

John Deere 1424 Mower-Conditioner



JOHN DEERE

TECHNICAL MANUAL
John Deere 1424
Mower-Conditioner

TM1264 (01AUG82) English

TM1264 (01AUG82)

LITHO IN U.S.A. (REVISED)
ENGLISH



1424 MOWER-CONDITIONER TECHNICAL MANUAL TM-1264 (AUG-82)

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INTRODUCTION

This technical manual is part of a twin concept of service:

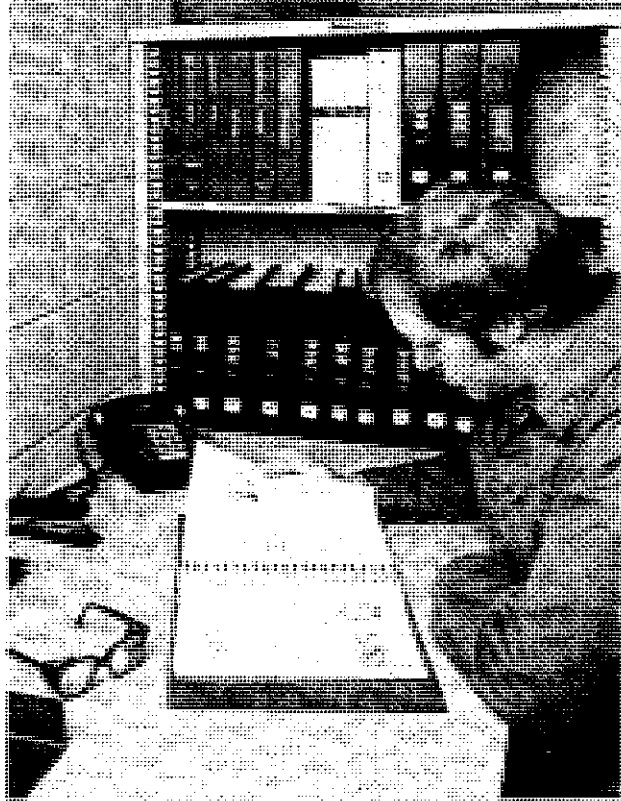
FOS Manuals — for reference

Technical Manuals — for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) Manuals cover basic theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new people and for reference by experienced technicians.

Technical Manuals are *concise* service guides for a *specific* machine. Technical Manuals are on-the-job guides containing only the vital information needed by an experienced technician.



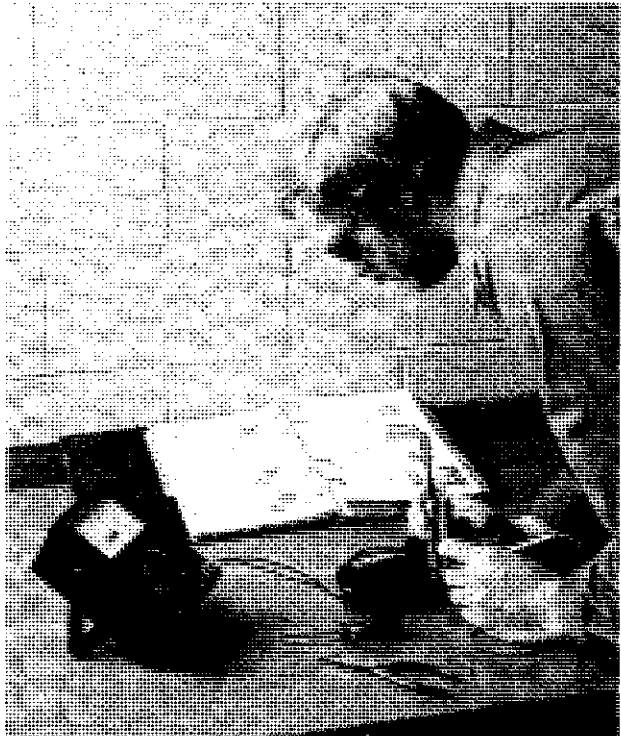
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FEATURES OF THIS TECHNICAL MANUAL

- John Deere ILLUSTRATION format emphasizing more detailed pictures and fewer words.
- Instructions and illustrations grouped together in easy-to-use modules.
- Removal and installation groups preceding some repair groups. These groups show how to remove and install components from the machine rather than from major components. They also show how to acquire access to major components of a machine.
- *Exploded views showing parts relationship.*

This technical manual was planned and written for you — an experienced technician. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.



RW5563/0000/ZC/200882

Section 10 GENERAL

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SAFETY MESSAGES



This safety alert symbol and the word **CAUTION** identify important safety messages in this manual and on the platform. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

1005/ZE/200882

IMPORTANT

The **IMPORTANT** message identifies potential problems which may cause consequential damage to the platform. Following the recommended procedure will instruct the technician how to avoid the problem.

1005/ZF/200882

NOTES

The word *NOTE* is followed by a statement that identifies a qualification or exception to a previous statement. A "NOTE" may also identify nice-to-know information pertinent to, but not directly related to the previous statement.

1005/ZG/200882

AVOID HIGH PRESSURE-FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

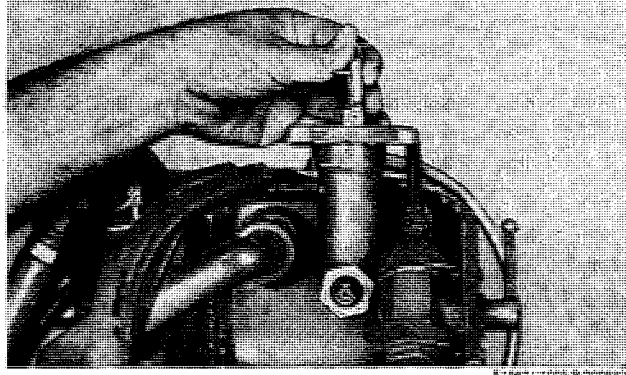
If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



X9811/1005/A/200882

WORKING ON HYDROSTATIC SYSTEM

To avoid being sprayed by hot oil when working on hydrostatic system, relieve reservoir pressure by lifting fill cap lever.



USE ADEQUATE SERVICE FACILITIES

Keep the service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

Make sure the service area is adequately vented.

Periodically check the shop exhaust system for leakage. Engine exhaust gas is dangerous.

Be sure all electrical outlets and tools are properly grounded.

Use adequate light for the job at hand.

Use lifting equipment and safety stands which have adequate strength for the job being performed.

