

**8570, 8770, 8870
and 8970
Tractors**

**John Deere Waterloo Works
OMAR112116 Issue A6
(This manual replaces OMAR112116 G4)
North American Edition
LITHO IN U.S.A.
ENGLISH**

Introduction

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. (See your John Deere dealer to order.)

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification or Identification Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. File

the identification numbers in a secure place off the machine.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

THE TIRE MANUFACTURER'S warranty supplied with your machine may not apply outside the U.S.

CALIFORNIA PROPOSITION 65 WARNING

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.



8770 Tractor

RW55709
-JUN-20DEC95

RXIFC,704WD -19-19DEC95

Contents

	Page		Page
Safety	05-1	Operating the Tractor	
Safety Signs	10-1	Brakes	45-2
Controls and Instruments		Differential Lock	45-2
Control Location	15-1	Transmission	
Instrument Identification	15-3	12-Speed Syncro and 24-Speed	
Gauges and Indicators Description	15-3	POWRSYNC®	45-3
Tachometer	15-7	Power Shift	45-7
Performance Monitor	15-10	Hitch	
Radar Sensor	15-16	Component Identification	50-1
Lights		Hitch Control Lever	50-1
Switch	20-1	Sway Blocks	50-8
Lights and Signals	20-1	Implement	
Electrical		Attaching	50-8
Outlets	20-4	Adjusting Level	50-10
Load Center	20-6	Removing	50-11
Operator Station		Remote Hydraulic Cylinders	
SOUND-GARD® Body Temperature		Hose Tips	55-1
Controls	25-1	Identifying SCV	55-2
Window Wipers	25-3	Connecting Cylinder Hoses	55-2
Windows	25-3	Operating SCV	55-4
Radio	25-4	Setting Remote Cylinder Stroke	55-6
Seat	25-7	Disconnecting Cylinder Hoses	55-7
Steering Wheel	25-10	Drawbar and PTO	
Engine Break-in	30-1	Drawbar Adjustments	60-1
Prestarting Checks	35-1	Power Take-Off (PTO)	60-3
Operating the Engine		Optimum Performance/Ballast	
Start-up Procedures	40-1	Guidelines	65-1
Cold Weather Starting	40-4	Importance of Ballast	65-1
Starting Aids	40-5	Power Hop	65-3
Warm-up and Operation	40-7	Inflation Pressures	65-8
Field Cruise	40-9	Measuring Wheel Slip	65-10
Stopping the Engine	40-11	Wheels, Tires, and Treads	
		Wheel Tightening	70-1

Continued on next page

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

OMAR112116 A6-19-21FEB97

COPYRIGHT© 1996
DEERE & COMPANY
Moline, Illinois
All rights reserved
A John Deere ILLUSTRATION® Manual
Previous Editions
Copyright 1994, 1993 Deere & Company

