

# 644H and 644H MH Loader Repair

## TECHNICAL MANUAL 644H and 644H MH Loader Repair TM1638

TM1638 15JAN04 (ENGLISH)

For complete service information also see:

644H and 644H MH Loader Operation and Test .....	TM1637
8.1 L Engine Repair .....	CTM86
8.1 L Engine Operation and Diagnostics ...	CTM134
Alternators and Starting Motors .....	CTM77
Electronic Fuel Injection Systems .....	CTM68

**Worldwide Construction  
And Forestry Division**

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# 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.

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**THANK YOU!**

*Introduction*

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# Section 00 General Information

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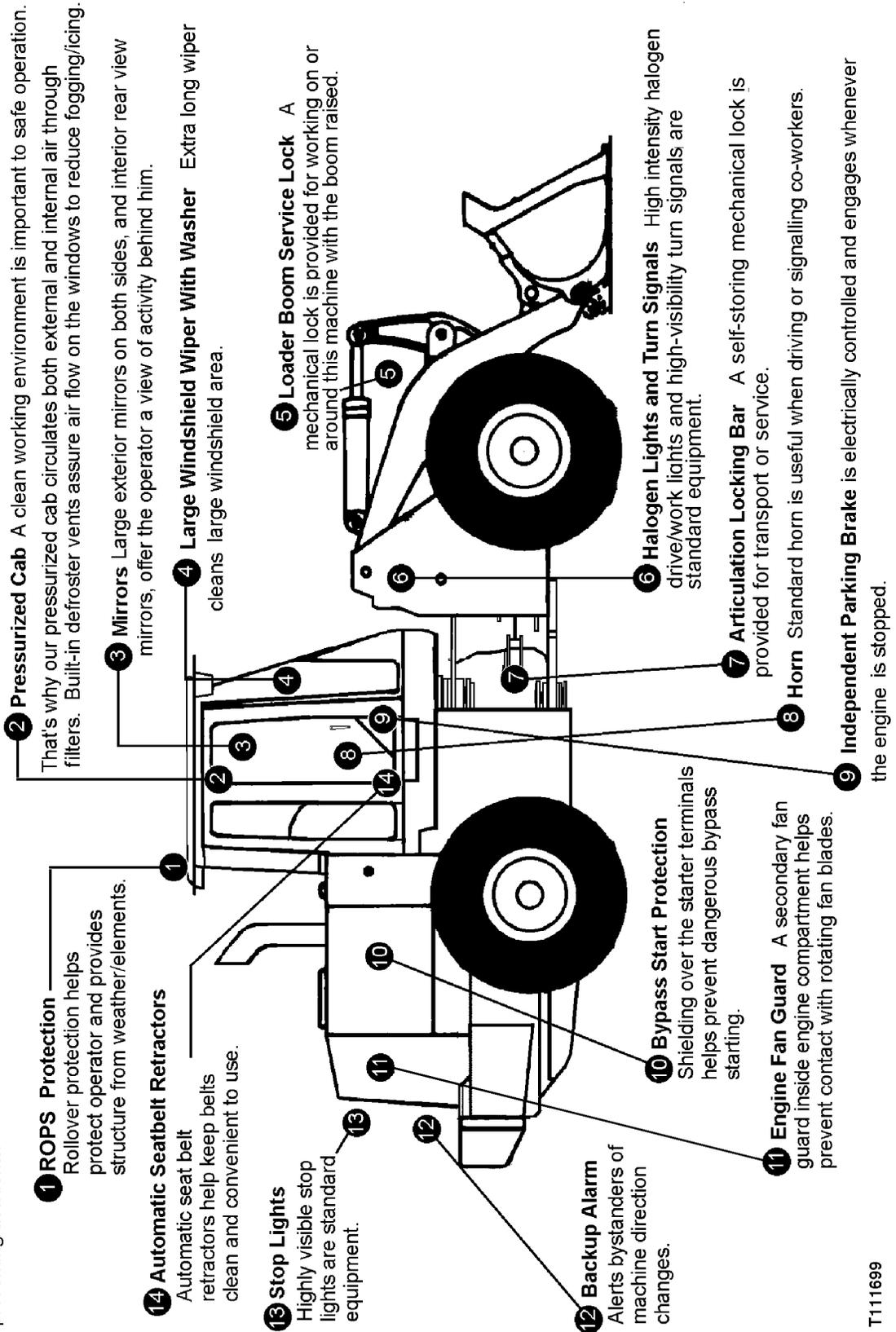
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## 4WD Loader Safety Features

# JOHN DEERE 4WD LOADER SAFETY FEATURES

Please remember, the operator is the key to preventing accidents.



