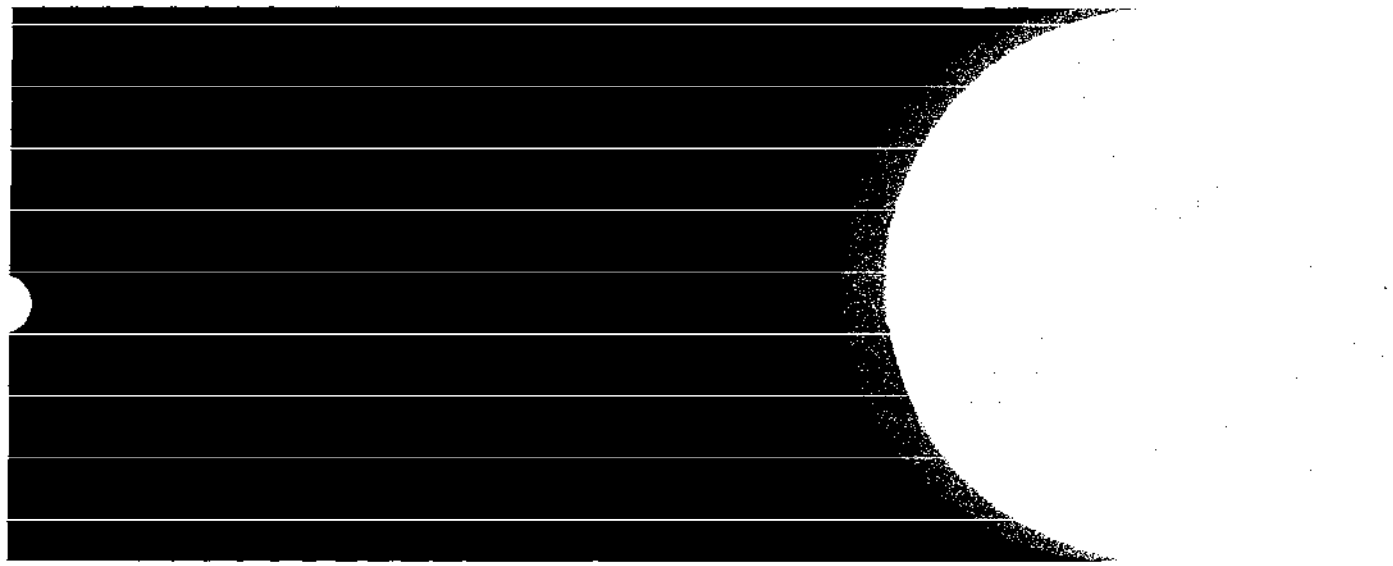
John Deere 444D, 544D and 644D Loader Operation and Tests



TECHNICAL MANUAL

TM-1341 (Oct-87)

LITHO IN U.S.A.

JOHN DEERE DEALERS

IMPORTANT: Please remove this page and route through your service department.

This is a complete revision for TM-1341, 444D/544D/644D Loader.

Binder and tabs from old manual may be saved and used with this bound manual.

The new pages are dated (Oct-87). Listed below is a brief explanation of "WHAT" was changed and "WHY" it was changed.

This manual was revised:

1. To include thrush washer in transmission case for first turbine drive gear.
2. To clarify assembly instruction for reverse range and low range clutch packs.
3. Slow idle for 644D has been increased to 900 ± 25 rpm.
4. To add direct acting relief valve for use in later units.

T64;1341 DCSR 061187

444D, 544D, AND 644D LOADERS TECHNICAL MANUAL TM-1341 (Oct-87)

SECTION AND GROUP CONTENTS

All information, illustrations and specifications contained in this technical 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.

T64;1341 J7 041187

INTRODUCTION

This manual is part of a total service support program.

