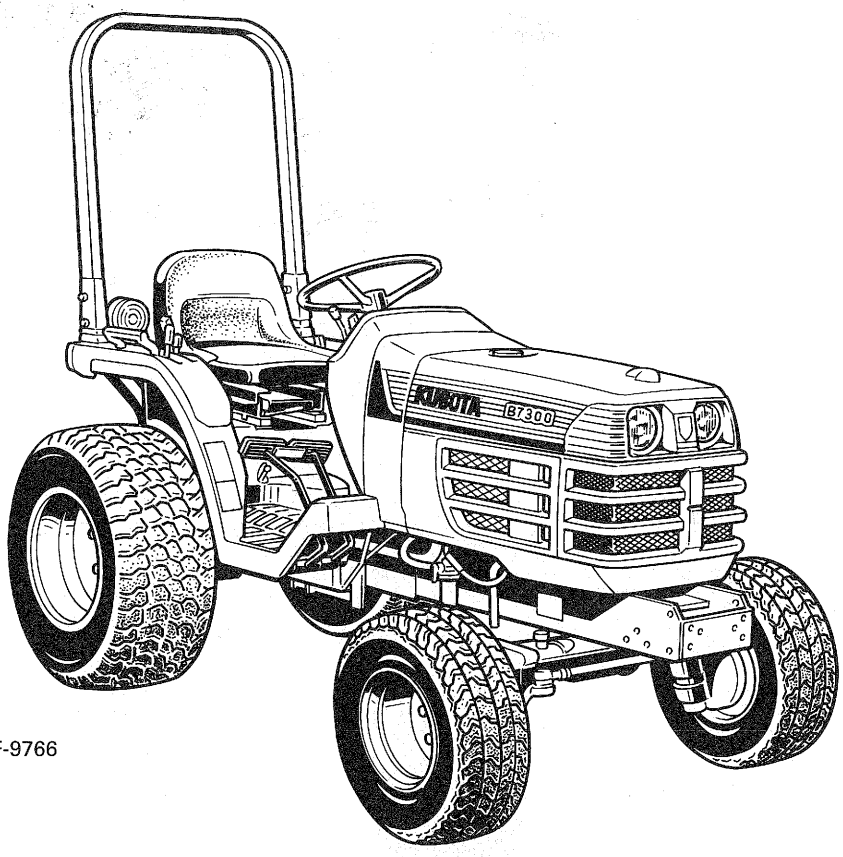
OPERATOR'S MANUAL

KUBOTA TRACTOR

MODEL B7300



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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, GREMANY
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 Scond
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
min^{-1} (rpm)	Revolutions Per Minute
S^{-1} (r/s)	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


Diesel Fuel


Fuel-Level

Engine-Rotational Speed


Hourmeter/Elapsed Operating Hours


Engine Coolant-Temperature


Diesel Preheat/Glow Plugs(Low Temperature Start Aid)


Parking Brake


Engine Intake/Combustion Air-Filter


Battery Charging Condition


Engine Oil-Pressure


Turn Signal

Engine-Stop

Engine Shut-Off Control


Engine-Run


Starter Control


Power Take-Off Clutch Control-Off Position


Power Take-Off Clutch Control-On Position


Differential Lock


Position Control-Raised Position


Position Control-Lowered Position


Draft Control-Shallow Position


Draft Control-Deep Position


3-Point Lowering Speed Control


Remote Cylinder-Retract


Remote Cylinder-Extend


Steering Wheel-Tilt Control


Hazard Warning Lights


Master Lighting Switch


Position Lamps


Headlight-Low Beam


Headlight-High Beam


Audible Warning Device


Four-Wheel Drive-On


Four-Wheel Drive-Off


Fast


Slow


Creep


Read Operator's Manual


Tractor-Forward Movement-Overhead View of Machine


Tractor-Rearward Movement-Overhead View of Machine


Engine 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.

CONTENTS

SAFE OPERATION

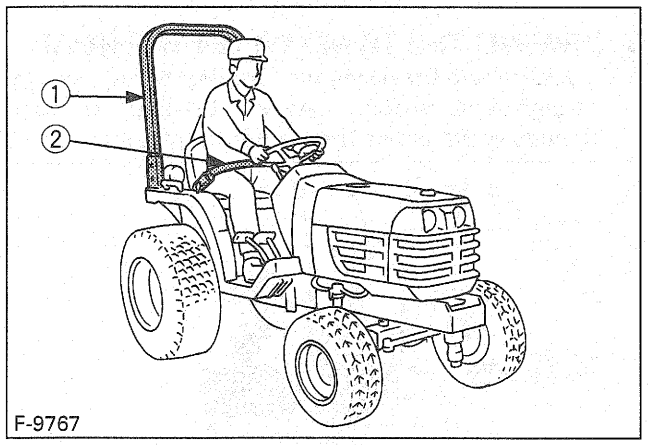
Careful operation is your best insurance against an accident.

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

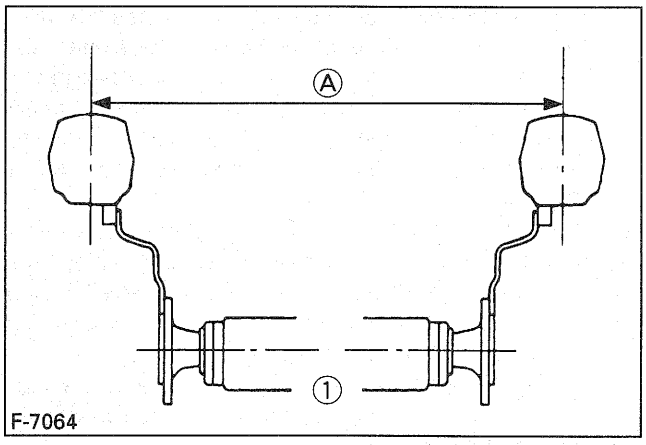
1. Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.
2. Pay special attention to the danger, warning and caution labels on the tractor itself.
3. KUBOTA recommends the use of a Roll Over Protective Structures (ROPS) and seat belt in almost 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.



(1) ROPS
(2) Seat belt

4. Always use the seat belt if the tractor has a ROPS. Do not use it if 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)

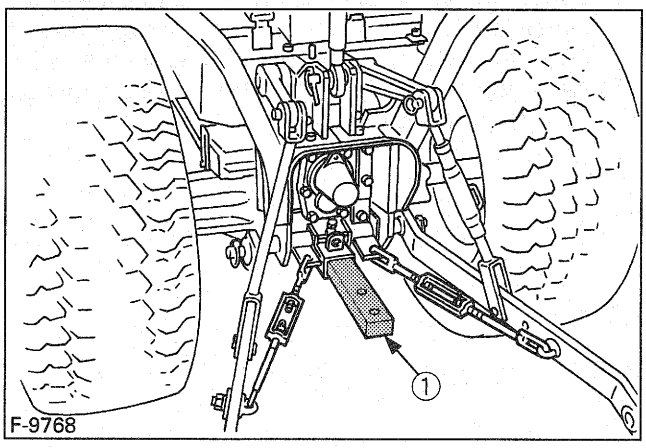


(1) Rear wheels *(A) Tread Width*

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. 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.

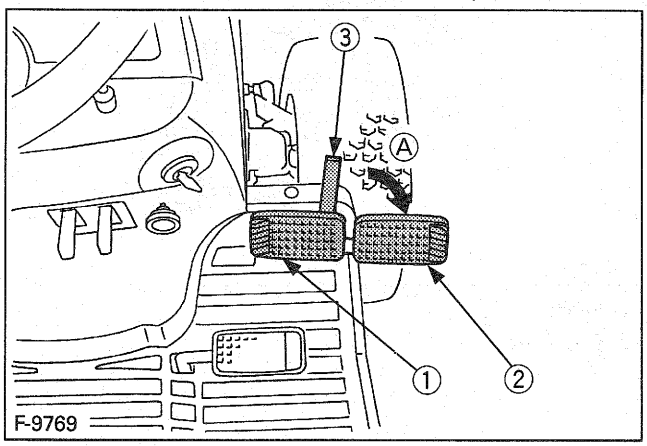


(1) Drawbar

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.

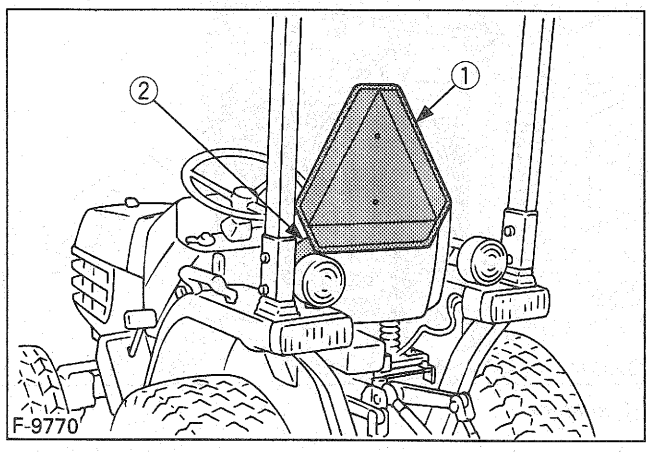
3. DRIVING THE TRACTOR ON THE ROAD

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.



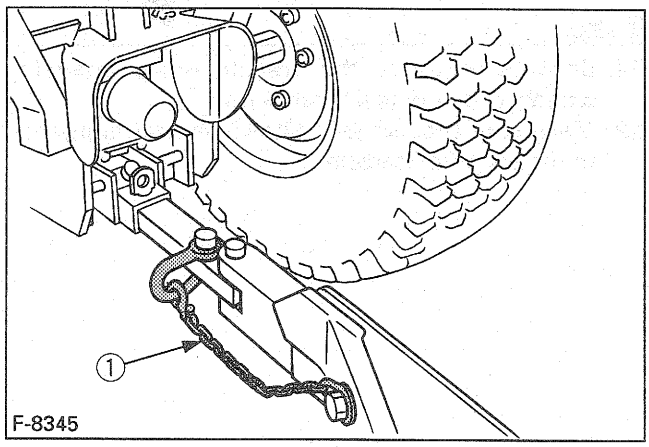
(1) Brake Pedal (LH) *(A) Whenever travelling on the road*
(2) Brake Pedal (RH)
(3) Brake Pedal Lock

2. Always slow the tractor down before turning. Turning at high speed may tip the tractor over.
3. Make sure that the an (SMV) slow moving vehicle 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. Dim them when meeting another vehicle.
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.



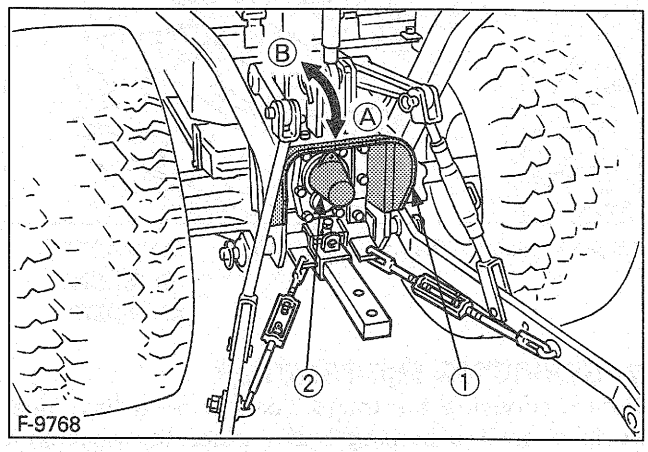
(1) Safety chain

4. PARKING THE TRACTOR

1. Disengage the PTO, lower all implements, 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.

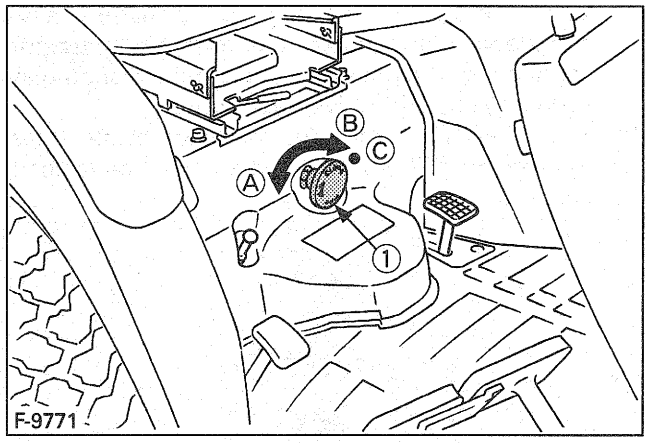


(1) PTO Shaft cover
(2) PTO Shaft cap
(A) "NORMAL POSITION"
(B) "RAISED POSITION"

3. Before installing or using PTO driven equipment, read the manufacturer's manual and review the safety labels attached to the equipment.
4. To prevent PTO driven equipment from out of control, becoming select the lower speed (540rpm) unless the higher one is specifically recommended as safe by the equipment manufacturer.
5. 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 implement lowering control in the "LOCK" position to hold the implement in the raised position.

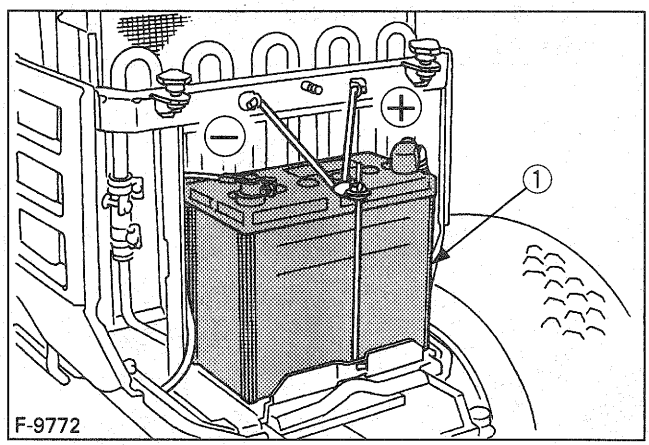


(1) 3-point hitch lowering speed knob *(A) "FAST"* *(B) "SLOW"* *(C) "LOCK"*

7. SERVICING THE TRACTOR

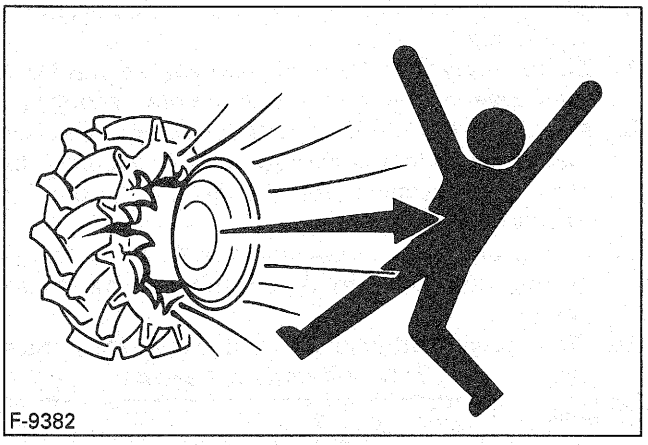
Before servicing the tractor, park it on a firm level surface, set the parking brake, place the gear shift lever in neutral and stop the engine.

1. Allow the tractor time to cool off before working on or near the engine, muffler, radiator, etc.
2. Always stop the engine 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. To avoid sparks from an accidental short circuit, always disconnect the battery's ground cable ⊖ first and connect it last.



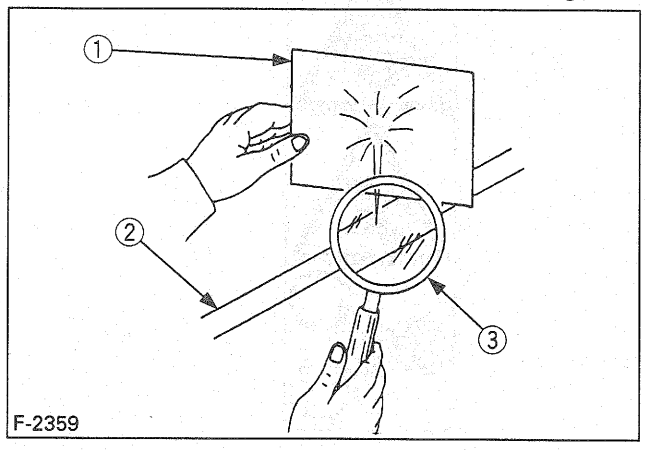
(1) Battery

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



11. Securely support the tractor when changing wheels or the wheel tread width.
12. Make sure that wheel bolts have been tightened to the specified torque.

13. 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.

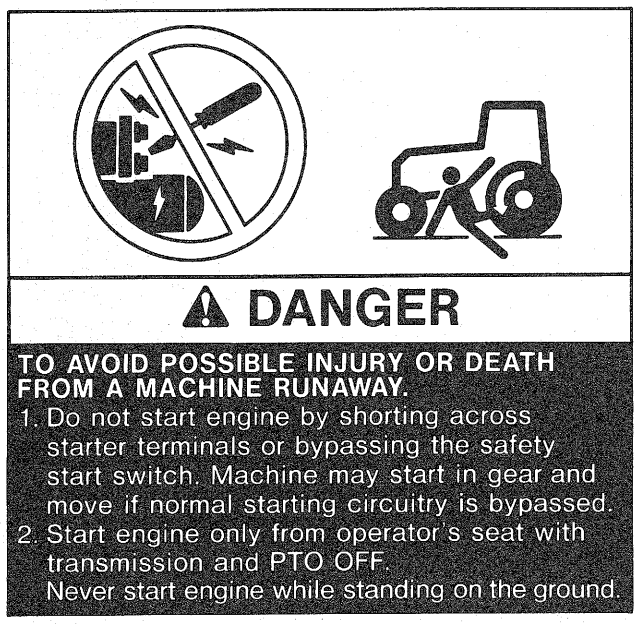


(1) Cardboard
(2) Hydraulic line
(3) Magnifying glass

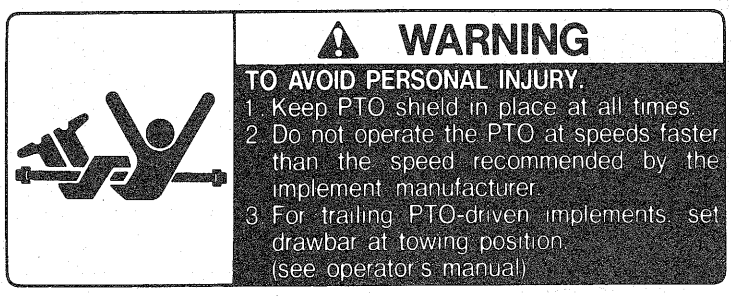
Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks; Use a piece of cardboard or wood, instead. Use of safety goggles or other eye protection is also highly recommended. If injured by escaping fluid, see a medical doctor at once. This fluid can produce gangrene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

8. DANGER, WARNING AND CAUTION LABELS

(1) Part No. 6C090-4965-1

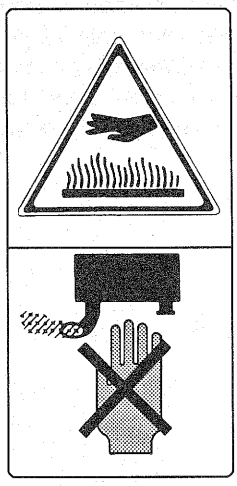


(2) Part No. TA040-4959-3



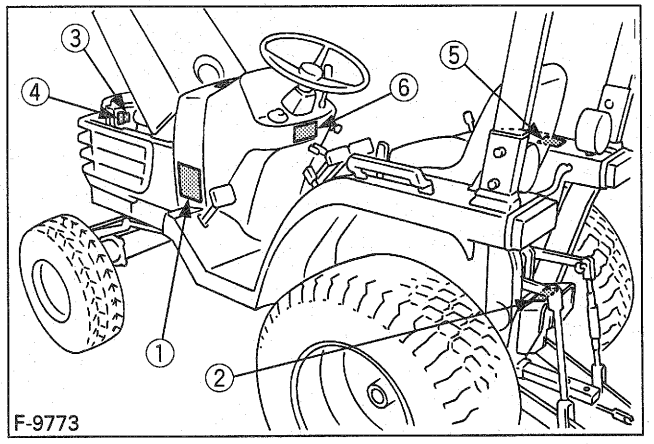
(3) Part No. 6C090-4958-2
Stay clear of engine fan and fanbelt.

(4) Part No. 6C090-4959-1
Do not touch hot surface like muffler, etc.



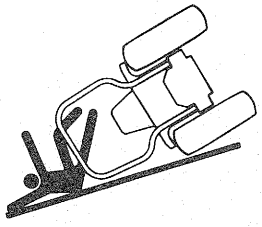
(5) Part No. TA040-4935-1

(6) Part No. 6C050-4724-2



(1) Part No. TA040-4932-2

⚠ WARNING



TO AVOID PERSONAL INJURY OR DEATH FROM ROLL-OVER:
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.

(2) Part No. 6C040-4742-1

⚠ C A U T I O N

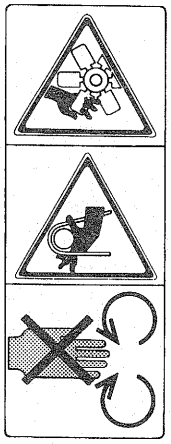
TO AVOID PERSONAL INJURY
1. Read and understand the operator's manual before operation.
2. Before starting the engine, make sure that everyone is at a safe distance from the tractor and that the PTO is OFF.
3. Do not allow passengers on the tractor at any time.
4. Before allowing other people to use 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.

(3) Part No. 6C090-4938-1

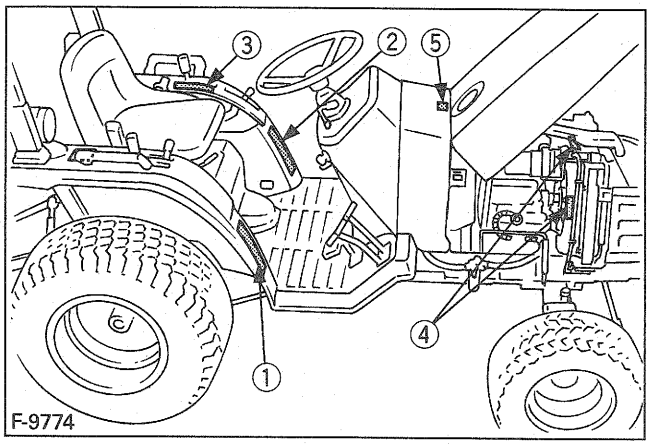
⚠ WARNING

TO AVOID PERSONAL INJURY.
1. Do not use the 2nd PTO speed with implements designed for 540rpm.
2. Use the 2nd PTO speed only when mid PTO or higher rpms are specifically recommended by the implement manufacturer.

