# 339
**(Serial No. 270806 - )**
# 349
**(Serial No. 340001 - )**
# 359
**(Serial No. 345001 - )**
# 459
**(Serial No. 276036 - )**
# Square Balers

## OPERATOR'S MANUAL
## 339 (270806-), 349 (340001-), 359 (345001-), 459 (276036-) Square Balers
**OMCC59112 Issue D0 (ANGLAIS)**

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

**⚠ WARNING**

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

**John Deere Arc-lès-Gray**
**(This manual replaces OMCC49852 H9)**
**European Edition**
Printed in U.S.A.

# Introduction

## Foreword

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages (see your John Deere dealer to order).

THIS MANUAL MUST BE CONSIDERED a permanent part of your machine and must remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (PIN) in the Specification or Identification Numbers section. Accurately record all the numbers to help in tracing the machine, should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

BEFORE DELIVERING THIS MACHINE, your dealer performed a predelivery inspection.

THIS SQUARE BALER IS DESIGNED SOLELY for use in customary agricultural or similar operations ("INTENDED USE"). Use in any other way is considered as contrary to the intended use. The manufacturer accepts no liability for damage or injury resulting from this misuse, and these risks must be borne solely by the user. Compliance with and strict adherence to the conditions of operation, service, and repair as specified by the manufacturer also constitute essential elements for the intended use.

THIS SQUARE BALER MUST BE OPERATED, serviced and repaired only by persons familiar with all its particular characteristics and acquainted with the relevant safety rules (accident prevention). The accident prevention regulations, all other generally recognized regulations on safety and occupational medicine and the road traffic regulations must be observed at all times. Any arbitrary modifications carried out on this square baler will relieve the manufacturer of all liability for any resulting damage or injury.

If you are not the original owner of this machine, it is in your interest to contact your local John Deere dealer to inform them of the serial number of the machine. This will help John Deere notify you of any issues or product improvements.

CC03745,0001003 -19-09MAR10-1/1

## Predelivery Inspection

**The following checks, adjustments, and service jobs were performed prior to delivery of the machine:**

1. □ Have all parts been delivered with the bundle and installed on the baler?
2. □ Is the gear case oil level correct?
3. □ Has shipping plug been replaced with relief valve on gear case?
4. □ Are all grease fittings lubricated?
5. □ Is the powerline cut to the correct dimensions?
6. □ Is drive slip clutch correctly adjusted?
7. □ Is pickup spring tension properly adjusted?
8. □ Are knotters or twisters correctly adjusted?
9. □ Measuring arm adjustment is correct?
10. □ Is clearance between plunger head and stationary knives correct?
11. □ Is baler correctly timed?
12. □ Are chains correctly tensioned and lubricated?
13. □ Are all screws and nuts tightened to specified torque?
14. □ Are all moving parts working freely?
15. □ Are all shields secured and in place?
16. □ Make a test run of the machine.
17. □ Have all lines and hoses been checked and are they free of leaks?
18. □ Has tire inflation been checked?
19. □ Are paint and decals smooth and neat?
20. □ Have all controls and safety rules been explained to the operator?
21. □ Has Operator’s Manual been given to operator?

**Date:**

**Signature Dealer/Service Technician:**

OUCC002,0002302 -19-31MAR10-1/1

# Contents

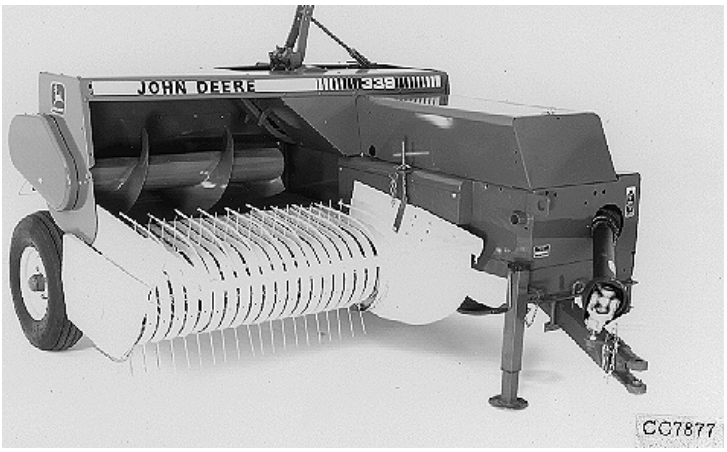


**Continued on next page**

*Original Instructions. 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.*

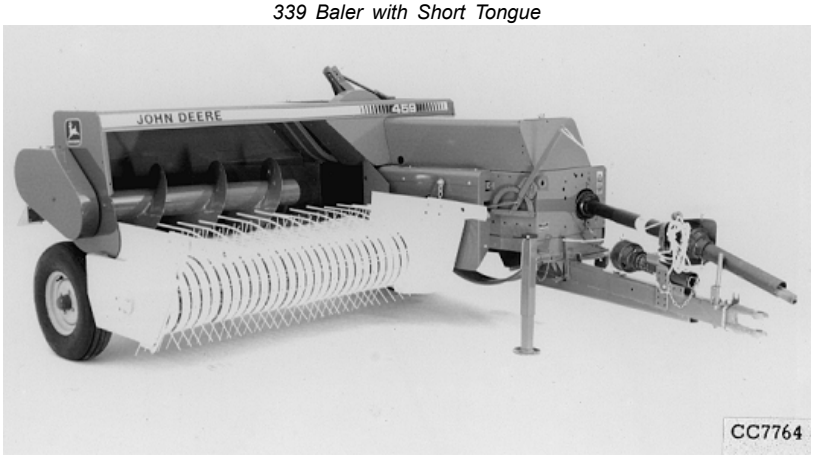
**Continued on next page**

## Identification Views




*339 Baler with Short Tongue*

CC7877 —UN—23SEP98




*459 Baler*

CC7764 —UN—05OCT98

OUCC002,000228A -19-03JUL06-1/1

## Recognize Safety Information

This is a 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.

T81389 —UN—07DEC88

DX,ALERT -19-29SEP98-1/1

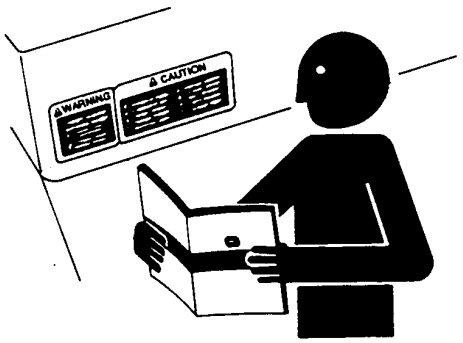
## Follow Safety Instructions

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.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

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.




TS201 —UN—23AUG88

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ -19-16JUN09-1/1

## 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.


TS187 —19—30SEP88

DX,SIGNAL -19-03MAR93-1/1

## Observe Road Traffic Regulations

Always observe local road traffic regulations when using public roads.

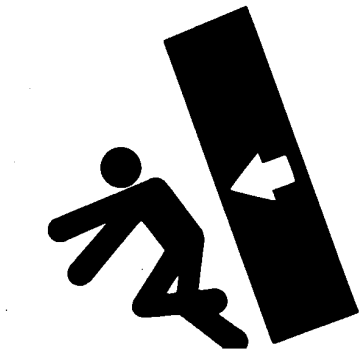
H28930 —UN—30JUN89

FX,ROAD -19-01MAY91-1/1

## Store Attachments Safely

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.



TS219 —UN—23AUG88

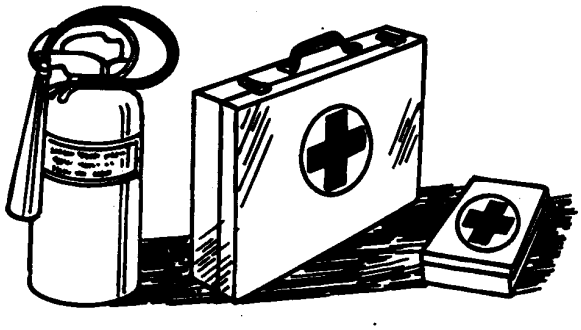
DX,STORE -19-03MAR93-1/1

## 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.



TS291 —UN—23AUG88

DX,FIRE2 -19-03MAR93-1/1

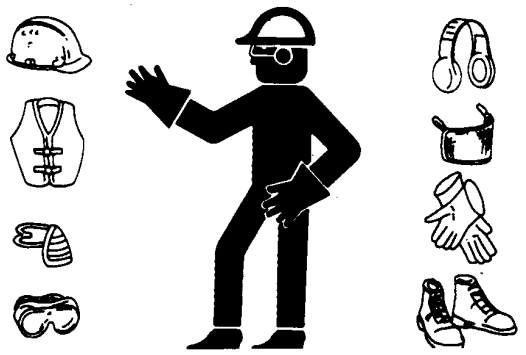
## Wear Protective Clothing

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.

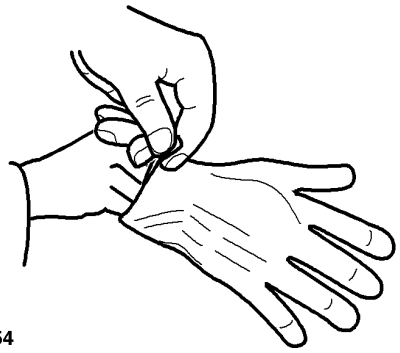


TS206 —UN—23AUG88

DX,WEAR -19-10SEP90-1/1

## Handling of Knives

Prevent personal injury by wearing safety gloves to handle knives.



CC1026954

CC1026928 —UN—26JAN05

OUCC006,0000DB6 -19-04JAN05-1/1

## Check Machine Safety

Always check the road and general operating safety of the machine before using.

FX,READY -19-28FEB91-1/1

## Stay Clear of Rotating Drivelines

Entanglement in rotating driveline can cause serious injury or death.

Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

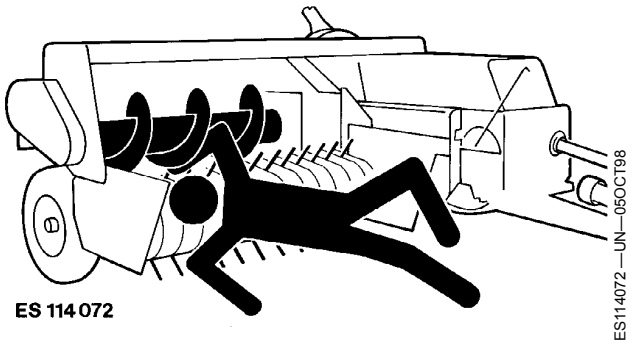
Wear close fitting clothing. Stop the engine and be sure PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

TS1644 —UN—22AUG95

DX,PTO -19-12SEP95-1/1

## Keep Clear of Feeder Elements

During operation, always maintain an adequate safety distance to the feeder elements, e.g. pickup, auger, etc. Due to their function, these elements cannot be completely covered with shields.

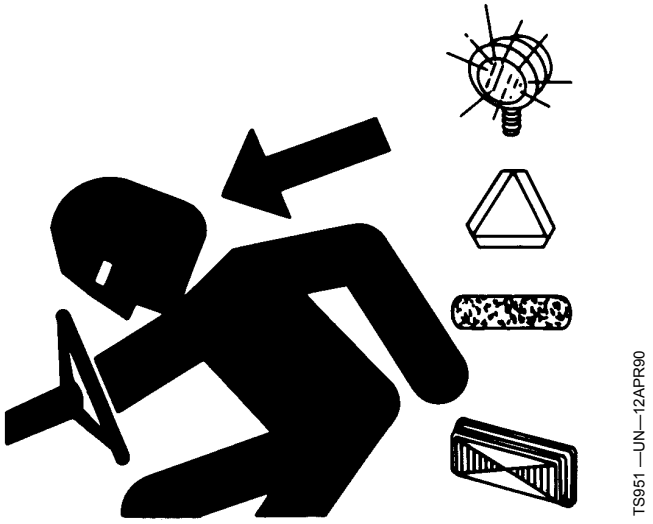



OUCC002,0002288 -19-03JUL06-1/1

## Use Safety Lights and Devices

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.



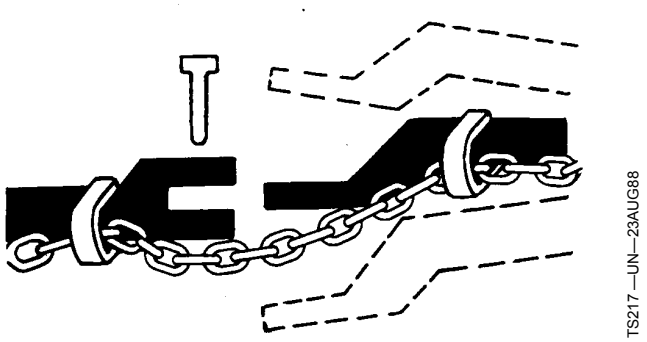

DX,FLASH -19-07JUL99-1/1

## Use a Safety Chain

A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

See your John Deere dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine. Do not use safety chain for towing.




DX,CHAIN -19-03MAR93-1/1

## Observe Maximum Transport Speed

**IMPORTANT: Maximum transport speed is determined by local road traffic regulations and speed capability of this implement.**

**Always observe local road traffic regulations when driving on public roads.**

Do not exceed implement gross weight when towing this implement at transport speed.

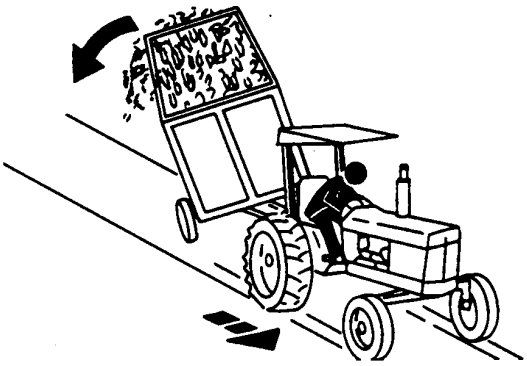
Before transporting baler, empty bale case and bale chute. Raise and secure bale chute. Raise pickup to highest position to prevent damage.

Some tractors can operate at speeds that exceed the maximum transport speed capability of this implement. Regardless of the maximum speed capability of the tractor being used to tow this implement, do not exceed 25 km/h (15.5 mph).

Exceeding the implement maximum transport speed can result in:

- Loss of control of the tractor/implement combination
- Reduced or no braking ability
- Implement tire failure
- Damage to the implement structure or its components

Use additional caution and reduce speed when towing under adverse surface conditions, when turning, and when on inclines.



TS216 —UN—23AUG88

CC03745,0001009 -19-01APR10-1/1

## 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.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

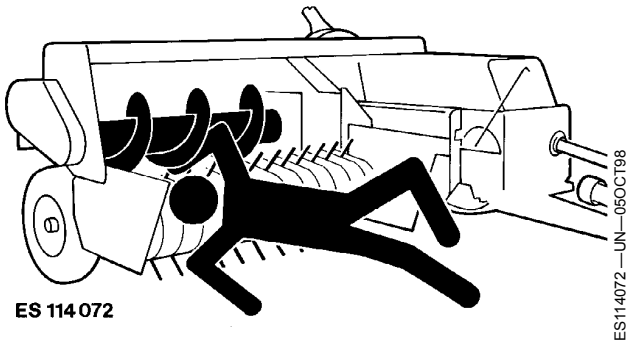
TS218 —UN—23AUG88

DX,SERV -19-17FEB99-1/1

## Protect People and Animals

Never allow anyone to walk or work near a running machine.

Be sure that people, livestock, or pets are not standing in the working area of the machine while operating.




CC03745,0001008 -19-01APR10-1/1

## Service Tires Safely

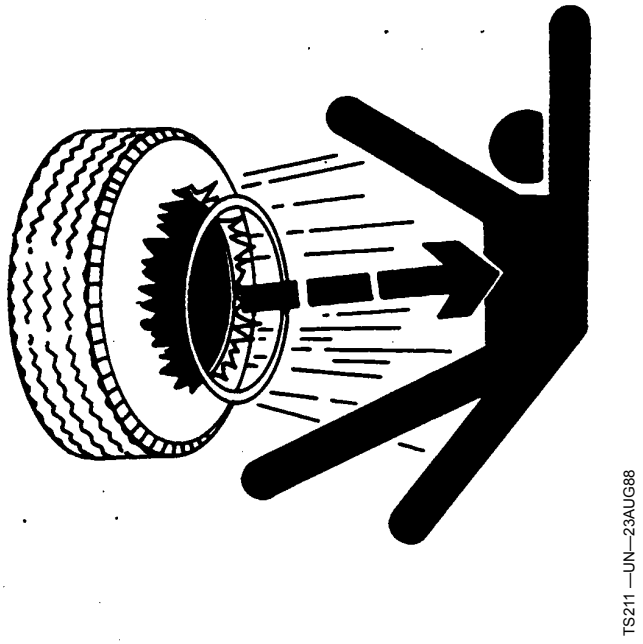
Explosive separation of a tire and rim parts can cause serious injury or death.

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 -19-24AUG90-1/1

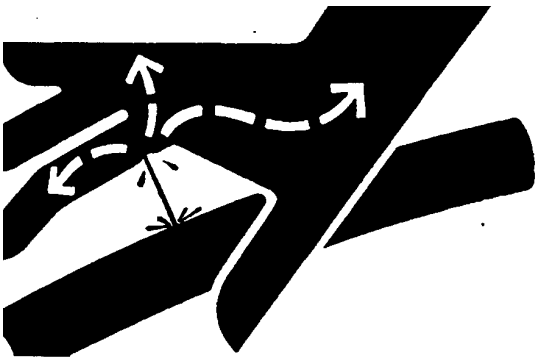
## Avoid High-Pressure Fluids

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 in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.



X9811 —UN—23AUG88

DX,FLUID -19-20AUG09-1/1

## Maximum Hydraulic Operating Pressure

The baler is designed for a maximum hydraulic operating pressure of 20000 kPa (200 bar, 2900 psi).

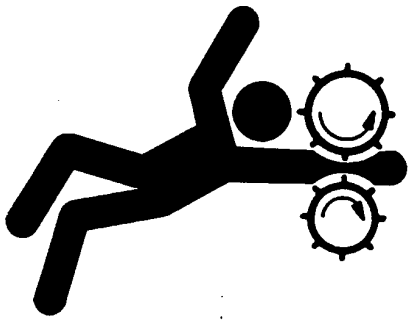
Do not connect baler to a tractor with a maximum hydraulic operating pressure over 20000 kPa (200 bar, 2900 psi).

OUCC006,0000487 -19-05SEP01-1/1

## 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.



TS228 —UN—23AUG88

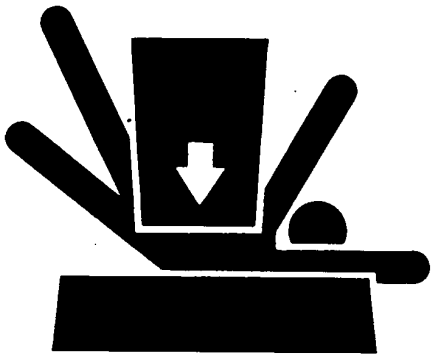
DX,LOOSE -19-04JUN90-1/1

## Support Machine Properly

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

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.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.



TS229 —UN—23AUG88

DX,LOWER -19-24FEB00-1/1

## Remove Paint Before Welding or Heating

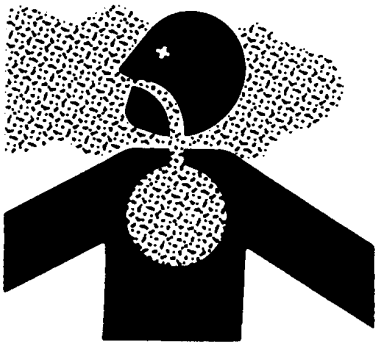
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- 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.

Do not use a chlorinated solvent in areas where welding will take place.



TS220 —UN—23AUG88

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

DX,PAINT -19-24JUL02-1/1

## 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 accidentally burst when heat goes beyond the immediate flame area.

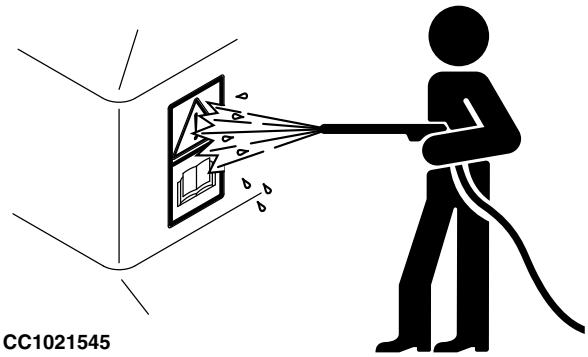
TS953 —UN—15MAY90

DX,TORCH -19-10DEC04-1/1

## Avoid High-Pressure Jet on Safety Decals

Pressurized water can remove or damage safety decals. Avoid to direct high-pressure jet on safety decals.

Immediately replace missing or damaged safety decals. Replacement safety decals are available from your John Deere dealer.



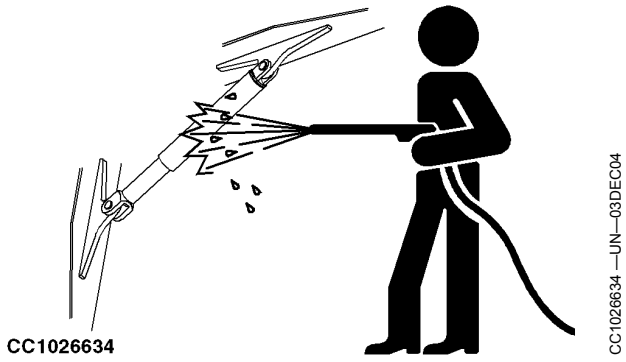
**CC1021545**

CC1021545 —UN—23APR02

CC03745,0000FD2 -19-08SEP09-1/1

## Avoid High-Pressure Jet on Cylinders

Pressurized water can damage cylinders. Avoid to direct high-pressure jet on cylinders.




CC03745,0000FD3 -19-08SEP09-1/1

## Dispose of Waste Properly

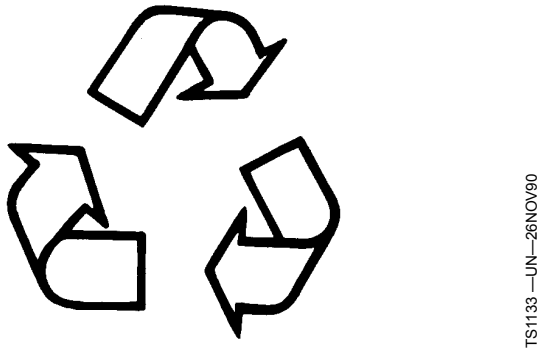
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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.




