmission fluid level.....	82
5. Checking the coolant level.....	83
6. Cleaning the grill, the radiator screen, and the oil cooler.....	83
7. Checking the brake pedals and the clutch pedal.....	84
8. Checking the gauges, the meters, and the Easy Checker™.....	84
9. Checking the head light, hazard light, and so on.....	84
10. Checking the seat belt and the ROPS.....	84
11. Checking the movable parts.....	84
SERVICE EVERY 50 HOURS.....	85
1. Lubricating the grease fittings.....	85
2. Checking the engine start system [Manual transmission type].....	85
3. Checking the engine start system [HST type].....	86
4. Checking the wheel bolt torque.....	87
SERVICE EVERY 100 HOURS.....	87
1. Cleaning the air cleaner primary element [Double element type].....	87
2. Cleaning the fuel filter.....	88
3. Adjusting the fan belt tension.....	88
4. Adjusting the clutch pedal.....	89
5. Adjusting the brake pedal.....	89
6. Checking the battery condition.....	89
SERVICE EVERY 200 HOURS.....	90
1. Replacing the engine oil filter.....	90
2. Changing the engine oil.....	91
3. Replacing transmission oil filter [HST type only].....	91
4. Checking the toe-in.....	92
4.1 Adjusting the toe-in.....	93
SERVICE EVERY 400 HOURS.....	93
1. Changing the transmission fluid, replacing the hydraulic oil filter, and cleaning the magnetic filter.....	93
2. Replacing the fuel filter element.....	94

SERVICE EVERY 600 HOURS .....	95
1. Adjusting the front axle pivot .....	95
SERVICE EVERY 800 HOURS .....	95
1. Changing the front axle case oil .....	95
2. Adjusting the engine valve clearance .....	96
SERVICE EVERY 1000 HOURS OR 1 YEAR .....	96
1. Replacing the air cleaner primary element and secondary element.....	96
SERVICE EVERY 1500 HOURS .....	96
1. Checking the injection pressure of the fuel injection nozzle .....	96
SERVICE EVERY 2000 HOURS OR 2 YEAR .....	96
1. Flushing the cooling system and changing the coolant .....	96
1.1 Antifreeze .....	97
SERVICE EVERY 3000 HOURS .....	98
1. Checking the turbocharger .....	98
2. Checking the injection pump .....	98
SERVICE EVERY 1 YEAR .....	98
1. Checking the fuel line .....	98
2. Checking the radiator hose and clamp .....	98
3. Checking the oil cooler line [HST type only] .....	99
4. Checking the intake air line .....	99
5. Checking the power steering line .....	100
SERVICE EVERY 4 YEARS .....	100
1. Replacing the radiator hose (water pipes).....	100
2. Replacing the power steering hose .....	100
3. Replacing the fuel hose .....	100
4. Replacing the oil cooler line [HST type only] .....	100
5. Replacing the intake air line .....	100
SERVICING AS REQUIRED.....	100
1. Bleeding the fuel system .....	100
2. Draining the water from the clutch housing .....	101
3. Replacing the fuse .....	101
4. Replacing the light bulb .....	102
5. Replacing the radiator hose (water pipes) if required .....	102
6. Replacing the power steering hose if required .....	102
7. Replacing the fuel hose if required .....	102
8. Replacing the intake air line if required .....	103
9. Replacing the oil cooler line if required [HST type only] .....	103
<b>STORAGE OF THE TRACTOR .....</b>	<b>104</b>
STORING THE TRACTOR .....	104
REMOVING THE TRACTOR FROM STORAGE.....	104
<b>TROUBLESHOOTING .....</b>	<b>106</b>
ENGINE TROUBLESHOOTING .....	106
<b>OPTIONS .....</b>	<b>107</b>
OPTION ITEMS .....	107
<b>INDEX.....</b>	<b>108</b>

## 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.

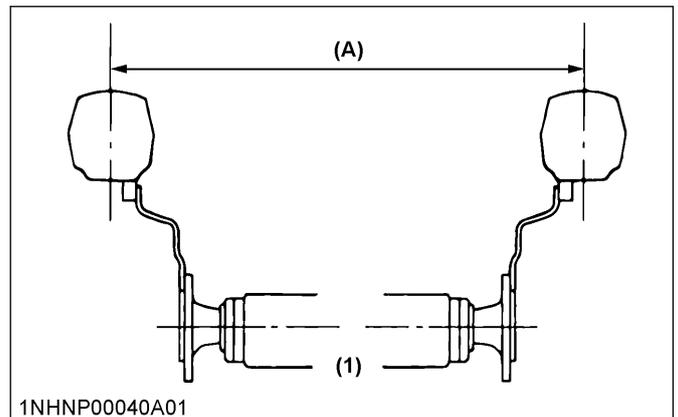
### PRECAUTIONS BEFORE OPERATING THE TRACTOR

Know your equipment and its limitations.

Read this entire manual before starting and operating the tractor.

#### 1. General precautions

- Pay special attention to the safety labels on the tractor.
  - Do not operate the tractor or any implement attached to the tractor while under the influence of alcohol, medication, controlled substances, or while you are fatigued.
  - Carefully check the vicinity of tractor before operating it or any implement attached to it. Do not allow any bystander around or near the tractor during operating it.
  - Before allowing other people to use your tractor, explain them how to operate it and require them to read this manual before operating your tractor.
  - Never wear loose, torn, or bulky clothing around the tractor. Loose, torn, or bulky clothing may catch on moving parts or controls, leading to the risk of an accident. Use additional safety items: hard hat, safety boots or shoes, eye and hearing protection, gloves, and so on, as appropriate or required.
  - Do not allow passengers to ride on any part of the tractor at anytime. The operator must remain in the operator's seat during operating the tractor.
  - Check the 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 SERVICE INTERVALS TABLE on page 77)
  - Keep your tractor clean. Buildups of dirt, grease, and trash may contribute to fires and lead to personal injury.
- Use only implements meeting the specifications listed under IMPLEMENT LIMITATION TABLES on page 21, or implements approved by KUBOTA.
  - Use proper weights on the front or rear of the tractor to reduce the risk of upsets. When using the front loader, put an implement or ballast on the 3-point hitch to maintain proper ballast and braking. Follow the safe operating procedures specified in the implement or attachment manual.
  - The narrower the tread, the greater the risk of a tractor upset. For maximum stability, adjust the wheels to the widest practical tread width for your application.  
(See WHEEL ADJUSTMENT on page 72)



(1) Rear wheels (A) Tread width

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

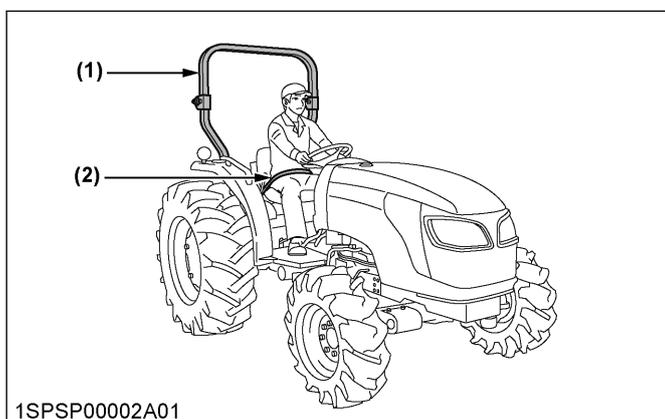
#### 2. Precaution for CAB and ROPS

KUBOTA recommends the use of a CAB or roll-over-protective-structures (ROPS), and seat belt in almost all applications. Combination of a CAB or ROPS and seat belt will reduce the risk of serious injury or death if the tractor should be upset.

- Check for overhead clearance which may interfere with a CAB or ROPS.
- Set the parking brake and stop the engine. Remove any obstructions which may prevent raising or folding the ROPS. Do not allow any bystander. Always perform function of ROPS from a stable position at the rear of the tractor. Hold the top of the ROPS securely when raising or folding it. Make sure that all pins are installed and locked.
- If the CAB or ROPS is loosened or removed for any reason, make sure that all parts are reinstalled correctly before operating the tractor.

# ! SAFE OPERATION

- Never modify or repair any structural member of a CAB or ROPS because welding, bending, drilling, grinding, or cutting it may weaken the structure.
- If any structural member of the CAB or ROPS is damaged, replace the entire structure at your local KUBOTA Dealer.
- If the tractor is equipped with a foldable ROPS, you may fold down it temporarily only when absolutely necessary to fold down it for areas with constraints on height.  
There is no protection for operator provided by the ROPS in the folded position. For operator safety, you should place the ROPS in the upright and locked position and fasten the seat belt for all other operations.
- Always use the seat belt if the tractor is equipped with a CAB or ROPS.  
Do not use the seat belt if the foldable ROPS is being folded or if there is no ROPS. Check the seat belt regularly and replace if it is frayed or damaged.



(1) ROPS (2) Seat belt

## PRECAUTIONS FOR 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, and so on.

This manual sets forth some of the obvious risks, but the list of risks is not exhaustive, and the list of risks cannot be exhaustive. It is the operator's responsibility to be alert for any equipment or environmental condition that could compromise safe operation.

### 1. Precaution for starting to operate the tractor

- Always sit in the operator's seat when starting the engine or operating the levers or controls. Adjust

the operator's seat according to Operator's seat on page 30. Never start the engine while you are standing on the ground.

- Before starting the engine, make sure that all levers including the auxiliary control levers are in their neutral positions, that the parking brake is engaged, and that the power take-off (PTO) is disengaged or "OFF".  
Fasten the seat belt if the tractor is equipped with a CAB, a fixed ROPS, or a foldable ROPS in the upright and locked position.
- Do not start the engine by shorting across starter terminals or bypassing the safety-start-switch. The tractor may start in gear and move if normal starting circuitry is bypassed.
- Do not operate or idle the engine in a non-ventilated area. Carbon monoxide gas is colorless, odorless, and deadly.
- Check that the operator-presence-control-system (OPC) are functioning correctly before each time you use the tractor. Test the safety systems.

#### – [HST type]

See Checking the engine start system [HST type] on page 86.

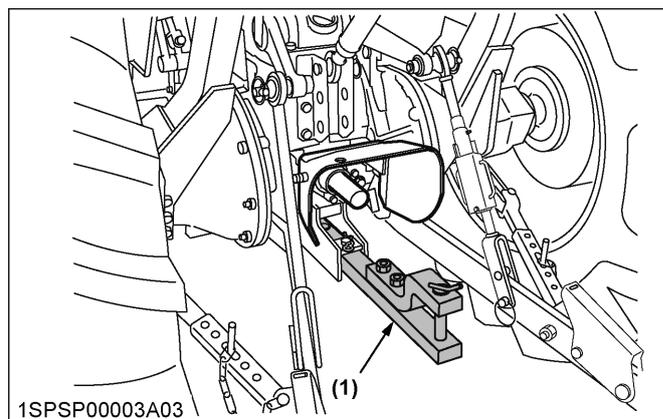
#### – [Manual transmission type]

See Checking the engine start system [Manual transmission type] on page 85.

Do not operate unless they are functioning correctly.

## 2. Precautions for working the tractor

- Pull only from the hitch devices. Never hitch to axle housing or any other point except hitch device. Hitching to axle housing or any other point except hitch device will increase the risk of serious personal injury or death due to a tractor upset.



(1) Drawbar

- Keep all shields and guards in place. Replace any shield or guard that are missing or damaged.

# SAFE OPERATION

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

## 3. Safety for children

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

- Never assume that children will remain where you last saw them.
- Keep children out of the work area and under the watchful eye of another responsible adult.
- Be alert and shut your machine down if children enter the work area.
- Never carry children on your machine. There is no safe place for children to ride. Children may fall off and be run over or interfere with your control of the machine.
- Never allow children to operate the machine even under adult supervision.
- Never allow children to play on the machine or on the implement.
- Use extra caution when backing up. Look behind and down to make sure that the working area is clear before moving.
- When parking your machine if at all possible park on a firm, flat, and level surface.

If you cannot park your machine on a firm, flat, and level surface, follow the following procedure.

1. Park across a slope.
2. Set the parking brake(s).
3. Lower the implements to the ground.
4. Remove the starter key from the ignition.
5. Lock the cab door (if equipped) and chock the wheels.

## 4. Precautions for operating the tractor on slopes

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

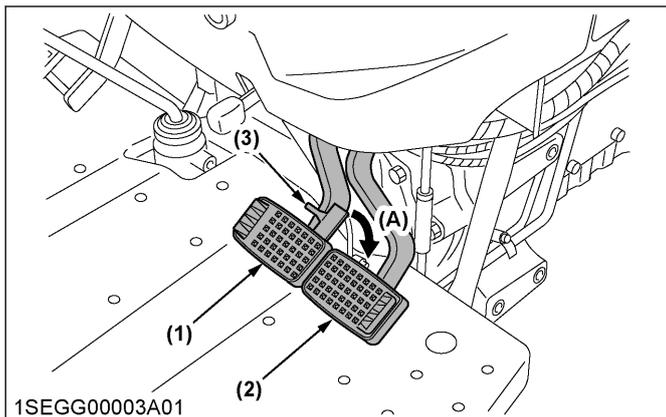
All slopes require extra caution.

- To avoid upsets of the tractor, always back it up steep slopes. If you cannot back the tractor up on the slope or if you feel uneasy to back it up on the slope, do not operate on it. Stay off slopes too steep for safe operation.
- Driving forward out of a ditch, mired condition or up a steep slope increases the risk of the tractor to be upset backward. Always back the tractor out of a ditch, mired condition or steep slope. The 4-wheel drive models require extra caution because their increased traction can give the operator false confidence in the ability of the tractor to climb slopes.
- Keep all movement of the tractor on slopes slow and gradual. Do not change speed or direction of the tractor suddenly. Do not apply brake suddenly. Do not move the steering wheel suddenly.
- Avoid disengaging the clutch or changing gears speed when the tractor is climbing or going down a slope. If operating the tractor on a slope, disengaging the clutch or changing gears to neutral could cause loss of control.
- You should pay special attention to the weight and location of implements and loads because they will affect the stability of the tractor.
- To improve stability of the tractor on slope, set the widest wheel tread.  
(See WHEEL ADJUSTMENT on page 72)  
Follow recommendations for proper ballasting.  
(See BALLAST on page 75)

## 5. Precautions for driving the tractor on the road

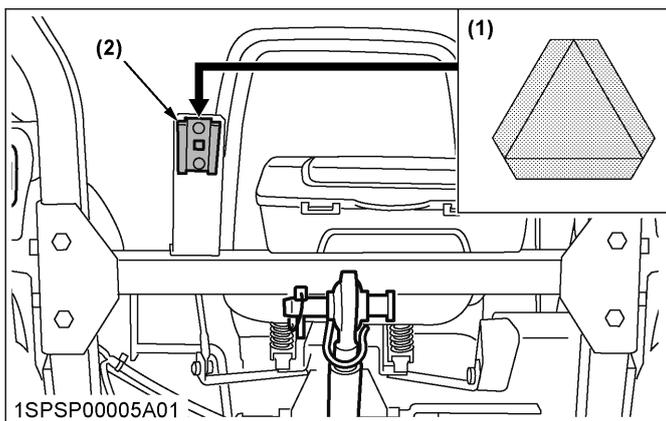
- Lock the 2 brake pedals together to help assure straight-line stops. Uneven braking at road speeds could cause the tractor to tip over.

# ! SAFE OPERATION



- 1SEGG0003A01
- (1) Brake pedal (LH)
  - (2) Brake pedal (RH)
  - (3) Brake pedal lock
- (A) Whenever traveling on the road

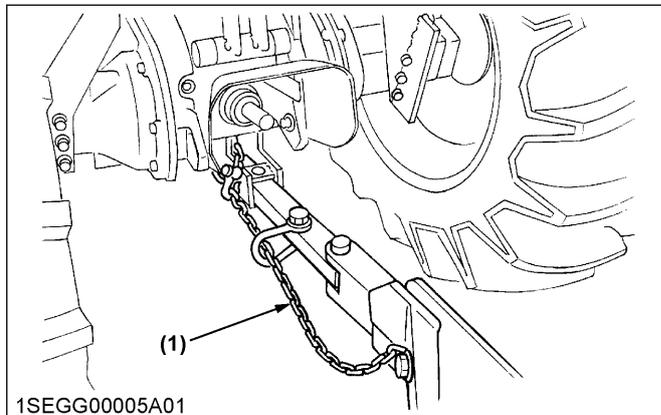
- Check the engagement of front wheel. The braking characteristics are different between 2-wheel drive and 4-wheel drive. Know the difference and use carefully.
- Always slow the tractor down before turning. Turning at high speed may tip the tractor over.
- Make sure that the slow-moving-vehicle (SMV)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



- 1SPSP0005A01
- (1) SMV emblem
  - (2) Bracket

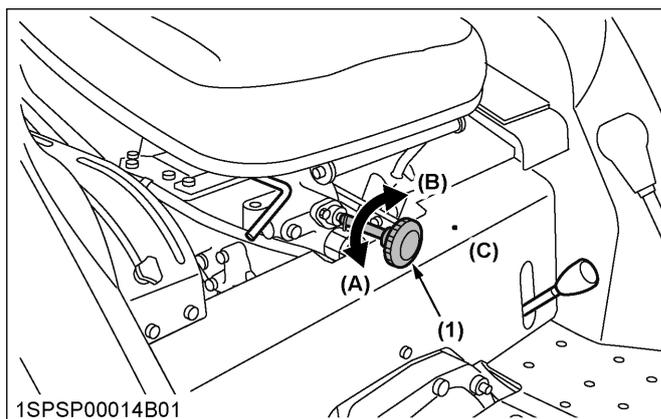
- Follow all local traffic and safety regulations.
- Turn the headlights on. Dim the headlights when meeting another vehicle.
- Drive at speeds that allow you to maintain control at all times.
- Do not apply the differential lock while traveling at road speeds. The tractor may run out of control.
- Avoid sudden motions of the steering wheel because they can lead to a dangerous loss of stability. The risk is especially great when the tractor is traveling at road speeds.
- Keep the ROPS in the "UP" position and wear the seat belt when driving the tractor on the road. Otherwise, you will not be protected in the event of a tractor roll-over.

- Do not operate an implement while the tractor is on the road. Lock the 3-point hitch in the raised position.
- When towing other equipment, use a safety chain and place an SMV emblem on the equipment as well.



- 1SEGG0005A01
- (1) Safety chain

- Set the implement-lowering-speed-knob in the "LOCK" position to hold the implement in the raised position.



- 1SPSP00014B01
- (1) 3-point hitch lowering speed knob
  - (A) Fast
  - (B) Slow
  - (C) Lock

## PRECAUTIONS FOR PARKING THE TRACTOR

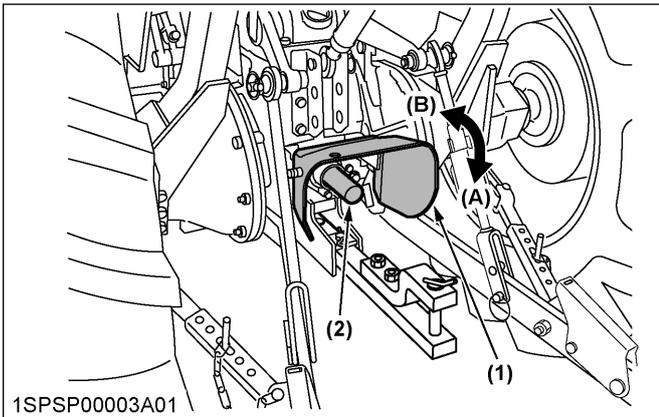
- Disengage the PTO, lower all implements to the ground, place all control levers in their neutral positions, set the parking brake, stop the engine, and remove the starter key.
- Make sure that the tractor has come to a complete stop before dismounting.
- Avoid parking on steep slopes, if at all possible park on a firm and level surface. If You cannot park on a firm and level surface, park across a slope with chock the wheels.

## SAFE OPERATION

Failure to comply with parking across a slope with chock the wheels may allow the tractor to move and could cause injury or death.

### PRECAUTIONS FOR OPERATING THE PTO

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

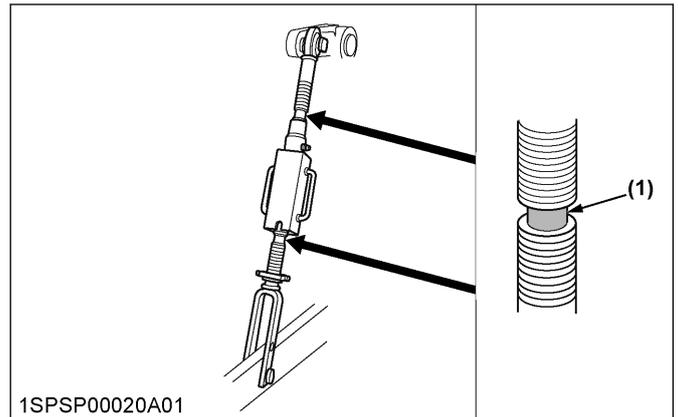


- (1) PTO shaft cover (A) Normal position  
(2) PTO shaft cap (B) Raised position

- Before installing or using the PTO-driven-equipment, read the manufacturer's manual and review the safety labels attached to the equipment.
- When operating the stationary PTO-driven-equipment, always apply the parking brake of tractor and place the chocks behind and in front of the rear wheels. Stay clear of all rotating parts. Never step over rotating parts.

### PRECAUTIONS FOR USING 3-POINT HITCH

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



- (1) Groove

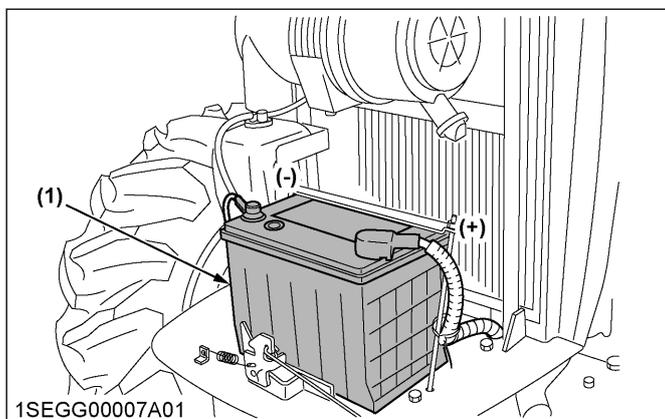
### PRECAUTIONS FOR SERVICING THE TRACTOR

- Before servicing the tractor, follow the following procedure.
  1. Park the tractor on a firm, flat, and level surface.
  2. Set the parking brake.
  3. Lower all implements to the ground.
  4. Place the gear-shift-lever in the neutral position.
  5. Stop the engine.
  6. Remove the starter key.
- Allow the tractor time to cool off before working on or near the engine, muffler, radiator, and so on.
- Do not remove the radiator cap while coolant is hot. When coolant is cool, slowly rotate the radiator cap to the first stop and allow sufficient time for excess pressure to escape before removing the radiator cap completely. If the tractor is equipped with a coolant-recovery-tank, add coolant or water to the tank, not the radiator. (See Checking the coolant level on page 83)
- Always stop the engine before refueling. Avoid spills and overfilling.
- 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.
- Before jump starting a dead battery, read and follow all of the instructions in JUMP STARTING THE ENGINE on page 42.
- Keep first aid kit and fire extinguisher handy at all times.
- Disconnect the ground cable of battery before working on or near electric components.
- To avoid the possibility of battery explosion, do not use or charge the refillable type battery if the fluid level is below the lower (lower limit level) mark. Check the fluid level regularly and add distilled

# ! SAFE OPERATION

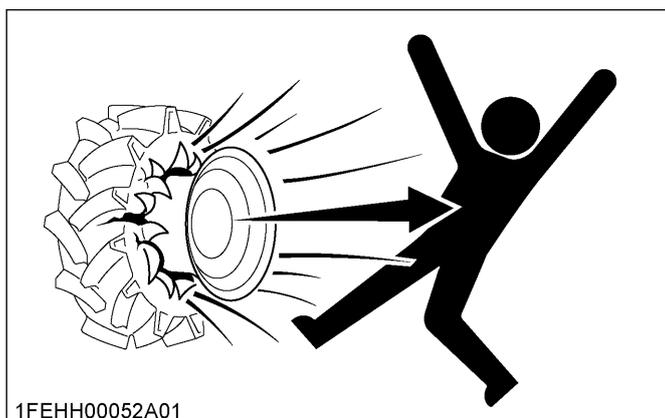
water as required so that the fluid level is between the upper and lower levels.

- To avoid sparks from an accidental short circuit, always disconnect the ground cable (-) of battery first and reconnect it last.



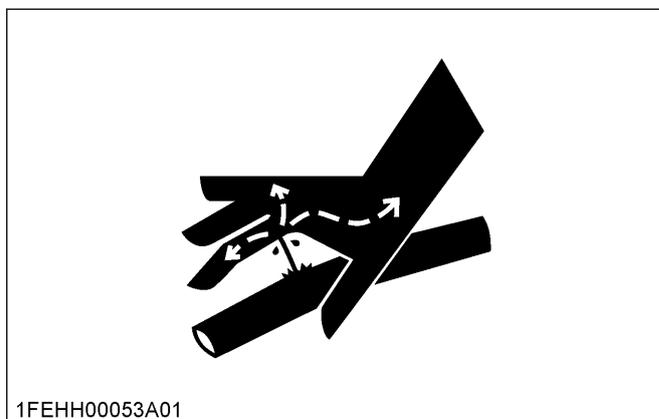
(1) Battery

- Do not mount a tire on a rim. Only a qualified person should mount a tire on a rim with the proper equipment.
- Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure shown in Inflation pressure of tires on page 72.

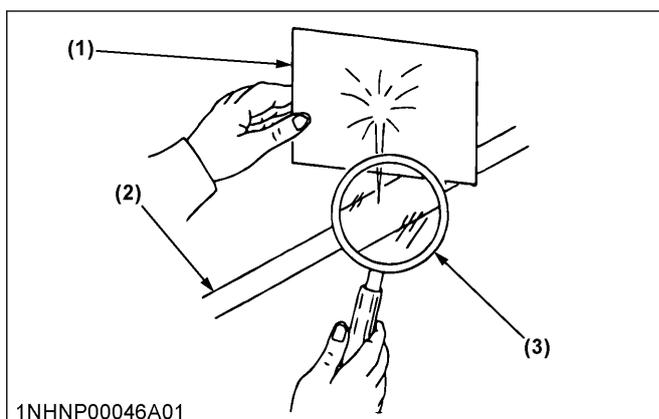


- Securely support the tractor when either changing wheels or adjusting the width of wheel tread.
- Make sure that the wheel bolts have been tightened to the specified torque.
- Disconnect the ground cable of battery and stop the engine to avoid the possibility of the machine runaway due to 4WD braking system during testing, service, or repair with only rear wheels off the ground.
- Do not work under any hydraulically supported devices. Hydraulically supported devices can settle, suddenly leak down, or be accidentally lowered. If it is necessary to work under the tractor or any machine elements for servicing or adjustment, securely support them with stands or suitable blocking beforehand.
- Escaping hydraulic fluid under pressure obtains sufficient force to penetrate skin, causing serious

personal injury. Before disconnecting the 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.



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



(1) Cardboard

(2) Hydraulic line

(3) Magnifying glass

- Keep the tractor away from people, animals, or structures which may be susceptible to harm or damage from hot exhaust gases.
- To avoid fire hazard:  
After use and pressure-washing, make sure there is nothing flammable near the exhaust pipe. Grass or twigs under the hood may cause fire.
- Waste products such as used oil, fuel, hydraulic fluid, and batteries, can harm the environment, people, pets, and wildlife. Please dispose properly. See your local recycling centre or KUBOTA Dealer to learn how to recycle or get rid of waste products.

## SAFETY LABELS

(1) Part No. TC660-4997-1

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

1AGAHAKAP046A

(3) Part No. 6C540-9554-1

**! WARNING**

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

**! WARNING**

**TO AVOID PERSONAL INJURY OR DEATH WHEN RAISING OR FOLDING ROPS :**

- Set parking brake and stop engine.
- Remove any obstruction that may prevent raising or folding of the ROPS.
- Do not allow any bystanders.
- Always perform function from a stable position at the rear of the tractor.
- Hold the top of the ROPS securely when raising or folding.
- Make sure all pins are installed and locked.

1AGAHAKAP032A

(2) Part No. TA040-4965-2



**! DANGER**

**TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.**

1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission and PTO OFF. Never start engine while standing on the ground.

1AGAMAAAP245U

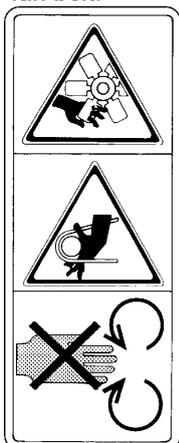
(6) Part No. 3J080-3822-2

**! WARNING**

**TO AVOID FIRE HAZARD :**  
After use and/or pressure-washing, make sure there is nothing flammable near the exhaust pipe. Grass or twigs under the bonnet may cause fire.

(4) Part No. 6C090-4958-2

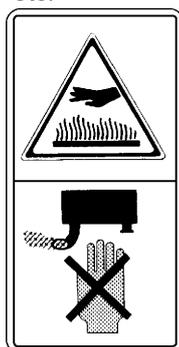
Do not get your hands close to engine fan and fan belt.



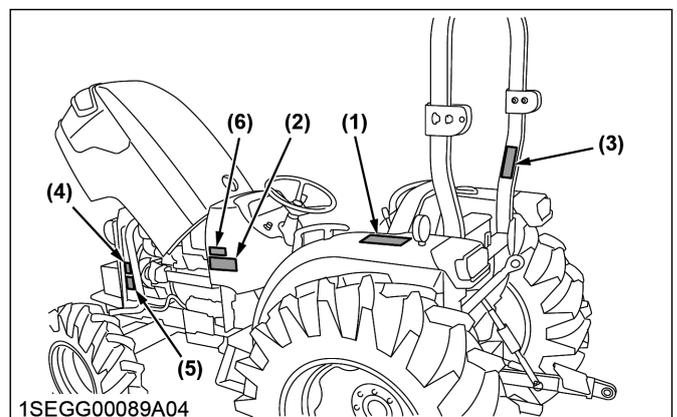
1AGAECDAPO31A

(5) Part No. TC030-4958-1

Do not touch hot surface like muffler, etc.



1AGAMAAAP240B



1SEGG00089A04

1SPSP00006A01enUS

# ! SAFE OPERATION

(1) Part No. TC660-4935-1

<p><b>WARNING</b></p> <p><b>TO AVOID PERSONAL INJURY OR DEATH:</b></p> <ol style="list-style-type: none"> <li>1. Attach pulled or towed loads to the drawbar only.</li> <li>2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.</li> </ol>	<p><b>WARNING</b></p> <p><b>TO AVOID PERSONAL INJURY OR DEATH FROM SEPARATION:</b></p> <p>Do not extend lift rod beyond the groove on the threaded rod.</p>
---	---

1AGAHAKAP052C

(2) Part No. TA240-9848-2

<p><b>WARNING</b></p> <p><b>TO AVOID INJURY OR DEATH FROM ROLL-OVER:</b></p> <ul style="list-style-type: none"> <li>• Keep Roll-Over Protective Structures (ROPS) in the upright and locked position.</li> <li>• Fasten SEAT BELT before operating.</li> </ul> <p><b>THERE IS NO OPERATOR PROTECTION WHEN THE ROPS IS IN THE FOLDED POSITION:</b></p> <ul style="list-style-type: none"> <li>• Check the operating area and fold the ROPS only when absolutely necessary.</li> <li>• Do not wear SEAT BELT if ROPS is folded.</li> <li>• Raise and lock ROPS as soon as vertical clearance allows.</li> <li>• Read ROPS related instructions and warnings.</li> </ul>	
---	--

1AGAEBMAP071E

(3) Part No. TA140-4933-1 [Manual Transmission Type]

<p><b>WARNING</b></p>	<p><b>BEFORE DISMOUNTING TRACTOR:</b></p> <ol style="list-style-type: none"> <li>1. ALWAYS SET PARKING BRAKE.</li> <li>2. PARK ON LEVEL GROUND WHENEVER POSSIBLE. If parking on a slope, position tractor across the slope.</li> <li>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.</li> <li>4. LOCK SHUTTLE SHIFT LEVER IN NEUTRAL POSITION AND STOP THE ENGINE.</li> </ol>
-----------------------	---

1AGAMAAAP400T

(3) Part No. TD170-4933-2 [HSTType]

<p><b>WARNING</b></p>	<p><b>BEFORE DISMOUNTING TRACTOR:</b></p> <ol style="list-style-type: none"> <li>1. ALWAYS SET PARKING BRAKE. Leaving transmission in gear with the engine stopped will not prevent tractor from rolling.</li> <li>2. PARK ON LEVEL GROUND WHENEVER POSSIBLE. If parking on a slope, position tractor across the slope.</li> <li>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.</li> <li>4. STOP THE ENGINE.</li> </ol>
-----------------------	--

1AGAMAAAP372A

(4) Part No. TA040-4959-3

	<p><b>WARNING</b></p> <p><b>TO AVOID PERSONAL INJURY:</b></p> <ol style="list-style-type: none"> <li>1. Keep PTO shield in place at all times.</li> <li>2. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer.</li> <li>3. For trailing PTO-driven implements, set drawbar at towing position. (see operator's manual)</li> </ol>
--	---

1AGAMAAAP247U

(5) Part No. TC230-4956-1

Diesel fuel only. No fire

<p><b>LOW SULFUR FUEL OR ULTRA LOW SULFUR FUEL ONLY</b></p>	

1AGAPAJAP068A

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

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

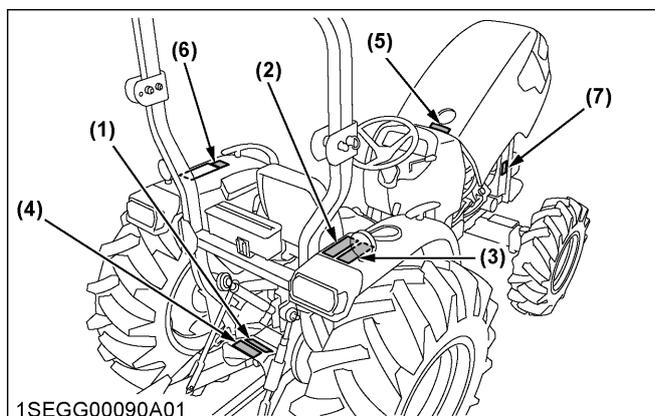
1AGAIHFAP069A

(7) Part No. 6C090-4958-2

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



1AGAECDAP031A



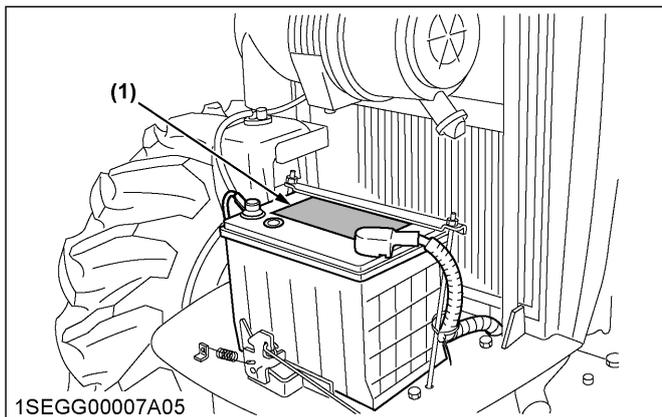
1SEGG00090A01

# ! SAFE OPERATION

(1) Part No. TC030-3012-1

 <b>NX110-5LMF 12V</b> AMP. HR (5HR) 55 RESERVE CAPACITY (MIN) 133 COLD CRANKING AMPS (-18°C) 582	 <b>FLAMMABLES</b>  <b>SHIELD EYES</b>  <b>KEEP OUT OF THE REACH OF CHILDREN</b>  <b>CAUTIOUS OF SULFURIC ACID</b>  <b>READ INSTRUCTION MANUAL CAREFULLY</b>  <b>EXPLOSIVE</b>	<b>HYDROMETER</b>  <b>OK CHARGE REPLACE BATTERY BATTERY</b> <b>OK 80959</b>																								
<p><b>DANGER</b></p> <ul style="list-style-type: none"> <li>• DUE TO HYDROGEN GAS GENERATED FROM BATTERY, HANDLING WITHOUT CARE CAN CAUSE FIRE AND EXPLOSION.</li> <li>• THIS 12V BATTERY IS ONLY FOR STARTING ENGINE. DO NOT APPLY THIS PRODUCT FOR OTHER USES.</li> <li>• CHARGE THIS BATTERY ONLY AT WELL VENTILATED PLACES, AND AVOID SHORTS OR SPARKS.</li> <li>• REFER TO THE INSTRUCTION MANUAL OF VEHICLE OR BATTERY BEFORE USING BOOSTER CABLE.</li> <li>• SULFURIC ACID MAY CAUSE BLINDNESS OR SEVERE BURN. IN CASE EYES, SKIN, CLOTHES OR ANY ARTICLES ARE STAINED WITH ACID, FLUSH OBJECTS IMMEDIATELY WITH WATER. IF ACID BEING SWALLOWED, DRINK PLENTY OF WATER PROMPTLY. IN CASE OF ACCIDENTAL CONTACT, CONSULT A DOCTOR IMMEDIATELY.</li> <li>• BATTERY FILLED WITH ACID (DO NOT TILT OR SPILL) • FLAMMABLE. DO NOT CHARGE NEAR FIRE OR SPARKS</li> <li>• DO NOT CHARGE RAPIDLY • DO NOT DISASSEMBLE THE BATTERY (SEALED TYPE)</li> </ul>																										
<h1>NX110-5LMF</h1>		<h1>80D26L</h1> <p>FITTING DATE</p> <table border="1"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td> <td>YEAR</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td> <td>MONTH</td> </tr> </table>	0	1	2	3	4	5	6	7	8	9	YEAR	1	2	3	4	5	6	7	8	9	10	11	12	MONTH
0	1	2	3	4	5	6	7	8	9	YEAR																
1	2	3	4	5	6	7	8	9	10	11	12	MONTH														
<p><b>DANGER EXPLOSIVE GASES</b> Cigarettes, flames or sparks could cause battery to explode. Always shield eyes and face from battery. Do not charge or use booster cables or adjust post connections without proper instruction and training.</p>		<p><b>POISON CAUSES SEVERE BURNS</b> Contains sulfuric acid. Avoid contact with skin, eyes or clothing. In event of accident flush with water and call a physician immediately. <b>KEEP OUT OF REACH OF CHILDREN</b></p>																								

1AGAHAP061E



1SEGG00007A05

1SEGG00093A01enUS

# **SAFE OPERATION**

## **CARE OF THE SAFETY LABELS**

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

# SERVICING OF THE TRACTOR

## DEALER SERVICE

Your dealer has knowledge of your new machine and desires to help you get the most value from it. After reading this manual thoroughly, you will find that you can perform some of the regular maintenance yourself.

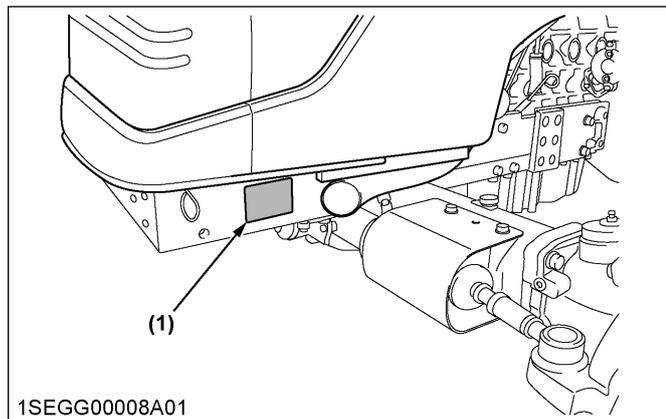
However, when your tractor needs parts or major service, be sure to see your KUBOTA Dealer.

For service, contact the KUBOTA Dealership from which you purchased your machine or your local KUBOTA Dealer. When in need of parts, be prepared to give your dealer the product identification number (PIN), and the CAB or ROPS, and the engine serial numbers.

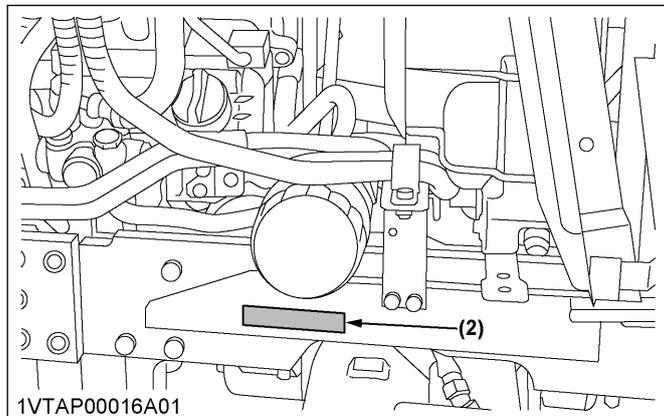
Locate the PIN and serial numbers now and record them in the space provided.

	Type	PIN / Serial No.
Tractor		
Engine		
Date of Purchase		
Name of Dealer		

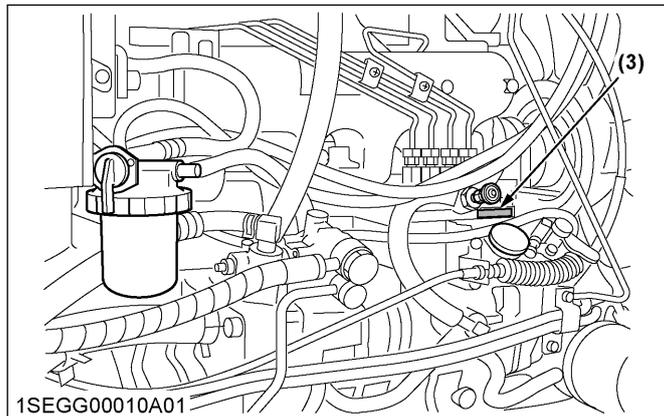
To be filled in by purchaser



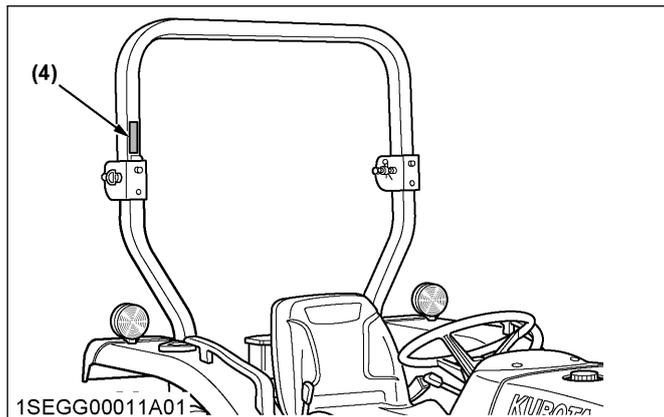
(1) Identification plate



(2) Product identification number



(3) Engine serial number



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

## 1. Warranty of the tractor

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 used according to the instruction given in the operator's manual even if it is within the warranty period.

## **2. 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 there is anything which you do not understand, consult your local KUBOTA Dealer.

# SPECIFICATIONS

## SPECIFICATION TABLE

Model			MX5200		
			Manual transmission	HST	
Engine	Model		V2403-M-TE3		
	Type		Indirect injection, Vertical, Water-Cooled 4 cycle diesel (E-TVCS)		
	Number of cylinders / Aspiration		4 / Turbocharged		
	Total displacement		L 2.434		
	Bore and stroke		mm 87 x 102.4		
	Net power*1		kW (PS) / rpm 38.2 (51.9) / 2700      37.8 (51.4) / 2700		
	PTO power (factory observed)*1		kW (PS) / rpm 33.6 (45) / 2700      32.4 (43.5) / 2700		
	Maximum torque		N · m (kgf · m) 166.3 (16.8)		
	Battery capacity		12 V, RC : 133 min, CCA : 582 A		
Capacities	Fuel tank		L 48.0		
	Engine crankcase (with filter)		L 8.0		
	Engine coolant		L 7.0		
	Transmission case		L 44.0		
Dimensions	Overall length (without 3p)		mm 3245		
	Overall width (min. tread)		mm 1770		
	Overall height (with ROPS)		mm 2430		
	Wheel base		mm 1895		
	Min. ground clearance		mm 385		
	Tread	Front	mm	1325	
Rear		mm	1375, 1490		
Weight (with ROPS)		kg	1642	1712	
Traveling system	Standard tire size	Front	9.5-16		
		Rear	14.9-26		
	Clutch		Dry type single stage		
	Steering		Hydrostatic power steering		
	Transmission		Gear shift, 8 forward and 8 reverse		Hydrostatic transmission, 3 range speed
	Braking system		Mechanical, Wet disk type		
	Min. turning radius (with brake)		m	2.7	
Hydraulic unit	Hydraulic control system		Position control		
	Pump capacity		L / min	35.8	
	3-point hitch		SAE Category 1, 2		

(Continued)

## SPECIFICATIONS

Model				MX5200	
				Manual transmission	HST
Hydraulic unit	Max. lift force	At lift points	kg	1300	
		24in. behind lift points	kg	1050	
	System pressure			MPa (kgf / cm <sup>2</sup> )	17.7 (180)
PTO	Rear PTO			SAE 1-3/8, 6-splines	
	PTO / Engine speed		rpm	540 / 2700	

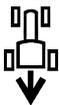
\*1 Manufacturer's estimate

**TRAVELING SPEEDS TABLE [MANUAL TRANSMISSION TYPE]**

Model			MX5200	
Tire size (Rear)			14.9-26	
	Range gear shift lever	Main gear shift lever	km/h (At rated engine rpm)	mph (At rated engine rpm)
Forward 	Low 	1	1.6	1.0
		2	2.2	1.4
		3	3.6	2.3
		4	5.4	3.3
	High 	1	7.6	4.7
		2	10.8	6.7
		3	17.5	10.9
		4	25.9	16.0
Reverse 	Low 	1	1.5	0.9
		2	2.1	1.3
		3	3.3	2.1
		4	4.9	3.1
	High 	1	7.0	4.3
		2	9.9	6.1
		3	16.1	10.0
		4	23.7	14.7

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

## TRAVELING SPEEDS TABLE [HST TYPE]

Model		MX5200	
Tire size (Rear)		14.9-26	
	Range gear shift lever	km/h (At rated engine rpm)	mph (At rated engine rpm)
Forward 	L	6.0	3.7
	M	11.8	7.3
	H	25.9	16.1
Reverse 	L	5.5	3.4
	M	10.6	6.6
	H	23.3	14.5

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

# IMPLEMENT LIMITATIONS

## IMPLEMENT LIMITATION TABLES

**IMPORTANT :**

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

Do not use the following implements:

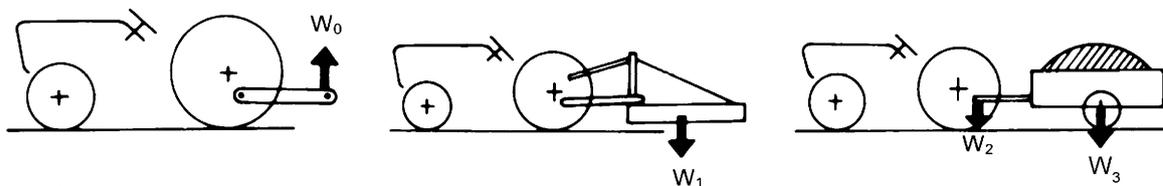
- Implements which are not sold or approved by KUBOTA
- Implements which exceed the maximum specifications listed in the following table
- Implements which are otherwise unfit for use with the KUBOTA tractor
- Implements which are not of the appropriate category

Preceding implements may result in malfunctions or failures of the tractor, damage to other property, and injury to the operator or others.

