SAFE OPERATION

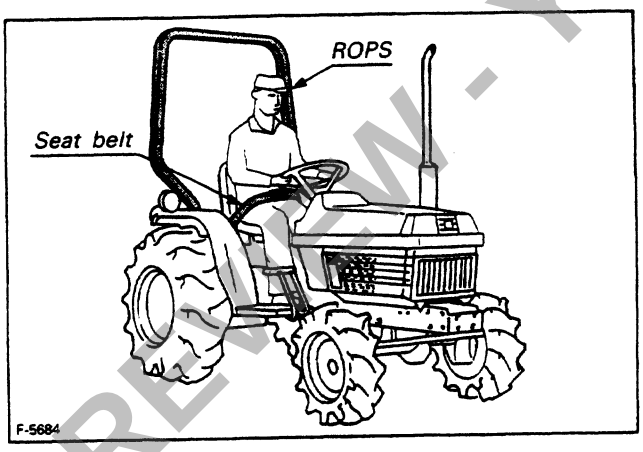
Careful operation is your best insurance against an accident. Read this section carefully before operating the tractor. All operators, no matter how much experience they may have had,should read this and other related manuals before operating tractor or any implement attached to it. It is the owner's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

1. BEFORE OPERATING THE TRACTOR

(1) Know your equipment and its limitations. Read this entire manual before attempting to start and operate the tractor.

(2) Pay special attention to the warning and caution labels on the tractor itself.

(3) Kubota recommends the use of a Roll Over Protective Structures (ROPS) and seat belt in almost all applications. This combination will reduce the risk of serious injury or death, should the tractor be upset.
If the ROPS is loosened or removed for any reason, make sure that all parts are reinstalled correctly before operating the tractor.
Never modify or repair a ROPS because welding, bending, drilling, grinding, or cutting any portion may weaken the structure.
A damaged ROPS structure must be replaced, not repaired or revised. If any structural member of the ROPS is damaged, replace the entire structure at your local Kubota dealer.



(4) Always use the seat belt if the tractor has a ROPS. Do not use it if there is no ROPS. Check the seat belt daily and replace if frayed or damaged.

(5) Do not operate tractor or any implement attached to it while under the influence of alcohol, medication, or other substances or while fatigued.

(6) Carefully check the vicinity before operating tractor or any implement attached to it. Check for overhead clearance which may interfere with a ROPS. Do not allow any bystanders around or near tractor during operation.

(7) Before allowing other people to use your tractor, explain how to operate and have them read this manual before operation.

(8) Never wear loose, torn, or bulky clothing around tractor. It may catch on moving parts or controls, leading to the risk of accident. Use additional safety items.....hard hat, safety boots or shoes, eye and hearing protection, gloves, etc.....as appropriate or required.

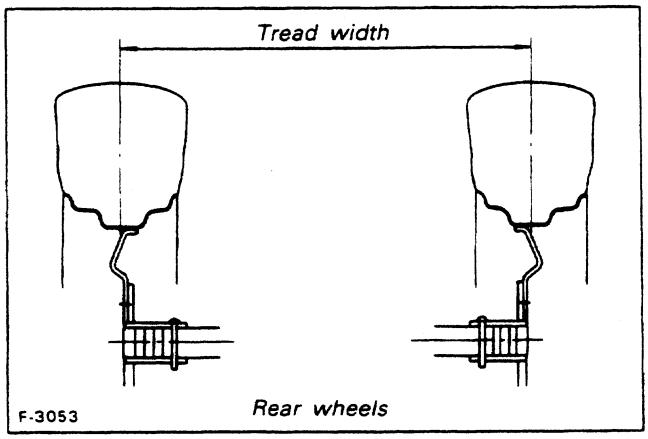
(9) Do not allow passengers or non-qualified operators on the tractor at any time. The operator must remain in the tractor seat throughout operation.

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

(11) Keep your tractor clean. Dirt, grease, and trash accumulations contribute to fires and lead to personal injury.

(12) Use only implements meeting the specifications listed under IMPLEMENT LIMITATIONS in this manual. Use proper weights to front or rear of tractor to reduce the risk of upsets. Follow the safe operating procedures specified in the manuals included with the equipment.