DX,DRAIN -19-03MAR93-1/1

# Safety Signs

## Pictorial Safety Signs

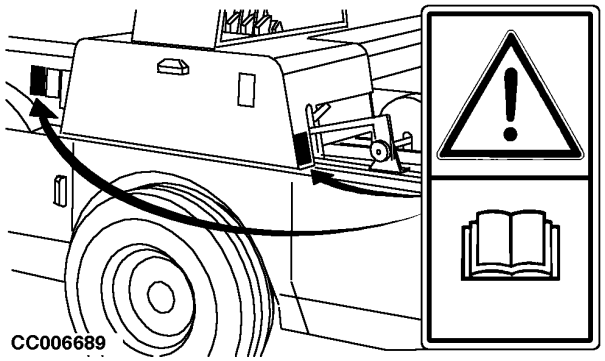
Safety signs are affixed at several important places of this machine to indicate a potential danger. The hazard is identified by a pictorial in a warning triangle. An adjacent pictorial provides information how to avoid personal injury. The safety signs, their location on the machine, and a brief explanatory text are shown below.


TS231 —19—07OCT88

FX,WBZ -19-19NOV91-1/1

## Operator's Manual

This operator's manual contains all important information necessary for safe machine operation. Carefully observe all safety rules to avoid accidents.

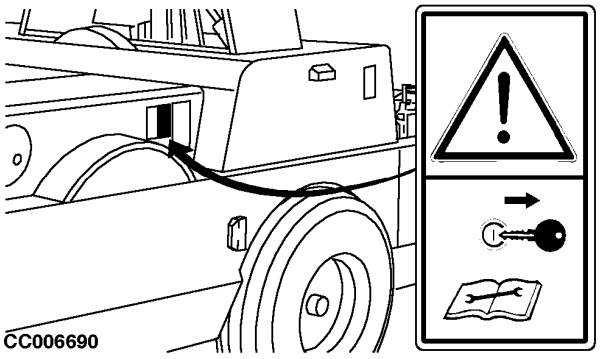



CC006689 —UN—23FEB95

OUCC002,000227F -19-03JUL06-1/1

## Repair and Maintenance

Before carrying out repair and maintenance work, shut off tractor engine and remove key.

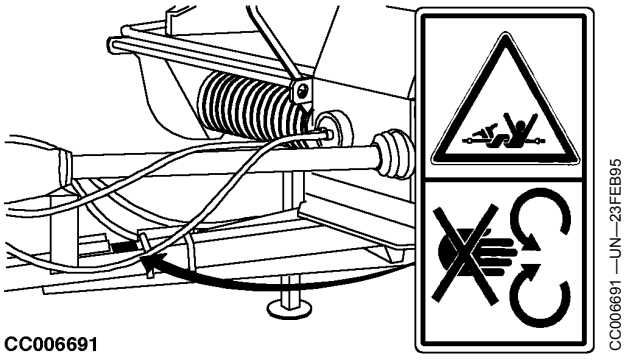



CC006690 —UN—23FEB95

OUCC002,0002280 -19-03JUL06-1/1

## Baler Hookup

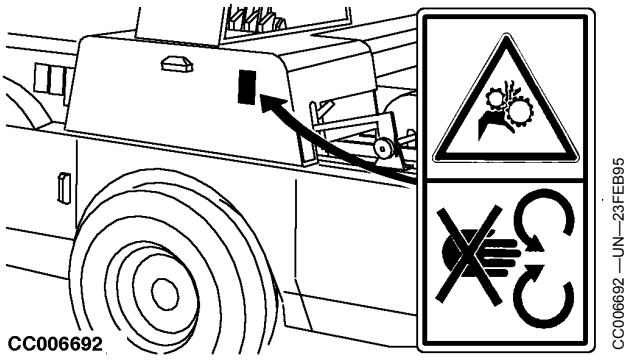
Stay clear of rotating hookup to avoid personal injury.




OUCC002,0002281 -19-03JUL06-1/1

## Drive Gears

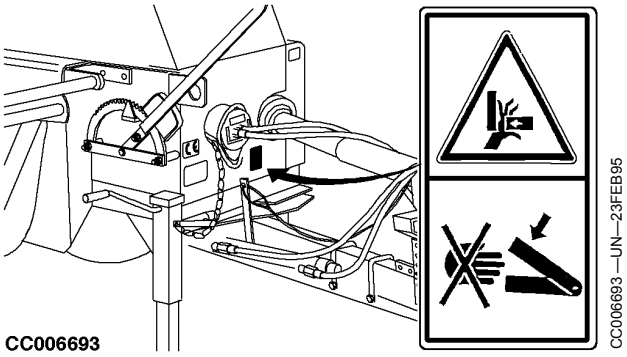
Do not open or remove guard when the baler is running.




OUCC002,0002282 -19-03JUL06-1/1

## Tongue Positioning

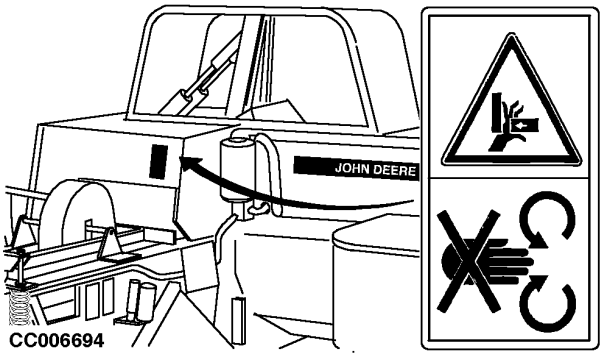
To avoid personal injury, stay clear of swinging tongue when positioning in work or transport position.




OUCC002,0002283 -19-03JUL06-1/1

## Knotter Mechanism

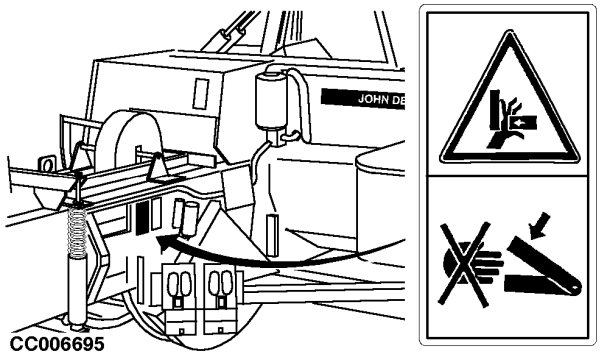
Do not open or remove guard when the baler is running.




OUCC002,0002284 -19-03JUL06-1/1

## Needles

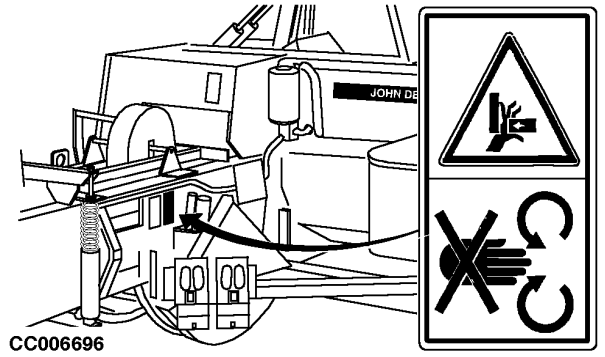
Do not open or remove guard when the baler is running.




OUCC002,0002285 -19-03JUL06-1/1

## Needle Tripping

Stay clear of moving needles during tying cycle to avoid personal injury.




OUCC002,0002286 -19-03JUL06-1/1

## Flywheel

Do not open or remove guard when the baler is running.


OUCC002,0002287 -19-03JUL06-1/1

## Check Ballast, Wheel Spacing and Tire Inflation

Provide sufficient weight to stabilize the tractor when operating on hilly ground or under other adverse conditions. See the tractor Operator's Manual.

To ensure proper stability, adjust ballast, wheel spacing, and tire inflation as described in the tractor Operator's Manual.

OUCC002,000228B -19-18MAR10-1/1

## Select Tractor PTO Speed

**CAUTION: Never operate a 540 rpm PTO baler with a tractor at 1000 rpm PTO speed.**

OUCC002,000228C -19-18MAR10-1/1

## PTO Speed

**CAUTION: Never operate a 540 rpm baler with a tractor at 1000 rpm PTO speed.**

The baler can be attached to any tractor having a drawbar and power take-off conforming to ASAE-SAE standards and having a PTO speed of 540 rpm matching the baler drive shaft speed.

OUCC002,000228D -19-03JUL06-1/1

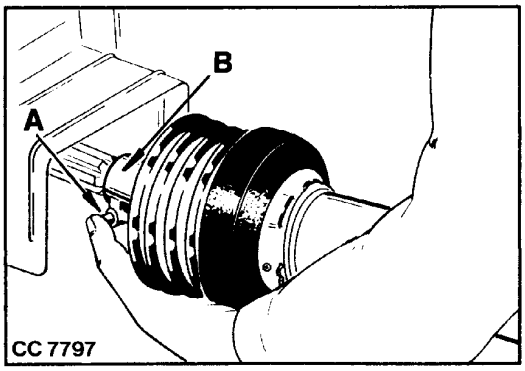
## Attach and Detach Standard Telescopic Hookup

**CAUTION: Never attach or detach the telescopic hookup while the tractor engine is running. Never use a steel hammer to attach or detach hookup.**

**IMPORTANT: When attaching the hookup for the first time, adjust length of the telescopic members (see Adjust Standard Telescopic Hookup in this Section).**

**IMPORTANT: Keep splines of hookup, PTO shaft and drive shaft free from paint, dirt, chaff, and burrs.**

Shut off tractor engine and wait until baler flywheel has come to a standstill.




CC7797 —UN—25SEP98

**A—Pin** **B—Hookup**

**Attach:**

Press pin (A) and simultaneously push hookup (B) onto tractor PTO until pin engages.

**Detach:**

Press pin (A) and simultaneously hold hookup (B) at guard tube. Remove hookup from tractor PTO.

OUCC002,000228E -19-23MAR10-1/1

## Attach and Detach CV Telescopic Hookup (459)

**CAUTION: Never attach or detach the telescopic hookup while the tractor engine is running. Never use a steel hammer to attach or detach hookup.**

Shut off tractor engine and wait until baler flywheel has come to a standstill.

**Attach:**

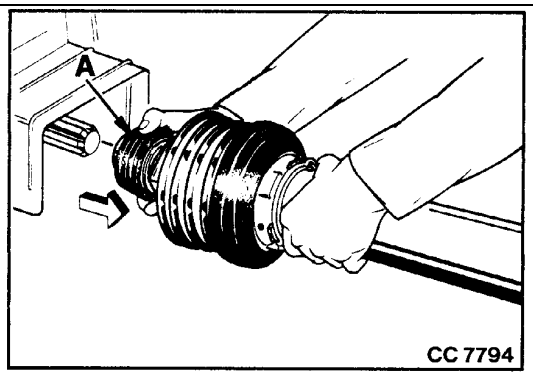
Pull back locking collar (A) until it remains in open position.

Push hookup onto tractor PTO until lock engages automatically. In this position the locking collar must rotate freely.

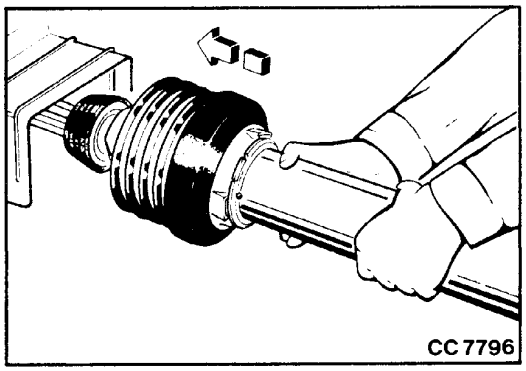
**Detach:**

Pull back locking collar (A) until it remains in open position. Hold hookup at guard tube and remove it from tractor PTO.

**A—Locking Collar**




CC7794 —UN—25SEP98




CC7796 —UN—25SEP98

OUCC002,000228F -19-18MAR10-1/1

## Attach and Detach CV Telescopic Hookup (339, 349 and 359)

**CAUTION: Never attach or detach the telescopic hookup while the tractor engine is running. Never use a steel hammer to attach or detach hookup or power shaft.**

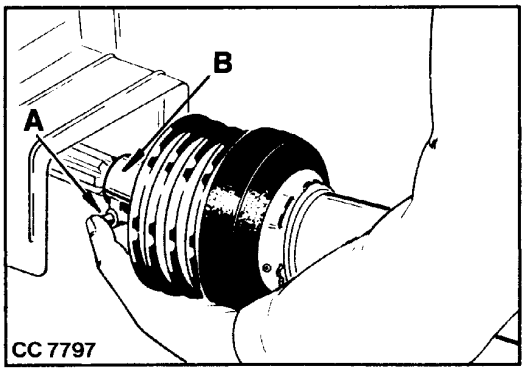
Shut off tractor engine and wait until baler flywheel has come to a standstill.

**Attach:**

Press pin (A) and simultaneously push telescopic shaft (B) onto tractor PTO until pin engages.

**Detach:**

Press pin (A) and simultaneously hold telescopic shaft (B) at guard tube. Remove shaft from tractor PTO.




CC7797 —UN—25SEP98

**A—Pin** **B—Telescopic Shaft**

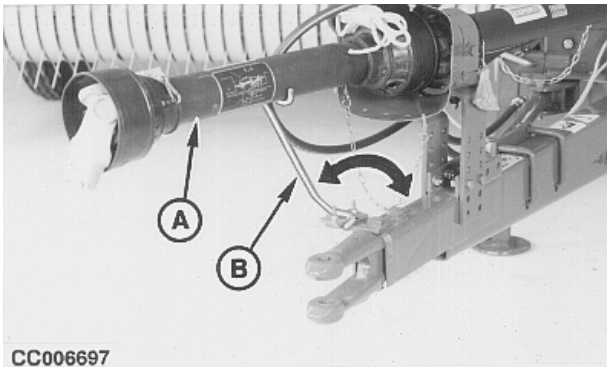
OUCC002,0002290 -19-18MAR10-1/1

## Store Hookup (All Types)

After detaching the baler from the tractor, store hookup (A) on support (B) as shown.

After attaching the baler to the tractor, store support (B) in down position.

**A—Hookup** **B—Support**



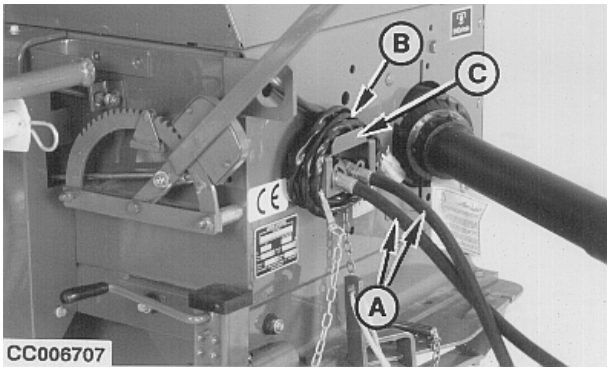

CC006697 —UN—28FEB95

OUCC002,0002291 -19-18MAR10-1/1

## Store Hydraulic Hoses and Wiring Harness

Once baler has been detached from tractor, hydraulic hoses (A) and wiring harness (B) can be stored on support (C) to keep them clean by avoiding contact with the ground.

**A—Hydraulic Hoses**
**B—Wiring Harness**
**C—Support**

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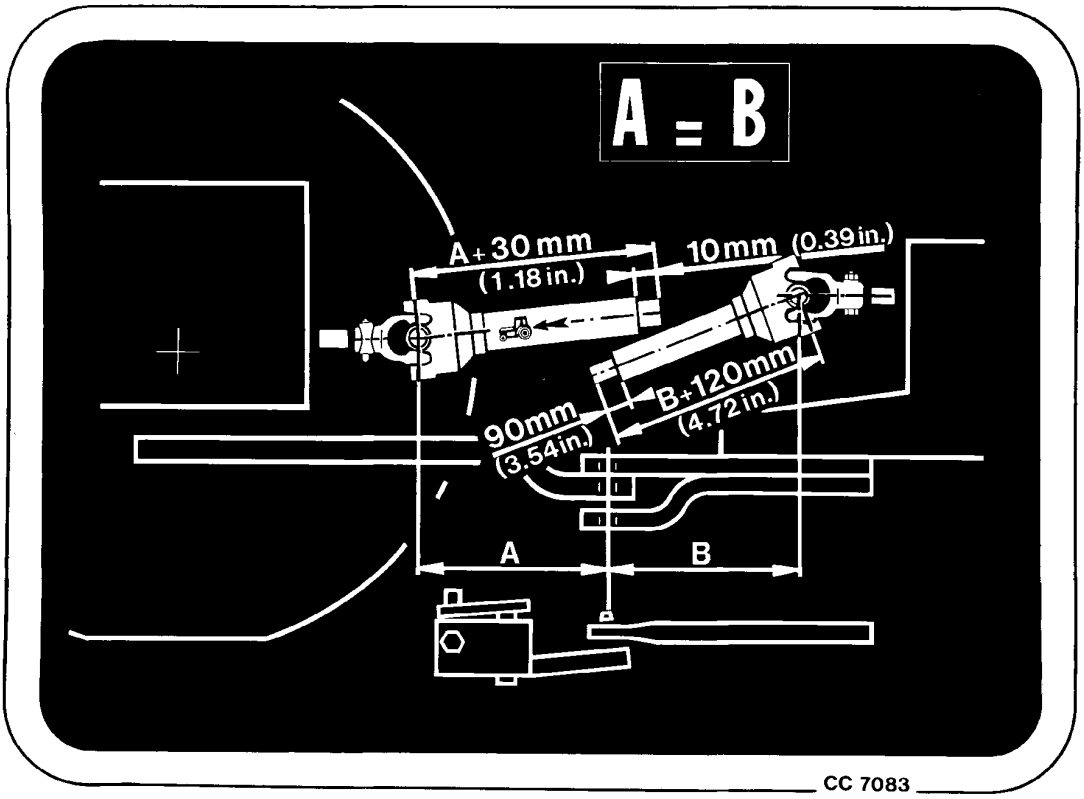
OUCC002,0002292 -19-18MAR10-1/1

## Adjust Standard Telescopic Hookup




CC7083 —UN—05OCT98

Adjust drawbar and hitch straps or ball joint hitch to obtain dimensions A = B.

Cut the hookup shafts and plastic shields according to the dimensions shown above.

Keep telescopic shafts free from burrs.

OUCC002,0002293 -19-18MAR10-1/1

## Adjust CV Telescopic Hookup

Normally, there is no need to adjust the length of the constant velocity hookup.

However, a good telescopic hookup length must have a minimum hookup overlap of 200 mm (7.9 in.).

If necessary, adjust length of tractor drawbar and hitch strap to obtain this minimum telescopic hookup overlap.

OUCC002,0002294 -19-18MAR10-1/1

## Adjust Powerline Support (Baler Without CV Hookup)

The powerline support must be adjusted to obtain the maximum straightness of the hookup from tractor to slip clutch.

Lower or raise powerline support into one of the six possible positions. Then, locate the pillow-block clevis in A, B or C, as necessary, for maximum vertical and lateral straightness of the powerline.

With the baler attached to tractor, make a righ turn until telescopic shaft ends make slight contact.

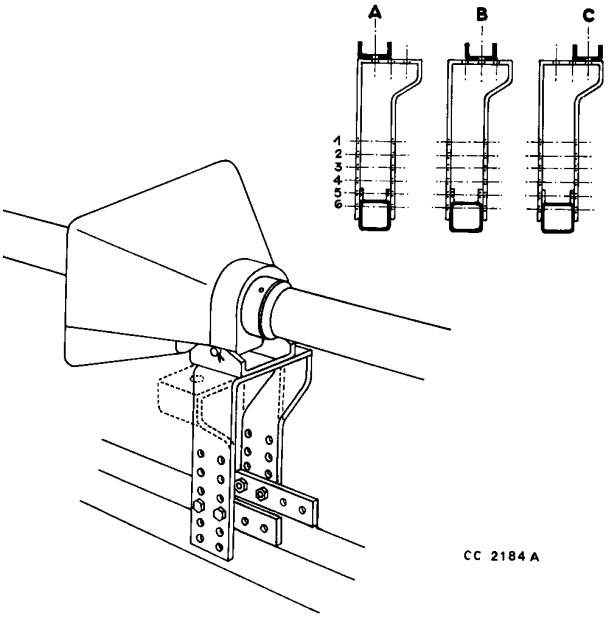
Then engage PTO drive gently. If an abnormal noise is heard at the slip clutch, lower or raise support under the powerline until the noise is eliminated.

*NOTE: Never use a steel hammer when connecting or removing U-joints of telescopic shaft.*

Keep splines on U-joint and PTO shaft clean.

With the telescopic tubes and shields shortened, it is necessary to clean, trim, and lubricate the ends of both tubes and shields.

It is critical to comply with the instructions for hitching. This will increase the life of hookup parts and eliminate strains and jerks on the PTO and on the powerline pillow-block.




CC2184A —UN—06OCT98

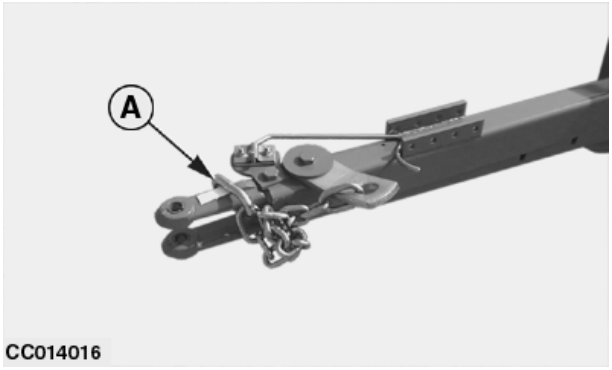
OUCC002,0002295 -19-18MAR10-1/1

## Connect Safety Chain

If baler is equipped with safety chain (A), connect and fasten to tractor drawbar structure. Remove all slack except what is needed for turns.

**IMPORTANT: Always observe local road traffic regulations when driving on public roads. For example, the use of safety chain is mandatory in France.**

**A—Safety Chain**




CC014016 —UN—22OCT98

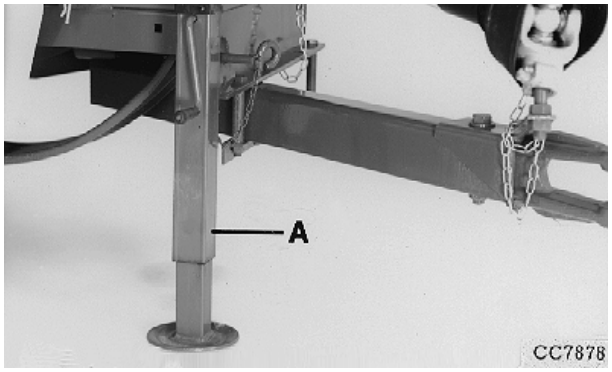
OUCC002,0002296 -19-18MAR10-1/1

## Store Jackstand (339)

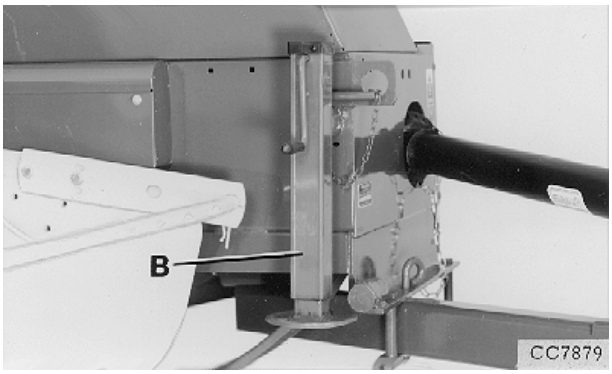
**CAUTION: Danger of crushing!**

When operating or transporting baler, secure jackstand (A) in storage position (B) as shown.