T111699

T111699 -19-04NOV98

TX,05\_JC2303 -19-09NOV98-1/1

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## Recognize Safety Information

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

Follow recommended precautions and safe operating practices.



DX,ALERT -19-29SEP98-1/1

TS1389 -UN-07DEC88

## Understand Signal Words

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

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



DX,SIGNAL -19-03MAR93-1/1

TS187 -19-30SEP88

## Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.



DX,READ -19-03MAR93-1/1

TS201 -UN-23AUG88

## Avoid Injury from Rollover Accidents

### Wear Your Seat Belt

**Do Not Attempt to Jump Clear of Tipping Machine—Serious or Fatal Crushing Injuries Will Result**

### Machine Will Tip Over Faster Than You Can Jump Free

To avoid rollovers:

Be careful when operating on a slope.

Avoid sharp turns.

Balance loads so weight is evenly distributed and load is stable.

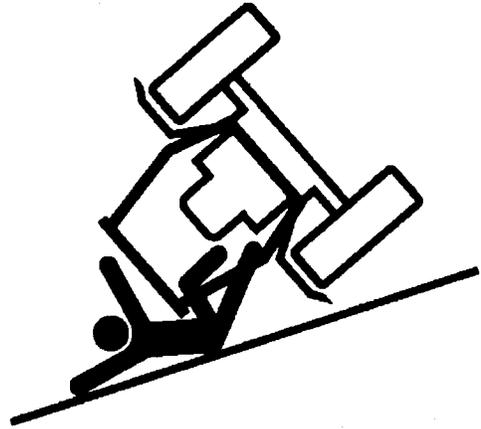
Carry tools and loads close to the ground to aid visibility and lower center of gravity.

Reduce speed before turning or swinging load.

Know capacity of machine. Do not overload.

Be careful when operating at the edge of an excavation, trench, or drop-off, and loading or unloading from a trailer.

Read and understand the operating instructions in this operator's manual.



**USE  
SEAT  
BELT**

T7242EA -19-22FEB90

TX,05,DH1525 -19-21JUN91-1/1

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## Avoid Injury from Backover Accidents

-----  
**Before Moving Machine, Be Sure All Persons are Clear of Area**  
-----

-----  
**Always Be Alert for Bystanders Moving into the Work Area. Use Horn or Other Signal to Warn Bystanders Before Moving Machine**  
-----

-----  
**When Using a Signal Person, Keep Person in View at all Times. Be Sure Signal Person is Clear Before Backing Up**  
-----



T7241AY -UN-21FEB90

To avoid backover accidents:

Always look around before you back up. Be sure that everyone is in the clear.

Keep bystanders away from pivot area of an articulated machine.

Keep reverse warning alarm in working condition, if equipped.

Use a signal person when backing up if view is obstructed. Always keep signal person in view.

Learn the meaning of all flags, signs, and markings used on the job, and who has the responsibility for signaling.

Keep windows, mirrors, and lights clean and in good condition.

Dust, heavy rain, fog, etc., can reduce visibility. As visibility decreases, reduce speed and use proper lighting.

Read and understand the operating instructions in this operator's manual.

TX.05,DH1573 -19-18MAR91-1/1

## Avoid Injury from Rollaway Accidents

**To Prevent Rollaway, Always Make Sure Machine is Properly Secured Before Leaving Operator's Seat**

**Death or Serious Injury May Result if You Attempt to Mount or Stop a Moving Machine**

To avoid rollaways:

Select level ground when possible to park machine.

Move transmission control lever to neutral "N", engage neutral lock, and push park brake switch to ON.

