

No. OW-640DE



# OPERATION & MAINTENANCE MANUAL

## WHEEL LOADER

(S/N01324 and after) **E830**

(S/N00374 and after) **E835**

(S/N00346 and after) **E840**



It is the responsibility of the Operator & Supervisor to read and understand this manual.  
The loader should be operated only by qualified operators.

# TCM CORPORATION

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- 8.12 When necessary to tow the machine, do not exceed the recommended towing speed. Be sure the towing machine has sufficient braking capacity to stop the towed load. If the towed machine cannot be braked, a towbar must be used or two towing machines must be used - one in front pulling and one in the rear to retard. Avoid towing over long distances (see paragraph 7.15).
- 8.13 Observe proper maintenance procedures.
- 8.14 Whenever servicing or replacing hardened pins, etc. use a brass drift or other suitable material between the hammer and pin.
- 8.15 Keep the brakes and steering systems in good operating condition.
- 8.16 Replace all missing, illegible or damaged safety signs. Keep all safety signs clean.

- 9.6 Tighten the fuel tank cap securely. Should the fuel cap be lost, replace it only with the original manufacturer's approved cap. Use of a non-approved cap without proper venting may result in pressurization of the tank.
- 9.7 Never use fuel for cleaning purposes.
- 9.8 Use the correct fuel grade for the operating season.

