

OPERATOR'S MANUAL

KUBOTA TRACTOR

MODEL B2410



F-11753

READ AND SAVE THIS MANUAL

Kubota

ABBREVIATION LIST

Abbreviations	Definitions
2WD	Two Wheel Drive
4WD	Four Wheel Drive
API	American Petroleum Institute
ASAE	American Society of Agricultural Engineers, USA
ASTM	American Society for Testing and Materials, USA
DIN	Deutsches Institut für Normung, GERMANY
DT	Dual Traction [4WD]
fpm	Feet Per Minute
GST	Glide shift Transmission
Hi-Lo	High Speed-Low Speed
HST	Hydrostatic Transmission
m/s	Meters Per Second
PTO	Power Take Off
RH/LH	Right-hand and left-hand sides are determined by facing in the direction of forward travel
ROPS	Roll-Over Protective Structures
rpm	Revolutions Per Minute
rps	Revolutions Per Second
SAE	Society of Automotive Engineers, USA
SMV	Slow Moving Vehicle



California Proposition 65

▲ WARNING ▲

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

UNIVERSAL SYMBOLS

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

	Safety Alert Symbol		Remote Cylinder-Retract
	Diesel Fuel		Remote Cylinder-Extend
	Fuel-Level		Steering Wheel-Tilt Control
	Engine-Rotational Speed		Hazard Warning Lights
	Hourmeter/Elapsed Operating Hours		Headlight-Low Beam
	Engine Coolant-Temperature		Four-Wheel Drive-On
	Parking Brake		Four-Wheel Drive-Off
	Battery Charging Condition		Fast
	Engine Oil-Pressure		Slow
	Turn Signal		Creep
	Engine-Stop		Read Operator's Manual
	Engine-Run		Tractor-Forward Movement-Overhead View of Machine
	Diesel Preheat/Glow Plugs(Low Temperature Start Aid)		Tractor-Rearward Movement-Overhead View of Machine
	Starter Control		Engine Speed Control
	Power Take-Off Control-Off Position (Disengaged)		
	Power Take-Off Control-On Position (Engaged)		
	Differential Lock		
	Position Control-Raised Position		
	Position Control-Lowered Position		
	Draft Control-Shallow Position		
	Draft Control-Deep Position		
	3-Point Lowering Speed Control		

FOREWORD

You are now the proud owner of a KUBOTA Tractor. This tractor is a product of KUBOTA quality engineering and manufacturing. It is made of fine materials and under a rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your tractor, please read this manual carefully. It will help you become familiar with the operation of the tractor and contains many helpful hints about tractor maintenance. It is KUBOTA's policy to utilize as quickly as possible every advance in our research. The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated. KUBOTA distributors and dealers will have the most up-to-date information. Please do not hesitate to consult with them.

SAFETY FIRST

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



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



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



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

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

NOTE : Gives helpful information.

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SAFE OPERATION

Careful operation is your best insurance against an accident.

Read and understand this section carefully before operating the tractor.

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

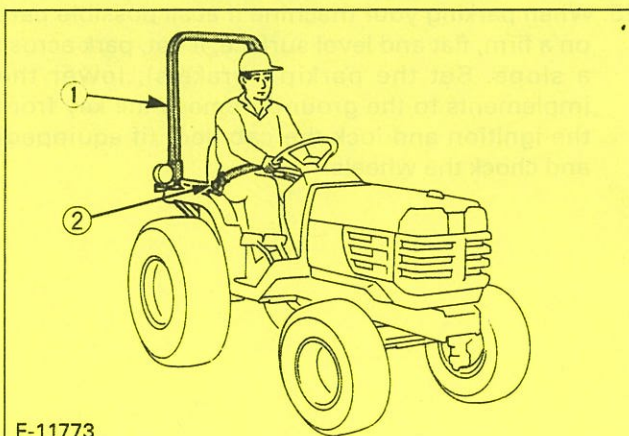
1. BEFORE OPERATING THE TRACTOR

1. Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.
2. Pay special attention to the danger, warning and caution labels on the tractor itself.
3. KUBOTA recommends the use of a Roll Over Protective Structures (ROPS) and seat belt in almost all applications. This combination will reduce the risk of serious injury or death, should the tractor be upset.

If the ROPS is loosened or removed for any reason, make sure that all parts are reinstalled correctly before operating the tractor.

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

A damaged ROPS structure must be replaced, not repaired or revised. If any structural member of the ROPS is damaged, replace the entire structure at your local KUBOTA Dealer.

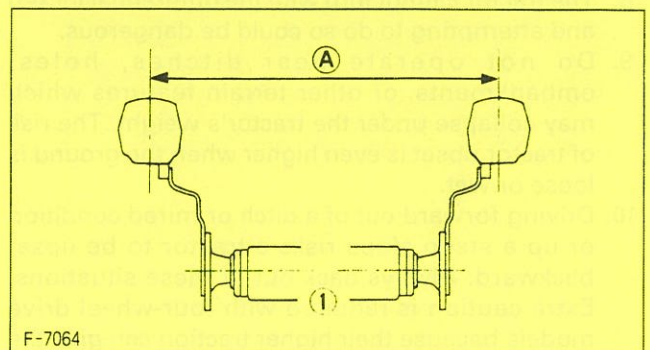


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- (1) ROPS
(2) Seat belt

4. Always use the seat belt when any ROPS is installed. Do not use the seat belt if a foldable ROPS is down or there is no ROPS. Check the seat belt regularly and replace if frayed or damaged.
5. Do not operate tractor or any implement attached to it while under the influence of alcohol, medication, or other substances or while fatigued.

6. Carefully check the vicinity before operating tractor or any implement attached to it. Check for overhead clearance which may interfere with a ROPS. Do not allow any bystanders around or near tractor during operation.
7. Before allowing other people to use your tractor, explain how to operate and have them read this manual before operation.
8. Never wear loose, torn, or bulky clothing around tractor. It may catch on moving parts or controls, leading to the risk of accident. Use additional safety items, e.g. hard hat, safety boots or shoes, eye and hearing protection, gloves, etc., as appropriate or required.
9. Do not allow passengers to ride on any part of the tractor at anytime. The operator must remain in the tractor seat throughout operation.
10. Check brakes, clutch, and other mechanical parts for improper adjustment and wear. Replace worn or damaged parts promptly. Check the tightness of all nuts and bolts regularly. (For further details, see Maintenance section.)
11. Keep your tractor clean. Dirt, grease, and trash accumulations contribute to fires and lead to personal injury.
12. Use only implements meeting the specifications listed under IMPLEMENT LIMITATIONS in this manual and use only implements approved by KUBOTA.
13. Use proper weights to front or rear of tractor to reduce the risk of upsets. When using the front loader, put the implement or ballast on 3-point hitch to improve stability. Follow the safe operating procedures specified in the attached manual to the equipment.
14. The narrower the tread, the greater the risk of a tractor upset. For maximum stability, adjust the wheels to the widest practical tread width. (See "TIRES, WHEELS AND BALLAST" Section)



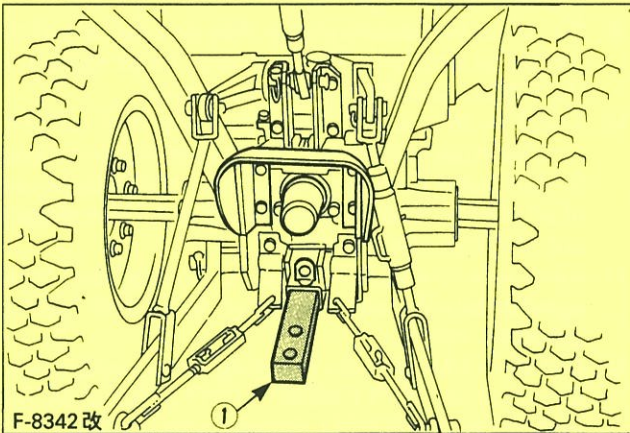
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- (1) Rear wheels (A) Tread Width

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

2. OPERATING THE TRACTOR

1. Never start engine or operate levers from anywhere other than the seat.
2. Before starting the engine, make sure that all levers (including auxiliary control levers) are in their neutral positions, that the parking brake is engaged, and that both the clutch and the Power Take-Off (PTO) are disengaged (OFF).
Fasten the seat belt if the tractor has a ROPS.
3. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
4. Pull only from the drawbar. Never hitch to axle housing or any other point except drawbar; such arrangements only increase the risk of serious personal injury or death due to a tractor upset.



(1) Drawbar

5. Do not operate or idle engine in a non-ventilated area.
Carbon monoxide gas is colorless, odorless, and deadly.
6. Keep all shields and guards in place. Replace any that are missing or damaged.
7. Avoid sudden starts. To avoid upsets, slow down when turning, on uneven terrain, and before stopping.
8. The tractor cannot turn with the differential locked and attempting to do so could be dangerous.
9. Do not operate near ditches, holes, embankments, or other terrain features which may collapse under the tractor's weight. The risk of tractor upset is even higher when the ground is loose or wet.
10. Driving forward out of a ditch or mired condition or up a steep slope risks a tractor to be upset backward. Always back out of these situations. Extra caution is required with four-wheel drive models because their higher traction can give the operator false confidence in the tractor's ability to climb slopes.
11. To avoid upsets, always back up steep slopes. Stay off hills and slopes too steep for safe operation.

12. Watch where you are going at all times. Watch for and avoid obstacles. Be alert at row ends, near trees, and other obstructions.
13. When working in groups, always let the others know what you are going to do before you do it.
14. Never "freewheel". Disengaging the clutch or shifting into neutral while descending a slope could lead to a loss of control.
15. Never try to get on or off a moving tractor.
16. Do not use "Bi-speed Turn" at high speed.
17. "Bi-speed Turn" enables short and fast turns, therefore, become familiar with its performance before operating in close or confined areas.

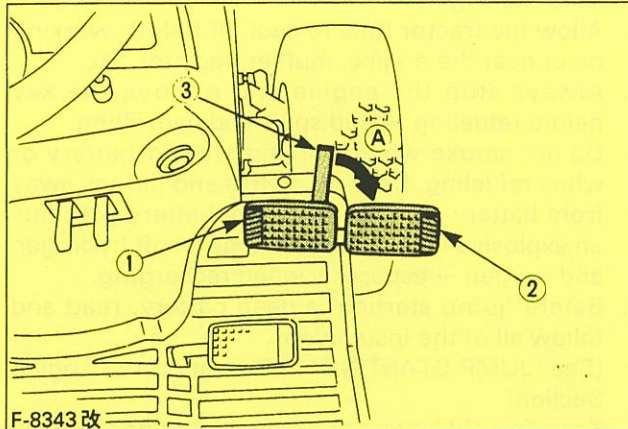
◆ Safety for children

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.

18. Never assume that children will remain where you last saw them.
19. Keep children out of the work area and under the watchful eye of another responsible adult.
20. Be alert and shut your machine down if children enter the work area.
21. Never carry children on your machine. There is no safe place for them to ride. They may fall off and be run over or interfere with your control of the machine.
22. Never allow children to operate the machine even under adult supervision.
23. Never allow children to play on the machine or on the implement.
24. Use extra caution when backing up, look behind and down-make sure area is clear before moving.
25. When parking your machine if at all possible park on a firm, flat and level surface; if not, park across a slope. Set the parking brake(s), lower the implements to the ground, remove the key from the ignition and lock the cab door (if equipped) and chock the wheels.

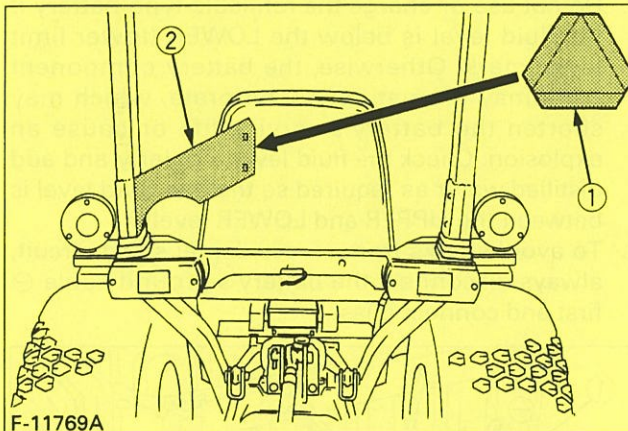
3. DRIVING THE TRACTOR ON THE ROAD

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



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

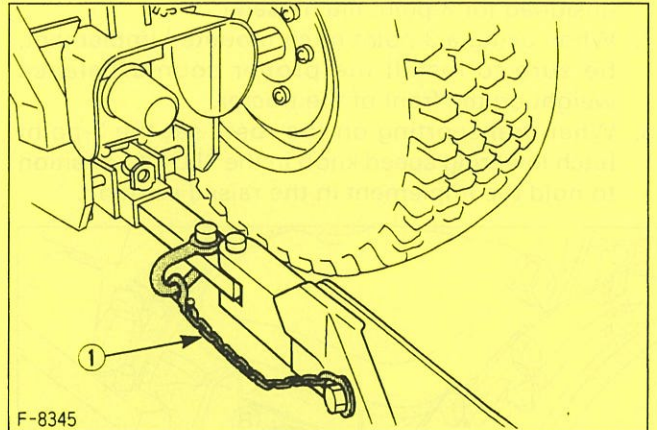
2. Always slow the tractor down before turning. Turning at high speed may tip the tractor over.
3. Make sure that the Slow Moving Vehicle (SMV) sign is clean and visible. Use hazard lights as required.



- (1) SMV emblem
 (2) Bracket

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

10. When towing other equipment, use a safety chain and place an SMV emblem on it as well.



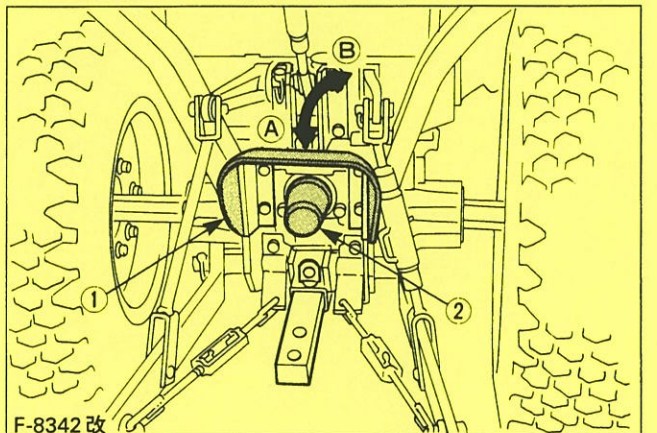
- (1) Safety chain

4. PARKING THE TRACTOR

1. Disengage the PTO, lower all implements to the ground, place all control levers in their neutral positions, set the parking brake, stop the engine, and remove the key.
2. Make sure that the tractor has come to a complete stop before dismounting.

5. OPERATING THE PTO

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

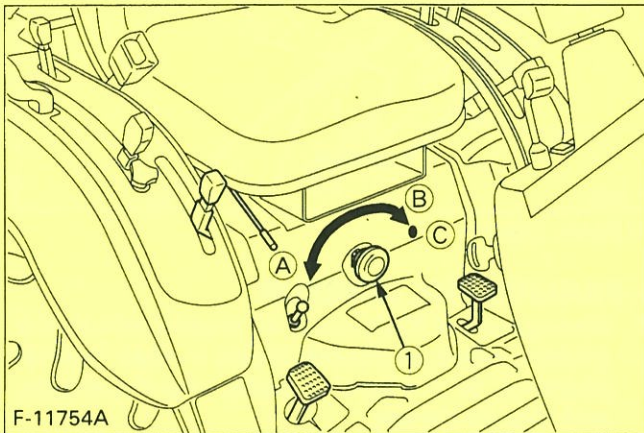


- (1) PTO shaft cover (A) "NORMAL POSITION"
 (2) PTO shaft cap (B) "RAISED POSITION"

3. Before installing or using PTO driven equipment, read the manufacturer's manual and review the safety labels attached to the equipment.
4. When operating stationary PTO driven equipment, always apply the tractor parking brake and place chocks behind and in front of the rear wheels. Stay clear of all rotating parts.

6. USING 3-POINT HITCH

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

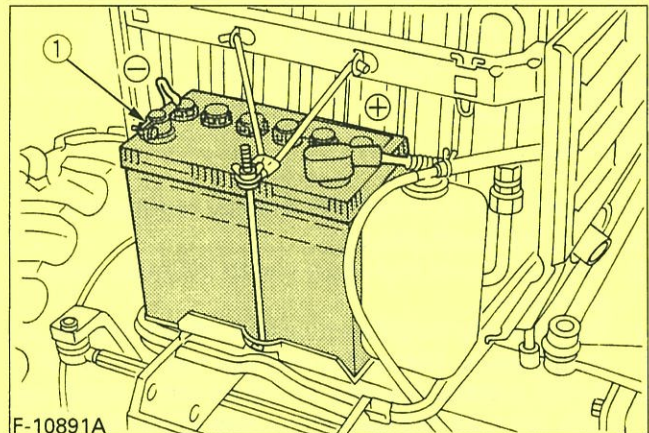


(1) 3-point hitch lowering speed knob (A) "FAST"
(B) "SLOW"
(C) "LOCK"

7. SERVICING THE TRACTOR

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

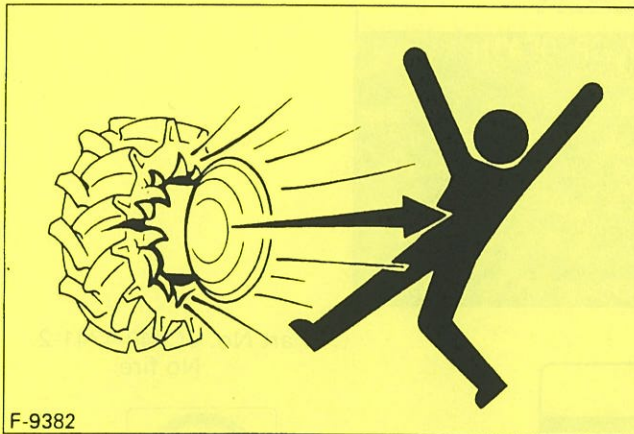
1. Allow the tractor time to cool off before working on or near the engine, muffler, radiator, etc.
2. Always stop the engine and remove the key before refueling. Avoid spills and overfilling.
3. Do not smoke when working around battery or when refueling. Keep all sparks and flames away from battery and fuel tank. The battery presents an explosive hazard because it gives off hydrogen and oxygen ... especially when recharging.
4. Before "jump starting" a dead battery, read and follow all of the instructions.
(See "JUMP STARTING" in Operating the Engine Section)
5. Keep first aid kit and fire extinguisher handy at all times.
6. Do not remove radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely. If the tractor has a coolant recovery tank, add coolant there instead of to the radiator.
7. Disconnect the battery's ground cable before working on or near electric components.
8. Do not use or charge the refillable type battery if the fluid level is below the LOWER (lower limit level) mark. Otherwise, the battery component parts may prematurely deteriorate, which may shorten the battery's service life or cause an explosion. Check the fluid level regularly and add distilled water as required so that the fluid level is between the UPPER and LOWER levels.
9. To avoid sparks from an accidental short circuit, always disconnect the battery's ground cable ⊖ first and connect it last.



(1) Battery

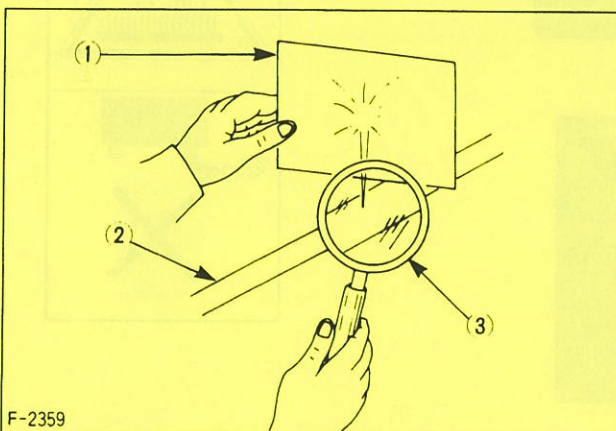
10. Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.

11. Always maintain the correct tire pressure.
Do not inflate tires above the recommended pressure shown in the operator's manual.



F-9382

12. Securely support the tractor when changing wheels or the wheel tread width.
13. Make sure that wheel bolts have been tightened to the specified torque.
14. Escaping hydraulic fluid under pressure has sufficient force to penetrate skin, causing serious personal injury. Before disconnecting hydraulic lines, be sure to release all residual pressure. Before applying pressure to the hydraulic system, make sure that all connections are tight and that all lines, pipes, and hoses are free of damage.



F-2359

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


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

8. DANGER, WARNING AND CAUTION LABELS

(1) Part No. TA040-4965-2

	<p style="text-align: center;">⚠ DANGER</p> <p>TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.</p> <ol style="list-style-type: none"> 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.
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(2) Part No. TA040-4959-3

	<p style="text-align: center;">⚠ WARNING</p> <p>TO AVOID PERSONAL INJURY.</p> <ol style="list-style-type: none"> 1. Keep PTO shield in place at all times. 2. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer. 3. For trailing PTO-driven implements, set drawbar at towing position. (see operator's manual)
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(4) Part No. 6C140-4744-1

<p style="text-align: center;">⚠ WARNING</p>	<p>TO AVOID PERSONAL INJURY:</p> <ol style="list-style-type: none"> 1. Attach pulled or towed loads to the drawbar only. 2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.
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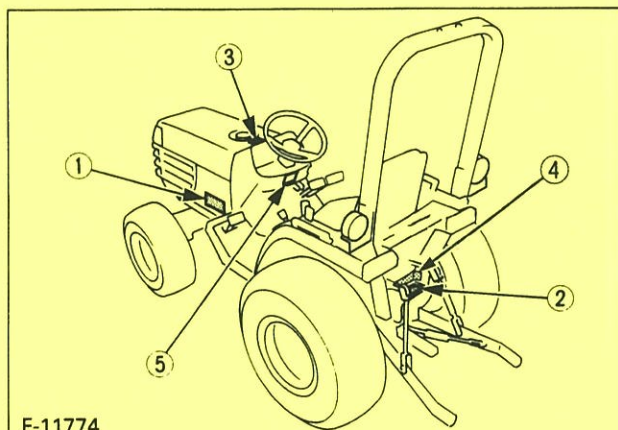
(5) Part No. 6C150-4743-1

<p style="text-align: center;">⚠ WARNING</p> 	<p>BEFORE DISMOUNTING TRACTOR:</p> <ol style="list-style-type: none"> 1. ALWAYS SET PARKING BRAKE. Leaving transmission in gear with the engine stopped will not prevent tractor from rolling. 2. PARK ON LEVEL GROUND WHENEVER POSSIBLE. If parking on a slope, position tractor across the slope. 3. LOWER ALL IMPLEMENTS TO THE GROUND. 4. STOP THE ENGINE.
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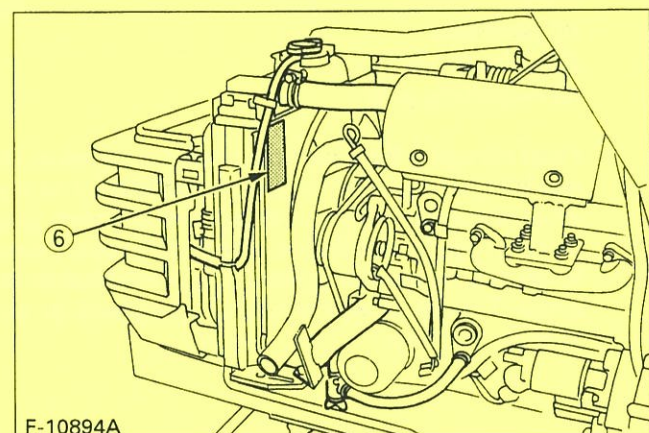
(3) Part No. 6C040-4741-2
No fire



(6) Part No. TA040-4958-1
Do not touch hot surface like muffler, etc.

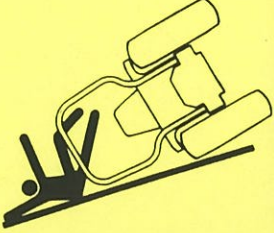


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F-10894A

(7) Part No. TA040-4932-2

⚠ WARNING	TO AVOID PERSONAL INJURY OR DEATH FROM ROLL-OVER:
	<ol style="list-style-type: none"> 1. Kubota recommends the use of a Roll-Over Protective Structures (ROPS) and seat belt in almost all applications. 2. Remove the ROPS only when it substantially interferes with operation or itself presents a safety risk. Examples include work in orchards and vineyards. ALWAYS REINSTALL IT BEFORE USING THE TRACTOR IN OTHER APPLICATIONS. 3. Never use just the seat belt or just the ROPS. They must be used together. For further details, consult your Operator's Manual or your local dealer.

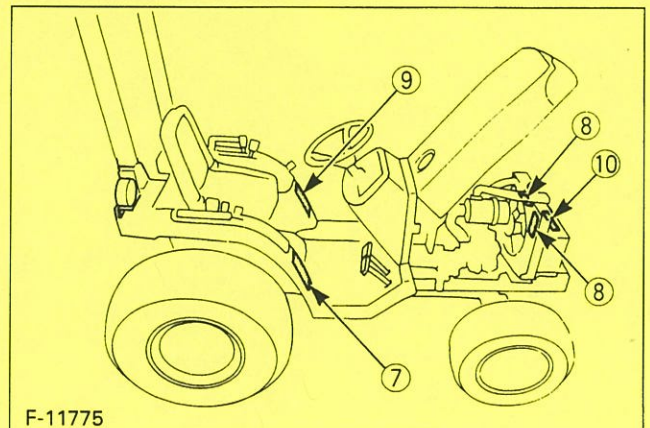
(8) Part No. 32751-4958-1
Stay clear of engine fan and fanbelt.

(9) Part No. 6C070-4742-1

⚠ CAUTION
TO AVOID PERSONAL INJURY: <ol style="list-style-type: none"> 1. Read and understand the operator's manual before operation. 2. Before starting the engine, make sure that everyone is at a safe distance from 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, set the parking brake, stop the engine and remove the key.