(4) Part No. 6C090-4958-2
Stay clear of engine fan and fanbelt.



(5) Part No. 6C040-4741-2
No fire



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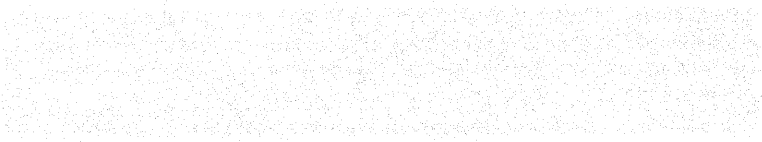
CARE OF DANGER, WARNING AND CAUTION LABELS

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.

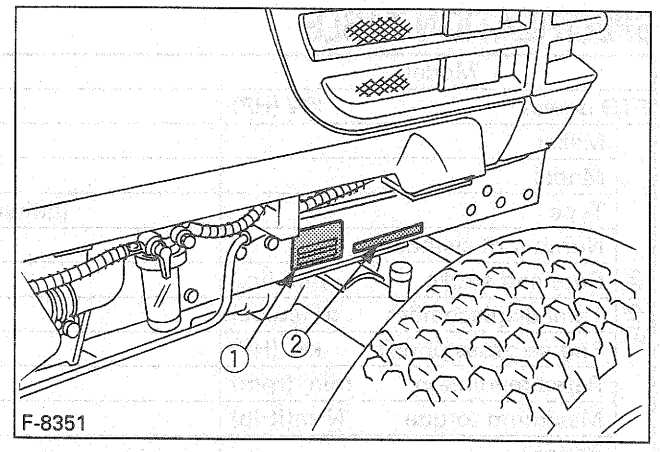


SERVICING OF TRACTOR

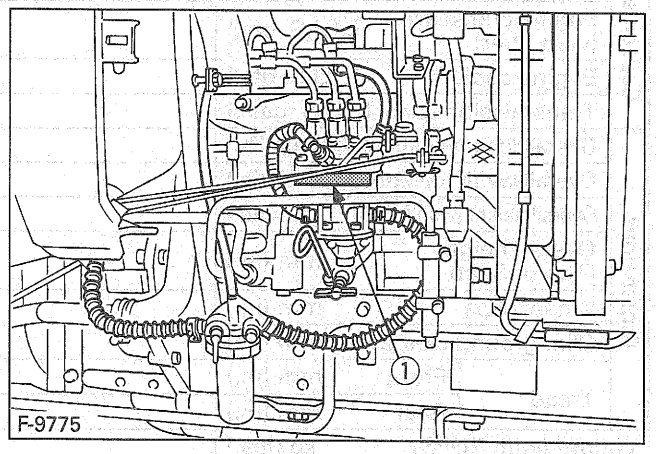
Your dealer is interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.
However, when in need of parts or major service, be sure to see your KUBOTA dealer.
For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



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



(1) Engine serial number

SPECIFICATIONS

SPECIFICATION TABLE

Model				B7300 HSD
PTO power			kW (HP)	9.3 (12.5)
Engine	Maker			KUBOTA
	Model			D722-D10SP
	Type			Indirect Injection. Vertical, water-cooled, 4 cycle diesel
	Number of cylinders			3
	Bore and stroke		mm (in.)	ϕ 67×68 (ϕ 2.64×2.68)
	Total displacement		cm³ (cu.in.)	719 (43.9)
	Engine gross power		kW (HP)	11.9 (16.0)
	Rated revolution		min⁻¹(rpm)	2900
	Maximum torque		N·m(ft·lb)	45 (33)
	Battery			12V, RC: 71 min, CCA: 390A
	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.)	13 (3.4)
	Engine crankcase (with filter)		L (U.S. qts.)	2.4 (2.5)
	Engine coolant		L (U.S. qts.)	2.7 (2.9)
	Transmission case		L (U.S. gals.)	12.0 (3.17)
Dimensions	Overall length (without 3p)		mm (in.)	2255 (88.8)
	Overall width (min.tread)		mm (in.)	1157 (45.6)
	Overall height (with ROPS)		mm (in.)	1890 (74.4)
	Overall height (Top of Seat)		mm (in.)	1175 (46.3)
	Wheel base		mm (in.)	1500 (59.0)
	Min. ground clearance		mm (in.)	270 (10.6)
	Tread	Front	mm (in.)	940 (37.0)
		Rear	mm (in.)	832 (32.8), 882 (34.7)
Weight (with ROPS)			kg (lbs.)	595 (1312)
Clutch				Dry single plate
Traveling system	Tires	Front		21×8.00−10
		Rear		29×12.50−15
	Steering			Manual steering
	Transmission			Main-hydrostatic transmission, High-Low gear shift (2 forward, 2 reverse)
	Brake			Wet disk type
	Min. turning radius (with brake)		m(feet)	2.1 (6.9)
Hydraulic unit	Hydraulic control system			Up and down type control valve
	Pump capacity		L/min (gals/min)	14.6 (3.9)
	Three point hitch			SAE category I
	Max. lift force	At lift points	kg(lbs.)	500 (1103)
		24 in. behind lift points	kg(lbs.)	390 (860)
PTO	Rear-PTO			SAE 1-3/8, 6 splines
	Revolution			2 speeds (540 min⁻¹ (rpm) at 2970 engine min⁻¹ (rpm), 950 min⁻¹(rpm) at 2900 engine min⁻¹ (rpm))
	Mid-PTO			USA No.5 (KUBOTA 10-tooth) involute spline
	Revolution			1 speed (2460 min⁻¹(rpm) at 2900 engine min⁻¹ (rpm))

NOTE: *Manufacturer's estimate

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

TRAVELING SPEEDS

(At rated engine rpm)

Model		B7300			
Tire size (Rear)		29×12.50−15		8.3−16	
	Range gear shift lever	km/h	mph	km/h	mph
Foward	Low	0 to 4.9	0 to 3.0	0 to 5.0	0 to 3.1
	High	0 to 12.0	0 to 7.5	0 to 12.3	0 to 7.7
Reverse	Low	0 to 4.9	0 to 3.0	0 to 5.0	0 to 3.1
	High	0 to 12.0	0 to 7.5	0 to 12.3	0 to 7.7

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

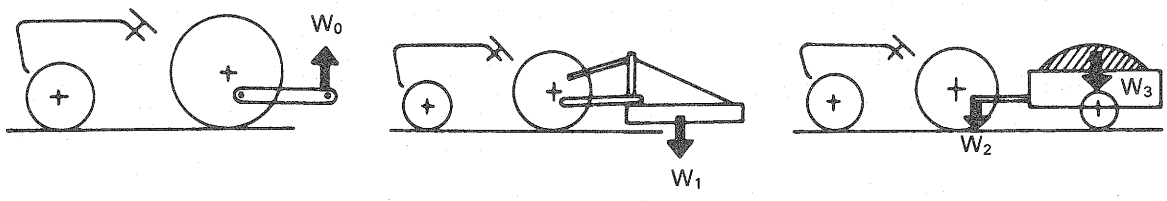
IMPLEMENT LIMITATIONS

The KUBOTA Tractor has been throughly tested for proper performance with implements sold or approved by KUBOTA. Use with implements 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	
B7300	835mm (32.9 in.)	948mm (37.3 in.)	300kg (660 lbs.)

	Actual figures		
	Implement weight W_1 and/or size	Max. Drawbar Load W_2	Trailer loading weight W_3 Max. capacity
B7300	As in the following list (Shown on the next page)	300kg (660 lbs.)	1000kg (2210 lbs.)

Lower link end max. loading weight ·····The max. allowable load which can be put on the lower link end: Wo
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



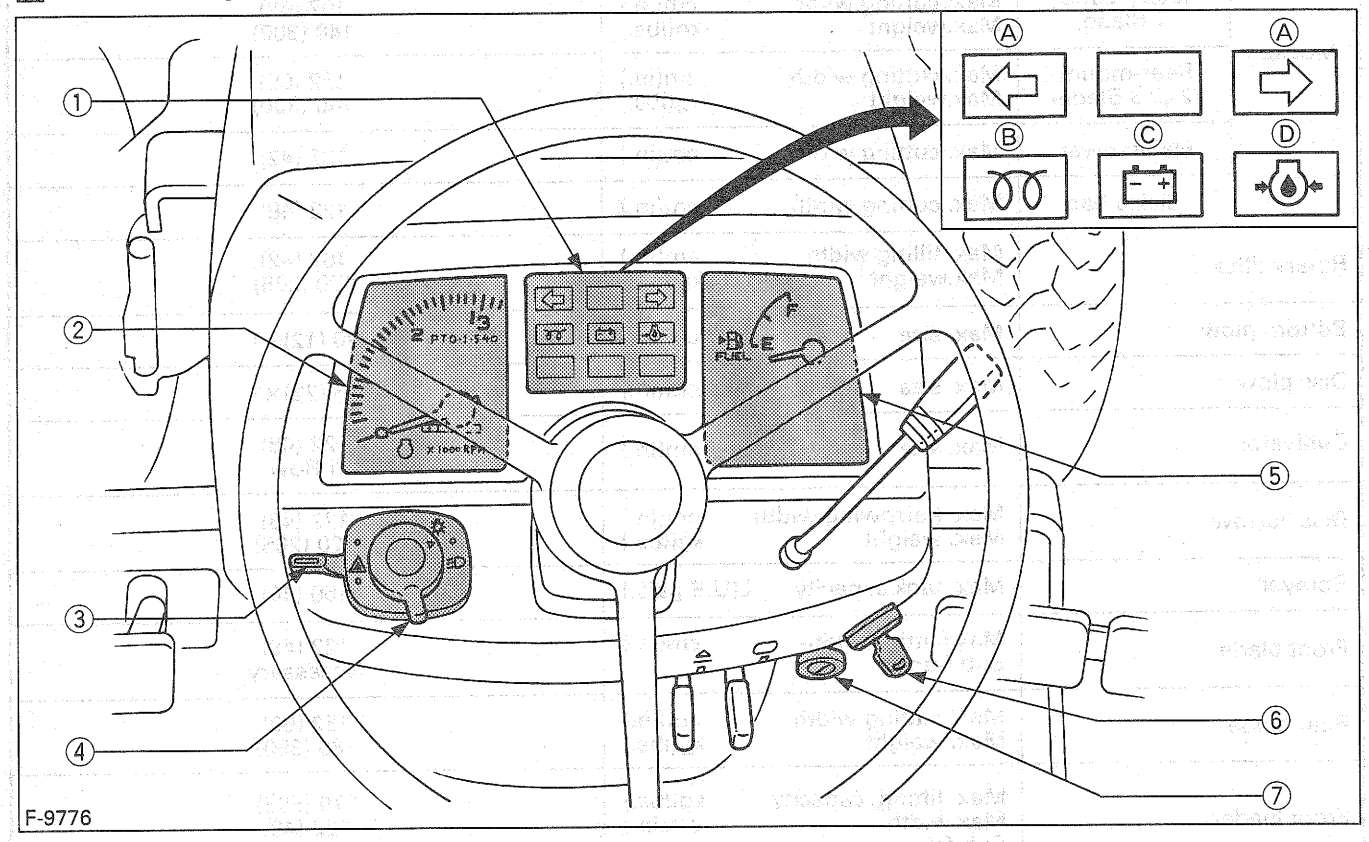
NOTE:
● Implement size may vary depending on soil operating conditions.

Implement		Remarks		B7300
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.)	107 (42) 140 (300)
	Rear-mount (2 or 3 Blade)	Max. cutting width Max.weight	cm(in.) kg(lbs.)	152 (60) 140 (300)
	Flail-mower	Max. cutting width	cm(in.)	107 (42)
	Sickle bar	Max. cutting width	cm(in.)	122 (48)
Rotary tiller		Max. tilling width Max.weight	cm(in.) kg(lbs.)	107 (42) 170 (375)
Bottom plow		Max. size	cm(in.)	30 (12)×1
Disc plow		Max. size	cm(in.)	56 (22)×1
Cultivator		Max. size	cm(in.)	122 (48) 1 Row
Disc harrow		Max. harrowing width Max. weight	cm(in.) kg(lbs.)	122 (48) 120 (265)
Sprayer		Max. tank capacity	L(U.S.gals.)	150 (40)
Front blade		Max.cutting width Sub frame	cm(in.)	122 (48) Necessary
Rear blade		Max. cutting width Max. weight	cm(in.) kg(lbs.)	152 (60) 160 (350)
Front loader		Max. lifting capacity Max.width Sub frame	kg(lbs.) cm(in.)	270 (595) 122 (48) Necessary
Box blade		Max. cutting width Max. weight	cm(in.) kg(lbs.)	107 (42) 170 (375)
Back hoe		Max.digging depth Max. weight Sub frame	cm(in.) kg(lbs.)	183 (72) 270 (600) Necessary
Snow blower		Max.working width Max. weight Sub frame	cm(in.) kg(lbs.)	107 (42) 160 (350) Necessary
Trailer		Max. load capacity		1000 (2200)

NOTE:
● Implement size may vary depending on soil operating conditions.

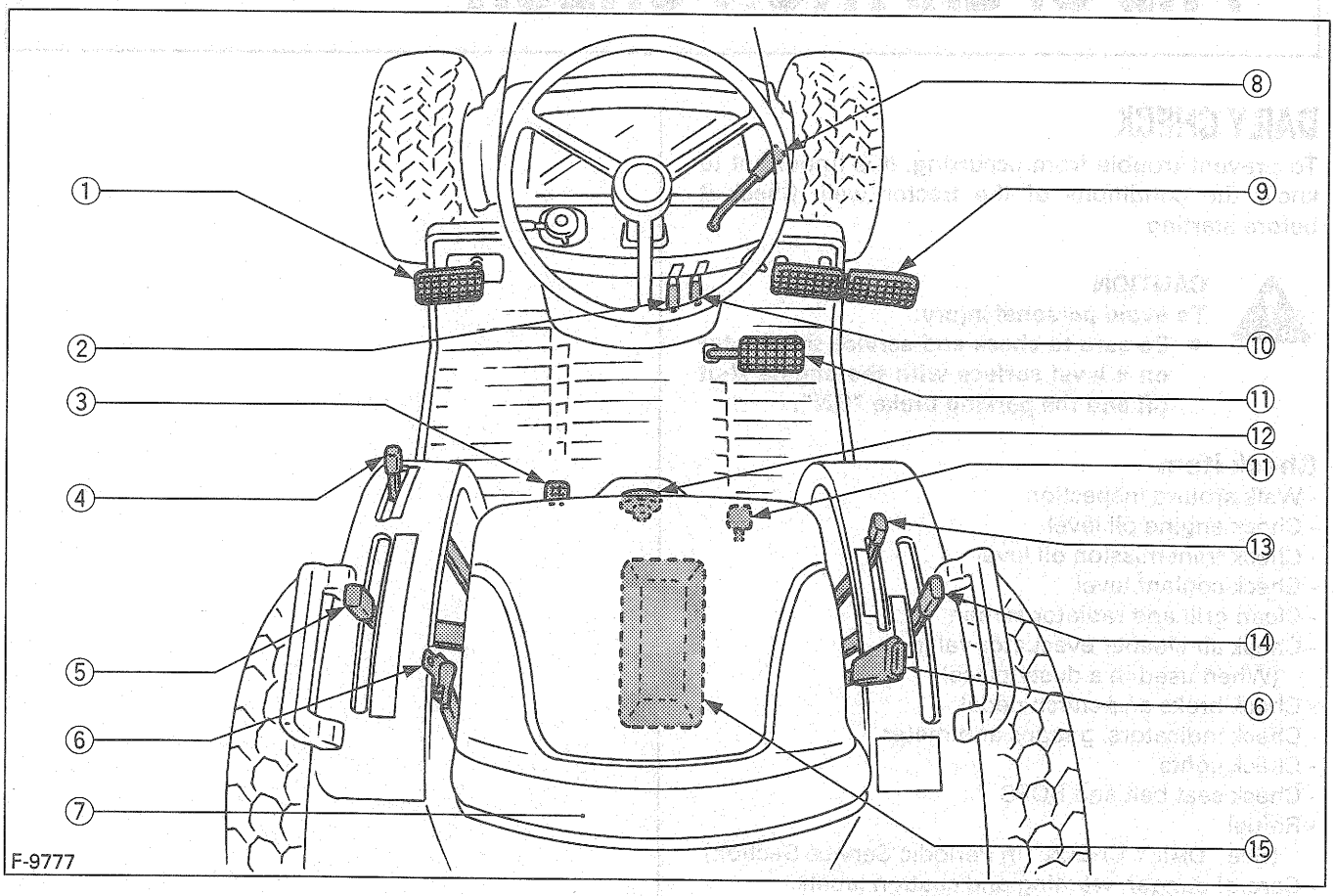
INSTRUMENT PANEL AND CONTROLS

Instrument panel, switches and hand contorols



ILLUSTRATED CONTENTS

Foot and hand controls

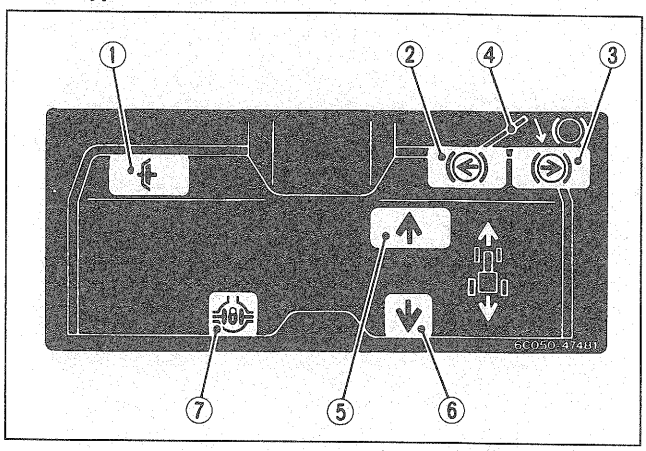


ILLUSTRATED CONTENTS

Pedal Location Label

The label is located on the cover under seat.

[HST type]



(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

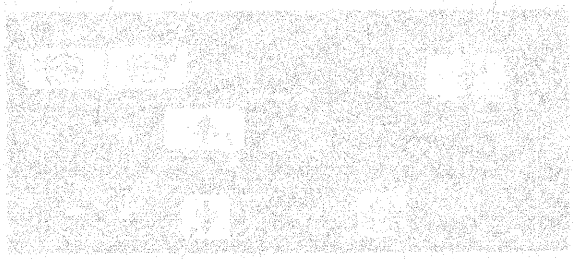
DAILY CHECK

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

CAUTION
To avoid personal injury:
- **Be sure to check and service the tractor on a level surface with the engine shut off 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 a dusty place)
- Check brake and clutch pedal
- Check indicators, gauges and meter
- Check lights
- 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

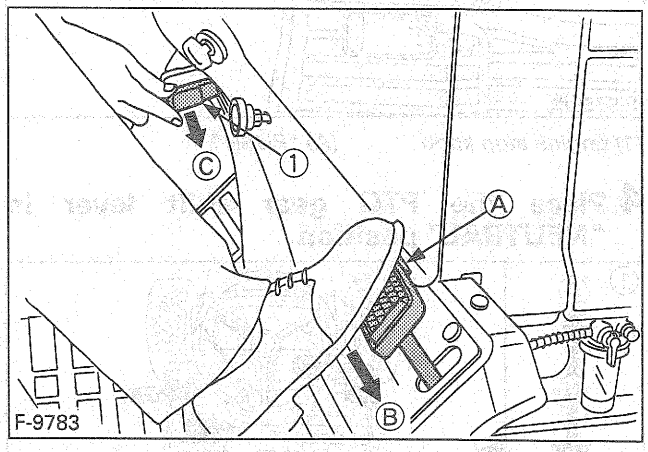
CAUTION
To avoid personal injury:
- **Read "Safe Operation" in the front of this manual.**
- **Read the danger, warning and caution labels located on the tractor.**
- **To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.**
- **Never 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

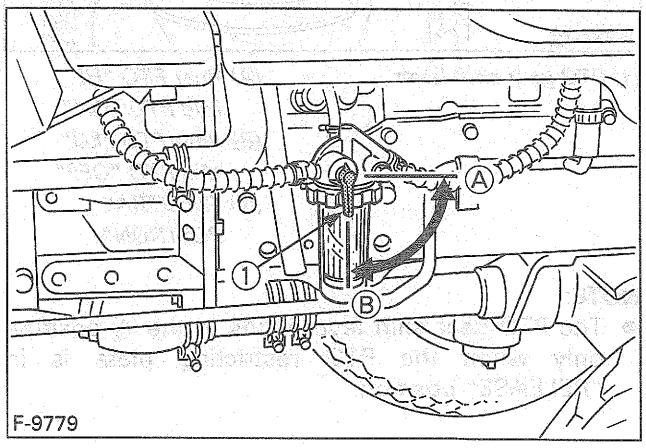
1. Set the parking brake

1. To set the parking brake;
   1) Interlock the brake pedals.
   2) Depress the brake pedals.
   3) Latch the brake pedals with the parking brake lever.
2. To release the parking brake, depress the brake pedals again.



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

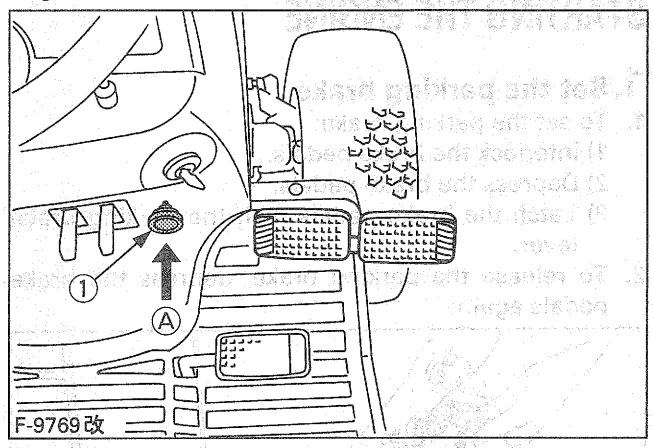
2. Make sure the fuel cock is in the open position.



