JD24A Skid-Steer Loader

JOHN DEERE

TECHNICAL MANUAL

JD24A Skid-Steer Loader

TM1157 (01NOV76) English

John Deere
Lawn & Grounds Care Division
TM1157 (01NOV76)

LITHO IN U.S.A.
ENGLISH

JD24-A SKID-STEER LOADER

Technical Manual
TM-1157 (Nov-76)

SECTIONAL CONTENTS OF THIS MANUAL

The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications and design information are in accordance with ICED and SAE standards.

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SECTION AND GROUP CONTENTS OF THIS MANUAL

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ALPHABETICAL INDEX

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COMPLETE PAGE LISTING WITH LATEST DATE LINES

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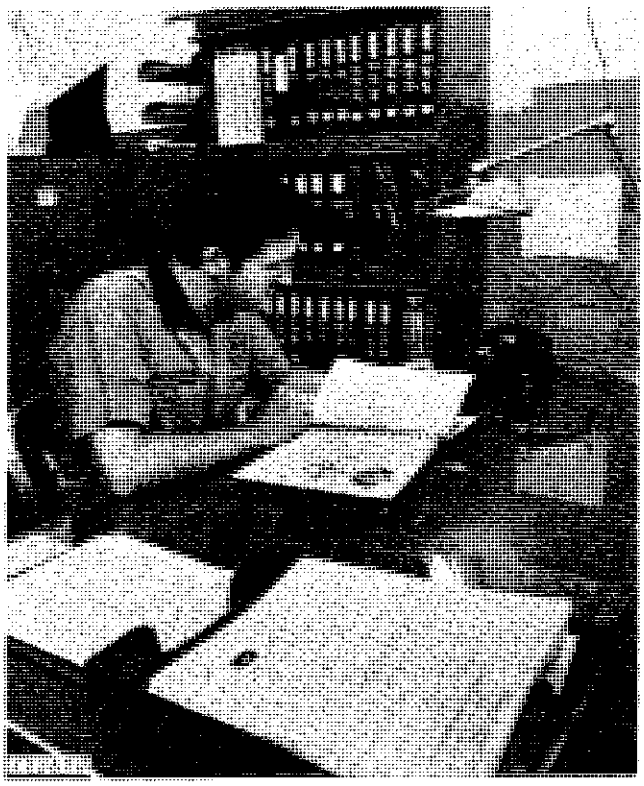
Group II
INTRODUCTION AND SAFETY INFORMATION
INTRODUCTION



Use FOS Manuals for Reference

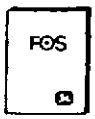
Use Technical Manuals for Actual Service

This technical manual is part of a twin concept of service:

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

•FOS Manuals - for reference

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of trouble shooting, general maintenance, and basic types of failure and their causes. FOS Manuals are for training new personnel and for reference by experienced service technicians.



When a service technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

•Technical Manuals - for actual service

Technical Manuals are concise service guides for a specific machine. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

This technical manual was planned and written for you - an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Some features of this manual:

- Inside front cover - "Table of Contents".
- Section I - General specifications and services.
- Sections 1 through 21 - Removal, repair, testing (components removed), installation, and adjustment.
- Section 90 - Detailed explanation of system operation, diagnosis, visual inspection, testing, and adjustments.
- Specifications grouped and illustrated at the end of each section.

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MAINTENANCE WITHOUT ACCIDENT
WORK SAFELY

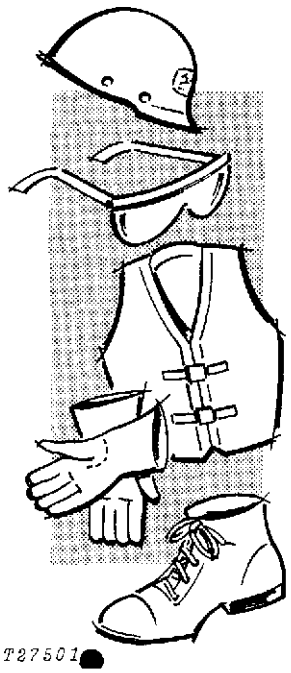
T27999

This safety alert symbol identifies important safety messages in this manual and on the skid-steer loader. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

EVERY EMPLOYER HAS A SAFETY PROGRAM. KNOW WHAT IT IS!

Consult your shop foreman for specific instructions on a job, and the safety equipment required.

For instance, you may need: Hard hat, safety shoes, safety goggles, heavy gloves, reflector vests, ear protectors, respirators.



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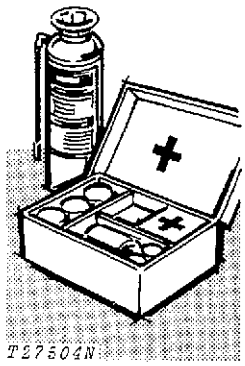
T27502

ALWAYS AVOID loose clothing or any accessory - flopping cuffs, dangling neckties and scarves, or rings and wrist watches - that can catch in moving parts and put you out of work.

BE ALERT!

Plan ahead - work safely - avoid accidental damage and injury. If a careless moment does cause an accident or fire, react quickly with the tools and skills at hand—know how to use a first-aid kit and a fire extinguisher—and where to get aid and assistance. In an emergency, split-second action is the key to safety.



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MAINTENANCE WITHOUT ACCIDENT

Specific safety procedures should always be observed, whether servicing the equipment or making the repairs. Remembering these - in time! - can prevent an injury..or save your life....

AVOID FIRE HAZARDS—

Fuel is Dangerous!

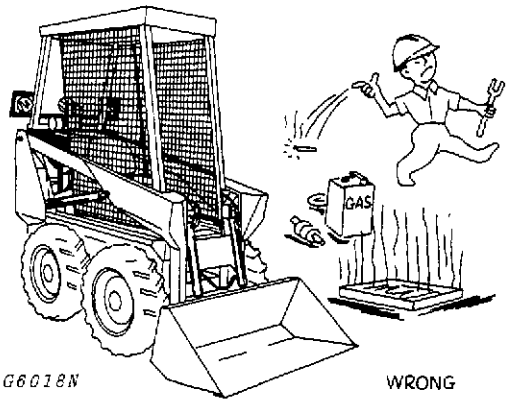
Don't smoke while refueling.

Don't smoke while handling highly flammable material.

Engine should be shut off when refueling.

Use care in refueling if the engine is hot.

Don't use open pans of gasoline or diesel fuel for cleaning parts. Good commercial, nonflammable solvents are preferred.



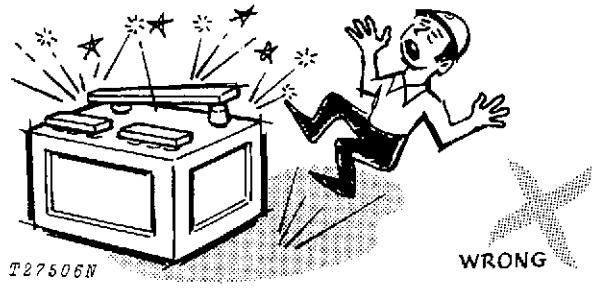
G6018N WRONG

Battery Gas is Highly Flammable!

Provide adequate ventilation when charging batteries.

Don't check battery charge by placing metal objects across the posts.

KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!



T27506N

Don't allow sparks or open flame near batteries.

Don't smoke near battery.

Flame is Not a Flashlight!

Never check fuel, battery electrolyte or coolant levels with an open flame.

