

990 Excavator

John Deere Dubuque Works
TM-1230 (May-87)

LITHO IN U.S.A.

990 EXCAVATOR TECHNICAL MANUAL TM-1230 (MAY-87)

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SAFETY AND YOU

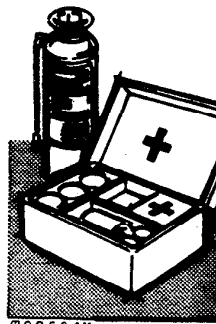


CAUTION: This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.



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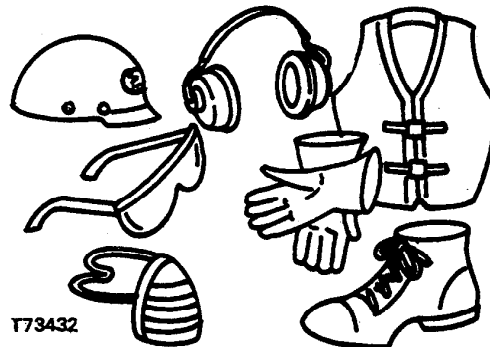
Be prepared for an accident or fire.
Know where the first aid kit and fire extinguisher are.
Know how to use them.
Know where to get help.



T27504N

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Wear safety equipment.



T73432

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Wear fairly tight clothing.



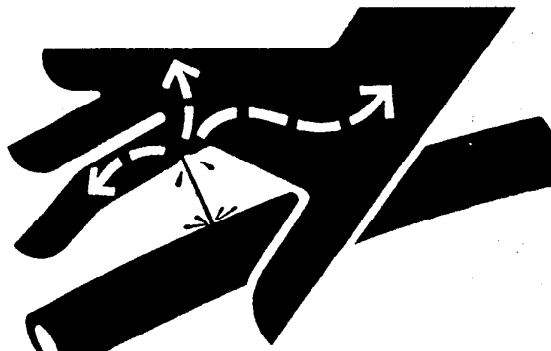
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AVOID HIGH PRESSURE-FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. **DO NOT** use your hand.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



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KEEP SHOP AND STORAGE AREA CLEAN

Maintenance area should be well-ventilated.

Keep maintenance area clean and dry.

Store flammable materials in a cool and well-ventilated area out of reach of unauthorized personnel.



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FOLLOW SAFE WORKING CONDITIONS

Do not work on the equipment unless you are approved to do so. Then be sure you know the correct procedure.

Do not work on equipment while it is being operated.

Keep hands away from moving parts.

When the engine is running, do not work on equipment unless the procedure is approved.

If you must work on the machine with the engine running, ALWAYS USE TWO service technicians. One must be at the controls. The other must be within sight of the operator.

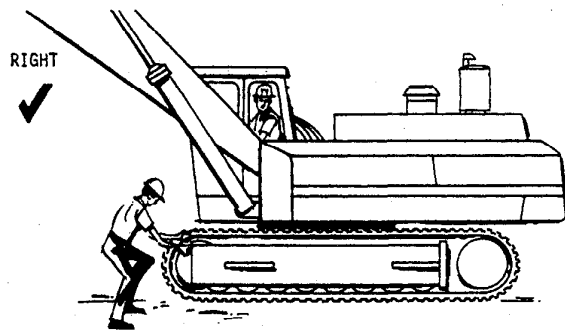
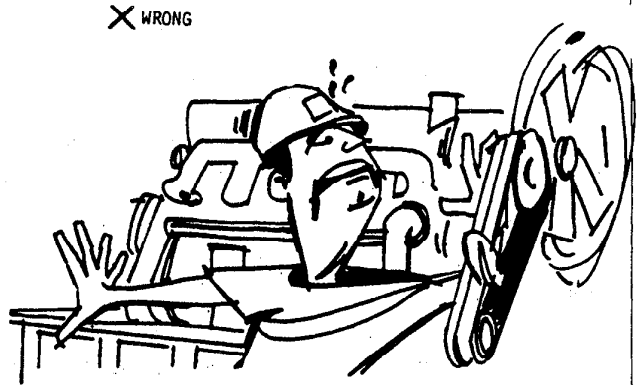
Put a support under all raised equipment.

Park the machine across a slope, or use blocks to hold it in place.

Do not lift heavy parts by yourself. Use a hoist or jack.

TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE AREA.

When you drill, grind or hammer metal, wear safety glasses.



OBSERVE SERVICE PRECAUTIONS

Keep ALL equipment free of dirt and oil.

Clean oil, grease, mud, ice or snow from the operator's station, steps and hand rails.

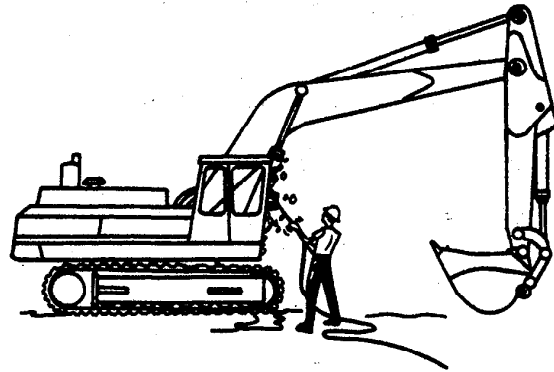
Do not remove the radiator cap unless the engine is cool. First, loosen the cap slowly to the stop. Then release all pressure in the cooling system before you remove the cap.

Check the exhaust system regularly for leaks.

Release hydraulic pressure before you work on the hydraulic system. See page I-I-06.

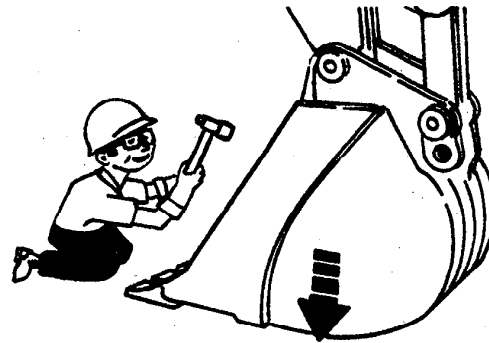
When you check hydraulic pressure, be sure to use the correct test gauge.

Before you work on the fuel system, close the fuel shutoff valve.



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Do not work under a raised bucket. Lower the bucket to the ground, or put blocks under the bucket.



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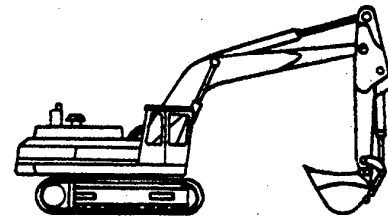
CHECK SAFETY EQUIPMENT ON MACHINE

All protective parts (shields, guards, ROPS, etc.) should be in good condition and fastened in place.

Check for leaks in all systems:

- Air intake system
- Engine oil system
- Hydraulic system
- Fuel system
- Cooling system

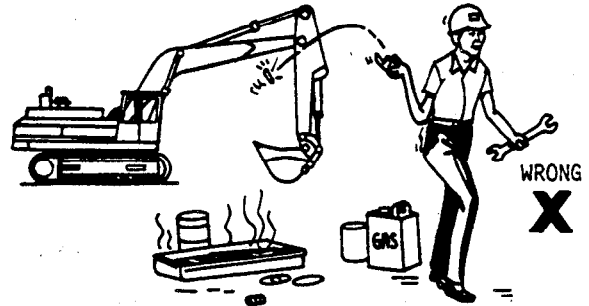
RIGHT



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AVOID EXPLOSIONS OR FIRE

- Do not smoke while you fill the fuel tank.
- Do not smoke while you work with material that will start on fire easily.
- Stop the engine before you fill the fuel tank.
- Do not fill fuel tank if engine is hot.
- Do not use gasoline or diesel fuel for cleaning parts. Use solvents that will not start on fire.



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OBSERVE BATTERY PRECAUTIONS

- Do not put metal objects across terminals to check the battery charge.
- When you charge a battery, be sure there is enough ventilation.
- Keep sparks and flames away from batteries.
- Do not smoke near battery.
- Before you work on the electrical system, or make major repairs, turn off the battery disconnect switch.