(1) Fuel cock (A) "CLOSE"
(B) "OPEN"

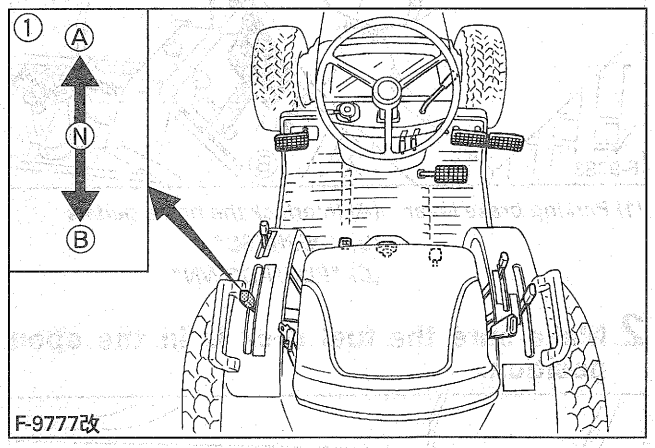
3. Make sure the engine stop knob is pushed in.

Push in the engine stop knob if it is pulled out, or the engine will not start.



(1) Engine stop knob *(A) "PUSH"*

4. Place the PTO gear shift lever in "NEUTRAL" position.



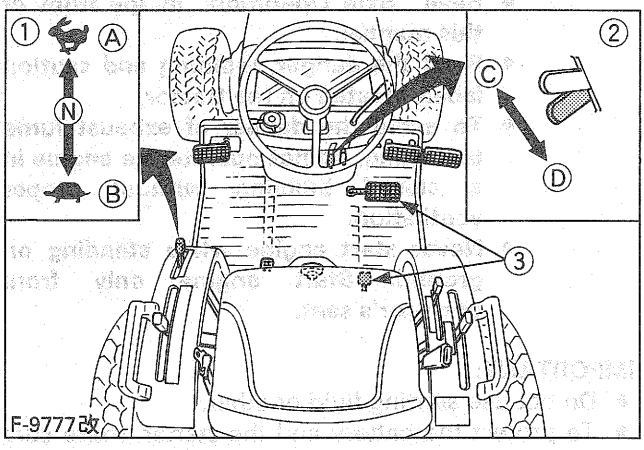
(1) PTO gear shift lever

(A) Rear PTO "HI"
Mid PTO "ON"
(B) Rear PTO "LO"
Mid PTO "OFF"
(N) "NEUTRAL POSITION"

NOTE:

- The PTO gear shift lever shifts to the Ⓐ position only when the PTO restricting plate is in "RELEASE" position.

5. 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.



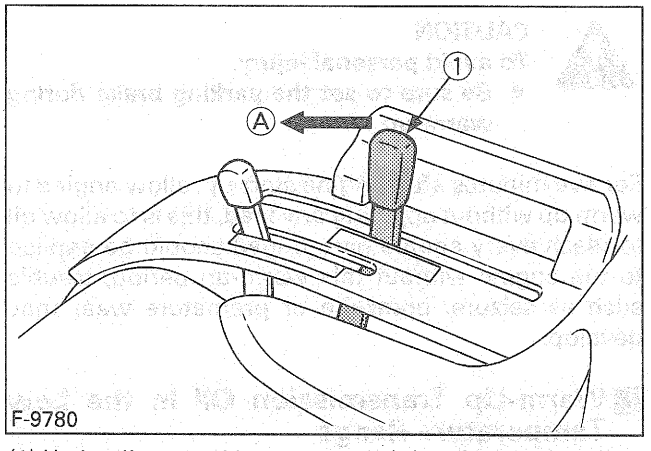
(1) Range gear shift lever (Hi-Lo)
(2) Speed set lever
(3) Speed control pedal

(A) "HI"
(B) "LO"
(C) "OFF"
(D) "ON"
(N) "NEUTRAL POSITION"

NOTE:

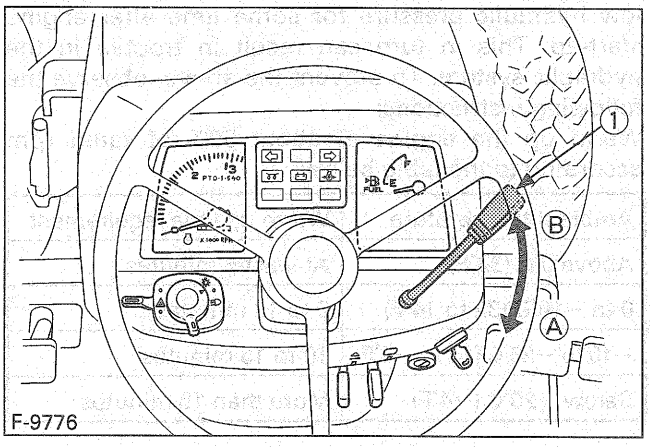
- Step out the foot from Speed control pedal, doing so the pedal automatically return to neutral position.

6. Place the hydraulic control lever in "DOWN" position.



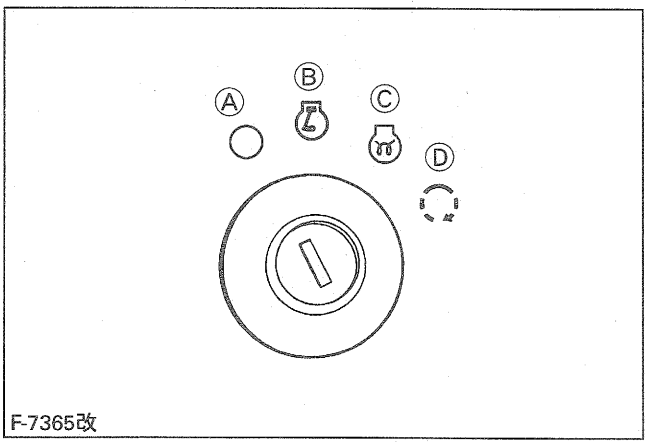
(1) Hydraulic control lever *(A) "DOWN"*

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



(1) Hand Throttle lever *(A) "INCREASE"*
(B) "DECREASE"

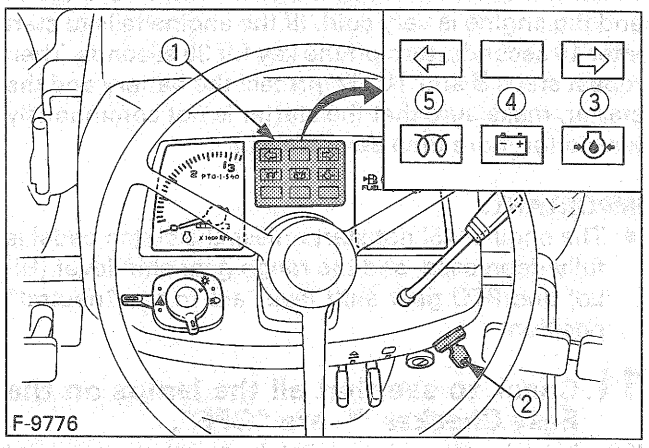
8. Insert the key into the key switch and turn it "ON".



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

◆ **Check Easy Checker™ lamps:**

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



(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 daily checks carefully by referring to Daily Check. (See "DAILY CHECK" in Periodic Service Section)

9. 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.

10. 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 after 10 seconds, turn off the key for 30 seconds. Then repeat steps 9 and 10. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 30 seconds.)

IMPORTANT:

- The engine will not start unless the clutch pedal is fully depressed, and the range gear shift lever (Hi-Lo) and PTO gear shift lever are in the "neutral" position.

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

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

12. Release the clutch pedal

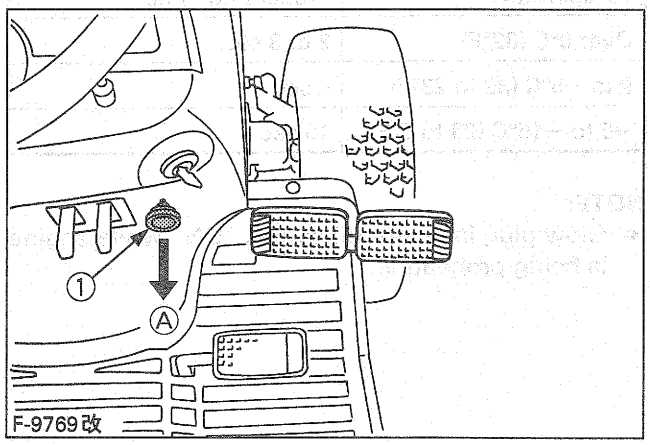
STOPPING THE ENGINE

1. After slowing the engine to idle, pull the engine stop knob back and hold it until the engine stops.

2. Remove the key.

NOTE:

- After the engine has stopped, be sure to push the engine stop knob back in, or the engine will not start next time.



(1) Engine stop knob (A) Pull to "STOP"

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 in the Low Temperature Range

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

Ambient temperature	Warm-up time requirement
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.

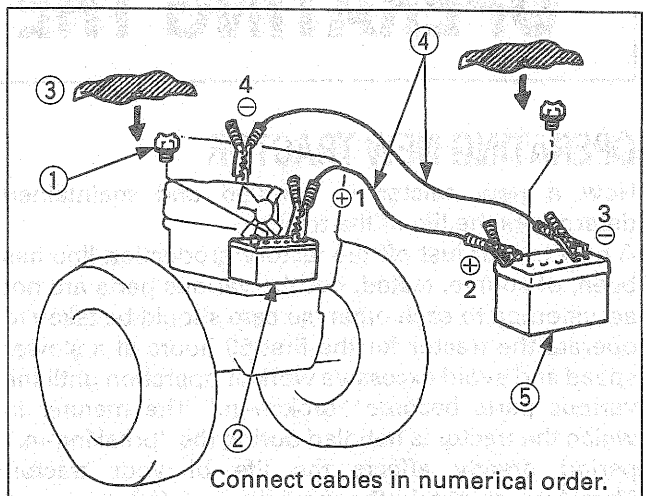
JUMP STARTING

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 (−) jumper cable to negative (−) 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 engine off.
3. Put on safety goggles and rubber gloves.
4. Remove the vent caps from both batteries. (if equipped)
5. Cover vent holes with damp rags. Do not allow the rag to touch the battery terminals.
6. Attach the red clamp to the positive (red, ⊕ or pos.) terminal of the dead battery and clamp the other end of the same cable to the positive (red, ⊕ or pos.) terminal of the helper battery.
7. Clamp the other cable to the negative (black, ⊖ 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. Reinstall the vent caps.



F-4727 Connect cables in numerical order. Disconnect in reverse order after use.

(1) Remove vent caps (if equipped)
(2) Dead battery
(3) Lay a damp rag over open vents
(4) Jumper cables
(5) Helper battery

IMPORTANT:

- This machine has a 12volt negative ⊖ ground starting system.
- Use only same voltage for jump starting.
- Use of a higher voltage source on tractors electrical system could result in severe damage to tractors 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)

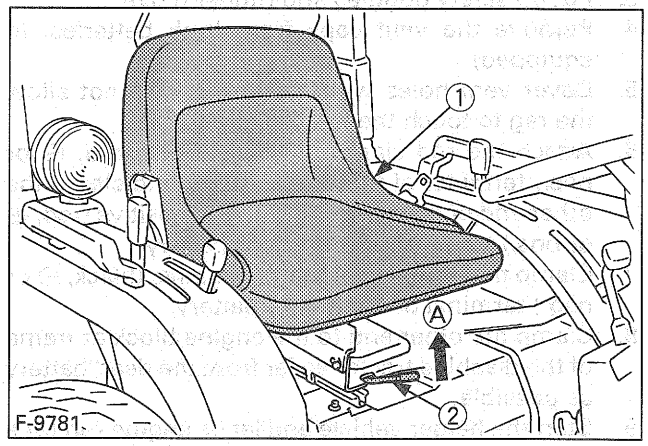
STARTING

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.**

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



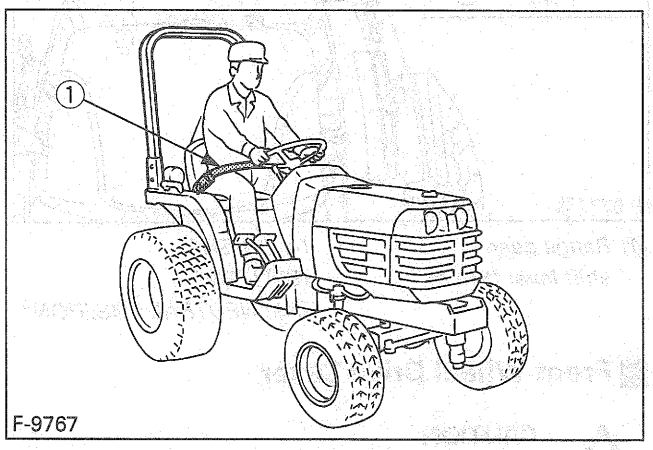
(1) Seat *(A) "PULL UP"*
(2) Adjusting lever

IMPORTANT
- After adjusting the operator's seat , be sure to check to see 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 the tractor is not equipped with ROPS.

Adjust the seat belt for proper fit and connect to the buckle.

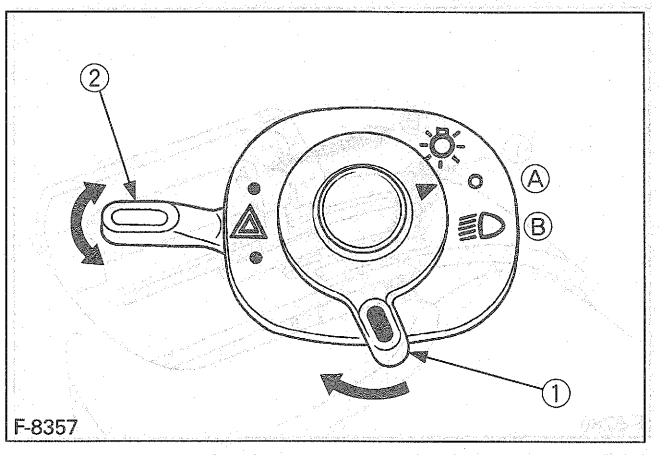


(1) Seat belt

2. Selecting light switch positions.

■ Head Light Switch, Hazard Light Switch

(A) ○ ··· Head lights OFF.
(B) ≡D ··· Head lights ON.
When hazard light switch is turned to either direction, the hazard lights blink. (Hazard light is standard for USA)



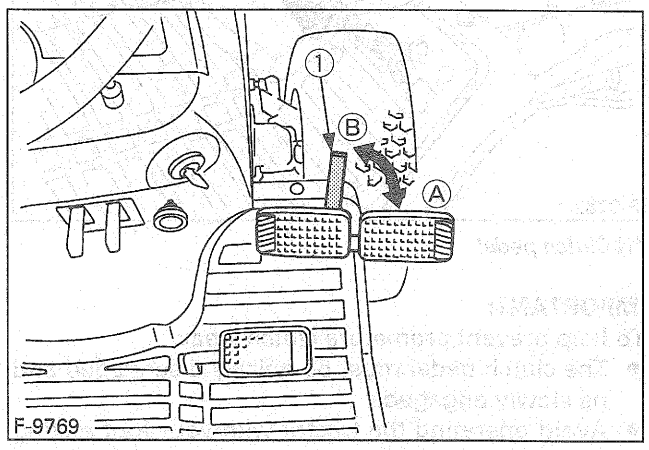
(1) Head light switch
(2) Hazard light switch

3. Checking the brake pedal.

■ Brake Pedals (Right and Left)

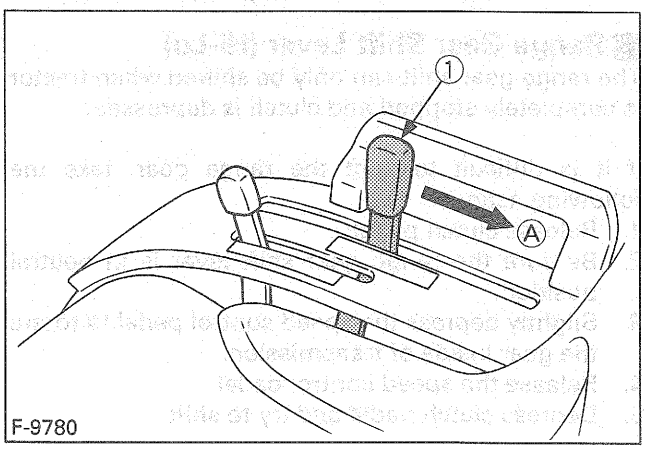
WARNING
To avoid personal injury:
- **Applying only one rear wheel brake at high speeds could cause the tractor to swerve or roll-over.**

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



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

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



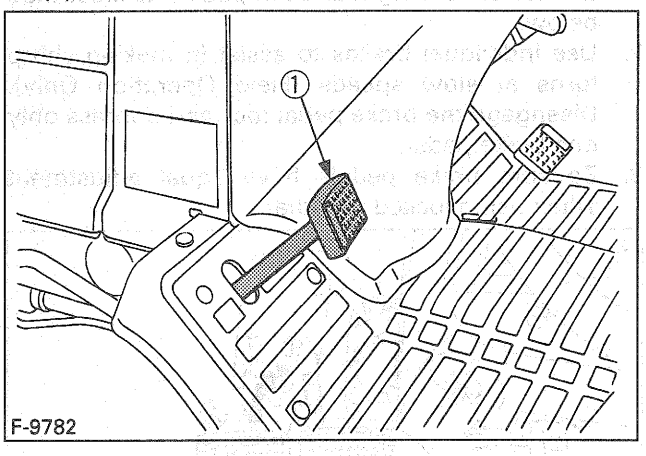
(1) Hydraulic control lever *(A) "UP"*

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

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 speeds depending on the type of job.

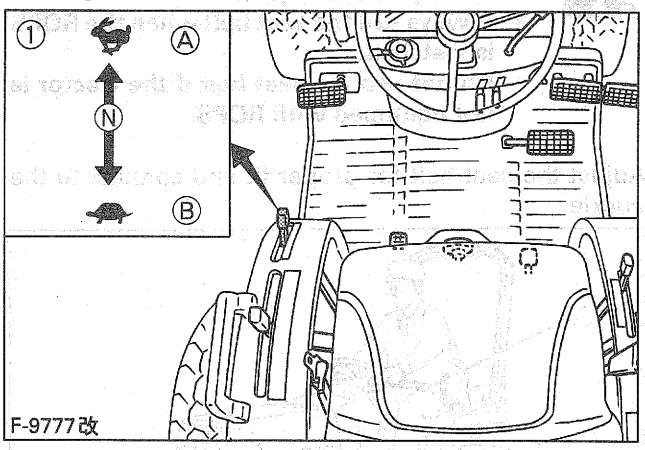
6. Selecting the travel speed.

■ Range Gear Shift Lever (Hi-Lo)

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

If it is difficult to shift the range gear, take the following actions.
1. Release clutch pedal.
2. Be sure the range gear shift lever is in neutral position.
3. Slightly depress the speed control pedal to rotate the gear inside of transmission.
4. Release the speed control pedal.
5. Depress clutch pedal and try to shift.

IMPORTANT:
- To avoid transmission damage, depress clutch pedal and stop tractor before shifting between ranges.

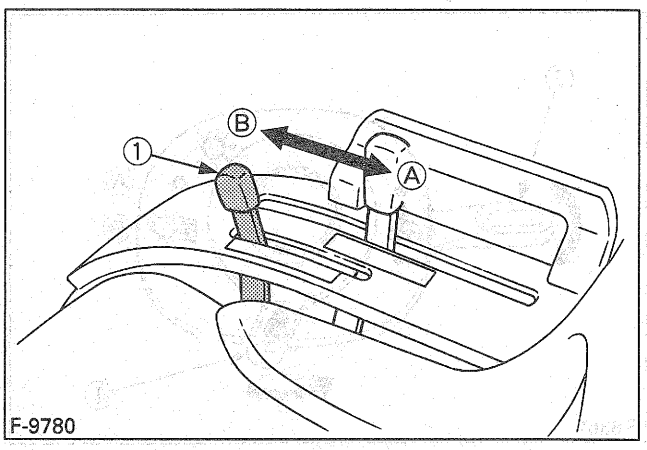


(1) Range gear shift lever (Hi-Lo)
(A) "HIGH"
(B) "LOW"
(N) "NEUTRAL POSITION"

■ Front Wheel Drive Lever

CAUTION
To avoid personal injury:
- **Do not engage the front wheel drive when traveling at road speed, or the tractor may stop quickly more than expected when applying the brake. An accident may occur if the tractor is suddenly braked.**

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.

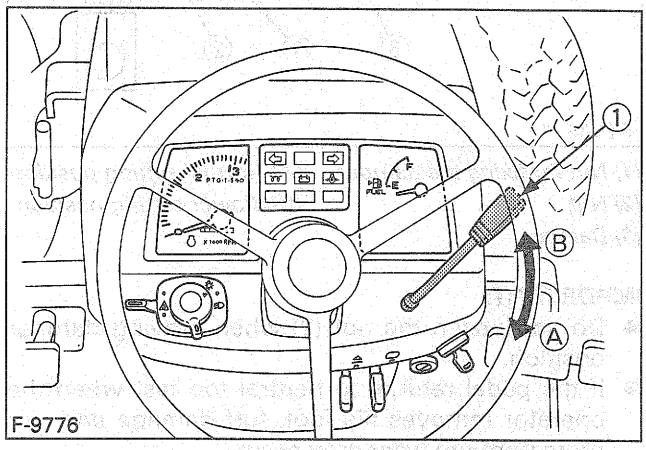
◆ **Front wheel drive is effective for the following jobs:**

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.