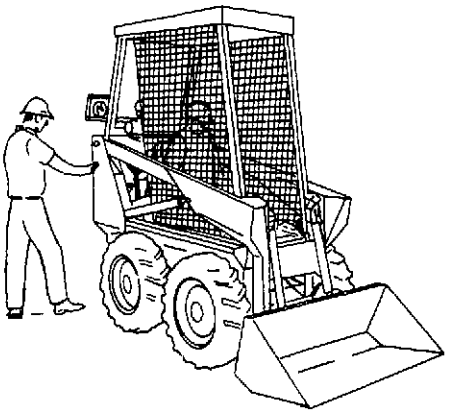
Never use an open flame to look for leaks anywhere on the equipment.

Never use an open flame as a light anywhere on or around the equipment.

UNDER ALL MAINTENANCE CONDITIONS -

Do not perform any work on the equipment unless authorized to do so. Then be sure you know what you're doing. Follow recommended procedures.

Never service the equipment while it is being operated.



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SERVICE TECHNICIANS

Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running, **ALWAYS USE TWO** - one, the operator, at the controls, the other checking in view of the operator. **KEEP HANDS AWAY FROM MOVING PARTS.**

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MAINTENANCE WITHOUT ACCIDENT

Before servicing, adjusting or repairing Skid-Steer Loader - LOWER bucket to the ground - or, if necessary raise bucket for access to certain parts. SECURELY SUPPORT by using lift arm locks. DO NOT rely on controls to support or position bucket for maintenance.

Never allow ANYONE to walk under equipment that is raised and not properly blocked.

Avoid working directly under raised and blocked equipment unless absolutely necessary.

If the machine is on an incline, block it securely.

Use hoisting equipment for lifting heavy parts. **TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE VICINITY.**

Use extreme caution in removing radiator caps, drain plugs, grease fittings, or hydraulic pressure caps.

Wear safety glasses when drilling, grinding, or hammering metal.

Make sure the maintenance area is adequately vented.

Keep maintenance area CLEAN AND DRY. Oily and wet floors are slippery; greasy rags are a fire hazard; wet spots are dangerous when working with electrical equipment.

SERVICING PRECAUTIONS

Stop the engine before cleaning or lubricating the equipment.

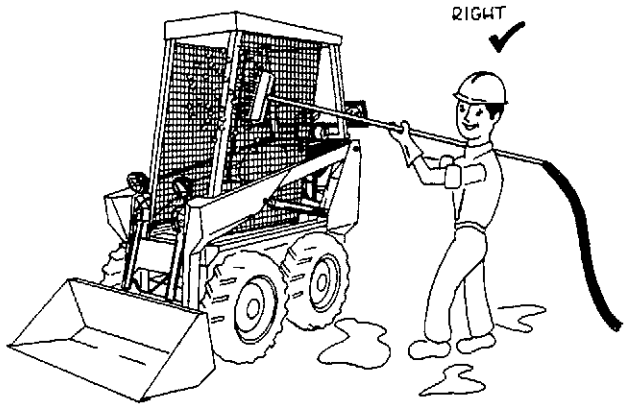
Lower mounted equipment and tools to the ground carefully.

Engine coolant gets hot! Don't remove the radiator cap until coolant temperature is below the boiling point. Then turn cap slightly to relieve pressure before removing.

Exhaust gases are dangerous! Periodically check exhaust system for excessive leakage.

Don't forget a hydraulic system may be pressurized! To relieve pressure, follow the technical manual.

When checking hydraulic pressure, be sure to use the correct test gauge for the pressure in the particular system.



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Keep the operator's platform clean. Do not use it as a storage area.

Keep the engine closure screens free of foreign matter. Avoid a possible fire hazard.

Keep all equipment free of dirt and oil. In freezing weather, beware of snow and ice on operator's platform.

MAINTENANCE WITHOUT ACCIDENT

ADJUSTING PRECAUTIONS

. . . . for Operating Adjustments

Keep controls properly adjusted at all times. Before making adjustments, stop engine.

Before removing any covers, stop engine. Take all objects from your pockets which could fall. Don't let adjusting wrenches fall.

. . . . for Maintenance Adjustments

Don't attempt to check belt tension while the engine is running.

Don't adjust the fuel system while the machine is in motion.

PRECAUTIONS DURING REPAIR

Before working on hydraulic system—make sure engine is not running and the system pressure is relieved by working the control levers in all directions with the engine shut off.

Before repairing the electrical system, or performing a major overhaul, make sure the battery is disconnected.

KNOW EQUIPMENT IS READY!

Check guards, safety equipment, and all protective devices installed on the skid steer. Each one should be in place and secure.

Check levels of fuel, coolant, hydraulic fluid, and lubricating oil. If fuel must be added - FIRST, PUT OUT THAT CIGARETTE.

Although it is impractical to try to cover every possible maintenance situation, the safety precautions recommended here should serve to develop and promote safe maintenance procedures.

The information contained in this manual is not intended to replace safety codes, insurance requirements, federal, state, and local laws, rules and regulations. In particular, your service area or jobsite activities may be subject to state safety rules and/or federal regulation under the Occupational Safety and Health Act (OSHA). Familiarize yourself with all regulations applicable to your situation in order to avoid possible safety violations.

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Group III
GENERAL SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with IEMC and SAE standards. Except where otherwise noted, these specifications are based on a unit equipped with 10 x 16.5, 4 ply rating steel-ply tires and standard equipment.)

POWER	SAE
(@ 2800 Engine rpm)	
Gross	37
Net	35

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel injection pump, alternator and muffler. The gross engine power is without fan. Gross and net flywheel power ratings are under SAE standard conditions of 500-ft (152 m) altitude and 85°F (29.5°C) temperature and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m) altitude.

**In the international system of units power is expressed in kilowatts (kW).

ISUZU ENGINE

Diesel, 4-Cylinder, 4-stroke cycle	
Bore and Stroke	3.37 x 3.31 in. (86 x 84 mm)
Piston Displacement	119 cu. in. (1951 cc)
Compression Ratio	20.1 to 1
Maximum Torque @ 2000 RPM	79.6 lb-ft (107.9 Nm)
MACC or AMA (U. S. Tax)-horsepower	18.34
Cooling	Pressurized with Single Thermostat and Control By Pass
Fan	Blower
Air Cleaner with Restriction Indicator	Dry

CONTINENTAL ENGINE

Gasoline - 4 Cylinder	
Bore and Stroke	3.188 x 3.50 (81 x 89 mm)
Piston Displacement	112 Cu. In. (1836 cm^3)
Compression Ratio	6.0761
Maximum Torque @1500 RPM	90 lb-ft (122 Nm) (12.2 kgm)

TRAVEL SPEED - (2800 Engine rpm no Tire Slip)
Forward or Reverse ..... 0 to 6.5 mph (0 to 10.5 km/hr)

DRIVE AXLES
Axles are specially treated, forged 2.56 in (65 mm) diameter steel. Chain and sprocket primary and final drive.

