

OPERATOR'S MANUAL

KUBOTA TRACTOR

L4350 L4850 L5450



READ AND SAVE THIS MANUAL

Kubota

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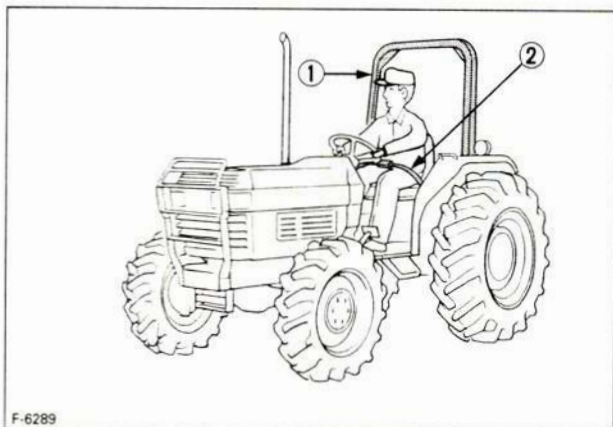


SAFE OPERATION

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 obligation to instruct all operators in safe operation.

1. BEFORE OPERATING THE TRACTOR

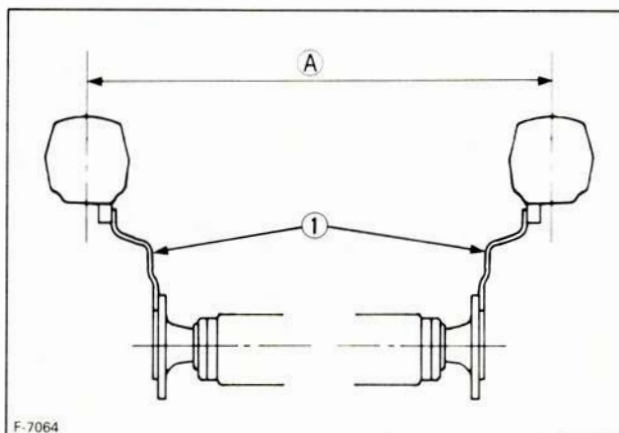
- (1) Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.
- (2) Pay special attention to the warning and caution labels on the tractor itself.
- (3) KUBOTA recommends the use of a Roll Over Protective Structures (ROPS) and seat belt in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



① ROPS ② Seat belt

- (4) Always use the seat belt if the tractor has a ROPS. Do not use it if there is no ROPS. Check the seat belt 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.

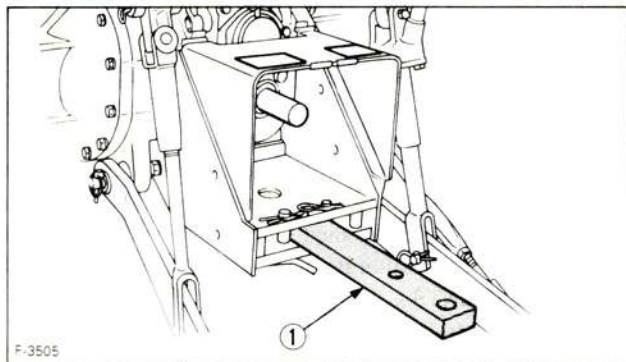
- (7) Before allowing other people to use your tractor, explain how to operate and have them read this manual before operation.
- (8) Never wear loose, torn, or bulky clothing around tractor. It may catch on moving parts or controls, leading to the risk of accident. Use additional safety items.....hard 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 27).



① Rear wheels
A Tread width

2. OPERATING THE TRACTOR

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



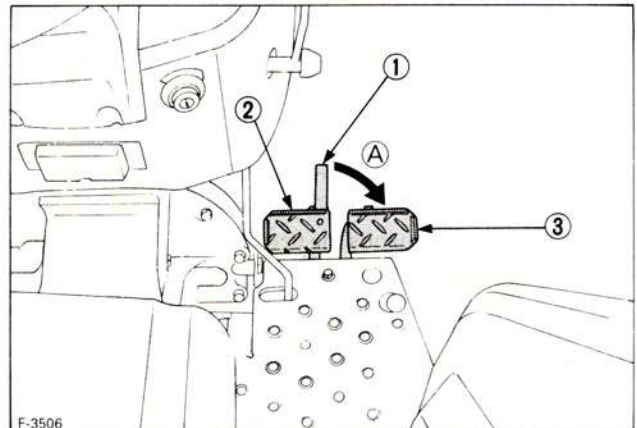
1 Swing drawbar

- (5) Do not operate or idle engine in a non-ventilated area. Carbon monoxide gas is colorless, odorless, and deadly.
- (6) Keep all shields and guards in place. Replace any that are missing or damaged.
- (7) Avoid sudden starts. To avoid upsets, slow down when turning, on uneven terrain, and before stopping.
- (8) The tractor cannot turn with the differential locked and attempting to do so could be dangerous.
- (9) Do not operate near ditches, holes, embankments, or other terrain features which may collapse under the tractor's weight. The risk of tractor upset is even higher when the ground is loose or wet.
- (10) Driving forward out of a ditch or 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.

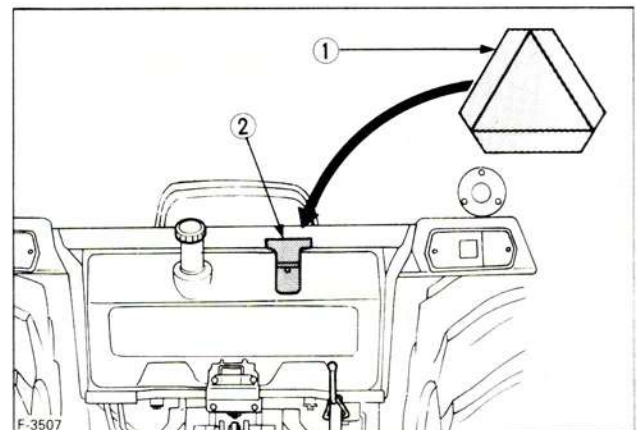
3. DRIVING THE TRACTOR ON THE ROAD

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



- 1 Brake pedal lock
 2 Brake pedal (L) 3 Brake pedal (R)
 A "Whenever traveling on the road"

- (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.



- 1 SMV emblem 2 Bracket

- (4) Observe all local traffic and safety regulations.
- (5) Turn the headlights on. Dim them when meeting another vehicle.
- (6) Drive at speeds that allow you to maintain control at all times.
- (7) Do not apply the differential lock while traveling at road speeds. The tractor may run out of control.

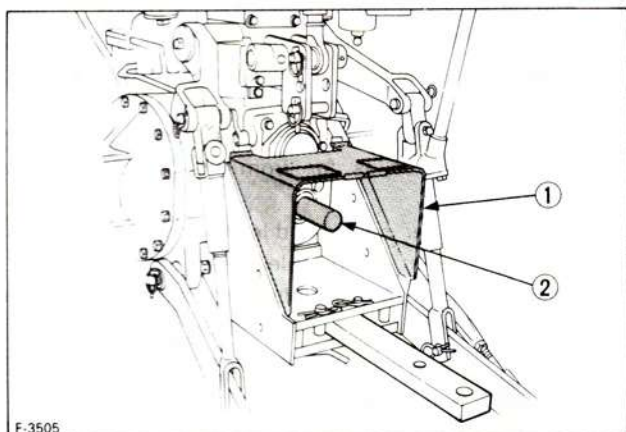
- (8) Avoid sudden motions of the steering wheel as they can lead to a dangerous loss of stability. The risk is especially great when the tractor is traveling at road speeds.
- (9) Do not operate an implement while the tractor is on the road. Lock it in the raised position.
- (10) When towing other equipment, 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.

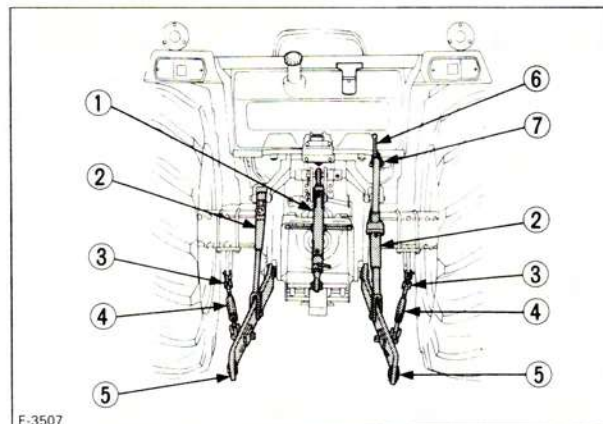


① PTO shaft cover ② PTO shaft cap

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

6. USING 3-POINT HITCH

- (1) Use the 3-point hitch only with equipment designed for 3-point hitch usage.



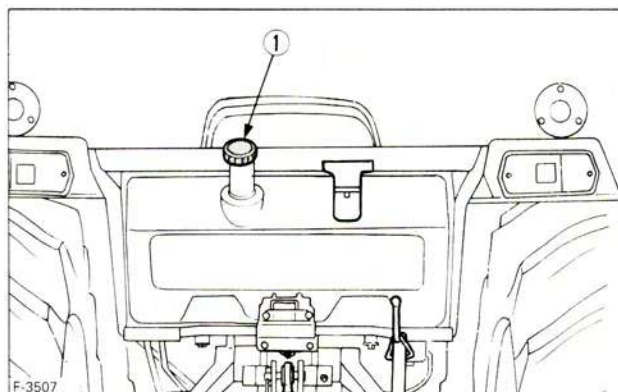
① Top link ② Lifting rod ③ Check chain
④ Turnbuckle ⑤ Lower link ⑥ Adjusting handle
⑦ Handle stopper

- (2) When using a 3-point hitch mounted implement, be sure to install the proper counterbalance weight on the front of the tractor.
- (3) When transporting on the road, set the implement lowering control in the "lock" position to hold the implement in the raised position.

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.

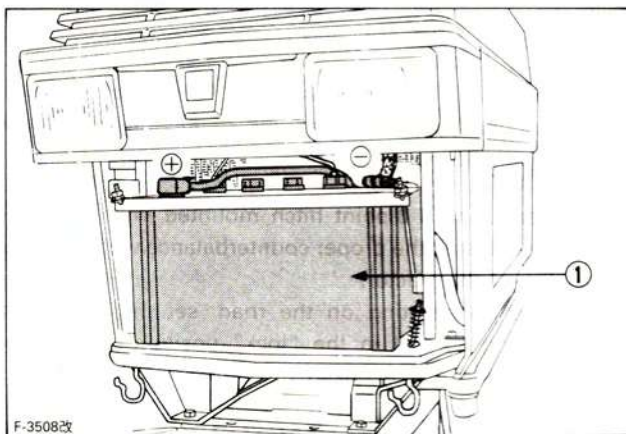
- (1) Allow the tractor time to cool off before working on or near the engine, muffler, radiator, etc.
- (2) Always stop the engine before refueling. Avoid spills and overfilling.



① Fuel tank cap

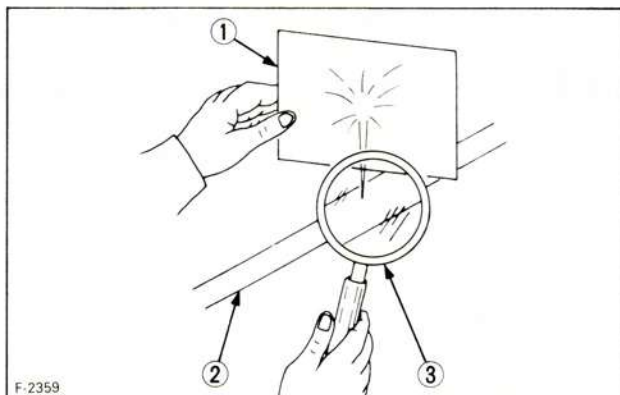
- (3) Do not smoke when working around battery or when refueling. Keep all sparks and flames away from battery and fuel tank. The battery presents an explosion hazard because it gives off hydrogen and oxygen....especially when recharging.

- (4) Before "jumping" a dead battery, read and follow all of the instructions.
- (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 $\ominus$ first and connect it last.



① Battery

- (9) Do not attempt to mount a tire on 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.



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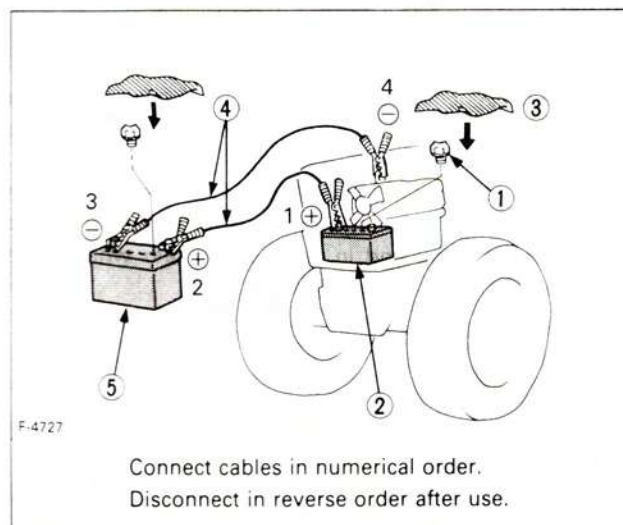
- ① Cardboard ② Hydraulic line
③ Magnifying glass

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

8. 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 rag to touch the battery terminals.
- (6) Attach the red clamp to the positive (red, $\oplus$ or pos.) terminal of the dead battery and clamp the other end of the same cable to the positive (red, $\oplus$ or pos.) terminal of the helper battery.
- (7) Clamp the other cable to the negative (black, $\ominus$ or neg.) terminal of the helper battery.
- (8) Clamp the other end to the engine block or frame of the disabled tractor as far from the dead battery as possible.
- (9) Start the helper vehicle and let its engine run for a few moments. Start the disabled tractor.
- (10) Disconnect the jumper cables in the exact reverse order of attachment. (Steps 8, 7 and 6).
- (11) Remove and discard the damp rags. Reinstall the vent caps.



F-4727

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

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

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. 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 by-passing 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.

❸ 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.

❹ Part No. 35080—6528—2



CAUTION

Pull the engine stop knob back and hold it until the engine stops in case of emergency.

❺ Part No. 35260—2534—1



WARNING

TO AVOID PERSONAL INJURY:

1. Keep PTO shield in place at all times.
2. Before using PTO, lock swinging drawbar in center position and set distance from drawbar pin hole to PTO at 14 in. (356mm)
3. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer.

❻ 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.

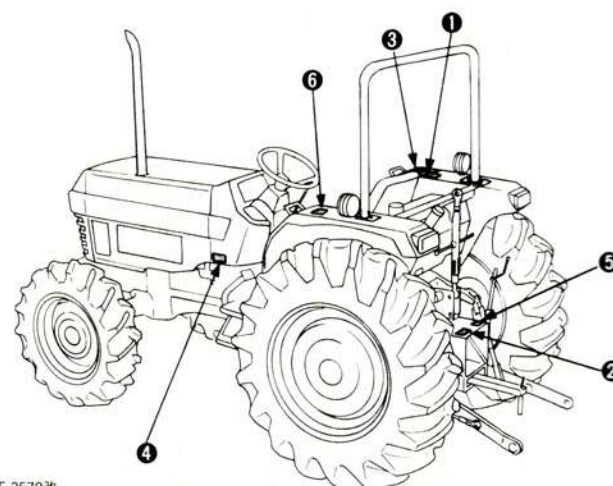
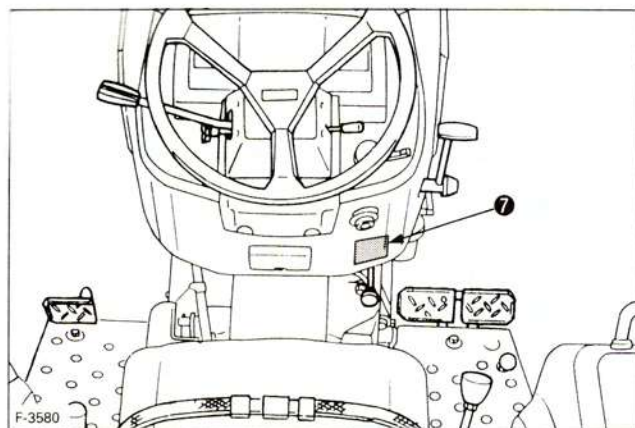
❼ [With hydraulic shuttle transmission]
Part No. 35370—3136—3



WARNING

BEFORE DISMOUNTING TRACTOR:

1. ALWAYS SET PARKING BRAKE
Leaving transmission in gear with the engine stopped will not prevent tractor with shuttle transmission from rolling.
2. LOCK SHUTTLE SHIFT LEVER IN NEUTRAL POSITION
This prevents movement of shuttle shift lever out of neutral position.
3. STOP THE ENGINE



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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.

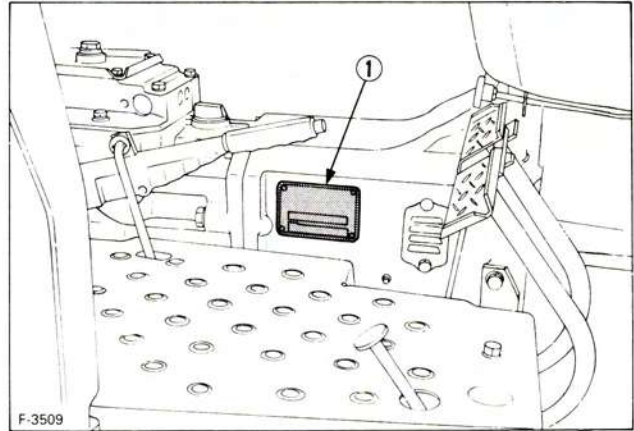
However, when in need of parts or major service, be sure to see your KUBOTA dealer.

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

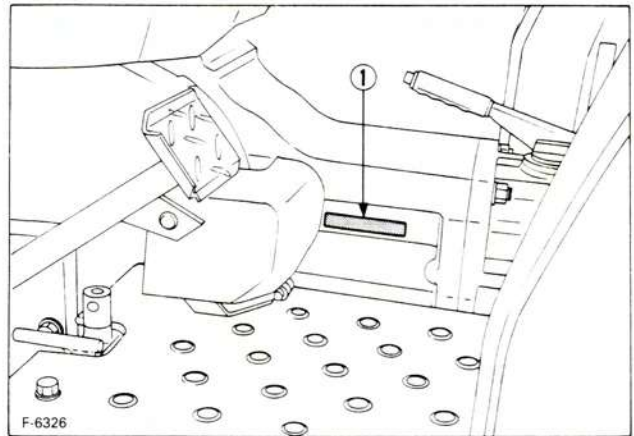
When in need of parts, be prepared to give your dealer both the tractor and engine serial numbers.

The tractor serial number is located on the transmission housing on the left-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.

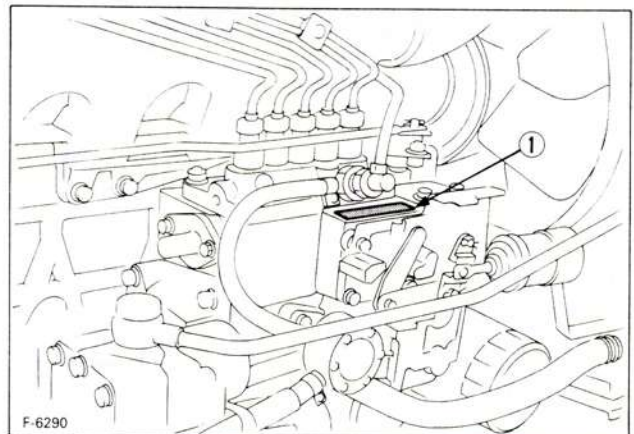
	Type	Serial No.
Tractor	_____	_____
Engine	_____	_____
Date of Purchase	_____	
Name of Dealer	_____	
(To be filled in by purchaser)		



① Identification plate



① Tractor serial number



① Engine serial number

2. SPECIFICATIONS

2.1 SPECIFICATION TABLE

Model			L4350	L4850	L5450	
Engine gross power			35.4kW (47.5HP)* ¹	39.5kW (53HP)* ¹	44.4kW (59.5HP)* ¹	
PTO power			28.3kW (38HP)* ¹	32.1kW (43HP)* ¹	36.6kW (49HP)* ¹	
Engine	Model		KUBOTA V2203-DI	KUBOTA F2503-DI	KUBOTA F2803-DI	
	Type		Vertical, water-cooled, 4-cycle diesel			
	No. of cylinders		4	5	5	
	Bore and stroke		87×92.4mm (3.4×3.6in.)	83×92.4mm (3.3×3.6in.)	87×92.4mm (3.4×3.6in.)	
	Total displacement		2197cm ³ (134.1cu.in.)	2499cm ³ (152.5cu.in.)	2746cm ³ (167.6cu.in.)	
	Rated engine speed		43.3r/s (2600rpm)			
	Fuel		Diesel fuel No.1 [below —10°C (14°F)] Diesel fuel No.2 [above —10°C (14°F)]			
	Starter		Electric starter 12V, 1.4kW			
	Lubrication		Forced lubrication by trochoidal pump			
	Cooling		Water with pressurized radiator			
	Battery		12V 110Ah (heavy duty 160Ah optional)* ⁶			
Capacities	Fuel tank		60 ℓ (15.9 U.S.gals)			
	Engine crankcase		6.5 ℓ (6.9 U.S.qts.)	8 ℓ (8.5 U.S.qts.)	8 ℓ (8.5 U.S.qts.)	
	Engine coolant		7 ℓ (7.4 U.S.qts.)	8 ℓ (8.5 U.S.qts.)	8 ℓ (8.5 U.S.qts.)	
	Transmission case		43 ℓ (45.5 U.S.qts.)			
	Front axle diff. case		5.5 ℓ (5.8 U.S.qts.)	6.3 ℓ (6.6 U.S.qts.)	6.3 ℓ (6.6 U.S.qts.)	
	Front axle gear case		2.7 ℓ (2.9 U.S.qts.) each			
Standard tires	Front	8.3—16		8.3—20	9.5—20	
	Rear	12.4—28		13.6—28	14.9—28	
Dimensions	Overall length* ²	mm(in.)	3405 (134.1)	3405 (134.1)	3490 (137.4)	
	Overall width	mm(in.)	1650 (65.0)	1710 (67.3)	1720 (67.7)	
	Overall height* ³	mm(in.)	1535 (60.4)	1565 (61.6)	1580 (62.2)	
	Wheel base	mm(in.)	1845 (72.6)	1940 (76.4)	1940 (76.4)	
	Min.ground clearance	mm(in.)	295 (11.6)	340 (13.4)	365 (14.4)	
	Crop clearance	mm(in.)	350 (13.8)	395 (15.6)	420 (16.5)	
	Treads	Front	mm(in.)	1285 (50.5)	1370 (54)	1370 (54)
		Rear	mm(in.)	1320 (52) 1525 (60) 1725 (68) 1930 (76) 1420 (56) 1620 (64) 1825 (72)		
Weight* ⁴		kg(lbs.)	1750 (3860)	1850 (4080)	2000 (4410)	
Rear PTO		SAE 1—3/8 6—splines				
Revolution	1st speed	9 r/s (540rpm) / engine 37.4 r/s (2243rpm)* ⁷			9 r/s (540rpm) / engine 38.4 r/s (2305rpm)	
	2nd speed	12.5 r/s (750rpm) / engine 39.9 r/s (2391rpm)			(1000rpm/engine 2471rpm optional)	
Clutch		Dry single plate or two plates			Dry two plates	
		Hydraulically actuated wet mastertraction clutch (Ever clutch) & dry single PTO clutch optional				
Steering		Hydrostatic power steering				
Transmission		8 forward, 8 reverse speeds, partially synchronized (hydraulic shuttle transmission optional)				
Min. turning radius* ⁵		m(feet)	2.7 (8.9)	2.9 (9.5)	2.9 (9.5)	
Brake		Wet disk type				
Differential		Bevel gear				

Note : *¹Manufacturer's estimate. Manual shuttle transmission without hydraulic coupler *²Without Bumper

*³Top of steering wheel *⁴With ROPS *⁵With Brake *⁶BCI 30H (CCA 600A, RC165min) Battery for U.S.A.