(10) Part No. 6C040-5559-1

DANGER EXPLOSIVE GASES 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. KEEP VENT CAPS TIGHT AND LEVEL POISON CAUSES SEVERE BURNS Contains sulfuric acid. Avoid contact with skin, eyes or clothing. In event of accident flush with water and call a physician immediately. KEEP OUT OF REACH OF CHILDREN



F-11775

CARE OF DANGER, WARNING AND CAUTION LABELS

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

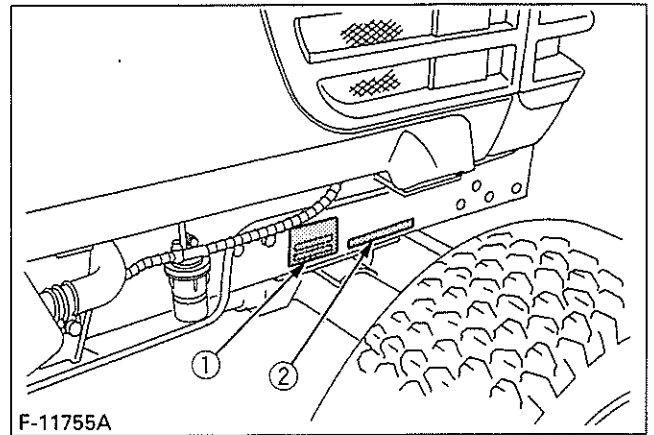
SERVICING OF TRACTOR

Your dealer is interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself. However, when in need of parts or major service, be sure to see your KUBOTA Dealer.

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

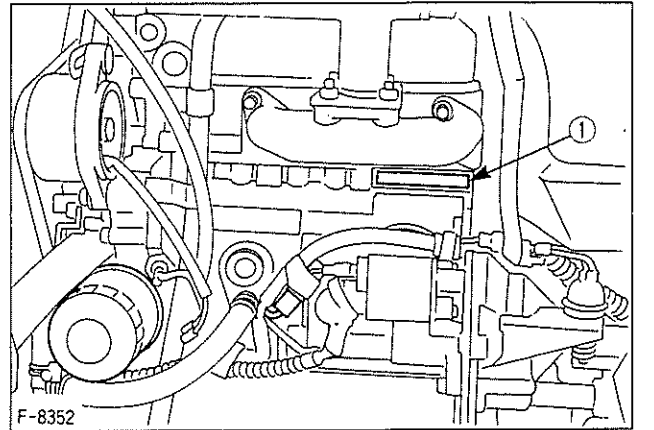
When in need of parts, be prepared to give your dealer both the tractor and engine serial numbers. Locate the serial numbers now and record them in the space provided.

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



F-11755A

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



F-8352

- (1) Engine serial number

SPECIFICATIONS

SPECIFICATION TABLE

Model		B2410HSDB	B2410HSD	B2410HSE	
PTO power		kW (HP)			
		13.4 (18.0)*			
Engine	Maker	KUBOTA			
	Model	D1105-E-D16			
	Type	Indirect Injection. Vertical, water-cooled, 4 cycle diesel			
	Number of cylinders	3			
	Bore and stroke	mm (in.)	ø78 x 78.4 (ø3.07 x 3.09)		
	Total displacement	L (cu.in.)	1.123 (68.5)		
	Engine gross power	kW (HP)	17.9 (24.0)		
	Rated revolution	rpm	2600		
	Maximum torque	N·m (ft·lb)	67 (50)		
	Battery	12V, RC : 79 min, CCA : 433 A			
Fuel	Diesel fuel No.2 [above -10°C (14°F)], Diesel fuel No.1 [below -10°C (14°F)]				
Capacities	Fuel tank	L (U.S.gals.)	24 (6.3)		
	Engine crankcase (with filter)	L (U.S.qts.)	3.0 (3.2)		
	Engine coolant	L (U.S.qts.)	3.8 (4.0)		
	Transmission case	L (U.S.gals.)	12.5 (3.30)		
Dimensions	Overall length (without 3p)	mm (in.)	2330 (91.7)		
	Overall width (min.tread)	mm (in.)	1175 (46.3)		
	Overall height (with ROPS)	mm (in.)	1965 (77.4)		
	Overall height (Top of Steering Wheel)	mm (in.)	1352 (53.2)		
	Wheel base	mm (in.)	1500 (59.0)		
	Min. ground clearance	mm (in.)	285 (11.2)	325 (12.8)	
	Tread	Front	mm (in.)	835 (32.9)	900 (35.4)
Rear		mm (in.)	890 (35.0) to 1064 (41.9)		
Weight (with ROPS)	kg (lbs.)	680 (1500)	670 (1477)	620 (1367)	
Clutch		Dry single plate			
Traveling system	Tires	Front	7 - 12		
		Rear	11.2 - 16		
	Steering	Integral type power steering			
	Transmission	Main-hydrostatic transmission, High-Low gear shift (2 foward, 2 reverse)			
	Brake	Wet disk type			
Min. turning radius (with brake)	m (feet)	2.1 (6.9)		2.0 (6.6)	
Hydraulic unit	Hydraulic control system		Position control		
	Pump capacity	L/min (gals/min)	3P : 16.6 (4.4), Power steering : 9.8 (2.6)		
	Three point hitch		SAE Category I		
	Max. lift force	At lift points	kg (lbs.)	750 (1655)	
24in. behind lift points		kg (lbs.)	590 (1300)		
PTO	Rear-PTO		SAE 1-3/8, 6 splines		
	Revolution		1 speed (540 rpm at 2600 engine rpm)		
	Mid-PTO		USA No.5 (KUBOTA 10-tooth) involute spline		
	Revolution		1 speed (2500 rpm at 2578 engine rpm)		

NOTE: * Manufacturer's estimate The company reserves the right to change the specifications without notice.

TRAVELING SPEEDS

(At rated engine rpm)

Model		B2410			
Tire size (Rear)		11.2-16 (Farm)		33 x 12.5-15 (Turf)	
	Range gear shift lever	km/h	mph	km/h	mph
Forward	Low	0 to 6.6	0 to 4.1	0 to 6.3	0 to 3.9
	High	0 to 16.5	0 to 10.2	0 to 15.5	0 to 9.6
Reverse	Low	0 to 5.3	0 to 3.3	0 to 5.0	0 to 3.1
	High	0 to 13.2	0 to 8.2	0 to 12.4	0 to 7.7

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

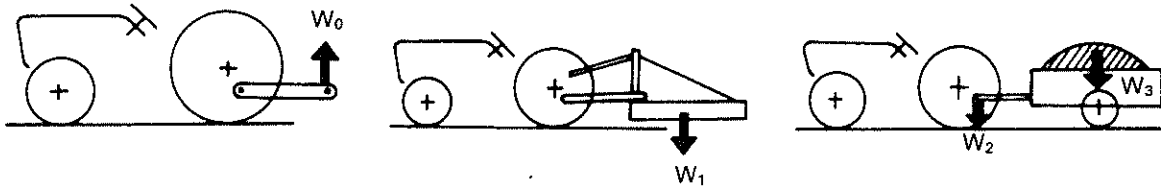
IMPLEMENT LIMITATIONS

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

	Tread (max. width) with farm tires			Lower link end max. loading weight W_0
	Front		Rear	
	2WD	4WD		
B2410	900 mm (35.4 in.)	835 mm (32.9 in.)		300 kg (660 lbs.)

	Actual figures		
	Implement weight W_1 and/or size	Max. Drawbar Load W_2	Trailer loading weight W_3 Max. capacity
B2410	As in the following list (Shown on the next page)	300 kg (660 lbs.)	1000 kg (2210 lbs.)

Lower link end max. loading weight..... The max. allowable load which can be put on the lower link end : W_0
 Implement weight The implement's weight which can be put on the lower link : W_1
 Max. drawbar load W_2
 Trailer loading weight..... The max. loading weight for trailer (without trailer's weight) : W_3



NOTE:

- Implement size may vary depending on soil operating conditions.

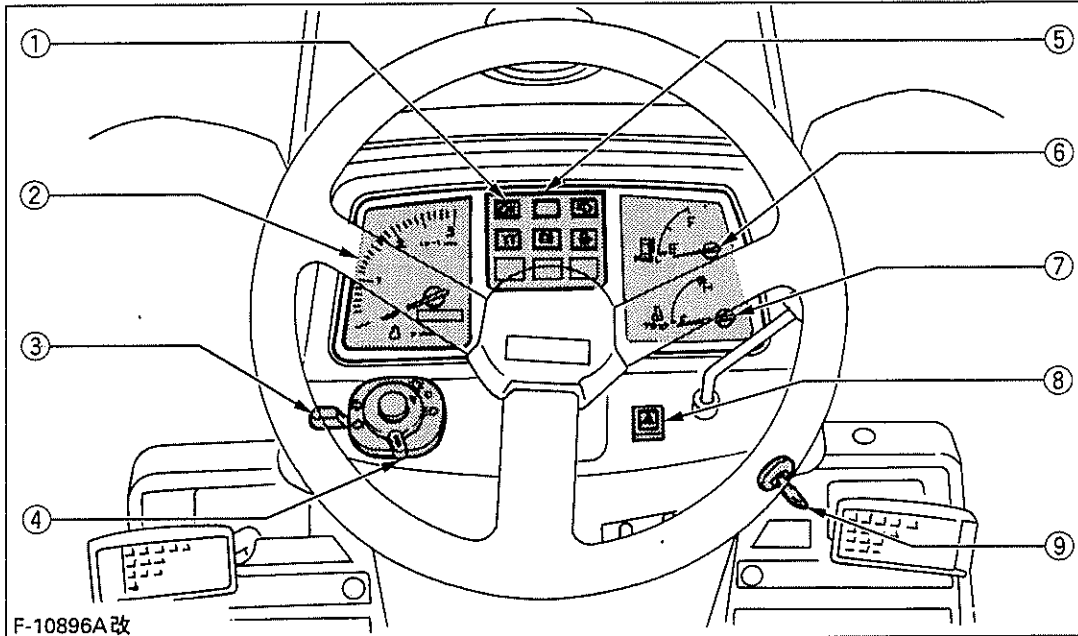
Implement		Remarks		B2410
Mower	Mid-mount	Max. cutting width Max. weight	cm (in.) kg (lbs.)	152 (60) 140 (300)
	Rotary-cutter (1 Blade)	Max. cutting width Max. weight	cm (in.) kg (lbs.)	122 (48) 180 (400)
	Rear-mount (2 or 3 Blade)	Max. cutting width Max. weight	cm (in.) kg (lbs.)	183 (72) 227 (500)
	Flail-mower	Max. cutting width	cm (in.)	122 (48)
	Sickle bar	Max. cutting width	cm (in.)	152 (60)
Rotary tiller		Max. tilling width Max. weight	cm (in.) kg (lbs.)	127 (50) 210 (465)
Bottom plow		Max. size	cm (in.)	36 (14) x 1
Disc plow		Max. size	cm (in.)	56 (22) x 1
Cultivator		Max. size	cm (in.)	137 (54) 1 Row
Disc harrow		Max. harrowing width Max. weight	cm (in.) kg (lbs.)	152 (60) 190 (420)
Sprayer		Max. tank capacity	L (U.S.gals.)	190 (50)
Front blade		Max. cutting width Sub frame	cm (in.)	152 (60) Necessary
Rear blade		Max. cutting width Max. weight	cm (in.) kg (lbs.)	152 (60) 180 (400)
Front loader		Max. lifting capacity Max. width Sub frame	kg (lbs.) cm (in.)	350 (770) 127 (50) Necessary
Box blade		Max. cutting width Max. weight	cm (in.) kg (lbs.)	137 (54) 227 (500)
Back hoe		Max. digging depth Max. weight Sub frame	cm (in.) kg (lbs.)	183 (72) 320 (700) Necessary
Snow blower		Max. working width Max. weight Sub frame	cm (in.) kg (lbs.)	152 (60) 200 (450) Necessary
Trailer		Max. load capacity Max. drawbar load	kg (lbs.) kg (lbs.)	1000 (2200) 300 (660)

NOTE:

- Implement size may vary depending on soil operating conditions.

INSTRUMENT PANEL AND CONTROLS

Instrument Panel, Switches and Hand Controls

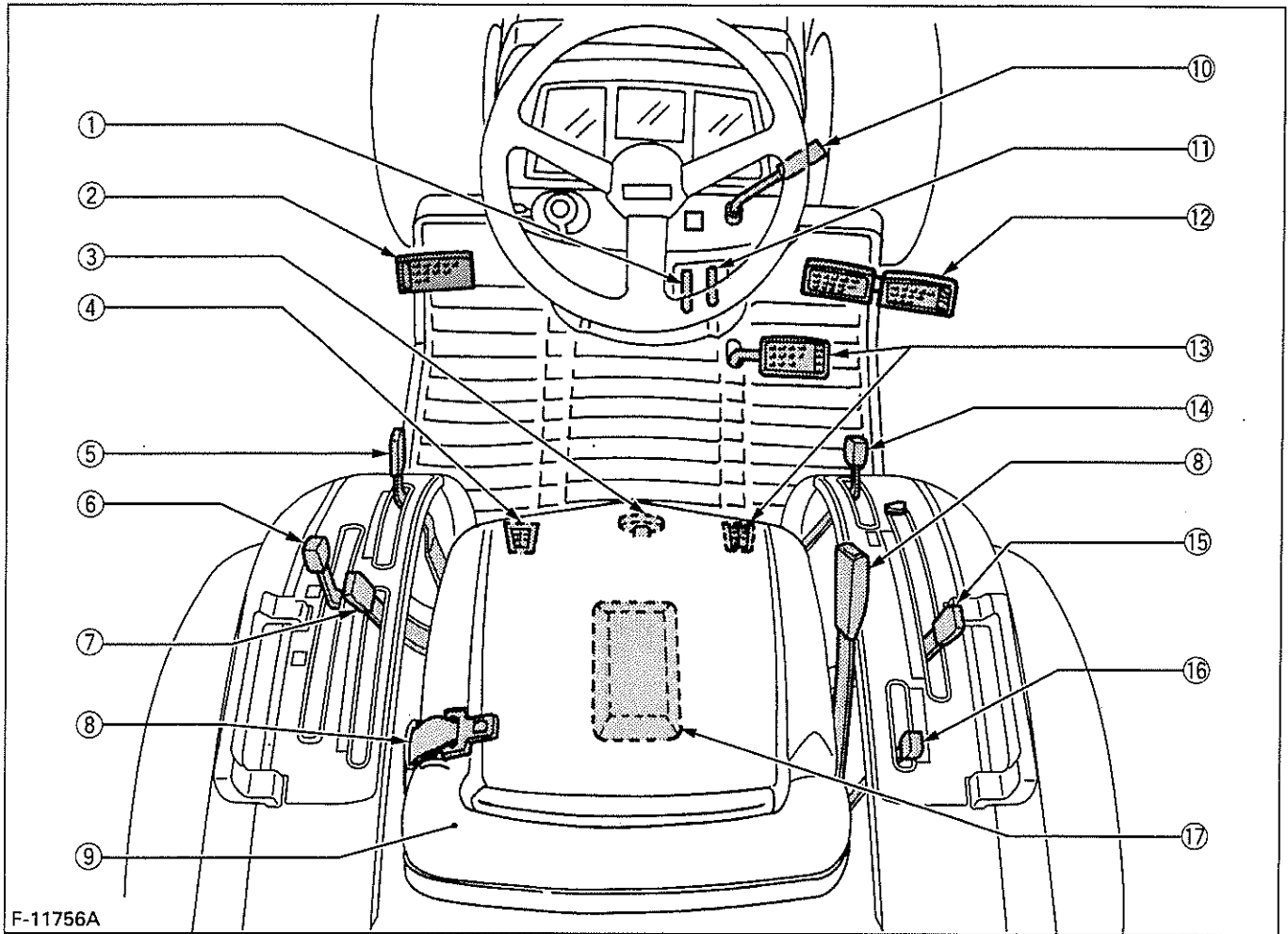


F-10896A改

ILLUSTRATED CONTENTS

(1) Turn signal / Hazard light indicator	24
(2) Hourmeter / Tachometer	30
(3) Turn signal light switch	24
(4) Head light switch	24
(5) Easy Checker™	19,29
(6) Fuel gauge	30
(7) Coolant temperature gauge	30
(8) Hazard light switch	24
(9) Key switch	19

Foot and Hand Controls



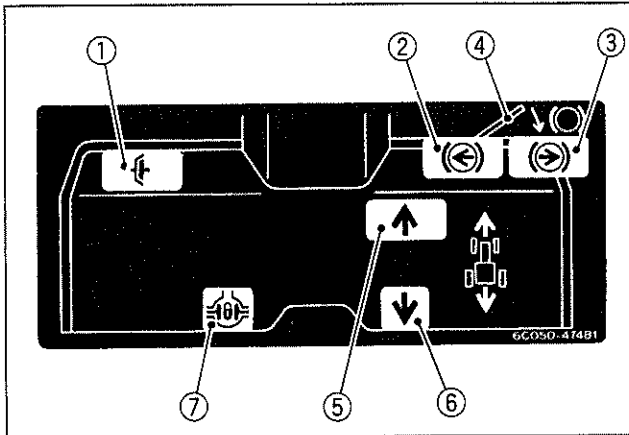
F-11756A

ILLUSTRATED CONTENTS

(1) Speed set lever	18,28,29
(2) Clutch pedal	26
(3) 3-Point hitch lowering speed knob	38
(4) Differential lock pedal	31
(5) Mid -PTO gear shift lever	18,34
(6) Range gear shift lever (Hi-Lo)	26
(7) Rear-PTO gear shift lever	18,33
(8) Seat belt	24
(9) Operator's seat	24
(10) Hand throttle lever	19,28
(11) Parking brake lever	16,28,30
(12) Brake pedal	25
(13) Speed control pedal	18,28
(14) Front wheel drive lever [4WD model]	26
(15) Position control lever	19,26
(16) Bi-speed turn lever [Bi-speed turn model]	27
(17) Tool-box	-

■ Pedal Location Label

The label is located on the cover under seat.



- (1) Clutch pedal
- (2) Brake pedal (left)
- (3) Brake pedal (right)
- (4) Brake pedal lock
- (5) Speed control pedal (forward)
- (6) Speed control pedal (reverse)
- (7) Differential lock pedal

PRE-OPERATION CHECK

DAILY CHECK

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



CAUTION

To avoid personal injury:

- Be sure to check and service the tractor on a firm, flat, and level surface with the engine stopped, all implements lowered to the ground and the parking brake "ON".

Check item

- Walk around inspection
- Check engine oil level
- Check transmission oil level
- Check coolant level
- Clean grill and radiator screen
- Check air cleaner evacuator valve
(When used in dusty conditions)
- Check brake and clutch pedal
- Check indicators, gauges and meter
- Check lights
- Check wire harness
- Check seat belt and ROPS
- Refuel
(See "DAILY CHECK" in periodic service section.)
- Care of danger, warning and caution labels
(See "DANGER, WARNING AND CAUTION LABELS" in safe operation section.)

OPERATING THE ENGINE



CAUTION

To avoid personal injury:

- Read "Safe Operation" in the front of this manual.
- Read the danger, warning and caution labels located on the tractor.
- To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.
- Never start engine while standing on ground. Start engine only from operator's seat.

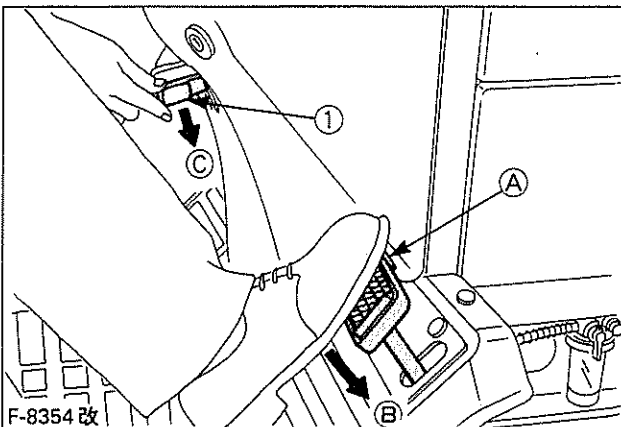
IMPORTANT:

- 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 30 seconds.

STARTING THE ENGINE

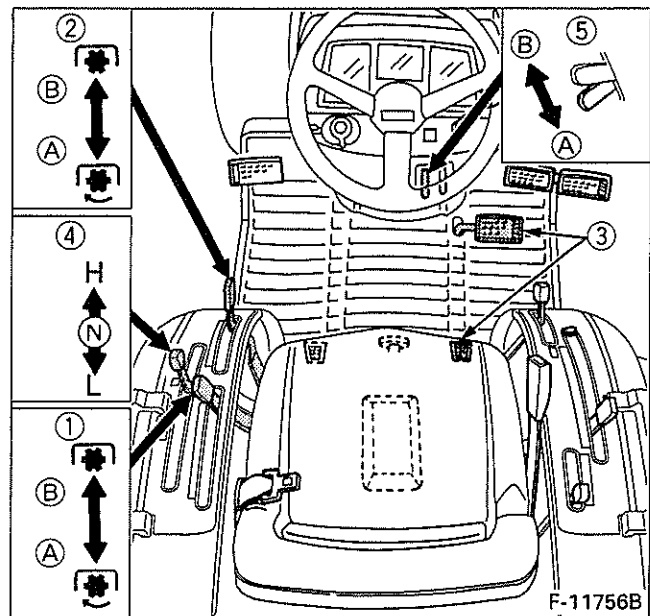
1. Make sure the parking brake is set.

- To set the parking brake;
 - Interlock the brake pedals.
 - Depress the brake pedals.
 - Latch the brake pedals with the parking brake lever.
- To release the parking brake, depress the brake pedals again.



- (1) Parking brake lever (A) Interlock the brake pedals
 (B) "DEPRESS"
 (C) "PUSH-DOWN"

- Place the Rear-PTO gear shift lever and Mid-PTO gear shift lever in "OFF" (Disengaged) position.
- Place the speed set lever in "OFF" position.
Place the speed control pedal in "NEUTRAL" position.
Place the range gear shift lever (Hi-Lo) in "NEUTRAL" position.

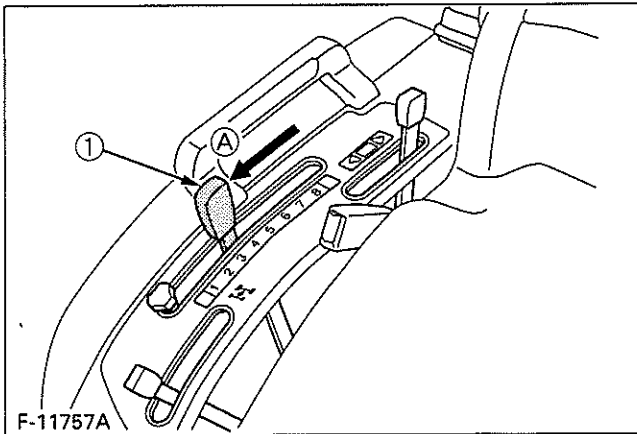


- (1) Rear-PTO gear shift lever (A) "ON"
 (B) "OFF"
 (2) Mid-PTO gear shift lever (H) "Hi"
 (L) "Lo"
 (3) Speed control pedal (N) "NEUTRAL POSITION"
 (4) Range gear shift lever (Hi-Lo)
 (5) Speed set lever

NOTE:

- The speed control pedal automatically returns to neutral when the operator's foot is released from the pedal.

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

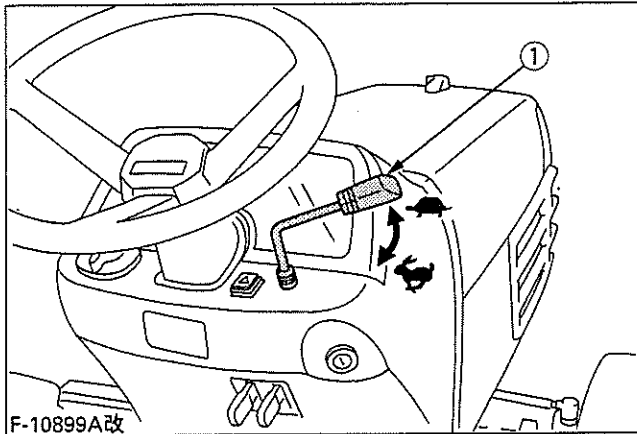


F-11757A

(1) Position control lever

(A) "DOWN"

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

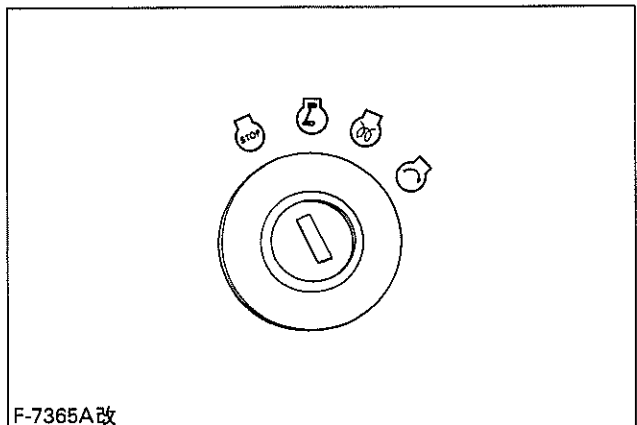


F-10899A改

(1) Hand throttle lever

↑ "INCREASE"
↓ "DECREASE"

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

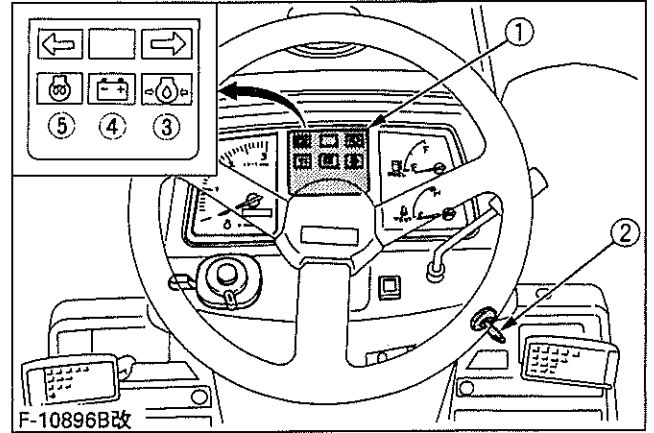


F-7365A改

↑ "OFF"
→ "ON"
↓ "PREHEAT"
← "START"

◆ Check Easy Checker™ lamps:

1. When the key is turned "ON", lamps (3) (4) should come on. If trouble should occur at any location while the engine is running, the warning lamp corresponding to that location comes on.



