

322, 330, 332 and 430 Lawn and Garden Tractors

For complete service information also see:

Yanmar Gasoline Engines CTM12
John Deere Series 220 Diesel Engines CTM3



John Deere Horicon Works
TM1591 (15JUL95)

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.

NThis 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 diagnostics. Repair sections tell how to repair the components. Diagnostic 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, other materials needed to do the job and service parts kits.

Section 10, Group 15—Repair Specifications, consist of all applicable specifications, near tolerances and specific torque values for various components on each individual machine.

Section 10, Group 20—Test and Adjustment Specifications, consist of all applicable test and adjustment specifications for various systems for each individual machine.

Binders, binder labels, and tab sets can be ordered by John Deere dealers direct from the John Deere Distribution Service Center.

This manual is part of a total product 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 type of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

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

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



TM1591 (15JUL95)

MX,1590,IFC -19-09DEC94

322,330,332 & 430 Lawn & Garden Tractors

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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.

TM1591-19-15JUL95

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A John Deere ILLUSTRATION™ Manual

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INDX

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INDX

Dealer Presentation Sheet

JOHN DEERE DEALERS

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

This is a complete revision for models 322, 330, 332 and 430 found in TM1277, TM1309 and TM1345. The complete revision of remaining machines (316, 318 and 420) can be found in TM1590. AFTER receiving both TM1590 and TM1591, please discard old TM1277 dated December 1987, TM1309 dated July 1985 and TM1345 dated June 1986.

NOTE: There are several "versions" of each model tractor. All versions were not available at time of latest printing. Some versions may not be covered.

Dealer Presentation Sheet

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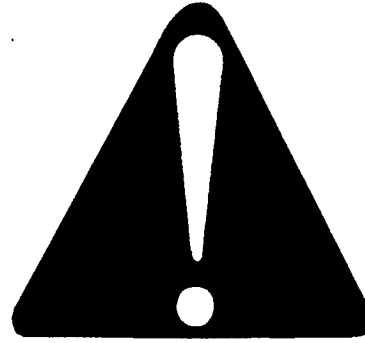
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RECOGNIZE SAFETY INFORMATION

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-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

-19-30SEP88

TS187

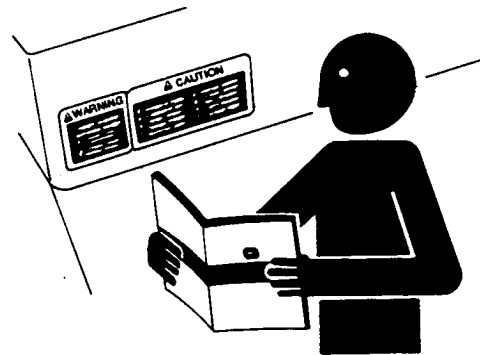
FOLLOW SAFETY INSTRUCTIONS

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

-UN-23AUG88

TS201

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05
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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.



DX,FLAME -19-04JUN90

-UN-23AUG88
TS227

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).



DX,SPARKS -19-03MAR93

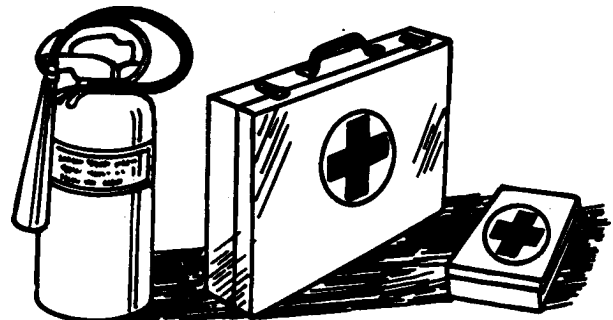
-UN-23AUG88
TS204

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

-UN-23AUG88
TS291

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.



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305

-UN-23AUG88

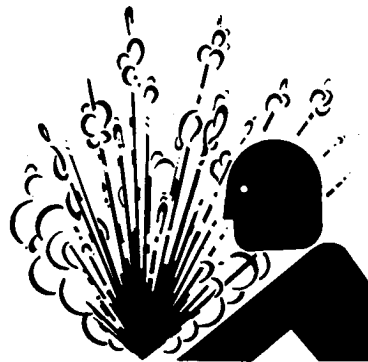
TSS203

DX,POISON -19-21APR93

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.