Wear fairly tight clothing.

Know where the first aid kit and fire extinguishers are located, and know how to use them.

1005/ZH/200882

OBSERVE SAFETY RULES



This safety alert symbol identifies important safety messages in this manual and on the machine. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

Avoid loose clothing that can catch in moving parts and put you out of work.

Wear your safety glasses while on the job.

Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running, **ALWAYS USE TWO PEOPLE** — with the operator, at the controls, able to see the person doing the checking. Also, put the transmission in neutral, set the brake, and apply safety locks provided. **KEEP HANDS AWAY FROM MOVING PARTS.**

Disengage all power and be sure all moving parts have stopped.

Before removing any housing covers, stop engine. Take all objects from your pockets which could fall into the opened housings. Don't let adjusting wrenches fall into opened housings.

Clear obstructions off machine when machine is shut off and all moving parts have stopped.

Always operate machine at rated PTO speed.

Always unhook towed equipment on level ground.

1005/C/200882

AVOID FIRE HAZARDS

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located — know how to use them.

Don't smoke while refueling or handling highly flammable material.

Shut off the engine when refueling.

Use care in refueling if the engine is hot.

Don't use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.

Provide adequate ventilation when charging batteries.

Don't check battery charge by placing metal objects across the posts.

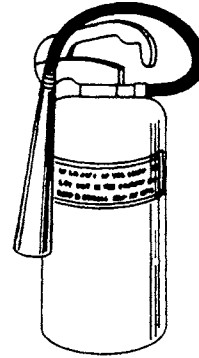
Don't allow sparks or open flame near batteries.

Don't smoke near battery.

Never check fuel, battery electrolyte, or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

Never use an open flame as light anywhere on or around the equipment.



N35540

N35540/1005/ZLJ/200882

PROTECT AGAINST NOISE

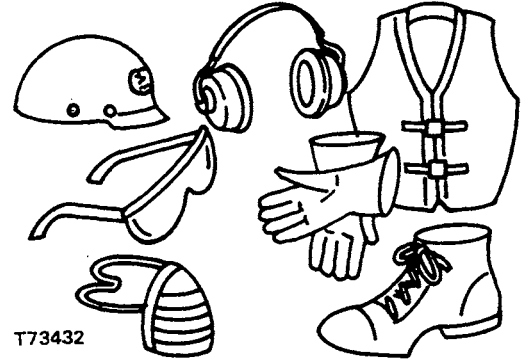
Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noises.



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Wear safety equipment.



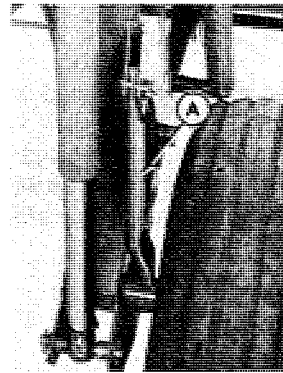
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SERVICE MACHINE SAFELY

When working on machine with platform raised, engage platform support (A) and install pin.

Block the wheels to keep the machine from moving while it is being serviced.



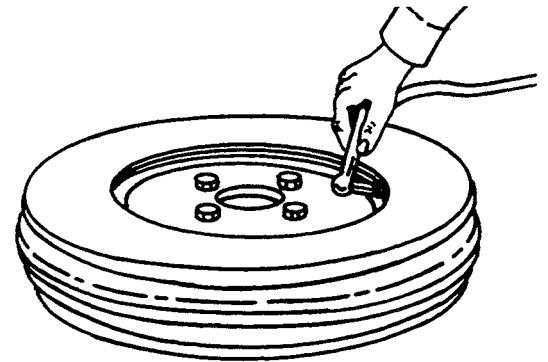
E19810/1005/D/200882

SERVICE TIRES SAFELY

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. Have it done by your John Deere dealer or a qualified tire repair service.

When sealing tire beads on rims, never exceed 240 kPa (2.4 bar) (35 psi) or maximum inflation pressure specified by tire manufacturers for mounting tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force. If both beads are not seated when the maximum recommended pressure is reached, deflate, reposition tire, relubricate bead, and reinflate.

Detailed agricultural tire mounting instructions, including necessary safety precautions, are contained in John Deere Fundamentals of Service (FOS) Manual 55, Tires and Tracks, available through your John Deere dealer. Such information is also available from the Rubber Manufacturers Association and from tire manufacturers.



E19547/1005/E/200882

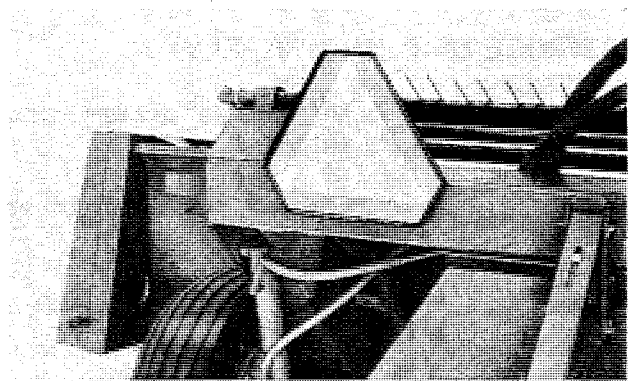
DO NOT MODIFY MACHINE

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

1005/F/200882

TRANSPORT SAFELY

When transporting the equipment on a road or highway at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. In this regard, check local governmental regulations. Various safety devices are available from your John Deere dealer.



E19633/1005/G/200882

Group 10
SPECIFICATIONS AND TORQUES

CONDITIONER ROLLS

Drive Timed Roller Chain
Construction Fluted Steel or Intermeshing Rubber
Diameter 197 mm (7-3/4 in.)
Length 1473 mm (58 in.)
Speed 730 rpm

CUTTERBAR

Guards Heavy-duty, double forged steel
Guard angle 6, 9, or 12° downward
Knives (chrome) Undeserrated standard, smooth available
Speed 1650 strokes per min.
Type drive Enclosed, running in oil

CUTTING HEIGHT - 51 to 483 mm (- 2 in. to 19 in.)