**A—Jackstand** **B—Storage Position**




CC7878 —UN—23SEP98




CC7879 —UN—23SEP98

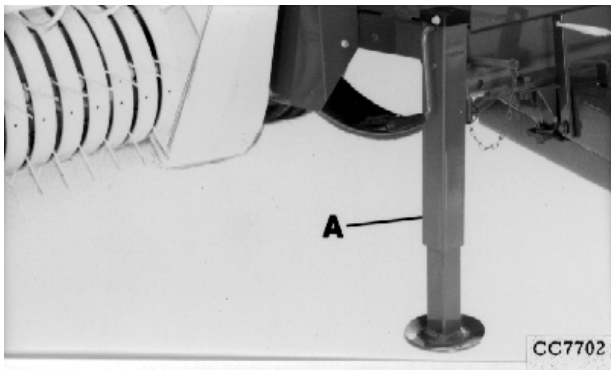
OUCC002,0002297 -19-18MAR10-1/1

## Store Jackstand (349, 359 and 459)

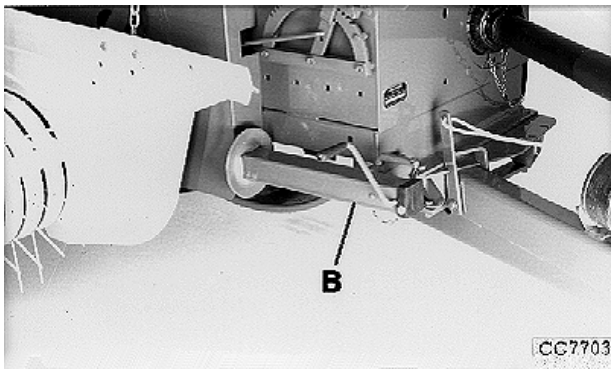
**CAUTION: Danger of crushing!**

When operating or transporting baler, secure jackstand (A) in storage position (B) as shown.

**A—Jackstand** **B—Storage Position**




CC7702 —UN—23SEP98




CC7703 —UN—23SEP98

OUCC002,0002298 -19-18MAR10-1/1

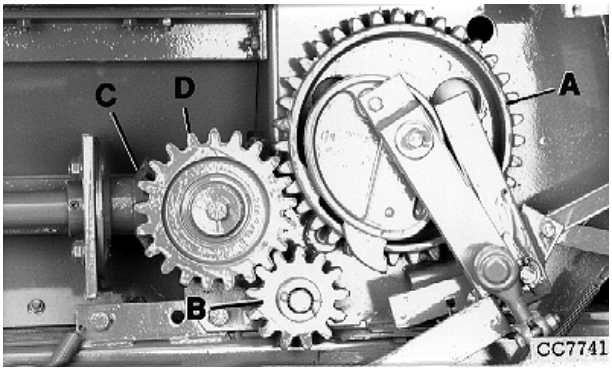
## Break-In Period

After baler has been attached to the tractor, inspect it to be sure that all screws are tight and all chains are correctly tensioned.

*NOTE: On twine balers, grease has been applied to the knotter area at the factory. Some misses in tying may occur on the first few bales due to this grease. Do not attempt to adjust the baler until all knotter parts have had time to become thoroughly polished by the twine.*

The drive gears must be lubricated during the break-in period to ensure that any casting irregularities are worn smooth. Apply a liberal coating of multipurpose grease to each tooth on all gears shown. This must be done before the 1 hour empty running break-in procedure described below.

A new baler must be given an empty running break-in period of at least 1 hour to allow parts to work in gradually. After a short run at slow idle, stop machine and inspect for loose screws, overheated bearings, binding parts etc. Also check chain tension. Run baler at slow idle for the first 30 minutes, then increase to full speed for rest of the break-in period. Inspect baler frequently during this break-in period. Never run baler at full speed without twine in twine disk.




**A—Clutch Ring Gear**
**B—Auger Drive Gear**
**C—Main Drive Gear**
**D—Cluster Gear**

OUCC002,0002299 -19-23MAR10-1/1

## Prepare for Transport

Raise pickup.

**⚠ CAUTION: Use care when towing baler at transport speeds.**

**IMPORTANT: Do not make sharp turns when transporting baler. Damage could result if tongue strikes tractor tire.**

**IMPORTANT: Always observe local road traffic regulations when driving on public roads. For example, the use of safety chain is mandatory in France. See Connect Safety Chain in Attaching and Detaching Section.**

When transporting baler at higher speeds, a rocking motion may occur. Reduce speed until rocking stops.

Do not tow baler at a speed exceeding 25 km/h (16 mph).

OUCC002,000229A -19-23MAR10-1/1

## Position Tongue (339)

**CAUTION: Danger of crushing!**

To change from operating to transport position, put a chock block behind the right wheel and remove pin (A).

Shift tongue to the right and secure it with pin (A) and quick lock pin (B).

Remove chock block.

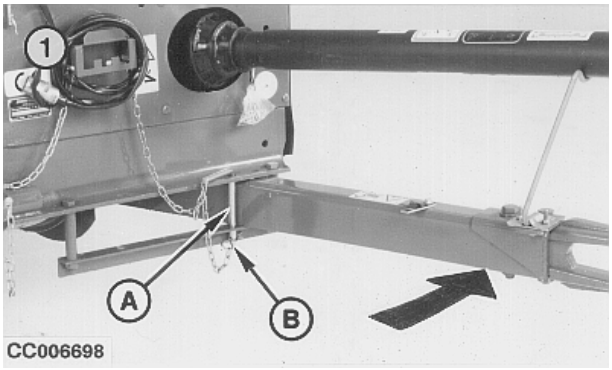
To change from transport to operating position, put a chock block in front of the right wheel and remove pin (A).

Shift tongue to the left and secure it with pin (A) and quick lock pin (B).

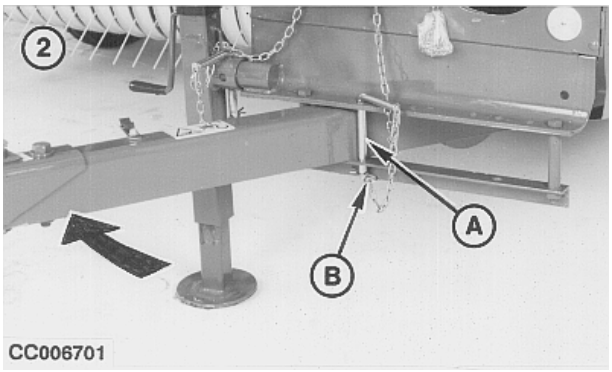
Remove chock block.

**A—Pin**
**B—Quick Lock Pin**

**1— Tongue in Operating Position**
**2— Tongue in Transport Position**




CC006698 —UN—28FEB95




CC006701 —UN—28FEB95

OUCC002,000229B -19-18MAR10-1/1

## Position Tongue (349, 359 and 459)

**CAUTION: Danger of crushing!**

To change from operating to transport position, put a chock block behind the right wheel and remove pin (A).

Pull latch (B) with rope.

Shift tongue to the right and release tension of rope to permit latch (B) to engage in transport position. Secure tongue with pin (A) and quick lock pin (C).

Remove chock block.

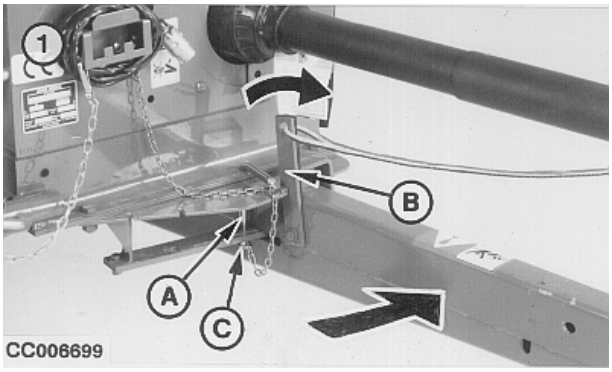
To change from transport to operating position, put a chock block in front of the right wheel and remove pin (A).

Pull latch (B) with rope.

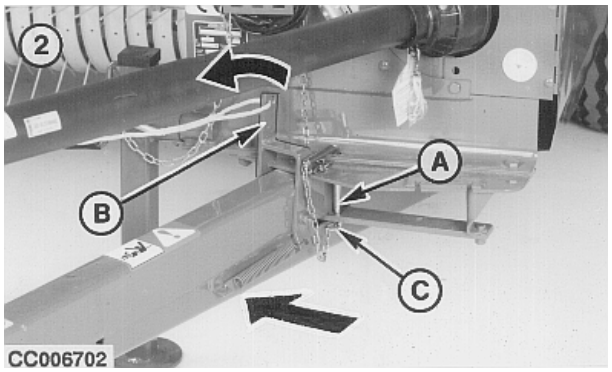
Shift tongue to the left and release tension of rope to permit latch (B) to engage in operating position. Secure tongue with pin (A) and quick lock pin (C).

Remove chock block.

**IMPORTANT: If baler is equipped with right wheel lock system, always stop the tractor before operating at a very low ground speed. Pull latch (B) with rope to engage the lock system and change the tongue position.**




CC006699 —UN—28FEB95




CC006702 —UN—28FEB95

**A—Pin**
**B—Latch**
**C—Quick Lock Pin**

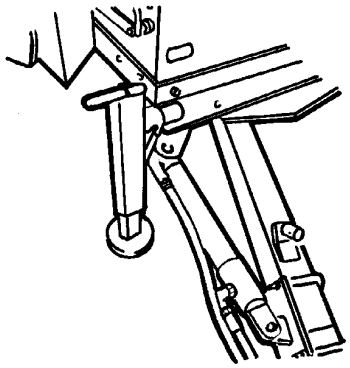
**1— Tongue in Operating Position**
**2— Tongue in Transport Position**

OUCC002,000229C -19-18MAR10-1/1

## Hydraulic Tongue Operation (339 with Long Tongue, 349, 359 and 459)

A hydraulic cylinder bundle is available for tongue positioning, allowing the tongue to be maintained hydraulically in transport or operating position.

This equipment requires a tractor with double-acting hydraulic couplers.



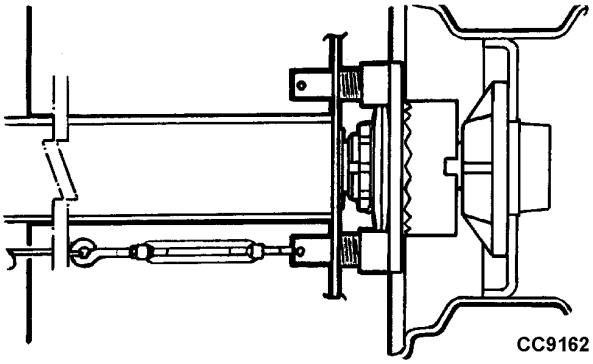

CC9161 —UN—23SEP98

OUCC002,000229D -19-18MAR10-1/1

## Mechanical Tongue Operation with Wheel Lock (339 with Long Tongue, 349, 359 and 459)

This device allows the tongue to be moved from transport to operating position without using a chock block in front of the right wheel.

When the latch is pulled using the rope, the right wheel is automatically locked.




CC9162 —UN—23SEP98

OUCC002,000229E -19-18MAR10-1/1

## Select Correct Twine and Wire

For trouble-free baling operation, select good quality twine or wire.

Select twine of good tensile strength and uniform size for proper knotter operation. This will also help prevent twine from breaking during handling and transporting of bales.

OUCC002,000229F -19-18MAR10-1/1

## Load Twine Box

Place a ball of good quality twine in each compartment of the twine box. Be sure the twine is pulled from end of ball marked ”Top”.

Join balls of twine by tying outside end of the first ball to inside end of the next one. When joining twine, use a modified square knot for sisal twine and a sheet bend knot for plastic twine.

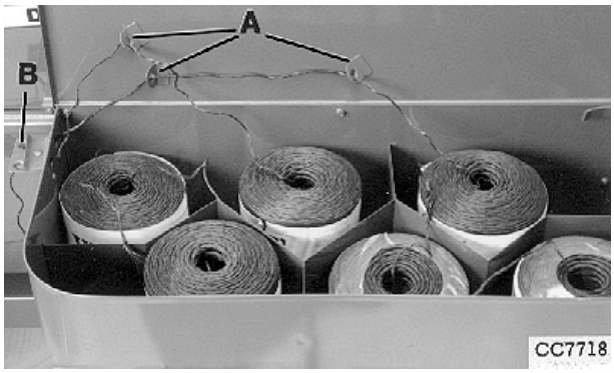
Trim loose end of twine as close to knot as possible.

Thread twine from the center of each ball through its respective guide (A) in the box lid.

Always have a new ball of twine in the left compartment.

Thread both ends of twine through tension plate (B) on the side of the twine box.

**A—Guide** **B—Tension Plate**

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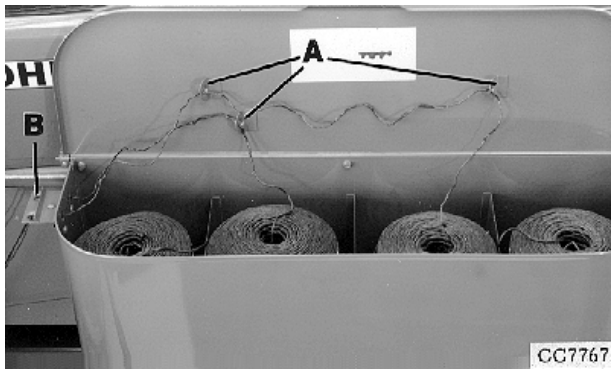


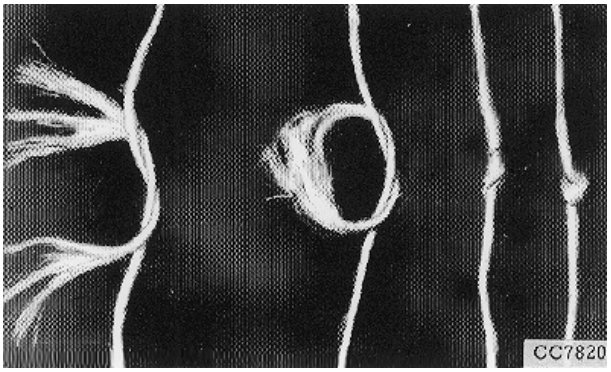

CC7767 —UN—23SEP98

OUCC002,00022A0 -19-18MAR10-1/1

## Tie Modified Square Knot (Sisal Twine)

**IMPORTANT: The knot must be small enough to pass through the guides and needle eyes.**

Moisten twine ends and tie twine balls together using a square or modified square knot as shown.

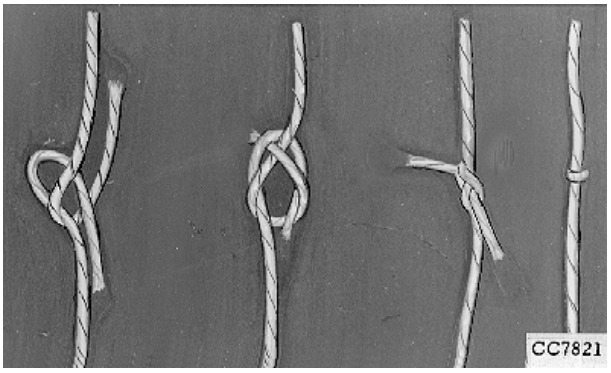



OUCC002,00022A1 -19-18MAR10-1/1

## Tie Sheet Bend Knot (Plastic Twine)

**IMPORTANT: The knot must be small enough to pass through the guides and needle eyes.**

Tie plastic twine balls together using a sheet bend knot as shown.




OUCC002,00022A2 -19-18MAR10-1/1

## Before Threading Needles

**CAUTION: Be careful when threading the needles. Stop tractor engine, remove key, and wait until baler flywheel has come to a standstill.**

The needles can be threaded without risk by lying on your back below the baler with your head in the direction of forward travel.

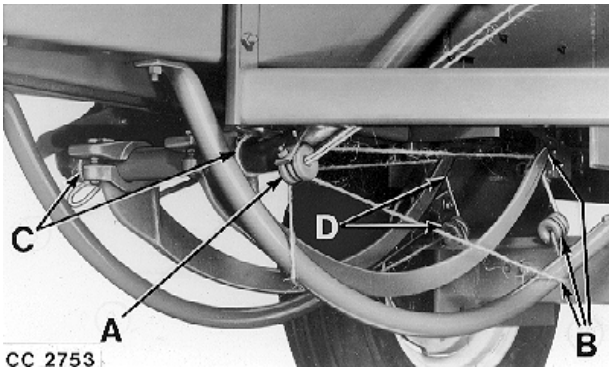

OUCC002,00022A3 -19-03JUL06-1/1

## Thread Needles (Twine Baler)

1. Thread both ends of the twine through eye (A) on needle frame.

**IMPORTANT: Be sure twine strands are not crossed when threading.**

2. With needles in ”home” position, run end of one strand of twine below needle guard, through the eye beneath the right needle and through right needle (B).
3. Run twine back to needle frame (C) and fasten as illustrated.
4. Repeat steps 2 and 3 with the other strand of twine to thread left needle (D).




**A—Eye**
**B—Right Needle**
**C—Needle Frame**
**D—Left Needle**

OUCC002,00022A4 -19-18MAR10-1/1

## After Threading Needles

When both right and left needles have been properly threaded, trip measuring wheel arm and turn flywheel counterclockwise by hand.

Continue turning flywheel until needles are all the way up, twine is held in twine disk and the needles have returned to ”home” position.

Remove the twine which was temporarily secured to the needle frame. Twine is now ready for baling operation.

OUCC002,00022A5 -19-03JUL06-1/1

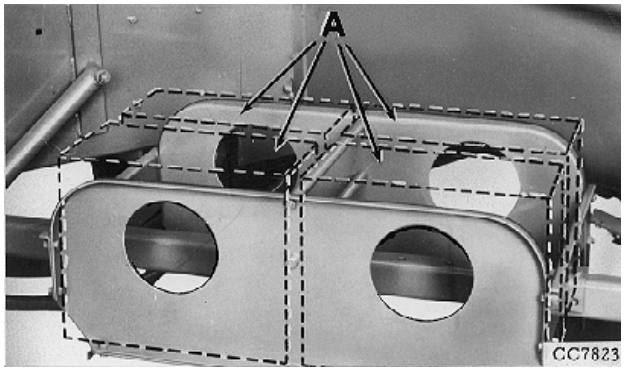
## Load Wire Box

Place four cartons of wire (A) in the wire box.

*NOTE: Splice center wire of each rear coil to outside wire of its respective front coil. Make a small tight splice so wire will pull through the wire guides and needles without snagging.*

When front coils of wire have run out, place rear coils forward. Locate two new cartons of wire in the wire box and splice wires.

Thread baler with the center wire from each front coil as shown.

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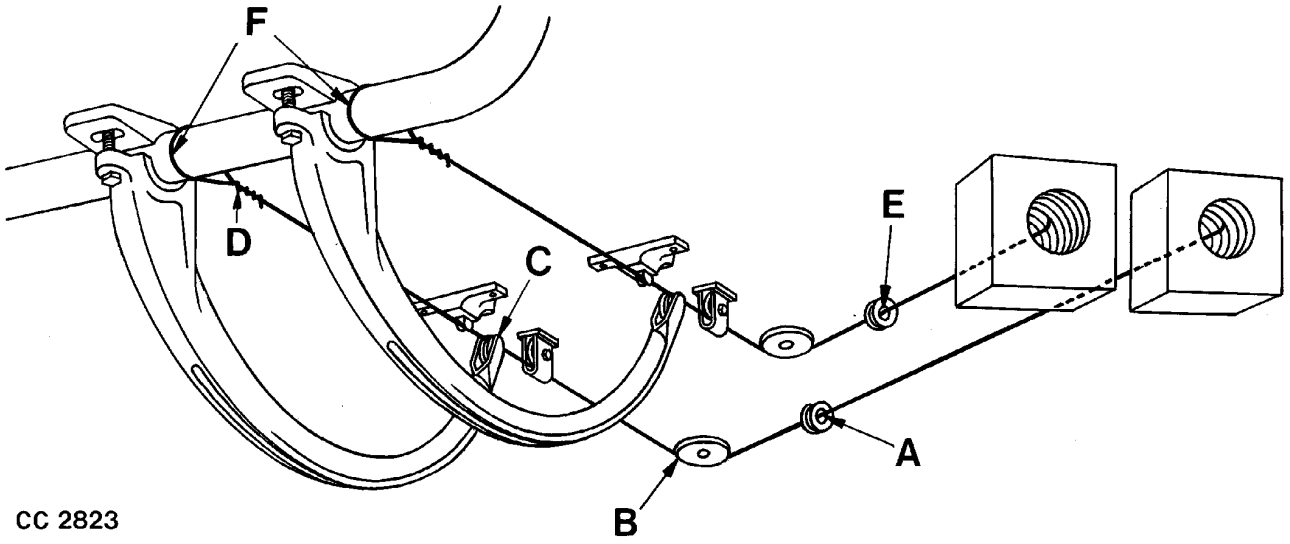
**A—Cartons of Wire**

OUCC002,00022A6 -19-22MAR10-1/1

## Thread Needles (Wire Baler)




CC 2823

CC2823 —UN—23SEP98

**A—Guide**
**B—Wire Pulley**
**C—Needle Pulley**
**D—Twist**
**E—Guide**
**F—Wire**

1. Thread the wire from right coil through guide (A), then through front hole in main frame.
2. Continue threading wire around front left wire pulley (B) inside of guides.
3. With needles in ”home” position, thread wire under left-hand side center wire pulley and over left needle pulley (C).
4. Pull wire back, loop around needle frame and secure with a twist (D).
5. Thread left wire through guide (E) and rear hole in main frame; then repeat steps 2, 3 and 4 on right pulleys and needle.

   When both strands of the wire have been properly threaded, trip measuring arm and turn flywheel counterclockwise by hand. Continue turning the flywheel until the needles have been all the way up, the wire is held by grippers and the needles have returned to the ”home” position.
6. Remove wire (F) from the needle frame.

