6800 Tractor Repair

JOHN DEERE

TECHNICAL MANUAL

John Deere Werke Mannheim
TM4516 (08NOV93)
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ENGLISCH

Contents

Continued on next page

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

TM4516-19-15MAR96

Section 05
SAFETY

Contents

Page

SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

T81389 -UN-07DEC88

LX,CRA05 002884-19-09APR92

"IMPORTANT" - INFORMATION

Information marked as IMPORTANT points out problems that may lead to machine damage. By following the directions given, these problems can be avoided.

LX,CRA05 002885-19-09APR92

"NOTE" - INFORMATION

When marked with NOTE the information given is more detailled or contains restrictions to directions given previously. On the other hand useful information may be given belonging to certain instructions without being directly connected to them.

LX,CRA05 002886-19-09APR92

HANDLE FLUIDS SAFELY—AVOID FIRES

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

TS227 -UN-23AUG88

DX,FLAME -19-04JUN90

PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

TS204 -UN-23AUG88

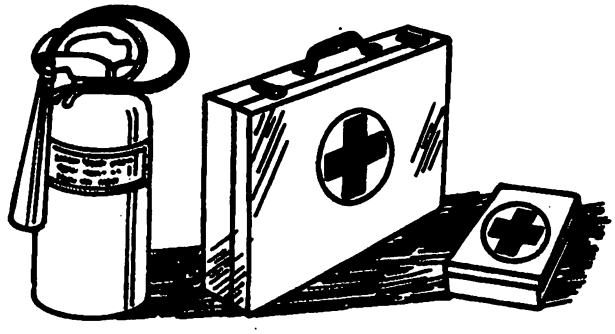
DX,SPARKS -19-03MAR93

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



TS291 -UN-23AUG88

DX,FIRE2 -19-03MAR93

PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:
1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 15—30 minutes. Get medical attention immediately.

If acid is swallowed:
1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.

TS203 -UN-23AUG88

DX,POISON -19-21APR93

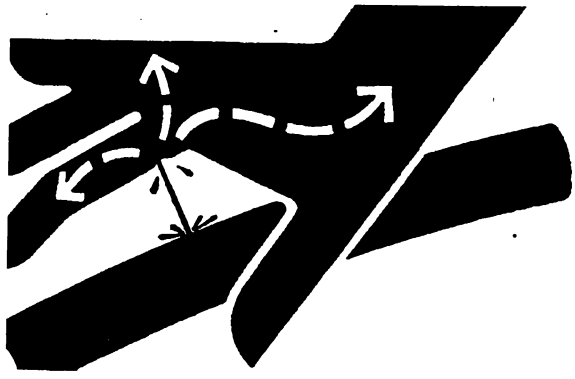
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

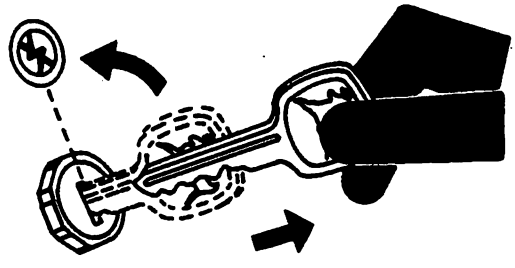


X9811 -UN-23AUG88

DX,FLUID -19-03MAR93

PARK MACHINE SAFELY

Before working on the machine:
- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



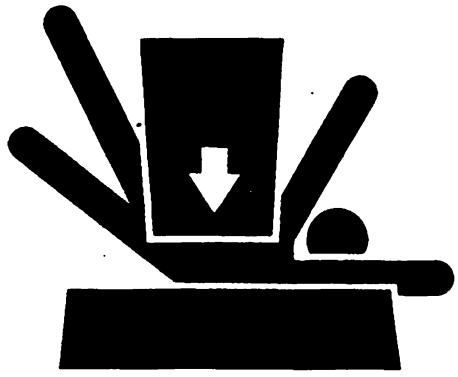
TS230 -UN-24MAY89

DX,PARK -19-04JUN90

SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



TS229 -UN-23AUG88

DX,LOWER -19-04JUN90

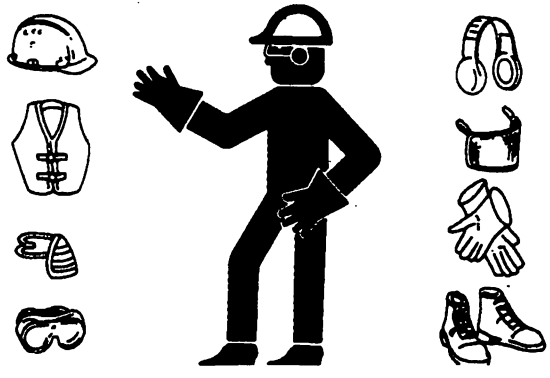
WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