F-10896B改

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

IMPORTANT:

- Daily checks with the Easy Checker™ only are not sufficient. Never fail to conduct physical daily checks carefully by referring to Daily Check section.
(See "DAILY CHECK" in Periodic Service section)

7. Fully depress the clutch pedal, turn the key to "PREHEAT" position and hold it for about 2 to 3 seconds.

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

Temperature	Preheating Time
Over 0°C (32°F)	2 to 3 sec.
0 to -5°C (32 to 23°F)	5 sec.
-5 to -15°C (23 to 5°F)	10 sec.

NOTE:

- Glow plug indicator (5) comes "ON" while engine is being preheated.

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

◆ Cold Weather Starting

When the ambient temperature is below -5°C (23°F) and the engine is very cold. If the engine fails to start, turn off the key for 30 seconds. Then repeat steps 7 and 8. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 30 seconds.

■ Block Heater (Option)

A block heater is available as an option from your dealer. It will assist you in starting your tractor when the ambient temperature is below -15°C (5°F).

IMPORTANT:

- The engine will not start unless the clutch pedal is fully depressed, and the speed control pedal and the Rear-PTO gear shift lever and Mid-PTO gear shift lever are in the "NEUTRAL" position.

9. Check to see that all the lamps on the Easy Checker™ are "OFF".

If a lamp is still on, immediately stop the engine and determine the cause.

10. Release the clutch pedal.

STOPPING THE ENGINE

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

WARMING UP



CAUTION

To avoid personal injury:

- Be sure to set the parking brake during warm-up.

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

■ Warm-up Transmission Oil at Low Ambient Temperatures

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

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

Ambient temperature	Warm-up time requirement
Above 0°C (32°F)	At least 5 minutes
0 to -10°C (32 to 14°F)	5 to 10 minutes
-10 to -20°C (14 to -4°F)	10 to 15 minutes
Below -20°C (-4°F)	More than 15 minutes

IMPORTANT:

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

JUMP STARTING



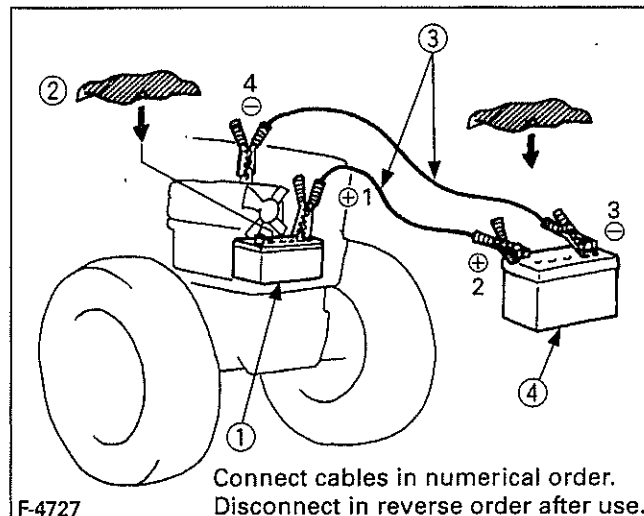
CAUTION

To avoid personal injury:

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

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

1. Bring helper vehicle with a battery of the same voltage as disabled tractor within easy cable reach. "THE VEHICLES MUST NOT TOUCH".
2. Engage the parking brakes of both vehicles and put the shift levers in neutral. Shut both engines off.
3. Put on safety goggles and rubber gloves.
4. Ensure the vent caps are securely in place. (if equipped)
5. Cover vent caps with damp rags. Do not allow the rag to touch the battery terminals.
6. Attach the red clamp to the positive (red, \oplus or pos.) terminal of the dead battery and clamp the other end of the same cable to the positive (red, \oplus or pos.) terminal of the helper battery.
7. Clamp the other cable to the negative (black, \ominus or neg.) terminal of the helper battery.
8. Clamp the other end to the engine block or frame of the disabled tractor as far from the dead battery as possible.
9. Start the helper vehicle and let its engine run for a few moments. Start the disabled tractor.
10. Disconnect the jumper cables in the exact reverse order of attachment. (Steps 8, 7 and 6).
11. Remove and discard the damp rags.



(1) Dead battery

(2) Lay a damp rag over the vent caps

(3) Jumper cables

(4) Helper battery

IMPORTANT:

- This machine has a 12volt negative \ominus ground starting system.
- Use only same voltage for jump starting.
- Use of a higher voltage source on tractor's electrical system could result in severe damage to tractor's electrical system.
Use only matching voltage source when "Jump starting" a low or dead battery condition.

OPERATING THE TRACTOR

OPERATING NEW TRACTOR

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

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

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

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

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

■ Changing Lubricating Oil for New Tractors

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

For further details of change interval hours, see "MAINTENANCE" section.

OPERATING FOLDABLE ROPS (OPTION)



CAUTION

To avoid personal injury:

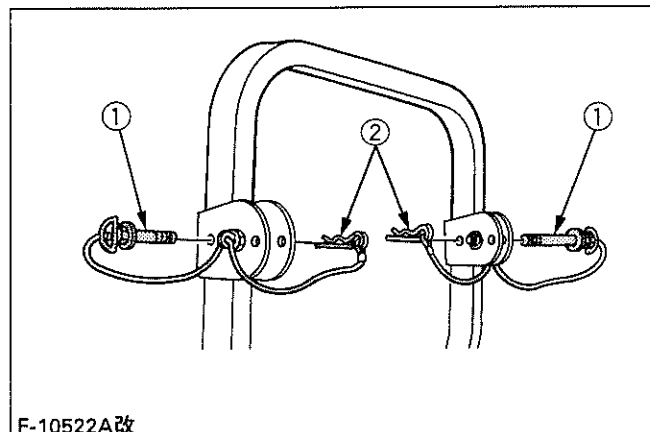
- When raising or folding the ROPS, apply parking brake, stop the engine and remove the key.

Always perform function from a stable position at the rear of tractor.

- Fold the ROPS down only when absolutely necessary and fold it up and lock it again as soon as possible.

■ To Fold the ROPS

1. Remove both set bolts.



F-10522A改

(1) Set bolt

(2) Hair pin

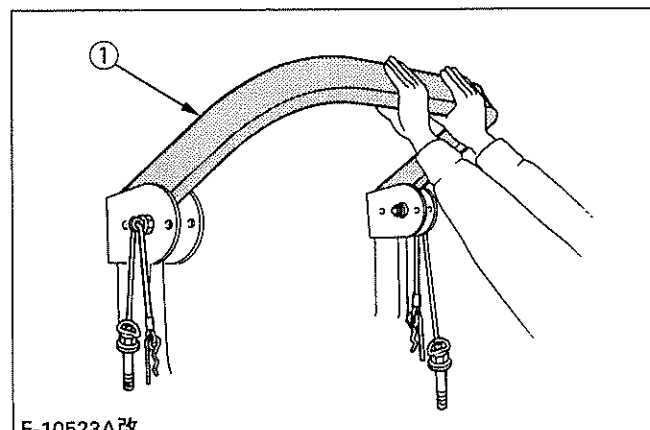
2. Fold the ROPS.



CAUTION

To avoid personal injury:

- Hold the ROPS tightly with both hands and fold the ROPS slowly and carefully.



F-10523A改

(1) ROPS

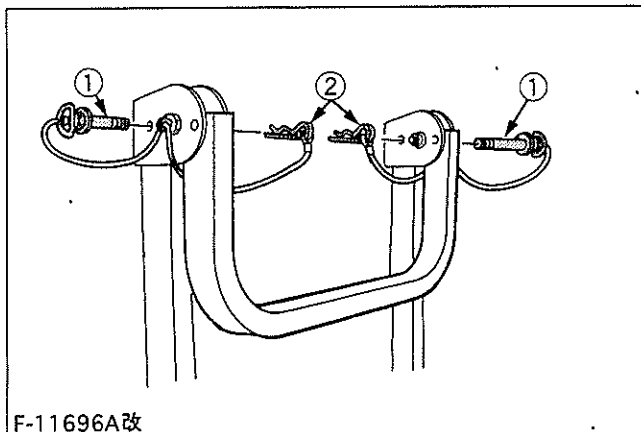
- Align set bolt holes and insert both set bolts. Slightly tighten the set bolts and secure them with the hair pins.



CAUTION

To avoid personal injury:

- Make sure that both set bolts are properly installed and secured with the hair pins.

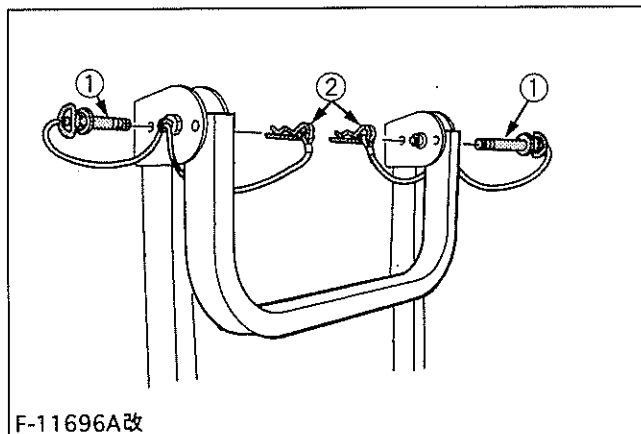


F-11696A改

- Set bolt
- Hair pin

To Raise the ROPS to Upright Position

- Remove both hair pins and set bolts.



F-11696A改

- Set bolt
- Hair pin

- Raise ROPS to the upright position.



CAUTION

To avoid personal injury:

- Raise the ROPS slowly and carefully.

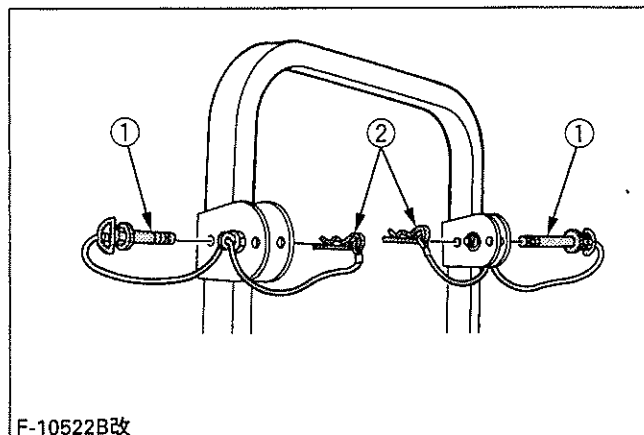
- Align set bolt holes, insert both set bolts. Slightly tighten the set bolts and secure them with the hair pins.



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 pins.

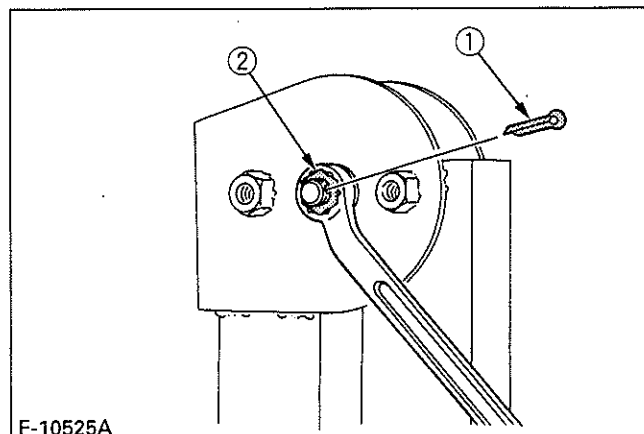


F-10522B改

- Set bolt
- Hair pin

Adjustment of Foldable ROPS

- Adjust free fall of the ROPS upper frame regularly.
- If you feel less friction when folding the ROPS, remove the cotter pin ①, tighten the nut ② until you feel the right friction in the movement and then replace the cotter pin.



F-10525A

- Cotter pin
- Nut

STARTING

1. Adjusting the Operator's Position.

Operator's Seat



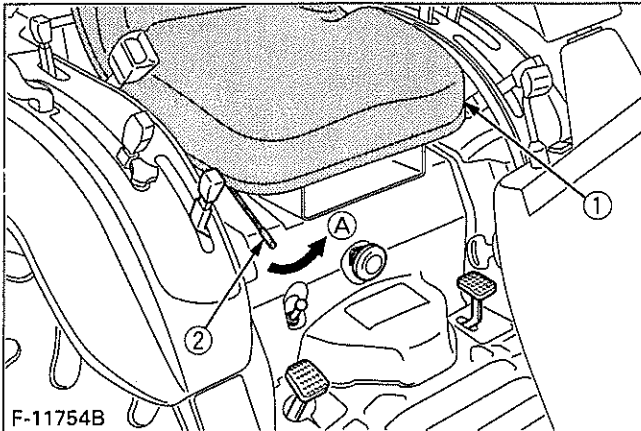
CAUTION

To avoid personal injury:

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

◆ Position adjustment

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



(1) Seat

(2) Position adjust lever

(A) "PULL IN"

IMPORTANT

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

Seat Belt

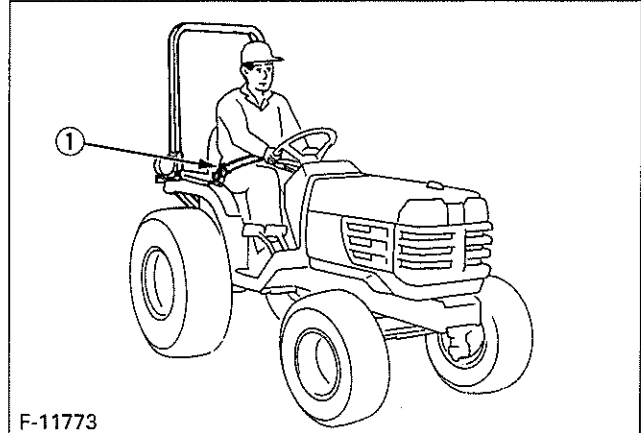


CAUTION

To avoid personal injury:

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

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



(1) Seat belt

2. Selecting Light Switch Positions.

Head Light / Turn Signal / Hazard Light Switch

◆ Head Light Switch

- (A) ○ ... Head lights OFF.
 (B) ≡○ ... Head lights ON.

◆ Hazard Light

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

◆ Turn Signal with Hazard Light Switch On.

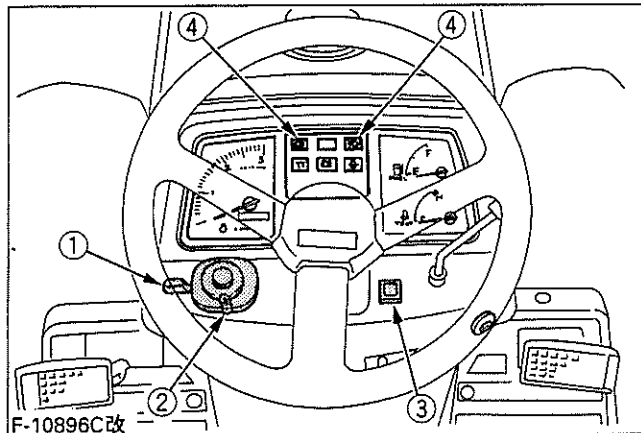
1. To indicate a right turn with the hazard lights already flashing (hazard switch on), turn the turn signal switch clockwise.
2. To indicate a left turn with the hazard lights already flashing, turn the turn signal switch counterclockwise.
3. When the left or right turn signal is activated in combination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

◆ Turn Signal with Hazard Light Switch Off

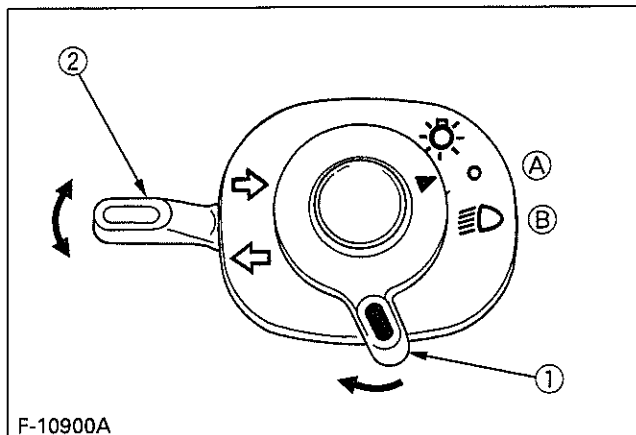
1. To indicate a right turn without hazard lights (hazard switch off), turn the turn signal switch clockwise.
2. To indicate a left turn without hazard lights, turn the turn signal switch counterclockwise.
3. When the left or right turn signal is activated without the hazard lights, the indicated turning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

NOTE:

- The hazard light switch is operative when the key switch is in either the "ON" or "OFF" positions.
- The turn signal light switch is only operative when the key switch is in the "ON" position.
- The indicator in the hazard light switch will light up when the head light switch is turned on.
- Be sure to return the turn signal switch to center position after turning.



(1) Turn signal light switch
 (2) Head light switch
 (3) Hazard light switch
 (4) Hazard / Turn signal indicator



(1) Head light switch (A) "OFF"
 (2) Turn signal light switch (B) "ON"

3. Checking the Brake Pedal.

■ Brake Pedals (Right and Left)



WARNING

To avoid personal injury:

- Applying only one rear wheel brake at high speeds could cause the tractor to swerve or roll-over.

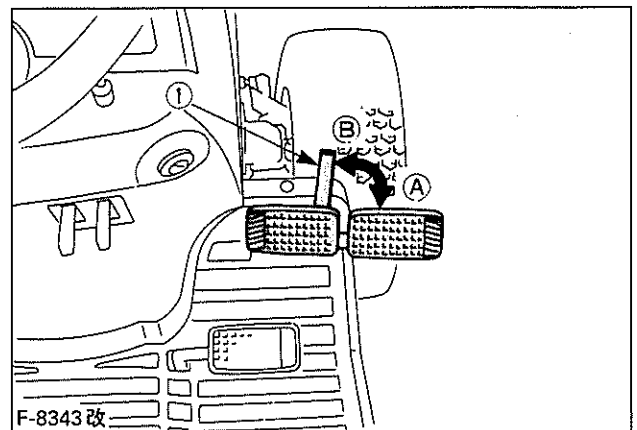


CAUTION

To avoid personal injury:

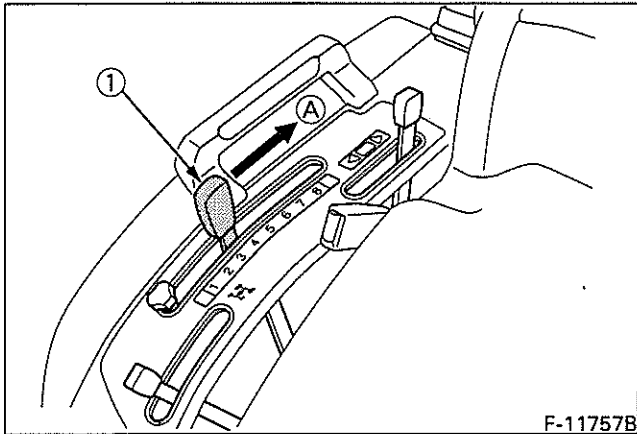
- An accident may occur if the tractor is suddenly braked, such as by heavy towed loads shifting forward or loss of control.
- The braking characteristics are different between two and four wheel drive. Be aware of the difference and use carefully.
- When driving on icy, wet or loose surfaces, make sure the tractor is correctly ballasted to avoid skidding and loss of steering control. Operate at reduced speed.

1. Before operating the tractor on the road or before applying the parking brake, be sure to interlock the right and left pedals as illustrated below.
2. Use individual brakes to assist in making sharp turns at slow speeds (Field Operation Only). Disengage the brake pedal lock and depress only one brake pedal.
3. Be sure brake pedals have equal adjustment when using locked together.



(1) Brake pedal lock (A) "LOCK"
 (B) "RELEASE"

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



(1) Position control lever (A) "UP" F-11757B

5. Depress the Clutch Pedal.

Clutch Pedal

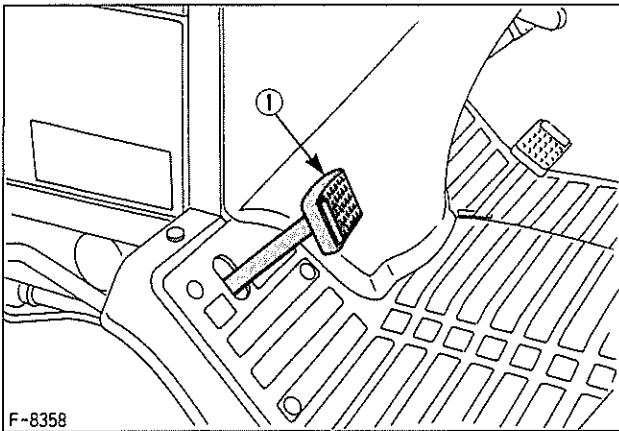


CAUTION

To avoid personal injury:

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

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



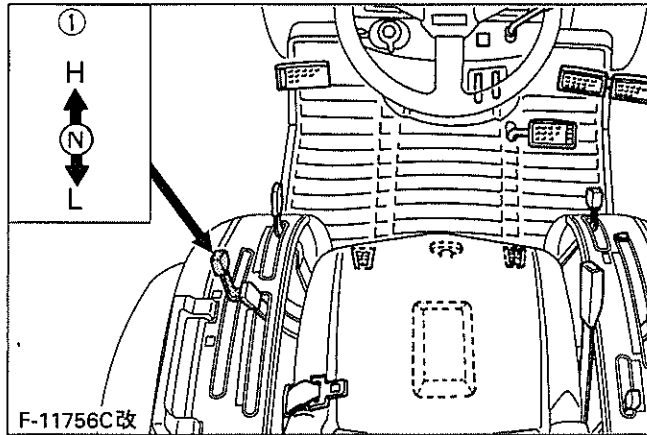
(1) Clutch pedal F-835B

IMPORTANT:

To help prevent premature clutch wear:

- The clutch pedal must be quickly disengaged and be slowly engaged.
- Avoid operating the tractor with your foot resting on the clutch pedal.
- Select proper gear and engine speed depending on the type of job.

6. Selecting the Travel Speed.



F-11756C改
 (1) Range gear shift lever (H) "HIGH" (Hi-Lo) (L) "LOW" (N) "NEUTRAL POSITION"

Range Gear Shift Lever (Hi-Lo)

The range gear shift can only be shifted when tractor is completely stopped and the clutch pedal is depressed.

IMPORTANT:

Depress the clutch pedal and stop the tractor. Do not force the range gear shift lever.

- If it is difficult to shift the range shift lever into neutral position;
 1. Depress the brake pedals firmly for several seconds.
 2. Without reducing the brake pedal force, depress the clutch pedal and then shift the range shift lever.
- If it is difficult to shift the range shift lever into "L" or "H" from neutral position;
 1. Release the clutch pedal.
 2. Slightly depress the speed control pedal to rotate the gears inside of transmission.
 3. Release the speed control pedal to neutral position.
 4. Depress the clutch pedal and then shift the range shift lever.

Front Wheel Drive Lever (if equipped)

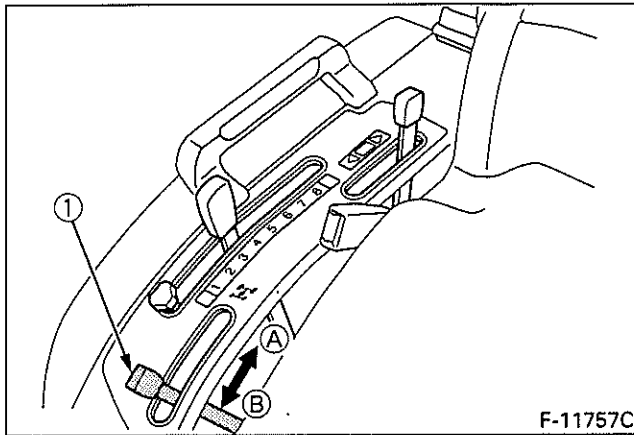


CAUTION

To avoid personal injury:

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

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



(1) Front wheel drive lever
 (A) "ON"
 (B) "OFF"

IMPORTANT:

- Depress the clutch pedal before engaging the front wheel drive lever.
- Tires will wear quickly if front wheel drive is engaged on paved roads.

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

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

■ **Bi-speed Turn Lever (if equipped)**

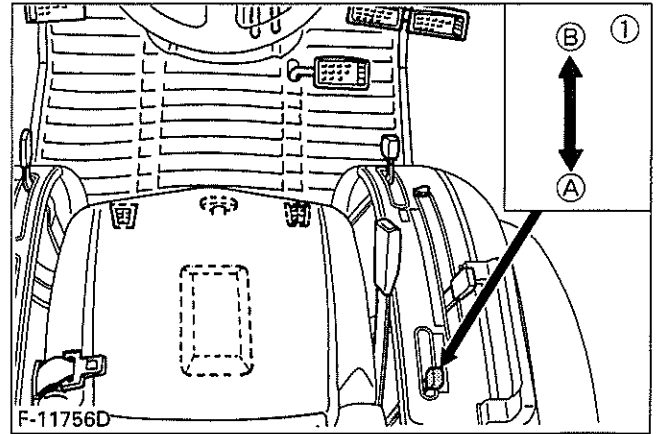


CAUTION

To avoid personal injury:

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

1. Bi-speed Turn system operates only when engaged and front wheel exceeds 35 degrees turning angle.
2. Bi-speed shift lever can be activated only when front wheels are in straight ahead position.
3. Bi-speed turn accelerates front tire rotation 1.7 times faster than conventional DT tractor front tires.
4. Bi-speed is a maneuvering feature, the increase in front wheel speed pulls the front around quicker, making a shorter turning radius.