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



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2. SPECIFICATIONS

2.1 SPECIFICATION TABLE

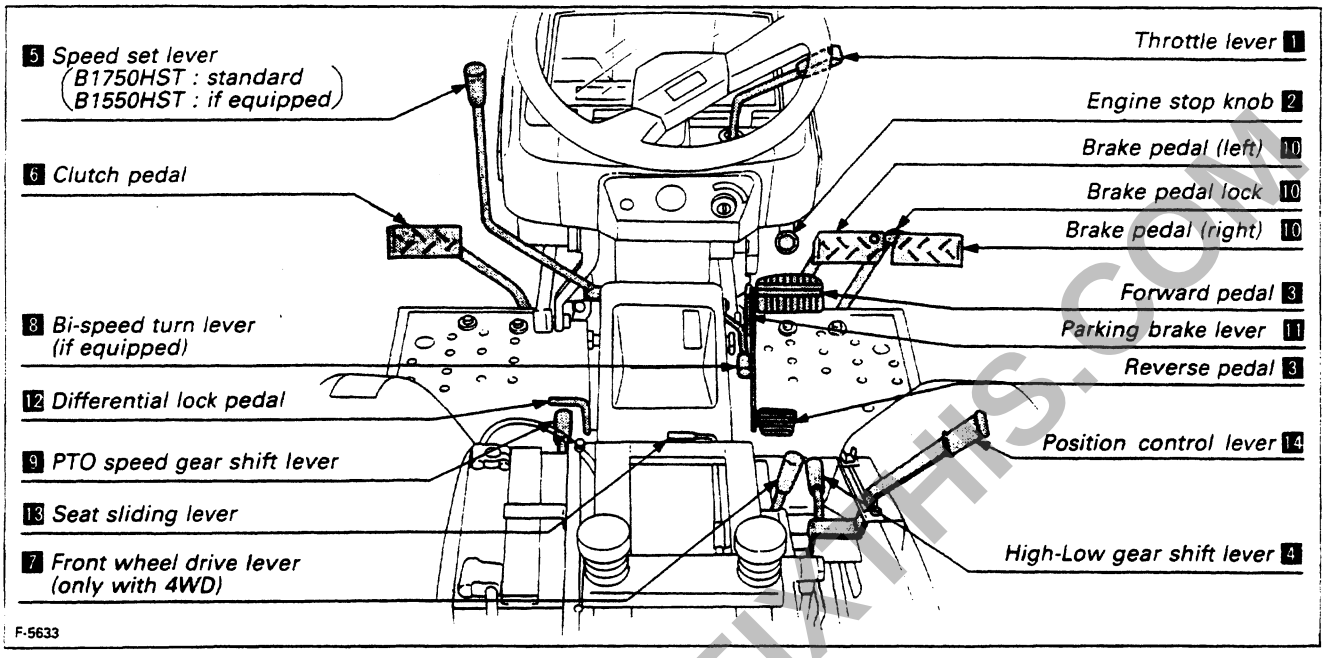
Model			B1550HSE (2WD)				B1550HSD (4WD)		
Engine gross power			12.7 kW (17 HP)*						
PTO power			9.7 kW (13 HP)*						
Engine	Model		D850−5B						
	Type		Vertical, water-cooled, 4-cycle diesel						
	No. of cylinders		3						
	Bore and stroke		72 mm × 70 mm (2.8 in. × 2.7 in.)						
	Total displacement		855 cm³ (52.2 cu.in.)						
	Rated revolution		43.3 r/s (2600 rpm)						
	Fuel		Diesel fuel No. 2−D [No.1 diesel fuel if temperature is below −10°C (14°F)]						
	Starter		Electric starter with battery, glow plug and decompression device, 12V, 0.8 kW						
	Lubrication		Forced lubrication by trochoidal pump						
	Cooling		Water with pressurized radiator						
	Battery		12V (45 AH)						
Capacities	Fuel tank		18 ℓ (4.8 U.S.gals)						
	Engine crankcase		3.1 ℓ (3.3 U.S.qts.)						
	Engine coolant		2.9 ℓ (3.1 U.S.qts.)						
	Transmission case		13.5 ℓ (14.3 U.S.qts.)						
	Steering gear box		0.2 ℓ (0.2 U.S.qt.)						
	Front axle diff. case		—				0.5 ℓ (0.5 U.S.qt.)	Bi-speed Turn: 2.5 ℓ (2.6 U.S.qts.)	
	Front axle gear case		—				0.15 ℓ (0.15 U.S.qt.)		
Tires		Front	Farm 4.50−10	Farm 5.00−10	Turf 18×9.50−8	Turf 18×9.50−8	Farm 6−12B	Turf 20.5×8.00−10	Turf 20.5×8.00−10
		Rear	7−16	8−16	29×12.00−15	31×13.5−15**	8−16	29×12.00−15	31×13.5−15**
Dimensions	Overall length	mm (in.)	2565 (101.0)	2565 (101.0)	2565 (101.0)	2565 (101.0)	2565 (101.0)	2565 (101.0)	2565 (101.0)