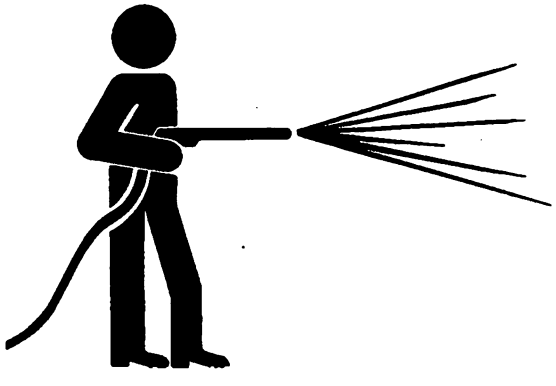


TS206 -UN-23AUG88

DX,WEAR -19-10SEP90

WORK IN CLEAN AREA

Before starting a job:
- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.



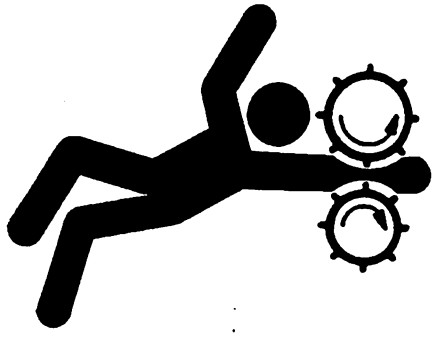
T6642EJ -UN-18OCT88

DX,CLEAN -19-04JUN90

SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



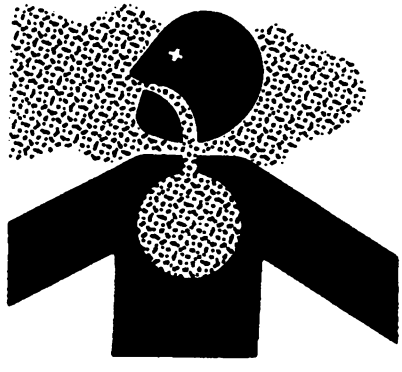
TS228 -UN-23AUG88

DX,LOOSE -19-04JUN90

WORK IN VENTILATED AREA

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.



TS220 -UN-23AUG88

DX,AIR -19-04JUN90

ILLUMINATE WORK AREA SAFELY

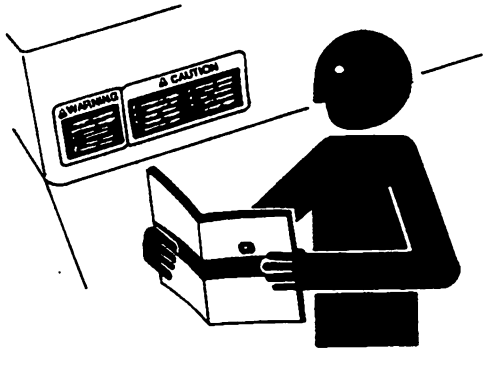
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

TS223 -UN-23AUG88

DX,LIGHT -19-04JUN90

REPLACE SAFETY SIGNS

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



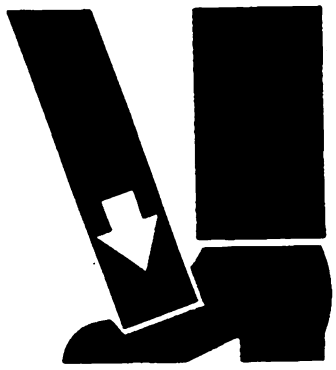
TS201 -UN-23AUG88

DX,SIGNS1 -19-04JUN90

USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



TS226 -UN-23AUG88

DX,LIFT -19-04JUN90

AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

TS953 -UN-15MAY90

DX,TORCH -19-03MAR93

REMOVE PAINT BEFORE WELDING OR HEATING

Avoid potentially toxic fumes and dust.

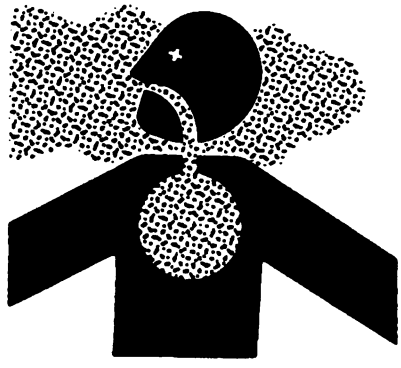
Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.

- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



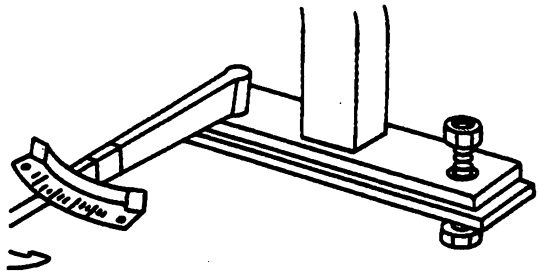
TS220 -UN-23AUG88

DX,PAINT -19-03MAR93

KEEP ROPS INSTALLED PROPERLY

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.



TS212 -UN-23AUG88

DX,ROPS3 -19-03MAR93

SERVICE TIRES SAFELY

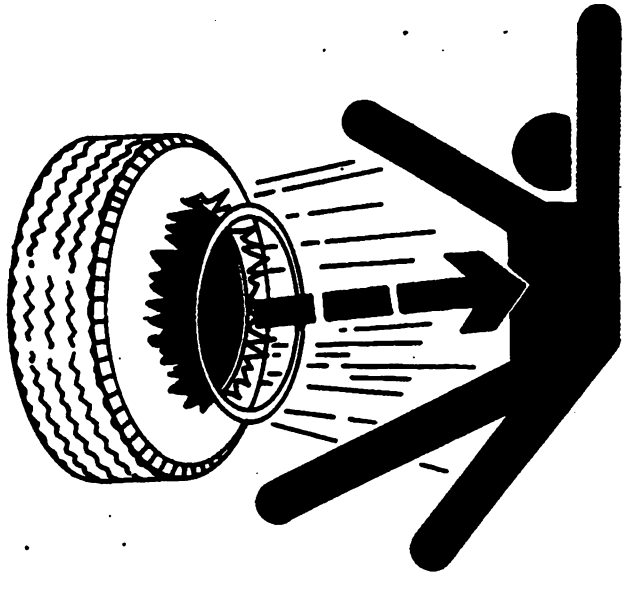
Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



TS211 -UN-23AUG88

DX,RIM -19-24AUG90

PRACTICE SAFE MAINTENANCE

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet , and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

TS218 -UN-23AUG88

DX,SERV -19-03MAR93

USE PROPER TOOLS

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.

TS779 -UN-08NOV89

DX,REPAIR -19-04JUN90

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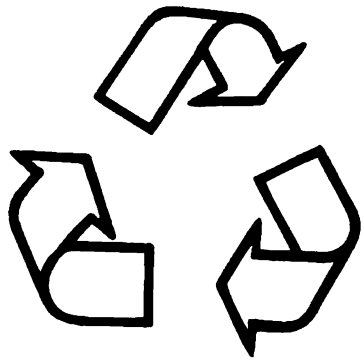
DISPOSE OF WASTE PROPERLY



TS1133 -UN-26NOV90

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

DX,DRAIN -19-03MAR93

LIVE WITH SAFETY

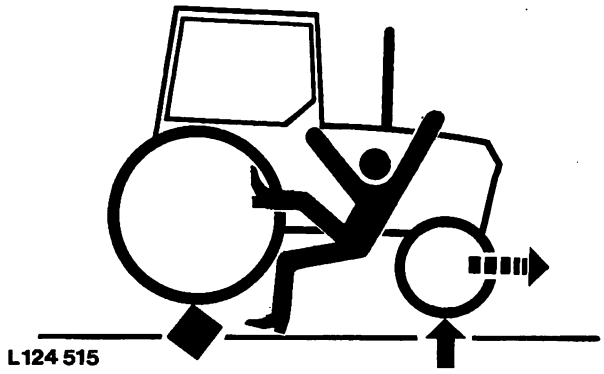
Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

TS231 -19-07OCT88

DX,LIVE -19-25SEP92

SERVICE FRONT-WHEEL DRIVE TRACTOR SAFELY

When servicing front-wheel drive tractor with the rear wheels supported off the ground and rotating wheels by engine power, always support front wheels in a similar manner. Loss of electrical power or transmission/ hydraulic system pressure will engage the front driving wheels, pulling the rear wheels off the support if front wheels are not raised. Under these conditions, front drive wheels can engage even with switch in disengaged position.