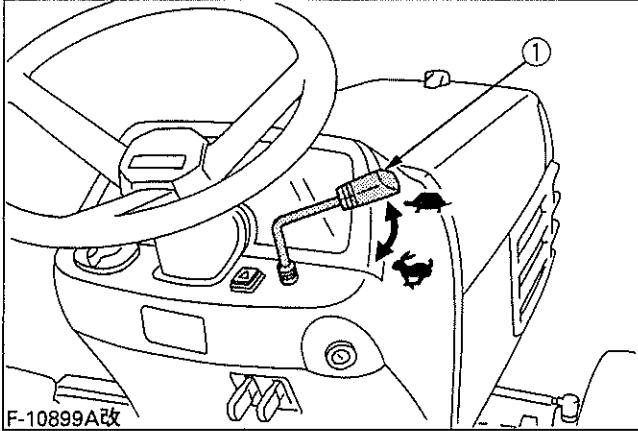
(1) Bi-speed turn lever

(A) "Disengaged" "OFF"
 (B) "Engaged" "ON"

7. Accelerate the Engine.

■ Hand Throttle Lever

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

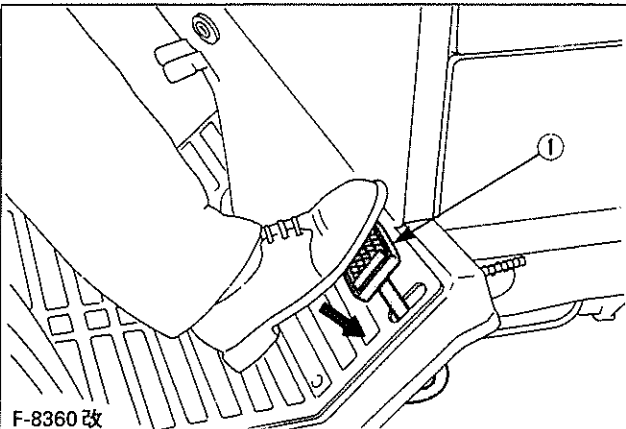


(1) Hand Throttle lever
 "INCREASE"
 "DECREASE"

8. Unlock the Parking Brake and Slowly Release the Clutch.

■ Parking Brake Lever

To release the parking brake, depress the brake pedals again.



(1) Brake pedals

9. Depress the Speed Control Pedal.

■ Speed Control Pedal



WARNING

To avoid personal injury:

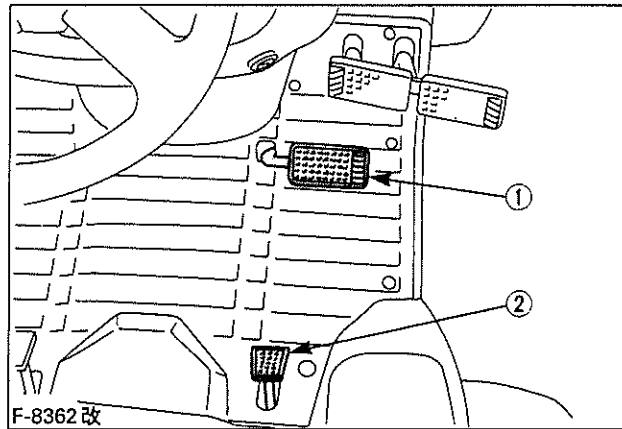
- Do not operate if tractor moves on level ground with foot off Speed Control Pedal.

Forward Pedal

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

Reverse Pedal

Depress the reverse pedal with the heel of your right foot to move backward.



(1) Forward Pedal
 (2) Reverse Pedal

IMPORTANT:

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

■ Speed Set Device

The Speed Set Device is designed for tractor operating efficiency and operator comfort. This device will provide a constant forward operating speed by mechanically holding the speed control pedal at a selected position.

◆ To engage Speed Set Device

1. Accelerate speed to desired level using Speed Control Pedal, and push the speed set lever down to the "ON" position.
2. Release Speed Control Pedal and desired speed will be maintained.

◆ To disengage Speed Set Device

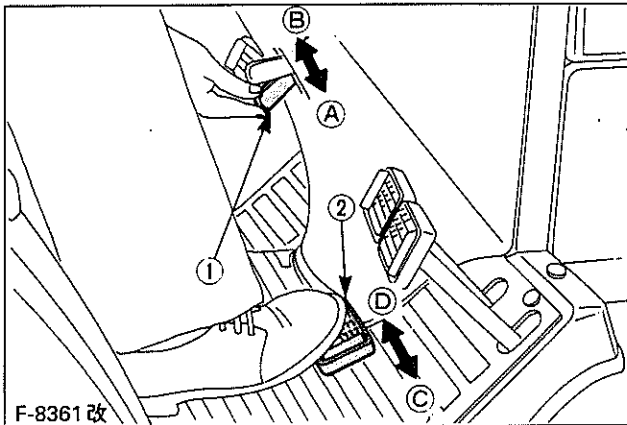
- Pull the speed set lever upward.
- Depress both brake pedals.

NOTE:

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

IMPORTANT:

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



- | | |
|-------------------------|----------------|
| (1) Speed set lever | (A) "ON" |
| (2) Speed control pedal | (B) "OFF" |
| | (C) "Increase" |
| | (D) "Decrease" |

STOPPING

Stopping

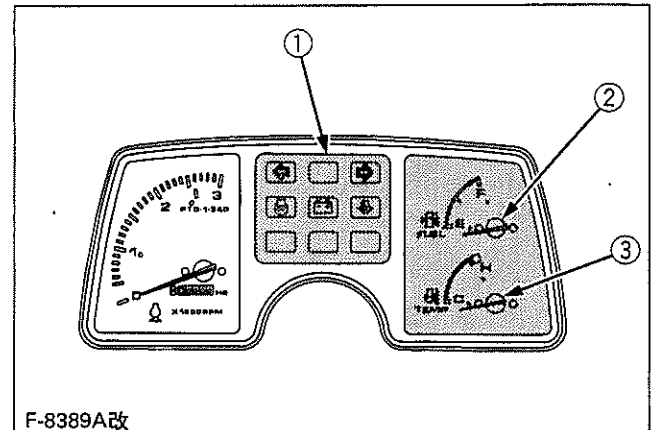
1. Slow the engine down.
2. Step on the clutch and brake pedal.
3. After the tractor has stopped, disengage the PTO, lower the implement to the ground, shift the transmission to neutral, release the clutch pedal, and set the parking brake.

CHECK DURING DRIVING

Immediately Stop the Engine if:

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

While driving, make the following checks to see that all the parts are functioning normally.



- F-8389A 改
- (1) Easy checker™
 - (2) Fuel gauge
 - (3) Coolant temperature gauge

Easy Checker™

If the warning lamps of the Easy Checker™ come on during operation, immediately stop the engine, and find the cause as shown below.

Never operate the tractor while Easy Checker™ lamp is on.

Engine oil pressure

If the oil pressure in the engine goes below the prescribed level, the warning lamp in the Easy Checker™ will come on.

If this should happen during operation, and it does not go off when the engine is accelerated to more than 1000 rpm, check level of engine oil. (See "Checking Engine Oil Level" in daily check in periodic service section.)

Electrical charge

If the alternator is not charging the battery, the warning lamp in the Easy Checker™ will come on.

If this should happen during operation, check the electrical charging system or consult your local KUBOTA Dealer.

NOTE:

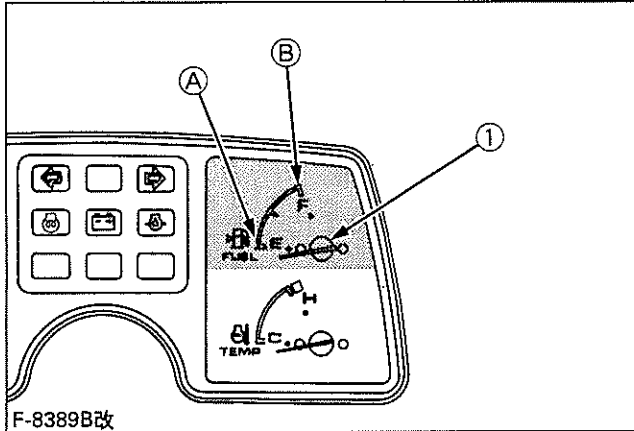
- For checking and servicing of your tractor, consult your local KUBOTA Dealer for instructions.

Fuel Gauge

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

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

Should this happen, the system should be bled (See "Bleeding Fuel System" in Periodic Service section)



F-8389B改
 (1) Fuel gauge (A) "EMPTY" (B) "FULL"

Coolant Temperature Gauge

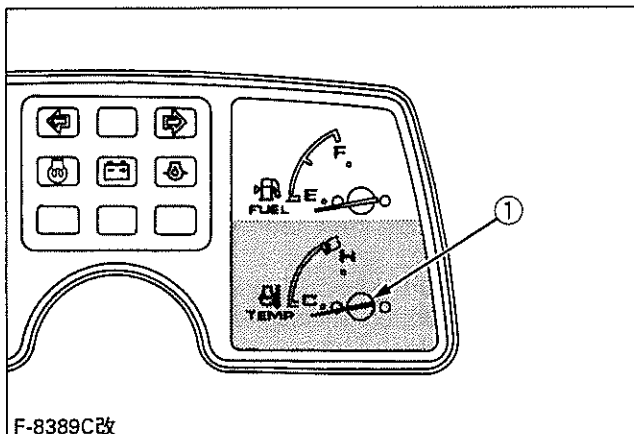


CAUTION

To avoid personal injury:

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

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

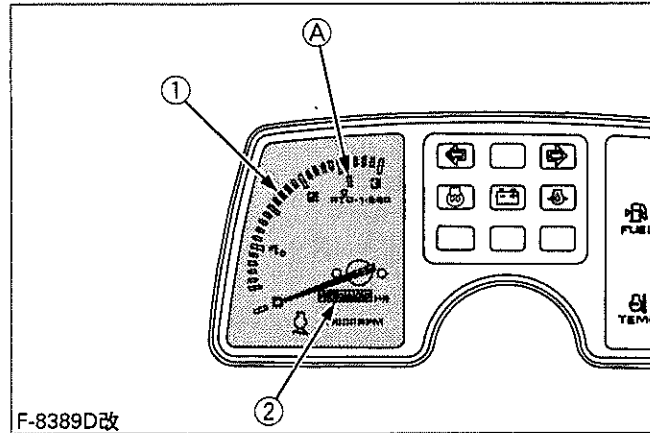


F-8389C改
 (1) Coolant temperature gauge

Hourmeter/Tachometer

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

- The tachometer indicates the engine speed and the 540 PTO shaft speed location on the dial.
- The hourmeter indicates in five digits the hours the tractor has been used; the last digit indicates 1/10 of an hour.



F-8389D改
 (1) Engine revolution (A) PTO: 540rpm
 (2) Hours used

PARKING

Parking

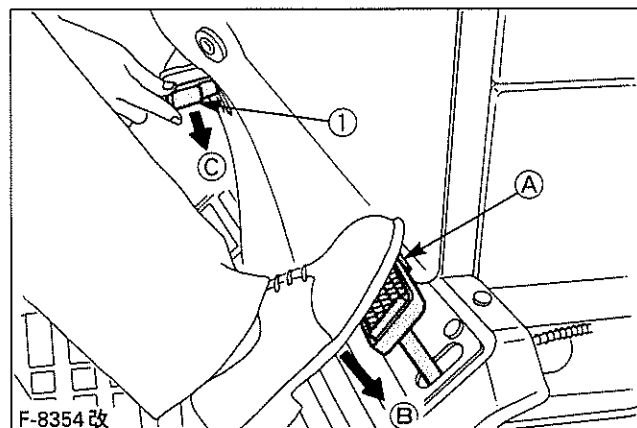


CAUTION

To avoid personal injury:

- Always set the parking brake, stop the engine and remove the key before leaving the tractor seat.

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



F-8354改
 (1) Parking brake lever (A) Interlock the brake pedals
 (B) "DEPRESS" (C) "PUSH-DOWN"

2. Before getting off 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 key.
3. If it is necessary to park on an incline, be sure to chock the wheels to prevent accidental rolling of the machine.

OPERATING TECHNIQUES

Differential Lock



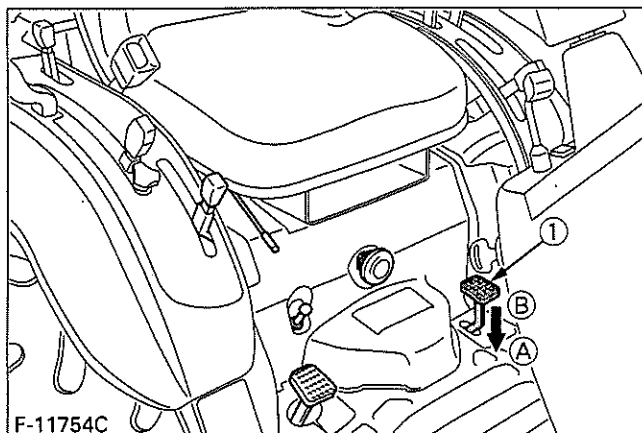
WARNING

To avoid personal injury due to loss of steering control:

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

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

Differential lock is maintained only while the pedal is depressed.



F-11754C

- (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 differential lock when one wheel is spinning and the other is completely stopped.
- If the differential lock cannot be released in the above manner, step lightly on the brake pedals alternately.

Operating the Tractor on a Road



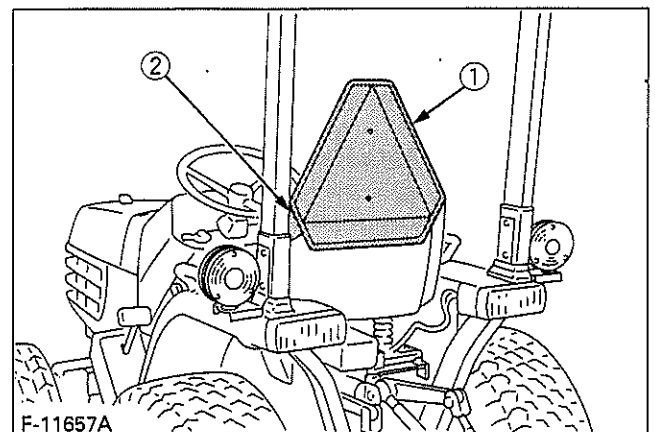
CAUTION

To avoid personal injury:

- To help assure straight line stops when driving at transport speeds, lock the brake pedals together. Uneven braking at road speeds could cause the tractor to roll-over.
- When traveling on road with 3-point hitch mounted implement attached, be sure to have sufficient front weight on the tractor to maintain steering ability.
- Towed equipment (without brake) must not exceed 1.5 times the tractor weight when traveling on roads or at high speeds.

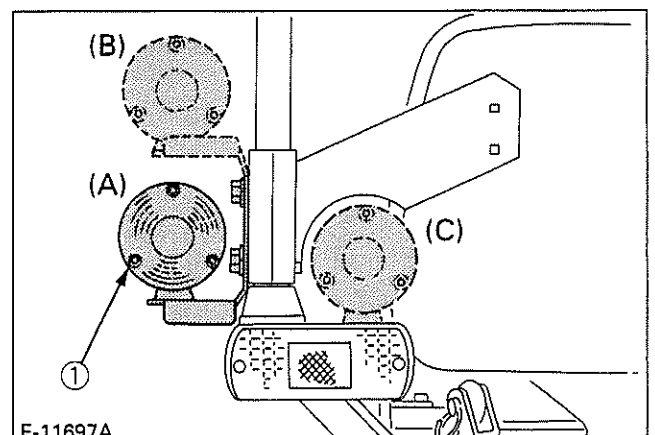
Be sure SMV emblem and hazard light are clean and visible. If towed or rear-mounted equipment obstructs these safety devices, install SMV emblem and hazard light on equipment. Install the hazard light in position (B) when implement obstructs the field of vision and in position (C) where interference may be encountered.

Consult your local KUBOTA dealer for further detail.



F-11657A

- (1) SMV emblem
(2) Bracket



F-11697A

- (1) Hazard light
(A) Standard position
(B) } Selective position
(C) }

■ Operating on Slopes or Rough Terrain



CAUTION

To avoid personal injury:

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

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

■ Directions for Use of Power Steering

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

PTO

PTO OPERATION



WARNING

To avoid personal injury:

- Before operation, be sure to select the correct PTO lever (mid/rear).



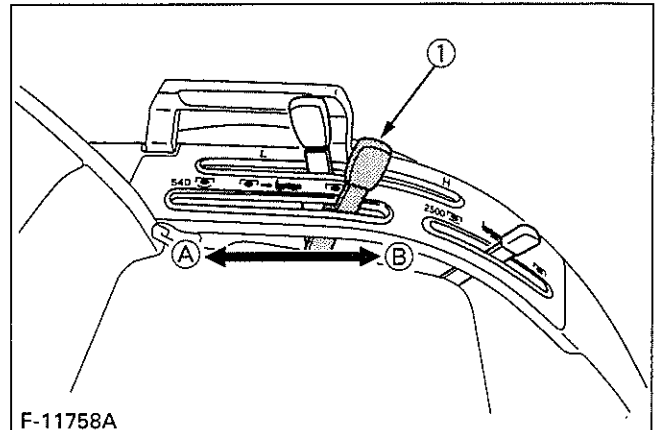
CAUTION

To avoid personal injury:

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

■ Rear-PTO Gear Shift Lever

1. The tractor has a 540 rpm speed position.
2. PTO shifting needs clutch operation. Press the clutch pedal down completely to stop the tractor movement and any PTO driven equipment movement before shifting the Rear-PTO gear shift lever.



F-11758A

(1) Rear-PTO gear shift lever (A) "ON" "ENGAGE"
(B) "OFF" "DISENGAGE"

IMPORTANT:

- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed:
- To avoid damage of transmission, before shifting the Rear-PTO gear shift lever, fully disengage the main clutch.

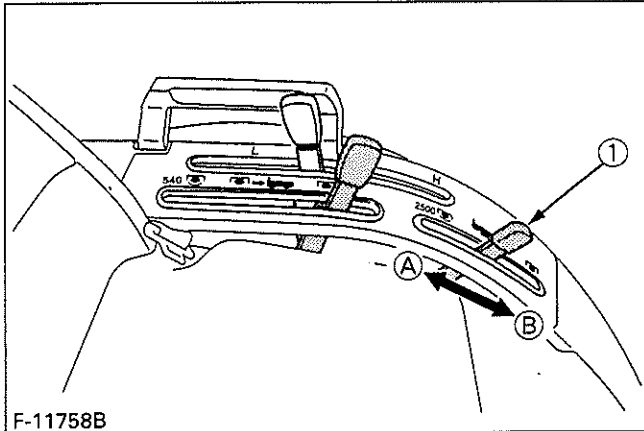
Engine Speed rpm	Shaft	PTO Speed rpm
2600	6-spline	540

NOTE:

- There is a PTO-1 (540rpm) indicator mark on the tachometer face.
- Tractor engine will not start if Rear-PTO gear shift lever is in the engaged ("ON") position.

Mid-PTO Gear Shift Lever

1. The tractor has a 2500 rpm speed position.
2. PTO shifting needs clutch operation. Press the clutch pedal down completely to stop the tractor movement and any PTO driven equipment movement before shifting the Mid-PTO gear shift lever.



(1) Mid-PTO gear shift lever (A) "ON" "ENGAGE" (B) "OFF" "DISENGAGE"

IMPORTANT:

- To avoid shock loads to the PTO, reduce engine speed when engaging the PTO, then open the throttle to the recommended speed.
- To avoid damage of transmission, before shifting the Rear and Mid-PTO gear shift levers, fully disengage the main clutch.

Mid-PTO speed

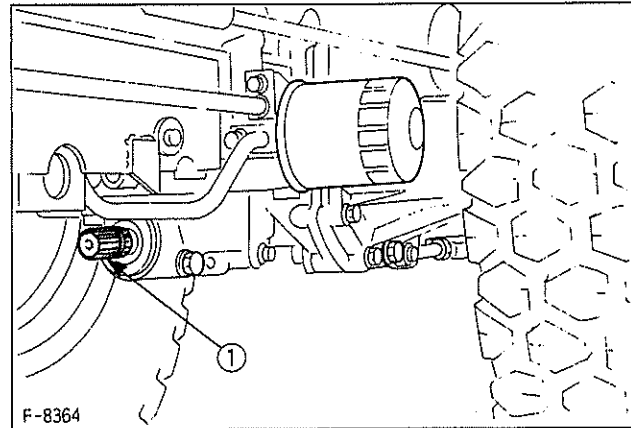
Engine Speed rpm	PTO Speed rpm
2578	2500

NOTE:

- Tractor engine will not start if Mid-PTO gear shift lever is in the engaged ("ON") position.

Mid-PTO

The Mid-PTO is available for KUBOTA approved implements.

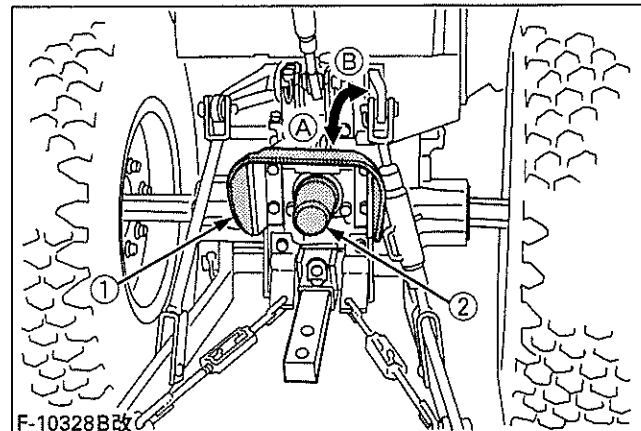


(1) Mid-PTO

PTO Shaft Cover and Shaft Cap

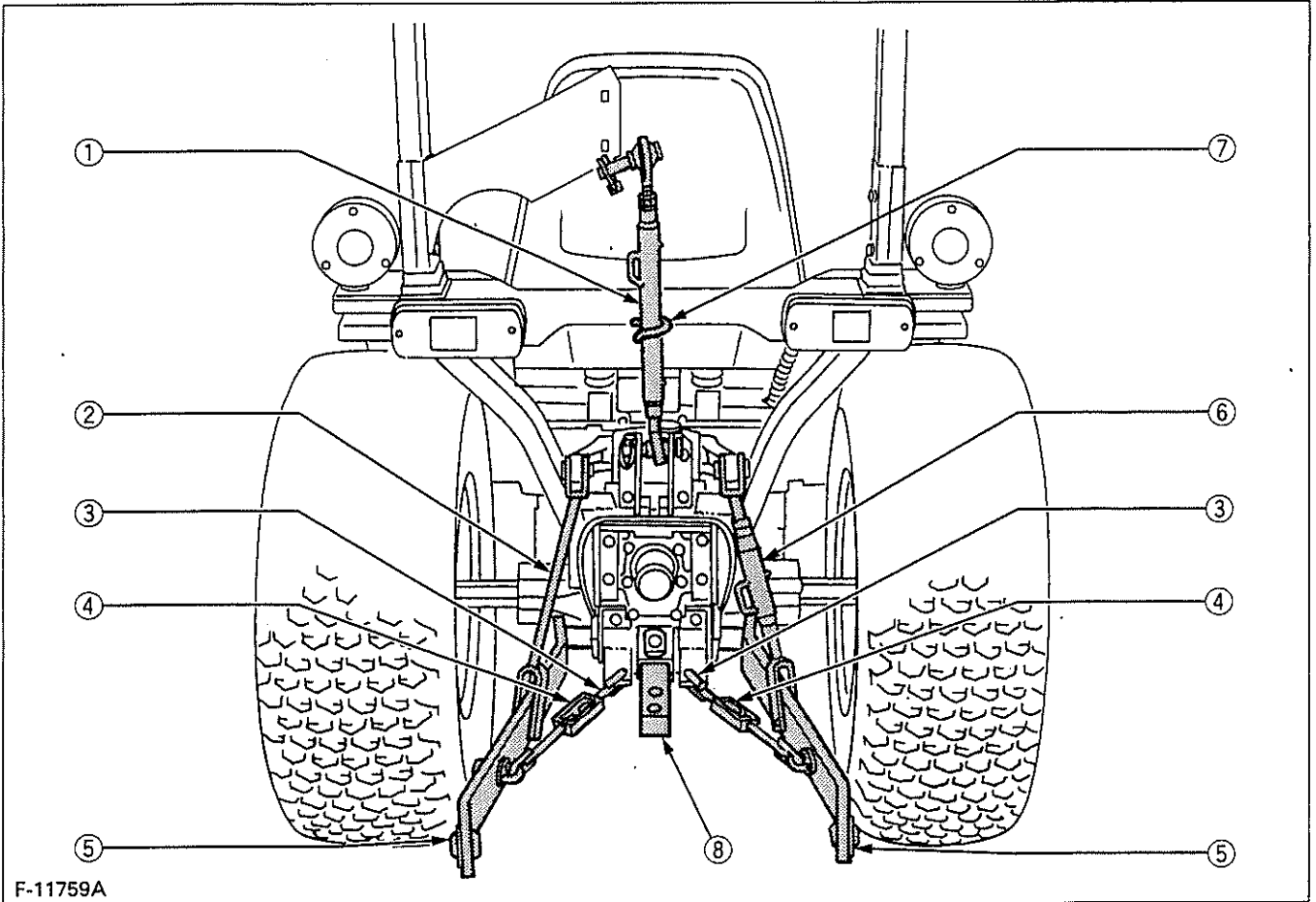
Keep the PTO shaft cover in place at all times. Replace the PTO shaft cap when the PTO is not in use. Before connecting or disconnecting a drive shaft to PTO shaft, be sure engine is "OFF" and raise up the PTO shaft cover.

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"

THREE-POINT HITCH & DRAWBAR



F-11759A

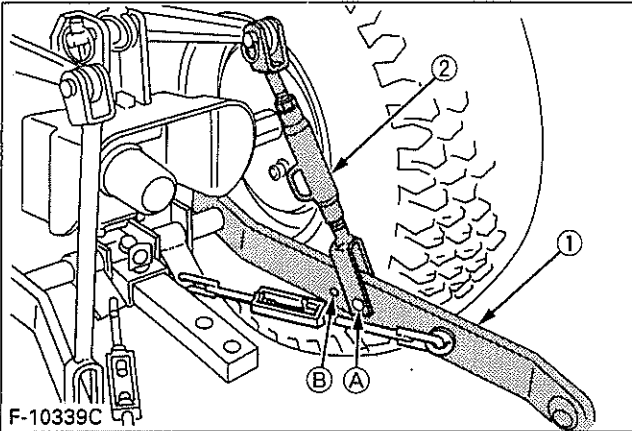
- (1) Top link
- (2) Lifting rod (Left)
- (3) Check chains
- (4) Turnbuckle
- (5) Lower link
- (6) Lifting rod (Right)
- (7) Top link holder
- (8) Drawbar

3-POINT HITCH

1. Make preparations for attaching implement.

■ Selecting the holes of lifting rods and lower links

There are two holes in the lower links. For most operations the lifting rods should be attached to the (A) holes.



