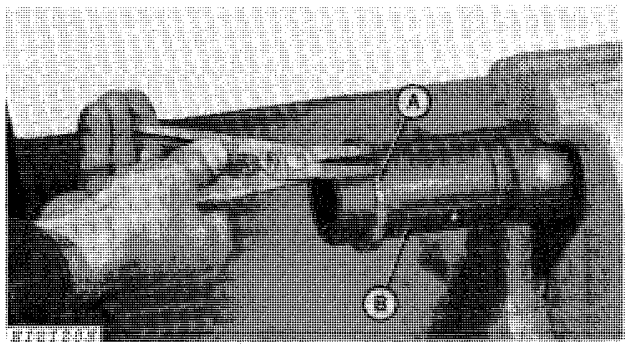


A—Nylon Bearing **B—Yoke and Tube**

Fig. 8-Removing Bearing

The yoke and tube (B) has a rear Nylon bearing (A) that can be removed by spreading the split ends (Fig. 8).

INSPECTION AND REPAIR

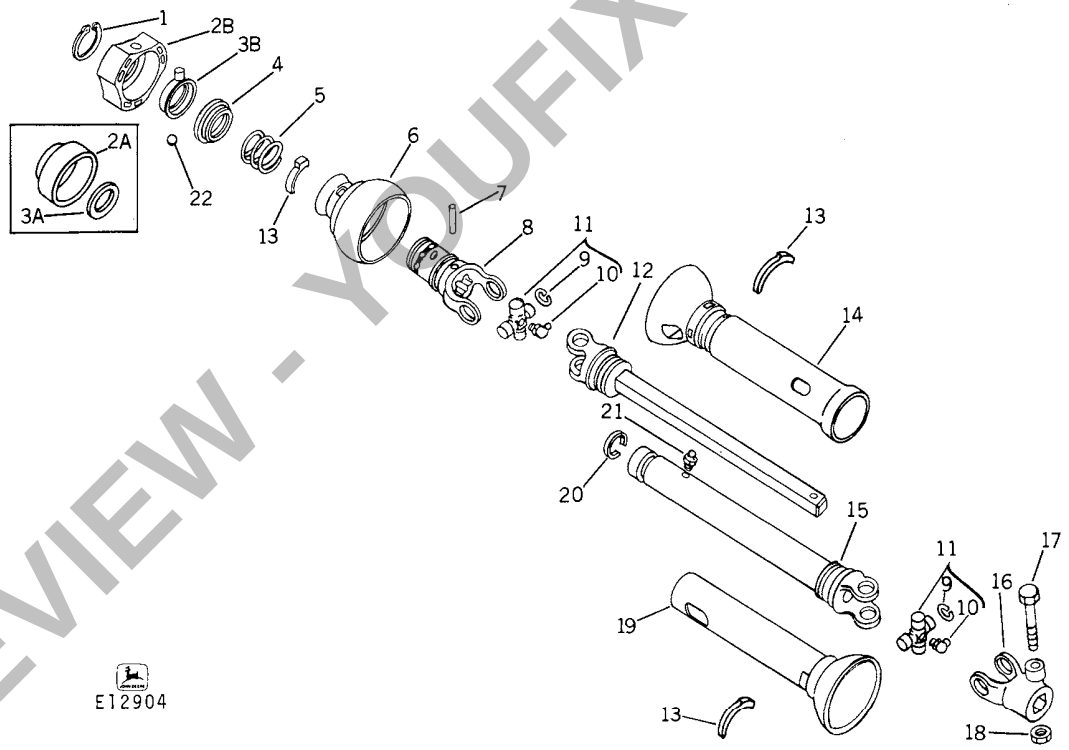
Check the spider and bearing assembly (11, Fig. 9) for wear. Replace if necessary.

Check the yoke tube (15) and yoke shaft (12) for straightness. Replace if necessary.

Check the compression spring (5) to see if it is broken or badly rusted. Replace if necessary.

Check the nylon locking bearings (13 and 20) for wear. Replace if necessary.