FOS Manuals—reference

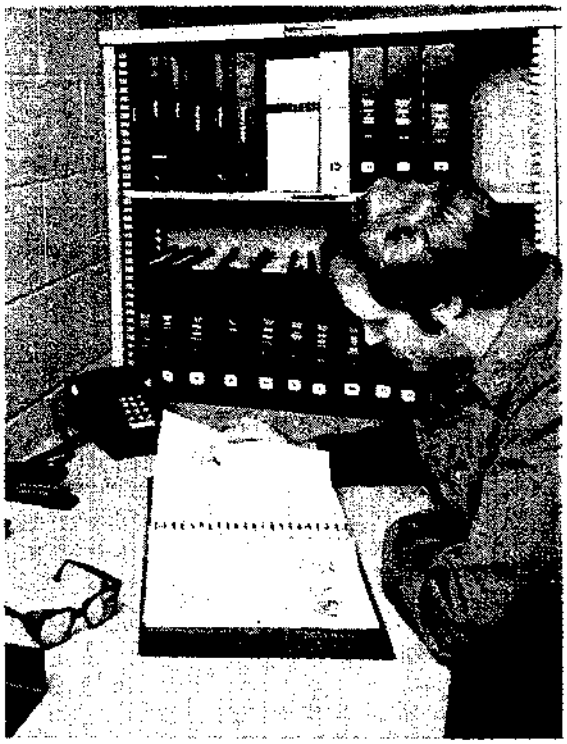
Technical Manuals—machine service

Component Manuals—component service

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

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

Component Technical Manuals are concise service guides for specific components. Component technical manuals are written as stand alone manuals covering multiple machine applications.



AB6;RW5559 053;INTRO2 030785

FEATURES OF THIS TECHNICAL MANUAL

John Deere ILLUSTRUCTION format emphasizing illustrations and concise instructions in easy-to-use modules.

Emphasis on diagnosis, analysis, and testing so you can understand the problem and correct it.

Diagnostic information presented with the most logical and easiest to isolate problems first to help you identify the majority of routine failures quickly.

Step-by-step instructions for teardown and assembly.

Summary listing at the beginning of each group of all applicable specifications, wear tolerances, torque values, essential tools, and materials needed to do the job.

An emphasis throughout on safety—so you do the job right without getting hurt.

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 when you need to know correct service procedures or specifications.

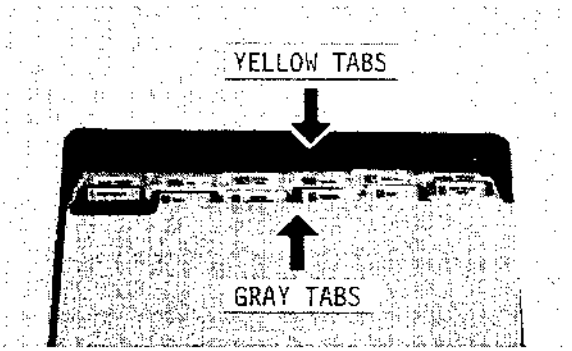
AB6;RW5560 053;INTR03 071085

USING TABS

To fully utilize this technical manual, you must understand how it is organized.

Only two tab colors are used—gray and yellow. Each color represents a different type of information.

Spend a minute reading this now and save many minutes of searching later.



018;T5933AB T82;FLPD I 260785

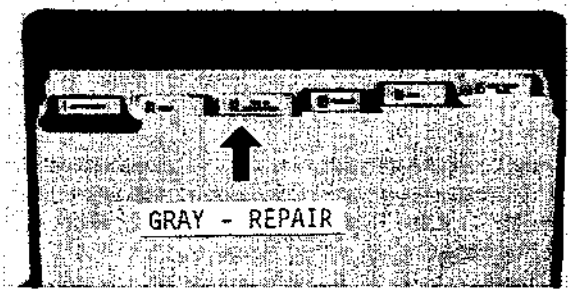
GRAY TAB SECTIONS

The gray tab sections are repair sections that tell how to repair the components of the various systems.

Repair of a component includes:

- Removal from machine (when necessary)
- Disassembly
- Inspection
- Replacement of parts
- Assembly
- Adjustment
- Installation on machine (when necessary)

The numbers used for the repair (gray tab) sections are part of an overall service publication numbering system. The numbers identify the same sections in the parts catalog, flat rate manual, service information bulletins, and service training courses.