OPERATING SPEED Up to 9.7 km/h (6 mph)

POWER TAKE-OFF SPEED 540 or 1000 rpm

REEL

Diameter 1067 mm (42 in.)
Drive V-belt
Speed:
Standard 50-75 rpm
Tooth bars 4, 5, or 6 bat cam controlled tooth angle

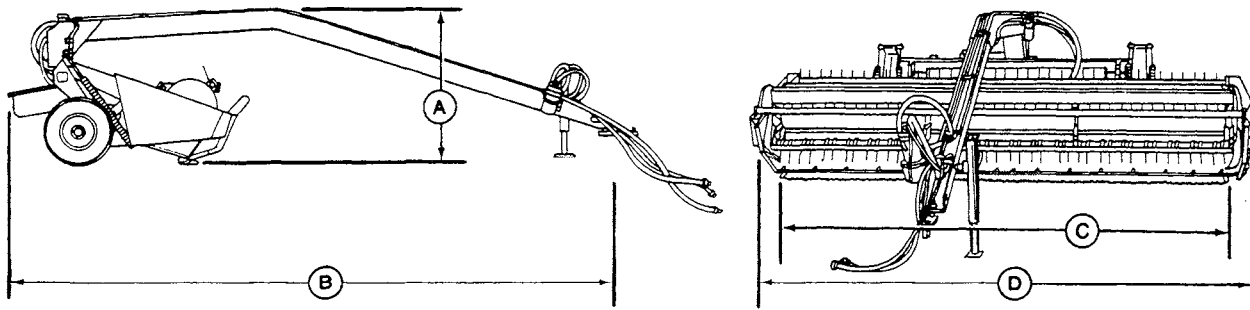
TRACTOR HYDRAULIC PRESSURE TO LIFT PLATFORM 123 kg/cm² (121 bar) (1750 psi)

WHEELS

Tire size 11L x 4
Tire inflation pressure 2 kg/cm² (2 bar) (32 psi)
Gauge wheels (optional) 2 kg/cm² (2 bar) (28 psi)

1010/A/200882

Specifications and Torques



A—Height1600 mm (5 ft. 3 in.)

B—Length6629 mm (21 ft. 9 in.)

C—Operating Width:

3658 mm (12 ft.) platform5715 mm (18 ft. 9 in.)

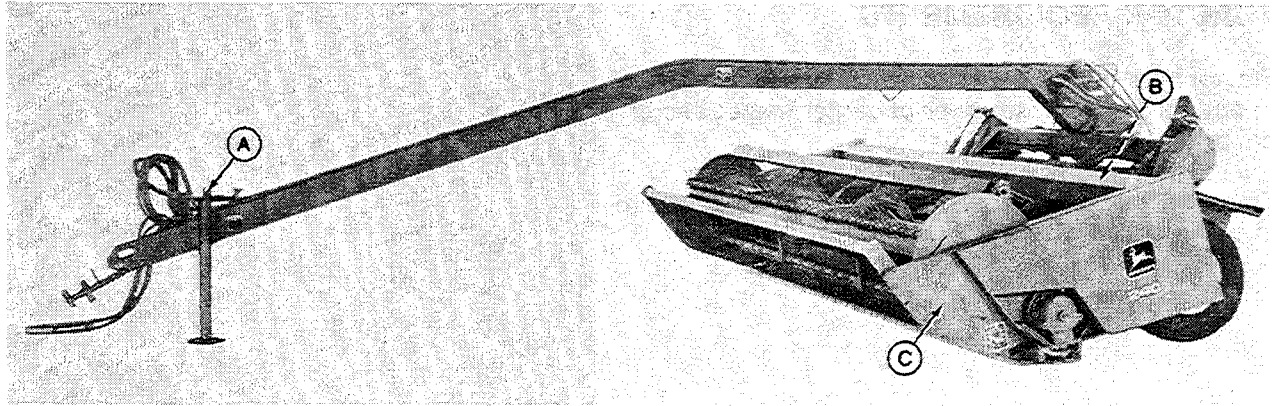
4267 mm (14 ft.) platform6235 mm (20 ft. 9 in.)

D—Transporting Width:

3658 mm (12 ft.) platform4001 mm (13 ft. 1-1/2 in.)

4267 mm (14 ft.) platform4610 mm (15 ft. 1-1/2 in.)

E21590/1010/B/200882



The 1424 Mower-Conditioner is driven by a pump (A) attached to a tractor PTO shaft. Pump (A) drives hydraulic motor (B), which drives cutting platform (C).

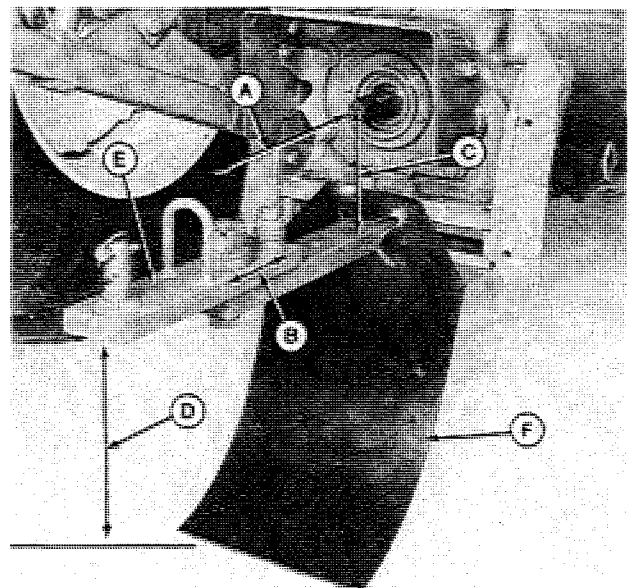
E21379/1020/A/200882

When servicing Mower-conditioner pay attention to tractor hookup geometry as shown. Hitch extension (E) must be used or the following problems could occur.

1. Premature failure of hydraulic components.
2. Damage to hydraulic hoses.
3. Turning radius is increased.

Instructions for making the drawbar shield (F) are in the operator's manual.

