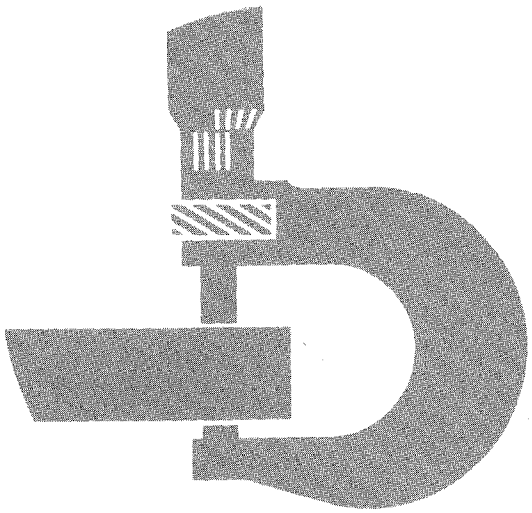
344E and 444E Loaders Repair



TECHNICAL MANUAL

For complete service information also see:

344E and 444E Loader
Operation and Test TM1421
Teammate Axles. CTM18
Teammate II Axles CTM43
4276 Engine CTM4
4045 Engine CTM8
Alternators and Starting Motors CTM77

John Deere Dubuque Works
TM1422 (02AUG94)

LITHO IN U.S.A.
ENGLISH

Introduction

FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.

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

Technical manuals are divided in two parts: repair and operation and tests. Repair sections tell how to repair the components. Operation and tests sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

DX,TMIFC -19-22MAY92

JOHN DEERE DEALERS

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

This is a complete revision for TM-1422 (Dec-91) 344E and 444E Loader—Repair.

Listed below is a brief explanation of "WHAT" was changed and "WHY" it was changed.

This manual was revised:

1. To update Groups 0200 and 0210.

   - 444E axle serial number break was added for TeamMate and TeamMate II axles.
   - 444E axle and differential repair procedures have been deleted from this manual. (CTM18 and CTM43 contain all the necessary information for complete repair of 444E TeamMate and TeamMate II differential and axle assemblies.)
   - Front and rear oscillating axle support procedures have been revised and moved to Group 0200.

2. To update Groups 0300 and 0360.

   - New procedure added for flushing the hydrostatic motor hoses and the hydrostatic oil cooler.
   - New art added, existing art revised, and text corrected in the HST Motor and HST Pump disassemble and assemble procedures.
   - The Starting Point Valve and Control Pressure Regulating Valve repair procedures have been revised to include an "initial setting" adjustment. New art and minor text changes has been added for later version.

3. To add new procedure for removing and installing the DB4 (retained shaft) injection pump in Group 0400.

4. To add new procedure for disassembling and assembling steering cylinder (Group 0960) for machines (S.N. 001192—).

5. To update Group 1060.

   - New art added and text revised to include repairing and charging brake accumulator for 444E machines (S.N. 001337—).
   - Brake bleed procedure for 344E has been revised.

6. To delete the alternator disassemble and assemble procedures on Group 1672. (CTM77 contains all necessary information for complete alternator repair.)

7. To revise and update the air conditioning procedures to include proper handling of R12 refrigerant and use of the R12 refrigerant recovery system.

8. To add new art for bucket and boom hydraulic cylinder repair procedure (Group 3160) for machines (S.N. 001192—).

9. To correct and update miscellaneous art and text throughout manual.

TX,1422,DLR -19-02AUG94

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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.

TM1422-19-02AUG94

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GENERAL INFORMATION

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PIP I I-V-1
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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