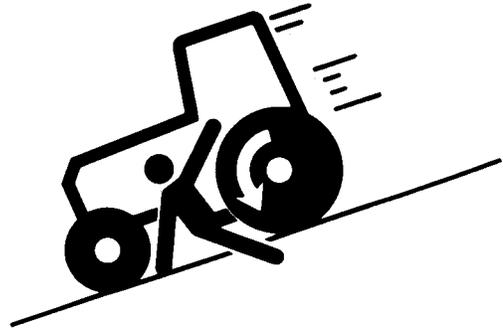
Lower all equipment to ground.

Stop the engine.

Block all wheels if you must park on a grade. Position machine to prevent rolling.

Park a reasonable distance from other machines.

Read and understand the operating instructions in this operator's manual.



T7241AZ -UN-21FEB90

TX,05,JC1888 -19-18FEB97-1/1

## Inspect Machine

Inspect your machine carefully each day by walking around it before you start it. (See Pre-Start Inspection Chapter.)



T6607AQ -UN-18OCT88

T82,BHSA,CL -19-14MAR90-1/1

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## Use Handholds and Steps

Falling is one of the major causes of personal injury.

When you get on and off the machine, always maintain a three point contact with the steps and handrails, and face the machine. Do not use the steering wheel or any controls as handholds.

Never jump on or off the machine. Never mount or dismount a moving machine.

Be careful of slippery conditions on platforms, steps, and handrails when leaving the machine.



T6981AN -UN-15JUN89

TX,05,DH553 -19-18MAR91-1/1

## Prevent Machine Runaway

Avoid possible injury or death from a runaway machine.

DO NOT start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

Never start engine while standing on ground. Start engine only from operator's seat with transmission control lever locked in neutral and park brake engaged.



T6642EB -UN-20OCT88

TX,05,DH2281 -19-06OCT92-1/1

## Use Seat Belt Properly

Overturns may occur if proper operating instructions are not followed.

Use your seat belt.



TS175 -UN-23AUG88

TX,05,JC1044 -19-12JAN96-1/1

## Maintain Seat Belt

It is important to use the seat belt on ROPS equipped machines to minimize the chance of injury from an accident such as an overturn. Keep the seat belt in good condition.

**The complete seat belt assembly should be replaced after three years of usage, regardless of appearance.**

Between replacement intervals:

Carefully examine buckle, webbing, and attaching hardware.

Be sure that the retractor, if equipped, locks to prevent belt extension after latching buckle.

Be sure that attaching hardware is in place. Tighten, if necessary.

Replace the seat belt if it does not operate properly, or if it is damaged, worn, or deteriorated.

TX,05,JC242 -19-03MAR95-1/1

## Secondary Exits

Machines equipped with cabs are equipped with secondary exits. For additional secondary exit information, see "Opening Side Window/Secondary Exit" in chapter 10 of this manual.

TX,05,JC1753 -19-09DEC96-1/1

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## Travel Safely

Know the location of bystanders before moving the machine.

Always keep the reverse warning alarm in working condition. It warns people when the machine starts to move in reverse.

Use a signal person when moving the machine in congested areas. Coordinate hand signals before starting the machine.



T6964AD -UN-20DEC88

TX,05,DH496 -19-02AUG89-1/1

## Drive Machine Safely

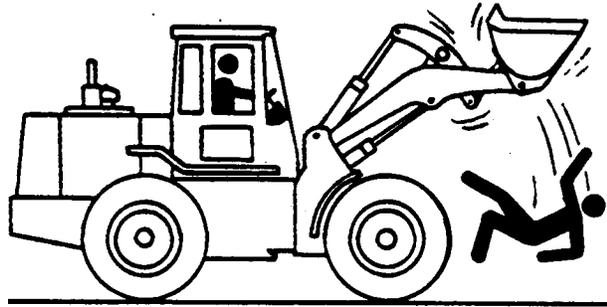
Walk around machine to clear all persons from area of operation and machine movement.

Always check area to rear before shifting to reverse.

Drive carefully in congested areas, over rough ground, near ditches for excavations, and on slopes or curves.

Keep machine in gear when going down hills.

Use accessory lights and devices to warn operators of other vehicles.