7. Accelerate the engine.

■ Hand Throttle Lever

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

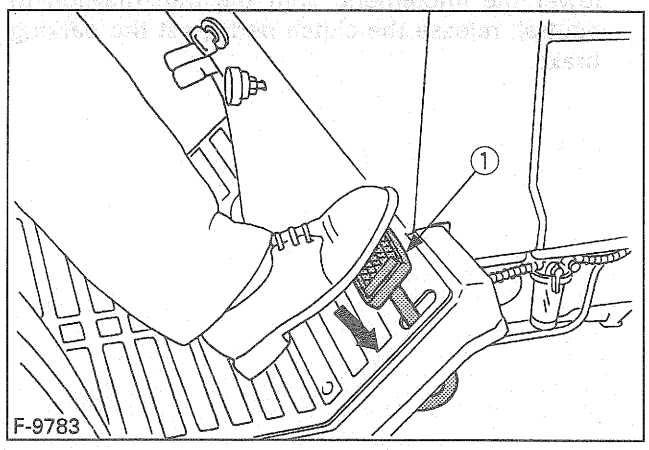


(1) Hand throttle lever *(A) "INCREASE"* *(B) "DECREASE"*

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. [HST Type]

■ Speed Control Pedal

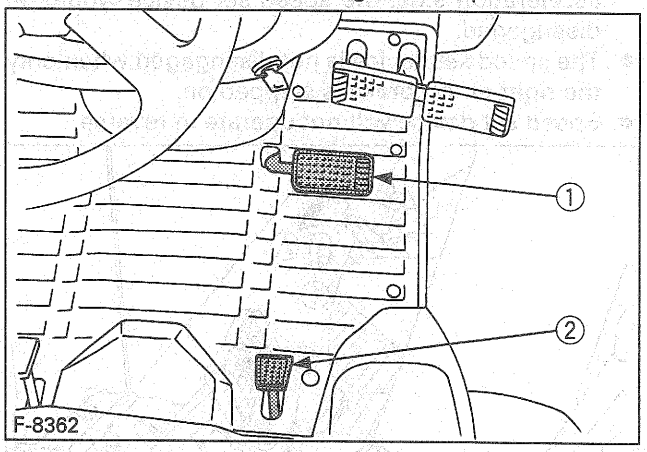
WARNING
To avoid personal injury:
- **Do not operate if tractor moves on level ground with foot off Speed Control Pedal.**
- **See "Adjusting Return Spring" in every 100 hours maintenance.**

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. Speed Set Device must be disengaged before depressing reverse pedal.



(1) Forward Pedal
(2) Reverse Pedal

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 the selected position.

◆To engage Speed Set Device

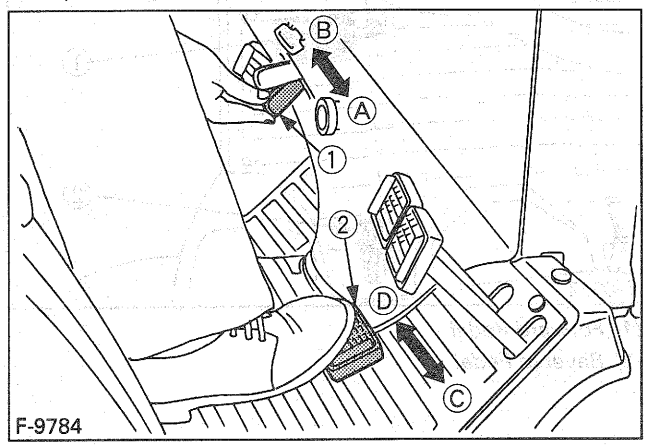
1. Accelerate speed to desired level using Speed Control Pedal, and push the speed set lever down to the "ON" position.
2. Release Speed Control Pedal and desired speed will be maintained.

◆To disengage Speed Set Device

- When you pull the speed set lever upward.
- Depress the both brake pedals.

NOTE:

- If you step on the pedal on the forward acceleration side, the speed set device would be disengaged.
- The speed set device is not disengaged when only the right or left brake is stepped on.
- Speed set device will not operate in reverse.



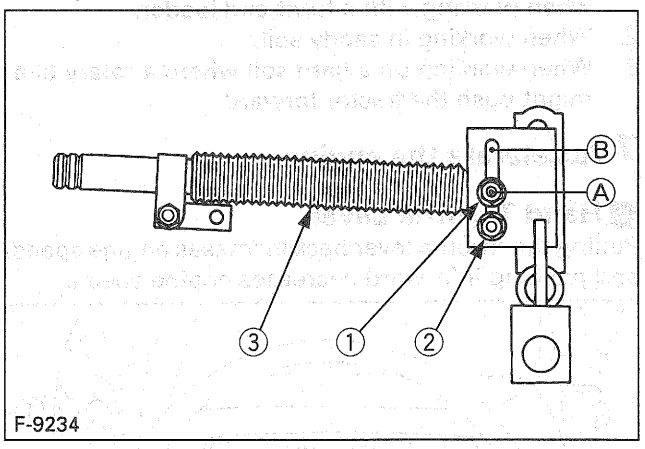
(1) Speed set lever
(2) Speed control pedal
(A) "ON"
(B) "OFF"
(C) "INCREASE"
(D) "DECREASE"

Adjusting Speed Control Pedal Damper

The damper is located under Speed Control Pedal and controls pedal returning speed.
Move the Damper from (A) towards (B) if slower stopping is needed.

◆Adjusting procedure

1. Loosen the nut (1).
2. Move the damper from (A) towards (B).
3. Tighten the nut (1).



(1) Nut for fixing the damper
(2) Nut
(3) Damper
(A) Normal setting position
(B) Slower setting position

IMPORTANT:

- Do not loosen the nut (2) when moving damper position.
- If the pedal returns to neutral too fast when the operator removes his foot, turf damage and / or premature tire wear may occur.

STOPPING

Stopping

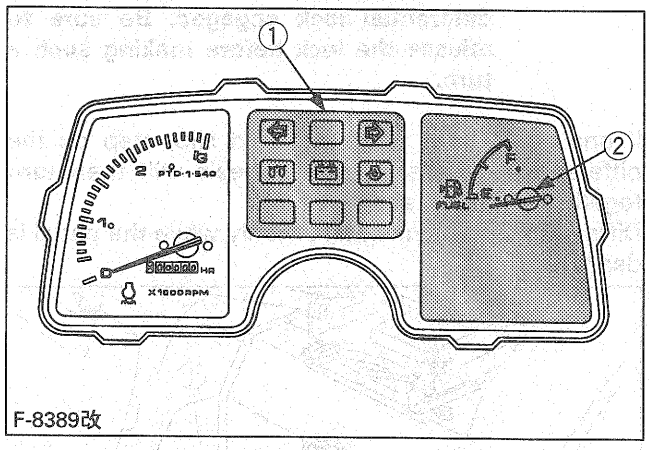
1. Slow the engine down.
2. Step on the clutch and brake pedal.
3. After the tractor has stopped, disengage the PTO, lower the implement, shift the transmission to neutral, release the clutch pedal, set the parking brake.

CHECK DURING DRIVING

Immediately Stop the Engine if:

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

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



(1) Easy checker ™
(2) Fuel gauge

Easy Checker ™

If the warning lamps in 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.)

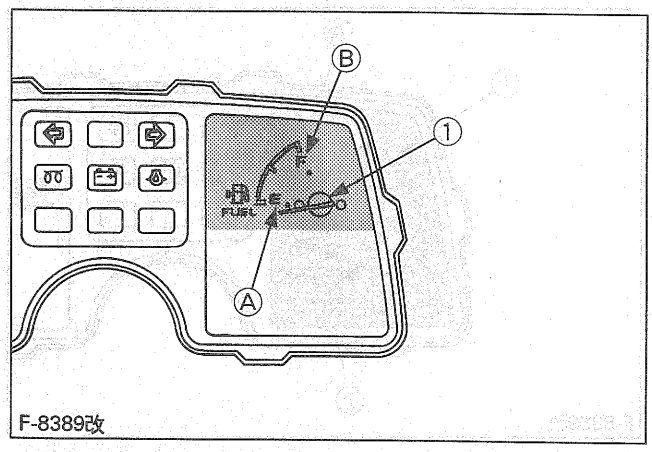
Electrical charge
If the alternator is not charging the battery, the warning lamp in the Easy Checker ™ will come on.
If this should happen during operation, check the electrical charging system or consult your local KUBOTA dealer.

NOTE:

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

Fuel Gauge

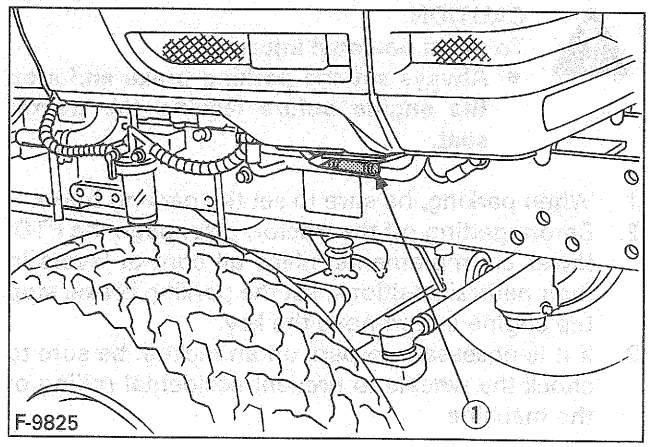
When the key switch is on, the fuel gauge indicates the fuel level.
Be careful not to empty the fuel tank. Otherwise air may enter the fuel system.
Should this happen, the system should be bled (See "Bleeding Fuel System" in as required in Periodic Service Section)



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

Overheat Alarm

If the temperature of the coolant rises to overheat temperature, the overheat alarm whistles.
Check the tractor by referring to "Trouble shooting" section.

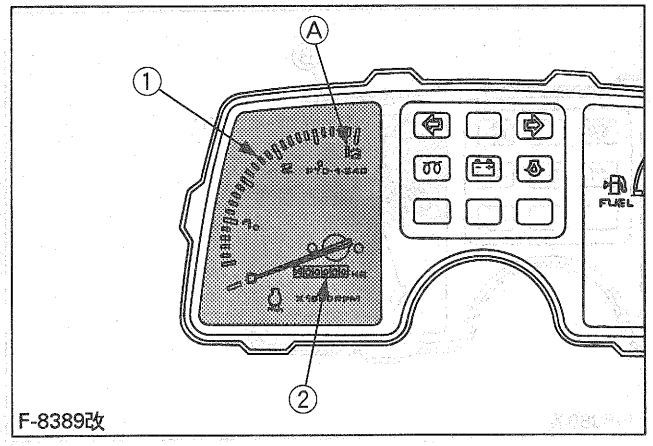


(1) Whistle

Hourmeter/Tachometer

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

1. The tachometer shows the engine speed and corresponding PTO shaft speed.
2. The hourmeter indicates in five digits the hours the tractor has been used; the last digit indicates 1/10 of an hour.



(1) Engine revolution *(A)PTO : 540 min^{-1} (rpm)*
(2) Hours used

PARKING

Parking

CAUTION
To avoid personal injury:
- **Always set the parking brake and stop the engine before leaving the tractor seat.**

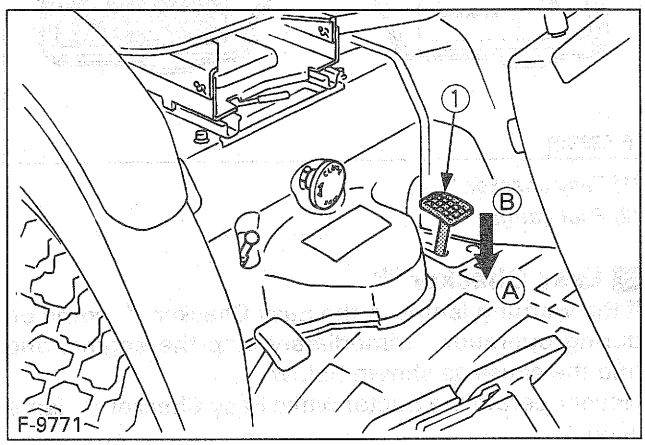
1. When parking, be sure to set the parking brake.
2. Before getting off the tractor, disengage the PTO, lower all implements, place all control levers in their neutral positions, set the parking brake, stop the engine and remove the key.
3. If it is necessary to park on an incline, be sure to chock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

OPERATING TECHNIQUES

Differential Lock

WARNING
To avoid personal injury:
- **It is extremely dangerous to operate tractor at high speed or attempt to turn the tractor in either direction with differential lock engaged. Be sure to release the lock before making such a turn.**

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.



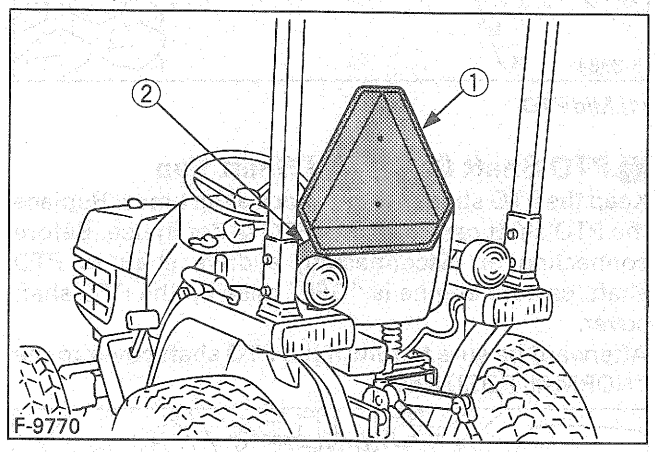
(1) Differential lock pedal *(A) Press to "ENGAGE"*
(B) Release to "DISENGAGE"

IMPORTANT:
- To prevent damage to power train, do not engage differential lock when one wheel is spinning and the other is completely stopped.
- When using the differential lock, always slow the engine down.
- 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.**

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



(1) SMV emblem
(2) Bracket

Operating on Slopes and 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 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 wheels, Tires and Ballast section.)
2. Slow down for slopes, rough ground, and sharpturns, especially when transporting heavy, rear mounted equipment.
3. Before descending a slope, shift to a gear low enough to control speed without using brakes.

PTO

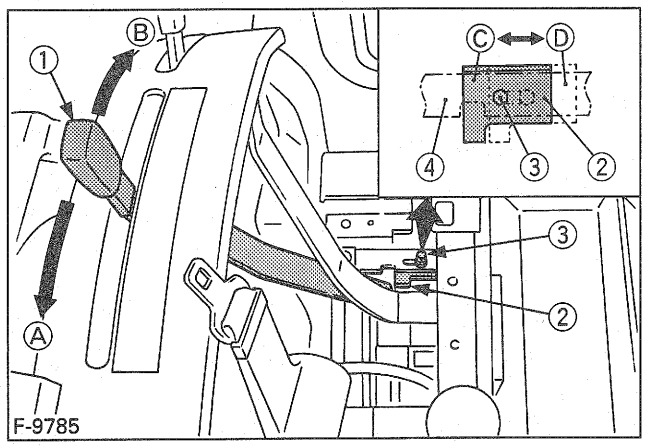
PTO OPERATION

WARNING
To avoid personal injury:
- **To prevent damage to PTO driven equipment and possibly causing personal injury, use the 2nd rear PTO speed and mid-PTO speed only when these higher rpms are specifically recommended by the implement manufacturer.**

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.**

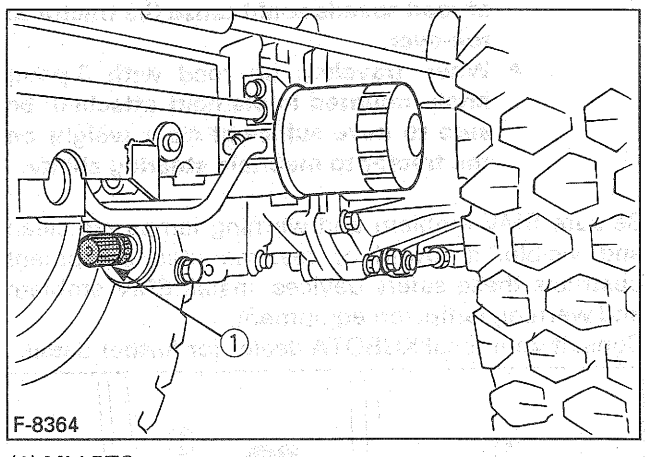
■ PTO Gear Shift Lever

The tractor has two rear PTO speeds and one mid PTO speed.
1st - Rear : 540 min^{-1} (rpm)
2nd - Rear : 950 min^{-1} (rpm)
Mid : 2460 min^{-1} (rpm)
To shift into 2nd PTO speed, loosen the bolt and slide the restricting plate to Ⓓ position.
Replace restricting plate to Ⓒ position following use of the 2nd PTO speed.



(1) PTO gear shift lever
(2) Restricting plate
(3) Bolt
(4) Fender stay
(A) 1st (Rear: 540min^{-1}(rpm))
(B) 2nd (Rear: 950min^{-1}(rpm))
(Mid: 2460min^{-1}(rpm))
(C) Restricted position (original position)
(D) Released position

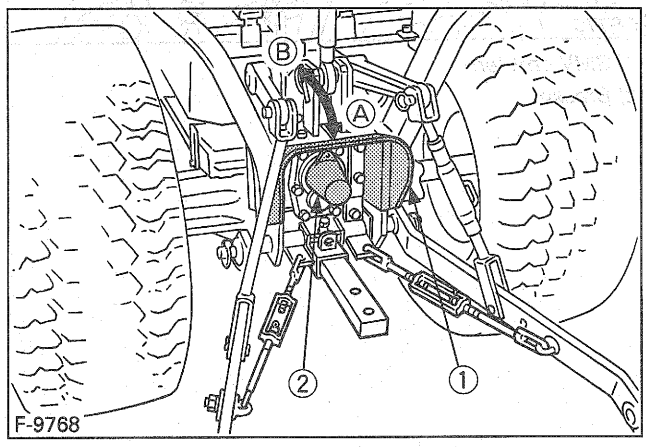
◆ **Mid PTO**
The mid PTO is available for KUBOTA approved implements.



(1) Mid PTO

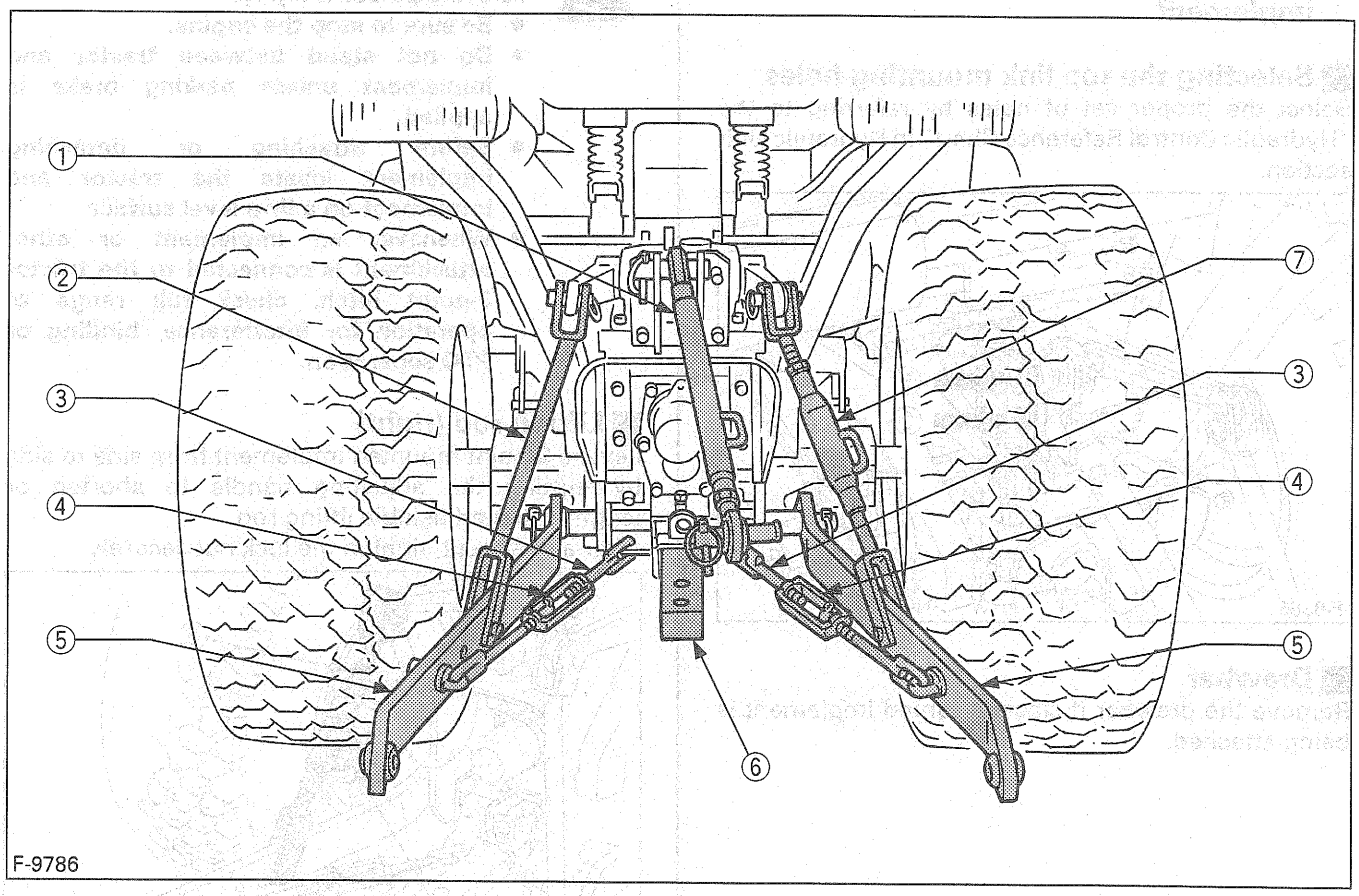
■ PTO Shaft Cover and Shaft Cap

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" raise up the PTO shaft cover.
Afterward be sure to return the PTO shaft cover to the "NORMAL POSITION".



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

THREE-POINT HITCH & DRAWBAR



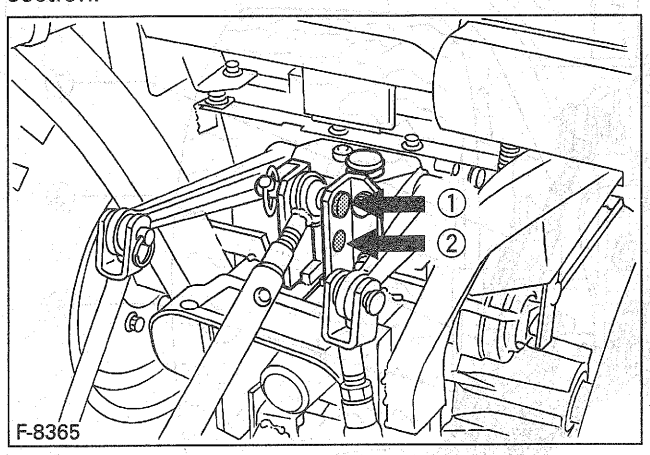
(1) Top link
(2) Lifting rod (Left)
(3) Check chains
(4) Turnbuckle
(5) Lower link
(6) Drawbar
(7) Lifting rod (Right)

3 POINT HITCH

1. Make preparations for attaching implement

■ Selecting the top link mounting holes

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



■ Drawbar

Remove the drawbar if close mounted implement is being attached.