— END —

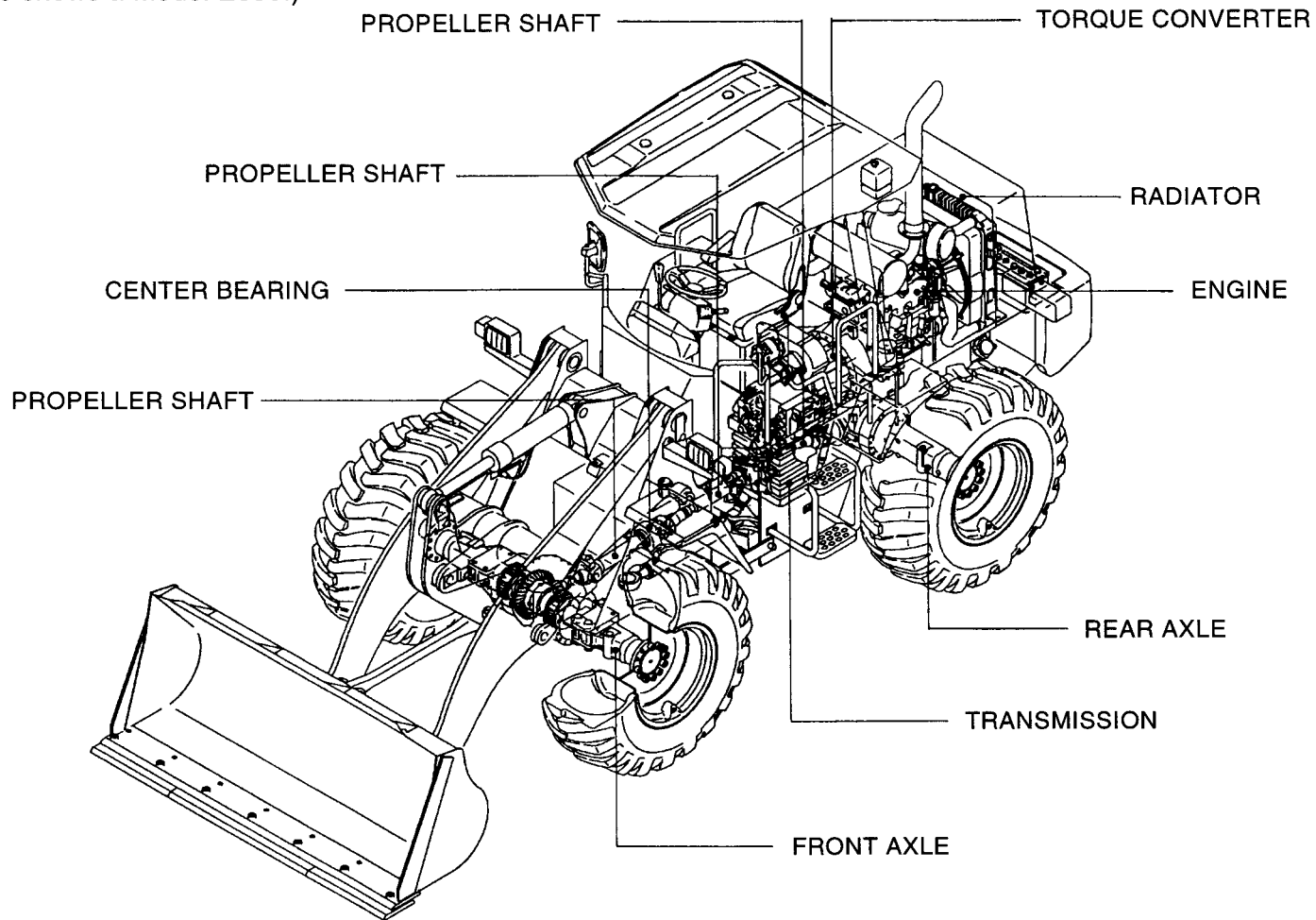
## **9. FUEL HANDLING PRECAUTIONS:**

- 9.1 Do not smoke or permit open flames while fueling or near fueling operations.
- 9.2 Never remove the fuel cap or refuel gasoline engine powered machines with the engine running or hot. Never allow fuel to spill on hot machine components.
- 9.3 Maintain control of the fuel filler nozzle when filling the tank.
- 9.4 Do not fill the fuel tank to capacity. Allow room for expansion.
- 9.5 Clean up spilled fuel immediately.

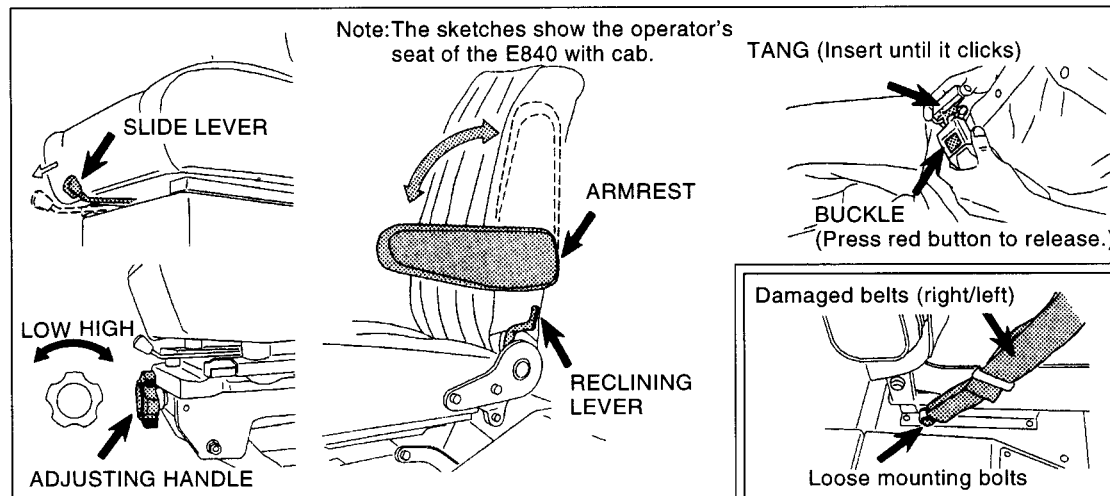
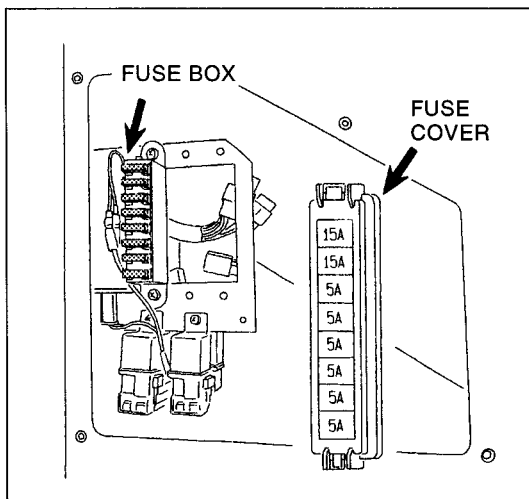
NOTE 1: ROPS canopy is standard equipment in North America.

## INSIDE THE LOADER

(The picture shows a Model E830.)



SEE NOTE 1



from top down:

- 15A: Lamps, back-up buzzer
- 15A: Work light
- 5A: Neutral
- 5A: Meters, monitors, buzzer
- 5A: Horn, bucket leveler
- 5A: Transmission, DSS, clutch cut-off switch
- 5A: Spare fuse
- 5A: Spare fuse

For loaders with cabs. (See page 37.)

## OPERATOR'S SEAT

### ⚠ WARNING

Adjust the operator's seat to a position which provides easy access to all hand and foot controls.

Do not tilt the backrest too far back, even if the backrest is adjustable.

### ⚠ WARNING

If the loader is equipped with a seat belt, check the belt for damage or loose mounting bolts. Always wear the seat belt after seating yourself in the operator's seat. Too slack a seat belt will not be effective enough to keep the operator safely secured. Adjust

the tightness of the seat belt properly.

