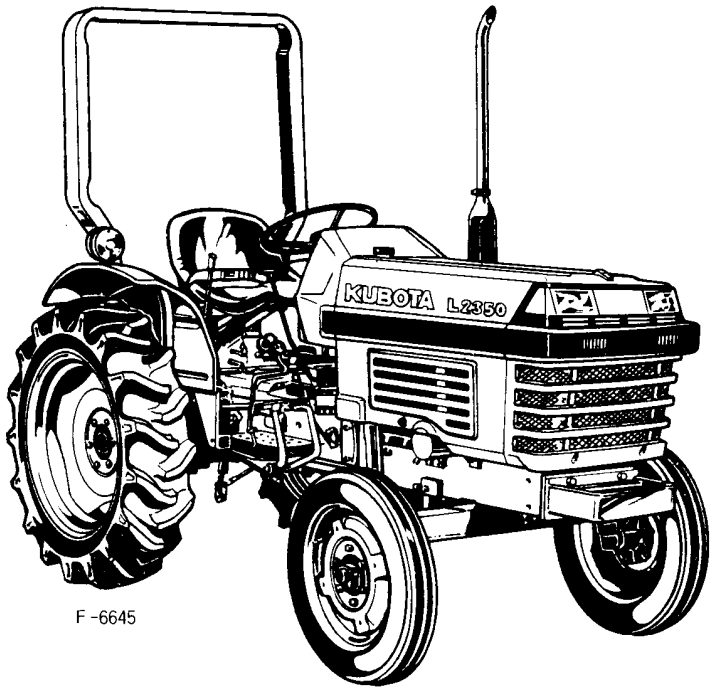
OPERATOR'S MANUAL

KUBOTA TRACTOR

MODELS L2350·L2350DT



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READ AND SAVE THIS BOOK

Kubota

CONTENTS

SAFE OPERATION

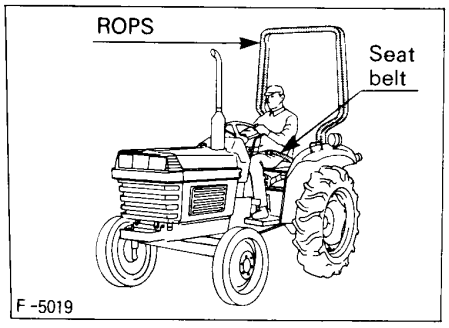
Careful operation is your best insurance against an accident. Read this section carefully before operating the tractor. All operators, no matter how much experience they may have had should read this and other related manuals before operating tractor or any implement attached to it. It is the owner's legal 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 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.



(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 daily 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 hard hat, safety boots or shoes, eye and hearing protection, gloves, etc. as appropriate or required.

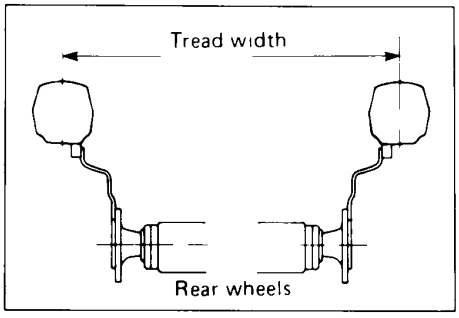
(9) Do not allow passengers or non-qualified operators on the tractor at any time. The operator must remain in the tractor seat throughout operation.

(10) Check brakes, clutch, and other mechanical parts for faulty adjustment and wear. Replace worn or damaged parts promptly. Check the tightness of all nuts and bolts regularly. (For further details, see MAINTENANCE AND ADJUSTMENTS.)

(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. Use proper weights to front or rear of tractor to reduce the risk of upsets. Follow the safe operating procedures specified in the manuals included with the equipment.

(13) The narrower the tread, the greater the risk of a tractor upset For maximum stability, adjust the wheels to the largest practical tread width, (See page 23,24)



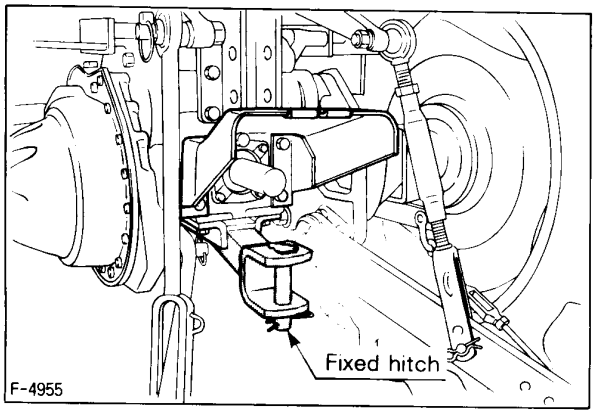
2. OPERATING THE TRACTOR

(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 nomal 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.



(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 mire or up a steep slope risks a tractor 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.

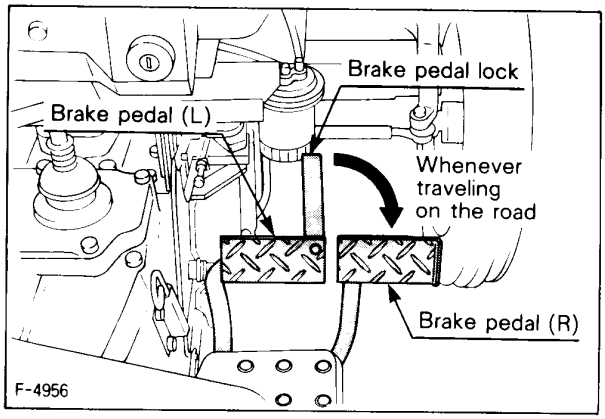
(13) When working in groups, always let the others know what you are going to do before you do it.

(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.

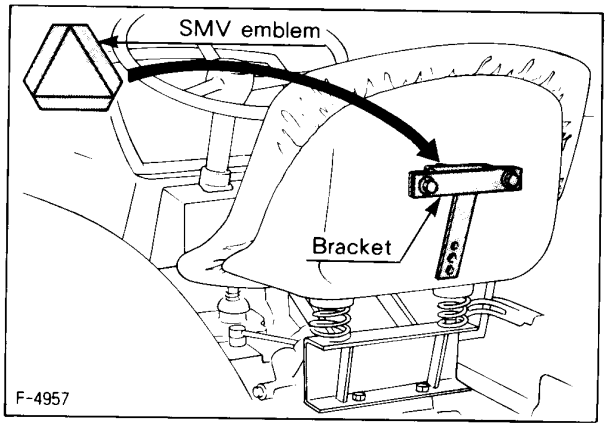
3. DRIVING THE TRACTOR ON THE ROAD

(1) Lock the two brake pedals together to help assure straightline stops. Uneven braking at road speeds could cause the tractor to roll over.



(2) Always slow the tractor down before turning. Turning at high speed may tip the tractor over.

(3) Make sure that the Slow-Moving Vehicle (SMV) emblem is clean and visible. Use hazard lights as required.



(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 it in the raised position.

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

4. STOPPING THE TRACTOR

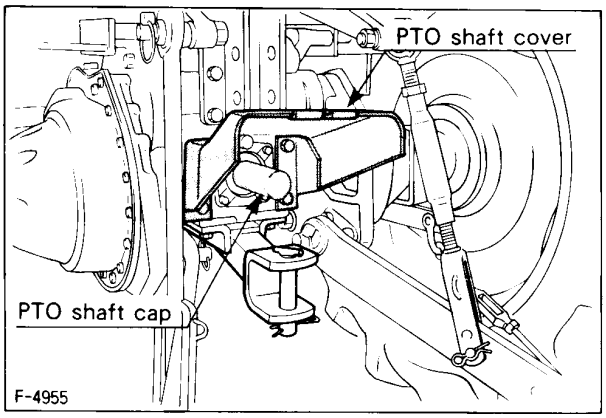
(1) Disengage the PTO, lower all implements, place all control levers in their neutral positions, apply parking brake, turn off the engine, and remove the key.

(2) Make sure that the tractor has come to a complete stop before dismounting.

5. OPERATING THE PTO

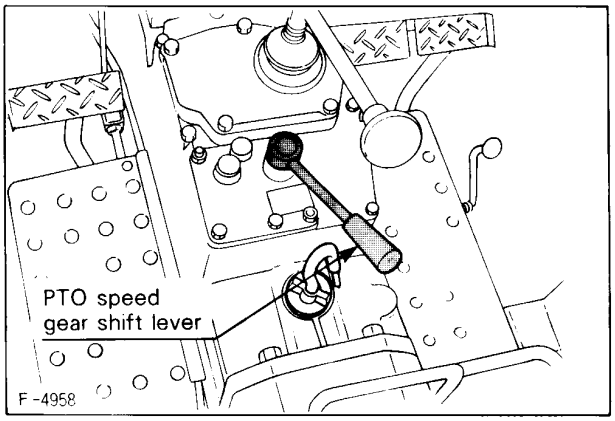
(1) Wait until all moving components have completely stopped before getting off the tractor, connecting, disconnecting, adjusting, cleaning, or servicing any PTO-driven equipment.

(2) Keep the PTO shaft cover in place at all times. Replace the PTO shaft cap when the shaft is not in use.



(3) Before installing or using PTO driven equipment, read the manufacturer's manual and review the safety labels attached to the equipment.

(4) Always observe PTO-speeds (540 rpm) recommended by the equipment manufacturer.



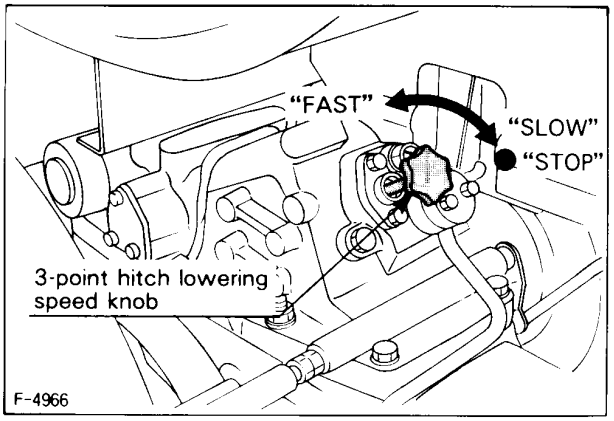
(5) When operating stationary PTO driven equipment, always apply the tractor parking brake and place chocks behind and in front of the rear wheels. Stay clear of all rotating parts.

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 counterballast 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.



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.

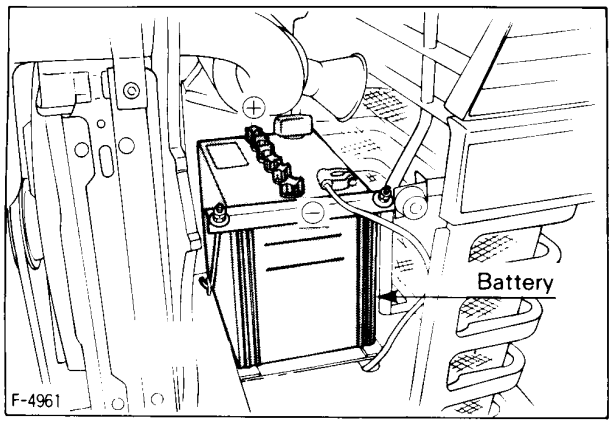
(2) Always stop the engine before refueling. Avoid spills and overfilling.

(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 explosion hazard because it gives off hydrogen and oxygen.....especially when recharging.

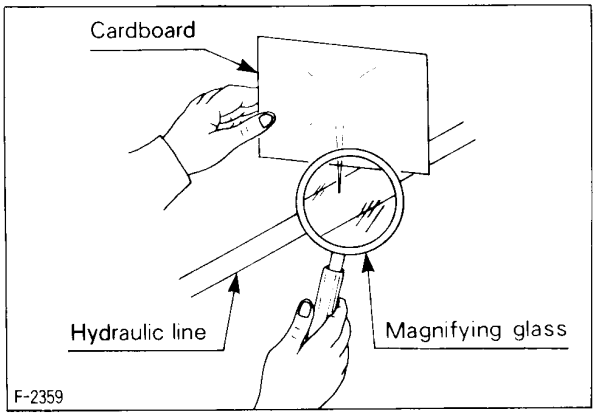
(4) Before "jumping" a dead battery, read and follow all of the instructions. (See Page 4)

(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.



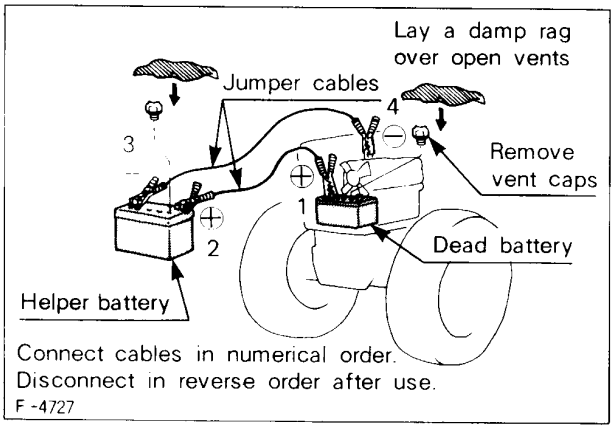
(9) Do not attempt to mount a tire an a rim unless qualified to do so and all proper safety precautions are followed.
(10) Provide adequate support when changing wheels or the wheel tread width.
(11) Make sure that wheel bolts have been tightened to the specified torque.
(12) Escaping hydraulic fluid under pressure has sufficient force to penetrate skin, causing serious personal injury. Before disconnecting hydraulic lines, be sure to release all residual pressure. Before applying pressure to the hydraulic system, make sure that all connections are tight and that all lines, pipes, and hoses are free of damage.



Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks; Use a piece of cardboard or wood, 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. JUMP STARTING INSTRUCTIONS AND PRECAUTIONS

If ice is present or the battery is cracked, DO NOT ATTEMPT TO "JUMP START" vehicle.
(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. Turn both key switches off.
(3) Put on safety goggles and rubber gloves.
(4) Remove the vent caps from both batteries.
(5) Cover vent holes with damp rags. Do not allow the rags 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.



9. WARNING AND CAUTION LABELS

❶ Part No. 35260—3491—3

⚠ CAUTION

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.

❷ Part No. 35260—2979—1

⚠ WARNING

TO AVOID PERSONAL INJURY:

1. Attach pulled or towed loads to the drawbar only.
2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.

❸ Part No. 35260—2978—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.

❹ Part No. 35820-9863-3

⚠ WARNING

TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY:

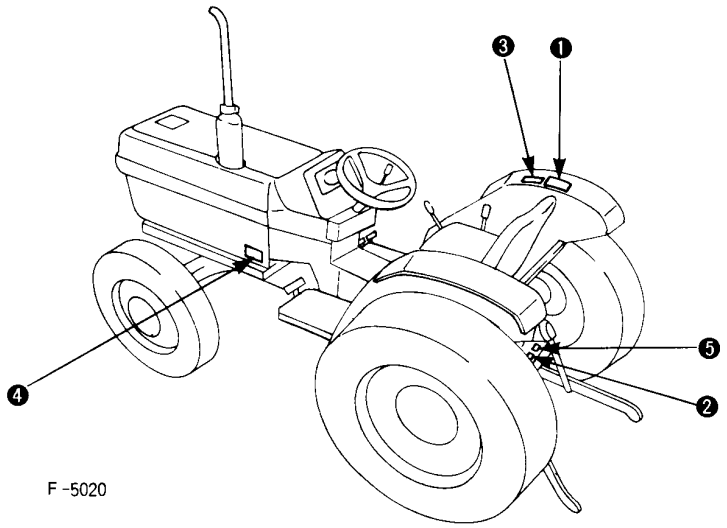
1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission and PTO OFF.
   Never start engine while standing on the ground.

❺ Part No. 35200—2534—1

⚠ WARNING

TO AVOID PERSONAL INJURY:

1. Keep PTO shield in place at all times.
2. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer.



CARE OF WARNING AND CAUTION LABELS

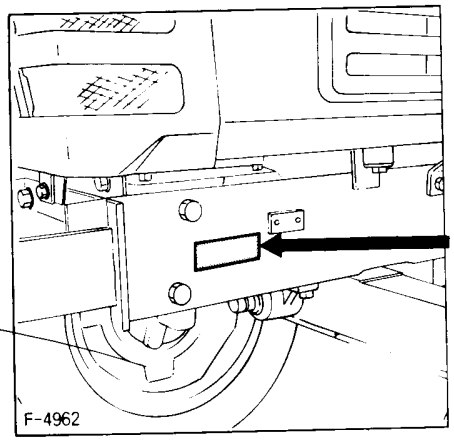
(1) Keep warning and caution labels clean and free from obstructing material.
(2) Clean warning and caution labels with soap and water, dry with a soft cloth.
(3) Replace damaged or missing warning and caution labels with new labels from your Kubota dealer.
(4) If a component with warning and caution 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 warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

1. SERVICING OF TRACTOR

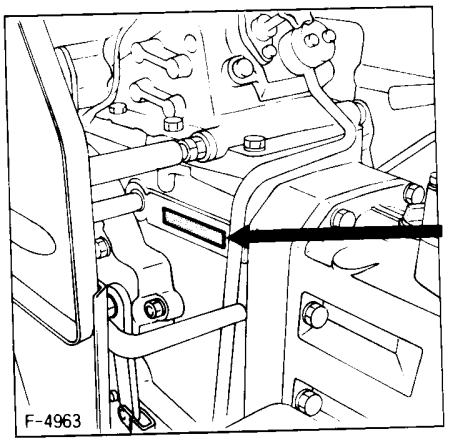
Your dealer is interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.
However, when in need of parts or major service, be sure to see your KUBOTA dealer.
For service, contact the KUBOTA Dealership from which you purchased your tractor or your local authorized KUBOTA dealer.
When in need of parts, be prepared to give your dealer both the tractor and engine serial numbers.
The tractor serial number is located on the transmission housing on the right-hand side of the tractor. The engine serial number is located on the engine crankcase, right side.
Locate the serial numbers now and record them in the space provided.

	Type	Serial No.
Tractor	_____	_____
Engine	_____	_____

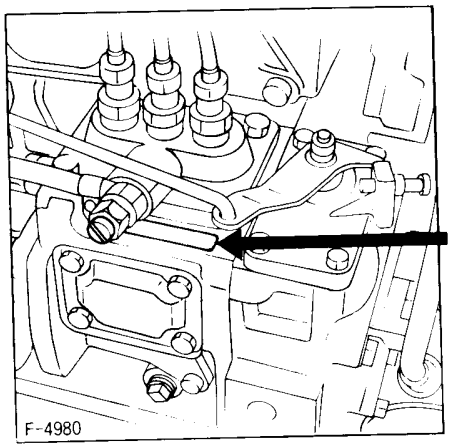
Date of Purchase _____
(To be filled in by purchaser)



Identification plate



Tractor serial number



Engine serial number

2. SPECIFICATIONS

2.1 SPECIFICATION TABLE

Model			L2350		
			2WD		4WD
PTO power		kW(HP)	15.3 (20.5)*		
Engine	Maker		KUBOTA		
	Model		D1102—AE		D1102—AE—2
	Type		Vertical, Water-Cooled 4 cycle diesel		
	Number of cylinders		3		
	Bore and stroke	mm (in.)	76×82 (3.0×3.2)		
	Total displacement	cm^3(cu.in.)	1115 (68.0)		
	Engine gross power	kW (HP)	18.7 (25)*		
	Rated revolution	r/s (rpm)	46.7 (2800)		
	Maximum torque	kg·m(ft·lb)	7.9 (57.5)		
	Battery		490—Cold cranking Amps at —18°C		
	Fuel		Diesel fuel No.2—D		
Capacities	Fuel tank	ℓ (u.s.gals.)	29 (7.7)		
	Engine crankcase (with filter)	ℓ (u.s.qts.)	6.3 (6.7)		
	Engine coolant	ℓ (u.s.qts.)	6 (6.3)		
	Transmission case	ℓ (u.s.gals.)	28 (7.4)		
Dimensions	Overall length (without 3p)	mm (in.)	2640 (103.9)		
	Overall width (minimum tread)	mm (in.)	1270 (50.0)		
	Overall height (with ROPS)	mm (in.)	2110 (83.1)		
	Overall height (Top of steering wheel)	mm (in.)	1380 (54.3)		
	Wheel base	mm (in.)	1555 (61.2)		1565 (61.6)
	Minimum ground clearance	mm (in.)	340 (13.3)		311 (12.2)
	Treads — Front	mm(in.)	1010 (39.8)		
	Treads — Rear	mm(in.)	1030 (40.6)		
Weight (with ROPS)		kg (lbs.)	890 (1962)		1000 (2205)
Clutch			Dry. type Single stage		
Traveling system	Standard tires	Front	4.00—15		6—14
		Rear	9.5—24		
	Steering		Recirculating ball type manual steering		Recirculating ball type manual steering or integral type power steering (if equipped)
	Transmission		Gear shift, 8 forward and 2 reverse		
	Brake		Wet disk type		
	Minimum turning radius (with brake)	m (feet)	2.4 (7.9)		
Hydraulic units	Hydraulic control system		Position control		
	Pump capacity	ℓ /min.	17.4		27.2
	Three point hitch		Category 1		
	Max. lift force — At lift points	kg (lbs.)	850 (1875)		
	Max. lift force — 24 in. behind lift points	kg (lbs.)	650 (1435)		
	System pressure	kg/cm^2 (psi)	155 (2205)		
PTO	Rear PTO		SAE 1-3/8 6-splines (with overrunning clutch)		
	Revolution		1 speed (9 r/s at 40.5 engine r/s) (540 rpm at 2430 engine rpm)		

Note: * Manufacturer's estimate

2.2 TRAVELING SPEEDS (At rated engine rpm)

Model			L2350	
Tire size (Rear)			9.5—24	
	Hi-Lo gear shift lever	Main gear shift lever	km/h	mph
Forward	Low	1	1.2	0.7
		2	1.6	1.0
		3	2.2	1.4
		4	3.9	2.4
	High	5	5.1	3.2
		6	6.7	4.2
		7	9.6	6.0
		8	17.8	11.1
Reverse	Low	1	2.0	1.2
	High	2	8.7	5.4

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

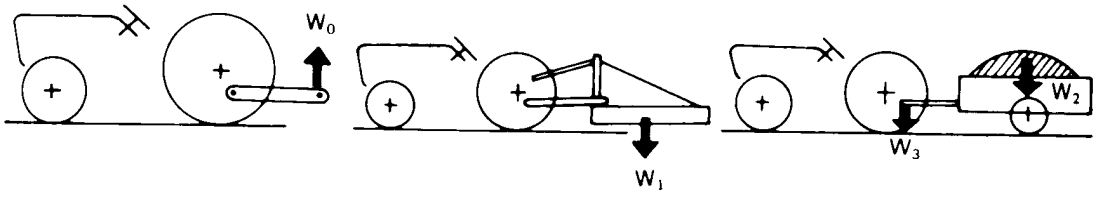
3. SPECIFICATIONS OF IMPLEMENT LIMITATIONS

The Kubota Tractor has been thoroughly 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			Lift capacity Lower link end W_0
	Front		Rear	
	2WD	4WD		
L2350	1010 mm (40 in.)	1010 mm (40 in.)	1030 mm (41 in.)	850 kg (1875 lbs.)