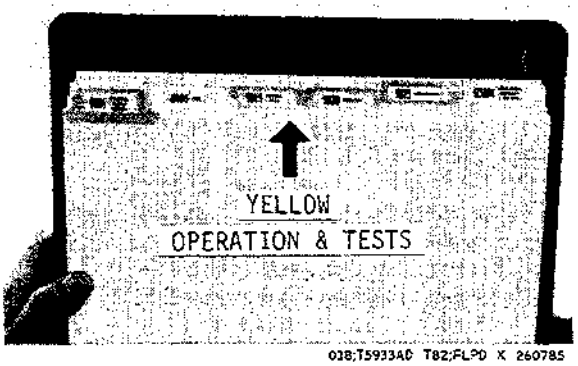


018;T5933AC T82;FLPD J 260785

YELLOW TAB SECTIONS

Each yellow tab section contains information on:

Groups	
05	Theory of Operation
10	System Operational Checks
15	System Diagnostic Information
20	Adjustments
25	Tests



018;T5933AD T82;FLPD K 260785

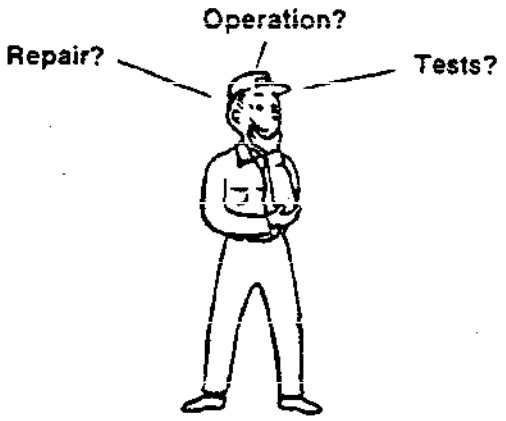
THREE-STEP PROCEDURE

Use the following three-step procedure to locate the desired information.

1. Determine the type of information you need. Is it repair, operation, or tests?

2. Go to the appropriate section tab:

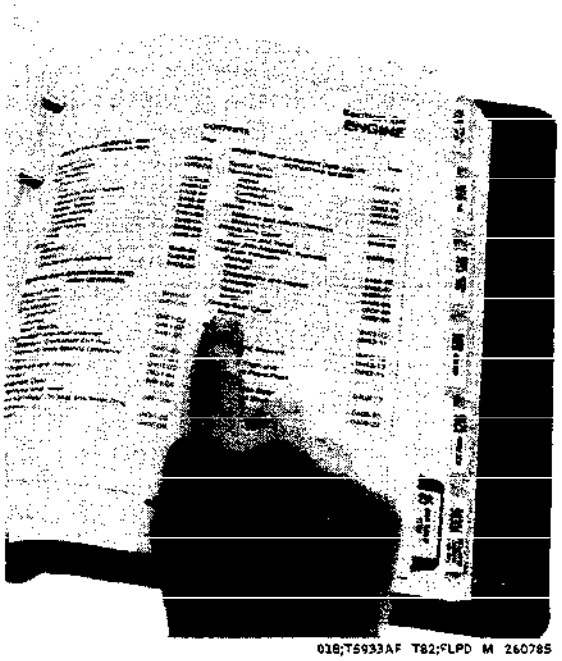
   Gray for Repair
   Yellow for Operation or Tests



TYPE OF INFORMATION?

018;T5940AT T82;FLPD L 260785

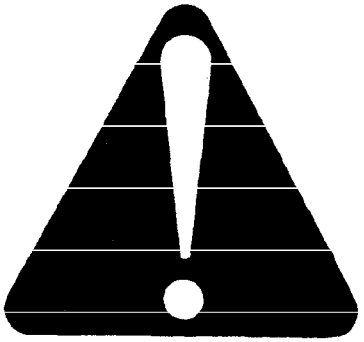
3. Use the table of contents on the first page of the section to locate the information.



018;T5933AF T82;FLPD M 260785

RECOGNIZE 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.



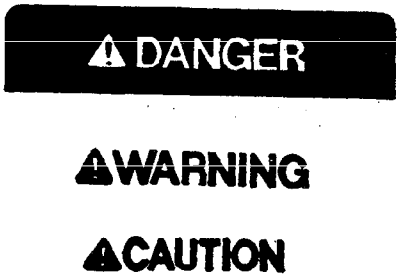
AB6;T81389 053;ALERT 071085

UNDERSTAND SIGNAL WORDS

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards.

Safety signs with signal word DANGER or WARNING are typically near specific hazards.