-UN-23AUG88

TSS281

DX,RCAP -19-04JUN90

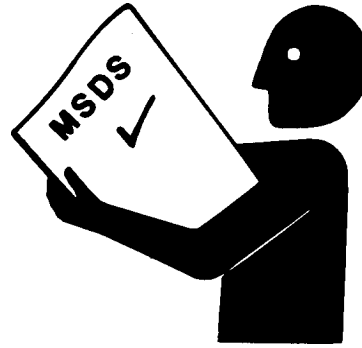
HANDLE CHEMICAL PRODUCTS SAFELY

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

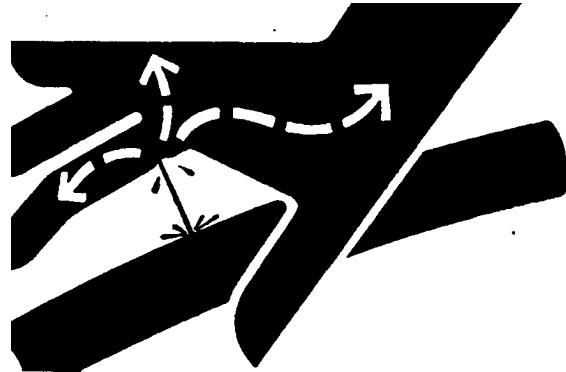
AVOID HIGH-PRESSURE FLUIDS

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.



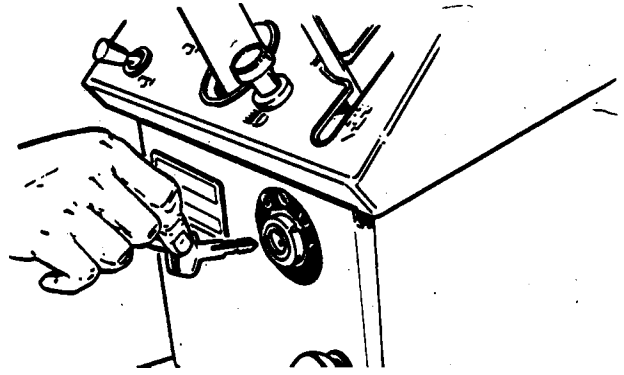
DX,FLUID -19-03MAR93

X9811 -UN-23AUG88

PREPARE MACHINE FOR REPAIR

1. Move hydrostatic control lever to STOP position.
2. Disengage PTO's
3. Lower all equipment to the ground.
4. Engage park brake.
5. Stop the engine and remove the key.
6. Operate all hydraulic control levers to release hydraulic pressure in the system.

Before you leave the operator's seat, wait for engine and attachment parts to stop moving.



MX,1005R,8 -19-01APR86

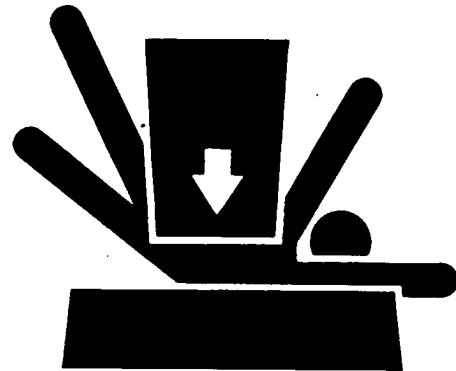
M34228 -UN-24APR89

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51

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.



DX,LOWER -19-04JUN90

TS229 -UN-23AUG88

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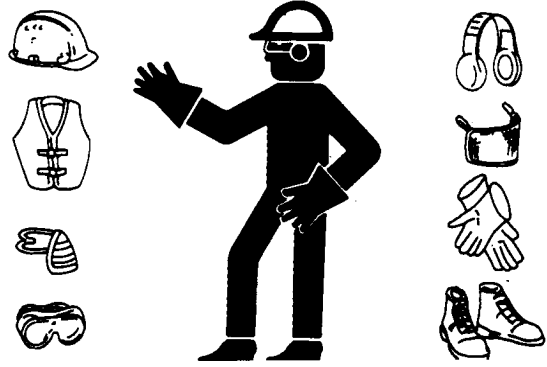
WEAR PROTECTIVE CLOTHING

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.