*⁷Wet mastertraction clutch (Ever clutch) has one PTO speed-540rpm.

2.2 TRAVELING SPEEDS (At rated engine rpm)

Model			L4350 • L4850															
Tire size (Rear)			14.9—24(R1)		16.9—24(R1)		12.4—28(R1)		13.6—28(R1)		14.9—28(R1)		14.9—24(R4)		17.5L—24(R4)		16.9—24(R4)	
	Hi-Lo gear shift lever	Main gear shift lever	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph
 (Forward)	 (Low)	1	2.2	1.4	2.3	1.4	2.2	1.4	2.3	1.4	2.4	1.5	2.2	1.4	2.2	1.4	2.3	1.4
		2	2.8	1.7	2.9	1.8	2.8	1.7	2.9	1.8	3.0	1.9	2.7	1.7	2.7	1.7	2.8	1.7
		3	5.3	3.3	5.6	3.5	5.3	3.3	5.4	3.4	5.7	3.5	5.1	3.2	5.1	3.2	5.4	3.4
		4	6.7	4.2	7.0	4.3	6.7	4.2	6.9	4.3	7.2	4.5	6.5	4.0	6.5	4.0	6.8	4.2
	 (High)	5	8.9	5.5	9.4	5.8	8.9	5.5	9.2	5.7	9.6	6.0	8.6	5.3	8.6	5.3	9.0	5.6
		6	11.4	7.1	12.0	7.5	11.4	7.1	11.8	7.3	12.3	7.6	11.0	6.8	11.0	6.8	11.6	7.2
		7	21.3	13.2	22.4	13.9	21.3	13.2	22.1	13.7	23.0	14.3	20.6	12.8	20.6	12.8	21.7	13.5
		8	26.9	16.7	28.4	17.6	26.9	16.7	27.9	17.3	29.1	18.1	26.1	16.2	26.1	16.2	27.4	17.0
 (Reverse)	 (Low)	1	2.1	1.3	2.2	1.4	2.1	1.3	2.3	1.4	2.3	1.4	2.1	1.3	2.1	1.3	2.2	1.4
		2	2.8	1.7	2.9	1.8	2.8	1.7	2.9	1.8	3.0	1.9	2.7	1.7	2.7	1.7	2.8	1.7
		3	5.2	3.2	5.5	3.4	5.2	3.2	5.4	3.4	5.6	3.5	5.0	3.1	5.0	3.1	5.3	3.3
		4	6.6	4.1	6.9	4.3	6.6	4.1	6.8	4.2	7.1	4.4	6.4	4.0	6.4	4.0	6.7	4.2
	 (High)	5	8.8	5.5	9.3	5.8	8.8	5.5	9.2	5.7	9.5	5.9	8.5	5.3	8.5	5.3	9.0	5.6
		6	11.3	7.0	11.9	7.4	11.3	7.0	11.7	7.3	12.2	7.6	11.0	6.8	11.0	6.8	11.5	7.2
		7	21.1	13.1	22.2	13.8	21.1	13.1	21.9	13.6	22.8	14.2	20.5	12.7	20.5	12.7	21.5	13.4
		8	26.7	16.6	28.1	17.5	26.7	16.6	27.7	17.2	28.8	17.9	25.9	16.1	25.9	16.1	27.1	16.8

Model			L4350 • L4850								L5450							
Tire size (Rear)			21.5L—16.1(R3)		16.9—24(R3)		14.9—28(R1)		16.9—28(R1)		16.9—24(R4)		17.5L—24(R4)		21.5L—16.1(R3)		16.9—24(R3)	
	Hi-Lo gear shift lever	Main gear shift lever	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph
 (Forward)	 (Low)	1	2.0	1.2	2.3	1.4	2.4	1.5	2.5	1.6	2.3	1.4	2.2	1.4	2.0	1.2	2.3	1.4
		2	2.5	1.6	2.8	1.7	3.0	1.9	3.2	2.0	2.8	1.7	2.7	1.7	2.5	1.6	2.8	1.7
		3	4.7	2.9	5.4	3.4	5.7	3.5	6.0	3.7	5.4	3.4	5.1	3.2	4.7	2.9	5.4	3.4
		4	5.9	3.7	6.8	4.2	7.2	4.5	7.6	4.7	6.8	4.2	6.5	4.0	5.9	3.7	6.8	4.2
	 (High)	5	7.9	4.9	9.0	5.6	9.7	6.0	10.2	6.3	9.1	5.7	8.7	5.4	8.0	5.0	9.1	5.7
		6	10.1	6.3	11.6	7.2	12.4	7.7	13.0	8.1	11.7	7.3	11.2	7.0	10.2	6.3	11.7	7.3
		7	18.9	11.7	21.7	13.5	23.1	14.4	24.3	15.1	21.8	13.5	20.8	12.9	18.9	11.7	21.8	13.5
		8	23.9	14.9	27.4	17.0	29.3	18.2	30.8	19.1	27.6	17.2	26.4	16.4	24.0	14.9	27.6	17.2
 (Reverse)	 (Low)	1	1.9	1.2	2.2	1.4	2.4	1.5	2.5	1.6	2.3	1.4	2.2	1.4	2.0	1.2	2.3	1.4
		2	2.5	1.6	2.8	1.7	3.0	1.9	3.2	2.0	2.8	1.7	2.7	1.7	2.5	1.6	2.8	1.7
		3	4.6	2.9	5.3	3.3	5.7	3.5	6.0	3.7	5.4	3.4	5.1	3.2	4.7	2.9	5.4	3.4
		4	5.8	3.6	6.7	4.2	7.2	4.5	7.6	4.7	6.8	4.2	6.5	4.0	5.9	3.7	6.8	4.2
	 (High)	5	7.8	4.8	9.0	5.6	9.7	6.0	10.2	6.3	9.1	5.7	8.7	5.4	8.0	5.0	9.1	5.7
		6	10.0	6.2	11.5	7.2	12.3	7.6	12.9	8.0	11.6	7.2	11.1	6.9	10.1	6.3	11.6	7.2
		7	18.7	11.6	21.5	13.4	23.0	14.3	24.2	15.0	21.7	13.5	20.7	12.9	18.9	11.6	21.7	13.5
		8	23.6	14.7	27.1	16.8	29.2	18.1	30.7	19.0	27.5	17.1	26.3	16.3	23.9	14.9	27.5	17.1

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.]

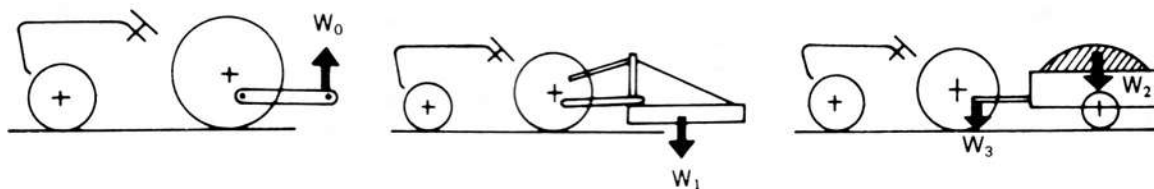
	Tread (max. width)		Lift capacity Lower link end W_0
	Front	Rear	
L4350	1285 mm (50.5 in.)	1930 mm (76 in.)	1500 kg (3300 lbs.)
L4850 • L5450	1370 mm (54 in.)		

	Actual figures		
	Trailer loading weight W_2 Max. capacity	Max. Drawbar Load W_3	Lift capacity 24 inch behind lower link end W_1
L4350 • L4850 • L5450	3000 kg (6600 lbs.)	1000 kg (2200 lbs.)	1450 kg (3200 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



No.	Implement		Remarks		L4350	L4850	L5450
1	Trailer		Max. Load Capacity	kg (lbs.)	3000 (6600)	3000 (6600)	3000 (6600)
			Max. Drawbar Load	kg (lbs.)	1000 (2200)	1000 (2200)	1000 (2200)
2	Mower	Rotary—Cutter	Max. Cutting Width	mm (in.)	2130 (84)	2130 (84)	2130 (84)
			Max. Weight	kg (lbs.)	500 (1100)	500 (1100)	540 (1200)
		Flail Mower (Heavy)	Max. Cutting Width	mm (in.)	1830 (72)	1830 (72)	2440 (96)
			Max. Weight	kg (lbs.)	500 (1100)	500 (1100)	600 (1320)
		Sickle Bar	Max. Cutting Width	mm (in.)	2130 (84)	2130 (84)	2130 (84)
3	Sprayer	Max. Tank-capacity ℓ (gals.)	Rear mounted		400 (110)	400 (110)	680 (180)
			Pull type		2000 (530)	2000 (530)	3500 (920)
4	Rotary Tiller		Max. Tilling Width	mm (in.)	1780 (70)	1780 (70)	1930 (76)
5	Bottom Plow		Max. Size		16 in.×2	14 in.×3 16 in.×2	14 in.×3 16 in.×2 18 in.×1
			Max. Weight	kg (lbs.)	450 (1000)	550 (1200)	600 (1500)
6	Disc-harrow	Rear mounted type	Max. Size		18 in.×24	18 in.×24 20 in.×24	20 in.×24
			Max. Harrowing Width	mm (in.)	2130 (84)	2440 (96)	2440 (96)
			Max. Weight	kg (lbs.)	400 (900)	450 (1000)	450 (1000)
		Pull type	Max. Harrowing Width	mm (in.)	2440 (96)	2440 (96)	2750 (108)
7	Chisel Plow		Max. Cutting Width	mm (in.)	1830 (72)	1830 (72)	1830 (72)
			Max. Weight	kg (lbs.)	680 (1500)	680 (1500)	680 (1500)
8	Broad Caster		Max. Tank Capacity	ℓ (gals.)	500 (130)	500 (130)	500 (130)
			Max. Weight	kg (lbs.)	100 (220)	100 (220)	100 (220)
9	Manure Spreader		Max. Capacity	kg(lbs.)	2500 (5500)	2500 (5500)	2500 (5500)
10	Cultivator		Max. Width	mm (in.)	2440 (96)	2740 (108)	3660 (144)
			Number of Rows		2	2	4
			Max. Weight	kg (lbs.)	450 (1000)	500 (1100)	500 (1100)
11	Front Blade		Max. Cutting Width	mm (in.)	1830 (72)	2130 (84)	2130 (84)
			Max. Oil Pressure	kgf/cm ² (psi.)	185 (2630)	185 (2630)	185 (2630)
			Sub Frame		Necessary	Necessary	Necessary
12	Rear Blade		Max. Cutting Width	mm (in.)	1830 (72)	2130 (84)	2130 (84)
			Max. Oil pressure	kgf/cm ² (psi.)	185 (2630)	185 (2630)	185 (2630)
13	Front-end Loader		Max. Lifting Capacity	kgf (lbs.)	950 (2100)	950 (2100)	1135 (2500)
			Max. Oil Pressure (Extra Hydro Kit)	kgf/cm ² (psi.)	185 (2630)	185 (2630)	185 (2630)
			Sub Frame		Necessary	Necessary	Necessary
14	Box Blade		Max. Cutting width	mm (in.)	1830 (72)	1830 (72)	1930 (76)
			Max. Weight	kg (lbs.)	400 (900)	400 (900)	500 (1100)
15	Back Hoe		Max. Digging Depth	mm (in.)	3440 (135)	3440 (135)	3440 (135)
			Max. Weight	kg (lbs.)	1090 (2400)	1090 (2400)	1090 (2400)
			Sub Frame		Necessary	Necessary	Necessary
16	Snow Blade		Max. Width	mm (in.)	1830 (72)	1830 (72)	1830 (72)
			Max. Weight	kg (lbs.)	350 (800)	350 (800)	450 (1000)

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

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

- (1) Do not start quickly nor apply the brakes suddenly.
- (2) In winter, operate the tractor only after fully warming up the engine.
- (3) Do not run the engine at speeds faster than necessary.
- (4) 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 36)

■ Read "▲SAFE OPERATION"

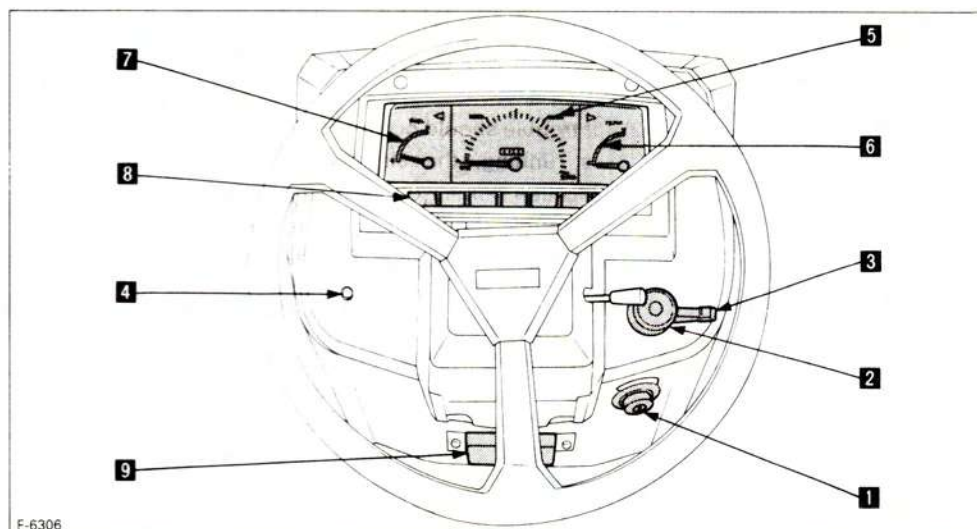
Please read "▲SAFE OPERATION" before attempting to start or operate the tractor.

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 SWITCHES



- 1 Key switch
- 2 Head light switch
- 3 Hazard light switch (if equipped)
- 4 Horn button (if equipped)
- 5 Hourmeter/Tachometer
- 6 Coolant temperature gauge
- 7 Fuel gauge
- 8 Easy checker
- 9 Fuse box

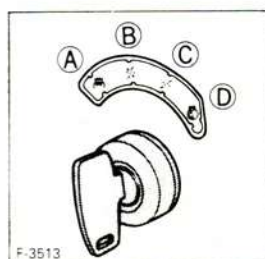
1 Key Switch

✱ The position where the key can be inserted into or removed from the key switch. (The engine stops the moment the key is turned to this position.)

⚡ The engine keeps running.

🔥 The combustion chamber is heated.

🔑 Depress the clutch pedal fully and turn the key switch to this position to start the engine.



- A "Preheat"
- B "OFF" C "ON"
- D "Start"

IMPORTANT:

[Except PTO clutch control lever]

- Because of the safety device, the engine will not start except when the clutch pedal is fully depressed.

[With PTO clutch control lever]

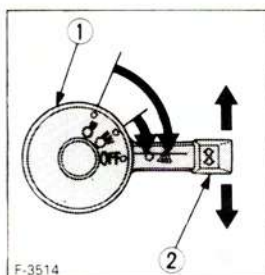
- Because of the safety device, the engine will not start except when the clutch pedal is fully depressed and PTO clutch control lever placed in the "disengage" position.

2 Head Light Switch

OFF Head lights OFF

☞ Head lights ON, high beam.

☞ Head lights dimmed, low beam.



- 1 Head light switch
- 2 Hazard light switch

3 Hazard Light Switch (If equipped)

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

(Hazard light is standard for U.S.A.)

4 Horn Button (If equipped)

The horn will sound when the key switch is in the "ON" position.

5 Hourmeter/Tachometer

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

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

6 Coolant Temperature Gauge

- (1) With the key switch at "ON," this gauge indicates the temperature of the coolant. "C" for "cold" and "H" for "hot."
- (2) If the indicator reaches the "H" setting (red zone), coolant is overheated. Check the tractor by referring to "Coolant" on page 35, 41, 42.

7 Fuel Gauge

The fuel gauge indicates the amount of fuel.

8 Easy Checker™



F-3183改



Alarm for when the hydraulic oil filter is clogged.



Alarm for when the fuel level drops.

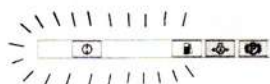
Lights up when remaining fuel amount is less than about 10 ℓ (2.6 gals.)



Alarm for when the engine oil pressure is low.



Alarm for when the parking brake is applied.



Alarm for when the electrical charge system troubles.

◆ How to check the Easy Checker

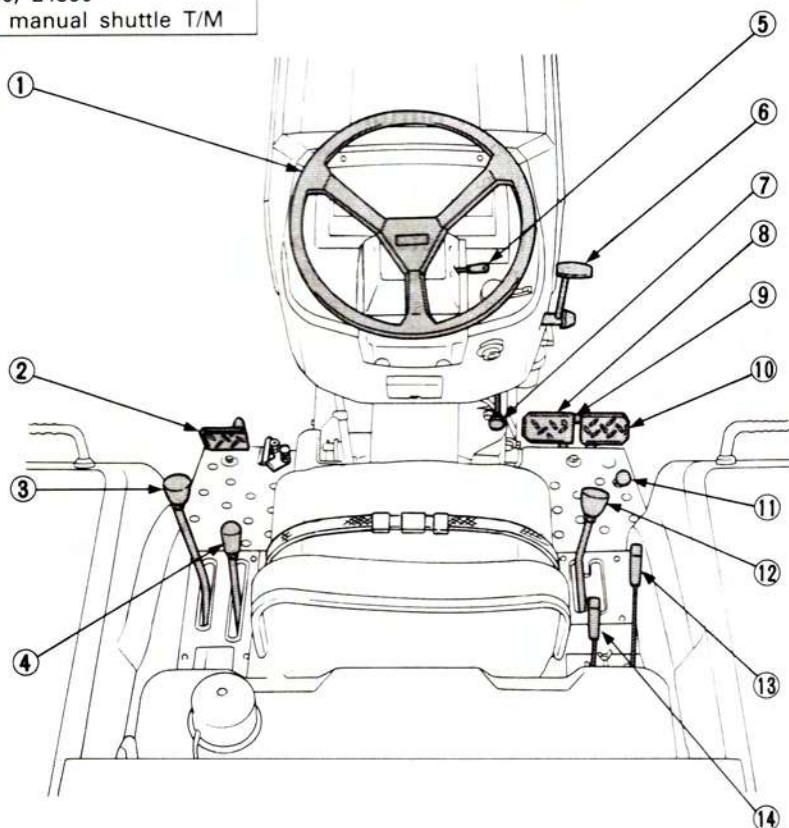
- (1) When the key switch is turned "ON," all the lights should come on. (except the parking brake light if not applied) When the engine starts, all the lights should go off.
- (2) If trouble should occur at any location while the engine is running, the alarm light corresponding to that location comes on.
- (3) If trouble should occur in the electrical charge system, the hydraulic oil filter and the fuel level light will come on.

IMPORTANT:

- Daily checks with the Easy Checker only, is not sufficient. Always conduct daily checks carefully by referring to "Daily Checks." See page 34.

5.2 CONTROLS

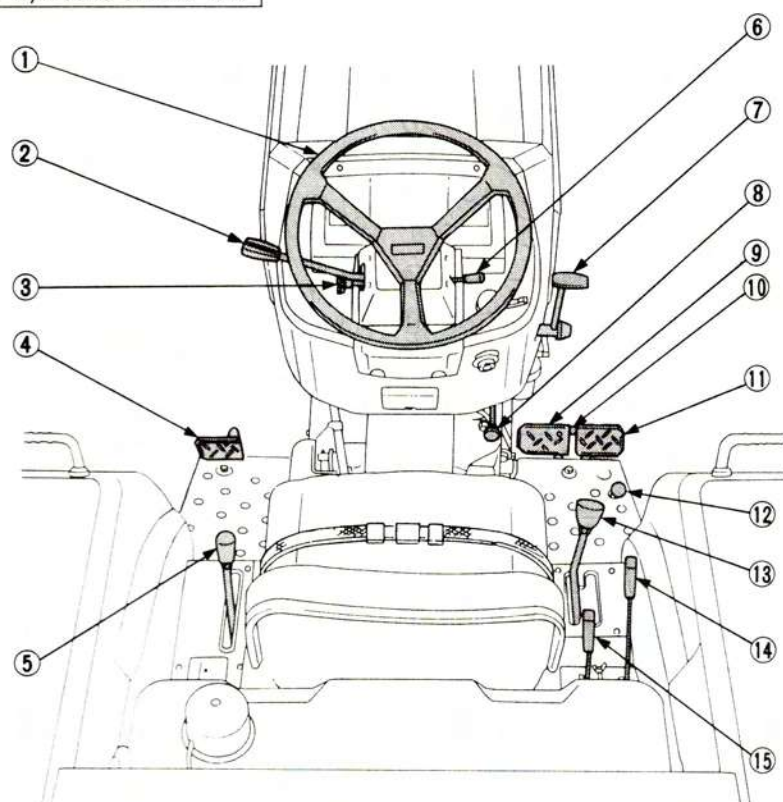
L4350, L4850
with manual shuttle T/M



- ① Steering wheel
- ② Clutch pedal
- ③ Manual shuttle shift lever
- ④ Hi-Lo gear shift lever
- ⑤ Steering wheel tilt lever
- ⑥ Throttle lever
- ⑦ Engine stop knob
- ⑧ Brake pedal (left)
- ⑨ Brake pedal lock
- ⑩ Brake pedal (right)
- ⑪ Throttle pedal
- ⑫ Main gear shift lever
- ⑬ Hydraulic position control lever
- ⑭ Hydraulic draft control lever