General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

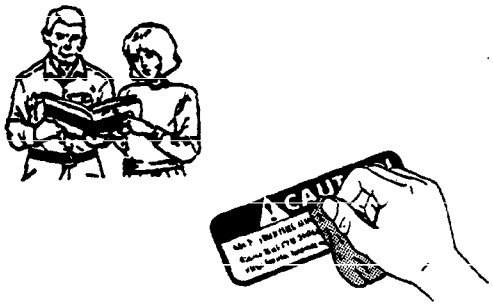


AB6;TS187 053;SIGNAL 071085

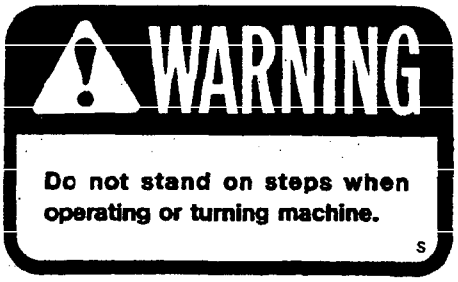
FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Follow recommended precautions and safe operating practices.

Keep safety signs in good condition. Replace missing or damaged safety signs.



AB6;TS188 053;SIGNS 071085

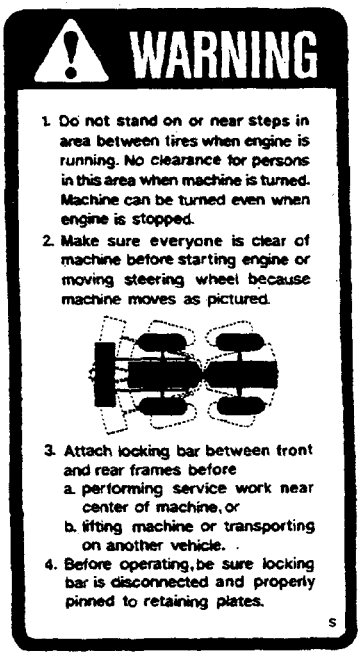


Above top step

018;T6084BF T82;FLSA X 280685

Center of loader frame, facing operator

018;T6126AR T82;FLSA T 280685

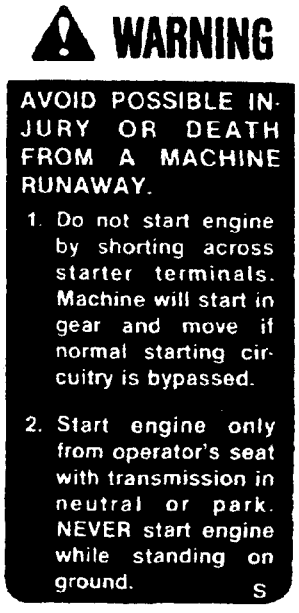


Equipment frame hinge vertical member on both sides of the machine

018;T6084BD T82;FLSA W 280685

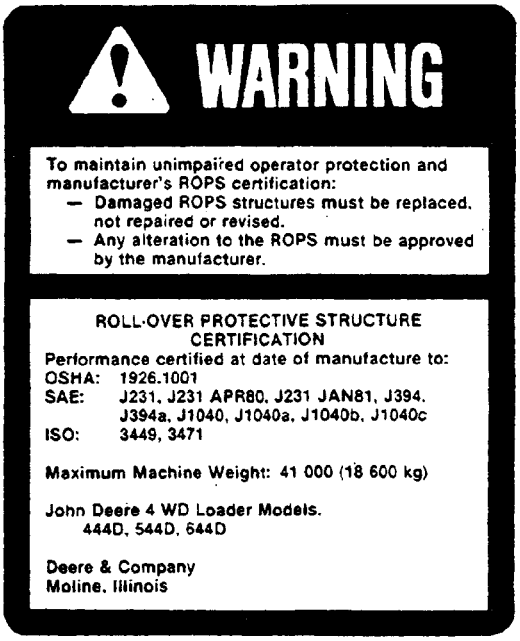
Centered on accumulator

018;T6084AY T82;FLSA V 280685



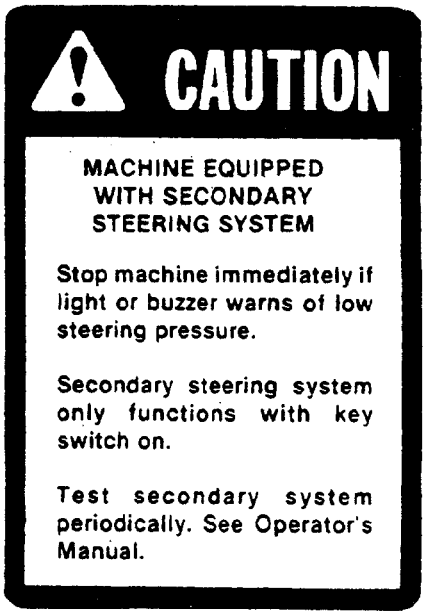
Right front side shield opening

018;T6084AZ T82;FLSA U 300585



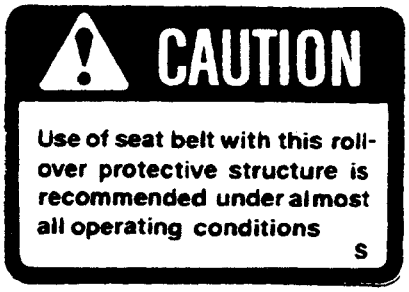
Located on right upper vertical member in front of rear ROPS post