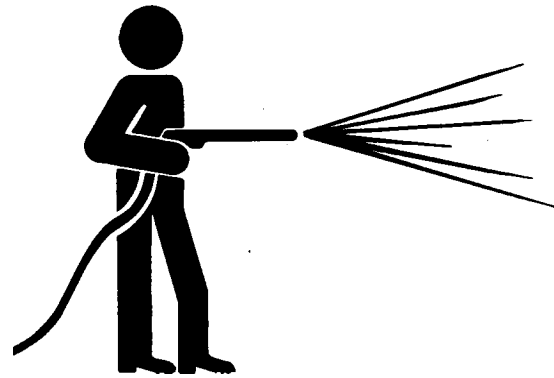
DX,WEAR -19-10SEP90

TS206 -UN-23AUG88

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.



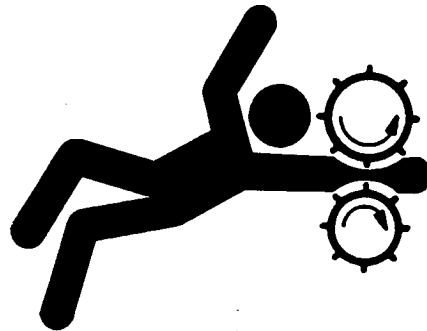
DX,CLEAN -19-04JUN90

T6642EJ -UN-18OCT88

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.



DX,LOOSE -19-04JUN90

TS228 -UN-23AUG88

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.



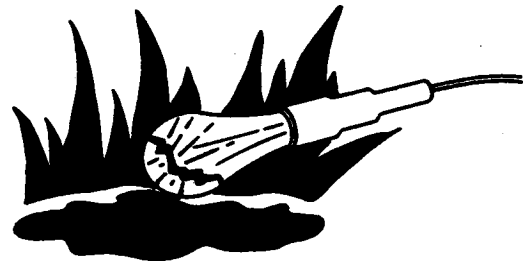
DX,AIR -19-04JUN90

TS220 -UN-23AUG88

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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.

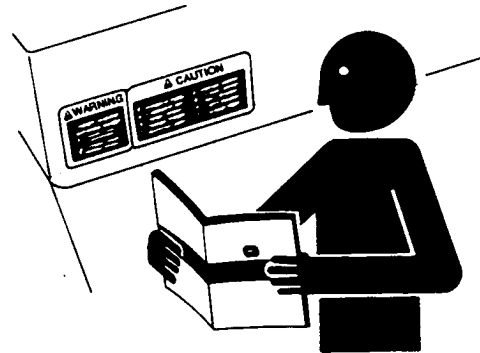


DX,LIGHT -19-04JUN90

TS223 -UN-23AUG88

REPLACE SAFETY SIGNS

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



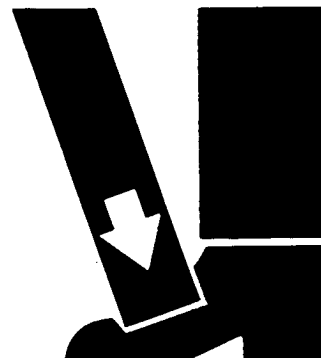
DX,SIGNS1 -19-04JUN90

TS201 -UN-23AUG88

USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



DX,LIFT -19-04JUN90

TS226 -UN-23AUG88

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REMOVE PAINT BEFORE WELDING OR HEATING

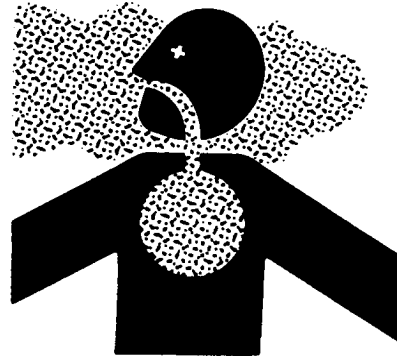
Avoid potentially toxic fumes and dust.

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

SERVICE TIRES SAFELY

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



DX,TIRECP -19-24AUG90

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-UN-12APR90
TS952

AVOID HARMFUL ASBESTOS DUST

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

Components in products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding material containing asbestos. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, apply a mist of oil or water on the material containing asbestos.

Keep bystanders away from the area.



DX,DUST -19-15MAR91

-UN-23AUG88
TS220

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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.

Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.