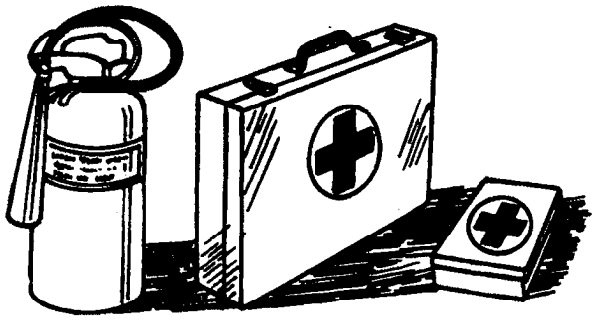
DX,SPARKS -19-03MAR93

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

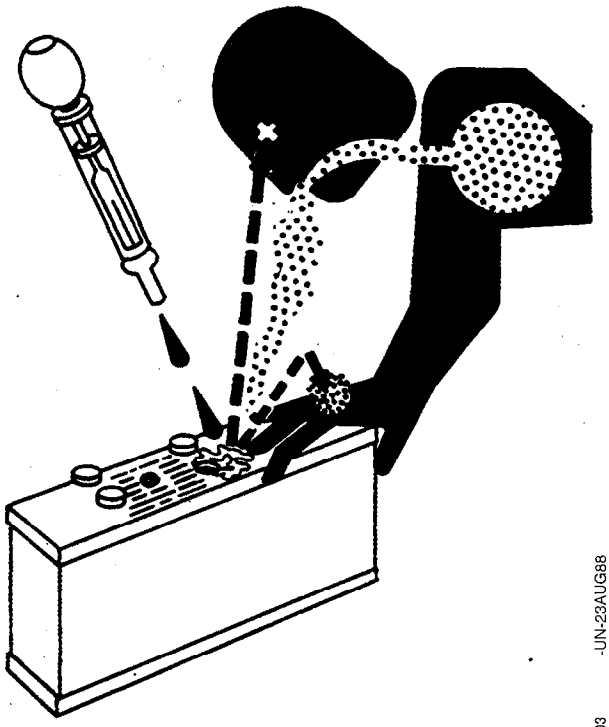
PREVENT ACID BURNS

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.

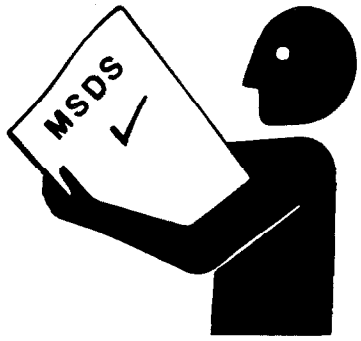
If acid is swallowed:
1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.



TS203 -UN-23AUG88

DX,POISON -19-21APR93

HANDLE CHEMICAL PRODUCTS SAFELY



TS1132 -UN-26NOV90

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

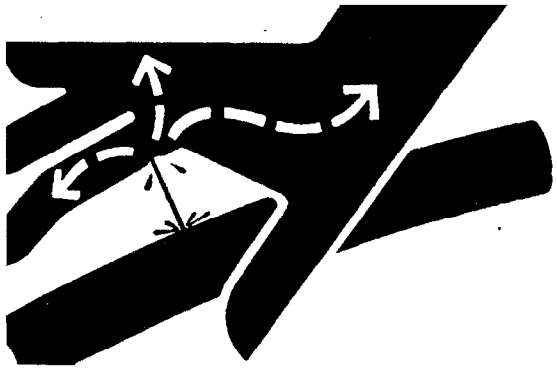
A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

(See your John Deere dealer for MSDS's on chemical products used with John Deere equipment.)

DX,MSDS,NA -19-03MAR93

AVOID HIGH-PRESSURE FLUIDS



X9811 -UN-23AUG88

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.

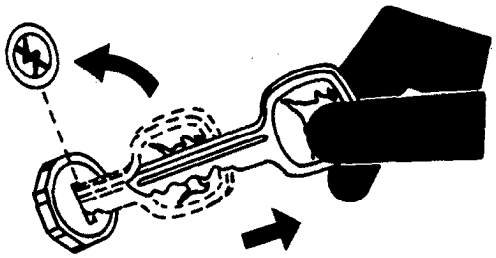
Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

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.

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.



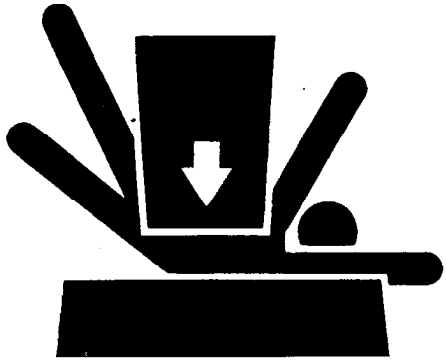
TS230 -UN-24MAY89

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

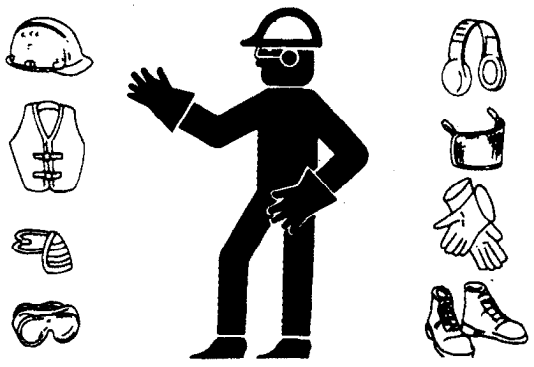
WEAR PROTECTIVE CLOTHING

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.