540 RPM	1000 RPM
A—356 mm (14 inches)	A—406 mm (16 inches)
B—102 mm (4 inches)	B—102 mm (4 inches)
C—152 to 305 mm (6 to 12 in.)	C—152 to 305 mm (6 to 12 in.)
D—330 to 432 mm (13 to 17 in.)	D—330 to 432 mm (13 to 17 in.)
E—Hitch Extension	E—Hitch Extension
F—Drawbar Shield	F—Drawbar Shield

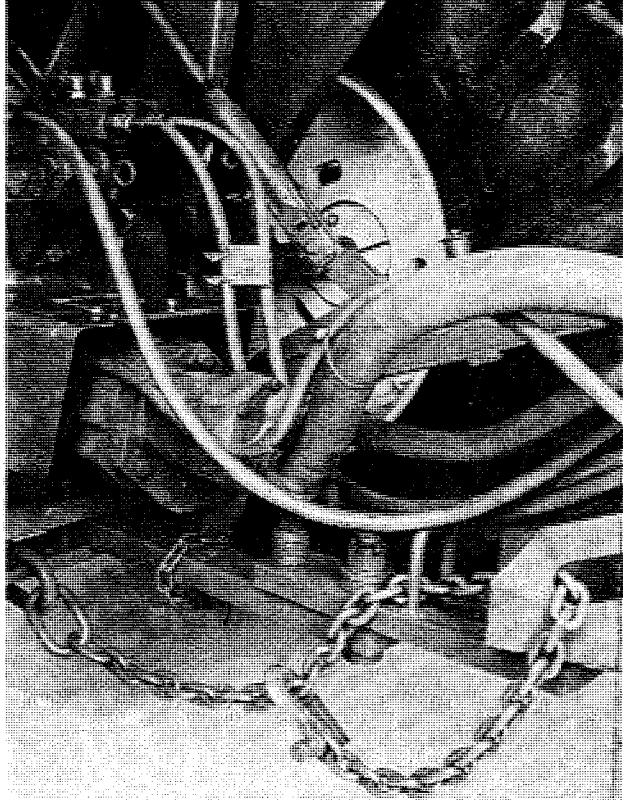


E21380/1020/B/200882

TRACTOR REQUIREMENTS

Tractor must have two sets of hydraulic outlets. One set of outlets for two hoses to pivot carrier frames and one set to lift platform.

Tractor can be either 540 or 1000 rpm PTO and a minimum of 52 kW (70 hp).

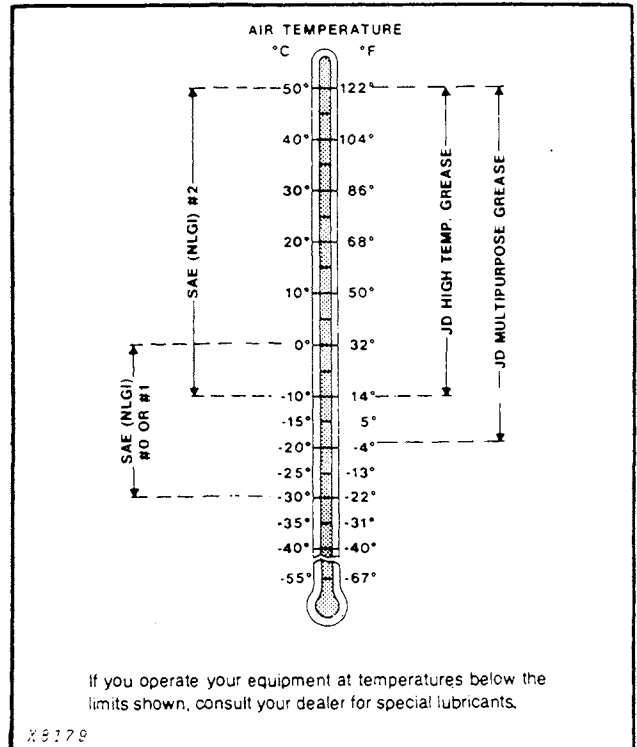


E21381/1020/C/200882

GREASE

John Deere Multipurpose Grease is recommended in all grease fittings. If other greases are used, use:

- SAE Multipurpose Grease
- SAE Multipurpose Grease containing 3 to 5 percent molybdenum disulfide.



X8179/1025/A/200882

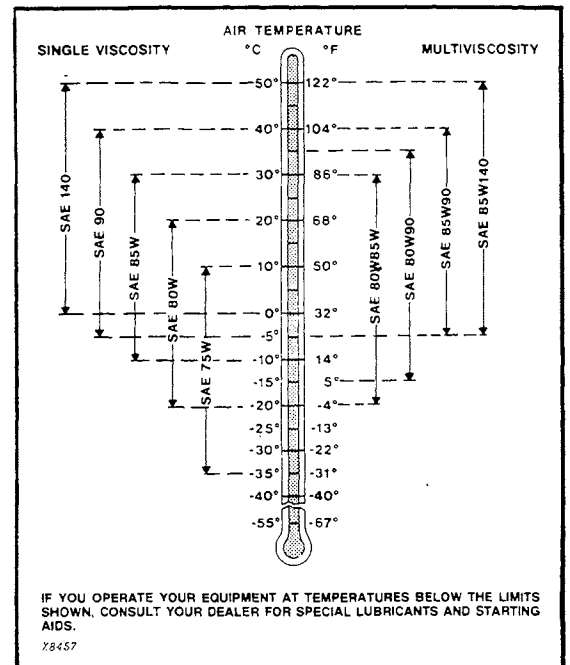
KNIFE DRIVE CASE LUBRICANT

Depending on the expected prevailing temperature for the fill period, use oil viscosity as shown in the chart.

John Deere SAE 85W140 API or GL-5 Gear Oils are recommended. If other oils are used, they must meet performance requirements of:

- API Service Classification GL-5
- Military Specification MIL-L-2105C

Cutterbar drive case capacity is one qt. (.946 L).



X8457/1025/B/200882

HYDRAULIC OIL

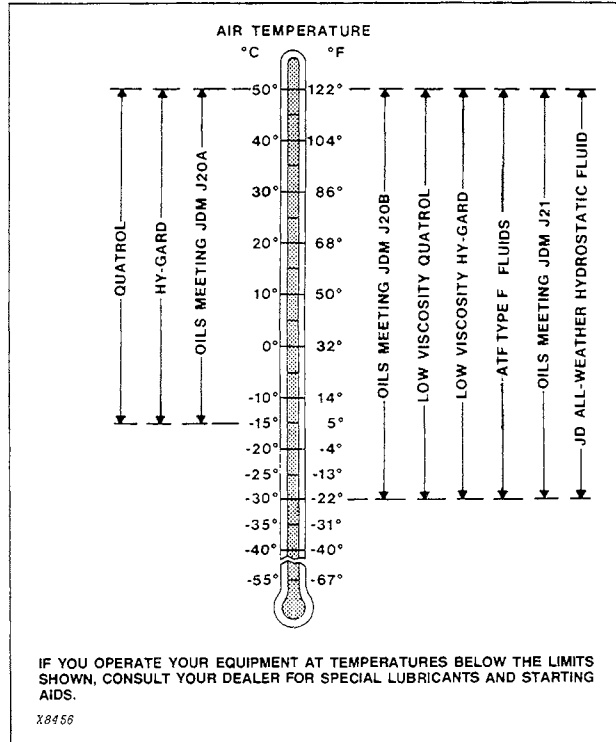
Depending on the expected prevailing temperature for fill period, use oil viscosity as shown in chart.