DX,SERV -19-03MAR93

TS218 -UN-23AUG88

USE PROPER TOOLS

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.



DX,REPAIR -19-04JUN90

TS779 -UN-08NOV89

DISPOSE OF WASTE PROPERLY

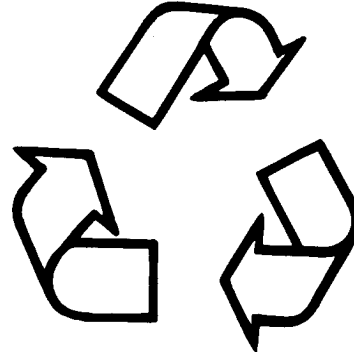
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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.



TS1133 -UN-26NOV90

DX,DRAIN -19-03MAR93

LIVE WITH SAFETY

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.



TS231 -19-07OCT88

DX,LIVE -19-25SEP92

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MACHINE SPECIFICATIONS—322 AND 330

	322	330
ENGINE		
Manufacturer	Yanmar	Yanmar
Model Number	3TG66UJ	3TN66UJ
Horsepower (SAEJ1349)	13.4 kW (18 hp)	12 kW (16 hp)
Torque	4.2 kg m (30.3 ft lbs)	4.2 kg m (30.3 ft lbs)
Engine Rated Speeds		
Fast Idle (No Load)	3500 rpm	3450 rpm
Low Idle (No Load)	1300 rpm	1300 rpm
Number of Cylinders	3	3
Crankshaft Alignment	Horizontal	Horizontal
Stroke/Cycle	4 Cycle	4 Cycle
Bore	66 mm (2.6 in.)	66 mm (2.6 in.)
Stroke	64.2 mm (2.5 in.)	64.2 mm (2.5 in.)
Displacement	658 cm ³ (40.1 cu in.)	658 cm ³ (40.1 cu in.)
Compression Ratio	8.7:1	22.4:1
Cooling	Liquid	Liquid
Coolant Capacity	2.8 L (3 U.S. qt)	2.8 L (3 U.S. qt)
Air Filter Type	Dry with Primary and Secondary Elements	Dry with Primary and Secondary Elements
Lubrication System	Full Pressure w/Filter	Full Pressure w/Filter
Crankcase Capacity (w/o Filter)	2.5 L (2.6 U.S. qt)	2.5 L (2.6 U.S. qt)
Oil Filter	Replaceable	Replaceable
Spark Plugs	NGK BPR4BS Champion RN11YC	N/A
FUEL SYSTEM		
Fuel Tank Location	Rear	Rear
Fuel Gauge	Standard	Standard
Fuel Tank Capacity	17 L (4.5 U.S. gal)	17 L (4.5 U.S. gal)
Fuel	85 Octane Unleaded	No.1 or No.2 Diesel
Fuel Pump Location	Frame	Frame
Fuel Pump Type	Electric	Electric
Fuel Delivery	Fixed Jet Carburetor	Indirect Injection
Injection Pump Type	N/A	In-Line Multi-Plunger
Fuel Shutoff	Electric Solenoid	Manual
ELECTRICAL SYSTEM		
Ignition	Electronic	N/A
Type of Starter	12 Volts, Solenoid	12 Volts, Solenoid
Charging System	Remote Alt. 20 amp	Remote Alt. 20 amp
Battery Type	BCI Group, U1	BCI Group, U1
Battery Voltage	12V	V
Battery Reserve Capacity @25 amp	44 minutes	44 minutes
Battery		
Cold Cranking amp @0°F	342 amp	342 amp
Headlights	Standard	Standard
Reflector/Tail Lights	Standard	Standard
Dash Indicator Lights	Standard	Standard
Operator Presence System	Standard	Standard
Hourmeter	Standard	Standard

Continued on next page.