**NOTE :**

KUBOTA does not cover any malfunctions or failures of the tractor resulting from use with improper implements by the warranty.

		<b>MX5200</b>
Max. width of tread with farm tires	Front	1325 mm
	Rear	1490 mm
Lower link end max. loading weight (W <sub>0</sub> )		1300 kg
Actual figures	Implement weight (W <sub>1</sub> ) and/or size	As in the following list (Shown on the next table)
	Max. Drawbar Load (W <sub>2</sub> )	750 kg
	Max. capacity of trailer loading weight (W <sub>3</sub> )	4300 kg



1PPEP00082A01

**Lower link end max. lifting weight W<sub>0</sub>**

The max. allowable load which can be put on the lower link end

**Implement weight W<sub>1</sub>**

The implement's weight which can be put on the lower link

**Max. hitch load W<sub>2</sub>**

The max. loading weight for hitching

**Trailer loading weight W<sub>3</sub>**

The max. loading weight for trailer with weight of trailer

## IMPLEMENT LIMITATIONS

### Implement weight list

Implement		Remarks		MX5200
Trailer		Max. load capacity	kg	4300
		Max. drawbar load	kg	750
Mower	Rotary-Cutter	Max. cutting width	mm	2130
		Max. weight	kg	450
	Flail mower	Max. cutting width	mm	1830
		Max. weight	kg	500
	Sickle bar	Max. cutting width	mm	2130
		Max. weight	kg	500
Sprayer	Rear mounted	Max. tank capacity	L	500
	Pull type	Max. tank capacity	L	2000
Rotary tiller		Max. tilling width	mm	1830
Bottom plow		Max. size		16 in. x 2
Disk harrow	Pull type	Max. harrowing width	mm	2130
		Max. weight	kg	400
Chisel plow		Max. width	mm	1830
		Max. weight	kg	350
Broad caster		Max. tank capacity	L	300
		Max. weight	kg	100
Manure spreader		Max. capacity	kg	2000
Cultivator		Max. width	mm	2450
		Number of rows		4
		Max. weight	kg	400
Front blade		Max. cutting width	mm	1830
		Max. oil pressure	MPa	17.2
		Sub frame		Necessary
Rear blade		Max. cutting width	mm	1830
		Max. oil pressure	MPa	17.2
Front-end loader		Max lifting capacity	kg	850
		Max. oil pressure	MPa	17.2
		Sub frame		Necessary
Box blade		Max. cutting width	mm	1830
		Max. weight	kg	450
Backhoe		Max. digging depth	mm	2288
		Max. weight	kg	450
		Sub frame		Necessary
Snow blade		Max. width	mm	1830
		Max. weight	kg	400

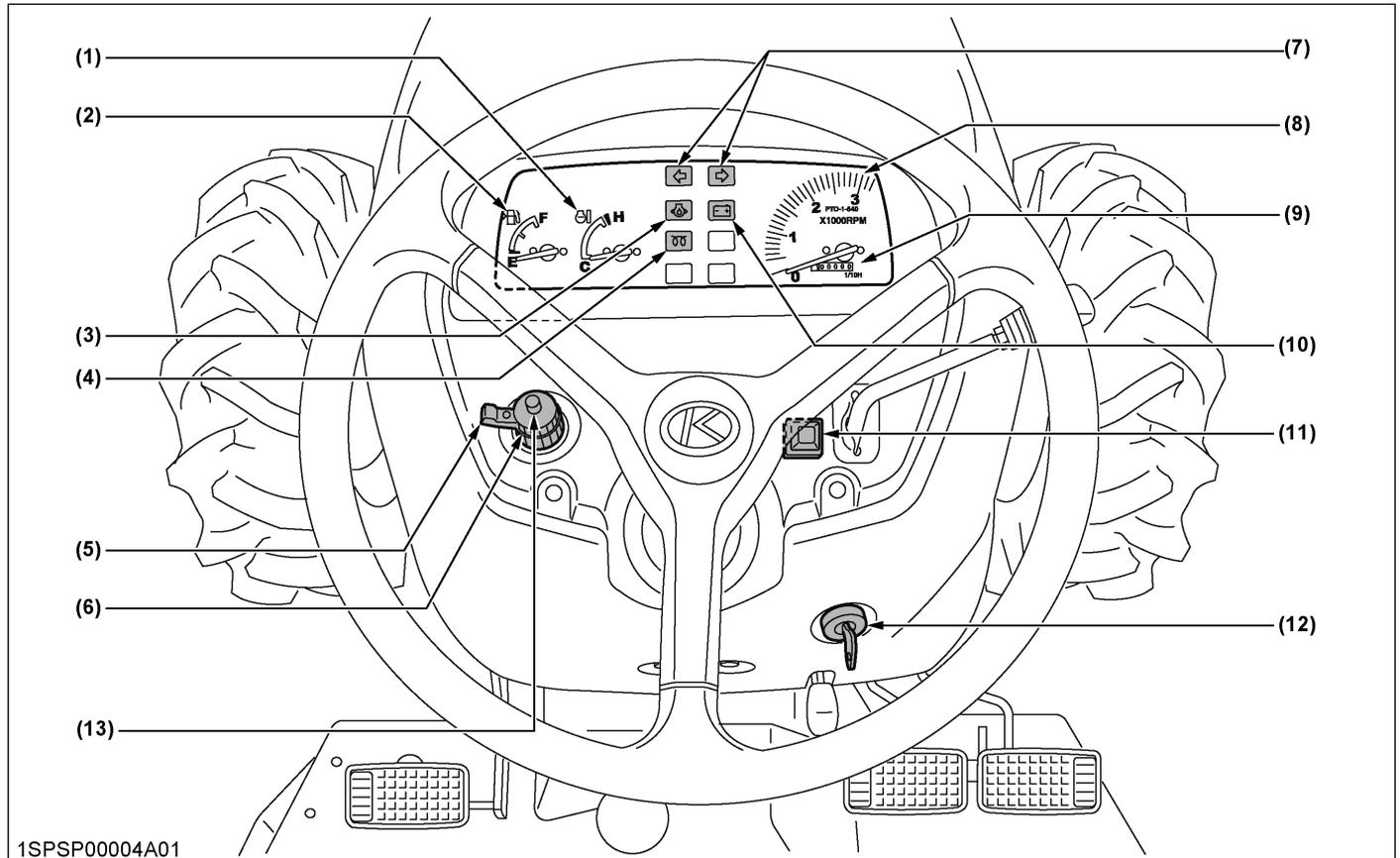
**NOTE :**

- Implement size may vary depending on soil conditions where you operate the machine.

# INSTRUMENT PANEL AND CONTROLS

## INSTRUMENT PANEL, SWITCHES, AND HAND CONTROLS

### Instrument panel, switches, and hand controls

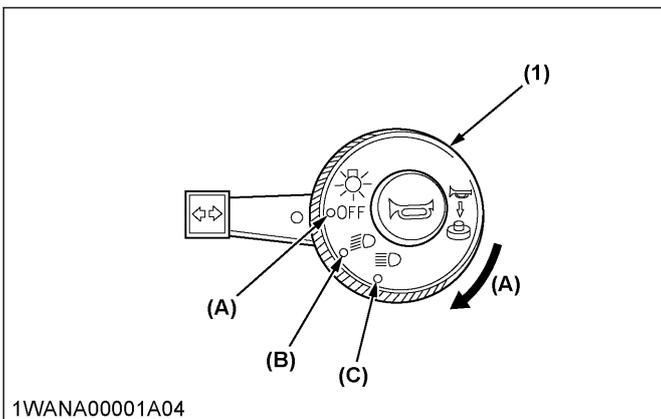
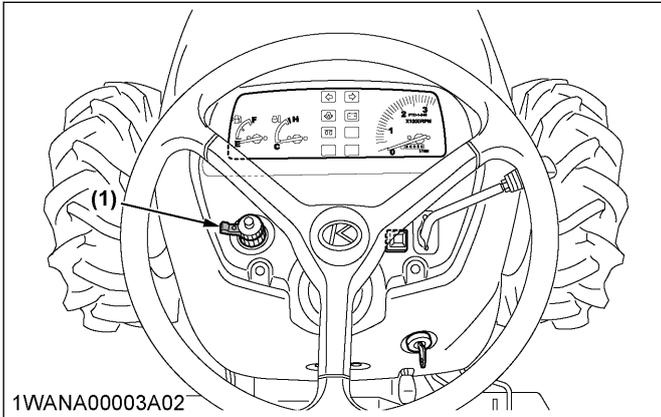


1SPSP00004A01

(1) Coolant temperature gauge .....	56	(8) Hour meter .....	56
(2) Fuel gauge .....	55	(9) Tachometer .....	56
(3) Engine oil pressure warning indicator .....	55	(10) Electrical charge warning indicator .....	55
(4) Glow plug indicator .....	25	(11) Hazard light switch .....	25
(5) Turn signal light switch .....	25	(12) Key switch .....	25
(6) Head light switch .....	24	(13) Horn button .....	26
(7) Turn signal / hazard light indicator .....	24		

### 1. Head light switch

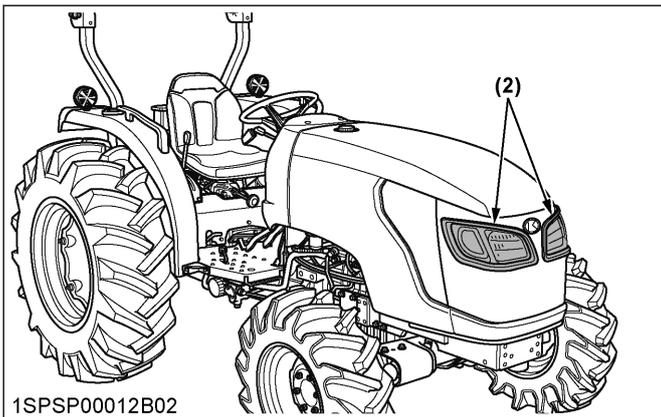
Turn the head-light-switch clockwise, and the following lights are activated on the position of the head-light-switch.



(1) Head light switch

- (A) Off
- (B) On (low)
- (C) On (high)

### Tractor lights



(2) Head light

#### [OFF] (A)

Head lights are OFF.

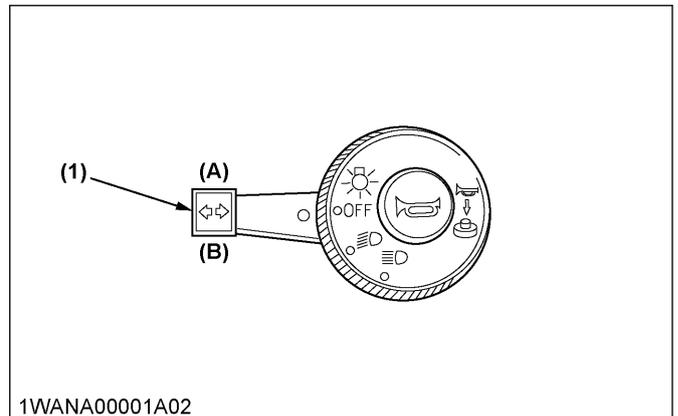
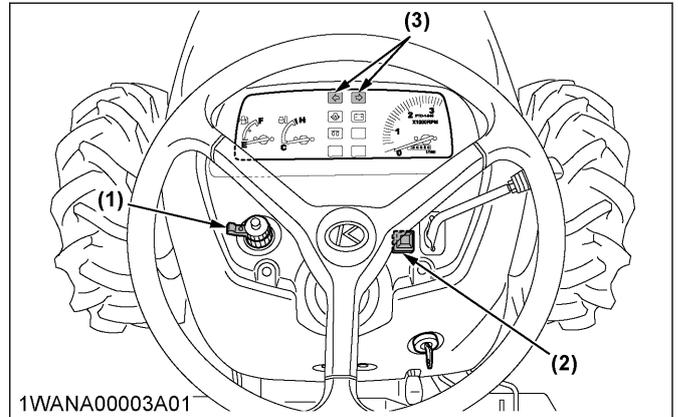
#### ☰ (B)

Head lights are dimmed as low beam.

#### ☰ (C)

Head lights are on as high beam.

### 2. Hazard light switch and turn signal light switch



(1) Turn signal light switch

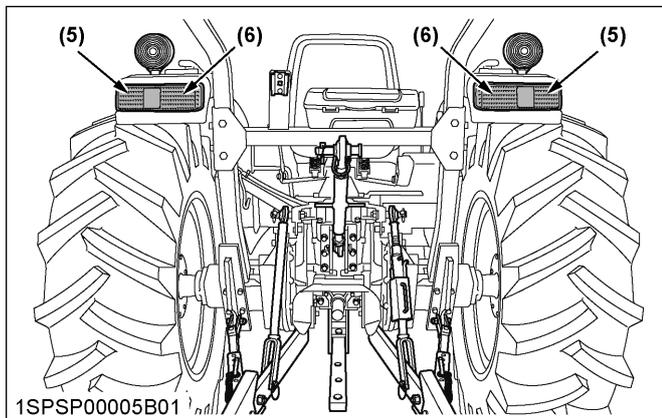
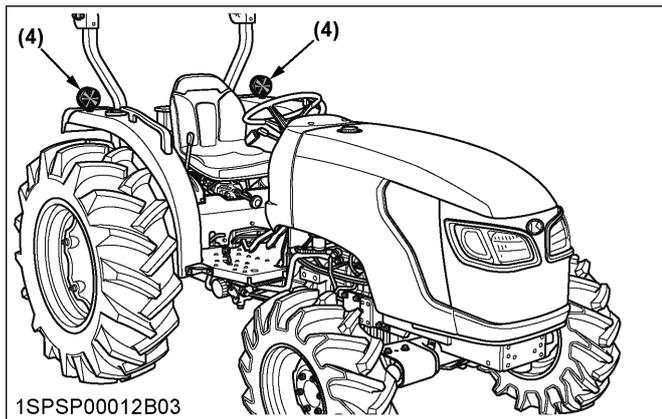
(2) Hazard light switch

(3) Turn signal / hazard light indicator

(A) Right turn

(B) Left turn

**Tractor lights**



- (4) Side turn signal / hazard light
- (5) Rear turn signal / hazard light
- (6) Brake stop light

**Hazard light switch**

1. When you push the hazard-light-switch, the hazard lights flash along with the turn signal / hazard light indicator on the instrument panel.
2. When you push the hazard-light-switch again, the hazard lights turn off.

**Turn signal light switch**

**Turn signal with hazard light**

- To indicate a right turn with the hazard lights already flashing (hazard on), turn the turn-signal-light-switch clockwise.
- To indicate a left turn with the hazard lights already flashing, turn the turn-signal-light-switch counterclockwise.

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**

- To indicate a right turn without hazard lights (hazard off), turn the turn-signal-light-switch clockwise.
- To indicate a left turn without hazard lights, turn the turn-signal-light-switch counterclockwise.

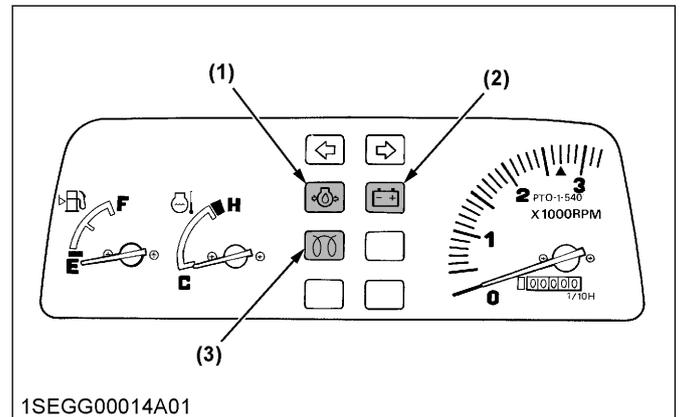
When the left or right turn signal is activated without the hazard lights, the indicated turning light will flash and the other will be off.

**NOTE :**

- Be sure to return the turn-signal-light-switch to center position after turning.

**3. Warning lamps**

If trouble should occur at any location while the engine is running, the warning lamp corresponding to that location comes on.

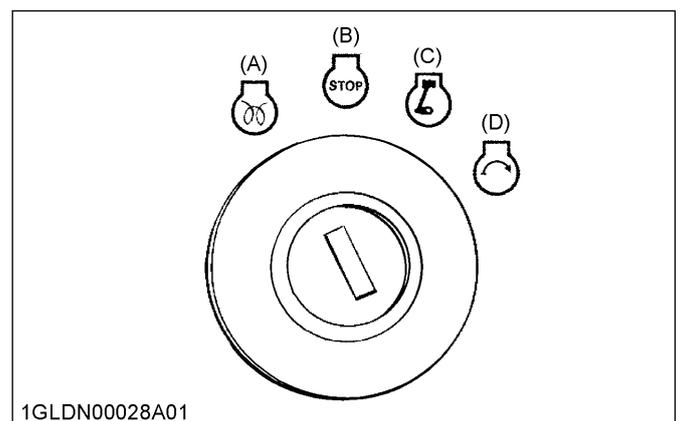


- (1) Engine oil pressure warning indicator
- (2) Electrical charge warning indicator
- (3) Glow plug indicator

**IMPORTANT :**

- Daily checks with the warning lamps only are not sufficient. Never fail to conduct physical daily checks carefully according to DAILY CHECK on page 81.

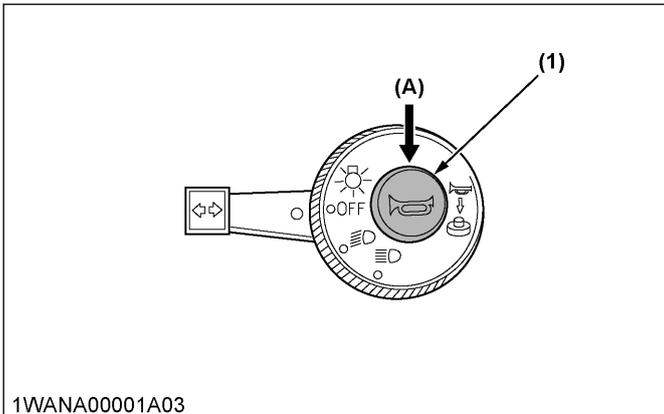
**4. Key switch**



- (A) Preheat
- (B) Off
- (C) On
- (D) Start

## 5. Horn button

When the key switch is in the "ON" position and you push the horn button, the horn will sound.



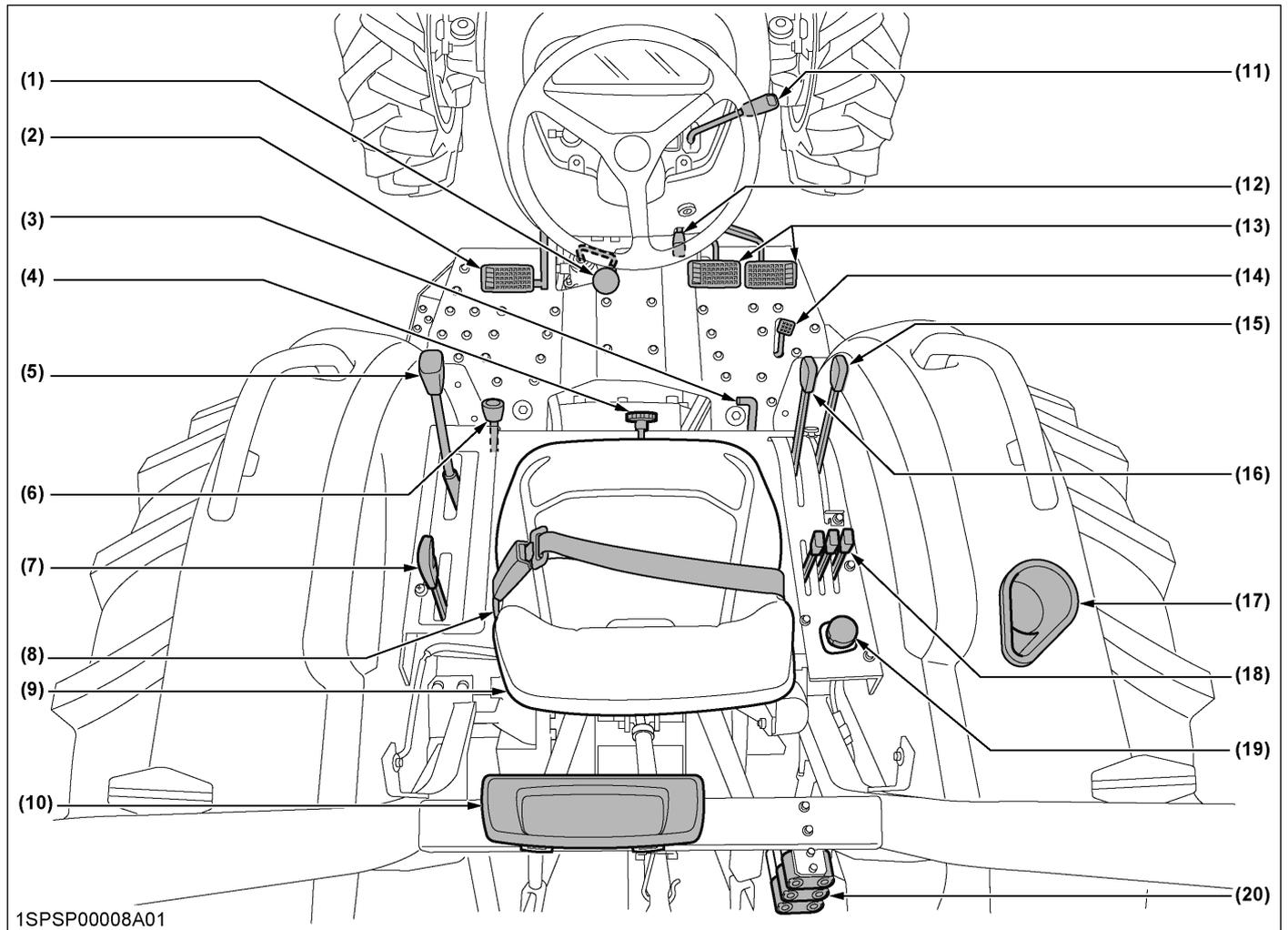
1WANA00001A03

(1) Horn button

(A) Push

# FOOT CONTROLS AND HAND CONTROLS

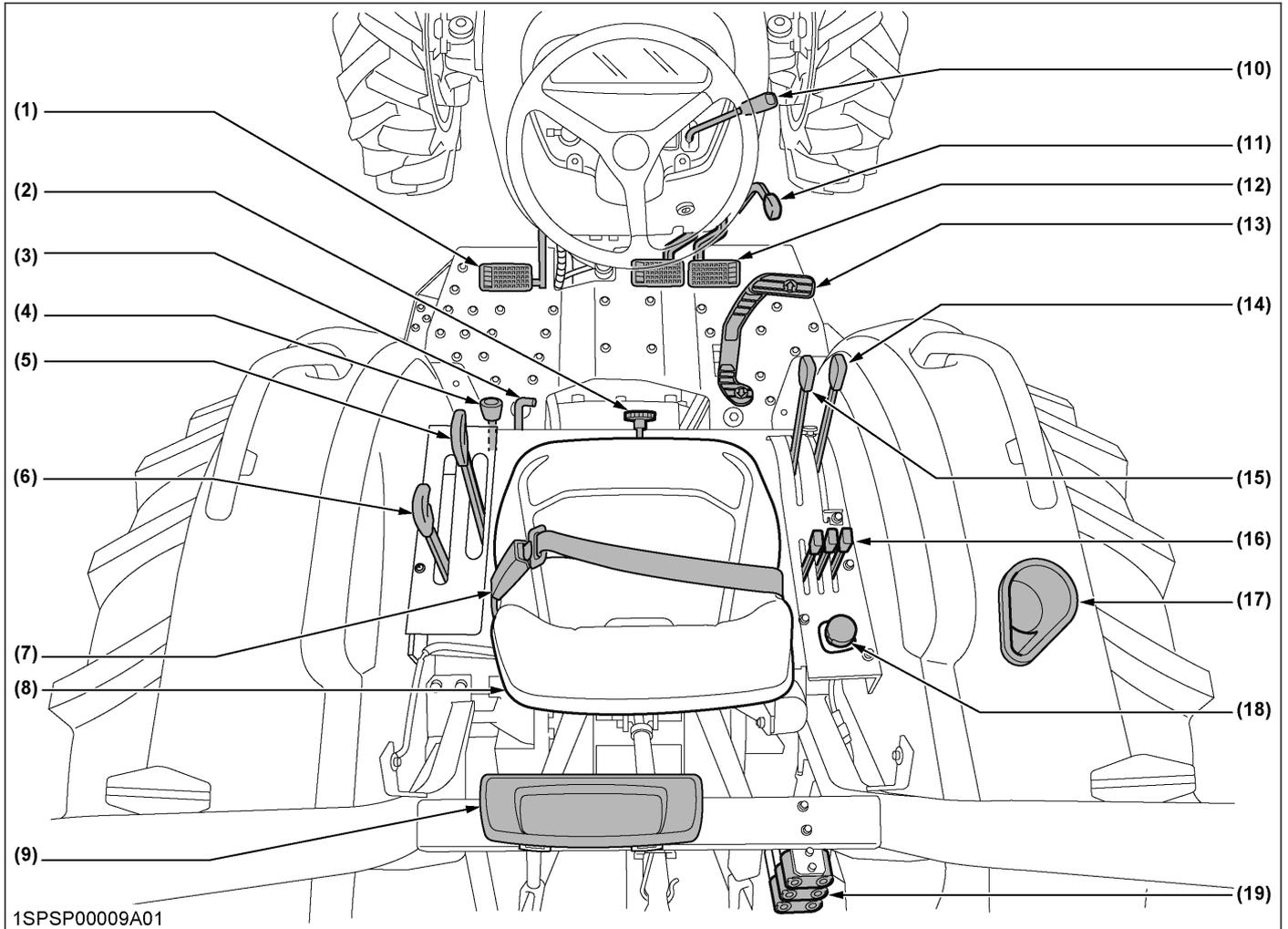
## 1. Foot controls and hand controls [Manual transmission type]



1SPSP00008A01

(1) Main gear shift lever .....	32	(11) Hand throttle lever .....	31
(2) Clutch pedal .....	29	(12) Parking brake lever .....	31
(3) Differential lock pedal .....	57	(13) Brake pedal .....	31
(4) 3-point hitch lowering speed knob .....	68	(14) Foot throttle .....	33
(5) Synchro-shuttle shift lever .....	32	(15) Position control lever .....	66
(6) Front wheel drive lever .....	29	(16) Draft control lever (if equipped) .....	66
(7) Range gear shift lever .....	32	(17) Cup holder	
(8) Seat belt .....	30	(18) Remote control valve lever (if equipped) .....	69
(9) Operator's seat .....	30	(19) PTO clutch control switch .....	60
(10) Tool box		(20) Remote control valve coupler (if equipped) .....	70

2. Foot controls and hand controls [HST type]



1SPSP00009A01

(1) Clutch pedal.....	29	(11) Parking brake lever.....	31
(2) 3-point hitch lowering speed knob.....	68	(12) Brake pedal.....	31
(3) Differential lock pedal.....	57	(13) Speed control pedal.....	34
(4) Front wheel drive lever.....	29	(14) Position control lever.....	66
(5) Range gear shift lever.....	33	(15) Draft control lever (if equipped).....	66
(6) Cruise control lever.....	33	(16) Remote control valve lever (if equipped).....	69
(7) Seat belt.....	30	(17) Cup holder	
(8) Operator's seat.....	30	(18) PTO clutch control switch.....	60
(9) Tool box		(19) Remote control valve coupler (if equipped).....	70
(10) Hand throttle lever.....	31		

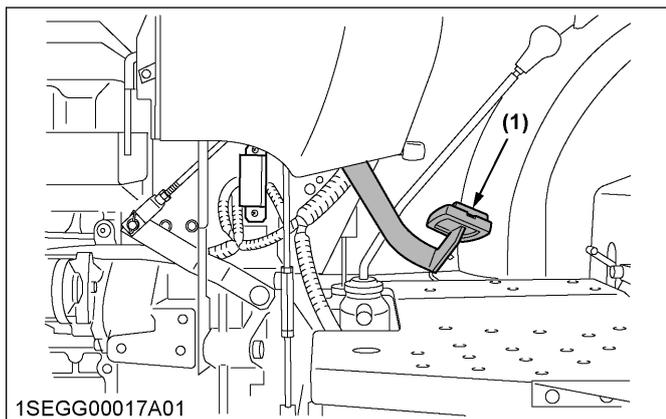
### 3. Clutch pedal

**⚠ WARNING**

To avoid personal injury or death:

- The sudden release of the clutch may cause the tractor to lunge in an unexpected manner.

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



1SEGG00017A01

(1) Clutch pedal

**IMPORTANT :**

To help prevent premature clutch wear:

- Disengage the clutch pedal quickly and engage it slowly.
- Avoid operating the tractor with your foot resting on the clutch pedal.
- Select proper gear and engine speed depending on the type of job.

### 4. Front wheel drive lever

You can use the front-wheel-drive-lever to shift between 2WD and 4WD.

**⚠ 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 that the tractor is correctly ballasted to avoid skidding and loss of steering control. Operate the tractor 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.
- Do not brake suddenly. An accident may occur as a result of a heavy towed load shifting forward or loss of control.
- The braking characteristics are different between 2-wheel drive and 4-wheel drive. Know the difference and use carefully.

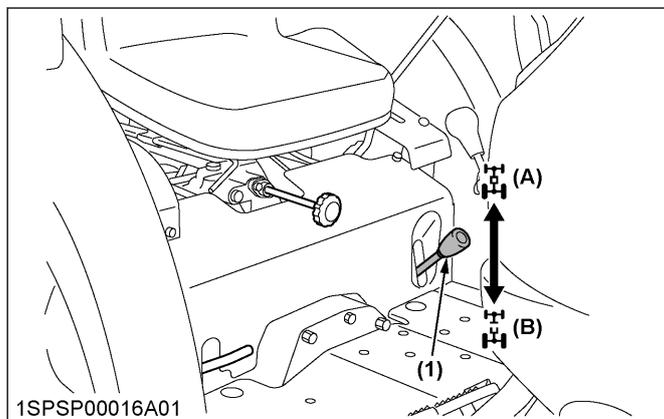
- When driving down a slope, make sure that the 4-wheel drive is engaged to increase the traction if equipped.

1. Make sure that the tractor has come to a complete stop before shifting the front-wheel-drive-lever.
2. Shift the front-wheel-drive-lever.
  - Shift the front-wheel-drive-lever to “ON” to engage the front-wheel-drive.
  - Shift the front-wheel-drive-lever to “OFF” to disengage the front-wheel-drive.

**NOTE :**

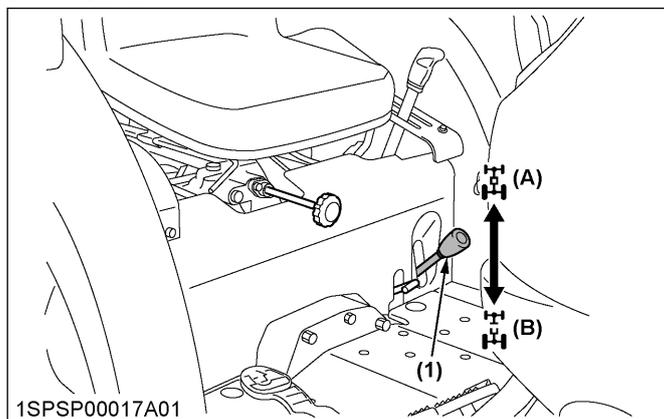
- If there are difficulties shifting the front-wheel-drive-lever, turn the steering wheel around, and then shift the front-wheel-drive-lever.

**[Manual transmission type]**



1SPSP00016A01

**[HST type]**



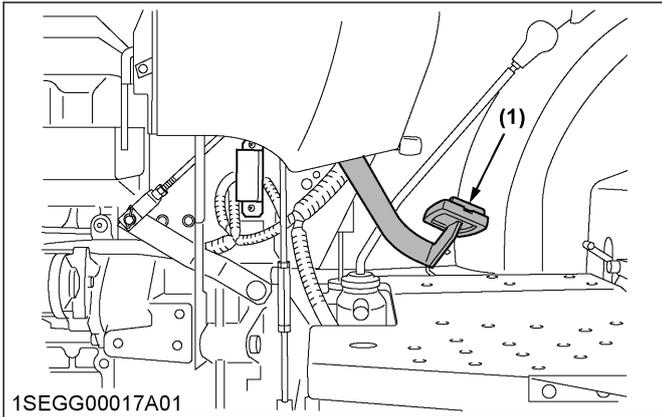
1SPSP00017A01

(1) Front wheel drive lever

(A) On  
(B) Off

**IMPORTANT :**

- Make sure that the tractor has come to a complete stop before shifting the front-wheel-drive-lever.
- Depress the clutch pedal before engaging the front-wheel-drive-lever.



1SEGG00017A01

(1) Clutch pedal

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

**Front wheel drive is effective for the following jobs:**

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

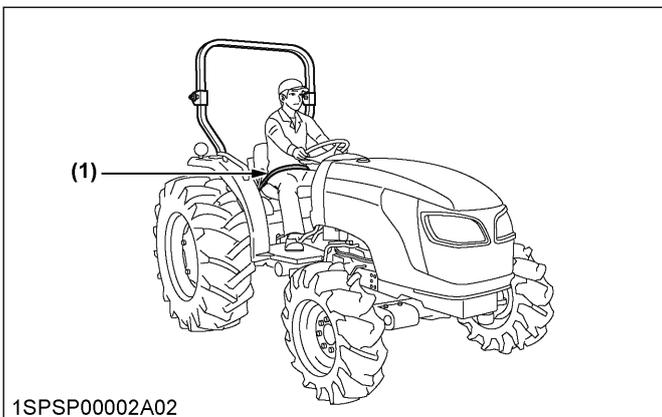
**5. Seat belt**

**! WARNING**

To avoid personal injury or death:

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

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



1SPSP00002A02

(1) Seat belt

**6. Operator's seat**

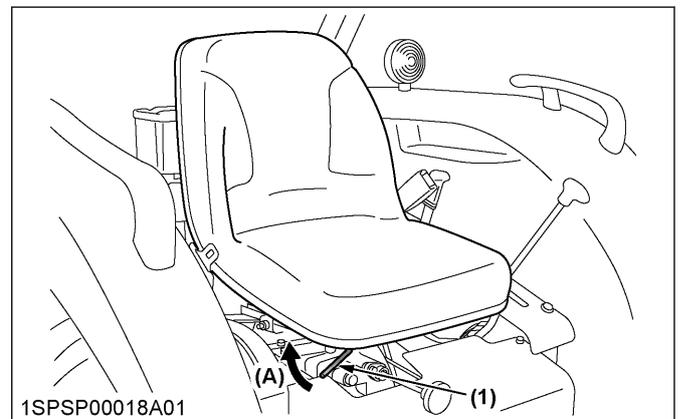
**! WARNING**

To avoid personal injury or death:

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

**• Travel adjustment**

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



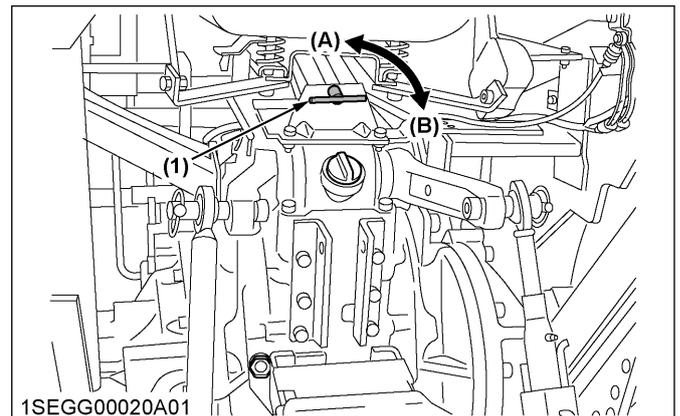
1SPSP00018A01

(1) Travel adjust lever

(A) Pull

**• Suspension adjustment**

Turn the suspension-adjust-handle to achieve the optimum suspension setting.



1SEGG00020A01

(1) Suspension adjust handle

(A) To decrease tension

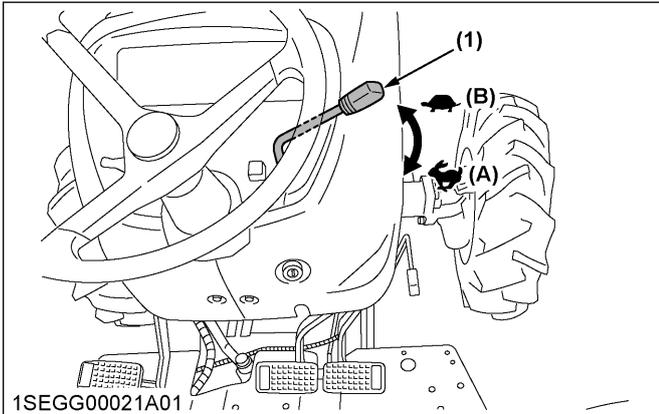
(B) To increase tension

**IMPORTANT :**

- After adjusting the operator's seat, be sure to check to see that the operator's seat is properly locked.
- Position the suspension-adjust-handle at the horizontal position.

### 7. Hand throttle lever

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



(1) Hand throttle lever (A) Increase (B) Decrease

### 8. Brake pedals (right and left)

#### **! WARNING**

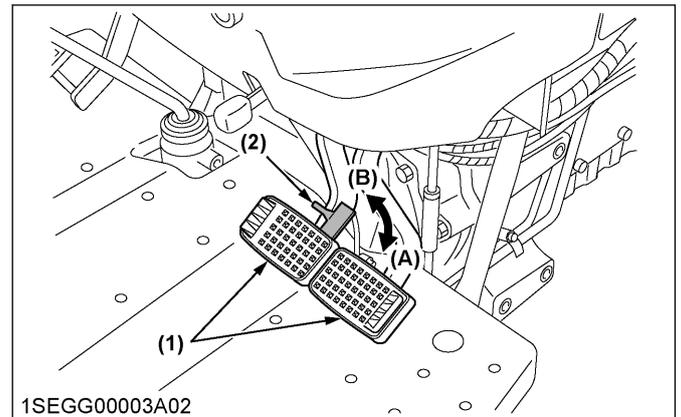
To avoid personal injury or death:

- Be sure to interlock the right and left pedals. Applying only 1 rear-wheel-brake at high speeds could cause the tractor to swerve or roll-over.
- Be sure that the brake pedals is equally adjusted when using locked together. Incorrect or unequal adjustment of brake pedal can cause the tractor to swerve or roll-over.
- Know the enhanced braking characteristics of 4-wheel braking system. You should take appropriate care during hard braking and/or when pulling towed loads.
- Do not brake suddenly. An accident may occur as a result of a heavy towed load shifting forward or loss of control.
- To avoid skidding and loss of steering control when driving on icy, wet, or loose surfaces, make sure that the tractor is correctly ballasted, operated at reduced speed, and operated with the front-wheel drive engaged if equipped.
- The braking characteristics are different between 2-wheel drive and 4-wheel drive. Know the difference and use carefully.
- When driving down a slope, make sure that the 4-wheel drive is engaged to increase the traction if equipped.

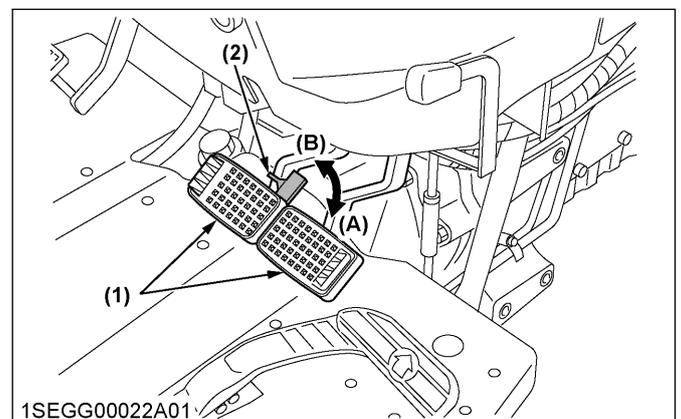
- Before operating the tractor on the road or before applying the parking brake, be sure to interlock the right and left pedals as the following figures.
- Use individual brakes to assist in turning sharply at slow speeds (field operation only). Disengage the brake-pedal-lock and depress only 1 brake pedal.

- Be sure that the brake pedals is equally adjusted when being used locked together.

#### [Manual transmission type]



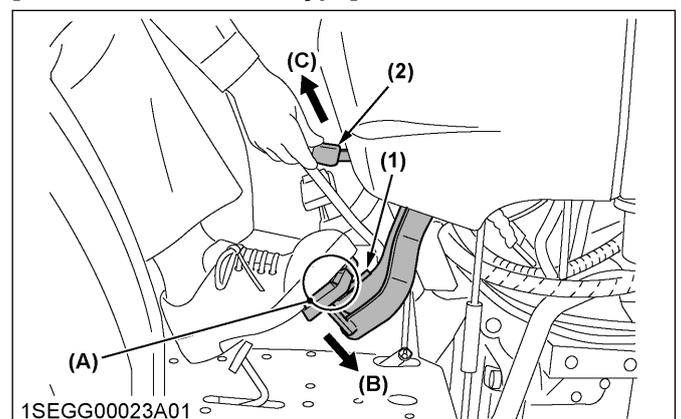
#### [HST type]



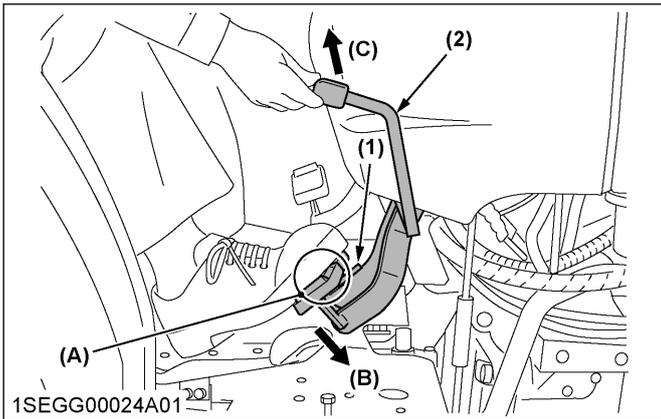
(1) Brake pedal (A) Lock (B) Release  
(2) Brake pedal lock

### 8.1 How to use the parking brake

#### [Manual transmission type]



[HST type]



- (1) Brake pedal
- (2) Parking brake lever
- (A) Interlock the brake pedals
- (B) Depress
- (C) Pull

**To set the parking brake**

1. Interlock the brake pedals.
2. Depress the brake pedals.
3. Latch the brake pedals with the parking-brake-lever.

**IMPORTANT :**

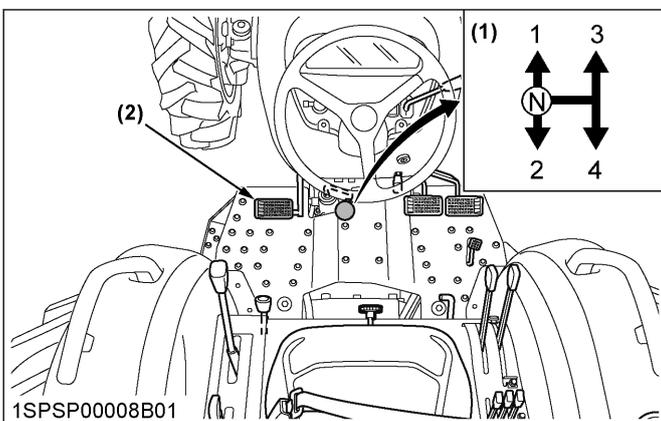
- To prevent damage to the parking-brake-lever, make sure that the brake pedals are fully depressed before pushing the parking-brake-lever.