BRAKES

Service	Dry Disc Type on Two Front Wheels
Emergency	Foot Operated Mechanical
Parking	Hand Operated Center Pull Mechanical

STEERING
T-Bar controls forward and reverse, right and left movements through two axial variable piston pumps and two axial fixed piston motors.
Turning Radius ..... 360 Degrees in its own length

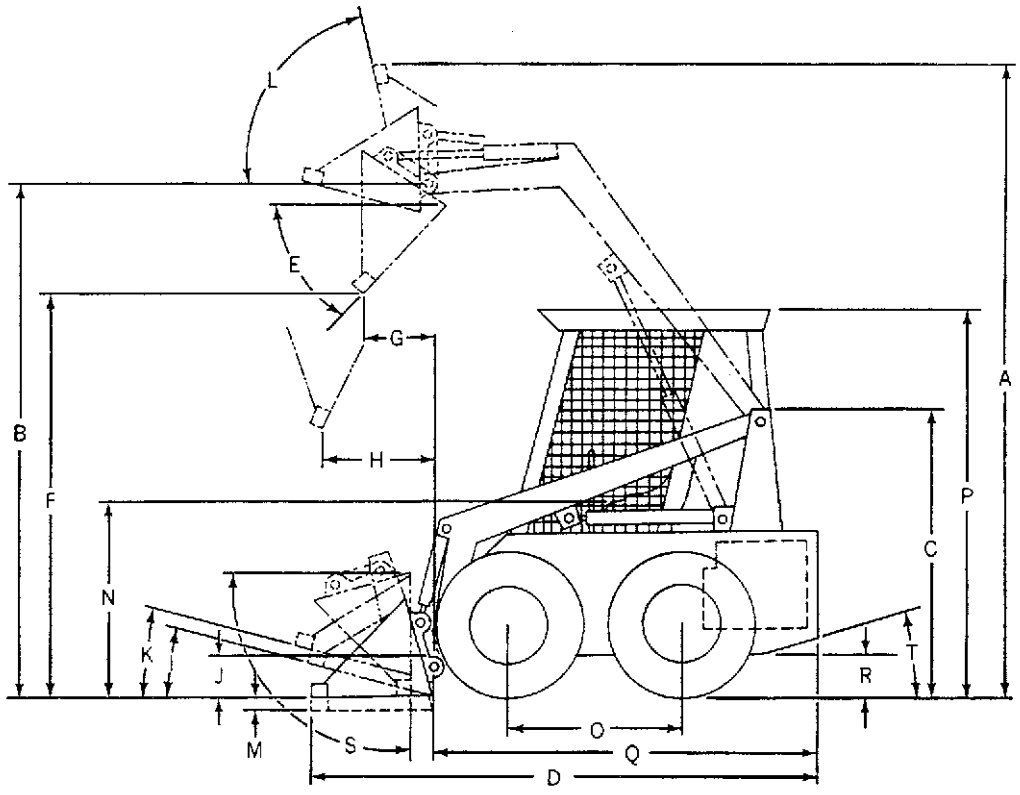
HYDRAULIC SYSTEM
Open center, constant flow hydrostatic pump driven from crankshaft - 15 gpm (60.51 lpm) 2000 psi (140.6 kg/cm^2) at 2800 engine rpm.

TIRES
10 x 16.5, 4 ply rating, steel cap
15.5 x 15, 8 ply rating, terra
6.50 x 16, solid rubber
7 x 15, 6 ply rating, steel cap

CAPACITIES	U.S.	Liter
Fuel Tank	24 Gal.	90.8 l
Cooling System	12 Qts.	11.3 l
Engine Lubrication with Filter	5-1/4 Qts.	4.9 l
Hydraulic System	18 Gal.	68.1 l

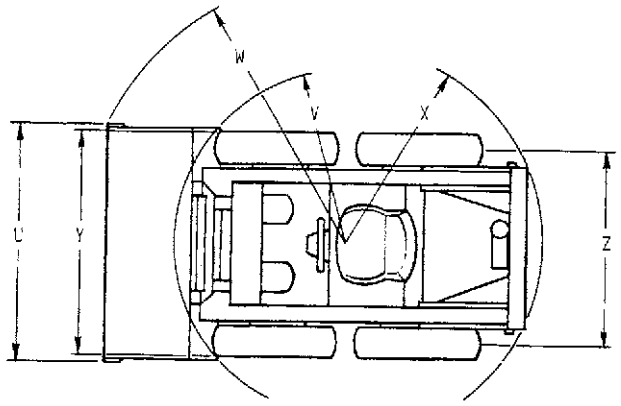
ELECTRICAL SYSTEM:
12-Volt totally enclosed alternator, belt-driven

Battery 12-volt (Diesel) ..... (95 amp-hr.)
(Gas) ..... (61 amp-hr.)



Specifications are in accordance with IEMC standards. Dimensions are with the Quik-Tatch 10 cu. ft. heaped (0.28 m³) Earth and Foundry Bucket and 10 x 16.5 Steel Cap Tires

A—Overall height - lift arms raised ..... 143.25-in. (3 640 mm)
B—Height to hinge pin (Maximum) ..... 110-in. (2 795 mm)
C—Overall height ..... 64.5-in. (28 mm)
D—Overall length - with bucket ..... 115.50-in. (2 935 mm)
E—Dump angle ..... 37°
F—Dump height ..... 84-in. (2 135 mm)
G—Reach of maximum height ..... 16.25-in. (415 mm)
H—Reach bucket on ground ..... 48.25-in. (1 225 mm)
I—Maximum rollback at ground ..... 31°
J—Carry position ..... 10-in. (255 mm)
K—Maximum rollback at carry position ..... 32°
L—Maximum rollback - full raised ..... 107°
M—Digging depth 0
N—Height to seat ..... 42-in. (1 070 mm)
O—Wheel base ..... 35-in. (89 mm)
P—Overall height with Roll-gard ..... 84.75-in. (2 155 mm)
Q—Overall length - less bucket ..... 85-in. (2 160 mm)
R—Ground clearance ..... 7.50-in. (190 mm)
S—Maximum grading angle ..... 93°
T—Angle of departure ..... 23°



G5275

U —Bucket width ..... 61-in. (1550 mm)

V —Front clearance circle ..... 44-in. (1120 mm) (less bucket) radius

W—Front clearance circle ..... 72.50-in. (1840 mm) (with bucket) radius

X —Rear clearance circle ..... 53.25-in. (1355 mm) (radius)

Y —Overall width less bucket ... 59.5-in. (1510 mm)

Z —Tread ..... 49-in. (1.25 m)

Operating capacity .. Operating capacity is 1250 lbs. (567 kg) Bucket capacities vary according to application.

Shipping weight ..... 4848 lbs. (2199 kg)

Distribution..... Rear - 65% Front - 35%

(Specifications and design subject to change without notice.)

ADDITIONAL STANDARD EQUIPMENT

Muffler
Transistorized Voltage Regulator
Engine Heat Shield
Belly Pans
Adjustable Seat with Seat Belt

Roll-Gard Canopy with Side Screens
Radiator Guard with Rubber Latches
Hand and Foot Brake
Canopy Mounted Lift Arm Locks
Quick-Tatch Mounting Frame

Gauges:

Engine Oil Pressure

Coolant Temperature

Electric Hour Meter

Ammeter

Fuel

Glow Plug Indicator

Air Restriction Indicator

Hydraulic Vacuum

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Group IV
PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

TEMPORARY STORAGE

After receiving your loader from the factory and before putting the machine into temporary storage, perform the following checks:

For long term storage (over 30 days) information, consult your JD24-A Operator's Manual.

1. Check battery electrolyte level and charge the battery, if necessary.

2. Check the level of coolant in the radiator. The coolant should be maintained at a level midway between the radiator core and filler neck.

3. Fill the fuel tank.

4. Check crankcase oil level. Oil should be at top mark of dipstick after loader has been shut down for 10 minutes.

5. Relieve hydraulic pressure by stopping engine, lowering all equipment and operating control levers until system fails to respond.