	Actual figures			
	Trailer loading weight W_2 Max. capacity		Max. Drawbar Load W_3 2WD, 4WD	Lift capacity 24 inch behind lower link end W_1
	2WD	4WD		
L2350	1000 kg (2200 lbs.)	1000 kg (2200 lbs.)	330 kg (730 lbs.)	650 kg (1435 lbs.)

Lower link end lift capacity ····· W_0
Implement weight ····· The implement's weight which can be put on the links: W_1
Trailer loading weight ····· The max. loading weight for trailer (without trailer's weight): W_2
Max. Drawbar Load ····· W_3



No.	Implement		Remarks		L2350
1	Trailer		Max. Load Capacity kg (lbs.)		1000 (2200)
			Max. Drawbar Load kg (lbs.)		330 (730)
2	Mower	Mid Mount	Max. Cutting Width mm (in.)		1829 (72)
			Max. Weight kg (lbs.)		200 (440)
		Rear Mount	Max. Cutting Width mm (in.)		1829 (72)
			Max. Weight kg (lbs.)		350 (770)
		Flail Mower	Max. Cutting Width mm (in.)		1270 (50)
			Max. Weight kg (lbs.)		350 (770)
		Sickle Bar	Max. Cutting Width mm (in.)		1829 (72)
			Max. Weight kg (lbs.)		400 (880)
3	Sprayer		Max. Tank-capacity ℓ (gals.)	Rear mounted	300 (80)
				Pull type	800 (210)
4	Rotary Tiller		Max. Tilling Width mm (in.)		1370 (54)
5	Bottom Plow		Max. Size		12 in.×2,16 in.×1
6	Disc-harrow (Pull type)		Max. Harrowing Width mm (in.)		1524 (60)
			Max. Weight kg (lbs.)		300 (660)
7	Chisel Plow		Max. Cutting Width mm (in.)		1829 (72)
			Max. Weight kg (lbs.)		350 (770)
8	Broad Caster		Max. Tank Capacity ℓ (gals.)		200 (53)
			Max. Weight kg (lbs.)		100 (220)
9	Manure Spreader		Max. Capacity kg (lbs.)		1000 (2200)
10	Cultivater		Max. Width mm (in.)		1524 (60)
			Number of Rows		1
			Max. Weight kg (lbs.)		250 (550)
11	Front Blade		Max. Cutting Width mm (in.)		1829 (72)
			Max. Oil Pressure kgf/cm^2 (psi.)		155 (2205)
			Sub Frame		Necessary
12	Rear Blade		Max. Cutting Width mm (in.)		1829 (72)
			Max. Oil Pressure kgf/cm^2 (psi.)		155 (2205)
13	Front-end Loader		Max. Lifting Capacity kgf (lbs.)		400 (880)
			Max. Oil Pressure (Extra Hydro Kit) kgf/cm^2 (psi.)		155 (2205)
			Sub Frame		Necessary
14	Box Blade		Max. Cutting Width mm(in.)		1321 (52)
			Max. Weight kg (lbs.)		295 (650)
15	Back Hoe		Max. Digging Depth mm (in.)		2288 (90)
			Max. Weight kg (lbs.)		450 (990)
			Sub Frame		Necessary
16	Snow Blade		Max. Width mm (in.)		1524 (60)
			Max. Weight kg (lbs.)		300 (660)
17	Snow Blowar		Max. Working Width mm (in.)		1524 (60)
			Max. Weight kg (lbs.)		250 (550)

4. 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, well fitted and tested, but the various parts are not accustomed to strenuous types of work, so care should be taken to operate the tractor for the first 100 hours at a slower speed and avoid excessive work or operation until the various parts become well "broken-in." The manner in which the tractor is operated 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 operating a new tractor, the following precautions should be observed.

■ Do not Operate the Tractor at Full Speed for the First 100 Hours.

- Do not start quickly nor apply the brakes suddenly.
- In winter, operate the tractor only 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 check list. (See page 32)

■ Read "Safe Operation"

Please read "Safe Operation" before attempting to start or operate the tractor.

4.1 LOADING AND UNLOADING

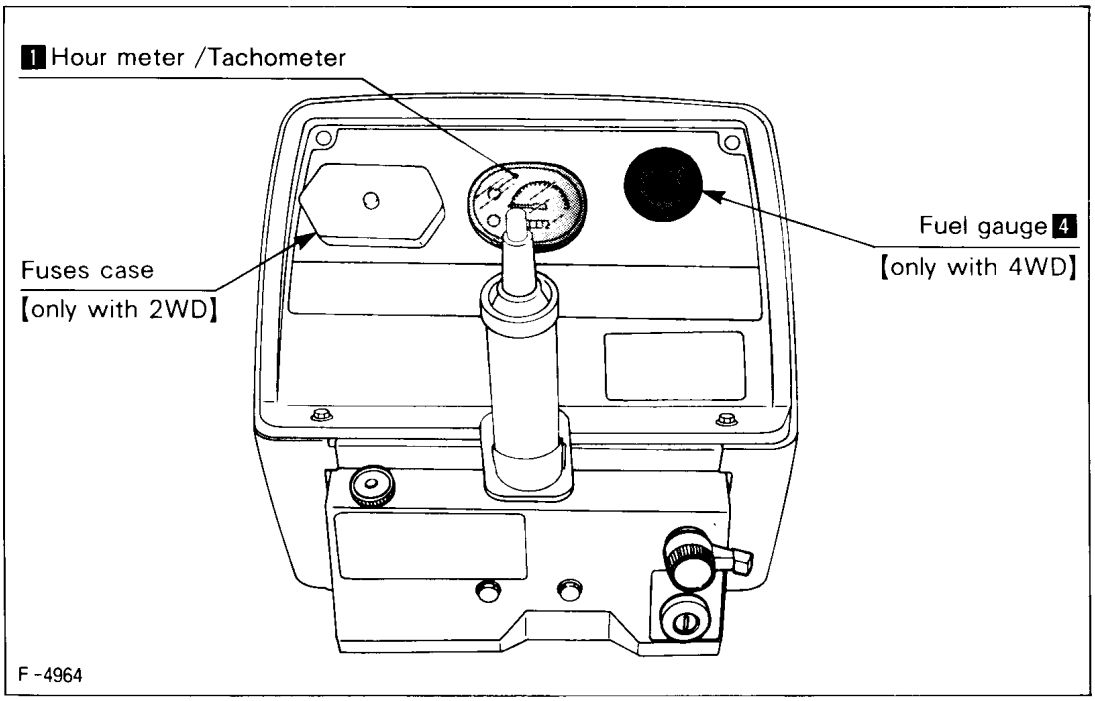
(1) When loading (or unloading) a tractor onto a truck or trailer, chock the truck or trailer's tires.

(2) Securely fix a rugged ramp with non-skids to the truck or trailer bed and check to see that there are no people around before starting to load or unload the tractor.

(3) Back the tractor when going up the ramp.

5. INSTRUMENT PANEL AND CONTROLS

5.1 INSTRUMENT PANEL



1 Hour Meter/Tachometer

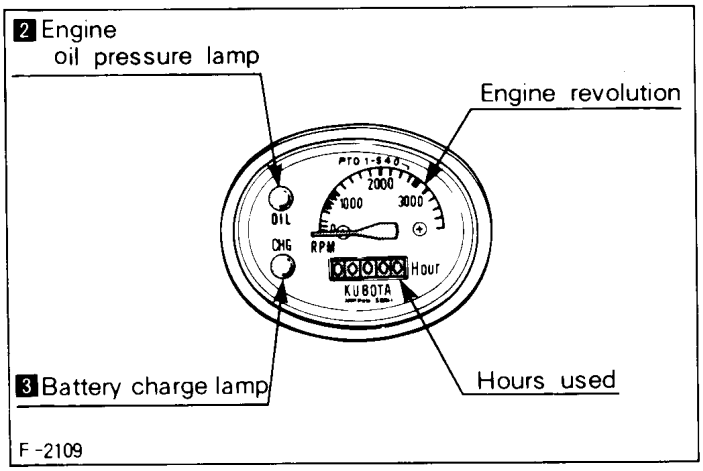
This meter shows the number of hours the tractor has been operated at rated engine rpm.

The last digit (white background) indicates 1/10 of an hour.

The time in minutes will be shown by multiplying by six to last digit on white background.

Example 0 1 7 0 1 ··· 170 hours 6 minutes used.

Moving hand indicates the revolution per minute of the engine



2 Engine Oil Pressure Lamp

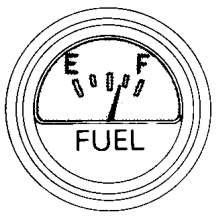
The oil pressure lamp will glow red when the key switch is turned on. This indicates the light and electrical wiring are functioning properly. The light should go out after engine starts. If light remains on, stop engine and determine cause.

3 Battery Charge Lamp

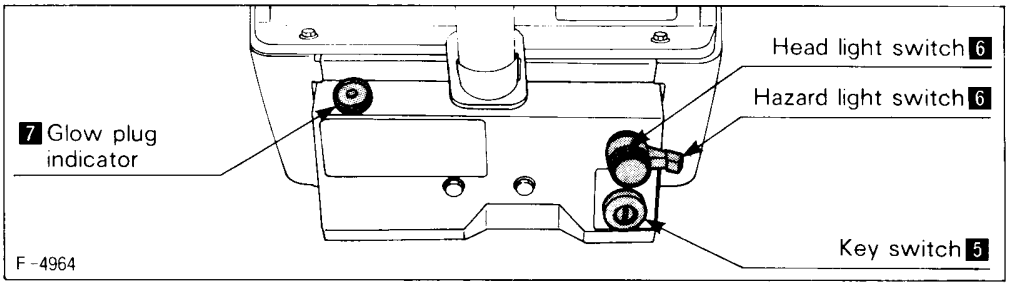
The battery charge lamp will glow red when the key switch is turned on and should go out as engine starts. If the lamp continues to glow above idle speeds, the battery is being discharged, indicating the electrical system should be checked.

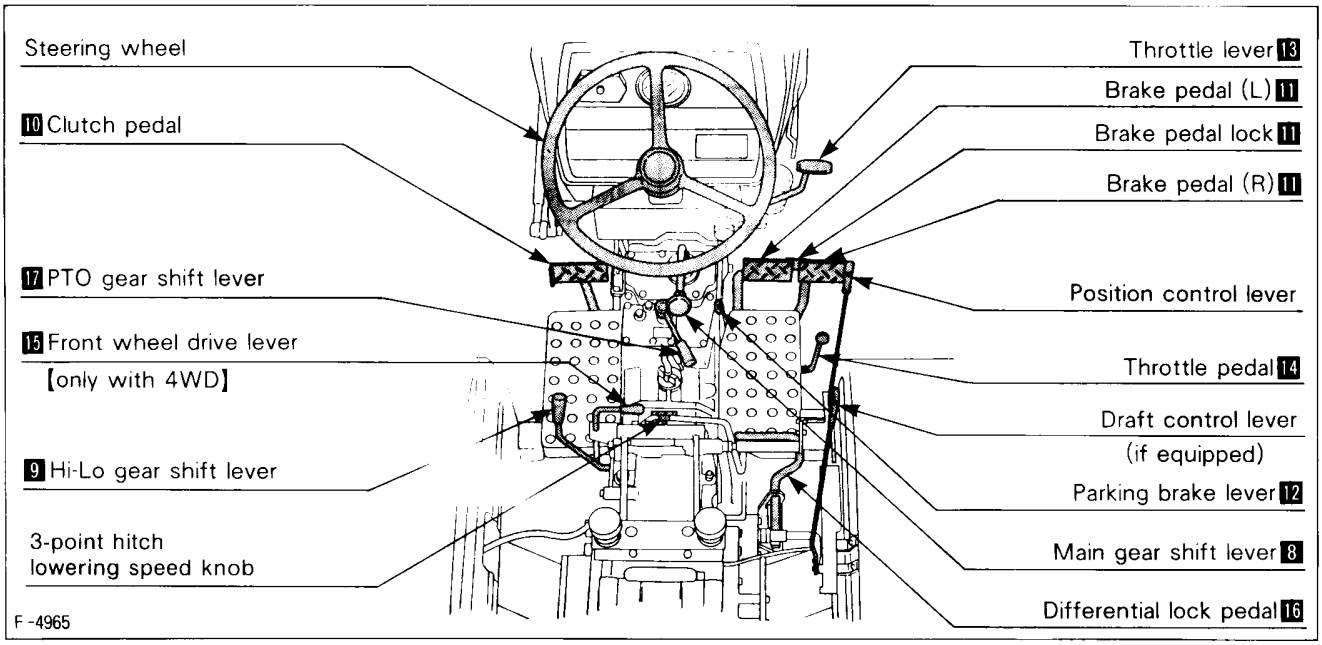
4 Fuel gauge [4WD]

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



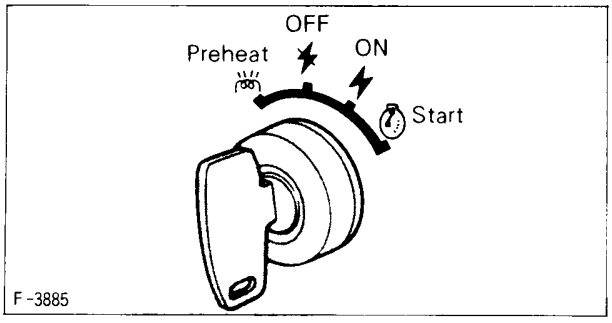
5.2 CONTROLS





5 Key Switch

- OFF····· The position where the key can be inserted into or removed from the key switch.
- ON····· The engine keeps running.
- Preheat····· The combustion chamber is heated.
- Start····· Depress the clutch pedal fully and turn the key switch to this position to start the engine.



IMPORTANT:

- Because of the safety device, the engine may not be started except when the clutch is disengaged.

6 Head Light Switch, Hazard Light Switch (if equipped)

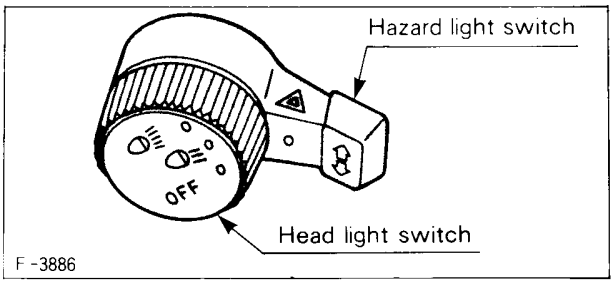
OFF ····Head lights OFF.

≡D·····Head lights dimmed, low beam.

≡D·····Head lights ON, high beam.

When hazard light switch is turned to either direction, the hazard lights blink.

(Hazard light is standard for USA)



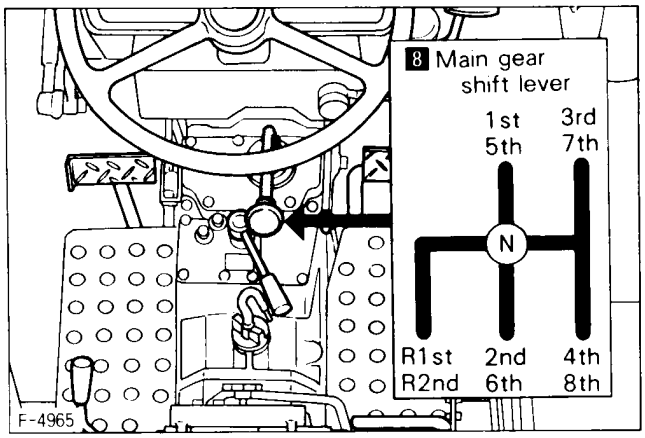
7 Glow Plug Indicator (Pre-heating Indicator)

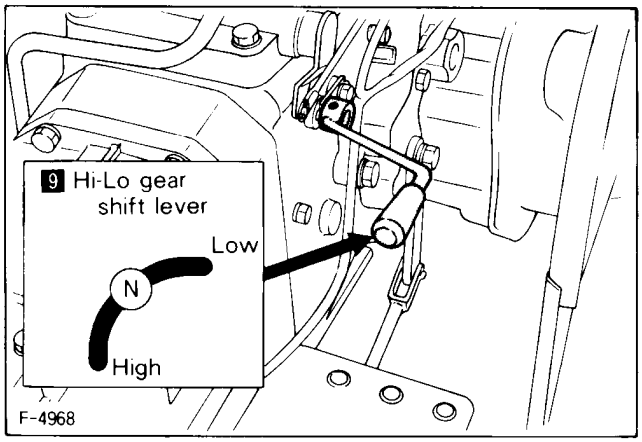
When the key switch is turned to the left, the glow plug indicator becomes red. This shows the condition of pre-heating in the combustion chamber.

8 9 Main Gear Shift Lever & Hi-Lo Gear Shift Lever

The main gear shift lever pattern is in the form of an "H". The Hi-Lo gear shift lever moves in the form of "I" in three stages, "high", "neutral" and "low".

By combination and use of the main gear shift lever and the Hi-Lo gear shift lever, eight forward speeds and two reverse speeds are obtained.



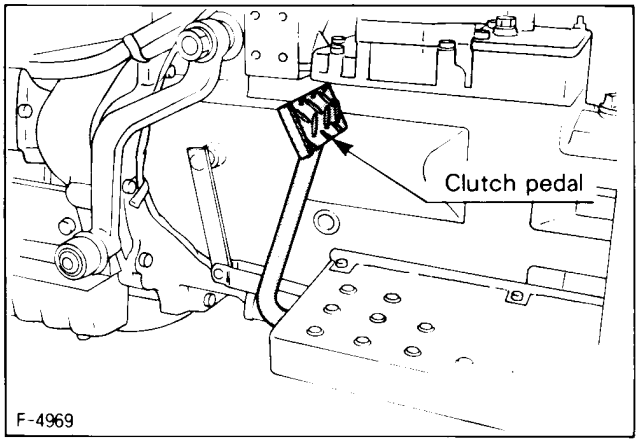


IMPORTANT:

- **To change gears press the clutch pedal completely down and stop the tractor.**

10 Clutch Pedal

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



IMPORTANTS:

(1) The clutch pedal must be quickly disengaged and be slowly engaged.

(2) Never operate the tractor with your foot resting on the clutch pedal. Doing so may contribute to premature clutch wear.

(3) While the tractor is traveling on a road, or when PTO power is not used, place the PTO lever in neutral.