L124 515

L124515 -UN-06AUG94

LX,MFWD2 -19-01MAY91

Section 10
GENERAL INFORMATION

Contents

SPECIFICATIONS

Engine

	6800	6900
Type	6068TL001 turbocharged	6068TL002 turbocharged
Engine power at rated speed according to ECE-R24 with viscous fan	88 kW (120 hp)	96 kW (130 hp)
Maximum torque at an engine speed of	536 N·m (395 lb-ft) 1300 rpm	595 N·m (439 lb-ft) 1300 rpm
Number of cylinders	6	6
Bore	106.5 mm (4.19 in.)	106.5 mm (4.19 in.)
Stroke	127.0 mm (5.0 in.)	127.0 mm (5.0 in.)
Displacement	6790 cm^3 (414 in^3)	6790 cm^3 (414 in^3)
Firing order	1 5 3 6 2 4	1 5 3 6 2 4
Valve clearance, intake valves	0.35 mm (0.014 in.)	0.35 mm (0.014 in.)
Valve clearance, exhaust valves	0.45 mm (0.018 in.)	0.45 mm (0.018 in.)
Slow idle	800 rpm - 900 rpm	800 rpm - 900 rpm
Fast idle	2250 rpm - 2300 rpm	2250 rpm - 2300 rpm
Rated engine speed	2100 rpm	2100 rpm
Working speed range	1300 rpm - 2100 rpm	1300 rpm - 2100 rpm
Max. PTO power at rated PTO speed (factory-measured, 1000 rpm PTO)	79 kW (107 hp)	85 kW (116 hp)
Engine speed for PTO operation		
- 540E rpm rear PTO	1754 rpm	1754 rpm
- 1000 rpm rear PTO	2000 rpm	2000 rpm
- 1000 rpm front PTO (6 splines)	2033 rpm	2033 rpm
- 1000 rpm front PTO (21 splines)	2154 rpm	2154 rpm

LX,10 004162-19-01AUG95

10 05 1

Cooling System

Type . . . . . pressurized system with centrifugal pump and expansion tank

Temperature control . . . . . thermostat and viscous fan drive

LX,RCRA 002953-19-14APR92

Fuel System

Type . . . . . direct injection

Fuel injection pump timing . . . . . at TDC

Fuel injection pump type . . . . . distributor pump, four piston type

Automatic switching-off . . . . . electrical

LX,10,5 004165-19-01MAR93

Air Intake System

Air cleaner . . . . . dry type air cleaner with safety element

LX,RCRA 002951-19-14APR92

Electrical System

Battery . . . . . 12 V, 154 Ah or 12 V, 174 Ah
Alternator with overvoltage protection . . . . . 14 V, 85 A or 14 V, 120 A
Starting motor . . . . . 12 V, 3.4 kW (4.6 hp)
Battery terminal grounded . . . . . negative

LX,10,5 004056-19-01AUG95

Hydrostatic Steering System

Type	fully hydraulic

LX,RCRA 002888-19-01MAR93

PowrQuad Transmission

Type	synchronized automatic transmission
Range shifting	mechanically, synchronized
Tractors with 30 km/h (18.5 mph) transmission	4 ranges
Tractors with 40 km/h (25 mph) transmission	5 ranges
Shifting of the 4 gears	mechanical-hydraulic, under load, without operating clutch
Reverse gear shifting	mechanical-hydraulic, under load, without operating clutch
- Tractors with 30 km/h (18.5 mph) and 40 km/h (25 mph) transmission	all ranges, all gears *

** Depending on option and legal requirements, there may be only 12 reverse gears.*

LX,10,05 004697-19-01AUG95

Creeper Transmission

Type	non synchronized reduction gear
Reduction of ground speed in all ranges as well as in the reverse range	approx. 90 %
Shifting the two creeper speeds	mechanically, non synchronized

LX,RCRA 002899-19-01AUG95

Rear PTO

Type . . . . . independent, engaging/disengaging under load

Engine speed for PTO operation
- 540E rpm rear PTO . . . . . 1754 rpm

- 1000 rpm rear PTO . . . . . 2000 rpm

LX,10,5 004173-19-01MAR93

Front PTO

Type . . . . . engaging/disengaging under load

Engine speed for 1000 rpm front PTO

-PTO turning clockwise* (6 splines) . . . . . 2033 rpm

-PTO turning counterclockwise* (21 splines) . . . . . 2154 rpm

* *seen in direction of travel*

LX,10,5 004153-19-01AUG95

Differential

Type . . . . . helical bevel gear drive

LX,TECHN 001036-19-04FEB92

Differential lock

Operation . . . . . electro/hydraulic, pedal operated

Disengaging . . . . . electro/hydraulic, after traction has equalized

LX,RCRA 002945-19-14APR92

Final drives

Type . . . . . Planetary reduction gear

LX,RCRA 002954-19-14APR92

Front Wheel Drive

Type . . . . . operated under load, hydraulically controlled drive with wet disk clutch