### SLIDE SEAT LEVER

Adjust the seat position by moving the lever to the right and left.

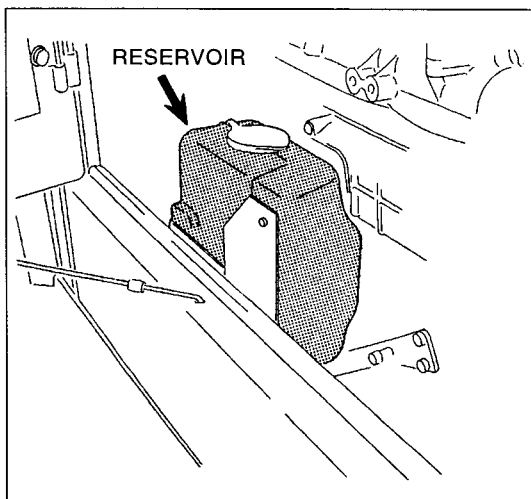
### SUSPENSION ADJUSTING HANDLE (HEIGHT CONTROL)

Adjust the seat height by turning the handle according to the operator's weight.

### E840 WITH CAB

### RECLINING SEAT ADJUSTING LEVER

Adjusts the angle of the backrest. Do not tilt the backrest too far back. The armrest is a rotational type.



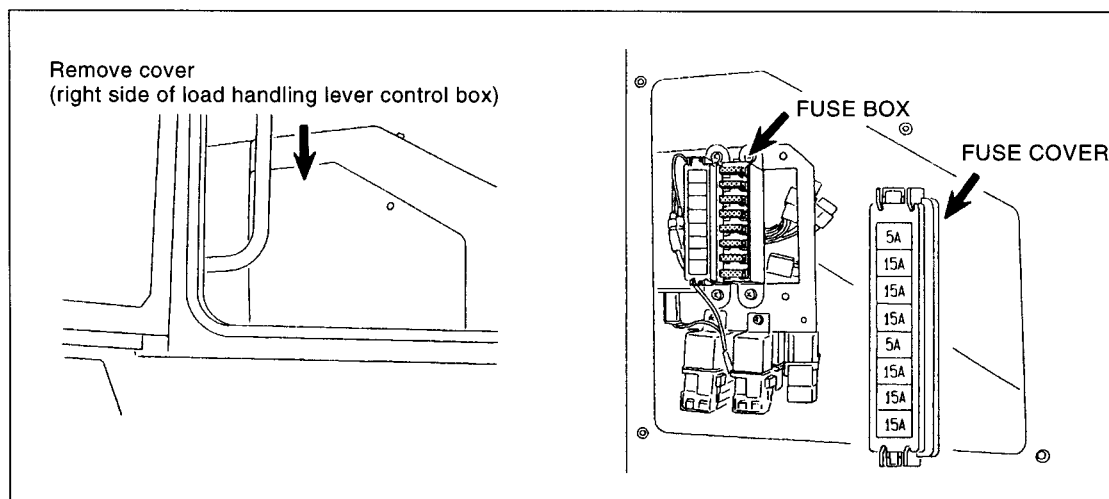
## WINDOW WASHER SWITCH

### ⚠ CAUTION

Before using the switch, check the cleaning liquid level in the reservoir. If you continue to push the switch without cleaning liquid, the motor will burn out.

A squirt of cleaning liquid covers the front windshield when "F" is pressed and covers the rear windshield when "R" is pressed. Remove your finger from the switch to stop the liquid.

The cleaning liquid reservoir is found at the left side inside of the engine room. Use the cleaning liquid specified. It is good practice to put antifreeze in cleaning liquid, if the loader is to be operated when the ambient temperature is below freezing.



## FUSE

### ⚠ WARNING

If any fuse is blown out, turn the starter switch off and shut off the power supply. Remedy the cause if needed and replace the fuse with a new one.

The fuse box is located inside the load handling lever control box.

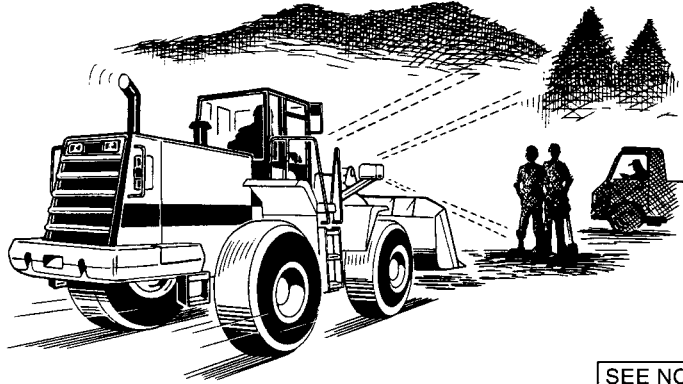
from top to down

- 5A: Radio
- 15A: Room lamp
- 15A: Air conditioner unit
- 15A: Air conditioner unit
- 5A: Air conditioner unit
- 15A: Front wiper
- 15A: Rear wiper
- 15A: Spare fuse

NOTE 1: ROPS canopy is standard equipment in North America.