T6582AS -UN-25OCT88

TX,05,DH1931 -19-21JUN91-1/1

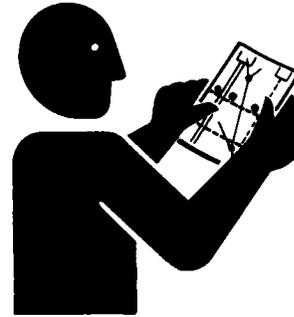
## Operate Machine with Caution

Check location of cables, gas lines, and water mains before digging.

Keep loading area smooth.

Never lower a loaded bucket with the boom and bucket control lever in the float position.

Increase the power gradually when pulling a heavy load or when driving out of a ditch or excavation.



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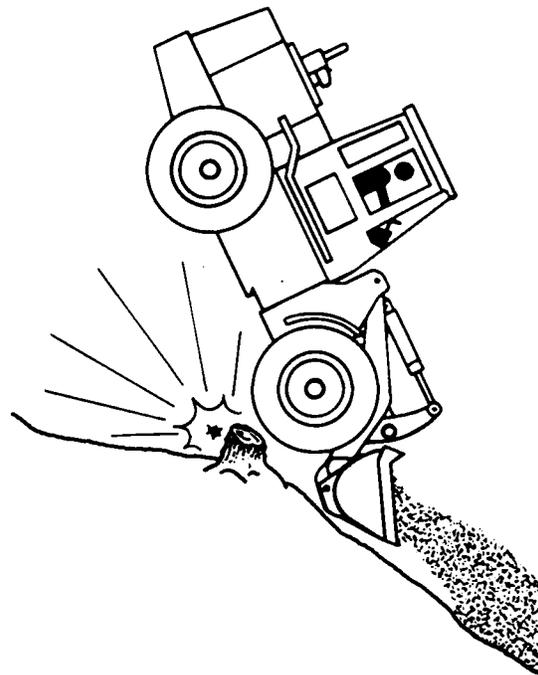
TX,05,DH1932 -19-06JUN91-1/1

## Operating on Slopes

Avoid side slope travel whenever possible. Drive up slope in forward and down in reverse. The danger of tipping is always present.

In steep slope operation, do not allow engine to overspeed. Select low gear speed before starting down slope.

The grade of the slope you should attempt will be limited by such factors as ground condition, and load being handled.



T7050AB -JUN-03AUG89

TX,05,RR,171 -19-27APR89-1/1

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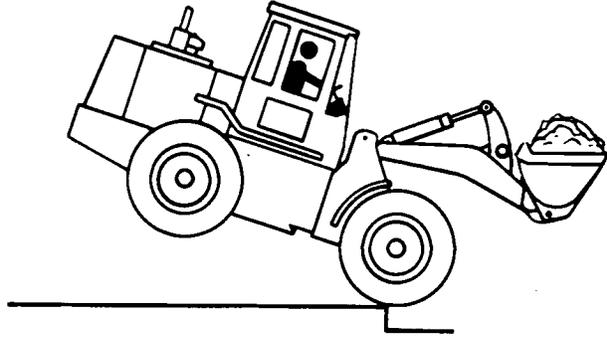
## Carrying Loads

Carry loader bucket as low as possible for better stability and visibility.

Handle only those loads which are properly arranged. Do not overload.

Do not start, stop, or turn quickly when transporting a load.

Do not change forward or reverse directions quickly when carrying a load.



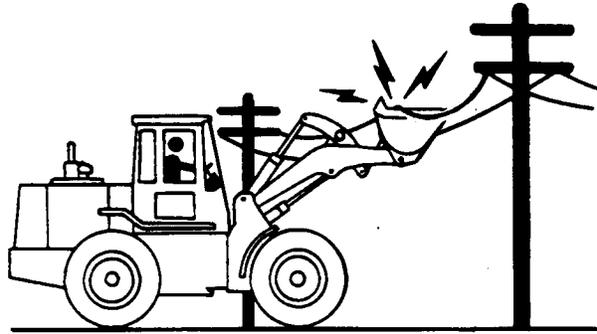
T7050AA -UN-03AUG89

TX,05,RR,172 -19-03JUN92-1/1

## Avoid Power Lines

Serious injury or death can result from contact with electric lines.