John Deere All-Weather Hydrostatic Fluid is recommended.

If other oils are used, they must meet performance requirements of:

- John Deere Standard JDM J21
- Type F automatic transmission fluids
- John Deere HY-GARD® Transmission and Hydraulic Oil
- QUATROL® Oils
- John Deere Standard JDM 20

Torque capacity is (95 L) 25 gal.



X8456/1025/C/200882

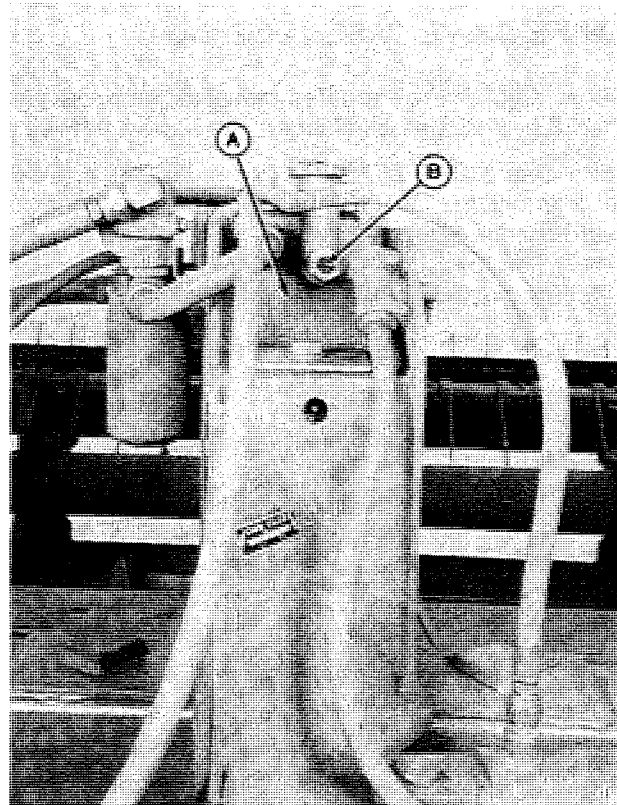
CHECK FLUID LEVEL

Check fluid level in hydraulic reservoir (A) by checking sight glass (B). Oil should be seen in sight glass when top of tongue is level.

If reservoir has been drained, re-fill by adding 95 L (25 U.S. gal.) of John Deere All Weather Hydrostatic Fluid. Operate pump for 2 minutes, re-check sight glass and fill as needed.

NOTE: John Deere HY-GARD Transmission and Hydraulic Oil may be added to or mixed with John Deere All Weather Hydrostatic fluid.

IMPORTANT: Keep fluid clean, free of dust, water, and sealing compound. Do not add brake fluid.



E21382/1025/D/200882

Group 30
SPECIAL TOOLS

No.	Name	Use
JDO-1*	Puller	Remove cutterbar drive arm.
TY5011	Riveting Tool	Installing knife sections.
D-1074AA*	Hydraulic Flow Meter	Check hydraulic flow and pressure.
D-15027NU*	Universal Pressure Test Kit	To check hydraulic pressures.
D-15016NU*	Fitting Kit	To connect the hydra-analyzer or pressure gauge into the hydraulic system.
JDH-6	"O" Ring Seal Hook	Remove "O" rings.
JDG-55	Thermometer	To check oil temperature.

1030/A/200882

PURCHASED TOOLS

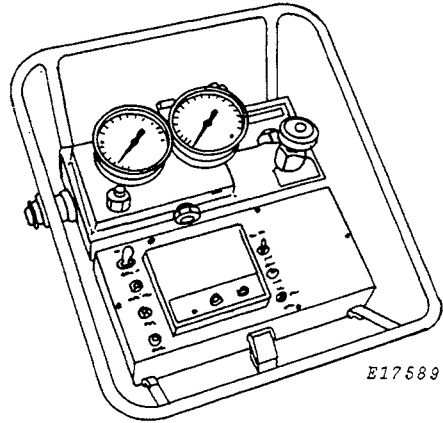
The tools in this group may be purchased through the SERVICE GARD™ catalog.

5005/ZA/200882

Special Tools

D-01074AA

Use the hydraulic tester to check oil flow, pressure, and temperature in the hydraulic system.

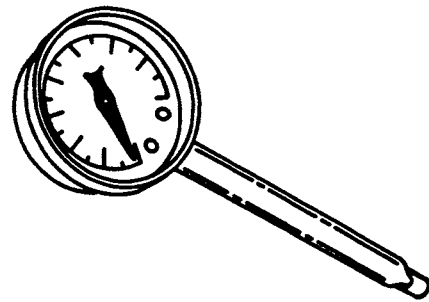


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E17589/5005/ZB/200882

JDG-55

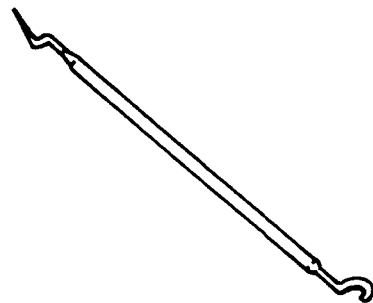
Use the thermometer to check oil temperature.



E21192/5005/ZC/200882

JDH-6

Use to remove and install O-ring seals.

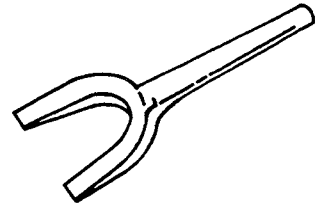


E21193/5005/ZD/200882

Special Tools

JDO-1

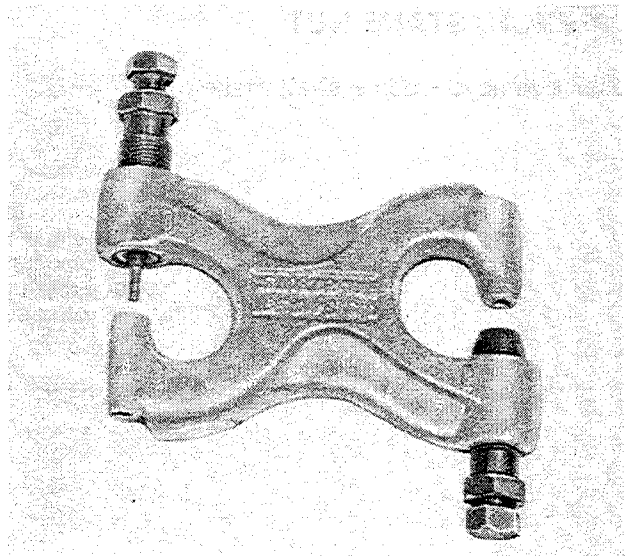
Use to remove knife drive arm.