ASSEMBLY

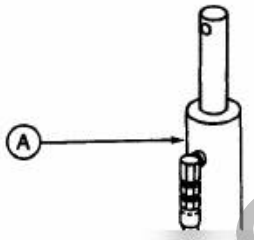


1—Snap Ring
2A—Offset Collar
2B—Push Button Collar
3A—Collar Spacer
3B—Push Button Latch
4—Push Button Collar Retainer
5—Spring
6—Closure Shield
7—540 RPM Spring Pin
1000 RPM Spring Pin
8—540 RPM Push Button Yoke
1000 RPM Push Button Yoke
9—Snap Ring (8 Used)
10—Grease Fitting (2 Used)
11—Spider and Bearing Assembly (2 Used)
12—540 RPM Yoke and Shaft
1000 RPM Yoke and Shaft
13—Third Bearing
410 (6 Used)
510 (9 Used)
14—540 RPM Front Shield
1000 RPM Front Shield
15—Yoke and Tube
16—Clamp Yoke
17—Cap Screw
18—Nut
19—Rear Shield with Decal
20—Center Bearing
21—Straight Grease Fitting (2 (Used)
22—Steel Ball (3 Used)

Fig. 9-PTO Hookup (Powr-Gard)

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ROUND BALER HYDRAULIC SYSTEM DIAGRAMS



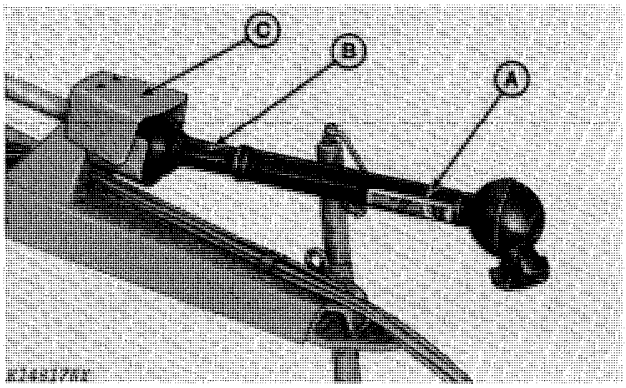
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Group 10
PTO HOOKUP

GENERAL INFORMATION



A—Front Section B—Rear Section C—Drive Shield

Fig. 1-PTO Hookup

The PTO hookup is located as shown in Fig. 1.

The PTO operating speed of the tractor and baler must be the same. The tractor half of the hookup is factory equipped with six splines for 540 rpm PTO operation and twenty-one splines for 1000 rpm, on the 510 only.

CAUTION: Never connect a 540 rpm round baler to a 1000 rpm tractor.

REMOVAL AND INSTALLATION

Removal

The PTO hookup has a front (A) and rear (B) section that slip fit together. The front section couples to the tractor PTO shaft and the rear section is connected to the baler input shaft.

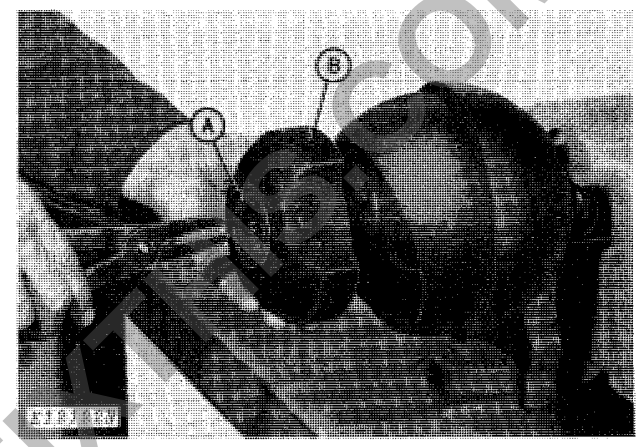
Remove the drive shield (C) and remove the coupler nut, bolt, and washer from the rear section of the hookup. Slide the rear section off the input shaft.

Installation

Install the hookup rear section over the input shaft and bolt in place. Slide the front section into rear section.

DISASSEMBLY

Place powershaft front section in vise.