018;T6134AB T82;FLSA Z 070685



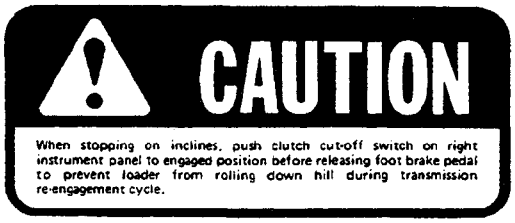
If equipped—right front ROPS post, facing operator

018;T6126AQ T82;FLSA S 270685



Right front ROPS post, facing operator

018;T6001BE T82;FLSA R 290585



If equipped—Inside operator's station above left front ROPS post

018;T6084BE T82;FLSA Y 300585

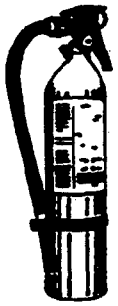
AVOID FIRE HAZARDS

Keep a fully charged fire extinguisher in a handy location.

Never use an open flame around the machine or to check fuel, battery electrolyte, or coolant levels.

Internal corrosion inhibitor is a volatile compound. All openings must be sealed and taped after preserving. Keep container closed when not in use.

Inspect and replace any damaged electrical wiring.



018;T6080AG T82;FLSA C 010485

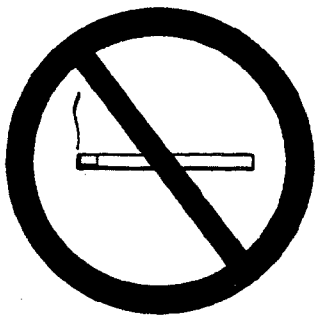
REFUEL SAFELY

Do not smoke while refueling or handling highly flammable material.

Shut off the engine when refueling.

Use care in refueling if the engine is hot.

Do not use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.



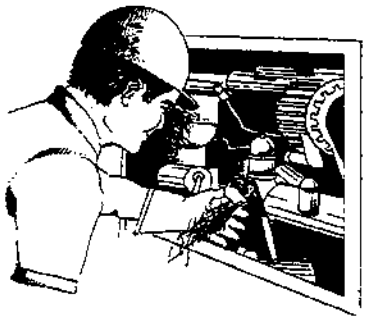
018;T6130BP T82;FLSA F 010485

CLEAN TRASH FROM MACHINE

Wait until engine has cooled before removing trash from areas such as engine, radiator, batteries, hydraulic lines, fuel tank, and operator's station.

Temperature in engine compartment may go up immediately after engine is stopped. BE ON GUARD FOR FIRES DURING THIS PERIOD.

Open side shields to cool the engine faster.



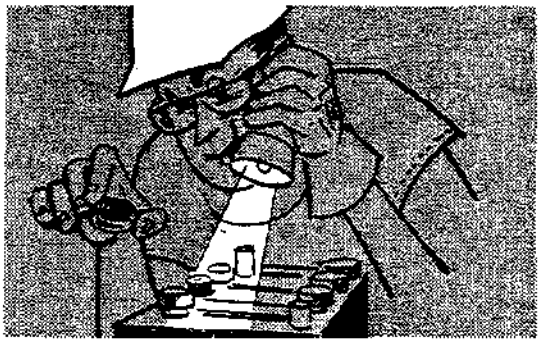
018;T86512 T82;FLSA D 010485

PREVENT BATTERY EXPLOSIONS

Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

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

Always remove grounded (-) battery clamp first and replace it last.