**To release the parking brake**

1. Depress the brake pedals again.

**9. Main gear shift lever [Manual transmission type only]**

The main-gear-shift is partially synchronized allowing to shift on the go between 3rd and 4th speeds. Just depress the clutch pedal and shift the tractor speed, coming to a complete stop is not necessary. When changing between 1st and 2nd speeds, depress the clutch pedal and stop the tractor before shifting the tractor speed.



- (1) Main gear shift lever
- (2) Clutch pedal

**IMPORTANT :**

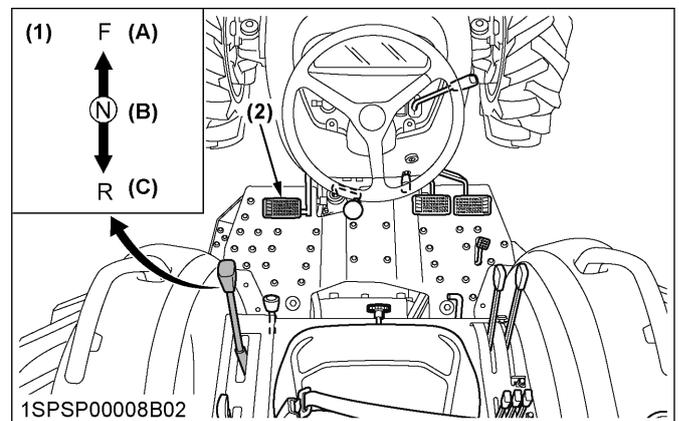
- To avoid transmission damage, depress the clutch pedal and stop the tractor before shifting 1st or 2nd speeds.

**NOTE :**

- For road travel, start the tractor in a lower gear (6th and 7th), and then shift to a higher gear (7th and 8th). Starting in the lower gear will prolong the service life of clutch.

**10. Synchro-shuttle shift lever [Manual transmission type only]**

Shift the synchro-shuttle shift lever forward to obtain forward speeds and shift back to obtain reverse speeds. Shifting the synchro-shuttle shift lever requires clutch operation.



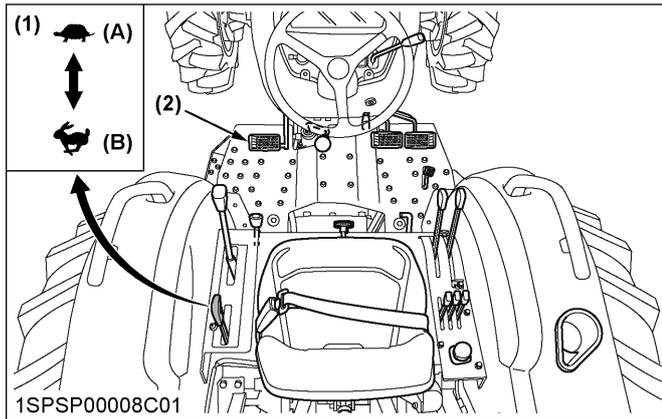
- (1) Synchro-shuttle shift lever
- (2) Clutch pedal
- (A) Forward
- (B) Neutral position
- (C) Reverse

**IMPORTANT :**

- The synchro-shuttle shift lever may be shifted while the tractor is moving slowly and the clutch is depressed, but sudden gear shifting may cause transmission damage.

**11. Range gear shift lever [Manual transmission type]**

You can shift the range-gear-shift only when the tractor is completely stopped and clutch pedal is depressed.



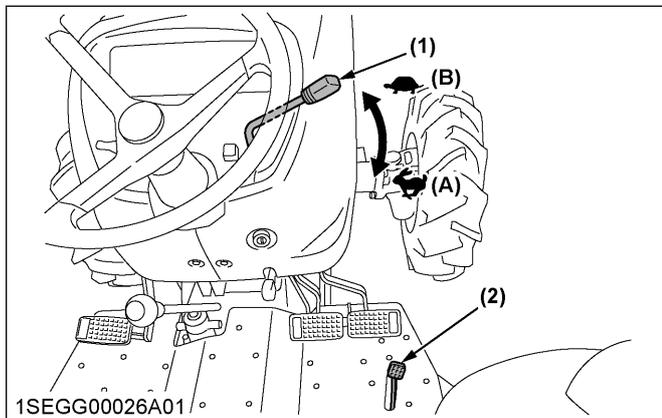
(1) Range gear shift lever (A) Low  
(2) Clutch pedal (B) High

**IMPORTANT :**

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

**12. Foot throttle [Manual transmission type only]**

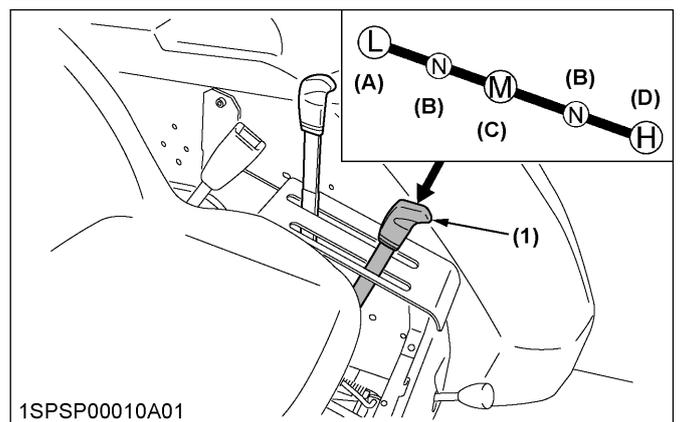
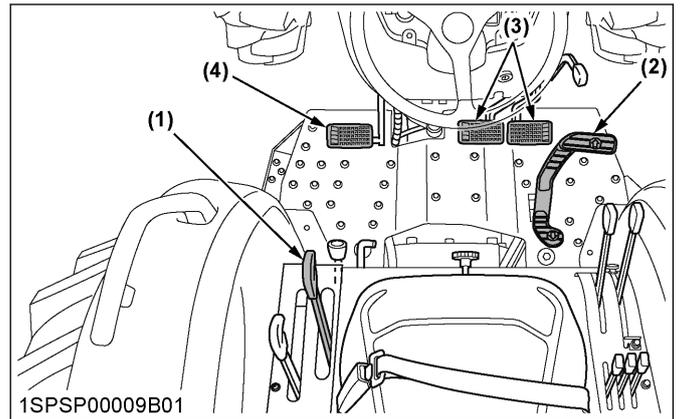
Use the foot throttle when traveling on the road. Press down on the foot throttle for higher speed. The foot throttle is interlocked with the hand-throttle-lever. When using the foot throttle, keep the hand-throttle-lever in the low idling position.



(1) Hand throttle lever (A) Increase (B) Decrease  
(2) Foot throttle

**13. Range gear shift lever (L-M-H) [HST type]**

You can shift the range gear only when the tractor is completely stopped and the speed-control-pedal is in the neutral position.



(1) Range gear shift lever (L-M-H) (A) Low (B) Neutral position  
(2) Speed control pedal (C) Middle (D) High  
(3) Brake pedal  
(4) Clutch pedal

**IMPORTANT :**

To avoid damage of transmission and shift linkage when shifting:

- Completely stop the tractor using the brake pedals.
- Do not force the range-gear-shift-lever.
- If it is difficult to shift the range-gear-shift-lever into [L], [M], or [H] from the neutral position: On slopes, be sure to set the parking brake and start the following procedure.
  1. Slightly depress the speed-control-pedal to rotate the gears inside of transmission.
  2. Release the speed-control-pedal to the neutral position.
  3. Depress the clutch pedal, wait for a moment, and then shift the range-gear-shift-lever.

**14. Cruise control lever [HST type only]**

**! WARNING**  
To avoid personal injury or death:

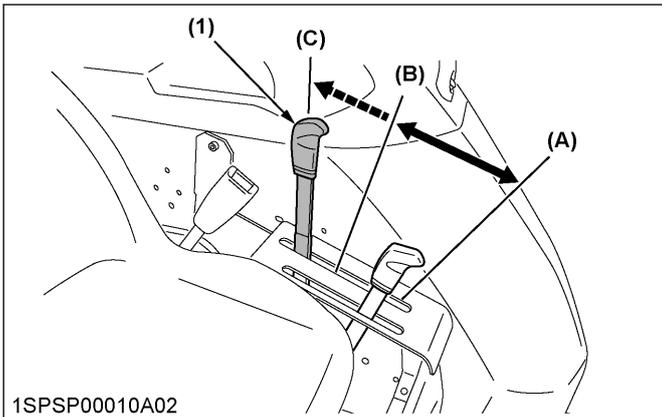
- Pull the cruise-control-lever completely to the rear before starting the engine.

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

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

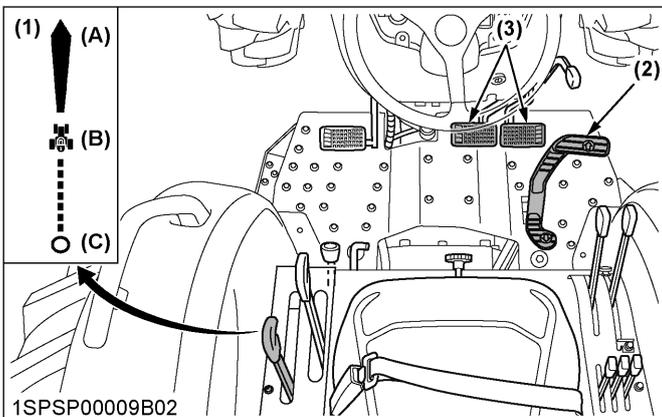
**NOTE :**

- Cruise-control-device will not operate in reverse.
- Preferably set the cruise-control-lever, while holding down the speed-control-pedal. You can set the cruise-control-lever smoothly.
- When releasing the cruise mode, be sure to return the cruise-control-lever fully backward.



1SPSP00010A02  
 (1) Cruise control lever (A) Increase  
 (B) Decrease  
 (C) Neutral

**14.1 How to use the cruise control lever [HST type only]**



1SPSP00009B02  
 (1) Cruise control lever (A) Increase  
 (2) Speed control pedal (B) Decrease  
 (3) Brake pedal (C) Neutral

**To engage the cruise control device**

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

1. To operate faster than the set speed, depress the speed-control-pedal further down in the proper forward speed.  
 The set speed will be resumed if you release the speed-control-pedal.

**NOTE :**

- When you stand up from the operator's seat with the speed-control-pedal stepped on or the cruise-control-lever engaged on, the engine will stop regardless of whether the tractor is moving or not.  
 The engine stop is because that the tractor is equipped with the operator-presence-control-system (OPC).

**To disengage the cruise control device**

1. Move the cruise-control-lever all the way back.
2. Move the cruise-control-lever to the "NEUTRAL" position to release the cruise control.
3. Depress both brake pedals.
4. Depress the speed-control-pedal in reverse.

**NOTE :**

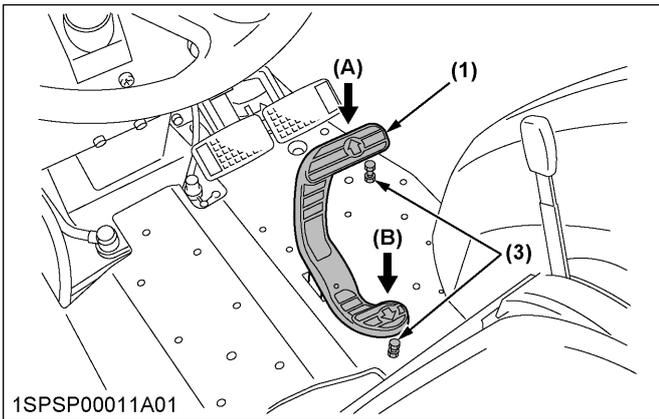
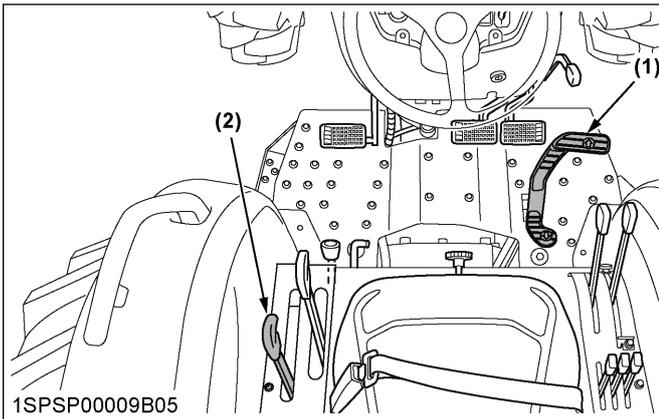
- Cruise control will be disengaged automatically when both brake pedals are depressed.
- Cruise-control-device does not disengage when the individual right or left brake is applied.

**15. Speed control pedal [HST type only]**

**! WARNING**  
 To avoid personal injury or death:

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

- **Forward pedal**  
 Depress the speed-control-pedal with the toe of your right foot to move forward.
- **Reverse pedal**  
 Depress the speed-control-pedal with the heel of your right foot to move backward.



- (1) Speed control pedal
- (2) Cruise control lever
- (3) Stopper bolt
- (A) Forward
- (B) Reverse

**IMPORTANT :**

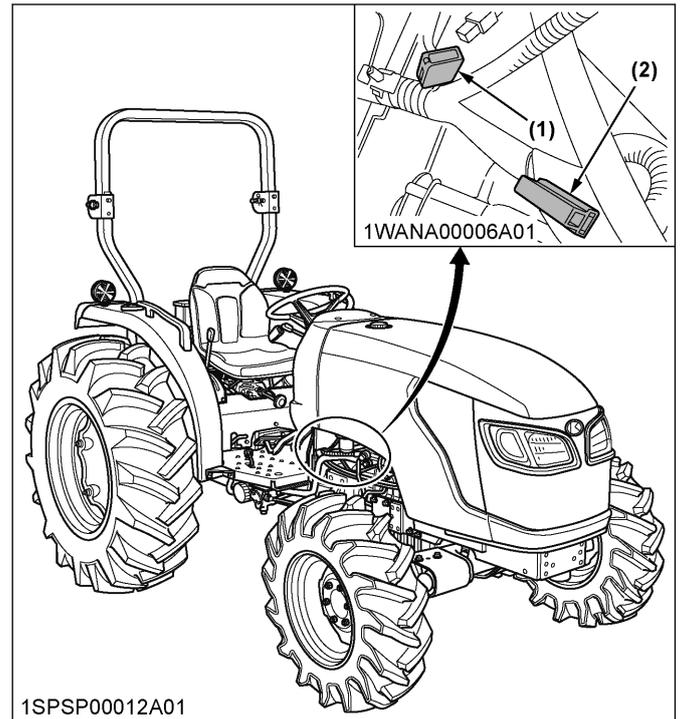
- To prevent serious damage to the HST, do not adjust the stopper bolts.

**NOTE :**

- When you stand up from the operator's seat with the speed-control-pedal stepped on or the cruise-control-lever engaged on, the engine will stop regardless of whether the tractor is moving or not. The engine stop is because that the tractor is equipped with the operator-presence-control system (OPC).

**ELECTRICAL OUTLET**

An electrical outlet is supplied for use with front loader.



- (1) Electrical outlet (MAX 10 A)
- (2) Front loader 3rd function solenoid valve (Green)

# PRE-OPERATION CHECK

## DAILY CHECK ITEMS BEFORE OPERATION OF THE TRACTOR

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

### WARNING

To avoid personal injury or death:

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

Check the condition of the tractor before starting it.

#### Check items

- Walk-around inspection
- Checking the engine oil level
- Checking the transmission oil level
- Checking the coolant level
- Cleaning the grill and radiator screen
- Cleaning the oil cooler [HST model]
- Checking the air-cleaner-evacuator-valve when used in a dusty place
- Checking the brake pedal and clutch pedal
- Checking the indicators, gauges, and meter
- Checking the lights
- Checking wire harness
- Checking the seat belt and ROPS
- Refuel  
(See Checking the fuel tank and refueling on page 81)
- Care of the safety labels  
(See CARE OF THE SAFETY LABELS on page 14)

# OPERATING THE ENGINE

## PRECAUTIONS FOR OPERATING THE ENGINE

**⚠ WARNING**

To avoid personal injury or death:

- Read and understand *Safe operation* in the front of this manual.
- Read and understand the safety labels located on the tractor.
- To avoid the danger of exhaust-fume-poisoning, do not operate the engine in a closed building without proper ventilation.
- Never start the engine while standing on ground. Start the engine only from the operator's seat.
- Always set all shift levers to the “*NEUTRAL*” positions and to place the PTO-clutch-control-switch in the “*OFF*” position before starting the engine.

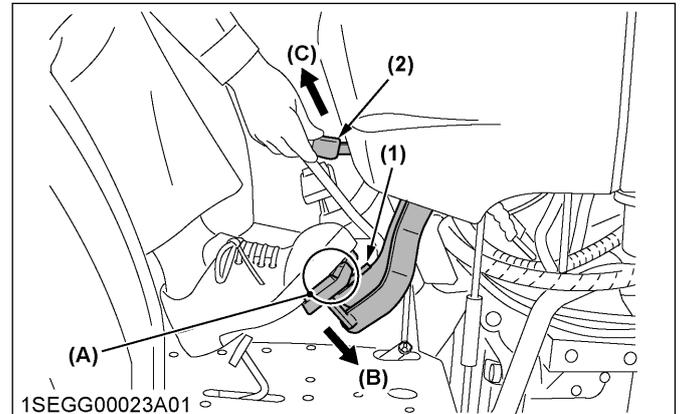
(See PRECAUTIONS FOR OPERATING THE TRACTOR on page 6, PRECAUTIONS FOR PARKING THE TRACTOR on page 8, and PRECAUTIONS FOR SERVICING THE TRACTOR on page 9)

**IMPORTANT :**

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

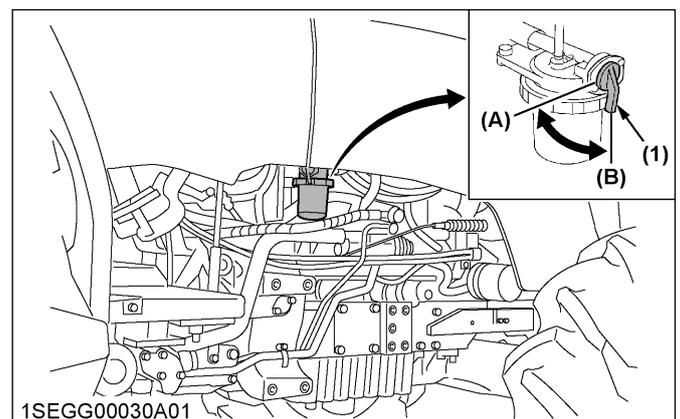
## STARTING THE ENGINE [MANUAL TRANSMISSION TYPE]

1. Make sure that the parking brake is set.  
(See To set the parking brake on page 32 if the parking brake is not set)



(1) Brake pedal  
(2) Parking brake lever  
(A) Interlock the brake pedals  
(B) Depress  
(C) Pull

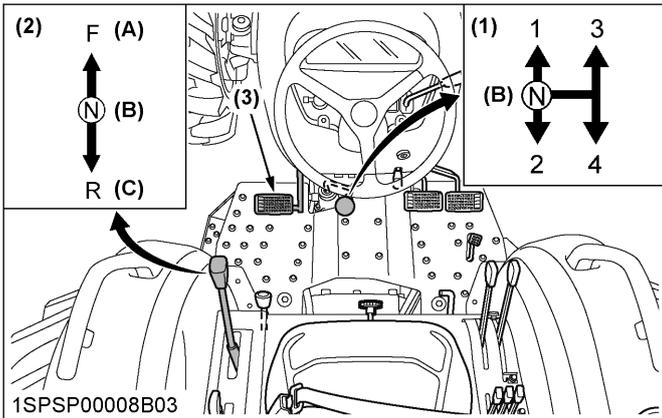
2. Make sure that the fuel shutoff-valve is in the open position.



(1) Fuel shutoff-valve  
(A) Close  
(B) Open

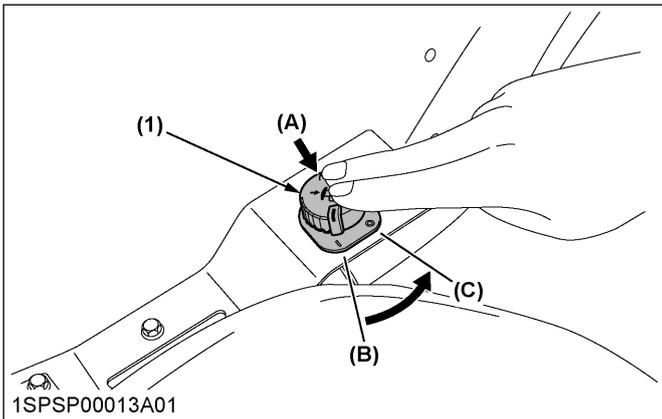
## OPERATING THE ENGINE

3. Place the main-gear-shift-lever and the synchro-shuttle shift lever in the "NEUTRAL" position.



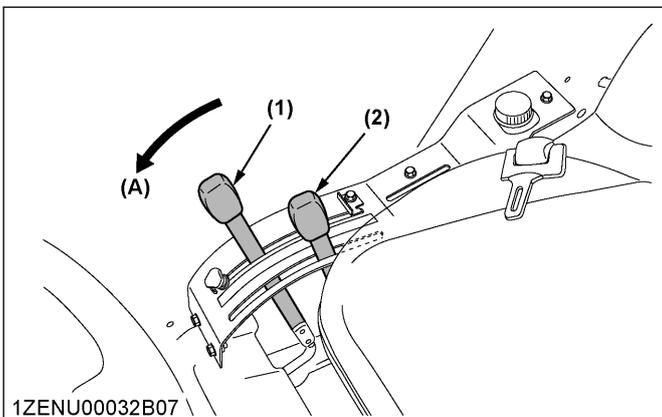
- (1) Main gear shift lever (A) Forward  
 (2) Synchro-shuttle shift lever (B) Neutral position  
 (3) Clutch pedal (C) Reverse

4. Place the PTO-clutch-control-switch in the "OFF" position.



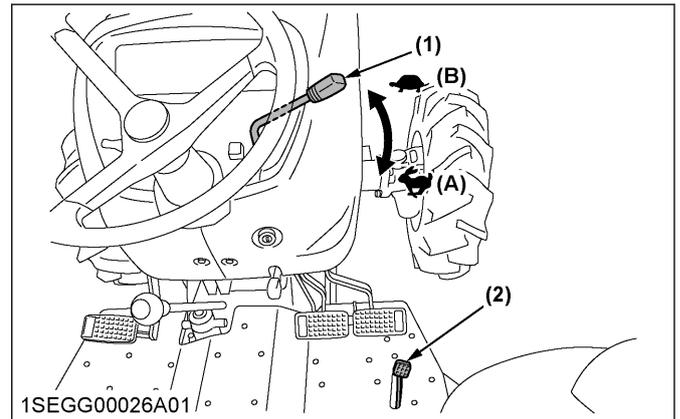
- (1) PTO clutch control switch (A) Push  
 (B) On  
 (C) Off

5. Place the position-control-lever and the draft-control-lever (if equipped) in the "LOWEST" position.



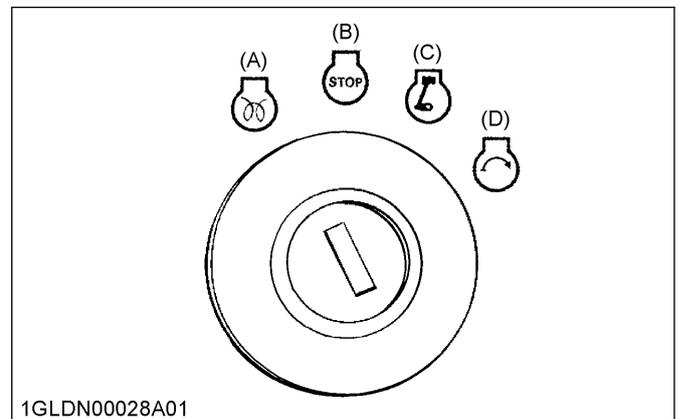
- (1) Position control lever (A) Down  
 (2) Draft control lever (if equipped)

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



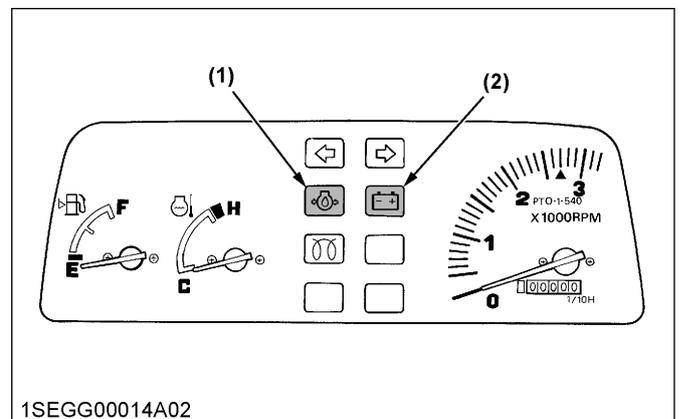
- (1) Hand throttle lever (A) Increase  
 (2) Foot throttle (B) Decrease

7. Insert the starter key into the key switch and turn it on.



- (A) Preheat (D) Start  
 (B) Off  
 (C) On

8. Check the warning lamps. When you turn "ON" the starter key, engine-oil-pressure-warning-indicator (1) and electrical-charge-warning-indicator (2) should come on.



- (1) Engine oil pressure warning indicator (2) Electrical charge warning indicator

9. Fully depress the clutch pedal.

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

**IMPORTANT :**

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

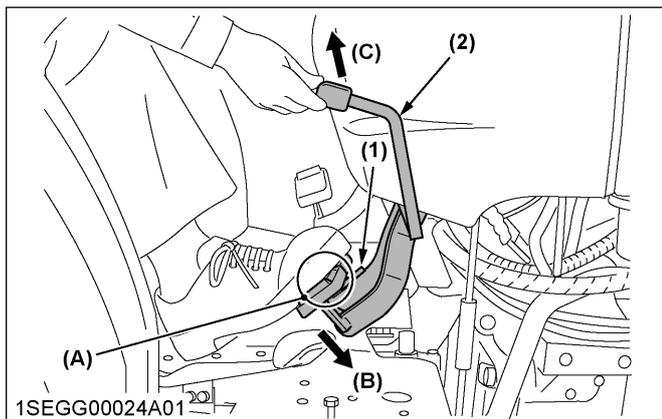
- Check to see that engine-oil-pressure-warning-indicator and electrical-charge-warning-indicator are "OFF".

If the engine-oil-pressure-warning-indicator or electrical-charge-warning-indicator is still on, immediately stop the engine and determine the cause.

- Release the clutch pedal.

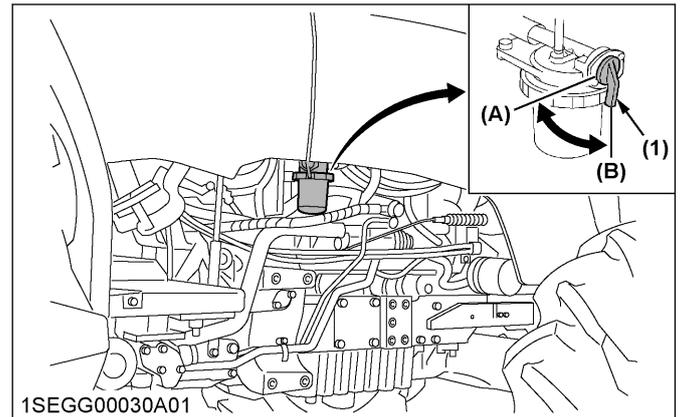
**STARTING THE ENGINE [HST TYPE]**

- Make sure that the parking brake is set.  
(See To set the parking brake on page 32 if the parking brake is not set)



- (1) Brake pedal (A) Interlock the brake pedals  
 (2) Parking brake lever (B) Depress  
 (C) Pull

- Make sure that the fuel shutoff-valve is in the open position.



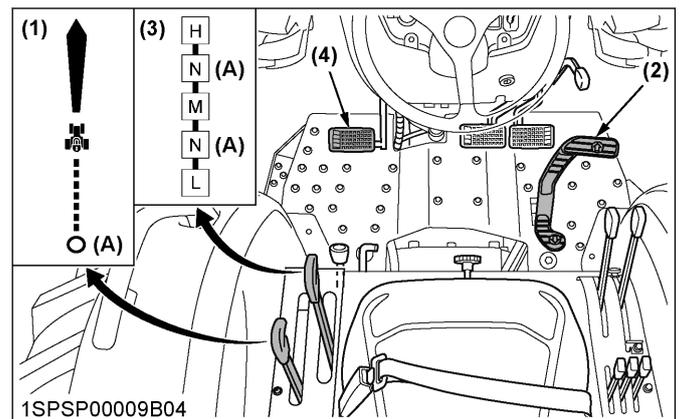
- (1) Fuel shutoff-valve (A) Close (B) Open

- Make sure that the cruise-control-lever is in the "NEUTRAL" position.

**NOTE :**

- Depress the both brake pedals together, and the cruise-control-lever automatically returns to the off position.

- Place the speed-control-pedal and the range-gear-shift-lever in the "NEUTRAL" position.



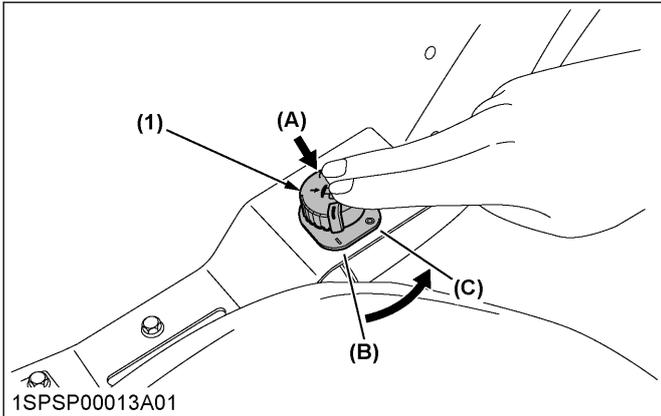
- (1) Cruise control lever (A) Neutral position  
 (2) Speed control pedal  
 (3) Range gear shift lever  
 (4) Clutch pedal

**NOTE :**

- When removing the foot from the speed-control-pedal, the speed-control-pedal automatically returns to the neutral position.

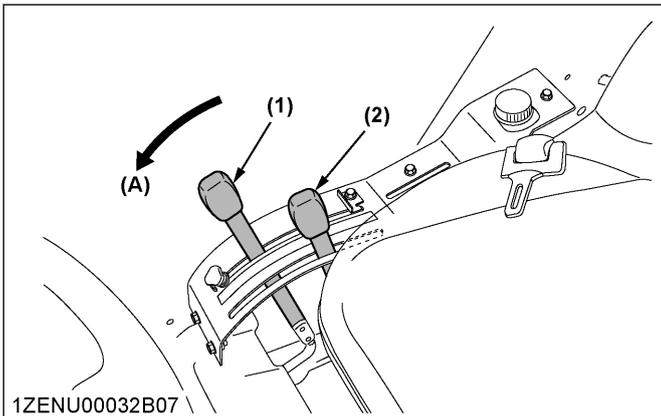
## OPERATING THE ENGINE

5. Place the PTO-clutch-control-switch in the "OFF" position.



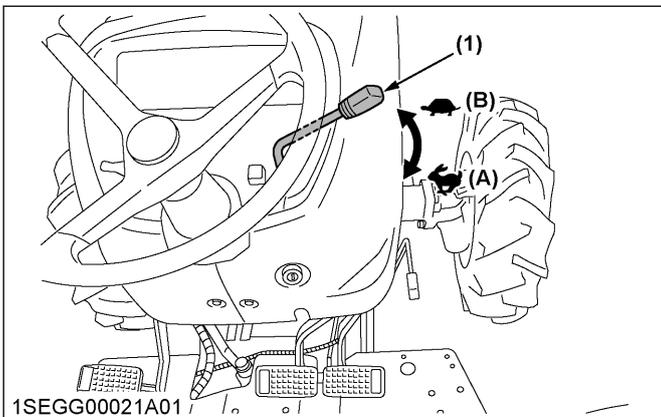
- (1) PTO clutch control switch (A) Push  
(B) On  
(C) Off

6. Place the position-control-lever and the draft-control-lever (if equipped) in the "LOWEST" position.



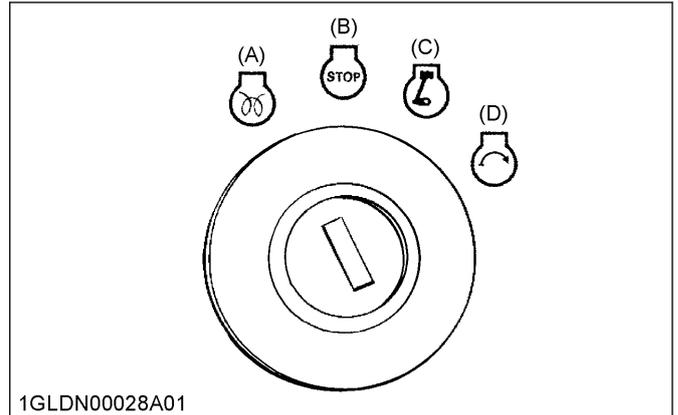
- (1) Position control lever (A) Down  
(2) Draft control lever (if equipped)

7. Set the hand-throttle-lever to about 1/2 way.



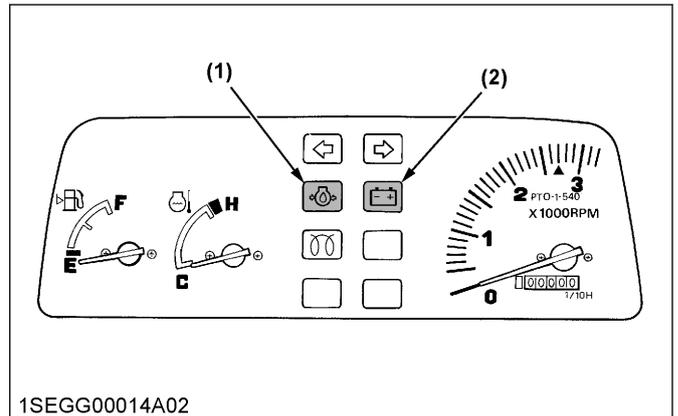
- (1) Hand throttle lever (A) Increase  
(B) Decrease

8. Insert the starter key into the key switch and turn it on.



- (A) Preheat (B) Off  
(C) On (D) Start

9. Check the Easy Checker™ lamps. When you turn "ON" the starter key, engine-oil-pressure-warning-indicator (1) and electrical-charge-warning-indicator (2) should come on.



- (1) Engine oil pressure warning indicator (2) Electrical charge warning indicator

10. Fully depress the clutch pedal.  
11. Turn the starter key to the "START" position and release it when the engine starts.

### IMPORTANT :

- Because of safety devices, the engine will not start except when the PTO-clutch-control-switch is placed in the "OFF" position, the speed-control-pedal is placed in the "NEUTRAL" position, and the clutch pedal is depressed.

12. Check to see that engine-oil-pressure-warning-indicator and electrical-charge-warning-indicator are "OFF".

If the engine-oil-pressure-warning-indicator or electrical-charge-warning-indicator is still on, immediately stop the engine and determine the cause.

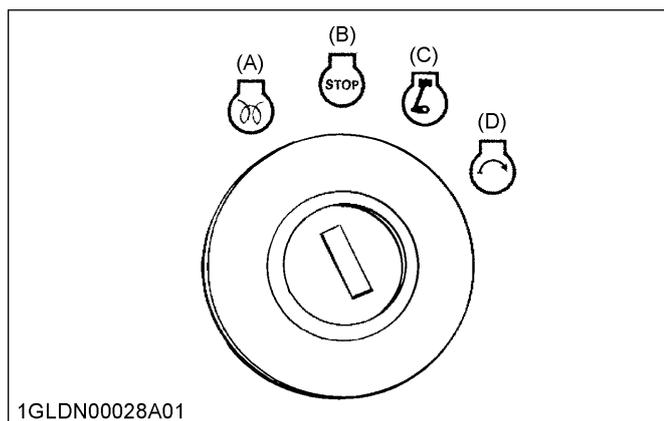
13. Release the clutch pedal.

## STARTING THE ENGINE IN COLD WEATHER

If the ambient temperature is as follows and the engine is cold, follow the procedure in this section to start the engine.

Ambient temperature	Below 5 °C (41 °F)
---------------------	--------------------

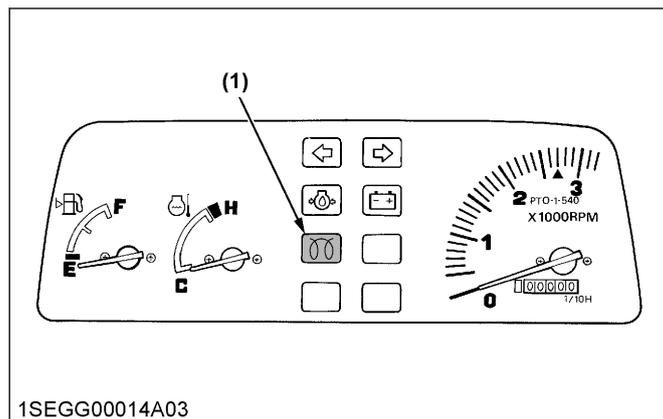
- Take the following steps of the procedure in the *Starting the engine* section.
  - [Manual transmission type]**  
Take the step 1. through step 9. of the procedure in STARTING THE ENGINE [MANUAL TRANSMISSION TYPE] on page 37.
  - [HST type]**  
Take the step 1. through step 10. of the procedure in STARTING THE ENGINE [HST TYPE] on page 39.
- Turn the starter key to the "PREHEAT" position and keep it there for 10 seconds.  
To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.



- (A) Preheat
- (B) Off
- (C) On
- (D) Start

**NOTE :**

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



(1) Glow plug indicator

- Turn the starter key to the start position.  
The engine should start.  
If the engine fails to start after keeping the starter key preheat position for 10 seconds, turn off the starter key for 30 seconds. Then repeat step 2. and step 3.

### 1. Block heater (if equipped)

A block heater is available as an option from your dealer.  
Block heater will assist you in starting your tractor when the ambient temperature is as follows.

Ambient temperature	Below -20 °C (-4 °F)
---------------------	----------------------

## STOPPING THE ENGINE

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

**NOTE :**

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

## WARMING UP OF THE ENGINE

**! WARNING**

To avoid personal injury or death:

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

For 5 minutes after the engine start-up, allow the engine to warm up without applying any load. Allowing the engine to warm up is to allow the oil to reach every

engine-part. If the load should be applied to the engine without the warm-up period of 5 minutes, trouble such as seizure, breakage, or premature wear may develop.

### 1. Warm-up of the engine and transmission oil in the low temperature range

**IMPORTANT :**

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

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

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

Ambient temperature	Warm-up time requirement
Higher than -10 °C (14 °F)	Approx. 5 minutes
-15 °C to -10 °C (5 °F to 14 °F)	5 minutes to 10 minutes
-20 °C to -15 °C (-4 °F to 5 °F)	10 minutes to 20 minutes
Below -20 °C (-4 °F)	More than 20 minutes

## JUMP STARTING THE ENGINE

When jump starting the engine, follow the instructions in this section to safely start the engine.

**⚠ WARNING**

To avoid personal injury or death:

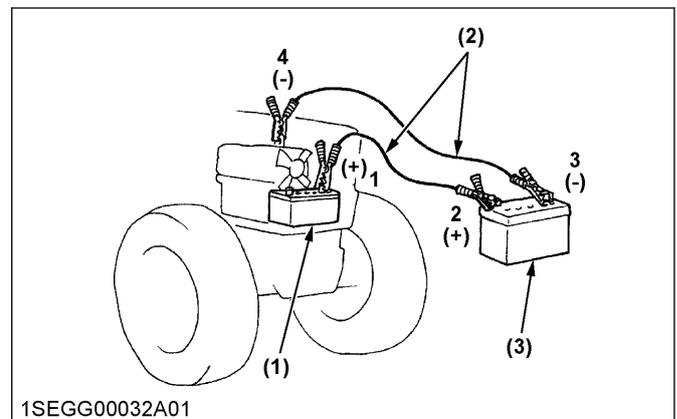
- Battery gases can explode. Keep cigarettes, sparks, and flames away from battery.
- If the tractor battery is frozen, do not jump start the engine.
- Do not connect the other end of the negative (-) jumper cable to the negative (-) terminal of the tractor battery.
- When taking out the dead battery,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

**IMPORTANT :**

- This machine is equipped with a 12 volt negative (-) ground starting system.
- Use only the same voltage for jump starting.

- Use of a higher voltage source on the electrical system of the tractor could result in severe damage to the electrical system of the tractor. Use only matching voltage source when jump starting in a low battery condition or a 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.

Connect cables in numerical order.  
Disconnect in reverse order after use.



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

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

**IMPORTANT :**

- The helper vehicle must not touch the disabled tractor.
2. Engage the parking brakes of both vehicles and put the shift levers in the "NEUTRAL" position. Shut both engines off.
  3. Wear an 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 of the cable, which is clamped to the negative terminal of the helper battery, 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.  
See the steps in order of step 6., step 5., and step 4.

# OPERATING THE TRACTOR

## OPERATION OF NEW TRACTOR

How a new tractor is used 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 you should take care of the tractor to operate for the first 50 hours at a slower speed and avoid excessive work or operation until the various parts become broken-in.

The manner which the tractor is used 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 using a new tractor, observe the following precautions.

**Do not operate the tractor at full speed for the first 50 hours.**

- Do not start the tractor quickly. Do not 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 preceding precautions are not limited only to new tractors, but to all tractors. But you should especially follow the preceding precautions 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. If 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. Small metal grit may wear out or damage the parts. Therefore, you should take care of the lubricating oil to change a little earlier than would ordinarily be required.

(For further details of change interval hours, see SERVICE INTERVALS TABLE on page 77)

## PRECAUTIONS FOR BOARDING AND LEAVING THE TRACTOR

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



1NHNP00133A01

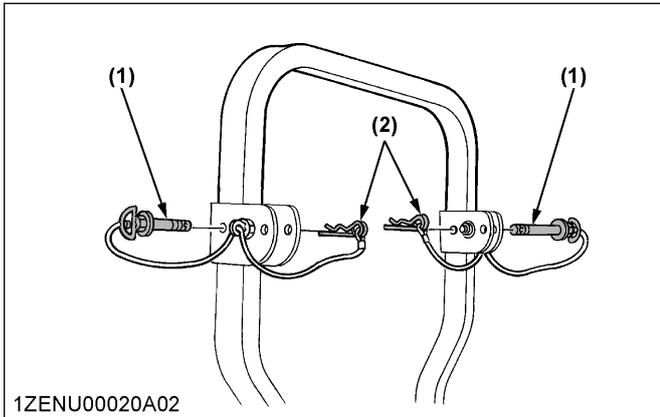
## OPERATION OF THE FOLDABLE ROPS (IF EQUIPPED)

To avoid personal injury or death:

- When raising or folding the ROPS, apply the parking brake, stop the engine, and remove the starter key.  
Always perform the function from a stable position at the rear of the tractor.
- Fold the ROPS down only when absolutely necessary and fold it up and lock it again as soon as possible.
- Before proceeding to fold ROPS, check for any possible interference with installed implements and attachments. If interference occurs, contact your KUBOTA Dealer.
- Always use the seat belt when the ROPS is installed.
- Do not use the seat belt if a foldable ROPS is down or if there is no ROPS.

### 1. Folding the ROPS (if equipped)

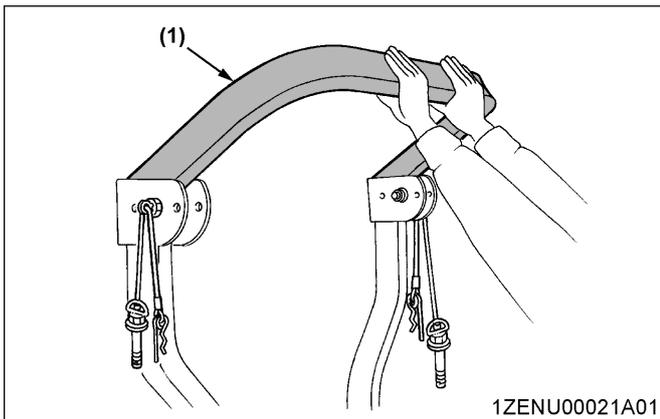
1. Remove both hair-pin-cotters and set bolts.



(1) Set bolt (2) Hair pin cotter

2. Fold the ROPS.

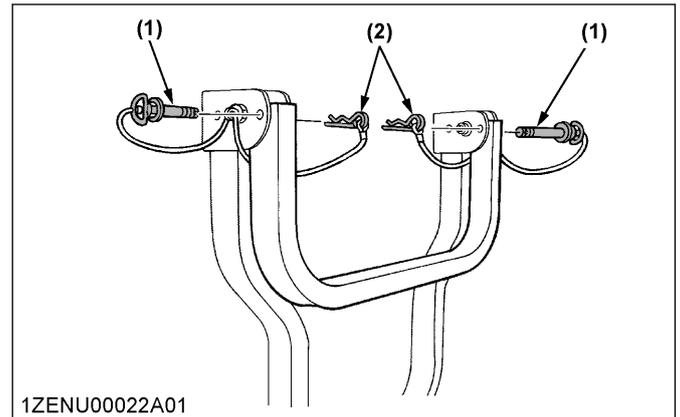
**CAUTION**  
 To avoid personal injury:  
 • Hold the ROPS tightly with both hands and fold the ROPS slowly and carefully.