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>

Contents

	Page		Page
Tread Width		Inspect Tractor For Loose Bolts	100-8
Limitations	70-3	Rollover Protective Structure	100-9
Adjusting (Steel)	70-6	Check Neutral Start System	100-9
Adjusting (Cast)	70-9	Check Brakes	100-10
Steering Stops	70-12	Inspect Fire Extinguisher	100-10
		Lubricate Hitch Sensor	100-11
Transporting		Service/500 Hours	
Driving	75-1	Lubricate Axle Bearings	105-1
Carrier	75-3	Check Coolant Conditioner	105-1
Towing	75-4	Replace Fuel Filters	105-2
Fuels, Lubricants, and Coolant		Service/750 Hours	
Fuel	80-1	Change Transmission Oil Filter (12-Speed and 24-Speed)	110-1
Engine		Change Hydraulic Oil Filter	110-1
Oil	80-3	Check Hoses	110-1
Break-in Oil	80-4	Clean Crankcase Vent Tube	110-2
Coolant	80-5	Drain Fuel Tank Sump	110-2
Transmission and Hydraulic Oil	80-7	Inspect Hydraulic Pump Screen and Reservoir Breather	110-2
Lubricants	80-8	Inspect Fuel Tank Breather	110-3
Lubricant Storage	80-9	Service/1000 Hours	
Service		Adjust Engine Valve Clearance	115-1
Engine Access	85-2	Change Transmission Oil (Power Shift)	115-1
Battery Compartment Access	85-3	Service/1500 Hours	
High-Pressure Washers	85-4	Change Transmission Oil (12-Speed and 24-Speed)	120-1
First 100 Hours—After 100 Hours	85-5	Change Hydraulic and Differential Oil	120-2
Service Interval Chart	85-6	Clean Front Axle Suction Screen	120-3
Service/Daily or Every 10 Hours		Check Fuel Injection Nozzle	120-3
Coolant Level	90-1	Clean Transmission Sump Screen	120-3
Tires	90-2	Service Cooling System	120-4
Engine Oil Level	90-3	Service/2000 Hours	
Water Separator	90-3	Adjust Engine Valve Clearance	125-1
Transmission Oil Level	90-3	Service/Annually	
Hydraulic Oil Level	90-4	Replace Air Filters	130-1
Hinge Pins	90-4	Replace AQS Filter	130-2
Axle Bearings	90-4	Lubricate Hitch Sensor	130-2
Lift Cylinders	90-5	Check Engine Mounts	130-3
Service/After 100 Hours	95-1	Service/2 Year	
Service/250 Hours		Service Cooling System	135-1
Lubricate Driveline Bearings	100-1	Replace Thermostats	135-1
Clean SGB Air Filter	100-2		
Lubricate Hitch	100-2		
Change Engine Oil and Filters	100-3		
Oil Filter (Power Shift)	100-3		
Service Batteries	100-4		
Check and Adjust Belt Tensions	100-6		

Continued on next page

Contents

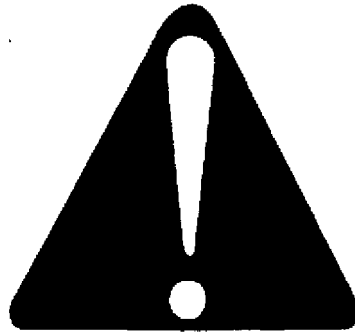
	Page		Page
Service/As Required		Identification Numbers	
Replace Air Filters	140-1	Identification Plates	165-1
Clean AQS Filter	140-3	Daily Maintenance	170-1
Clean Evaporator/Heater Core	140-3	Lubrication and Maintenance Records	175-1
Change Transmission Filter	140-3	John Deere Service Keeps You On The Job	
Replace Hydraulic Filter	140-4	Index	
Clean Hydraulic Filter Charge Makeup Screen	140-4		
Check Engine Oil Filler Cap	140-4		
Replace Fuel Filters	140-5		
Bleed Fuel System	140-6		
Drain Fuel Tank Sump	140-10		
Bleed Brakes	140-10		
Clean Hydraulic Reservoir Sump Screen	140-11		
Clean Exhaust Stack and Muffler Area	140-11		
Clean Engine Compartment	140-11		
Inspect Engine Crankshaft Damper	140-13		
Inspect Transmission Drive Shaft Damper	140-13		
Adjust Park Brake	140-13		
Replace Fan Belts	140-14		
Replace Batteries	140-15		
Check Electrical Load Center	140-16		
Fuses	140-17		
Lighting	140-18		
Adjust Head Lights	140-21		
Connecting Starter and Alternator	140-22		
Servicing Air Conditioner	140-23		
Check Hydraulic Hoses	140-25		
Troubleshooting			
Engine	145-1		
Transmission	145-4		
Drive Line	145-4		
Hydraulic System	145-5		
Brakes	145-6		
Axles	145-6		
Hitch and Quick-Coupler	145-7		
Remote Hydraulic Cylinders	145-9		
Electrical	145-10		
SOUND-GARD® Body	145-12		
Tractor Operation	145-13		
Storage	150-1		
Crime Prevention Tips	155-1		
Specifications	160-1		
Ground Speeds	160-4		
Torque Charts	160-6		
Battery Warranty	160-8		

Safety

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.