	Overall width	mm (in.)	910 (35.8) 960 (37.8) 1080 (42.5)	990 (39.0) 1110 (43.7)	1140 (44.9)	1240 (48.8)	980 (38.6) 1110 (43.7)	1140 (44.9)	1240 (48.8)
	Overall height with ROPS	mm (in.)	1875 (73.7)	1900 (74.8)	1880 (74.1)	1890 (74.4)	1900 (74.8)	1880 (74.1)	1890 (74.4)
	Wheelbase	mm (in.)	1470 (57.9)	1470 (57.9)	1470 (57.9)	1470 (57.9)	1470 (57.9)	1470 (57.9)	1470 (57.9)
	Min. ground clearance	mm (in.)	230 (9.1)	255 (10.0)	240 (9.4)	250 (9.8)	240 (9.4)	215 (8.5)	215 (8.5)
	Treads Front	mm (in.)	710 (28.0)	710 (28.0)	850 (33.5)	850 (33.5)	795 (31.3)	825 (32.5)	895 (35.2)
	Treads Rear	mm (in.)	790 (31.1) 910 (35.8)	790 (31.1) 910 (35.8)	840 (33.1)	895 (35.2)	790 (31.1) 910 (35.8)	840 (33.1)	895 (35.2)
Weight (with ROPS)		kg (lbs.)	560 (1235)	570 (1257)	580 (1279)	570 (1257)	625 (1378)	630 (1389)	630 (1389)
PTO shaft			Transmission case rear (rear PTO), Transmission case bottom (mid PTO) and engine front (front PTO)						
	Rear PTO		SAE 1-3/8 2 speeds (9.0 and 14.3 r/s at 41.9 engine r/s) (540 and 858 rpm at 2517 engine rpm)						
	Mid PTO		USA No.5 (KUBOTA 10 tooth) Involute spline 1 speeds (40.9 r/s at 41.9 engine r/s) (2455 rpm at 2517 engine rpm)						
Clutch			Dry single plate						
Steering			Recirculating ball type manual steering or integral type power steering (if equipped)						
Transmission			Main-hydrostatic transmission, High-Low gear shift (2 forward, 2 reverse)						
Min. turning radius m (ft)	with Brake		2.10 (6.9)				2.40 (7.9)	Bi-speed Turn: 2.10 (6.9)	
	without Brake		2.30 (7.5)				2.80 (9.2)		
Brake			Internal expanding type, right and left independent with interlocking device						
Differential			Bevel gear						