(1) ROPS

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

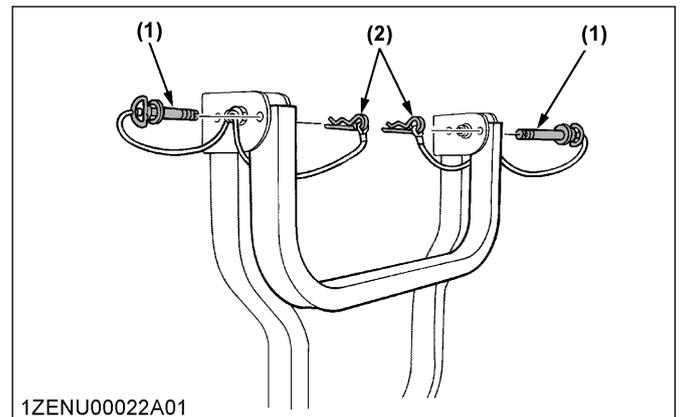
**CAUTION**  
 To avoid personal injury:  
 • Make sure that both set bolts are properly installed and secured with the hair-pin-cotters.



1ZENU00022A01  
 (1) Set bolt (2) Hair pin cotter

### 2. Raising the ROPS to upright position (if equipped)

1. Remove both the hair-pin-cotters and the set bolts.



1ZENU00022A01  
 (1) Set bolt (2) Hair pin cotter

2. Raise the ROPS to the upright position.

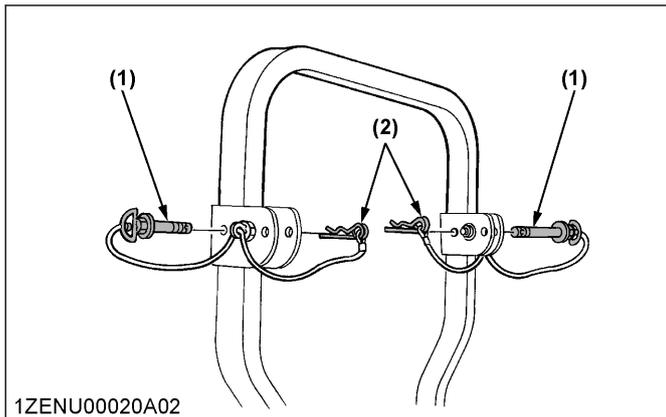
**CAUTION**  
 To avoid personal injury:  
 • Raise the ROPS slowly and carefully.

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

**CAUTION**

To avoid personal injury:

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



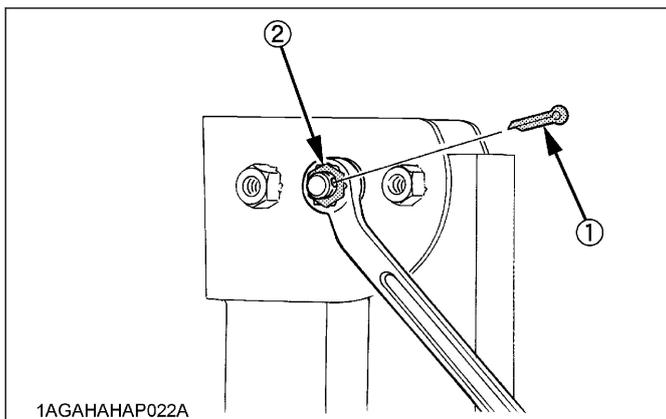
1ZENU00020A02

(1) Set bolt

(2) Hair pin cotter

### 3. Adjusting the foldable ROPS (if equipped)

1. Adjust free fall of the ROPS upper frame regularly.
2. If you feel less friction in folding the ROPS, follow the following procedure.
  - a. Remove the cotter pin.
  - b. Tighten the nut until you feel the right friction in the movement.
  - c. Replace the cotter pin.



1AGAHAP022A

(1) Cotter pin

(2) Nut

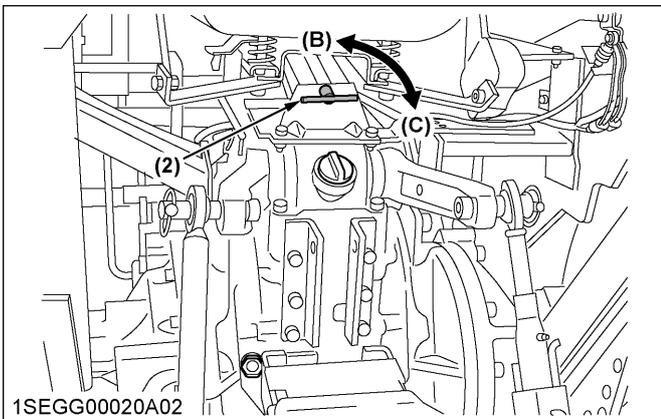
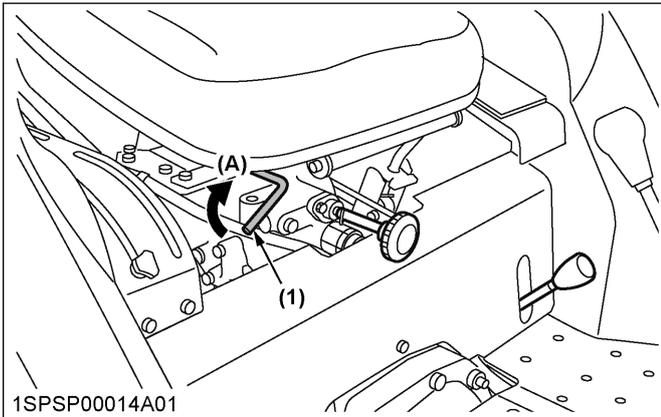
## STARTING THE TRACTOR [MANUAL TRANSMISSION TYPE]

**WARNING**

To avoid personal injury or death:

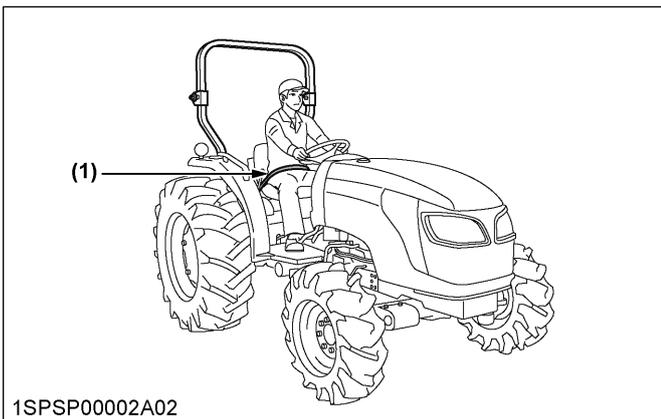
- Read and understand *Safe operation* in the front of this manual.
- Read and understand the safety labels located on the tractor.
- To avoid the danger of exhaust-fume-poisoning, do not operate the engine in a closed building without proper ventilation.
- Never start the engine while standing on ground. Start the engine only from the operator's seat.
- Always set all shift levers to the "NEUTRAL" positions and to place the PTO-clutch-control-switch in the "OFF" position before starting the engine.

1. Adjust the operator's position.
  - Adjust the operator's seat. (See Operator's seat on page 30)



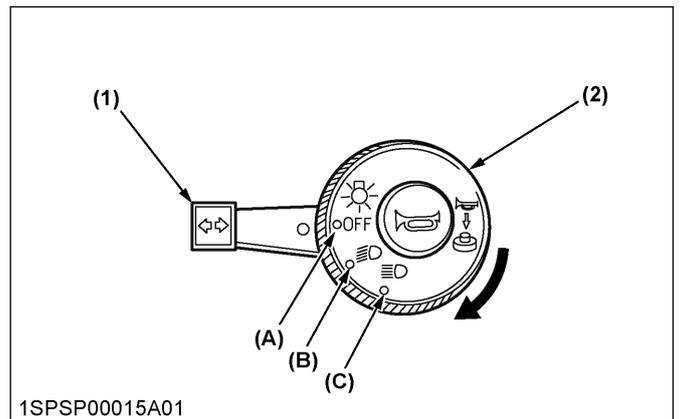
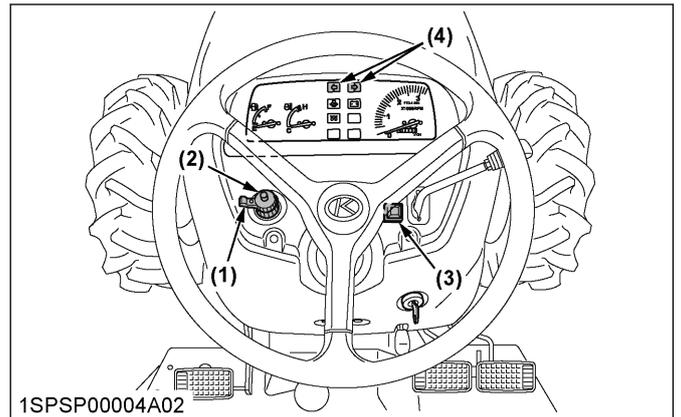
- |                              |                         |
|------------------------------|-------------------------|
| (1) Travel adjust lever      | (A) Pull                |
| (2) Suspension adjust handle | (B) To decrease tension |
|                              | (C) To increase tension |

- Adjust the seat belt. (See Seat belt on page 30)



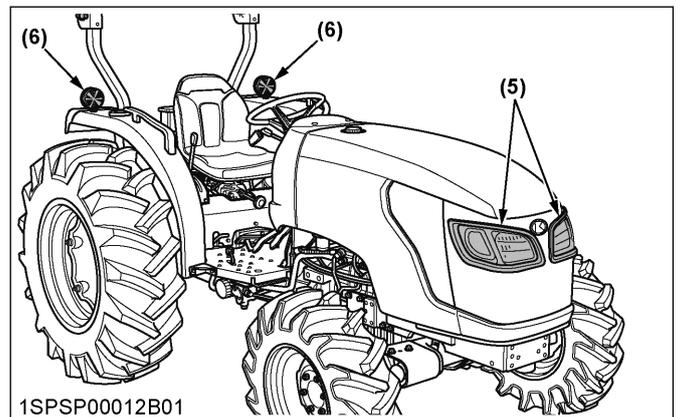
- (1) Seat belt

2. Start the engine. (See STARTING THE ENGINE [MANUAL TRANSMISSION TYPE] on page 37)
3. Select the positions of the light switches. (See Head light switch on page 24 and Hazard light switch and turn signal light switch on page 24)

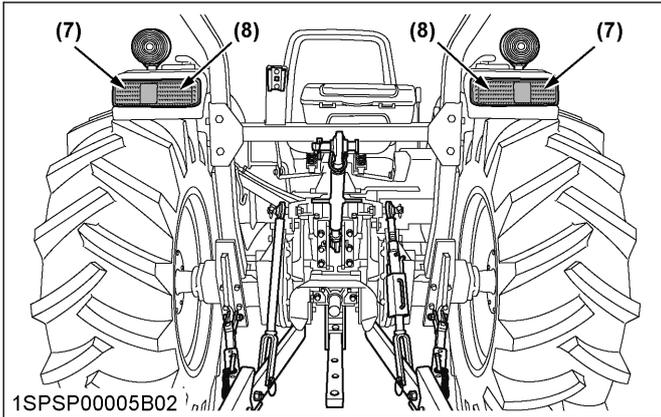


- |  |               |
|--|---------------|
| (1) Head light switch                    | (A) Off       |
| (2) Turn signal light switch             | (B) On (low)  |
| (3) Hazard light switch                  | (C) On (high) |
| (4) Turn signal / hazard light indicator |               |

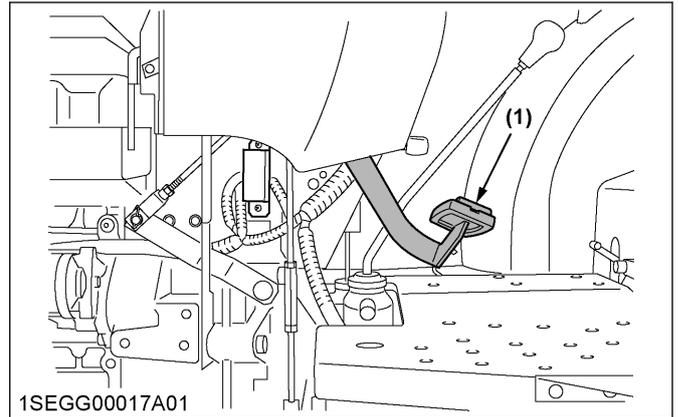
**Tractor lights**



## OPERATING THE TRACTOR

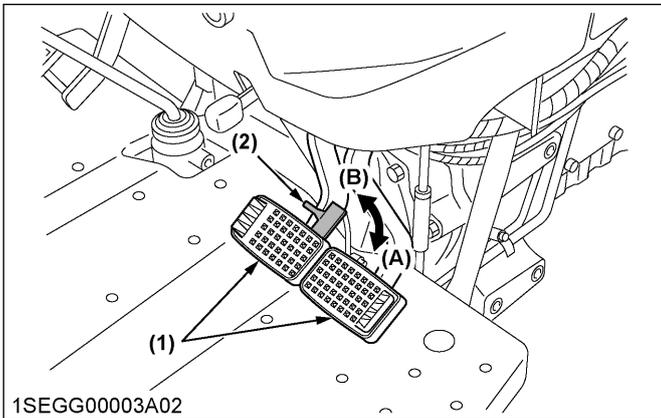


- (5) Head light  
 (6) Side turn signal / hazard light  
 (7) Rear turn signal / hazard light  
 (8) Brake stop light



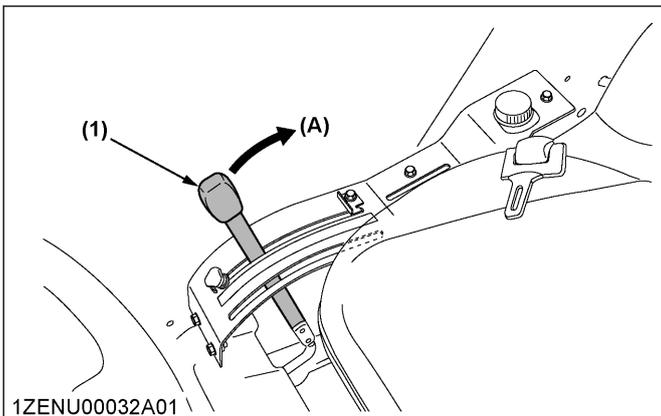
- (1) Clutch pedal

4. Check the brake pedal.  
 (See Brake pedals (right and left) on page 31)



- (1) Brake pedal  
 (2) Brake pedal lock  
 (A) Lock  
 (B) Release

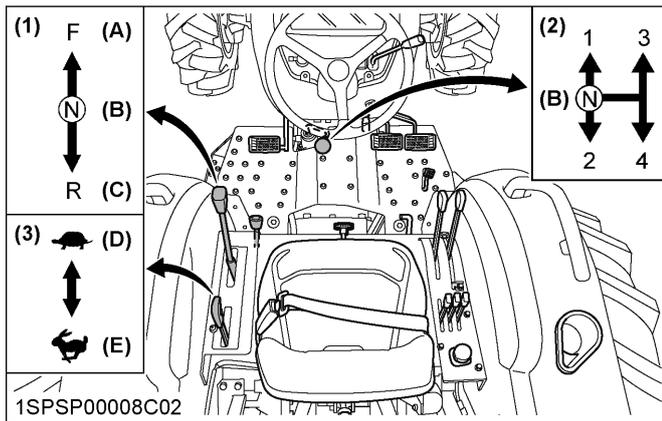
5. Raise the implement.  
 (See Position control of 3-point hitch mounted implement on page 66)



- (1) Position control lever  
 (A) Up

6. Depress the clutch pedal.  
 (See Clutch pedal on page 29)

7. Select the travel speed.



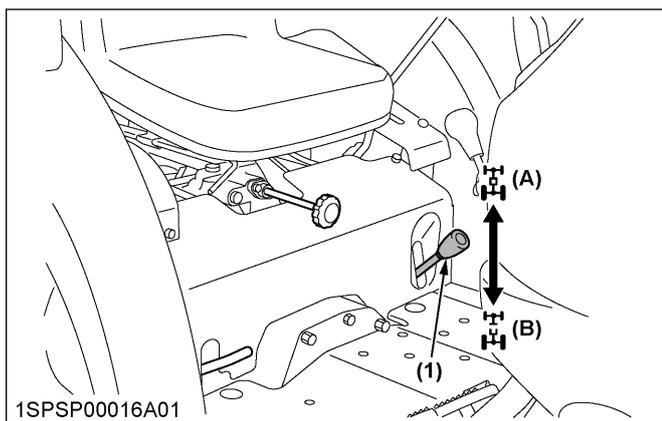
- (1) Synchro-shuttle shift lever (A) Forward
- (2) Main gear shift lever (B) Neutral position
- (3) Range gear shift lever (C) Reverse
- (D) Low
- (E) High

- By combination of using the main-gear-shift lever, the range-gear-shift-lever, and the synchro-shuttle shift lever, you can obtain forward speeds and reverse speeds shown in the following table.

Standard model	8 forward speeds
	8 reverse speeds

(See Main gear shift lever [Manual transmission type only] on page 32, Synchro-shuttle shift lever [Manual transmission type only] on page 32, and Range gear shift lever [Manual transmission type] on page 32)

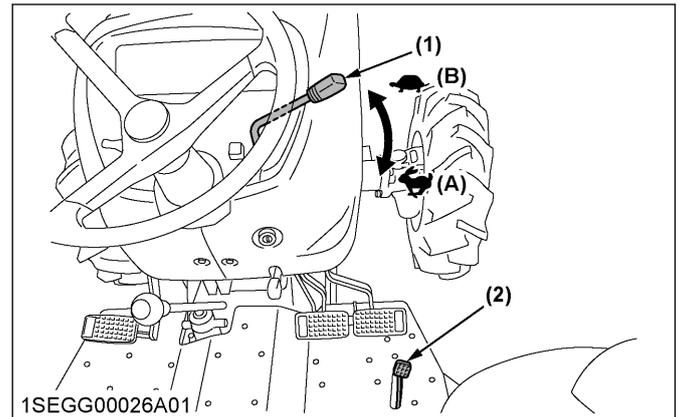
- Engage the front-wheel-drive. (See Front wheel drive lever on page 29)



- (1) Front wheel drive lever (A) On
- (B) Off

8. Accelerate the engine.

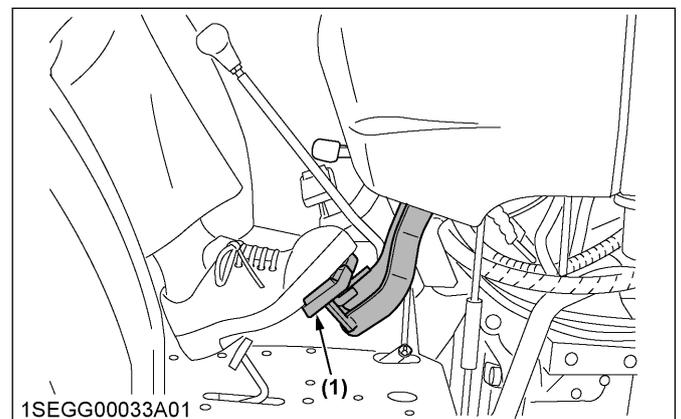
(See Hand throttle lever on page 31 and Foot throttle [Manual transmission type only] on page 33)



- (1) Hand throttle lever (A) Increase
- (2) Foot throttle (B) Decrease

9. Unlock the parking brake and slowly release the clutch.

(See To release the parking brake on page 32)



- (1) Brake pedals

## STARTING THE TRACTOR [HST TYPE]

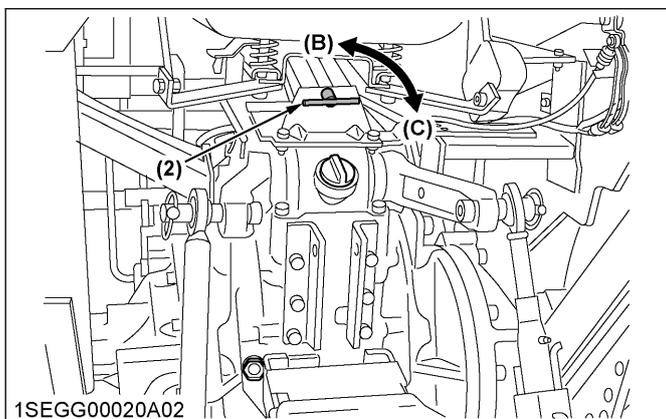
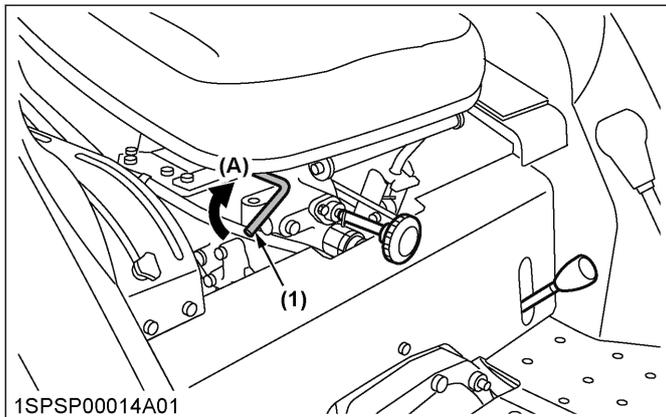
### ⚠ WARNING

To avoid personal injury or death:

- Read and understand *Safe operation* in the front of this manual.
- Read and understand the safety labels located on the tractor.
- To avoid the danger of exhaust-fume-poisoning, do not operate the engine in a closed building without proper ventilation.
- Never start the engine while standing on ground. Start the engine only from the operator's seat.
- Always set all shift levers to the "NEUTRAL" positions and to place the PTO-clutch-control-switch in the "OFF" position before starting the engine.

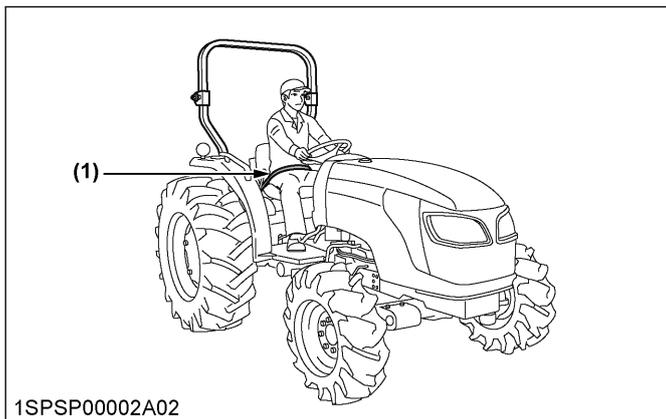
## OPERATING THE TRACTOR

1. Adjust the operator's position.
  - Adjust the operator's seat. (See Operator's seat on page 30)



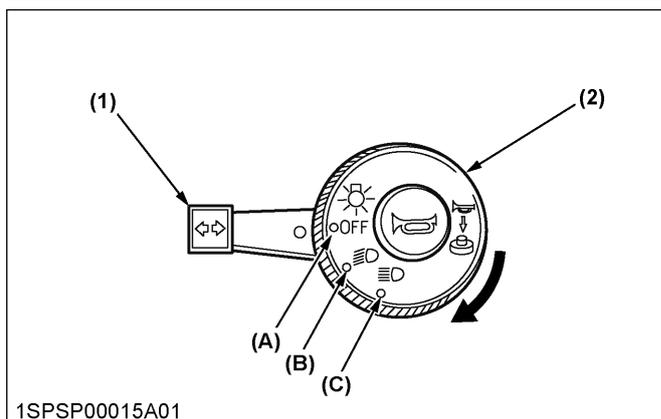
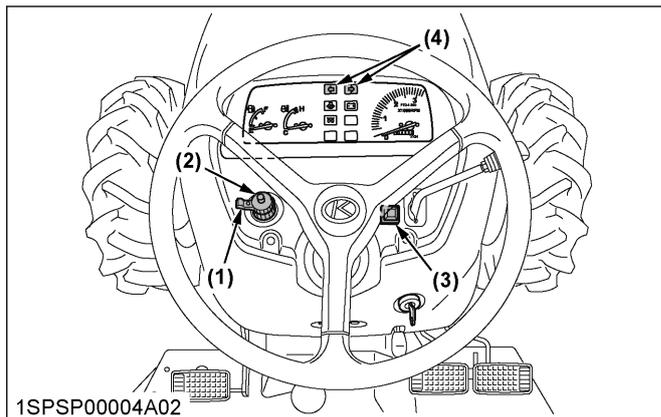
- |                              |                         |
|------------------------------|-------------------------|
| (1) Travel adjust lever      | (A) Pull                |
| (2) Suspension adjust handle | (B) To decrease tension |
|                              | (C) To increase tension |

- Adjust the seat belt. (See Seat belt on page 30)



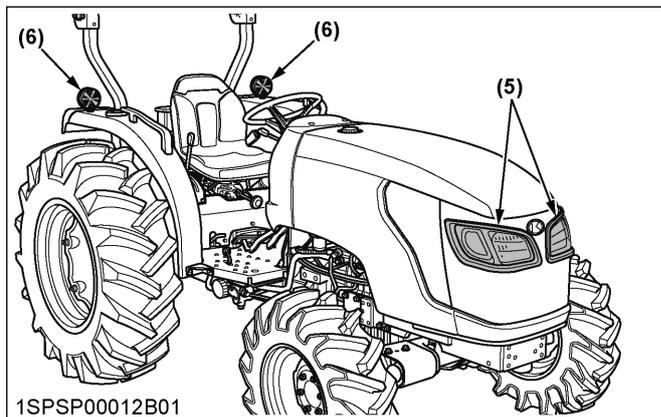
- (1) Seat belt

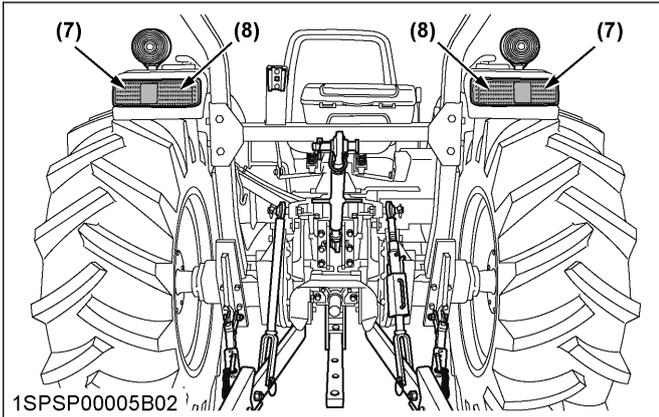
2. Start the engine. (See STARTING THE ENGINE [HST TYPE] on page 39)
3. Select the positions of the light switches. (See Hazard light switch and turn signal light switch on page 24)



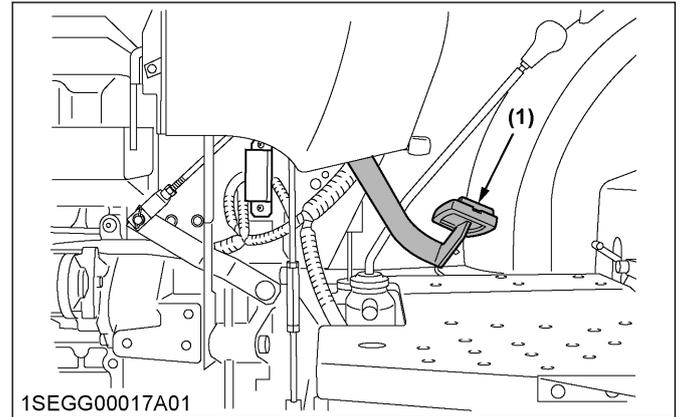
- |  |               |
|--|---------------|
| (1) Head light switch                    | (A) Off       |
| (2) Turn signal light switch             | (B) On (low)  |
| (3) Hazard light switch                  | (C) On (high) |
| (4) Turn signal / hazard light indicator |               |

### Tractor lights



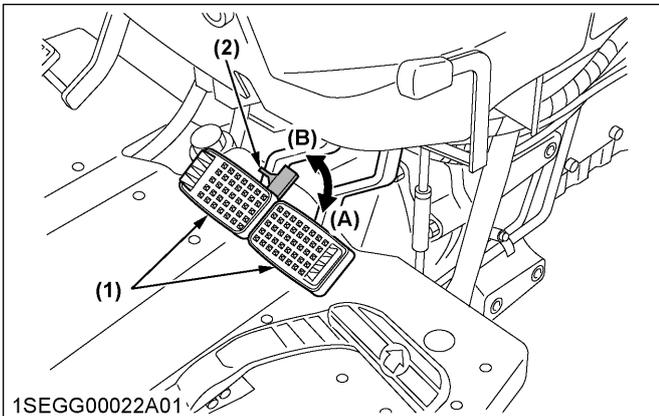


- (5) Head light
- (6) Side turn signal / hazard light
- (7) Rear turn signal / hazard light
- (8) Brake stop light



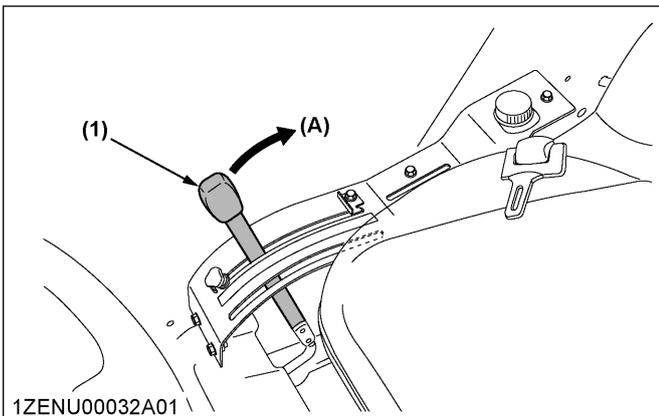
- (1) Clutch pedal

4. Check the brake pedal.  
(See Brake pedals (right and left) on page 31)



- (1) Brake pedal
- (2) Brake pedal lock
- (A) Lock
- (B) Release

5. Raise the implement.  
(See Position control of 3-point hitch mounted implement on page 66)

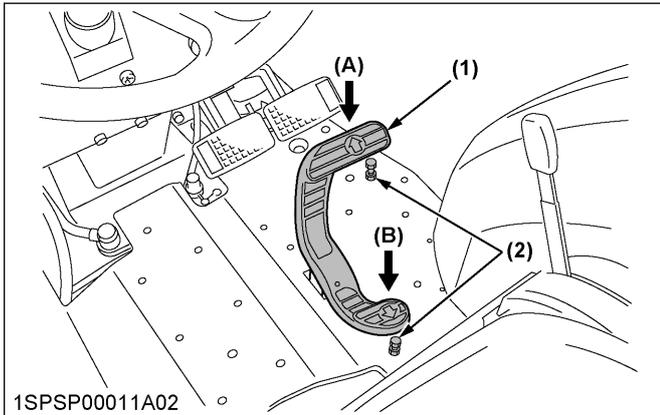


- (1) Position control lever
- (A) Up

6. Depress the clutch pedal.  
(See Clutch pedal on page 29)

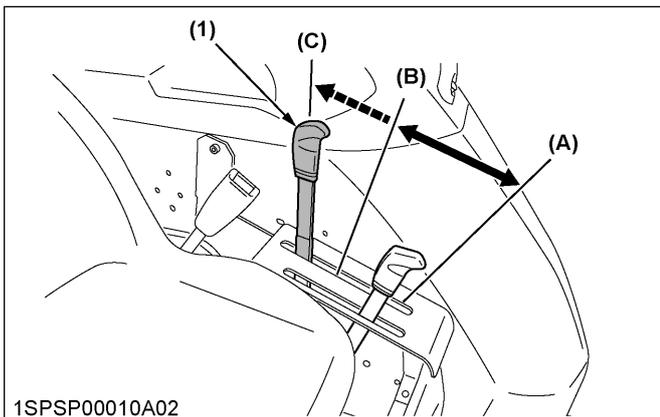


- Depress the speed-control-pedal.  
(See Speed control pedal [HST type only] on page 34)



(1) Speed control pedal (A) Forward  
(2) Stopper bolt (B) Reverse

- Set the proper forward speed by applying the cruise-control-lever.  
(See Cruise control lever [HST type only] on page 33 and How to use the cruise control lever [HST type only] on page 34)

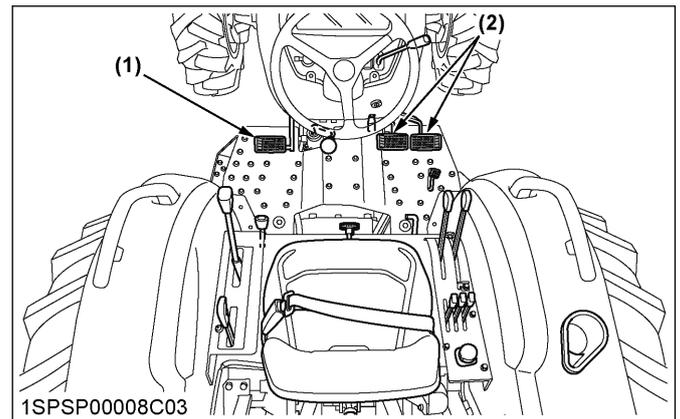


(1) Cruise control lever (A) Increase  
(B) Decrease (C) Neutral

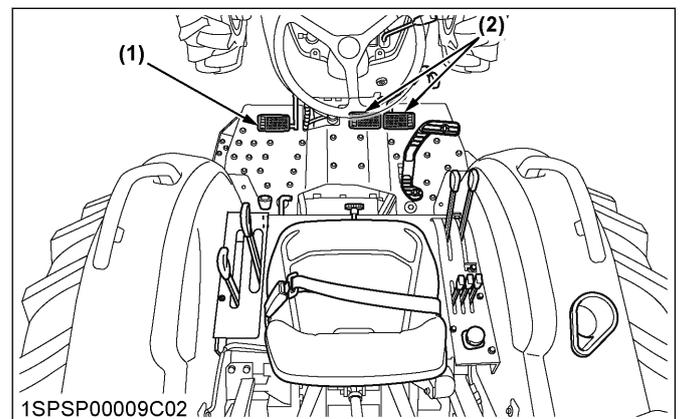
## STOPPING THE TRACTOR

- Slow down the engine.
- Depress the clutch pedal and brake pedal.

### [Manual transmission type]

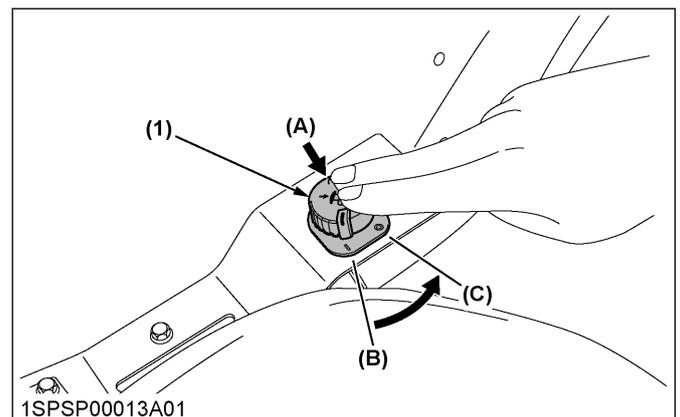


### [HST type]



(1) Clutch pedal (2) Brake pedal

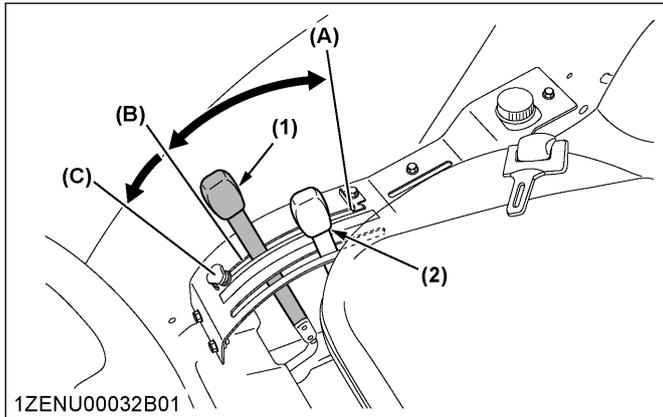
- After the tractor has stopped, disengage the PTO clutch.  
(See PTO clutch control switch on page 60)



(1) PTO clutch control switch (A) Push  
(B) On (C) Off

## OPERATING THE TRACTOR

4. Lower the implement to the ground.  
(See Position control of 3-point hitch mounted implement on page 66)

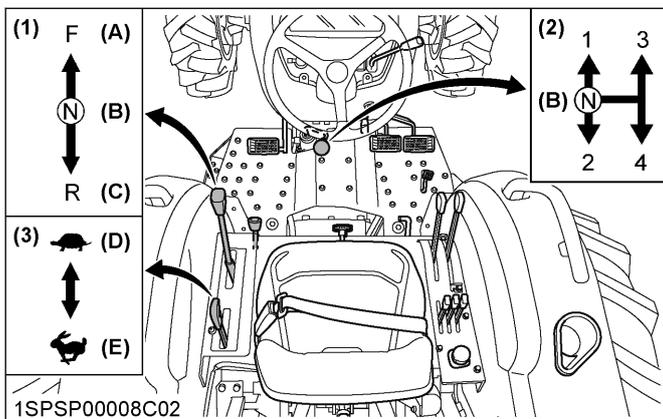


- (1) Position control lever (A) Up  
(B) Down  
(2) Draft control lever (if equipped) (C) Float

5. Shift the transmission to the neutral position.

• **[Manual transmission type]**

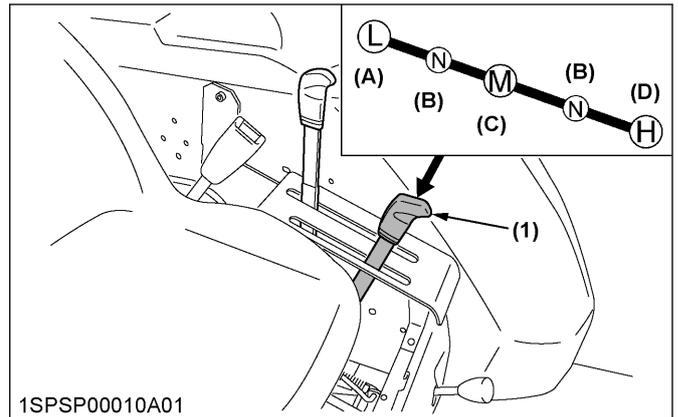
(See Main gear shift lever [Manual transmission type only] on page 32, Synchro-shuttle shift lever [Manual transmission type only] on page 32, and Range gear shift lever [Manual transmission type] on page 32)



- (1) Synchro-shuttle shift lever (A) Forward  
(B) Neutral position  
(C) Reverse  
(2) Main gear shift lever (D) Low  
(E) High  
(3) Range gear shift lever

• **[HST type]**

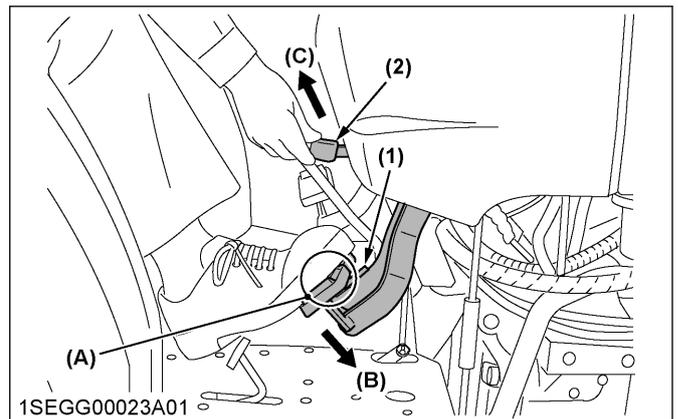
(See Range gear shift lever (L-M-H) [HST type] on page 33)



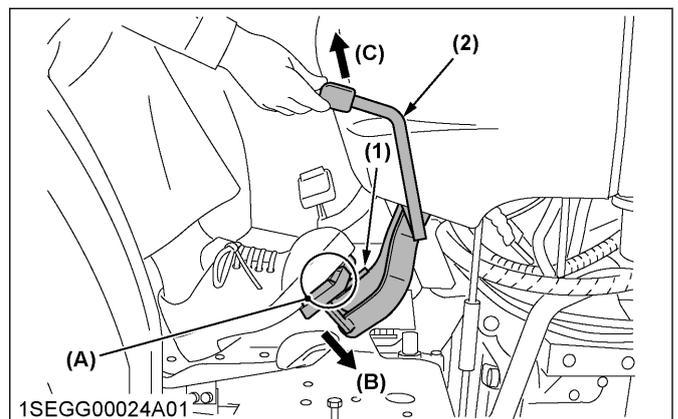
- (1) Range gear shift lever (L-M-H) (A) Low  
(B) Neutral position  
(C) Middle  
(D) High

6. Release the clutch pedal.  
7. Set the parking brake.  
(See To set the parking brake on page 32)

**[Manual transmission type]**



**[HST type]**



- (1) Brake pedal (A) Interlock the brake pedals  
(2) Parking brake lever (B) Depress  
(C) Pull

# CHECK DURING DRIVING

## 1. Cases to stop the engine immediately

Immediately stop the engine if:

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

## 2. Easy Checker™

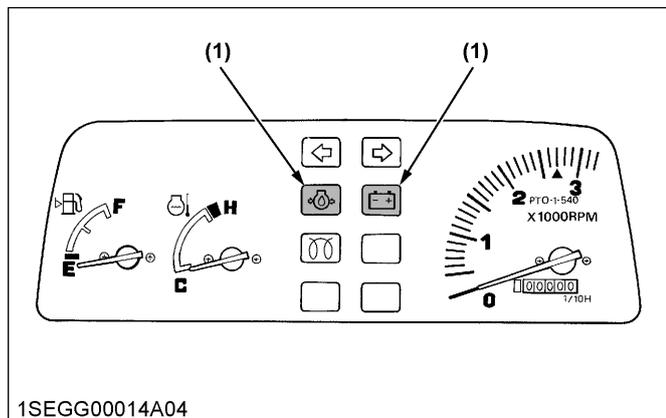
If trouble should occur at any location while the engine is running, the warning-indicator-lamp in the Easy Checker™ corresponding to that location comes on.

If the warning-indicator-lamps in the Easy Checker™ come on during operation of the tractor, immediately stop the engine, and find the cause as the following table.

Never operate the tractor while the warning-indicator-lamp in the Easy Checker™ is on.

**NOTE :**

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



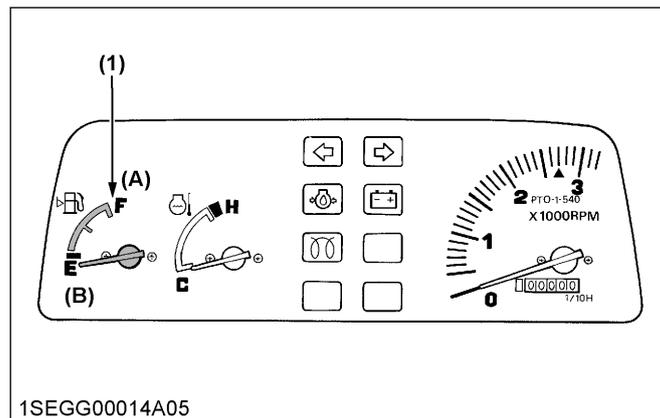
(1) Easy Checker™

### Easy Checker™ lamps

 Engine oil pressure	If the oil pressure in the engine goes below the prescribed level, the engine-oil-pressure-warning-indicator in the Easy Checker™ will come on. If the engine-oil-pressure-warning-indicator should come on during operation of the tractor, and this warning indicator does not go off when the engine is accelerated to more than 1000 rpm, check level of engine oil. (See Checking the engine oil level on page 82)
 Electrical charge	If the alternator is not charging the battery, the electrical-charge-warning-indicator in the Easy Checker™ will come on. If the electrical-charge-warning-indicator should come on during operation of the tractor, check the electrical charging system or consult your local KUBOTA Dealer.

## 3. Fuel gauge

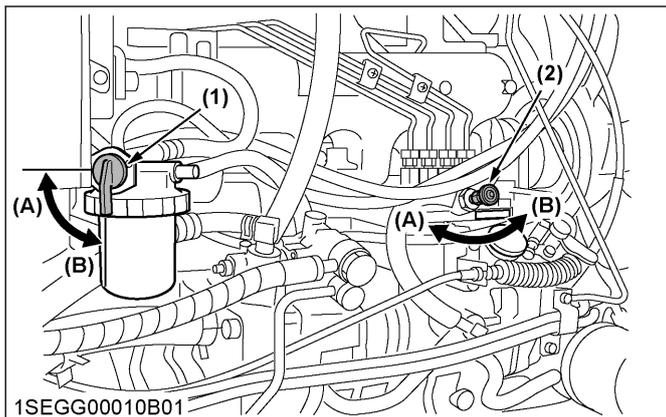
When the key switch is on, the fuel gauge indicates the fuel level.



(1) Fuel gauge (A) Full (B) Empty

Be careful not to empty the fuel tank. Otherwise air may enter the fuel system.