E21194/1030/B/200882

TY 5011

Use to remove and install knife sections.



E21240/1030/C/200882

FABRICATED TOOLS

The tools in this group cannot be purchased, they must be made in the shop.

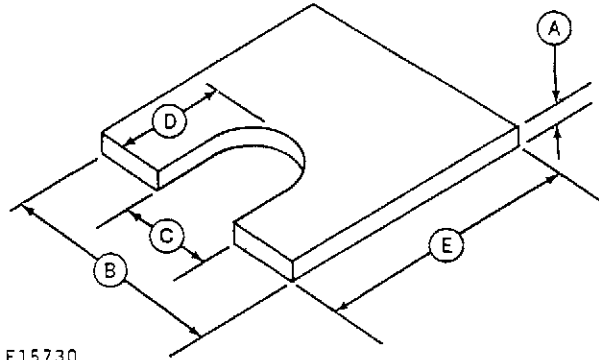
5010/ZA/200882

Special Tools

SHIM

Use this shim to press spindles.

- A—3.8 mm (0.150 in.)
- B—51 mm (2 in.)
- C—25 mm (1 in.)
- D—38 mm (1-1/2 in.)
- E—102 mm (4 in.)



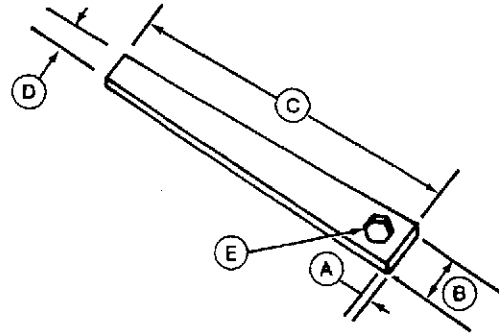
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WRENCH, STAKE NUT

Use to remove wobble shaft stake nut.

- A—4.8 mm (3/16 in.)
- B—102 mm (4 in.)
- C—610 mm (24 in.)
- D—64 mm (2-1/2 in.)
- E—67 mm (2-5/8 in.)



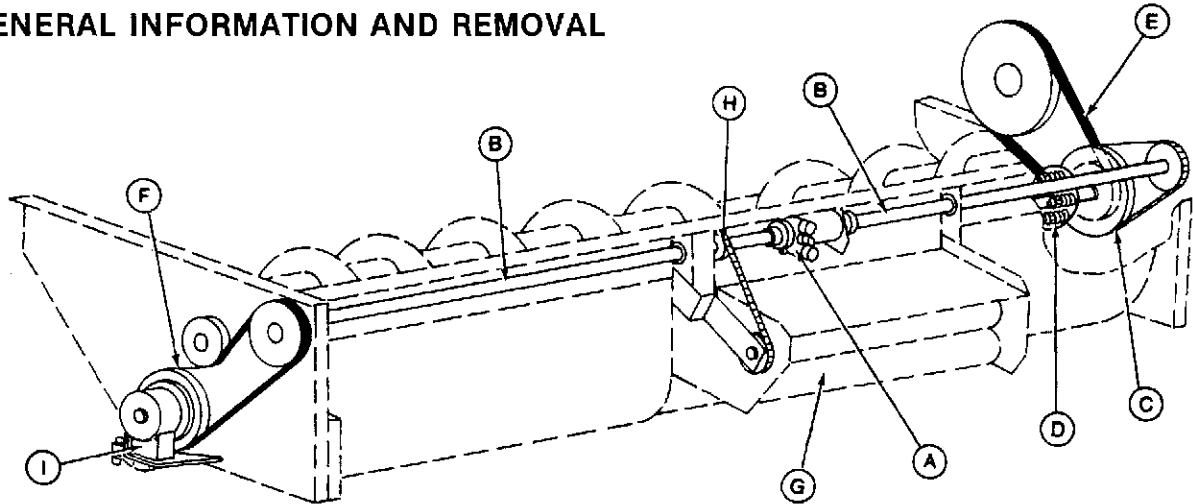
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Section 20 PLATFORM

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GENERAL INFORMATION AND REMOVAL



Power to platform is transmitted by the hydraulic motor (A) to right-hand and left-hand platform ends with two cross drive shafts (B).

The right-hand cross shaft drives the auger with a 50 RC chain (C). The auger is protected by a spring-tensioned slip clutch (D). A variable sheave attached to the auger shaft drives the reel with a V-belt (E). The drive belt is under constant tension from a spring-loaded idler.

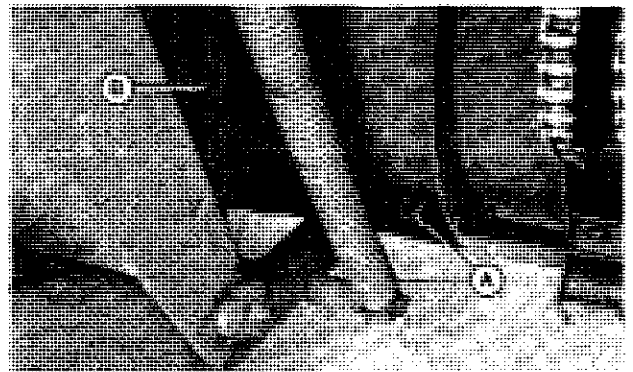
The left-hand cross shaft (B) drives the knife drive case (I) with a V-belt (F) and the conditioner (G) with a 60 RC chain (H). Belt and chain tension is controlled by fixed idlers.