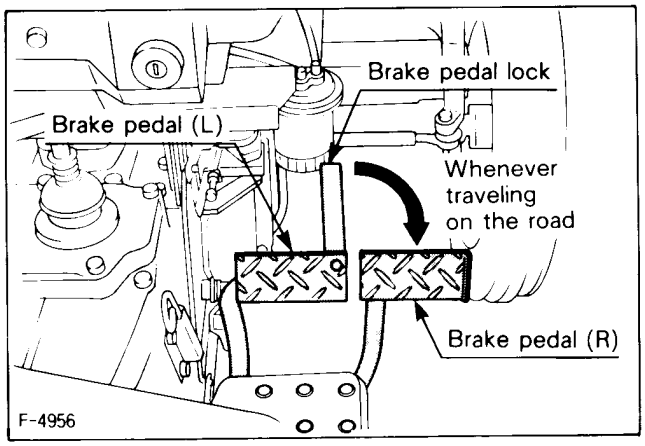
11 Brake Pedals (Right and Left)

WARNING:

- **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.

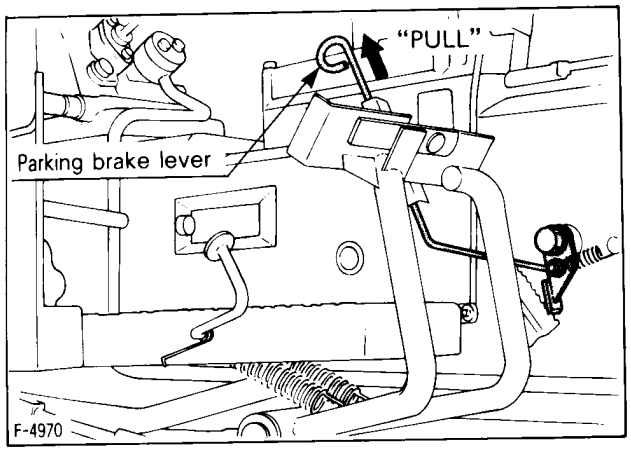
(2) Use individual brakes to assist in making sharp turns at slow speeds (Field Operation Only). Disengage the brake pedal lock and depress only one brake pedal to do this.



12 Parking Brake Lever

(1) To set the parking brake;
- Interlock the brake pedals.
- Depress the brake pedals.
- Latch the brake pedals with the parking brake lever.

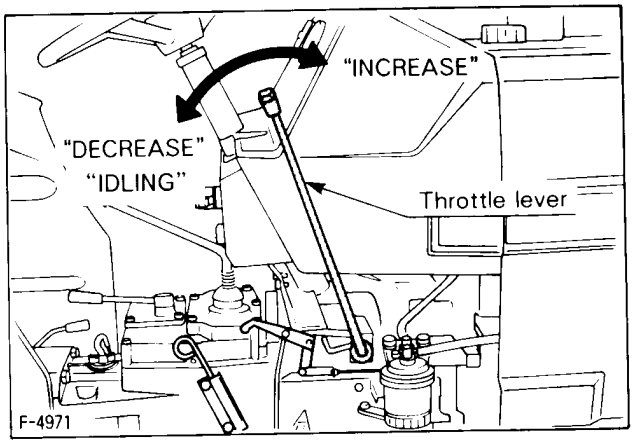
(2) To release the parking brake, depress the brake pedals again.



IMPORTANT:
- Be sure to release the parking brake before attempting to move the tractor.

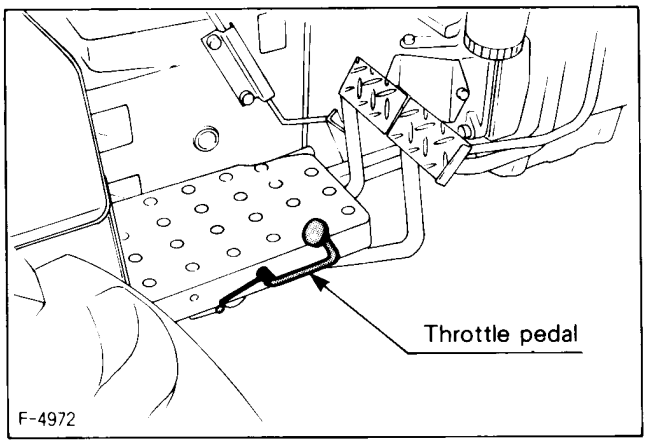
13 Throttle Lever

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



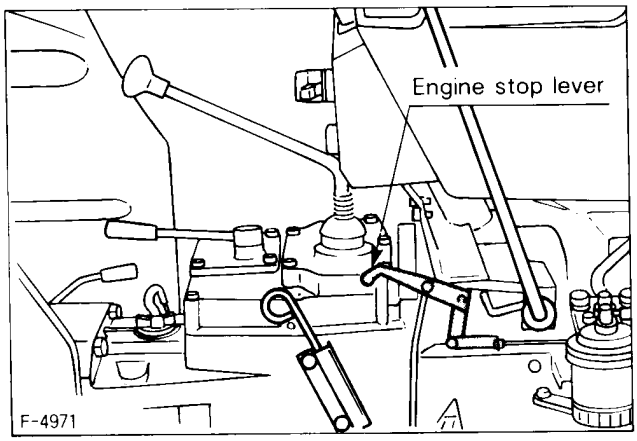
14 Throttle Pedal

Depressing the pedal increases engine speed.
The throttle pedal may also be used to increase engine speed above what is set by the throttle lever.



■ Engine Stop Lever

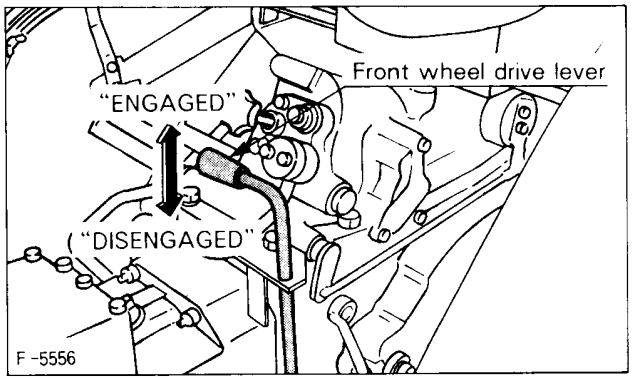
Pull engine stop lever upward and hold to stop engine.



The lever remains in the stop position.

15 Front Wheel Drive Lever [4WD]

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



IMPORTANTS:

(1) Depress the clutch pedal before engaging the front wheel drive lever.
(2) If the front wheel drive lever is difficult to disengage, turn the steering wheel in either direction, and the lever will disengage easily.

◆Front wheel drive is effective for the following jobs:

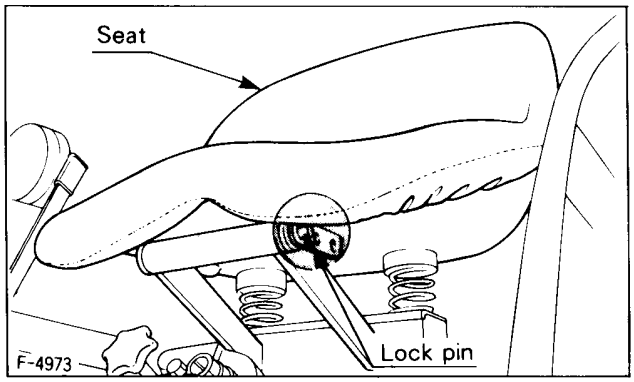
(1) When greater pulling force is needed, such as working in a wet field, when pulling a trailer, or when working with a front-end loader.
(2) When working in sandy soil.
(3) When working on a hard soil where a rotary tiller might push the tractor forward.

CAUTION:

- Do not engage the front wheel drive lever while the tractor is traveling on a paved road or traveling at road speed. The tires may wear down quickly. An accident may occur if the tractor is suddenly braked.

■ Operator's Seat

The seat can be adjusted to three pre-set positions at the operator's convenience. To adjust, lift the front of the seat and resetting the lock pin from one to another hole.

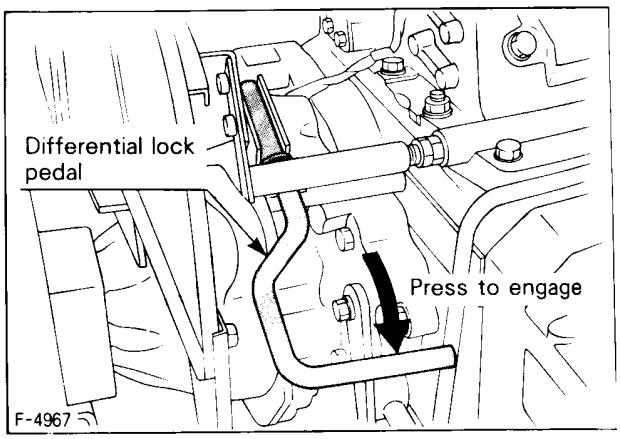


16 Differential Lock Pedal

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

Differential locking is maintained only while the pedal is depressed.

Refer to "Differential lock" on page 28.



IMPORTANT:

- If the differential lock cannot be released in the above manner, step lightly on the brake pedals alternately.

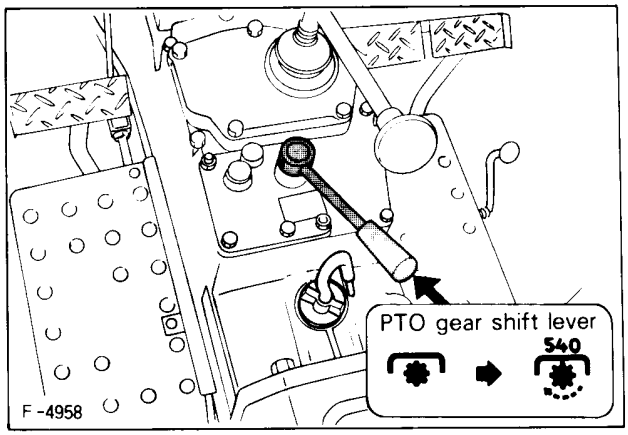
WARNING:

- **It is extermely dangerous to attempt to turn the tractor to either direction with the differential lock engage. Be sure to release the lock before making such a turn.**

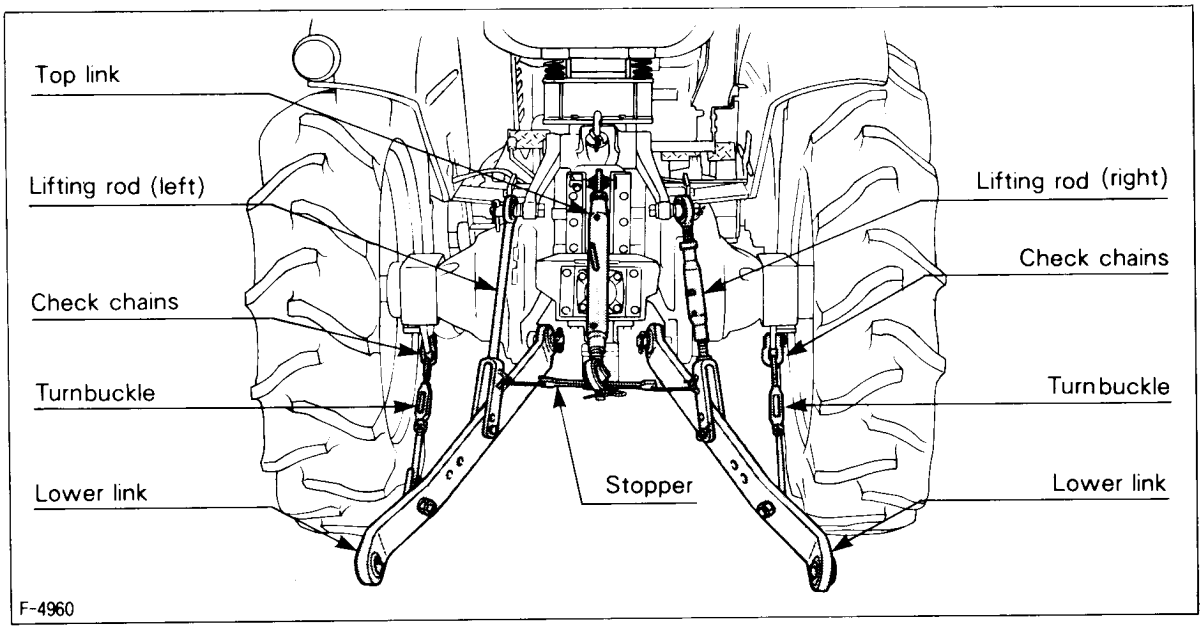
5.3 PTO OPERATION

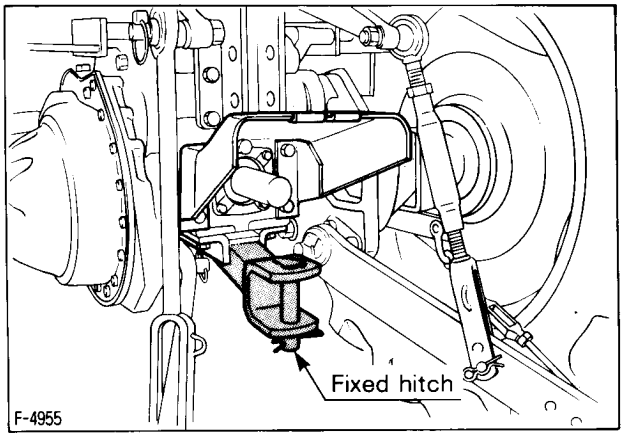
17 PTO Gear Shift Lever

The tractor has a 540 rpm speed position and a neutral position. For standard 540 rpm PTO speed,operate the engine at 2430 engine rpm.



6. THREE-POINT HITCH & DRAWBAR





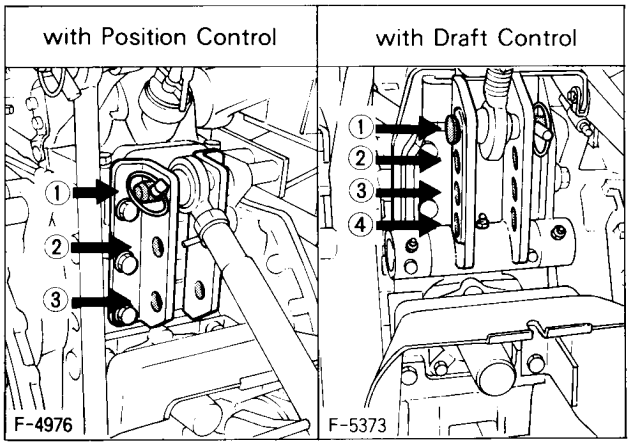
CAUTION:

- **Never pull from top link, the rear axle or any point above the drawbar or hitch. Doing so colud cause the tractor to tip over rearward causing personal injury. For pulling, attach to the drawbar or hitch. Use the 3-point hitch only with equipment designed for 3-point hitch usage.**

■ Top Link Mounting Holes (if equipped)

Select the proper set of holes by referring to the "Hydraulic Control Reference Chart" on page 21.

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



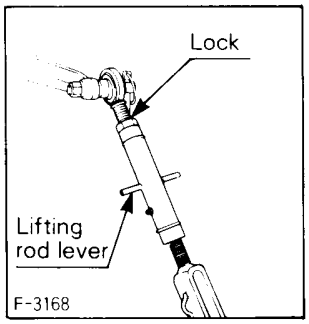
■ Adjustment of Top Link

(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.

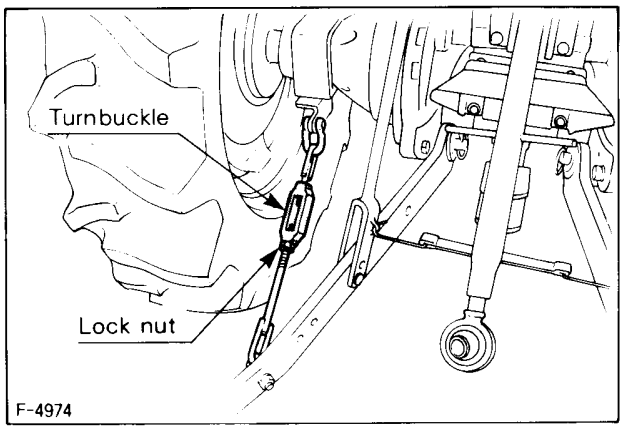
■ Adjustment of Lifting Rod

Level a 3-point mounted implement from side to side by turning the lifting rod lever to shorten or lengthen the adjustable lifting rod.



■ Adjustment of Check Chains

Adjust the turnbuckle to control horizontal sway of the implement.



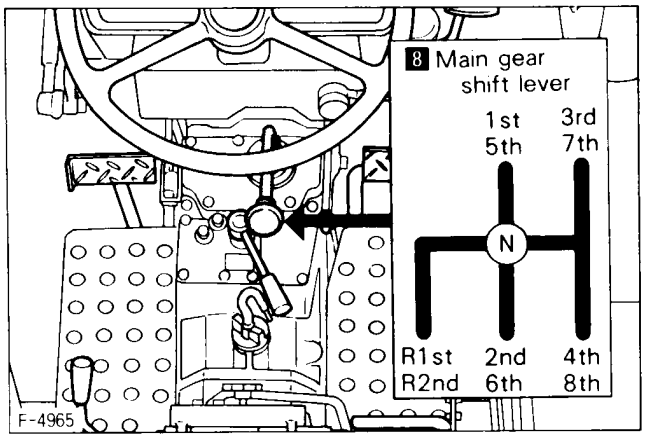
7 Glow Plug Indicator (Pre-heating Indicator)

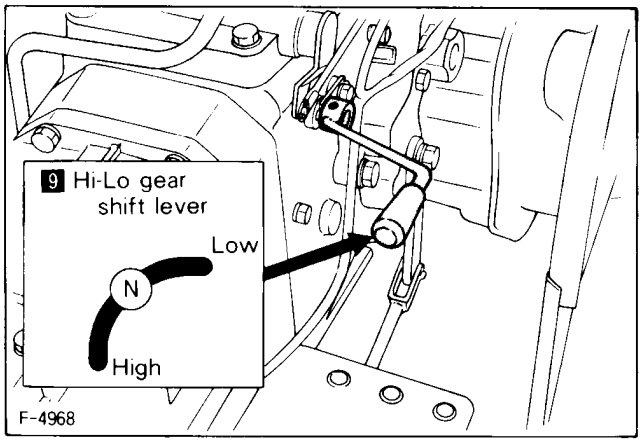
When the key switch is turned to the left, the glow plug indicator becomes red. This shows the condition of pre-heating in the combustion chamber.

8 9 Main Gear Shift Lever & Hi-Lo Gear Shift Lever

The main gear shift lever pattern is in the form of an "H". The Hi-Lo gear shift lever moves in the form of "I" in three stages, "high", "neutral" and "low".

By combination and use of the main gear shift lever and the Hi-Lo gear shift lever, eight forward speeds and two reverse speeds are obtained.



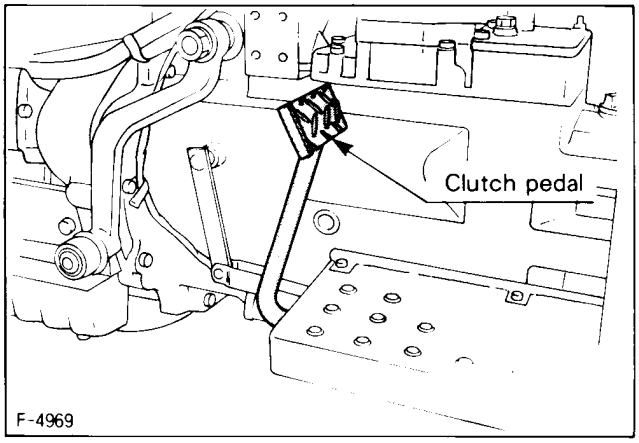


IMPORTANT:

- **To change gears press the clutch pedal completely down and stop the tractor.**

10 Clutch Pedal

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



IMPORTANTS:

(1) The clutch pedal must be quickly disengaged and be slowly engaged.

(2) Never operate the tractor with your foot resting on the clutch pedal. Doing so may contribute to premature clutch wear.

(3) While the tractor is traveling on a road, or when PTO power is not used, place the PTO lever in neutral.

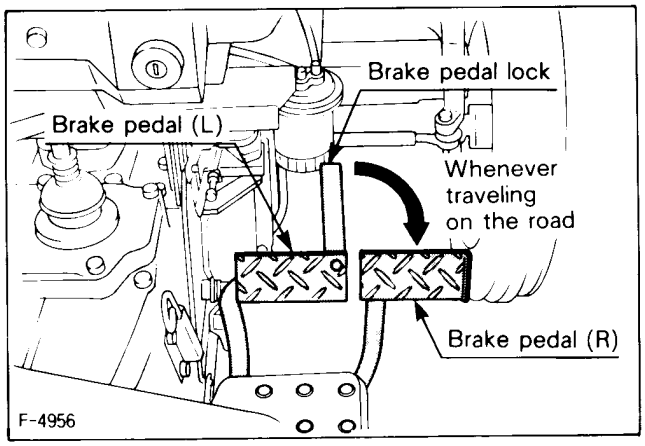
11 Brake Pedals (Right and Left)

WARNING:

- **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 to do this.