*NOTE: Check wire pulleys frequently to ensure that they turn freely.*

OUCC002,00022A7 -19-18MAR10-1/1

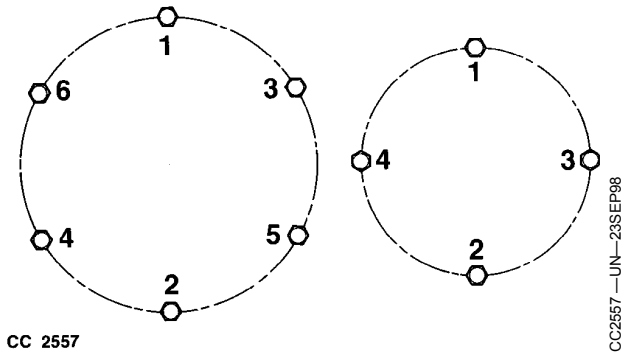
## Tire Inflation

| Tire | Tire type | Pressure |
|---|---|---|
| **Right wheel:** | | |
| Baler 339 | 7.00-12 6 PR | 230 kPa (2.3 bar; 32.2 psi) |
| Baler 349 | 7.00-12 6 PR | 230 kPa (2.3 bar; 32.2 psi) |
| Baler 359 | 7.00-12 6 PR<br>10.0/75-15.3 6 PR | 230 kPa (2.3 bar; 32.2 psi)<br>230 kPa (2.3 bar; 32.2 psi) |
| Baler 459 | 7.00-12 6 PR<br>10.0/75-15.3 6 PR | 230 kPa (2.3 bar; 32.2 psi)<br>230 kPa (2.3 bar; 32.2 psi) |
| **Left wheel:** | | |
| Baler 339 | 10.0/75-15.3 6 PR<br>10.0/80-12 6 PR | 230 kPa (2.3 bar; 32.2 psi)<br>230 kPa (2.3 bar; 32.2 psi) |
| Baler 349 | 10.0/75-15.3 6 PR | 230 kPa (2.3 bar; 32.2 psi) |
| Baler 359 | 10.0/75-15.3 6 PR<br>10.0/80-12 6 PR<br>11.5/80-15.3 6 PR | 230 kPa (2.3 bar; 32.2 psi)<br>230 kPa (2.3 bar; 32.2 psi)<br>340 kPa (3.4 bar; 47.6 psi) |
| Baler 459 | 10.0/75-15.3 6 PR<br>11.5/80-15.3 6 PR | 230 kPa (2.3 bar; 32.2 psi)<br>340 kPa (3.4 bar; 47.6 psi) |
| **Gauge wheel:** | | |
| All balers | 4.00-8 4 PR | 100 kPa (1 bar; 14 psi) |

OUCC002,00022A8 -19-09MAR10-1/1

## Tighten Wheel Screws

Tighten wheel screws to 115—135 N·m (85—100 lb.-ft.) in the sequence shown.




OUCC002,00022A9 -19-23MAR10-1/1

# Operating the Baler

## Start and Operate the Baler

**IMPORTANT: Do not disengage PTO during the tying cycle as flywheel shear bolt will shear when re-engaged.**

Engage tractor PTO and slowly increase engine speed to obtain a drive shaft speed of 540 rpm. The plungerhead must normally operate at 80 strokes per minute under load for 339 and 349 balers, 92 strokes for a 359 baler, and 100 strokes for a 459 baler. The baler may not produce uniform bales until a sufficient compression is built up to turn the bale measuring wheel.

If hay does not fill the bale case, increase ground speed or windrow size. The baler is operating efficiently when it is making 12—18 strokes per 90 cm (36 in.) bale or 5—8 cm (2—3 in.) of compressed material per stroke.

**IMPORTANT: If the auger drive belt slips, baler is being crowded, which may result in damage.**

*NOTE: For good bale shape, adjust overhead feeder forks and make uniform windrows. Operate in a higher tractor gear and reduce engine speed, if necessary.*

Rough ground conditions may require ground speed or windrow adjustment. Clean out chaff and trash daily from around tying mechanism and plungerhead stop.

Adjust plungerhead after the first 1000 bales and thereafter as necessary.

OUCC002,00022AA -19-19MAR10-1/1

## Prepare the Crop

Windrows must be of moderate size and made by a side-delivery rake or windrower.

OUCC002,00022AB -19-19MAR10-1/1

## Select Correct Direction of Travel

Bale the driest hay first by starting with the outer windrows.

Travel in direction that rake or windrower travelled to pickup hay.

OUCC002,00022AC -19-19MAR10-1/1

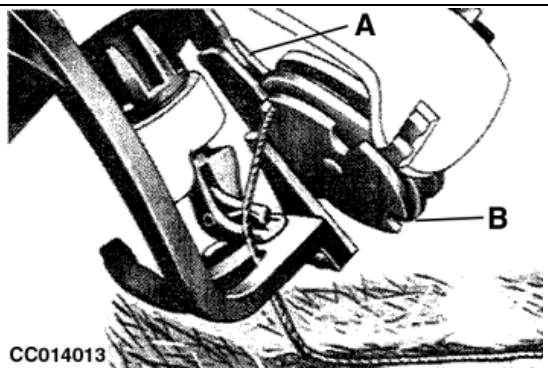
## Twine Tying Cycle

The twine tying cycle is as follows:

1. **Initial Position of Knotter**

   Twine is held in twine disk (B) by twine holder (A). As the bale is formed, it pulls twine from the twine box.

**A—Twine Holder** **B—Twine Disk**

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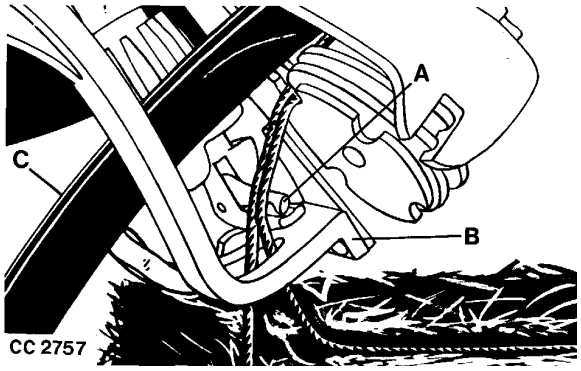
OUCC002,00022AD -19-16MAR10-1/6

2. **Twine Holding**

When the bale reaches its proper length, the measuring wheel trips the tying mechanism. With the help of the tucker finger, needle (C) brings the second strand of twine through guide on knife arm (B), across billhook (A) and into the twine disk.

**A—Billhook**
**B—Knife Arm**
**C—Needle**

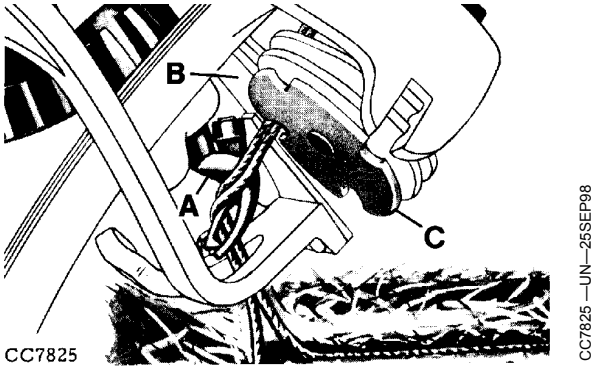



OUCC002,00022AD -19-16MAR10-2/6

3. **Start of Tying**

Billhook (A) starts its revolution when the gear teeth on the intermittent knotter gear have operated the disk drive pinion and turned the disk sufficiently to permit twine holder (B) to secure both strands of twine in disk (C).

**A—Billhook**
**B—Twine Holder**
**C—Twine Disk**



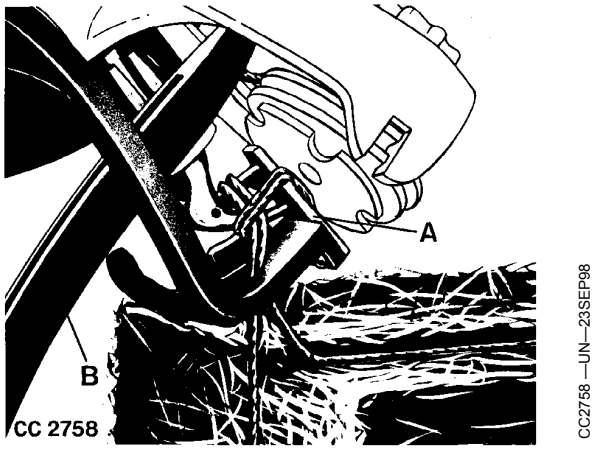

OUCC002,00022AD -19-16MAR10-3/6

4. **Prepare the Knot**

As the billhook turns, it forms a loop of twine around the hook and the jaw opens to receive the twine. Knife (A) moves forward, ready to cut the twine between billhook and disk.

At this stage, needle (B) begins to retract, leaving the twine in the disk which will be held there for the next knot.

**A—Knife**
**B—Needle**

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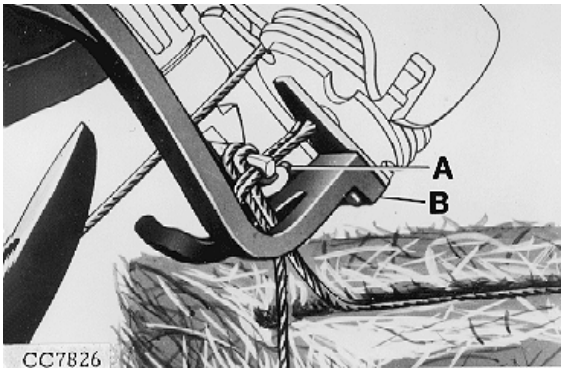
OUCC002,00022AD -19-16MAR10-4/6

5. **Cut the Twine**

   Billhook jaw has now closed and holds the ends of the twine tightly. The twine has been cut and wiper (A) on knife arm (B) wipes looped twine from the outside of the billhook to complete the knot.

**A—Wiper** **B—Knife Arm**

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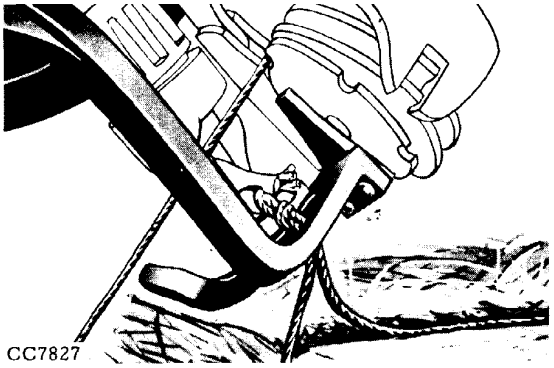
OUCC002,00022AD -19-16MAR10-5/6

6. **End of Tying**

   The tied knot drops from the billhook.

   The needles then return to the ”home” position, leaving the strand of twine in the disk and extending through the bale case ready to receive material for the next bale, at the end of which another tying cycle begins.

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OUCC002,00022AD -19-16MAR10-6/6

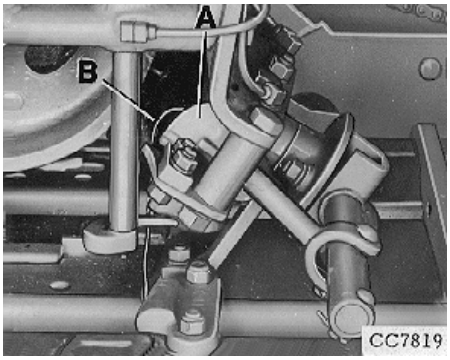
## Wire Twist Cycle

1. **Initial Position of Twister**

   The twisting cycle is as follows:

   After needle has been threaded, the end of the wire (B) is anchored by wire gripper (A). As the bale is being formed, needle wire is pulled from the wire box around the bale.

**A—Wire Gripper** **B—Wire**

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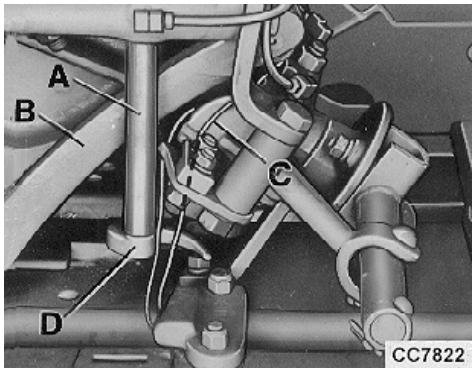
OUCC002,00022AE -19-23MAR10-1/4

2. **Catch the Wire**

When the bale reaches the desired length, the measuring wheel trips the twisting mechanism. As needle (B) starts up, it catches wire (C) around the bottom of the bale and carries it up the front of the bale.

The intermittent drive gear on the needle lift shaft engages the pinion on the bevel gear drive shaft. It turns the pinion on twister shaft (A). The needle continues to rise and places wire in shear plate notch on the opposite side of anchored wire.

Meanwhile, twister hook (D) on twister shaft rotates clockwise. The twister hook completes one revolution and grasps both strands of wire.




CC7822 —UN—23SEP98

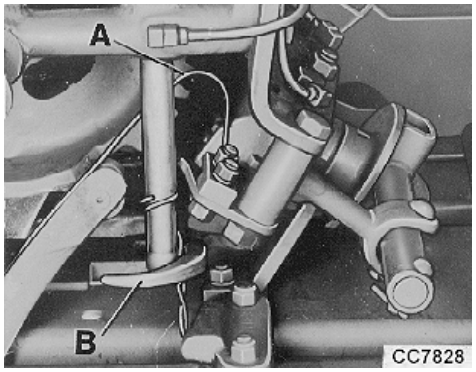
**A—Twister Shaft**
**B—Needle**
**C—Wire**
**D—Twister Hook**

OUCC002,00022AE -19-23MAR10-2/4

3. **Twist the Wire**

The wire gripper drive pinion engages in the intermittent drive gear. This pinion drives the gripper shaft, which actuates the arm of the gripper to release the anchored wire (A), also shearing and anchoring needle wire as gripper moves to the other side. The needle returns home and twister hook (B) makes five complete revolutions, twisting the ends of the wire together.

**A—Wire**
**B—Twister Hook**

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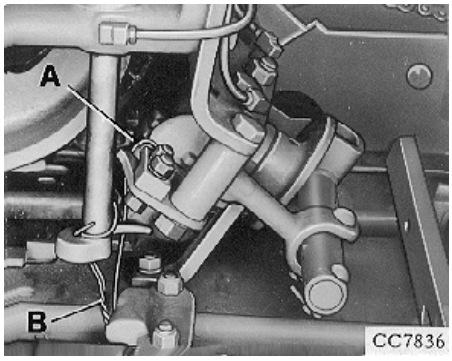
OUCC002,00022AE -19-23MAR10-3/4

4. **End of Twist Cycle**

The finished bale pulls twisted wire (B) off the twister hook. The next bale then pulls anchored wire (A) into position for the next twisting cycle.

**A—Anchored Wire**
**B—Twisted Wire**

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OUCC002,00022AE -19-23MAR10-4/4

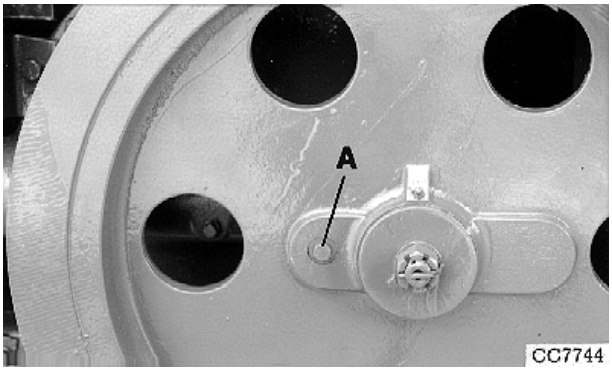
## Replace Flywheel Shear Bolt

**CAUTION: Flywheel may rotate for several minutes after shear bolt has sheared. To avoid bodily injury, disengage all power, shut off engine, remove key, and wait until flywheel has come to a standstill.**

Locate cause of shearing and correct. Replace with a new special shear bolt (A). Do not replace with standard bolt.

If needles are in the bale case when the bolt shears, return the needles to ”home” position by hand before starting baler.

**IMPORTANT: After replacing the shear bolt, move plungerhead forward (towards tractor) before returning needles to the ”home” position. This prevents damage to the safety stop rod.**




**A—Shear Bolt**

OUCC002,00022AF -19-16MAR10-1/1

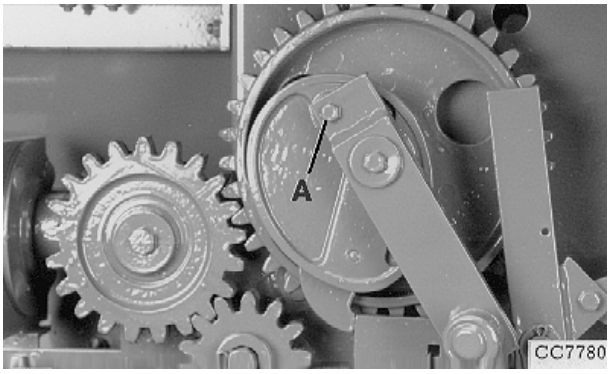
## Replace Knotter and Needle Drive Shear Bolt

**IMPORTANT: If breakage occurs, see the John Deere dealer for correct replacement. Do not use a substitute bolt.**

Correct the problem and replace special shear bolt (A).

Do not replace with a standard bolt.

**A—Shear Bolt**




OUCC002,00022B0 -19-19MAR10-1/1

## Adjust Compressor Rod Height

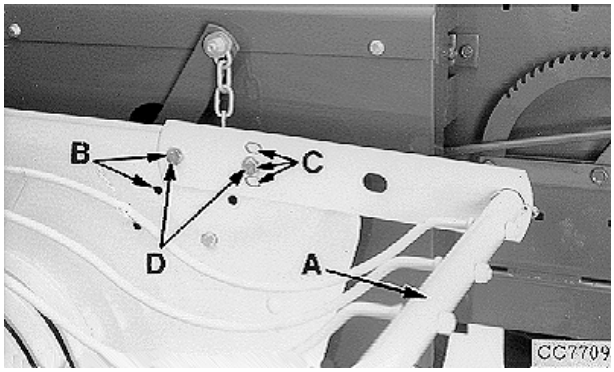
**IMPORTANT: Compressor rod bar must clear highest part of windrow.**

Several positions (two different heights (B) with three different angles (C) each) are possible for compressor rod bar (A).

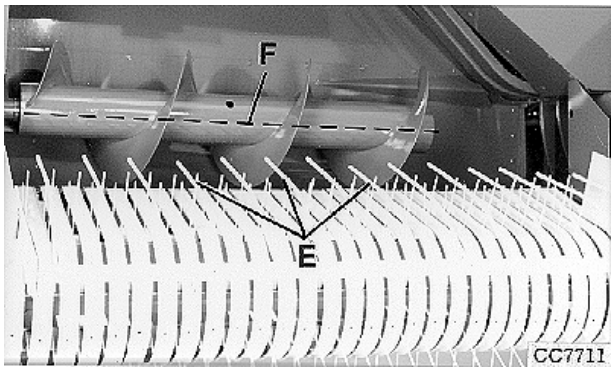
Remove two lock nuts and carriage bolts (D) from each end. Reposition compressor rod assembly at the desired height and angle and secure with lock nuts and carriage screws.

**IMPORTANT: Rear of compressor rods (E) must clear the strippers enough to prevent bunching of material. They must not be any higher than center line of auger (F).**

**A—Compressor Rod Bar**
**B—Height Adjustment Holes**
**C—Angle Adjustment Holes**
**D—Carriage Bolt**
**E—Compressor Rods**
**F—Center Line of Auger**




CC7709 —UN—23SEP98



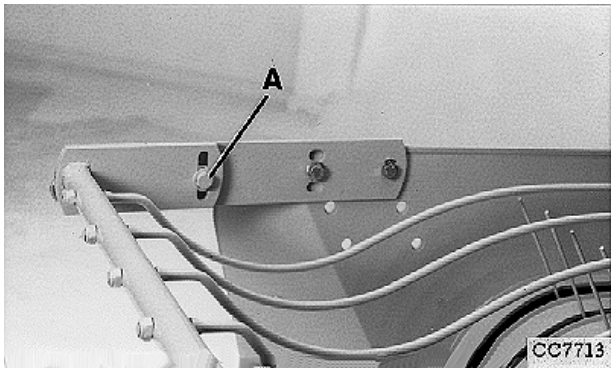

CC7711 —UN—23SEP98

OUCC002,00022B1 -19-23MAR10-1/1

## Adjust Compressor Rod Angle

The angle can be increased by slightly loosening lock nut (A) and raising or lowering compressor rod bar to the desired angle. Tighten lock nut securely.

**A—Lock Nut**




CC7713 —UN—23SEP98

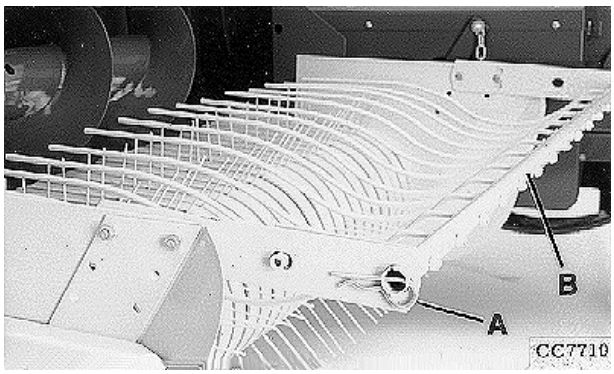
OUCC002,00022B2 -19-19MAR10-1/1

## Remove Compressor Rods

**CAUTION: Shut off tractor engine, remove key, and wait until all moving parts have come to a standstill before removing compressor rods. Also remove any plugged hay.**

Remove spring locking pin (A) from each end of compressor rod bar (B) and remove.

**A—Spring Locking Pin**
**B—Compressor Rod Bar**




CC7710 —UN—23SEP98

OUCC002,00022B3 -19-19MAR10-1/1

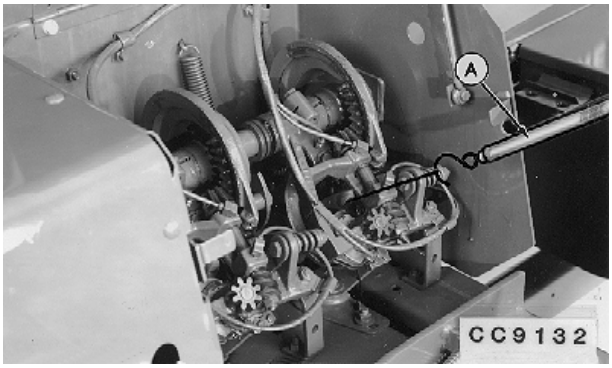
## Check Twine Tension

Raise needles until twine guide rivet is level with top of twine disk.

Attach a spring balance (A) to twine as shown. The twine must come out of twine box with a tension of 22—44 N (5—10 lb.). If tension is less, tighten adjusting nut. If a tension of more than 44 N (10 lb.) is measured, loosen the adjusting nut.

*NOTE: Sisal twine in springy hay may need a slightly higher tension than 44 N (10 lb.).*

**A—Spring Balance**



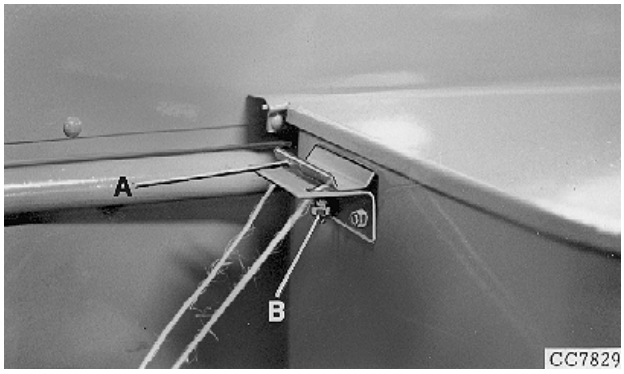

CC9132 —UN—23SEP98

OUCC002,00022B4 -19-19MAR10-1/1

## Adjust Twine Tension

Tension is controlled by a spring-loaded tension plate (A). Adjust twine tension using adjusting nut (B).