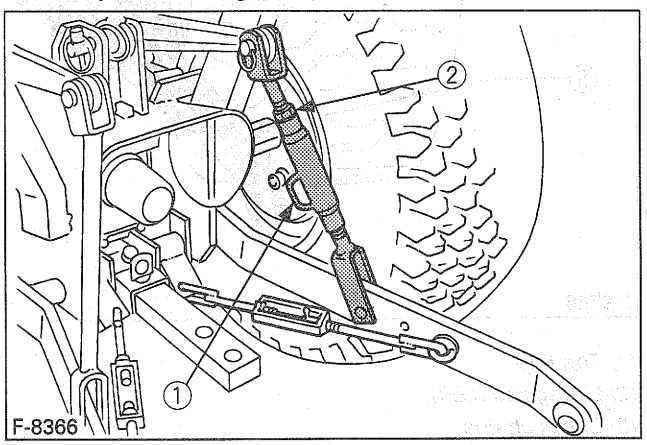
2. Attaching and detaching implements

CAUTION
To avoid personal injury:

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

■ 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.
After adjustment, tighten the lock nut securely.



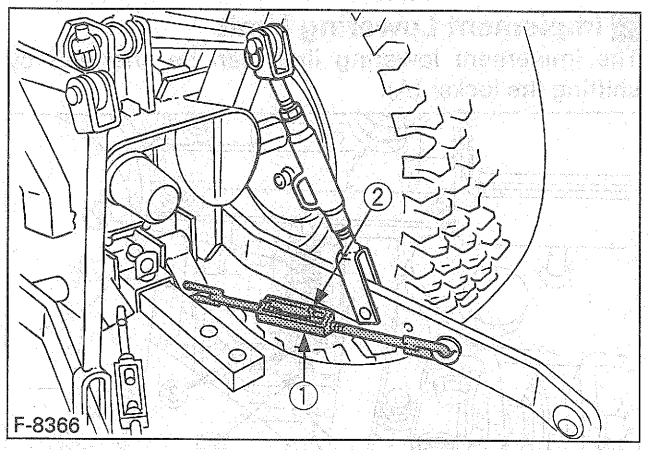
(1) Adjusting handle
(2) Lock nut

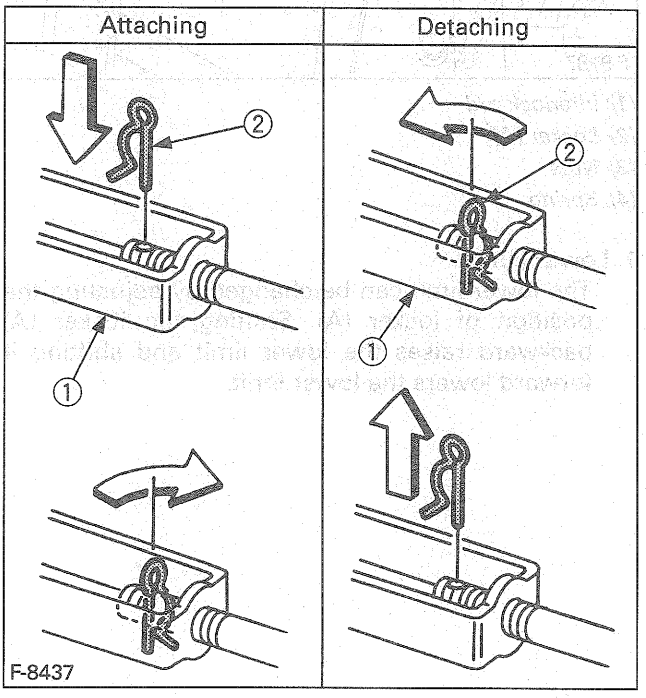
■ Top link

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.





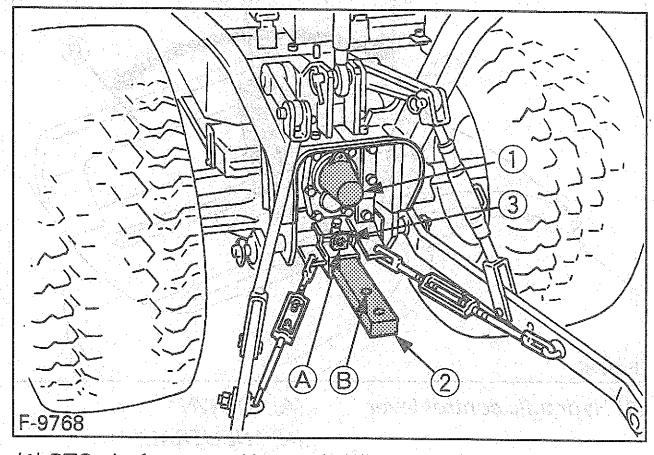
(1) Turnbuckle
(2) Snap pin

DRAWBAR

CAUTION
To avoid personal injury:
- **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.**

Adjusting drawbar length

When towing an implement, recommend use of (A) hole in drawbar.
The drawbar load is referred to "IMPLEMENT LIMITATIONS" section.



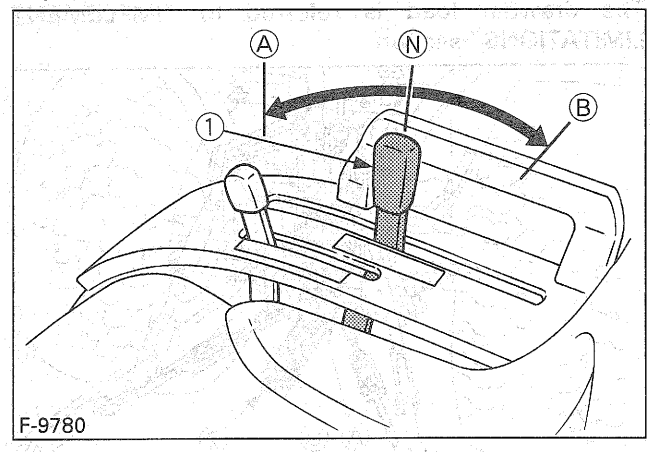
(1) PTO shaft *Holes : (A),(B)*
(2) Drawbar
(3) Drawbar pin

HYDRAULIC UNIT

3-POINT HITCH CONTROL SYSTEM

■ Hydraulic Control

Operating the hydraulic control lever actuates the hydraulic lift arm, which controls the elevation of 3-point hitch mounted implement.
To lower implement, push the lever forward; to raise it, pull the lever back.



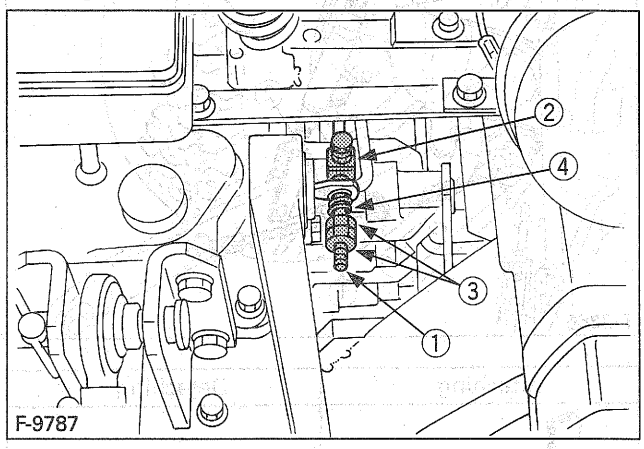
(1) Hydraulic control lever
(A) "DOWN"
(N) "NEUTRAL"
(B) "UP"

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, follow these air bleeding procedures.
  1. Stop the engine.
  2. Set the hydraulic control lever to the down position, fully depress and hold the clutch pedal, start the engine.
  3. Operate the engine at low idle speed and continue to depress the clutch pedal for at least 30 seconds 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.

■ Implement Lowering Limit

The implement lowering limit can be changed by shifting the locker (A).



(1) Interlock rod
(2) Locker (A)
(3) Nuts
(4) Spring

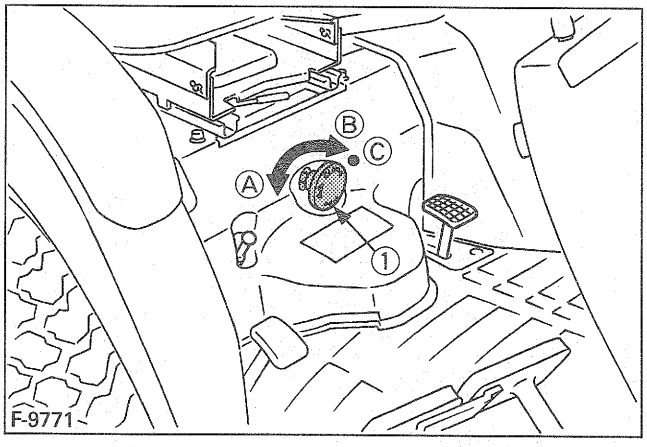
1. Lower Limit

The lower limit can be changed by adjusting the position of locker (A). Shifting the locker (A) backward raises the lower limit and shifting it forward lowers the lower limit.

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) "STOP"

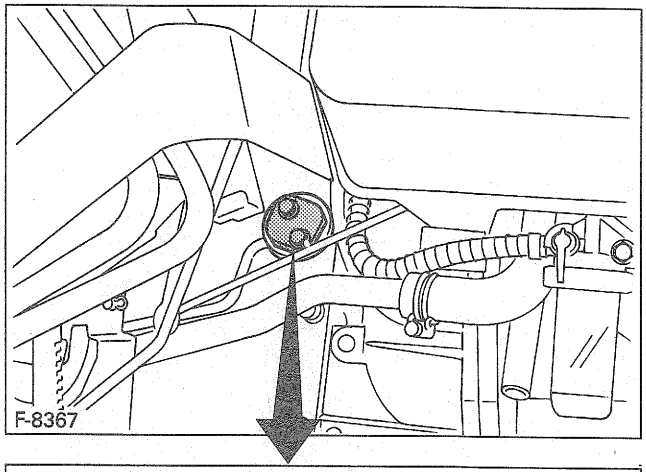
AUXILIARY HYDRAULICS

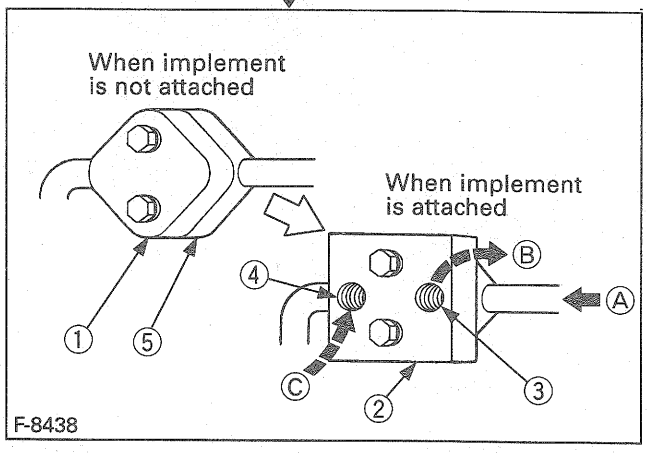
On the tractor, hydraulic outlet is provided.

Hydraulic Block Type Outlet

Hydraulic block type outlet is useful when adding hydraulic 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)
   (The block outlet cover is standard part for KUBOTA Implement)





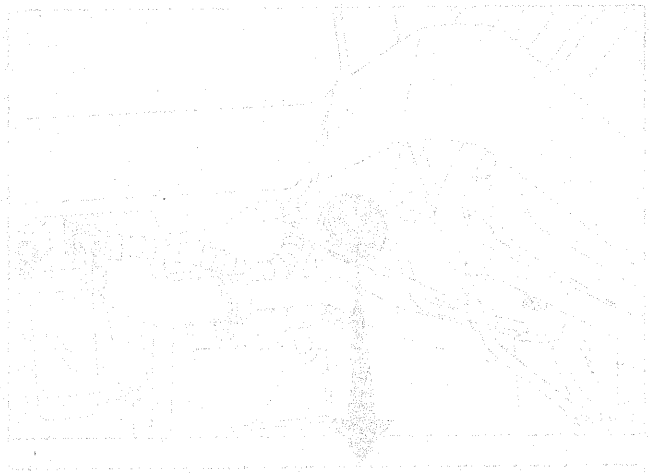
(1) Block cover
(2) Block outlet cover (option)
(3) Outlet
(4) Inlet
(5) Hydraulic block
(A) From gear pump
(B) To implement (Inlet)
Max. flow
12.1 L/min
(3.2 U.S.gals./min)
No relief valve in the hydraulic block.
(C) From implement (outlet)

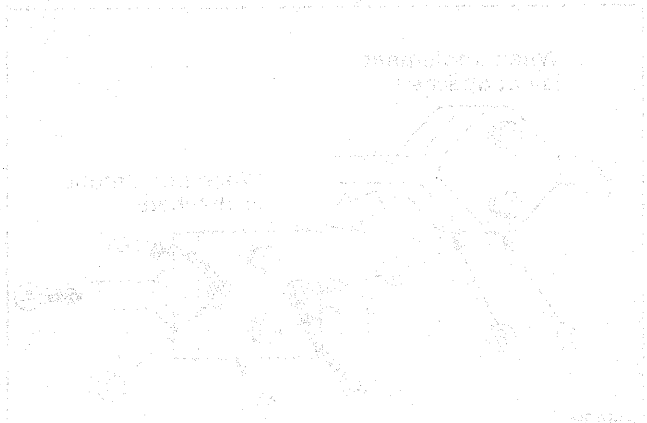
IMPORTANT:

- For hydraulic block type outlet, be sure to use the control valve of the "Power beyond type" (with relief valve).

NOTE:

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





Hydraulic Control Unit Use Reference Chart

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

Implement	Soil condition	F-8365 Top link mounting holes	(1) Hydraulic control lever	F-2016 Gauge Wheel	(1) Chack chains	Remarks
Moldboard plow	Light soil Medium soil heavy soil	(1) is standard. (2) is used only when there is some obstacle that prevents you from using the standard.	Hydraulic control	YES/NO	Loose	Adjust the check chains so that the implement can move 5 to 6 (2.0 to 2.4 in.) laterally. Check chains should be tight enough to prevent excessive implement movement when implement is in raised position.
Disc plow	—					
Harrower (spike, springtooth, disc type)	—					
Sub-soiler						
Weeder, ridger	—			YES	Tighten	
Earthmover, digger, scraper, manure fork, rear carrier				YES/NO		With implements with gauge wheels, lower the hydraulic control lever all way.
Mower (mid-and rear-mount type) Hayrake, tedder				NO		

TIRES, WHEELS AND BALLAST

TIRES

WARNING
To avoid personal injury:
- **Do not attempt mount a tire. 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 larger than specified.
- When you intend to mount different size of tires from equipped ones, consult your dealer about front drive gear ratio for detail.
  Excessive wear of tires may occur due to improper gear ratio.

Inflation Pressure

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

	Tire sizes	Inflation Pressure
Rear	8.3 – 16, 4PR	140 kPa (1.4 kgf/cm², 20 psi)
	29×12.50 – 15, 4PR	140 kPa (1.4 kgf/cm², 20 psi)
Front	6 – 12, 4PR	200 kPa (2.0 kgf/cm², 28 psi)
	21×8.00 – 10, 4PR	160 kPa (1.6 kgf/cm², 23 psi)

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

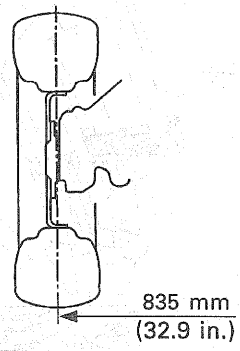
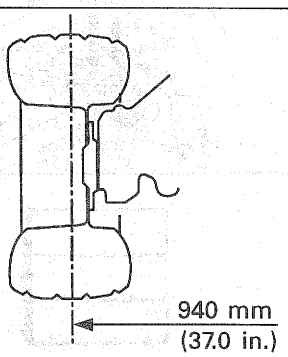
WHEEL ADJUSTMENT

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

Front Wheels

Front tread can not be adjusted.

IMPORTANT:
- Do not turn front discs to obtain wider tread.

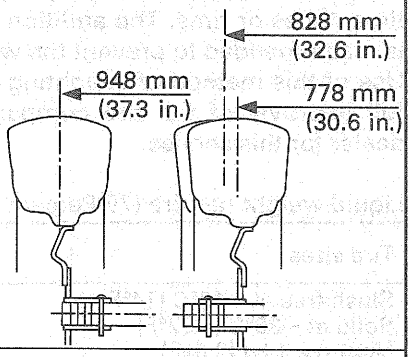
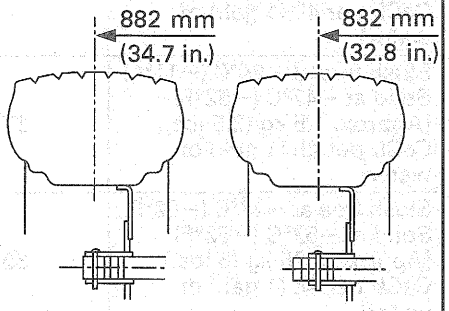
Tire	Tread
6 – 12 Farm	
21×8.00 – 10 Turf	 F-9827

Rear Wheels

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

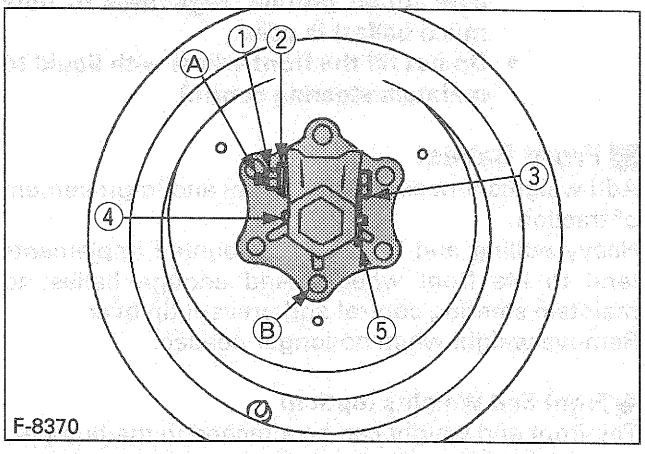
To change the tread width

1. Loosen the nut of cotter pin 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.

Tire	Tread
8.3 – 16 Farm	
29×12.50 – 15 Turf	 F-8441

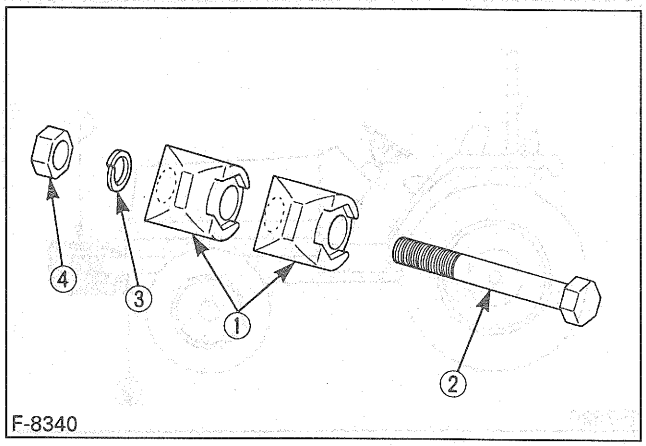
IMPORTANT:

- 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 200m (200yards) and thereafter daily check service.



F-8370

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



F-8340

(1) Cotter
(2) Bolt
(3) Spring washer
(4) Nut

IMPORTANT:

- Insert the bolt from the indented side of both cotter pins 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 wheel with liquid to maintain steering control.**

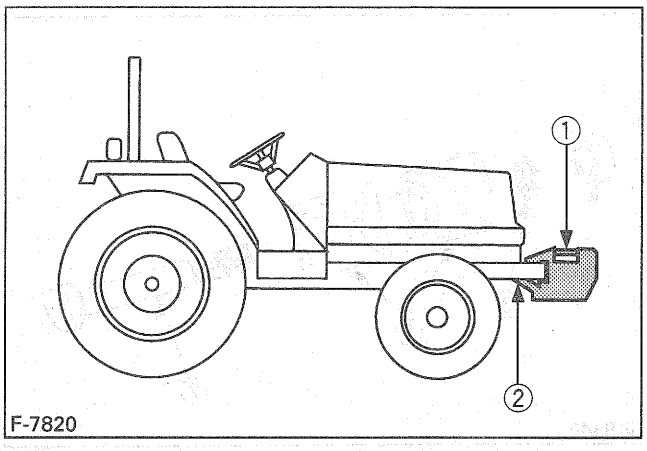
Front Ballast

Add weights if needed for stability and improvement of traction.
Heavy pulling and heavy rear mounted implements tend to life 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 weight can be attached to the bumper. See your implement operator's manual for required number of weights or consult your local KUBOTA dealer to use.

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



F-7820

(1) Front end weights
(2) Bumper

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

Maximum weight	25 kg × 3 pieces (165 lbs)

Rear Ballast

Add weight to rear wheels if needed to improve traction or for stability. The amount of rear ballast should be matched to job and the ballast should be removed when it is not needed.
The weight should be added to the tractor in the form of liquid ballast.

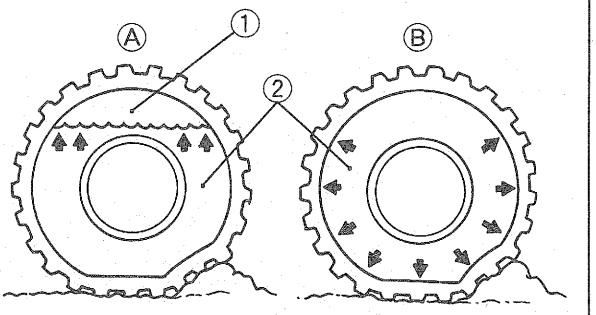
◆ Liquid Ballast in Rear Tires

Water and calcium chloride solution provides safe economical ballast. Used properly, it will not damage tires, tubes or rims. The addition of calcium chloride is recommended to prevent the water from freezing. Use of this method of weighting the wheels has the full approval of the tire companies. See your tire dealer for this service.