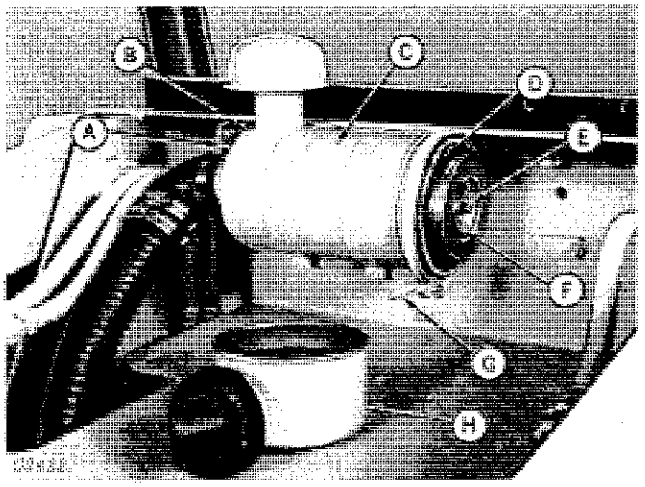
6. Check torque on wheel lug nuts. Tighten nut to 90 lb-ft (118 Nm) (12 kgm) torque.

PREDELIVERY SERVICE

Because of the shipping factors involved, plus extra finishing touches that are necessary to promote customer satisfaction, proper predelivery service is of prime importance to the dealer and the customer.

Use the following list when preparing a unit for delivery to the customer.

1. Air Cleaner



A—Restriction Indicator
B—Reset Button
C—Air Cleaner Body
D—Element
E—Gasket
F—Wing Nut
G—Clamp
H—Dust Cap

Fig. 1-Air Cleaner

Check air cleaner restriction indicator. If the restriction indicator is locked in red position, check and clean air filter element. Replace element, if necessary.

2. Check Air Intake Hoses

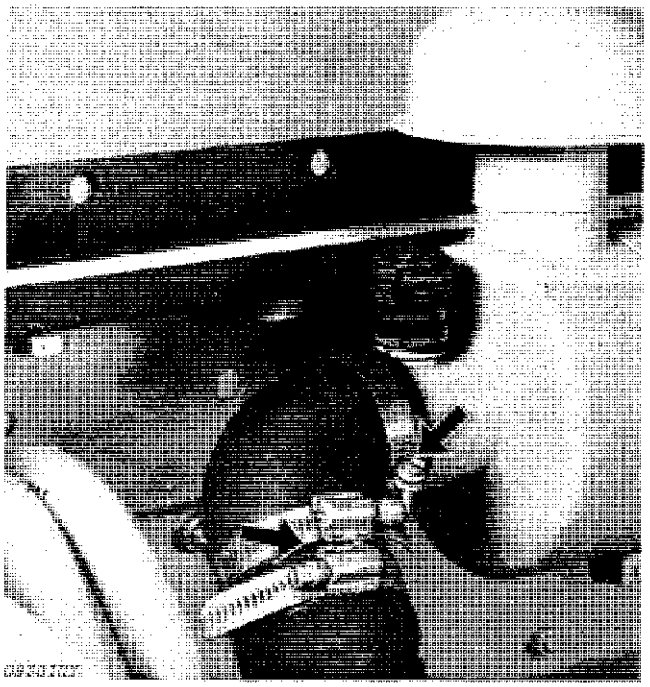


Fig. 2-Hose Clamps

Check clamps on hoses which connect air cleaner to engine. Tighten hose clamps where necessary to prevent dirt from entering engine. Inspect hoses for cracks.

3. Fuel Tank

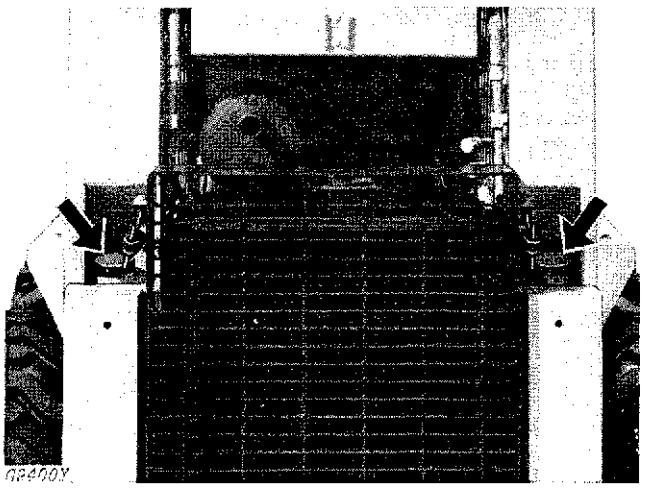


Fig. 3-Fuel Tanks

Check fuel tank level. If fuel level is low, add sufficient fuel to fill fuel tank. Fuel tank capacity is 24 U.S. Gal. (90.8 l).

4. Fuel Filter

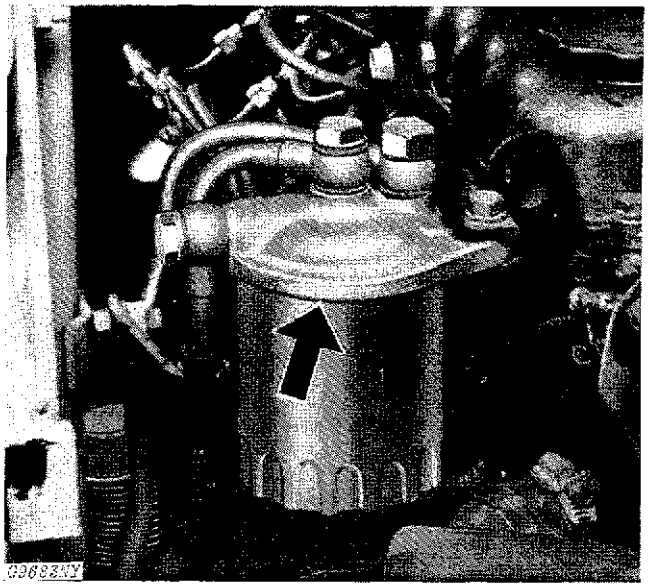
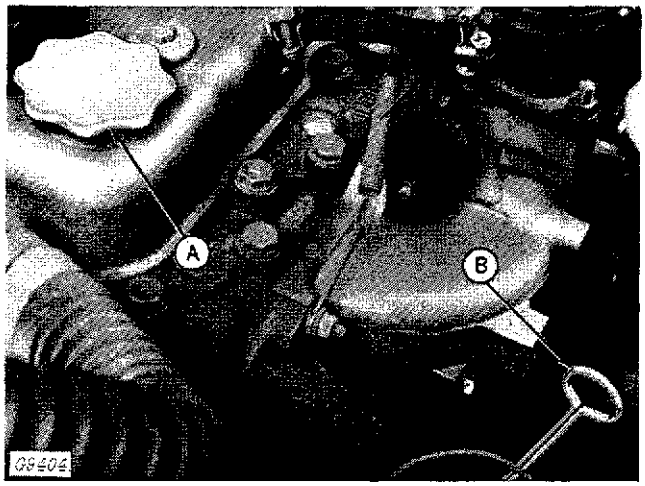


Fig. 4-Fuel Filter

Check fuel filter for loose connections.