MX,15911010,1--- 19-13JUL95

General Specifications/Machine Specifications

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	322	330
POWER TRAIN		
Transmission Type	Hydrostatic.....	Hydrostatic
Number of Speeds	Infinite.....	Infinite
Travel Speeds		
Forward	0—12.38 km/h.....	0—12.38 km/h
	(0—7.69 mph)	(0—7.69 mph)
Reverse	0—6.19 km/h.....	0—6.19 km/h
	(0—3.85 mph)	(0—3.85 mph)
Transmission Capacity (w/Filter)	6.1 L (13 U.S. pt).....	6.1 L (13 U.S. pt)
Trans. Oil Cooler	Optional.....	N/A
Trans. Oil Filter	Standard.....	Standard
Differential Lock	N/A.....	N/A
STEERING		
Type	Power, Hydrostatic.....	Manual
BRAKES		
Location	Rear Wheels.....	Rear Wheels
Individual Control	Standard.....	N/A
Type	Shoe and Drum.....	Shoe and Drum
Return-to-Neutral Braking	Standard.....	Standard
Parking	Yes.....	Yes
HYDRAULIC SYSTEM		
Type	Two-Function.....	Single-Function
	(One w/Float)	
Hydraulic Couplers	Two Sets.....	One Set
PTO		
Front	Standard.....	Standard
Rear	Optional.....	Optional
Type	Electric Clutch.....	Electric Clutch
Control	Elec. Switch on Dash.....	Elec. Switch on Dash
PTO rpm (No Load)		
Front	3500.....	3450
Rear	2000.....	2000
MOWER ATTACHMENT		
Compatibility	38, 46 and 50 Inch.....	38, 46 and 50 Inch
Lift System	Hydraulic.....	Hydraulic
WHEEL TREAD		
Front	813 mm (32 in.).....	813 mm (32 in.)
Rear		
Narrow	775 mm (30.5 in.).....	775 mm (30.5 in.)
Wide	834 mm (32.8 in.).....	834 mm (32.8 in.)

Continued on next page.

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General Specifications/Machine Specifications

	322	330
TIRES		
Standard Tires		
Front Turf	16 x 6.50-8, 2 PR.....	16 x 6.50-8, 2 PR
Rear Turf or Bar	23 x 10.50-12, 2 PR.....	23 x 10.50-12, 2 PR
Optional Tires		
Front (Turf)	16 x 6.50-8, 4 PR	16 x 6.50-8, 4 PR
Rear (Turf or Bar)	23 x 8.50-12, 2 PR.....	23 x 8.50-12, 2 PR
Inflation Pressure		
Front	41—110 kPa (6—16 psi) . . .	41—110 kPa (6—16 psi)
Rear	34—69 kPa (5—10 psi).....	34—69 kPa (5—10 psi)
SEAT		
Style	High-Back.....	High-Back
Suspension	2 Spring.....	2 Spring
Adjustment	Slide Rail.....	Slide Rail
DIMENSIONS		
Wheel Base	1.2 m (46 in.).....	1.2 m (46 in.)
Overall Length	1.8 m (69.5 in.).....	1.8 m (69.5 in.)
Overall Height	1.1 m (44.5 in.).....	1.1 m (44.5 in.)
Overall Width (max.)	1.1 m (43.3 in.).....	1.1 m (43.3 in.)
Overall Width (min.)	1.04 m (41 in.).....	1.04 m (41 in.)
Turning Radius		
Inside Rear Wheel	0.66 m (26 in.).....	0.66 m (26 in.)
Outside Front Wheel	2.0 m (80 in.).....	2.0 m (80 in.)
NET WEIGHT (No Fuel)	408 kg (900 lbs)	408 kg (900 lbs)
SHIPPING WEIGHT	445 kg (980 lbs)	445 kg (980 lbs)
<i>(Specifications and design subject to change without notice.)</i>		

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MACHINE SPECIFICATIONS—332 AND 430