NOTE 2: The illustrations do not necessarily depict the E830 – E840. The safety rules and cautions however apply to any model.

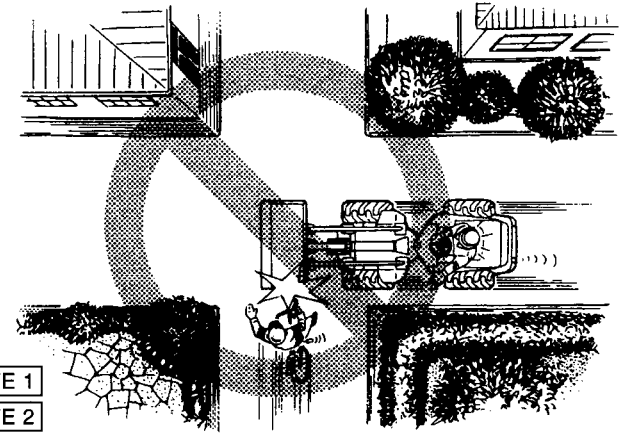
17. Be aware of the weather and the ground condition. Slow down when it is raining, snowing or foggy, because vision is impaired. Avoid working on rough, soft or swampy grounds if possible. If unavoidable, check the ground condition in advance.



SEE NOTE 2

18. Go around obstacles on the road. They might upset the loader or damage assets or injure people around the loader.
19. When working with a loader with special equipment which restricts your vision or handling a high load which obstructs your front vision, use extreme caution, especially when operating the load handling lever. It is good practice to have a guide.
20. Stop and sound horn, if necessary, at corners and other locations where vision is restricted. It is good practice to have a guide.

21. Use extreme caution when traveling or making a turn in congested areas.

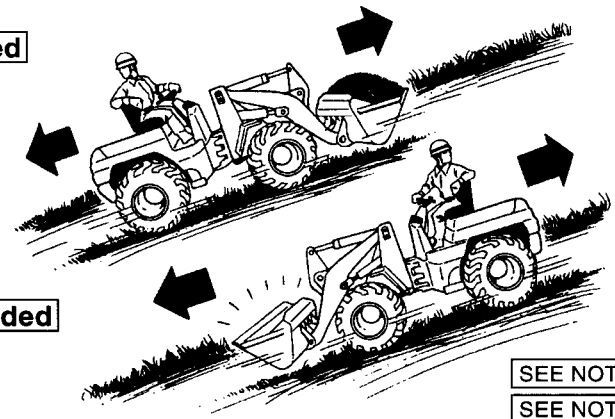


SEE NOTE 1

SEE NOTE 2

22. When ascending or descending grades, the loader should be driven with the loader's center of gravity uphill. That is, a loaded loader shall be driven with the load facing uphill and a unloaded loader shall be driven with the front attachment facing downhill.
- Do not make sudden stops.

Loaded



Unloaded

SEE NOTE 1

SEE NOTE 2

## TOWING

The loader is not equipped with any towing pin. When necessary to tow another vehicle, the tow rope must be tied to the positions specified on page 30.

**The loader must be used for towing only in an emergency.**

### **⚠ WARNING**

**Do not tow another vehicle a long distance. It is dangerous.**

### **⚠ WARNING**

**When towing another vehicle on a public road, take necessary measures to let other vehicles and people know that you are towing another vehicle. Use a flag, rotating lamp, or hazard lamp.**

There are several requirements you must abide by when towing another vehicle. Learn the regulations and rules about towing another vehicle and observe them.

- Check the weights of your loader and the vehicle to be towed and make sure your loader has sufficient braking capacity to stop the towed load.
- Check if the vehicle to be towed can be braked and steered. If not, do not allow anyone to ride on the towed vehicle.
- Check the tow rope or tow bar for damage and make sure it has sufficient strength for the work.
- When necessary to descend a gradient, another towing vehicle must be used in the rear to retard.
- Start slowly. A sudden start can lead to a broken tow rope.
- The tow line must be along the centerline of both your loader and the vehicle to be towed.
- If you use any other towing device, refer to the Instruction Manual supplied with the towing device.