7. HYDRAULIC UNIT

The hydraulic unit consists of the lifting system which includes the hydraulic cylinder, control valve, engine driven hydraulic pump and hydraulic lines.

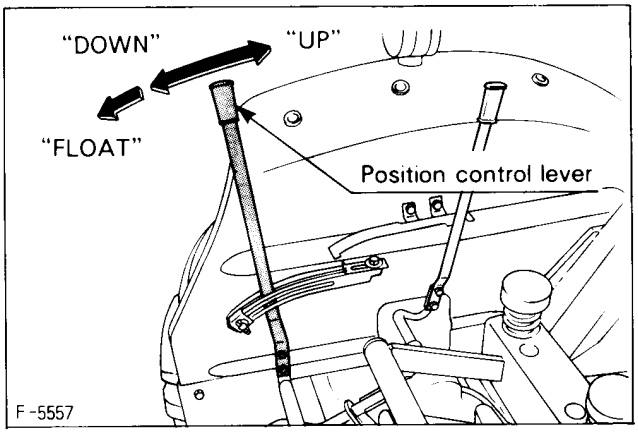
■ Operation

The draft control lever and position control lever controls the 3-point hitch in the following manner.

- Position Control

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

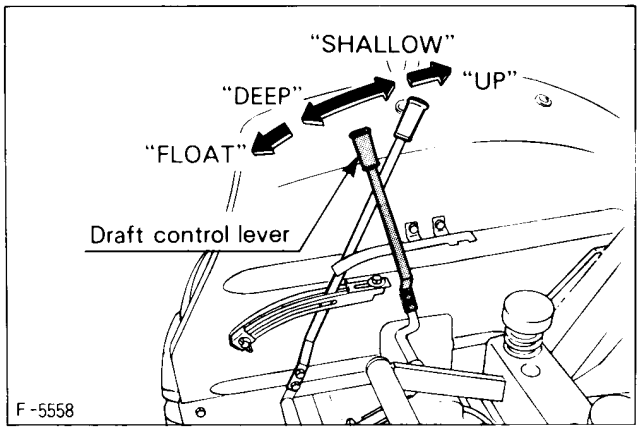
Place the draft control lever to the rear-most position and set the implement working depth with the position control lever.



- Draft Control (if equipped)

This will control the pull of the three-point hitch mounted implement. As the load on the three-point hitch changes due to various soil conditions, the draft control system automatically responds to these changes by either raising or lowering the implements slightly to maintain a constant pull.

Place the position control lever to the rear-most position and set the implement pull with the draft control lever.



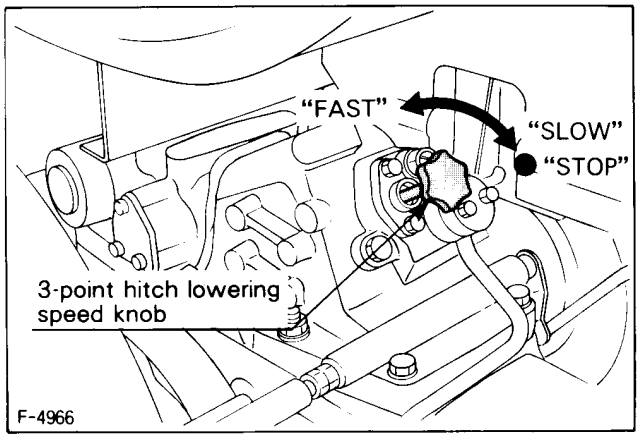
IMPORTANTS:

(1) Do not operate until the engine is warmed up. If operation is attempted while the engine is still cold, the hydraulic system may be damaged.

(2) If noises are heard when the implement is lifting after the hydraulic control lever has been activated, the hydraulic mechanism is not adjusted properly. Unless corrected, the unit will be damaged. Contact your Kubota dealer for adjustment.

■ 3-Point Hitch Lowering Speed Knob

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

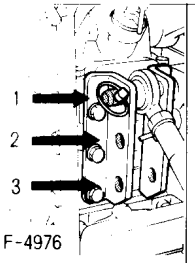
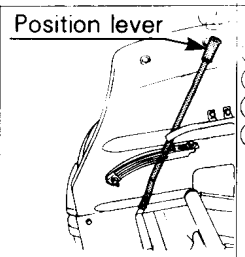
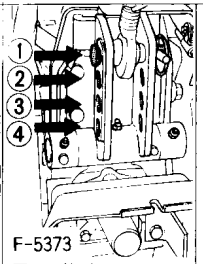
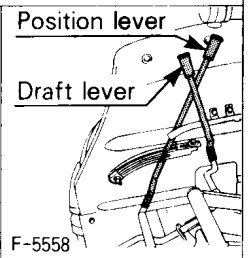
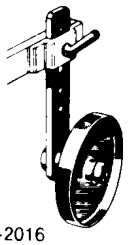
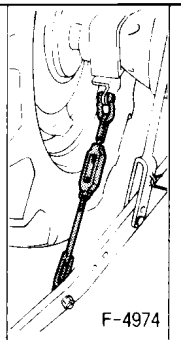


CAUTION:

- **Too fast of a lowering speed may cause damage of injury. Lowering speed of implement should be adjusted to 2 or more seconds.**

■ Hydraulic Control Unit Use Reference Chart

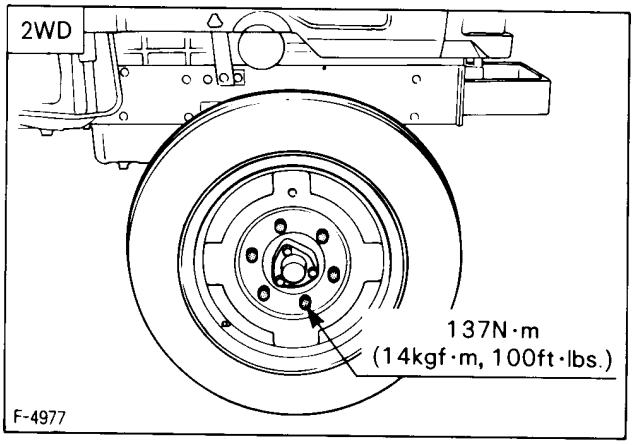
In order to handle the hydraulic unit properly, the operator must be familiar with the following.
Though this information may not be applicable to all types of implements and soil conditions, it is useful for most general situations.

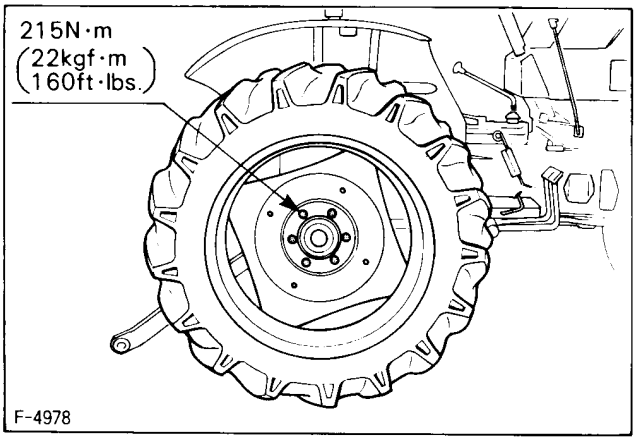
Implement	with Position control			with Draft control				Remarks
	 Soil condition	 F-4976 Top link mounting holes	 F-5558改 Position control lever	 F-5373 Top link mounting holes	 F-5558 Position control lever Draft control lever	 F-2016 Gauge wheel	 F-4974 Check chains	
Moldboard plow	Light soil	1 or 2	Position control	1 or 2	Draft control (Hold the position control lever at the rear most position during operation.)	YES/NO	Loose	Adjust the check chains so that the implement can move 5 to 6 cm (2.0 to 2.4 in.) laterally. Check chains should be tight enough to prevent excessive implement movement when implement is in raised position.
	Medium soil	2 or 3		2 or 3				
	Heavy soil	3		3				
Disc plow	—	2 or 3		2 or 3				
Harrower (spike, springtooth, disc type)	—	2 or 3		2 or 3				
Sub-soiler								
Weeder, ridger					Position control (Hold the draft control lever at the rear most position during operation.)	YES		
Earthmover, digger, scraper, manure fork, rear carrier	—	3		4		YES/NO	Tighten	With implements with gauge wheels, lower the position control lever all the way.
Mower (mid-and rear-mount type) Hayrake, tedder						NO		

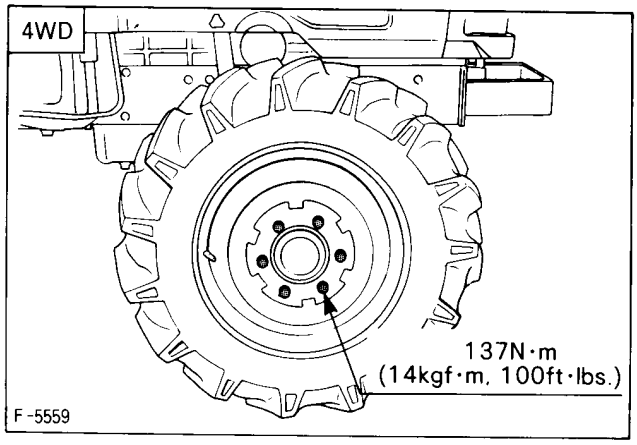
8. WHEELS, TIRES AND BALLAST

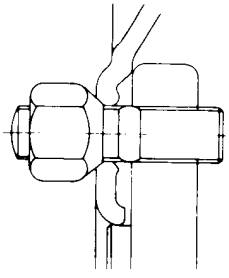
CAUTIONS:
Never operate tractor with a loose rim, wheel, or axle.
(1) Any time bolts and nuts are loosened, retighten to specified torque.
(2) Check all bolts and nuts frequently and keep them tight.

IMPORTANT:
- Follow the same checking procedure when tractor is first used.









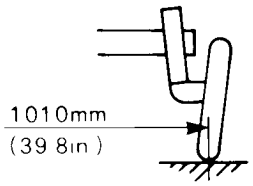
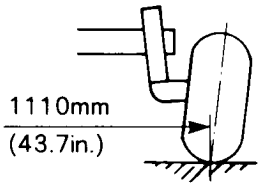
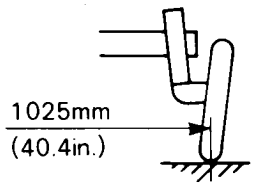
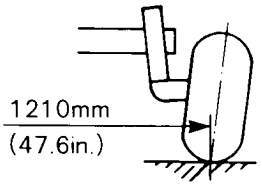
Wheels with beveled or tapered holes:
Use the tapered side of lug nut.

8.1 WHEEL ADJUSTMENT

■ Front Wheels

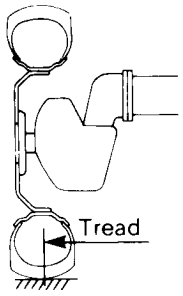
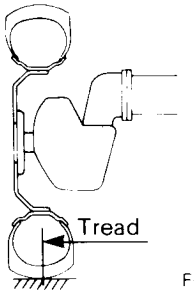
◆2WD (Two Wheel Drive)

Front axle is not adjustable.

4.00—15 Farm	23 × 8.50—12 Turf
 F-3910	 F-3911
5.00—15 Farm	**25 × 8.50—14 Turf**
 F-3910	 F-3911

◆4WD (Four Wheel Drive)

Front axle is not adjustable.

6-14,7-16 Farm	24 × 8.50-14 Turf
 F-3912	 F-3912
1010mm (39.8 in.)	1115mm (43.9in.)

■ Rear Wheels

Rear tread can be adjusted in 4 steps depending on the model. (Shown below are the tread variation with the standard tires.)

To change the rear tread:

(1) Jack up the rear tires.

(2) Follow the illustrations below to get the desired tread width.

CAUTION:

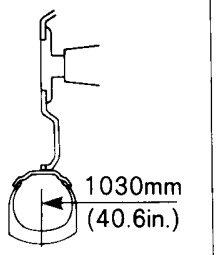
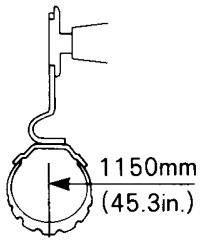
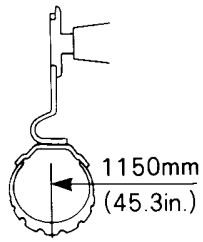
- **When working on slopes or when working with trailer, set the wheel tread as wide as practical for the job for maximum stability.**

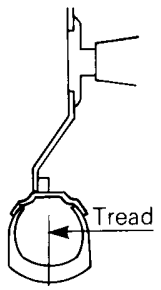
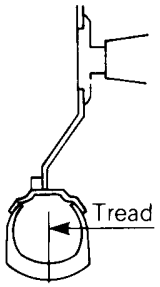
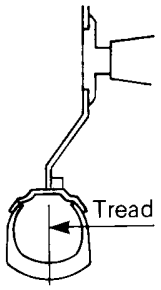
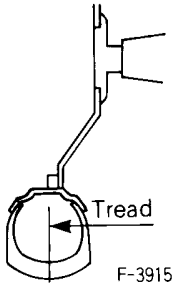
IMPORTANTS:

(1) Always attach tires as shown in the drawings below.

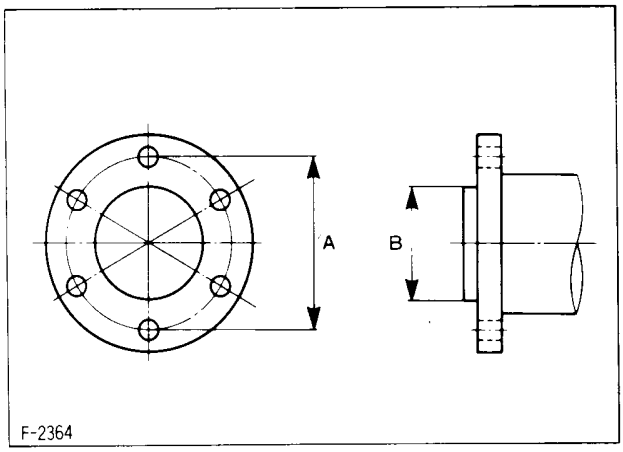
(2) If not attached as illustrated, transmission parts may be damaged.

Do not use tires larger than specified.

9.5—24 Farm	13.6—16 Turf	355/80—D20 Turf
 F-3913	 F-3914	 F-3914

11.2—24 Farm			
			 F-3915
1025mm (40.3in.)	1120mm (44.0in.)	1200mm (47.2in.)	1290mm (50.8in.)

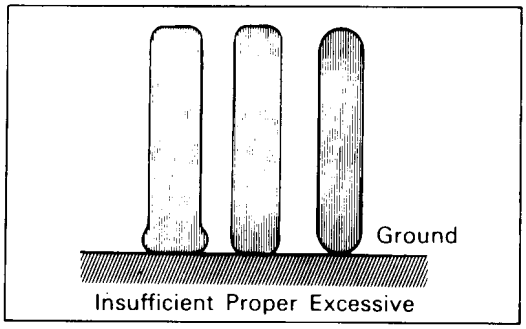
8.2 WHEEL HUB



	Front wheel hub	Rear wheel hub
Bolt circle diameter Ⓐ	152.4 mm (6 in.)	170 mm (6.7 in.)
Number of bolts	6	6
Bolt sizes	M14 × 1.5	M16 × 1.5
Hub pilot diameter B	117.4 mm (4.625 in.)	135 mm (5.315 in.)

8.3 TIRES

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.



CAUTION:

- **Do not attempt to mount a tire. This should be done by a qualified person with the proper equipment.**

■ Inflation Pressure

	Tire sizes	Inflation Pressure
Rear	9.5-24, 4PR	100 kPa (1.0 kgf/cm², 14 psi)
	11.2-24, 4PR	100 kPa (1.0 kgf/cm², 14 psi)
	13.6-16, 4PR	100 kPa (1.0 kgf/cm², 14 psi)
	355/80-D20, 4PR	100 kPa (1.0 kgf/cm², 14 psi)
Front	4.00-15, 4PR	220 kPa (2.2 kgf/cm², 32 psi)
	5.00-15, 4PR	220 kPa (2.2 kgf/cm², 32 psi)
	6-14, 4PR	200 kPa (2.0 kgf/cm², 28 psi)
	7-16, 4PR	180 kPa (1.8 kgf/cm², 26 psi)
	23X8.50-12, 4PR	160 kPa (1.6 kgf/cm², 23 psi)
	24X8.50-14, 4PR	160 kPa (1.6 kgf/cm², 23 psi)
	25X8.50-14, 4PR	160 kPa (1.6 kgf/cm², 23 psi)

8.4 BALLAST

■ Selecting Front Ballast

Add weight to front end if needed for stability.
Heavy pulling and heavy rear mounted implements tend to lift front wheels. Add enough ballast to maintain steering control and prevent tip over.
Remove weight when it is no longer needed. Front weights are available from your Kubota Dealer.
Your dealer can help you decide how much is required for your particular application.

CAUTION:

- **Additional ballast will be needed for transporting heavy integral implements.**
  When the implement is raised, drive slowly over rough ground, regardless of how much ballast is used.

■ Select Rear Ballast Carefully.

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. Rear wheel weights are available or liquid may be added to the rear tires. Consult your Kubota dealer for the correct ballasting necessary for your particular application.

■ Using Liquid Weight 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 also 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. Do not fill any tire more than 75% full (to valve stem level).
Liquid weight per tire (75 Percent filled)

Tire sizes	9.5-24	11.2-24
Slush free at −10°C (14°F) Solid at −30°C (−22°F) [Approx. 1kg (2 lbs.) $CaCl_2$ per 4 ℓ (1 gal) of water]	75 kg (165 lbs.)	103 kg (227 lbs.)
Slush free at −24°C (−11°F) Solid at −47°C (−53°F) [Approx. 1.5 kg (3.5 lbs.) $CaCl_2$ per 4 ℓ (1 gal) of water]	81 kg (178 lbs.)	108 kg (237 lbs.)
Slush free at −47°C (−53°F) Solid at −52°C (−62°F) [Approx. 2.25 kg (5 lbs.) $CaCl_2$ per 4 ℓ (1 gal) of water]	85 kg (187 lbs.)	115 kg (253 lbs.)

IMPORTANT:

- Do not fill front tires with liquid.

9. OPERATING INSTRUCTIONS

Pre-Start Checks

Prior to starting the engine, make pre-start checks according to the Maintenance Check List on page 32.

CAUTIONS:

(1) Read "Safe Operation" in the front of this manual.

(2) Read the warning and caution labels located on the tractor.

9.1 OPERATING THE ENGINE

CAUTIONS:

(1) To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.

(2) Make it a rule to set main gear shift lever, Hi-Lo gear shift lever and PTO speed gear shift lever to the "neutral" positions before starting the engine.

■ Starting

(1) Sit on the operator's seat. If the tractor is equipped with a ROPS, fasten the seat belt.
(2) Set the parking brake.
(3) Place Main gear shift lever, Hi-Lo gear shift lever and PTO speed gear shift lever in the Neutral positions.
(4) Place hydraulic control lever in lowest position.
(5) Set the throttle lever approximately 1/4 of the way forward (approximately 1500 rpm position).
(6) Insert the key into the key switch and turn it on.
(7) Make sure that the engine oil pressure lamp is on.
(8) Fully depress the clutch pedal and turn the key switch left, until the glow plug lamp turns red. Though the preheat turns red in about 10 seconds, it takes at least 20 seconds until the preheating coil in the combustion chamber is fully heated. The lower the ambient temperature, the longer the preheating time.
For the necessary preheating time, refer to the table below:

Temperature	Preheating Time
Over 0°C (32°F)	20 – 30 sec.
0 to –5°C (32 to 23°F)	40 – 60 sec.

(9) Turn the key switch to the starter position and the starter will turn and the engine should start.
(10) Make sure that the engine oil pressure lamp has gone off. If the lamp is still on, immediately stop the engine and check the lubrication system.
(11) Perform warm-up operations by running the engine at the medium speed.

IMPORTANTS:

(1) Do not turn the key switch to start position while the engine is running.
(2) When the temperature is below 0℃ (32°F), place the main gear shift lever in the neutral position and keep the engine at medium speed to warm up the lubricant of engine and transmission at least 10 minutes. If the tractor is operated before the lubricant of engine and transmission is warm enough, the tractor life will be shortened.
(3) Do not operate the tractor under full load condition until it is sufficiently warmed up.
(4) Do not use starting fluid or ether.
(5) Do not leave your tractor in the rain. If it cannot be avoided, cover the muffler pipe to prevent rain drops from entering.
(6) Cold, blue or white exhaust fumes may come out occasionally (about a minute) from muffler, which is not abnormal. If this condition continues apply a load to the engine. Avoid running the engine at slow idle for a long time or repeat unnecessary engine starting procedures.