5. Crankcase Oil Level

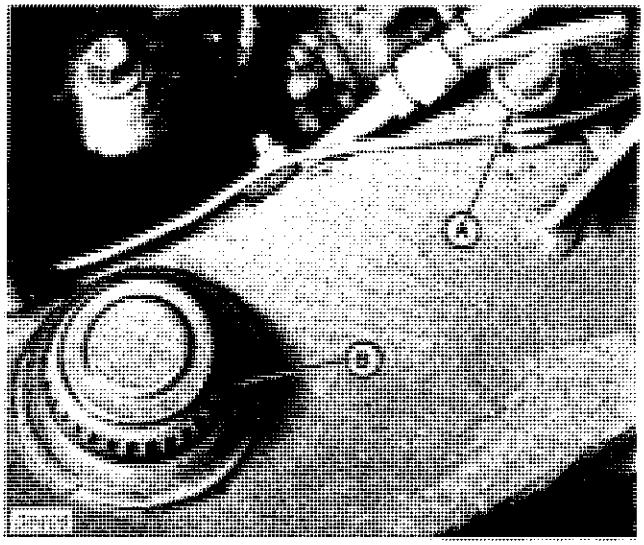


A—Crankcase Filler Cap **B—Crankcase Dipstick**

Fig. 5-Crankcase Filler Cap and Dipstick

Check crankcase oil level with unit on level ground and engine off. If oil level is at or below bottom mark on dipstick, add oil specified on page I-V-2 to bring oil level to mark on dipstick. Do not operate engine with oil level below the bottom mark.

6. Hydraulic Reservoir Oil Level



A—Hydraulic Dipstick **B—Hydraulic Filler Cap**

Fig. 6-Hydraulic Dipstick and Filler Cap

Check oil level in loader hydraulic reservoir. Level should be midway between low and high marks.

7. Radiator

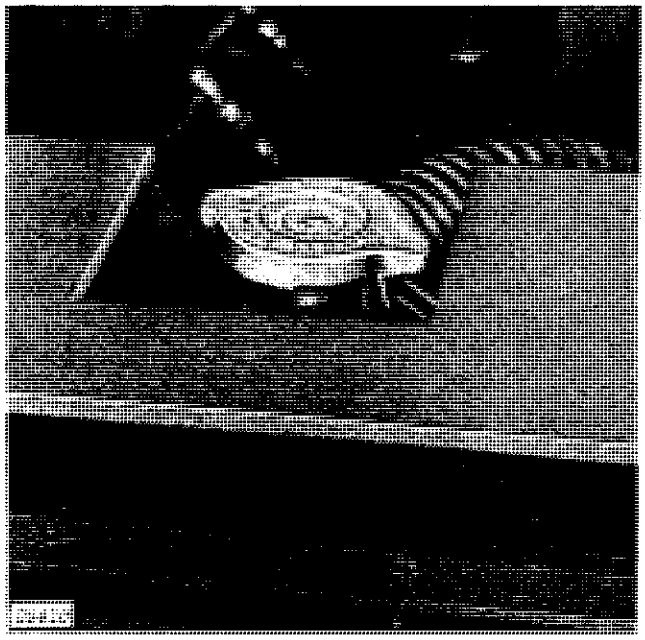


Fig. 7-Radiator Filler Cap

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

Check the level of coolant in the radiator. Coolant should be maintained at a level midway between the radiator core and filler neck. Add permanent type antifreeze if cold weather is anticipated.

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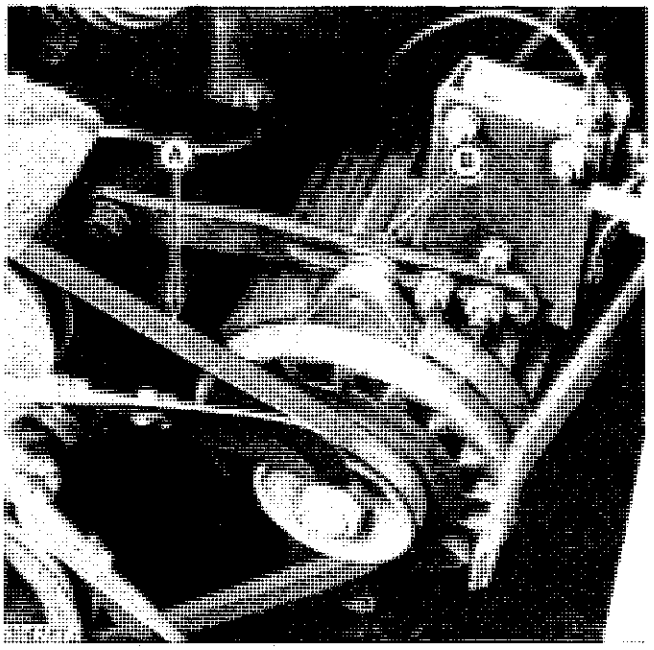
8. Alternator Belt Tension



A—Fan Belt **B—Adjustment Screw**

Fig. 8-Alternator Fan Belt

IMPORTANT: Do not pry on the rear alternator housing as this may damage the alternator.

The fan belt on the loader should have a 3/4-inch (19.1 mm) deflection with 20 pounds (9 kg) tension.

9. Battery

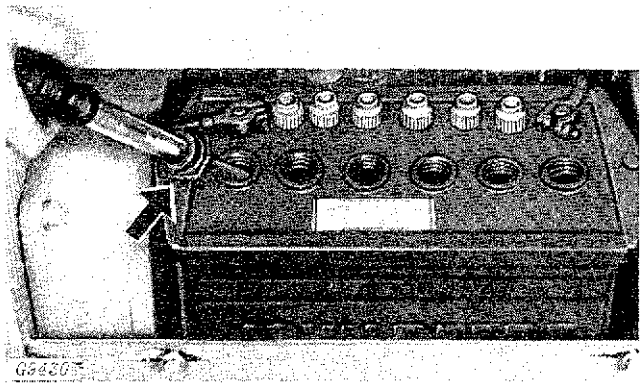
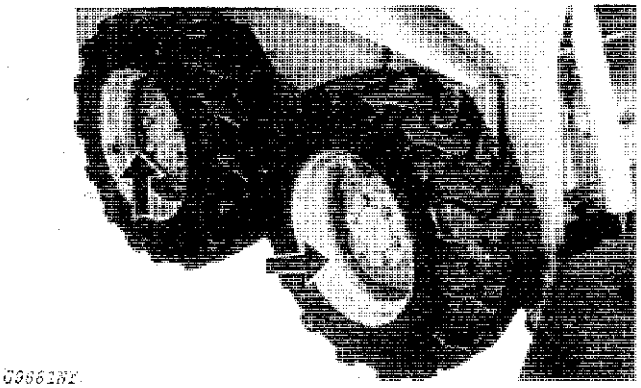


Fig. 9-Battery

Check battery electrolyte reading. If distilled water is not available, use clean soft water. Avoid use of hard water. Remove foreign material from top of battery. Tighten terminal connections and coat terminals with petroleum jelly. Clean vent holes in battery caps.

10. Tire Pressure



Check air pressure in tires with an accurate gauge having 1-pound (0.07 kg/cm²) graduations.

All tires must be identical in psi rating.

11. Wheel Lug Nuts

The wheel lug nuts must be tightened to 90 lb-ft (118 Nm) (12 kgm).

12. Check Seat Operation

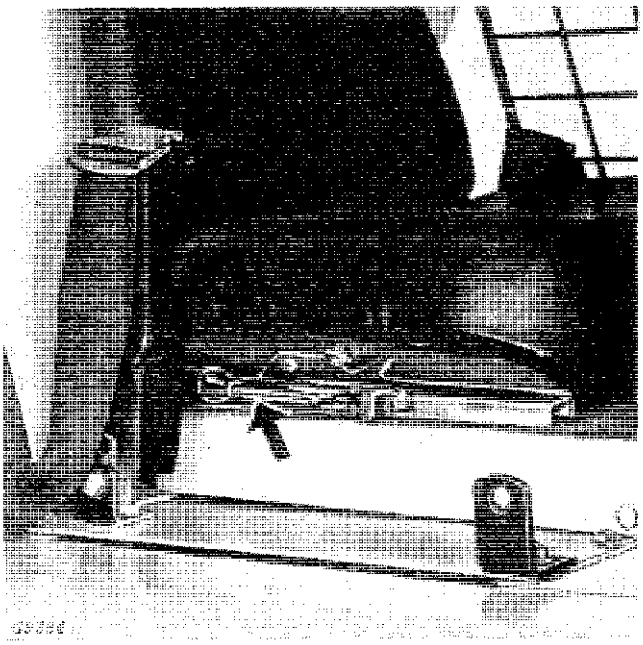


Fig. 11-Adjustment Lever

Check the distance from seat to control pedals and move seat forward or rearward for correct position.