F-3580

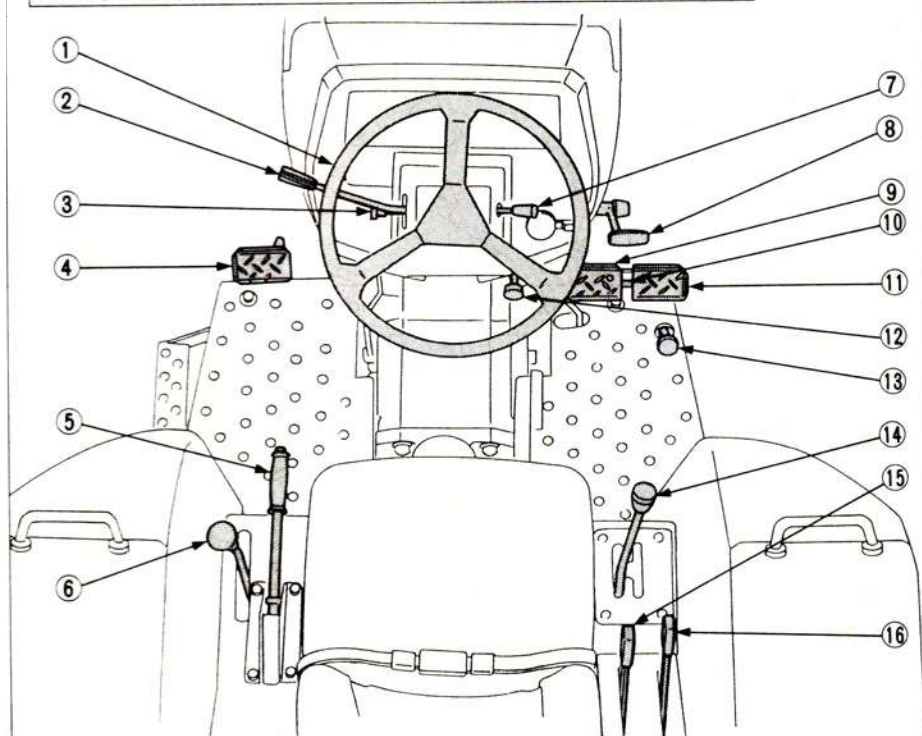
L4350, L4850
with hydraulic shuttle T/M



- ① Steering wheel
- ② Hydraulic shuttle shift lever
- ③ Shuttle shift neutral lock knob
- ④ Clutch pedal
- ⑤ Hi-Lo gear shift lever
- ⑥ Steering wheel tilt lever
- ⑦ Throttle lever
- ⑧ Engine stop knob
- ⑨ Brake pedal (left)
- ⑩ Brake pedal lock
- ⑪ Brake pedal (right)
- ⑫ Throttle pedal
- ⑬ Main gear shift lever
- ⑭ Hydraulic position control lever
- ⑮ Hydraulic draft control lever

F-6512

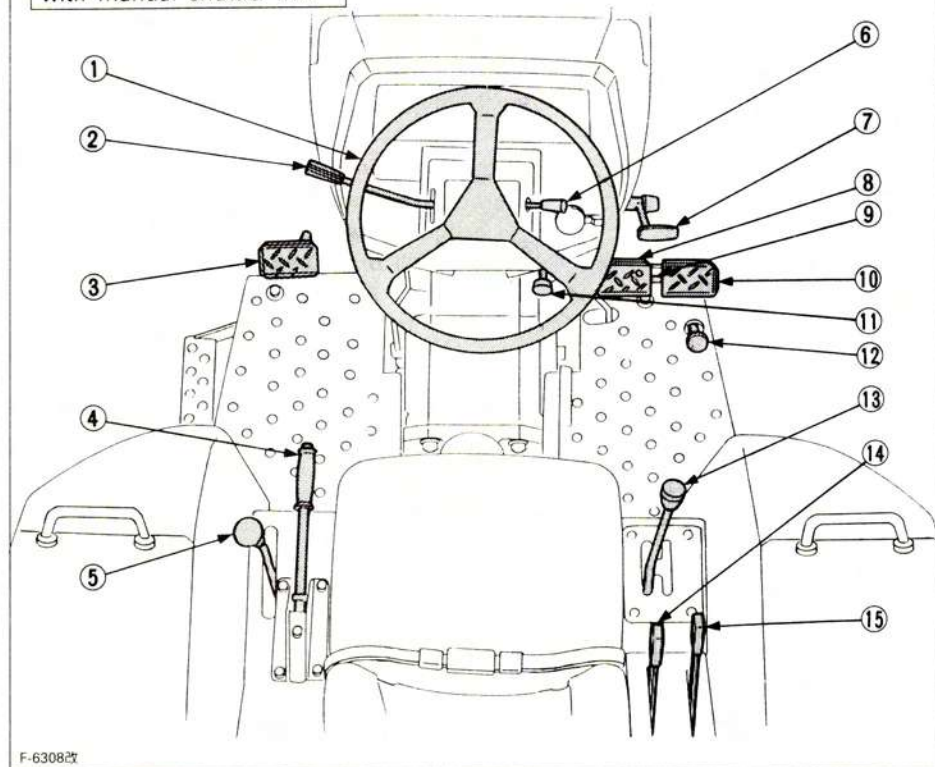
L5450 with hydraulic shuttle T/M
L4350, L4850, L5450 with wet mastertraction clutch (Ever clutch)



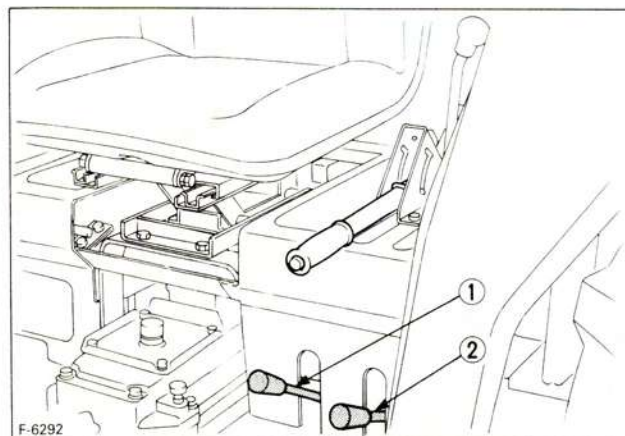
- ① Steering wheel
- ② Hydraulic shuttle shift lever
- ③ Shuttle shift neutral lock knob
- ④ Clutch pedal
- ⑤ PTO clutch control lever
- ⑥ Hi-Lo gear shift lever
- ⑦ Steering wheel tilt lever
- ⑧ Throttle lever
- ⑨ Brake pedal (left)
- ⑩ Brake pedal lock
- ⑪ Brake pedal (right)
- ⑫ Engine stop knob
- ⑬ Throttle pedal
- ⑭ Main gear shift lever
- ⑮ Hydraulic draft control lever
- ⑯ Hydraulic position control lever

F-6958

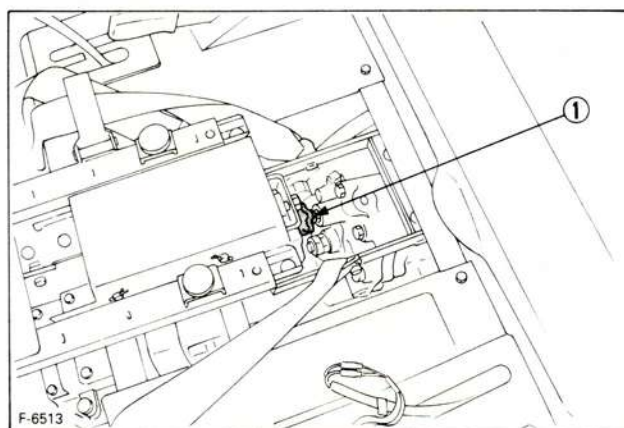
L5450
with manual shuttle T/M



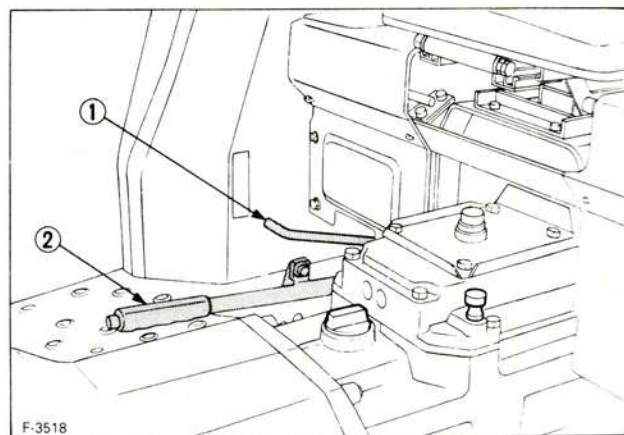
- ① Steering wheel
- ② Manual shuttle shift lever
- ③ Clutch pedal
- ④ PTO clutch control lever
- ⑤ Hi-Lo gear shift lever
- ⑥ Steering wheel tilt lever
- ⑦ Throttle lever
- ⑧ Brake pedal (left)
- ⑨ Brake pedal lock
- ⑩ Brake pedal (right)
- ⑪ Engine stop knob
- ⑫ Throttle pedal
- ⑬ Main gear shift lever
- ⑭ Hydraulic draft control lever
- ⑮ Hydraulic position control lever



- ① PTO gear shift lever
- ② Front wheel drive lever



- ① 3-point hitch lowering speed control knob



- ① Differential lock pedal
- ② Parking brake lever

■ Main Gear Shift Lever & Hi-Lo Gear Shift Lever

Main gear shift lever pattern is in the form of an "H."
Hi-Lo gear shift lever moves two stages, "High" and "Low".
By combination and use of the main gear shift lever and the Hi-Lo gear shift lever, eight speeds are obtained.

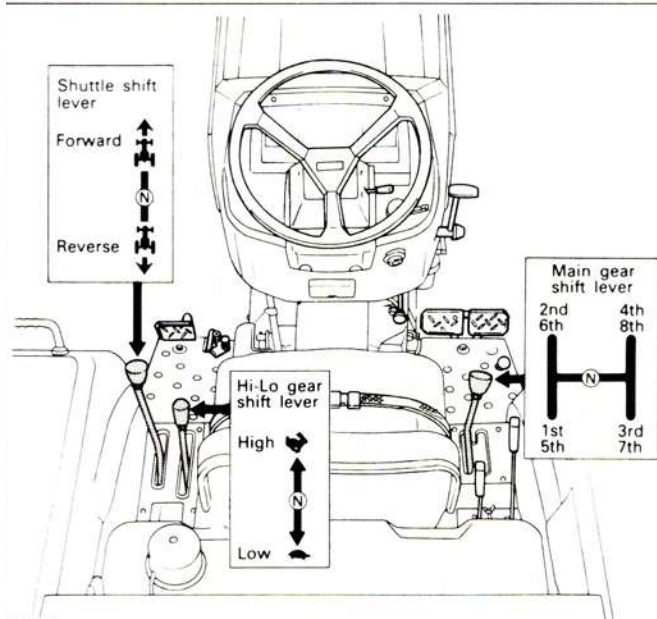
■ Manual Shuttle Shift Lever

Shift the shuttle lever forward to obtain forward speeds and shift it backward to obtain reverse speeds.

IMPORTANT:

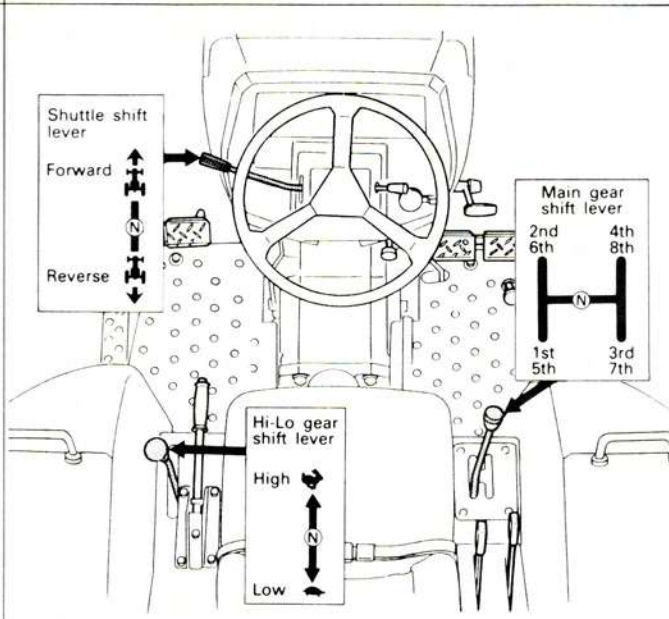
- To change speeds, press the clutch pedal completely down and stop the tractor before attempting to proceed with speed change.

L4350, L4850 with manual shuttle T/M



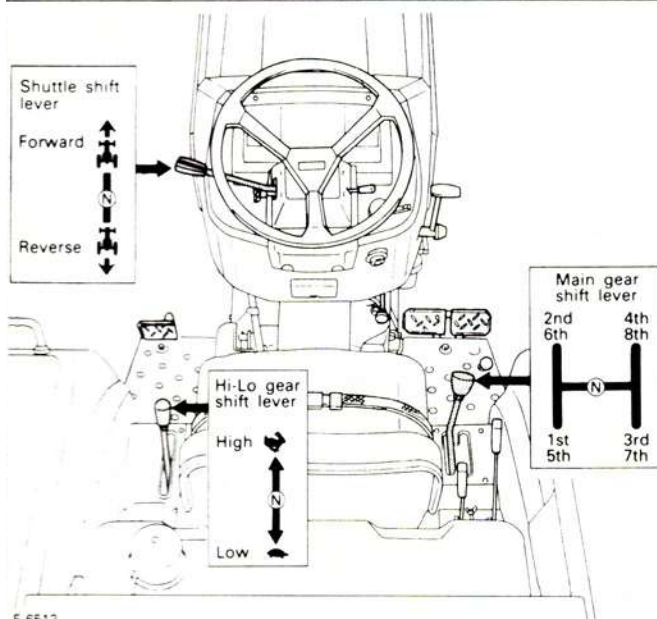
F-3580

L5450 with manual shuttle T/M & hydraulic shuttle T/M



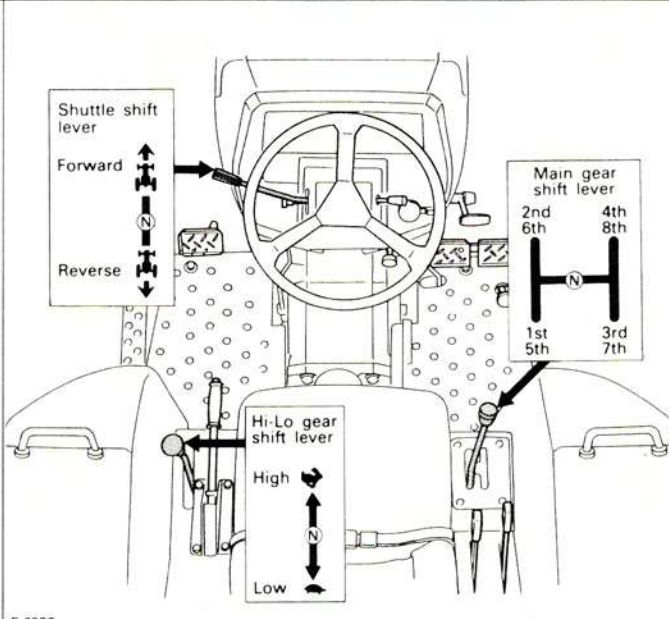
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L4350, L4850 with hydraulic shuttle T/M



F-6512

L4350, L4850, L5450 with wet mastertrac traction clutch (Ever clutch)



F-6958

■ Hydraulic Shuttle Shift Lever [with Hydraulic Shuttle Transmission]

Shift the shuttle shift lever forward to obtain forward speeds and shift it backward to obtain reverse speeds without using the clutch pedal.

Total of eight forward and eight reverse speeds can be obtained.

IMPORTANT:

- Reduce engine speed to low idle before shifting the shuttle shift lever.
- Before shifting the main gear shift lever or the Hi-Lo gear shift lever, fully disengage the clutch and completely stop the tractor.

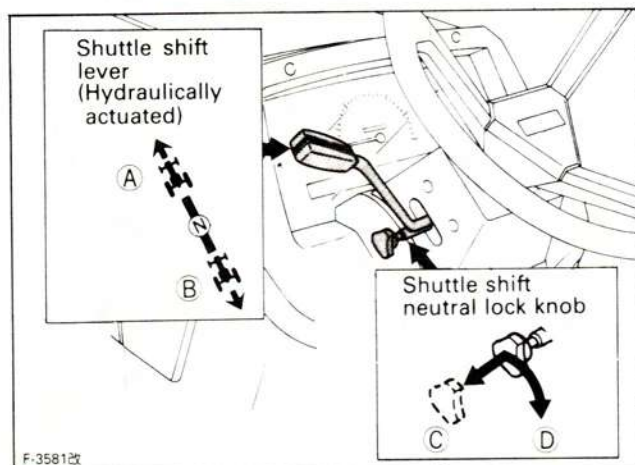


WARNING

To avoid personal injury:

BEFORE DISMOUNTING TRACTOR:

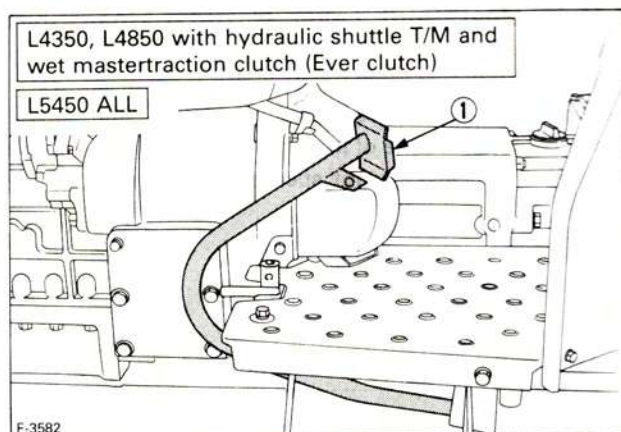
- **ALWAYS SET PARKING BRAKE**
Leaving transmission in gear with the engine stopped will not prevent tractor with shuttle transmission from rolling.
- **LOCK SHUTTLE SHIFT LEVER IN NEUTRAL POSITION**
This prevents movement of shuttle shift lever out of neutral position.
- **STOP THE ENGINE**



A "Forward" B "Reverse" C "Released" D "Locked"

■ Clutch Pedal

The clutch is disengaged when the clutch pedal is fully depressed.

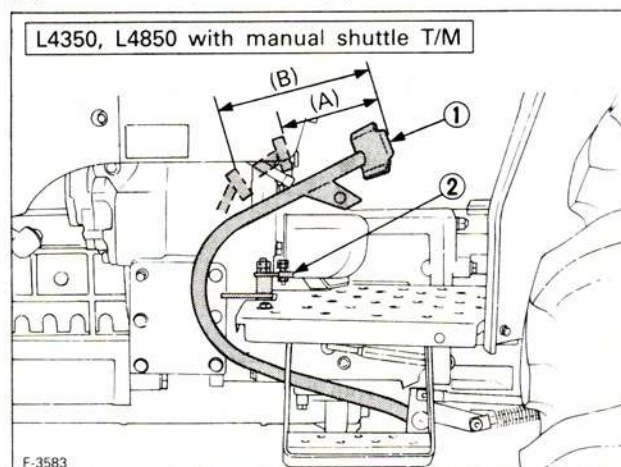


① Clutch pedal (Wet mastertraction clutch)

■ Clutch Pedal (with Dual Clutch)

The transmission clutch is disengaged when the clutch pedal is pressed down half-way. The PTO clutch remains engaged. Both transmission and PTO clutch are disengaged when the pedal is fully pressed down.

By using clutch stopper, only transmission clutch is disengaged even the pedal is fully pressed down.



① Clutch pedal ② Clutch pedal stopper

It is recommended to use the stopper when operating the tractor with an implement not requiring PTO power such as front-end loader, blade, etc. to avoid excessive slip of PTO clutch.

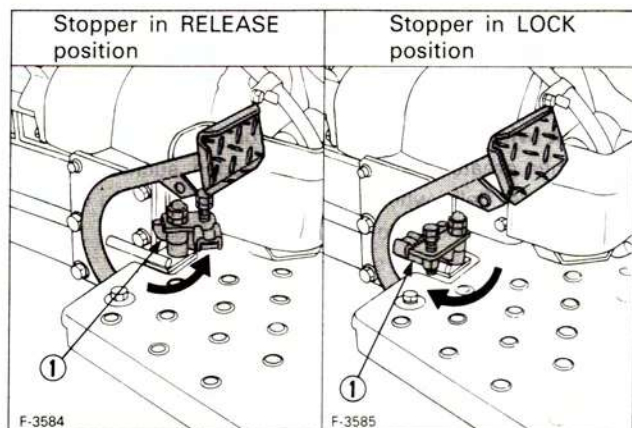
- (A) Only the transmission clutch is disengaged.
(B) Both the transmission and the PTO clutch are disengaged.

IMPORTANT:

- The clutch pedal must be quickly disengaged and be slowly engaged.
- Never operate the tractor with your foot resting on the clutch pedal. Doing so may contribute to premature clutch wear.
- While the tractor is traveling on a road, or when PTO power is not used, place the PTO lever in neutral.
- For operation of the clutch and adjustment of the clutch pedal, refer to the respective items.

■ Clutch Pedal Stopper (with Dual Clutch)

When the PTO operation is not to be used, put the clutch pedal stopper in lock position.



① Clutch pedal stopper



CAUTION:

- Never use the clutch pedal stopper when operating PTO powered equipment.

■ Brake Pedals (Right and Left)

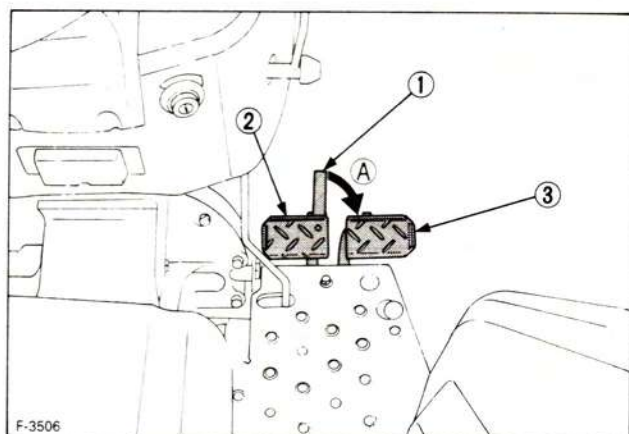


WARNING

To avoid personal injury:

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

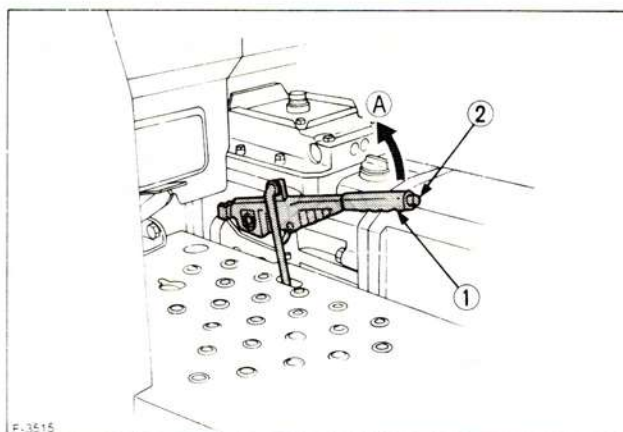
- (1) Before operating the tractor on the road, be sure to interlock the right and left pedals as illustrated below.
- (2) Use individual brakes to assist in making sharp turns at slow speeds (Field Operation Only). Disengage the brake pedal lock and depress only one brake pedal to do this.



① Brake pedal lock
② Brake pedal (L) ③ Brake pedal (R)
A Whenever traveling on the road

■ Parking Brake Lever

- (1) To set the parking brake;
 - 1) Interlock the brake pedals.
 - 2) Depress the brake pedals.
 - 3) Pull the lever to park.
- (2) To release the parking brake, push release button and push down parking brake lever.



① Parking brake lever ② Release button A "Pull"

IMPORTANT:

- If the tractor is operated with the parking brake applied, the parking brake may be damaged.