**A—Tension Plate** **B—Nut**




CC7829 —UN—23SEP98

OUCC002,00022B5 -19-19MAR10-1/1

## Adjust Feeder Fingers (All Models Except 459 with Double Feeder Fork)

Feeder fingers (A) may be adjusted to increase or decrease their stroke, which alters the distance they move into the bale case.

*NOTE: A spring (B) helps to protect the teeth from damage as a result of overloading or striking a solid object.*

Three positions of feeder fingers (A) are usable.

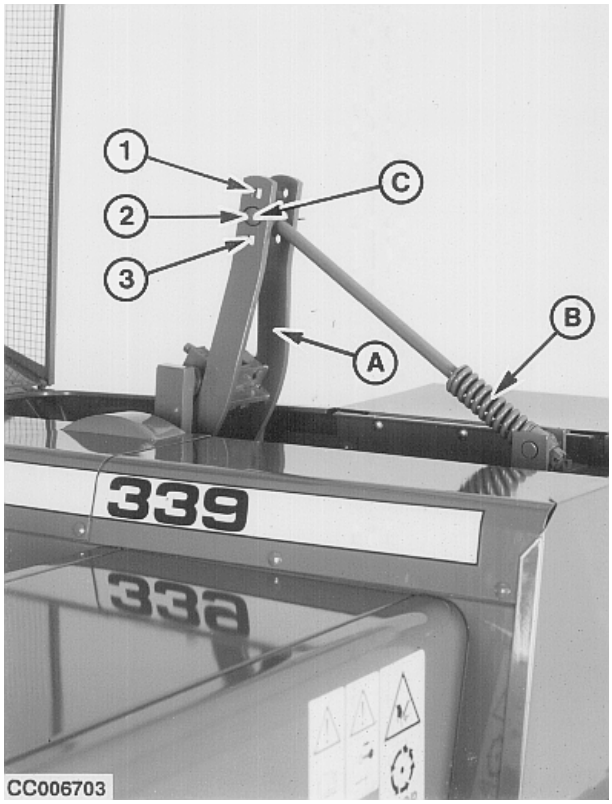
To place more hay in right-hand side of bale case, place pivot pin (C) in position 1 of feeder fingers (A).

*NOTE: Position 2 of feeder fingers (A) is the factory installed position.*

If more hay is needed on the left-hand side, move pivot pin (C) to position 3 of feeder finger (A).

*NOTE: If pivot pin (C) is in position 3 and material is still not coming far enough into the bale case, the baler is underfed. This happens when baling at too low ground speed or when windrows are too light.*

**A—Feeder Finger**
**B—Spring**
**C—Pivot Pin**




CC006703 —UN—28FEB95

OUCC002,00022B6 -19-19MAR10-1/1

## Adjust Feeder Fingers (459 with Double Feeder Fork)[1]

Feeder fingers (A) and (B) may be adjusted to increase or decrease their stroke, which alters the distance they move into the bale case.

*NOTE: A spring (C) helps to protect the teeth from damage as a result of overloading or striking a solid object.*

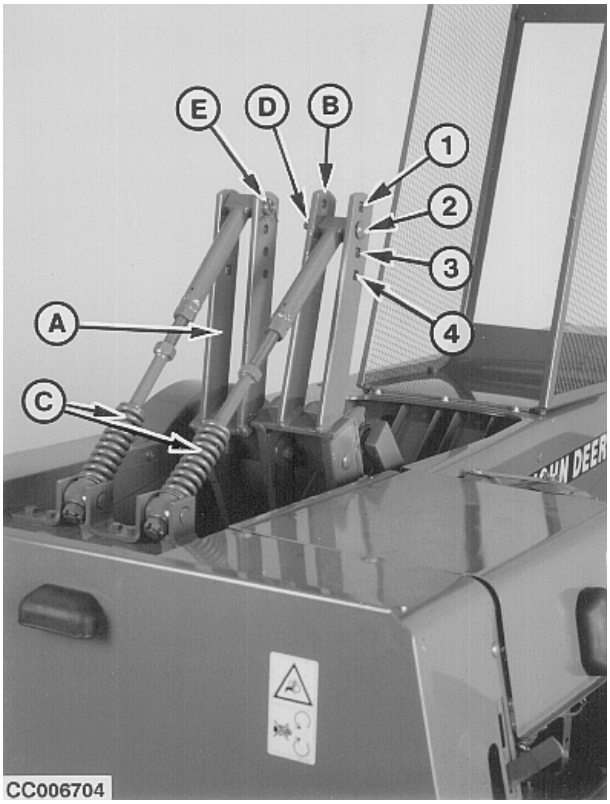
Four positions of front and rear feeder fingers (A) and (B) are usable.

To place more hay in the right-hand side of the bale case, place pivot pin (D) in position 1 of rear feeder fingers (B).

*NOTE: Position 1 of front feeder fingers (A) and position 2 of rear feeder fingers (B) are the factory installed positions.*

If more hay is needed on the left-hand side, move pivot pin (D) to position 3 or 4 of rear feeder fingers (B) and move pivot pin (E) to position 2, 3 or 4 of front feeder fingers (A).

*NOTE: If pivot pins (D) and (E) are both in position 4 and material is still not coming far enough into the bale case, the baler is underfed. This happens when baling at too low ground speed or when windrows are too light.*




CC006704 —UN—28FEB95

**A—Front Feeder Fingers**
**B—Rear Feeder Fingers**
**C—Spring**
**D—Rear Pivot Pin**
**E—Front Pivot Pin**

[1]*Baler with adjustable front pitman shown.*

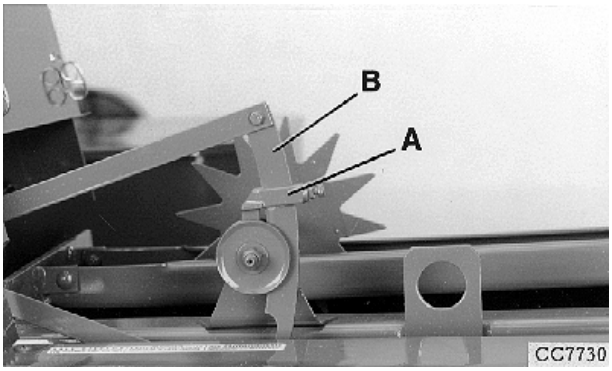
OUCC002,00022B7 -19-19MAR10-1/1

## Adjust Bale Length

Adjust stop (A) on measuring wheel arm (B) up or down for desired bale length.

Raise the stop to increase bale length, lower stop to decrease length.

The bale length may be varied between 1.3 m (50 in.) and 0.3 m (12 in.).




CC7730 —UN—23SEP98

**A—Stop**
**B—Measuring Wheel Arm**

OUCC002,00022B8 -19-19MAR10-1/1

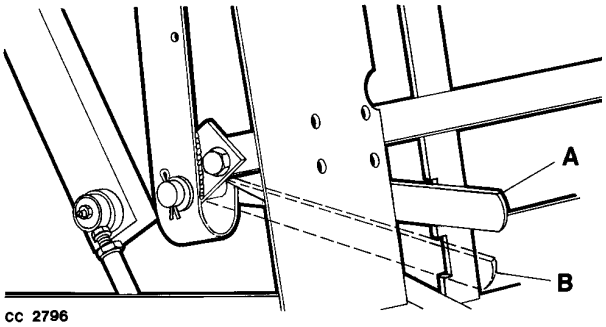
## Operate the Safety Latch

**⚠ CAUTION: Before servicing machine, shut off tractor engine, remove key and engage safety latch.**

Safety regulations in certain countries require a safety latch on the baler.

If the lever is in position (B), the safety latch prevents any tripping of needles and knotting mechanism.

With lever in position (A), safety latch is not engaged and the knotting mechanism will normally be tripped at the end of the measuring wheel stroke.




CC2796 —UN—06OCT98

**A—Unlatched Position** **B—Latched Position**

OUCC002,00022B9 -19-19MAR10-1/1

## Adjust Bale Weight Manually

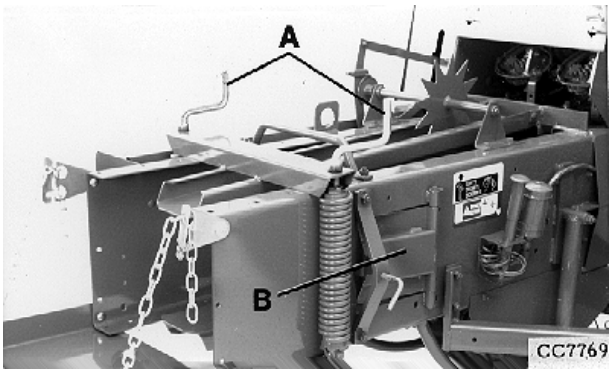
**⚠ CAUTION: Disengage PTO, shut off tractor engine, remove key, and wait until baler flywheel has come to a standstill before adjusting.**

**IMPORTANT: Too tight or too heavy bales cause excessive strain on the baler, contributing to undue breakage and wear of parts, and also to breakage of twine or wire.**

Bale weight is regulated via the bale case tension. Adjust tension using cranks (A).

When baling light windrows, the weight of bales can be increased by tightening both side doors (B) (option on 339 and 349).

*NOTE: Bale weight is also affected by size of windrows, moisture content, and quality of the hay. These factors may vary from hour to hour or from windrow to windrow. Check bale weight regularly.*



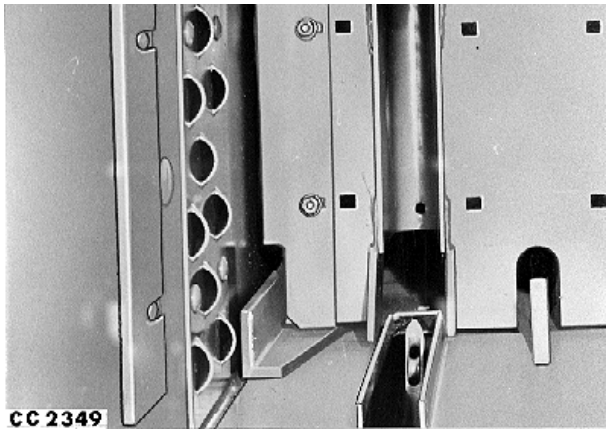

CC7769 —UN—23SEP98

**A—Cranks** **B—Side Doors**

Reduce bale case tension at the end of each operation day.

OUCC002,00022BA -19-19MAR10-1/1

## Side Straw Resistors (Attachment on 349, 359 and 459)




Side straw resistors can be mounted on each side of the bale case. They provide increased bale density, which is especially recommended when baling light, dry material.

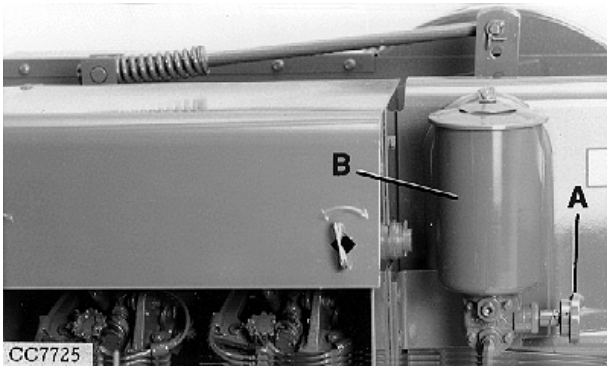
**IMPORTANT: Before installing the resistors, ensure that the paint inside the bale case has worn off sufficiently; this is the main reason why the straw resistors are not installed in the bale case at the factory.**

Up to two sets of straw resistors may be installed, depending on the desired bale density. If one set of resistors is used, screw in the front holes.

As the baling conditions become normal, remove the resistors set by set, starting at the rear of the bale case.

OUCC002,00022BB -19-23MAR10-1/1

## Adjust Bale Weight with Hydraulic Tension (Option on 359 and 459)




**A—Knob** **B—Reservoir**

If the machine is equipped with optional hydraulic bale weight control, bale weight is controlled by adjusting the knob (A) on the pump. If making this adjustment for the first time, remove hydraulic tension completely (turn knob counterclockwise) then increase tension by approximately 1-1/2 turns (turn knob clockwise).

When increasing or decreasing bale tension, adjust by turning knob no more than 1/2 turn. Once knob has been set, continual readjustment will not be necessary under most conditions.

Periodically check the oil level in hydraulic reservoir (B). For maximum compression control, the oil must be level with the mark on the reservoir when the hydraulic cylinder is completely retracted. If necessary, add oil to maintain that level. Use oil specified under Lubrication and Maintenance Section.

**IMPORTANT: Keep oil clean, free of dust, water, and sealing compound.**

OUCC002,00022BC -19-22MAR10-1/1

## Adjust Height of Pickup Teeth (339)

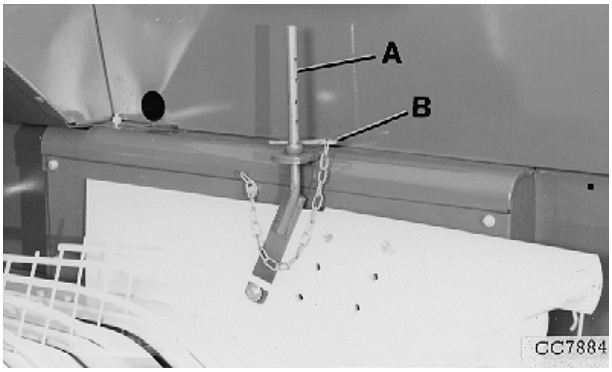
**CAUTION: Before commencing adjustment, shut off the tractor engine, remove key, and wait until flywheel has come to a standstill.**

Set pickup teeth as high as possible, but low enough to pick up all the crop.

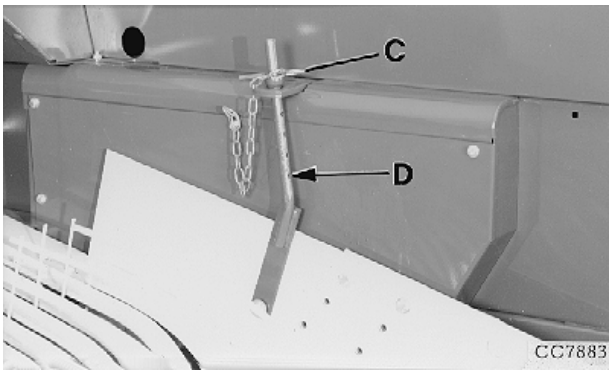
**CAUTION: Quick lock pin (B) must always be locked firmly.**

Adjust pickup teeth height using adjusting rod (A) and quick lock pin (B).

**A—Adjusting Rod**
**B—Quick Lock Pin**
**C—Lowest Position**
**D—Transport Position**




CC7884 —UN—23SEP98




CC7883 —UN—23SEP98

OUCC002,00022BD -19-22MAR10-1/1

## Adjust Pickup Teeth Height (349, 359 and 459)

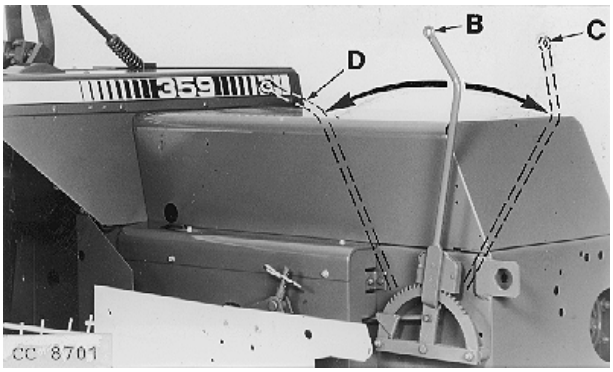
**CAUTION: Before commencing adjustment, shut off the tractor engine, remove key, and wait until flywheel has come to a standstill.**

Set pickup teeth as high as possible, but low enough to pick up all the crop using adjusting rod and quick lock pin (A).

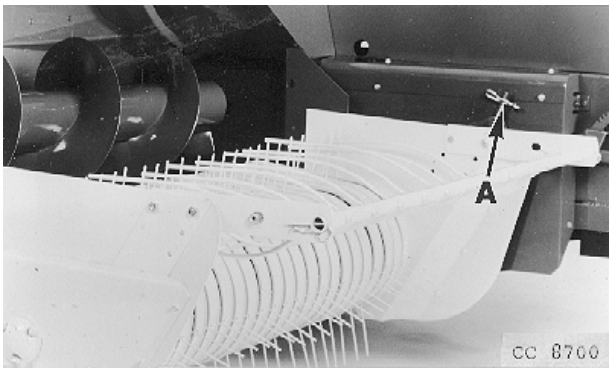
Pull lever (B) all the way forward to raise the pickup completely for transport.

Push lever (B) to the rear stop to lower the pickup.

**A—Quick Lock Pin**
**B—Lever**
**C—Transport Position**
**D—Lowest Position**




CC8701 —UN—23SEP98




CC8700 —UN—23SEP98

OUCC002,00022BE -19-19MAR10-1/1

## Adjust Pickup Teeth Height (349, 359 and 459 with Hydraulic Option)

A single-acting hydraulic cylinder allows the pickup to be raised or lowered.

Attach the chain to hook (A) so that pickup teeth are as high as possible, but low enough to pick up all the crop.

**A—Hook**


CC7830 —UN—05OCT98

OUCC002,00022BF -19-19MAR10-1/1

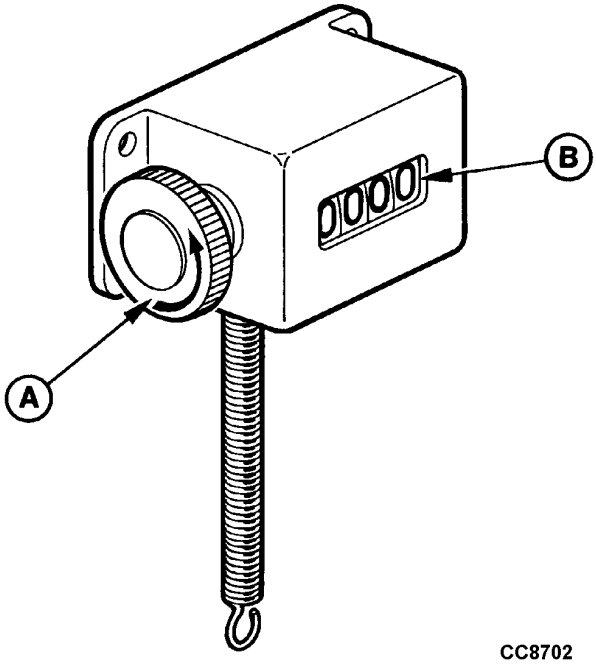
## Reset Bale Counter

The bale counter must always be correctly reset.

Turn knob (A) counterclockwise (arrow) until window (B) displays 0000. A click confirms that all components are properly engaged.

*NOTE: Any partial rotation of the knob (either clockwise or counterclockwise) will result in a malfunction of the counter. In this case, reset the counter as explained above.*

**A—Knob** **B—Window**




**CC8702**

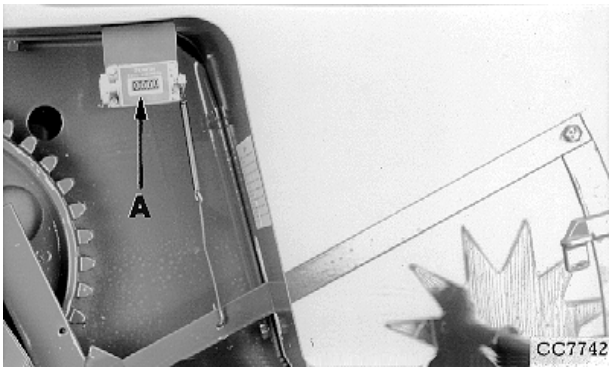
CC8702 —UN—05OCT98

OUCC002,00022C0 -19-19MAR10-1/1

## Bale Counter

Bale counter (A) keeps an exact record of the number of bales made. It can be reset to zero.

**A—Bale Counter**




CC7742 —UN—23SEP98

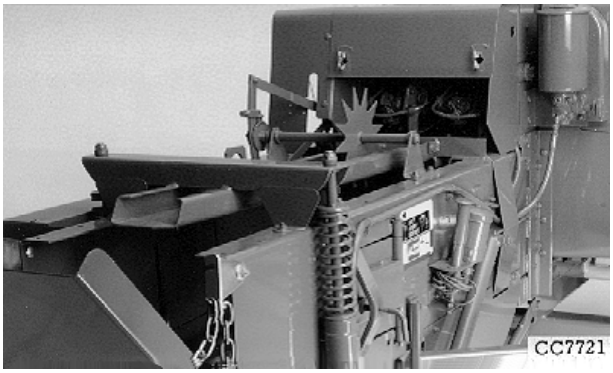
OUCC002,00022C1 -19-19MAR10-1/1

## Hydraulic Bale Tensioner (359 and 459)

This attachment eliminates the need for handcranked tension springs.

One knob controls the tension applied to the bale.

Once the knob has been set to the type or condition of the crop, more uniform bales will be obtained without continual readjustment.




CC7721 —UN—23SEP98

OUCC002,00022C2 -19-03JUL06-1/1

## Service Box

The service box contains emergency repair parts such as pickup teeth, shear bolts, coupler links, pickup V-belt, and grease fittings, allowing you to carry out emergency repairs in the field.

OUCC002,00022C3 -19-03JUL06-1/1

## Lighting Equipment

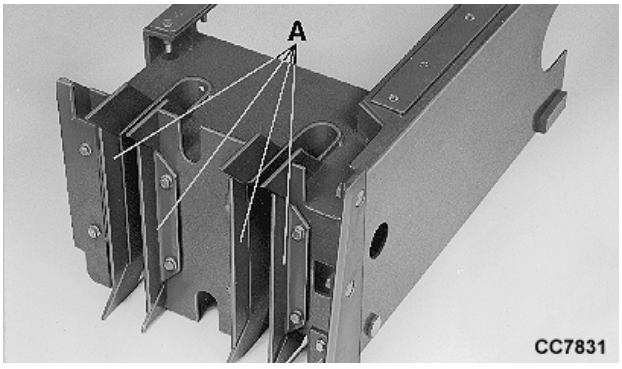
A road lighting kit is available as an attachment.

OUCC002,00022C4 -19-03JUL06-1/1

## Plungerhead Extensions (349, 359 and 459)

Plungerhead extensions (A) will provide additional compression needed to produce bales of desired weight when baling unusually dry or fluffy material.