### **When the loader is towed by another vehicle**

If the engine won't start, remove the front and rear propeller shafts; otherwise the transmission will rotate without being properly lubricated, causing seizure. Before removing them, apply the parking brakes and block the wheels securely.

If the engine can be started and the steering wheel and brakes function normally, have someone get on the loader you are going to tow for steering it.

If it is difficult to tow the loader, transport it by a trailer truck to your nearest repair shop.

### **When towing E830, E835, E840**

In addition to the above measures, release the parking brakes if the engine won't start or the hydraulic pumps are defective, referring to "**Releasing parking brake** (page 60)."

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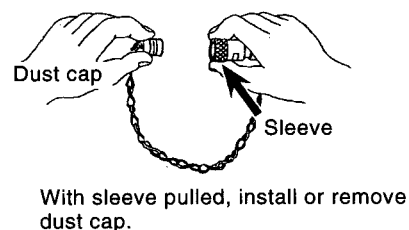
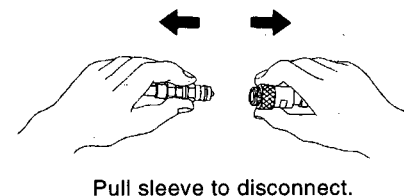
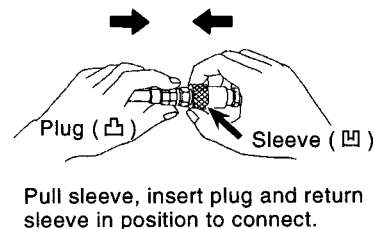
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## Installing and removing hydraulic hose

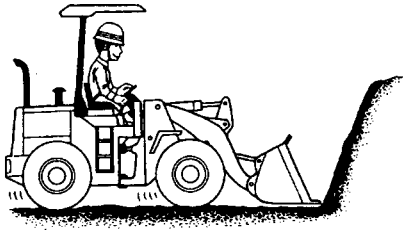
If your loader is equipped with a hydraulic attachment, it is necessary to install and remove the hydraulic hose when drawing hydraulic power from the loader.

### Installing and removing

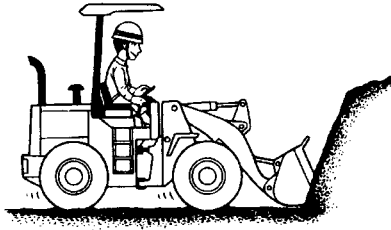
- **⚠ WARNING** Set the parking brake and shut off the engine. Operate the attachment control lever a few times to release the pressure from the piping. **⚠ CAUTION** Clean dust and dirt from the hydraulic hose connections.
- Connect the hydraulic hose of the loader side with the hydraulic hose of the attachment.
- Start the engine. Operate the attachment control lever slowly to move the attachment, to make sure there is no oil leaks from the connections.
- After removing the hydraulic attachment, connect the hydraulic hoses of the attachment to each other. Dust cap the hose ends of the loader body side to prevent dirt from entering the circuit.



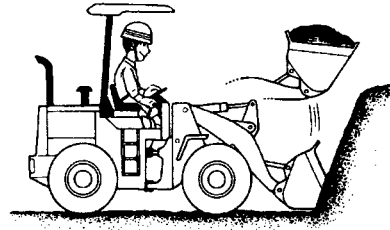
Lower the bucket to the ground and tilt it to make the front edge horizontal.



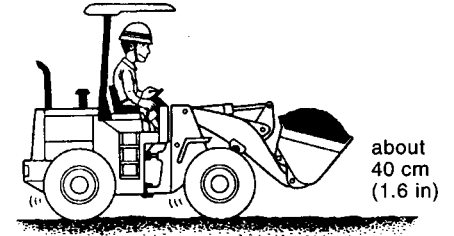
Drive forward in 2nd gear. Press down-shift switch in front of the pile of material and thrust the bucket into it.



Raise the booms while tilting back the bucket to fill it. Drive back.



Tilt the bucket back all the way and keep it at the minimum ground clearance height when moving.



## DIGGING

### ⚠ CAUTION

Make sure the load is centered when filling the bucket. Never try to lift uneven load.

“Digging” refers to operations in which the loader puts the bucket into a pile of sand or the like to fill it.

## SCOOPING

- With the edge of the bucket parallel to the ground surface, drive forward into the pile.

(If the bucket is used in the floating mode it will cause the edges of the bucket to wear rapidly. It is advisable to keep the bucket bottom just above the surface of the ground. Level any residual part of the load with the bucket free floating.)

- If you want to fill the bucket completely, or it is hard to push the bucket into the pile, rock the bucket forward and backward.

### ⚠ CAUTION

When filling the bucket, press the accelerator pedal until the tires begin to skid. When the tires begin to skid, return the accelerator pedal a little and raise the booms to reduce the load in the bucket slightly, or once leave the pile. Avoid overloading.

