

# 4055, 4255, and 4455 Tractors Repair

For complete service information also see:

4055, 4255, and 4455 Tractors

Operation and Tests . . . . .	TM1459
6076 Engine . . . . .	CTM6
Radial Piston Pumps . . . . .	CTM7
Engine Accessories . . . . .	CTM11
MFWD Axles, 1100 Series . . . . .	CTM17

John Deere Waterloo Works  
TM1458 (09JUL01)

LITHO IN U.S.A.  
ENGLISH

## 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 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, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

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.

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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.*

TM1458-19-09JUL01

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A John Deere ILLUSTRATION™ Manual

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# Section 10 GENERAL INFORMATION

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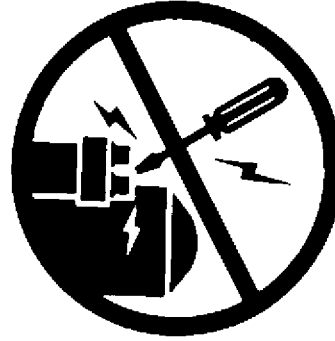
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### PREVENT MACHINE RUNAWAY

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 -19-04JUN90

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TS177

### 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

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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).



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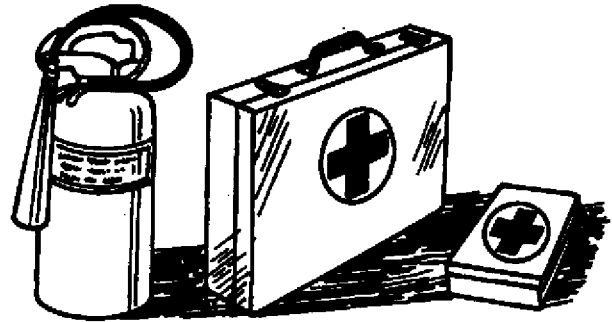
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## PREPARE FOR EMERGENCIES

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.



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DX,FIRE2 -19-04JUN90

## 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:

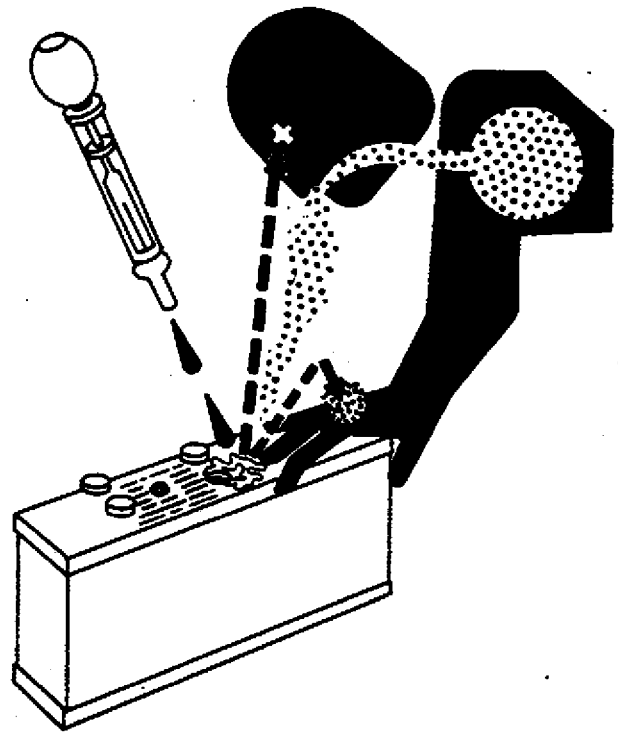
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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 10—15 minutes. Get medical attention immediately.

If acid is swallowed:

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



TS203  
-JUN-23AUG88

DX,POISON -19-04JUN90

### 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.



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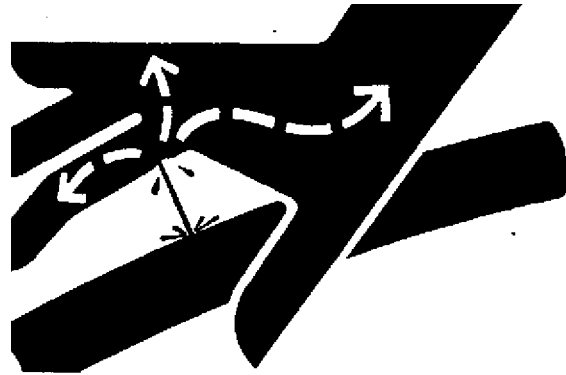
### AVOID HIGH-PRESSURE FLUIDS

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 may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.