13. T-Bar Lever Control

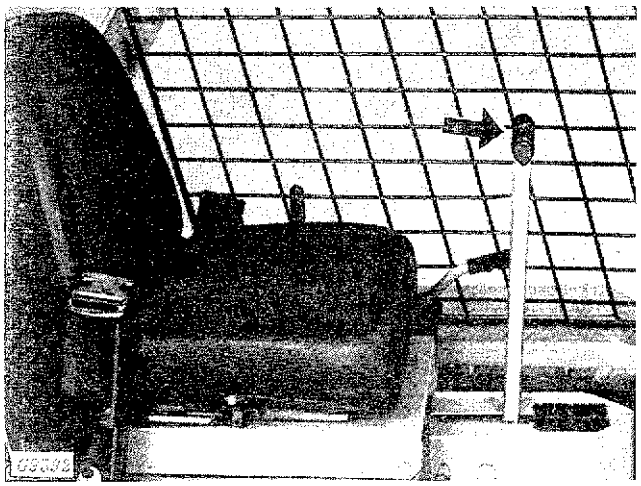
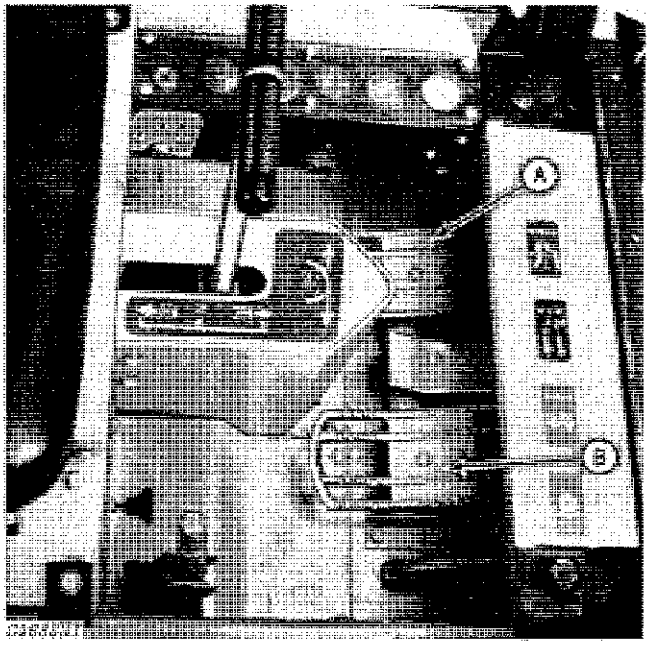


Fig. 12-T-Bar Lever

Check forward, rearward, left hand and right hand movement by moving T-bar lever controls from neutral position forward and rearward, and turning from side to side.

14. Check Boom and Bucket Pedal Operation



A—Boom Control Pedal **B—Bucket Control Pedal**

Fig. 13-Boom and Bucket Pedals

The boom control pedal is located on the floor of the loader on the left-hand side.

To raise the boom, push down on the rear of the boom control pedal.

To lower boom push down on the front of the boom control pedal.

NOTE: When raising or lowering the boom, the boom control lever will always return to the neutral position when released.

To position the boom in the float position, move the control pedal all the way down on the front of the control pedal to the detent position. Pedal will remain in the float (detent) position until manually returned to neutral.

CAUTION: To avoid free-fall of load when lowering boom, do not fully depress boom control pedal. Carry load as low as possible. Never make sharp maneuvers with boom in raised position.

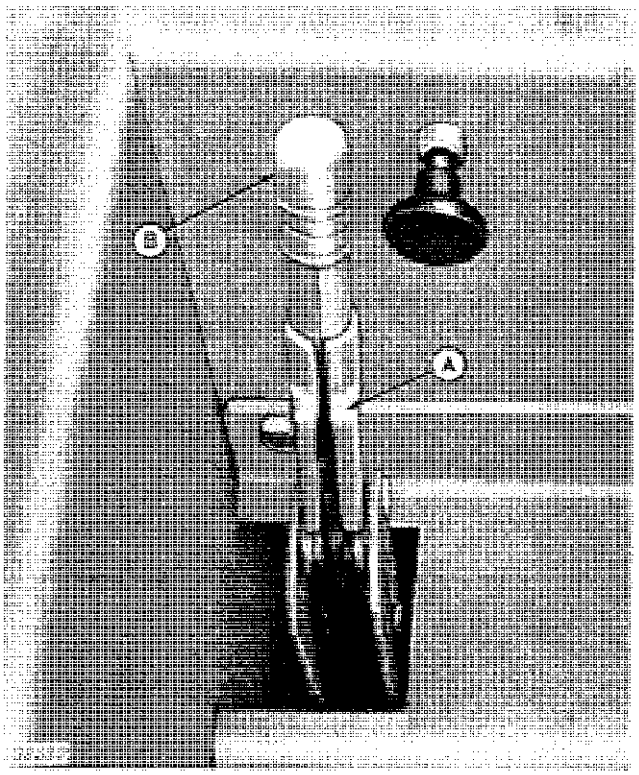
CAUTION: When parking, always lower the boom to the ground before dismounting.

The bucket control pedal is located on the floor of the loader on the right hand side.

To curl the bucket inward or raise the front of the forks, push down on the rear of bucket control pedal.

To dump bucket or lower front of forks, depress front of bucket control pedal.

15. Check Brake Operation



A—Brake Handle **B—Adjustment Knob**

Fig. 15-Parking Brake

The brake handle is on the right side of the loader.

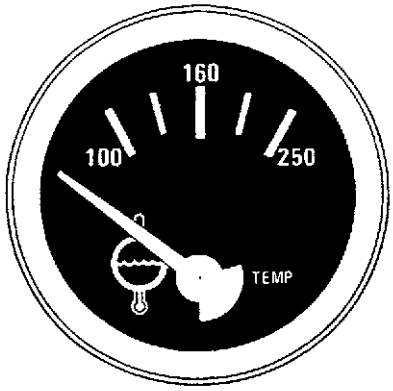
Pull the brake handle rearward to set the brake.

To release the brakes, push the brake handle forward.

If the brakes are slipping, turn the adjustment knob on the brake handle counterclockwise to tighten the brake cable.

16. Checking Instruments and Gauges

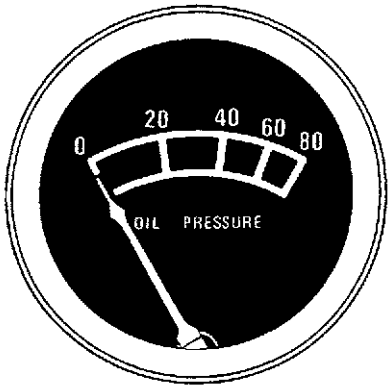
When operating the loader check the engine coolant temperature gauge, oil pressure gauge, hydraulic vacuum gauge and ammeter.