Follow recommended precautions and safe operating practices.



DX,ALERT -19-03MAR93

T81389 -UN-07DEC68

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

TS187 -19-30SEP88

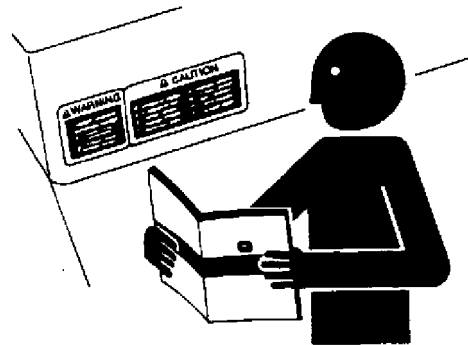
FOLLOW SAFETY INSTRUCTIONS

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.



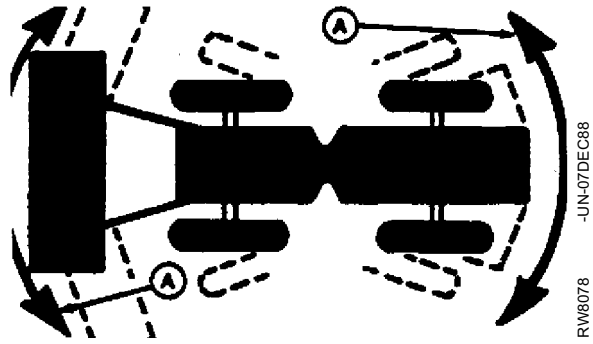
DX,READ -19-03MAR93

TS201 -UN-23AUG88



STAY CLEAR OF MOVING TRACTOR

Be sure everyone is clear of tractor and attached equipment before starting engine or moving steering wheel. Tractor and equipment move (A), even with transmission in PARK or with park brake applied. Some steering movement often occurs as engine starts.



RXCRUSH -19-16FEB93

USE HAND HOLDS AND STEPS

Clean off slippery mud, grease, and any crop residue that may have accumulated on the steps and operator's platform of your tractor. Remember that chains and tools carried on the platform may interfere with pedal operation or cause a slip or fall from the tractor. Remove them.



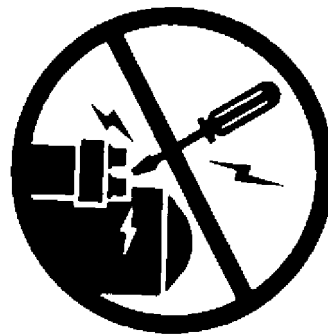
RX,SLIP -19-20DEC95

PREVENT MACHINE RUNAWAY

Avoid possible injury or death from machinery runaway.

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 in neutral or park.



DX,BYPAS1 -19-03MAR93

USE SEAT BELT PROPERLY

Use a seat belt when you operate with a roll-over protective structure (ROPS) to minimize chance of injury from an accident such as an overturn.



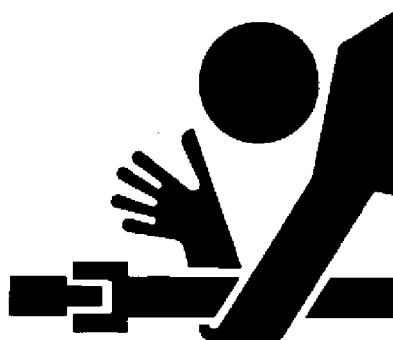
RX,4WDBELT -19-20DEC95



OPERATING THE TRACTOR SAFELY



TS213
-UN-23AUG88



TS276
-UN-23AUG88

Careless use of the tractor can result in unnecessary accidents. Be alert to hazards of tractor operation. Understand causes of accidents and take every precaution to avoid them. Most common accidents are caused from:

- Tractor roll-over
- Improper starting procedures
- Crushing and pinching during hitching
- Collisions with other motor vehicles
- Entanglement in PTO shafts
- Falling from tractor

Avoid accidents by taking the following precautions:

- Put transmission in PARK before dismounting. Leaving transmission in gear with engine stopped will NOT prevent the tractor from moving.
- Be sure everyone is clear of tractor and attached equipment before starting engine.
- Never try to get on or off a moving tractor.
- When tractor is left unattended, place in PARK, lower implements to the ground, stop the engine, and remove the key.
- Never go near an operating PTO or an operating implement.
- Always fasten your seat belt in a ROPS equipped tractor.