■ Starting Engine in the Low Temperature Range

Perform the following procedure between the steps (6) and (10) on Starting:

■ Stopping the Engine

Slow engine and apply even foot pressure on both brake pedals. Depress the clutch pedal and place main gear shift lever and PTO gear shift lever in Neutral. Lower equipment. Allow engine to idle for a short time before turning it off.
Stopping a hot engine at high speed may cause internal engine damage.
Set parking brake by lifting the parking brake lever. Pull engine stop lever upward.

IMPORTANTS:

(1) Always remove the key before dismounting.
(2) When you hear the whistle, stop the engine and fill the radiator with clean water after sufficient time to cool.

CAUTION:

- **After operating the tractor or engine, never touch the heat shield or muffler until it has had sufficient time to cool.**

■ 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 or breakage might develop.

CAUTION:

- **Be sure to apply the parking brake during engine warm-up.**

■ Warm-Up and Transmission Oil in the Low Temperature Range

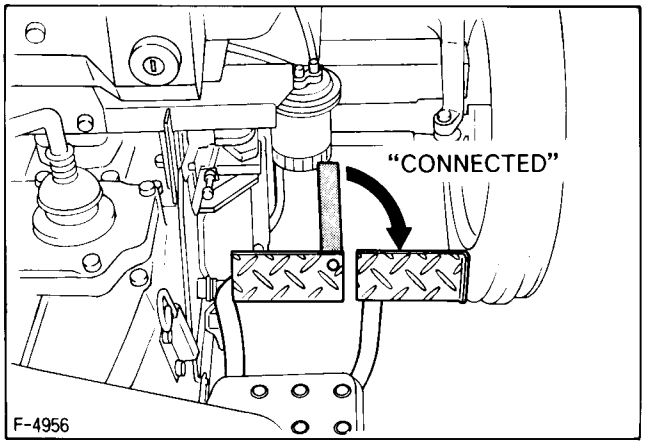
Hydraulic oil serves as transmission oil. In cold weather, the oil may be cold with increased viscosity. This can cause delayed oil circulation or abnormally low hydraulic pressure for some time after engine start-up. This in turn can result in trouble in the hydraulic system. To prevent the above, observe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

Ambient temperature	Warm-up time requirement
Above 0℃ (32°F)	At least 10 minutes
0 to −10℃ (32 to 14°F)	10 to 20 minutes
−10 to −20℃ (14 to −4°F)	20 to 30 minutes
Below −20℃ (−4°F)	More than 30 minutes

9.2 OPERATING THE TRACTOR

■ Starting

(1) If traveling on the road, check to see that the right and left brake pedals are properly connected.



(2) Raise the implement.
(3) Depress the clutch pedal, and shift the main, and range gear shift levers to the desired speed.
(4) Accelerate the engine to a proper level to prevent engine stall.
(5) Unlock the parking brake and slowly release the clutch.

IMPORTANTS:

(1) Be sure to release the parking brake before moving the tractor.
(2) Stop the tractor and change transmission speed only after depressing the clutch pedal all the way.
(3) Avoid slipping the clutch to prolong the clutch service life, paying attention to the following points:
- Do not slip the clutch when changing speed.
- Select proper gear and engine speeds depending on the type of job.
- Do not operate the tractor with your foot resting on the clutch pedal.

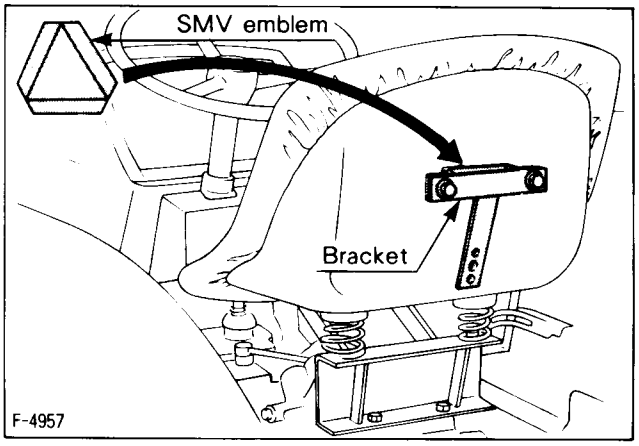
(4) For road travel, start the tractor in a lower gear (3, 7th), and then change to a higher gear (4, 8th). It will prolong the clutch service life.

CAUTIONS:

(1) Sudden release of the clutch may cause the tractor to lunge in an unexpected manner.
(2) 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.
(3) Do not allow any person other than the driver to ride on the tractor.
(4) 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.
(5) 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.
(6) If descending a slope, never disengage the clutch or shift levers to neutral. Doing so could cause the tractor to speed up out of control.
(7) Roll-Over Protective Structure (ROPS) with a seat belt is recommended by Kubota in almost all applications. Refer to the Safety Section.
(8) Do not apply the differntial lock while traveling at road speeds. Doing so could cause the tractor to swerve out of control.

(9) When traveling on road with 3-point hitch mounted implement attached, be sure to have sufficient front weight on the tractor to increase steering stability.

(10) When traveling on a road, attach the SMV emblem to the tractor to identify it as a low speed vehicle.
Observe all traffic regulations.

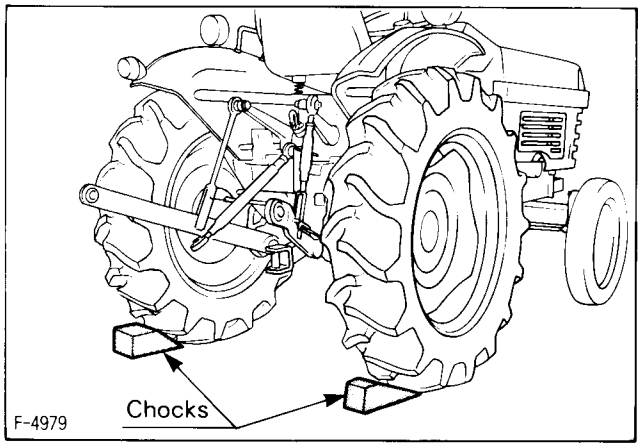


■ Stopping

(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, pull the parking rod to apply the parking brake.

■ Parking

(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.

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

■ Directions for Use of Power Steering

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

■ Differential Lock

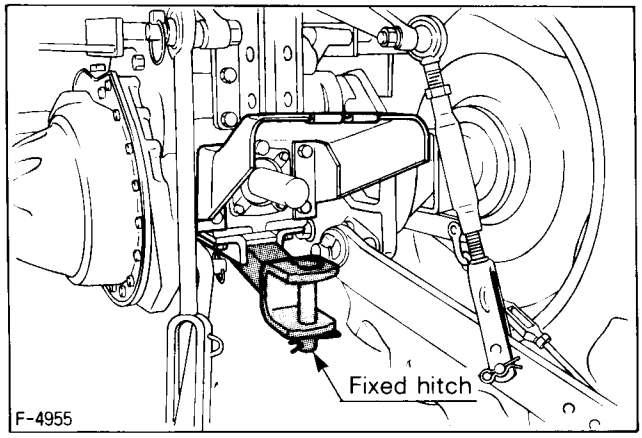
Though very useful when used properly, the differential lock is very dangerous if misused, and may cause breakdown. Use the differential lock in the following cases:

(1) If one wheel is caught in mud and the tractor cannot go forward.
(2) If the wheels slip during plowing operation.

CAUTIONS:
(1) When using the differential lock, always slow the engine down.
(2) The differential lock automatically releases when the pedal is released. If this does not happen, lightly step on the brake pedals alternately, or turn the steering wheel slightly.
(3) Always disengage the differential lock before turning the tractor. It is very dengerous not to do so.
(4) Do not engage differential lock while one wheel is spinning and the other is completely stopped. It may cuase the tractor to lunge unexpectedly.

9.3 PULLING

CAUTION:
- **Never pull from the top link, the rear axle or any point above the drawbar or hitch. Doing so could cause the tractor to tip over rearward causing personal injury. For pulling, attach to the drawbar or hitch. Use the 3-point hitch only with equipment designed for 3-point hitch usage.**



9.4 CHECK DURING DRIVING

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

■ Cooling Water

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

If the temperature of the cooling water rises above 100℃ (212°F), the overheat alarm whistles. Immediately stop the engine and exercise the following checks and remedies, with the safety caution in mind.
(1) Shortage or leakage of the cooling water.
(2) Foreign matter on the radiator net and dust and dirt between the radiator fins and tube.
(3) Loose the fan drive belt.
(4) Blockage in the radiator tube.

■ Engine Oil Pressure Lamp

The pressure lamp signals to the operator that the engine oil pressure is below the prescribed level. If the lamp should go on during operation, immediately stop the engine and check;
(1) The level of the engine oil. (See page 35)
(2) The conditions of the lubrication system.

■ Battery Charge Lamp

The charge lamp signals to the operator that alternator is not charging the battery.
If the lamp goes on during operation, immediately stop the engine and check:
(1) Wiring failure.
(2) Connection failure of alternator and regulator.

■ Fuel

Do not allow the fuel tank to empty completely.
Doing so will allow air to enter into the fuel system. Should this happen, the fuel system must be bled. (See page 33)

■ Exhaust Fumes

(1) Exhasut fumes are colorless at normal output drive.
(2) If the exhaust turns dark continuously during driving, this probably indicates an overburden on the engine.
In such a case, corrective action should be applied to conditions of operation so that subsequent damage to the engine can be avoided.

■ Urgent Stop

Should the following abnormally take place, immediately stop the engine.
(1) The engine suddenly slows down or speeds up.
(2) Unusual noises are suddenly heard.
(3) Exhaust fumes suddenly become very dark.
(4) The engine oil pilot lamp goes on while operating.
(5) The battery charge lamp goes on while operating.
For checks and remedies in the above situations, consult your dealer for instruction.

10. MAINTENANCE

10.1 DAILY CHECK

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

CAUTION:

- **Be sure to check and service the tractor on a flat place with the engine shut off and the parking brake on.**

	No.	Check item	Reference page
Walking around the tractor	1	The tire, pressure, wear and damage	25
	2	Oil and water leaks	–
	3	Engine oil level	35
	4	Transmission fluid level	36
	5	Coolant level in the recovery tank	37
	6	Dust in the air cleaner baffle	39
	7	Radiator screen	–
	8	Damage of tractor body, tightness of all bolts and nuts	–
	9	Damage of the SMV emblem Clean or replace as necessary if equipped	2

	No.	Check item	Reference page
While sitting on the operator's seat	1	Throttle pedal Brake pedals Clutch pedal	–
	2	Parking brake	–
	3	Steering wheel	–
Turning the key switch on	1	Headlights Tail lights Hazard lights (if equipped)	–
	2	Performance of the meters and gauges	–
Starting the engine	1	Color of the exhaust fumes	–
	2	Check the brake for proper operation.	–
Others	1	Check the areas where previous trouble was experienced.	–

10.2 LUBRICANTS

To prevent serious damage to hydraulic systems, use only specified fluid or its equivalent.

<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>29 ℓ
(7.7 U.S.gals.)</td><td colspan="2">No.2—D diesel fuel
No.1—D diesel fuel below —10°C (14°F)</td></tr>
<tr><td>2</td><td>Coolant</td><td>6 ℓ
(6.3 U.S.qts.)</td><td colspan="2">Fresh clean water with anti-freeze</td></tr>
<tr><td>3</td><td>Engine crankcase</td><td>6.3 ℓ
(6.7 U.S.qts.)</td><td colspan="2">● Engine oil: API Service CC or CD
Below 0°C (32°F) — SAE 10W or 10W—30
0~25°C (32~77°F) — SAE 20 or 10W—30
Above 25°C (77°F) — SAE 30 or 10W—30</td></tr>
<tr><td>4</td><td>Transmission case</td><td>28 ℓ
(7.4 U.S.gals.)</td><td colspan="2">● Multi-grade transmission fluid
The transmission fluids listed on page 48 or equivalent are recommended.</td></tr>
<tr><td>5</td><td>Steering gear box
[Manual steering only]</td><td>0.21 ℓ
(0.22 U.S.qt.)</td><td colspan="2" rowspan="2">Gear oil SAE 80 or SAE 90
(See page 48)</td></tr>
<tr><td>6</td><td>Front axle case
[4WD only]</td><td>6 ℓ
(6.3 U.S.qts.)</td></tr>
<tr><td rowspan="11">7</td><td>Greasing
(Refer to page 42)</td><td>No. of greasing points</td><td>Capacity</td><td>Type of grease</td></tr>
<tr><td>● Front wheel hub</td><td>2 [2WD only]</td><td>A small amount</td><td>Bearing grease
(See page 48)</td></tr>
<tr><td>● Knuckle shaft</td><td>2 [2WD only]</td><td rowspan="7">Until grease overflows</td><td rowspan="9">Multipurpose type grease
(See page 48)</td></tr>
<tr><td>● Clutch pedal</td><td>1</td></tr>
<tr><td>● Brake pedal</td><td>1</td></tr>
<tr><td>● Pedal shaft support</td><td>1</td></tr>
<tr><td>● Top link</td><td>2</td></tr>
<tr><td>● Top link bracket</td><td>3</td></tr>
<tr><td>● Lift rod</td><td>1</td></tr>
<tr><td>● Battery terminal</td><td>2</td><td>A small amount</td></tr>
<tr><td>● Clutch release hub</td><td>1</td><td>Grease when disassembled</td></tr>
</table>

10.3 MAINTENANCE CHECK LIST

Items \ Period		Break-In		Indication on hour meter																Since then	Reference page
		25	50	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800		
Engine oil	Change		◎				○				○				○				○	every 200 Hr	35
Engine oil filter cartridge	Replacement		◎								○								○	every 400 Hr	35
Transmission fluid	Change		◎								○								○	every 400 Hr	36
Hydraulic oil filter	Cleaning		◎				○				○				○				○	every 200 Hr	37
Front axle case oil [4WD only]	Change		◎								○								○	every 400 Hr	37
Greasing				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	42
Air cleaner element	Cleaning				○		○		○		○		○		○		○		○	every 100 Hr	39
	Replacement																			every 1 year*	39
Fuel filter element	Replacement										○								○	every 400 Hr	34
Fan belt tension	Check						○				○				○				○	every 200 Hr	44
Battery electrolyte level	Check						○				○				○				○	every 200 Hr	39
Clutch pedal play range	Check				○		○		○		○		○		○		○		○	every 100 Hr	43
Brake pedal play range	Change				○		○		○		○		○		○		○		○	every 100 Hr	43
Toe-in	Check						○				○				○				○	every 200 Hr	44
Fuel line	Check						○				○				○				○	every 200 Hr	34,41
	Replacement																			every 2 year**	41
Radiator hose	Check						○				○				○				○	every 200 Hr	38,41
	Replacement																			every 2 year	38,41
Radiator	Cleaning																		○	every 800 Hr	37,38
Steering gear box oil (Manual steering only)	Check										○								○	every 400 Hr	37
Front axle case front-back play range	Check										○								○	every 400 Hr	45
Front wheel hub bearing [2WD only]	Greasing								○						○					every 300 Hr	42
Valve clearance	Check																		○***	every 800 Hr	—
Fuel injection nozzle injection pressure	Check																		○***	every 800 Hr	—

*Every year or every 6 times at cleaning.

**Replace only if necessary.

***Ask your Kubota dealer to perform this service.

11. CHECK AND MAINTENANCE

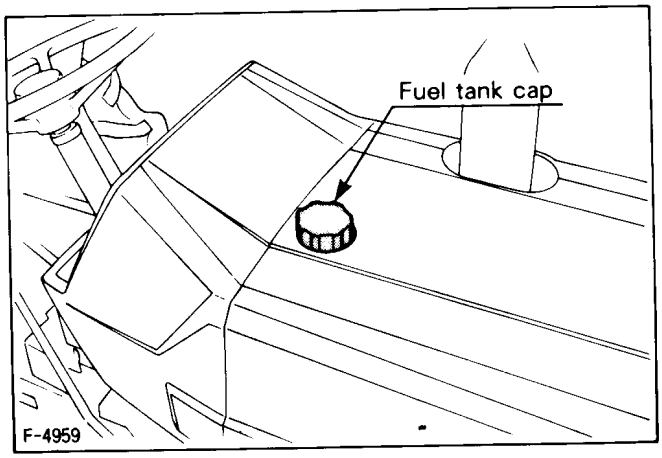
11.1 FUEL

■ Checking and Refueling

CAUTION:

- **Stop the engine before adding fuel. Deep fuel away from sparks and flames.**

(1) Use No. 2-Diesel fuel.
(2) Use No. 1-Diesel fuel, if temperature is below −10℃(14°F).



Fuel tank capacity	29 ℓ (7.7 U.S.gals.)

IMPORTANT:

- Always use a strainer in refueling to prevent fuel injection pump contamination.

■ Fuel Line Bleeding

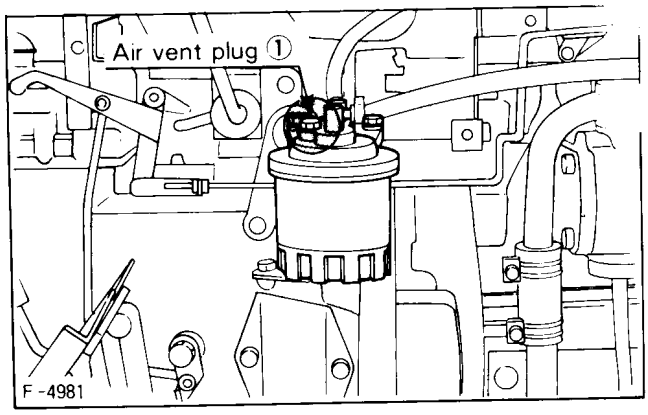
Air must be removed:
(1) When the fuel filter or lines are removed.
(2) When tank becomes completely empty.
(3) After the tractor has not been used for a long period of time.

Bleeding procedure is as follows:

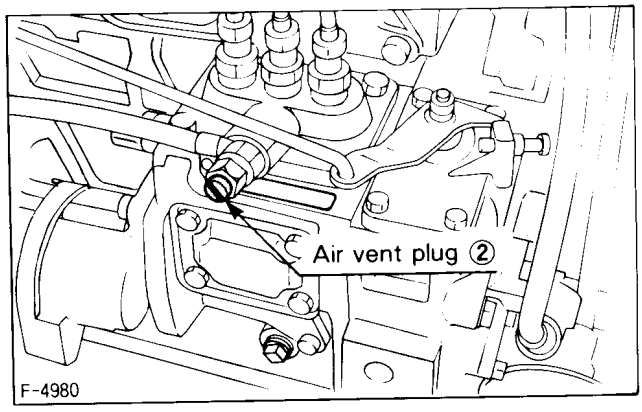
CAUTION:

- **Do not bleed the fuel system when the engine is hot.**

Air venting in the fuel system is as follows.
(1) Fill the fuel tank with fuel.(7.7 U.S. gals : 29 ℓ)
(2) Loosen the air vent plug ① of the fuel filter two or three turns using a wrench.



(3) When there are no more air bubbles in the fuel which flows out, tighten as before.
(4) Loosen the air vent plug ② of the injection pump and vent air in the same way.



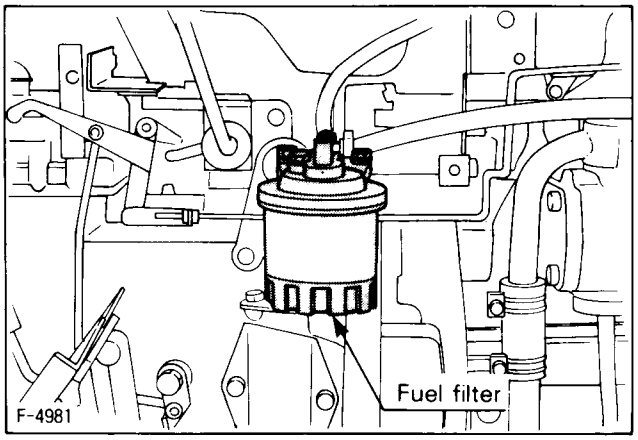
IMPORTANT:

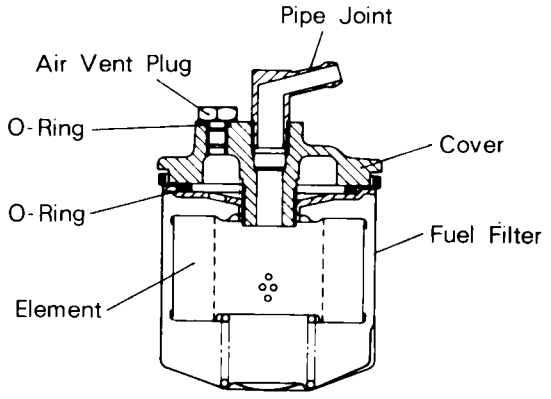
- Always close the air vent plug except for bleeding fuel lines.
  Otherwise, engine runs irregularly or stalls frequently.