- A—Hydraulic Motor
- B—Cross Shafts
- C—Auger Drive Chain
- D—Auger Clutch
- E—Reel Drive Belt
- F—Knife Drive Case Belt
- G—Conditioner
- H—Conditioner Drive Chain
- I—Knife Drive Case

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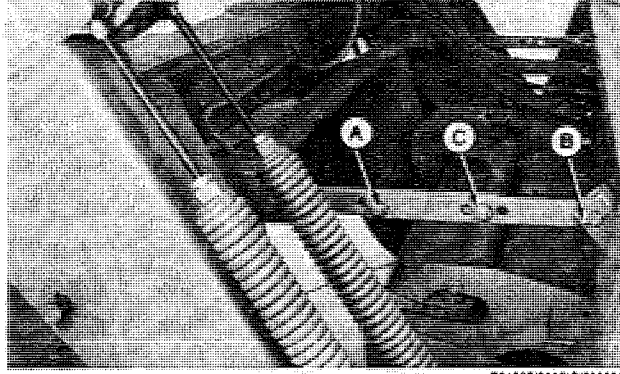
REMOVE PLATFORM

1. Move machine to a level area.
2. Remove Quik-Lock pin (A) and lift arm pin.
3. Remove safety chain (B).
4. Repeat on opposite side.
5. Raise platform about 356 mm (14 in.) from ground. Securely support platform with blocks.

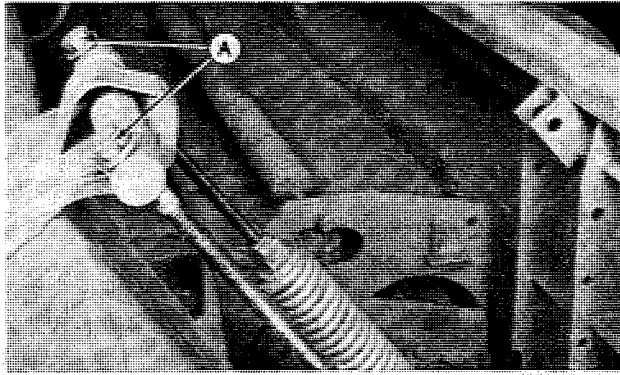


General Information and Removal

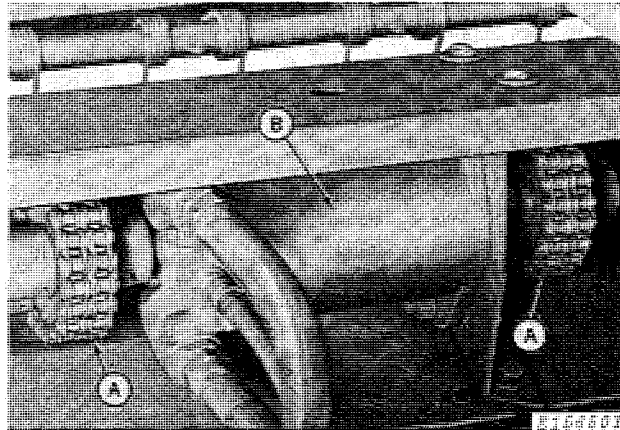
6. Remove 5/8 x 1-3/4 inch cap screw and lock nut in rear of upper link (A).
7. Remove cotter pin (B) loosen front cap screw (C) and remove upper link.
8. Repeat on opposite side.



9. Remove tension from float springs by loosening bolts (A) until lower lift arm has lowered away from platform.
10. Repeat on opposite side.



11. Remove two 1/2 x 1-1/4 carriage bolts, two 1/2 x 1-1/4 inch cap screws and lock nuts.
12. Remove two 5/16 x 3/4 cap screws from rear motor bracket.
13. Remove both coupler chains (A).
14. Remove hydraulic motor (B) with hydraulic lines still attached and secure to right side of torque using the two 1/2 x 1-1/4 in. cap screws.
15. Platform can be separated from main frame.



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NOTE:

If there is no response to click on the link above, please download the PDF document first and then click on it.

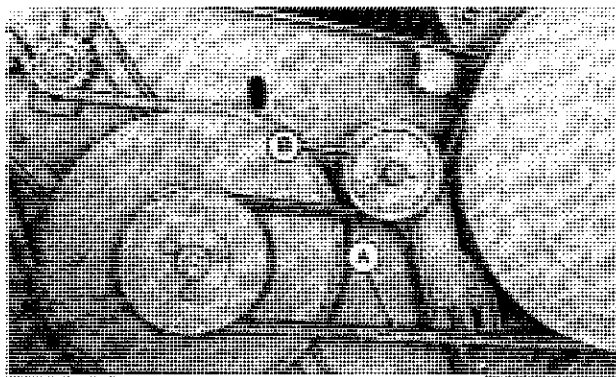
GENERAL INFORMATION

The standard four bat reel delivers the crop to the auger and can be converted to five or six bats. The 3658 mm (12 ft) reel has 72 wrap-around reel teeth and the 4267 mm (14 foot) has 84.

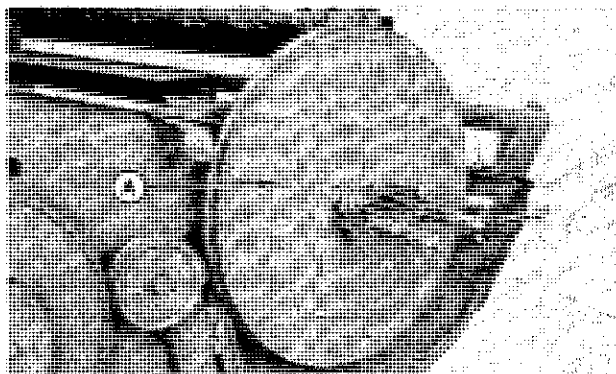
2010/A/200882

REMOVE REEL

1. Remove tension from reel drive belt (A).
2. Remove nut, lock washer and $2\frac{1}{32}$ x $1\frac{5}{16}$ x 0.090-inch washers from idler sheave (B).
3. Remove idler sheave (B).