AB6;TS181 053;EXPLO 180485

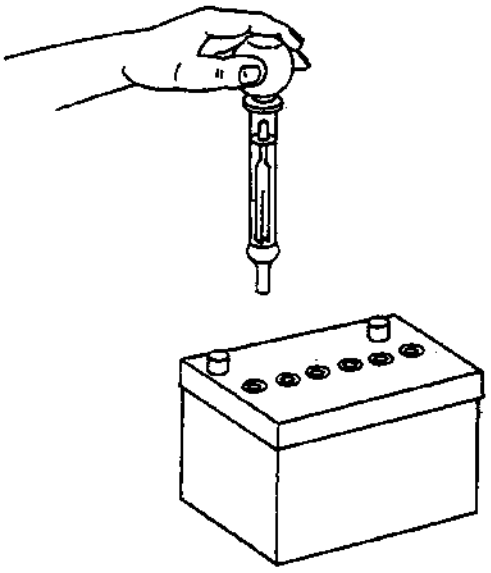
AVOID ACID BURNS

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.

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 10-15 minutes. Get medical attention immediately.

If acid is swallowed:
1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



AB6;TS182 053;ACID 180485

HANDLE STARTING FLUID SAFELY

Starting fluid is highly flammable. DO NOT incinerate or puncture a starting fluid container. Store starting fluid containers away from high temperature areas.

018;T6089AU T82;FLSA G 010485

WEAR PROTECTIVE CLOTHING

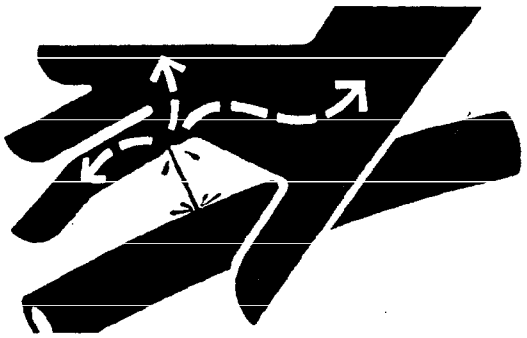
Wear fairly tight clothing . . . and safety equipment.

018;T85056 T82;FLSA AA 130685

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 to search for leaks.

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.

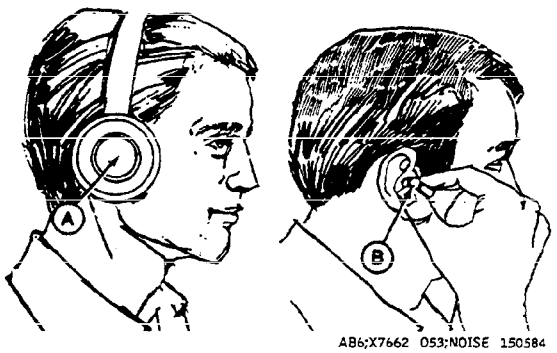


AB6;X9811 053;FLUID 010586

PROTECT AGAINST NOISE

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

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



AB6;X7662 053;NOISE 150584

UNDERSTAND MACHINE OPERATION, SERVICE

Allow only qualified people to operate and service the machine.

Learn the location and purpose of all controls, instruments, indicators, and labels.

Be sure you understand a service procedure before you work on the machine.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

ALWAYS USE TWO PEOPLE when making checks with the engine running——the operator at the controls, able to see the person doing the checking.

Keep hands away from moving parts.

018;T6073AO T82;FLSA H 010485

PREVENT MACHINE RUNAWAY

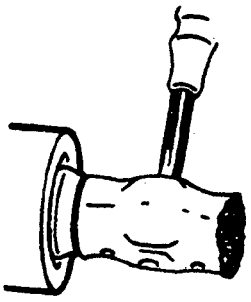
Avoid possible injury or death from machine runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear and will move if normal circuitry is bypassed.

Never start engine while standing on ground. Start engine only from operator's seat, with gear shift lever in neutral, neutral lock latch in place, and park brake applied.

AB6;TS177 T82;FLSA I 010485

PROTECT AGAINST FLYING DEBRIS



When you drive connecting pins in or out, guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.

018;T6073AP T82;FLSA AB 130685

SUPPORT RAISED EQUIPMENT

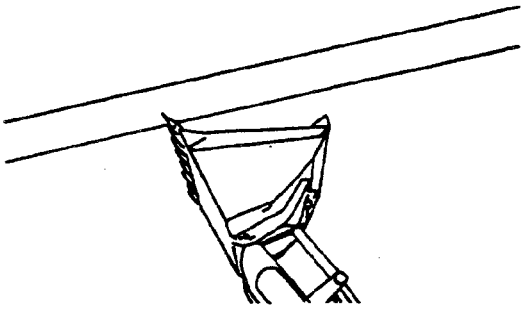
Raised equipment must be supported before working under it.