**A—Extensions**




CC7831 —UN—23SEP98

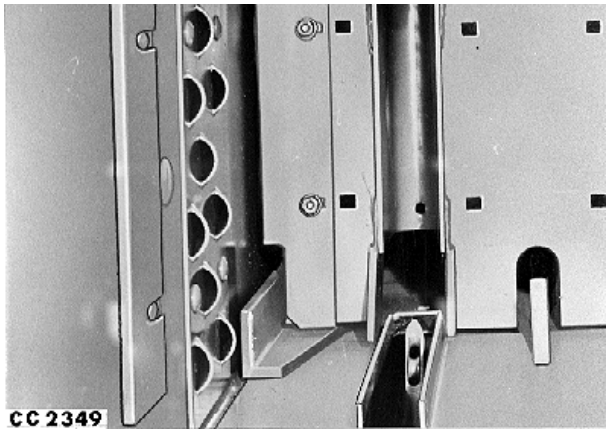
OUCC002,00022C5 -19-19MAR10-1/1

## Side Straw Resistors (349, 359 and 459)

Side straw resistors, which can be mounted on each side of the bale case, provide increased bale density. This is especially recommended when baling light, dry material.

**IMPORTANT: Before installing the resistors, ensure that the paint inside the bale case has worn off sufficiently.**

*NOTE: Up to two sets of straw resistors may be installed, depending on the desired bale density. If one set of resistors is used, it must be screwed in the front holes. As the baling conditions become normal, remove the resistors set by set, starting at the rear of the bale case.*




CC2349 —UN—23SEP98

OUCC002,00022C6 -19-23MAR10-1/1

## Bale Case Springs (349, 359 and 459)

Bale case springs are available as an attachment.

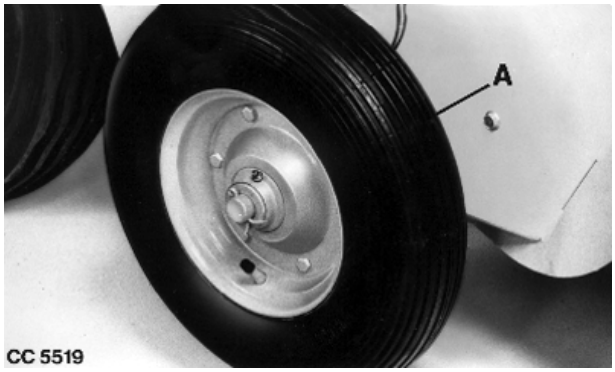
OUCC002,00022C7 -19-03JUL06-1/1

## Pickup Gauge Wheel

Pickup gauge wheel (A) is adjustable in height.

It enables the pickup to follow ground contours more closely when operating in irrigated fields or in rough or irregular conditions.

**A—Gauge Wheel**



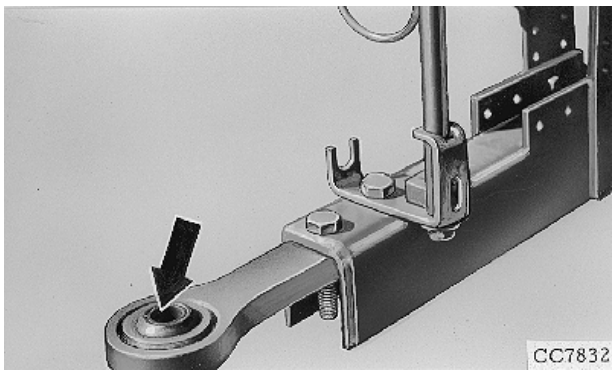

CC5519 —UN—23SEP98

OUCC002,00022C8 -19-19MAR10-1/1

## Ball Joint Hitch

The ball joint hitch enables the use of two different hitch pin sizes. To change from 26.5 mm (1.04 in.) to 33 mm (1.30 in.) or vice versa, remove or install bushing.

*NOTE: The ball joint hitch must be attached to the swinging drawbar of the tractor.*



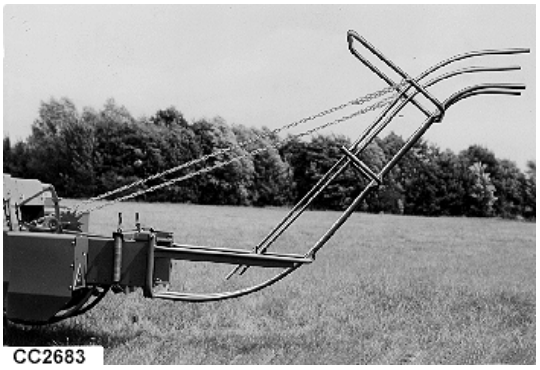

CC7832 —UN—23SEP98

OUCC002,00022C9 -19-03JUL06-1/1

## Loading Frame (339)

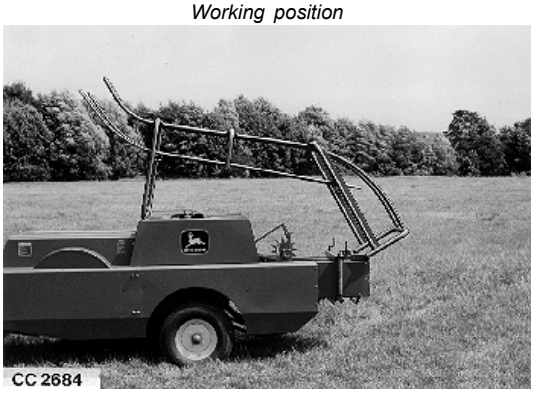
A loading frame is available for the 339 baler.

This attachment requires the use of the trailer hitch.




CC2683 —UN—23SEP98

*Working position*

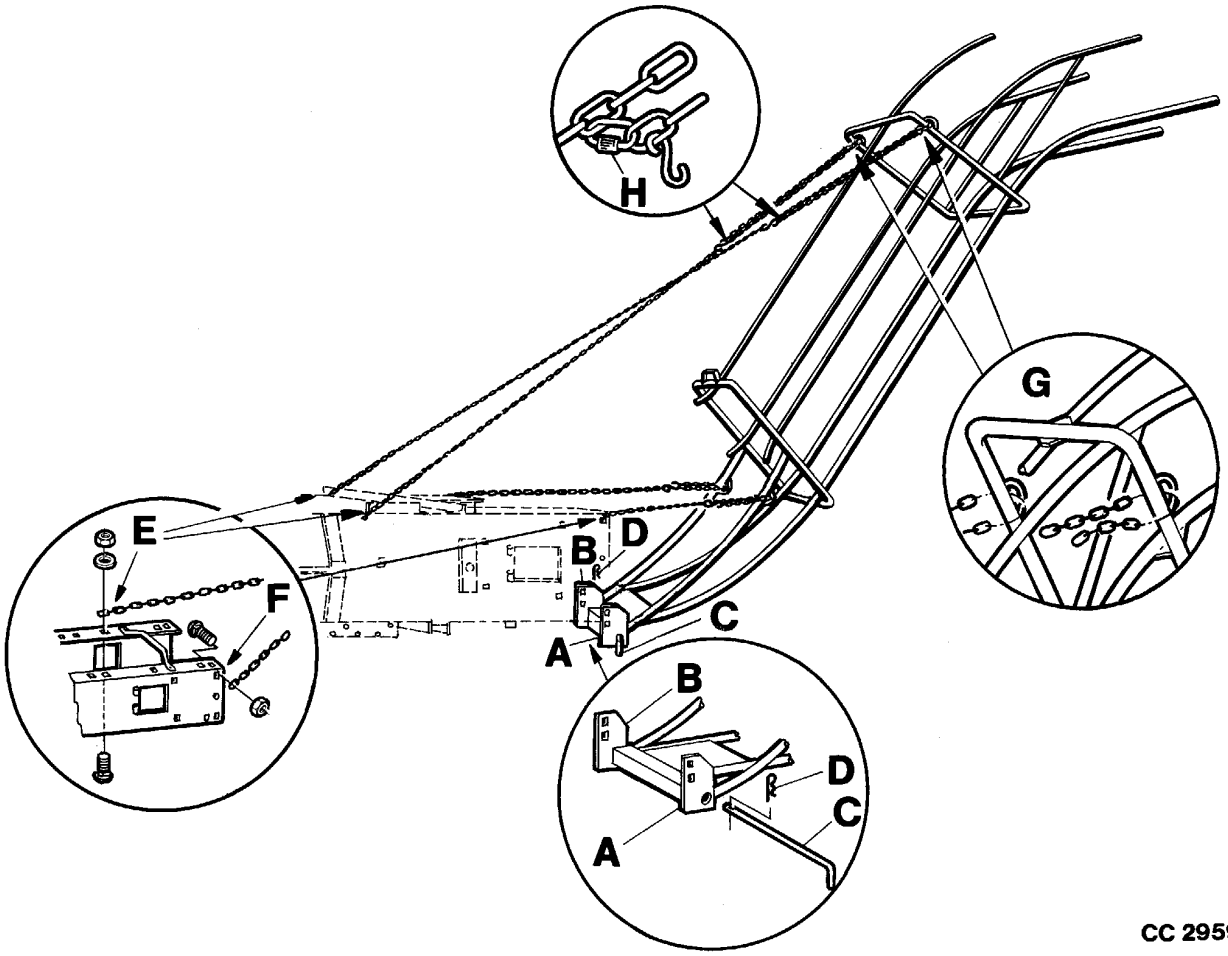



CC2684 —UN—23SEP98

*Transport position*

OUCC002,00022CA -19-03JUL06-1/1

## Loading Frame (349, 359 and 459)




*Loading Frame*

**A—Mounting Plate**
**B—Mounting Plate**
**C—Pin**
**D—Locking Pin**
**E—Upper Chain**
**F—Lower Chain**
**G—Loops**
**H—Chain Link**

The loading frame must be attached as follows:

Attach mounting plates (A and B) in vertical position. Attach loading frame with pin (C) and locking pin (D).

Attach upper chains (E) and lower chains (F) to bale case, as shown.

Bring loading frame into operating position and place chains around tubes and through loops (G) as shown.

*NOTE: The upper chains must be crossed and sag slightly when the loading frame is empty.*

Attach chains as shown and tighten chain link (H) securely.

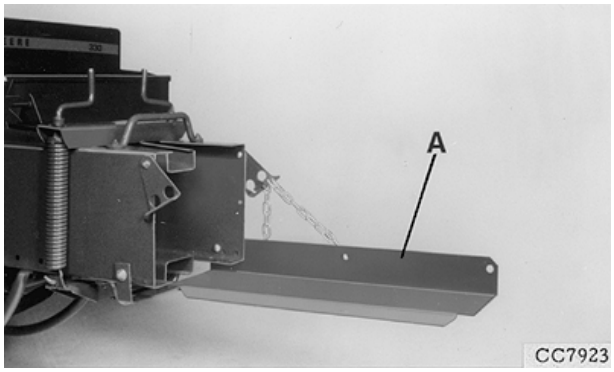
*NOTE: The loading frame requires the use of the trailer hitch.*

OUCC002,00022CB -19-19MAR10-1/1

## Side Drop Bale Chute (339)

Side drop bale chute (A) will drop bales on their narrow side. The chute is reversible to drop bales to the right or to the left.

**A—Side Drop Bale Chute**



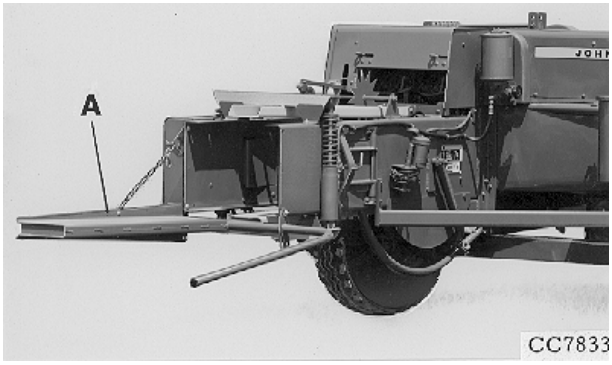

CC7923 —UN—06OCT98

OUCC002,00022CC -19-19MAR10-1/1

## Side Drop Bale Chute (349, 359 and 459)

Side drop bale chute (A) will drop bales on their narrow sides. The chute is reversible to drop bales to the right or to the left.

**A—Side Drop Bale Chute**




CC7833 —UN—23SEP98

*Side Drop Bale Chute (349, 359 and 459)*

OUCC002,00022CD -19-19MAR10-1/1

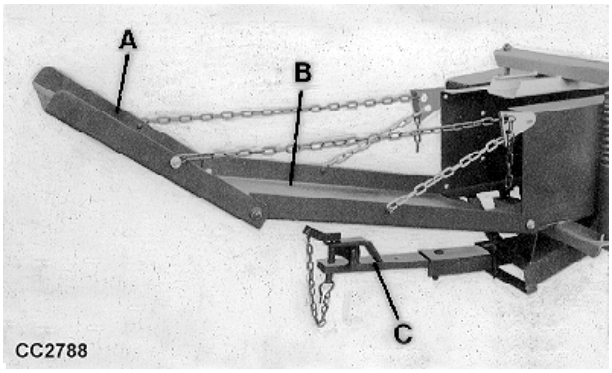
## Trailer Hitch, Bale Chute and Bale Chute Extension

These attachments allow the bales to be loaded directly from the baler to a trailer, without picking up bales.

Bale chute extension (A) is attached by chains in the same way as regular bale chute (B).

The support of adjustable trailer hitch (C) is screwed directly to the bale case. The telescopic trailer hitch is adjustable for trailers having tongues of variable length.

**A—Bale Chute Extension**
**B—Bale Chute**
**C—Trailer Hitch**

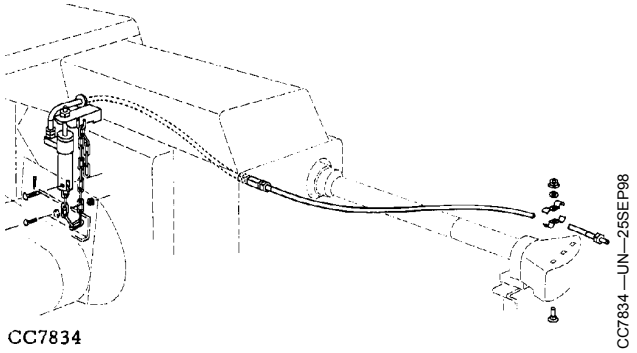



CC2788 —UN—23SEP98

OUCC002,00022CE -19-23MAR10-1/1

## Hydraulic Pickup Lift (349, 359 and 459)

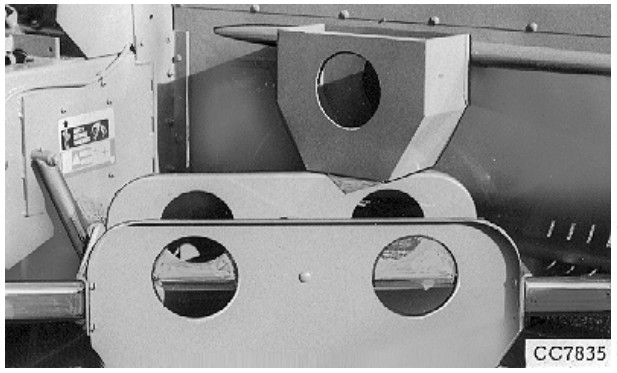
The pickup can be operated from the tractor seat with the hydraulic pickup lift. The hydraulic line is connected to the tractor hydraulic system.




OUCC002,00022CF -19-03JUL06-1/1

## Wire Cartons (349, 359 and 459)

Use the special wire coil cartons to ensure proper unwinding of the wire coils.

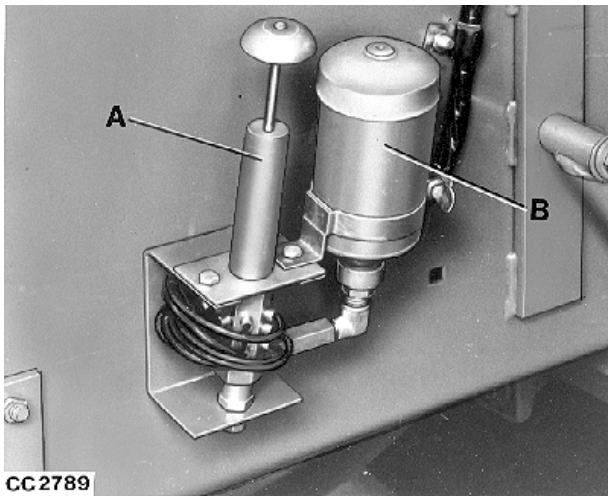



OUCC002,00022D0 -19-03JUL06-1/1

## Multi-Luber Device (349)

The multi-luber system is an optional accessory that allows the knotter parts to be lubricated by pressing pump knob (A).

**A—Pump** **B—Reservoir**

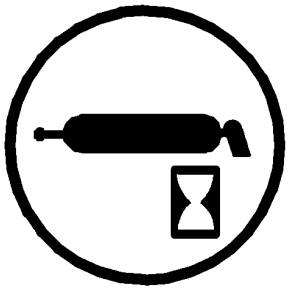



OUCC002,00022D1 -19-03JUL06-1/1

## Observe Service Intervals

Using tractor hour meter as a guide, perform services at the hourly intervals indicated on following pages.

**IMPORTANT: Recommended service intervals are for average conditions. Service MORE OFTEN if baler is operated in adverse conditions.**



CC 000934

CC000934 —UN—05APR95

CC03745,00002A9 -19-27AUG01-1/1

## Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

**John Deere SD POLYUREA GREASE is preferred.**

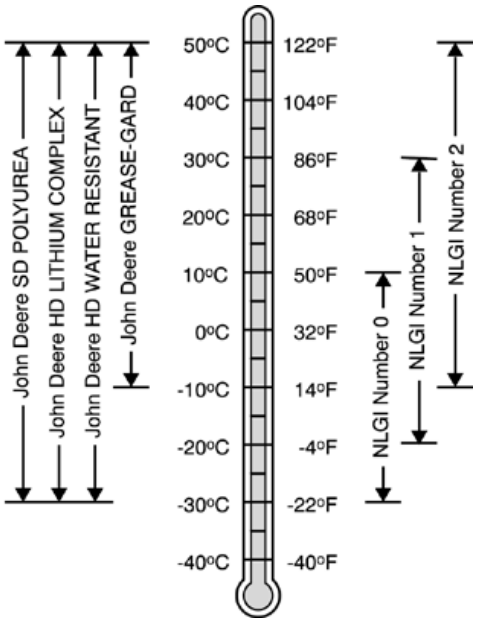
The following greases are also recommended

- John Deere HD LITHIUM COMPLEX GREASE
- John Deere HD WATER RESISTANT GREASE
- John Deere GREASE-GARD™

Other greases may be used if they meet the following:

NLGI Performance Classification GC-LB

**IMPORTANT: Some types of grease thickeners are not compatible with others. Consult your grease supplier before mixing different types of grease.**




TS1673 —UN—31OCT03

*GREASE-GARD is a trademark of Deere & Company*

DX,GREA1 -19-07NOV03-1/1

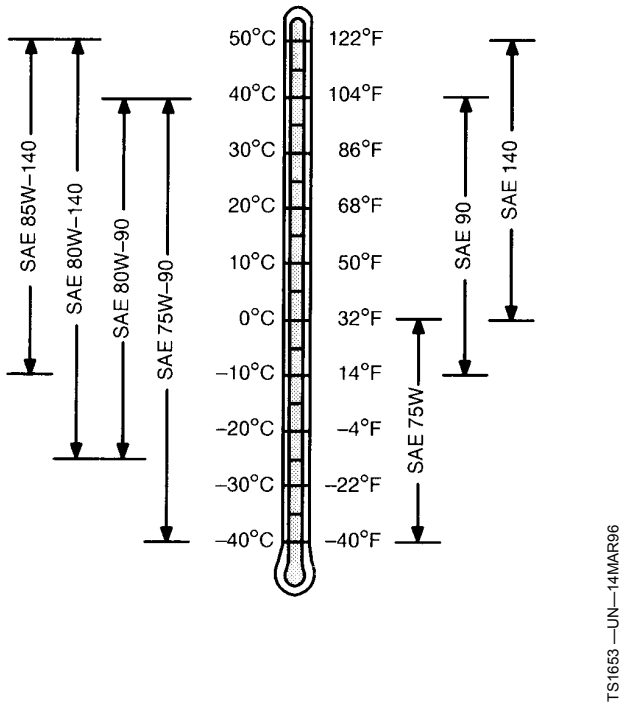
## Gear Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere GL-5 GEAR LUBRICANT
- John Deere EXTREME-GARD ™

Other oils may be used if they meet API Service Classification GL-5.




*EXTREME-GARD is a trademark of Deere & Company.*

DX,GEOIL -19-07JUL99-1/1

## Transmission and Hydraulic Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

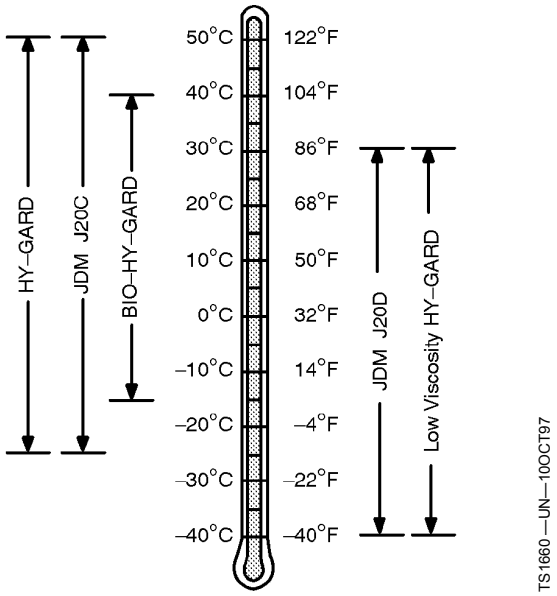
The following oils are preferred:

- John Deere HY-GARD™
- John Deere Low Viscosity HY-GARD™

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

Use John Deere BIO-HY-GARD™ oil when a biodegradable fluid is required.[1]




*HY-GARD is a trademark of Deere & Company*
*BIO-HY-GARD is a trademark of Deere & Company*

*[1] BIO-HY-GARD meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. BIO-HY-GARD should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.*

DX,ANTI -19-07NOV03-1/1

## Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to both conventional and synthetic oils.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

Avoid mixing different brands or types of oils. Oil manufacturers blend base stock and additives to create their oils and to meet certain specifications and performance requirements. Mixing different oils can interfere with proper functioning of these formulations and degrade lubricant performance.

Consult your authorized John Deere dealer to obtain specific information and recommendations.

DX,ALTER -19-11NOV09-1/1

## Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

Whenever possible, store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

DX,LUBST -19-18MAR96-1/1

## Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

Consult your John Deere dealer to obtain specific information and recommendations.

DX,LUBMIX -19-18MAR96-1/1

## Lubricate Baler Properly

**CAUTION: Do not attempt to clean, lubricate, or adjust the machine while it is in motion. Always shut off the tractor engine, remove key, and wait until flywheel has come to a standstill.**

**IMPORTANT: The lubrication period recommended is based on normal conditions. Severe or unusual conditions may require more frequent lubrication or oil changes.**

Perform each lubrication and service illustrated in this Section.

Clean grease fittings before using grease gun. Replace any lost or broken fittings immediately. If a new fitting fails to take grease, remove and check for failure of adjoining parts.