Control . . . . . solenoid valve, electro-hydraulic

Engagement . . . . . with pre-tensioned Belleville springs

Disengagement . . . . . hydraulically

LX,TECHN 001034-19-01AUG95

Hydraulic Brakes

Type . . . . . self-adjusting, hydraulically operated wet disk brakes, individually acting in field operation

LX,RCRA 002889-19-09APR92

Handbrake

Type . . . . . mechanically operated brake band acting on FWD clutch

LX,RCRA 002890-19-01MAR93

Parking Lock

Type	mechanically operated locking pawl, acting on front wheel drive gear

LX,10,5 004180-19-01MAR93

Hydraulic System

Type	closed center system with Load Sensing Control
System pressure	
min. (standby)	3000 kPa (30 bar; 435 psi)
max.	20000 kPa (200 bar; 2900 psi)
Axial piston pump	pressure and flow compensated

LX,RCRA 002891-19-01MAR93

Rockshaft

Type	three-point hitch with two lift cylinders, activated via stepper motor and valve
Control types	load, depth, load-and depth control, float position
Control	electronic/hydraulic draft link control, draft sensor or position sensor (actual value) operation box (set-point values) electronic control unit (processor)

LX,RCRA 002892-19-01MAR93

Front Hitch

Front hitch	controlled via selective control valve

LX,RCRA 002894-19-09APR92

Ground Speeds

Ground speeds . . . . . see Operator's Manual

LX,RCRA 002895-19-09APR92

Front and Rear Wheels

Tires, wheel treads, tire pressure and ballast . . . . . see Operator's Manual

LX,RCRA 002896-19-09APR92

Dimensions and Weights

Dimensions and weights . . . . . see Operator's Manual

LX,RCRA 002897-19-09APR92

Capacities

	6800	6900
Fuel tank	207 L (54.6 US.gal.)	207 L (54.6 US.gal.)
		250 L (66.0 US.gal.)
Cooling system -initial filling	19.5 L (5.1 US.gal.)	19.5 L (5.1 US.gal.)
-changing coolant	15.5 L (4.1 US.gal.)	15.5 L (4.1 US.gal.)
Engine crankcase -oil change with filter	17.0 L (4.5 US.gal.)	17.0 L (4.5 US.gal.)
Transmission/hydraulic system -initial filling	75.0 L (19.8 US.gal.)	75.0 L (19.8 US.gal.)
-oil change with filter	56.0 L (14.8 US.gal.)	56.0 L (14.8 US.gal.)
Front wheel drive, front axle housing	6.6 L (1.7 US.gal.)	6.7 L (1.8 US.gal.)
Front wheel drive, final drive housing - each	0.8 L (0.2 US.gal.)	2.2 L (0.6 US.gal.)
Air conditioning system (R134a refrigerant)	1.3 kg (2.86 lb)	1.3 kg (2.86 lb)

LX,10,5 004187-19-01AUG95

DIESEL ENGINE OIL

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oil is preferred.

- **John Deere PLUS-50®**

If John Deere PLUS-50 engine oil and a John Deere oil filter are used, the service interval for oil and filter changes may be extended by 50 hours.

The following oil is also recommended:

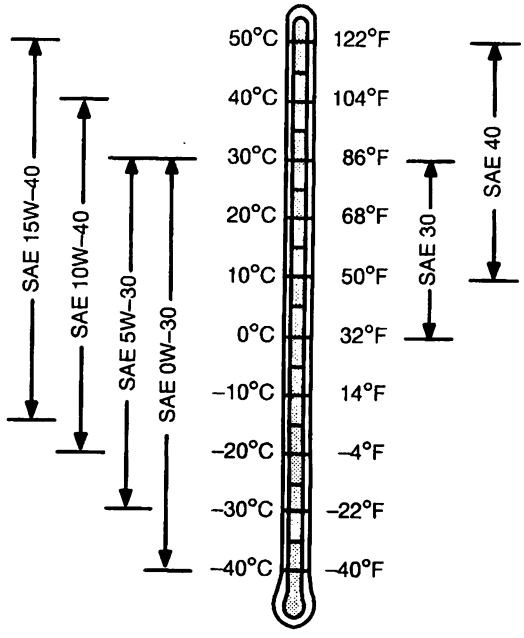
- John Deere TORQ-GARD SUPREME®

Other oils may be used if they meet one or more of the following:

- John Deere UNI-GARD™
- API Service Classification CG-4
- API Service Classification CF-4
- ACEA Specification E3
- ACEA Specification E2
- CCMC Specification D5
- CCMC Specification D4

Multi-viscosity diesel engine oils are preferred.