G9467

Fig. 15-Water Temperature Gauge

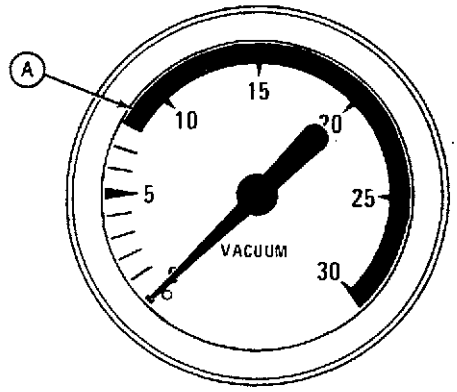
The water temperature gauge indicates the temperature of engine water coolant. The average temperature should be 170°F.



G9531

Fig. 16-Oil Pressure Gauge

The oil pressure gauge gives the oil pressure of the engine. When the engine is thoroughly warmed, the oil pressure should be 65-80 psi (4-5 bar) (5-6 kg/cm²) at 2800 rpm on the diesel, and 30-40 psi (2-3 bar) (2-3 kg/cm²) at 2950 rpm for gasoline.



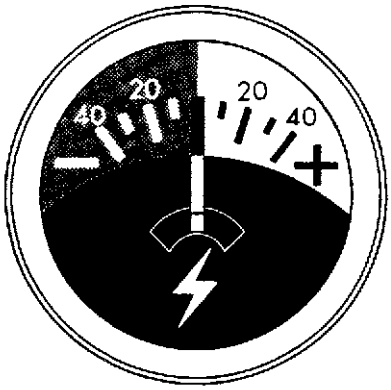
G9589

Fig. 17-Hydraulic Vacuum Gauge

The hydraulic vacuum gauge measures the hydraulic oil in inches of mercury. If the needle of the gauge is in the red zone after 30 to 45 minutes of operation, change the hydraulic oil filters.

IMPORTANT: Filters are to be changed every 100 hours of operation. This gauge is for added protection. If the filters are not changed, recirculation of foreign material in the system will cause damage to the pump, valves, and cylinders.

NOTE: Both filters must be changed.



G9451

Fig. 18-Ammeter

If the ammeter needle is pointing straight up or in the "plus" area, the alternator is charging.

If the needle goes into the "minus" area with the engine operating, stop the engine and determine the cause.

LUBRICATION

All grease fittings were properly lubricated and checked before the loader left the factory. However, to insure proper customer satisfaction, check each fitting shown in the following pages and lubricate it, if necessary, with John Deere Multi-Purpose Lubricant or an equivalent.

1. Lift Arm and Cylinder Lubrication

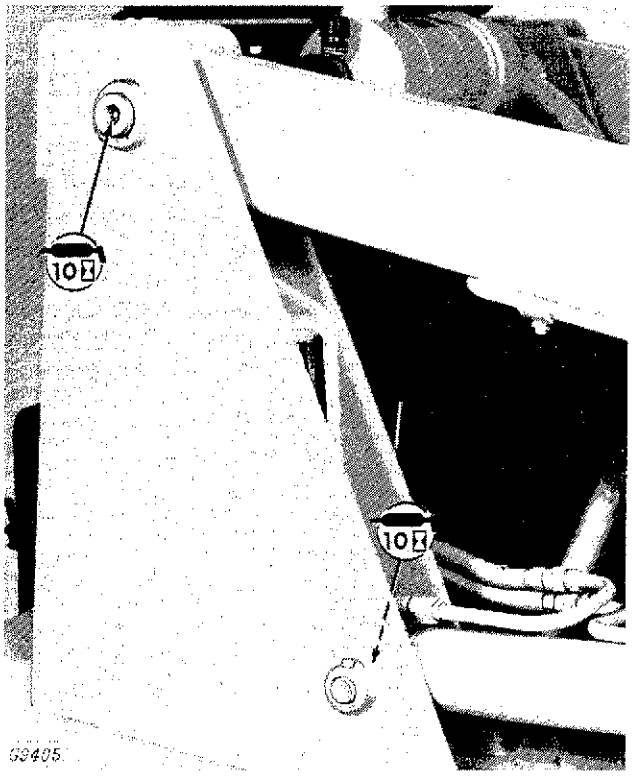


Fig. 19-Lift Arm Lubrication

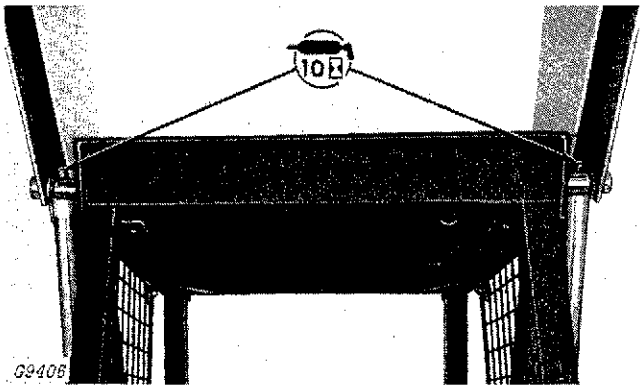


Fig. 20-Cylinder Pivot Points

Lubricate pivot points and lift arm cylinder grease fittings every 10 hours of operation with two strokes of grease gun containing John Deere Multi-Purpose Lubricant or an equivalent.

2. Tilt Cylinders and Pivot Points

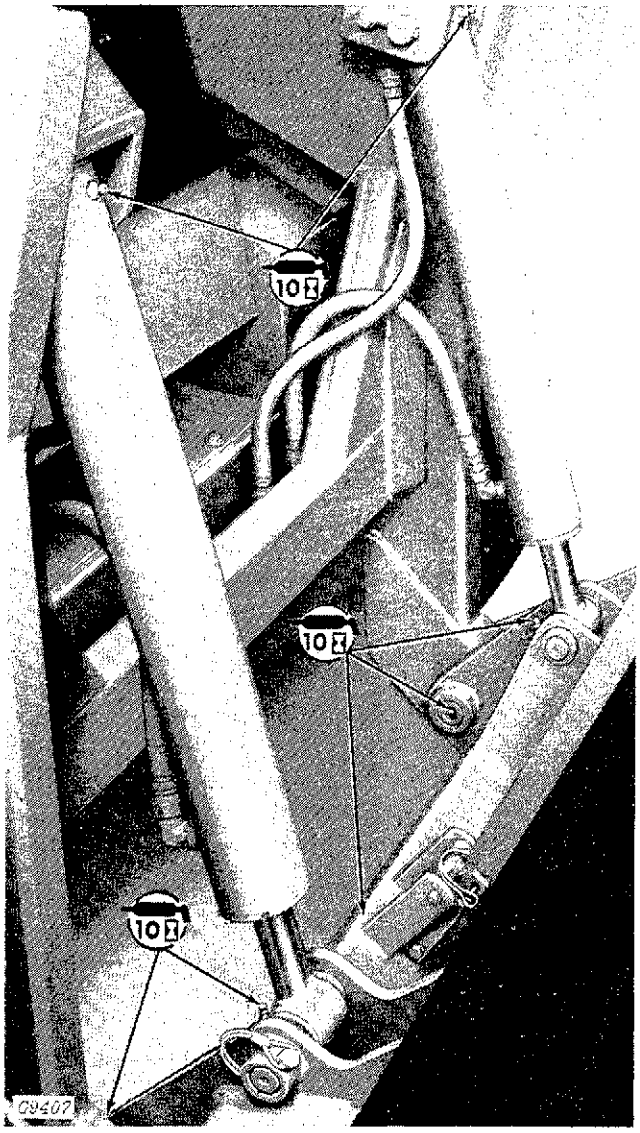


Fig. 21-Tilt Cylinder and Pivot Points

Lubricate pivot points and tilt cylinder grease fittings every 10 hours of operation with two strokes of grease gun containing John Deere Multi-Purpose Lubricant or equivalent.