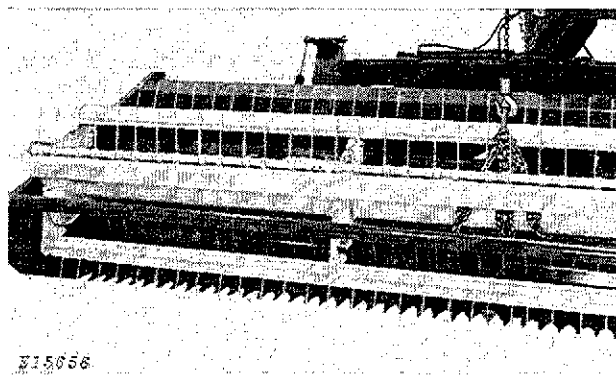


4. Remove $\frac{5}{8}$ x 1-1/2-inch cap screw and washer on reel sheave.
5. Use puller and remove sheave (A).



E21398/2010/C/200882

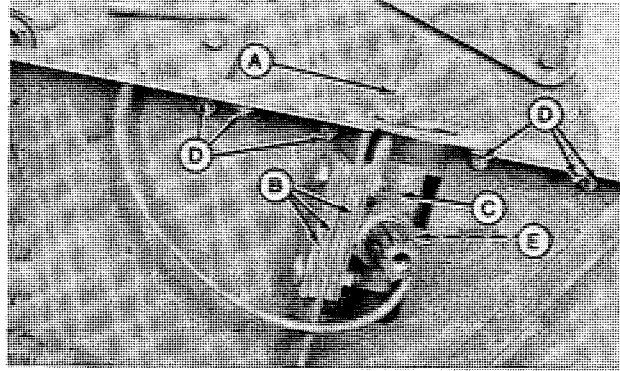
6. Attach hoist to reel as shown. Remove tension from reel.



E15656/2010/D/200882

Reel

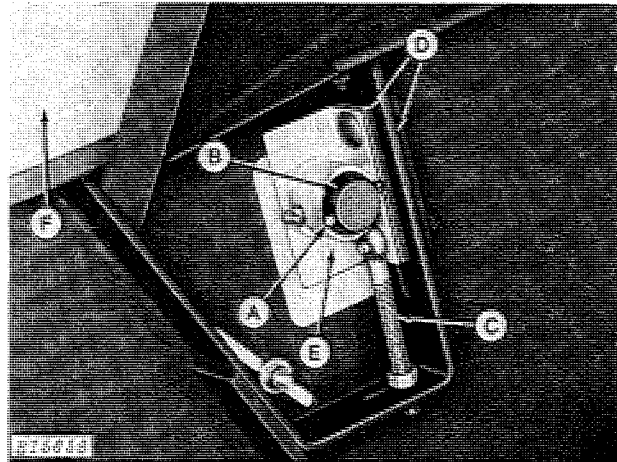
7. Loosen eyebolt (A).
8. Remove lower 1/2 x 2-inch carriage bolt and nut.
9. Remove upper 1/2 x 2-inch cap screw and three spacers (B).
10. Remove eyebolt (A).
11. Remove reel mounting (C).
12. Remove six 3/8 x 3/4-inch carriage bolts (D), nuts and side sheet reinforcement.
13. Remove 1-13/32 x 2 x 0.060 inch spacer washers (E).



- A—Eyebolt
- B—Spacers
- C—Reel Mounting
- D—Bolts for Reinforcement
- E—Spacer Washers

E21389/2010/E/200882

14. Remove 5/16 x 2-inch spring pin (A).
15. Remove hardened washer and 1-13/32 x 2 x 0.060 inch spacer washers.
16. Loosen eyebolt (C) and remove lower 1/2 x 2-inch cap screw.
17. Remove upper 1/2 x 2-inch carriage bolt, spacers (D) and nut.
18. Remove reel mounting (E).
19. Remove 1-13/32 x 2 x 0.060-inch spacer washers.



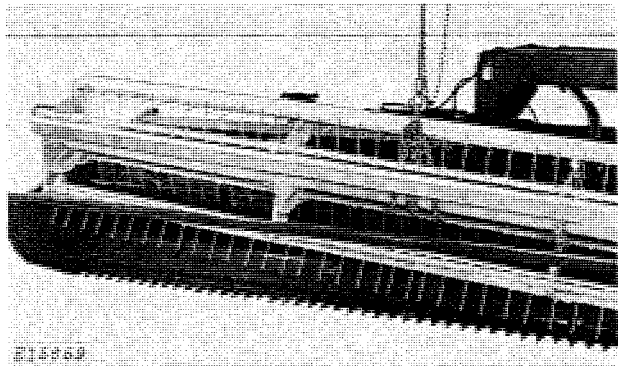
NOTE: Record amount of washers removed. These are needed for alignment during assembly.

- A—Spring Pin
- B—Washers
- C—Eyebolt
- D—Spacers
- E—Reel Mounting
- F—Reel Cam

E15658/2010/F/200882

Reel

20. Carefully raise and remove reel leaving cam in place.



E15659

E15659/2010/G/200882

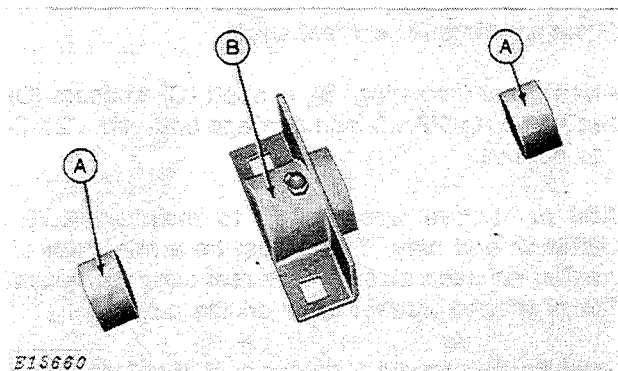
INSPECT REEL PARTS

Check reel mounting bushings (A). Replace if worn.

Check cam follower bearings.

Check reel drive belt for fraying.

Inspect all remaining parts for damage or excessive wear.

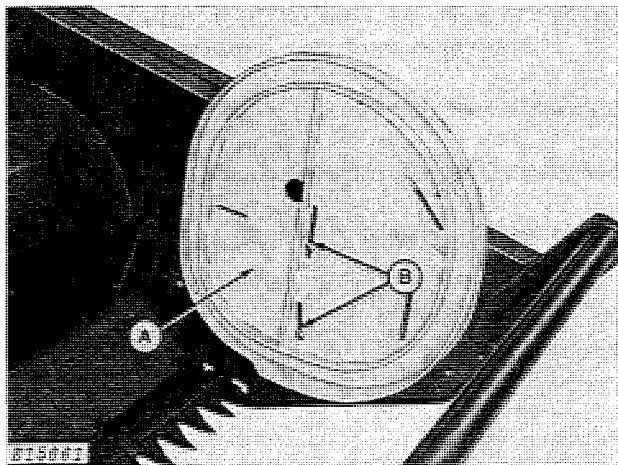


E15660

E15660/2010/H/200882

ASSEMBLE REEL

If it was necessary to remove reel cam (A), attach using two 3/8 x 1-inch carriage bolts and nuts (B).



E15661

E15661/2010/I/200882