If air should enter the fuel system, bleed it. (See Bleeding the fuel system on page 100)



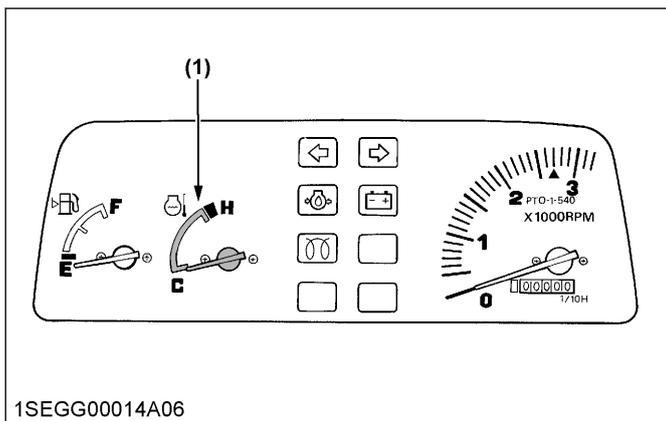
(1) Fuel shutoff-valve (A) Close  
 (2) Air vent shutoff-valve (B) Open

### 4. Coolant temperature gauge

#### WARNING

To avoid personal injury or death:

- Do not remove the radiator cap until the coolant temperature is well below its boiling point. Then loosen the radiator cap slightly to the stop to relieve any pressure before removing the radiator cap completely.
- With the key switch at the "ON" position, the coolant-temperature-gauge indicates the temperature of the coolant. [C] means cold and [H] means hot.
- If the indicator of the coolant-temperature-gauge reaches the [H] position (red zone), engine coolant is overheated. Check the tractor according to Dealing with overheated coolant temperature on page 56 and ENGINE TROUBLESHOOTING on page 106.



(1) Coolant temperature gauge

#### 4.1 Dealing with overheated coolant temperature

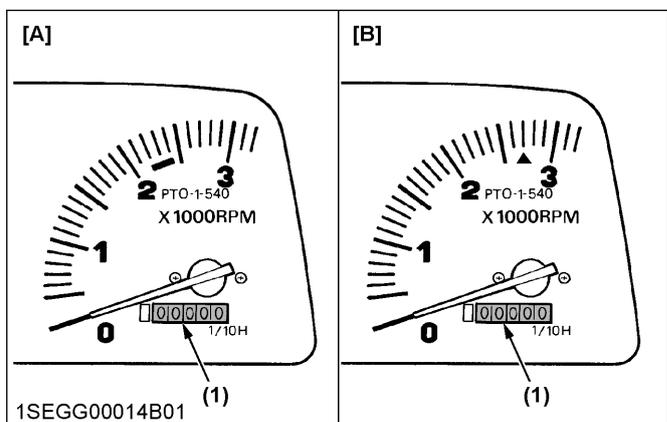
Take the following actions in the event which the coolant temperature is nearly or more than the boiling point, what is called *Overheating*.

- Park the tractor in a safe place and keep the engine unloaded idling.
- Do not stop the engine suddenly, but stop it after about 5 minutes of unloaded idling.
- Keep yourself well away from the machine for further 10 minutes or while the steam blows out.
- Check that there are no dangers such as burns. Get rid of the causes of overheating according to ENGINE TROUBLESHOOTING on page 106.
- Then, start again the engine.

### 5. Hour meter

The hour meter gives readings for the hours that the tractor has been operated.

The hour meter indicates the hours that the tractor has been used in 5 digits and the last digit indicates 1/10 of an hour.

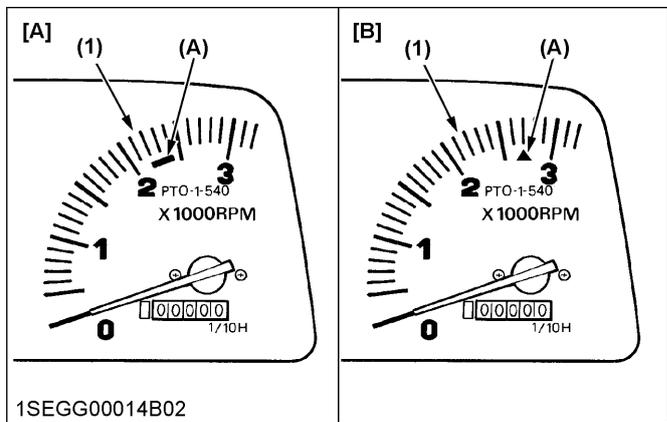


(1) Hour meter  
 [A] Manual transmission type  
 [B] HST type

### 6. Tachometer

The tachometer gives readings for the engine speed and PTO-shaft-speed.

The tachometer indicates the engine speed and the location of 540-PTO-shaft-speed on the dial.

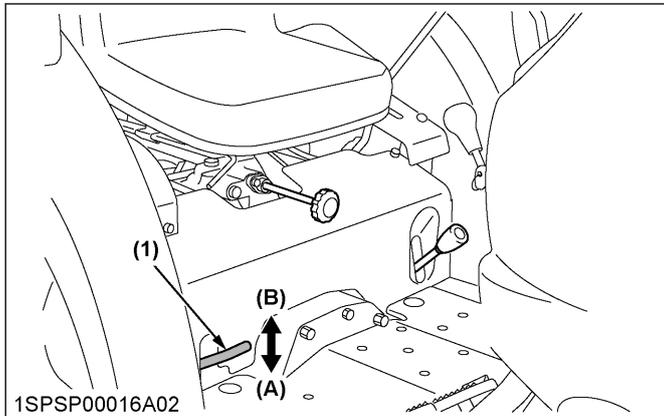


(1) Engine revolution  
 (A) PTO (540 rpm)  
 [A] Manual transmission type  
 [B] HST type

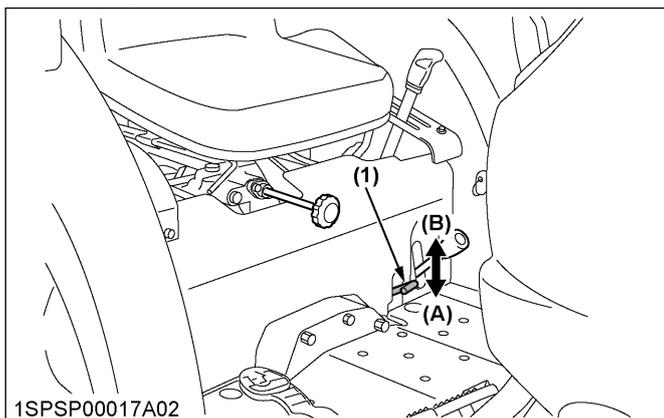


If one of the rear wheels should slip, depress the differential-lock-pedal. Both wheels will then turn together, which reduce slippage of the rear wheels. You can maintain the differential lock only while the differential-lock-pedal is depressed.

**[Manual transmission type]**



**[HST type]**



(1) Differential lock pedal (A) Press to engage (B) Release to disengage

**IMPORTANT :**

- When using the differential lock, always slow the engine down.
- To prevent damage to power train, do not engage the differential lock when one wheel is spinning and the other is completely stopped.
- If you cannot release the differential lock in the preceding manner, lightly depress the brake pedals alternately.

**2. Precautions for operating the tractor on a road**

**! WARNING**

To avoid personal injury or death:

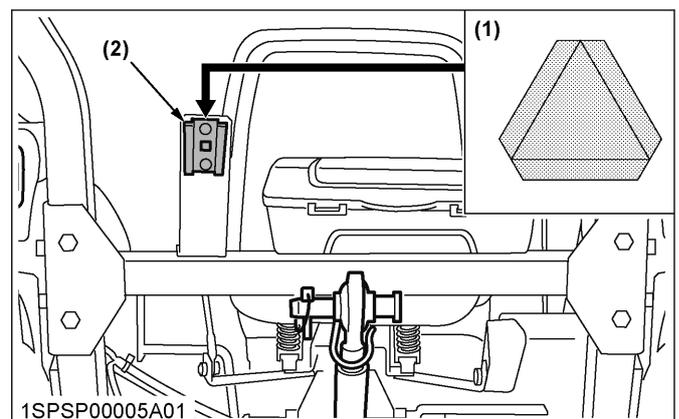
- To help assure that the straight line stops when driving at transport speeds, lock the brake

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 get sufficient front weight on the tractor to maintain steering ability.
- While traveling, lock the 3-point hitch in the raised position.

Be sure that the SMV emblem and the warning-indicator-lamps are clean and visible. If towed or rear-mounted equipment obstructs these safety devices, install the SMV emblem and the warning-indicator-lamp on equipment.

Consult your local KUBOTA Dealer for further details.



(1) SMV emblem (2) Bracket

**3. Precautions for operating the tractor on slopes and rough terrain**

**! WARNING**

To avoid personal injury or death:

- Always back the tractor up when the tractor is 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 of the tractor.
- Avoid changing gears when the tractor is climbing or descending a slope.
- If operating the tractor on a slope, never disengage the clutch pedal or shift lever to neutral. Disengage the clutch pedal or shift lever to neutral 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.

- Be sure that the wheel tread is adjusted to provide the maximum stability.  
(See WHEEL ADJUSTMENT on page 72)

- Slow down for slopes, rough ground, and sharp turns, especially when transporting heavy, rear mounted equipment.
- Before descending a slope, shift to a gear low enough to control speed without using brakes.

#### **4. Directions for use of the power steering**

- The power steering is activated only while the engine is running. Slow engine speeds weight the steering a little. While the engine is stopped, the tractor functions in the same manner as tractors without power steering.
- Turning the steering wheel all the way to the stop activates the relief valve. Do not hold the steering wheel in the stop for a long period of time.
- Avoid turning the steering wheel while the tractor is stopped. Otherwise tires may wear out sooner.
- The steering becomes easier due to the power-steering-mechanism. Be careful when driving on a road at high speeds.

# POWER TAKE-OFF (PTO)

## PTO OPERATION

### WARNING

To avoid personal injury or death:

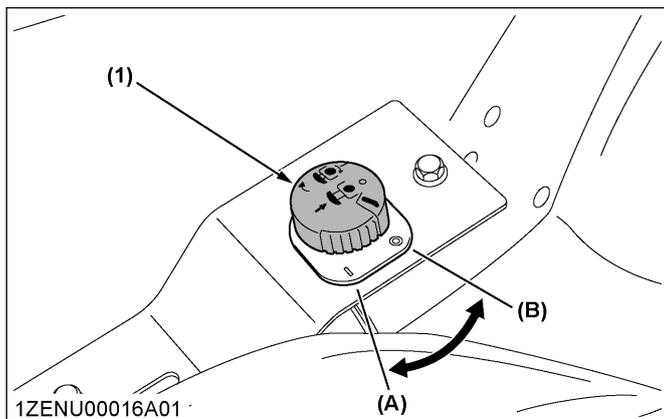
- Disengage the PTO, stop the engine, and allow all rotating components to come to a complete stop before connecting, disconnecting, adjusting, or cleaning any PTO driven equipment.

### 1. PTO clutch control switch

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

The tractor is equipped with a 540 rpm speed position and 6-spline shaft.

Turn the PTO-clutch-control-switch to "ON" to engage the PTO clutch. Turn the PTO-clutch-control-switch to "OFF" to disengage the PTO clutch.

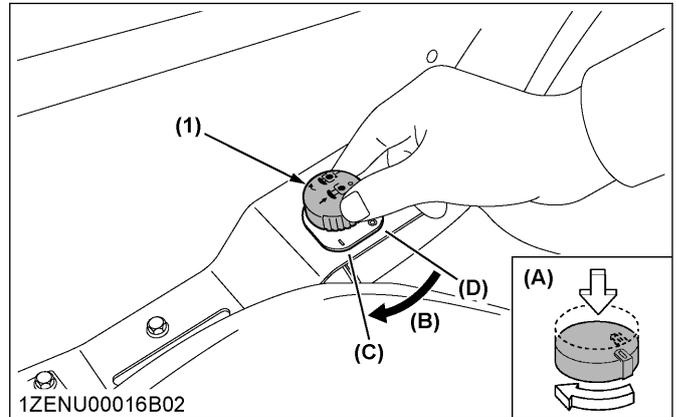


(1) PTO clutch control switch (A) On  
(B) Off

#### • To turn "ON"

While pushing the PTO-clutch-control-switch, turn the PTO-clutch-control-switch clockwise to the "ON" position. Then release your hand.

In the "ON" position, PTO-clutch-control-switch slightly rises itself.

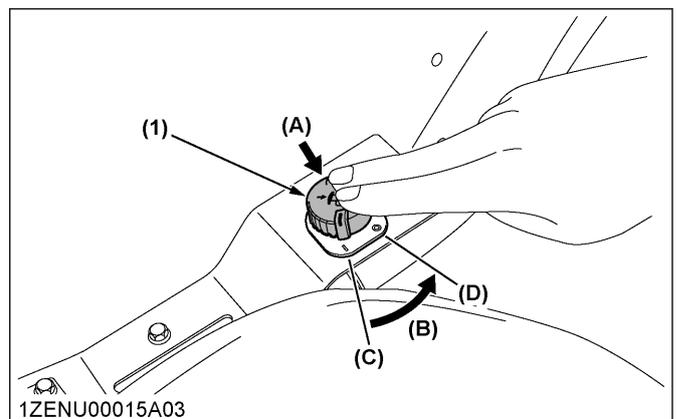


(1) PTO clutch control switch (A) Push  
(B) Turn clockwise  
(C) On  
(D) Off

#### • To turn "OFF"

Tap on top of the PTO-clutch-control-switch.

The PTO-clutch-control-switch will return to the "OFF" position.



(1) PTO clutch control switch (A) Push  
(B) Return automatically  
(C) On  
(D) Off

### IMPORTANT :

- To avoid shock loads to the PTO, reduce the engine speed when engaging the PTO, then open the throttle to the recommended speed.
- To avoid damage of PTO clutch and implement, proper warm up is strongly recommended in cold weather.  
Do not continuously turn the PTO-clutch-control-switch.

### NOTE :

- There are [PTO 540] rpm indicated mark on the tachometer board.

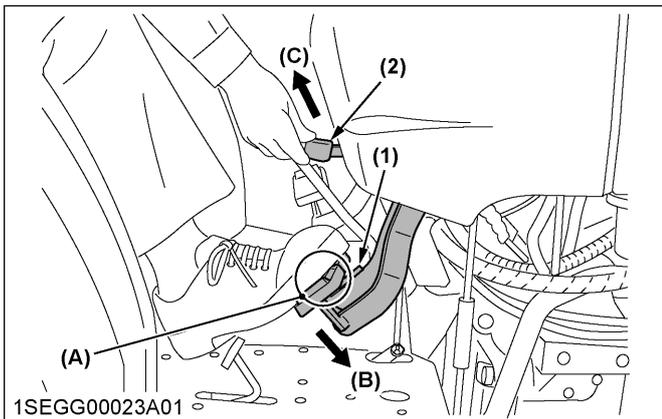
- Tractor engine will not start if the PTO-clutch-control-switch is in the "ON" position.

## 2. How to use the stationary PTO

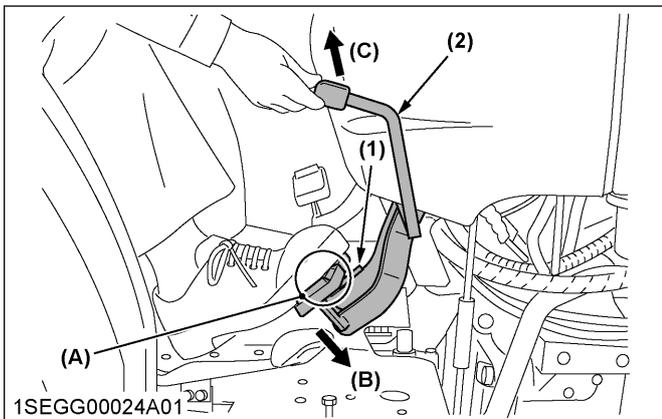
To park the tractor and use the PTO system for chipper or pump, for example, start the PTO system in the procedure in this section.

1. Apply the parking brake and place blocks at the tires.  
(See To set the parking brake on page 32)

### [Manual transmission type]

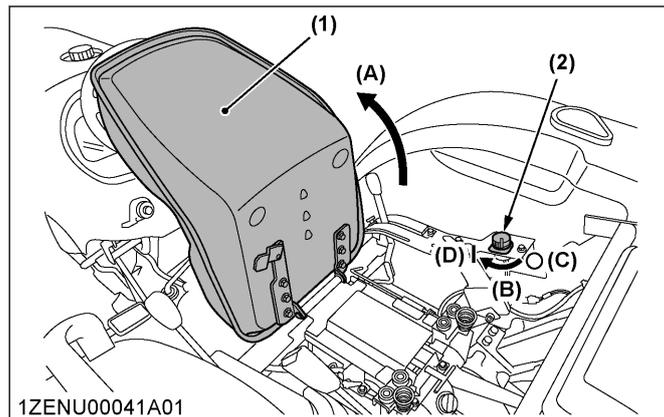


### [HST type]



- |                         |                                |
|-------------------------|--------------------------------|
| (1) Brake pedal         | (A) Interlock the brake pedals |
| (2) Parking brake lever | (B) Depress                    |
|                         | (C) Pull                       |

2. Make sure that all shift levers are in their "NEUTRAL" positions.
3. Start the engine.
  - [Manual transmission type]  
See STARTING THE ENGINE [MANUAL TRANSMISSION TYPE] on page 37.
  - [HST type]  
See STARTING THE ENGINE [HST TYPE] on page 39.
4. Tilt the operator's seat forward.
5. Set the PTO-clutch-control-switch to engage "ON".



- 1ZENU00041A01
- |                               |                    |
|-------------------------------|--------------------|
| (1) Operator's seat           | (A) Tilt forward   |
| (2) PTO clutch control switch | (B) Turn clockwise |
|                               | (C) Off            |
|                               | (D) On             |

6. Set the engine speed to provide recommended rear PTO speed.

### NOTE :

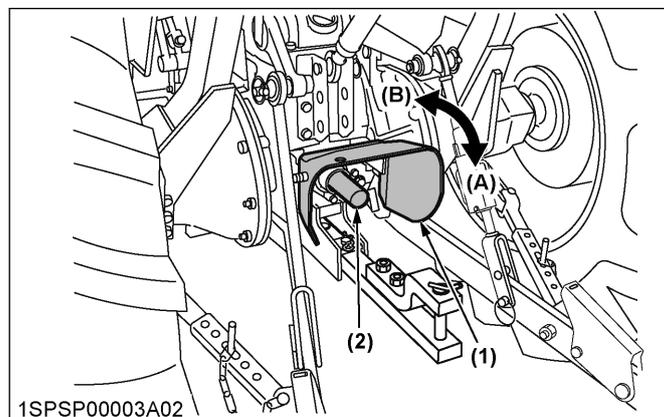
- If the PTO system is engaged and you stand up from the operator's seat or the operator's seat is not tilted forward, the engine stops automatically after standing up.

## 3. PTO shaft cover and PTO shaft cap

### ! WARNING

To avoid personal injury or death:

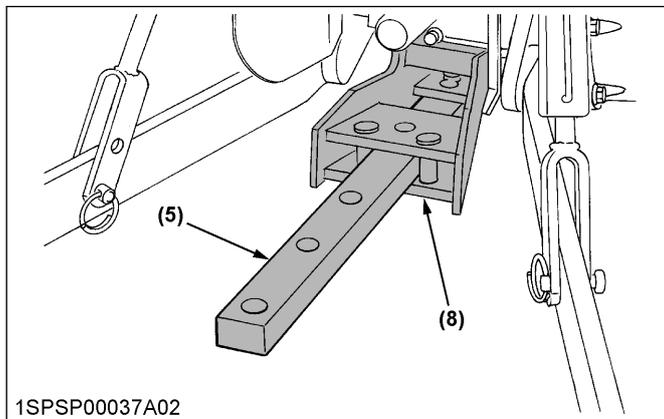
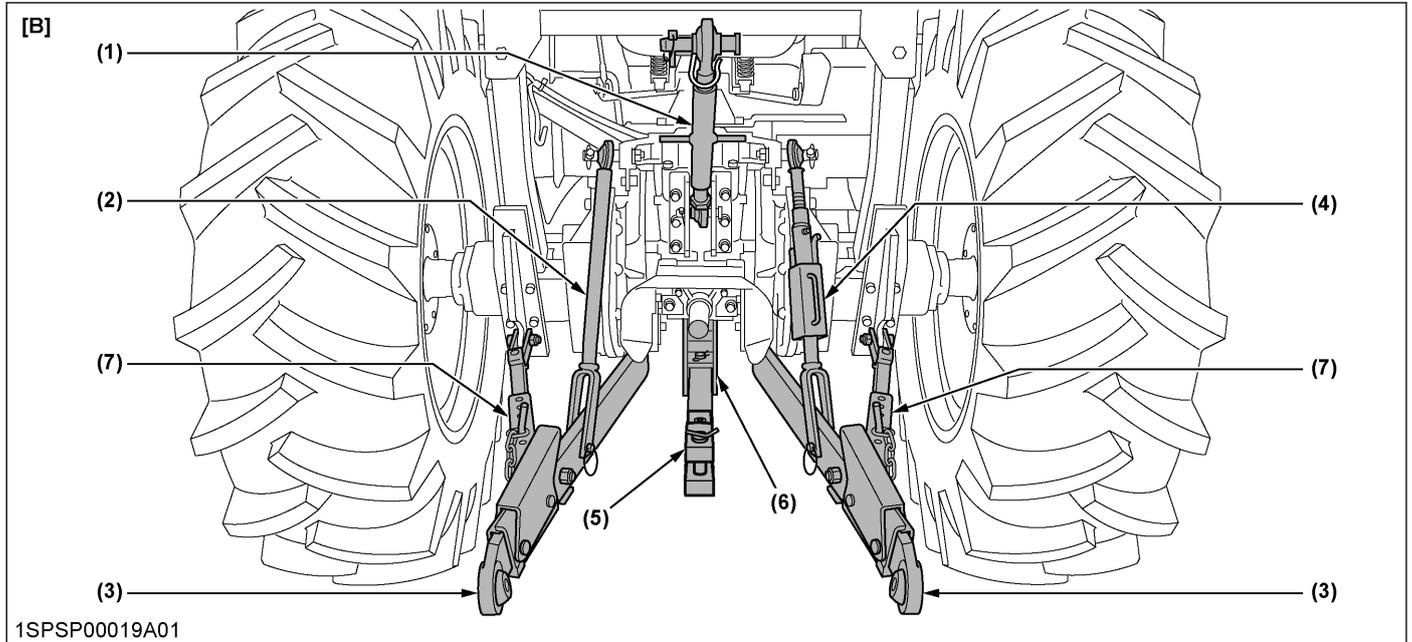
- Keep the PTO-shaft-cover in place at all times.
- Replace the PTO-shaft-cap when the PTO shaft is not in use.
- Before connecting or disconnecting a drive shaft to PTO shaft, be sure that the engine is off and raise up the PTO-shaft-cover. Afterward be sure to return the PTO-shaft-cover to the "NORMAL" position.



- |                     |                     |
|---------------------|---------------------|
| (1) PTO shaft cover | (A) Normal position |
| (2) PTO shaft cap   | (B) Raised position |

# 3-POINT HITCH AND DRAWBAR

## OVERVIEW OF THE 3-POINT HITCH AND DRAWBAR



- (1) Top link
- (2) Lifting rod (left)
- (3) Lower link

- (4) Lifting rod (right)
- (5) Drawbar
- (6) Fixed drawbar frame

- (7) Telescopic stabilizers
- (8) Swing drawbar frame (if equipped)

## 3-POINT HITCH

### 1. Preparations for attaching the 3-point hitch implement

#### 1.1 Changing the category 1 and 2 of 3-point hitch implement

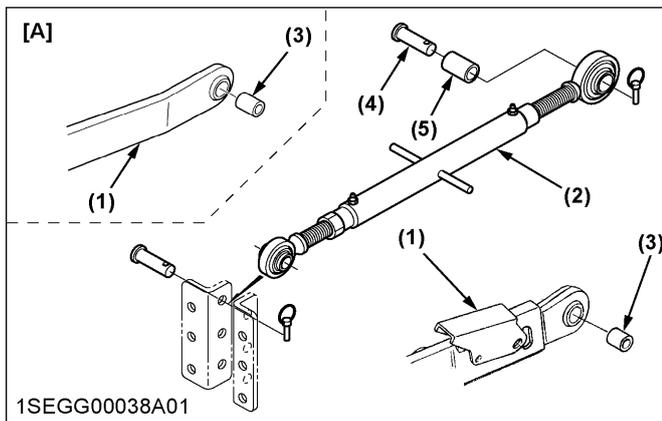
This section describes the procedure to change from category 1 to category 2.

This tractor is equipped with both category 1 and 2 of 3-point hitch implement.

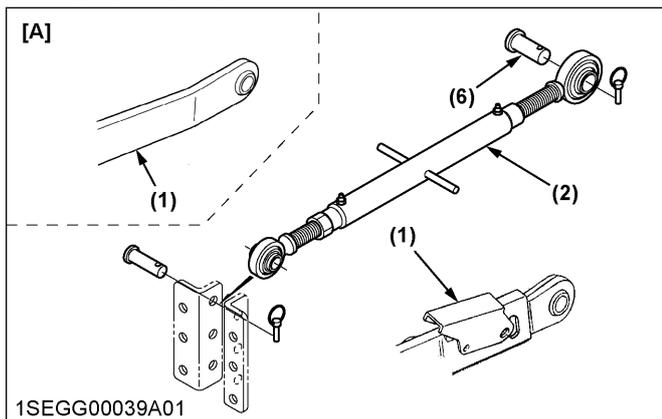
Category 1 type is standard and assemble all parts shown as the procedure in this section.

1. Remove the adjusting collar from the lower link.
2. Remove the adjusting collar from the rear top-link-pin.
3. Use the correct rear top-link-pin for category 2.

#### [Category 1 type]



#### [Category 2 type]

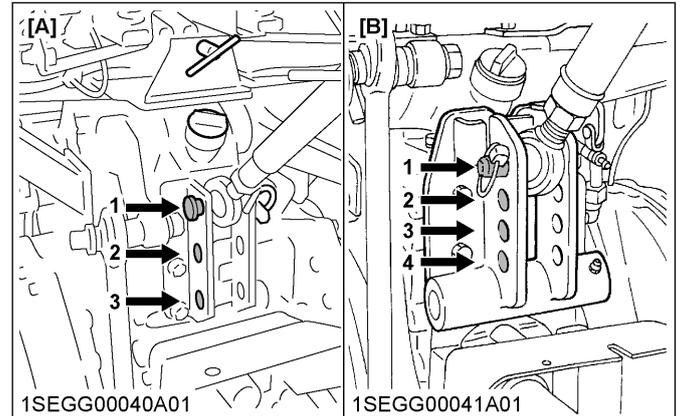


- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| (1) Lower link                        | (4) Top link rear pin [Category 1]  |
| (2) Top link                          | (5) Collar of top link [Category 1] |
| (3) Collar of lower link [Category 1] | (6) Top link rear pin [Category 2]  |

#### 1.2 Selecting the holes to mount the top link

1. Select the proper set of holes according to Hydraulic control unit use reference chart on page 71.

If the hydraulic unit is set for draft control, draft response is more sensitive when an implement is connected to the upper set of holes to mount the top link. If draft control is not required, it is recommended to use the hole-4 in the figure as low set.



[A] With position control

[B] With draft control

#### 1.3 Dealing with the drawbar

1. Remove the drawbar if a close mounted implement is attached to the 3-point hitch.  
(For detail for the drawbar, see DRAWBAR on page 65)

### 2. Attaching methods of 3-point hitch implement

#### 2.1 Precautions for attaching and detaching the 3-point hitch implement

#### **! WARNING**

To avoid personal injury or death:

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

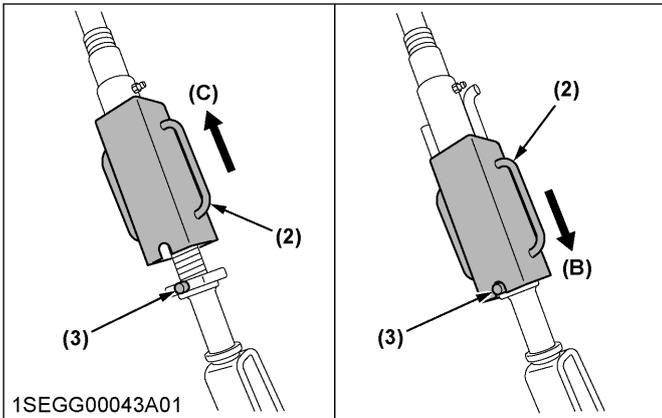
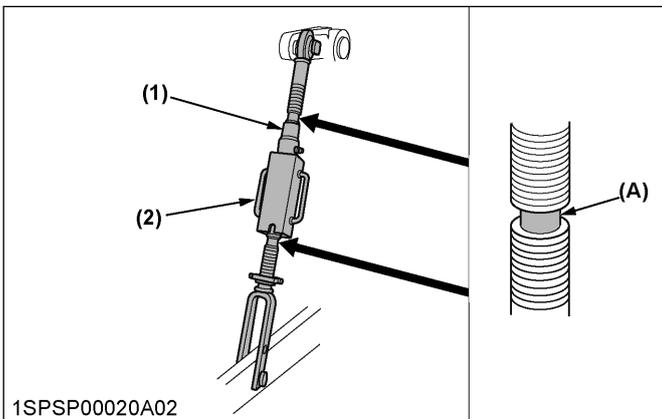
### 2.2 Adjusting the lifting rod (right)

**⚠ WARNING**

To avoid personal injury or death:

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

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

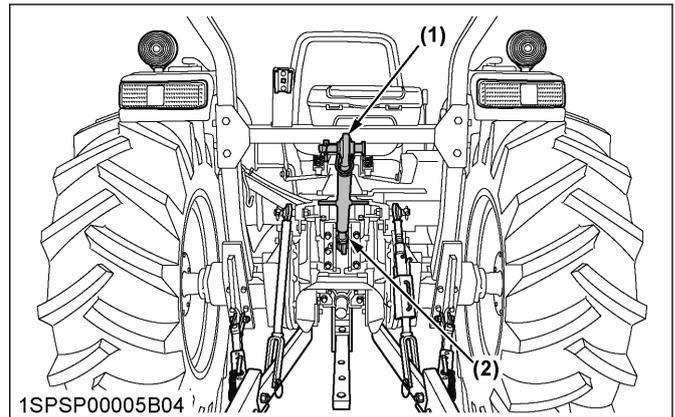


- |                      |                     |
|----------------------|---------------------|
| (1) Lifting rod      | (A) Groove          |
| (2) Adjusting handle | (B) Lock position   |
| (3) Lock pin         | (C) Unlock position |

### 2.3 Adjusting the top link

The proper length of the top link varies according to the type of implement being used.

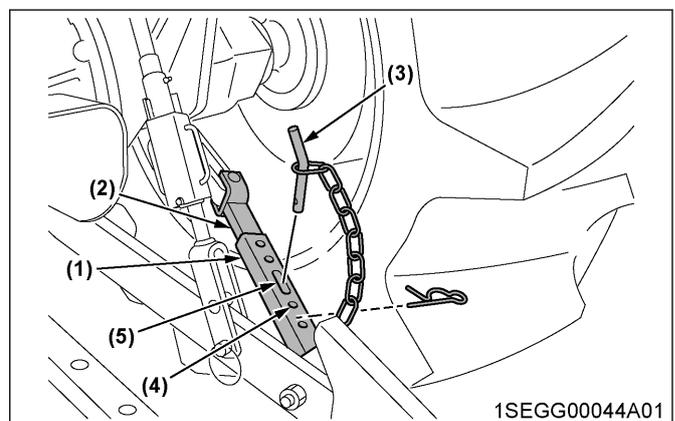
1. Adjust the angle of the implement to the desired position by shortening or lengthening the top link.
2. After adjustment, tighten the lock nut securely.



- |              |              |
|--------------|--------------|
| (1) Top link | (2) Lock nut |
|--------------|--------------|

### 2.4 Adjusting the telescopic stabilizers

1. Adjust the telescopic stabilizers to control the horizontal sway of the implement. Select the proper set of holes. (See Hydraulic control unit use reference chart on page 71)
2. After aligning satisfactorily, insert the set-pin through any one of the 4 holes on the outer tube that align with one of the holes on the inner bar. Both stabilizers will be locked. If the set-pin is inserted through the slot to engage one of the holes on the inner bar, a limited degree of sway will be permitted.



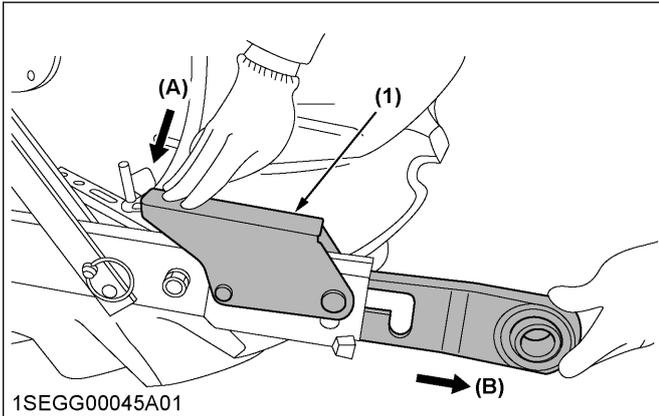
- |                |          |
|----------------|----------|
| (1) Outer tube | (4) Hole |
| (2) Inner bar  | (5) Slot |
| (3) Set-pin    |          |

### 2.5 Adjusting the telescopic lower links

To attach an implement, follow the instructions in this section.

1. Push the levers, pull out the ends of lower links, and attach to the implement.

2. Back up the tractor slightly to make sure that the lower links are pushed in securely.



(1) Lever

(A) Push  
(B) Pull out

## DRAWBAR

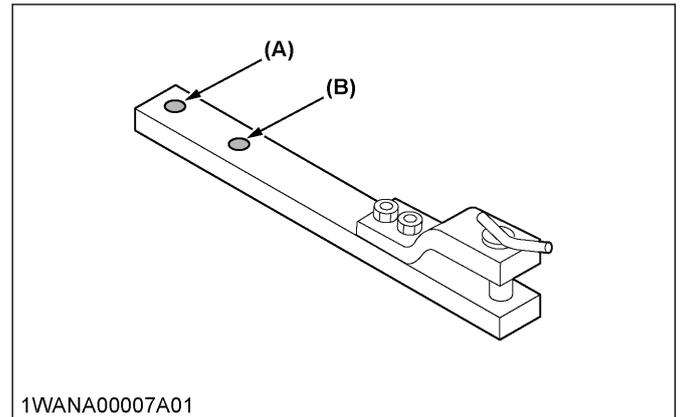
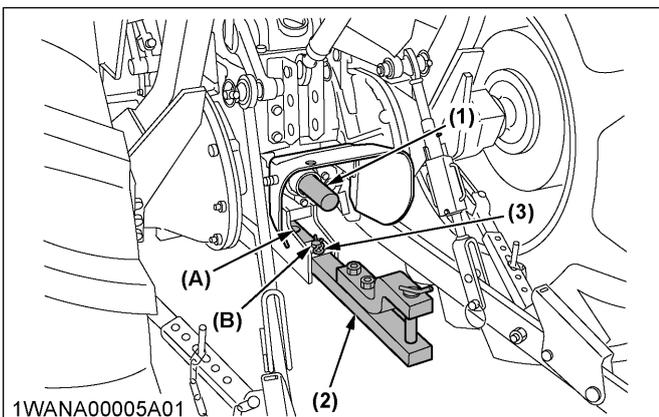
### ⚠ WARNING

To avoid personal injury or death:

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

## 1. Adjusting the drawbar length

1. Adjust the length of the drawbar.  
When towing an implement, it is recommended that the (B) hole in drawbar to be utilized.  
For information about the drawbar load, read the IMPLEMENT LIMITATION TABLES on page 21.

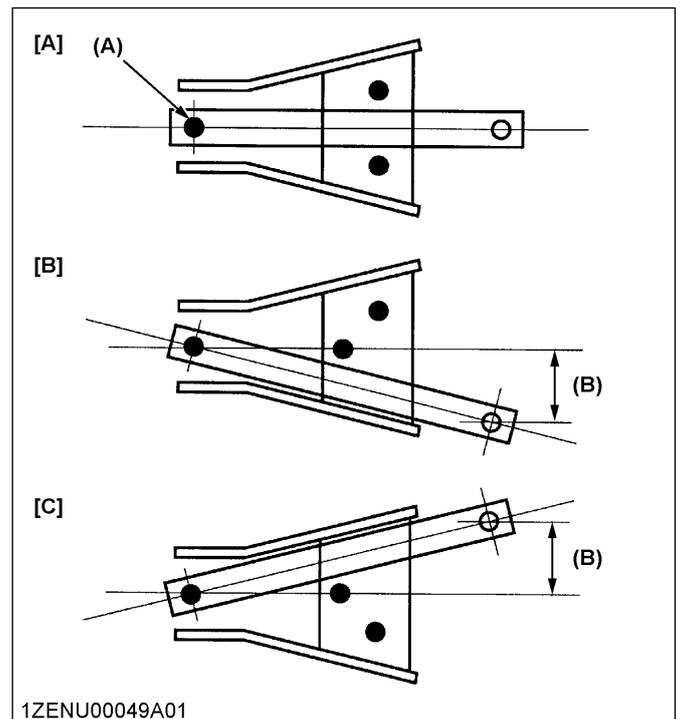


(1) PTO shaft  
(2) Drawbar  
(3) Drawbar pin

(A) Hole-A  
(B) Hole-B

## 2. Swing drawbar

You can use the swing drawbar in 3 different ways as follows. Assemble the swing drawbar correctly with set of joint pins at the points as marked by ● in the figure.



[A] Using way-A  
[B] Using way-B  
[C] Using way-C

(A) Hole-A  
(B) 140 mm (5.5 in.)

# HYDRAULIC UNIT

**IMPORTANT :**

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

## 3-POINT HITCH CONTROL SYSTEM

**⚠ WARNING**

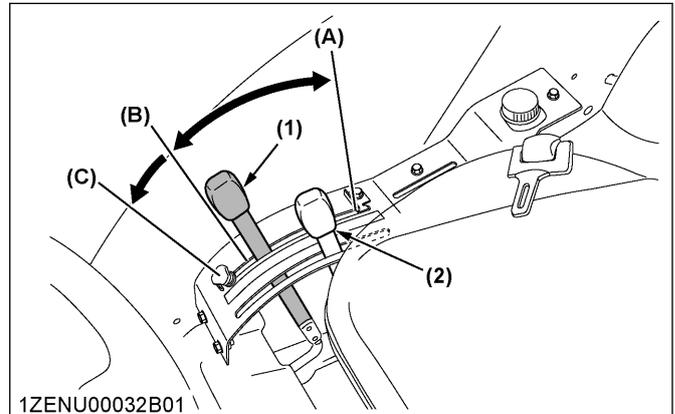
To avoid personal injury or death:

- Before using the 3-point hitch controls, make sure 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.

### 1. Position control of 3-point hitch mounted implement

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

Place the draft-control-lever in the lowest position and set the working depth of the implement with the position-control-lever.



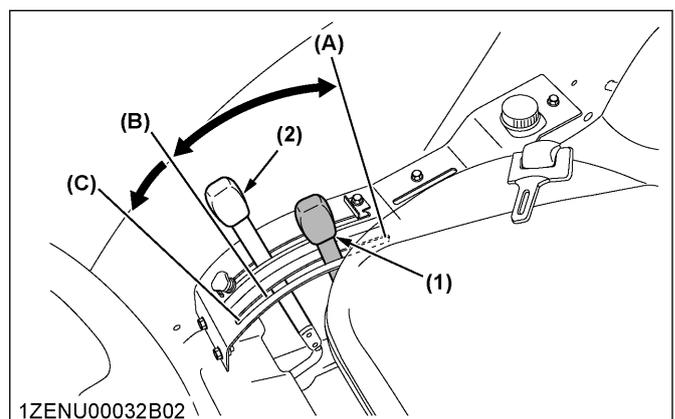
(1) Position control lever (A) Up  
 (2) Draft control lever (if equipped) (B) Down  
 (C) Float

### 2. Draft control of 3-point hitch mounted implement (if draft control lever is equipped)

Draft control will control the pull of 3-point hitch mounted implement.

Because the load on the 3-point hitch changes due to various soil conditions, the draft-control-system automatically responds to these changes by either raising or lowering the implement slightly to maintain a constant pull.

Place the position-control-lever in the lowest position and set the implement pull with the draft-control-lever.



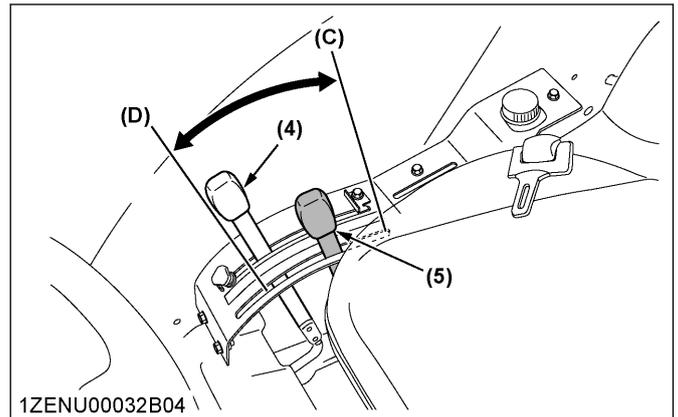
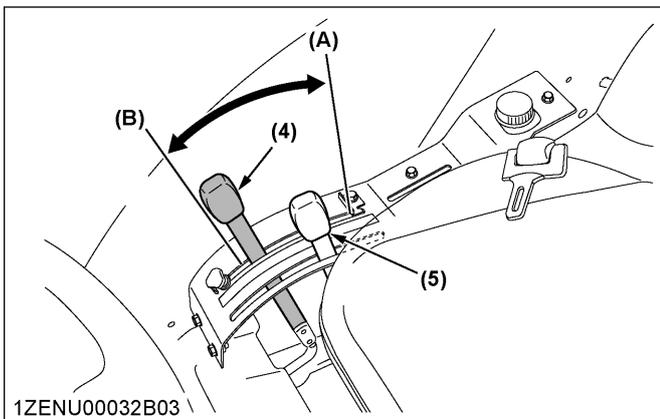
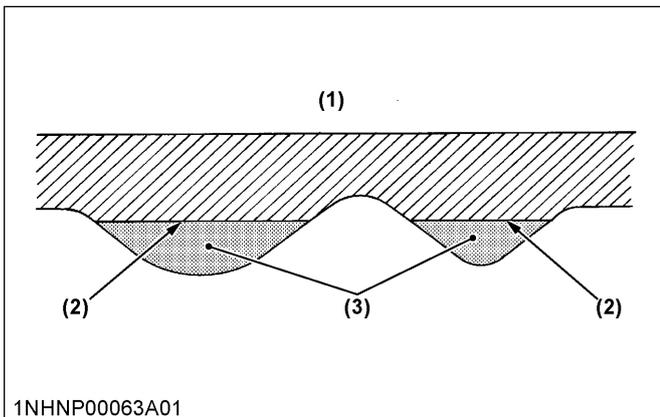
(1) Draft control lever (A) Sensitive  
 (2) Position control lever (B) Insensitive  
 (C) Float

### 3. Mixed control of position and draft of 3-point hitch mounted implement

In draft control, when draft decreases, the implement automatically lowers to increase draft. However, the implement sometimes lowers too much.

To limit the degree to which the implement can be lowered, set the position-control-lever at the lowest working depth desired for the implement. Lower the draft-control-lever to the point where the implement is at the desired depth.

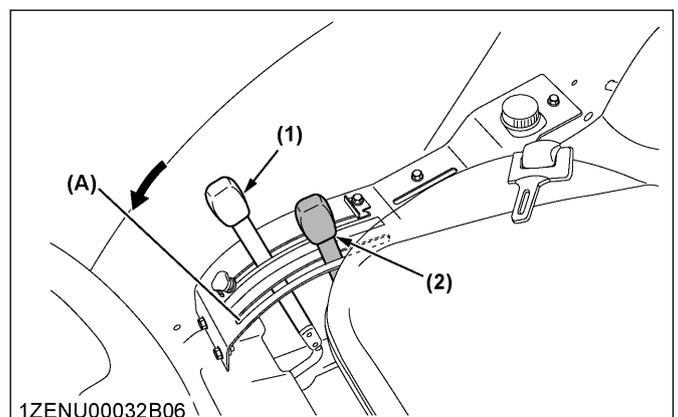
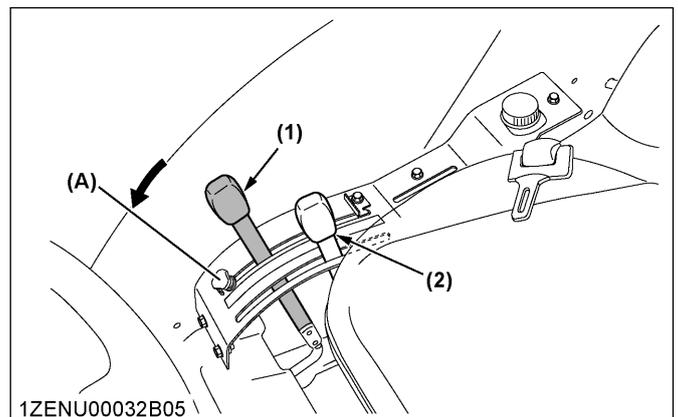
Setting the position-control-lever and the draft-control-lever stops the implement from going too deep and causing loss of traction and ground speed.