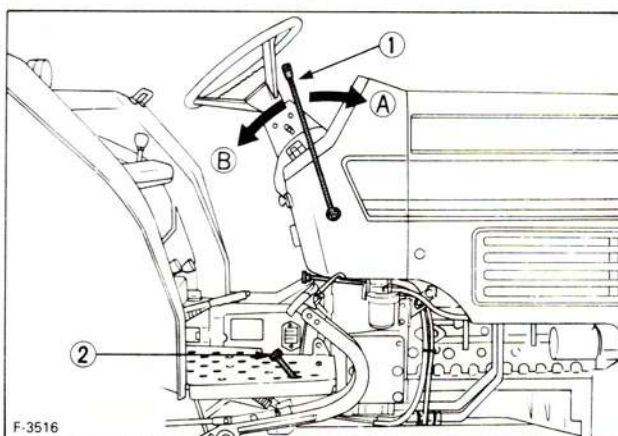
■ Throttle Lever

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

■ 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.

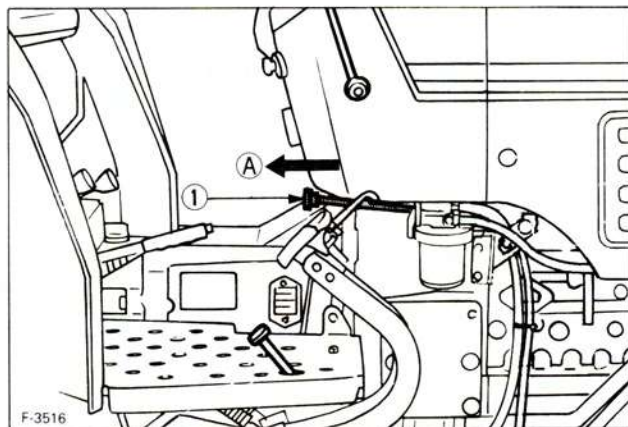


① Throttle lever ② Throttle pedal
A "Increase" B "Decrease (Idling)"

■ Engine Stop Knob

The engine stops when the key switch is turned off. If the engine does not stop, pull engine stop knob back and hold it until the engine stops.

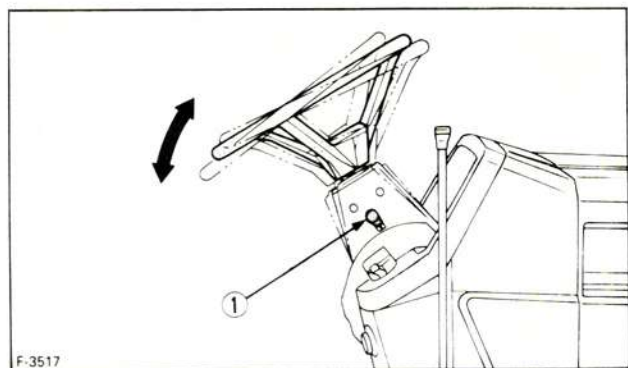
After the engine has stopped, be sure to push the stop knob back in, or the engine will not start the next time.



① Engine stop knob A "Pull"

■ Steering Wheel Tilt Lever

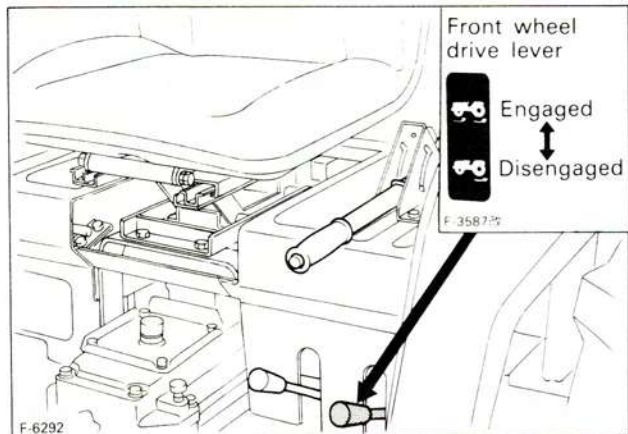
Pull up the steering wheel tilt lever, and the lock is released and the steering wheel can be adjusted to a desired tilt angle among the four settings.



① Steering wheel tilt lever

■ Front Wheel Drive Lever

Use the lever to engage the front wheels with the tractor stopped. Pull the lever up to engage the front wheel drive.



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IMPORTANT:

- Depress the clutch pedal before engaging the front wheel drive lever.
- 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

To avoid personal injury:

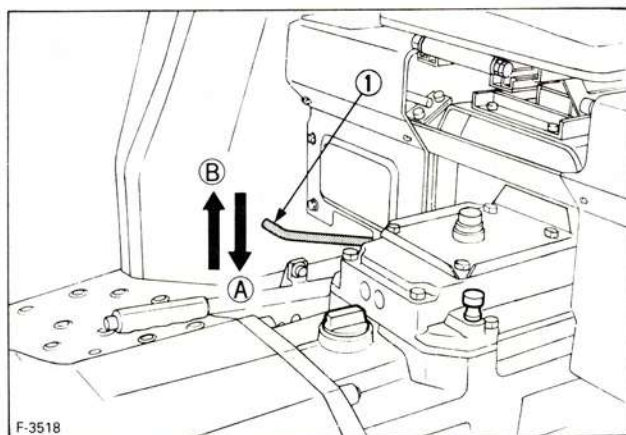
- Do not engage the front wheel drive lever while the tractor is traveling on a paved road or traveling at road speed. The tires may wear quickly. An accident may occur if the tractor is suddenly braked.

■ 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 32.



① Differential lock pedal

A Press to "ENGAGE" B Release to "DISENGAGE"

IMPORTANT:

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



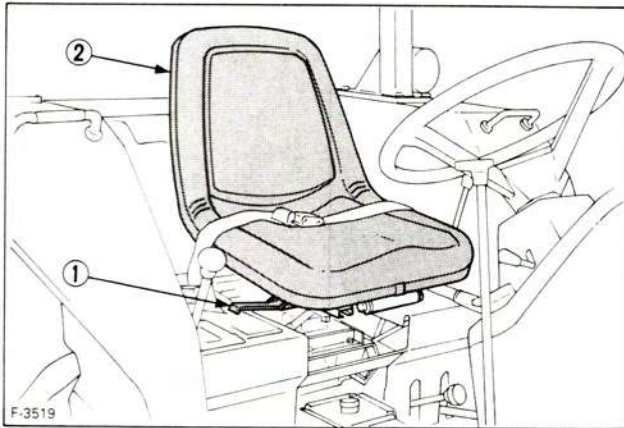
WARNING

To avoid personal injury:

- It is extremely dangerous to attempt to turn the tractor in either direction with the differential lock engaged. Be sure to release the lock before making such a turn.

■ Operator's Seat

- (1) The operator's seat position can be adjusted forward and backward by moving the seat adjusting lever.



① Adjusting lever ② Seat

IMPORTANT:

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

■ How to Open the Hood

To open the hood, remove the hood latches located on it.



CAUTION

To avoid personal injury:

- Never open the hood while the engine is running.

5.3 PTO OPERATION

■ PTO Gear Shift Lever (with Independent PTO)

The tractor with independent PTO has one PTO speed—540rpm. (Second PTO speed—1000rpm optional) Move the lever down to engage the PTO shaft. Pull the lever upward to disengage the PTO shaft.

IMPORTANT:

- PTO gear shift lever can be shifted only when the PTO clutch control lever is disengaged position.
- Completely stop the tractor before shifting PTO gear shift lever.

■ PTO Clutch Control Lever (with Independent PTO)

Disengage the PTO clutch by pulling it upward. Engage the PTO clutch by pushing the release button and the lever down slowly.

IMPORTANT:

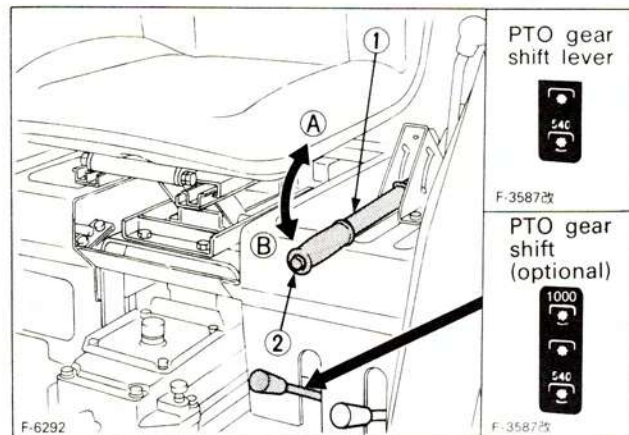
- Do not run the PTO clutch in the disengaged position for any period of time, premature wear will result on the clutch plate and thrust bearing.
- Engage PTO clutch slowly to prevent shock loads to the tractor and the implement.



CAUTION

To avoid personal injury:

- Before making adjustments to the implement, stop the engine.



① PTO clutch control lever ② Release button

A "DISENGAGE" B "ENGAGE"

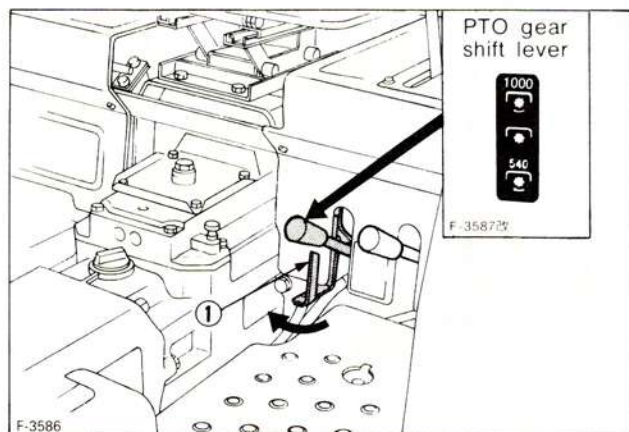


WARNING:

- Be sure to observe the PTO shaft speed prescribed for the individual implement. It is extremely dangerous to run an implement at high speed (1000 rpm optional) that is meant to be operated at low speed (540 rpm).

■ PTO Gear Shift Lever (without Independent PTO)

The tractor without independent PTO has two speeds—540 & 750 rpm. To use 750 rpm, release restrictor lever toward inside of the tractor and shift the lever up to desired position.



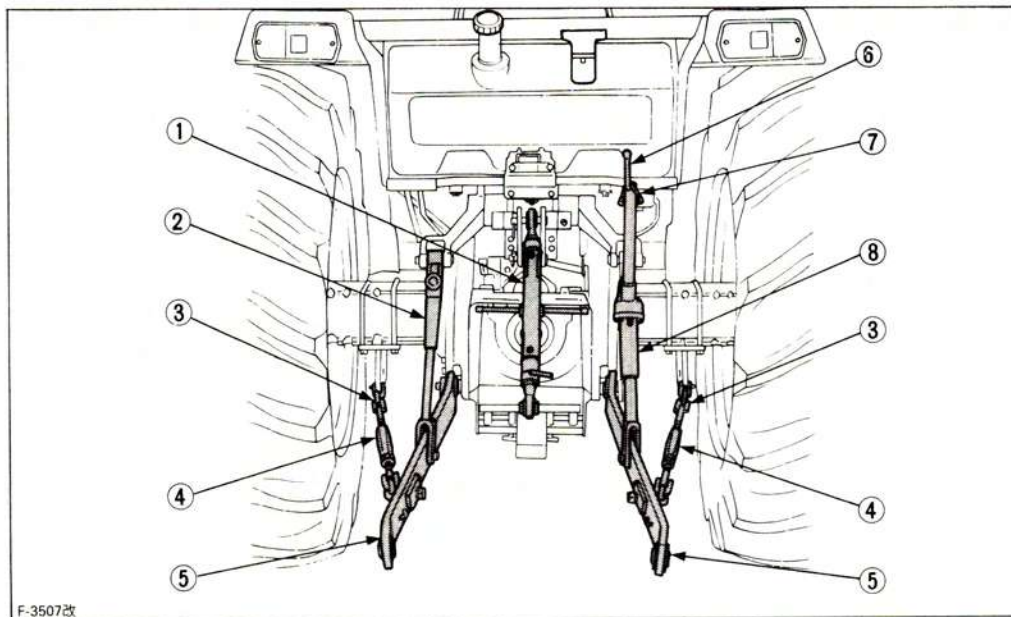
① Restrictor lever



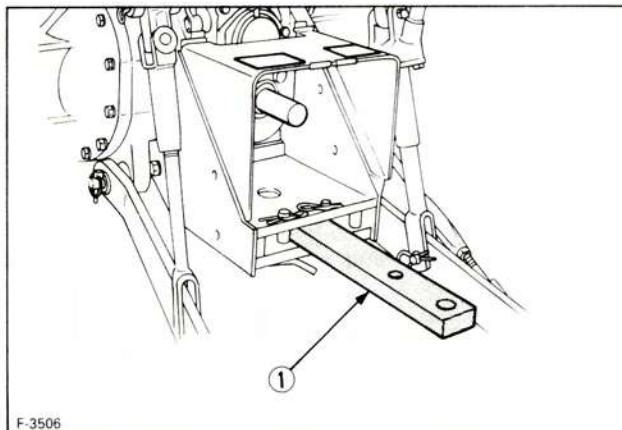
WARNING:

- Be sure to observe the PTO shaft speed prescribed for the individual implement. It is extremely dangerous to run an implement at high speed (750 rpm) that is meant to be operated at low speed (540 rpm).

6. THREE-POINT HITCH & DRAWBAR



- ① Top link
- ② Lifting rod (left)
- ③ Check chains
- ④ Turn buckle
- ⑤ Lower link
- ⑥ Adjusting handle
- ⑦ Handle stopper
- ⑧ Lifting rod (right)



① Swing drawbar



CAUTION

To avoid personal injury:

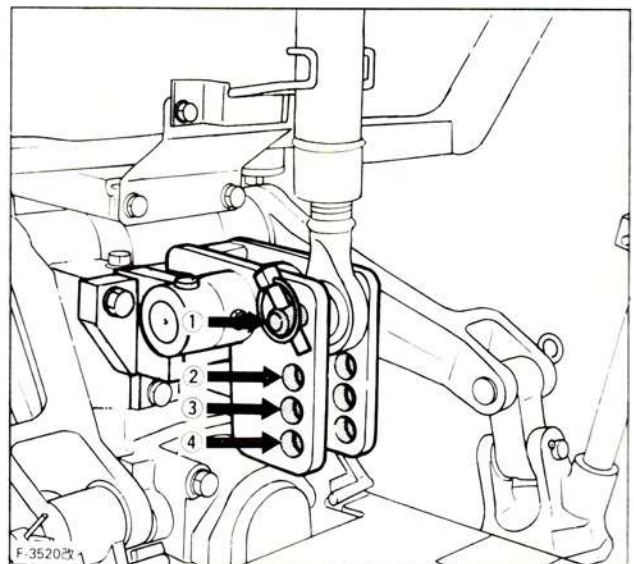
- Never pull from the top link, the rear axle or any point above the drawbar. Doing so could cause the tractor to tip over rearward causing personal injury.

For pulling, attach to the drawbar (fixed or swinging type). Use the 3-point hitch only with equipment designed for 3-point hitch usage.

■ Top Link Mounting Holes

Select the proper set of holes by referring to the "Hydraulic Control Reference Chart" on page 26.

If the hydraulic unit is set for draft control, draft response is more sensitive when an implement is connected to the lower set of top link mounting holes. If draft control is not required, it is recommended to use the top set ①.



■ Adjustment of Top Link

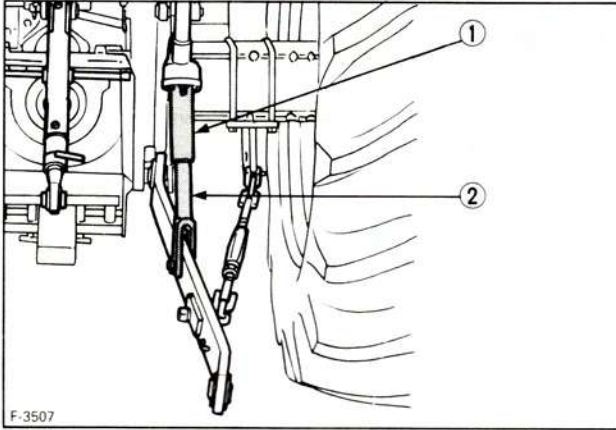
- (1) Adjust the angle of the implement to the desired position by shortening or lengthening the top link.
- (2) The proper length of the top-link varies according to the type of implement being used.

■ 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.

◆ Lifting rod (right)

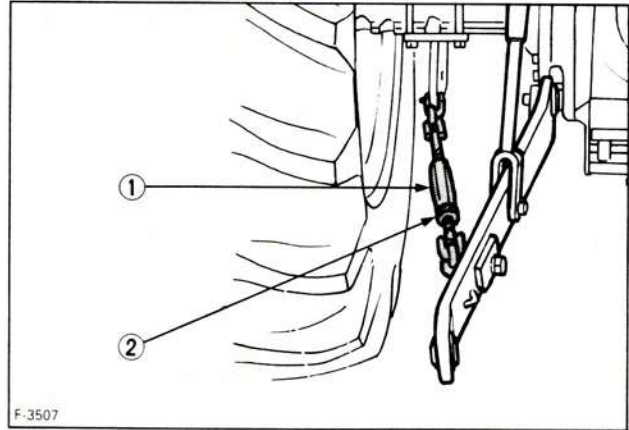
Be careful not to extend the lifting rod (right) to such an extent that it comes out of the cover.



① Cover ② Lifting rod (lower)

■ Adjustment of Check Chains

Adjust the turnbuckle to control horizontal sway of the implement.



① Turnbuckle ② Lock nut

■ Category I & II [L5450]

Category I type (standard)	Category II type
To change from category II to category I : - Reverse lower link position from back to front. - Insert adjusting collar onto the lower link pin for category I . - Move the check chain and bolt it to the rear end hole. - Repeat the procedure for both right and left lower links.	- Reverse the top link position from back to front. - Insert the adjusting collar for category I . ① Lower link ② Top link ③ Check chain ④ Collar, lower link pin ⑤ Collar, top link

7. HYDRAULIC UNIT

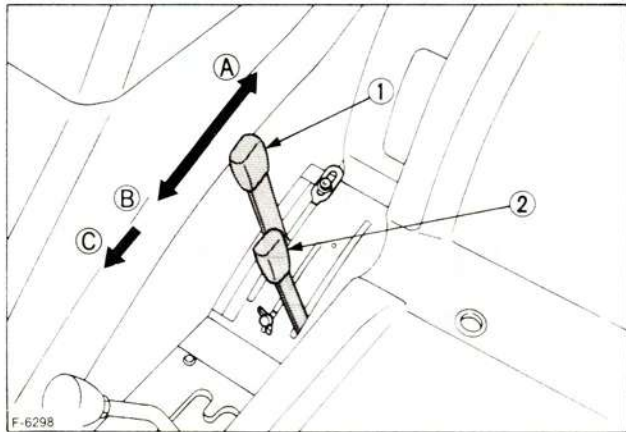
The hydraulic unit consists of the lifting system which includes the hydraulic cylinder, control valve, engine driven hydraulic pump and hydraulic lines.

■ 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 3-point hitch mounted implement regardless of the amount of pull required. Place the draft control lever to the forward-most position and set the implement working depth with the position control lever.

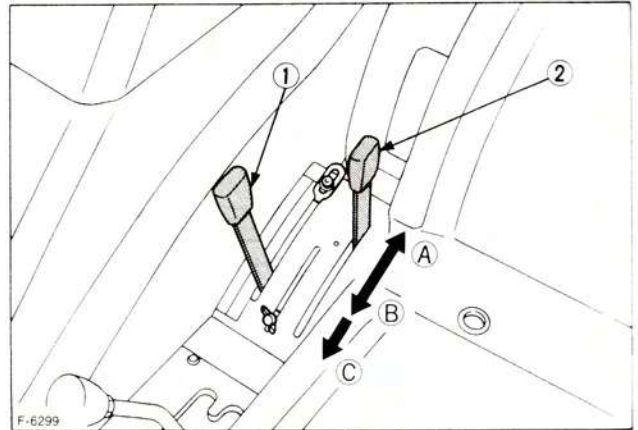


- ① Position control lever
 ② Draft control lever (forward-most position)
 A "Up" B "Down" C "Float"

◆ Draft Control

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

Place the position control lever to the forward-most position and adjust the implement pull with the draft control lever.



- ① Position control lever (forward-most position)
 ② Draft control lever
 A "Shallow" B "Deep" C "Float"

◆ Mixed Control

In draft control, when draft decreases, the implement automatically lowers to increase draft. However the implement sometimes lowers too much. To limit the degree, the implement can be lowered, position control function can be added, thus increasing working efficiency.

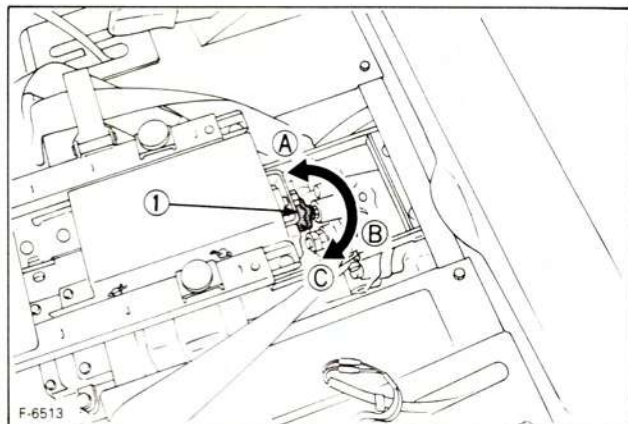
Set the position control lever to the lowest working depth desired for the implement. Then lower the draft control lever to the point where the implement is at the desired depth.

IMPORTANT:

- Do not operate until the engine has warmed up. If operation is attempted while the engine is still cold, the hydraulic mechanism life will be shortened.
- If noises are heard when the implement is lifting after the hydraulic control lever has been moved, the hydraulic mechanism is not adjusting properly. Unless corrected the unit will be damaged. Contact your Kubota dealer for proper 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.



① 3-point hitch lowering speed knob
A "Fast" B "Slow" C "Stop"



CAUTION

To avoid personal injury:

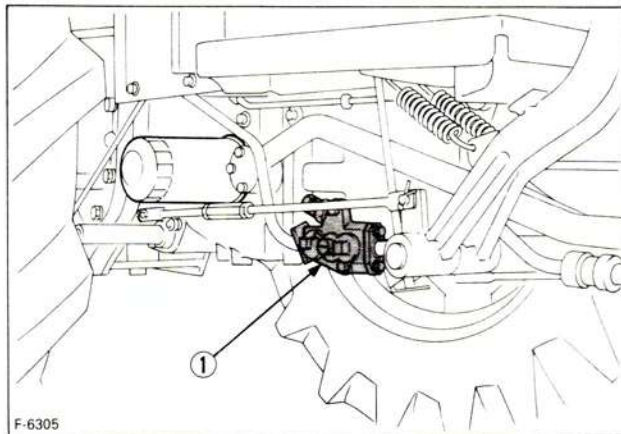
- Too fast of a lowering speed may cause damage or injury. Lowering speed of implement should be adjusted to 2 or more seconds.