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BEFORE YOU WORK ON THE HYDRAULIC SYSTEM

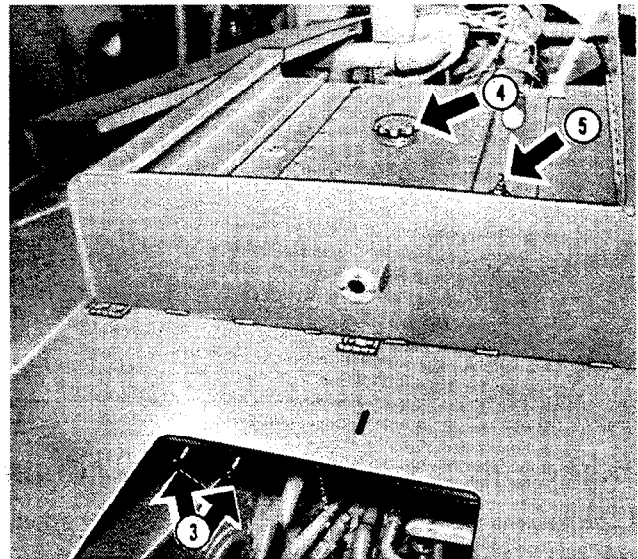
Follow these steps before you work on any part of the hydraulic system:

1. Park the excavator on level ground.
2. Lower hydraulic pressure:
 - Lower bucket to ground.
 - Stop engine.
 - Move control levers until boom and bucket do not move.
3. Push valve levers in all the way to stop oil flow.
4. Loosen the reservoir filler cap slowly to release pressure.
5. Open the diffuser vent. Turn it counterclockwise.

IMPORTANT: After you finish:

- Close diffuser vent.
- Pull levers out.

CAUTION: Do not walk or stand on sloping fenders or other sheet metal to service the excavator.



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General Specifications

Swing mechanism:

Swing 360-degree, internal drive, continuous Turntable bearing Single row, ball Case-hardened ring and pinion gears run in lubricant.

Undercarriage:

Propel motors (one for each track) . High-torque axial-piston hydraulic motors with planetary drive. Multiple-disk brakes automatically release while propelling, and apply when stationary. Independent drive to each track permits counterrotation.

Undercarriage, car body, and track frame Each track frame is a formed, reinforced U-channel. Track frames are joined by reinforced boxed car body with swing bearing mount.

Track Chain Sealed track chain

Track Adjustment Hydraulic

Buckets: High-strength steel, ribbed and plated bottom section.

Cab:

Steel, with urethane sound-proofing on ceiling and side walls, and cushioned neoprene floor mat. Safety glass on all sides and top. Front and rear windows open. Front window can be stored overhead.

Seat:

Fully adjustable heavy-duty cloth, foam-rubber cushioned seat.

Controls:

Pilot-operated two-lever for boom, arm, bucket, and swing. Pilot-operated right and left pedals control forward and rearward movement of right and left tracks respectively.

Nominal Width	Bite Width	Capacity		Weight
		SAE	Struck	
39 in. (991 mm)	42 in. (1067 mm)	1½ cu. yd. (1.15 m³)	1¼ cu. yd. (0.96 m³)	2550 lb. (1157 kg)
45 in. (1143 mm)	47 in. (1194 mm)	1⅞ cu. yd. (1.43 m³)	1½ cu. yd. (1.15 m³)	2670 lb. (1211 kg)
51 in. (1295 mm)	54 in. (1372 mm)	2⅞ cu. yd. (1.62 m³)	1¾ cu. yd. (1.34 m³)	2820 lb. (1279 kg)
Heavy-duty				
33 in. (838 mm)	37 in. (940 mm)	1½ cu. yd. (1.15 m³)	1¼ cu. yd. (0.96 m³)	3050 lb. (1383 kg)
39 in. (991 mm)	44 in. (1118 mm)	1⅞ cu. yd. (1.43 m³)	1½ cu. yd. (1.15 m³)	3575 lb. (1622 kg)
45 in. (1143 mm)	50 in. (1270 mm)	2 cu. yd. (1.53 m³)	1½ cu. yd. (1.15 m³)	3660 lb. (1660 kg)
Track Shoes:		Ground Contact	Ground Pressure	
Width	Shoes			
30 in. (750 mm)	Triple-bar semigrouser	9723 sq. in. (62 731 cm²)	9.18 psi (63.3 kPa) (0.65 kg/cm²)	
36 in. (900 mm) (optional)	Triple-bar semigrouser	11,668 sq. in. (75 278 cm²)	7.85 psi (54.1 kPa) (0.55 kg/cm²)	

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