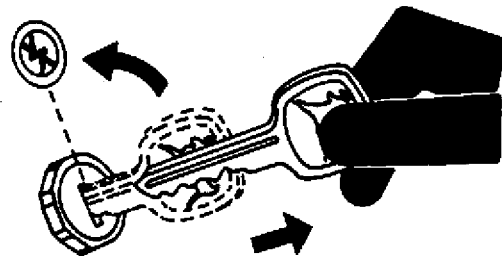
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### PARK MACHINE SAFELY

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.



DX,PARK -19-04JUN90

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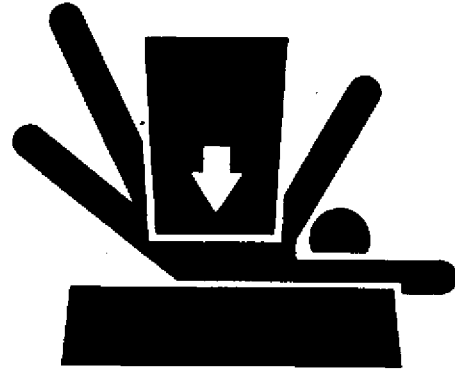


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### SUPPORT MACHINE PROPERLY

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

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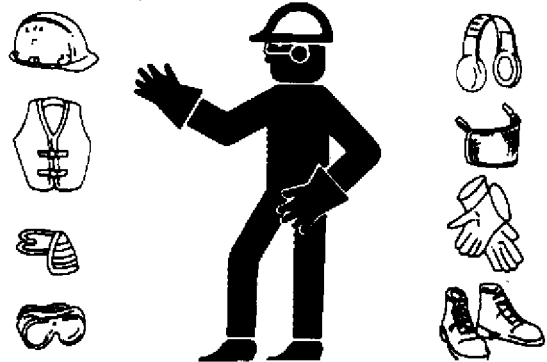
### WEAR PROTECTIVE CLOTHING

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

## PROTECT AGAINST HIGH PRESSURE SPRAY

Spray from high pressure nozzles can penetrate the skin and cause serious injury. Keep spray from contacting hands or body.

Any high pressure spray injected into the skin must be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene may result. Doctors unfamiliar with this type of injury may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.



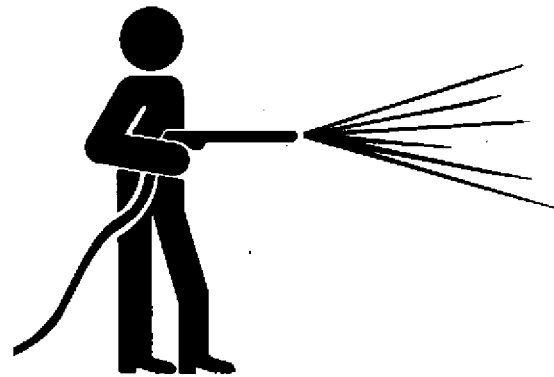
DX,SPRAY -19-04JUN90

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TS443

## 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.



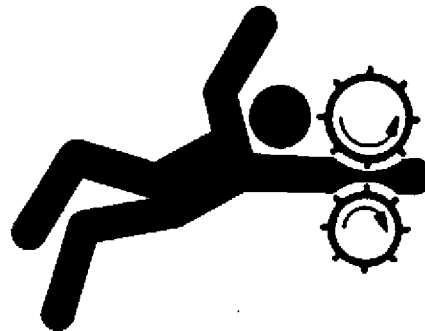
DX,CLEAN -19-04JUN90

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## 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.



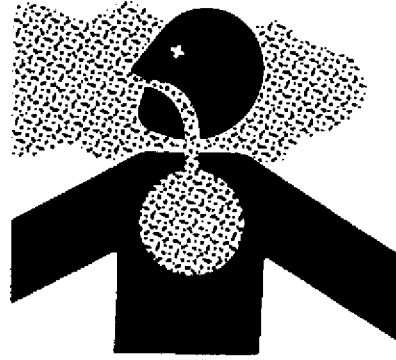
DX,LOOSE -19-04JUN90

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TS228

### 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

### 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.

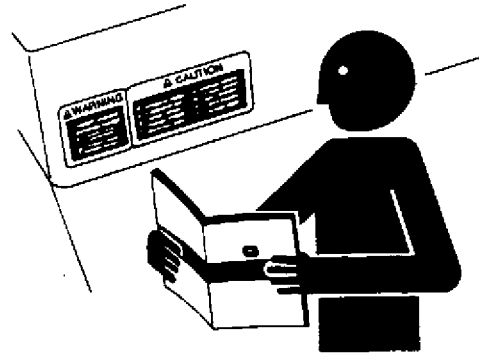


DX,LIGHT -19-04JUN90

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### REPLACE SAFETY SIGNS

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



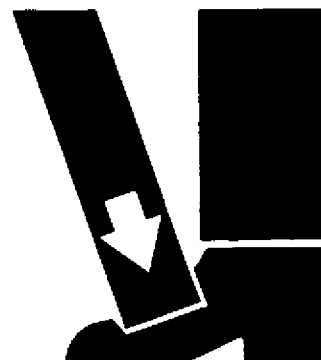
DX,SIGNS1 -19-04JUN90

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### 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.