■ Hydraulic Block type Outlet

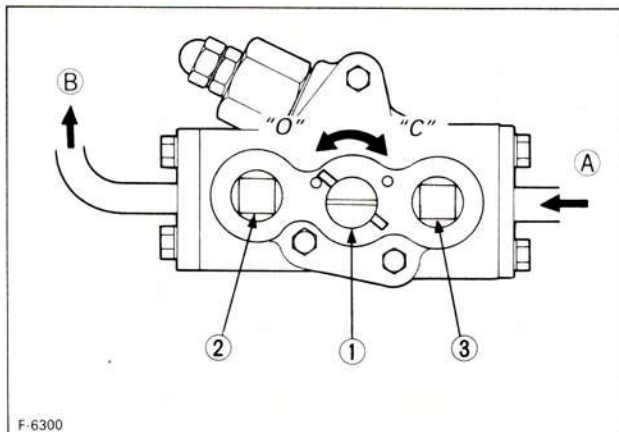
Hydraulic block type outlet is useful when adding hydraulic operated equipment such as: front loader, front blade, etc.

WHEN IMPLEMENT IS ATTACHED

- (1) Remove the plugs.
- (2) Route the implement inlet and outlet as shown in the illustration.
- (3) Move the control screw forward to "C" when implement is attached.



① Hydraulic block type outlet



① Control screw ② Inlet (From implement)
③ Outlet

To implement		
Max flow	L4350-L4850	41.7 ℓ/min (11GPM)
	L5450	49.2 ℓ/min (13GPM)
Max pressure	185 kgf/cm ² (2630 psi)	

A From gear pump

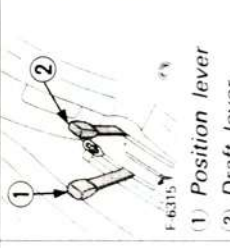
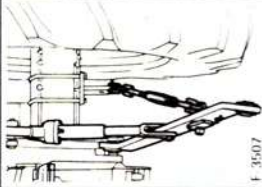
B To hydraulic control valve (3-point hitch)

IMPORTANT:

- When an implement is not attached be sure the control screw is turned back against "O".

■ 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	Soil condition	 Top link mounting holes	 (1) Position lever (2) Draft lever Position control lever Draft control lever	 F 2016 Gauge wheel	 F 3507 Check chains	Remarks
Moldboard plow	Light soil Mediul soil Heavy soil	4 3 2	Draft control or Mixed control	YES/NO	Loose	Adjust the check chains so that the implement can move 5 to 6 cm (2.0 to 2.4 in.) laterally. Check chains should be tight enough to prevent excessive implement movement when implement is in raised position.
Disc plow	—	2 or 3				
Harrower (spike, springtooth, disc type) Sub-soiler	—	2				
Weeder, ridger	—			YES		Hold the draft control lever at the forward most position during operation.
Earthmover, digger, scraper, manure fork, rear carrier	—	1	Position control	YES/NO	Tighten	With implements with gauge wheels, lower the position control lever all the way.
Mower (mid-and rear-mount type) Hay rake, tedder	—			NO		

8. WHEELS, TIRES AND BALLAST



CAUTION

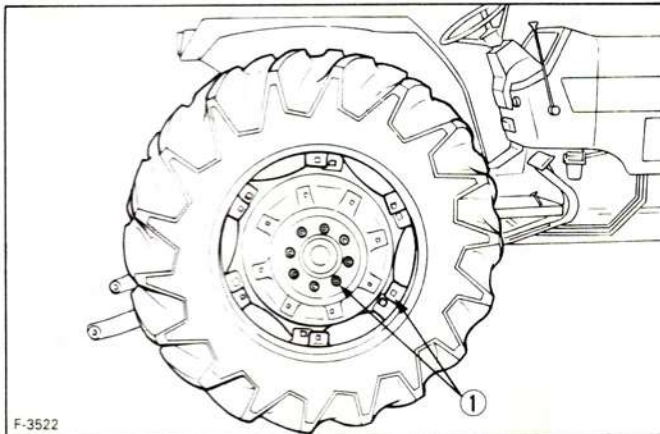
To avoid personal injury:

Never operate tractor with a loose rim, wheel, or axle.

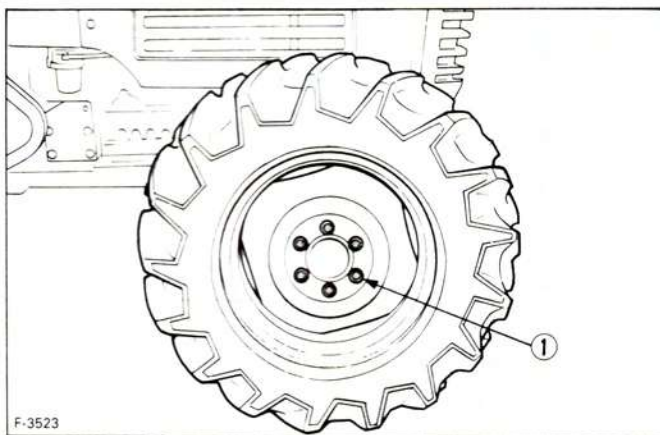
- Any time bolts are loosened, retighten to specified torque.
- Check all bolts frequently and keep them tight.

IMPORTANT:

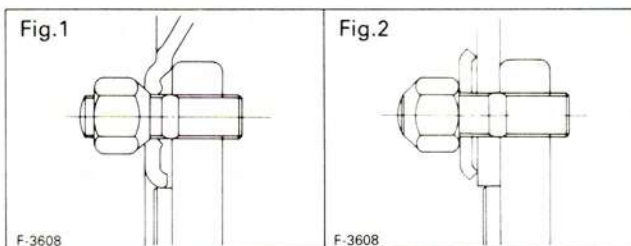
- Follow the same checking procedure when tractor is first used.



① 304N·m (31kgf·m, 225ft·lbs)



① 185N·m (19kgf·m, 135ft·lbs)

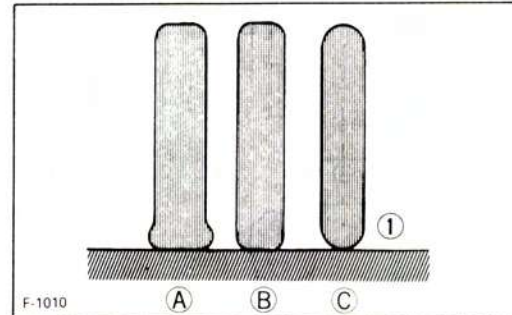


Wheels with beveled or tapered holes:
Use the tapered side of lug nut as fig.1.

Wheels without tapered holes:
Use washers and flat side of lug nut as fig.2.

8.1 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.



① Ground

A Insufficient

B Proper

C Excessive



CAUTION

To avoid personal injury:

- 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
Front	8.3-16, 6PLY, R1	235kPa (2.4kgf/cm ² , 34psi)
	9.5-16, 6PLY, R1	205kPa (2.1kgf/cm ² , 30psi)
	8.3-20, 6PLY, R1	235kPa (2.4kgf/cm ² , 34psi)
	9.5-20, 6PLY, R1	220kPa (2.2kgf/cm ² , 32psi)
	10-16.5, 6PLY, SGLSS	310kPa (3.1kgf/cm ² , 45psi)
	12-16.5, 6PLY, SGLSS	280kPa (2.8kgf/cm ² , 40psi)
	29X12.50-15, 4PLY, NHS	135kPa (1.4kgf/cm ² , 20psi)
	33X12.50-15, 4PLY, NHS	135kPa (1.4kgf/cm ² , 20psi)
Rear	14.9-24, 6PLY, R1	135kPa (1.4kgf/cm ² , 20psi)
	16.9-24, 6PLY, R1	125kPa (1.2kgf/cm ² , 18psi)
	12.4-28, 4PLY, R1	110kPa (1.1kgf/cm ² , 16psi)
	13.6-28, 6PLY, R1	150kPa (1.5kgf/cm ² , 22psi)
	14.9-28, 6PLY, R1	135kPa (1.4kgf/cm ² , 20psi)
	16.9-28, 6PLY, R1	125kPa (1.2kgf/cm ² , 18psi)
	14.9-24, 6PLY, R4	165kPa (1.7kgf/cm ² , 24psi)
	17.5L-24, 8PLY, R4	180kPa (1.8kgf/cm ² , 26psi)
	16.9-24, 6PLY, R4	150kPa (1.5kgf/cm ² , 22psi)
	21.5L-16.1, 6PLY, R3	80kPa (0.8kgf/cm ² , 12psi)
	16.9-24, 6PLY, R3	125kPa (1.2kgf/cm ² , 18psi)

8.2 WHEEL ADJUSTMENT

■ Rear Wheels

Rear tread can be adjusted in 7 steps. (Shown below are the tread variation with the standard tires.)

To change the rear tread:

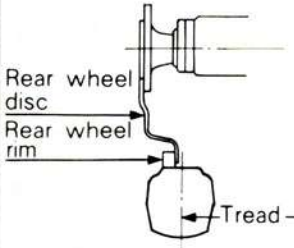
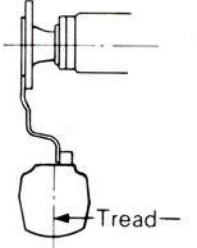
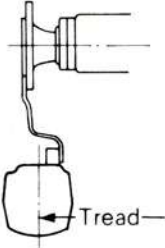
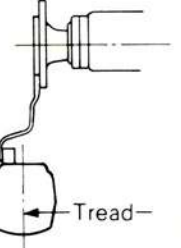
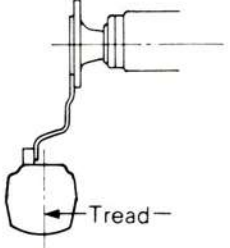
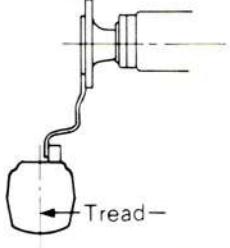
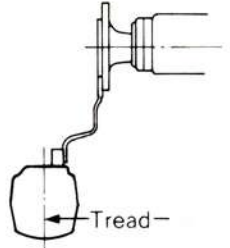
- (1) Jack the rear tires up.
- (2) Follow the illustrations below to get the desired tread width.



CAUTION

To avoid personal injury:

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

Models				
12.4-28 13.6-28 14.9-28	1320 mm (52 in.)	1420 mm (56 in.)	1525 mm (60 in.)	1620 mm (64 in.)
16.9-28	1335 mm (52.5 in.)	1435 mm (56.5 in.)	1540 mm (60.5 in.)	1620 mm (64 in.)
Models				
12.4-28 13.6-28 14.9-28 16.9-28	1725 mm (68 in.)	1825 mm (72 in.)	1930 mm (76 in.)	

F-3748

IMPORTANT:

- Always attach wheels as shown in the above drawing.
- If not attached as illustrated, transmission parts may be damaged.

Do not use tires larger than specified.

■ Front Wheels

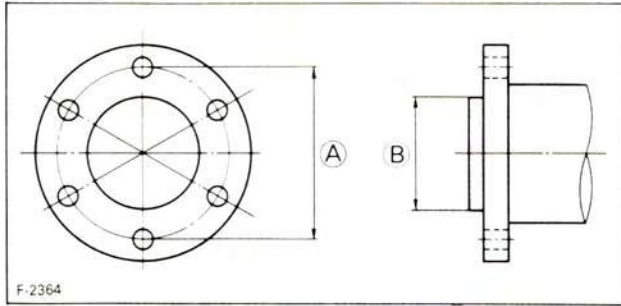
Front tread can not be adjusted.

IMPORTANT:

- Do not turn front discs to obtain wider tread.
- When you intend to mount different size of tires from equipped ones, consult your dealer about front drive gear ratio for detail.

Excessive wear of tires may occur due to improper gear ratio.

8.3 WHEEL HUB



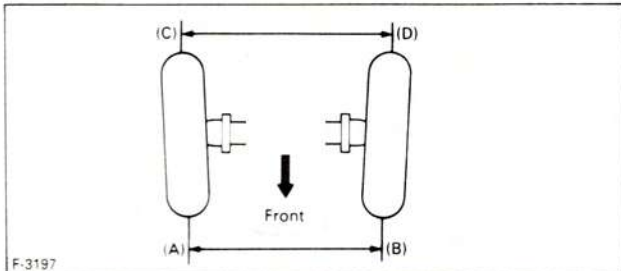
F-2364

	Front wheel hub	Rear wheel hub
Bolt circle diameter A	152.4 mm (6 in.)	203.2 mm (8 in.)
Number of bolts	6	8
Bolt sizes	M14 x 1.5	M16 x 1.5
Hub pilot diameter B	117.4 mm (4.625 in.)	152.4 mm (6 in.)

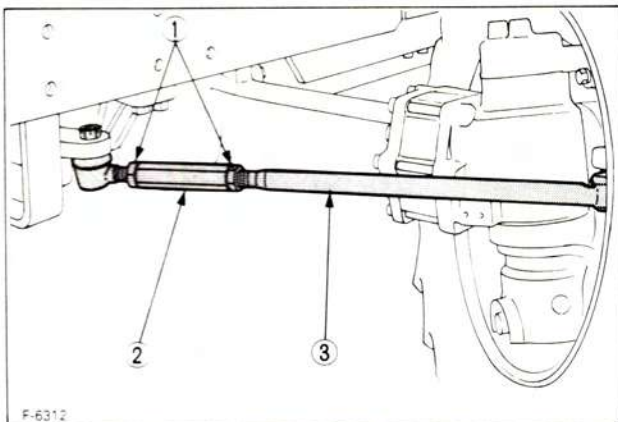
8.4 TOE-IN

Toe-in equals distances (C) (D) — (A) (B), or 2 to 8 mm (0.1 to 0.3 in.).

To adjust toe-in loosen the lock nut and adjust the length of the tie rod until the proper toe-in measurement is obtained. Retighten the lock nut.



F-3197



F-6312

- 1 Lock nut 2 Turn buckle
3 Tie rod

8.5 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 to 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

To avoid personal injury:

- 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	12.4—28	13.6—28	14.9—28	16.9—28
Water	132 kg (292 lbs.)	163 kg (359 lbs.)	201 kg (442 lbs.)	261 kg (575 lbs.)
Slush free at —24°C (—12°F)				
Solid at —47°C (—52°F)	168 kg (370 lbs.)	199 kg (439 lbs.)	247 kg (545 lbs.)	317 kg (699 lbs.)
[Approx. 1.5 kg (3.5 lbs.) CaCl ₂ per 4 ℓ (1 gal) of water]				
Slush free at —47°C (—52°F)				
Solid at —52°C (—62°F)	178 kg (392 lbs.)	212 kg (467 lbs.)	260 kg (574 lbs.)	339 kg (747 lbs.)
[Approx. 2.25 kg (5 lbs.) CaCl ₂ per 4 ℓ (1 gal) of water]				

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 36.



CAUTION

To avoid personal injury:

- Read "Safe Operation" in the front of this manual.
- Read the warning and caution labels located on the tractor.

9.1 OPERATING THE ENGINE



CAUTION

To avoid personal injury:

- To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.
- Make it a rule to set main gear shift lever, Hi-Lo range shift lever, shuttle shift lever and PTO 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) Place Main gear shift lever, Hi-Lo range shift lever, shuttle shift lever and PTO gear shift lever in the "neutral" position.
- (3) Place hydraulic control lever in the lowest position.
- (4) Insert the key into the the main switch and turn it on.
- (5) Fully depress the clutch pedal. If the PTO clutch control lever is equipped, place it in the "disengage" position. (The safety switch is activated.)
- (6) Check to see that all the lights on the Easy Checker are on.
- (7) Turn the key to start position and release when the engine starts.
- (8) Check to see that all the lights on the Easy Checker are off.

IMPORTANT:

- Do not turn the key switch to start position while the engine is running.
- When the temperature is below 0°C (32°F), place the main gear shift lever in the neutral position and run the engine at medium speed to warm the lubricant of engine and transmission for 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.
- Do not operate the tractor under full load condition until it is sufficiently warmed up.

- Do not use starting fluid or ether.
- Do not leave your tractor in the rain. If it cannot be avoided, cover the muffler pipe to prevent rain drops from entering.
- When cold, blue or white exhaust fumes may come out occasionally (about a minute) from muffler, which is not abnormal. Colored fumes continued even longer can be extinguished by applying load to the engine. It should be avoided to continue engine slow idle for a long time or repeat engine starting more than necessary.

■ Starting Engine in the Low Temperature Range

If the ambient temperature is below -5°C (23°F) and the engine is very cold, start it in the following manner: Take steps (1) through (6) above.

- (7) Push the hand throttle lever forward all the way.
- (8) Turn the key to "Preheat" and keep it there for about 30 seconds.
- (9) Turn the key switch to the start position and the engine should start.
(If the engine fails to start after 20 seconds, turn off the key switch for 30 seconds. Then repeat steps (8) and (9). To protect the battery and the starter, make sure that the starter is not continuously turned for more than 30 seconds.)

■ Stopping the Engine

- (1) After slowing the engine, turn the key switch to "OFF", and the engine comes to complete stop.
- (2) Pull the key out of switch.

■ 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

To avoid personal injury:

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

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

A tractor with hydraulic shuttle employs a hydraulic clutch. Hydraulic oil serves as transmission oil, too. 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 or a damaged hydraulic clutch. 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°C (32°F)	At least 10 minutes
0 to -10°C (32 to 14°F)	10 to 20 minutes
-10 to -20°C (14 to -4°F)	20 to 30 minutes
Below -20°C (-4°F)	More than 30 minutes

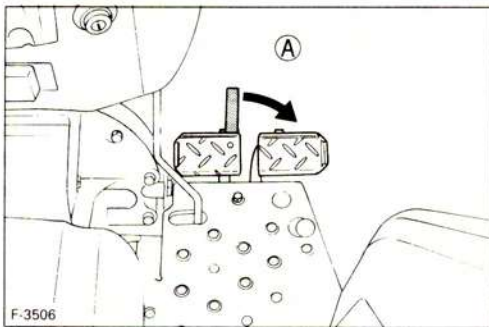
■ Block Heater

A block heater is available as an option from your dealer. It will assist you in starting your tractor when the ambient temperature is below 0°C (32°F).

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.



A "Connected"

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

IMPORTANT:

- Be sure to release the parking brake before moving the tractor.
- Change transmission speed only after depressing the clutch pedal all the way.

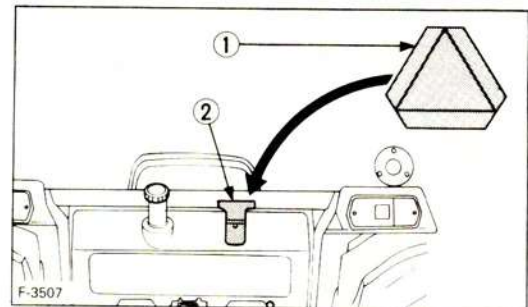
- Avoid slipping the clutch to prolong the clutch service life, paying attention to the following points:
- Do not slip the clutch when changing speed.
- Select proper gear and engine speeds depending on the type of job.
- Do not operate the tractor with your foot resting on the clutch pedal.
- For road travel, start the tractor in a lower gear, and then change to a higher gear. It will prolong the clutch service life.



CAUTION

To avoid personal injury:

- Sudden release of the clutch may cause the tractor to lunge unexpectedly.
- 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 go out of control.
- Do not allow any person other than the driver to ride on the tractor.
- 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.
- 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.
- If descending a slope, never disengage the clutch or shift transmission to neutral. Doing so could cause the tractor to speed up out of control.
- Roll-Over Protective Structure (ROPS) with a seat belt is recommended by Kubota in most applications.
- Do not apply the differential lock while traveling at road speeds. Doing so could cause the tractor to swerve out of control.
- When traveling on road with 3-point hitch mounted implement attached, be sure to have sufficient front weight on the tractor to maintain steering stability.
- When traveling on a road, attach the SMV emblem to the tractor to identify it as a low speed vehicle. Observe all local and state traffic regulations.



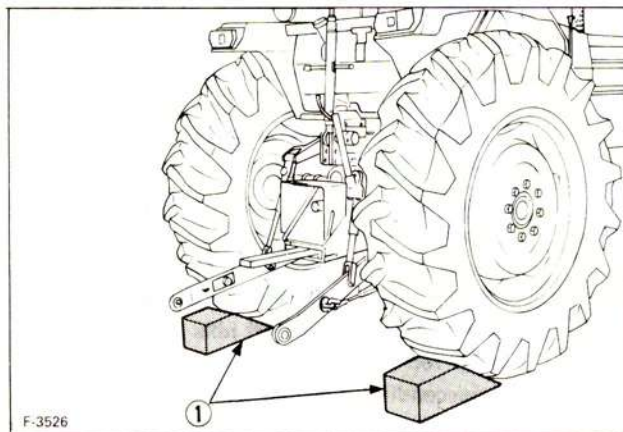
1 SMV emblem 2 Bracket

■ 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 apply 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.



① Chocks



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 lock, 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 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.



CAUTION

To avoid personal injury:

- When using the differential lock, always slow the engine down.
- 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.
- Always disengage the differential lock before attempting to turn the tractor. It is very dangerous not to do so.
- Do not engage differential lock while one wheel is spinning and the other is completely stopped. It may cause the tractor to lunge unexpectedly.

9.3 PULLING

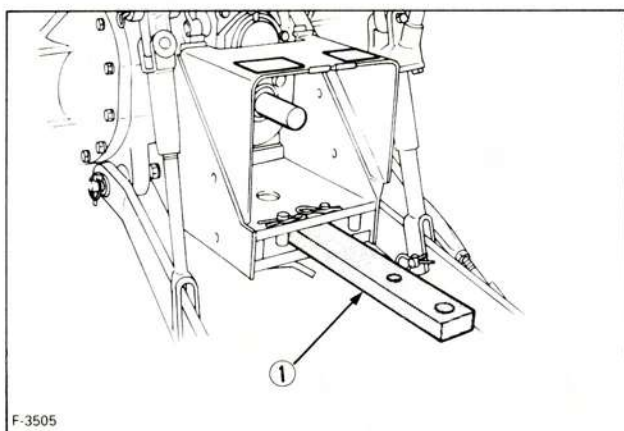


CAUTION

To avoid personal injury:

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

For pulling, attach to the drawbar (fixed or swinging type). Use the 3-point hitch only with equipment designed for 3-point hitch usage.



F-3505

① Swing drawbar

9.4 CHECK DURING DRIVING

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

■ Hydraulic System

If the pressure in the hydraulic suction line exceeds the prescribed level, the warning light in the Easy Checker, will come on indicating a clogged hydraulic oil filter. Replace the hydraulic oil filter with a new one, and change transmission oil if necessary.

■ Coolant

If the coolant in the coolant recovery reservoir drops to the "LOW LEVEL" mark, add the proper mixture of water and anti-freeze up to the full level in the coolant recovery reservoir.



CAUTION

To avoid personal injury:

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

If engine temperature gauge needle moves past the H on the gauge, stop the engine and check for the following:

- (1) Shortage or leakage of the coolant.
- (2) Foreign matter on the radiator net and dust and dirt between the radiator fins and tube.
- (3) Loose fan drive belt.
- (4) Internal blockage in the radiator core or hose.