	332	430
ENGINE		
Manufacturer	Yanmar.....	Yanmar
Model Number	3TN66UJ.....	3TNA72UJ
Horsepower (SAEJ1349)	12 kW (16 hp).....	15 kW (20 hp)
Torque	4.2 kg m (30.3 ft lbs).....	5.1 kg m (36.8 ft lbs)
Engine Rated Speeds		
Fast Idle (No Load)	3425 rpm.....	3400 rpm
Low Idle (No Load)	1400 rpm.....	1300 rpm
Number of Cylinders	3.....	3
Crankshaft Alignment	Horizontal.....	Horizontal
Stroke/Cycle	4 Cycle.....	4 Cycle
Bore	66 mm (2.6 in.).....	72 mm (2.84 in.)
Stroke	64.2 mm (2.5 in.).....	72 mm (2.84 in.)
Displacement	658 cm ³ (40.1 cu in.).....	879 cm ³ (53.6 cu in.)
Compression Ratio	22.4:1.....	21.6:1
Cooling	Liquid.....	Liquid
Coolant Capacity	2.8 L (3 U.S. qt).....	3.8 L (1 U.S. gal)
Air Filter Type	Dry with Primary and Secondary Elements.....	Dry with Primary and Secondary Elements
Lubrication System	Full Pressure w/Filter.....	Full Pressure w/Filter
Crankcase Capacity (w/o Filter)	2.5 L (2.6 U.S. qt).....	2.9 L (3.1 U.S. qt)
Oil Filter	Replaceable.....	Replaceable
FUEL SYSTEM		
Fuel Tank Location	Rear.....	Rear
Fuel Gauge	Standard.....	Standard
Fuel Tank Capacity	17 L (4.5 U.S. gal).....	24.6 L (6.5 U.S. gal)
Fuel	No.1 or No.2 Diesel.....	No.1 or No.2 Diesel
Fuel Pump Location	Frame.....	Frame
Fuel Pump Type	Electric.....	Electric
Fuel Delivery	Indirect Injection.....	Indirect Injection
Injection Pump Type	In-Line Multi-Plunger.....	In-Line Multi-Plunger
Fuel Shutoff	Electric Solenoid.....	Electric Solenoid
ELECTRICAL SYSTEM		
Ignition	N/A.....	N/A
Type of Starter	12 Volts, Solenoid.....	12 Volts, Solenoid
Charging System		
Early Machines	Remote Alt. 20 amp.....	Remote Alt. 35 amp
Later Machines	Remote Alt. 20 amp.....	Remote Alt. 40 amp
Battery Type	BCI Group, U1.....	BCI Group, 22F
Battery Voltage	12V.....	V
Battery Reserve Capacity @25 amp	44 minutes.....	102 minutes
Battery		
Cold Cranking amp @0°F	342 amp.....	491 amp
Headlights	Standard.....	Standard
Reflector/Tail Lights	Standard.....	Standard
Dash Indicator Lights	Standard.....	Standard
Operator Presence System	Standard.....	Standard
Hourmeter	Standard.....	Standard

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General Specifications/Machine Specifications

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	332	430
POWER TRAIN		
Transmission Type	Hydrostatic	Hydrostatic, 2 Ranges
Number of Speeds	Infinite	Infinite
Travel Speeds		
Forward	0—12.38 km/h (0—7.69 mph)	N/A
Reverse	0—6.19 km/h (0—3.85 mph)	N/A
Forward, High	N/A	0—16.09 km/h (0—10 mph)
Forward, Low	N/A	0—9.35 km/h (0—5.80 mph)
Reverse, High	N/A	0—6.44 km/h (0—4 mph)
Reverse, Low	N/A	0—4.66 km/h (0—2.90 mph)
Transmission Capacity (w/Filter)	6.1 L (13 U.S. pt)	7.1 L (15 U.S. pt)
Trans. Oil Cooler	Optional	Standard
Trans. Oil Filter	Standard	Standard
Differential Lock	N/A	Standard
STEERING		
Type	Power, Hydrostatic	Power, Hydrostatic
BRAKES		
Location	Rear Wheels	Rear Wheels
Individual Control	Standard	Standard
Type	Shoe and Drum	Shoe and Drum
Return-to-Neutral Braking	Standard	Standard
Parking	Yes	Yes
HYDRAULIC SYSTEM		
Type	Two-Function (One w/Float)	Three-Function (One w/Float)
Hydraulic Couplers	Two Sets	Two Sets
PTO		
Front	Standard	Standard
Rear	Optional	Optional
Type	Electric Clutch	Electric Clutch
Control	Elec. Switch on Dash	Elec. Switch on Dash
PTO rpm (No Load)		
Front	3425	3400
Rear	2000	2000
MOWER ATTACHMENT		
Compatibility	38, 46 and 50 Inch	50 and 60 Inch, 260 Rotary
Lift System	Hydraulic	Hydraulic

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General Specifications/Machine Specifications

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332

430

WHEEL TREAD

Front	813 mm (32 in.)	914 mm (36 in.)
Rear		
Narrow	775 mm (30.5 in.)	818 mm (32 in.)
Wide	834 mm (32.8 in.)	980 mm (38.6 in.)