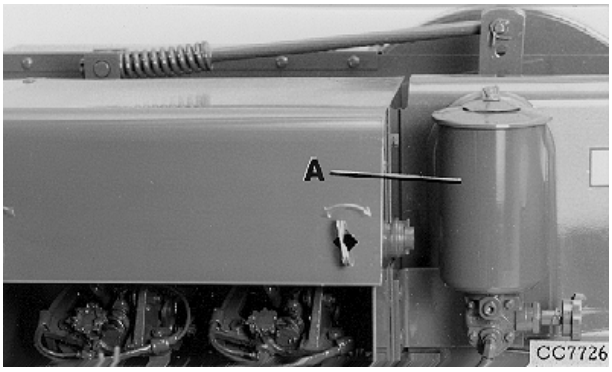
OUCC002,00022D2 -19-03JUL06-1/1

## As Required: Hydraulic Bale Tensioner

Oil must be level with the mark in reservoir (A).

If necessary, add oil. Use a type specified under Transmission and Hydraulic Oil in this Section.

**A—Reservoir**




OUCC002,00022D3 -19-31MAR10-1/1

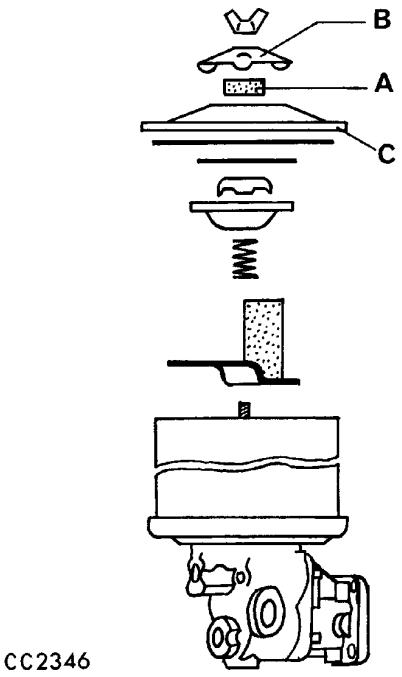
## As Required: Hydraulic Bale Tensioner Filter

Remove covers (B and C) and filter (A) after every 10 days of operation. Wipe dust off covers and dip filter in petrol to remove dirt and foreign particles.

In extremely dusty working conditions, clean the covers and filter more frequently. Reassemble as shown.

When necessary, bleed the hydraulic system by loosening the hose at hydraulic cylinder. Start tractor and engage power shaft. The tractor engine must be idling while air is being forced out of the hose. Tighten hose at hydraulic cylinder after the air has been forced out.

**A—Filter**
**B—Cover**
**C—Cover**




CC2346 —UN—06OCT98

OUCC002,00022D4 -19-31MAR10-1/1

## As Required: Tractor PTO Shaft

Coat tractor PTO shaft with John Deere GREASE-GARD.

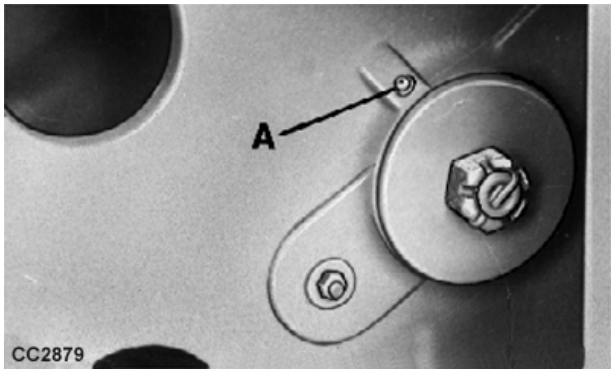
OUCC002,00022D5 -19-31MAR10-1/1

## As Required: Flywheel Bushing

Whenever flywheel shear bolt is replaced (or every 10 hours), lubricate fitting (A) with John Deere GREASE-GARD.

If the bushing is replaced, drill the lubrication hole in the new bushing once it is installed. Liberally lubricate the hub before and after reinstalling the flywheel.

**A—Fitting**



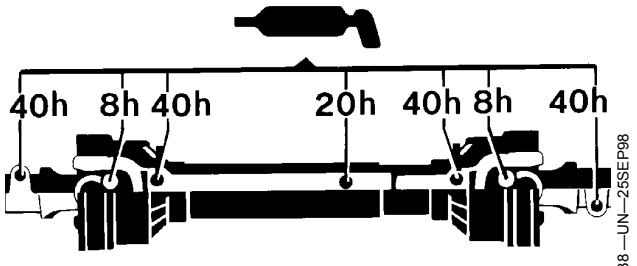

CC2879 —UN—23SEP98

OUCC002,00022D6 -19-31MAR10-1/1

## As Required: Standard Powerline

Lubricate at the intervals indicated in the illustration opposite.

Lubricate with John Deere GREASE-GARD.




CC 2338

OUCC002,00022D7 -19-31MAR10-1/1

## Every 5 Hours: Multi-Luber System (349, 359 and 459)

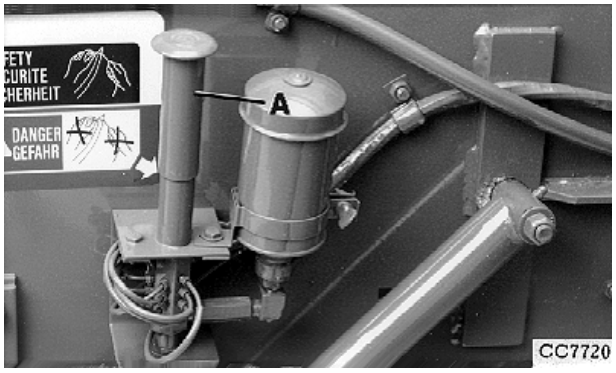
Pump the multi-luber twice every 5 hours of operation.

**IMPORTANT: Use John Deere Multi-Lube Lubricant.**

**Using lubricant of the wrong type can cause malfunction of the system.**

Push pump handle (A) all the way down to discharge lubricant through all ports. The measuring chamber is filled as the plunger and handle return to their normal position.

Periodically check reservoir lubricant level with dipstick.



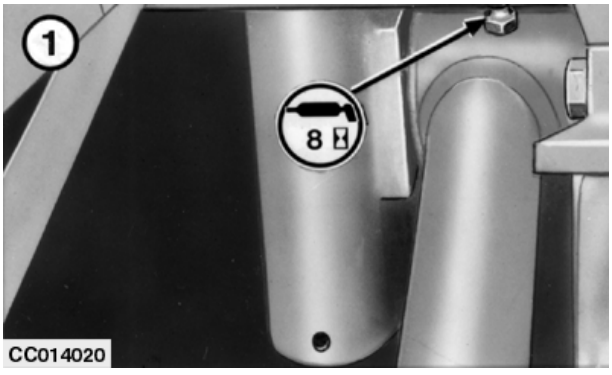

**A—Pump Handle**

OUCC002,00022D8 -19-31MAR10-1/1

## Every 8 Hours (339)

Lubricate with John Deere GREASE-GARD.

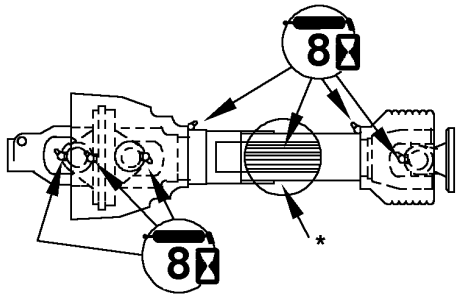
**1— Plungerhead Pitman**




OUCC002,00022D9 -19-31MAR10-1/1

## Every 8 Hours: CV Powerline[1]

Lubricate with John Deere GREASE-GARD.




CC014021

CC014021 —UN—24OCT98

[1]* *Grease guard tubes in winter to prevent freezing.*

OUCC002,00022DA -19-31MAR10-1/1

## Every 10 Hours: Chains

Liberally apply SAE 30 or heavier oil to chains every 10 hours of operation.

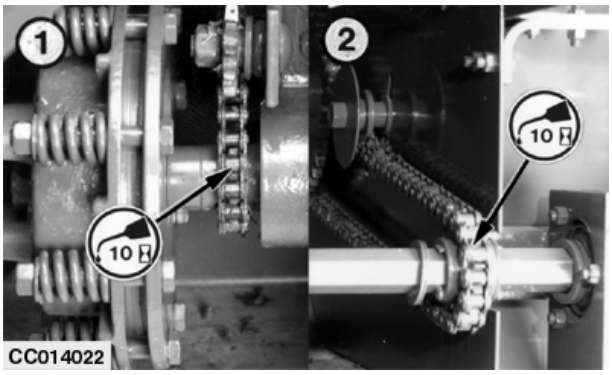
Lubricate chains immediately after operation when the chains are still warm. Let the machine stand idle for a short period to insure effective oil penetration, resulting in longer chain life.

OUCC002,00022DB -19-31MAR10-1/1

## Every 10 Hours

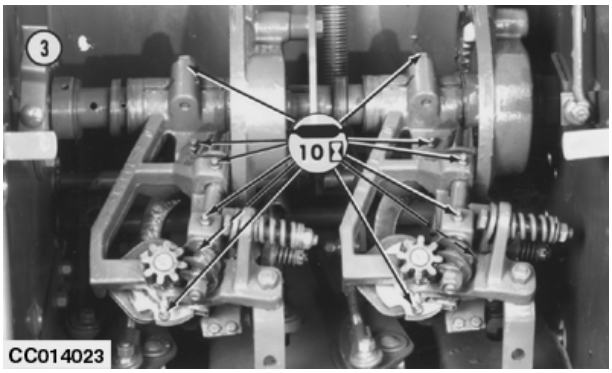
Lubricate with John Deere GREASE-GARD.

**1— Main Drive Chain**
**2— Feeder Finger Drive Chain**
**3— Knotters (Baler without multi-luber)**




CC014022

CC014022 —UN—24OCT98




CC014023

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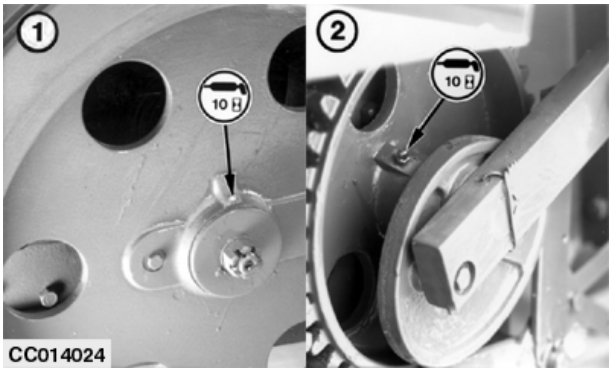
OUCC002,00022DC -19-19MAR10-1/2

Lubricate with John Deere GREASE-GARD.

*NOTE: Whenever flywheel shear bolt is replaced, lubricate at fitting.*

**1— Flywheel Bushing** **2— Clutch Ring**




CC014024 —UN—24OCT98

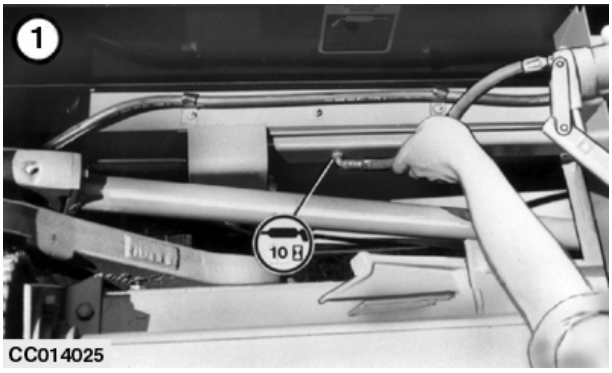
OUCC002,00022DC -19-19MAR10-2/2

## Every 10 Hours (359 and 459)

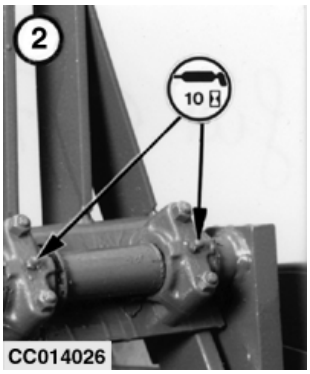
Lubricate with John Deere GREASE-GARD.

*NOTE: Whenever flywheel shear bolt is replaced, lubricate at fitting.*

**1— Plungerhead Pin** **2— Feeder Fingers (459)**




CC014025 —UN—24OCT98



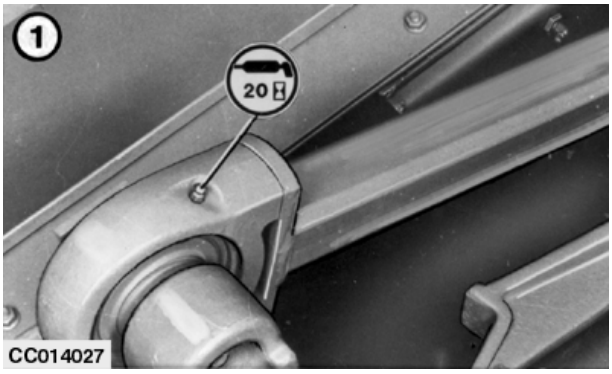

CC014026 —UN—06AUG99

OUCC002,00022DD -19-31MAR10-1/1

## Every 20 Hours (359 and 459)

Lubricate with John Deere GREASE-GARD.

**1— Pitman Bearing**



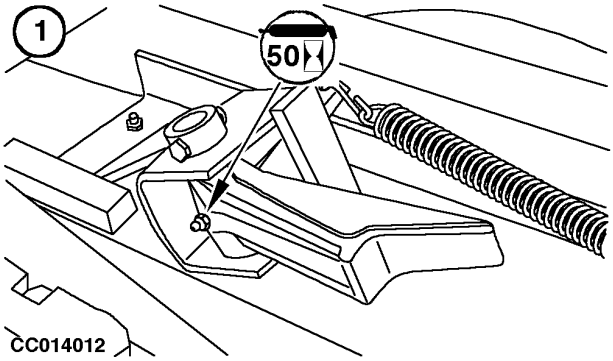

CC014027 —UN—24OCT98

OUCC002,00022DE -19-31MAR10-1/1

## Every 50 Hours

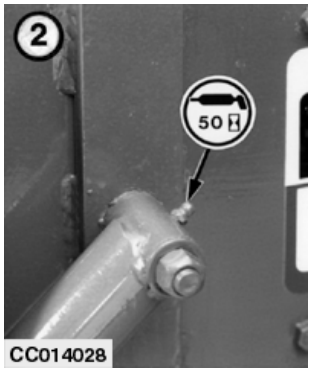
Lubricate with John Deere GREASE-GARD.

1— Plungerhead Safety Stop
2— Needle Frame Pin (Lubricate Both Sides)
3— Pickup Gauge Wheel
4— Tucker Finger Drive Roller



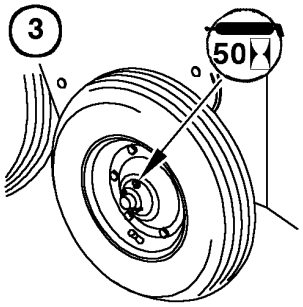

CC014012

CC014012 —UN—24OCT98




CC014028

CC014028 —UN—24OCT98

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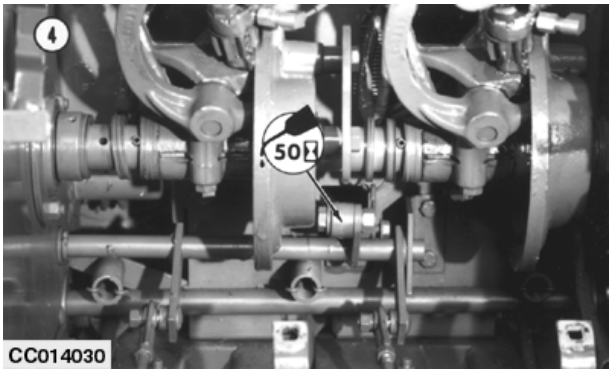
CC014029 —UN—24OCT98




CC014030

CC014030 —UN—24OCT98

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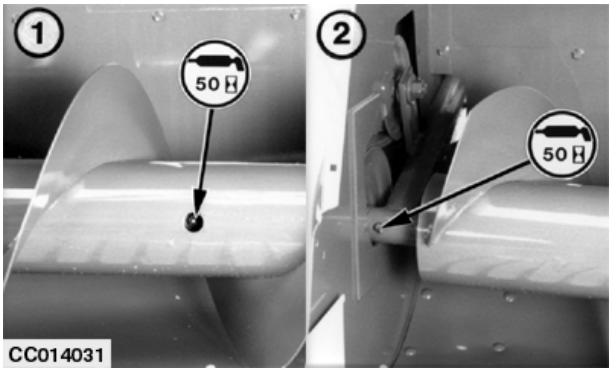
OUCC002,00022DF -19-19MAR10-1/2

Lubricate with John Deere GREASE-GARD.

**1— Auger Center Grease Fitting**
**2— Auger Right Grease Fitting**
**3— Auger Drive Grease Fitting**




CC014031 —UN—24OCT98

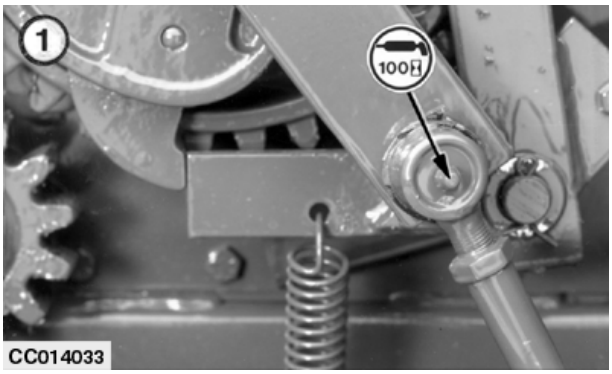

CC014032 —UN—24OCT98

OUCC002,00022DF -19-19MAR10-2/2

## Every 100 Hours

Lubricate with John Deere GREASE-GARD.

**1— Needle Lift Link**
**2— Needle Frame Pin**




CC014033 —UN—24OCT98


CC014034 —UN—24OCT98

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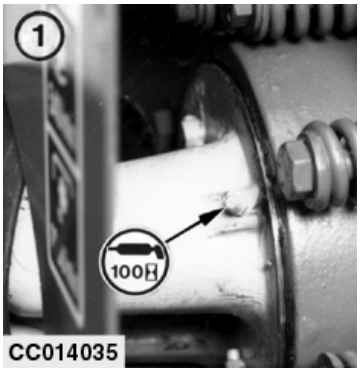
OUCC002,00022E0 -19-19MAR10-1/2

Lubricate with John Deere GREASE-GARD.

**1— Slip Clutch (Balers with CV Powerline)**



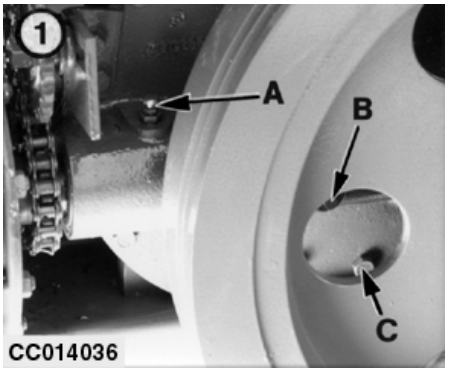

CC014035 —UN—24OCT98

OUCC002,00022E0 -19-19MAR10-2/2

## Every Season

1. Check oil level and fill gear case to check plug (B) level using oil specified under Gear Oil in this Section. Capacity: 3.8 L (1 US gal.).

**1— Gear Case**
**A—Refill Plug**
**B—Check Plug**
**C—Drain Plug**

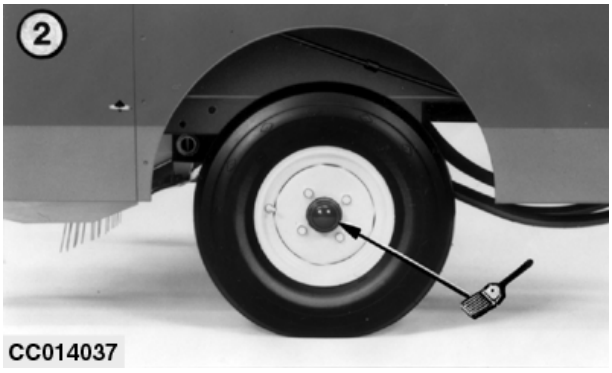



CC014036 —UN—24OCT98

OUCC002,00022E1 -19-26MAR10-1/4

2. Remove wheels, clean, repack, and adjust bearings. Lubricate with John Deere GREASE-GARD.

**2— Wheel Bearing**




CC014037 —UN—24OCT98

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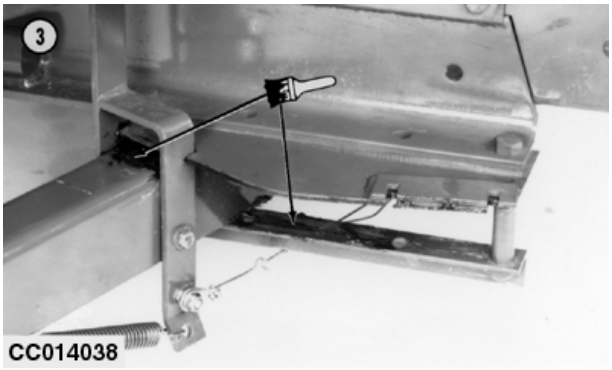
OUCC002,00022E1 -19-26MAR10-2/4

3. Lubricate with John Deere GREASE-GARD.

**3— Tongue**

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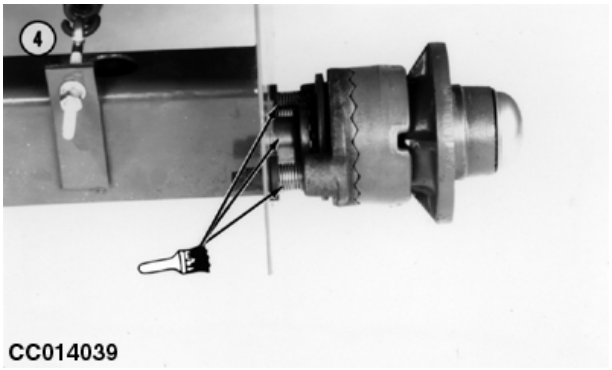
OUCC002,00022E1 -19-26MAR10-3/4

4. Lubricate with John Deere GREASE-GARD.

**4— Wheel Lock Axle**




CC014039 —UN—24OCT98

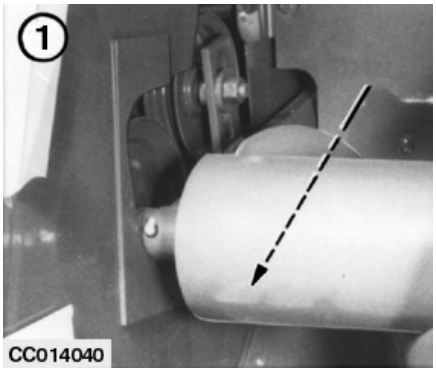
*Wheel Lock Axle (349, 359 and 459)*

OUCC002,00022E1 -19-26MAR10-4/4

## Every Season (459)

Lubricate with John Deere GREASE-GARD.