■ Fuel

Be careful not to empty the fuel tank. Air may enter the fuel system. Should this happen, the system should be bled (see page 37 Fuel system maintenance). Refuel as soon as the warning light for low fuel level in the Easy Checker comes on.

■ Engine Oil Pressure Warning Light

The oil pressure warning light goes on if the oil pressure in the engine goes below the prescribed level. If this should happen during operation, and it does not go off even if the engine is accelerated to more than 1000 rpm (16.7 r/s), immediately stop the engine, and check:

- (1) The quantity of engine oil (see page 35, 39 Engine oil).
- (2) The lubrication system (see page 39 Engine oil filter).

■ Immediately Stop the Engine if:

- (1) The engine suddenly slows down or accelerates,
- (2) Unusual noises suddenly develop,
- (3) Exhaust suddenly becomes very dark,
- (4) The oil pressure warning light goes on during operation.

Note:

- For checking and servicing of your tractor, contact your nearest Kubota dealer for instructions.

10. MAINTENANCE

10.1 DAILY CHECK

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



CAUTION

To avoid personal injury:

- Be sure to check and service the machine on a level surface 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	27
	2	Oil and water leaks	—
	3	Engine oil level	39
	4	Transmission fluid level	40
	5	Coolant level in the radiator	41,42
	6	Dust in the air cleaner dust cup	43
	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
While sitting in the operator's seat	1	Throttle pedal Brake pedals Clutch pedal	—
	2	Parking brake	—
	3	Steering wheel	—

	No.	Check item	Reference page
Turning the key switch on	1	Performance of the easy checker light	14
	2	Headlights Tail lights Hazard lights	—
	3	Performance of the meters and gauges	—
	4	Horn Signal lights	—
Starting the engine	1	Color of the exhaust fumes	—
	2	Going off of the lights on the Easy Checker	14
	3	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.

No.	Locations	Capacities			Lubricants	
		L4350	L4850	L5450		
1	Fuel	60 ℓ (15.9 U.S.gals)			No.2—D diesel fuel No.1—D diesel fuel below −10°C (14°F)	
2	Coolant	7 ℓ (7.4 U.S.qts.)	8 ℓ (8.5 U.S.qts.)	Fresh clean water with anti-freeze		
3	Engine crankcase	6.5 ℓ (6.9 U.S.qts.)	8 ℓ (8.5 U.S.qts.)	● Engine oil: API Service CC or CD		
4	Transmission case	43 ℓ (45.5 U.S.qts.)			● Multi-grade transmission fluid The transmission fluids listed on page 52 or equivalent are recommended.	
5	Front differential case	5.5 ℓ (5.8 U.S.qts.)	6.3 ℓ (6.6 U.S.qts.)	● Gear oil SAE80, SAE90 or Multi-grade transmission fluid (See page 52)		
6	Front wheel case (right and left)	2.7 ℓ (2.9 U.S.qts.) each				
7	Greasing	No. of greasing points			Capacity	Type of grease
	Steering lever shaft	1			Until grease overflows.	Multipurpose type grease (See page 52)
	Power steering cylinder	2				
	Clutch pedal	1				
	Brake pedal	1				
	Pedal shaft support	1				
	Front axle support	2				
	Front wheel case support	2				
	Top link mount	2				
	Lift rod	1				
	Battery terminal	2			A small amount	
	Clutch release hub	1			Grease when disassembled.	

10.3 MAINTENANCE CHECK LIST

No.	Items	Period	Indication on hour meter																Since then	Reference page
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800		
1	Engine oil	Change	⊙			○				○				○				○	every 200 Hr	39
2	Engine oil filter cartridge	Replacement	⊙							○								○	every 400 Hr	39
3	Transmission fluid	Change	⊙							○								○	every 400 Hr	40
4	Magnetic plug	Cleaning	⊙			○				○				○				○	every 200 Hr	40
5	Hydraulic oil filter cartridge	Replacement	⊙			○				○				○				○	every 200 Hr	40
6	Magnetic filter	Cleaning	⊙			○				○				○				○	every 200 Hr	41
7	Front differential case oil	Change	⊙							○								○	every 400 Hr	41
8	Front wheel case (right and left) oil	Change	⊙							○								○	every 400 Hr	41
9	Greasing		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	46
10	Air cleaner primary element	Cleaning		○		○		○		○		○		○		○		○	every 100 Hr	43
		Replacement																	every 1 year*	43
11	Safety element	Replacement																	every 1 year	43
12	Fuel filter element	Cleaning		○		○		○				○		○		○			every 100 Hr	38
		Replacement								○								○	every 400 Hr	38
13	Fan belt tension	Check				○				○				○				○	every 200 Hr	49
14	Battery electrolyte level	Check				○				○				○				○	every 200 Hr	44
15	Clutch pedal play range [Except Ever clutch]	Check		○		○		○		○		○		○		○		○	every 100 Hr	47
16	Clutch pedal stroke [Ever clutch only]	Check								○								○	every 400 Hr	47
17	Brake pedal play range	Check		○		○		○		○		○		○		○		○	every 100 Hr	48
18	Toe-in	Check				○				○				○				○	every 200 Hr	48
19	Fuel line	Check				○				○				○				○	every 200 Hr	38,46
		Replacement																	every 2 year**	46
20	Radiator hose	Check				○				○				○				○	every 200 Hr	42
		Replacement																	every 2 year	42
21	Radiator	Cleaning																○	every 800 Hr	41,42
22	Powersteering oil line	Check				○				○				○				○	every 200 Hr	46
		Replacement																	every 2 year**	46
23	Front differential case front-back play range	Check								○								○	every 400 Hr	49
24	Valve clearance	Check																○ ***	every 800 Hr	—
25	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.

Note: The jobs indicated by ⊙ must be done after first 50 hours.

11. CHECK AND MAINTENANCE

11.1 FUEL

■ Checking and Refueling

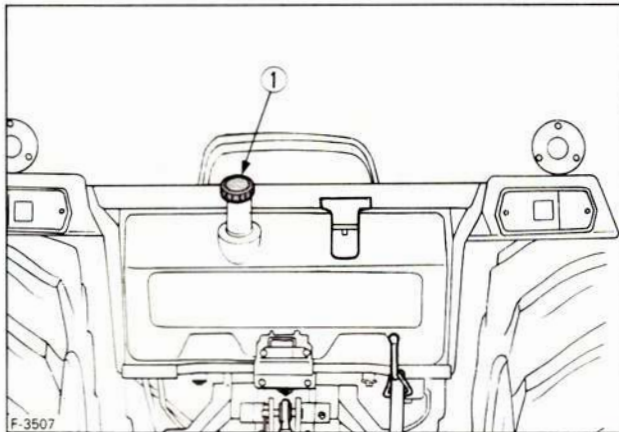


CAUTION

To avoid personal injury:

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

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



① Fuel tank cap

Fuel tank capacity	60 l (15.9 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:

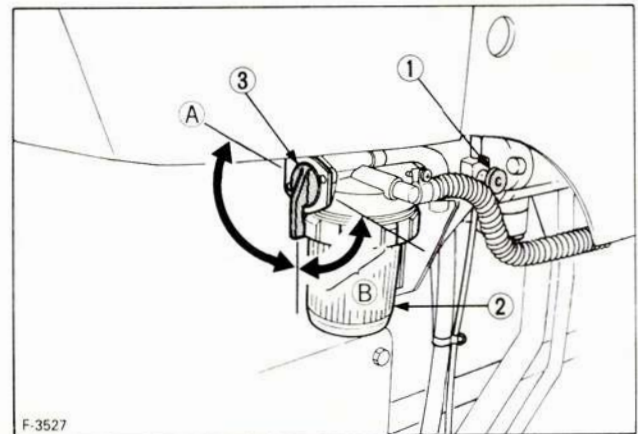


CAUTION

To avoid personal injury:

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

- (1) Fill the fuel tank with fuel, and open the fuel cock.
- (2) Loosen the air vent cock ①.



① Air vent cock ② Fuel filter

③ Fuel cock

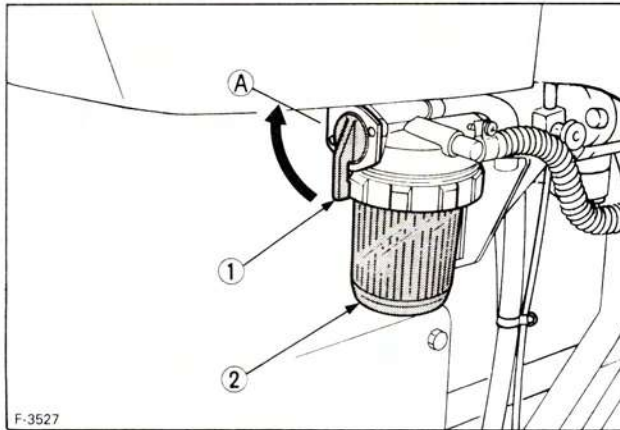
A "Close" B "Open"

- (3) When bubbles disappear from fuel coming out of the drain pipe, close the air vent cock ①.

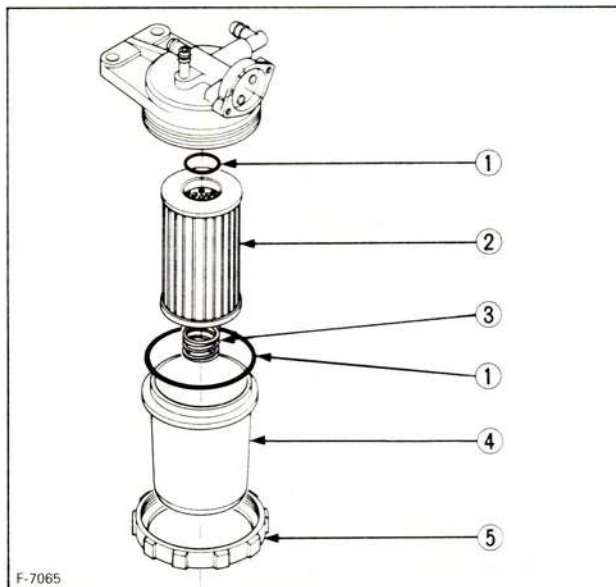
■ Fuel Filter Bowl Cleaning

When period of operation reaches approx. 100 hours, clean the fuel filter. This job should not be done in the field, but in a clean place.

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



① Fuel cock ② Fuel filter bowl
A "Close"



① O ring ② Filter element ③ Spring
④ Filter bowl ⑤ Screw ring

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 clean the fuel filter bowl periodically.

■ Fuel Line Check



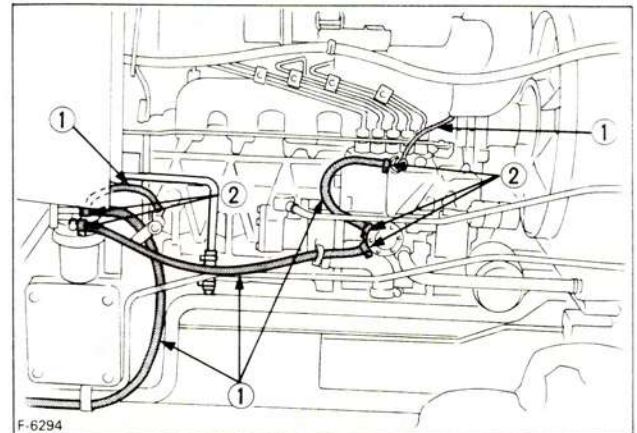
CAUTION

To avoid personal injury:

- Stop the engine when attempting to check the fuel line.
- 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.



① Fuel lines ② Clamps

- (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. Entrance of dust and dirt causes 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



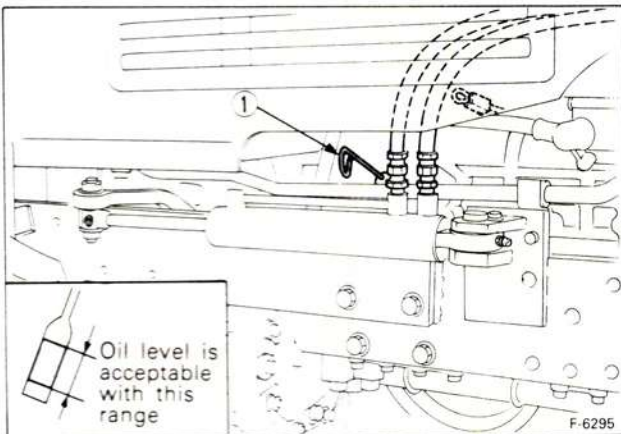
CAUTION

To avoid personal injury:

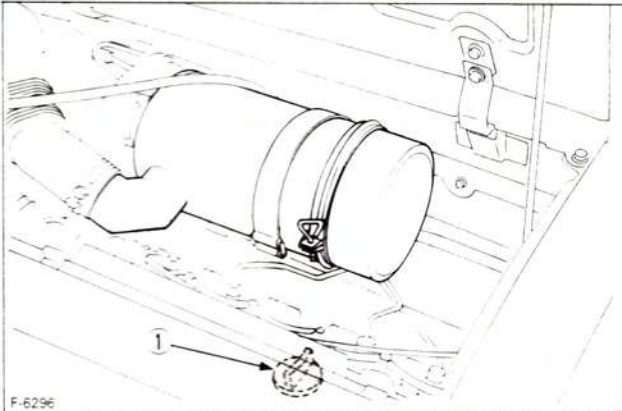
- Be sure to stop the engine before checking the oil level, changing the oil and changing the oil filter cartridge.

■ Oil Level Check and Replenishment

- (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.



① Dipstick



① Oil inlet

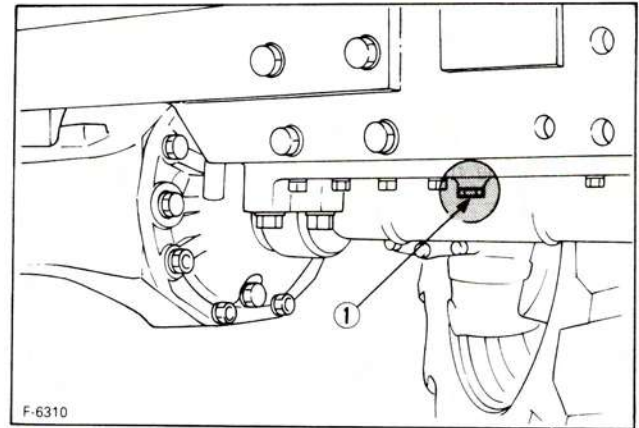
- (4) When using an oil of different manufacturer or viscosity from the previous one, remove all of the old oil. Never mix two different types of oil.
- (5) Use the proper SAE Engine Oil according to the air temperatures.

ENGINE OIL VISCOSITY CHART

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

■ Engine Oil Change

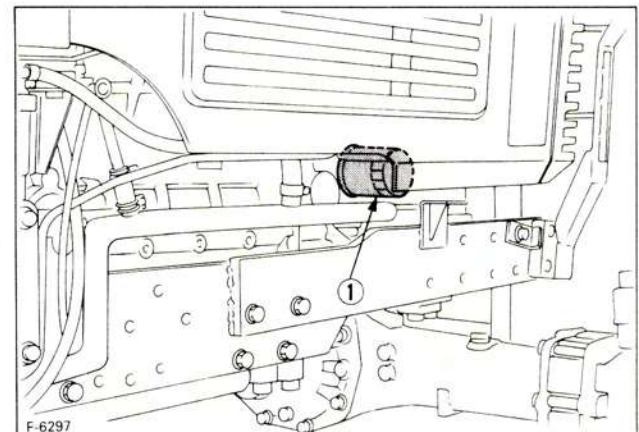
- (1) To drain the used oil, remove the drain plug at the bottom of the engine and drain the oil completely. All the used oil can be drained out easily when the engine is still warm.
- (2) Reinstall the drain plug.
- (3) Fill with the new oil up to the upper notch on the dipstick.



① Drain plug

■ Engine Oil Filter Cartridge Change

- (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.



① Oil filter cartridge

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

To avoid personal injury:

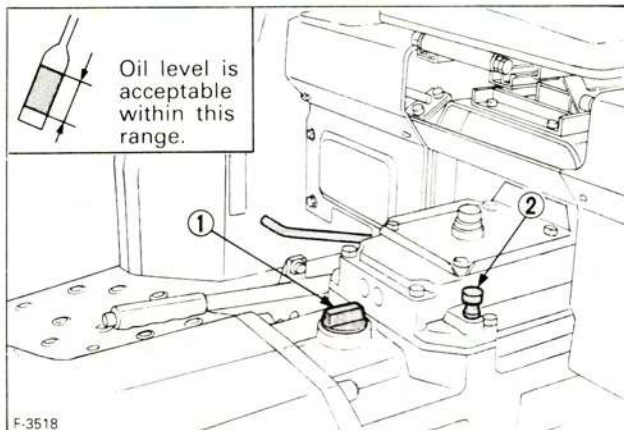
- Be sure to stop the engine before checking and changing the transmission fluid.

■ Transmission Fluid Check and Replenishment

To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level lies between the two notches.

If low, replenish through the oil filling plug.

Use multi-grade transmission fluid. (See page 52)

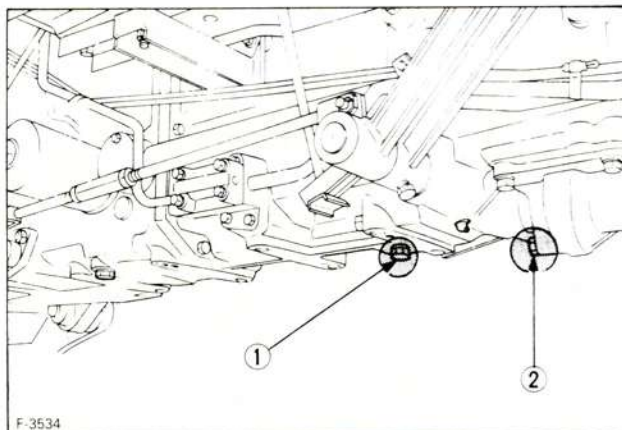


① Oil filling plug ② Dipstick

■ Transmission Fluid Change

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

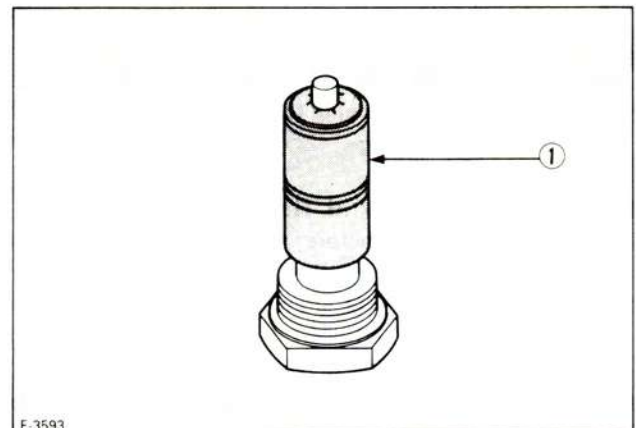
- (1) To drain the transmission oil, place an oil pan underneath the transmission case and remove the drain plugs at the bottom of the transmission case.
- (2) After draining install drain plugs and fill with new transmission fluid.
- (3) After running the engine for a few minutes, stop it and check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



① Drain plug (with magnet) ② Drain plug

◆ Cleaning magnetic plug

Remove the magnetic plug and clean off metal filings.



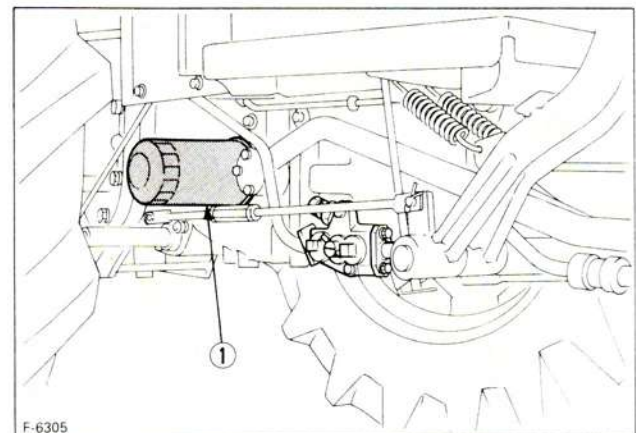
① Magnetic plug

IMPORTANT:

- Do not operate the tractor immediately after changing the transmission fluid.
Run the engine at medium speed for a few minutes to prevent damage to the transmission.

■ Hydraulic Oil Filter (Cartridge) Replacement

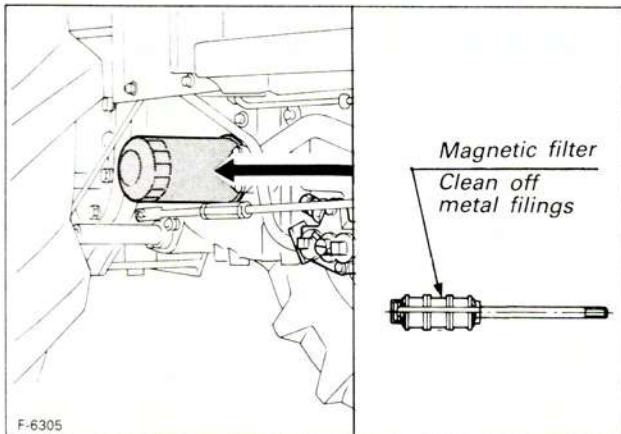
Detach the oil filter cartridge, and install a new one.



① Hydraulic oil filter (cartridge)

◆ Cleaning magnetic filter

After detaching the oil filter cartridge, clean off metal filing tips from the magnetic filter. Wipe the filter.



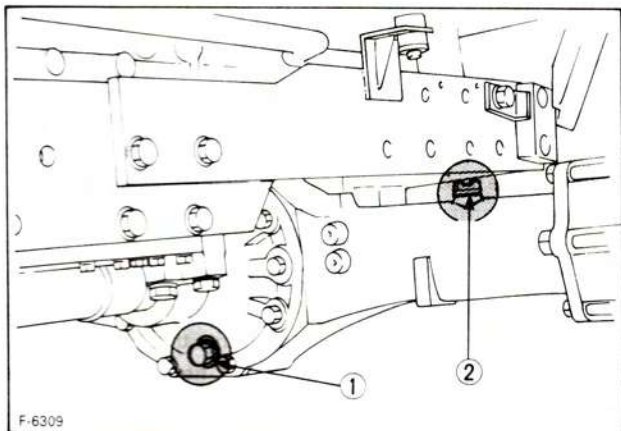
IMPORTANT:

- For oil check and replenishment place the tires as straight as possible.

11.4 FRONT AXLE CASE OIL

■ Front Differential Case

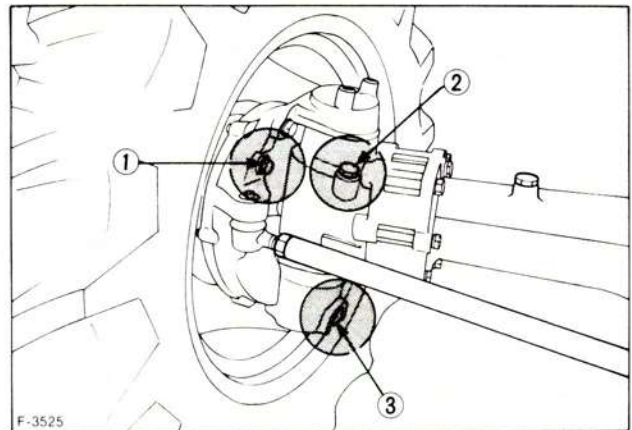
Remove the drain and filling port plug. After draining, replace the drain plug and fill with new oil.