RX,HAZARD,S -19-20DEC95

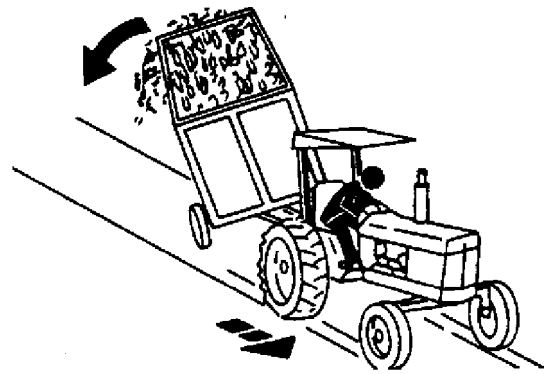


SHIFT TO LOW GEAR ON HILLS

Shift to a low gear before descending a steep hill to improve your control of the tractor with little or no braking. Use engine braking to reduce speed before applying tractor brakes. Run-away tractors often tip over. Never coast downhill.

When driving on icy, wet, or graveled surfaces, reduce speed and be sure tractor is correctly ballasted to avoid skidding and loss of steering control. For best control, engage front-wheel drive, if equipped, by using "ON" mode, rather than "AUTO" mode, for four-wheel braking.

Additional ballast may be needed for transporting heavy integral implements. When implement is raised, drive slowly over rough ground, regardless of how much ballast is used.



TS216
-UN-23AUG68

RX,DRIVE,SAFE -19-21DEC95



USE CAUTION ON HILLSIDES

Avoid holes, ditches, and obstructions which may cause the tractor to tip, especially on hillsides.

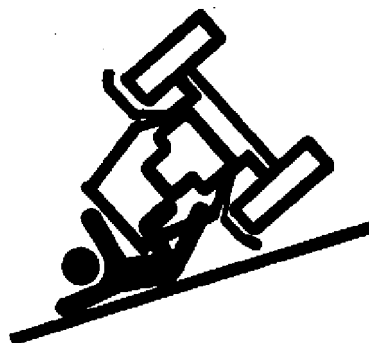
Never drive near the edge of a gully or steep embankment—it might cave in.

Be especially careful when using single wheels. Danger of overturn increases greatly with narrow tread, 80 in. (2032 mm), or less and high speed.

For hillside operation, always use front and rear dual wheels. Avoid sharp, uphill turns.

Keep transmission and hydraulic oil level at upper mark on sight-gauge and dipstick when operating on hillsides. Low oil level might result in loss of steering and clutch engagement. If this should happen, hold tractor with brakes, shift to PARK or apply park brake, stop engine, and add hydraulic oil to proper level.

Before operating on extremely steep slopes, fill hydraulic system beyond overfill mark on dipstick 1—2 gal (4—8 L). This is particularly important when using large hydraulic cylinders, due to the volume of oil used to extend them.



RW13093 -UN-07DEC88

RXHILL,SIDE -19-20DEC95

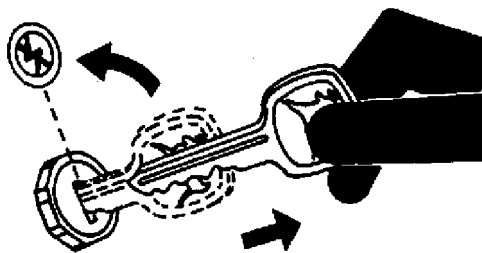


STOPPING AND PARKING TRACTOR

Tractor roll-over, collisions, runaway tractors, and people being crushed under machines and implements can happen when operators ignore safety.