■ Fuel Filter Change

When period of operation reaches approx. 400 hours, change the fuel filter.

(1) Empty the fuel out of a fuel tank.
(2) Detach the filter with filter wrench.
(3) Replace with a new one.
(4) Apply a slight coat of fuel to O-ring and then fully tighten by hand.
(5) Bleed the fuel system.





Structure of Fuel Filter

IMPORTANT:

- If dust and dirt enter the fuel, the fuel pump and injection nozzles are subject to quick wear. To prevent this, be sure to replace a fuel filter periodically.

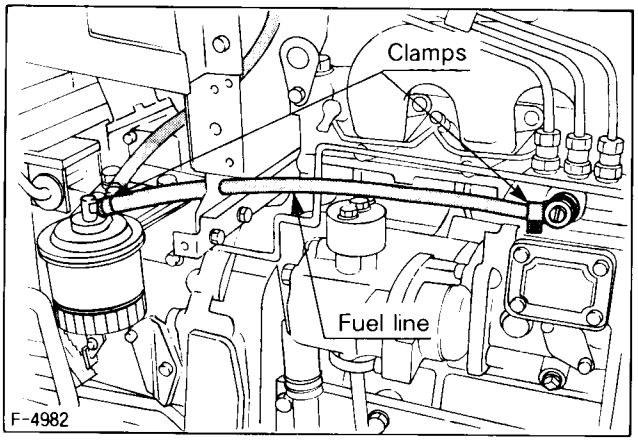
■ Fuel Line Check

CAUTIONS:

(1) Stop the engine when attempting to check the fuel line.
(2) Check the fuel line periodically. The fuel line is subject to wear and aging, fuel may leak onto the running engine, causing a fire.

The fuel line connections should be checked every 6 months or 200 service hours, whichever occurs first.

(1) If the clamp is loose, apply a slight coat of lubricant onto the threads and securely retighten it.



(2) The fuel line is made of rubber and may deteriorate by age.
(3) After inspection, if the fuel line and clamps are found damaged or deteriorated, replace them.
(4) After the fuel line and clamps have been changed, bleed the fuel system.

IMPORTANT:

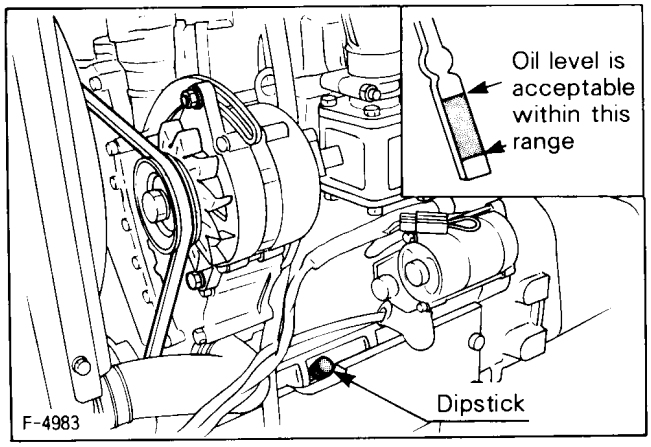
- When the fuel line is disconnected for change, close both ends of the fuel line with a piece of clean cloth or paper to prevent dust and dirt from entering. Dust and dirt may cause a malfunction of the fuel injection pump. In addition, particular care must be taken not to admit dust and dirt into the fuel pump.

11.2 ENGINE OIL

■ Oil Level Check and Replenishment

(See page 32 and 48)

(1) Check engine oil before starting the engine or 5 minutes or more after the engine has stopped.
(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.
(3) If the level is too low, add new oil to the prescribed level.



(4) When using an oil of different manufacturer or viscosity from the previous one, remove all of the old oil.
Never mix two different types of oil.
(5) Use the proper SAE Engine Oil according to the air temperatures.

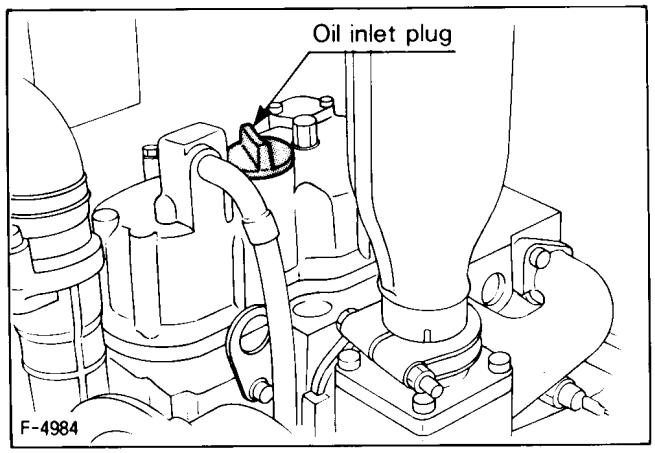
ENGINE OIL VISCOSITY CHART

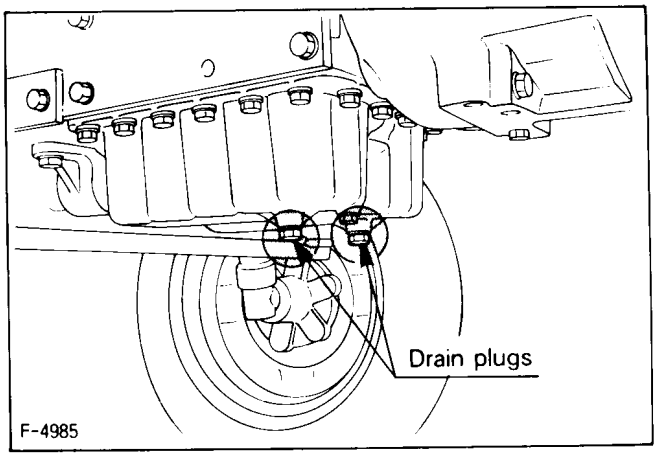
Below0℃ (32°F)	SAE 10W or 10W—30
0~25℃ (32~77°F)	SAE 20 or 10W—30
Above 25℃ (77°F)	SAE 30 or 10W—30

■ Engine Oil Change

CAUTION:
- **Before changing the oil, be sure to stop the engine.**

(1) To drain the used oil, remove the drain plug at the bottom of the engine and drain the oil completely. All the used oil can be drained out easily when the engine is still warm.
(2) Reinstall the drain plug.
(3) Fill with the new oil up to the upper notch on the dipstick.

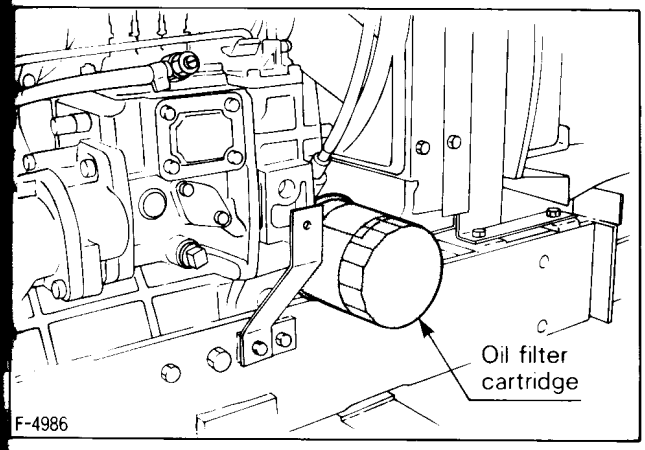




■ Engine Oil Filter Cartridge Change

CAUTION:
- **Be sure to stop the engine before changing the oil filter cartridge.**

(1) The oil filter cartridge must be changed every 400 service hours.
(2) Apply a slight coat of oil onto the cartridge gasket.
(3) To install the new cartridge, screw it on by hand. Overtightening may cause deformation of the rubber gasket.
(4) After the new cartridge has been replaced, the engine oil level will normally lower a little. Add engine oil to proper level. Check for oil leaks around filter gasket.



IMPORTANT:

- To prevent serious damage to the engine, replacement element must be highly efficient. Use only a genuine KUBOTA filter or its equivalent.

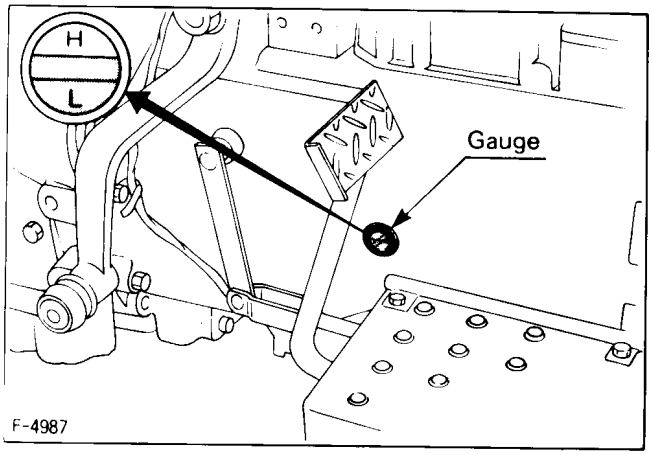
11.3 TRANSMISSION FLUID

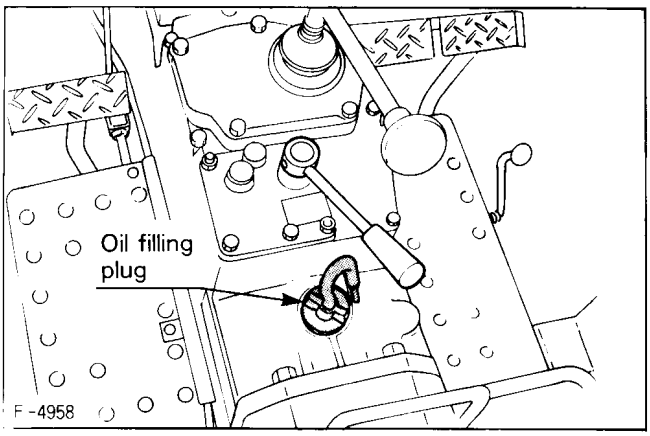
CAUTION:

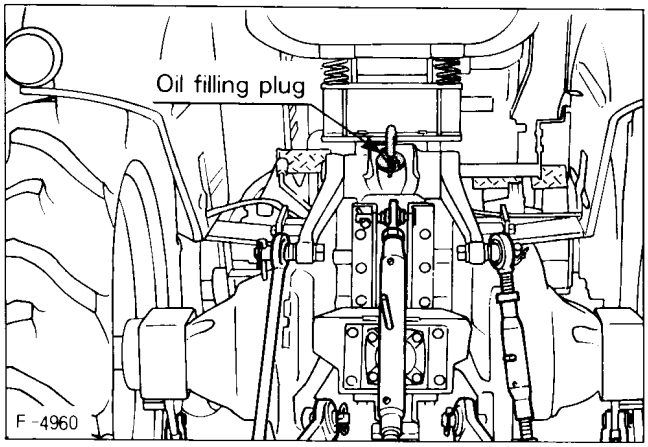
- **Be sure to stop the engine before checking and changing the transmission fluid.**

■ Transmission Fluid Check and Replenishment

View the fluid level through the fluid level gauge.
If low, replenish through the port.
Use multi-grade transmission fluid. (See page 48)



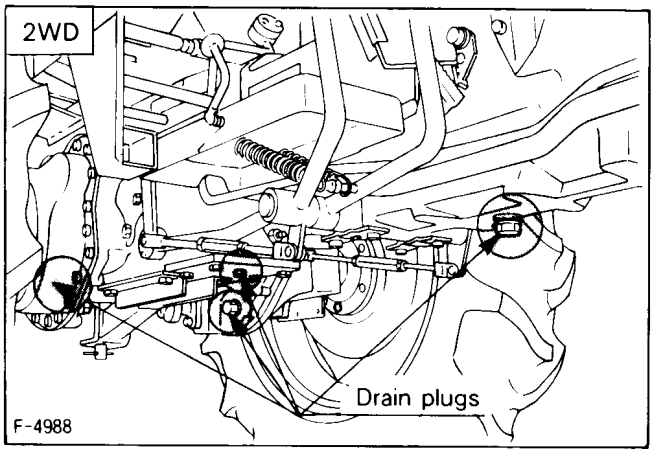


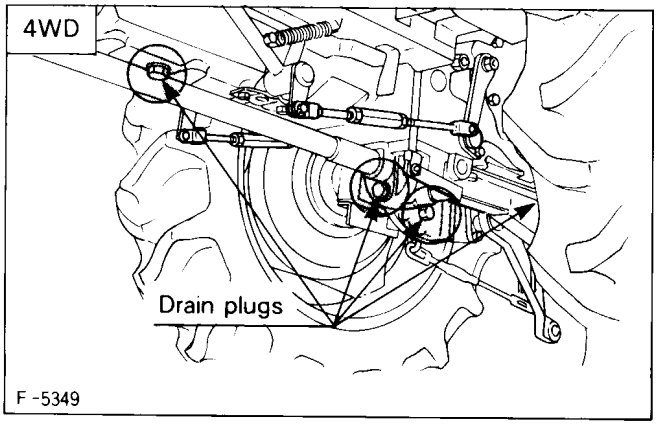


■ Transmission Fluid Change

The fluid in the transmission case is also used for the hydraulic system and power steering system.

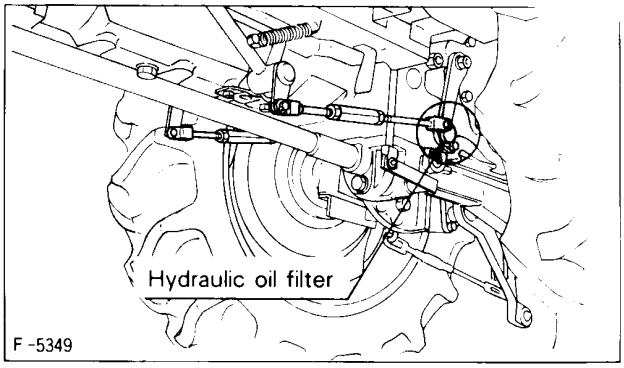
(1) To drain the transmission case, place an oil pan underneath the transmission case and remove the drain plugs at the bottom of the transmission case and the brake case.
(2) After draining install drain plugs and fill with new transmission fluid.
(3) After running the engine for a few minutes, stop it and check the oil level again; add oil to prescribed level.





■ Hydraulic Oil Filter Cleaning

Wash with kerosene light oil.

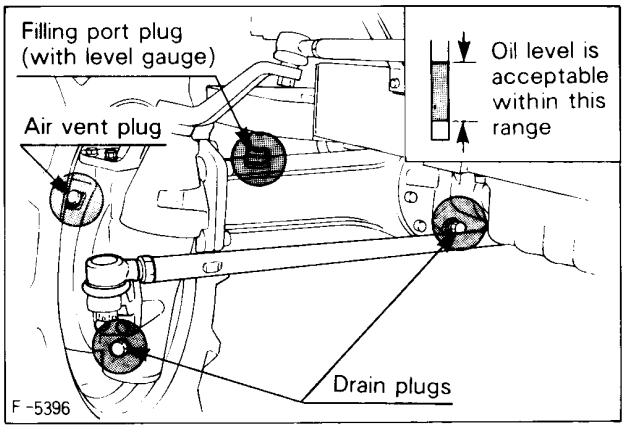


11.4 FRONT AXLE CASE OIL [4WD]

(See page 31,32)

■ Oil Change

Remove the drain, air vent plug and filling port plug. After draining, replace the drain plug and fill with new oil.

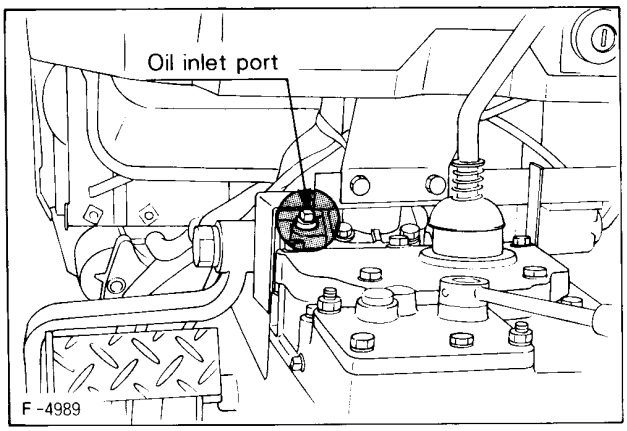


11.5 STEERING GEAR BOX OIL

(See page 31,32)

—Manual Steering Only—

If the oil level is low, fill with gear lube up to the oil inlet port.



11.6 RADIATOR

CAUTION:

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

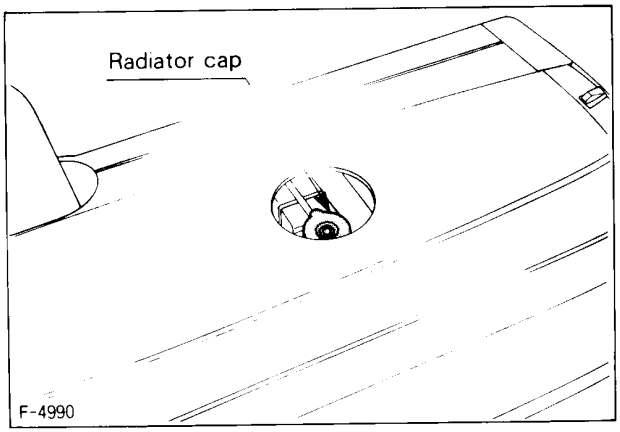
■ Coolant Check, Replenishment and Change

Check the coolant level at the coolant recovery reservoir. If it is low, add the proper mixture of water and anti-freeze up to the full level.

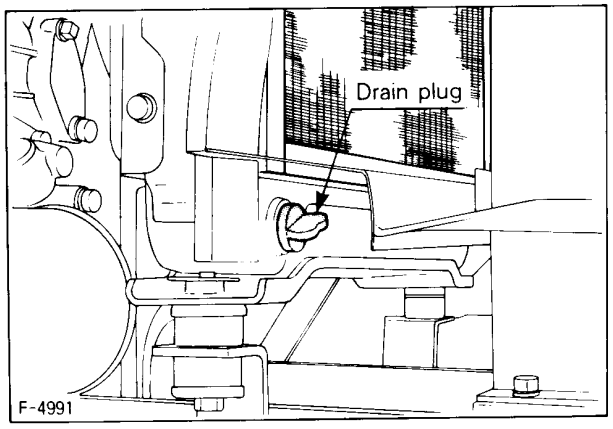
IMPORTANTS:

(1) Use clean, fresh water and anti-freeze to fill the coolant recovery reservoir.

(2) If the radiator cap has to be removed, follow the caution above and securely retighten the cap.



(3) To drain the used coolant, open the radiator drain plug and remove radiator cap. The radiator cap must be removed to completely drain the radiator.



(4) Be sure to close the pressure cap securely. If the cap is loose or improperly closed, water may leak out and the engine could overheat.

(5) Do not use anti-freeze and a scale inhibitor at the same time.

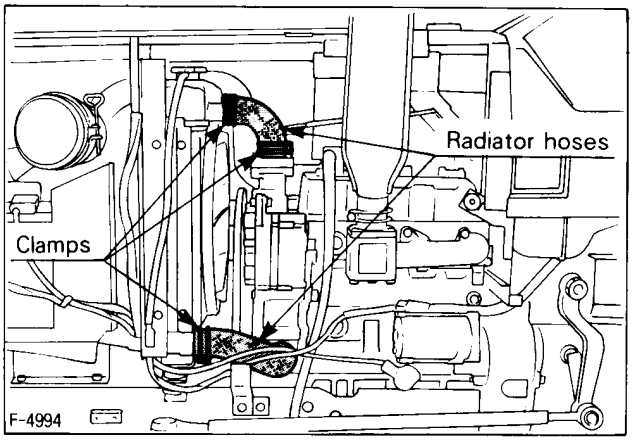
■ Checking Radiator Hoses (water pipes)

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

(1) If clamp bands are loose or water leaks, tighten bands securely.

(2) Replace hoses and tighten clamp bands securely, if radiator hoses are swollen, hardened or cracked.

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



■ 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.

■ Water Leakage Remedy

(1) A small water leak can be eliminated with the Kubota Radiator Cement No.40 or equivalent.

(2) If water leakage should become excessive, consult your local dealer.

■ Cooling System Cleaning

(1) The cooling system should be cleaned on the following occations:

- Every 800 service hours
- When adding an anti-freeze solution.
- When changing from water containing anti-freeze to pure water.