If a support is not available, lower equipment to the ground.

T82;FLSA 0 010485

AVOID POWER LINES

Keep away from power lines. Serious injury or death may result. Never move any part of the machine or load closer to power line than 10 ft (3 m) plus twice the line insulator length.



018;T6133AK T82;FLSA Q 100685

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.

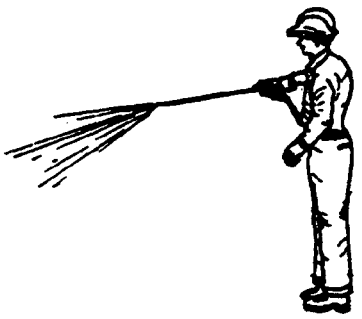
DO NOT remove the radiator cap unless the engine is cool. Then loosen the cap slowly to the stop. Release all pressure before you remove the cap.

Check the exhaust system regularly for leaks.

Release hydraulic pressure before you work on the hydraulic system.

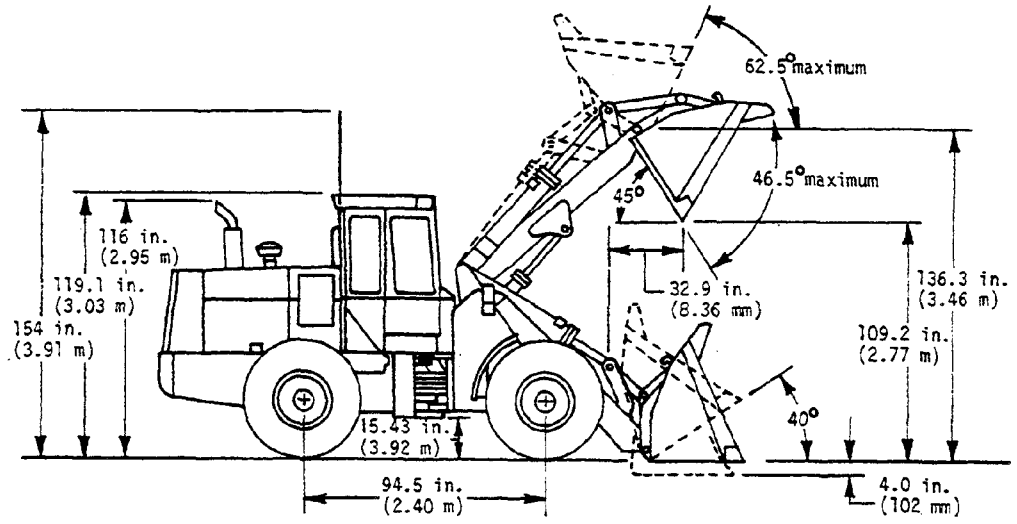
Disconnect negative (—) battery cable.

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



018;T5813AM T82;FLPD P 130886

444D LOADER



Engine:
- John Deere 6-cylinder turbocharger diesel ..... 90 SAE hp (67 kw)
- Bore and stroke
  - Pin (—511476) ..... 4.02 x 4.33 in. (102 x 110 mm)
  - Pin (511477—) ..... 4.19 x 4.33 in. (106 x 110 mm)
- Piston displacement
  - Pin (—511476) ..... 3.29 cu. in. (5.392 L)
  - Pin (511477—) ..... 3.59 cu. in. (5.833 L)
- Lubrication ..... Pressure system with full-flow filter
- Cooling ..... Pressurized with thermostat and controlled bypass
- Fan ..... Blower
- Dual-stage air cleaner with restriction indicator ..... Dry
- Electrical system ..... 12-volt with alternator
- Batteries (one 12-volt)
  - Cold cranking capacity at 0°F (—18°C) ..... 625 amps
  - Reserve capacity ..... 170 min. ea.
- Alternator: standard ..... 42 amps
  - optional with cab ..... 90 amps

Differentials:
- Front and rear ..... Standard
- Front hydraulic differential lock with capture circuit ..... Optional
- Front No Spin ..... Optional

Drive Axles:
- Inboard-mounted planetary gears to each wheel.
- Front axle fixed.
- Rear axle oscillates 22° total (15.6 in (396 mm) vertical travel at center of tire).

018;T6140AC 05T;115 C72 140886