Never move any part of the machine or load closer to electric line than 3 m (10 ft) plus twice the line insulator length.



T6642EG -UN-20JUN89

02T,05,J18 -19-06JUN91-1/1

## Beware of Exhaust Fumes

Prevent asphyxiation. Engine exhaust fumes can cause sickness or death.

If you must operate in a building, be sure there is adequate ventilation. Either use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring enough outside air into the area.



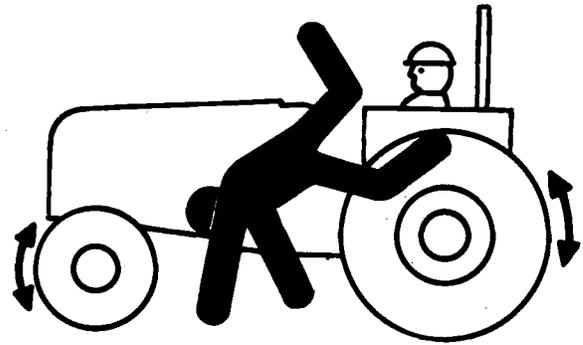
T6458AO -UN-18OCT88

TX,DH,2 -19-09FEB89-1/1

### Keep Riders Off Machine

Only allow the operator on the machine. Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.



DX,RIDER -19-03MAR93-1/1

TS290 -UN-23AUG88

### Handle Fuel Safely—Avoid Fires

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.



DX,FIRE1 -19-03MAR93-1/1

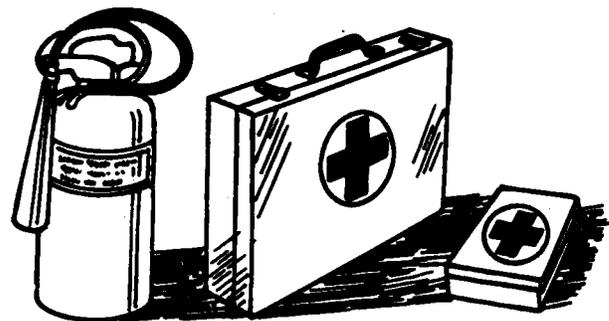
TS202 -UN-23AUG88

### 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.



DX,FIRE2 -19-03MAR93-1/1

TS291 -UN-23AUG88

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### Handle Starting Fluid Safely

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. Keep starting fluid away from batteries and cables.

Remove container from machine if engine does not need starting fluid.

To prevent accidental discharge when storing the pressurized can, keep the cap on the container, and store in a cool, protected location.

Do not incinerate or puncture a starting fluid container.



T6464AV -UN-18OCT88

TX,05,FF2281 -19-22FEB91-1/1

### Clean Trash from Machine

Keep engine compartment, radiator, batteries, hydraulic lines, fuel tank, and operator's station clean.

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

Open access door(s) to cool the engine faster, and clean engine compartment.

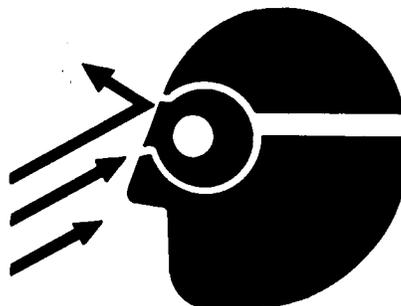


TS227 -UN-23AUG88

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### 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.



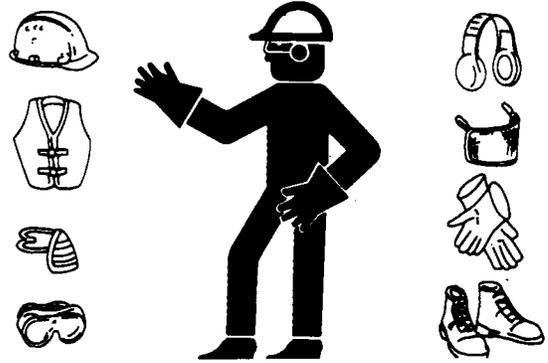
T6642DK -UN-18OCT88

02T,05,J45 -19-30MAY90-1/1

### Wear Protective Clothing

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

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



DX,WEAR2 -19-03MAR93-1/1

TS206 -JUN-23AUG88

### Protect Against Noise

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.