Note: *Manufacturer's estimate
**Bar Tire (if equipped)

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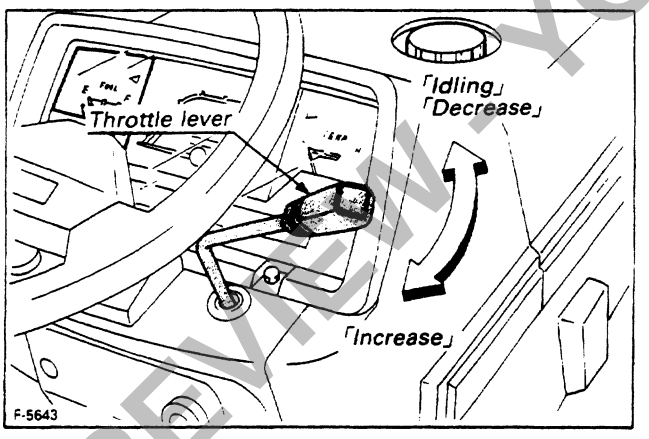
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5.2 CONTROLS



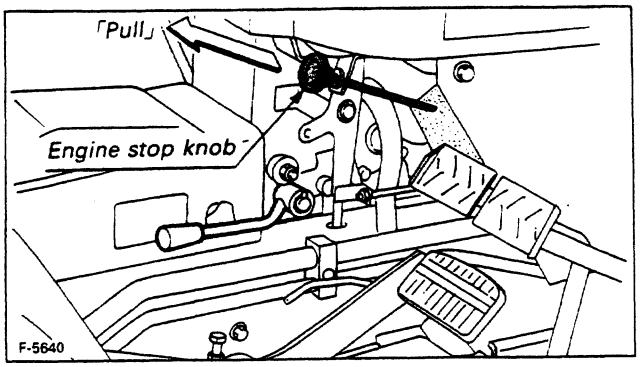
1 Throttle Lever

Pulling the throttle lever clockwise increases engine speed, and pushing it counterclockwise decreases engine speed.



2 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.



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8. OPERATING INSTRUCTIONS

Pre-Start Checks

Prior to starting the engine, make pre-start checks according to the Maintenance Check List on page 30 to 31.

CAUTION

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

(2) Read the Warning and Caution labels located on the tractor.

8.1 OPERATING THE ENGINE

CAUTION

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

(2) To avoid personal injury, always set main gear shift lever and PTO speed gear shift lever to the "neutral" positions before starting the engine.

■ Starting

(1) Sit in the operator's seat. If the tractor is equipped with a ROPS, fasten the seat belt.
(2) Set the parking brake.
(3) Place Main gear shift lever and PTO speed gear shift lever in the "neutral" positions.
(4) Place hydraulic control lever in lowest position.
(5) Push in the engine stop knob.
(6) Insert the key into the key switch and turn it by one notch.
(7) Make sure that the easy checker light is on.
(8) Depress the clutch pedal fully, turn the key switch right, and hold it for about 5 seconds. (at the preheat position)
For the appropriate preheating time, refer to the table below:

Temperature	Preheating Time
Over 0°C (32°F)	5 sec.
0 to —5°C (32 to 23°F)	10 sec.

(9) Turn the key switch to the start position and the starter will turn and the engine should start.
(10) Make sure that the easy checker light has gone off. If the light is still on, immediately stop the engine and check the lubrication system.
(11) Warm the engine by running at the medium speed.

IMPORTANT

(1) Do not turn the key switch to start position while the engine is running.
(2) When the temperature is below 0°C(32°F),place the main gear shift lever in the neutral position and keep the engine at medium speed to warm up the lubricant of engine and transmission at least 10 minutes.
If the tractor is operated before the lubricant of engine and transmission is warmed sufficiently, the tractor life will be shortened.
(3) Do not operate the tractor under full load condition until it is sufficiently warmed up.
(4) Do not use starting fluid, or engine will be damaged.

■ Stopping

Turn the key switch off and remove the key.

8.2 OPERATING THE TRACTOR

■ Starting

(1) Depress the clutch pedal to disengage the clutch.
(2) Shift levers to the desired speed position.
(3) Unlock the parking brake.
(4) Speed up the engine by moving the throttle lever clockwise.
(5) Slowly release the clutch pedal.
(6) Depress the forward pedal with the toe of your right foot to move forward.
(7) Depress the reverse pedal with the heel of your right foot to move backward.

CAUTION

(1) Interlock the right and left brake pedals before starting. Uneven braking results in a sharp turn, which may turn over the tractor.

(2) Do not allow any person other than the driver to ride on the tractor at any time.

(3) Do not drive the tractor close to the edges of ditches or banks which may break under the weight of the tractor, especially when the ground is loose or wet.

(4) Slow the tractor down to a safe speed before turning.

(5) Do not drive the tractor on the road with the implement in motion.

(6) After the differential lock has been used, be sure to see that it has been released.

(7) When traveling on a road, attach the S.M.V. emblem to the tractor to identify it as a slow moving vehicle.