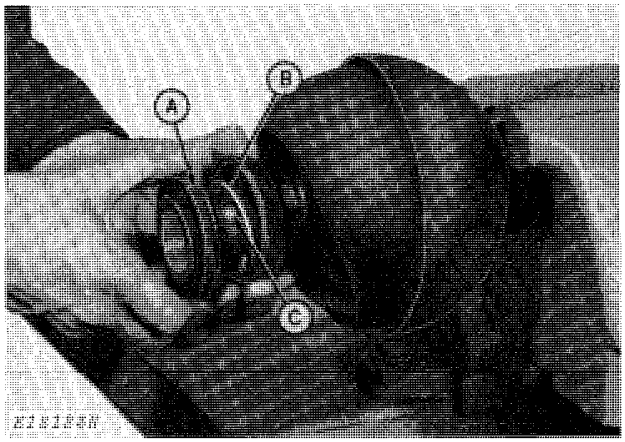


A—Snap Ring B—Push Collar Assembly

Fig. 2-Removing Snap Ring

Support the push collar assembly as shown; then remove the snap ring (Fig. 2).

Remove push collar and push-button latch.



A—Collar Retainer B—Spring C—Steel Ball

Fig. 3-Removing Collar Retainer

Remove the three steel balls from the push-button yoke; then remove the collar retainer and spring (Fig. 3).

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410 and 510 ROUND BALERS

TECHNICAL MANUAL
TM-1194 (Apr-79)

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SECTION 60 - ALPHABETICAL INDEX

All information, illustrations and specifications contained in this technical 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.

Because John Deere sells its products world-wide, U.S. units of measure are shown with their respective metric equivalents throughout this technical manual. These equivalents are the SI (International System) Units of Measure.

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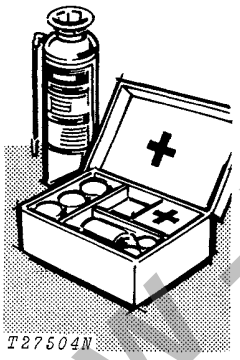
SAFETY AND YOU



T27999N

INTRODUCTION

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



T27504N

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

SERVICE AREA

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.

AVOID FIRE HAZARDS



E11866N

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

Engine should be shut off when refueling.

Use care in refueling if the engine is hot.

Don't use open pans of gasoline or diesel fuel for cleaning parts. Good commercial, nonflammable solvents are preferred.

Don't allow sparks or open flame near batteries.

Don't smoke near a battery.

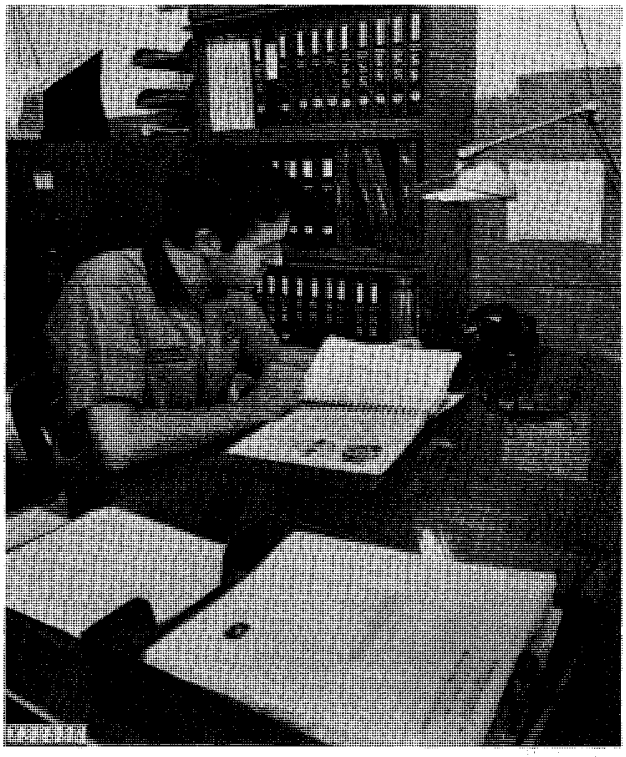
Never check fuel, battery electrolyte or coolant levels with an open flame.

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

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INTRODUCTION



Use FOS Manuals for Reference



Use Technical Manuals for Actual Service

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

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

•FOS Manuals—for reference

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



When a service technican should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

•Technical Manuals—for actual service

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.