(1) Lower links
(2) Lifting rods

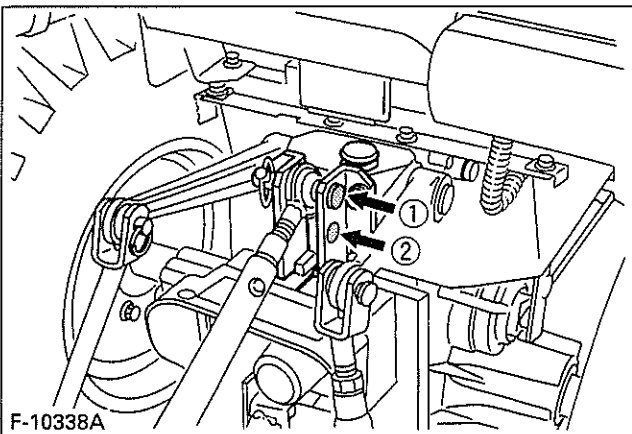
holes: (A), (B)

NOTE:

- The lifting rods may be attached to (B) hole for higher lifting height. (with reduced lifting force)

■ Selecting the Top Link Mounting Holes

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



F-10338A

■ Drawbar

Remove the drawbar if a close mounted implement is being attached.

2. Attaching and detaching implements



CAUTION

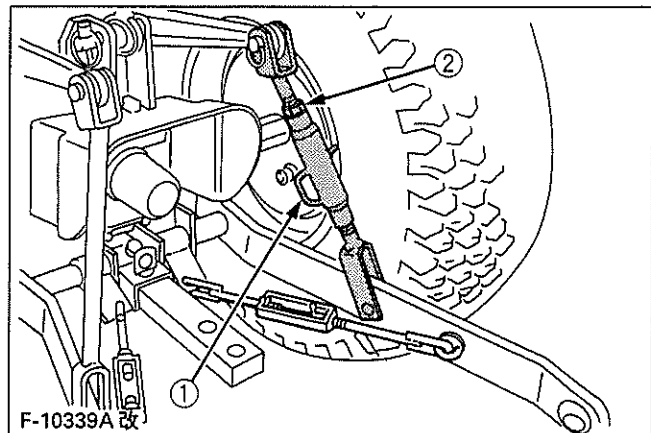
To avoid personal injury:

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

■ Lifting Rod (Right)

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

After adjustment, tighten the lock nut securely.



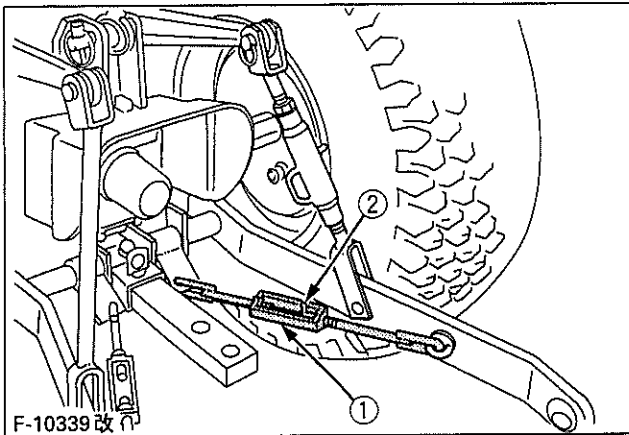
(1) Adjusting handle
(2) Lock nut

■ Top Link

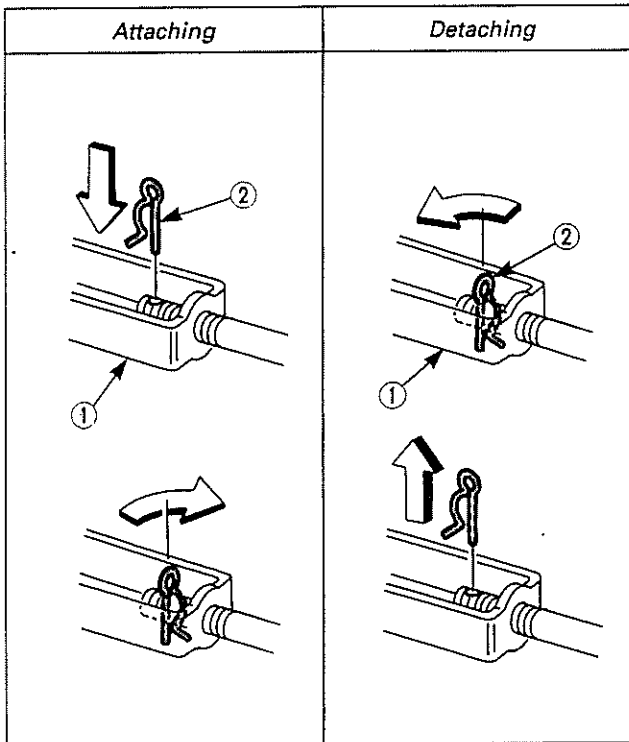
1. Adjust the angle of the implement to the desired position by shortening or lengthening the top link.
2. The proper length of the top link varies according to the type of implement being used.

Check Chains

Remove the snap pin and adjust the turnbuckle to control horizontal sway of the implement. After adjustment, re-set the snap pin.



F-10339 改



(1) Turnbuckle
(2) Snap pin

F-8437

DRAWBAR



WARNING

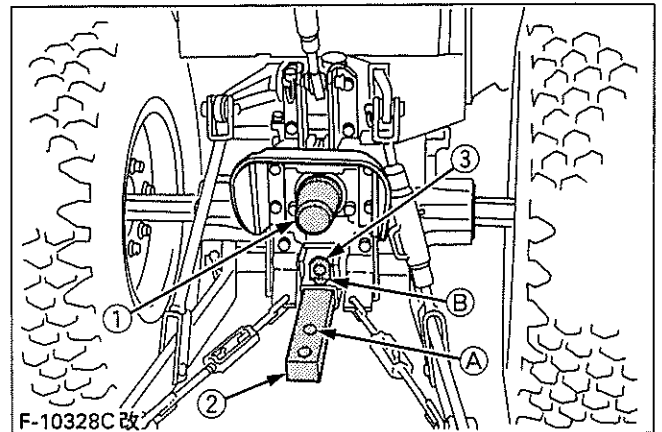
To avoid personal injury or death:

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

Adjusting Drawbar Length

When towing an implement, use of (B) hole in drawbar is recommended.

The acceptable drawbar load is provided in the "IMPLEMENT LIMITATIONS" section.



F-10328C 改

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

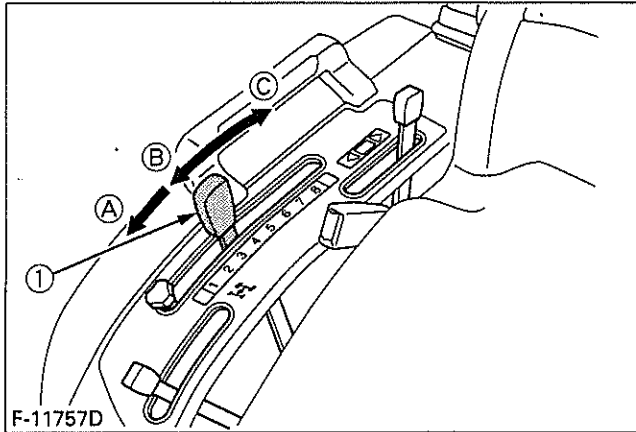
Holes : (A), (B)

HYDRAULIC UNIT

3-POINT HITCH CONTROL SYSTEM

Position Control

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



(1) Position control lever

(A) "FLOAT"

(B) "DOWN"

(C) "UP"

IMPORTANT:

- If the 3-point hitch can not be raised by setting the hydraulic control lever to the UP position after long term storage or when changing the transmission oil, turn steering wheel to the right and left several times to bleed air from the system.
- Do not operate until the engine is warmed up. If operation is attempted when the engine is still cold, the hydraulic system may be damaged.
- If noises are heard when implement is lifting after the hydraulic control lever has been activated, the hydraulic mechanism is not adjusted properly. Unless corrected, the unit will be damaged. Contact your KUBOTA Dealer for adjustment.

3-point Hitch Lowering Speed

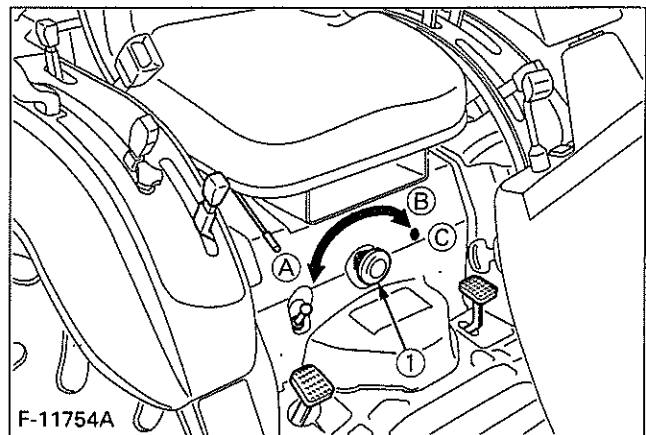


CAUTION

To avoid personal injury:

- Fast lowering speed may cause damage or injury. Lowering speed of implement should be adjusted to two or more seconds.

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



(1) 3-Point lowering speed knob

(A) "FAST"

(B) "SLOW"

(C) "LOCK"

AUXILIARY HYDRAULICS

Two hydraulic outlets (mid and rear) are provided on the tractor.

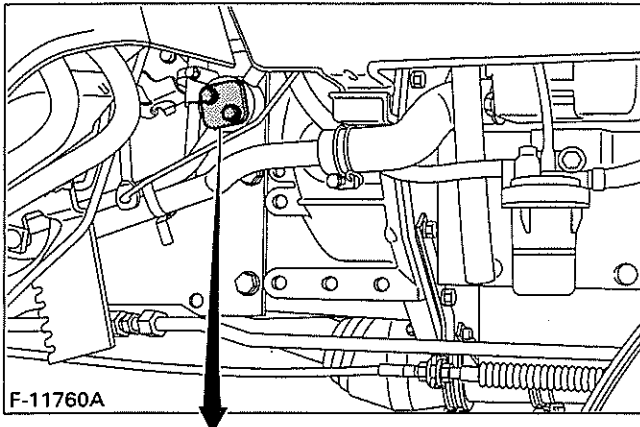
Hydraulic Block Type Outlet

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

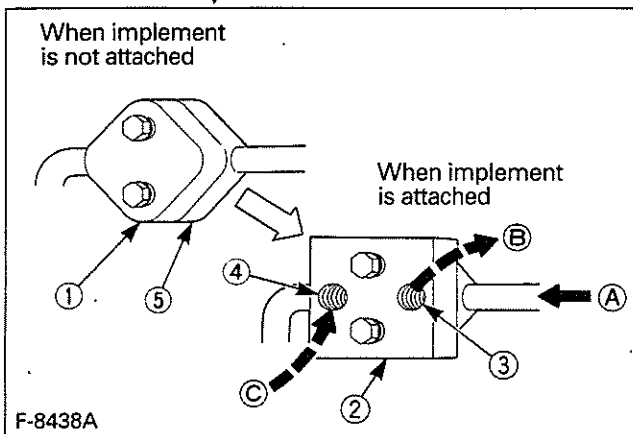
When implement is attached

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

[Mid outlet]



F-11760A



F-8438A

- | | |
|---------------------------------|---|
| (1) Block cover | (A) From gear pump |
| (2) Block outlet cover (option) | (B) To implement inlet |
| (3) Outlet | Max. flow |
| (4) Inlet | 16.6 L/min |
| (5) Hydraulic block | (4.4 U.S.gals./min) |
| | No relief valve in the hydraulic block. |
| | (C) From implement outlet |

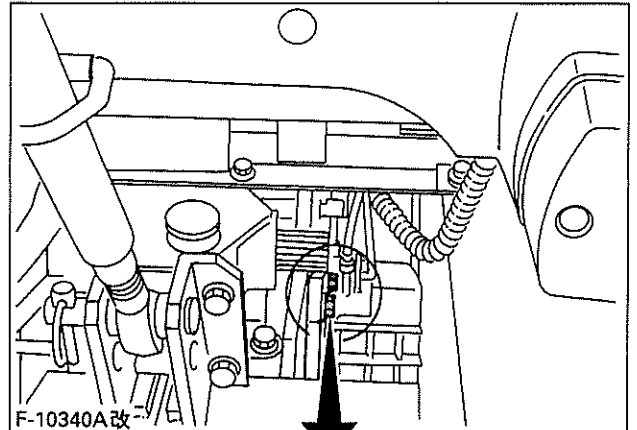
IMPORTANT:

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

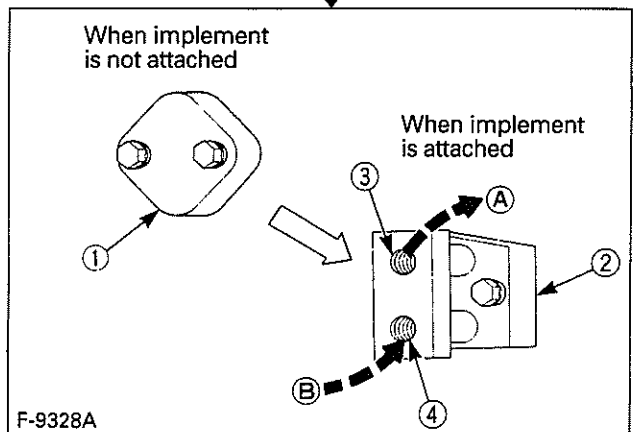
NOTE:

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

[Rear outlet]



F-10340A改

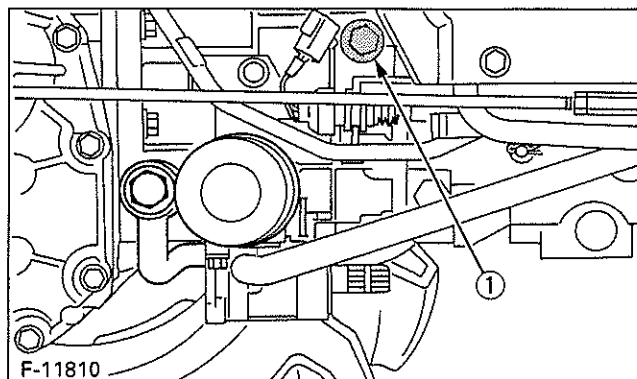


F-9328A

- | | |
|---------------------------------|-----------------------------------|
| (1) Block cover | (A) To implement inlet |
| (2) Block outlet cover (option) | Max. flow |
| (3) Outlet | 16.6 L/min |
| (4) Inlet | (4.4 U.S.gals./min) |
| | Max. pressure |
| | 13.2 to 13.7 MPa |
| | (135 to 140 kgf/cm ²) |
| | (1920 to 1992 psi) |
| | (B) From implement outlet |

NOTE:

- If the implement control valve has a relief valve, the tank port flow from implement should be connected to the port located on the right hand side of transmission case.

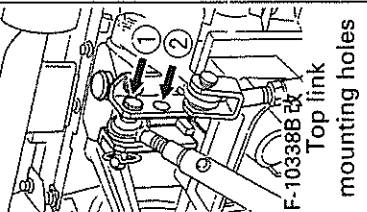
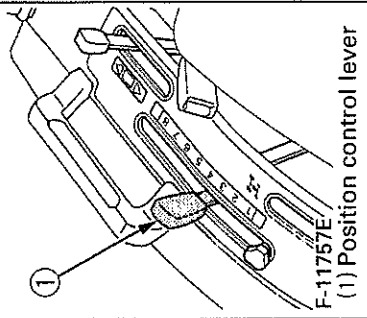
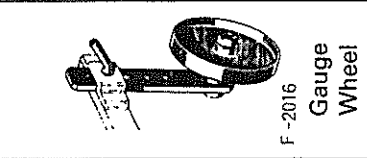
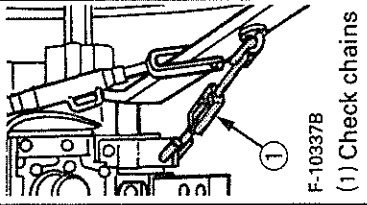


F-11810

(1) Return port

Hydraulic Control Unit Use Reference Chart

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

Implement	Soil condition	 <p>F-10338B Top link mounting holes</p>	 <p>F-11757E (1) Position control lever</p>	 <p>F-2016 Gauge Wheel</p>	 <p>F-10337B (1) Check chains</p>	Remarks
Moldboard plow	Light soil Medium soil heavy soil		Position control	YES/NO	Loose	Adjust the check chains so that the implement can move 5 to 6 cm (2.0 to 2.4 in.) laterally.
Disc plow	—	(1) is standard.				For implements with gauge wheels, lower the implements to the ground.
Harrower (spike, springtooth, disc type)	—	(2) is used only when there is some obstacle that prevents you from using the standard.				Check chains should be tight enough to prevent excessive implement movement when implement is in raised position
Sub-soiler				YES/NO	Tighten	For implements with gauge wheels, lower the implements to the ground.
Weeder, ridger				YES		
Earthmover, digger, scraper, manure fork, rear carrier	—			YES/NO		
Mower (mid-and rear-mount type), hayrake, tedder						

TIRES, WHEELS AND BALLAST

TIRES



WARNING

To avoid personal injury:

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

IMPORTANT:

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

■ Inflation Pressure

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

	Tire sizes	Inflation Pressure
Rear	31 x 15.5 – 15, 4PR	140 kPa (1.4 kgf/cm ² , 20 psi)
	9.5-18, 4PR	160 kPa (1.6 kgf/cm ² , 23 psi)
	315/75D – 15, 4PR	100 kPa (1.0 kgf/cm ² , 14 psi)
	11.2 – 16, 4PR	130 kPa (1.3 kgf/cm ² , 18 psi)
	33 x 12.5 – 15, 4PR	140 kPa (1.4 kgf/cm ² , 20 psi)
Front	12 – 16.5, 6PR	270 kPa (2.7 kgf/cm ² , 40psi)
	6.00 – 12, 4PR	180 kPa (1.8 kgf/cm ² , 25 psi)
	6.50 – 10, 4PR	200 kPa (2.0 kgf/cm ² , 28 psi)
	7 – 12, 4PR	170 kPa (1.7 kgf/cm ² , 24 psi)
	23 x 8.50 – 12Turf, 4PR	150 kPa (1.5 kgf/cm ² , 22 psi)
	21 x 8.00 – 10, 4PR	160 kPa (1.6 kgf/cm ² , 23 psi)
	23 x 8.50 – 12Ind, 4PR	241 kPa (2.5 kgf/cm ² , 35 psi)
24 x 8.50 – 12, 4PR	160 kPa (1.6 kgf/cm ² , 23 psi)	

NOTE:

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

WHEEL ADJUSTMENT



CAUTION

To avoid personal injury:

- When working on slopes or when working with a trailer, set the wheel tread as wide as practical for maximum stability.
- Support tractor securely on stands before removing a wheel.
- Never operate tractor with a loose rim, wheel, or axle.

■ Front Wheels

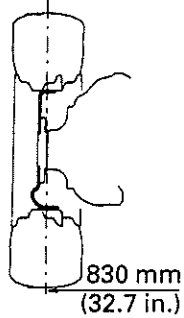
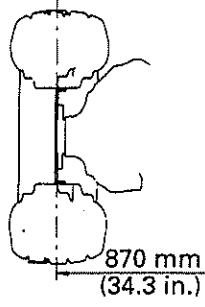
Front tread width can not be adjusted.

IMPORTANT:

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

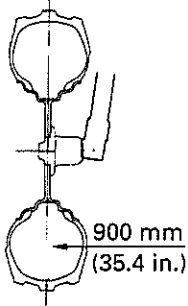
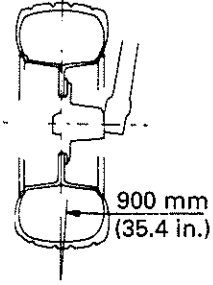
Tire	7 – 12 Farm	23 x 8.50 – 12 Turf	23 x 8.50 – 12 Ind.	21 x 8.00 – 10 Turf
Tread	 835 mm (32.9 in.)	 870 mm (34.3 in.)	 870 mm (34.3 in.)	 940 mm (37.0 in.)

◆ Except USA models

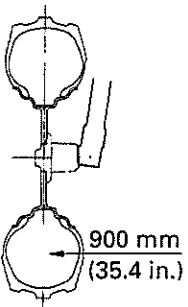
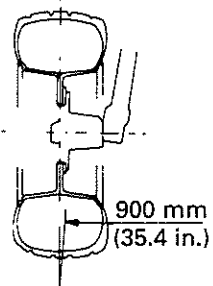
Tire	6.00 - 12 Farm	24 x 8.50 - 12 Turf
Tread	 <p>830 mm (32.7 in.)</p>	 <p>870 mm (34.3 in.)</p>

[2WD]

◆ USA models

Tire	6.50 - 10 Farm	23 x 8.50 - 12 Turf
Tread	 <p>900 mm (35.4 in.)</p> <p>F-2620</p>	 <p>900 mm (35.4 in.)</p> <p>F-2623</p>

◆ Except USA models

Tire	6.50 - 10 Farm	24 x 8.50 - 12 Turf
Tread	 <p>900 mm (35.4 in.)</p>	 <p>900 mm (35.4 in.)</p>

Rear Wheels

Rear tread width can be adjusted as shown.

To change the tread width

1. Loosen the nut of cotter bolt.
2. Remove the snap pin and wheel hub pin.
3. Change the tread to the desired position.
4. Re-set the wheel hub pin, snap pin and cotter pin bolt.

USA models

Tire	11.2 - 16 Farm	33 x 12.5 - 15 Turf	12 - 16.5 Ind.	31 x 15.5 - 15 Bar
	1064 mm to 890 mm (41.9 in. to 35.0 in.)	936 mm and 886 mm (36.9 in. and 34.9 in.)	866 mm and 966 mm (34.1 in. and 38.0 in.)	942 mm (37.1 in.)
Tread				

*Remove the wheel hub and reinstall it on the other side of the wheel disk, then set the wheel as shown.

Except USA models

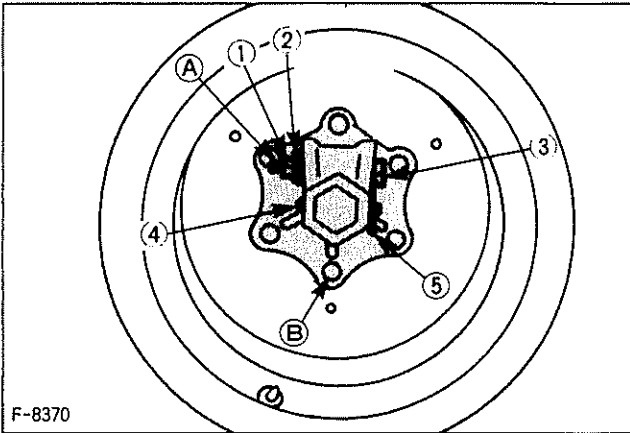
Tire	9.5 - 18 Farm	315 / 75D - 15 Turf
	810 mm to 1035 mm (31.9 in. to 40.7 in.)	865 mm to 1085 mm (34.1 in. to 42.7 in.)
Tread		

F-9203

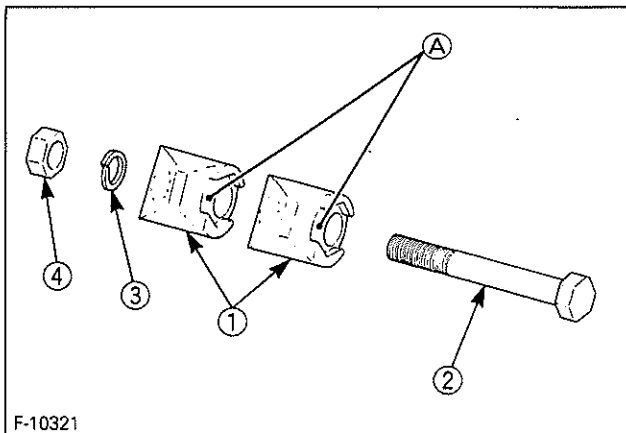
*Remove the wheel hub and reinstall it on the other side of the wheel disk, then set the wheel as shown.

IMPORTANT:

- Always attach tires as shown in the drawings.
- If not attached as illustrated, transmission parts may be damaged.
- When re-fitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor forward and backward for 5 minutes and thereafter on a daily basis.



- (1) Nut (A) 123 to 147 N·m
 (2) Spring washer (12.6 to 15.0 kgf·m)
 (3) Bolt (91 to 108 ft·lbs)
 (4) Wheel hub pin (B) 108 to 125 N·m
 (5) Snap pin (11.0 to 12.8 kgf·m)
 (80 to 93 ft·lbs)



- (1) Cotter (A) Recessed side
 (2) Bolt
 (3) Spring washer
 (4) Nut

IMPORTANT:

- Insert the bolt from the recessed side of both cotters as shown.

BALLAST**CAUTION**

To avoid personal injury:

- Additional ballast will be needed for transporting heavy implements. When the implement is raised, drive slowly over rough ground, regardless of how much ballast is used.
- Do not fill the front wheels with liquid.

Front Ballast

Add weights if needed for stability (2WD/4WD models) and improving traction (4WD model).

Heavy pulling and heavy rear mounted implements tend to lift front wheels. Add enough ballast to maintain steering control and prevent tip over.

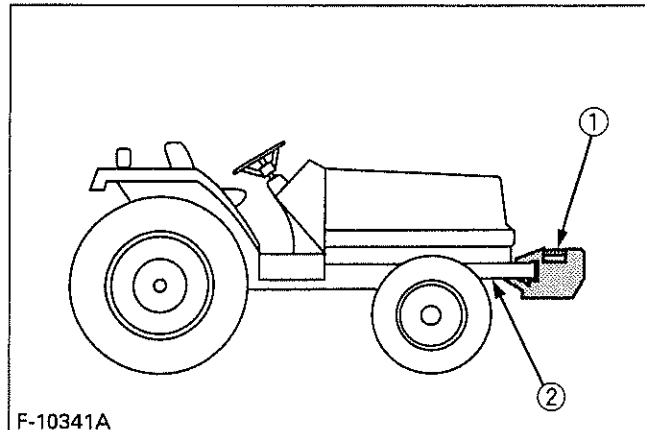
Remove weight when no longer needed.