- When moving, keep the bucket at the minimum ground clearance height necessary and keep it tilted back all the way.

# MAINTENANCE

This Operation & Maintenance Manual uses the following safety alert symbols. When you see those symbols in the text, follow the safety message to avoid personal injury or death.

**⚠ DANGER**

Failure to follow the instructions in the message will cause a serious accident or death.

**⚠ WARNING**

Failure to follow the instructions in the message might cause a serious accident or death.

**⚠ CAUTION**

Failure to follow the instructions in the message may cause personal injury or damage to the loader.

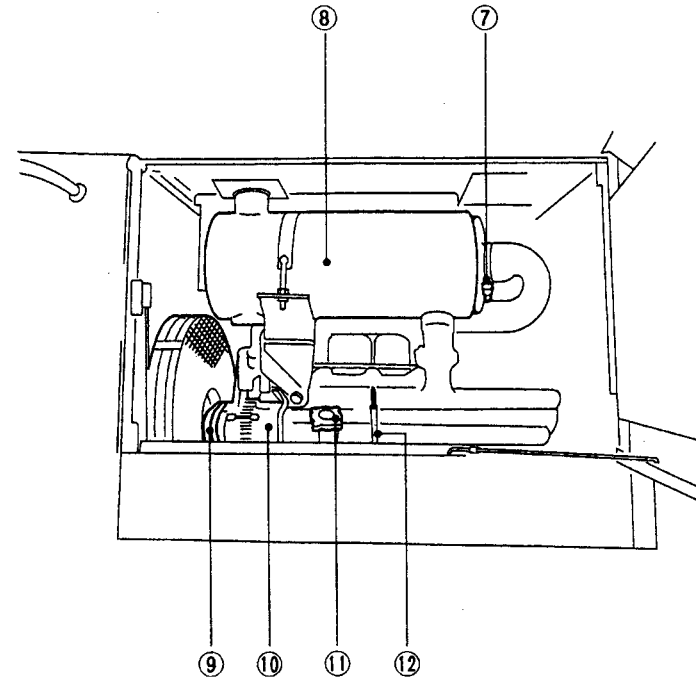
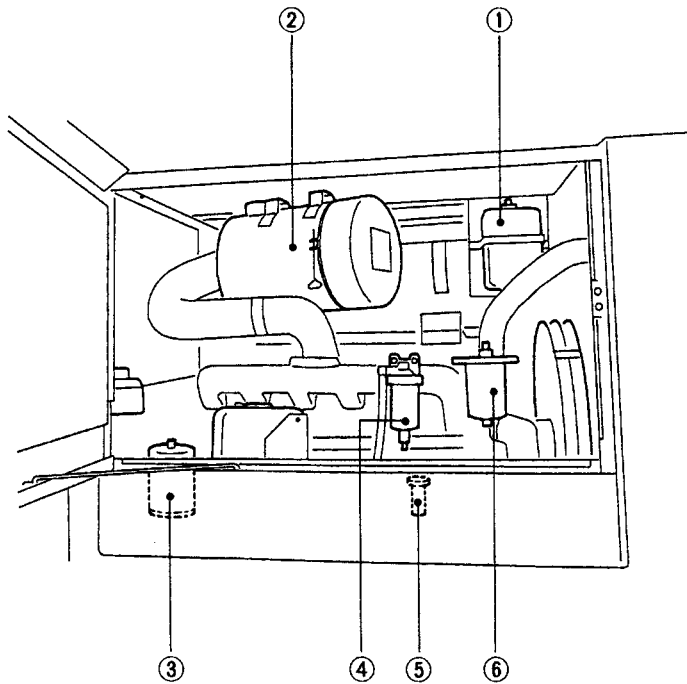
**MAINTENANCE**

SAFE SERVICING AND  
 MAINTENANCE ..... 88  
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 GREASE FITTING LOCATIONS ..... 95  
 ENGINE COMPARTMENT ..... 96

Left-side view

E835

Right-side view



- ① Radiator subtank
- ② Air cleaner
- ③ Engine oil filter

- ④ Water sedimentor
- ⑤ Fuel feed pump
- ⑥ Fuel filter

- ⑦ Dust indicator
- ⑧ Muffer
- ⑨ Fan belt

- ⑩ Alternator
- ⑪ Engine oil filler port
- ⑫ Engine oil dipstick

## FUEL

Turn the starter switch to ON, to check that the pointer swings.