(2) When cleaning the cooling system, Kubota Scale Inhibitor No.20, or its equivalent, is recommended to effectively wash away scale build-up.

■ Anti-Freeze

If the cooling water freezes, the engine cylinder and radiator may crack. In cold weather before the temperature drops below 0℃(32°F), add a proper amount of anti-freeze to the tractor coolant system.

(1) There are two types of anti-freeze solutions, permanent type (PT) and semi-permanent type (SPT). For the Kubota Engine, be sure to use the permanent type.

(2) When anti-freeze is used for the first time, drain and flush the cooling system completely.

(3) The radiator should be filled with 50 percent each of anti-freeze solution and water as recommended by the anti-freeze manufacturer. Most anti-freeze contains a corrosion inhibitor and will allow a higher operating temperature in the radiator during the hot season.

(4) Mix the anti-freeze and the water first, then pour the mixture into the radiator.

(5) When the coolant mixed with anti-freeze decreases due to evaporation, replenish with water only. If loss has been due to leaking, add water and anti-freeze mixture with the same mix ratio as the original preparation.

(6) Anti-freeze solutions absorb moisture, so be sure to securely close the container after use.

(7) Anti-freeze and water should be changed every year.

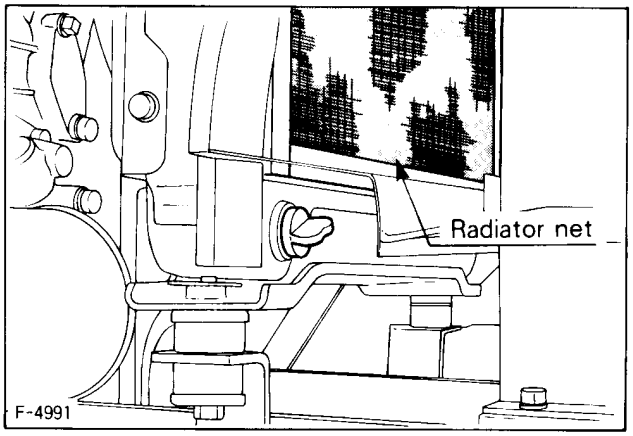
(8) Do not use an anti-freeze and a scale inhibitor at the same time.This may cause sludge to form, adversely affecting the engine.

■ Radiator Net and Radiator Core

Check daily to be sure the radiator net and radiator core are clean.

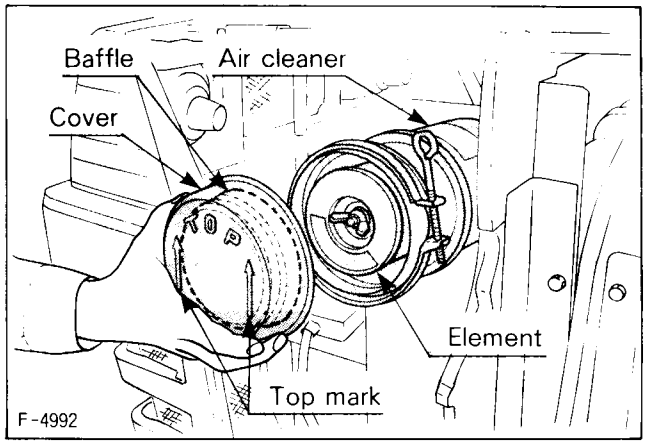
Dirt or chaff in the radiator net and radiator core decrease cooling performance.

In that case, detach the net and remove all the foreign materials from them.



11.7 AIR CLEANER

(1) The air cleaner uses one dry element, never apply oil.
(2) Do not let dust build up to more than the half level in the cover. Detach the baffle from the cover and clean out the dust—normally once a week, everyday in working conditions that are especially dusty.
(3) Do not touch element except in cases where cleaning is required.
(4) When cleaning the element, refer to the instructions below.
(5) If the element is stained with carbon or oil, replace it.
(6) Change the element once yearly or after every sixth cleaning, whichever comes first.



IMPORTANTS:
(1) Be sure to refit the cover with the arrow ⬆ (on the rear) upright. If the cover is improperly fitted, dust passes by the baffle and directly adheres to the element.
(2) Do not run the engine with filter element removed.

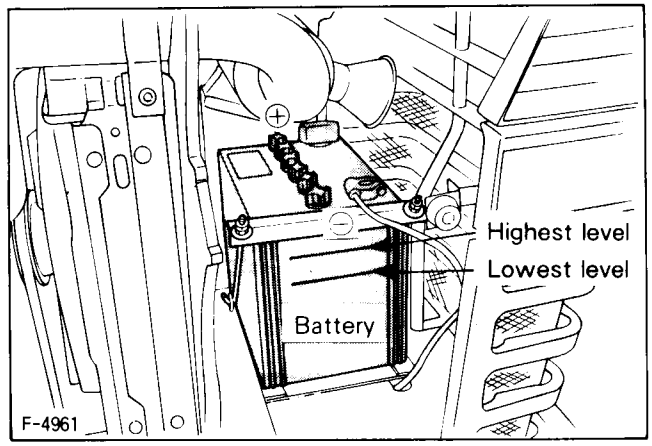
■ Air Filter Element Cleaning

(1) To clean the element, use clean dry compressed air on the inside of the element.
Air pressure at the nozzle must not exceed 0.69MPa (7kgf/cm² ; 100 psi).
Maintain reasonable distance between the nozzle and the filter.
(2) To wash the elements, use Donaldson ND-1500 Filter Cleaner, or its equivalent, which is especially effective on oily and soot-laden filters.
Follow instructions that are supplied with the filter cleaner.

11.8 BATTERY

CAUTION:
- **Never remove the battery cap while the engine is running.**
  Keep electrolyte away from eyes, hands and clothes. If you are spattered with it, wash it away comletely with water immediately.

Mishandling the battery shortens the service life and adds to maintenance costs. Be sure to service it correctly so that it will develop its full potential performance.



CAUTION:
- **Keep open sparks and flames away from the battery at all times, especially when charging the battery. Hydrogen gas mixed with oxygen becomes very explosive.**

(1) If the battery is weak, the engine is difficult to start and the lights become dim.It is important to check the battery daily and recharge before trouble occurs.
(2) The water in the electrolyte evaporates during recharging. Liquid shortage damages the battery. Excessive liquid spills over and damages the tractor body. If low, fill the battery with distilled water.
(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 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 extremely affects the service life.

CAUTION:
- **To avoid accidental short circuit, be sure to attach the positive cable to the positive terminal before the ground cable is attached to the negative terminal.**

IMPORTANT

- If the tractor is to be operated for a short time without a battery (using a slave battery for starting), do not, under any circumstances, interrupt the circuit by switching off the key switch before stopping the engine by means of fuel pump shut-off knob. Use additional current (lights) while engine is running. Insulate terminal of battery cable before starting by means of slave battery. If this advice is disregarded, damage to alternator and regulator may result.

■ Directions for Storage

(1) When storing the tractor for long periods of time, remove the battery from the 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 a month in hot seasons and once every two months in cold seasons.

IMPORTANT:

- The tractor has been shipped with a dry battery. Your dealer will fill it with electrolyte and charge it for initial use.

■ Dry Type Battery Charging

(1) Remove vent plugs and discard temporary sealing tapes.

(2) Fill each cell with electrolyte having a specific gravity given in Table 1 up to the middle levels marked on the battery case side.

Table 1

	AIR TEMPERATURES	
	TEMPERATE Ordinarily below 20°C (68°F)	TROPICAL Frequently above 20°C (68°F)
sp.gr.of Electrolyte for Filling	1.260	1.240
sp.gr.of Electrolyte when fully charged	1.260 to 1.275	1.240 to 1.255

(3) After standing 2 to 3 hours, correct the electrolyte to proper level.

(4) Connect positive terminal ⊕ of battery, with positive terminal of D.C. charging unit, and negative terminal ⊖ with negative terminal.

(5) Batteries are preferably charged by the current shown in Table 2.Keep vent plugs removed during charging.

Table 2

TYPE	Volts (V)	Number of plate per cell	Capacity at		Volume of Electrolyte (ℓ)	Normal Charging Rate (A)	Cold cranking Amps
			20 H.R (A.H)	5 H.R (A.H)			
75D26L	12	13	65	52	4.2	6.5	490

(6) Check temperature of electrolyte, if it reaches 40℃ (104°F), lower the charging rate.When the temperature is too high, reduce charging rate and charge for a proportionately longer period.

(7) If the tractor is stored after original charge, periodically recharge as shown below:

Table 3

Period of storage from manufactured (months)	Recharge (hours)
0—6	about 3~5 hours
6—12	10
over 12	30

A battery is fully charged when the cells are all gassing freely and the specific gravity ceases to rise for three consecutive readings taken at hour intervals. Specific gravity should be adjusted to that shown in Table 1.

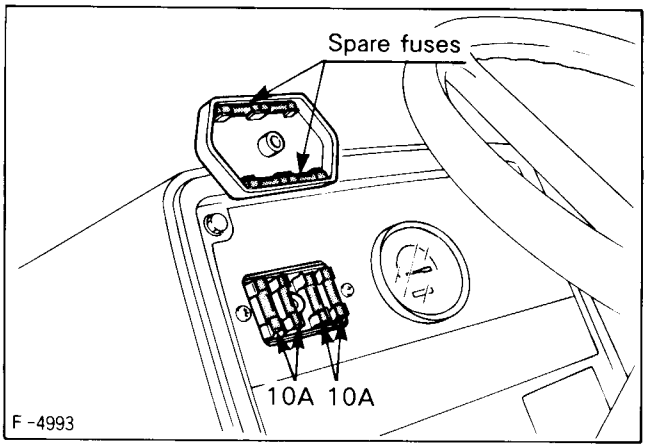
(8) Check electrolyte level two hours after charging has finished and correct if necessary by adding distilled water.

11.9 FUSE AND LIGHT

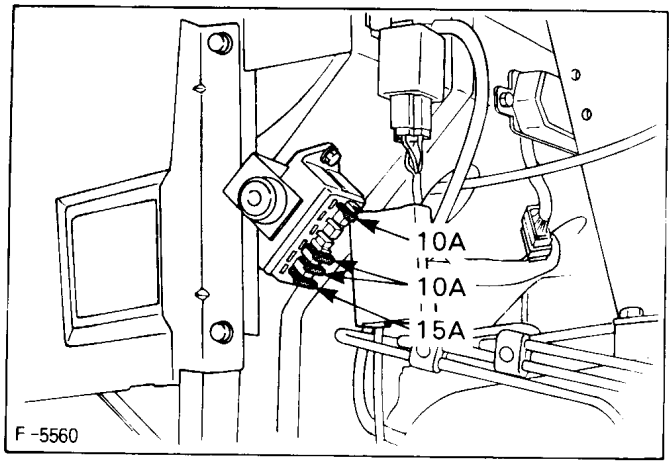
■ Fuses

◆2WD (Two Wheel Drive)

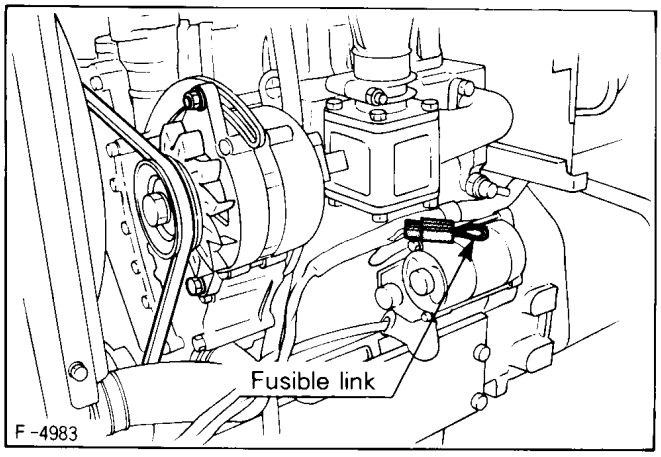
There are four 10 ampere fuses in the fuse box to safeguard the electric circuit. There are also spare fuses.



◆4WD (Four Wheel Drive)
There are three 10 ampere fuses and a 15 ampere fuse in the fuse box to safeguard the electric circuit. There are also spare fuses.



■ Fusible Link (40A)



■ Light Bulb Replacement

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

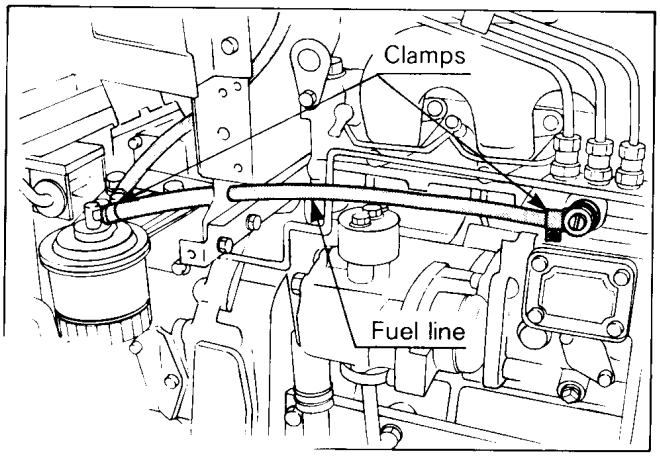
Head light	35W×2	Panel light	2W
Hazard light	23W	Tail light	8W

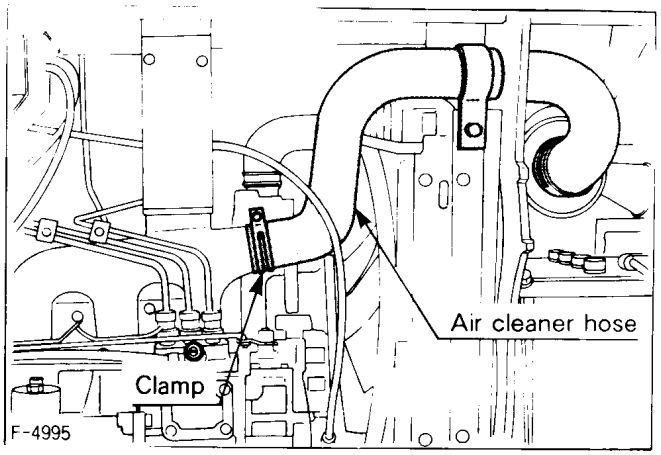
11.10 RUBBER LINES AND HOSES

■ Check and Replacement

Check fuel lines periodically. Replace them when they become deteriorated.

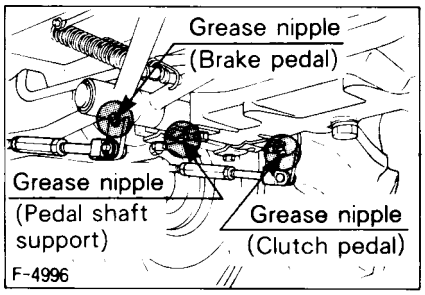
(1) Check frequently to see that hose clamps are tight.
(2) Air must be bled from fuel lines whenever they are removed.

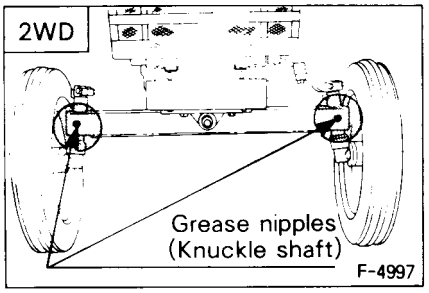


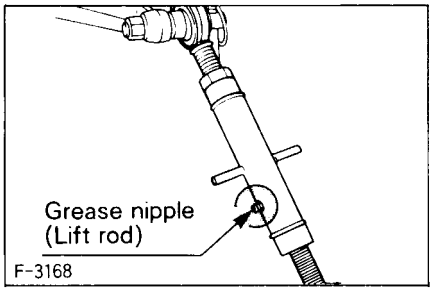


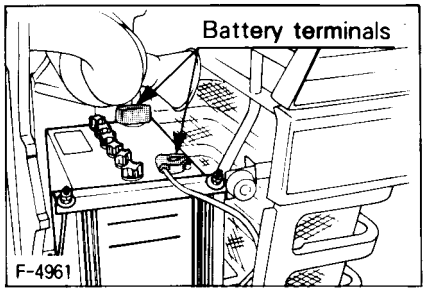
11.11 GREASING POINTS BEFORE STARTING

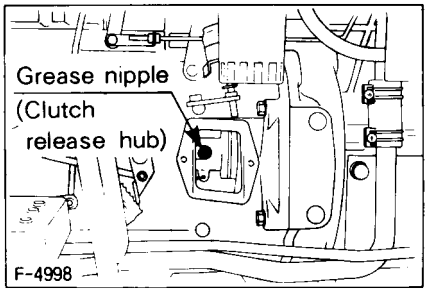
Apply a small amount of multipurpose grease to the following points every 50 hours.

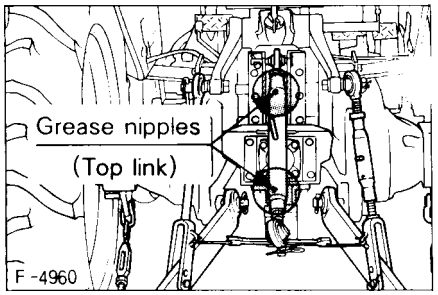


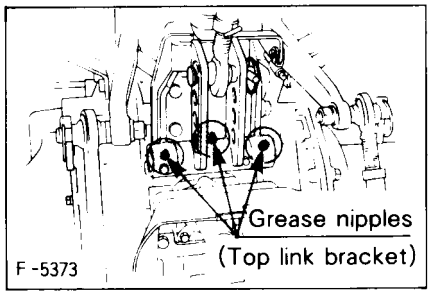






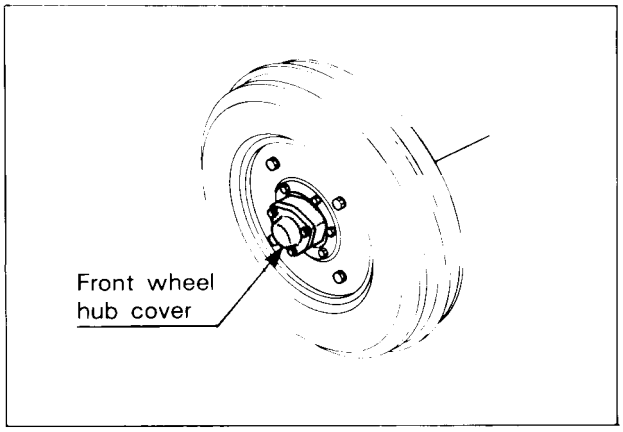






■ Front Wheel Hub 【2WD】

Detach the cover, and apply bearing grease every 300 hours.



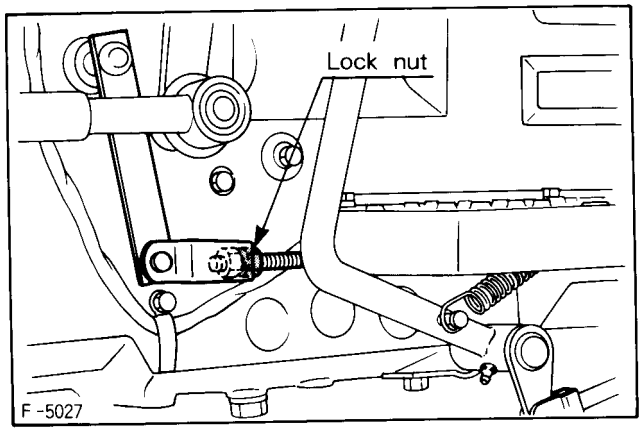
12. ADJUSTMENTS

CAUTION:
- **When making adjustments, park the tractor on flat ground, apply the parking brake, stop the engine and chock the wheels.**

12.1 CLUTCH PEDAL CHECK AND ADJUSTMENT

Proper clutch pedal free travel	20 to 30 mm (0. 8 to 1. 2in.) on the pedal

◆Adjusting procedure
(1) Loosen the lock nut and adjust the rod length.
(2) Retighten the lock nut.