- (1) Ground surface
- (2) Implement penetration limit
- (3) Light soil
- (4) Position control lever
- (5) Draft control lever (if equipped)
- (A) Up
- (B) Down
- (C) Sensitive
- (D) Insensitive

### 4. Float control of lower link

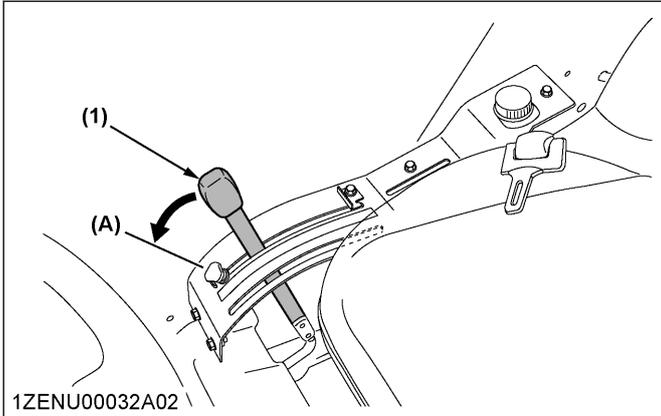
**With draft control (if draft control lever is equipped)**  
Place both the draft-control-lever and the position-control-lever in the float position to move the lower links freely along with the ground conditions.



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

**With position control**

Place the position-control-lever in the float position to move the lower links freely along with the ground conditions.



(1) Position control lever (A) Float

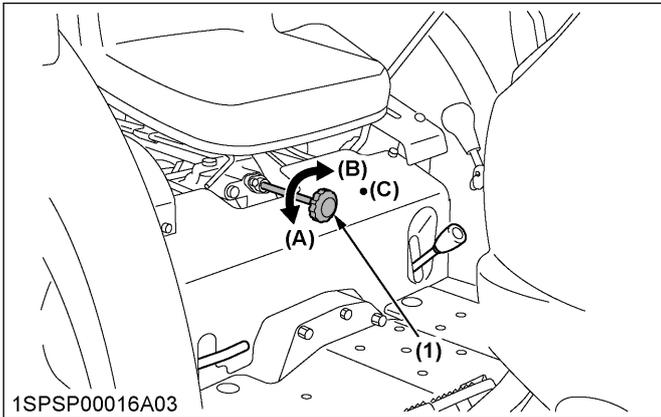
**5. 3-point hitch lowering speed**

**! WARNING**

To avoid personal injury or death:

- Fast lowering speed may cause damage or injury. You should adjust the lowering speed of 3-point hitch mounted implement to 2 or more seconds.

You can control the lowering speed of the 3-point hitch by adjusting the 3-point hitch lowering speed knob.



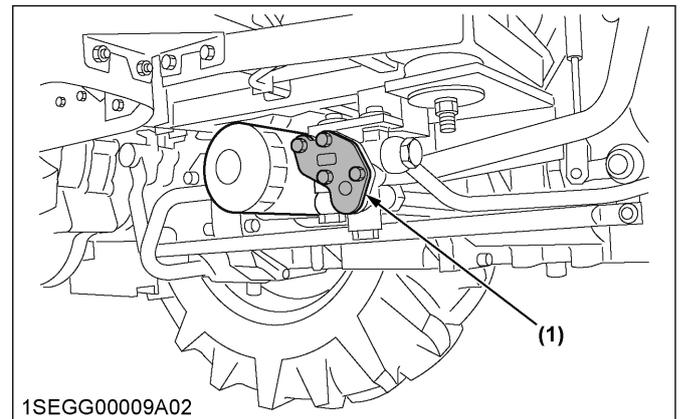
(1) 3-point hitch lowering speed knob (A) Fast (B) Slow (C) Lock

**AUXILIARY HYDRAULICS**

**1. How to use the hydraulic block type outlet when the hydraulically operated implement is attached**

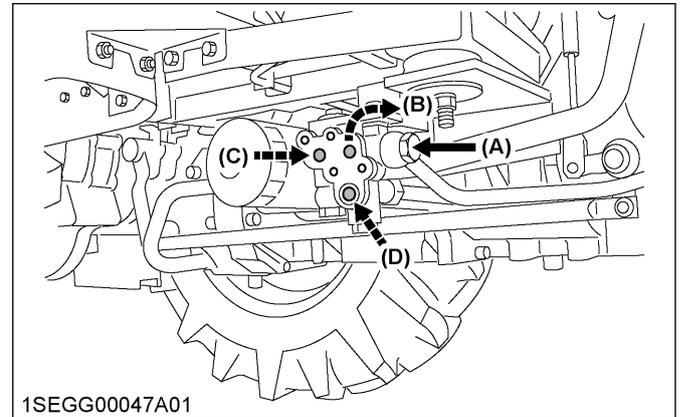
Hydraulic-block-type-outlet is useful when adding hydraulically operated implement such as front-end-loader, front blade, and so on.

1. Remove the block cover.
2. Route the implement inlet, outlet, and return hoses as shown in the illustration.



(1) Block cover

**Block cover (1) removed**



(A) From gear pump (B) To implement (C) From implement (outlet) (D) From implement (tank port)

To implement (B)	Max flow	35.8 L/min (9.5 gals./min)
	Max pressure	17.7 MPa (180 kgf/cm <sup>2</sup> ) [2560 psi]

# REMOTE HYDRAULIC CONTROL SYSTEM (IF EQUIPPED)

You can install the hydraulic-auxiliary-control-valves up to triple segments.

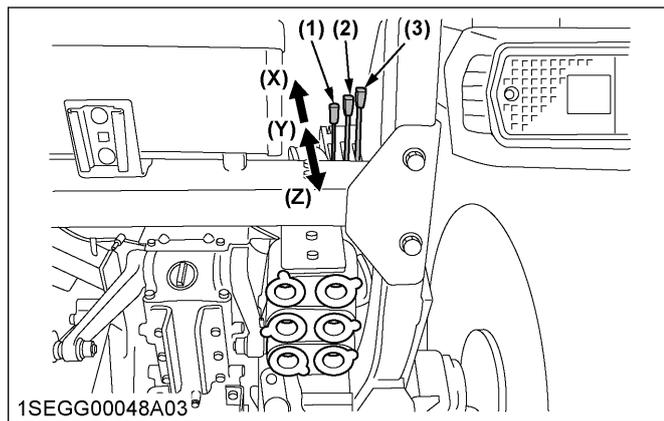
## 1. Remote control valve (if equipped)

There are 2 types of remote-control-valves available for the following models:

- Double acting valve
  - Double acting valve with float position
- Double-acting-valve with float position may be placed in the float mode with the remote-control-valve-lever all the way forward. The cylinder is free to extend or retract, letting an implement such as a loader bucket follow the ground.

**NOTE :**

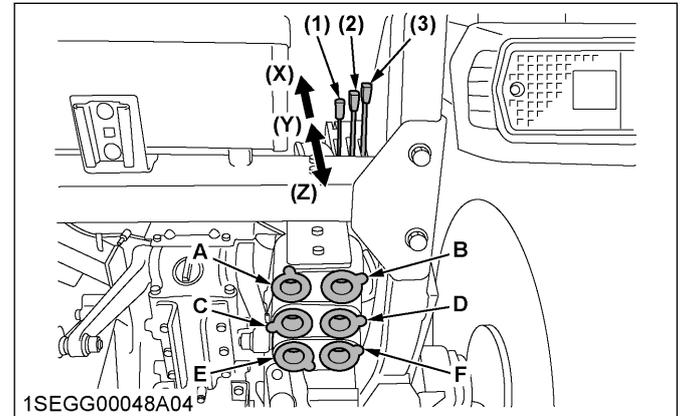
- You can attach the floating valve as the second segment only.



- (1) Remote control valve lever with double acting valve (X) Full forward (Y) Forward
- (2) Remote control valve lever with double acting valve / float position (Z) Rearward
- (3) Remote control valve lever with double acting valve

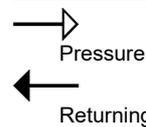
## 2. Remote control valve lever (if equipped)

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

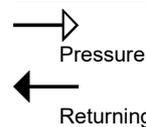


- (1) Remote control valve lever with double acting valve (X) Full forward (Y) Forward
- (2) Remote control valve lever with double acting valve / float position (Z) Rearward
- (3) Remote control valve lever with double acting valve

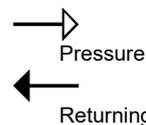
Remote control valve lever with double acting valve (1)	Forward		Rearward	
	Port-A	In ←	Out →	Out →
Port-B	Out →	In ←	In ←	Out →



Remote control valve lever with double acting valve (2)	Full Forward		Forward		Rearward	
	Port-C	In	Float	In ←	Out →	Out →
Port-D	Out	Float	Out →	In ←	In ←	Out →



Remote control valve lever with double acting valve (3)	Forward		Rearward	
	Port-E	In ←	Out →	Out →
Port-F	Out →	In ←	In ←	Out →



Port	Coupler size
A, B, C, D, E, F	PT 1/2

**IMPORTANT :**

- Do not hold the remote-control-valve-lever in the “REARWARD” position or the “FORWARD” position once the remote cylinder has reached the end of the stroke, because it will cause oil to flow through the relief valve. Forcing oil through the relief valve for extended periods will overheat the oil.
- When using the tractor-hydraulic-system to power the front loader, do not operate the boom and bucket cylinders simultaneously

**NOTE :**

- To use the single-acting cylinder with the float valve, connect the single-acting cylinder to the port-C.  
To extend a single-acting cylinder, pull the remote-control-valve-lever rearward. To retract a single-acting cylinder, push the remote-control-valve-lever fully forward to the “FLOAT” position. Do not hold the remote-control-valve-lever in the down position, the transmission fluid may be overheated.

2. Remove the dust plugs.
3. Insert the implement coupler to the tractor-hydraulic-coupler.
4. Pull the implement coupler slightly to make sure that the implement coupler and the tractor-hydraulic-coupler are firmly connected.

**NOTE :**

- Your local KUBOTA Dealer can supply parts to adapt the implement coupler and the tractor-hydraulic-coupler to hydraulic hoses.

**Disconnecting**

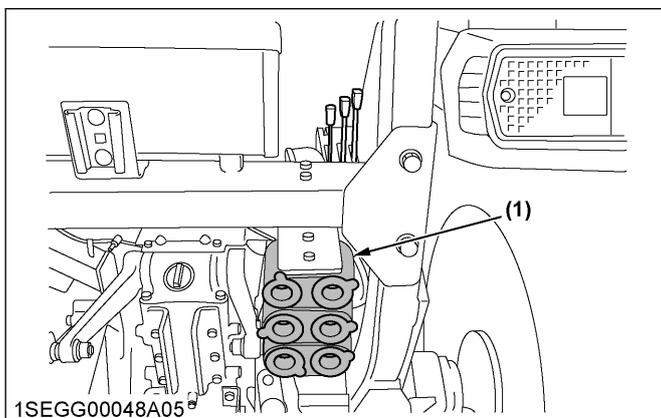
1. Lower the implement first to the ground to release the hydraulic pressure in the hoses.
2. Clean the implement coupler and tractor-hydraulic-coupler.
3. Relieve the pressure by moving the hydraulic-control-levers with engine shut off.
4. Pull the hose straight from the tractor-hydraulic-coupler to release it.
5. Clean the oil and dust from the tractor-hydraulic-coupler, then replace the dust plugs.

### 3. How to use the remote control valve coupler (if equipped)

**! WARNING**

To avoid personal injury or death:

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



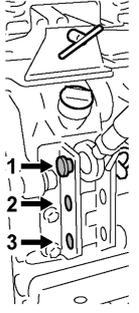
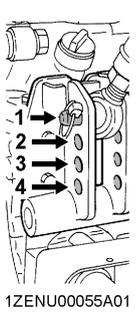
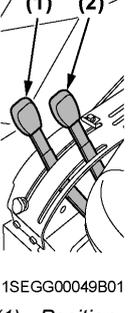
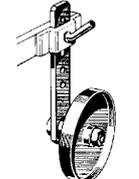
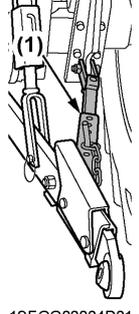
(1) Remote control valve coupler (if equipped)

**Connecting**

1. Clean both implement coupler and tractor-hydraulic-coupler.

### 4. Hydraulic control unit use reference chart

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

Implement	Soil condition	With position control		With draft control (if draft control lever is equipped)		Gauge wheel	Telescopic stabilizers	Remarks
		Top link mounting holes	(1) position control lever	Top link mounting holes	(1) Position control lever (2) Draft control lever			
	1AGAIAZAP122A							
Moldboard plow	Light soil	1 or 2	Position control	1 or 2	Draft and mixed control	Yes/no	Loose	Insert the set-pin through the slot on the outer tube that align with one of the holes on the inner bar. For implements with gauge wheels, lower the position-control-lever all way.
	Medium soil	2 or 3		2 or 3				
	Heavy soil	3		3				
Disc plow	-	2 or 3		2 or 3	Place the draft-control-lever to the suitable position and set the implement pull with the position-control-lever			
Harrower (spike, spring-tooth, and disc type)	---	2 or 3		2 or 3				
Sub-soiler								
Weeder and ridger					Position control	Yes	Tighten	Telescopic stabilizer should be tight enough to prevent excessive implement movement when implement is in raised position.
Earthmover, digger, scraper, manure fork, and rear carrier	---	3		4	Hold the draft-control-lever at the most front position during operation.	Yes/no		
Mower (mid mount type and rear mount type)						No		

# TIRES, WHEELS, AND BALLAST

## TIRES

### WARNING

To avoid personal injury or death:

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

(See Inflation pressure of tires on page 72)

### IMPORTANT :

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

## 1. Inflation pressure of tires

Though the tire pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Thus, check the tire pressure everyday and inflate as necessary.

	Tire sizes	Inflation Pressure
Rear	13.6-28, 4PR	150 kPa (1.5 kgf/cm <sup>2</sup> ) [22 psi]
	14.9-26, 4PR	140 kPa (1.4 kgf/cm <sup>2</sup> ) [20 psi]
	17.5L-24, 6PR	140 kPa (1.4 kgf/cm <sup>2</sup> ) [20 psi]
	44 x 18-20, 6PR	170 kPa (1.7 kgf/cm <sup>2</sup> ) [24 psi]
	610R470, 6PR	140 kPa (1.4 kgf/cm <sup>2</sup> ) [20 psi]
Front	9.5-16, 4PR	205 kPa (2.1 kgf/cm <sup>2</sup> ) [30 psi]
	7.5L-15, 6PR	220 kPa (2.2 kgf/cm <sup>2</sup> ) [32 psi]
	9.5L-15, 6PR	235 kPa (2.4 kgf/cm <sup>2</sup> ) [34 psi]

(Continued)

	Tire sizes	Inflation Pressure
Front	12-16.5, 6PR	140 kPa (1.4 kgf/cm <sup>2</sup> ) [20 psi]
	29 x 12.5-15, 4PR	140 kPa (1.4 kgf/cm <sup>2</sup> ) [20 psi]
	305R343, 2PR	70 kPa (0.7 kgf/cm <sup>2</sup> ) [10 psi]

### NOTE :

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

## 2. Dual tires

You can not use the dual tires.  
Dual tires are not approved.

## WHEEL ADJUSTMENT

### WARNING

To avoid personal injury or death:

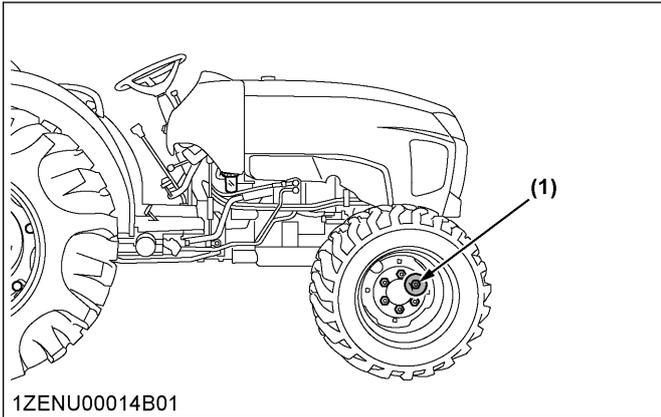
- When working on slopes or when working with a trailer, set the wheel tread as wide as practical for maximum stability.
- Support the tractor securely on stands before removing a wheel.
- Do not work under any hydraulically supported devices. They can settle, suddenly leak, or be accidentally lowered.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

## 1. Front wheels with 4-wheel drive

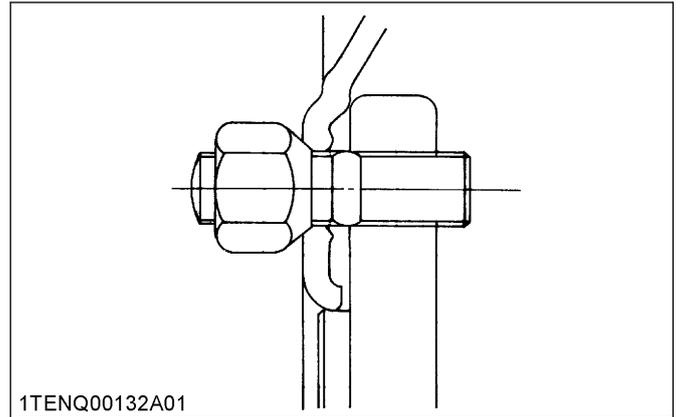
You can not adjust width of the front tread.

### IMPORTANT :

- Do not turn the front discs to obtain the wider tread.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques.



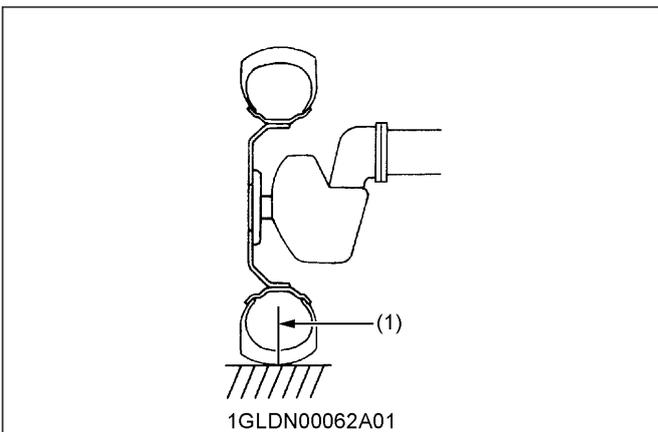
(1) Bolt



Bolt (1)	Tightening torque	124.0 N · m to 147.0 N · m (12.6 kgf · m to 15.0 kgf · m) [91.5 ft · lbs to 108.4 ft · lbs]
----------	-------------------	---

**Then recheck after driving the tractor as follows, and thereafter according to SERVICE INTERVALS TABLE on page 77.**

Driving tractor	200 m (200 yards) and 10 times of shuttle movement by 5 m (5 yards)
-----------------	---



(A) Tread

Tire	Tread
9.5-16 Farm	1325 mm (52.2 in.)
12-16.5 IND	1325 mm (52.2 in.)
29 x 12.5-15 Turf	1305 mm (51.4 in.)

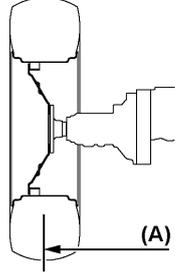
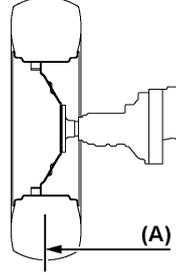
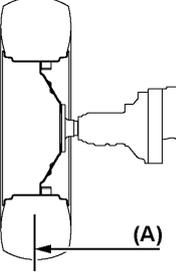
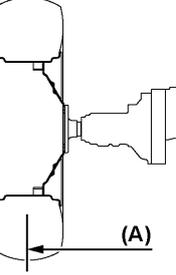
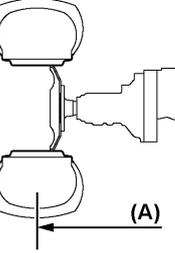
**IND**  
For industrial

**NOTE :**

- For wheels with beveled or tapered holes, use the tapered side of lug nut.

## 2. Rear wheels

You can adjust the width of rear tread with the standard equipped tires.  
 (See Adjusting the rear wheels on page 75)

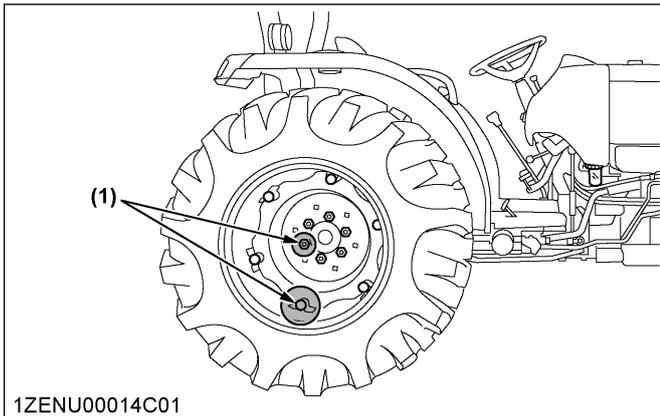
Model	 1SEGG00052A01 (A) Tread	 1SEGG00053A01 (A) Tread	 1SEGG00054A01 (A) Tread	 1SEGG00055A01 (A) Tread	 1SEGG00056A01 (A) Tread
14.9-26 Farm	---	---	1375 mm (54.2 in.)	1490 mm (58.6 in.)	---
13.6-28 Farm	1275 mm (50.2 in.)	1385 mm (54.4 in.)	1480 mm (58.2 in.)	1585 mm (62.4 in.)	---
17.5L-24 IND	1310 mm (51.6 in.)	1420 mm (55.9 in.)	1450 mm (57.1 in.)	1555 mm (61.2 in.)	---
44x18-20 Turf	---	---	---	---	1470 mm (57.9 in.)

## 2.1 Adjusting the rear wheels

This section describe the procedure to change the width of the rear tread.

**IMPORTANT :**

- Always attach the wheels as shown in the following figure.
- If you do not attach the rear wheel as the following figure, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques.



(1) Bolt

Bolt (1)	Tightening torque	196.0 N · m to 225.0 N · m (20.0 kgf · m to 23.0 kgf · m) [144.6 ft · lbs to 166.0 ft · lbs]
----------	-------------------	--

**Then recheck the wheel after driving the tractor as follows, and thereafter according to SERVICE INTERVALS TABLE on page 77.**

Driving tractor	200 m (200 yards) and 10 times of shuttle movement by 5 m (5 yards)
-----------------	---

1. Remove the bolts which mount the wheel rim and / or disk.
2. Change the position of the rim and / or disk (right and left) to the desired position.
3. Tighten the bolts which mount the wheel rim and / or disk.

## BALLAST

**⚠ WARNING**

To avoid personal injury or death:

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

## 1. Front ballast

Add weights if needed for stability and improve traction. Heavy pulling and heavy rear mounted implements tend to lift the front wheels.

Add enough ballast to maintain the steering control and prevent tip over.

Remove the weight when no longer needed.

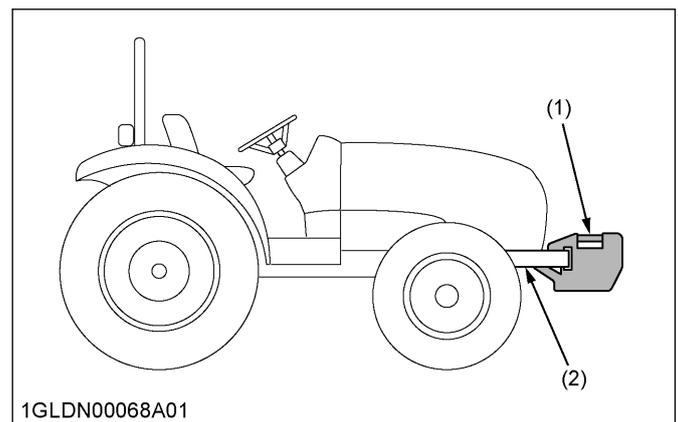
**IMPORTANT :**

- Do not overload the tires.
- Add no more weight than indicated in the following table.

Maximum weight	25 kg x 7 pieces
----------------	------------------

### 1.1 Front end weights (option)

You can attach the front-end-weights to the bumper. Refer to your implement operator's manual for required number of weights or consult your local KUBOTA Dealer to use it.



(1) Front end weights

(2) Bumper

## 2. Rear ballast

Add weights to rear wheels if needed to improve traction or for stability. you should match the amount of rear ballast to job and remove the rear ballast when it is not needed.

You should add the weight to the tractor in the form of liquid ballast, rear wheel weights, or a combination of both.

**IMPORTANT :**

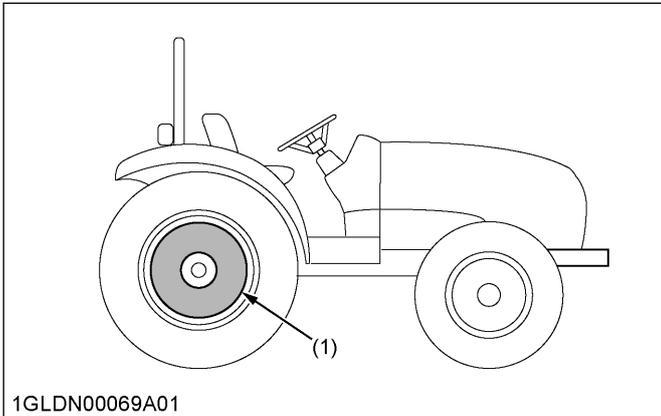
- Do not overload the tires.
- Add no more weight than indicated in the following table.

Maximum weight per wheel	47 kg x 3 pieces
--------------------------	------------------

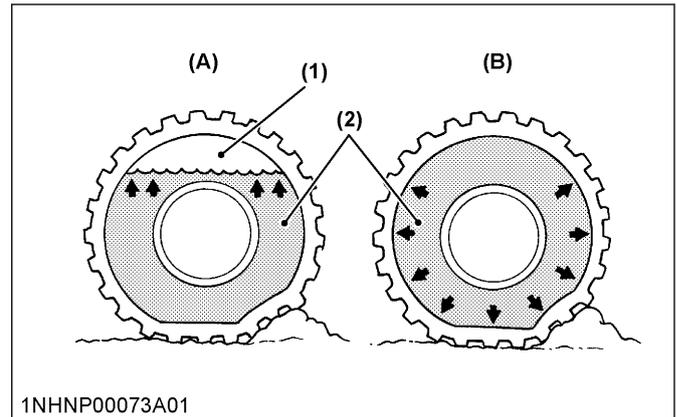
### 2.1 Rear wheel weights (option)

You can attach the rear-wheel-weights to the rear wheel.

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



(1) Rear wheel weights



(1) Air (A) Correct  
 (2) Water (B) Incorrect

	Correct	Incorrect
Amount of water	75% of full capacity of tire	100% of full capacity of tire
Characteristic	Air compresses like a cushion	Water can not be compressed

### 3. Liquid ballast in rear tires

Water and calcium-chloride-solution provides safe economical ballast. Using the liquid ballast properly will prevent tires, tubes, or rims from damaging. The addition of calcium chloride is recommended to prevent the water from freezing. Appropriate liquid ballast has the full approval of the tire companies. Consult your tire dealer for addition of calcium chloride.

#### Liquid weight per tire (75 percent filled)

Tire sizes	14.9-26	13.6-28	17.5L-24
Slush free at -10 °C (14 °F) Solid at -30 °C (-22 °F) [Approx. 1 kg (2 lbs.) CaCl <sub>2</sub> per 4 L (1 gal) of water]	215 kg (470 lbs.)	185 kg (410 lbs.)	235 kg (520 lbs.)
Slush free at -24 °C (-11 °F) Solid at -47 °C (-52 °F) [Approx. 1.5 kg (3.5 lbs.) CaCl <sub>2</sub> per 4 L (1 gal) of water]	225 kg (495 lbs.)	200 kg (440 lbs.)	250 kg (550 lbs.)
Slush free at -47 °C (-52 °F) Solid at -52 °C (-62 °F) [Approx. 2.25 kg (5 lbs.) CaCl <sub>2</sub> per 4 L (1 gal) of water]	235 kg (520 lbs.)	215 kg (470 lbs.)	265 kg (585 lbs.)

**IMPORTANT :**

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

# MAINTENANCE

## SERVICE INTERVALS TABLE

No.	Items			Indication on hour meter														Interval	Ref. page	
				50	100	150	200	250	300	350	400	450	500	550	600	650	700			
1	Greasing		---	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hrs	85
2	Engine start system	[Manual transmission]	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hrs	85
		[HST]																		86
3	Wheel bolts and nuts torque		Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hrs	87
4	Battery condition		Check		○		○		○		○		○		○		○	every 100 Hrs	89	*1
5	Fan belt		Adjust		○		○		○		○		○		○		○	every 100 Hrs	88	
6	Clutch		Adjust	⊙	○		○		○		○		○		○		○	every 100 Hrs	89	
7	Brake		Adjust		○		○		○		○		○		○		○	every 100 Hrs	89	
8	Fuel filter element		Clean		○		○		○		○		○		○		○	every 100 Hrs	88	
			Replace								○							every 400 Hrs	94	
9	Air cleaner element [Double element type]	Primary element	Clean		○		○		○		○		○		○		○	every 100 Hrs	87	*2
			Replace																every 1000 Hrs or 1 Year	96
		Secondary element	Replace																every 1000 Hrs or 1 Year	96
10	Engine oil		Change	⊙			○				○				○			every 200 Hrs	91	
11	Engine oil filter		Replace	⊙			○				○				○			every 200 Hrs	90	
12	Transmission oil filter [HST]		Replace	⊙			○				○				○			every 200 Hrs	91	
13	Toe-in		Adjust				○				○				○			every 200 Hrs	92	
14	Hydraulic oil filter	[Manual transmission]	Replace								○							every 400 Hrs	93	
		[HST]		⊙							○									
15	Transmission fluid		Change								○							every 400 Hrs	93	
16	Front axle pivot		Adjust												○			every 600 Hrs	95	
17	Engine valve clearance		Adjust															every 800 Hrs	96	*4
18	Front axle case oil		Change															every 800 Hrs	95	
19	Injection pressure of fuel injector nozzle		Check															every 1500 Hrs	96	*4
20	Cooling system		Flush															every 2000 Hrs or 2 years	96	*5
21	Coolant		Change															every 2000 Hrs or 2 years	96	*5
22	Injection pump		Check															every 3000 Hrs	98	*4
23	Turbocharger		Check															every 3000 Hrs	98	*4
24	Fuel line		Check															every 1 Year	98	*6
			Replace																every 4 years	100
25	Radiator hose and clamp		Check															every 1 year	98	*6

(Continued)

## MAINTENANCE

No.	Items		Indication on hour meter													Interval	Ref. page			
			50	100	150	200	250	300	350	400	450	500	550	600	650				700	
25	Radiator hose and clamp	Replace																every 4 years	100	*6
26	Power steering oil line	Check																every 1 year	100	*6
		Replace																every 4 years	100	*4, *6
27	Intake air line	Check																every 1 year	99	*6
		Replace																every 4 years	100	*4, *6
28	Oil cooler line [HST]	Check																every 1 year	99	*6
		Replace																every 4 years	100	*4, *6
29	Radiator hose and clamp	Replace																Service as re- quired	102	*4, *6
30	Power steering line	Replace															102		*4, *6	
31	Fuel line	Replace															102		*4, *6	
32	Intake air line	Replace															103		*4, *6	
33	Oil cooler line [HST]	Replace															103		*4, *6	
34	Fuel system	Bleed															100			
35	water in clutch housing	Drain															101			
36	Fuse	Replace															101			
37	Light bulb	Replace															102			

### IMPORTANT :

- Carry out the jobs indicated by Ⓞe after the first 50 hours of operation.

- \*1 When the battery is used for less than 100 hours per year, check the battery condition by reading the indicator annually.
- \*2 Clean the air cleaner more often in dusty conditions than in normal conditions.
- \*3 Every 1000 hours or every 1 year, whichever comes first.
- \*4 Consult your local KUBOTA Dealer for this service.
- \*5 Every 2000 hours or every 2 years, whichever comes first.
- \*6 Replace if any deterioration such as crack, hardening, and scar of deformation or damage occurred. However, replace every 4 years regardless of the condition.

# LUBRICANTS, FUEL, AND COOLANT

## Lubricants, fuel, and coolant table

Locations	Capacities	Lubricants	
	MX5200		
Fuel	48.0 L	No. 2-D diesel fue No. 1-D diesel fuel (If temperature is below -10 °C (14 °F))	
Coolant	7.0 L	Fresh clean soft water with antifreeze	
Engine crankcase with filter	8.0 L	For the engine oil, see the following <i>Engine oil</i> .	
		Above 25 °C (77 °F)	SAE30, SAE10W-30 or 15W-40
		-10 °C to +25 °C (14 °F to 77 °F)	SAE20, SAE10W-30 or 15W-40
		Below -10 °C (14 °F)	SAE10W-30
Transmission case	44.0 L	KUBOTA SUPER UDT-2 fluid	
Front axle case	8.5 L	KUBOTA SUPER UDT-2 fluid or SAE 80-SAE 90 gear oil	

## Greasing table

Greasing	No. of greasing points	Capacity	Type of grease
	MX5200		
Front wheel case support	2	Until grease overflows.	Multipurpose Grease NLGI-2 or NLGI-1 (GC-LB)
Front axle support	2		
Top link	2		
Top link bracket with draft control (if equipped)	2		
Lift rod	1		
Battery terminals	2	Moderate amount	

### NOTE :

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

### Engine oil

- The oil used in the engine should have an American Petroleum Institute (API) service classification and proper SAE engine oil according to the ambient temperatures shown in the previous table.
- With the emission control now in effect, the **CF-4** and **CG-4** lubricating oils have been developed for use of a lowsulfur fuel on on-road vehicle engines. When an off-road vehicle engine runs on a high-sulfur fuel, it is advisable to employ the "CF" or "better" lubricating oil with a high total base number (TBN) of 10 minimum.
- Refer to the following table for the suitable API classification engine oil according to the engine type (with internal EGR, external EGR or non-EGR) and the fuel (low-sulfur or high-sulfur fuel).

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

\*

EGR: Exhaust gas re-circulation

## MAINTENANCE

---

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

	except external EGR	with external EGR
Models	<b>MX5200</b>	---

### Fuel

- Cetane number of 45 is minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20 °C or elevations above 1500 m.
- If diesel fuel with sulfur content greater than 0.5% (5000 ppm) sulfur content is used, reduce the service interval for engine oil and filter by 50%.
- Never use diesel fuel with sulfur content greater than 0.05% (500 ppm) for external EGR type engine.
- Do not use diesel fuel with sulfur content greater than 1.0% (10000 ppm).
- Diesel fuels specified to EN 590 or ASTM D975 are recommended.
- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service (SAE J313 JUN87).
- Since this engine adopts EPA Tier 4 and Interim Tier 4 standards, the use of low sulfur fuel or ultra low sulfur fuel is mandatory in EPA regulated area (North America). Therefore, please use No.2-D S500 or S15 diesel fuel as an alternative to No.2-D, or use No.1-D S500 or S15 diesel fuel as an alternative to No.1-D if outside air temperature is below -10 °C.

### Transmission oil

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

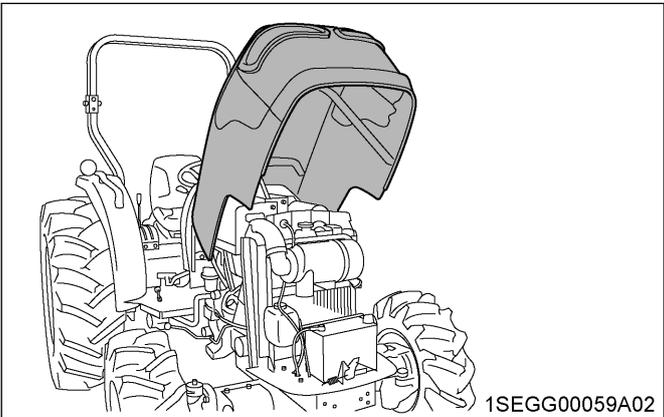
Do not mix different brands together.

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

# PERIODIC SERVICE

**⚠ WARNING**  
 To avoid personal injury or death:

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

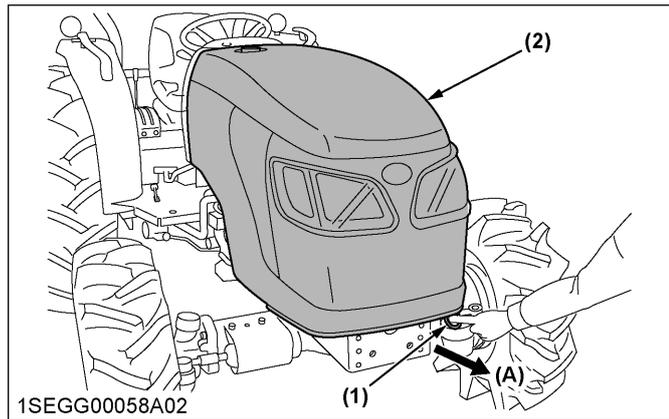


## OPENING THE HOOD

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

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

1. Hold the hood and pull the release lever.
2. Open the hood.



(1) Release lever                      (A) Pull  
 (2) Hood

**NOTE :**

- To close the hood, push the hood into initial position using both hands.

## DAILY CHECK

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

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

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

### 1. Walk around inspection

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

### 2. Checking the fuel tank and refueling

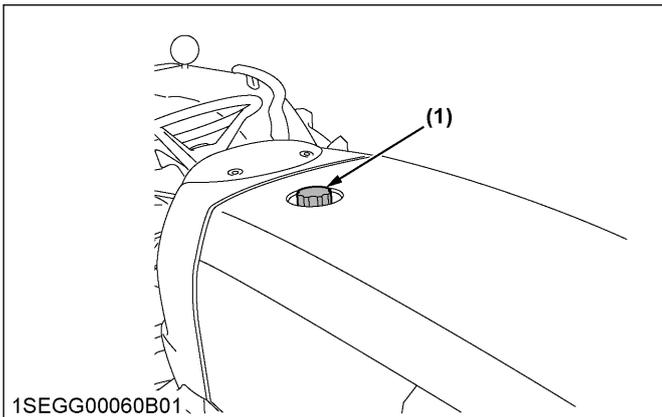
**⚠ WARNING**  
 To avoid personal injury or death:

- Never use fire.
- Do not smoke while refueling.
- Be sure to stop the engine and remove the starter key before refueling.
- Be sure to close the fuel-tank-cap after refueling.

- Use properly grounded fueling systems. Make sure that there is no static discharge.
- To avoid allergic skin reaction:
- Wash hands immediately after contact with diesel fuel.

**IMPORTANT :**

- Do not permit dirt or trash to get into the fuel system.
  - Be careful not to let the fuel tank become empty, otherwise air will enter the fuel system, necessitating bleeding before the next engine start.
  - Be careful not to spill during refueling. If a spill should occur, wipe it off at once, or it may cause a fire.
  - To prevent condensation (water) accumulation in the fuel tank, fill the fuel tank before parking overnight.
1. Turn the key switch to “ON” and check the amount of fuel by fuel gauge.
  2. Fill the fuel tank when the fuel gauge shows 1/4 or less fuel in tank.



(1) Fuel tank cap

Fuel tank capacity	48.0 L
--------------------	--------

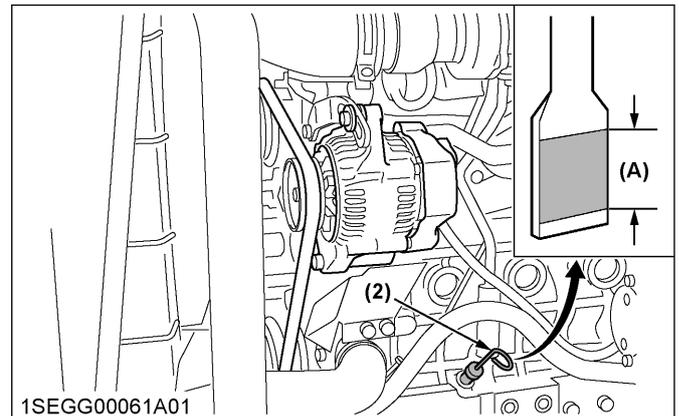
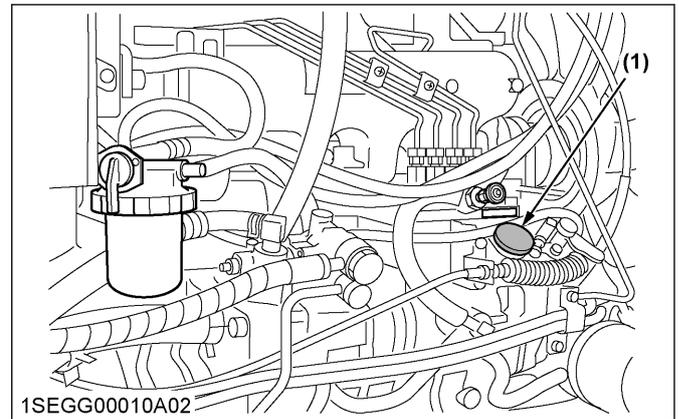
### 3. Checking the engine oil level

- ! WARNING**  
 To avoid personal injury or death:
- Be sure to stop the engine and remove the starter key before checking the engine-oil-level.

Check the engine oil before starting the engine or 5 minutes or more after the engine has stopped.

1. Park the machine on a flat surface.
2. To check the engine-oil-level, draw out the dipstick.
3. Wipe the dipstick clean.
4. Replace the dipstick.

5. Draw the dipstick out again.
6. Check to see that the engine-oil-level lies between the 2 notches.
7. If the engine-oil-level is too low, add new engine oil to the prescribed level at the oil inlet.  
 (See LUBRICANTS, FUEL, AND COOLANT on page 79.)



(1) Oil inlet  
 (2) Dipstick  
 (A) Range which engine oil level is acceptable within

**IMPORTANT :**

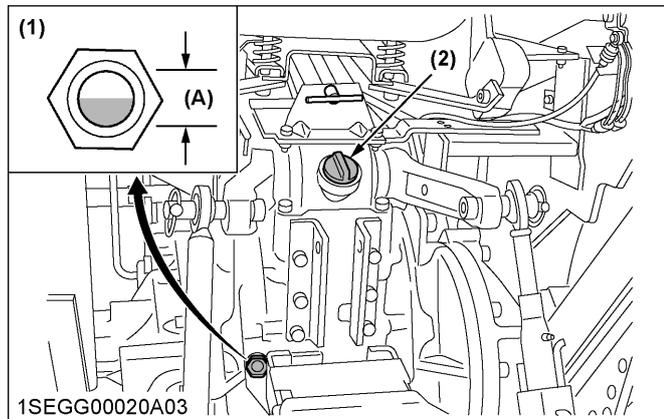
- When using an engine oil of different maker or viscosity from the previous one, remove all of the old engine oil. Never mix 2 different types of engine oil.
- If the engine oil level is low, do not run the engine.

### 4. Checking the transmission fluid level

- ! WARNING**  
 To avoid personal injury or death:
- Park the tractor on a firm, flat, and level surface, lower the implement to the ground, and shut off the engine before checking the transmission-fluid-level.

1. Park the machine on a flat surface.

2. Lower the implement.
3. Shut off the engine.
4. View the transmission-fluid-level through the transmission-fluid-level-gauge.



(1) Gauge (A) Range which transmission oil level is acceptable within  
 (2) Oil inlet

5. If the transmission-fluid-level is too low, add new transmission fluid to the prescribed level at the oil inlet.  
 (See LUBRICANTS, FUEL, AND COOLANT on page 79)

**IMPORTANT :**

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

**5. Checking the coolant level**

**! WARNING**

To avoid personal injury or death:

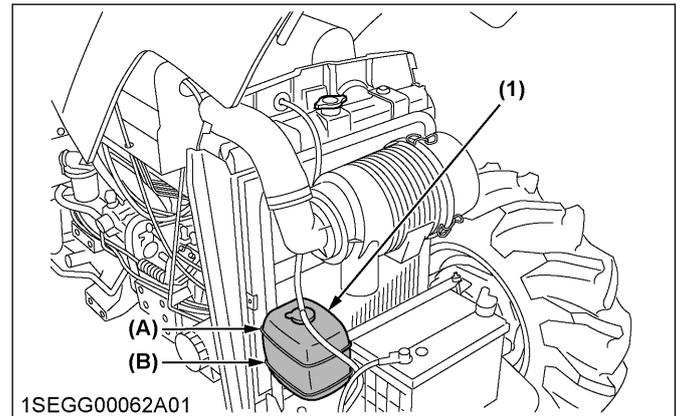
- Do not remove the radiator cap while the coolant is hot. When the coolant is cool, slowly rotate the radiator cap to the first stop and allow sufficient time for excess pressure to escape before removing the radiator cap completely.

**IMPORTANT :**

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

1. Check to see that the coolant level is between the **[FULL]** and **[LOW]** marks of recovery tank.
2. When the coolant level drops due to evaporation, add soft water only up to the full level. In case of leakage, add antifreeze and soft water in the specified mixing ratio up to the full level.

See Flushing the cooling system and changing the coolant on page 96.



(1) Recovery tank (A) Full (B) Low

**6. Cleaning the grill, the radiator screen, and the oil cooler**

**! WARNING**

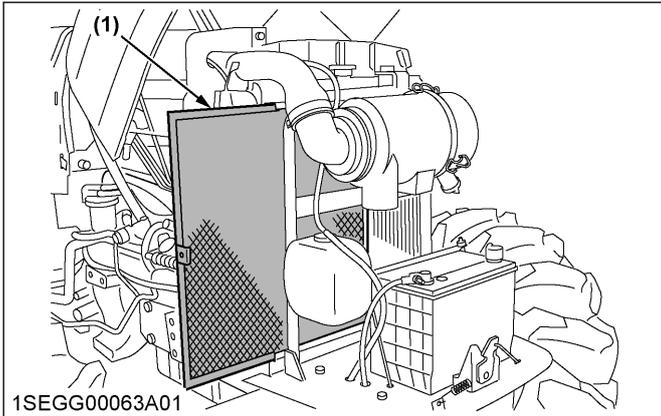
To avoid personal injury or death:

- Be sure to stop the engine before removing the radiator screen.
- Before checking or cleaning the radiator screen, stop the engine and wait until it is cooled down enough.