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9.3 MAINTENANCE CHECK LIST

No.	Check point	Indication on hour meter (Change or check every interval shown below)							(After purchase)		Reference Page
		50	100	200	300	400	500	600	1 year	2 year	
1	Engine oil change	◎	○	○	○	○	○	○			34
2	Engine oil filter cartridge replacement	◎		○		○		○			34
3	Transmission fluid change		◎		○			○			34
4	Transmission oil filter cartridge replacement	◎			○			○			35
5	Transmission strainer cleaning		◎		○			○			35
6	Front axle differential case oil change				○			○			35,36
7	Front axle gear case (right and left) oil change				○			○			36
8	Clutch pedal play range check		○	○	○	○	○	○			42
9	Brake pedal play range check		○	○	○	○	○	○			43
10	Steering wheel play range check		○	○	○	○	○	○			43
11	Battery electrolyte level check		○	○	○	○	○	○			40
12	Recharge battery	Every one to two months									40,41
13	Radiator hose and hose clamp check			○		○		○			38
14	Fan drive belt tension check	◎		○		○		○			42
15	Fuel filter cleaning		○	○	○		○	○			33
16	Fuel filter replacement					○					33
17	Radiator cleaning								○		38,39
18	Anti-freeze and coolant change								○		38,39
19	Fuel line check		○	○	○	○	○	○			32
20	Fuel line replacement									○*	32,33
21	Radiator hose replacement									○*	38
22	Hydraulic hose change									○	—
23	Air cleaner element cleaning		○	○	○	○	○				39
24	Air cleaner element replacement							○**			39
25	Greasing King pins, Pedal shaft, Center pin, Speed control pedal shaft Clutch release hub		○	○	○	○	○	○			36,37

Note: The jobs indicated by ◎ must be done at 50 and 100 hours respecitively.

* Replace only if necessary.

** Every year or every 6 times of cleaning.

IMPORTANT

- Air cleaner should be cleaned more often in dusty conditions than in normal conditions. Suggested cleaning interval is every 100 hours in normal conditions. Follow the cleaning procedures.

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12. TROUBLESHOOTING

12.1 ENGINE TROUBLESHOOTING

■ When engine is difficult to start

Cause	Remedy
Fuel is thick and doesn't flow	* Check the fuel tank and fuel filter. * Remove water, dirt and other impurities * As all fuel will be filtered by the filter, if there should be water or other foreign matter on the filter, replace the filter. * See your KUBOTA dealer. * Check if fuel type is correct for cold weather.
Air or water mixed in fuel system	* If air is in the fuel filter or injection lines, the fuel pump will not work properly. To attain proper fuel injection pressure, check carefully for loosened fuel lines, cap nut, etc. * Loosen air vent screws atop fuel filter and fuel injection pump to eliminate all the air in the fuel oil system.
Thick carbon deposits on orifice of injection nozzle.	* This is caused when water or dirt is mixed in the fuel. Clean the nozzle injection piece. Do not damage the orifice. * Check to see if nozzle is working properly or not. If not, install a new nozzle. * See your KUBOTA dealer.
Valve clearance is incorrect	* Adjust valve clearance. See your KUBOTA dealer.
Leaking valves	* Grind valves. * See your KUBOTA dealer.
Fuel injection timing is incorrect	* Adjust injection timing. See your KUBOTA dealer.
Engine oil becomes thick in cold weather and engine cranks slow.	* Change grade of oil according to the weather(temperature).
Low compression	* Bad valve or excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts.
Battery is discharged and the engine will not crank.	* Charge battery. * In winter, always remove battery from tractor, charge fully and keep indoors. Install in tractor at time of use.