Some features of this technical manual:

- *Table of contents at front of manual*
- *Exploded views showing parts relationship*
- *Photos showing service techniques*
- *Specifications grouped for easy reference*

This technical manual was planned and written for you—a service 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.

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13. Install snap ring.
14. Position gear and bearing cone in gear case.
15. Install stake nut on output shaft.
16. Install Woodruff key in shaft.
17. Install output shaft through gear and bearing.
18. Position bearing cone on shaft.
19. Press bearing cup in gear case.
20. Install snap ring.
21. Tighten stake nut. Be sure bearing cups are seated against snap rings. DO NOT STAKE NUT AT THIS TIME.

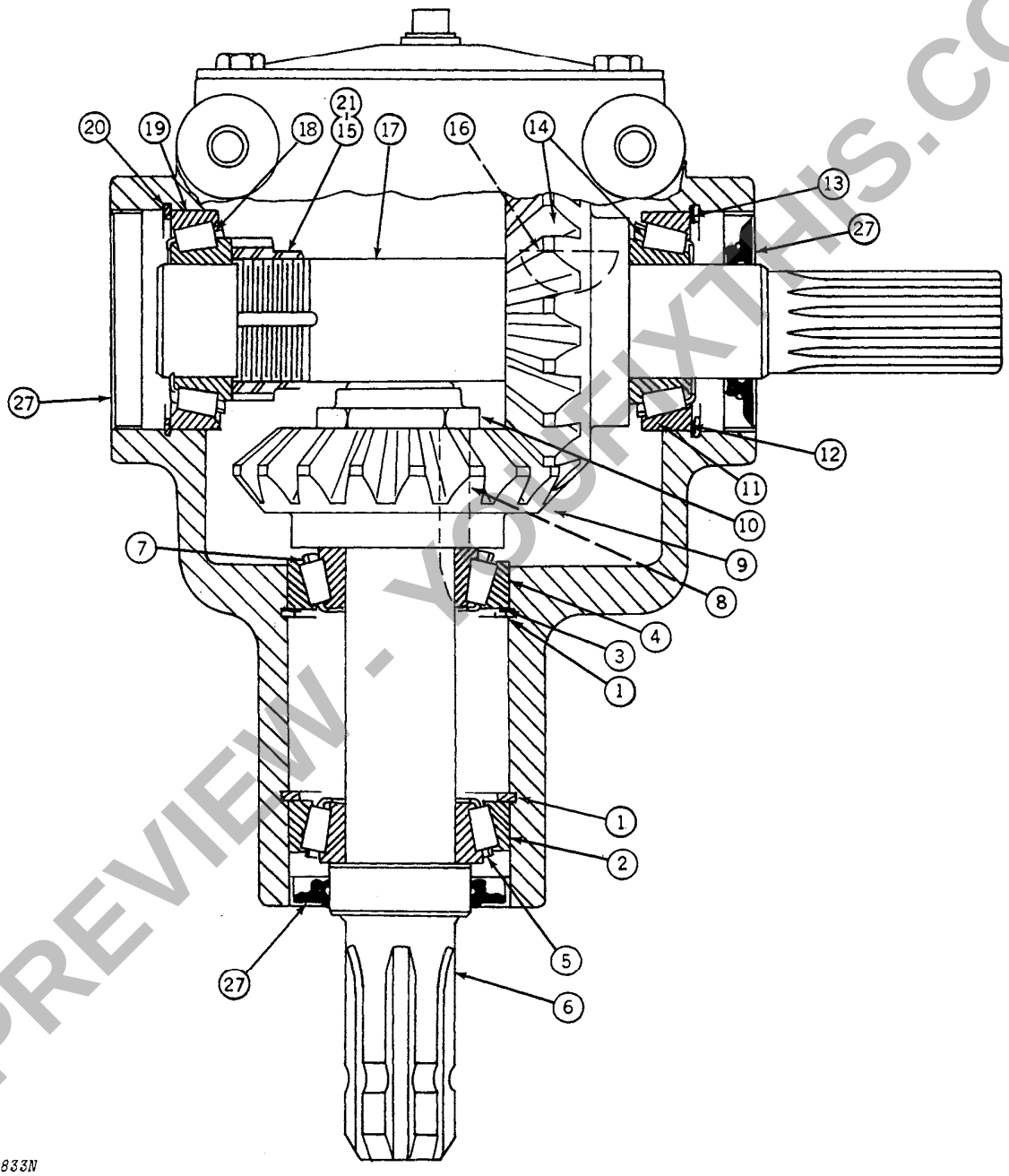


Fig. 14-Exploded View of 410 Gear Case

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GENERAL INFORMATION—Continued