Front End Weights (option)

The front end weights can be attached to the bumper. Consult your local KUBOTA Dealer for use.

NOTE:

- Besides the weight, a mounting kit is also required.



- (1) Front end weights
 (2) Bumper

IMPORTANT:

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

Maximum weight	25 kg x 3 pieces (165 lbs)
----------------	---------------------------------

IMPORTANT:

- The jobs indicated by Ⓞ must be done after the first 50 hours of operation.
- *1 Air cleaner should be cleaned more often in severe dusty conditions.
- *2 Every year or after 6 cleanings.
- *3 Replace only if necessary.
- *4 Consult your local KUBOTA Dealer for this service.
- *5 When the battery is used for less than 100 hours per year, check the fluid level annually.
- The items listed above (Ⓞ marked) are registered as emission related critical parts by KUBOTA in the U.S.EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.
Please see the Warranty Statement in detail.

LUBRICANTS

No.	Locations	Capacities	Lubricants	
1	Fuel	24 L (6.3 U.S.gals.)	No.2-D diesel fuel No.1-D diesel fuel if temperature is below -10°C (14°F)	
2	Coolant (with recovery tank)	3.8 L (4.0 U.S.qts.)	Fresh clean water with anti-freeze	
3	Engine crankcase	3.0 L (3.2 U.S.qts.)	● Engine oil : API Service Classification CC or CD	
			Above 25°C (77°F)	SAE30, SAE10W-30 or 10W-40
			0 to 25°C (32 to 77°F)	SAE20, SAE10W-30 or 10W-40
	Below 0°C (32°F)	SAE10W, SAE10W-30 or 10W-40		
4	Transmission case	12.5 L (3.30 U.S.gals.)	● KUBOTA UDT or SUPER UDT fluid*	
5	Front axle case	3.7 L (3.9 U.S.qts.) [4WD]	● KUBOTA UDT or SUPER UDT fluid* or SAE80-SAE90 gear oil	
		4.5 L (4.7 U.S.qts.) [Bi-speed turn]		
6	Greasing	No. of greasing points	Capacity	Type of grease
	Top link	1	Until grease overflows.	Multipurpose type grease
	Lift rod [RH]	1		
	Speed control pedal	1		
	Battery terminal	2	moderate amount	
	Knuckle shaft	2 [2WD]		
	Front axle support	2 [2WD]		

NOTE: * KUBOTA UDT or SUPER UDT fluid ...KUBOTA Original Transmission hydraulic fluid

NOTE:

- Engine oil:
Oil used in the engine should have an American Petroleum Institute (API) service classification and Proper SAE Engine Oil according to the ambient temperatures as shown above:

- Transmission oil:
The oil used to lubricate the transmission is also used as hydraulic fluid. To insure proper operation of the hydraulic system and complete lubrication of the transmission, it is important that a multi-grade transmission fluid be used in this system. We recommend the use of **KUBOTA SUPER UDT fluid** for optimum protection and performance. (Consult your local KUBOTA Dealer for further detail.)
Do not mix different brands or grades.
- Indicated capacity of water and oil are manufacturer's estimate.

PERIODIC SERVICE

HOW TO OPEN THE HOOD



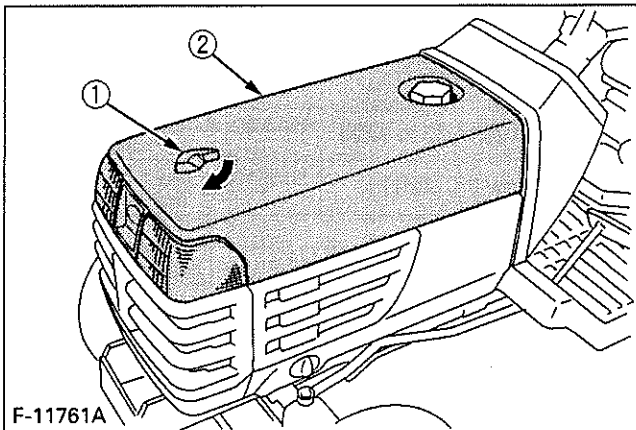
CAUTION

To avoid personal injury from contact with moving parts;

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

■ Hood

To open the hood, twist the mascot to release the latch and open the hood.

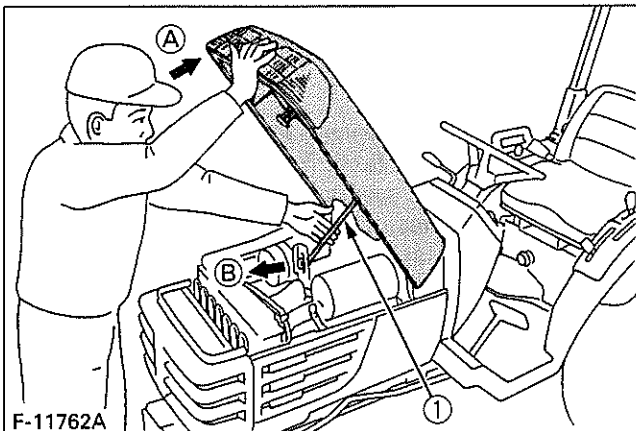


F-11761A

- (1) Mascot
(2) Hood

NOTE:

- To close the hood, hold the hood and release the support rod.

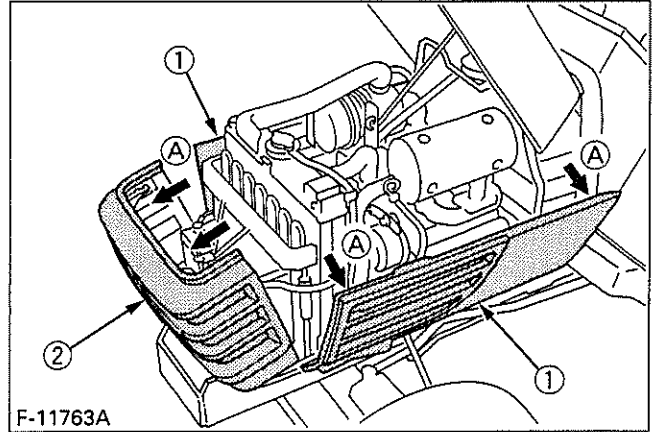


F-11762A

- (1) Support rod
(A) "HOLD"
(B) "PULL"

■ Engine Side Cover and Front Grill

To remove the engine side cover and front grill, pull outward as indicated by arrows, and then lift cover off.



F-11763A

- (1) Side cover
(2) Front grill

(A) "PULL"

DAILY CHECK

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



CAUTION

To avoid personal injury:

- Be sure to check and service the tractor on a firm, flat and level place with the engine stopped, the parking brake "ON" and implements lowered to the ground.

Walk Around Inspection

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

Checking and Refueling

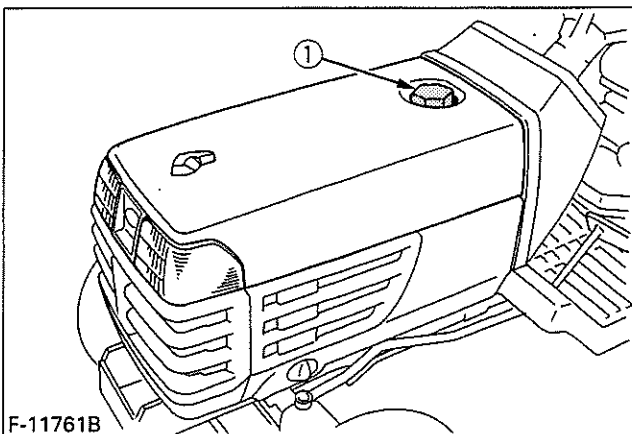


CAUTION

To avoid personal injury:

- Do not smoke while refueling.
- Be sure to stop the engine and remove the key before refueling.

1. Turn the key switch to "ON", check the amount of fuel by fuel gauge.
2. Fill fuel tank when fuel gauge shows 1/4 or less fuel in tank.
3. Use grade No.2-Diesel fuel at temperatures above -10°C(14°F).
Use grade No.1-Diesel fuel at temperatures below -10°C(14°F).



F-11761B

(1) Fuel tank cap

Fuel tank capacity	24 L (6.3 U.S.gals.)
--------------------	------------------------

IMPORTANT:

- Do not permit dirt, trash or water to get into the fuel system.
- Be careful not to let the fuel tank empty completely, otherwise air will enter the fuel system, necessitating bleeding before engine will start.
- Be careful not to spill fuel during refueling. If a spill should occur, wipe it off at once, or it may cause a fire.
- To prevent condensation (water accumulation) in the fuel tank, fill the tank before parking overnight.

NOTE:

- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service.
- Grade of Diesel Fuel Oil According to ASTM D975 (SAE J313 JUN87)

Flash Point °C (°F)	Water and Sediment, volume %	Carbon Residue on, 10 percent Residuuum, %	Ash, weight %
Min	Max	Max	Max
52 (125)	0.05	0.35	0.01

Distillation Temperature °C (°F) 90% Point		Viscosity Kinematic cST or mm ² /s at 40°C		Viscosity Saybolt, SUS at 100°F		Sulfur, weight %	Copper Strip Corro- sion	Cetane Num- ber
Min	Max	Min	Max	Min	Max	Max	Max	Min
282 (540)	338 (640)	1.9	4.1	32.6	40.1	0.50	No.3	40

■ Checking Engine Oil Level

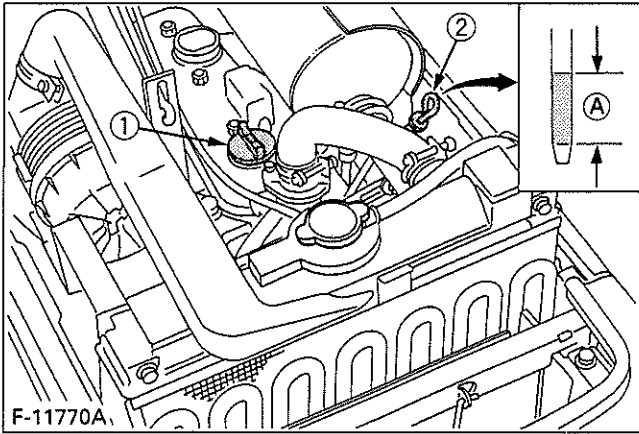


CAUTION

To avoid personal injury:

- Be sure to stop the engine and remove the key before checking the oil level.

1. Park the machine on a firm, flat and level surface.
2. Check engine oil before starting the engine, or, wait 5 minutes or more after the engine has been stopped.
3. To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level is between the two notches. If the level is too low, add new oil to the prescribed level at the oil inlet. (See "LUBRICANTS" in Maintenance section)



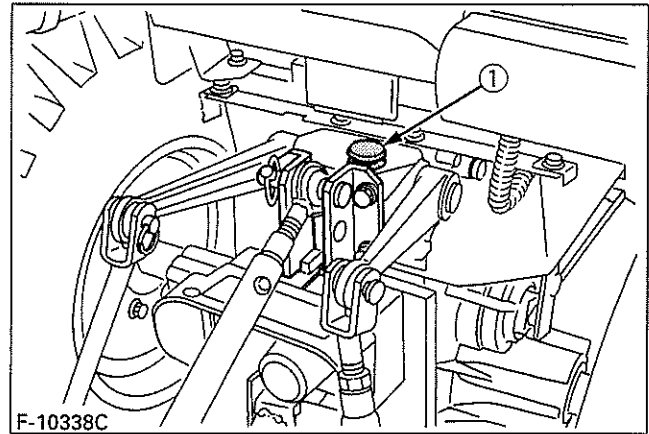
(1) Oil inlet (A) Oil level is acceptable within this range.
(2) Dipstick

IMPORTANT:

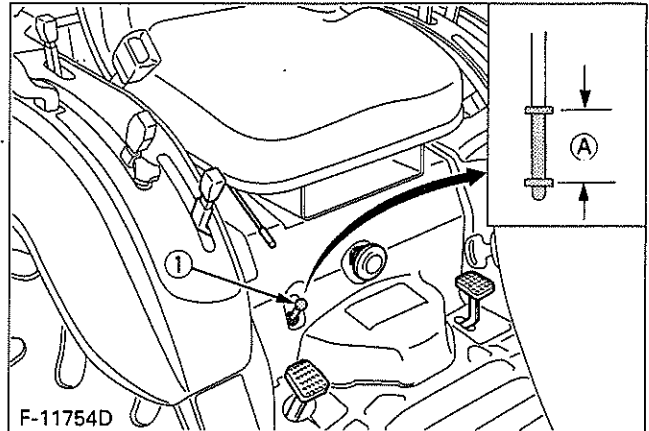
- When using oil from a different manufacturer or viscosity, remove all of the old oil and oil filter. Never mix two different types of oil.
- If oil level is low, do not run engine.

■ Checking Transmission Fluid Level

1. Park the machine on a firm, flat and level surface, lower the implement and stop the engine.
2. To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level is between the two notches. If the level is too low, add new oil to the prescribed level at the oil inlet. (See "LUBRICANTS" in Maintenance section)



(1) Oil inlet



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

IMPORTANT:

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

■ Checking Coolant Level

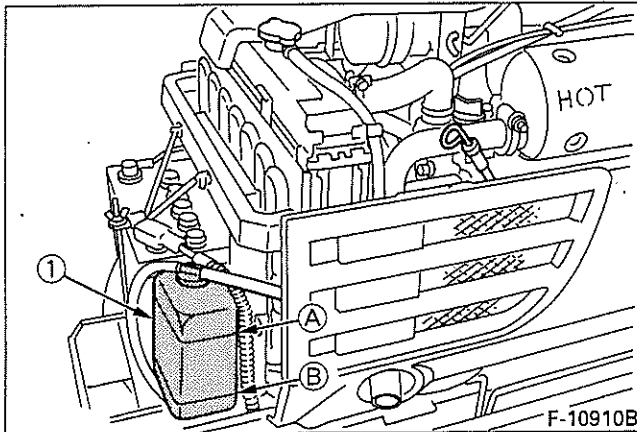


CAUTION

To avoid personal injury:

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

1. Check to see that the coolant level is between the "FULL" and "LOW" marks on the recovery tank.
2. When the coolant level drops due to evaporation, add water only up to the full level. In case of leakage, add antifreeze and water in the specified mixing ratio up to the full level.
(See "Flush Cooling System and Changing Coolant" in every 2 years maintenance.)



(1) Recovery tank

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

F-10910B

IMPORTANT:

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

■ Cleaning Grill and Radiator Screen

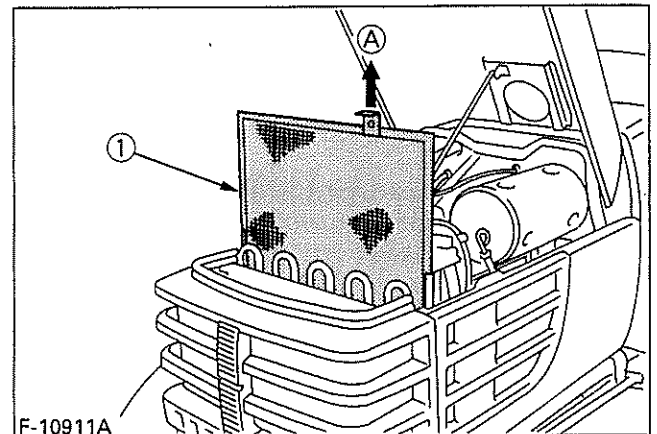


CAUTION

To avoid personal injury:

- Be sure to stop the engine and remove the key before removing the screen.

1. Check front grill and side screens to be sure they are clean of debris.
2. Detach the screen and remove all foreign material.



F-10911A

(1) Radiator screen

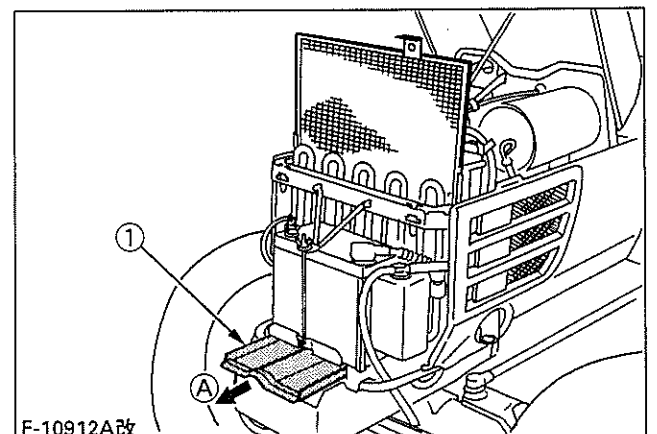
(A) "DETACH"

IMPORTANT:

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

NOTE:

- If the dust or chaff has accumulated between the battery and radiator, open the shutter plate and clean the front of radiator completely.



F-10912A改

(1) Shutter plate

(A) "PULL"

■ Checking Brake Pedals and Clutch Pedal

1. Inspect the brake and clutch pedals for free travel, and smooth operation.
2. Adjust if incorrect measurement is found:
(See "Adjusting Clutch and Brake Pedal" in every 100 hours maintenance.)

NOTE:

- Brake pedals should be equal when depressed.

■ Checking Gauges, Meters and Easy Checker™

1. Inspect the instrument panel for broken gauge(s), meter(s) and Easy Checker™ lamps.
2. Replace if broken.

■ Checking Head Light, Hazard Light etc.

1. Inspect the lights for broken bulbs and lenses.
2. Replace if broken.

■ Checking and Cleaning of Electrical Wiring and Battery Cables



CAUTION

To avoid personal injury:

- A loosened terminal or connector, or damaged wire may affect the performance of electrical components or cause short circuits. Leakage of electricity could result in a fire hazard, a dead battery or damage to electrical components.
- Replace damaged wires or connections promptly.
- If a fuse blows soon after replacement, **DO NOT USE A LARGER THAN RECOMMENDED FUSE OR BYPASS THE FUSE SYSTEM.**
- Many wiring connections are protected by waterproof plugs, plug and unplug these connections carefully and make sure they are sealed correctly after assembly.
- Accumulation of dust, chaff or spilled fuel deposits around the battery, electrical wiring, engine or exhaust system are a fire hazard.

CLEAN THESE AREAS BEFORE STARTING WORK.

To avoid premature electrical malfunctions **DO NOT APPLY** high pressure water directly to battery, wiring, connectors, electrical components or instrument panel.

Inspect the following Regularly:

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

Consult your KUBOTA Dealer regarding maintenance, diagnosis and repair.

■ Checking Seat Belt and ROPS

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

EVERY 50 HOURS

■ Checking Engine Start System



CAUTION

To avoid personal injury:

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

◆ Preparation before testing

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

◆ Test 1:

1. Release the clutch pedal.
2. Turn the key to "START" position.
3. The engine must not crank.

◆ Test 2:

1. Fully depress the clutch pedal.
2. Depress the speed control pedal.
3. Turn the key to "START" position.
4. The engine must not crank.

◆ Test 3:

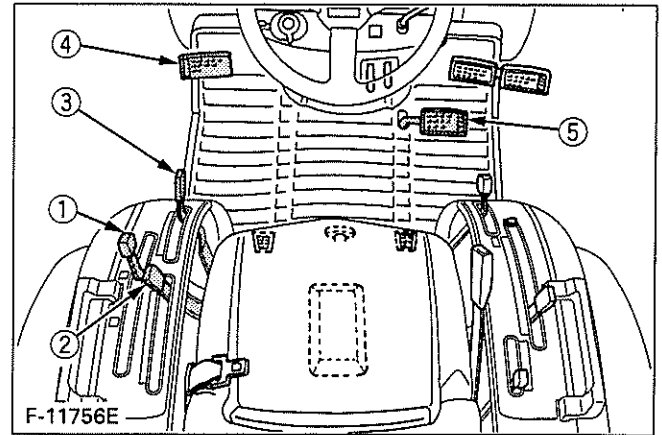
1. Fully depress the clutch pedal.
2. Place the speed control pedal in "NEUTRAL" position.
3. Shift the rear-PTO gear shift lever to "ON" (Engaged) position.
4. Turn the key to "START" position.
5. The engine must not crank.

◆ Test 4:

1. Shift the rear-PTO gear shift lever to "OFF" (Disengaged) position.
2. Shift the Mid-PTO gear shift lever to "ON" (Engaged) position.
3. Turn the key to "START" position.
4. The engine must not crank.

NOTE:

- If the engine cranks during any of these tests, consult your local KUBOTA Dealer to have unit checked before operating.



(1) Range gear shift lever (Hi-Lo)

(2) Rear-PTO gear shift lever

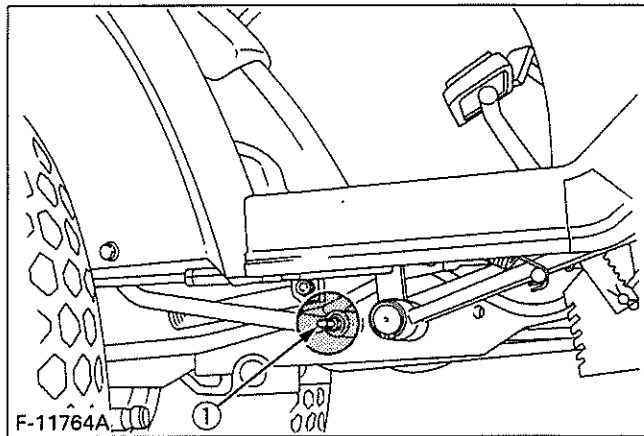
(3) Mid-PTO gear shift lever

(4) Clutch pedal

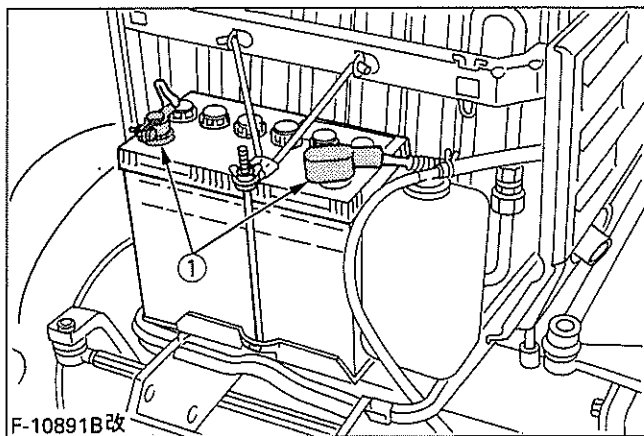
(5) Speed control pedal

■ Lubricating Grease Fittings

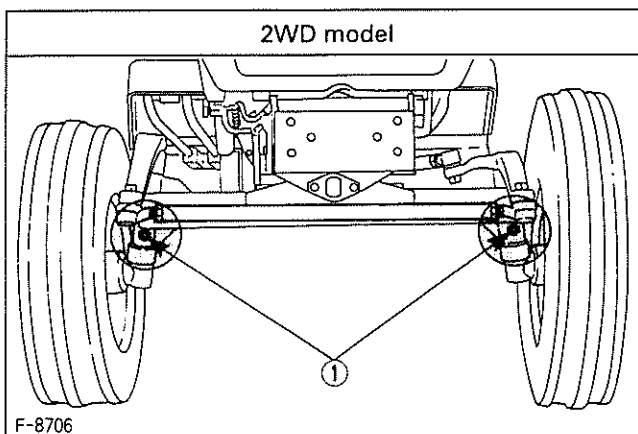
Apply a small amount of multipurpose grease to the following points every 50 hours:
If you operated the machine in extremely wet and muddy conditions, lubricate grease fittings more often.



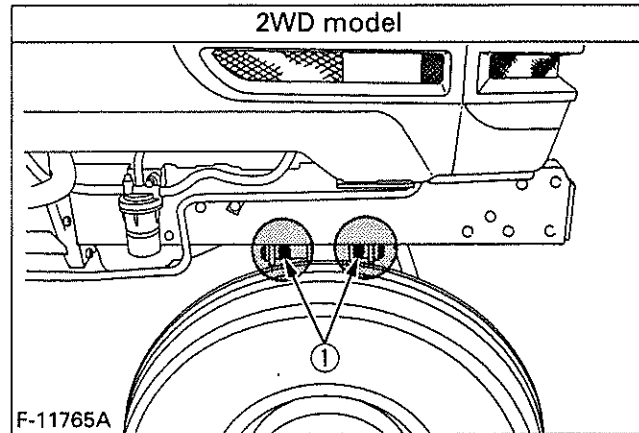
(1) Grease fitting (Speed control pedal)



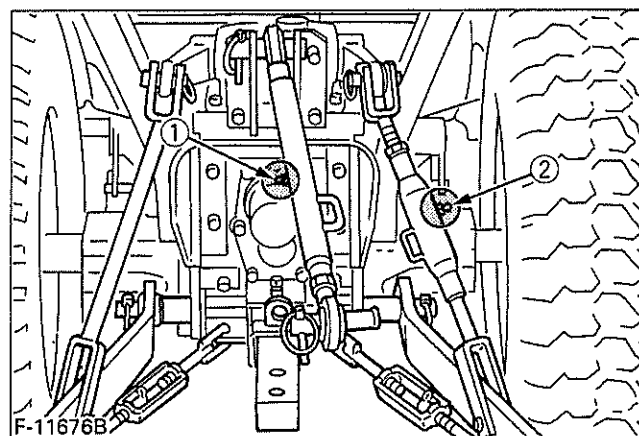
(1) Battery terminals



(1) Knuckle shaft (Both sides)



(1) Front axle support



(1) Grease fitting (Top link)
(2) Grease fitting (Lift rod, right)

■ Checking Wheel Bolt Torque

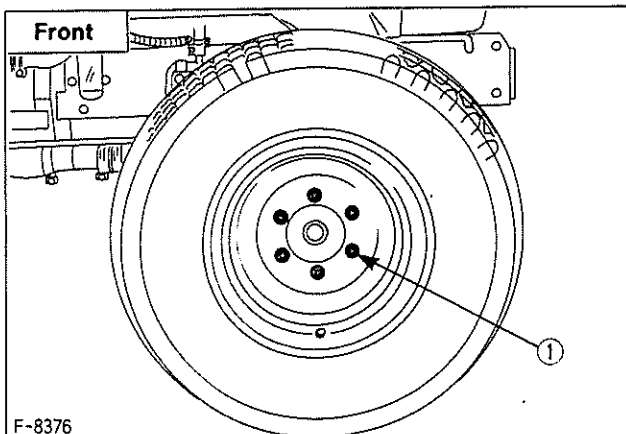


CAUTION

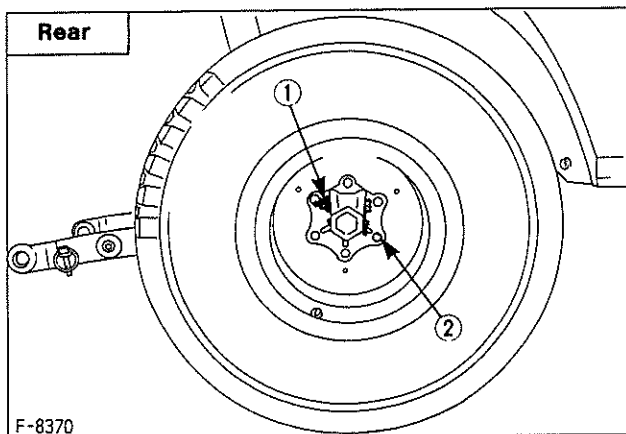
To avoid personal injury:

- Never operate tractor with a loose rim, wheel, or axle.
- Any time bolts and nuts are loosened, retighten to specified torque.
- Check that wheel hub pin and snap pin are securely fastened.