To avoid these accidents, take some precautions:

- Signal before stopping, turning, or slowing down on public roads
- Pull over to side of road before stopping
- Slow down before braking
- Pump brakes when stopping on slippery surfaces
- Be careful when towing and stopping heavy loads
- Shift to park or apply parking brake
- Lower all equipment when leaving tractor
- Remove key



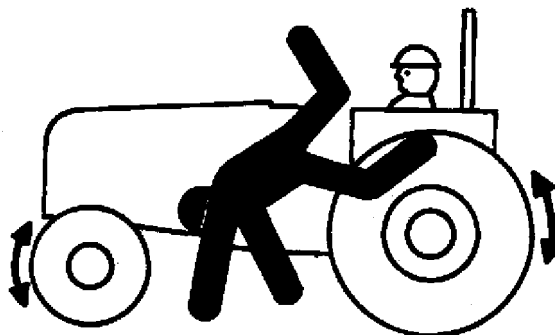
RX,STOP,PARK -19-21SEP92

TS230
-UN-24MAY69

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.

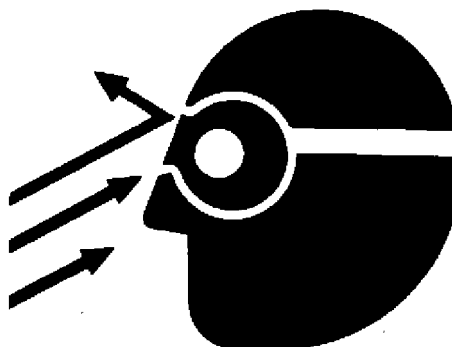


DX,RIDER -19-03MAR93

TS290
-UN-23AUG88

OPERATE RADAR UNIT SAFELY

Radar ground speed sensor emits a very low intensity microwave signal. It will not cause any ill effects during normal use. Although intensity is low, DO NOT look directly into face of sensor while in operation, to avoid any possible eye damage.



RX,SAFTY,RADAR -19-20DEC95

TS266
-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

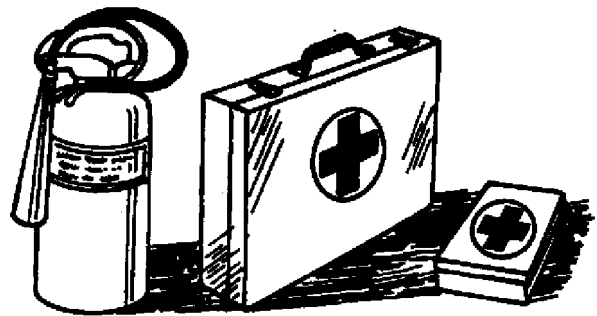
TS202
-UN-23AUG88

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

TS291
-UN-23AUG88

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.

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.



DX,FIRE3 -19-16APR92

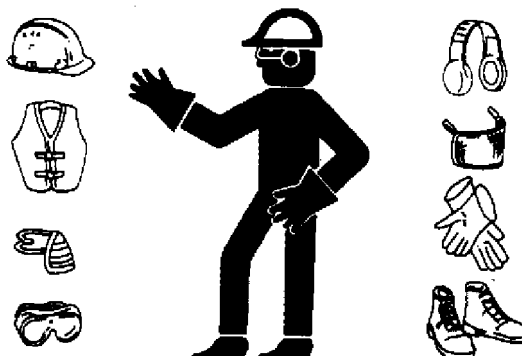
TS1356
-UN-18MAR92



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

TS206 -UN-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

TS207 -UN-23AUG88

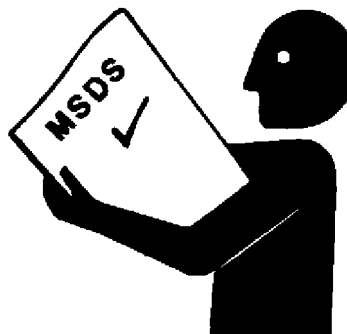
HANDLE CHEMICAL PRODUCTS SAFELY

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

TS1132 -UN-26NOV90

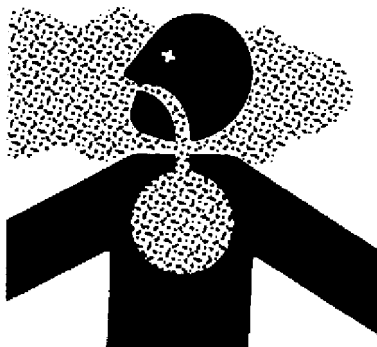


AVOID CONTACT WITH PESTICIDES

This enclosed cab does not protect against inhaling harmful pesticides. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.