**IMPORTANT :**

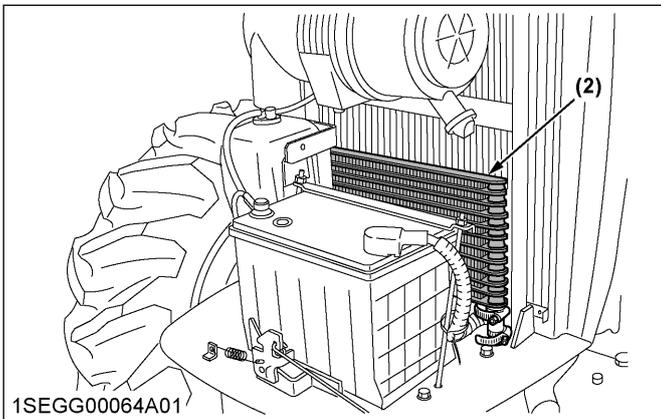
- Clean the grill and screen from debris to prevent the engine from overheating and to allow good air intake for the air cleaner.
1. Fully turn the steering handle clockwise.
  2. Check the front grill to be sure that it is clean of debris.

- Detach the screen and remove all the foreign material.



(1) Radiator screen

[HST Type]



(2) Oil cooler

### 7. Checking the brake pedals and the clutch pedal

**! WARNING**  
**To avoid personal injury or death:**

- Make sure that both brake pedals have equal adjustment when being locked together. Incorrect or unequal adjustments of brake pedals can cause the tractor to swerve or roll-over.

- Inspect the brake pedals and the clutch pedal for free travel and smooth operation.
- Adjust the brake pedals or the clutch pedal if incorrect measurement is found.  
 (See Adjusting the brake pedal on page 89 and Adjusting the clutch pedal on page 89)

Proper brake pedal free travel	15 mm to 20 mm (5/8 in. to 13/16 in.) on brake pedal. Keep the free travel in the right and left brake pedals equal.
--------------------------------	---

Proper clutch pedal free travel	20 mm to 30 mm (13/16 in. to 1-3/16 in.) on the clutch pedal
---------------------------------	--

### 8. Checking the gauges, the meters, and the Easy Checker™

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

### 9. Checking the head light, hazard light, and so on

- Inspect the lights such as the head light, hazard light, and so on for broken bulbs and lenses.
- Replace the lights such as the head light, hazard light, and so on if they are broken.

### 10. Checking the seat belt and the ROPS

- Always check condition of the seat belt and the hardware to attach the ROPS before operating the tractor.
- Replace the seat belt or the ROPS if it is damaged.

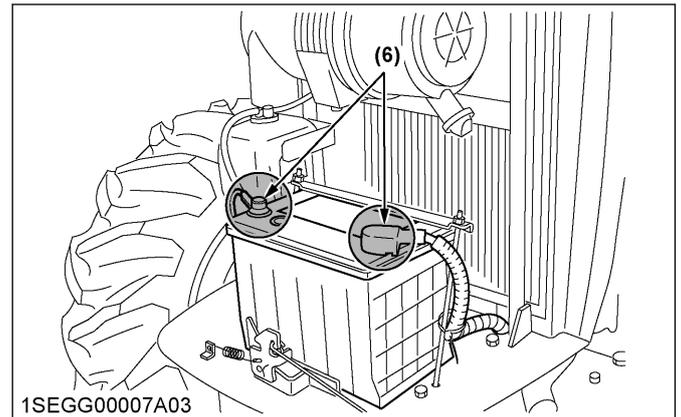
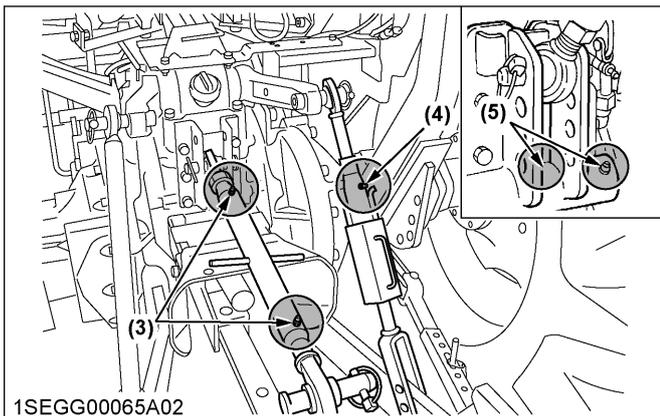
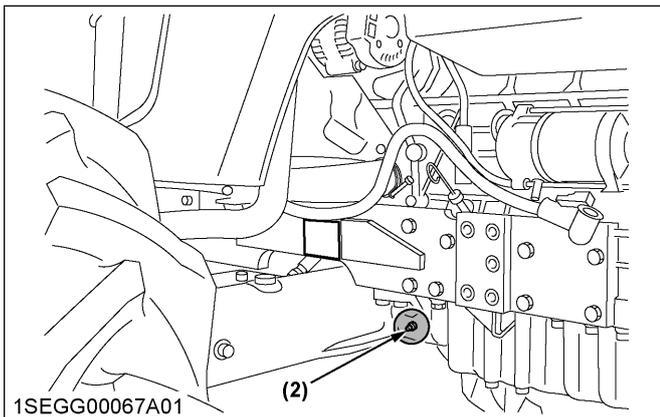
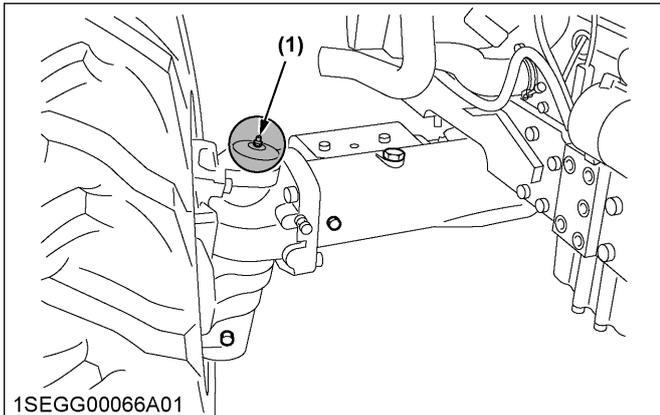
### 11. Checking the movable parts

- If any of the movable parts, such as levers and pedals, is not smoothly moved because of rust or anything sticky, remove the rust or the sticky thing, and apply oil or grease on the relevant spot. Do not force the movable parts into motion. Otherwise, the machine may get damaged.

# SERVICE EVERY 50 HOURS

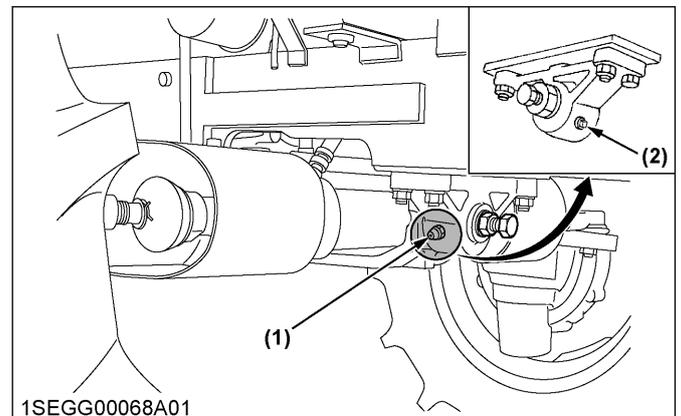
## 1. Lubricating the grease fittings

1. Apply a small amount of multipurpose grease to the following points every 50 hours.  
If you have operated the machine in extremely wet and muddy conditions, lubricate the grease fittings more often.



- |   |   |
|---|---|
| (1) Grease fitting (front wheel case support)[RH and LH]              | (5) Grease fitting (hydraulic arm case support) |
| (2) Grease fitting (front axle support)                               | (6) Battery terminals                           |
| (3) Grease fitting (lifting rod) [RH]                                 |   |
| (4) Grease fitting (top link bracket with draft control)(if equipped) |   |

2. When applying the grease to the forward front-axle-support, follow the following procedure.
  - a. Remove the breather plug.
  - b. Apply grease until the grease overflows from the breather-plug-port.
  - c. After greasing, reinstall the breather plug.



- |   |                   |
|---|-------------------|
| (1) Grease fitting (forward front axle support) | (2) Breather plug |
|---|-------------------|

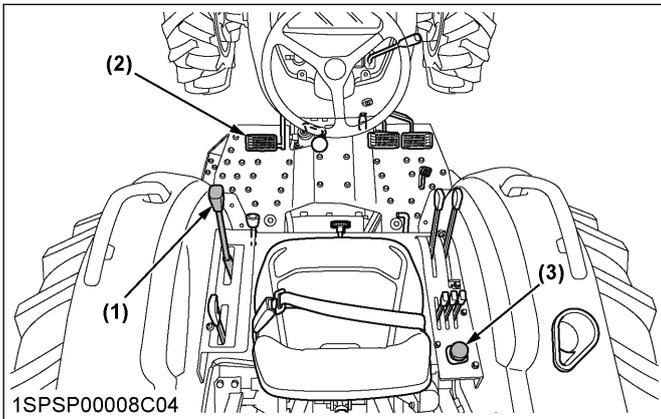
## 2. Checking the engine start system [Manual transmission type]

**⚠ WARNING**  
To avoid personal injury or death:

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

**Preparation before testing**

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



(1) Synchro-shuttle shift lever (3) PTO clutch control switch  
(2) Clutch pedal

**Test of switch for the synchro-shuttle shift lever**

1. Sit on the operator's seat.
2. Shift the synchro-shuttle shift lever to the "FORWARD" or "REVERSE" position.
3. Depress the clutch pedal fully.
4. Disengage the PTO-clutch-control-switch.
5. Turn the starter key to the "START" position.
6. Make sure that the engine does not crank.
7. If the engine cranks, consult your local KUBOTA dealer for servicing the synchro-shuttle shift lever.

**Test of switch for the PTO clutch control switch**

1. Sit on the operator's seat.
2. Engage the PTO-clutch-control-switch.
3. Depress the clutch pedal fully.
4. Shift the shuttle-shift-lever to the neutral position.
5. Turn the starter key to the "START" position.
6. Make sure that the engine does not crank.
7. If the engine cranks, consult your local KUBOTA dealer for servicing the PTO-clutch-control-switch and lever.

**Test of the switch for the operator's seat**

1. Sit on the operator's seat.
2. Depress the clutch pedal fully.
3. Start the engine.
4. Engage the PTO-clutch-control-switch.
5. Stand up.  
Do not get off the machine.
6. Make sure that the engine shuts off after approximately 1 second.
7. If the engine does not stop, consult your local KUBOTA Dealer for servicing the operator's seat.

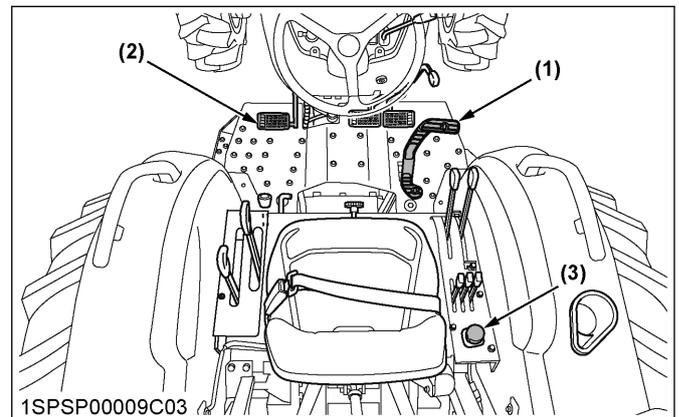
**3. Checking the engine start system [HST type]**

**! WARNING**

- To avoid personal injury or death:
- Do not allow anyone near the tractor while testing.
  - If the tractor does not pass the test, do not operate the tractor.

**Preparation before testing**

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



(1) Speed control pedal (3) PTO clutch control switch  
(2) Clutch pedal

**Test of switch for the speed control pedal**

1. Sit on the operator's seat.
2. Depress the clutch pedal fully.
3. Depress the speed-control-pedal to the desired direction.
4. Disengage the PTO-clutch-control-switch.
5. Turn the starter key to the start position.
6. Make sure that the engine does not crank.
7. If the engine cranks, consult your local KUBOTA dealer for servicing the speed-control-pedal.

**Test of switch for the PTO clutch control switch**

1. Sit on the operator's seat.
2. Depress the clutch pedal fully.
3. Engage the PTO-clutch-control-switch.
4. Place the speed-control-pedal in the neutral position.
5. Turn the starter key to the start position.
6. Make sure that the engine does not crank.
7. If the engine cranks, consult your local KUBOTA dealer for servicing the PTO-clutch-control-switch.

**Test of the switch for the operator's seat**

1. Sit on the operator's seat.
2. Start the engine.
3. Engage the PTO-clutch-control-switch.
4. Stand up.  
Do not get off the machine.

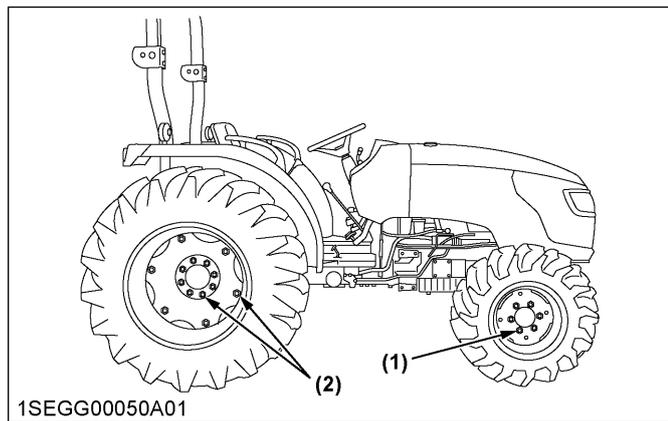
5. Make sure that the engine shuts off after approximately 1 second.
6. If the engine does not stop, consult your local KUBOTA Dealer for servicing the operator's seat.

### 4. Checking the wheel bolt torque

**⚠ WARNING**  
**To avoid personal injury or death:**

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

1. Check the wheel bolts and nuts regularly especially when they are new.
2. If the bolts and nuts of the wheels are loose, tighten them as follows.



(1) Bolt (front wheel)                      (2) Bolt (rear wheel)

Bolt (front wheel) (1)	Tightening torque	124.0 N·m to 147.0 N·m (12.6 kgf·m to 15.0 kgf·m) [91.5 ft·lbs to 108.4 ft·lbs]
Bolt (rear wheel) (2)		196.0 N·m to 225.0 N·m (20.0 kgf·m to 23.0 kgf·m) [144.6 ft·lbs to 166.0 ft·lbs]

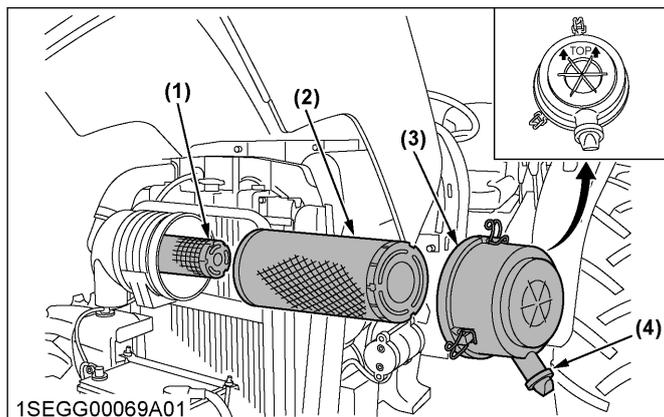
## SERVICE EVERY 100 HOURS

### 1. Cleaning the air cleaner primary element [Double element type]

**IMPORTANT :**

- The air cleaner uses a dry element. Never apply oil.
- Do not run the engine with the filter element removed.
- Do not touch the secondary element except in cases where replacing is required.

(See Replacing the air cleaner primary element and secondary element on page 96.)



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

1. Remove the cover of the air cleaner and the primary element.
2. Clean the primary element.
3. When dry dust adheres to the primary element, blow compressed air from the inside, turning the primary element.  
 Pressure of compressed air must be under the following value.

Pressure of compressed air	205 kPa (2.1 kgf/cm <sup>2</sup> ) [30 psi]
----------------------------	---

4. When carbon or oil adheres to the primary element, follow the following procedure.
  - a. Soak the primary element in detergent for 15 minutes.
  - b. Then wash the primary element several times in water.
  - c. Rinse the primary element with clean water.
  - d. Dry the primary element naturally.
  - e. After the primary element is fully dried, inspect the inside of the primary element with a light and check if it is damaged or not.
5. Replace the primary element of the air cleaner.  
 Be sure to perform once yearly or after every sixth cleaning, whichever comes first.

**IMPORTANT :**

- Be sure to refit the cover with the arrow ↑ (on the rear of cover) upright. If the cover is improperly fitted, the evacuator valve will not function and dust will adhere to the primary element.

**Evacuator valve**

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

**NOTE :**

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

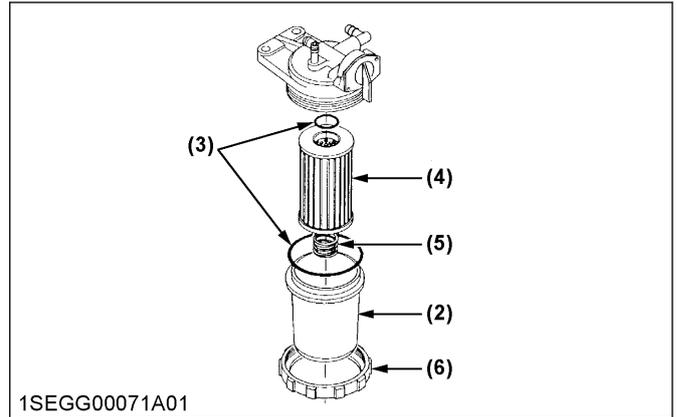
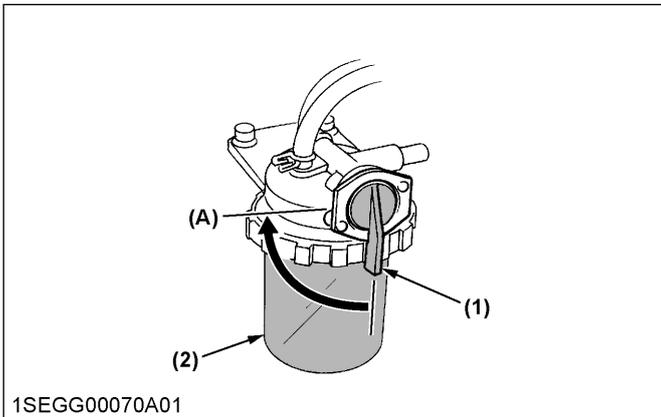
## 2. Cleaning the fuel filter

**IMPORTANT :**

- If dust and dirt enters the fuel system, the fuel pump and injection nozzles are subject to premature wear. To prevent the premature wear, be sure to clean the fuel-filter-bowl and filter element periodically.

Carry out the cleaning of the fuel filter not in the field, but in a clean place.

1. Close the fuel-shutoff-valve.
2. Remove the screw ring, remove the filter bowl, and rinse the inside with kerosene.
3. Remove the filter element and dip it in the kerosene to rinse.
4. After cleaning, reassemble the fuel filter, keeping out dust and dirt.
5. Bleed the fuel system.  
(See Bleeding the fuel system on page 100.)



- (1) Fuel shutoff-valve
  - (2) Fuel filter bowl
  - (3) O ring
  - (4) Filter element
  - (5) Spring
  - (6) Screw ring
- (A) Close

## 3. Adjusting the fan belt tension

**! WARNING**

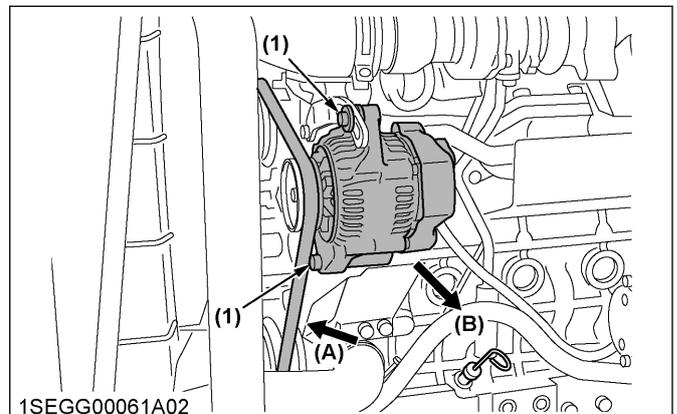
To avoid personal injury or death:

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

1. Stop the engine and remove the starter key.
2. Apply moderate thumb pressure to the belt between the pulleys.

Proper fan belt tension	A deflection is 12 mm (0.48 in.) when the fan belt is pressed (68.6 N (7 kgf) [15.4 lbs]) in the middle of the span.
-------------------------	--

3. If tension of fan belt is incorrect, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection of the fan belt falls within the acceptable limits.



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

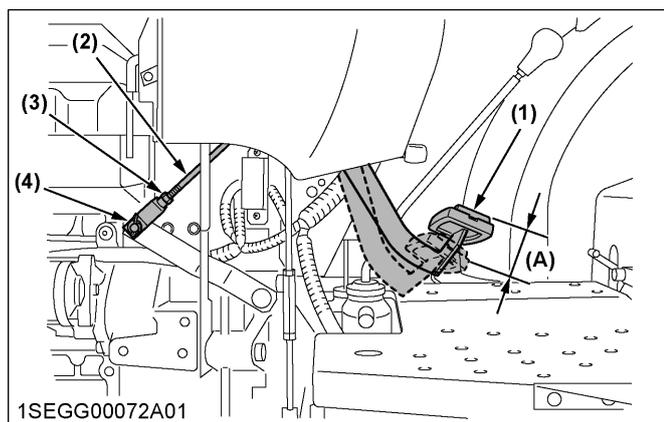
4. Replace the fan belt if it is damaged.

### 4. Adjusting the clutch pedal

1. Stop the engine and remove the starter key.
2. Slightly depress the clutch pedal and measure the free travel at the top of stroke of the clutch pedal.

Proper clutch pedal free travel	20 mm to 30 mm (13/16 in. to 1-3/16 in.) on the clutch pedal
---------------------------------	--

3. If adjustment is needed, follow the following procedure.
  - a. Loosen the lock nut.
  - b. Remove the cotter pin.
  - c. Adjust the rod length within acceptable limits.



(1) Clutch pedal (A) Free travel  
 (2) Clutch rod  
 (3) Nut  
 (4) Cotter pin

4. Retighten the lock nut and split the cotter pin.

### 5. Adjusting the brake pedal

#### ! WARNING

To avoid personal injury or death:

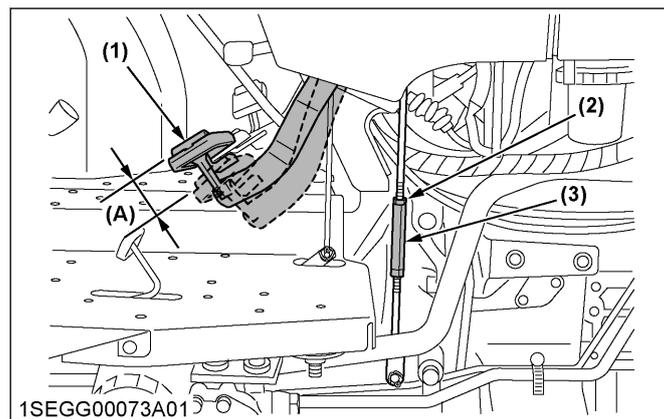
- Park on flat ground, stop the engine, and chock the wheels before checking the brake pedal.
- To prevent uneven braking, the specification of the brakes must be within the recommended limit. If you find the brakes to be beyond the specification range, contact your local KUBOTA dealer for adjusting the brakes.

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

Proper brake pedal free travel	15 mm to 20 mm (5/8 in. to 13/16 in.) on brake pedal. Keep the free travel in the right and left brake pedals equal.
--------------------------------	---

3. If adjustment is needed, loosen the lock nut and turn the turnbuckle to adjust the rod length within the acceptable limits.

4. Retighten the lock nut.



(1) Brake pedal (A) Free travel  
 (2) Lock nut  
 (3) Turnbuckle

### 6. Checking the battery condition

#### ! DANGER

To avoid the possibility of battery explosion:

For the refillable type battery, follow the following instructions.

- Do not use or charge the refillable type battery if the fluid level is below the [LOWER] (lower limit level) mark. Otherwise, battery-component-parts may prematurely deteriorate, which may shorten the service life of battery 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 the electrolyte away from eyes, hands, and clothes. If you are splattered with the electrolyte, 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 an eye protection and rubber gloves when working around the battery.

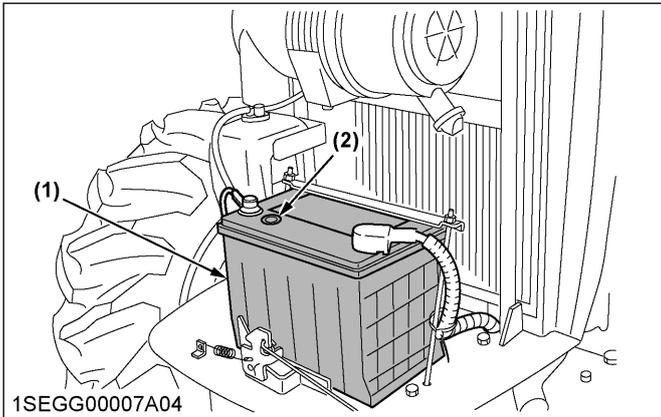
Mishandling the battery shortens the service life and adds to maintenance costs.

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.

**How to read the indicator**

1. Check the battery condition by reading the indicator.



1SEGG00007A04

(1) Battery (2) Indicator

**State of indicator display**

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

**NOTE :**

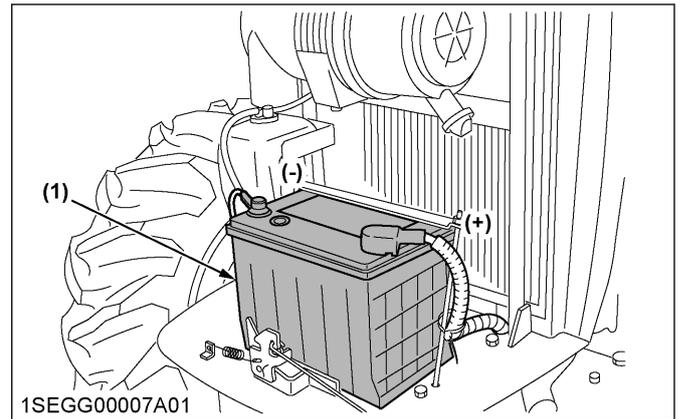
- The factory-installed battery is of non-refillable type. If the indicator turns white, do not charge the battery but replace it with a new one.

**Charging the battery**

**! WARNING**

To avoid personal injury or death:

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



1SEGG00007A01

(1) Battery

1. To charge the battery slowly, connect the positive terminal of battery to the positive terminal of charger, and the negative terminal of battery to the negative terminal of charger. Then recharge in the standard fashion.

A boost charge is only for emergencies. Boost charge 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 recharge the battery may shorten the service life of battery.

The battery is charged if the indicator display turns green from black.

2. When exchanging an old battery for a new one, use the battery of equal specification shown in the following table.

Battery type	Volts (V)	Reserve capacity (min)	CCA (SAE) (A)	Normal charging rate (A)
80D26R	12	133	582	6.5

**CCA**

Cold cranking ampere

**Direction for battery storage**

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

**SERVICE EVERY 200 HOURS**

**1. Replacing the engine oil filter**

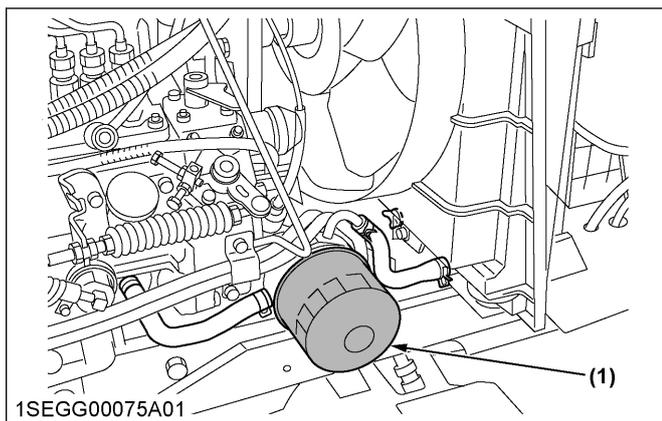
**! WARNING**

To avoid personal injury or death:

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

**IMPORTANT :**

- To prevent serious damage to the engine, use only a KUBOTA genuine filter.
1. Remove the engine-oil-filter.
  2. Put a film of clean engine oil on the rubber seal of the new engine-oil-filter.
  3. Tighten the engine-oil-filter quickly until it contacts the mounting surface.
  4. Tighten the engine-oil-filter by hand an additional 1/2 turn only.  
After replacing the engine-oil-filter, the engine oil normally decreases a little.
  5. Make sure that the engine oil does not leak through the seal and be sure to check the oil level on the dipstick.
  6. Then, replenish the engine oil up to the prescribed level.



(1) Engine oil filter

## 2. Changing the engine oil

**⚠ WARNING**

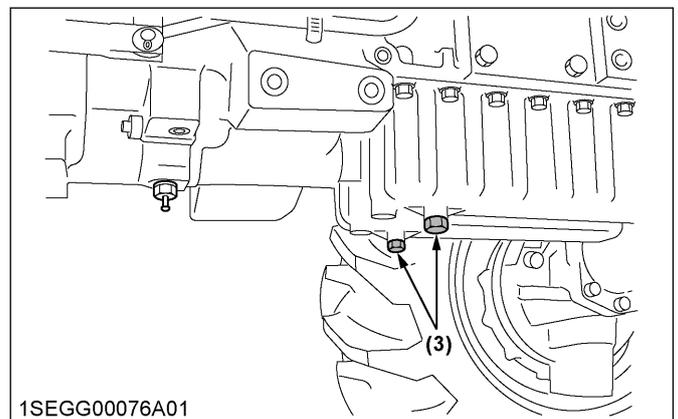
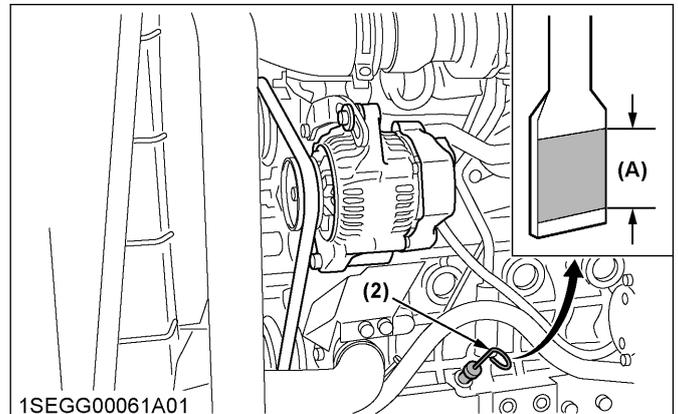
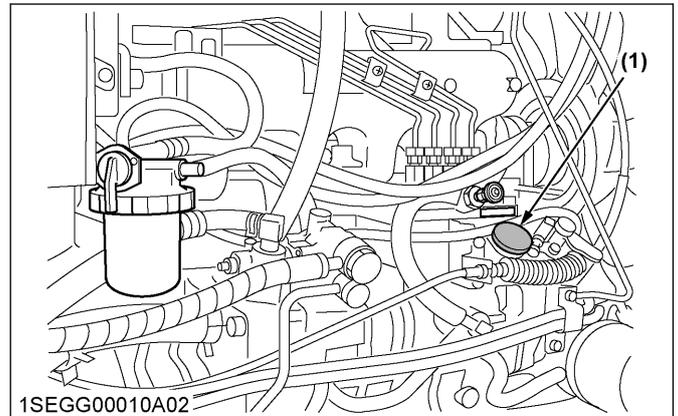
To avoid personal injury or death:

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

1. To drain the used engine oil, remove the drain plug at the bottom of the engine and drain the engine oil completely into the oil pan.
2. After draining the engine oil, reinstall the drain plug.
3. Fill with the new engine oil up to the upper notch on the dipstick.

(See LUBRICANTS, FUEL, AND COOLANT on page 79)

Engine oil capacity with engine oil filter	8.0 L
--	-------



- (1) Oil inlet
- (2) Dipstick
- (3) Drain plug

(A) Range which engine oil level is acceptable within

## 3. Replacing transmission oil filter [HST type only]

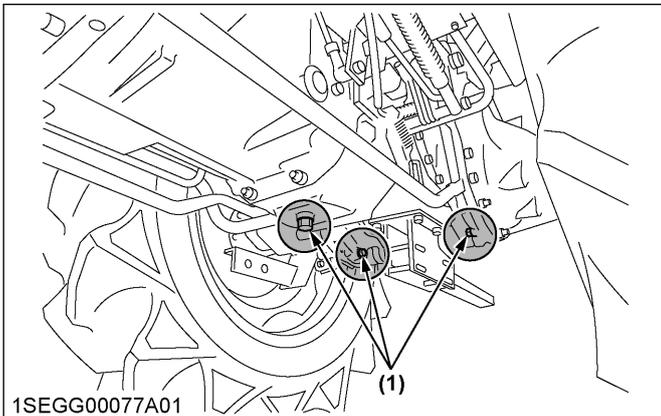
**⚠ WARNING**

To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before changing the transmission-oil-filter-cartridge.
- Allow the engine to cool down sufficiently because the transmission oil can be hot and can burn.

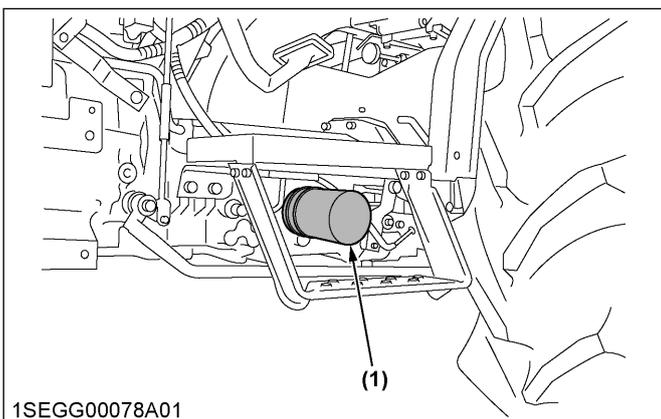
**IMPORTANT :**

- To prevent serious damage to the hydraulic system, use only a KUBOTA genuine filter.
  - Do not operate the tractor immediately after changing the transmission fluid.
- Run the engine at medium speed for a few minutes to prevent damage to the transmission.
1. Remove the drain plugs at the bottom of the transmission case and drain the transmission oil completely into the oil pan.
  2. After draining the transmission oil, reinstall the drain plugs.



(1) Drain plugs

3. Remove the transmission-oil-filter.



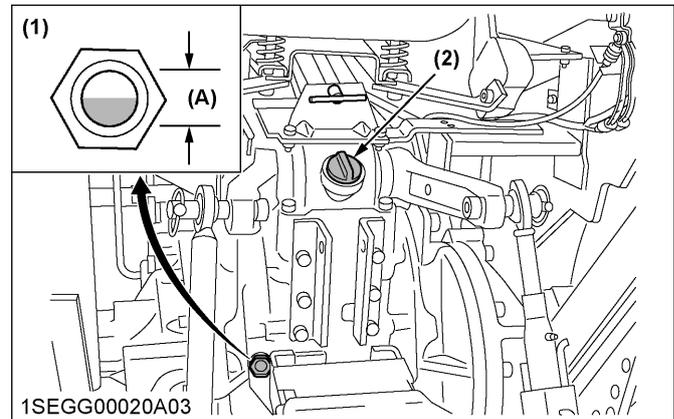
(1) Transmission oil filter [HST type]

4. Put a film of clean transmission oil on the rubber seal of the new transmission-oil-filter.
5. Quickly tighten the transmission-oil-filter until it contacts the mounting surface, then, with a filter

wrench, tighten the transmission-oil-filter an additional one turn only.

6. After the new transmission-oil-filter has been replaced, fill with the transmission oil up to the upper line of the gauge.

Transmission oil capacity	44.0 L
---------------------------	--------



(1) Gauge (A) Range transmission oil level is acceptable within  
 (2) Oil inlet

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

**4. Checking the toe-in**

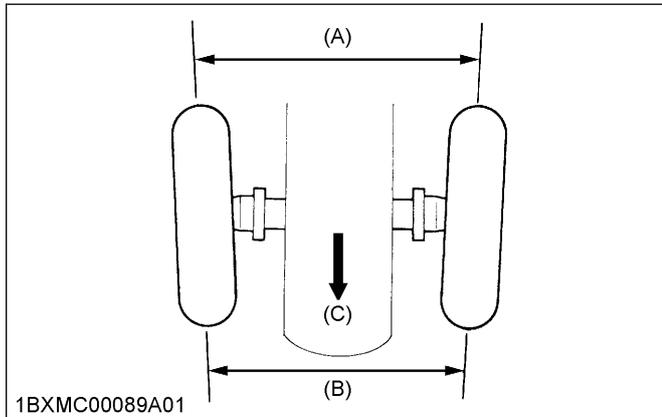
**! WARNING**

To avoid personal injury or death:

- Park the tractor on a firm, flat, and level place.
- Lower the implement to the ground and lock the parking brake.
- Stop the engine and remove the starter key.

1. Park the tractor on a flat place.
  2. Turn the steering wheel so that the front wheels are in the straight ahead position.
  3. Lower the implement, lock the parking brake, and stop the engine.
  4. Measure the distance between the tire beads at front of tire, at the hub height.
  5. Measure the distance between the tire beads at rear of tire, at the hub height.
- The distance between the tire beads at front of tire should be shorter than the distance between the tire beads at rear of tire.

- If the distance between the tire beads at front of tire is not shorter than the distance between the tire beads at rear of tire, adjust the length of tie rod. (See Adjusting the toe-in on page 93.)

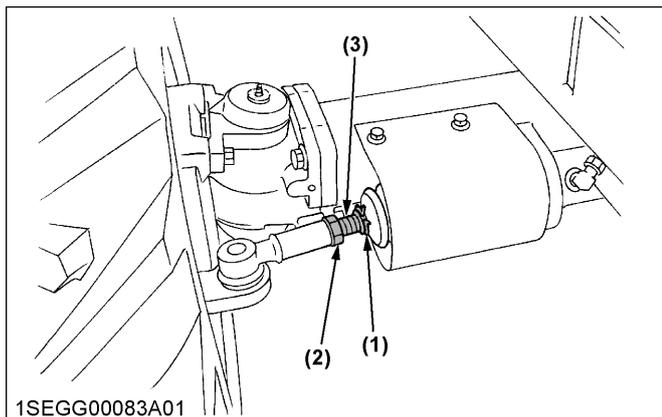


1BXMC00089A01  
 (A) Wheel-to-wheel distance at rear  
 (B) Wheel-to-wheel distance at front  
 (C) Front

Proper toe-in	2 mm to 8 mm (1/16 in. to 5/16 in.)
---------------	--

### 4.1 Adjusting the toe-in

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



1SEGG00083A01  
 (1) Snap ring  
 (2) Tie-rod nut  
 (3) Tie-rod joint

Tie-rod nut (2)	Tightening torque	167 N · m to 196 N · m (17 kgf · m to 20 kgf · m) [123.2ft · lbs to 144.6 ft · lbs]
-----------------	-------------------	---

## SERVICE EVERY 400 HOURS

### 1. Changing the transmission fluid, replacing the hydraulic oil filter, and cleaning the magnetic filter

#### ! WARNING

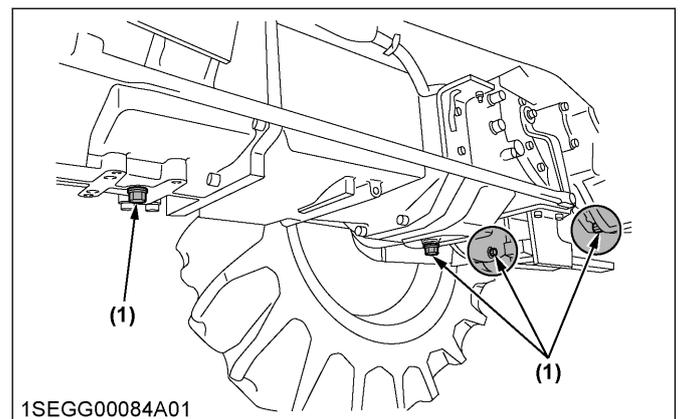
To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before changing the hydraulic-oil-filter-cartridge.
- Allow the engine to cool down sufficiently because the transmission oil can be hot and can burn.

#### IMPORTANT :

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

- Remove the drain plugs at the bottom of the transmission case and drain the transmission oil completely into the oil pan.
- After draining, reinstall the drain plugs.

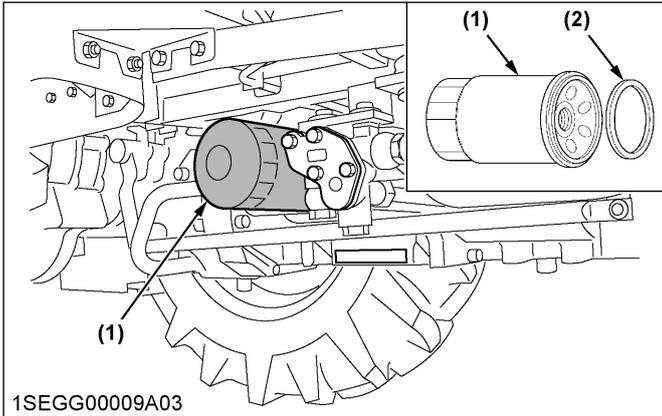


1SEGG00084A01

(1) Drain plugs

- Remove the hydraulic-oil-filter.

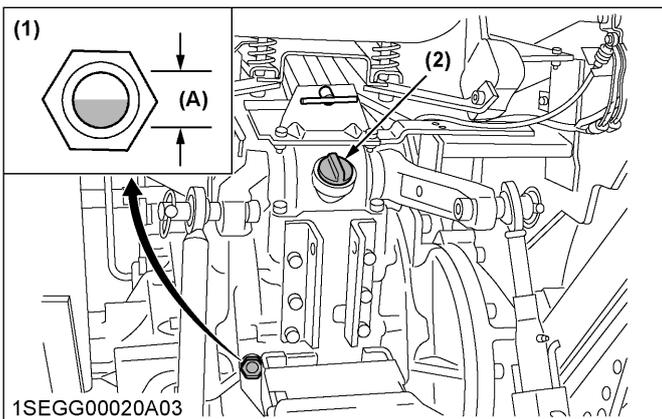
- Wipe off metal filings from the magnetic filter with a clean rag.



(1) Hydraulic oil filter (2) Magnetic filter (wipe off metal filings)

- Put a film of clean transmission oil on the rubber seal of the new hydraulic-oil-filter.
- Quickly tighten the hydraulic-oil-filter until it contacts the mounting surface.
- Then tighten the hydraulic-oil-filter by hand an additional 1/2 turn only.
- After the new hydraulic-oil-filter has been replaced, fill with transmission oil up to the upper line of the gauge.
- After running the engine for a few minutes, stop the engine and check the level of the transmission oil again. Add the transmission oil to the prescribed level.
- Make sure that the transmission fluid does not leak past the seal on the hydraulic-oil-filter.

Transmission oil capacity	44.0 L
---------------------------	--------



(1) Gauge (2) Oil inlet (A) Range which transmission oil level is acceptable within

**IMPORTANT :**

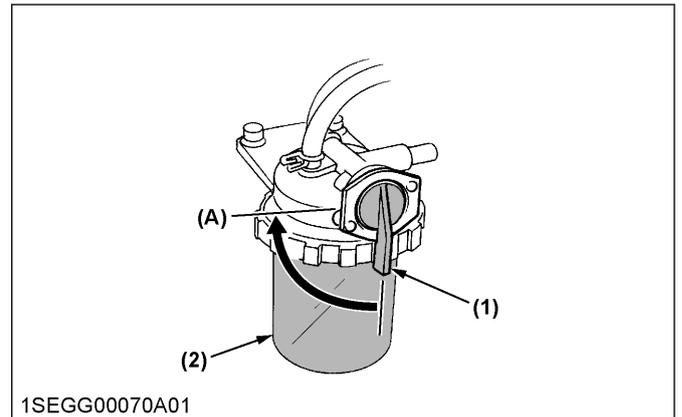
- Do not operate the tractor immediately after changing the transmission fluid.

Run the engine at medium speed for a few minutes to prevent damage to the transmission.