① Drain plug ② Filling port plug

■ Front Wheel Case (Right and Left)

Drain old oil by removing the right and left drain plugs and the filling port plug. Fill with new oil by the fill port.



① Oil level check plug ② Filling plug
③ Drain plug

11.5 RADIATOR



CAUTION

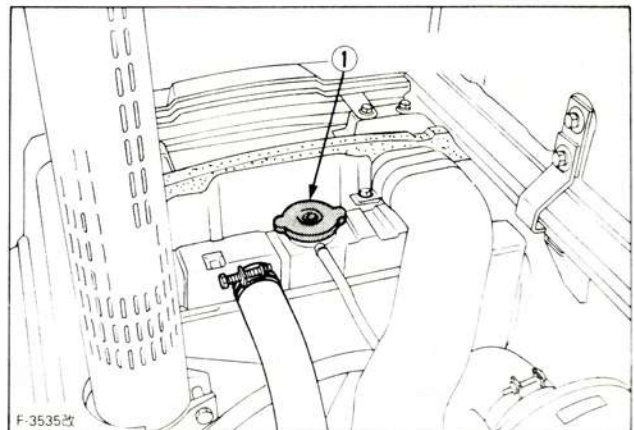
To avoid personal injury:

- Do not remove the 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.

■ Coolant Check, Replenishment and Change

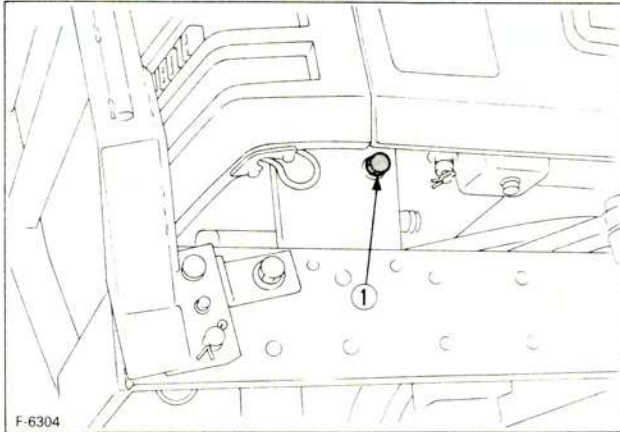
Check the coolant level at the coolant recovery reservoir. If it is low, add the proper mixture of water and anti-freeze up to the full level.

- (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.



① Radiator cap

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



① Drain plug

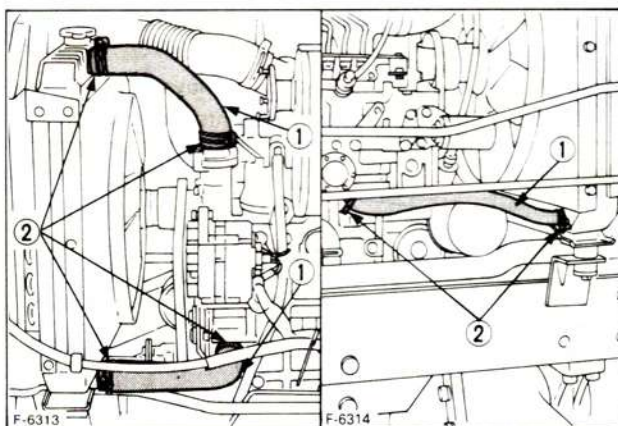
- (4) Be sure to close the pressure cap securely. If the cap is loose or improperly closed, water may leak out and the engine could overheat.
- (5) Do not use an anti-freeze and scale inhibitor at the same time.

■ 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.



① Radiator hoses ② Clamps

■ 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 water cooling system should be cleaned on the following occasions:
 - Every 800 service hours
 - When adding an anti-freeze solution.
 - When changing from water containing anti-freeze to pure water.
- (2) When cleaning the water cooling system, Kubota Scale Inhibitor No.20, or its equivalent, is recommended to effectively wash away scale build-up.

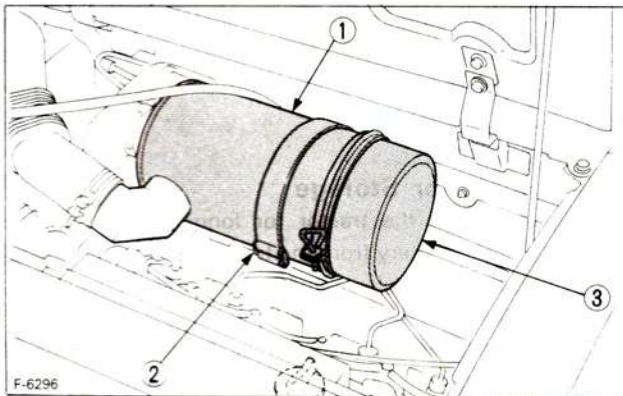
■ Anti-Freeze

If the cooling water freezes, the engine cylinder and radiator may crack. In cold weather before the temperature drops below 0 °C (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 parts.

11.6 AIR CLEANER

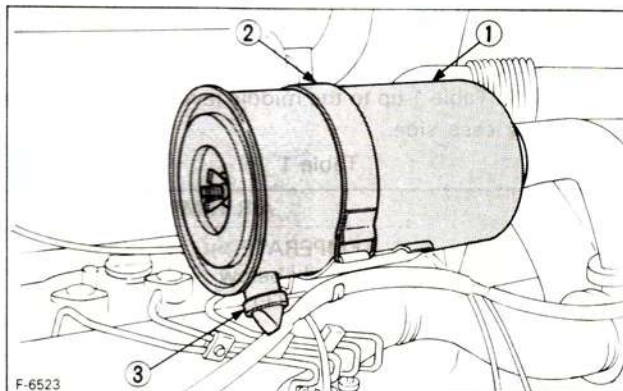
- (1) The air cleaner uses two dry elements, never apply oil.
- (2) Do not let dust build up to more than the half level in the dust cup. Detach the dust cup and clean out the dust—normally once a week, everyday in working conditions that are especially dusty.
- (3) Do not touch primary filter element except in cases where cleaning is required.
- (4) When cleaning this element, refer to the instructions below.
- (5) If the elements are stained with carbon or oil, replace them.
- (6) Change the primary element once yearly or after every sixth cleaning, whichever comes first.
- (7) The safety element should be removed only if it is to be replaced. Do not attempt to clean the safety element. Change the safety element once yearly or after every sixth cleaning of the primary element, whichever occurs first.



① Air cleaner ② Band ③ Dust cup

IMPORTANT:

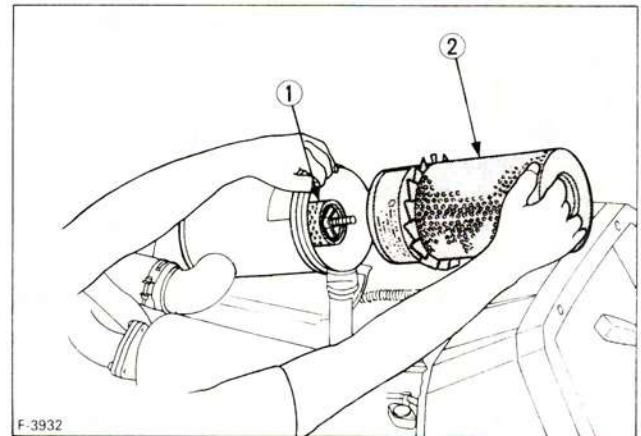
- Be sure to refit the dust cup with the arrow ↑ (on the rear) upright. If the dust cup is improperly fitted, dust passes by the dust cup and directly adheres to the element.
- Do not run the engine with filter elements removed.



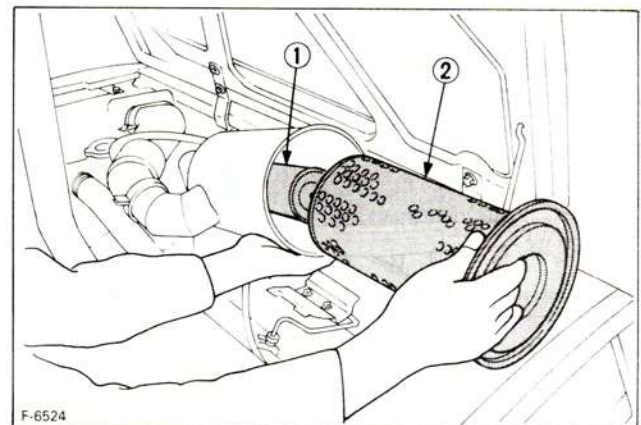
① Air cleaner ② Band ③ Evacuater

IMPORTANT

- When cleaning the element, remove the evacuator valve and remove rough dust.



① Safety element ② Primary element



① Safety element ② Primary element

■ Primary 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 205 kPa (2.1 kgf/cm²; 30 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.

11.7 BATTERY



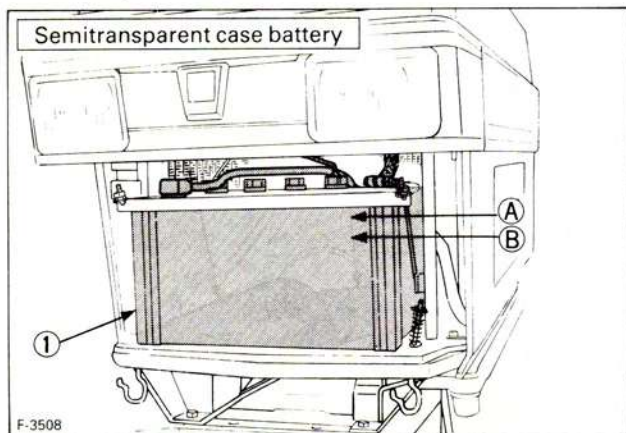
CAUTION

To avoid personal injury:

- Never remove the battery cap while the engine is running.

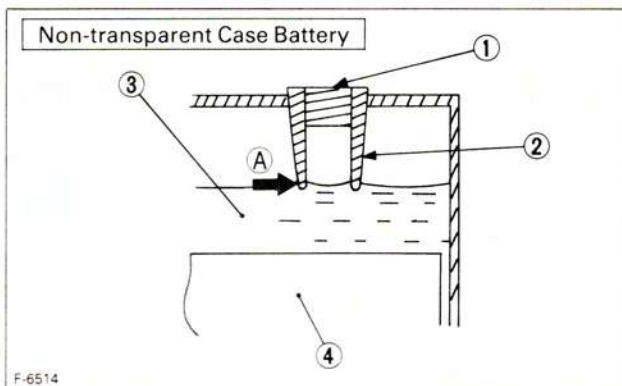
Keep electrolyte away from eyes, hands and clothes. If you are spattered with it, wash it away completely with water immediately.

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



① Battery

A "Highest level" B "Lowest level"



① Fill cap ② Filler neck

③ Electrolyte ④ Battery plates

A Fill cells to bottom of filler neck



CAUTION

To avoid personal injury:

- 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 personal injury:

- 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. 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 5 H.R (A.H)	Volume of Electrolyte (ℓ)	Normal Charging Rate (A)
105E41R (N100Z)	12	19	83	6.8	11
G160-10	12	19	88	6.8	9

Table 3

TYPE	Cold Cranking Amps.	Reserve Capa.
BCI No. 30H	600A	165 min

- (6) Check temperature of electrolyte, if it reaches 40°C (105°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 4

Period of storage from manufactured (months)	Recharging (hours)
0 to 6	About 3 to 5 hours
6 to 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.

11.8 FUSE AND LIGHT

■ Fuses

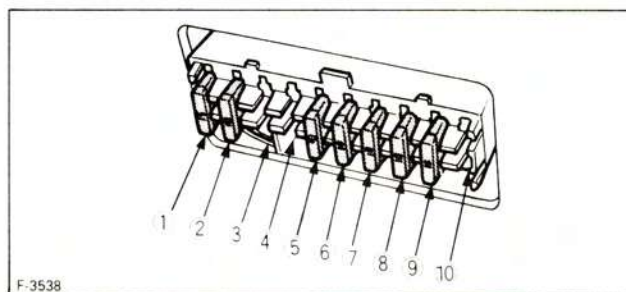
The tractor electrical system is protected from potential damage by fuses. There are a total of eight fuses in the tractor electrical system. Seven of the fuses are located in a fuse box on the firewall. The eighth fuse is an in-line fuse. Refer to the illustrations and chart below for the location of the fuses and fuse amperage.

Inoperative electrical components may indicate that a fuse has been blown. A blown fuse indicates that there is an overload or short somewhere in the electrical system.

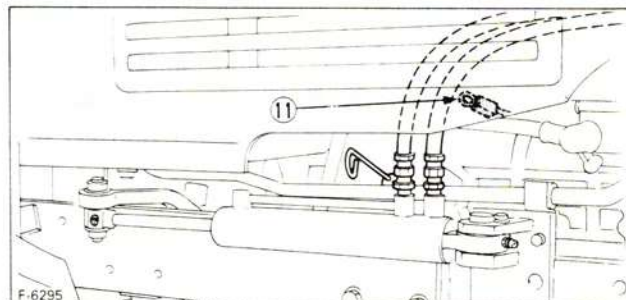
IMPORTANT:

- Before replacing a blown fuse, determine why the fuse blew and make any necessary repairs. Failure to follow this procedure may result in serious damage to the tractor electrical system. Refer to the troubleshooting section of this manual or your Kubota dealer for specific information dealing with electrical problems.

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



F-3538



11 Fusible link

◆ Protected circuit

- | | |
|-----------------|--|
| ① Fuse 1 (15A) | (Work light) |
| ② Fuse 2 (10A) | Hazard lights |
| ③ Fuse 3 | (Not used) |
| ④ Fuse 4 | (Not used) |
| ⑤ Fuse 5 (10A) | Head lights (low beam) |
| ⑥ Fuse 6 (10A) | Head lights (high beam) |
| ⑦ Fuse 7 (10A) | Panel illumination and tail lights |
| ⑧ Fuse 8 (10A) | Panel light (Meters, Easy checker) |
| ⑨ Fuse 9 (15A) | Regulator (Key stop) |
| ⑩ Fuse 10 | (Not used) |
| 11 Fusible link | Check circuit against wrong battery connection |

■ Light Bulb Replacement

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

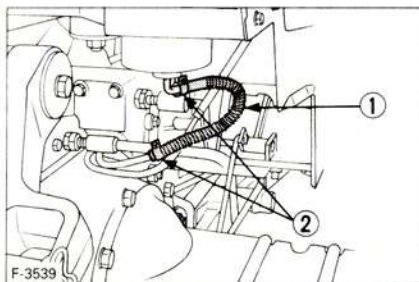
Head light	45/45W	Panel light	3.4W
Hazard light	23W	Tail light	8W

11.9 RUBBER LINES AND HOSES

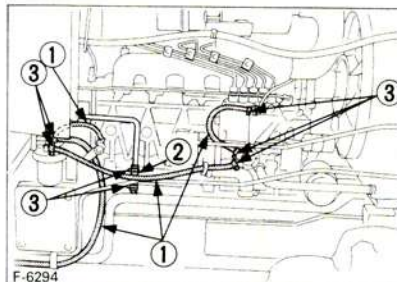
■ Check and Replacement

Check fuel lines and power steering hoses periodically.
Replace them when they become deteriorated.

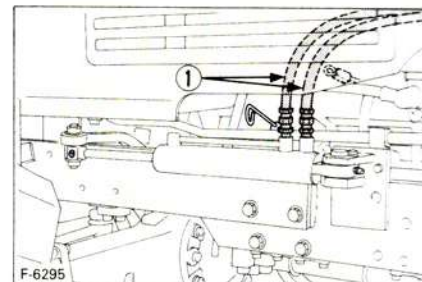
- (1) Check frequently to see that hose clamps are tight
- (2) Air must be bled from fuel lines whenever they are removed.



- ① Fuel line
- ② Clamps



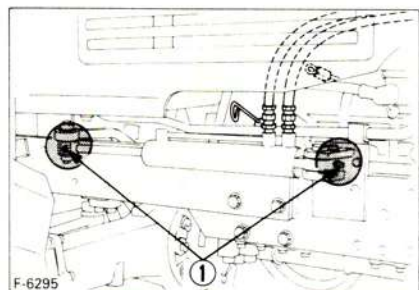
- ① Fuel lines
- ② Power steering return hose
- ③ Clamps



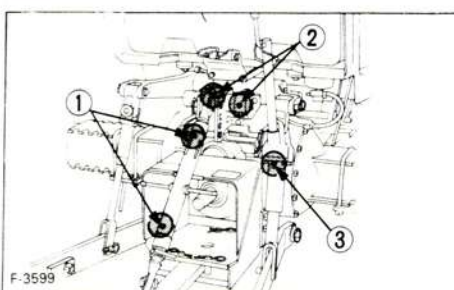
- ① Power steering pressure hoses

11.10 GREASING POINTS

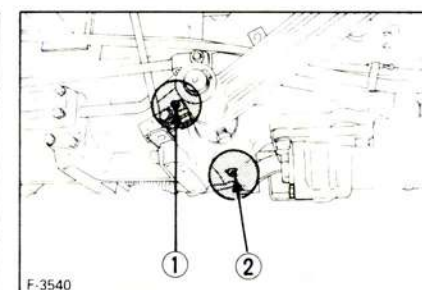
Apply a small amount of multipurpose grease to the following points every 50 hours:



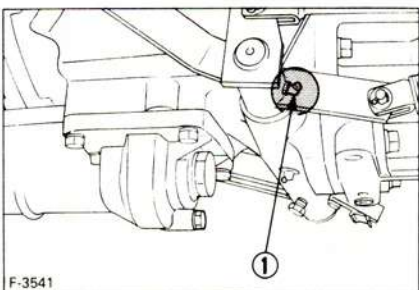
- ① Grease nipple (Power steering cylinder)



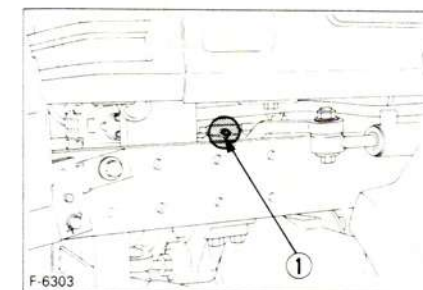
- ① Grease nipples (Top link)
- ② Grease nipples (Top link mount)
- ③ Grease nipple (Lift rod)



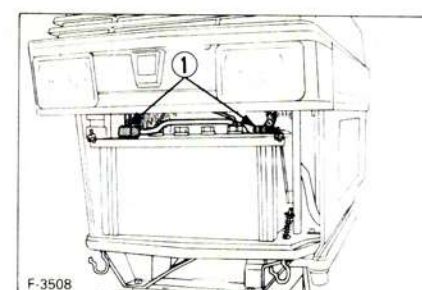
- ① Grease nipple (Brake pedal)
- ② Grease nipple (Pedal shaft support)



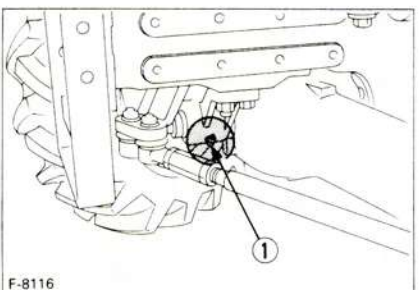
- ① Grease nipple (Clutch pedal)



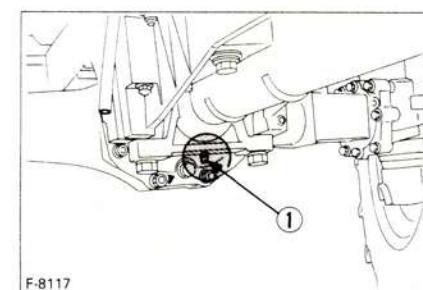
- ① Grease nipple (Steering lever shaft)



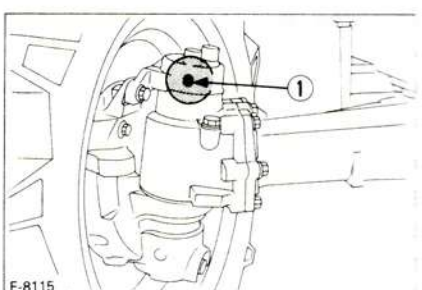
- ① Battery terminals



- ① Grease nipple (Front axle support (Front))



- ① Grease nipple (Front axle support (Rear))



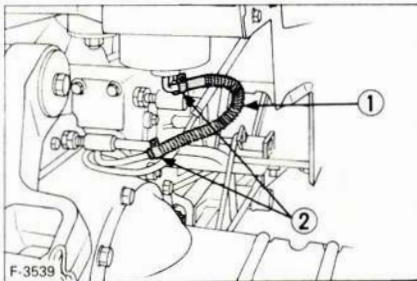
- ① Grease nipples (Front wheel case support (RH, LH))

11.9 RUBBER LINES AND HOSES

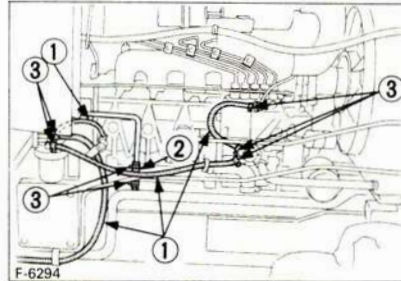
■ Check and Replacement

Check fuel lines and power steering hoses periodically. Replace them when they become deteriorated.

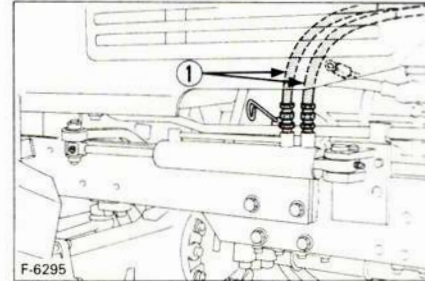
- (1) Check frequently to see that hose clamps are tight.
- (2) Air must be bled from fuel lines whenever they are removed.