Litho in U.S.A.

3. Engine Chain Coupler (Diesel)

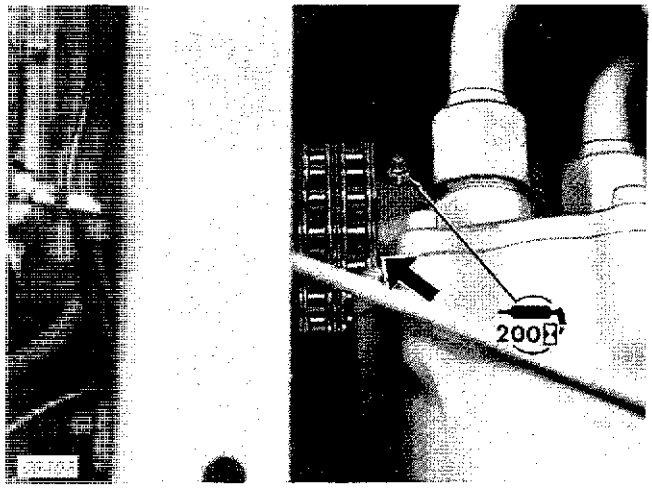


Fig. 22-Engine Chain Coupler

Lubricate engine chain coupler grease fitting every 200 hours of operation with two strokes of grease gun containing Moly Grease or equivalent.

DELIVERY SERVICE

A thorough discussion of the operation and service of a new machine at the time of delivery helps to assure complete customer satisfaction. Proper delivery should be an important phase of a dealer's program. A portion of the John Deere Delivery Receipt emphasizes the importance of proper delivery service.

It is a well-known fact that many complaints have arisen simply because the owner was not shown how to operate and service the new machine properly. Enough time should be devoted, at the customer's convenience, to introduce the owner to the new Skid-Steer Loader and explaining how to operate and service it.

The following procedure is recommended before the technician and owner complete the delivery acknowledgements portion of the Delivery Receipt.

Using the operator's manual as a guide be sure that the owner understands these points thoroughly:

1. The importance of safety.
2. The importance of lubrication and periodic services.
3. The importance of the break-in period.
4. Controls and instruments.
5. How to start and stop the engine.
6. All functions of the hydraulic system.

After explaining and demonstrating the above features, have the owner sign the Delivery Receipt and give the owner the operator's manual.

AFTER-SALE INSPECTION

The purchaser of a new John Deere machine is entitled to a free inspection at some mutually agreeable time within the warranty period after the equipment has been "run-in," usually at approximately 100 hours of machine operation. The terms of this after-sale inspection are outlined on the customer's John Deere Delivery Receipt.

The purpose of this inspection is to make sure that the customer is receiving satisfactory performance from the machine. At the same time, the inspection should reveal whether or not the machine is being operated, lubricated, and serviced properly.

If the recommended after-sale service inspection is followed, the dealer can eliminate a needless volume of service work by preventing minor irregularities from developing into serious problems later on. This will promote strong dealer-customer relations and present the dealer an opportunity to answer questions that may have arisen during the first few days of operation.

Group V
LUBRICATION

GENERAL INFORMATION

Illustrated below is the periodic service chart which is mounted on the loader heat shield. More detailed information on servicing the loader can be found in the current JD24-A Skid-Steer Loader Operator's Manual.

Use the operator's manual and the periodic service chart as references when servicing the loader. Remind your customer to thoroughly read the operator's manual before attempting to service or operate the loader.

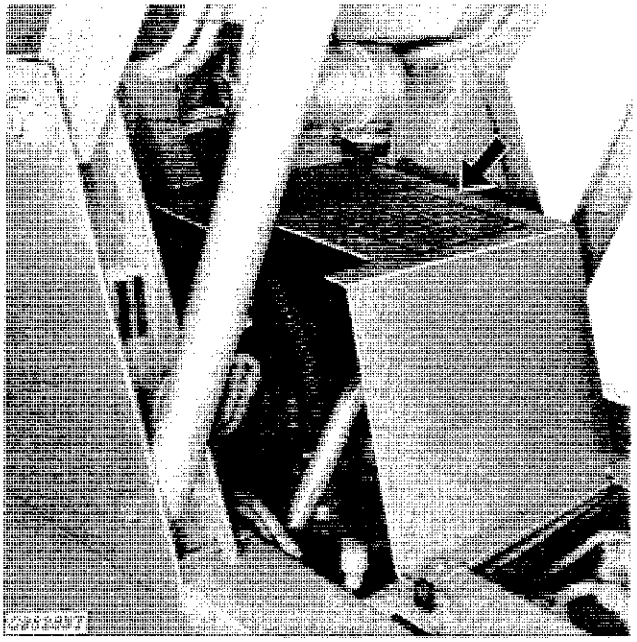


Fig. 1-Lubrication Chart

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LUBRICANTS

Effective use of lubricating oils and greases is perhaps the most important step towards low upkeep cost, long loader life, and satisfactory service. Use only lubricants specified in this section; apply them at the intervals and according to instructions in the lubrication section.

Engine Lubricating Oils

Fig. 2-Torq-Gard Oil

We recommend John Deere Torq-Gard Supreme engine oil for use in the engine crankcase. This oil is compounded specifically for use in John Deere engines, and provides superior lubrication under all conditions for diesel and gasoline engines. NEVER PUT ADDITIVES IN THE CRANKCASE. Torq-Gard oil was formulated to provide all the protection your engine needs. Additives could reduce this protection rather than help it.

If oil other than Torq-Gard Supreme is used, it must conform to the following specifications:

DIESEL ENGINES

Fuel Sulfur Content Less Than 0.5%	Fuel Sulfur Content More Than 0.5%
MIL-L-2104B or API Service CC	Series 3 (S-3), MIL-L 45199B, API Service CD (DS)
Series 3 (S-3), MIL-L-45199B, API service CD (DS)	

GASOLINE ENGINES

Single Viscosity Oils

API Service CC/SE, CC/SD, or SD MIL-L46152

Multi-Viscosity Oils

API Service CC/SE, CC/SD or SD MIL-L-46152

Previous API service designation.

As further assurance of quality, the oil should be identified as suitable for API Service Designation SD.

Depending on the highest expected prevailing temperature for the fill period, use oil of viscosity as shown in the following chart.

Air Temperature	John Deere Torq-Gard Oil	Other Oils: Single Viscosity Oil	Other Oils: Multi-Viscosity Oil
Above 32°F (0°C)	SAE 30	SAE 30	Not recommended
−10°F to 32°F* (−23°C to 0°C)*	SAE 10W-20	SAE 10W	SAE 10W-30
Below −10°F** (−23°C)**	SAE 5W-20	SAE 5W	SAE 5W-20

* *SAE 5W-20 oil may be used to facilitate starting.*
** *Some increase in oil consumption may be expected when SAE 5W-20 or SAE 5W oil are used. Check oil level more frequently.*

GREASES

Use John Deere Multi-Purpose Type Lubricant or equivalent SAE multipurpose-type grease for all grease fittings except when noted. Application of grease as instructed in the lubrication section will provide proper lubrication and will keep contamination out of bearings.

HYDROSTATIC AND HYDRAULIC OIL

Use John Deere All-weather Hydrostatic Fluid or equivalent in the hydraulic system reservoir. Capacity of the reservoir is 18 U.S. gallons (68.1 l).

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