Basic components of the hydraulic system are:

Selector Control Valve - An optional six port valve with integral pilot operated check valves for tractors equipped with one dual hydraulic outlet.

Gate Hydraulic Cylinder - A double-acting cylinder used to maintain pressure and keep the gate locked during the baling cycle.

Relief Valve - A high-pressure, pilot operated check valve located on the left side of the machine.

Twine Arm Cylinder - A double-acting cylinder used to wrap the bale.

GLOSSARY AND DESCRIPTION OF PARTS AND TERMS

Circuit - A series of component parts connected to each other by oil lines or passages.

Cycle - A single and complete operation of a component which begins and ends in a neutral position.

Displacement - The volume of oil displaced by one complete stroke or revolution of a pump, motor, or cylinder.

Double-Acting Cylinder - A cylinder in which fluid force can be applied, to a movable load, in either direction.

Filter - A device through which oil is passed to remove foreign matter held in suspension.

Flow Meter - A testing device which gauges either flow rate, total flow, or both.

Flow Rate - The volume of fluid passing a point in a given time.

G.P.M. - Gallons per minute.

Orifice - A restricted passage in a hydraulic circuit. Usually a small drilled hole to limit oil flow or create a pressure differential in a circuit.

Piston - A cylinderical part which moves or reciprocates in a cylinder and transmits or receives motion to do work.

Port - The open end of an oil passage. May be within or at the surface of a component.

P.S.I. - Pounds per square inch.

Restriction - A reduced cross-sectional area in a line or passage which normally causes a pressure drop. (Examples: pinched lines or clogged passages, or an orifice designed into a system.)

Single-Acting Cylinder - A cylinder in which fluid force can be applied to a movable load, in only one direction.

System - One or more series of component parts connected to each other. Often made up of two or more "circuits".

Valve (Hydraulic) - Mechanical device used to start, stop, direct or otherwise regulate flow of oil.

Viscosity - The measure of resistance of a fluid to flow.

Volume - The amount of fluid flow per unit time. Usually given as gallons per minute (gpm).

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HOW THE BALE IS FORMED—Continued

Wrapping

When the bale has reached the discharge size it is ready to wrap.

Slowly continue baling and:

1. Pull the hydraulic lever rearward to actuate the twine arm to the left.

2. When the twine has been fed with the hay into the compression rolls, stop the forward travel of the tractor.

IMPORTANT: Twine can wrap around bottom roll and damage machine and bottom belts if hay is not fed with twine when wrapping bale.

3. Continue to hold the hydraulic lever rearward until the twine arm has reached the extreme left-hand position. Hold there for a few seconds to allow at least one full turn of twine to go around the end of the bale.

NOTE: The number of wraps around the bale can be altered by the flow control valve. (See page 30-15-5.)

4. Push the tractor hydraulic lever forward to move the twine arm to the right, allowing at least one full turn of twine to go around the end of the bale before the twine is automatically cut off by the knife.

5. STOP THE TRACTOR POWER TAKEOFF and move tractor throttle to idle speed.

Unloading

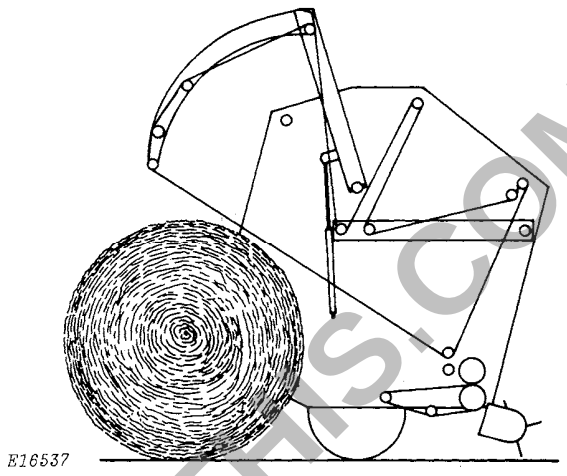


Fig. 6-Removing the Bale

1. Back up the baler approximately eight to ten feet (2.4 to 3.0 m) to unload the bale.

⚠ CAUTION: To prevent injury or damage, always unload baler on level ground to prevent bales from rolling downhill.