■ When output is insufficient

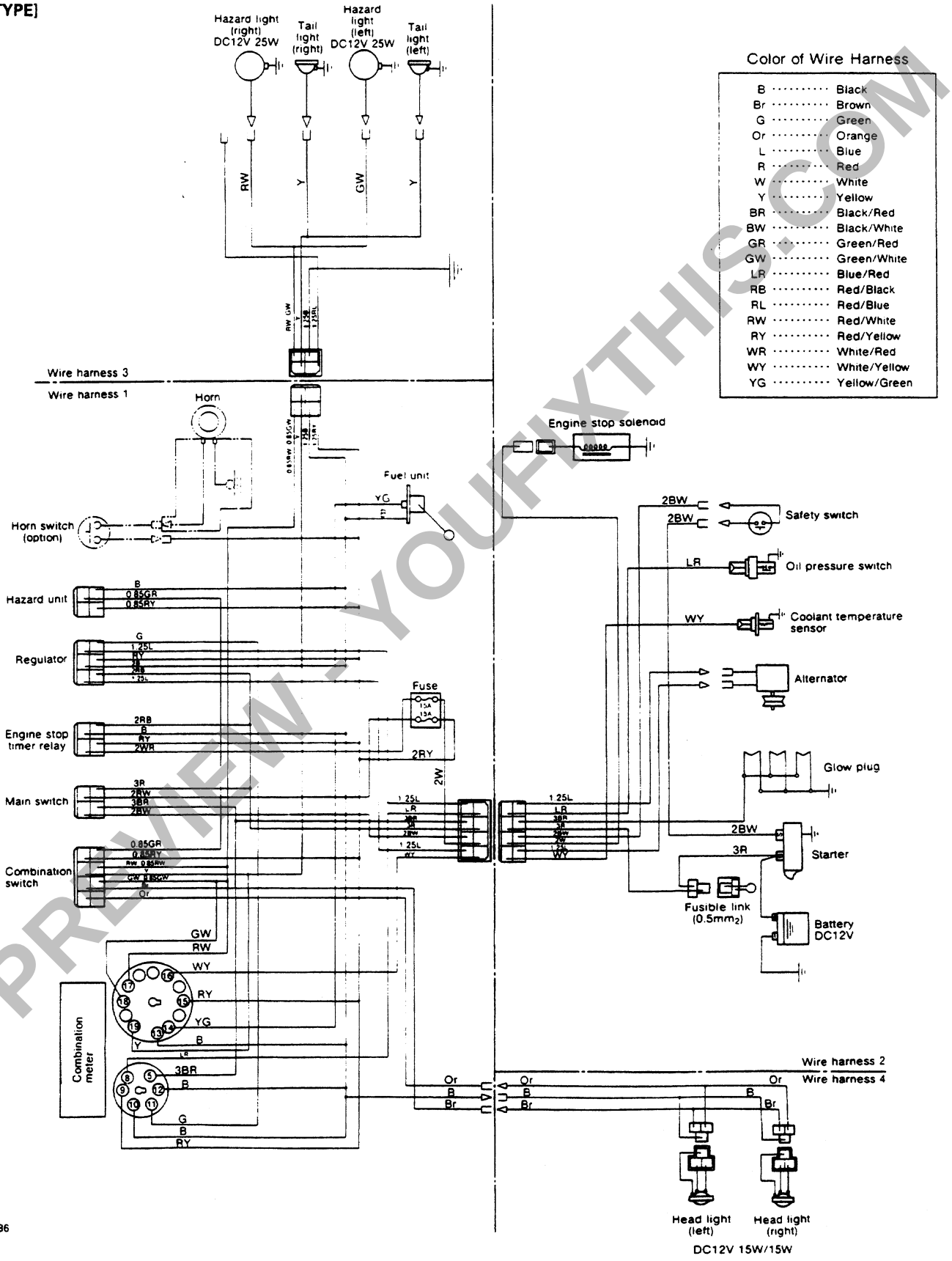
Cause	Remedy
Air cleaner is dirty Fuel filter is dirty	* Clean the element every 100-200 hours of operation.
Carbon around orifice of nozzle piece	* Clean orifice and needle valve, being very careful not to damage the nozzle orifice. * Check nozzle. If defective, replace with new parts. * See your KUBOTA dealer.
Compression is insufficient. Leaking valves	* Bad valves and excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts. * Grind valves.
Fuel is insufficient	* Check fuel system.
Overheating of moving parts	* Check lube oil system. * Check to see if lube oil filter is working properly. * Filter screens or elements deposited wi' impurities would cause poor lubrication. Clean screens. * Check if bearing clearances are within factory specs. * Check engine timing.
Valves out of adjustment	* Adjust to proper valve clearance. See your KUBOTA dealer.
Fuel injection pressure is incorrect	* Adjust to proper pressure. See your KUBOTA dealer.