TIRES

Standard Tires

Front Turf	16 x 6.50-8, 2 PR	18 x 8.50-8, 4 PR
Rear Turf or Bar	23 x 10.50-12, 2 PR	26 x 12.00-12, 2 PR

Optional Tires

Front (Turf)	16 x 6.50-8, 4 PR	N/A
Rear (Turf or Bar)	23 x 8.50-12, 2 PR	N/A

Inflation Pressure

Front	41—110 kPa (6—16 psi)	41—152 kPa (6—22 psi)
Rear	34—69 kPa (5—10 psi)	34—69 kPa (5—10 psi)

SEAT

Style	High-Back/Tilt	High-Back/Tilt
Suspension	2 Spring	Deluxe Seat Suspension
Adjustment	Slide Rail	Slide Rail

DIMENSIONS

Wheel Base	1.2 m (46 in.)	1.3 m (52 in.)
Overall Length	1.8 m (69.5 in.)	2.13 m (84 in.)
Overall Height	1.1 m (44.5 in.)	1.22 m (48.5 in.)
Overall Width (max.)	1.1 m (43.3 in.)	1.31 m (51.5 in.)
Overall Width (min.)	1.04 m (41 in.)	1.14 m (45 in.)
Turning Radius		
Inside Rear Wheel	0.66 m (26 in.)	0.66 m (26 in.)
Outside Front Wheel	2.0 m (80 in.)	2.2 m (86 in.)

NET WEIGHT (No Fuel) 408 kg (900 lbs)..... 533 kg (1116 lbs)

SHIPPING WEIGHT 445 kg (980 lbs)..... 567 kg (1219 lbs)

(Specifications and design subject to change without notice.)

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REPAIR SPECIFICATIONS

Item	Specifications
ENGINE	
For all repair specifications—Use CTM12 (322) and CTM3 (330, 332 and 430)	
Engine Mounting Cap Screw/Nut Torque	49 N·m (36 lb-ft)
Drive Shaft to Engine Cap Screw Torque	
330 and 430.....	27 N·m (20 lb-ft)
322 and 332.....	37 N·m (27 lb-ft)
Drive Shaft Universal Joint Cap Screw Torque.....	60 N·m (45 lb-ft)
PTO Belt Tension Spring Length (430)	35 mm (1.38 in.)
Fuel/Water Separator Cap Screw Torque (430).....	20 N·m (180 lb-in.)
ELECTRICAL	
Front PTO Clutch-to-Crankshaft Cap Screw Torque.....	47 N·m (35 lb-ft)
PTO Clutch Armature to Rotor Clearance	0.46 mm (0.018 in.)
PTO Belt Tension Spring Length (430)	35 mm (1.380 in.)
POWER TRAIN	
Transmission	
Charge Pump-to-Transmission Cap Screw Torque	70 N·m (52 lb-ft)
Transmission Cover Bearing Installation Height	3 mm (0.118 in.) above housing surface
Center Section-to-Housing Cap Screw Torque.....	35 N·m (26 lb-ft)
Transmission-to-Differential Cap Screw Torque	45 N·m (33 lb-ft)
Axle Housing-to-Frame Cap Screw Torque	100 N·m (75 lb-ft)
Brake Rod Spring Length	42 mm (1.650 in.)
Differential-to-Frame Support Cap Screw Torque.....	61 N·m (45 lb-ft)
Swashplate Control Arm-to-Control Shaft Nut Torque.....	60 N·m (44 lb-ft)
Drive Shaft Clamping Yoke-to-Transmission Pump Shaft Cap Screw Torque	60 N·m (44 lb-ft)
Differential	
Case and Cover Oil Groove Depth (Minimum).....	0.25 mm (0.010 in.)
Carrier Cap Screw Torque	53 N·m (39 lb-ft)
Cover-to-Case Cap Screw Torque	23 N·m (204 lb-in.)
Axle Housing	
Differential Seal Depth	3 mm (0.118 in.) below differential surface
Axle Housing-to-Differential Cap Screw Torque	81 N·m (60 lb-ft)
Brake Plate-to-Axle Housing Cap Screw Torque.....	68 N·m (50 lb-ft)
Axle Housing-to-Frame Cap Screw Torque	100 N·m (75 lb-ft)
Brake Rod Spring Length	42 mm (1.650 in.)
Brake Drum Nut Torque.....	88 N·m (65 lb-ft)
Rear Wheel Cap Screw Torque	70 N·m (52 lb-ft)
Drive Shaft—322 and 332	
Isolator-to-Engine Cap Screw Torque	37 N·m (27 lb-ft)
Drive Shaft Cap Screws and Lock Nut Torque	
Flange-to-Isolator.....	27 N·m (20 lb-ft)
Clamping Yoke-to-Transmission Pump Shaft.....	60 N·m (44 lb-ft)
Drive Shaft—330	
Isolator-to-Engine Cap Screw Torque	27 N·m (20 lb-ft)
Drive Shaft Cap Screws and Lock Nut Torque	
Flange-to-Isolator.....	27 N·m (20 lb-ft)
Clamping Yoke-to-Transmission Pump Shaft.....	60 N·m (44 lb-ft)