2. Pull the tractor hydraulic lever rearward to raise the gate for bale ejection.

This will allow bale to drop to the ground. If the bale fails to drop out, engage the power takeoff for bale ejection.

⚠ CAUTION: Do not allow anyone to stand near the rear of the baler when a bale is being discharged.

3. Move forward approximately 8 feet (2.4 m) to avoid striking the bale with the gate, then hold the hydraulic lever forward until the gate has lowered. Return hydraulic lever to neutral after gate has been lowered.

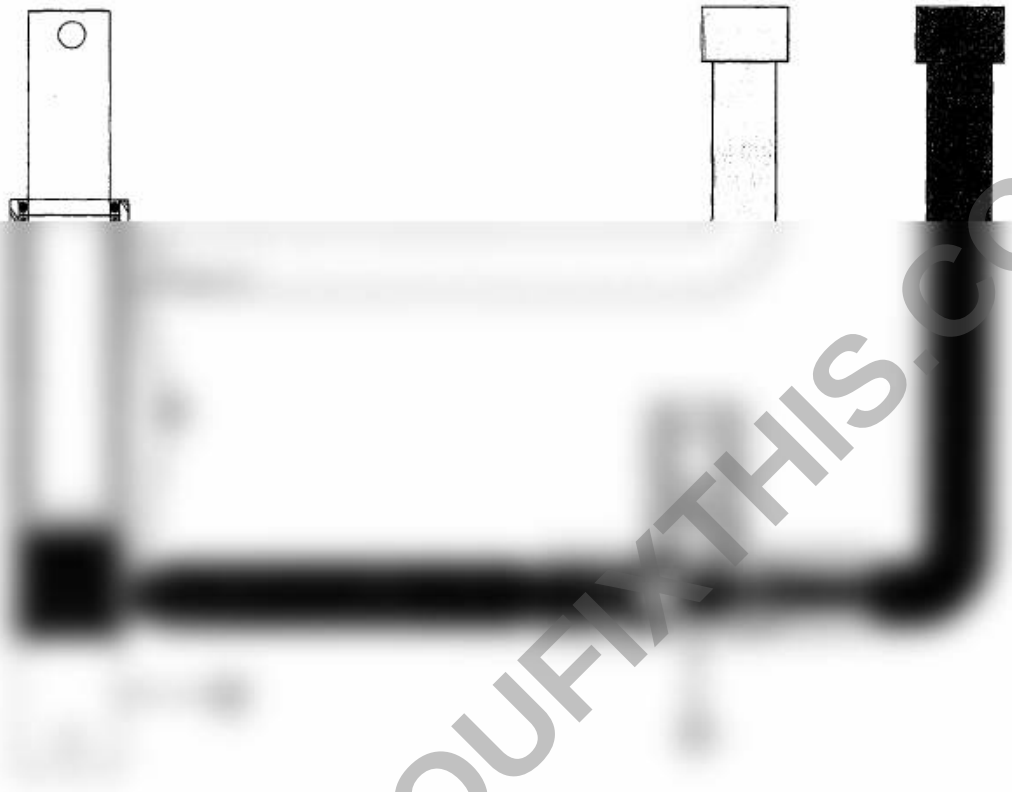
IMPORTANT: Serious damage can result if the gate strikes the bale.

NOTE: If unsure gate has latched, open and close again until distinct noise of gate closing in the "home" position is heard. The hydraulic lever must be held for 5 seconds after the gate has closed to allow gate to be completely latched. Gate latch indicator should be in the latched position.

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GENERAL INFORMATION—Continued



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