- ① Fuel line
- ② Clamps



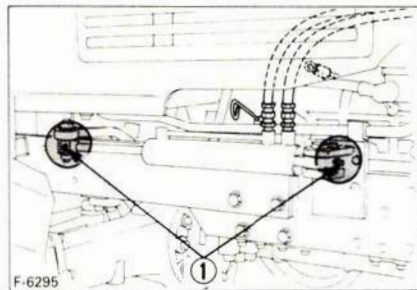
- ① Fuel lines
- ② Power steering return hose
- ③ Clamps



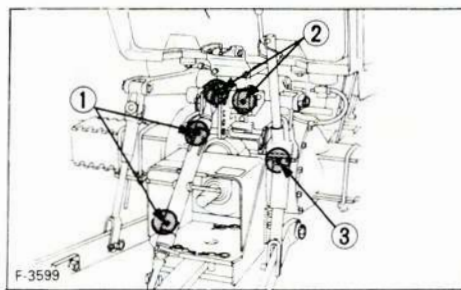
- ① Power steering pressure hoses

11.10 GREASING POINTS

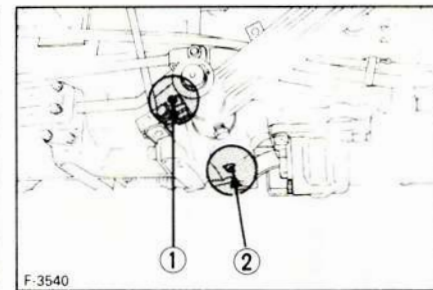
Apply a small amount of multipurpose grease to the following points every 50 hours:



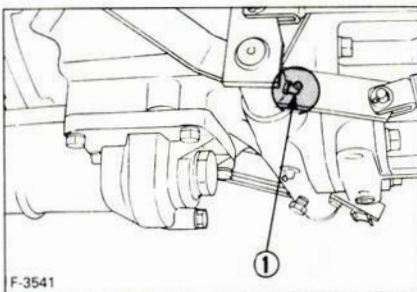
- ① Grease nipple
(Power steering cylinder)



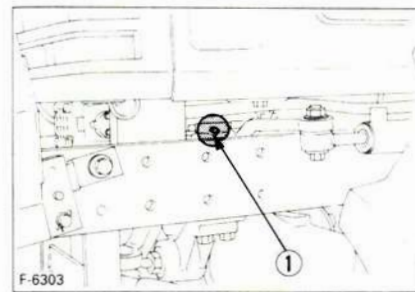
- ① Grease nipples (Top link)
- ② Grease nipples (Top link mount)
- ③ Grease nipple (Lift rod)



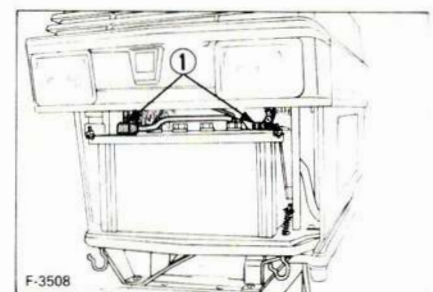
- ① Grease nipple (Brake pedal)
- ② Grease nipple (Pedal shaft support)



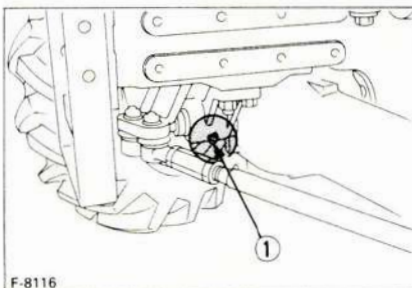
- ① Grease nipple (Clutch pedal)



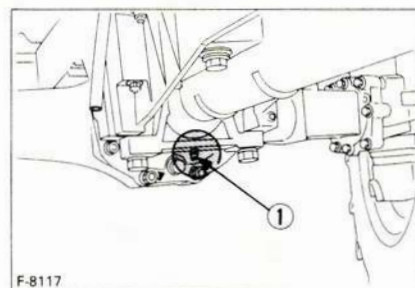
- ① Grease nipple (Steering lever shaft)



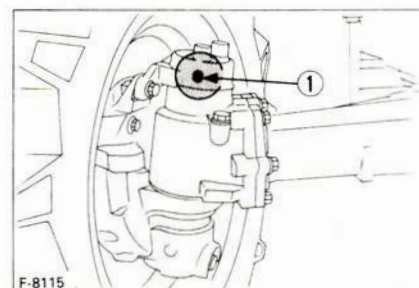
- ① Battery terminals



- ① Grease nipple
(Front axle support (Front))



- ① Grease nipple
(Front axle support (Rear))



- ① Grease nipples
(Front wheel case support (RHL))

12. ADJUSTMENTS



CAUTION

To avoid personal injury:

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

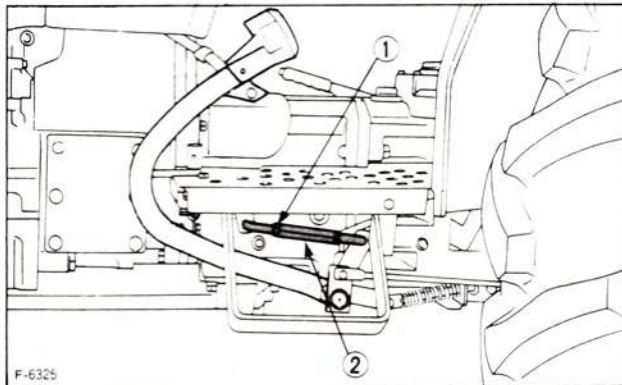
■ Clutch Pedal Check and Adjustment

L4350, L4850, L5450 with manual shuttle T/M
L4350, L4850, L5450 with hydraulic shuttle T/M

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

◆ Adjusting procedure

- (1) Loosen the lock nut, and turn the turnbuckle to adjust the rod length.
- (2) Retighten the lock nut.



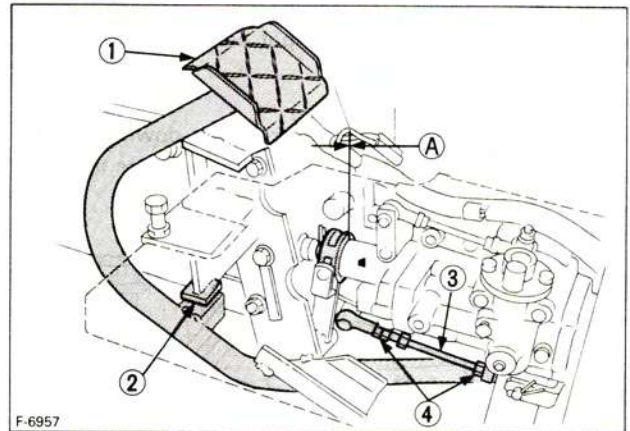
① Lock nut ② Turn buckle

L4350, L4850, L5450 with wet mastertraction clutch (Ever clutch)

Proper clutch pedal stroke
Clearance A is 0 mm (0 in.) when the clutch is engaged completely.
Clearance B is 0 mm (0 in.) when the clutch is disengaged completely.

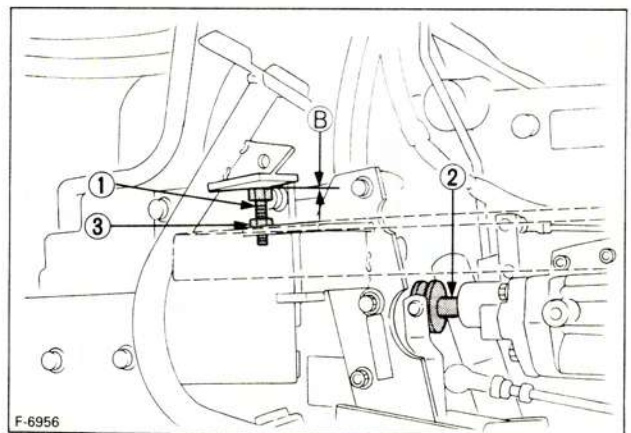
◆ Adjusting procedure

- (1) Lifting the clutch pedal up, hit rubber cushion of the clutch pedal to the stopper of the step support LH..
- (2) Insert shim of thickness 1 mm (0.04 in.) between stopper and rubber cushion, and adjust the length of the clutch rod so that the clearance A between valve body and shifter is 0 mm (0 in.).
- (3) Tighten the lock nut and securely lock it.



① Clutch pedal ② Stopper of the step support LH.
③ Clutch rod ④ Lock nut
A Clearance A

- (4) Temporarily screw the stopper bolt all the way in.
- (5) Push the clutch pedal down until the valve spool is fully extended. [approximately 23 mm(0.9 in.)]
- (6) Holding the condition mentioned item (5), screw the stopper bolt back until the head of the stopper bolt contact the stopper of clutch pedal (Clearance B). Then tighten the lock nut and securely lock it.



① Stopper bolt ② Valve spool
③ Lock nut B Clearance B

■ Brake Pedal Check and Adjustment

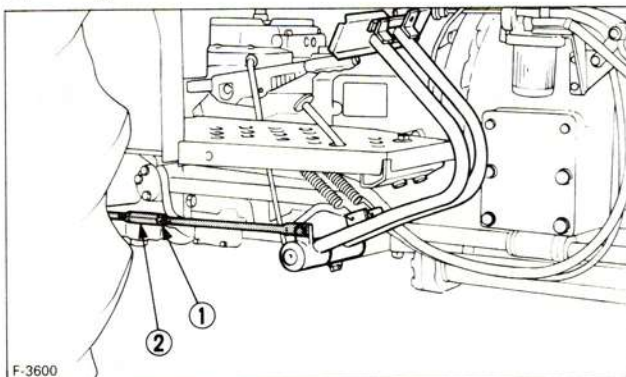
Proper clutch pedal free travel	25 to 35 mm (1.0 to 1.4 in.) on the pedals
---------------------------------	--

IMPORTANT:

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

◆ Adjusting procedure

- (1) Release the hand brake lever to the down setting.
- (2) Loosen the lock nut, and turn the turnbuckle to adjust the rod length.
- (3) Retighten the lock nut.



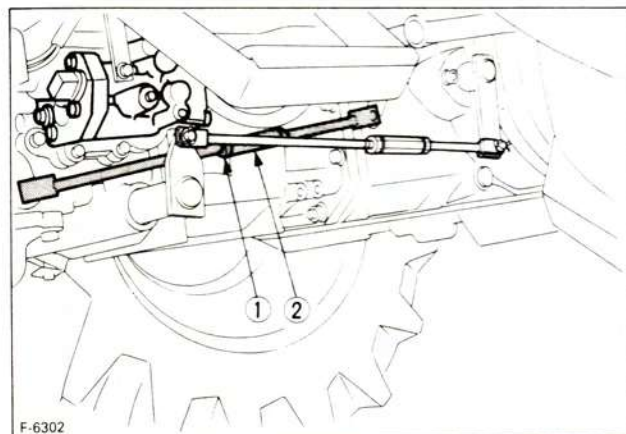
① Lock nut ② Turn buckle

■ PTO Clutch Control Lever Check and Adjustment (with Independent PTO)

Proper PTO clutch control lever free travel	35 to 40 mm (1.4 to 1.6 in.) at the grip on lever
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◆ Adjusting procedure

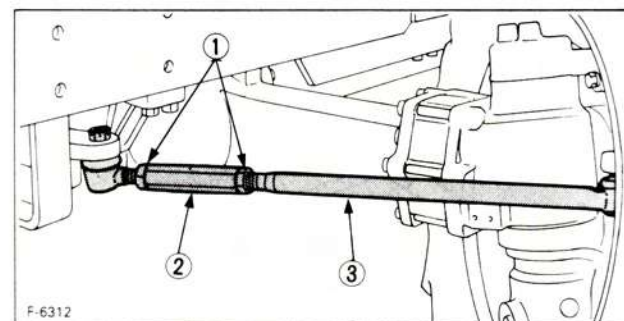
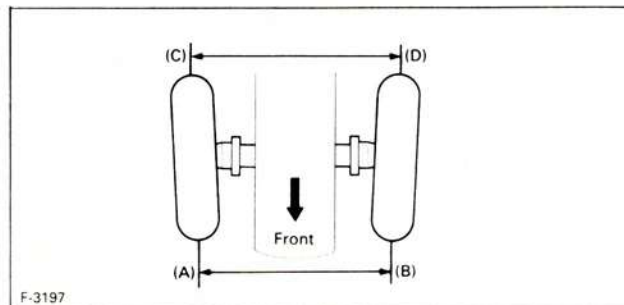
- (1) Loosen the lock nut, and turn the turnbuckle to adjust the rod length.
- (2) Retighten the lock nut.



① Lock nut ② Turn buckle

■ 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 (C) (D) — (A) (B), or 2 to 8 mm (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.



① Lock nut ② Turn buckle ③ Tie rod

■ Fan Belt Adjustment

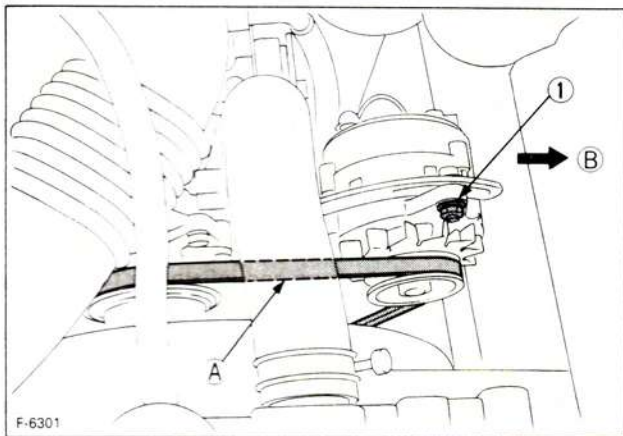
Proper fan belt tension	A deflection of about 7 mm (0.3 in.) when the belt is pressed in the middle of the span with a finger.
-------------------------	--

◆ Adjusting procedure

Check the adjustment of the fan belt periodically.

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 span of the belt falls within acceptable limits.

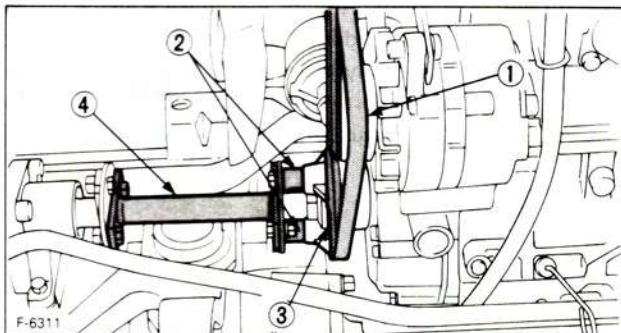
To replace the fan belt, loosen the alternator mounting bolts and move the alternator toward the engine block until the fan belt can be removed from the alternator pulley. With the belt removed from the alternator pulley, remove the belt from the crankshaft pulley and then slide the belt over the fan. It may be necessary to rotate the fan slightly to move the fan belt past the radiator fan shroud. To install a new belt, reverse this procedure.



① Nut A Check the belt tension B "To tighten"

NOTE

- L5450 has a front mount hydraulic pump. When replacing the fan belt, remove the two pieces of spacer on the crank shaft pulley. And then, the fan belt can be moved past between the drive shaft and the crank shaft pulley.



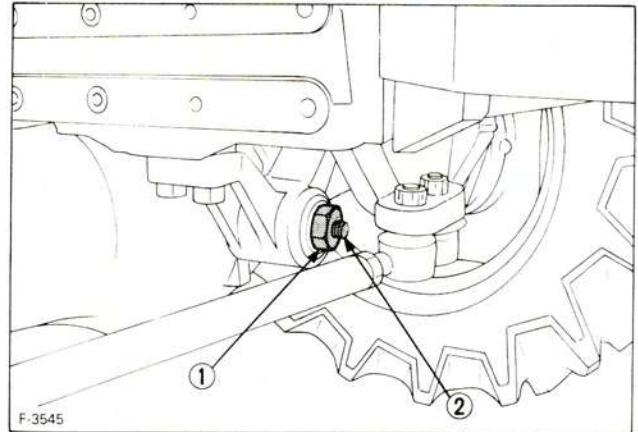
① Fan belt ② Spacers
③ Crank shaft pulley
④ Drive shaft (Hydraulic pump)

■ Front Differential Case Back-and-Forth Play Adjustment

If the back-and-forth play of the front differential case 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.



① Lock nut ② Adjusting screw

■ Orifice Lever

[with wet mastertraction clutch (Ever clutch)]

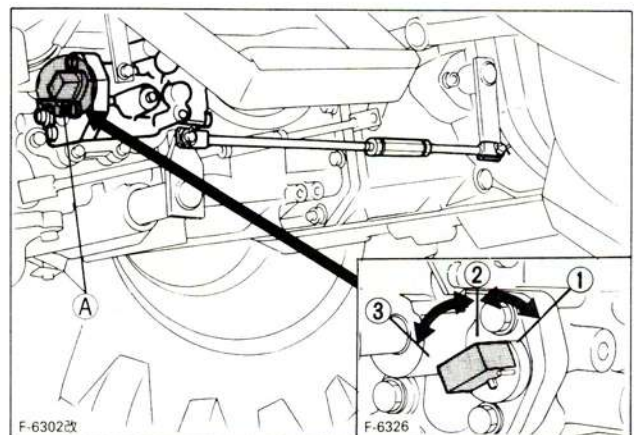
The aggressiveness of the hydraulic shuttle engagement can be adjusted with the orifice lever located underneath the LH step.

The adjustment is provided due to various tractor gross weights and hydraulic oil temperatures.

The orifice lever has three settings as shown below.

Position ① is for normal working conditions. If the shuttle shift engagement seems too slow use position ②.

When operating in outside temperatures below -18°C (0°F) use position ③.



A Orifice lever

13. STORAGE



CAUTION

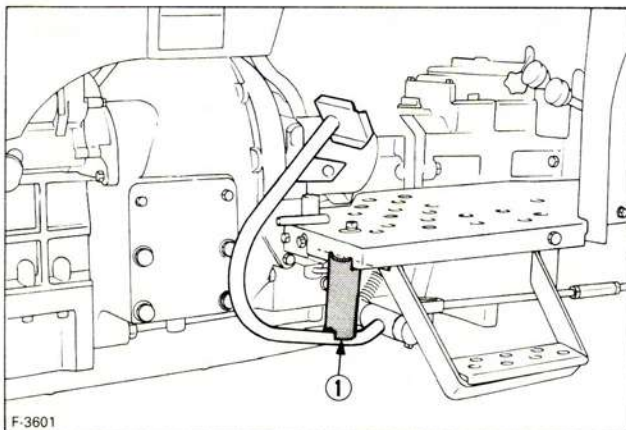
To avoid personal injury:

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

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) Drain and flush the cooling system.
- (7) Keep the clutch disengaged by using a clutch lock plate. If the clutch is left engaged for a long period of time, the clutch plate may rust, making clutch disengagement impossible at the next operation.



① Clutch lock plate

- (8) Keep the PTO clutch control lever at "DISENGAGE" position while tractor is stored for a long period of time.
- (9) With all implements lowered to the ground, coat any exposed hydraulic cylinder piston rods with grease.
- (10) Remove the battery from the tractor. Store the battery following the battery storage procedures outlined in the maintenance section of this manual.

- (11) 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.
- (12) Keep the tractor in a dry place where the tractor is safe from rain. Cover the tractor.
- (13) Store the tractor indoors in a dry area that is protected from sunlight and excessive heat. If the tractor must be stored outdoors, cover it with a waterproof tarpaulin. Jack the tractor up and place blocks under the front and rear axles so that all four tires are off the ground. Keep the tires out of direct sunlight and extreme heat.

IMPORTANT:

- When washing the tractor, be sure to stop the engine. 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 very expensive damage.
- Cover the tractor after the muffler and the engine have cooled down.
- 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.

13. STORAGE



CAUTION

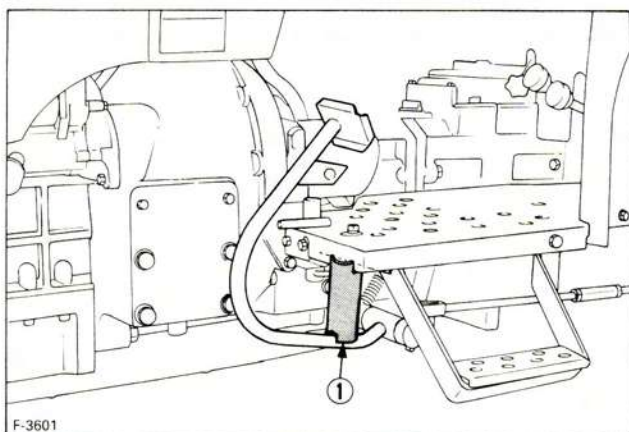
To avoid personal injury:

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

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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.
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- (5) Change the engine oil and run it to circulate oil throughout its block and internal moving parts for about five minutes.
- (6) Drain and flush the cooling system.
- (7) Keep the clutch disengaged by using a clutch lock plate. 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.



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- 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 very expensive damage.
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- (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.	1) Check the fuel tank and the fuel filter. Replace filter if necessary.
		2) Air and water is 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 37)
		3) In winter, oil viscosity increases, and engine turning is heavy.	1) Use oils 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. 2) The air cleaner is clogged.	Check the fuel system. 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. 2) Too much oil.	1) Change the fuel. 2) Check the proper amount of oil.
	Blue white	1) The inside of exhaust muffler is dumped with fuel. 2) Nozzle trouble. 3) Fuel quality is poor.	1) Heat the muffler by applying load to the engine. 2) Check the nozzle. 3) Change the fuel.
Engine overheats.		Engine overloaded.	Shift to lower gear or reduce load.
		Low coolant level.	Fill cooling system to proper level; check radiator and hoses for loose connections or leaks.
		Loose or defective fan belt.	Adjust fan belt.
		Dirty radiator core or grille screens.	Remove all trash.
		Coolant flow route corroded.	Flush cooling system.

If you have any questions, contact your Kubota dealer.

15. LUBRICANT SPECIFICATIONS

■ 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 recommended 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 Brake Fluid
Phillips	H.T.Fluid
Shell	Donax TD,TT,TM
Texaco	T.D.H.Oil
Union	Hydraulic / Tractor Fluid
Mobil	Mobil Fluid 423

■ 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 to 25°C (32 to 77°F)	SAE 20 or 10W-30
Above 25°C (77°F)	SAE 30 or 10W-30

■ Others

Chassis grease fittings	Multipurpose type grease
Front Wheel Drive Unit	SAE 80, 90 gear oil or Multi-grade transmission fluid (same as transmission oil)

KUBOTA LUBRICANTS

THE BEST CHOICE SINCE BUYING YOUR KUBOTA



When you think of Kubota diesel tractors, you think of quality, performance and service. Now you can also think of Kubota lubricants.

Now, Kubota offers a lubricant line to use with all the Kubota tractors from 10 to 85 PTO horsepower. The Kubota lubricant line consists of a 15W-40 or 10W-30 engine oil and a universal transdrdraulic fluid called "UDT." A variety of sizes are available to meet your small and larger needs, in 1 quart, 2 gallon, 5 gallon and 55 gallon containers.

Next time you need to pour it on, pour it in with Kubota lubricants.

Kubota lubricants, tractor tough quality.

KUBOTA

Nothing like it on earth.™

16. OPTIONS

Consult your KUBOTA dealer for detail.

- (1) SMV (Slow Moving Vehicle) Emblem
Recommended to forewarn overtaking traffic of tractor's presence.
- (2) Hydraulic Coupler
For hydraulic outlet by double or single remote control valve.
- (3) Electric trailer coupler
For hooking up trailer or wagon signals.
- (4) Working Light
High visibility for night work.
- (5) Pre-cleaner kit
For extremely dusty conditions.
- (6) Under muffler kit
For low profile.
- (7) Front drive gear 19-17 kit.
For optional tire of 4WD tractor.
- (8) Front suitcase weights.
25kg (55 lbs.) each for front ballast.
- (9) Rear wheel weights.
200kg (440 lbs, 50kg (110 lbs.) x 4 pcs.)
- (10) Tool box.
- (11) Clevis for swing drawbar.
- (12) Front bumper kit.
- (13) Creep kit.
- (14) Stabilizer kit (for Lower link)
- (15) Sunshade
- (16) Top & tilt kit (For scraper)
- (17) Block heater

17. WIRING DIAGRAM