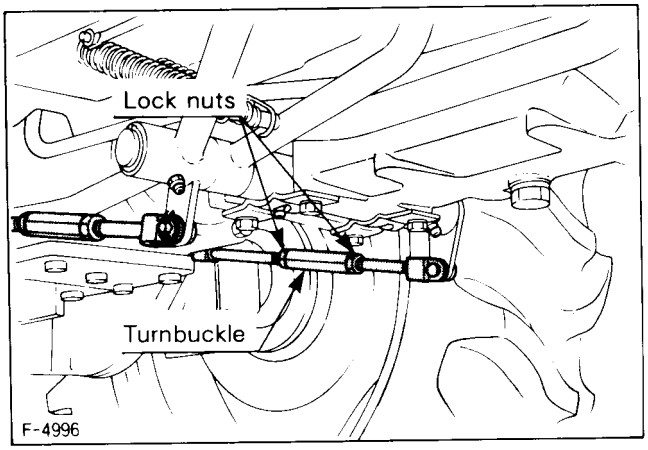


12.2 BRAKE PEDAL CHECK AND ADJUSTMENT

Proper brake pedal free travel	20 to 30 mm (0. 8 to 1. 2in.) on the pedal

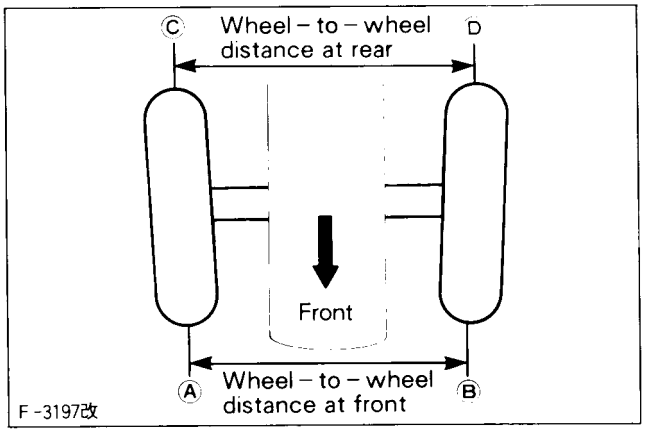
IMPORTANT:
- Keep the free travel in the right and left brake pedals equal.

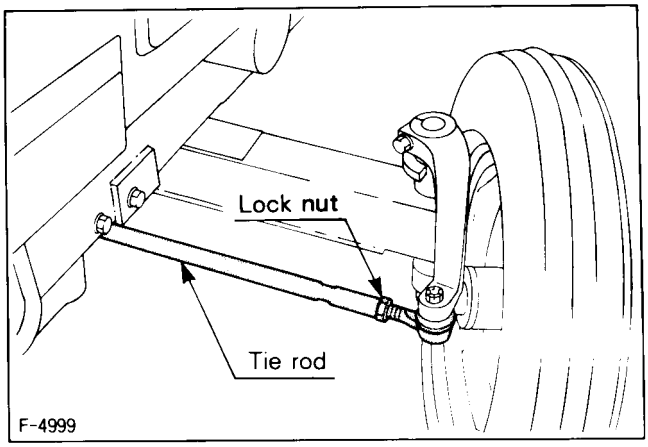
◆Adjusting procedure
(1) Release the parking rod.
(2) Loosen the lock nut, and turn the turnbuckle to adjust the rod length.
(3) Retighten the lock nut.



12.3 TOE-IN CHECK AND ADJUSTMENT

If the amount of toe-in is improper, such troubles as losing direction control and abnormal vibration may arise. Toe-in equals distances Ⓒ Ⓓ — Ⓐ Ⓑ, or 2 to 8mm (0. 1 to 0. 3 in.). To adjust toe-in loosen the lock nut and adjust the length of the rod until the proper toe-in measurement is obtained. Retighten the lock nut.



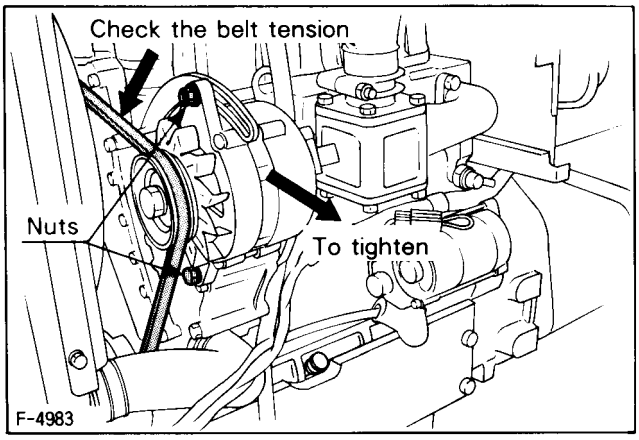


12.4 FAN BELT ADJUSTMENT

Proper fan belt tension	A deflection of about 7mm (0. 3 in.) when the belt is pressed in the middle of the span.

◆ Adjusting procedure

Check the adjustment of the fan belt daily. When correctly adjusted the fan belt should have about 7mm (0. 3 in.) of deflection in the middle of the longest span of the belt. To adjust the fan belt tension, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection on the longest span of the belt falls within acceptable limits.

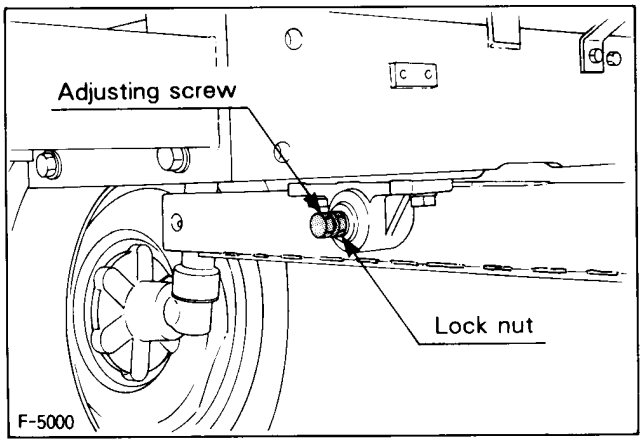


12.5 FRONT AXLE BACK-AND-FORTH PLAY ADJUSTMENT

If the back-and-forth play of the front axle is not proper, such trouble as abnormal front wheel vibration occurs and is transmitted to the steering wheel.

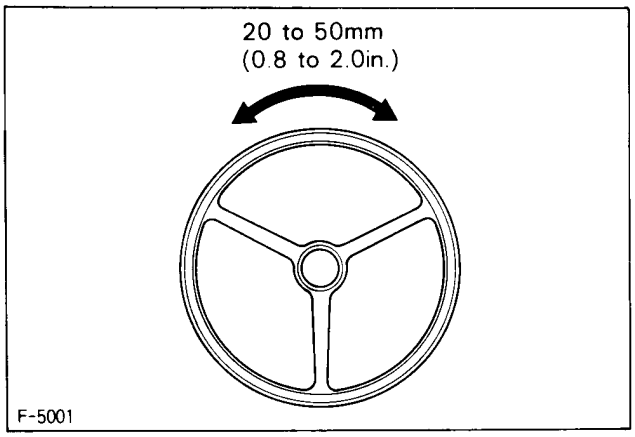
◆Adjusting procedure

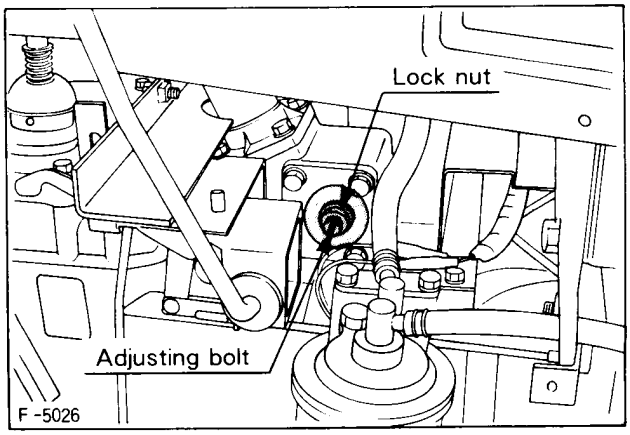
Loosen the lock nut, tighten the adjusting screw all the way, and then loosen the screw by 1/6 turn. Retighten the lock nut.



12.6 STEERING WHEEL ADJUSTMENT

Moderate steering wheel play is 20 to 50 mm (0. 8 to 2. 0 in.). To adjust this, loosen the lock nut and turn the adjusting bolt to the right. After adjustment, securely retighten the nut.





13. STORAGE

CAUTIONS:

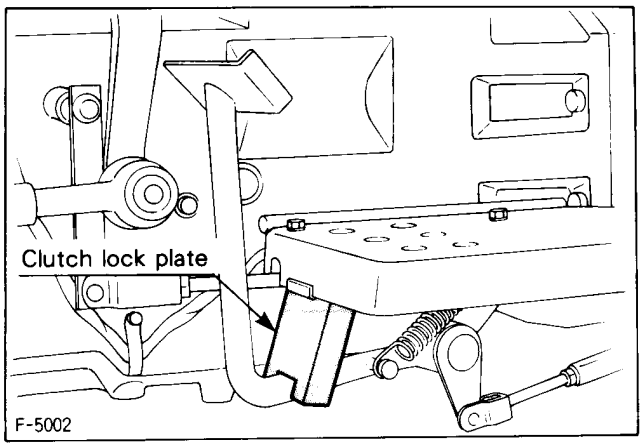
(1) To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.

(2) When storing, remove the key from the key switch to avoid unauthorized persons from operating the tractor and getting injured.

13.1 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 or engine oil to the tractor parts where rust collects easily.
(3) Detach the additional weights from the tractor body.
(4) Inflate the tires to a pressure a little higher than recommended for use.
(5) Change the engine oil and run it to circulate oil throughout its block and internal moving parts for about five minutes.
(6) Pull the engine stop knob all the way out.
(7) Drain and flush the cooling system.
(8) 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.



(9) Keep the PTO clutch lever at "NEUTRAL" position while tractor is stored for a long period of time.
(10) With all implements lowered to the ground, coat any exposed hydraulic cylinder rods with grease.
(11) Remove the battery from the tractor. Store the battery following the battery storage procedures outlined in the maintenance section of this manual.
(12) Recharge the battery even while the tractor is in storage. The battery discharges itself even when not in use; recharge once a month in summer, and every two months in winter.
(13) Keep the tractor in a dry place where the tractor is safe from rain. Cover the tractor.
(14) 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.

IMPORTANTS:

(1) When washing the tractor, be sure to stop the engine. If the engine cannot be stopped, be careful not to allow water to get into the inlet port of the air cleaner. Water in the engine can cause severe trouble.
(2) Cover the tractor after the muffler and the engine have cooled down.
(3) During storage do not leave the key switch on.

13.2 REMOVING THE TRACTOR FROM STORAGE

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

14. 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.		1) No fuel flow.	● Check the fuel tank and the fuel filter. Replace filter if necessary.
		2) Air and water are in the fuel system.	1) Check to see if the fuel line coupler bolt and nut are tight. 2) Bleed the fuel system (See page 33).
		3) In winter, oil viscosity increases, and engine turning is heavy.	● Use oils of different viscosities, depending on ambient temperatures.
		4) Battery becomes weak and the engine does not turn over fast enough.	1) Charge the battery. 2) 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.		1) Insufficient fuel.	● Check the fuel system.
		2) The air cleaner is clogged.	● Clean the element.
Engine stops suddenly.		Insufficient fuel.	1) Refuel. 2) Bleed the fuel system if necessary.
Exhaust fumes are colored.	Black	1) Fuel quality is poor.	● Change the fuel.
		2) Too much oil.	● Check the proper amount of oil.
	Blue White	1) Nozzle trouble.	● Check the nozzle.
		2) Fuel quality is poor.	● Change the fuel.
Engine overheats.		1) Engine overloaded.	● Shift to lower gear or reduce load.
		2) Low coolant level.	● Fill cooling system to proper level; check radiator and hoses for loose connections or leaks.
		3) Loose or defective fan belt.	● Adjust fan belt.
		4) Dirty radiator core or grille screens.	● Remove all trash.
		5) Coolant flow route corroded.	● Flush cooling system.

If you have any questions, contact your Kubota dealer.

15. LUBRICANT SPECIFICATIONS

■ Engine Oil

Oil used in the engine should have an American Petroleum Institute (API) / SAE Classification of service CC or CD. The chart below shows the correct oil to be used at various temperature conditions:

ENGINE OIL VISCOSITY CHART

Below 0°C (32°F)	SAE 10W or 10W—30
0~ 25°C (32~77°F)	SAE 20 or 10W—30
Above 25°C (77°F)	SAE 30 or 10W—30

■ Others

Power steering	Multi-grade transmission fluid (Same as transmission oil)
Front Wheel Bearings [2WD]	SAE lithium based grease
Chassis grease fittings	Multipurpose type grease
Front Wheel Drive Unit [4WD]	SAE 80 or 90 gear oil

■ 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 UDT fluid for optimum protection and performance.

Also the following are recomended oils, by brand name, that may be used in the transmission hydraulic system.

Maker	Brand Name
Atlantic Richfield (Arco)	Arco Tractor Fluid
Chevron	Tractor Hydraulic Fluid
Exxon	Torque Fluid 56
Penzoil	Hydra-Trans and Wet Br.
Phillips	H.T.Fluid
Shell	Donax TD,TT,TM
Texaco	T.D.H.Oil
Union	Hydraulic / Tractor Fluid
Gulf	Universal Fluid 425,350
Mobil	Mobil Fluid 423,350

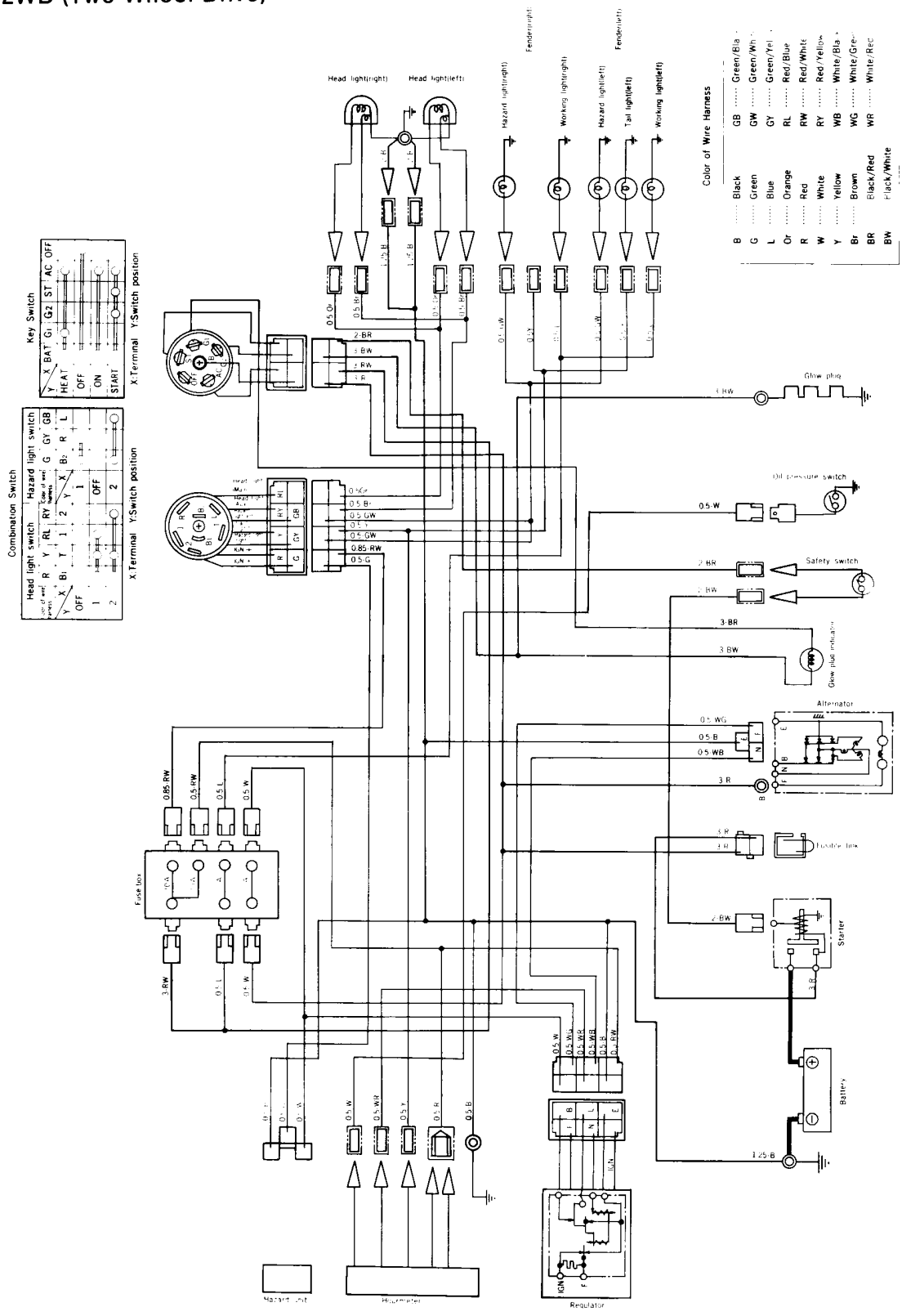
16. OPTIONS

Consult your KUBOTA dealer for detail.

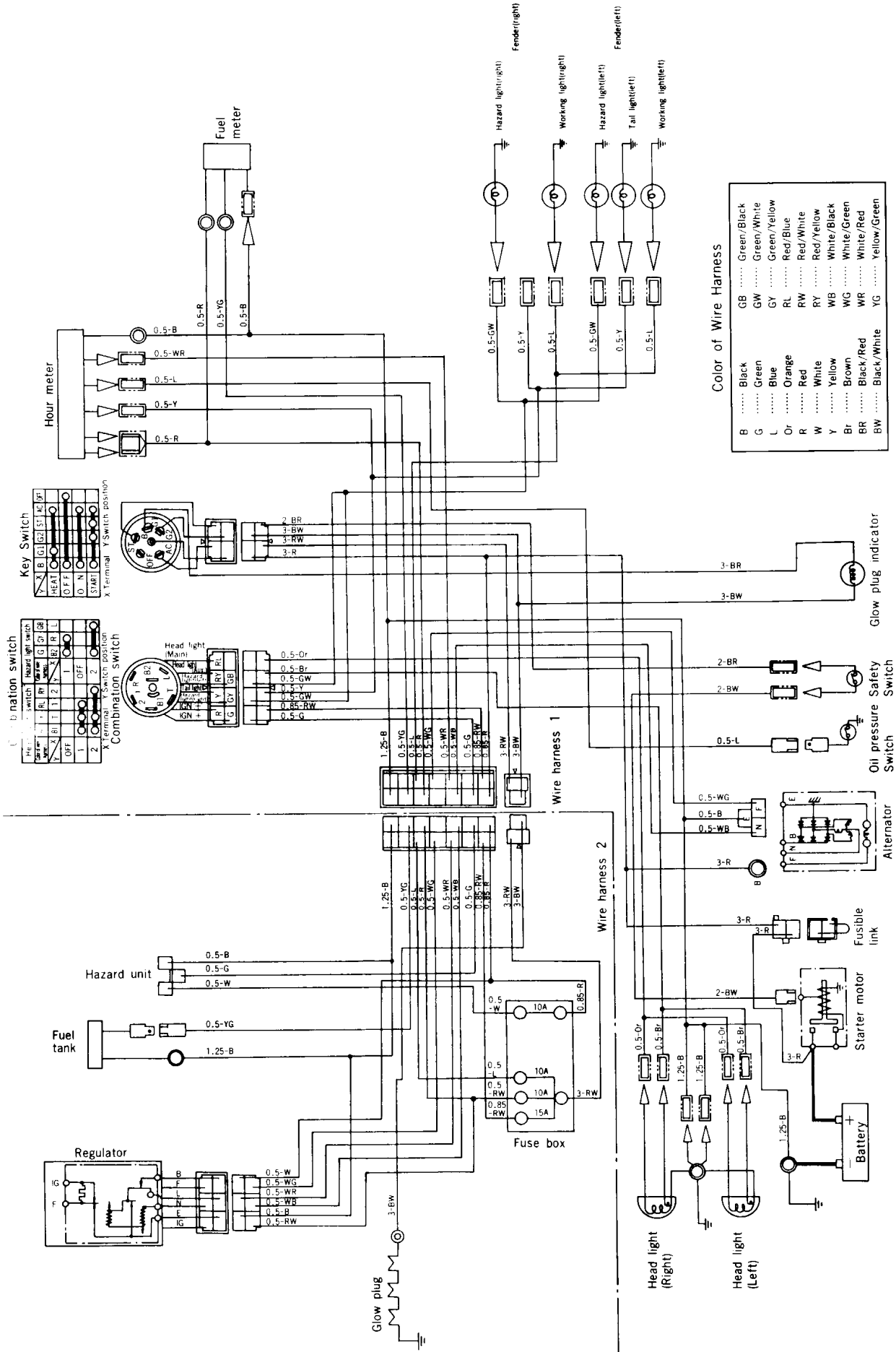
- SMV (Slow Moving Vehicle) Emblem
  To for-warn overtaking traffic of tactor's presence.
- Rear Work Light
  High visibility for night work.
- Suitcase Weights
  55 lbs. each for front ballast.
- Rear Wheel Weights
  60 lbs. each for rear ballast.
- Under Muffler
- Double Element Air Cleaner

17. WIRING DIAGRAM

■ 2WD (Two Wheel Drive)



■ 4WD (Four Wheel Drive)



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