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Item	Specifications
POWER TRAIN, continued	
Drive Shaft—430	
Flange-to-Engine Cap Screw Torque	27 N·m (20 lb-ft)
Clamping Yoke-to-Transmission Pump Shaft Cap Screw Torque	60 N·m (44 lb-ft)
Tube Yoke Shaft-to-Bushing Yoke Tube Lock Nut Torque.....	3 N·m (25 lb-in.)
STEERING AND BRAKES	
Steering—330	
Gearbox Mounting Cap Screw Torque.....	95 N·m (70 lb-ft)
Steering Wheel-to-Shaft Nut Torque	15 N·m (133 lb-in.)
Pitman Arm Nut Torque	224 N·m (165 lb-ft)
Preload Adjuster Maximum End Clearance	0.05 mm (0.002 in.)
Side Cover-to-Gearbox Housing Cap Screw Torque.....	40 N·m (30 lb-ft)
Worm Bearing Preload Rolling Torque.....	0.60—1.0 N·m (5—8 lb-in.)
Over-Center Preload Rolling Torque	0.50—1.20 N·m (4—10 lb-in.)
Preload Adjuster Lock Nut Torque	34 N·m (25 lb-ft)
Steering Shaft Universal Joint-to-Worm Shaft Cap Screw Torque.....	24 N·m (212 lb-in.)
Steering—322, 332 and 430	
Steering Wheel-to-Shaft Nut Torque	15 N·m (133 lb-in.)
Rotor-to-Stator Maximum Allowable Clearance.....	0.08 mm (0.003 in.)
Steering Tube Bushing Depth.....	2.5 mm (0.100 in.) below top of tube
Commutator Cover-to-Commutator Screw Torque.....	1.4 N·m (12 lb-in.)
Port Cover Nut Torque.....	30 N·m (22 lb-ft)
Check Ball Plug Torque (Early Version)	14 N·m (124 lb-in.)
Steering Cylinder Mounting Nut Torque.....	163 N·m (120 lb-ft)
Brakes	
Brake Plate-to-Axle Housing Cap Screw Torque.....	68 N·m (50 lb-ft)
Axle Housing-to-Frame Cap Screw Torque	100 N·m (75 lb-ft)
Brake Rod Spring Length	42 mm (1.650 in.)
Brake Drum-to-Axle Nut Torque	88 N·m (65 lb-ft)
Rear Wheel Cap Screw Torque	70 N·m (52 lb-ft)
HYDRAULICS	
Single-Spool Valve	
Spool Screw Torque.....	4 N·m (35 lb-in.)
Spool Cap-to-Body Screw Torque	4 N·m (35 lb-in.)
Check Valve Plug Torque	31 N·m (23 lb-ft)
Two-Spool Valve	
Versions One and Two	
Spool Cap-to-Body Screw Torque	31 N·m (23 lb-ft)
Versions Three and Four	
Spool Screw and Detent Torque.....	4 N·m (35 lb-in.)
Spool Cap-to-Body Screw Torque	4 N·m (35 lb-in.)
Check Valve Plug Torque	31 N·m (23 lb-ft)
Three-Spool Valve	
Spool Screws and Detent Torque	4 N·m (35 lb-in.)
Spool Cap-to-Body Screw Torque	4 N·m (35 lb-in.)
Check Valve Plug Torque	31 N·m (23 lb-ft)

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