If diesel fuel with sulfur content greater than 0.5% is used, reduce the service interval by 50%.



TS1647 -UN-14MAR96

DX,ENOIL -19-18MAR96

TRANSMISSION AND HYDRAULIC OIL

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

10 05 10

- John Deere HY-GARD®
- John Deere Low Viscosity HY-GARD®

The following oils are also recommended:

- John Deere UNI-GARD™

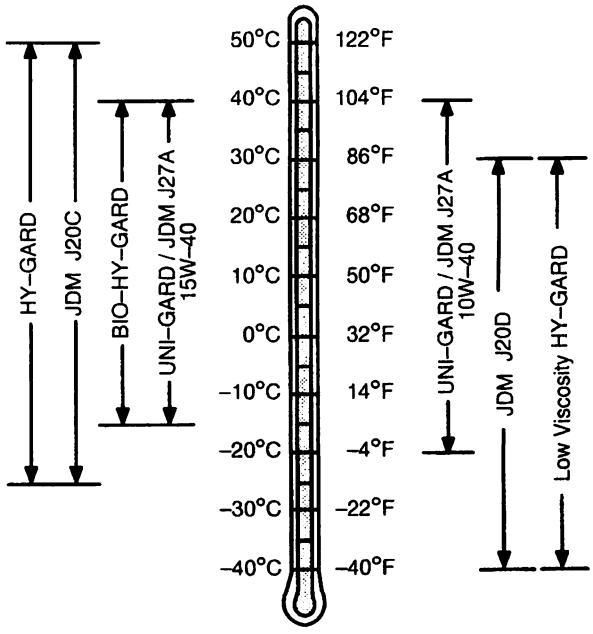
Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D
- John Deere Standard JDM J27A

Use the following oil when a biodegradable fluid is required:

- John Deere BIO-HY-GARD™[1]

IMPORTANT: Do not use engine oil for this application.



[1]BIO-HY-GARD meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. BIO-HY-GARD should not be mixed with mineral oils because this reduces the biodegradability and makes proper oil recycling impossible.

DX,ANTI -19-18MAR96

FRONT WHEEL DRIVE AXLE OIL

Use oil viscosity based on the expected air temperature range during the period between oil changes.

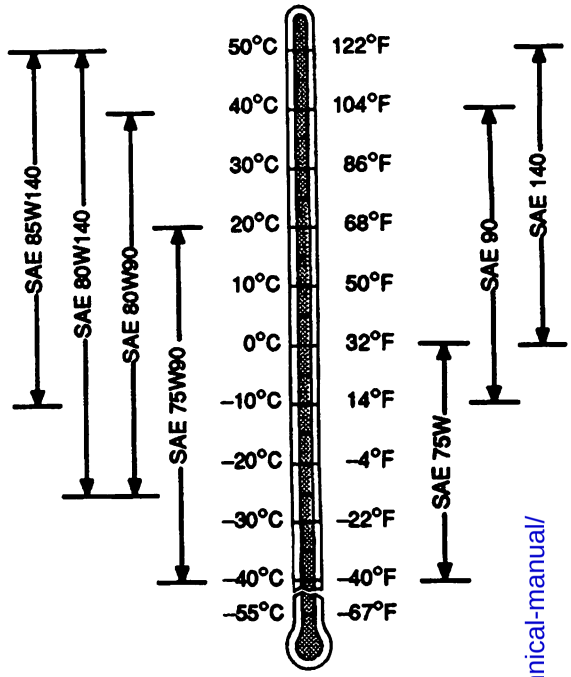
The following oils are preferred:

- John Deere EXTREME-GARD™
- John Deere GL-5 GEAR LUBRICANT

Other oils may be used if they meet the following:

- API Service Classification GL-5

Arctic oils (such as Military Specification MIL-L-10324A) may be used at temperatures below -30°C (-22°F).



LX,DX,GEOIL -19-01FEB94

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