Liquid weight per tire (75 Percent filled)

Tire sizes	8.3 – 16
Slush free at −10°C (14°F) Solid at −30°C (−22°F) [Approx. 1 kg (2 lbs.) $CaCl_2$ per 4L (1 gal.) of water]	35 kg (77 lbs.)
Slush free at −24°C (−11°F) Solid at −47°C (−52°F) [Approx. 1.5 kg (3.5 lbs.) $CaCl_2$ per 4L (1 gal.) of water]	37 kg (82 lbs.)
Slush free at −47°C (−52°F) Solid at −52°C (−62°F) [Approx. 2.25 kg (5 lbs.) $CaCl_2$ per 4L (1 gal.) of water]	39 kg (86 lbs.)

IMPORTANT:
- Do not fill tires with water or solution more than 75% of full capacity (to the valve stem level).



F-7749

(1) Air (A) Correct-75% Air compresses like a cushion
(2) Water (B) Incorrect-100% Full Water can not be compressed

MAINTENANCE

SERVICE INTERVALS

No.	Items \ Period		Indication on hour meter																Since then	Reference page
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800		
1	Engine oil	Change	◎	○		○		○		○		○		○		○		○	every 100 Hr	50
2	Engine oil filter	Replace	◎			○				○				○				○	every 200 Hr	54
3	Transmission oil filter	Replace	◎					○						○					every 300 Hr	57
4	Transmission fluid	Change	◎					○						○					every 300 Hr	55
5	Transmission strainer	Clean						○						○					every 300 Hr	56
6	Front axle case oil	Change						○						○					every 300 Hr	57
7	Front axle pivot	Adjust								○								○	every 400 Hr	58
8	Engine start system	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	47
9	Greasing	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	47
10	Wheel bolt torque	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	48
11	Battery condition	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	48,49
12	Air cleaner element	Clean		○		○		○		○		○		○		○		○	every 100 Hr*	50
		Replace																	every 1 year	58
13	Fuel filter element	Clean		○		○		○		○		○		○		○		○	every 100 Hr	51
		Replace								○								○	every 400 Hr	58
14	Fan belt	Adjust		○		○		○		○		○		○		○		○	every 100 Hr	52
15	Return spring	Adjust		○		○		○		○		○		○		○		○	every 100 Hr	52
16	Clutch	Adjust	◎	○		○		○		○		○		○		○		○	every 100 Hr	53
17	Brake	Adjust		○		○		○		○		○		○		○		○	every 100 Hr	53
18	Radiator hose and clamp	Check				○				○				○				○	every 200 Hr	54
		Replace																	every 2 years	59
19	Fuel line	Check		○		○		○		○		○		○		○		○	every 100 Hr	51
		Replace																	every 2 years	59
20	Toe-in	Adjust				○				○				○				○	every 200 Hr	55
21	Engine valve clearance	Adjust																○	every 800 Hr**	58
22	Cooling system	Flush																	every 2 years	58
23	Coolant	Change																	every 2 years	58
24	Fuel system	Bleed																	Service as required	60
25	Fuse	Replace																		60
26	Light bulb	Replace																		60

IMPORTANT:

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

* Air cleaner should be cleaned more often in dusty conditions than in normal conditions.

** Consult your local KUBOTA dealer for this service.

LUBRICANTS

<table>
<tr><th>No.</th><th>Locations</th><th>Capacities</th><th colspan="2">Lubricants</th></tr>
<tr><td>1</td><td>Fuel</td><td>13 L (3.4 U.S. gals.)</td><td colspan="2">No.2-D diesel fuel
No.1-D diesel fuel if temperature is below –10°C (14°F)</td></tr>
<tr><td>2</td><td>Coolant
(with recovery tank)</td><td>2.7 L (2.9 U.S. qts.)</td><td colspan="2">Fresh clean water with anti-freeze</td></tr>
<tr><td>3</td><td>Engine crankcase
(with filter)</td><td>2.4 L (2.5 U.S. qts.)</td><td colspan="2">● Engine oil: API Service Classification CC or CD
Above 25°C (77°F): SAE30, SEA10W-30 or 10W-40
0 to 25°C (32 to 77°F): SAE20, SEA10W-30 or 10W-40
Below 0°C (32°F): SAE10W, SEA10W-30 or 10W-40</td></tr>
<tr><td>4</td><td>Transmission case</td><td>12.0 L(3.17 U.S.gals.)</td><td colspan="2">● KUBOTA UDT or SUPER UDT fluid*</td></tr>
<tr><td>5</td><td>Front axle case</td><td>3.7 L (3.9 U.S. qts.)</td><td colspan="2">● KUBOTA UDT or SUPER UDT fluid* or SAE 80 · SAE 90 gear oil</td></tr>
<tr><td rowspan="3">6</td><td>Greasing</td><td>No. of greasing points</td><td>Capacity</td><td>Type of grease</td></tr>
<tr><td>Speed control pedal</td><td>1</td><td>Until grease overflows.</td><td rowspan="2">Multipurpose type grease</td></tr>
<tr><td>Battery terminal</td><td>2</td><td>moderate amount</td></tr>
</table>

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 together.

- Indicated capacity of water and oil are manufacture's estimate.

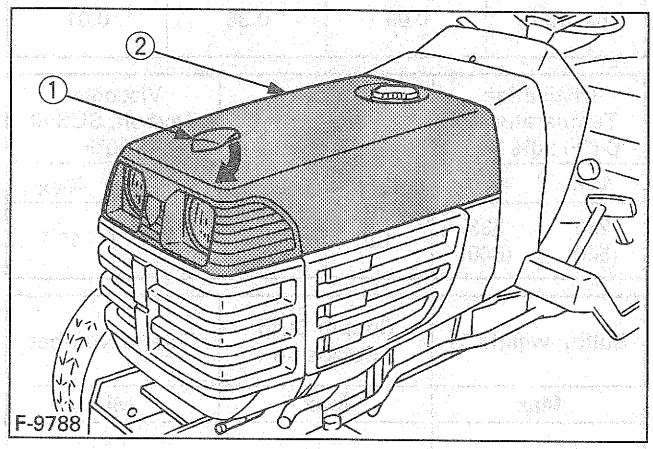
PERIODIC SERVICE

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.**

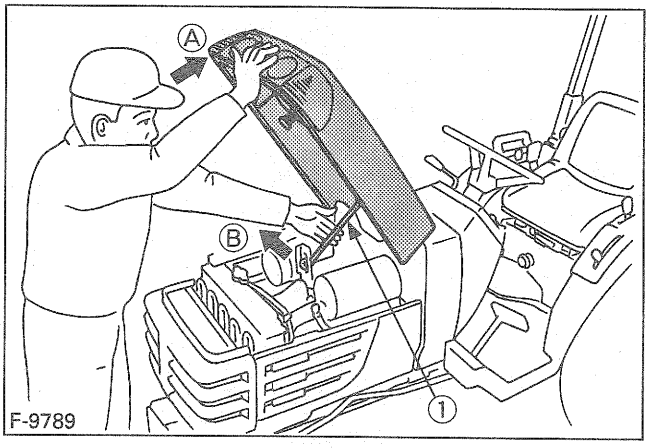
Hood

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



(1) Mascot
(2) Hood

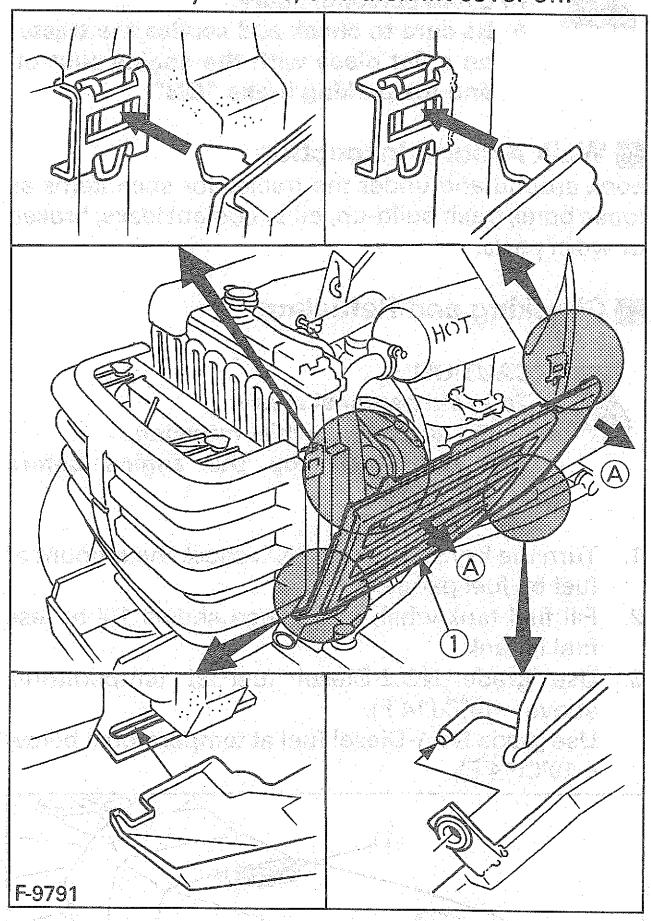
NOTE:
- To close the hood, hold the hood and release the support rod.



(1) Rod *(A) "HOLD"* *(B) "PULL"*

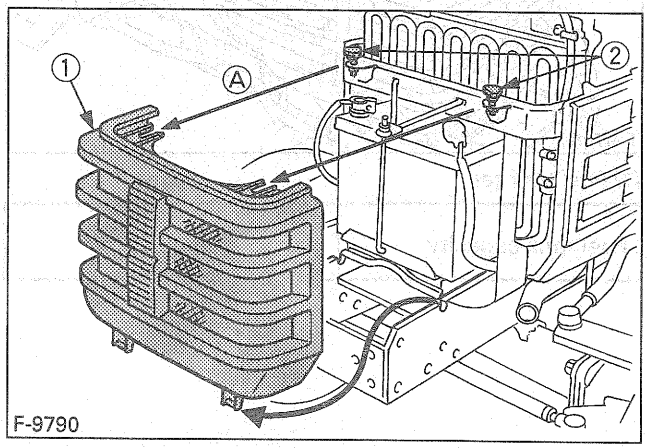
Engine Side Cover and Front Grill

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



(1) Side cover *(A) "PULL"*

2. To remove the front grill, loose knob bolt, pull outward as indicated by arrows, and then lift the front grill off.



(1) Front grill *(A) "PULL"*
(2) Knob bolt

DAILY CHECK

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

CAUTION
To avoid personal injury:
- **Be sure to check and service the tractor on a flat place with the engine shut off and the parking brake "ON".**

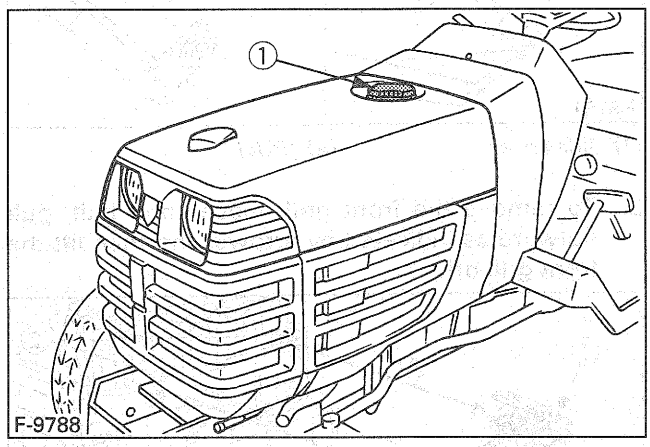
■ Walk Around Inspection

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 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).



(1) Fuel tank cap

Fuel tank capacity	13L (3.4 U.S.gals.)

IMPORTANT:
- Do not permit dirt or trash to get into the fuel system.
- Be careful not to let the fuel tank become empty, or air can enter the fuel system, necessitating bleeding before next engine start.
- Be careful not to spill during refueling. If should spill, wipe it off at once, or it may cause a fire.

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

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

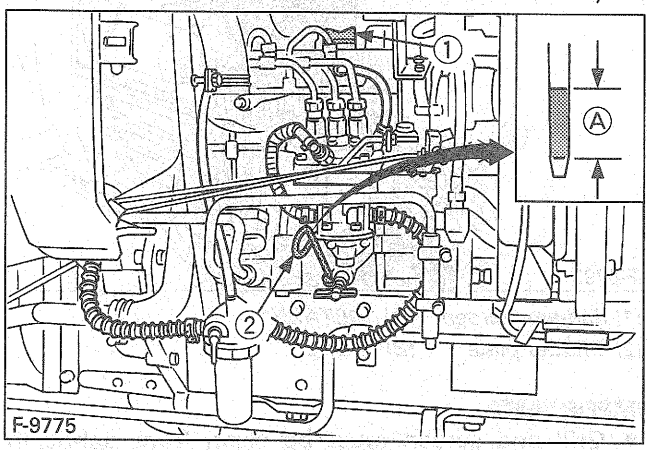
Distillation Temperatures, °C (°F) 90% Point		Viscosity Kinematic cSt or mm²/s at 40°C		Viscosity Saybolt, SUS at 100°F	
Min	Max	Min	Max	Min	Max
282 (540)	338 (640)	1.9	4.1	32.6	40.1

Sulfru, weight %	Copper Strip Corrosion	Cetane Number
Max	Max	Min
0.50	No.3	40

Checking Engine Oil Level

CAUTION
To avoid personal injury:
- **Be sure to stop the engine before checking the oil level.**

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

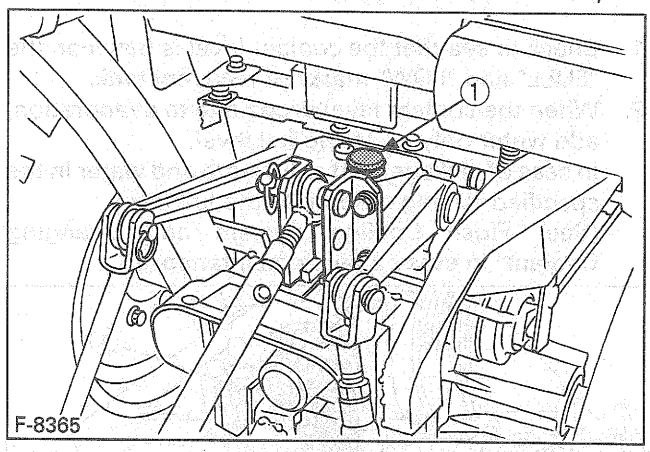


(1) Oil inlet (A) Oil level is acceptable within this range.
(2) Dipstick

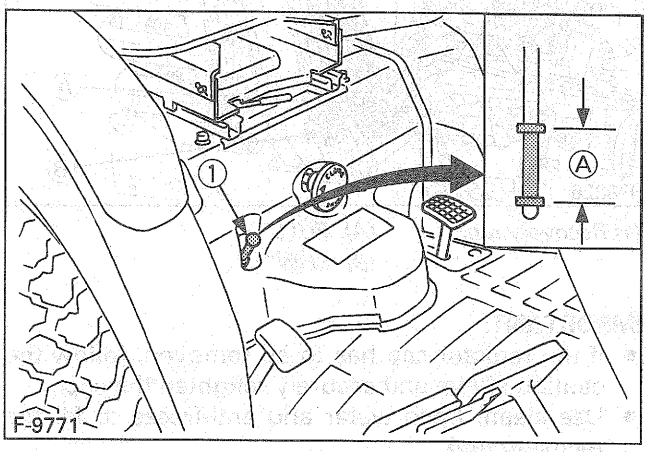
IMPORTANT:
- When using an oil of different maker or viscosity from the previous one, remove all of the old oil. Never mix two different types of oil.
- If oil level is low, do not run engine.

Checking Transmission Fluid Level

1. Park the machine on a flat surface, lower the implement and shut off 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 lies 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



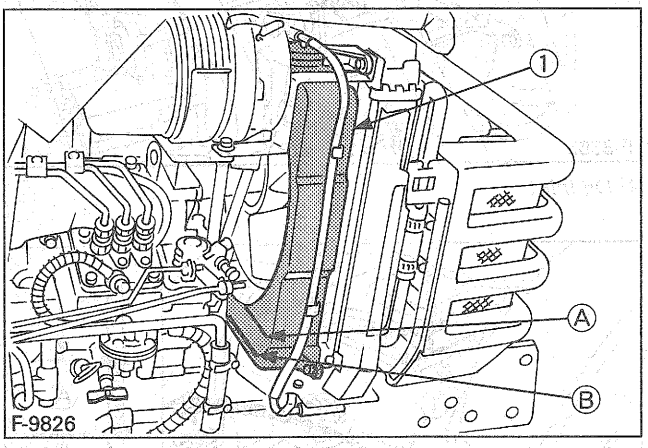
(1) Dipstick (A) Oil level is acceptable within this range.

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

Checking Coolant Level

CAUTION
To avoid personal injury:
- **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. Check to see that the coolant level is between the "FULL" and "LOW" marks of recovery tank.
2. When the coolant level drops due to evaporation, add water only up to the full level.
   In case of leakage, add anti-freeze and water in the specified mixing ratio up to the full level.
   (See "Flush Cooling System and Changing Coolant" in every 2 years maintenance.)



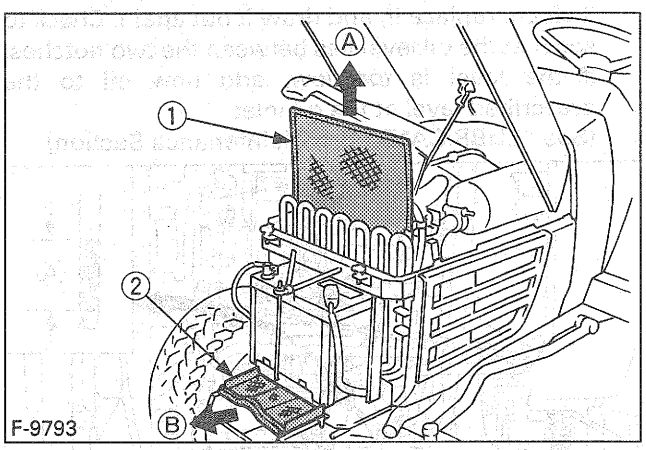
(1) Recovery tank *(A) "FULL"*
(B) "LOW"

IMPORTANT:
- If the radiator cap has to be removed, follow the caution above and securely retighten the cap.
- Use clean, fresh water and anti-freeze to fill the recovery tank.
- If water should be leak, consult your local KUBOTA dealer.dealer.

Cleaning Grill and Radiator Screen

CAUTION
To avoid personal injury:
- **Be sure to stop the engine before removing the screen.**

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



(1) Radiator screen *(A) "DETACH"*
(2) Shutter plate *(B) "PULL"*

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

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

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, Meter 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 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.**

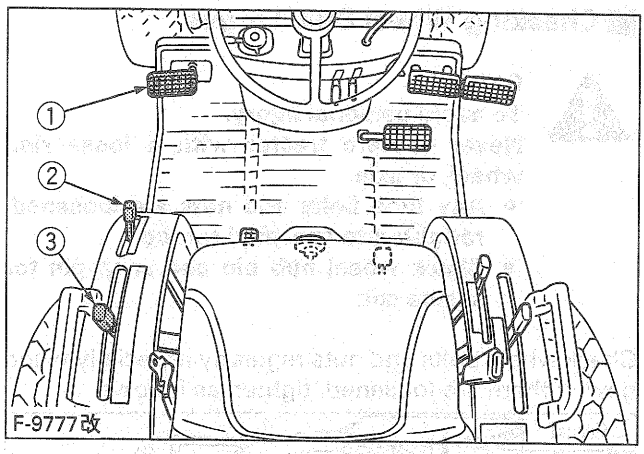
◆ Preparation before testing
1. Sit on operator's seat.
2. Set the parking brake and stop the engine.
3. Shift the range gear shift lever to "NEUTRAL" position.
4. Shift the PTO gear shift lever to "NEUTRAL" position.
5. Fully depress the clutch pedal.

◆ 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 again.
2. Shift the range gear shift lever to "Desired" position.
3. Turn the key to "START" position.
4. The engine must not crank.

◆ Test 3:
1. Shift the range gear shift lever to "NEUTRAL" position.
2. Shift the PTO gear shift lever to "Desired" position.
3. Turn the key to "START" position.
4. The engine must not crank.

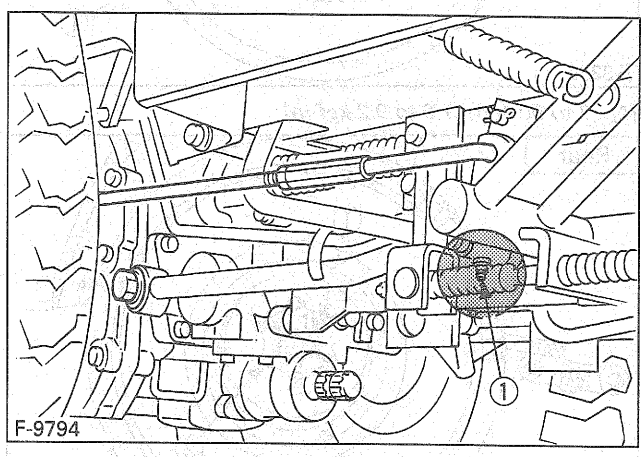
NOTE:
- If the engine cranks during any of these tests, consult your local KUBOTA dealer to have unit checked before operating.