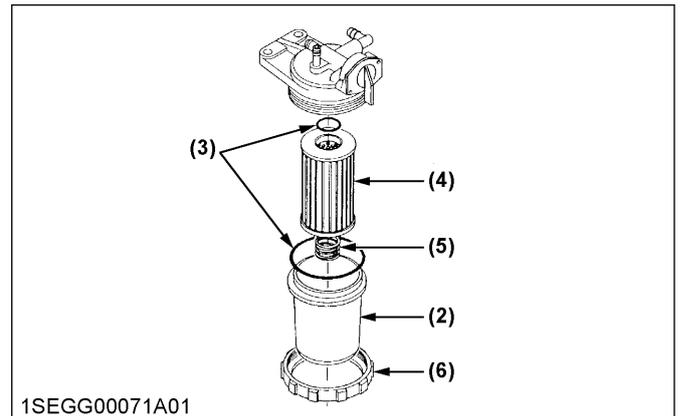
## 2. Replacing the fuel filter element

Carry out the replacing of the fuel-filter-element not in the field, but in a clean place.

Replace the fuel-filter-element according to Cleaning the fuel filter on page 88.



1SEGG00070A01

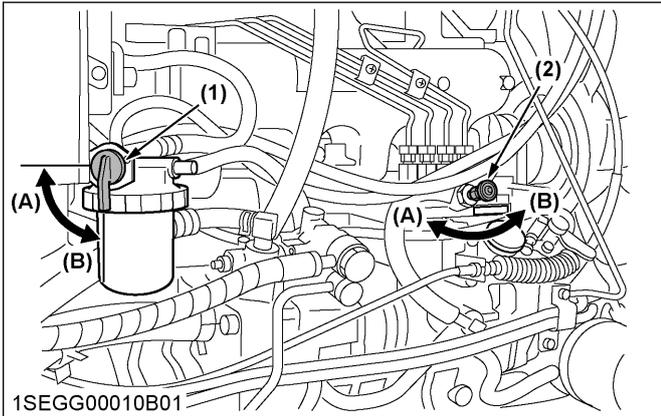


1SEGG00071A01

- (1) Fuel shutoff-valve (A) Close  
 (2) Fuel filter bowl  
 (3) O ring  
 (4) Filter element  
 (5) Spring  
 (6) Screw ring

- Close the fuel-shutoff-valve.
- Remove the screw ring, remove the filter bowl, and rinse the inside with kerosene.
- Remove the fuel-filter-element.
- Assemble the new fuel filter, keeping out dust and dirt.

- Bleed the fuel system.  
(See Bleeding the fuel system on page 100)



(1) Fuel shutoff-valve (A) Close  
(2) Air vent shutoff-valve (B) Open

## SERVICE EVERY 600 HOURS

### 1. Adjusting the front axle pivot

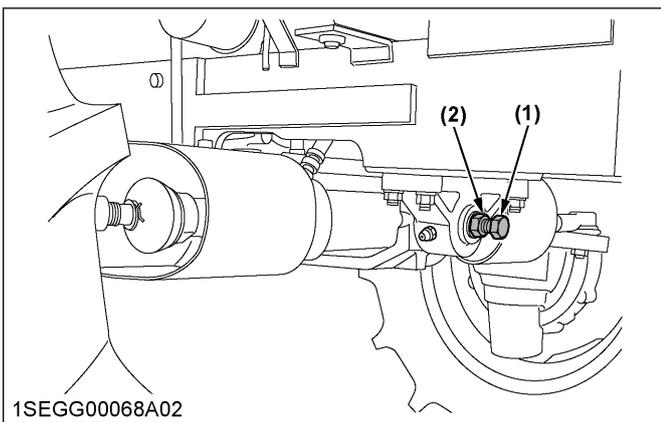
#### **! WARNING**

To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before checking the front-axle-pivot.

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

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



(1) Adjusting screw (2) Lock nut

## SERVICE EVERY 800 HOURS

### 1. Changing the front axle case oil

#### **! WARNING**

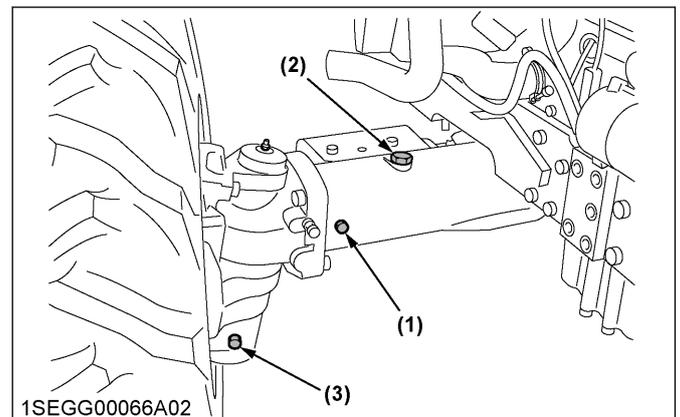
To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before changing the front-axle-case-oil.

- To drain the used front-axle-case-oil, remove the right and left drain plugs and filling plug at the front-axle-case and drain the front-axle-case-oil completely into the oil pan.
- After draining, reinstall the drain plugs.
- Gently pour new oil through the filling port.  
Required quantities of front-axle-case-oil are written in the following table. Make sure to pour the specified amounts. If front-axle-case-oil overflows before pouring any of the specified amounts, wait a couple of minutes and try again.  
(See LUBRICANTS, FUEL, AND COOLANT on page 79)

Front axle case oil capacity	8.5 L
------------------------------	-------

- After filling, reinstall the filling plug.
- Run the machine a few minutes in order for the front-axle-case-oil to flow through the front-axle-case.
- Remove the oil-level-check-plug and check to see if the front-axle-case-oil flows out of its port.
- If the front-axle-case-oil does not flow out, add the front-axle-case-oil through the filling port until it flows out of the oil-level-check-port.
- Reinstall and tighten the oil-level-check-plug and filling plug.



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

## 2. Adjusting the engine valve clearance

- Consult your local KUBOTA Dealer for adjusting the clearance of the engine valve.

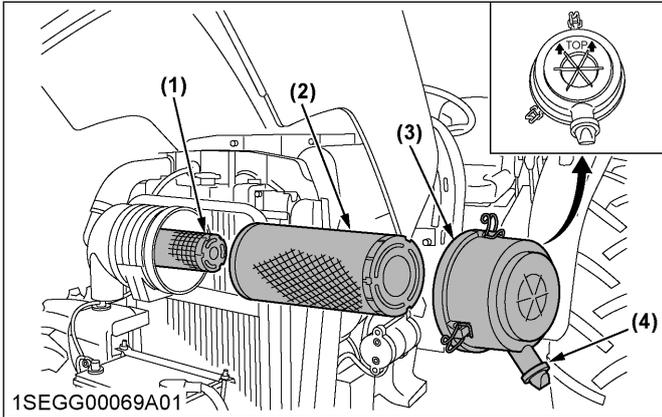
## SERVICE EVERY 1000 HOURS OR 1 YEAR

### 1. Replacing the air cleaner primary element and secondary element

Be sure to perform once every 1000 hours or yearly, whichever comes first.

(See Cleaning the air cleaner primary element [Double element type] on page 87)

1. Remove the primary element and secondary element of the air cleaner.
2. Attach new primary element and secondary element of the air cleaner.



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

**IMPORTANT :**

- Be sure to refit the cover with the arrow ↑ (on the rear of cover) upright. If the cover is improperly fitted, the evacuator valve will not function and dust will adhere to the primary element.

## SERVICE EVERY 1500 HOURS

### 1. Checking the injection pressure of the fuel injection nozzle

- Consult your local KUBOTA Dealer for checking the injection pressure of the fuel-injection-nozzle.

## SERVICE EVERY 2000 HOURS OR 2 YEAR

### 1. Flushing the cooling system and changing the coolant

**! WARNING**

To avoid personal injury or death:

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

**IMPORTANT :**

- Do not start engine without coolant.

1. Stop the engine, remove the starter key, and let the engine cool down.
2. To drain the coolant, open the radiator-drain-shutoff-valve and remove the radiator cap. Remove the radiator cap to completely drain the coolant.
3. After all coolant is drained, close the radiator-drain-shutoff-valve.
4. Fill with clean soft water and cooling-system-cleaner.
5. Follow directions of the cleaner instruction.
6. After flushing, fill with clean soft water and antifreeze until the coolant level is just below the radiator cap. For antifreeze, see Antifreeze on page 97.

**IMPORTANT :**

- Use clean, fresh, soft water and antifreeze to fill the radiator and recovery tank.
- When mixing the antifreeze with water, the antifreeze mixing ratio is 50%.

7. Install the radiator cap securely.

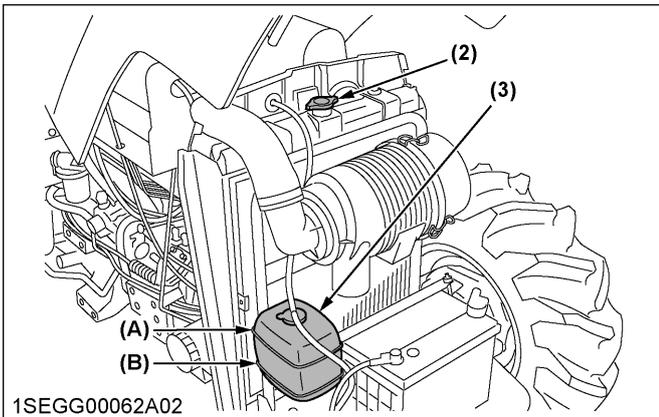
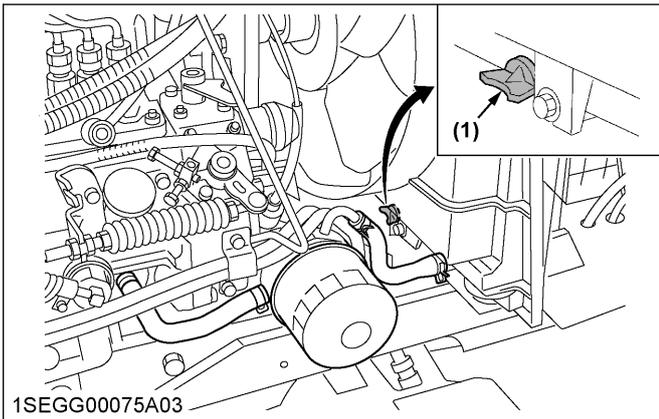
**IMPORTANT :**

- Securely tighten the radiator cap. If the radiator cap is loose or improperly fitted, water may leak out and the engine could overheat.

8. Fill with coolant up to the [FULL] mark of recovery tank.
9. Start and operate the engine for few minutes.
10. Stop the engine, remove the starter key, and let the engine cool.
11. Check the coolant level of recovery tank and add coolant if necessary.

Coolant capacity with recovery tank	7.0 L
-------------------------------------	-------

12. Properly dispose of used coolant.



- (1) Drain shutoff-valve
- (2) Radiator cap
- (3) Recovery tank
- (A) Full
- (B) Low

- When draining the fluids from the engine, place a container underneath the engine body.
- Do not pour waste onto the ground, down a drain, or into any water source.
- Also, follow 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.

**NOTE :**  
 • The following data represent industry standards that necessitate a minimum glycol content in the concentrated antifreeze.

- Long-life coolant (LLC) comes in several types. Use ethylene glycol (EG) type for this engine.
- Before employing LLC-mixed cooling water, fill the radiator with fresh water and empty it again. Repeat filling and emptying the radiator with fresh water 2 or 3 times to clean up the inside.
- Mixing the LLC  
 Premix 50% LLC with 50% clean soft water. When mixing, stir it up well, and then fill into the radiator.
- The procedure for the mixing of water and antifreeze differs according to the type of the antifreeze and the ambient temperature. Refer to SAE J1034 standard, more specifically also to SAE J814c.

1.1 Antifreeze

**⚠ WARNING**  
 To avoid personal injury or death:

- When using the antifreeze, put on some protection such as rubber gloves. Antifreeze contains poison.
- If someone drank the antifreeze, seek immediate medical help. Do not ask the person to throw up unless told to throw up by a 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 reactions causing harmful substances.
- Antifreeze is extremely flammable and explosive under certain conditions. Keep fire and children away from antifreeze.

Vol (%) Antifreeze	Freezing Point		Boiling Point* <sup>1</sup>	
	°C	°F	°C	°F
50	-37	(-34)	108	(226)

- Adding the LLC
  - Add only water if the mixture reduces in amount by evaporation.
  - 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 contain different additive components, and the engine may fail to perform as specified.
- 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.
- Service life of KUBOTA's genuine long-life coolant is 2 years. Be sure to change the coolant every 2 years.

\*1 At  $1.013 \times 10^5$  Pa (760 mmHg) pressure (atmospheric). A higher boiling point is obtained by using a radiator-pressure-cap which permits the development of pressure within the cooling system.

## SERVICE EVERY 3000 HOURS

### 1. Checking the turbocharger

- Consult your local KUBOTA dealer for checking the turbocharger.

### 2. Checking the injection pump

- Consult your local KUBOTA Dealer for checking the injection pump.

## SERVICE EVERY 1 YEAR

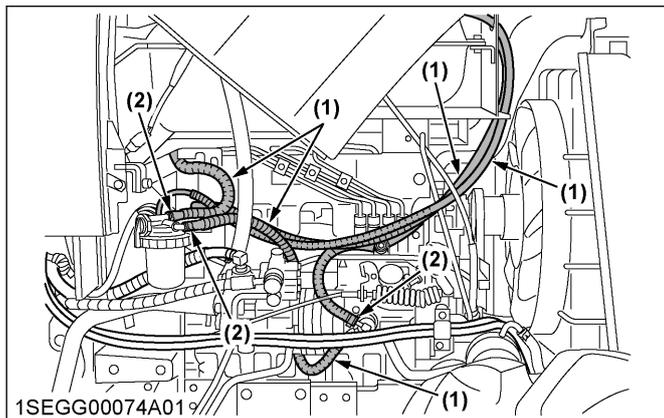
### 1. Checking the fuel line

#### WARNING

To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before checking the fuel line.
- Check the fuel lines periodically. The fuel lines are subject to wear and aging. Fuel may leak out onto the running engine, causing a fire.

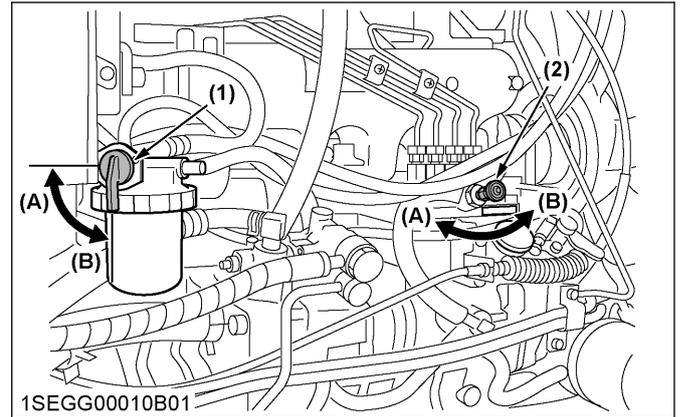
1. Check to see that all lines and hose clamps are tight and not damaged.
2. If the hoses and the hose clamps are found worn or damaged, replace or repair them at once.



(1) Fuel lines (2) Clamp bands

#### NOTE :

- If the fuel line is removed, be sure to properly bleed the fuel system. (See Bleeding the fuel system on page 100)



(1) Fuel shutoff-valve (A) Close  
(2) Air vent shutoff-valve (B) Open

### 2. Checking the radiator hose and clamp

#### WARNING

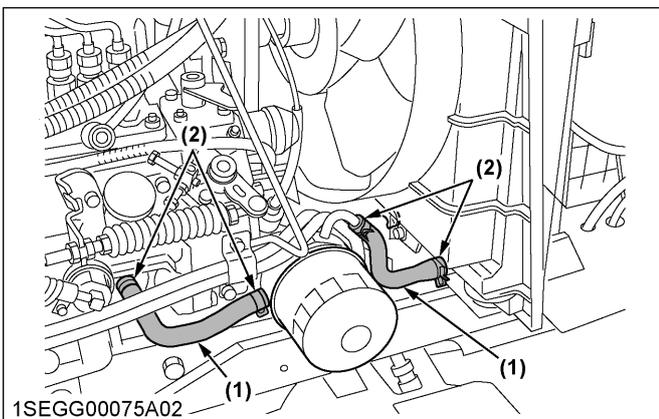
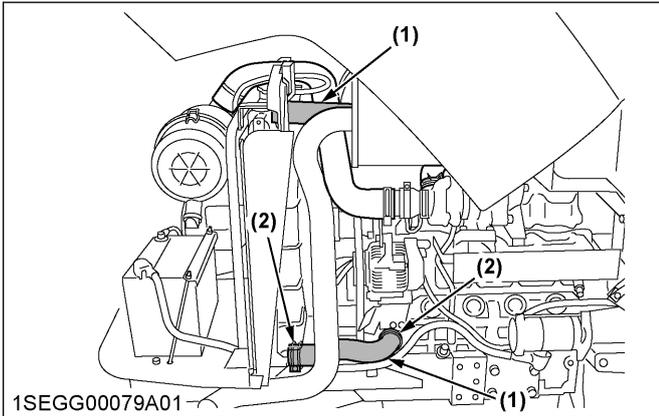
To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before checking the radiator hose and hose clamps.

Check the radiator hose and clamp every year.

1. Check to see if radiator hoses are properly fixed.

- If hose clamps are loose or water leaks, tighten the bands securely.



(1) Radiator hoses (2) Clamp bands

Replace the hoses and the hose clamps every 4 years or earlier if checked and found that hoses are swollen, hardened, or cracked.

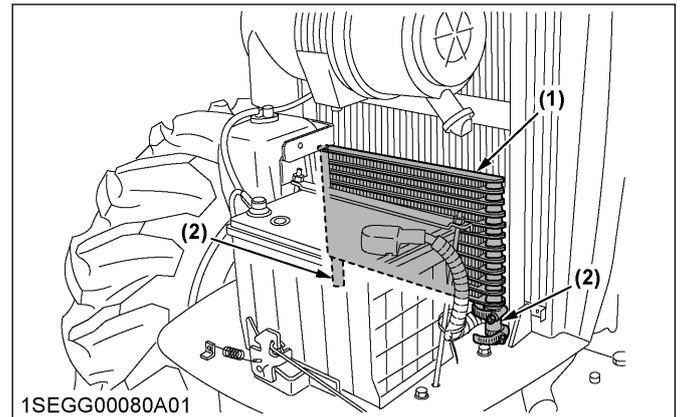
### 3. Checking the oil cooler line [HST type only]

#### **! WARNING**

To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before checking the oil-cooler-line.

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



(1) Oil cooler (2) Oil cooler line

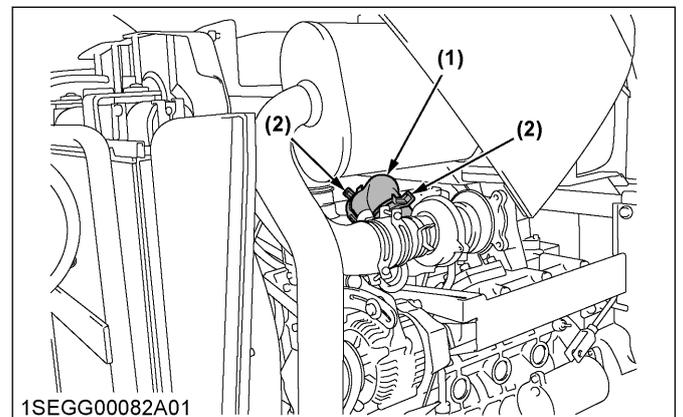
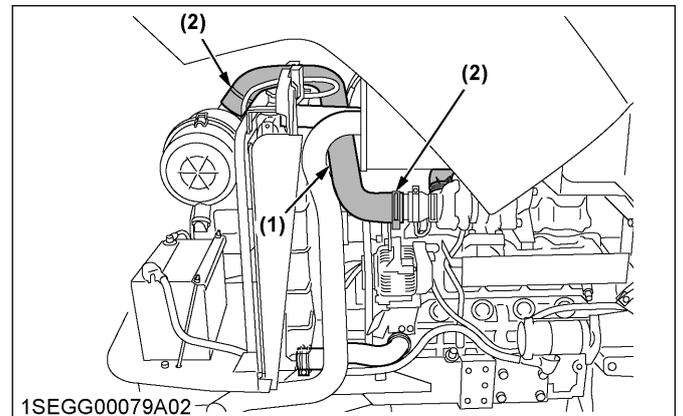
### 4. Checking the intake air line

#### **! WARNING**

To avoid personal injury or death:

- Stop the engine and remove the starter key before checking the intake-air-line.

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



(1) Hose (2) Hose clamps

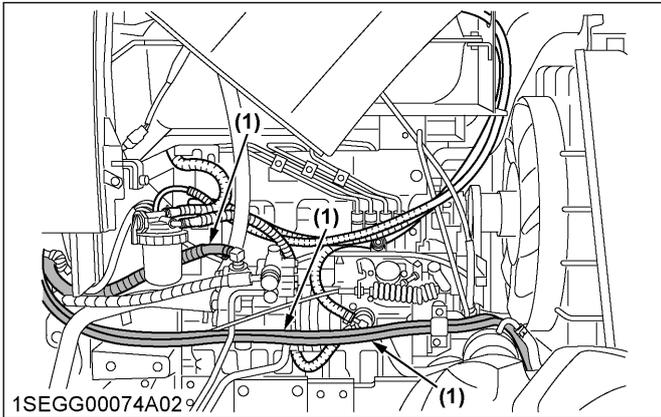
## 5. Checking the power steering line

### WARNING

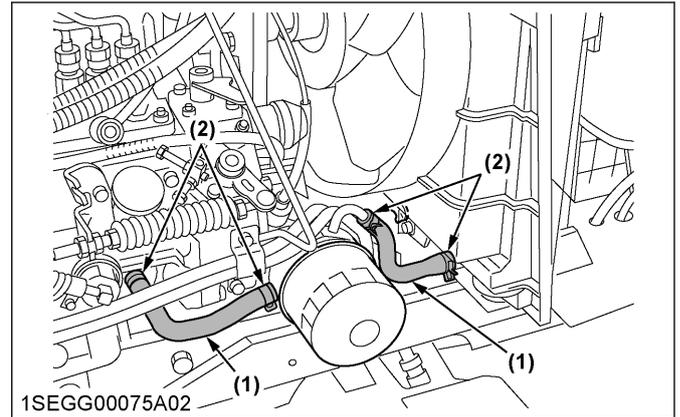
To avoid personal injury or death:

- Be sure to stop the engine and remove the starter key before checking the 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



(1) Radiator hoses

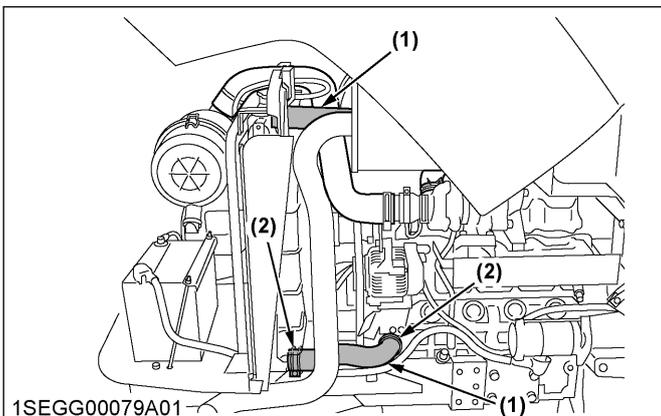
(2) Clamp bands

## SERVICE EVERY 4 YEARS

### 1. Replacing the radiator hose (water pipes)

See Checking the radiator hose and clamp on page 98.

1. Replace the radiator hoses and tighten the hose clamps securely.



### 2. Replacing the power steering hose

- Consult your local KUBOTA Dealer for replacing the power-steering-hose.

### 3. Replacing the fuel hose

- Consult your local KUBOTA Dealer for replacing the fuel hose.

### 4. Replacing the oil cooler line [HST type only]

- Consult your local KUBOTA Dealer for replacing the oil-cooler-line.

### 5. Replacing the intake air line

- Consult your local KUBOTA Dealer for replacing the intake-air-line.

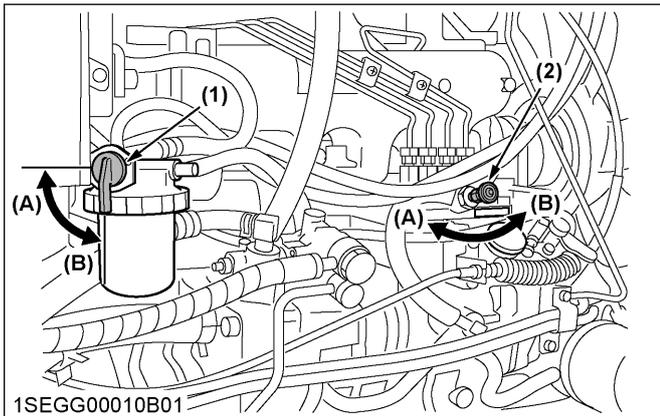
## SERVICING AS REQUIRED

### 1. Bleeding the fuel system

Remove the air in the following cases.

- When the fuel filter or lines are removed.
- When the fuel tank is completely empty.
- After you have not use the tractor for a long period of time.

1. Fill the fuel tank with fuel, and open the fuel shutoff-valve.



- (1) Fuel shutoff-valve                      (A) Close  
 (2) Air vent shutoff-valve                (B) Open

2. Open the air vent shutoff-valve on the fuel-injection-pump.
3. Start the engine and run for about 30 seconds, and then stop the engine.
4. Close the air vent shutoff-valve.

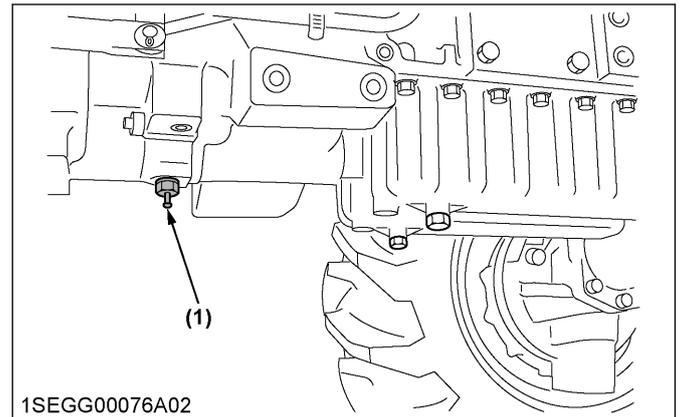
**IMPORTANT :**

- Always close the air vent shutoff-valve except for bleeding the fuel lines.
- Otherwise, engine runs irregularly or stalls frequently.

## 2. Draining the water from the clutch housing

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

1. Check if water has entered into the clutch housing by pushing in the split pin.
2. If water has entered into the clutch housing, remove the split-pin-plug and drain the water.  
The tractor is equipped with split-pin-plug under the clutch housing.
3. Then install the split-pin-plug again.



- (1) Split pin plug

## 3. Replacing the fuse

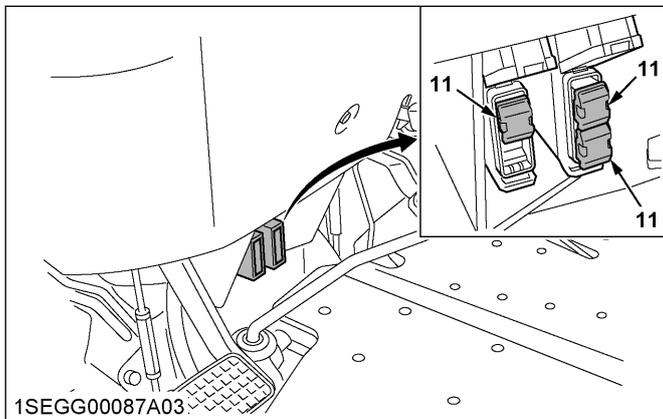
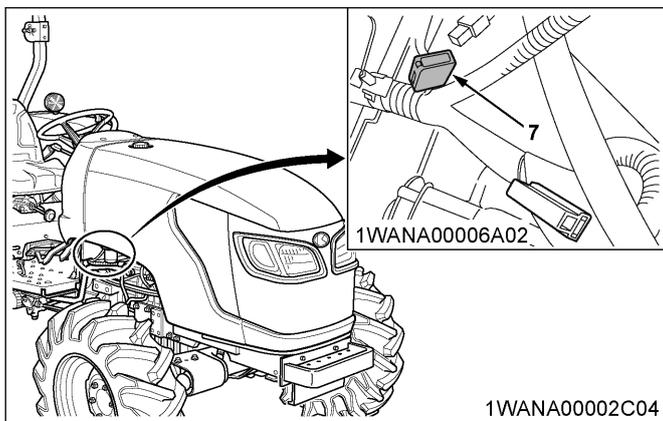
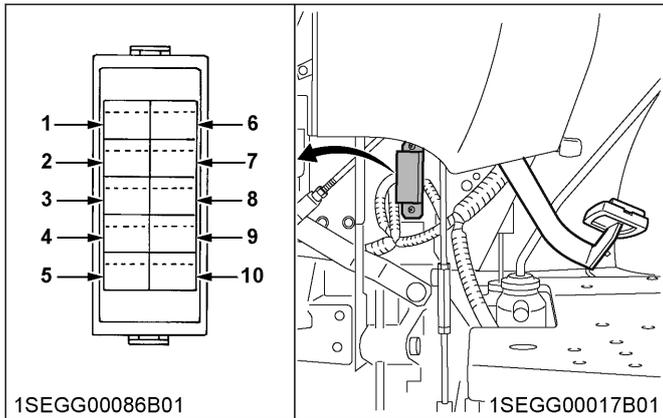
**IMPORTANT :**

- Before replacing a blown fuse, determine why the fuse blew and carry out any necessary repairs. Failure to follow the replacing procedure may result in serious damage to the electrical system of the tractor. Consult your local KUBOTA Dealer for specific information dealing with electrical problems.

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

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

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



**Protected circuit**

Fuse No.	Capacity (A)	Protected circuit
1	10	Work light
2	10	Panel
3	5	Head light
4	5	Key stop
5	10	Brake lamp
6	5	Glow lamp
7	10	Electrical outlet
8	15	Head lamp relay (Hi)
9	15	Head lamp relay (Lo)
10	15	Hazard
11	Slow blow fuse	Check circuit against wrong battery connection.

**4. Replacing the light bulb**

Light	Capacity
Head light	60 W / 55 W
Tail light	8 W
Turn signal / hazard light (rear)	23 W
Turn signal / hazard light (front)	27 W
Instrument panel light	1.7 W
Brake stop light	23 W

**Head light and rear combination lights**

1. Take the bulb out of the light body and replace with a new one.

**Other lights**

1. Detach the lens and replace the bulb.

**5. Replacing the radiator hose (water pipes) if required**

- Consult your local KUBOTA Dealer for replacing the radiator hose.

**6. Replacing the power steering hose if required**

- Consult your local KUBOTA Dealer for replacing the power-steering-hose.

**7. Replacing the fuel hose if required**

- Consult your local KUBOTA Dealer for replacing the fuel hose.

## **8. Replacing the intake air line if required**

- Consult your local KUBOTA dealer for replacing the intake-air-line.

## **9. Replacing the oil cooler line if required [HST type only]**

- Consult your local KUBOTA Dealer for replacing the oil-cooler-line.

# STORAGE OF THE TRACTOR

## WARNING

To avoid personal injury or death:

- Do not clean the tractor 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 the tractor, remove the starter key from the key switch to avoid unauthorized persons from operating the tractor and getting injured.

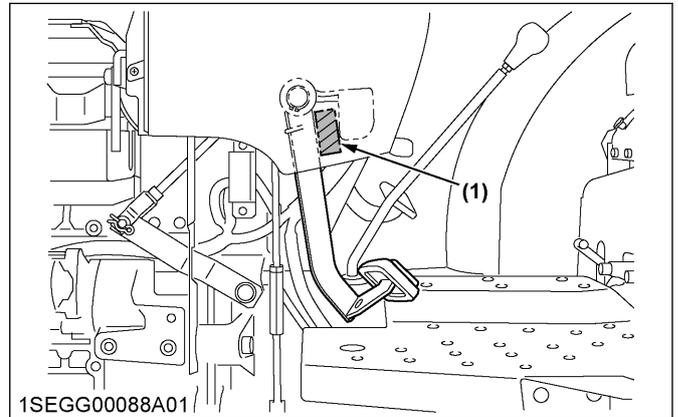
## STORING THE TRACTOR

If you intend to store your tractor for an extended period of time, follow the proper storing procedures. Proper storing 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 them if necessary.
2. Apply grease to the areas of the tractor where bare metal will rust and 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. Keep the clutch disengaged.

If you leave the clutch engaged for a long period of time, the clutch plate may rust, causing the disengagement of clutch impossible when operating it next time.

To keep the clutch disengaged, depress the clutch pedal fully and get it locked with the wooden block as the following figure.



(1) Wooden block

7. With all implements lowered to the ground, coat any exposed hydraulic-cylinder-piston-rods with grease.
8. Remove the battery from the tractor. Store the battery following the direction for battery storage. (See Checking the battery condition on page 89)
9. Keep the tractor in a dry place where the tractor is sheltered from the elements. Cover the tractor.
10. Store the tractor indoors in a dry area that is protected from sunlight and excessive heat. If you must store the tractor 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 the tractor.
- Cover the tractor after the muffler and the engine have cooled down.

## REMOVING THE TRACTOR FROM STORAGE

1. Check the air pressure of the tires 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. Before installing the battery, be sure that it is fully charged.
4. Install the battery.
5. Check the tension of the fan belt.

6. Check all fluid levels: engine oil, transmission/hydraulic oil, engine coolant, and any attached implements.
7. Start the engine. Check all gauges.
8. If all gauges are functioning properly and reading normal, follow the following procedure.
  - a. Move the tractor outside.
  - b. Once outside, park the tractor.
  - c. Let the engine idle for at least 5 minutes.
9. Shut the engine off. Walk around tractor and make a visual inspection looking for evidence of oil or water leaks.
10. With the engine fully warmed up, release the parking brake and test the brakes for proper adjustment as you move forward. Adjust the brakes if it is necessary for the brakes to be adjusted.

# TROUBLESHOOTING

## ENGINE TROUBLESHOOTING

If something is wrong with the engine, see the following table for the cause of the trouble and its corrective measure.

Trouble		Cause	Countermeasure
Engine is difficult to start or will not start.		<ul style="list-style-type: none"> <li>No fuel flow</li> </ul>	<ul style="list-style-type: none"> <li>Check the fuel tank and the fuel filter. Replace the filter if necessary.</li> </ul>
		<ul style="list-style-type: none"> <li>Air or water is in the fuel system.</li> </ul>	<ul style="list-style-type: none"> <li>Check to see if the bolt and nut of fuel-line-coupler are tight.</li> <li>Bleed the fuel system. (See Bleeding the fuel system on page 100)</li> </ul>
		<ul style="list-style-type: none"> <li>In winter, oil viscosity increases, and engine revolution is slow.</li> </ul>	<ul style="list-style-type: none"> <li>Use the oils of different viscosity, depending on ambient temperatures.</li> <li>Use the engine-block-heater (option).</li> </ul>
		<ul style="list-style-type: none"> <li>Battery becomes weak and the engine does not turn over quick enough.</li> </ul>	<ul style="list-style-type: none"> <li>Clean battery cables and terminals.</li> <li>Charge the battery.</li> <li>In cold weather, always remove the battery from the engine, and charge and store the battery indoors. Install the battery on the tractor only when the tractor is going to be used.</li> </ul>
Insufficient engine power.		<ul style="list-style-type: none"> <li>Insufficient or dirty fuel</li> </ul>	<ul style="list-style-type: none"> <li>Check the fuel system.</li> </ul>
		<ul style="list-style-type: none"> <li>The air cleaner is clogged.</li> </ul>	<ul style="list-style-type: none"> <li>Clean or replace the air cleaner element.</li> </ul>
Engine stops suddenly.		<ul style="list-style-type: none"> <li>Insufficient fuel</li> </ul>	<ul style="list-style-type: none"> <li>Refuel.</li> <li>Bleed the fuel system if necessary.</li> </ul>
Exhaust fumes are colored.	Black	<ul style="list-style-type: none"> <li>Fuel quality is poor.</li> </ul>	<ul style="list-style-type: none"> <li>Change the fuel and the fuel filter.</li> </ul>
		<ul style="list-style-type: none"> <li>Too much oil</li> </ul>	<ul style="list-style-type: none"> <li>Check the proper amount of oil.</li> </ul>
		<ul style="list-style-type: none"> <li>The air cleaner is clogged.</li> </ul>	<ul style="list-style-type: none"> <li>Clean or replace the air cleaner element.</li> </ul>
	Blue or white	<ul style="list-style-type: none"> <li>The inside of exhaust muffler is damped from fuel.</li> </ul>	<ul style="list-style-type: none"> <li>Heat the muffler by applying load to the engine.</li> </ul>
		<ul style="list-style-type: none"> <li>Trouble of injection nozzle</li> </ul>	<ul style="list-style-type: none"> <li>Check the injection nozzle.</li> </ul>
Engine overheats.		<ul style="list-style-type: none"> <li>Fuel quality is poor.</li> </ul>	<ul style="list-style-type: none"> <li>Change the fuel and fuel filter.</li> </ul>
		<ul style="list-style-type: none"> <li>Engine overloaded.</li> </ul>	<ul style="list-style-type: none"> <li>Shift to lower gear or reduce load.</li> </ul>
		<ul style="list-style-type: none"> <li>Low coolant level.</li> </ul>	<ul style="list-style-type: none"> <li>Fill cooling system to the correct level. Check the radiator and the hoses for loose connections or leaks.</li> </ul>
		<ul style="list-style-type: none"> <li>Loose or damaged fan belt.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust or replace the fan belt.</li> </ul>
		<ul style="list-style-type: none"> <li>Dirty radiator core or grille screens.</li> </ul>	<ul style="list-style-type: none"> <li>Remove all trash.</li> </ul>
		<ul style="list-style-type: none"> <li>Coolant flow route corroded.</li> </ul>	<ul style="list-style-type: none"> <li>Flush the cooling system.</li> </ul>

If there are any questions about the engine, consult your local KUBOTA Dealer.

# OPTIONS

## OPTION ITEMS

Consult your local KUBOTA Dealer for further details of the following options.

- Engine block heater  
For extremely cold weather starting
- Work light  
High visibility for night work
- Double acting remote hydraulic control valve
- Double acting remote hydraulic control valve with float position
- Draft control
- Swinging drawbar
- Clevis type swinging drawbar
- Front bumper
- Front end weights  
For the front ballast
- Rear wheel weights  
For the rear ballast
- Sunshade
- Front grill guard

# INDEX

## Symbols

3-point hitch	
overview.....	62
precautions for using.....	9
3-point hitch control system	
precautions.....	66
3-point hitch implement	
changing category 1 and 2.....	63
3-point hitch lowering speed	
function.....	68
3-point hitch mounted implement	
draft.....	67
draft control.....	66
position control.....	66

## A

air cleaner primary element	
Replacing.....	96
air cleaner primary element [double element type]	
cleaning.....	87
air cleaner secondary element	
Replacing.....	96
antifreeze.....	97

## B

ballast	
precautions.....	75
battery condition	
checking.....	89
block heater	
outline.....	41
brake pedal	
adjusting.....	89
checking.....	84
function.....	31

## C

clutch housing water	
draining water.....	101
clutch pedal	
adjusting.....	89
checking.....	84
function.....	29
coolant.....	79
changing.....	96
coolant level	
checking.....	83
coolant temperature	
dealing with overheated.....	56
coolant temperature gauge	
function.....	56

cooling system	
flushing.....	96
cruise control lever [HST type]	
function.....	33
operating.....	34

## D

daily check items	
before operation of the tractor.....	36
dealer service.....	15
differential lock	
function.....	57
double element type	
cleaning air cleaner primary element.....	87
drawbar	
adjusting length.....	65
dealing with.....	63
overview.....	62
precautions.....	65
dual tire	
notification.....	72

## E

Easy Checker (TM).....	55
checking.....	84
electrical charge warning indicator.....	25
electrical outlet.....	35
engine	
cases to stop immediately.....	55
jump starting.....	42
starting in cold weather.....	41
stopping.....	41
warming up.....	41
warming up in the low temperature range.....	42
engine [HST type]	
starting.....	39
engine [manual transmission type]	
starting.....	37
engine oil	
changing.....	91
checking level.....	82
engine oil filter	
replacing.....	90
engine oil pressure warning indicator.....	25
engine start system [HST type]	
checking.....	86
engine start system [manual transmission type]	
checking.....	85
engine valve	
adjusting clearance.....	96

<b>F</b>		<b>H</b>	
fan belt		hand controls	23
adjusting tension	88	hand controls [HST type]	
foldable ROPS (if equipped)		allocation	28
adjusting	46	hand controls [manual transmission type]	
folding	45	allocation	27
operating	44	hand throttle lever	31
raising to upright position	45	hazard light	
foot controls [HST type]		checking	84
allocation	28	hazard light switch	24
foot controls [manual transmission type]		head light	
allocation	27	checking	84
foot throttle [manual transmission type]		head light switch	24
function	33	hood	
front axle case oil		opening	81
changing	95	horn button	26
front axle pivot		hour meter	
adjusting	95	function	56
front ballast	75	hydraulic block type outlet	
front end weights (option)	75	operating hydraulically operated implement is	
front wheel drive lever		attached	68
function	29	hydraulic control unit	
front wheels		reference chart	71
with 4-wheel drive	72	hydraulic oil filter	
fuel	79	replacing	93
fuel filter			
cleaning	88	<b>I</b>	
fuel filter element		implement limitation table	21
replacing	94	injection pump	
fuel gauge		checking	98
function	55	instrument panel	23
fuel hose		intake air line	
replacing	100	checking	99
replacing if required	102	replacing	100
fuel injection nozzle		replacing if required	103
checking the injection pressure	96		
fuel line		<b>K</b>	
checking	98	key switch	25
fuel system			
bleeding	100	<b>L</b>	
fuel tank		lifting rod (right)	
checking	81	adjusting	64
refueling	81	light bulb	
fuse		replacing	102
replacing	101	liquid ballast in rear tires	76
		lower link	
<b>G</b>		float control	67
gauges		lubricant	79
checking	84		
glow plug indicator	25	<b>M</b>	
grease fitting		magnetic filter	
lubricating	85	cleaning	93
grill		main gear shift lever [manual transmission type]	
cleaning	83	function	32

meters	
checking.....	84
mixed control of position	
function.....	67
movable parts	
checking.....	84

## N

new tractor	
operating.....	44

## O

oil cooler	
cleaning.....	83
oil cooler line [HST type]	
checking.....	99
replacing.....	100
replacing if required.....	103
operator's seat	
function.....	30
option	
front end weights.....	75
rear wheel weights.....	76
option items.....	107

## P

parking brake	
setting and releasing.....	31
power steering	
directions for use.....	59
power steering hose	
replacing.....	100
replacing if required.....	102
power steering line	
checking.....	100
precaution	
driving the tractor on the road.....	7
general.....	5
operating the engine.....	37
operating the PTO.....	9
parking tractor.....	8
servicing the tractor.....	9
starting to operate tractor.....	6
working tractor.....	6
precautions	
attaching 3-point hitch implement.....	63
detaching 3-point hitch implement.....	63
operating tractor on road.....	58
operating tractor on slope.....	58
operating tractor on terrain.....	58
PTO	
operation.....	60
PTO clutch control switch	
operating.....	60
PTO shaft cap	
precautions.....	61

PTO shaft cover	
precautions.....	61

## R

radiator clamp	
checking.....	98
radiator hose	
checking.....	98
radiator hose (water pipe)	
replacing.....	100
replacing if required.....	102
radiator screen	
cleaning.....	83
range gear shift lever (L-M-H) [HST type]	
function.....	33
range gear shift lever [manual transmission type]	
function.....	32
rear ballast.....	75
rear wheel	
adjusting.....	75
specification.....	74
rear wheel weights (option).....	76
remote control valve (if equipped)	
outline.....	69
remote control valve coupler (if equipped)	
operating.....	70
remote control valve lever (if equipped)	
function.....	69

## ROPS

checking.....	84
---------------	----

## S

safety for children.....	7
safety label.....	11
safety labels	
taking care.....	14
seat belt	
checking.....	84
outline.....	30
service interval.....	77
specification table.....	17
speed control pedal [HST type]	
function.....	34
stationary PTO.....	61
stopping tractor.....	53
storing tractor.....	104
swing drawbar.....	65
switches.....	23
synchro-shuttle shift lever [manual transmission type]	
function.....	32

## T

tachometer	
function.....	56
telescopic lower link	
adjusting.....	64

telescopic stabilizer	
adjusting.....	64
tires	
inflation pressure.....	72
precautions.....	72
toe-in	
adjusting.....	93
checking.....	92
top link	
adjusting.....	64
selecting hole to mount.....	63
tractor	
daily check.....	81
parking.....	57
precautions before operating.....	5
precautions for boarding and leaving.....	44
precautions for CAB.....	5
precautions for operating.....	6
precautions for operating on slopes.....	7
precautions for ROPS.....	5
removing from storage.....	104
scrapping procedure.....	16
walk around inspection.....	81
warranty.....	15
tractor [HST type]	
starting.....	49
tractor [manual transmission type]	
starting.....	46
transmission fluid	
changing.....	93
checking level.....	82
transmission oil	
in the low temperature range.....	42
transmission oil filter [HST type]	
replacing.....	91
traveling speed	
HST type.....	20
manual transmission type.....	19
troubleshooting	
engine.....	106
turbocharger	
checking.....	98
turn signal / hazard light indicator.....	24
turn signal light switch.....	24

## **W**

water pipe (radiator hose)	
replacing if required.....	102
wheel	
checking bolt torque.....	87
wheel adjustment	
precautions.....	72