DX,NOISE -19-03MAR93-1/1

TS207 -JUN-23AUG88

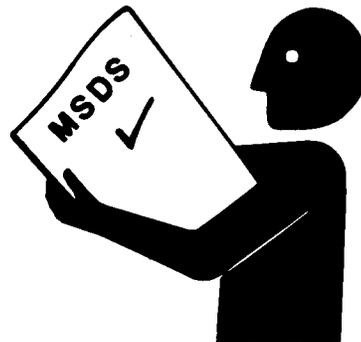
### Handle Chemical Products Safely

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 -19-03MAR93-1/1

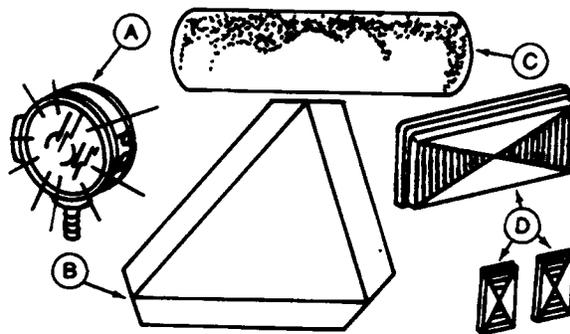
TS1132 -JUN-26NOV90

**Use Safety Lights and Devices**

Operators of machines that travel below normal highway speeds should take special precautions to avoid collision with other vehicles.

Before driving on public roads, check state and local laws that may apply to tractors, self-propelled machines, and towed equipment. Additional lights, mirrors, SMV emblems, or reflectors may be required.

Install and use all safety lights and devices necessary to assure safe operation and local compliance. Keep these safety items in good condition. Replace missing or damaged parts immediately.



A—Lights  
 B—Slow Moving Vehicle Emblem  
 C—Reflector Tape  
 D—Reflectors

N36564 -UN-10FEB89

TX,05,DH1729 -19-26JAN91-1/1

**Keep ROPS Installed Properly**

A damaged roll-over protective structure (ROPS) should be replaced, not reused.

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.

If ROPS was loosened or removed for any reason, inspect it carefully before operating the machine again.

To maintain the ROPS:

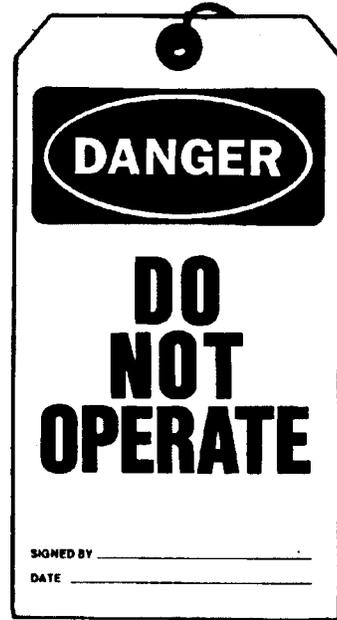
- Replace missing hardware using correct grade hardware.
- Check hardware torque.
- Check isolation mounts for damage, looseness or wear; replace them if necessary.
- Check ROPS for cracks or physical damage.

TX,05,DH1846 -19-14MAY91-1/1

### Warn Others of Service Work

Unexpected machine movement can cause serious injury.

Before performing any work on the machine, attach a "DO NOT OPERATE" tag to the steering wheel.



T7447AO -19-22APR91

TX,05,DH1820 -19-14MAY91-1/1

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## 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.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.



TS218 -UN-23AUG88

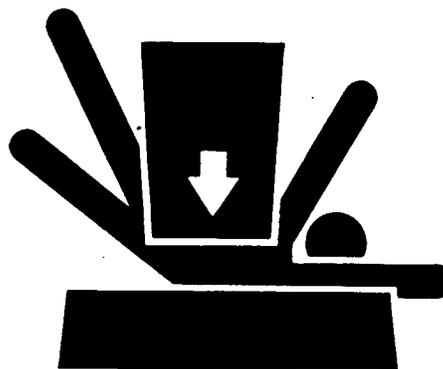
DX.SERV -19-17FEB99-1/1

## Support Machine Properly

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

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.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.