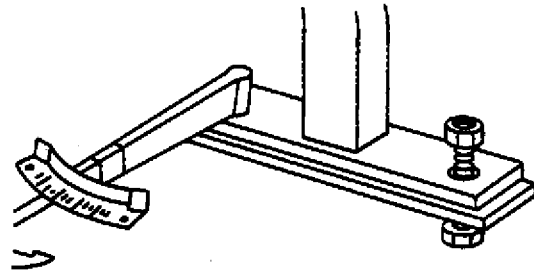
DX,LIFT -19-04JUN90

TS226 -UN-23AUG88

## KEEP ROPS INSTALLED PROPERLY

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

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. A damaged ROPS should be replaced, not reused.



DX,ROPS3 -19-04JUN90

TS212 -UN-23AUG88

## SERVICE TIRES SAFELY

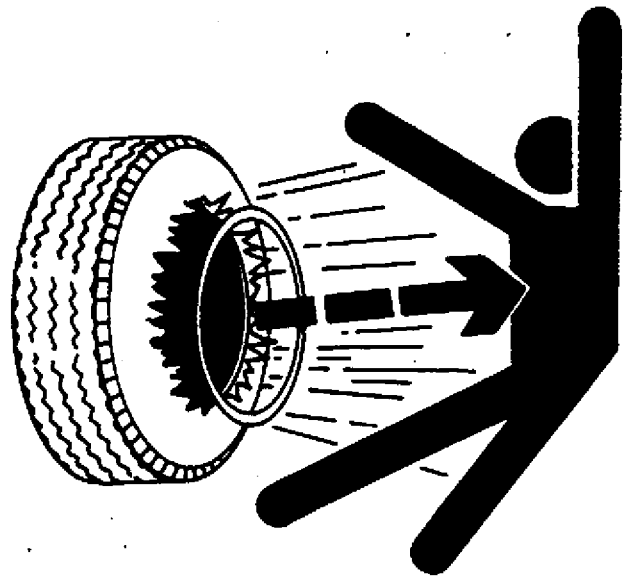
Explosive separation of a tire and rim parts can cause serious injury or death.

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,RIM -19-24AUG90

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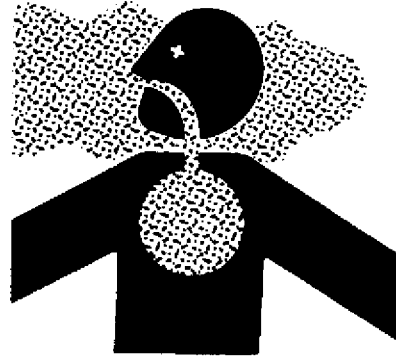
## AVOID HARMFUL ASBESTOS DUST

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 of asbestos containing materials. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, wet the asbestos containing materials with a mist of oil or water.

Keep bystanders away from the area.



TS220 -JUN-23AUG88

DX,DUST -19-27AUG90

## 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.



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DX,TORCH -19-05OCT90

## REMOVE PAINT BEFORE WELDING OR HEATING

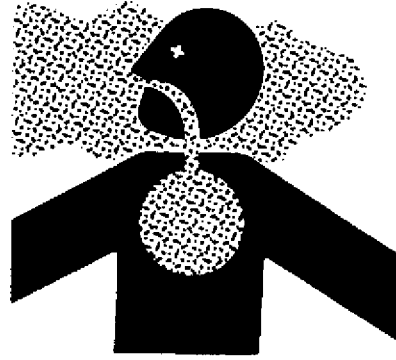
Avoid potentially toxic fumes and dust.

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.



DX,PAINT -19-04JUN90

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## 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

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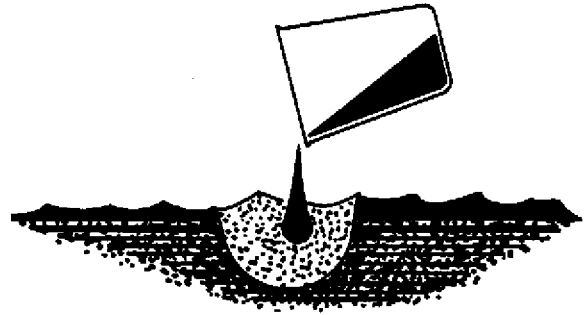
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### DISPOSE OF FLUIDS PROPERLY

Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, find out the proper way to dispose of waste from your local environmental agency.

Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

DO NOT pour oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, and other harmful waste.



DX,DRAIN -19-05JUN90

TS222 -UN-23AUG88

### LIVE WITH SAFETY

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



DX,LIVE -19-04JUN90

TS231 -19-07OCT88

**GENERAL SPECIFICATIONS**

**POWER:**

PTO (Factory observed at 2200 rpm)

4055	105 hp (78.3 kW)
4255	120 hp (89.5 kW)
4455	140 hp (104.4 kW)

**ENGINE:**

Type	Diesel
Aspiration	Turbocharged
Cylinders	In-line 6
Slow idle speed	850 rpm
Governed speed range	800—2400 rpm
Operating speed range	1500—2200 rpm
Bore and stroke	4.56 x 4.765 in. (115.8 x 120.7 mm)
Compression ratio	16.0:1
Displacement	466 cu. in. (7.6 L)
Firing order	1-5-3-6-2-4
Valve clearance	
Intake	0.015 in. (0.38 mm)
Exhaust	0.020 in. (0.51 mm)
Lubrication system	Full Pressure-full Flow Filtration

**HYDRAULIC SYSTEM:**

Type	Closed-center, Pressure Compensating
Pump	8-Piston, Variable Displacement
Pump displacement	3 cu. in. (50 cm <sup>3</sup> )
Standby pressure	2530 psi (17 500 kPa) (175 bar)

**CAPACITIES:**

Fuel tank	65 gal (246 L)
Cooling system	27 qt (25.6 L)
Crankcase with filter	18 qt (17.0 L)
Transmission-hydraulic system	
Power Shift	13.5 gal (51 L)
Power Shift with MFWD	15.9 gal (60 L)
QUAD-RANGE	16 gal (60.5 L)
QUAD-RANGE with MFWD	17.2 gal (65.1 L)
Mechanical-Front-Wheel-Drive	
Wheel Hubs	2 qt (1.9 L)
Axle Housing	12 qt (11.4 L)

RX14581010,1 -19-09OCT90



**DIMENSIONS (Standard Tires):**

<b>WHEELBASE</b>	
Two-Wheel Drive . . . . .	2710 mm (106.7 in.)
MFWD . . . . .	2675 mm (105.3 in.)
Hi-Crop . . . . .	2715 mm (107 in.)
<b>LENGTH (less hitch and drawbar)</b>	
Two-Wheel Drive . . . . .	4028 mm (158.6 in.)
MFWD . . . . .	4023 mm (158.4 in.)
Hi-Crop . . . . .	4034 mm (159 in.)
<b>OVERALL WIDTH (axle length)</b>	
Regular axle—4055, 4255, 4455 . . . . .	2438 mm (96 in.)
Long axle—4055 and 4255 . . . . .	2870 mm (113 in.)
Long axle—4455 . . . . .	2769 mm (109 in.)
Extra Long axle—4455 . . . . .	3023 mm (119 in.)
<b>OVERALL HEIGHT (top of SOUND-GARD body)</b>	
Two-Wheel Drive . . . . .	2957 mm (116.4 in.)
MFWD . . . . .	2959 mm (116.5 in.)
Hi-Crop . . . . .	3282 mm (129.3 in.)

**SHIPPING WEIGHT (average):**

With QUAD-RANGE transmission and most popular wheel equipment, less SOUND-GARD

4055 . . . . .	5029 kg (11089 lb)
4255 . . . . .	5331 kg (11755 lb)
4455 . . . . .	5780 kg (12745 lb)

With Power Shift transmission and most popular wheel equipment, with SOUND-GARD

4055 . . . . .	5665 kg (12489 lb)
4255 . . . . .	5966 kg (13155 lb)
4455 . . . . .	6415 kg (14145 lb)
Hi-Crop with standard equipment . . . . .	6063 kg (13369 lb)

## ABBREVIATIONS

Abbreviations are used in place of some words.

Dk—Dark

ECU—Electronic Control Unit

FWD—Front Wheel Drive

ID—Inside Diameter

Lt—Light

MFWD—Mechanical Front Wheel Drive

OD—Outside Diameter

PST—Power Shift Transmission

PTO—Power Take-Off

QRT—QUAD-RANGE™ Transmission

ROPS—Roll-Over Protective Structure

SCV—Selective Control Valve

SGB—SOUND-GARD Body

SMV—Slow Moving Vehicle

RX14581010,3 -19-09OCT90

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