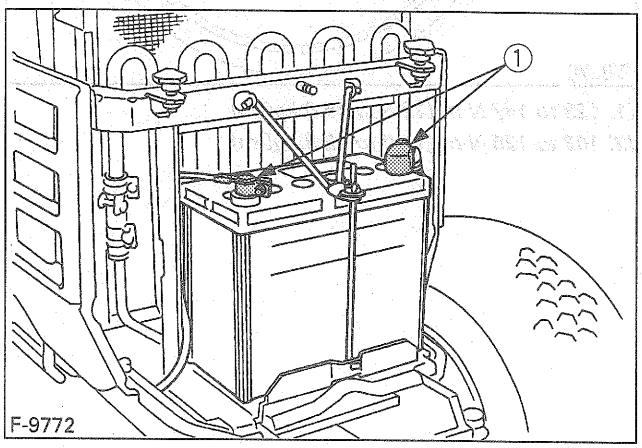
(1) Clutch pedal
(2) Range gear shift lever (Hi-Lo)
(3) PTO gear shift lever

■ 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)

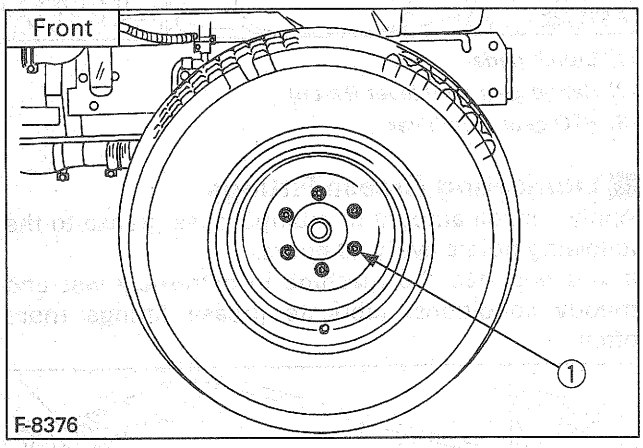


(1) Battery terminals

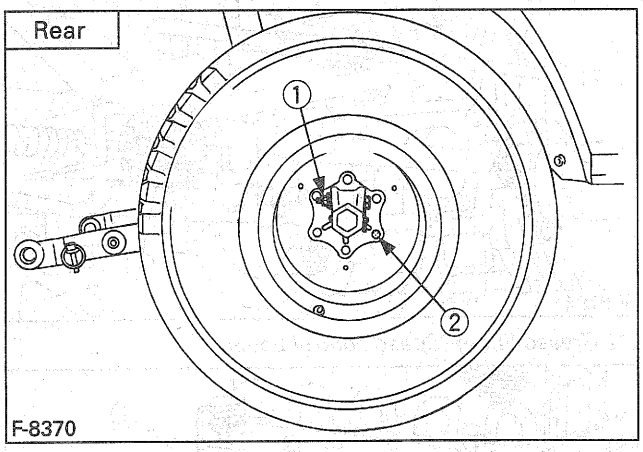
Checking Wheel Bolt Torque

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 wheel hub pin and snap pin for secure set.**

Check wheel bolts and nuts regularly especially when new. If there are loosened, tighten as follows.



(1) 77 to 90 N·m (7.9 to 9.2 kgf·m)

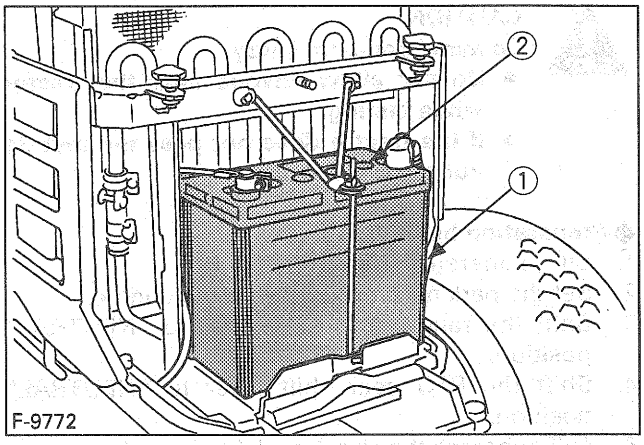


(1) 123 to 147 N·m (12.6 to 15.0 kgf·m)
(2) 108 to 125 N·m (11.0 to 12.8 kgf·m)

Battery

CAUTION
To avoid personal injury:
- **Never remove the vent plugs while the engine is running.**
- **Keep electrolyte away from eyes, hands and clothes. If you are spattered with it, wash it away completely with water immediately and get medical attention.**
- **Wear eye protection and rubber gloves when working around battery.**

Mishandling the battery shortens the service life and adds to maintenance costs.
The original battery is maintenance free type battery, but need some servicing.
If the battery is weak, the engine is difficult to start and the lights become dim. It is important to check the battery periodically.



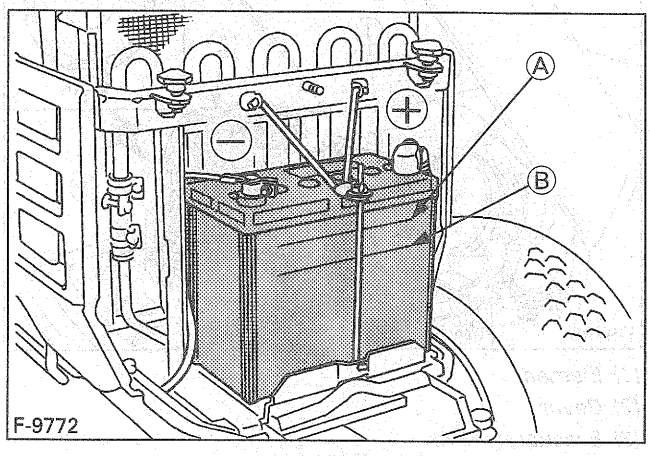
(1) Battery
(2) Vent plug

◆ 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 battery, remove battery vent plugs.**
- **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) Highest level
(B) Lowest 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 standard fashion.
4. A boost charge is only for emergencies. It will partially charges 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 become between 1.27 and 1.29 charge has completed.
6. When exchanging an old battery into new one, use battery of equal specification shown in **TABLE 1.**

[TABLE 1]

Battery Type	Volts (V)	Capacity at 5 H.R (A.H)
50B24L(S)-MF	12	36

Reserve Capacity (min)	Cold Cranking Amps	Normal Charging Rate (A)
71	390	4.5

◆ Direction for Storage

1. When storing the tractor for long periods of time, 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.

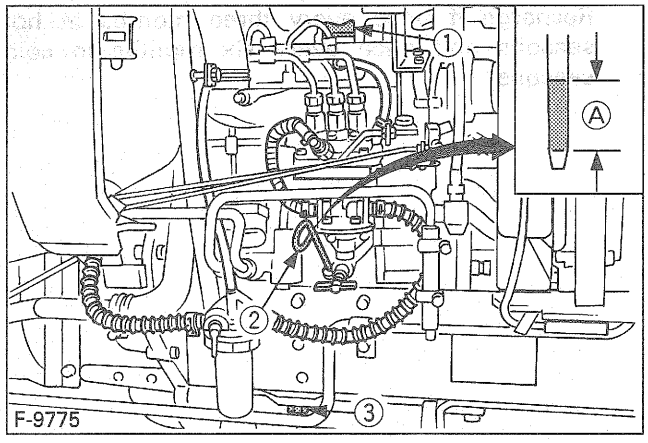
EVERY 100 HOURS

Changing Engine Oil

CAUTION
To avoid personal injury:
- **Be sure to stop the engine before changing the oil.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

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

Oil capacity with filter	2.4 L (2.5 U.S.qts.)

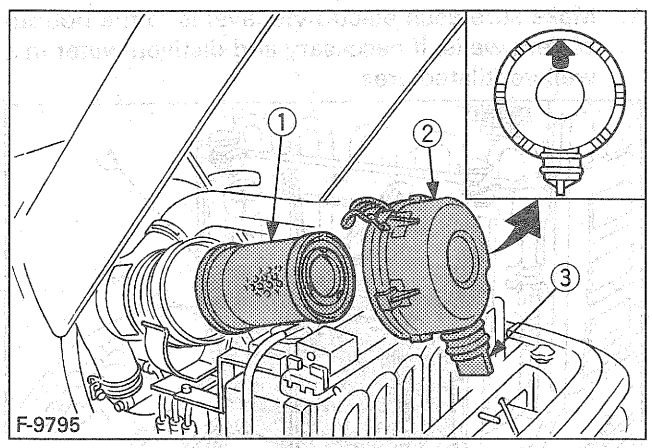


(1) Oil inlet (A) Oil level is acceptable within this range
(2) Dipstick
(3) Drain plug

Cleaning Air Cleaner Element

1. Remove the element.
2. Clean the 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).
   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. (refering to the instructions on the label attached to the case.)
3. Replace air cleaner element if:
   Once yearly or after every sixth cleaning, whichever comes first.

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



(1) Element
(2) Cover
(3) Evacuator valve

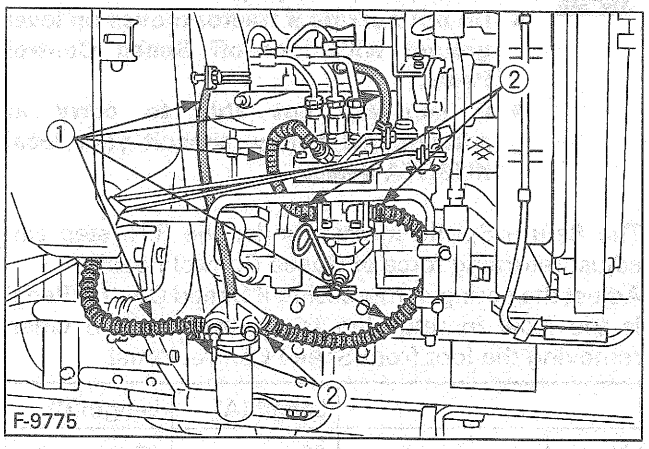
IMPORTANT:
- The air cleaner uses a dry element, never apply oil.
- Do not run the engine with filter element removed.
- Be sure to refit the dust cup with the arrow ⬆ (on the rear) upright. If the dust cup is improperly fitted, dust passes by the baffle and directly adheres to the element.

◆ Evacuator Valve

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

Checking Fuel Line

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



(1) Fuel lines
(2) Clamp bands

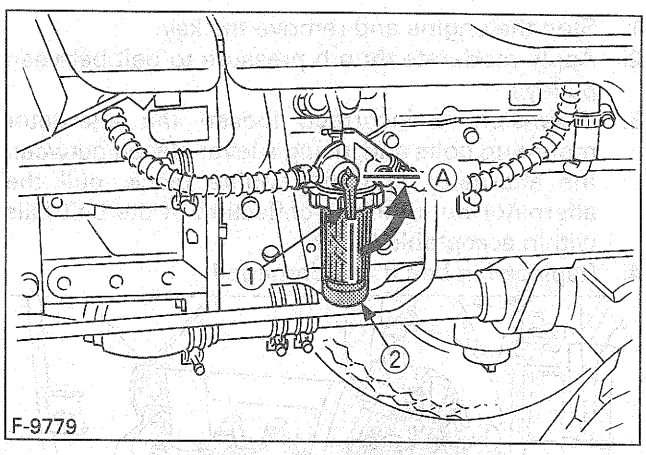
NOTE:

- If the fuel line is removed, be sure to properly bleed the fuel system.
  (See "Bleeding Fuel System" in as required maintenance)

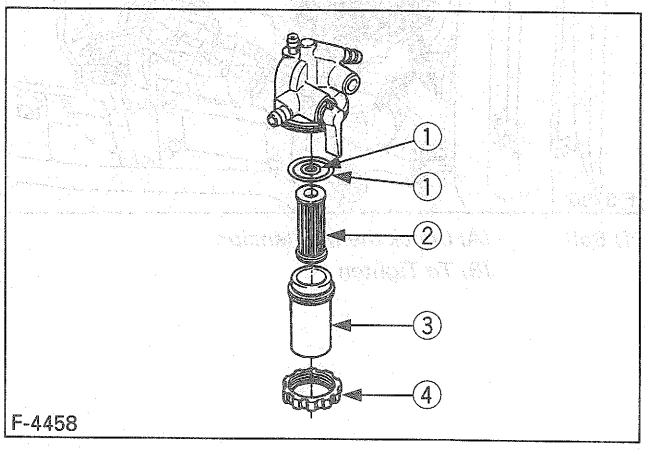
Cleaning Fuel Filter

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

1. Close the fuel filter cock.
2. Unscrew the screw ring and remove the filter bowl, and rinse the inside with kerosene.
3. Take out the element and dip it in the kerosene to rinse.
4. After cleaning, reassemble the fuel filter, keeping out dust and dirt.
5. Bleed the fuel system.
   (See "Bleeding Fuel System" in as required maintenance)



(1) Fuel cock *(A) "CLOSE"*
(2) Fuel filter bowl



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

IMPORTANT:

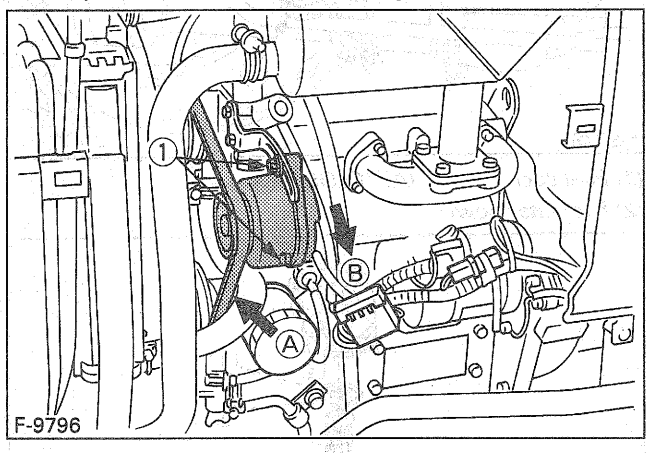
- If dust and dirt enters the fuel system, the fuel pump and injection nozzles are subject to premature wear. To prevent this, be sure to clean the fuel filter bowl periodically.

Adjusting Fan Belt Tension

CAUTION
To avoid personal injury:
- **Be sure to stop the engine before checking belt tension.**

Proper fan belt tension	A deflection of between 7 to 9 mm (0.28 to 0.34 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 fan belt if it is damaged.



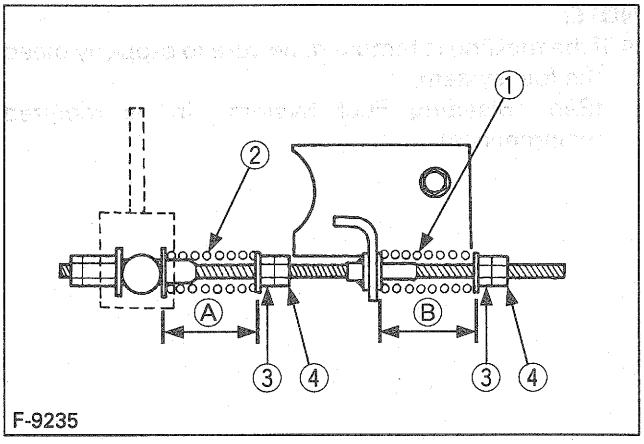
(1) Bolt *(A) Check the belt tension*
(B) To Tighten

Adjusting Return Spring (for Speed Control Pedal)

WARNING
To avoid personal injury:
- **Do not operate if tractor moves on level ground with foot off Speed Control Pedal.**
- **If you are not able to curry at adjustments below, consult your local KUBOTA dealer.**

The Return Spring located under the R.H. step can adjust returning force of Speed Control Pedal.
Adjust the spring compression if Speed Control Pedal is too slow in returning to neutral position when removing the foot from Speed Control Pedal.

	Length(A)	Length(B)
Normal compression	65mm	65mm
Max. compression	42mm	42mm



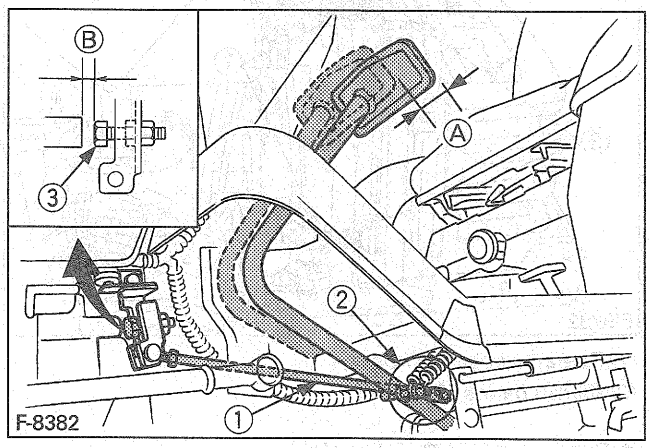
(1) Return Spring (for forward adjustment) *(A) Spring Length*
(2) Return Spring (for reverse adjustment) *(B) Spring Length*
(3)(4) Adjusting Nut

IMPORTANT:
- Do not compress the Return Spring shorter than Max. compression length.

Adjusting Clutch Pedal

Proper clutch pedal free travel	20 to 30 mm (0.8 to 1.2 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).



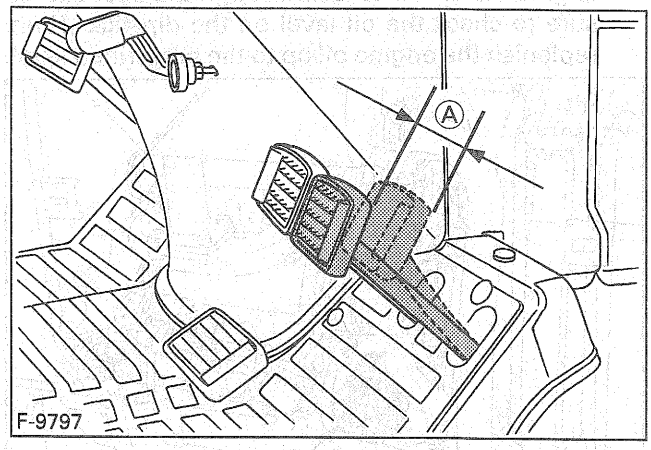
(1) Clutch rod
(2) Lock nut
(3) Bolt
(A) Free travel
(B) 8.5mm

Adjusting Brake Pedal

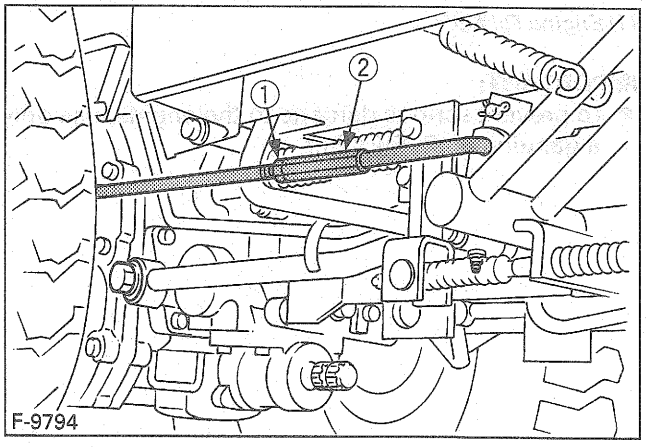
CAUTION
To avoid personal injury:
- **Stop the engine and chock the wheels before checking brake pedal.**

Proper brake pedal free travel	30 to 40 mm (1.2 to 1.6 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 with in acceptable limits.
4. Retighten the lock nut.



(A) Free travel



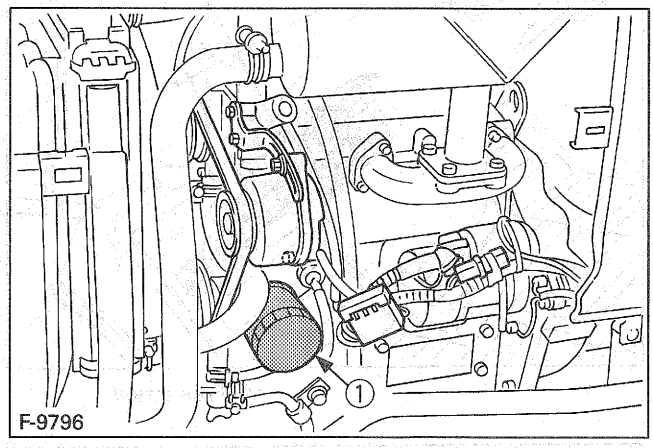
(1) Lock nut
(2) Turnbuckle

EVERY 200 HOURS

Replacing Engine Oil Filter

CAUTION
To avoid personal injury:
- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

1. Remove the oil filter.
2. Put a film of clean engine 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 engine oil normally decreases a little. Make sure that the engine oil does not leak through the seal and be sure to check the oil level on the dipstick. Then, replenish the engine oil up to the prescribed level.



(1) Engine Oil filter

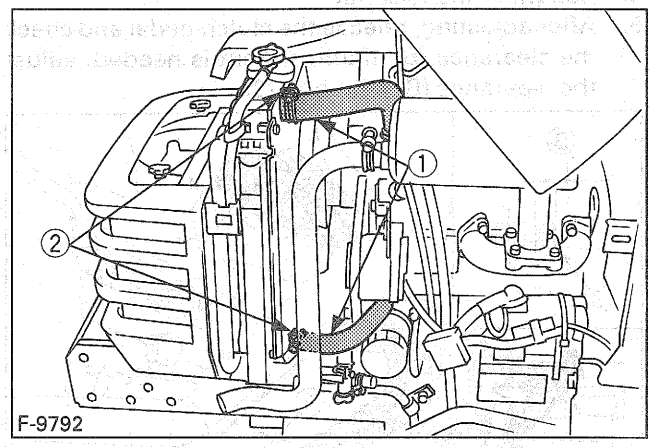
IMPORTANT:
- To prevent serious damage to the engine, use only a genuine KUBOTA filter.

Checking Radiator Hose and Clamp

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 bands securely.
2. Replace hoses and tighten hose clamps securely, if radiator hoses are swollen, hardened or cracked.

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



(1) Radiator hoses (4 hoses)
(2) Clamp bands (8 bands)

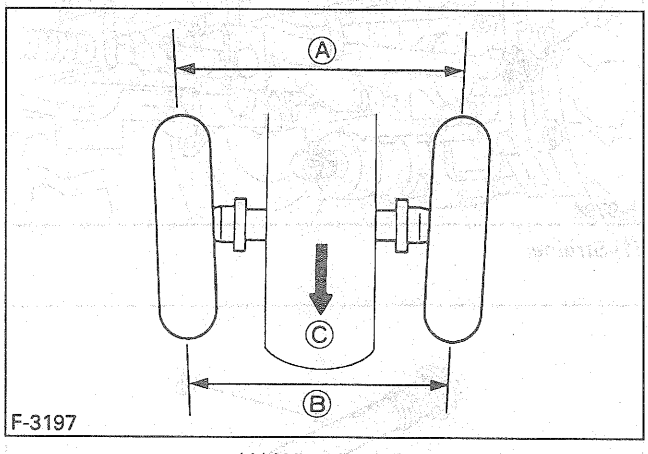
◆ Precaution at Overheating

Take the following actions in the event the coolant temperature be nearly or more than the boiling point, what is called "Overheating"

1. Stop the machine operation in a safe place and keep the engine unloaded idling.
2. Don't stop the engine suddenly, but stop it after about 5 minutes of unloaded idling.
3. Keep yourself well away from the machine for further 10 minutes or while the steam blown out.
4. Checking that there gets no danger such as burn, get rid of the causes of overheating according to the manual, see "Troubleshooting" section, And then, start again the engine.

