

# **240, 260, and 270 Rotary Disk Mowers**

**John Deere Ottumwa Works  
TM1367 (26NOV01)**

LITHO IN U.S.A.  
ENGLISH

# Introduction

## FOREWORD

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

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



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

Technical manuals are divided in two parts: repair and 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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**Have any questions please write to me:  
[admin@servicemanualperfect.com](mailto:admin@servicemanualperfect.com)**

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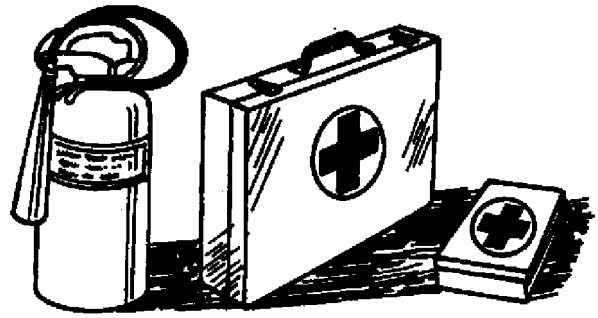
# Safety

## 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

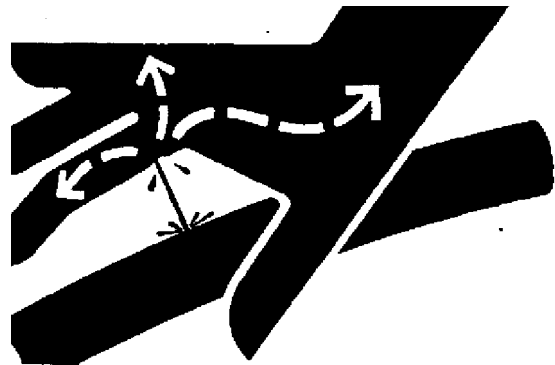
## AVOID HIGH-PRESSURE FLUIDS

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.



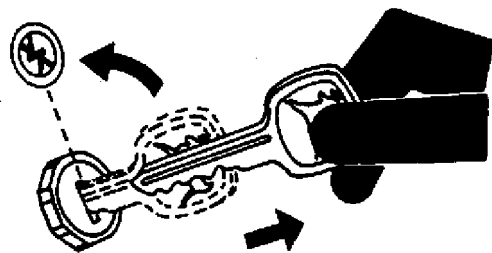
DX,FLUID -19-03MAR93

X9811  
-UN-23AUG88

## 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.



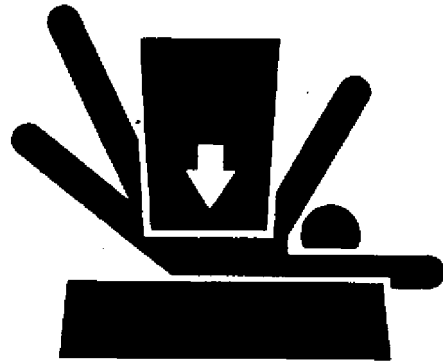
DX,PARK -19-04JUN90

T5230  
-UN-24MAY88

### 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

-UN-23AUG88  
TS229

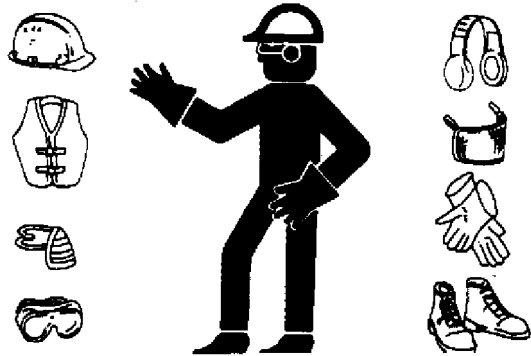
### WEAR PROTECTIVE CLOTHING

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.