Check wheel bolts and nuts regularly especially when new. If they are loose, tighten them as follows.



(1) 77 to 90 N·m (7.9 to 9.2 kgf·m, 57 to 67 ft·lbs.)



(1) 123 to 147 N·m (12.6 to 15.0 kgf·m, 91 to 108 ft·lbs.)
 (2) 108 to 125 N·m (11.0 to 12.8 kgf·m, 80 to 93 ft·lbs.)

EVERY 100 HOURS

■ Battery



DANGER

To avoid the possibility of battery explosion:

For the refillable type battery, follow the instructions below.

- Do not use or charge the refillable type battery if the fluid level is below the LOWER (lower limit level) mark. Otherwise, the battery component parts may prematurely deteriorate, which may shorten the battery's service life or cause an explosion. Check the fluid level regularly and add distilled water as required so that the fluid level is between the UPPER and LOWER levels.



CAUTION

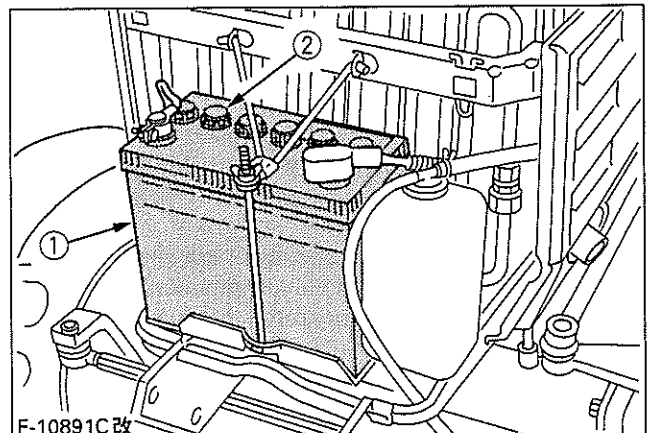
To avoid personal injury:

- Never remove the vent caps while the engine is running.
- Keep electrolyte away from eyes, hands and clothes. If you are splattered with it, wash it away completely with water immediately and get medical attention.
- Wear 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.



(1) Battery
 (2) Vent cap

◆ Battery Charging

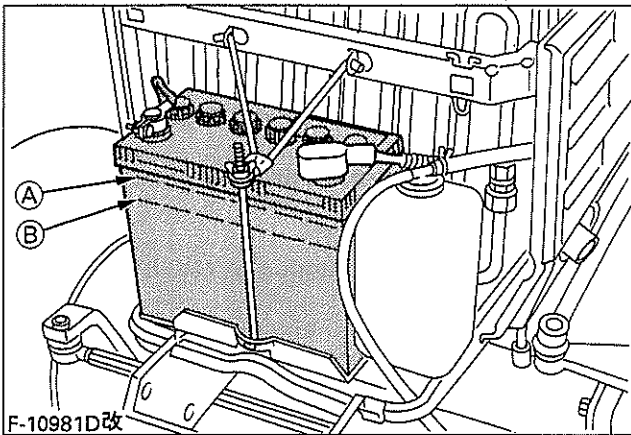


CAUTION

To avoid personal injury:

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

1. Make sure each electrolyte level is to the bottom of vent wells, if necessary add distilled water in a well-ventilated area.



(A) Upper level
(B) Lower level

2. The water in the electrolyte evaporates during recharging. Liquid shortage damages the battery. Excessive liquid spills over and damages the tractor body.
3. To slow charge the battery, connect the battery positive terminal to the charger positive terminal and the negative to the negative, then recharge in the normal manner.
4. A boost charge is only for emergencies. It will partially charge the battery at a high rate and in a short time.
When using a boost-charged battery, it is necessary to recharge the battery as early as possible. Failure to do this will shorten the battery's service life.

5. When the specific gravity of electrolyte is between 1.27 and 1.29 the charging is completed.
6. When exchanging an old battery for a new one, use battery of equal specification shown in **table 1**.

Table 1

Battery Type	Volts (V)	Capacity at 5H.R	Reserve at (min)	Cold Cranking Amps	Normal Charging Rate (A)
55B24L(S) -MF	12	36	79	433	4.5

◆ Battery Storage

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

■ Changing Engine Oil



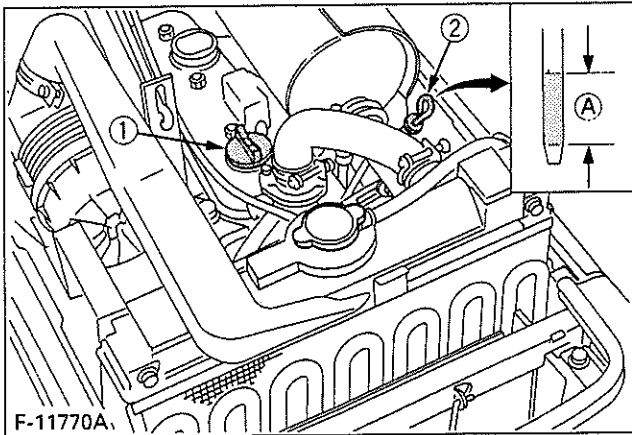
CAUTION

To avoid personal injury:

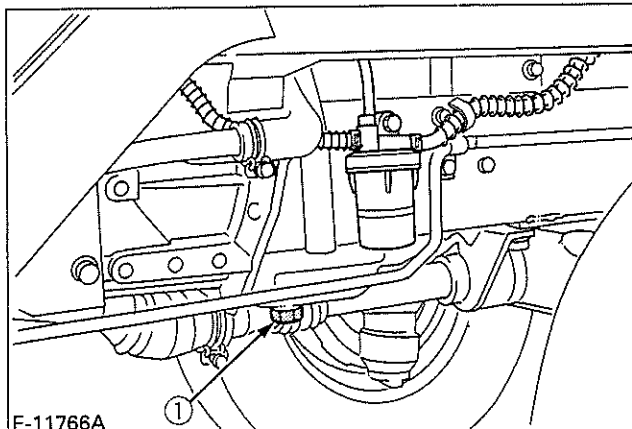
- Be sure to stop the engine and remove the key.
- Allow engine to cool down sufficiently, oil can be hot and can burn.

1. To drain the used oil, remove the drain plug at the bottom of the engine and drain the oil completely into the oil pan. All the used oil can be drained out easily when the engine is still warm.
2. After draining reinstall the drain plug.
3. Fill with the new oil up to the upper notch on the dipstick.
(See "LUBRICANTS" in Maintenance Section)
4. Properly dispose of used oil.

Oil capacity with filter	3.0 L (3.2 U.S.qts.)
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(1) Oil inlet (A) Oil level is acceptable within this range
(2) Dipstick



(1) Drain plug

■ Cleaning Air Cleaner Primary Element



CAUTION

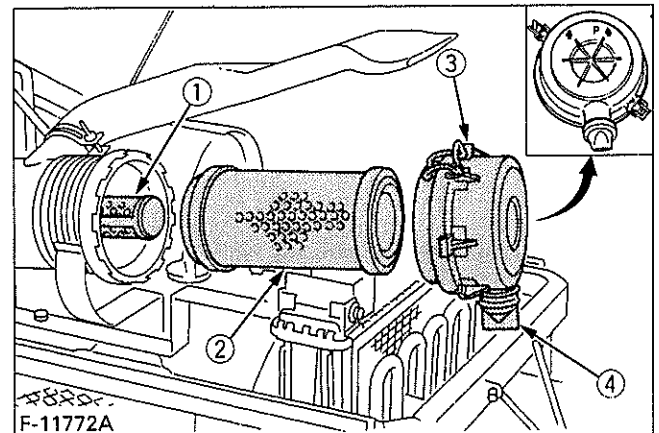
To avoid personal injury:

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

1. Remove the air cleaner cover and primary element.
2. Clean the primary element:
 - 1) When dry dust adheres to the element, blow compressed air from the inside, turning the element. Pressure of compressed air must be under 686kPa (7kgf/cm², 99psi).
 - 2) When carbon or oil adheres to the element, soak the element in detergent for 15 minutes then wash it several times in water, rinse with clean water and dry it naturally. After element is fully dried, inspect inside of the element with a light and check if it is damaged or not.
3. Replace air cleaner primary element:
Once yearly or after the sixth cleaning, whichever comes first.

NOTE:

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



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

IMPORTANT:

- The air cleaner uses a dry element, never apply oil.
- Do not run the engine with filter element removed.
- Be sure to refit the cover with the arrow ↑ (on the face of cover) upright. If the cover is improperly fitted, evacuator valve will not function and dust will adhere to the element.
- Do not touch the secondary element except in cases where replacing is required.

◆ Evacuator Valve

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

■ Checking Fuel Line

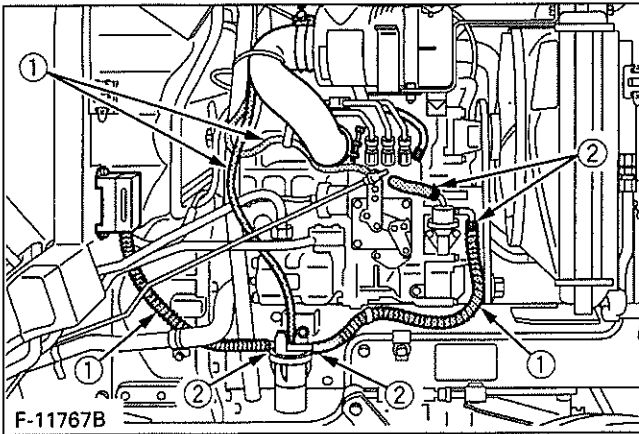


CAUTION

To avoid personal injury:

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

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



- (1) Fuel lines
(2) Hose clamps

NOTE:

- If the fuel line is removed, be sure to properly bleed the fuel system.
(See "Bleeding Fuel System" in "SERVICE AS REQUIRED")

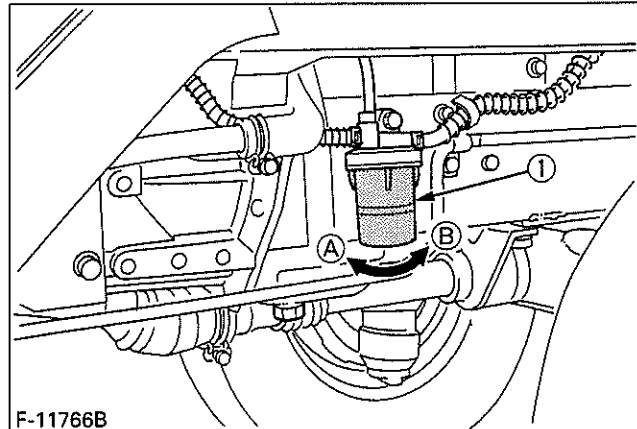
■ Cleaning Fuel Filter

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

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

NOTE:

- When the fuel filter bowl has been removed, fuel stops flowing from the fuel tank. If the fuel tank is almost full, however, the fuel will flow back from the fuel return pipe to the fuel filter. Before checking, make sure the fuel tank is less than half-full.

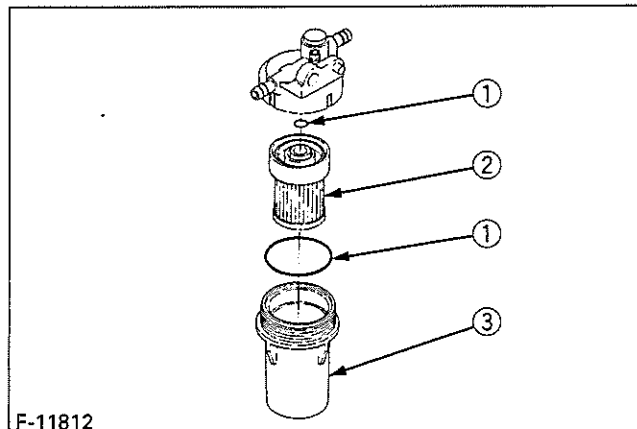


F-11766B

(1) Fuel filter bowl

(A) "LOOSEN"

(B) "TIGHTEN"



F-11812

(1) O ring

(2) Filter element

(3) Filter bowl

IMPORTANT:

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

■ Adjusting Fan belt Tension



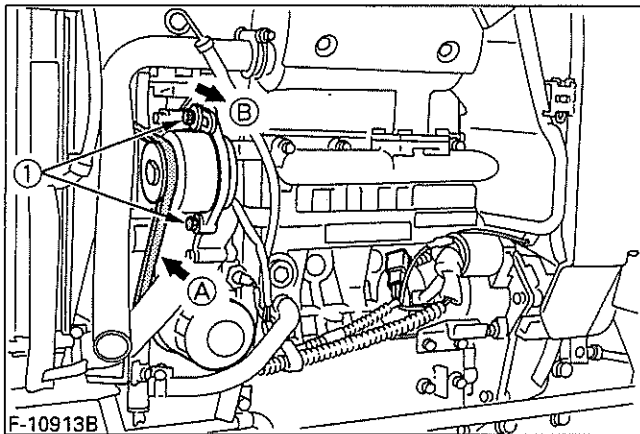
CAUTION

To avoid personal injury:

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

Proper fan belt tension	A deflection of between 7 to 9 mm (1/4 to 3/8 in.) when the belt is pressed in the middle of the span.
-------------------------	--

1. Stop the engine and remove the key.
2. Apply moderate thumb pressure to belt between pulleys.
3. If tension is incorrect, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection of the belt falls within acceptable limits.
4. Replace fanbelt if it is damaged.



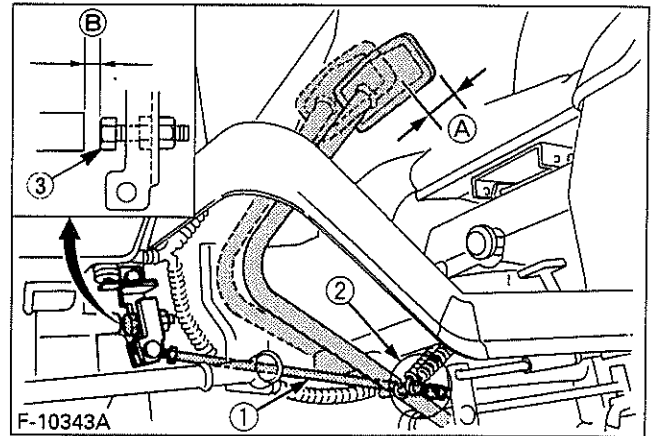
(1) Bolt (A) Check the belt tension (B) To tighten

■ Adjusting Clutch Pedal

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

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

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



(1) Clutch rod (A) Free travel (2) Lock nut (B) 8.5mm (11/32in.) (3) Bolt

■ Adjusting Brake Pedal



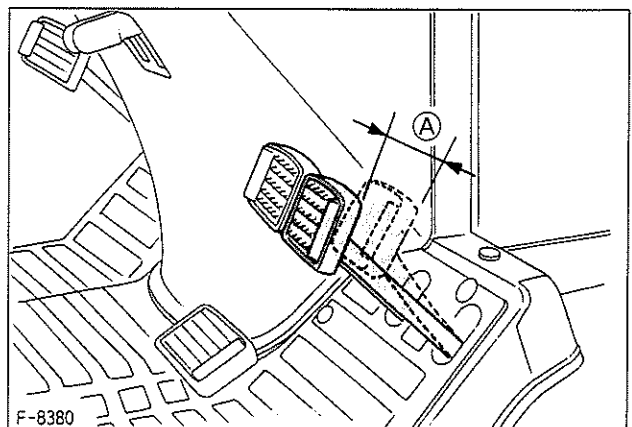
CAUTION

To avoid personal injury:

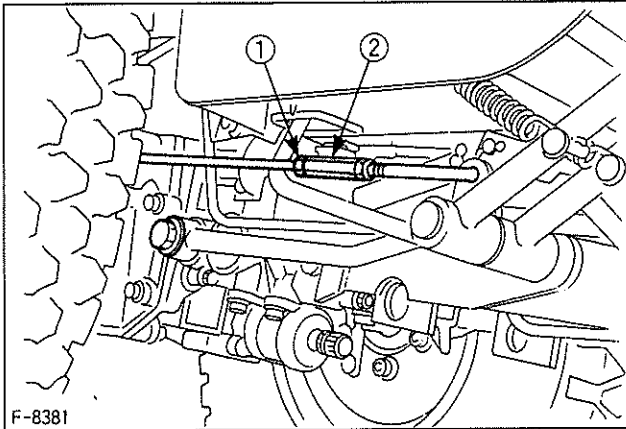
- Stop the engine, remove the key, lower the implement to the ground and chock the wheels before checking brake pedal.

Proper brake pedal free travel	30 to 40 mm (1-3/16 to 1-19/32 in.) on the pedal
	Keep the free travel in the right and left brake pedals equal.

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



(A) Free travel



F-8381

- (1) Lock nut
(2) Turnbuckle

EVERY 200 HOURS

Replacing Engine Oil Filter

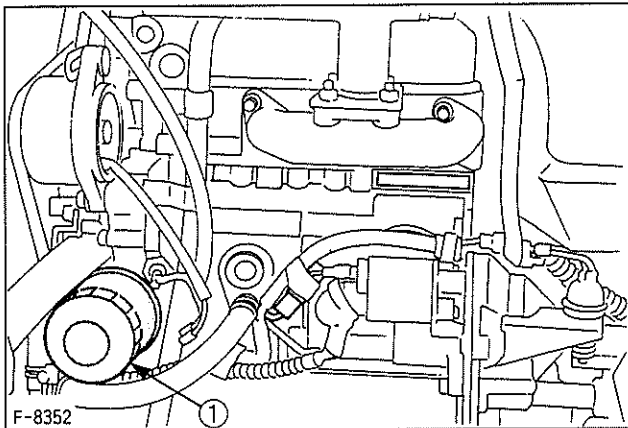


CAUTION

To avoid personal injury:

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

1. Remove the oil filter.
2. Put a film of clean engine oil on the rubber seal of the new filter.
3. Tighten the filter quickly until it contacts the mounting surface.
Tighten filter by hand an additional 1/2 turn only.
4. After the new filter has been replaced, the engine oil normally decreases a little. Make sure that the engine oil does not leak through the seal and be sure to check the oil level on the dipstick. Then, replenish the engine oil up to the prescribed level.
5. Properly dispose of used oil.



F-8352

- (1) Engine oil filter

IMPORTANT:

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

Checking Radiator Hose and Clamp



CAUTION

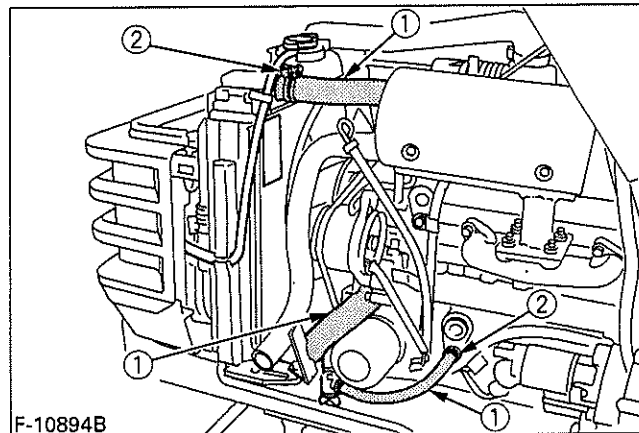
To avoid personal injury:

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

Check to see if radiator hoses are properly fixed every 200 hours of operation or six months, whichever comes first.

1. If hose clamps are loose or water leaks, tighten clamps securely.
2. Replace hoses and tighten hose clamps securely, if radiator hoses are swollen, hardened or cracked.
3. Properly dispose of used coolant.

Replace hoses and hose clamps every 2 years or earlier if checked and found that hoses are swollen, hardened or cracked.



F-10894B

- (1) Radiator hose (5 hoses)
(2) Hose clamps (10 clamps)

◆ Precaution at Overheating

Take the following actions in the event the coolant temperature nears the boiling point, which is termed "Overheating".

1. Stop the machine operation in a safe place and keep the engine unloaded and idling.
2. Don't stop the engine suddenly, but stop it after about 5 minutes of unloaded idling.
3. Keep yourself well away from the machine for an additional 10 minutes or until the steam has blown out.
4. After carefully checking that there is no danger of being burned, eliminate the causes of overheating according to the manual, see "Troubleshooting" section, and restart the engine.

■ Checking Intake Air Line

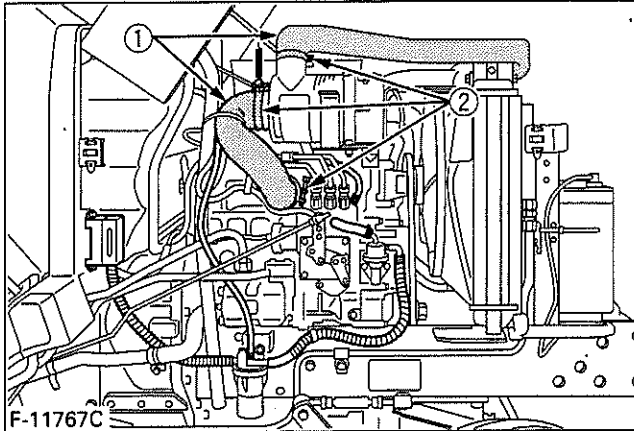


CAUTION

To avoid personal injury:

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

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



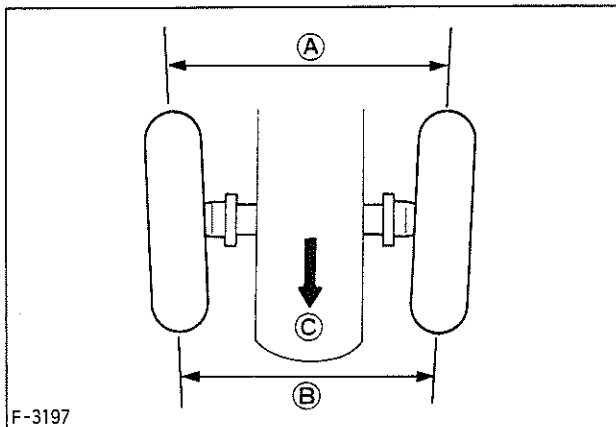
F-11767C

(1) Hose

(2) Hose clamps

■ Adjusting Toe-in

1. Park tractor on a firm, flat and level surface.
2. Turn steering wheel so front wheels are in the straight ahead position.
3. Lower the implement to the ground, set the parking brake, stop the engine and remove the key.
4. Measure distance between tire beads at front of tire at hub height.
5. Measure distance between tire beads at rear of tire, hub height.
6. Front distance should be 1 to 10mm (1/16 to 3/8 in.) less than rear distance.
If not, adjust tie rod length.

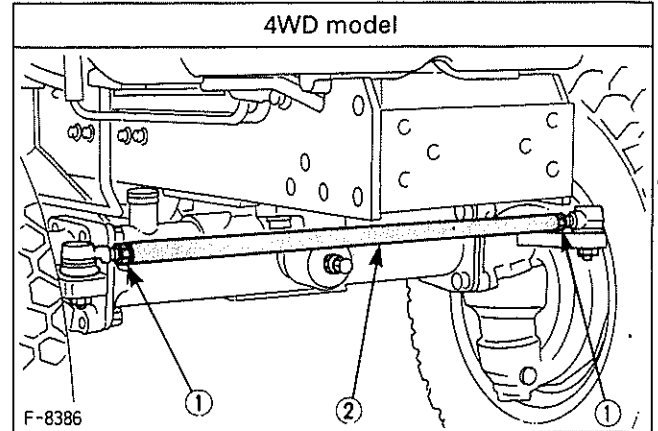


F-3197

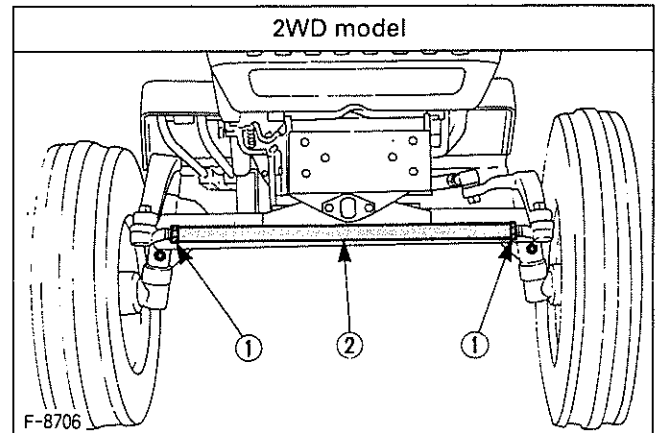
- (A) Wheel - to - wheel distance at rear
 (B) Wheel - to - wheel distance at front
 (C) "FRONT"

◆ Adjusting procedure

1. Loosen the lock nut and turn the tie rod to adjust the rod length until the proper toe-in measurement is obtained.
2. Retighten the lock nut.