Adjusting Toe-in

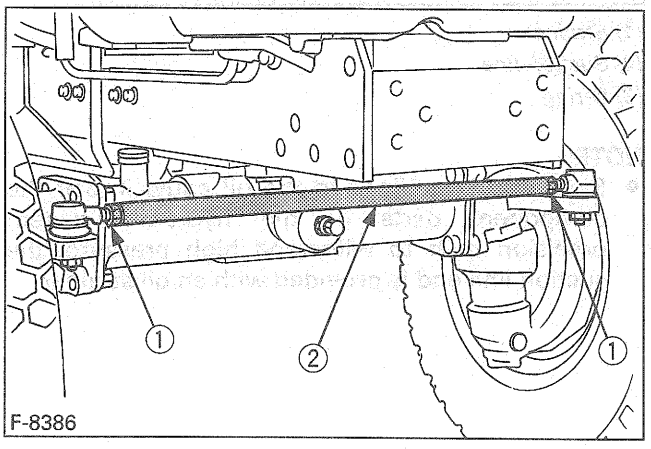
1. Park tractor on a flat place.
2. Turn steering wheel so front wheels are in the straight ahead position.
3. Lower the implement, lock the park brake and stop the engine.
4. Measure distance between tire beads at front of tire, hub height.
5. Measure distance between tire beads at rear of tire, hub height.
6. Front distance should be shorter than rear distance.
   If not, adjust tie rod length.



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

◆ Adjusting 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.



(1) Lock nuts
(2) Tie rod

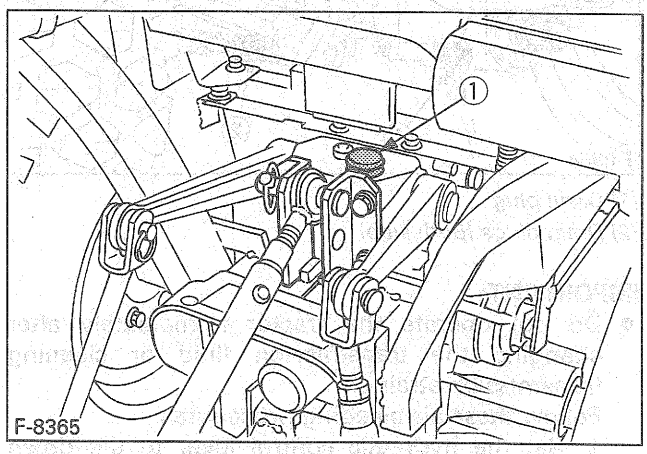
EVERY 300 HOURS

Changing Transmission Fluid

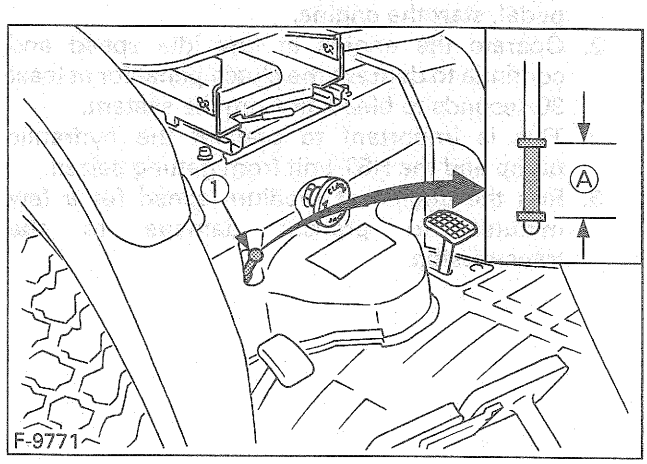
CAUTION
To avoid personal injury:
- **Allow engine to cool down sufficiently, oil can be hot and can burn.**

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. Cleaning Transmission Strainer.
4. Fill with the new KUBOTA SUPER UDT fluid up to the upper notch on the dipstick.
   (See "LUBRICANTS" 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.

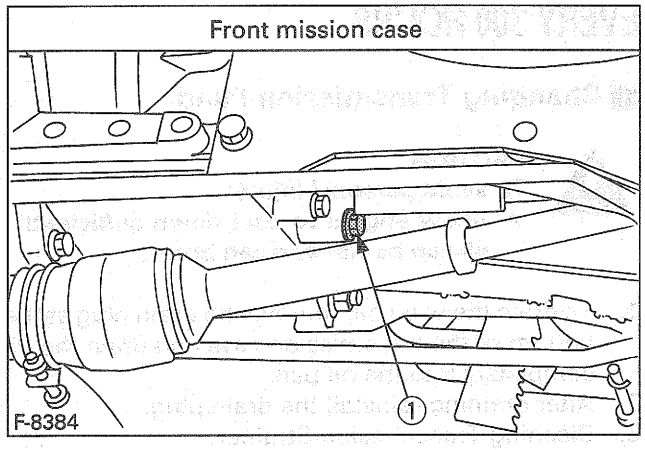
Oil capacity	12.0 L (3.17 U.S.gals.)

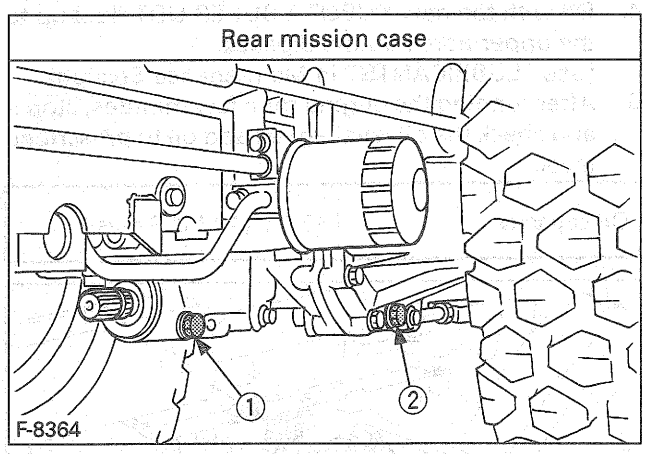


(1) Oil inlet



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





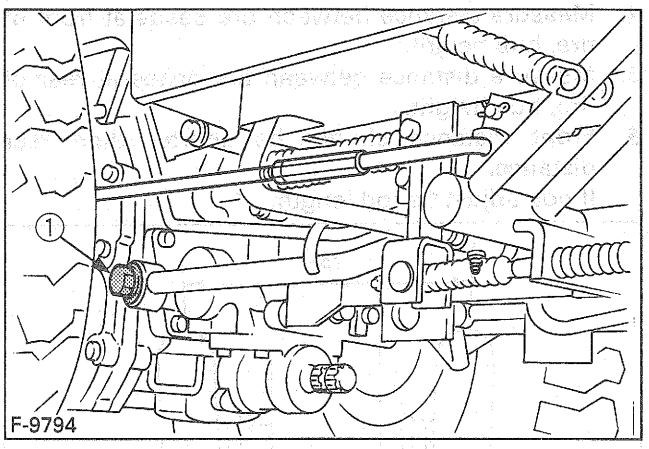
(1) Drain plug
(2) Drain plugs (Both side)

IMPORTANT:

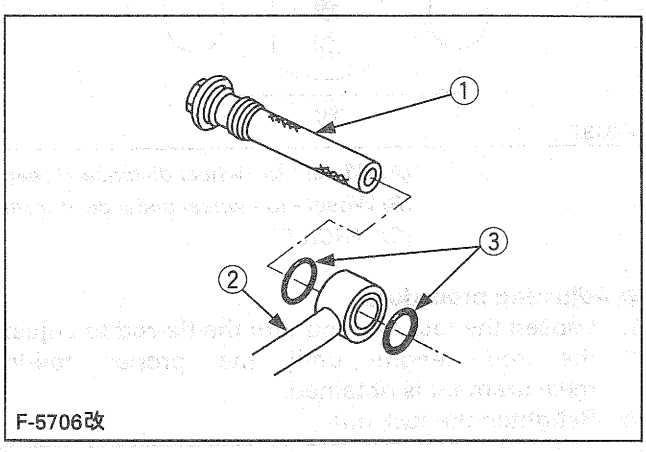
- Do not operate the tractor immediately after changing the transmission fluid or cleaning transmission strainer.
  Follow these air bleeding procedures.
  1. Set the hydraulic control lever to the down position, fully depress and hold the clutch pedal, start the engine.
  2. Operate the engine at low idle speed and continue to depress the clutch pedal for at least 30 seconds to bleed air from the system.
     This is important to prevent the hydraulic pump and the HST unit from getting seized.
  3. 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



(1) Strainer
(2) Suction line
(3) O-ring

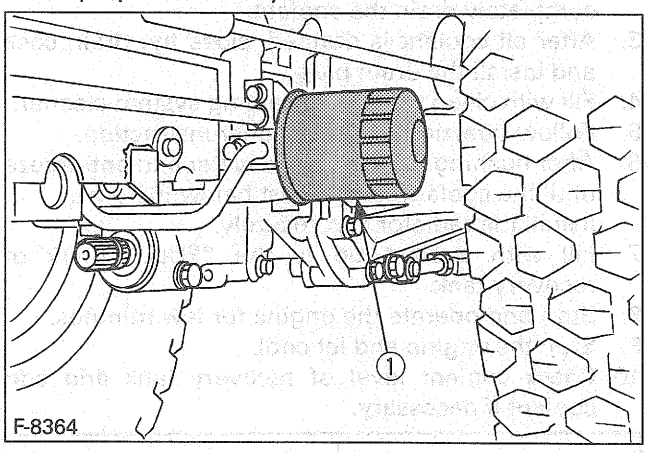
NOTE:

- Since the fine filings in the oil could impair the component parts of the hydraulic system precision built to withstand high pressure, the suction line end 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.



(1) Filter

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

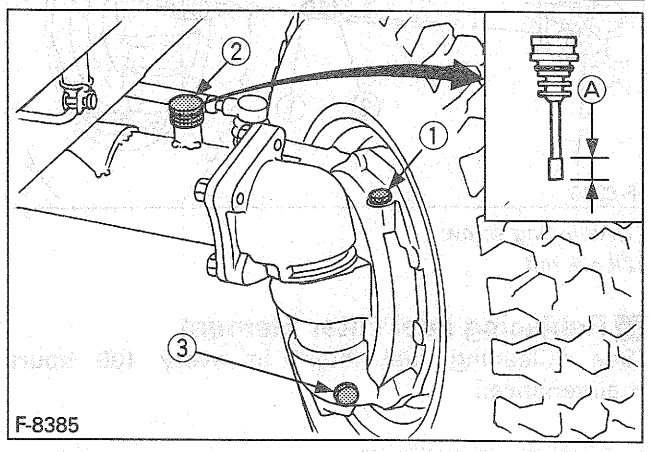
Changing Front Axle Case Oil [4WD]

1. 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.
2. After draining reinstall the drain plugs.
3. Remove the right and left breather plugs.
4. Fill with new oil up to the upper notch on the dipstick.
   (See "LUBRICANTS" in Maintenance Section)

   IMPORTANT:
   - After ten minutes, check the oil level again; add oil to prescribed level.

5. After filling reinstall the filling plug and breather plug.

Oil capacity	3.7 L (3.9 U.S.qts)



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

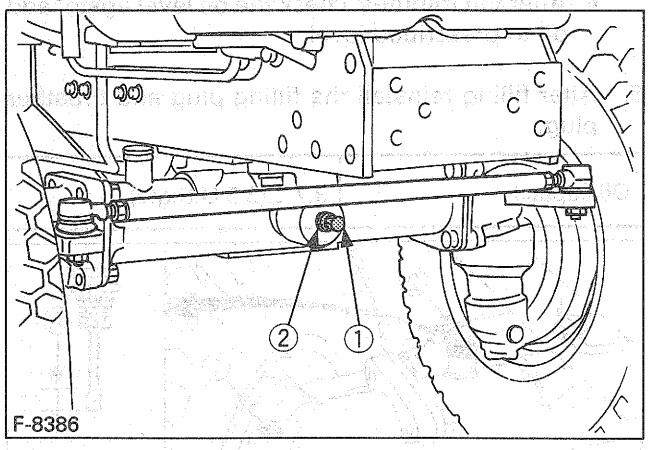
EVERY 400 HOURS

■ Adjusting Front Axle Pivot

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 all the way, and 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.)

EVERY 800 HOURS

■ Adjusting Engine Valve Clearance

Consult your local KUBOTA dealer for this service.

EVERY 1 YEAR

■ Replacing Air Cleaner Element

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

EVERY 2 YEARS

■ Flush Cooling System and Changing Coolant

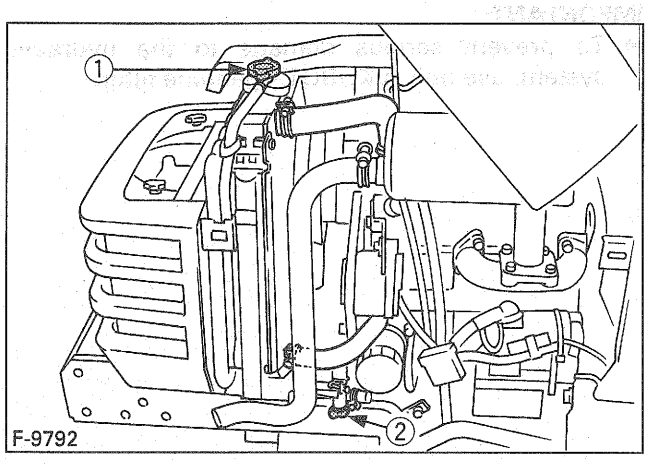
CAUTION

To avoid personal injury:

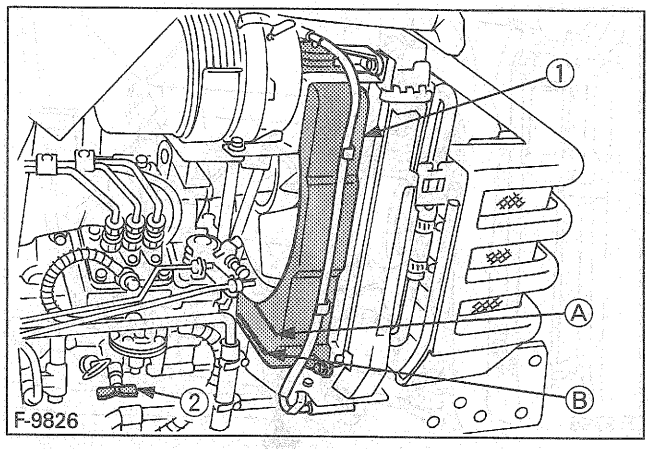
- **Do not remove the radiator cap when the engine is hot. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.**

1. Stop the engine and let cool down.
2. To drain the coolant, open the radiator drain cock and remove the radiator drain plug 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 and install the drain plug.
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 and let cool.
10. Check coolant level of recovery tank and add coolant if necessary.

Coolant capacity	2.7 L (2.9 U.S.qts.)



(1) Radiator cap
(2) Drain plug



(1) Recovery tank *(A) "FULL"*
(2) Drain cock *(B) "LOW"*

IMPORTANT:
- Do not start engine without coolant.
- Use clean, fresh water and anti-freeze to fill the radiator and 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, water may leak out and the engine could overheat.

Anti-Freeze

If it freezes, cooling water 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 be referred to SAE J1034 standard, more specifically also to SAE J814c.
4. Mix the anti-freeze with water, and then fill in to the radiator.

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

* 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, if necessary.
(See "Checking Fuel line" in every 100 hours maintenance.)

SERVICE AS REQUIRED

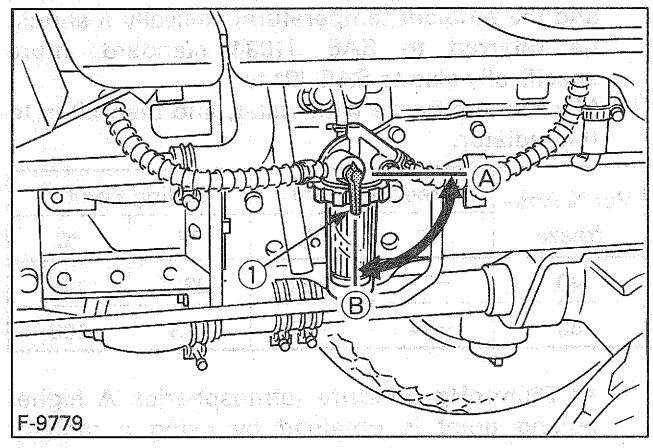
■ Bleeding Fuel system

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, and open the fuel cock.



(1) Fuel cock *(A) "CLOSE"* *(B) "OPEN"*

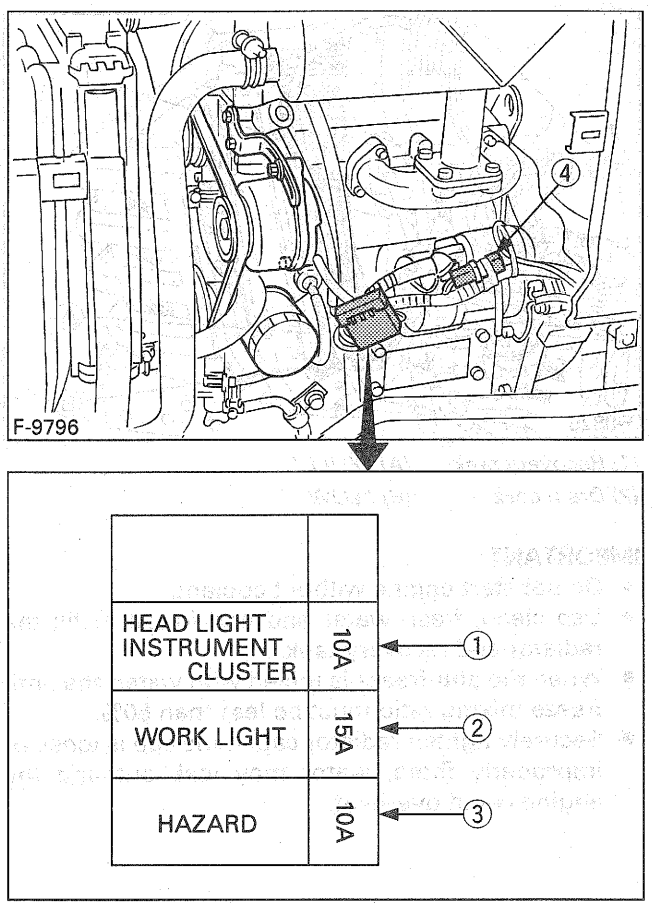
2. Start the engine and run for about 30 seconds, and then stop the engine.

■ Replacing Fuse

The tractor electrical system is protected from potential damage by fuses.
A blown fuse indicates that there is an overload or short somewhere in the electrical system.
If any of the fuses should blow, replace with a new one of the same capacity.

IMPORTANT:

- Before replacing a blown fuse, determine why the fuse blew and make any necessary repairs. Failure to follow this procedure may result in serious damage to the tractor electrical system. Refer to the troubleshooting section of this manual or your local KUBOTA dealer for specific information dealing with electrical problems.
  If any of them should blow, replace with a new one of the same capacity.



◆ Protected circuit

FUSE No.	CAPACITY (A)	Protected circuit
①	10	Head light, Instrument cluster
②	15	Work light
③	10	Hazard lights
④	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
Headlights	15W
Tail light	8W
Hazard light	27W

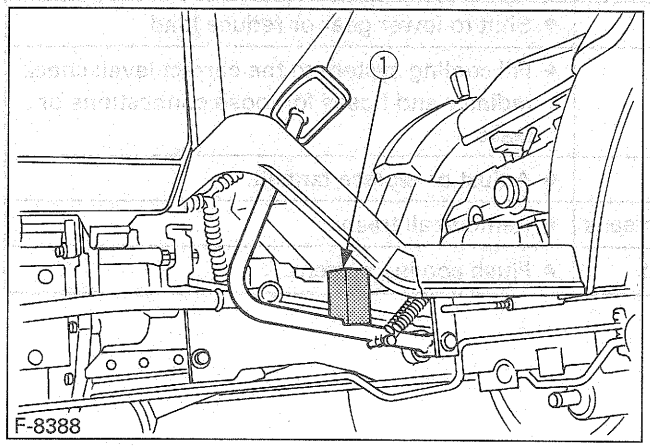
STORAGE

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 50 hours in periodic service section.)
9. Keep the tractor in a dry place where the tractor is sheltered from rain. 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. Set the hydraulic control lever to the down position, fully depress and hold the clutch pedal, start the engine. Operate the engine at low idle speed and continue to depress the clutch pedal for at least 30 seconds to bleed air from the system. 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.		• No fuel flow.	• Check the fuel tank and the fuel filter. Replace filter if necessary.
		• Air or water is in the fuel system.	• Check to see if the fuel line coupler bolt and nut are tight. • Bleed the fuel system (See "Bleeding Fuel system" in as required maintenance)
		• In winter, oil viscosity increases, and engine revolution is slow.	• Use oils of different viscosities, depending on ambient temperatures. • Use engine block heater. (Option)
		• Battery becomes weak and the engine does not turn over quick enough.	• Clean battery cables and terminals. • Charge the battery. • In cold weather, always remove the battery from the engine, charge and store it indoors. Install it on the tractor only when the tractor is going to be used.
Insufficient engine power.		• Insufficient of dirty fuel. • The air cleaner is clogged.	• Check the fuel system. • Clean the element.
Engine stops suddenly.		• Insufficient fuel.	• Refuel. • Bleed the fuel system if necessary.
Exhaust fumes are colored.	Black	• Fuel quality is poor. • Too much oil.	• Change the fuel and fuel filter. • Check the proper amount of oil.
	Blue white	• The inside of exhaust muffler is dumped with fuel. • Injection nozzle trouble. • Poor quality fuel.	• Heat the muffler by applying load to the engine. • Check the injection nozzle. • Change the fuel and fuel filter.
Engine overheats.		• Engine overloaded.	• Shift to lower gear or reduce load.
		• Low coolant level.	• Fill cooling system to the correct level; check radiator and hoses for loose connections or leaks.
		• Loose or defective fanbelt.	• Adjust or replace fanbelt.
		• Dirty radiator core or grille screens.	• Remove all trash.
		• Coolant flow route corroded.	• Flush cooling system.

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

OPTIONS

Consult your local KUBOTA dealer for further detail.

- SMV (Slow Moving Vehicle) Emblem:
  To identify slow moving vehicle.
- Front end weights.
  For front ballast.
- Mounting Kit (Front end weights)
  To mount Front end weights.

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.

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