TS229 -UN-23AUG88

DX.LOWER -19-24FEB00-1/1

## 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.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- 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.

Do not use a chlorinated solvent in areas where welding will take place.

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.



TS220 -UN-23AUG88

DX,PAINT -19-24JUL02-1/1

## 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 -19-03MAR93-1/1

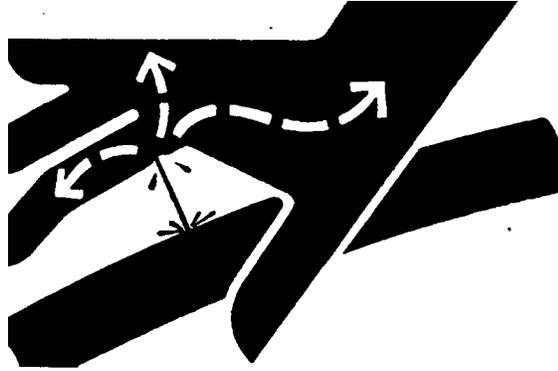
## Avoid High-Pressure Fluids

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

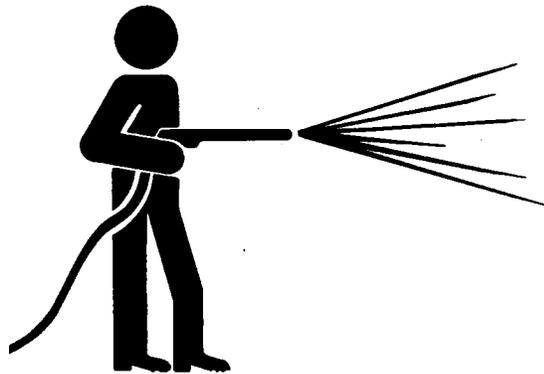
DX,FLUID -19-03MAR93-1/1

## Clean the Machine Regularly

Remove any grease, oil, fuel, or debris build-up to avoid possible injury or machine damage.

High pressure washing [greater than 1379 kpa (13.8 bar) (200 psi)] can damage freshly painted finishes. Paint should be allowed to air dry for 30 days minimum after receipt of machine before cleaning with high pressure. Use low pressure wash operations until 30 days have elapsed.

Do not spray oil cooler fins at an angle. Fins may bend.



T6642EJ -UN-18OCT88

TX,05,FF2787 -19-27JUL94-1/1

### Service Cooling System Safely

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



DX,RCAP -19-04JUN90-1/1

TS281 -JUN-23AUG88

### Store Attachments Safely

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.



DX,STORE -19-03MAR93-1/1

TS219 -JUN-23AUG88

### Dispose of Waste Properly

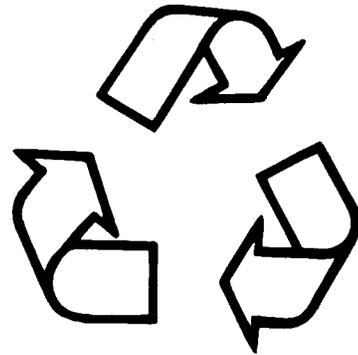
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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 -19-03MAR93-1/1

TS1133 -JUN-26NOV90

Product: John Deere 644H and 644H MH Loader Service Repair Technical Manual

Full Download: [https://www.arepairmanual.com/downloads/john-deere-644h-and-](https://www.arepairmanual.com/downloads/john-deere-644h-and-644h-mh-loader-service-repair-technical-manual/)

[644h-mh-loader-service-repair-technical-manual/](https://www.arepairmanual.com/downloads/john-deere-644h-and-644h-mh-loader-service-repair-technical-manual/)

*Safety Information*

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Sample of manual. Download All 544 pages at:

<https://www.arepairmanual.com/downloads/john-deere-644h-and-644h-mh-loader-service-repair-technical-manual/>

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644H and 644H MH Loader

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