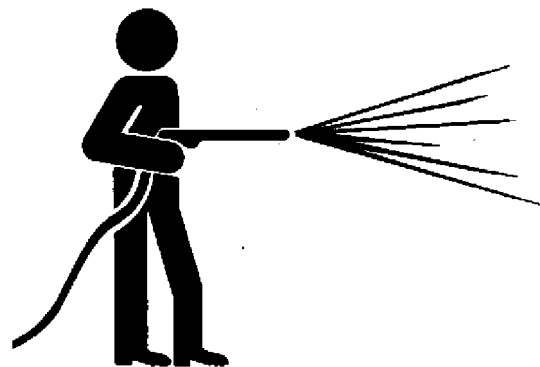
DX,WEAR -19-10SEP90

-UN-23AUG88  
TS206

### 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.



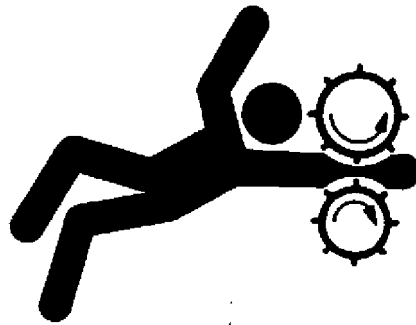
DX,CLEAN -19-04JUN90

-UN-18OCT88  
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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

TS228 -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.

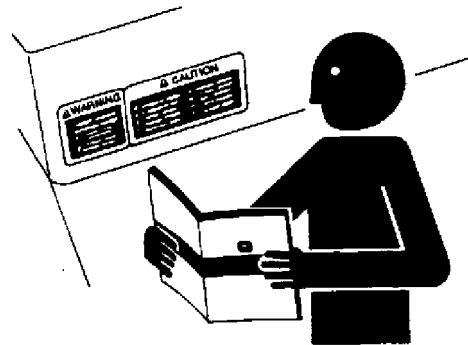


DX, LIGHT -19-04JUN90

TS223 -UN-23AUG88

### REPLACE SAFETY SIGNS

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



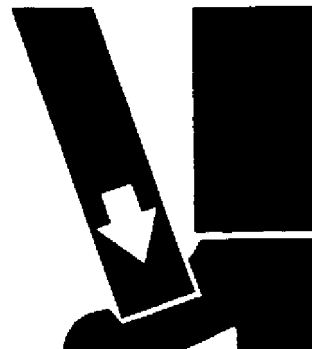
DX, SIGNS1 -19-04JUN90

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



## REMOVE PAINT BEFORE WELDING OR HEATING

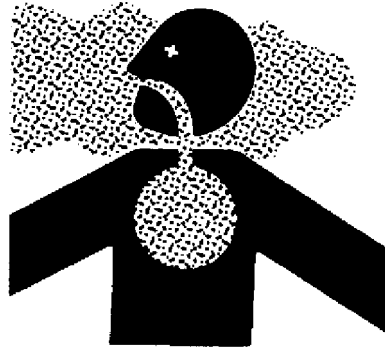
Avoid potentially toxic fumes and dust.

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 -19-03MAR93

TS220 -UN-23AUG68

## 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.



DX,TORCH -19-03MAR93

TS953 -UN-15MAY90

## 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

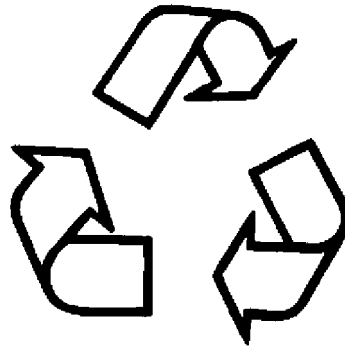
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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 -JUN-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

# Specifications

## ROTARY DISK MOWER SPECIFICATIONS

**Number of Disks:**

240	.....	4
260	.....	6
270	.....	7

**Controls:**

Optional (240)	.....	Manual
Standard (260, 270)	.....	Hydraulic

**Size of Tractor Recommended:**

240	.....	26 kW (35 hp)
260	.....	33 kW (45 hp)
270	.....	41 kW (55 hp)

**Weight:**

240	.....	345 kg (759 lb)
260	.....	433 kg (953 lb)
270	.....	518 Kg (1140 lb)

**Disk Speed**

(@540 rpm) ..... 3030 rpm

**Width:**

240	.....	1.60 m (5 ft 3 in.)
260	.....	2.40 m (7 ft 10 in.)
270	.....	2.54 m (10 ft)

**PTO Hookup:**

Model	Manufacturer	RPM	Splines	Type
240	Bondioli	540	6	3-Lobe
260, 270	Walterscheid	540	6	Shaped Tube