Before leaving the cab, wear personal protective equipment as required by the pesticide use instructions. When re-entering the cab, remove protective equipment and store either outside the cab in a closed box or some other type of sealable container or inside the cab in a pesticide resistant container, such as a plastic bag.

Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.



-UN-23AUG68

TS220

-UN-23AUG88

TS272

DX,CABS -19-03MAR93

STAY CLEAR OF ROTATING DRIVELINES

Entanglement in rotating driveline can cause serious injury or death.

Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Wear close fitting clothing. Stop the engine and be sure PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.



-UN-22AUG95

TS1644

DX,PTO -19-12SEP95



Suggest:

If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

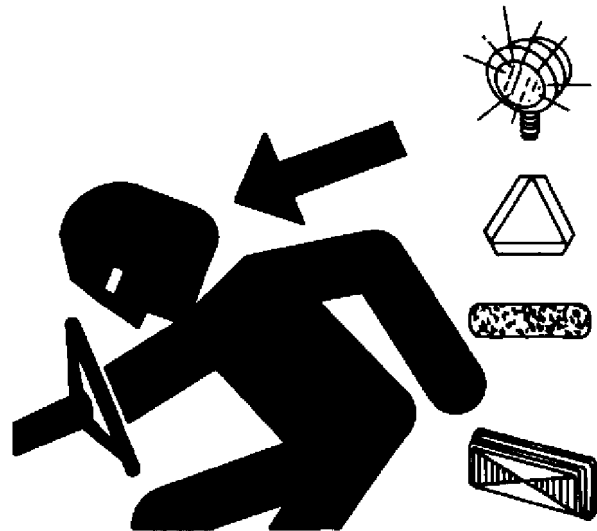
Thank you so much for reading



USE SAFETY LIGHTS AND DEVICES

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use hand signals or turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.



DX,FLASH -19-12SEP95

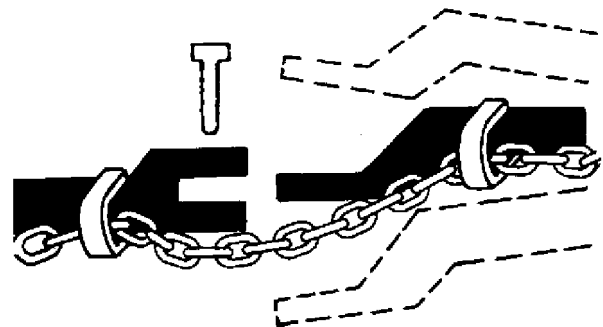
TS951 -UN-12APR90

USE A SAFETY CHAIN

A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

See your John Deere dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine. Do not use safety chain for towing.



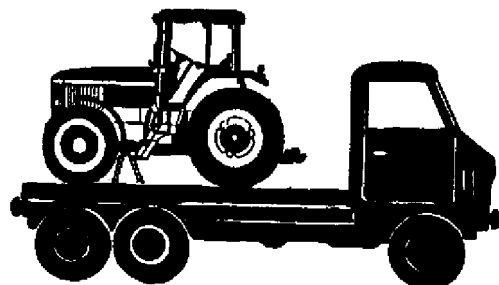
DX,CHAIN -19-03MAR93

TS217 -UN-23AUG88

TRANSPORT TRACTOR SAFELY

Transport a disabled tractor on a flatbed carrier. Securely chain tractor to carrier.

If towing a tractor, never tow faster than 16 km/h (10 mph) with front or rear wheels raised or faster than 8 km/h (5 mph) with all wheels on the ground. Have an operator steer and brake tractor.



RX,HAUL,IT1 -19-20DEC95

RW22056 -UN-04DEC92

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>