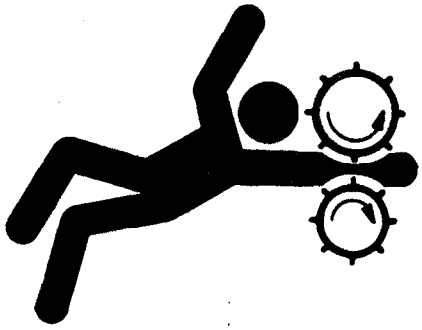
TS206 -UN-23AUG88

DX,WEAR -19-10SEP90

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.



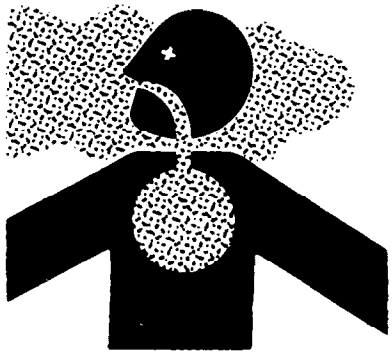
TS228 -UN-23AUG88

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.

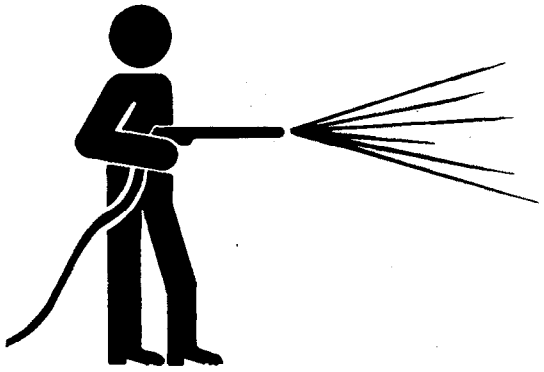


TS220 -UN-23AUG88

DX,AIR -19-04JUN90

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

REMOVE PAINT BEFORE WELDING OR HEATING

Avoid potentially toxic fumes and dust.

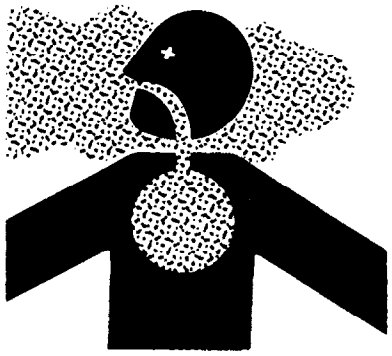
Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