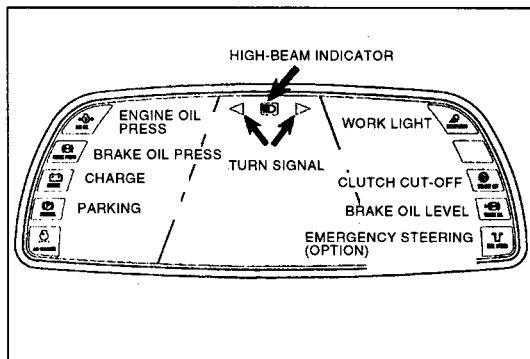
## km/h SPEEDOMETER

Drive the loader and check to see if the pointer swings properly according to the traveling speed.

### WARNING

Before starting the loader make sure there is no one around the loader. This check should be performed at an out-of-traffic area.

## Monitors (warning lamps, indicator lamps)



## ENGINE OIL PRESS

If light comes on, shut off the engine and check the lubricating system including the oil filter.

## BRAKE OIL PRESS (E835, E840 only)

### WARNING

If light comes on and the buzzer sound, stop the loader, lower the bucket on the ground, place the shift lever and the load handling lever in neutral, and apply the parking brake.

Press the accelerator pedal about half way to let the engine run at medium rpm. This will store brake oil pressure in the accumulator. When the specified brake oil pressure is stored in the accumulator, the monitor lamp goes out and the buzzer stops sounding. Start the loader after making sure there is no one around the loader.

## CHARGE

If light comes on, check V-belt for tension, alternator for failure, electrical wiring for breakage or poor connection, and the batteries for electrolyte level and specific gravity.

## PARKING

Light comes on when the parking brake hand knob is pulled out and goes out when it is pushed in. If light stays lit after the knob is pushed in, check wiring and parking brake linkage.

## BRAKE OIL

If light comes on, check the brake oil for level. If low, add to the specified level.

## HIGH BEAM INDICATOR,

## TURN SIGNAL INDICATOR,

## WORK LIGHT,

## TRANSMISSION CUT OFF

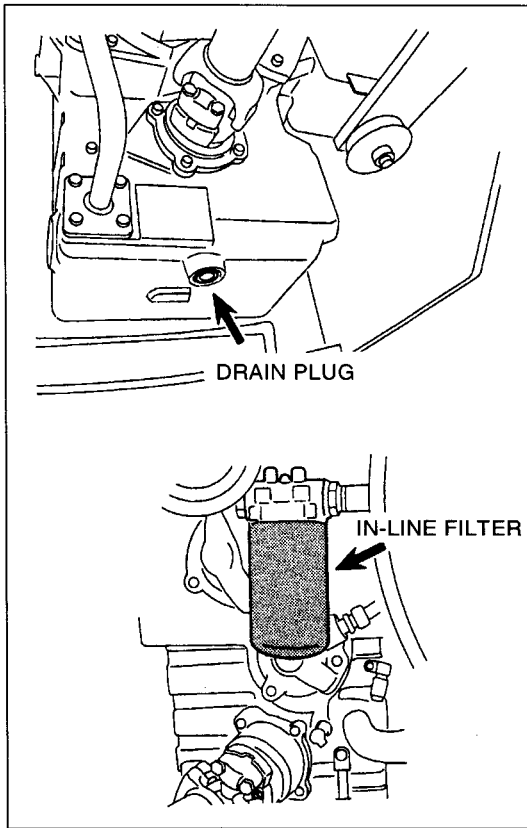
Operate each of the above switches and levers to check to see if light comes on. If not, check the bulb and wiring.

## EMERGENCY STEERING (OPTION)

Light comes on when emergency steering pump is operating.

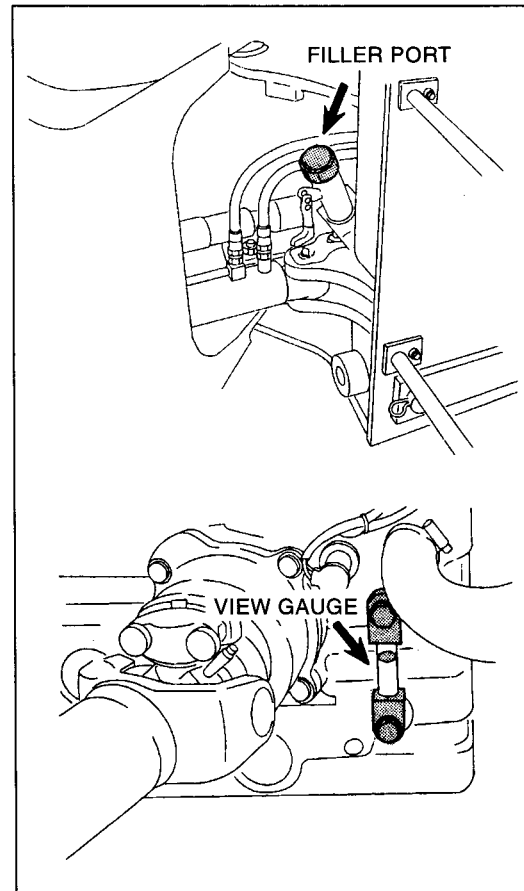
### WARNING

Light blinks while the emergency steering pump is operating. Move to a level, out-of-traffic area and check the loader.