**Gear Case Capacities:**

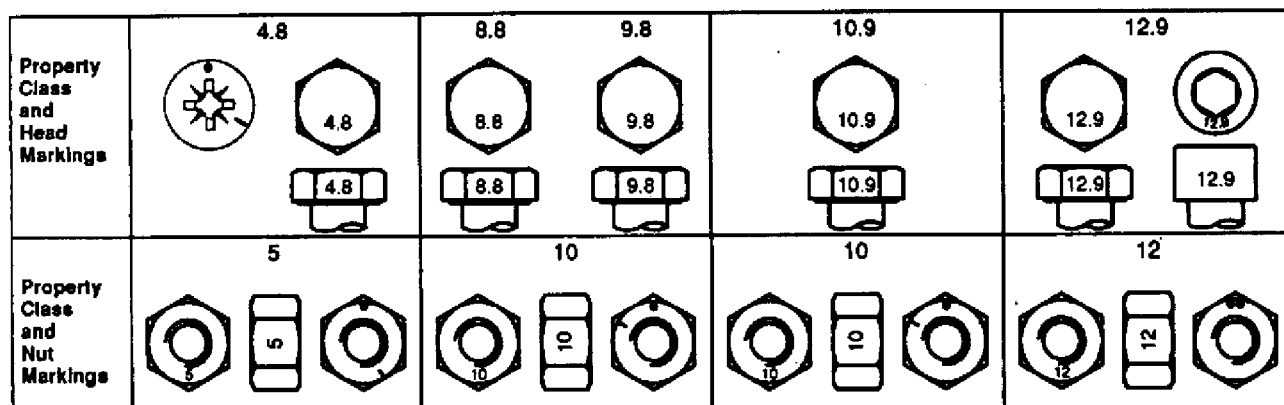
Angle Drive Gear Case	.....	1/4 L (1/2 pt)
Cutterbar Gear Case		
240	.....	1-3/4 L (3-3/4 pt)
260, 270	.....	2-1/4 L (4-3/4 pt)

**Breakaway Latch:**

240	.....	76 mm (3 in.)
260, 270	.....	95 mm (3-3/4 in.)

E05,1367.CSG1 -19-02NOV95

### METRIC BOLT AND CAP SCREW TORQUE VALUES



TS1163 -19-04MAR91

Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>	
	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to the strength of the original.

<sup>a</sup> "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

# Troubleshooting

## PTO HOOKUP DIFFICULTIES

Symptom	Problem	Solution
<b>Hookup Will Not Telescope Correctly</b>	Tractor drawbar not installed correctly.	Check dimensions. Install drawbar correctly. See Attaching and Detaching in the operator's manual.
	Hookup bent or twisted.	Straighten or replace.
<b>Hookup Vibrates Excessively</b>	Hookup bent or twisted.	Straighten or replace.
	Hookup cross bearings worn.	Replace bearings. See PTO Hookups.
<b>Hookup Will Not Stay Engaged</b>	Splines on yoke worn.	Replace yoke. See PTO Hookups.

EX,1367,CSG2 -19-02NOV95

## **GEAR CASE DIFFICULTIES**

<b>Symptom</b>	<b>Problem</b>	<b>Solution</b>
<b>Gear Case Noisy</b>	Lack of lubricant.	Check and add fluid. See Check And Fill Gear Case.
	Bearings worn or damaged.	Replace bearings. See Gear Case.
	Gear teeth excessively worn or damaged.	Check tooth contact and backlash. See Assemble Gear Case.
	Shim washer worn allowing excessive end play.	Check tooth contact and backlash. See Assemble Gear Case.
<b>Gear Case Excessively Hot</b>	Lack of lubricant.	Check and add fluid. See Check and Fill Gear Case.
	Defective bearings.	Replace bearings. See Gear Case.
	Oil level too high.	Operate with oil level at fill plug hole.
	Bearings not installed correctly.	Check gear case assembly. See Gear Case.
<b>Leaking Oil</b>	Worn oil seals.	Replace seals. See Gear Case.
	Missing or defective vent.	Replace vent.
	Leaking cover gaskets.	Replace gaskets.
	Too much lubricant in gear case.	Drain to correct level. See Check and Fill Gear Case.
<b>Gears Noisy or Wear Prematurely</b>	Lack of lubrication.	Add oil to fill plug hole. See Check and Fill Gear Case.