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

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

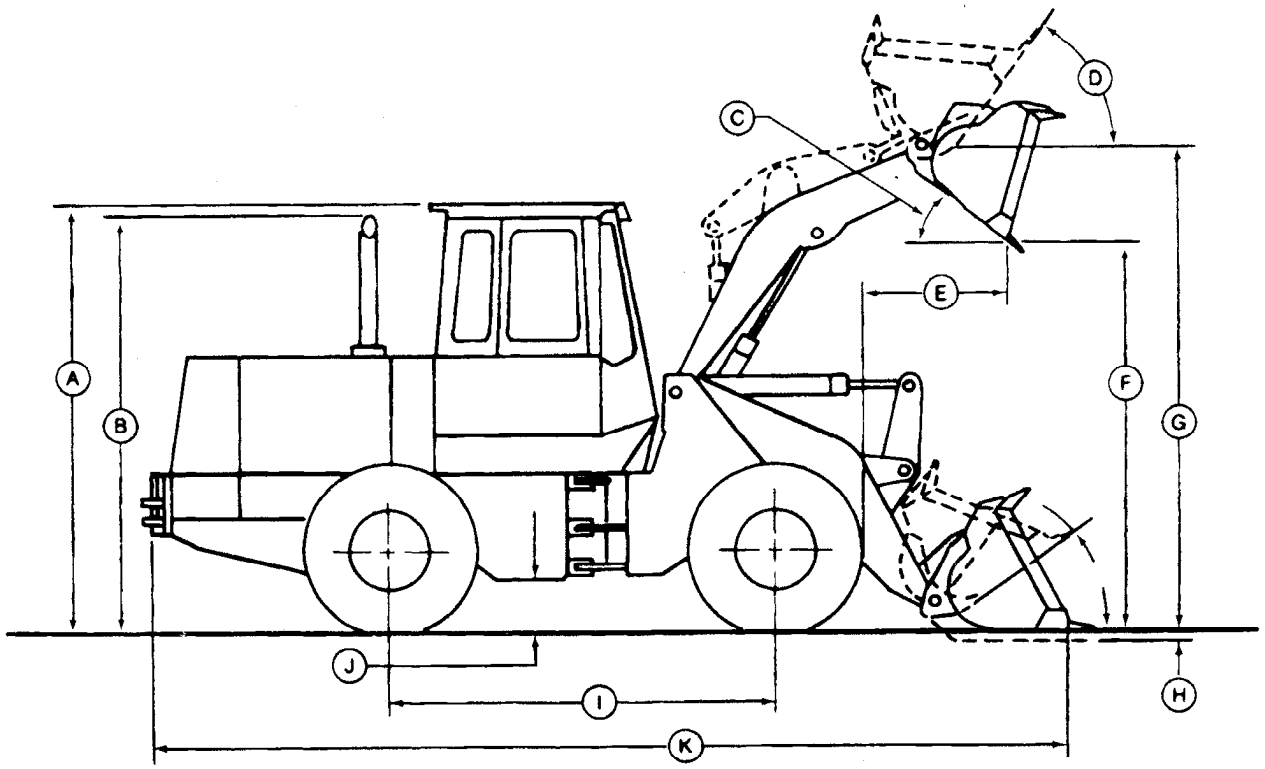
ILLUMINATE WORK AREA SAFELY

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

344E LOADER



T6764AA1 -UN-03AUG89

A—3.10 m (10 ft. 2 in.)	D—56° max.	G—3.44 m (11 ft. 3 in.)	J—390 mm (15.35 in.)
B—2.97 m (9 ft. 9 in.)	E—See Loader Information	H—75 mm (2.9 in.)	K—See Loader Information
C—45°(max. of 50°)	F—See Loader Information	I—3.55 m (100.4 in)	

Tread width (15.5 x 25 tires) . . . . . 1780 mm (70.08 in)
With over tires . . . . . 2174 mm (85.59 in)

NOTE: Specifications and design subject to change with notice. Wherever applicable, specifications are in accordance with SAE Standards. Except where otherwise noted, specifications are based on a machine with all standard equipment, 15.5—25.8 PR, L2 tires with optional 280 kg (617 lb) counterweight, ROPS cab, full fuel tank, and 80 kg (175) operator.

TX,115,RR,668 -19-04AUG94

344E LOADER OPERATING INFORMATION

	Bucket Type			
	Excavating	Excavating w/bolt on edge	Stockpiling	Stockpiling w/bolt on edge
Capacity, heaped SAE	1.2 m^3 (1.63 cu yd)	1.2 m^3 (1.63 cu yd)	1.5 m^3 (2.0 cu yd)	1.5 m^3 (2.0 cu yd)
Capacity, struck, SAE	1.0 m^3 (1.3 cu yd)	1.0 m^3 (1.3 cu yd)	1.3 m^3 (1.7 cu yd)	1.3 m^3 (1.7 cu yd)
Bucket width	2.35 m (92.5 in)	2.35 m (92.5 in)	2.35 m (92.5 in)	2.35 m (92.5 in)
Breakout force, SAE J32C	6620 kg (64.9 kN) (14595 lb)	6240 kg (61.2 kN) (13757 lb)	5793 kg (56.8 kN) (12771 lb)	5475 kg (53.7 kN) (12070 lb)
Tipping load, straight	5157 kg (11356 lb)	5062 kg (1160 lb)	5051 kg (11135 lb)	4951 kg (10915 lb)
Tipping load, 40° full turn, SAE	4529 kg (9985 lb)	4443 kg (4443 kg)	4432 kg (9771 lb)	4336 kg (9559 lb)
Reach at 45° dump, 2.13 m (7 ft) clearance	1288 mm (50.7 in)	1283 mm (50.5 in)	1328 mm (52.3 in)	1322 mm (52 in)
Reach at 45° dump, full height	819 mm (32.2 in)	839 mm (33 in)	900 mm (35.4 in)	920 mm (36.2 in)
Dump clearance at 45° dump, full height	2711 mm (106.7 in)	2627 mm (105.1 in)	2644 mm (104.1 in)	2603 mm (102.5 in)
Overall length	6.01 m (19 ft 8.8 in)	6.06 m (19 ft 10.4 in)	6.12 m (20 ft 1 in)	6.16 m (20 ft 2.6 in)
Loader clearance circle, bucket lowered	10.161 m (33 ft 4 in)	10.2 m 33 ft 5 in	10.22 m (33 ft 1 in)	10.26 m (33 ft 8 in)
Operating weight	7264 kg (16014 lb)	7330 kg (16160 lb)	7334 kg (16169 lb)	7402 kg (16319 lb)

TX,115,RR,1669 -19-04AUG94