- ① Wipe the drain plug and areas around it clean.
- ② Put an oil receiving pan under the drain plug. Slowly turn the plug to drain off the oil.
- ③ Using a filter wrench, slowly turn the in-line filter and remove. Use care to prevent oil from spilling. Use a receiving pan and a shop rag.

- ④ After draining the oil, reinstall the drain plug.
- ⑤ Apply a thin coat of transmission oil to the seal of a new filter and tighten it until the seal surface comes in contact with the base.
- ⑥ Then, give the filter 1/2 of a turn.



- ⑦ Add new oil to the specified level. Run the engine at idling rpm for a few minutes. Make sure there is no oil leakage from the drain plug or in-line filter. Check the oil level. For oil check procedure, see page 108.

### Change axle oil (initial 250 hrs. only)

Change axle oil (initial 250 hrs. only)

- ⚠ WARNING**  
**Before changing axle oil, make sure to:**
- Pull the parking brake hand knob.
  - Set the load handling lever lock.
  - Set the safety link on the frames.

**Be sure to wear a hard hat. If unavoidable to work under a raised load handling means, take necessary measures to prevent it from dropping. See page 6.**

(to be continued)

- ③ After draining oil, wipe the drain plug clean and reinstall it.
- ④ Add oil through the filler port to the specified level.

Start the engine and operate the booms and bucket slowly several times. Shut off the engine and make sure there is no oil leak. Check the oil level. See page 113.

### **Check brake disk for wear (service and parking brakes)**

Consult your local TCM dealer.

## **Loaders with cab (one year)**

### **Check door lock for operation**

The left-side door is locked with the starter key from outside. Check key cylinder motion and lock state.

The right-side door is locked from inside by pressing the lock knob. Check the door and knob for operation.

### **Check windshield wiper for operation**

Check the windshield wiper for proper operation. If the front or rear windshield cannot be sufficiently cleaned by the wiper, replace the wiper blade with a new one.

### **Check window washer liquid for spray condition**

Check that cleaning liquid is injected from the nozzle properly. If not, check the cleaning liquid level and the nozzle for clogging.

## **4000 HRS.**

### **Change engine water pump grease.**

Consult your local TCM dealer.

## TROUBLESHOOTING GUIDE

For complicated checks, repairs, and changes underlined in the “Remedy” column, consult your local TCM dealer.

### ENGINE AND ALLIED PARTS

Problem	Probable cause	Remedy
Engine is hard to start or does not start when starter switch is turned to “START.”	<ul style="list-style-type: none"> <li>• Shift lever in forward or reverse position</li> <li>• Battery is discharged</li> <li>• Low fuel level</li> <li>• Air mixed in fuel system</li> <li>• Injection pump or nozzle defective</li> <li>• Engine is not preheated</li> <li>• Starter defective</li> <li>• Engine stop solenoid defective</li> </ul>	Shift into neutral. Charge the battery. Add fuel. Bleed air out of system. <u>Repair or replace.</u> <u>Repair or replace.</u> <u>Repair or replace.</u> <u>Repair or replace.</u>
Engine does not stop.	<ul style="list-style-type: none"> <li>• Starter switch defective</li> <li>• Engine stop solenoid defective</li> </ul>	<u>Repair or replace.</u> <u>Repair or replace.</u>
Erratic idling speed	<ul style="list-style-type: none"> <li>• Injection pump defective</li> <li>• Air mixed in fuel system</li> <li>• Injection timing and spray pattern improper</li> </ul>	<u>Repair or replace.</u> Bleed air out of system. <u>Repair or replace.</u>
Engine overheats; coolant temp. gauge registers in red area	<ul style="list-style-type: none"> <li>• Low coolant level or leaks</li> <li>• Clogged radiator core</li> <li>• Radiator damaged or corroded</li> <li>• Thermostat defective</li> <li>• Radiator cap defective</li> <li>• V-belt loose or damage</li> <li>• Clogged muffler</li> <li>• Overloading</li> </ul>	Add coolant, <u>Repair or replace.</u> Clean. <u>Repair or replace, clean inside.</u> <u>Repair or replace.</u> Replace. <u>Adjust or replace.</u> <u>Clean.</u> Reduce load.

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