O5TRS.CG1 -19-02NOV95

## CUTTERBAR AND DISK DIFFICULTIES

Symptom	Problem	Solution
<b>Disks Contact Each Other</b>	Disks not positioned correctly on pinion gear splines.	Remove disks and reposition with ovals at 90 degrees to each other. See Rotating Disks.
	Pinion gear timing marks or spline positions incorrectly installed.	Reset pinion gears. See Remove Pinion Shaft.
<b>Cutterbar Excessively Hot</b>	Oil level too low or incorrect grade of oil.	Drain and refill cutterbar. See Lubrication and Maintenance section in the operator's manual.
	Oil level too high.	Drain excess oil from cutterbar.
	Relief valve plugged.	Remove valve and clean.
	Gear case pinion gear seal worn. This leaks oil from gear case to cutterbar.	Replace pinion gear seal. Drain cutterbar oil. Refill with oil. See Remove Pinion Shaft.
<b>Excessive Cutterbar Noise</b>	Oil level too low or incorrect grade of oil.	Drain and refill cutterbar. See Lubrication and Maintenance section in the operator's manual.
	Bearings or gear teeth worn or damaged.	Replace worn bearings or gears. See Cutterbar.

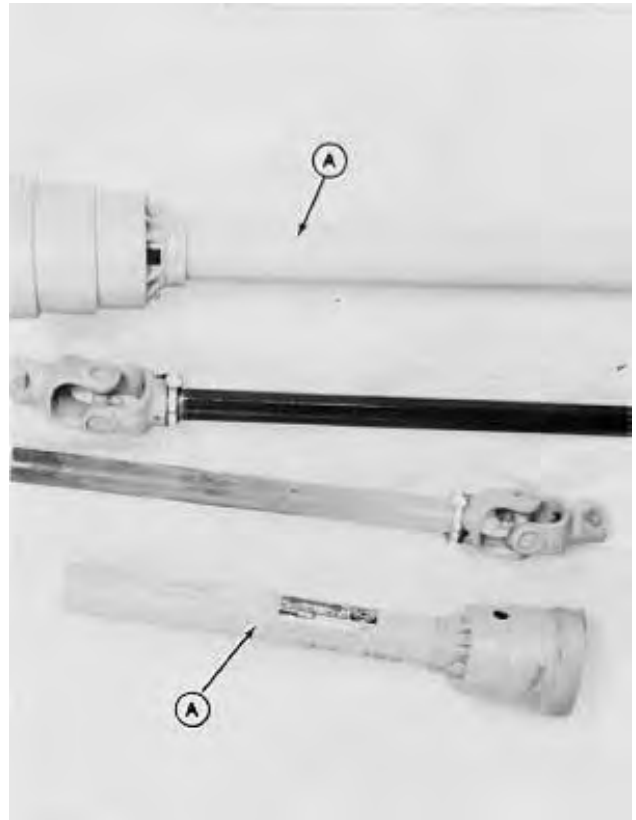
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# PTO Hookup

## DISASSEMBLE PTO HOOKUP

1. Remove hookup and the halves.
2. Remove both shields (A).



E05,1000,AV -19-02NOV95

E28425 -UN-21SEP88

3. Remove snap rings (A).
4. If snap rings stick, loosen by tapping lightly on ends of bearings with a soft brass hammer or brass rod.



E05,1000,AW -19-26AUG86

E28426 -UN-21SEP88

5. Position joint in an open vise with each ear of one yoke supported by a vise jaw.
6. With a soft hammer or mallet, strike the top ear of the unsupported yoke. This will drive the top bushing outward approximately 9.5 mm (3/8 in.).



E05,1000,AX -19-26AUG86

E19272 -UN-04OCT88

## PTO Hookup

7. Clamp loosened bearing in vise and drive yoke off.
8. Repeat this procedure for removing bearing directly opposite the one just removed.



E19273  
-UN-04OCT88

E05,1000,AY -19-26AUG86

9. To remove remaining two bushings, support cross as shown making certain that vise jaws are covered with brass protectors. By striking yoke ear, the remaining bushings can be removed by repeating procedure in step 6.
10. Disassemble rear section using same procedure as front section.



E19274  
-UN-04OCT88

E05,1000,AZ -19-26AUG86

## INSPECT HOOKUP

- Clean rust, dirt and paint from cap holders.
- Replace joint cross if worn.
- Check tube for roughness, nicks or pitting of surface.
- Replace joint bearings if worn.
- Replace lock pins if cracked or rusted.

E05,1000,BA -19-02NOV95