F-8386



F-8706

(1) Lock nuts

(2) Tie rod

EVERY 300 HOURS

Changing Transmission Fluid



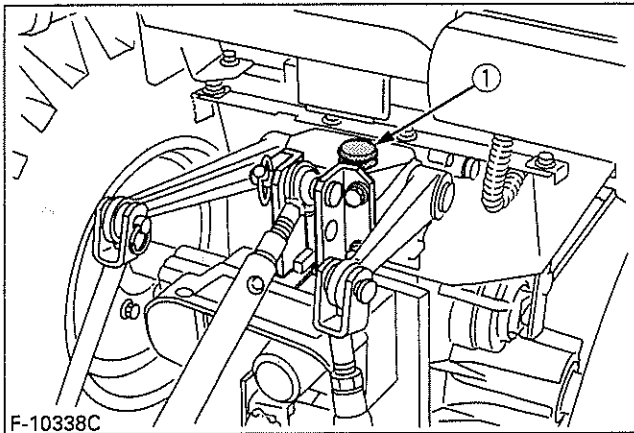
CAUTION

To avoid personal injury:

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

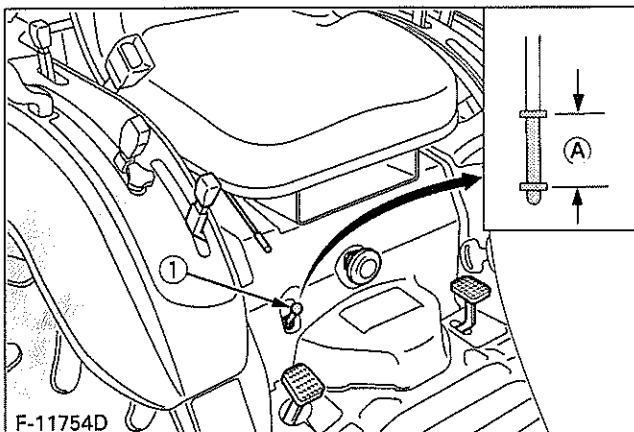
1. To drain the used oil, remove the drain plug at the bottom of the transmission case and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Clean the transmission strainer.
4. Fill with the new KUBOTA SUPER UDT fluid up to the upper notch on the dipstick.
- (See "LUBRICANTS" and "DAILY CHECK" in Maintenance Section)
5. After running the engine for a few minutes, stop it and check the oil level again; add oil to prescribed level.
6. Properly dispose of used oil.

Oil capacity	12.5 L (3.30 U.S.gals.)
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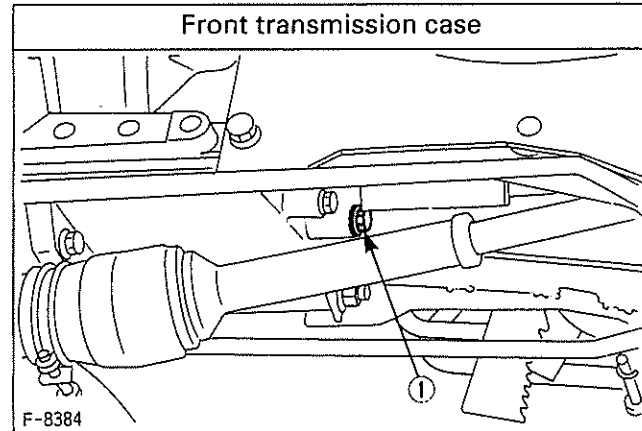
F-10338C

(1) Oil inlet

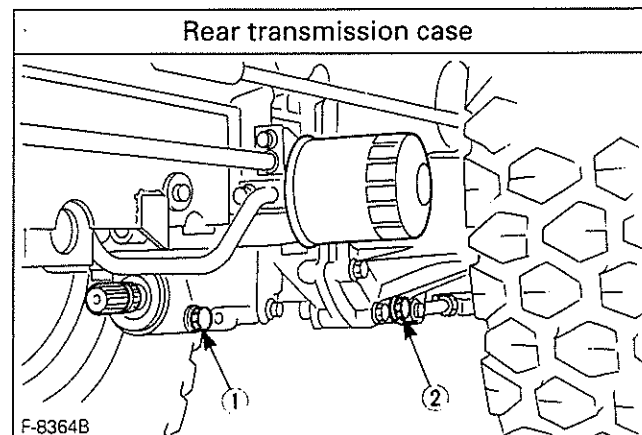


F-11754D

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



F-8384



F-8364B

(1) Drain plug

(2) Drain plugs (Both sides)

IMPORTANT:

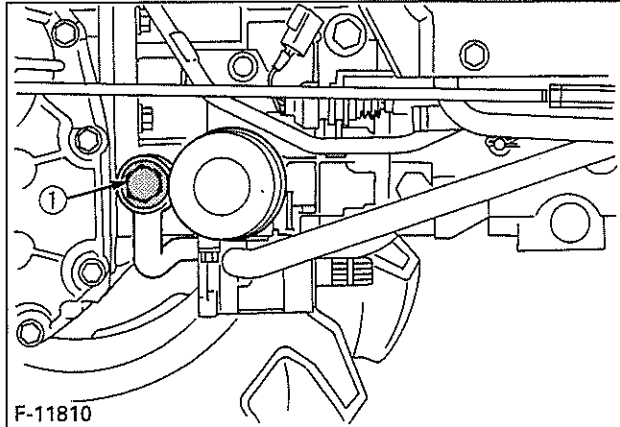
- If the 3-point hitch can not be raised by setting the hydraulic control lever to the UP position after long term storage or when changing the transmission oil, turn steering wheel to the right and left several times to bleed air from the system.
- Do not operate the tractor immediately after changing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

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

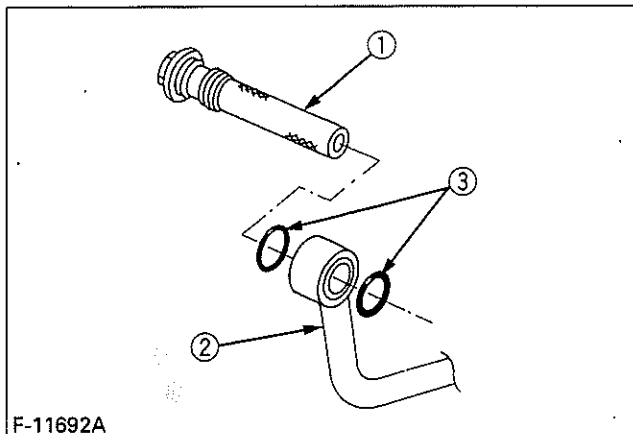
◆ **Cleaning Transmission Strainer**

When changing the transmission fluid, disassemble and rinse the strainer with nonflammable solvent to completely clean off filings.

When reassembling be careful not to damage the parts.



(1) Strainer



F-11692A
 (1) Strainer
 (2) Suction line
 (3) O-ring

NOTE:

- Since the fine filings in the oil can damage the precision component parts of the hydraulic system, the end of the suction line is provided with an oil strainer.

■ **Replacing Transmission Oil Filter**

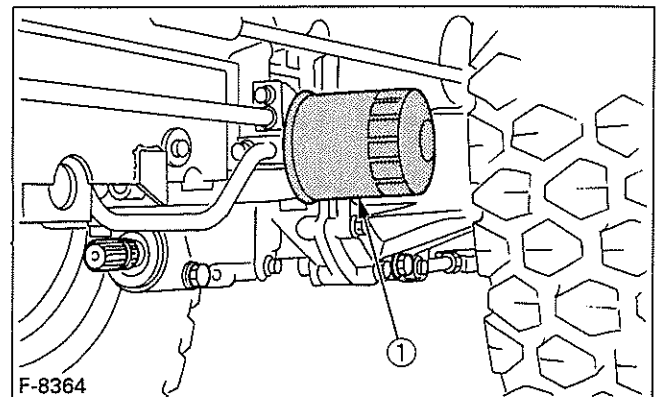


CAUTION

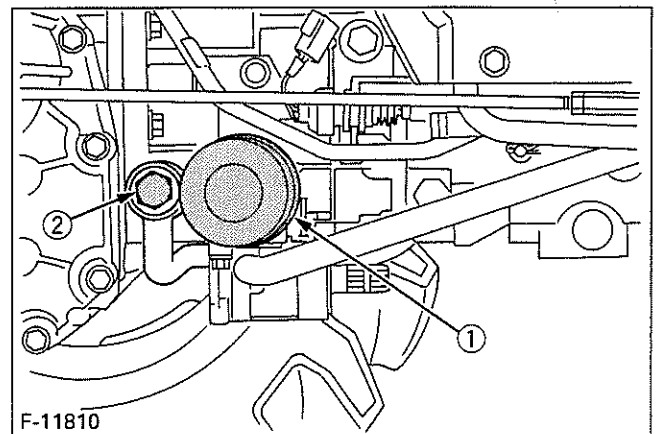
To avoid personal injury:

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

1. Remove the oil filter.
2. Put a film of clean transmission oil on rubber seal of new filter.
3. Tighten the filter quickly until it contacts the mounting surface.
Tighten filter by hand an additional 1/2 turn only.
4. After the new filter has been replaced, the transmission fluid level will decrease a little. Make sure that the transmission fluid does not leak through the seal, and check the fluid level. Top up if necessary.
5. Properly dispose of used oil.



(1) Filter



(1) Filter (2) Strainer

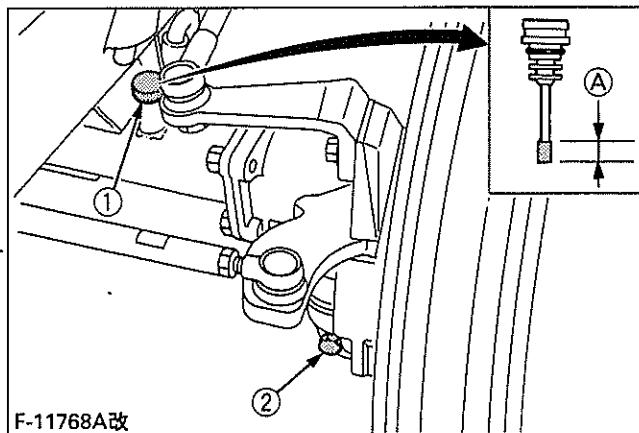
IMPORTANT:

- The strainer must be removed before removing the filter. Otherwise, filter damage will result.
- To prevent serious damage to the hydraulic system, use only a KUBOTA genuine filter.

■ Changing Front Axle Case Oil [4WD]

1. Park the machine on a firm, flat and level surface.
2. To drain the used oil, remove the right and left drain plugs and filling plug at the front axle case and drain the oil completely into the oil pan.
3. After draining reinstall the drain plugs.
4. Fill with new oil up to the upper notch on the dipstick.
5. Properly dispose of used oil.
(See "LUBRICANTS" in Maintenance section)
IMPORTANT:
 - After ten minutes, check the oil level again; add oil to prescribed level.
6. After filling, reinstall the filling plug.

Oil capacity	3.7 L (3.9 U.S.qts.) [4WD]
	4.5 L (4.7 U.S.qts.) [Bi-speed turn]



(1) Filling plug with dipstick (A) Oil level is acceptable within this range
(2) Drain plug

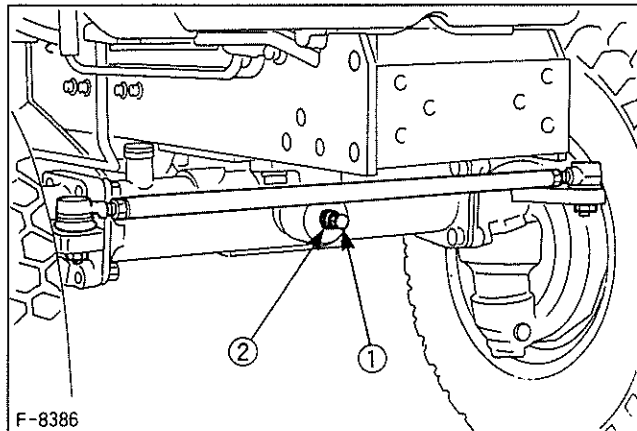
EVERY 400 HOURS

■ Adjusting Front Axle Pivot [4WD]

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

◆ Adjusting procedure

Loosen the lock nut, tighten the adjusting screw (tightening torque 20 N·m, 2.0 kgf·m, 15 ft·lbs), then loosen the screw by 1/6 turn. Retighten the lock nut.



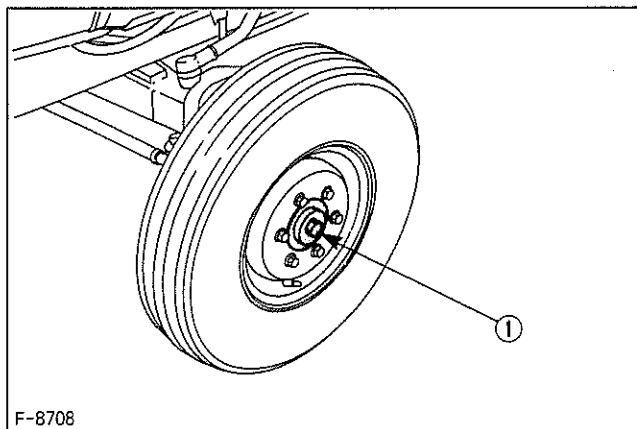
(1) Adjusting screw
(2) Lock nut

■ Replacing Fuel Filter Element

(See "Cleaning fuel filter" in every 100 hours maintenance.)

■ Lubricating Grease Fitting [2WD]

Detach the cover, and apply bearing grease.



(1) Front wheel hub cover

EVERY 800 HOURS

■ Adjusting Engine Valve Clearance

Consult your local KUBOTA Dealer for this service.

EVERY 1500 HOURS

■ Checking Fuel Injection Nozzle Injection Pressure

Consult your local KUBOTA Dealer for this service.

EVERY 3000 HOURS

■ Checking Injection Pump

Consult your local KUBOTA Dealer for this service.

EVERY 1 YEAR

■ Replacing Air Cleaner Primary Element and Secondary Element

(See "Cleaning Air Cleaner Primary Element" in every 100 hours maintenance.)

EVERY 2 YEARS

■ Flush Cooling System and Changing Coolant



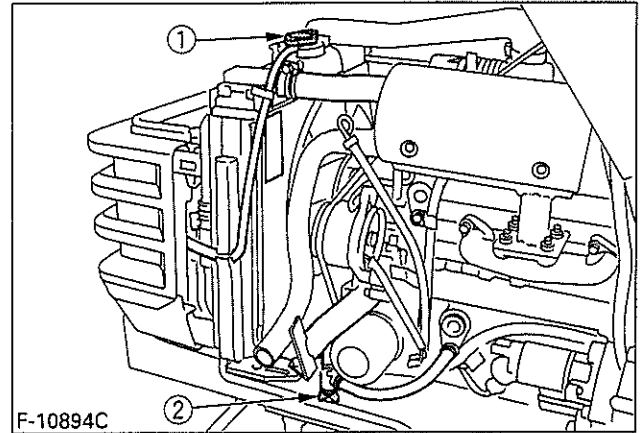
CAUTION

To avoid personal injury:

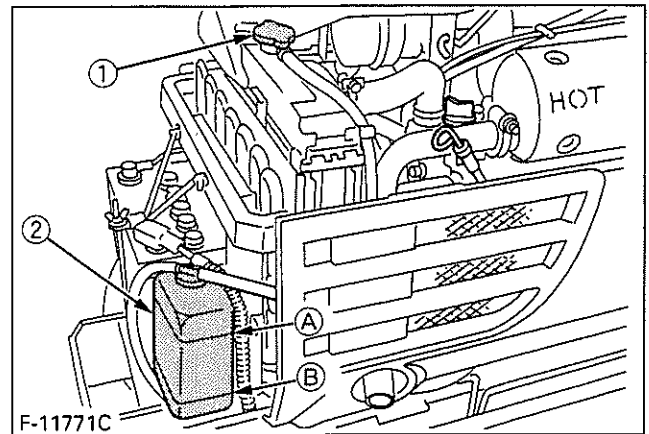
- Do not remove the radiator cap when the engine is hot. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.

1. Stop the engine, remove the key and let cool down.
2. To drain the coolant, open the radiator drain cock, and remove radiator cap. The radiator cap must be removed to completely drain the coolant.
3. After all coolant is drained, close the drain cock.
4. Fill with clean water and cooling system cleaner.
5. Follow directions of the cleaner instruction.
6. After flushing, fill with clean water and anti-freeze until the coolant level is just below the port. Install the radiator cap securely.
7. Fill with coolant up to the "FULL" mark of recovery tank.
8. Start and operate the engine for few minutes.
9. Stop the engine, remove the key and let cool.
10. Check coolant level of recovery tank and add coolant if necessary.
11. Properly dispose of used coolant.

Coolant capacity (with recovery tank)	3.8 L (4.0 U.S.qts.)
---------------------------------------	----------------------



(1) Radiator cap
(2) Drain cock



(1) Radiator cap
(2) Recovery tank
(A) "FULL"
(B) "LOW"

IMPORTANT:

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

■ Anti-Freeze

If cooling water freezes, it can damage the cylinders and radiator. It is necessary, if the ambient temperature falls below 0°C (32°F), to remove cooling water after operating or to add anti-freeze to it.

1. There are two types of anti-freeze available; use the permanent type (PT) for this engine.
2. Before adding anti-freeze for the first time, clean the radiator interior by pouring fresh water and draining it a few times.
3. The procedure for mixing of water and anti-freeze differs according to the make of the anti-freeze and the ambient temperature, basically it should refer to SAE J1034 standard, more specifically SAE J814c.
4. Mix the anti-freeze with water, and then fill into the radiator.

Vol % Anti-freeze	Freezing Point		Boiling Point*	
	°C	°F	°C	°F
40	-24	-12	106	222
50	-37	-34	108	226

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

NOTE:

- The above data represents industry standards that necessitate a minimum glycol content in the concentrated anti-freeze.
- When the cooling water level drops due to evaporation, add water only. In case of leakage, add anti-freeze and water in the specified mixing ratio.
- Anti-freeze absorbs moisture. Keep unused anti-freeze in a tightly sealed container.
- Do not use radiator cleaning agents when anti-freeze has been added to the cooling water. (Anti-freeze contains an anti-corrosive agent, which will react with the radiator cleaning agent forming sludge which will affect the engine parts.)

■ Replacing Radiator Hose (Water pipes)

Replace the hoses and clamps.

(See "Checking Radiator Hose and Clamp" in every 200 hours maintenance.)

■ Replacing Fuel Hose

Replace the hoses and clamps.

(See "Checking Fuel Line" in every 200 hours maintenance.)

■ Replacing Intake Air Line

Consult your local KUBOTA Dealer for this service.

SERVICE AS REQUIRED

■ Bleeding Fuel System

Air must be removed:

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

◆ Bleeding procedure is as follows:

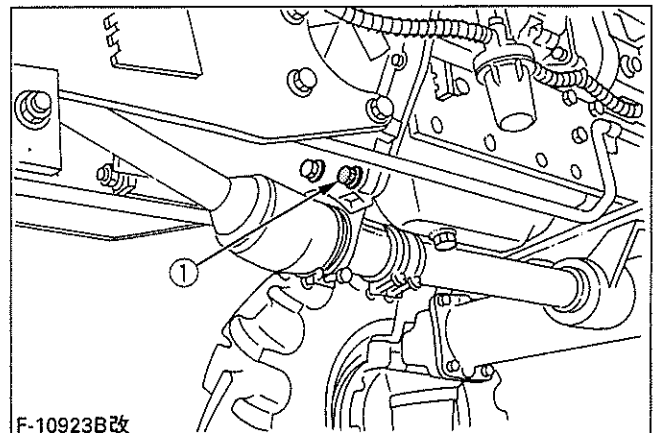
1. Fill the fuel tank with fuel.
2. Start the engine and run for about 30 seconds, and then stop the engine.

■ Draining Clutch Housing Water

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

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

Remove the drain plug and drain the water, then install the plug again.



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* (1) Water drain plug

■ Replacing Fuse



CAUTION

To avoid personal injury:

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

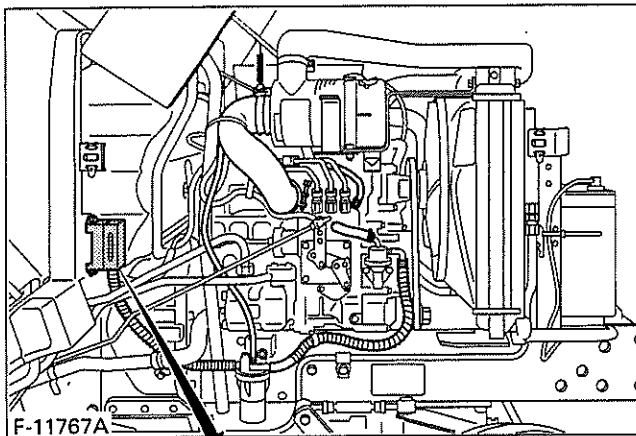
The tractor electrical system is protected from potential damage by fuses.

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

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

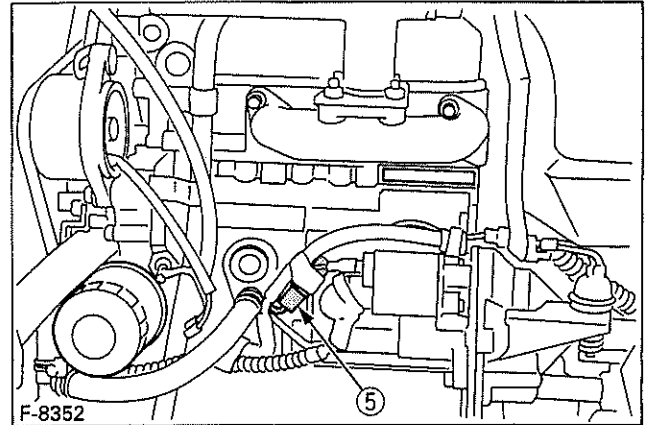
IMPORTANT:

- Before replacing a blown fuse, determine why the fuse blew and make any necessary repairs. If fuse continues to blow, do not short circuit. Failure to follow this procedure may result in serious damage to the tractor electrical system. Refer to the troubleshooting section of this manual or your local KUBOTA Dealer for specific information dealing with electrical problems. If any of them should blow, replace with a new one of the same capacity.



Don't use the fuse except indicated capacity

5A	KEY STOP	5A	①
10A	HEAD LIGHT INSTRUMENT CLUSTER	10A	②
20A	WORK LIGHT	20A	③
20A	FLASHER HAZARD	20A	④
20A			



◆ Protected circuit

FUSE No.	CAPACITY (A)	Protected circuit
①	5	Key stop
②	10	Head lights
③	20	Work light
④	20	Flasher / Hazard lights
⑤	Slow blow fuse	Check circuit against wrong battery connection

■ Replacing Light Bulb

1. Head lights :
Take the bulb out of the light body and replace with a new one.
2. Other lights :
Detach the lens and replace the bulb.

Light	Capacity
Head lights	23W
Tail light	8W
Turn Signal / Hazard light	27W
Instrument panel light	1.7W
Hazard light switch indicator	0.6W

STORAGE



CAUTION

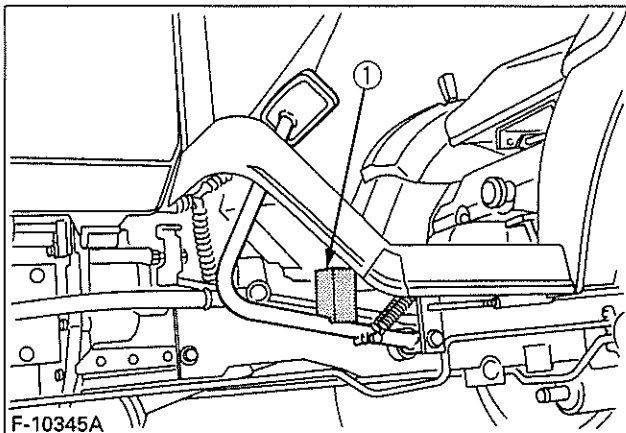
To avoid personal injury:

- Do not clean the machine with engine running.
- To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.
- When storing, remove the key from the key switch to avoid unauthorized persons from operating the tractor and getting injured.

TRACTOR STORAGE

If you intend to store your tractor for an extended period of time, follow the procedures outlined below. These procedures will insure that the tractor is ready to operate with minimum preparation when it is removed from storage.

1. Check the bolts and nuts for looseness, and tighten if necessary.
2. Apply grease to tractor areas where bare metal will rust also to pivot areas.
3. Detach the weights from the tractor body.
4. Inflate the tires to a pressure a little higher than usual.
5. Change the engine oil and run the engine to circulate oil throughout the engine block and internal moving parts for about five minutes.
6. Keep the clutch disengaged. If the clutch is left engaged for a long period of time, the clutch plate may rust, making clutch disengagement impossible at the next operation.



(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 battery storage procedures. (See "Battery condition" in every 100 hours in periodic service section.)
9. Keep the tractor in a dry place where it will be sheltered from the elements. Cover the tractor.
10. Store the tractor indoors in a dry area that is protected from sunlight and excessive heat. If the tractor must be stored outdoors, cover it with a waterproof tarpaulin.
Jack the tractor up and place blocks under the front and rear axles so that all four tires are off the ground. Keep the tires out of direct sunlight and extreme heat.

IMPORTANT:

- When washing the tractor, be sure to stop the engine. Allow sufficient time for the engine to cool before washing.
- Cover the tractor after the muffler and the engine have cooled down.

REMOVING THE TRACTOR FROM STORAGE

1. Check the tire air pressure and inflate the tires if they are low.
2. Jack the tractor up and remove the support blocks from under the front and rear axles.
3. Install the battery. Before installing the battery, be sure it is fully charged.
4. Check the fan belt tension.
5. Check all fluid levels (engine oil, transmission/hydraulic oil, engine coolant and any attached implements).
6. Start the engine. Observe all gauges. If all gauges are functioning properly and reading normal, move the tractor outside. Once outside, park the tractor and let the engine idle for at least five minutes. Shut the engine off and walk around tractor and make a visual inspection looking for evidence of oil or water leaks.
7. With the engine fully warmed up, release the parking brake and test the brakes for proper adjustment as you move forward. Adjust the brakes as necessary.

TROUBLESHOOTING

ENGINE TROUBLESHOOTING

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

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

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

OPTIONS

Consult your local KUBOTA Dealer for further detail.

- Rear Work Light.
High visibility for night work.
- Front end weights.
For front ballast.
- Mounting Kit (Front end weights)
To mount Front end weights.
- Engine Block Heater
For extremely cold weather starting

KUBOTA Corporation is . . .

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

To achieve this status, the company has through the years diversified the range of its products and services to a remarkable extent. Nineteen plants and 16,000 employees produce over 1,000 different items, large and small.

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

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

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