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16. WIRING DIAGRAM

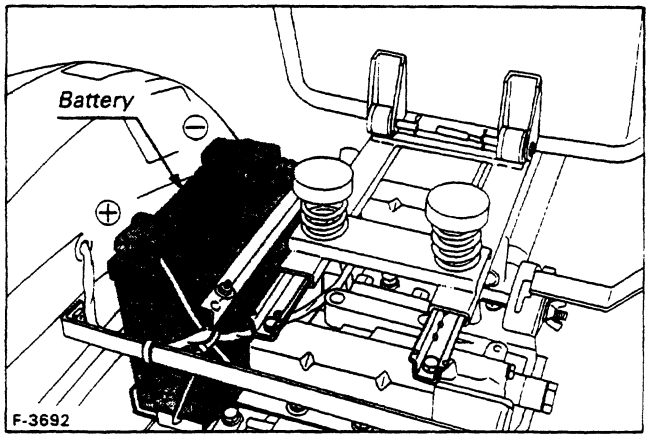
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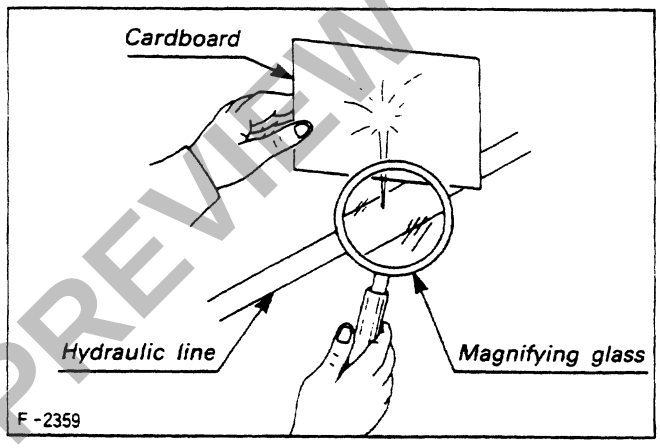
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(7) Disconnect the battery's ground cable before working on or near electric components.
(8) To avoid sparks from an accidental short circuit, always disconnect the battery's ground cable ⊖ first and connect it last.



(9) Do not attempt to mount a tire 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.

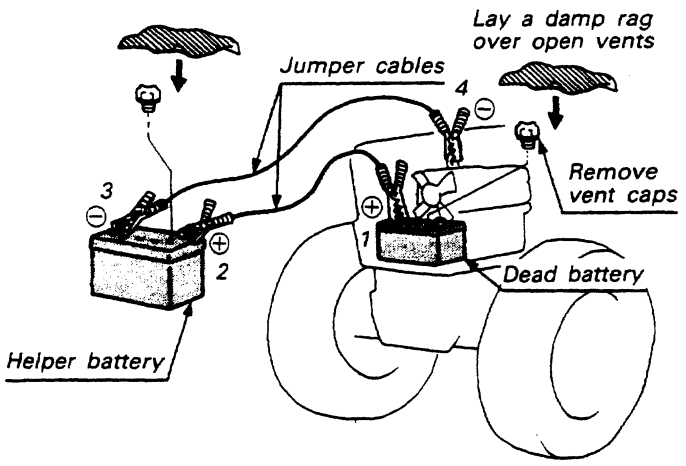


Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks; Use a piece of cardboard or wood, instead. Use of safety goggles or other eye protection is also highly recommended.
If injured by escaping fluid, see a medical doctor at once. This fluid can produce gangrene 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, ⊕ or pos.) terminal of the dead battery and clamp the other end of the same cable to the positive (red, ⊕ or pos.) terminal of the helper battery.
(7) Clamp the other cable to the negative (black, ⊖ or neg.) terminal of the helper battery.
(8) Clamp the other end to the engine block or frame of the disabled tractor as far from the dead battery as possible.
(9) Start the helper vehicle and let its engine run for a few moments. Start the disabled tractor.
(10) Disconnect the jumper cables in the exact reverse order of attachment. (Steps 8, 7 and 6).
(11) Remove and discard the damp rags. Reinstall the vent caps.



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

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