**1— Wooden Auger Bearing**




CC014040 —UN—24OCT98

*Wooden Auger Bearing (459)*

OUCC002,00022E2 -19-19MAR10-1/1

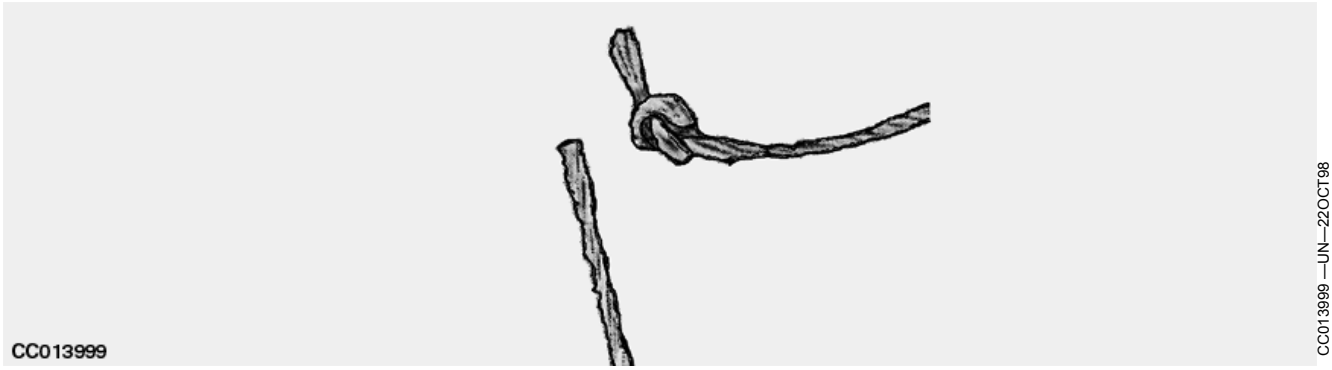
## Observe knotter or twister operation

**CAUTION: Do not take chances! Before working on baler, disengage tractor PTO, shut off tractor engine, remove key, and wait until flywheel has come to a standstill.**

To observe knotter or twister operation, remove hay from bale case, trip measuring arm and turn flywheel by hand until tying cycle is completed.

OUCC002,00022E3 -19-03JUL06-1/1

## Knotter Difficulties

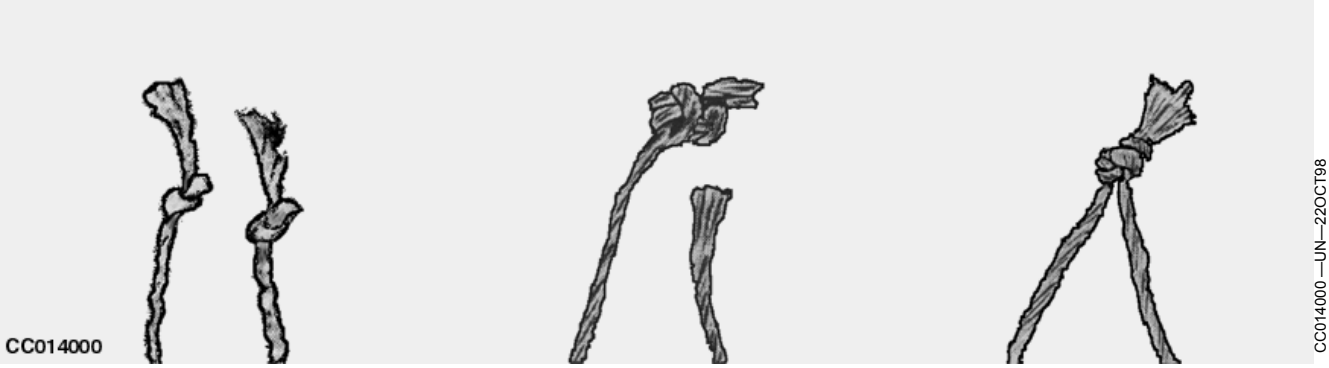



| Symptom | Problem | Solution |
|---|---|---|
| **Knot in Twine Over Bale Only** | Tucker fingers did not pick up needle twine or move into tying position properly | Adjust tucker fingers.<br>Adjust twine disk and/or needles.<br>Check twine tension at twine disk and twine box.<br>Install plungerhead extensions. |
| | Hay dogs not holding end of bale[1] | Free seized hay dogs.<br>Replace broken hay dog springs.<br>Reduce feeding rate.<br>Install plungerhead extensions. |

[1] *Hay dogs must extend into bale case completely with each plungerhead stroke.*

OUCC002,00022E4 -19-03JUL06-1/1

## Knotter Difficulties—Continued

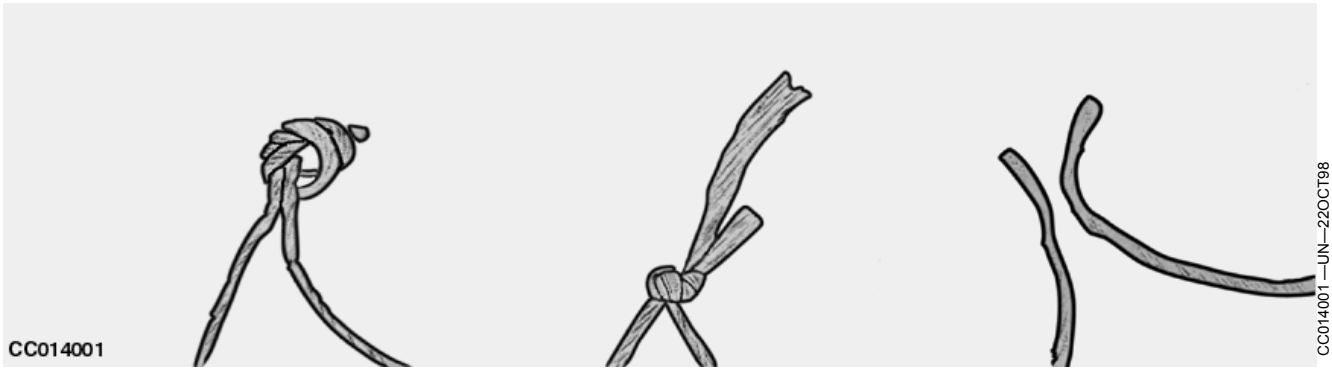



| Symptom | Problem | Solution |
|---|---|---|
| **Knot in each end of twine** | Tucker fingers did not pick up needle twine or move it into twine disk properly. This twine will be longer than mating twine on opposite side of baler | Adjust tucker fingers.<br>Adjust twine disk and/or needles.<br>Check twine tension at twine disk and twine box.<br>Install plungerhead extensions. |
| | Hay dogs not holding end of bale[1]. | Free seized hay dogs.<br>Replace broken hay dog springs.<br>Reduce feeding rate.<br>Install plungerhead extensions. |
| **Twine broken or frayed in knot** | Excessive twine tension around billhook during tying cycle causes twine to shear or pull apart | Loosen twine disk spring.<br>Smooth off all rough surfaces and edges on billhook. |
| | Excessive twine tension | Reduce twine tension. |
| | Insufficient clearance between billhook and knife (wiper) arm | Adjust clearance. |
| **Twine ends frayed** | Dull twine knife | Sharpen or replace knife. |

*[1]Hay dogs must extend into bale case completely with each plungerhead stroke*

OUCC002,00022E5 -19-03JUL06-1/1

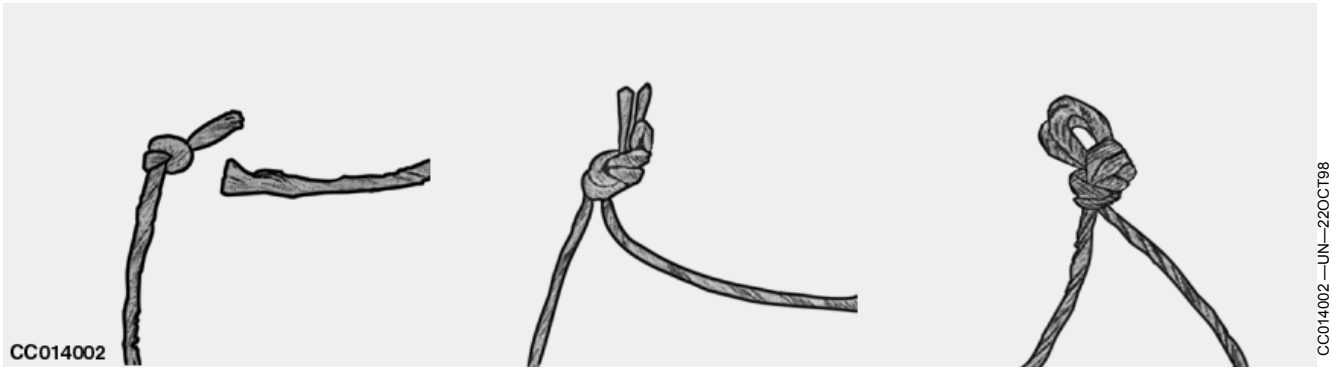
## Knotter Difficulties—Continued




| Symptom | Problem | Solution |
|---|---|---|
| **Knot too loose** | Worn or damaged billhook tongue | Replace billhook. See the John Deere dealer. |
| | Bale density too low | Increase bale density. |
| | Normal wear of knotter | Adjust knife arm wiper. |
| | Improper adjustment of twine disk | Adjust twine disk. |
| **Twine ends uneven** | Insufficient tension on twine disk | Tighten twine disk spring. |
| | Dull or chipped knife | Sharpen or replace knife. |
| **No knot in either twine end** | Twine sheared in twine disks | Loosen twine holder and/or remove all sharp edges and burrs on twine holder and disks. |
| | Billhook not revolving | Check for lost or sheared pin in billhook pinion. |
| | Billhook tongue fails to open | Check for lost billhook tongue roller, excessive wear on roller and cam face, or damaged billhook tongue. |

OUCC002,00022E6 -19-03JUL06-1/1

## Knotter Difficulties—Continued




| Symptom | Problem | Solution |
|---|---|---|
| **Knot in needle twine** | Twine over the bale pulled out of twine disk. (Can be detected by square cut end which has been flattened in disks. This twine is usually shorter than mating twine tied on opposite side of bale.) | Increase tension on twine disk spring and/or decrease bale tension.<br>Relocate feeder fingers. |
| | Twine over bale sheared out of twine disks. (In this case, the twine end will be frayed and torn, not cut squarely by knife as described above.) | Decrease tension on twine disk spring.<br>Decrease bale tension. |
| **One twine strand doubled back through knot (does not affect knot strength)** | Billhook tongue is closing on top of twine | Bend knife arm so that knife arm groove will hold twine over billhook tongue further to right.<br>Adjust timing of twine disks. |
| | Twine hanging up on knife arm | Polish knife arm at bend. |
| | Insufficient clearance between billhook and knife (wiper) arm | Adjust clearance. |
| **Double twine bow knot** | Insufficient travel of knife arm past billhook | Bend knife arm to obtain correct travel. |
| | Billhook pressure arm spring to loose | Tighten adjusting nut on billhook pressure arm spring.<br>Bend knife arm to obtain more clearance between knife and twine disk.<br>Check knife arm cam in intermittent gear for excessive wear. Replace gear if cam is worn. |

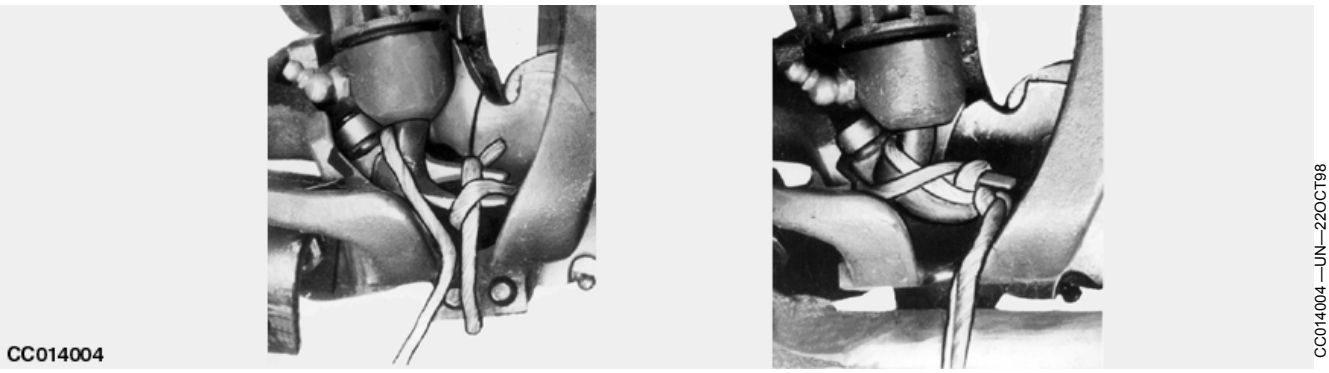
OUCC002,00022E7 -19-03JUL06-1/1

## Knotter Difficulties—Continued


| Symptom | Problem | Solution |
|---|---|---|
| **Single twine bow knot** | Insufficient travel of knife arm past billhook | Bend knife arm to obtain correct travel. |
| | Billhook pressure arm spring too loose | Tighten adjusting nut on billhook pressure arm spring. |
| | | Bend knife arm to obtain more clearance between knife and twine disk. |
| | | Check knife arm cam in intermittent gear for excessive wear. Replace gear if cam is worn. |
| | Twine is not sliding back on knife arm properly | Polish knife arm. |
| **Twine cut and/or frayed behind knot** | As billhook turns, twine is pinched between billhook and knife arm and twine is damaged 13—25 mm (0.5—1 in.) from knot | Bend knife arm so that billhook turns freely. Make certain that wiper plate on knife arm contacts back face of billhook. |
| | Rough knife arm cuts twine 19—32 mm (0.75—1.26 in.) from knot | Smooth off rough edge in twine notch of knife arm. |
| | Extremely high top twine tension | Reduce bale weight by decreasing bale tension and/or check twine tension. |
| | Rough wiper hole edge | Smooth off rough edge. |

OUCC002,00022E8 -19-31MAR10-1/1

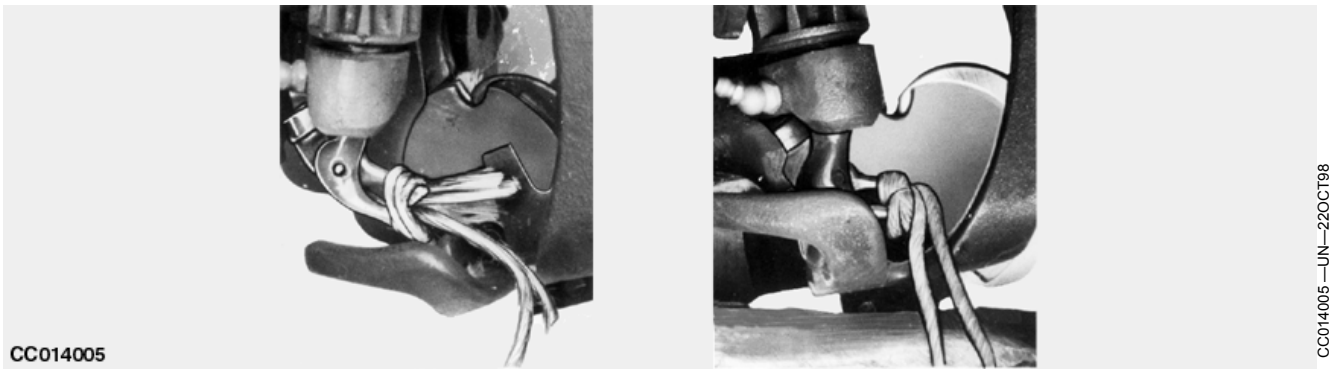
## Knotter Difficulties—Continued




| Symptom | Problem | Solution |
|---|---|---|
| **Needle twine over billhook tongue roller** | Needle twine does not enter twine disk | Check twine disk timing and/or adjust needles.<br>Check for sheared or lost pin in twine disk pinion or in disk worm gear.<br>Make certain twine coming from box is correctly passing tensioning devices on box. |
| | Improper twine tension | Adjust twine tension. |
| | Improper twine threading | See Thread Needles in Preparing the Baler Section. |
| **Needle twine over billhook tongue roller and second knot tied on billhook** | As for preceding malfunction; however, this condition occurs usually more often than the condition described above | Make corrections as instructed previously; examine complete knotter for broken or damaged parts. |

OUCC002,00022E9 -19-23MAR10-1/1

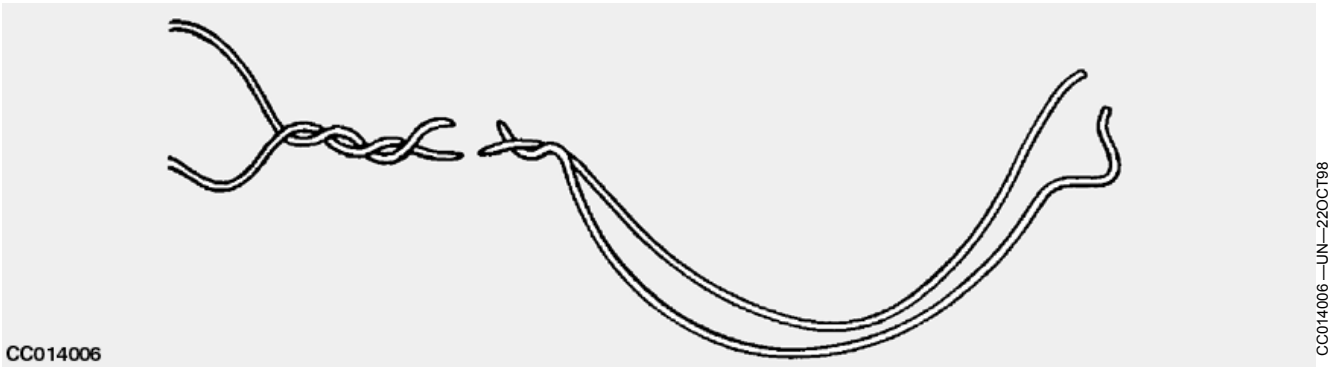
## Knotter Difficulties—Continued




| Symptom | Problem | Solution |
|---|---|---|
| **Knot not stripped off billhook** | Excessive billhook tongue tension | Loosen adjusting nut of billhook pressure arm spring. |
| | Insufficient clearance between billhook and knife (wiper) arm | Adjust clearance. |
| | Knife arm wiper is not contacting back face of billhook | Adjust wiper plate so that wiper is in proper contact with billhook. |
| | Knife arm lift is not sufficient | Bend knife arm to increase movement past end of billhook. |
| | Rough billhook | Smooth off all rough edges on billhook with emery cloth. |
| | Worn or bent billhook | Replace billhook. See the John Deere dealer. |
| | Insufficient bale density | Increase bale density. |
| | Twine tension too high | Reduce tension. |
| | Improper twine disk adjustment | Adjust disk timing. |
| **Needle twine goes under billhook tongue during first quarter of billhook travel** | Tucker fingers not carrying twine back to tying position | Adjust tucker fingers. |

OUCC002,00022EA -19-03JUL06-1/1

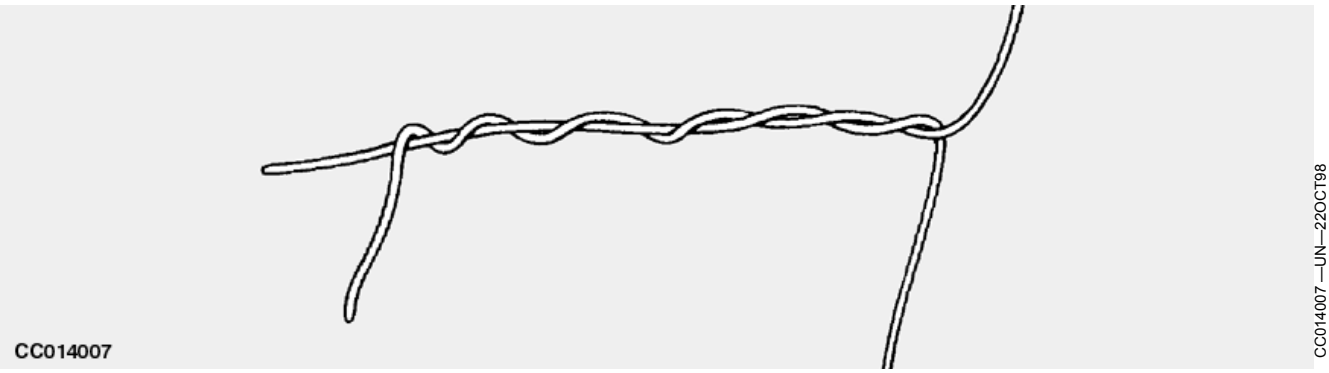
## Twister Mechanism Difficulties




| Symptom | Problem | Solution |
|---|---|---|
| **"Tails": One end cut and other end twisted off** | Radius on top of twister hook too sharp | Polish throat of twister hook.<br>Install new twister hook.<br>Retard twister hook to specified range. |
| | Excessive wire tension between bale and wire coil during first stage of tying cycle | Check all wire pulleys. Pulleys must turn freely.<br>Check for proper wire threading.<br>Make sure all of knockout disk is removed from front of wire carton.<br>Check for any indication where wire has been catching.<br>Check front of needle for grooves or buildup of foreign material retarding wire flow.<br>Check for rough or uneven wire.<br>Check top wire guide for grooves deep enough to cause wire to wedge. |
| | Wire cannot feed down twister hook slots because of rough twister shaft | Polish or replace shaft. |

OUCC002,00022EB -19-03JUL06-1/1

## Twister Mechanism Difficulties—Continued



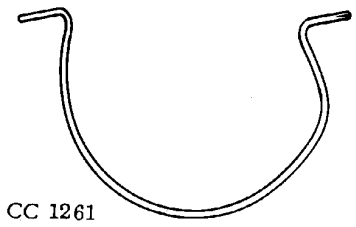

| Symptom | Problem | Solution |
|---|---|---|
| **Knot consists of one wire twisted around the other** | Excessive wire tension between bale and wire coil | Check wire pulleys. Pulleys must turn freely. |
| | | Check for proper wire threading. |
| | | Check for any indication where wire has been catching. |
| | | Check front of needle for grooves or buildup of foreign material retarding wire flow. |
| | | Check for rough or uneven wire. |
| | | Check top wire guide for grooves deep enough to cause wire to wedge. |
| | | Oil wire coils (light oil). |
| | Gripper does not apply equal pressure on each side | Check entire twister assembly for loose screws. |
| | | Clean gripper parts including gripper drive tube. |
| | | With gripper to the tight side, loosen screws holding shear plates to twister assembly and realign plates. |
| | | Do not add washers or coins to the spring in the gripper drive tube. |
| | | Do not grind the cutting edges of the shear blade or plate. |

Continued on next page

| Symptom | Problem | Solution |
|---|---|---|
| | Twister hook catches needle wire on second revolution instead of first | Adjust needle closer to gripper.<br>Check timing.<br>Replace bent needle.<br>Install plungerhead extensions. |
| | Hay dogs not holding end of bale | Free seized hay dogs.<br>Reduce feeding rate.<br>Replace broken hay dog springs.<br>Install plungerhead extensions. |

OUCC002,00022EC -19-23MAR10-2/2

## Twister Mechanism Difficulties—Continued

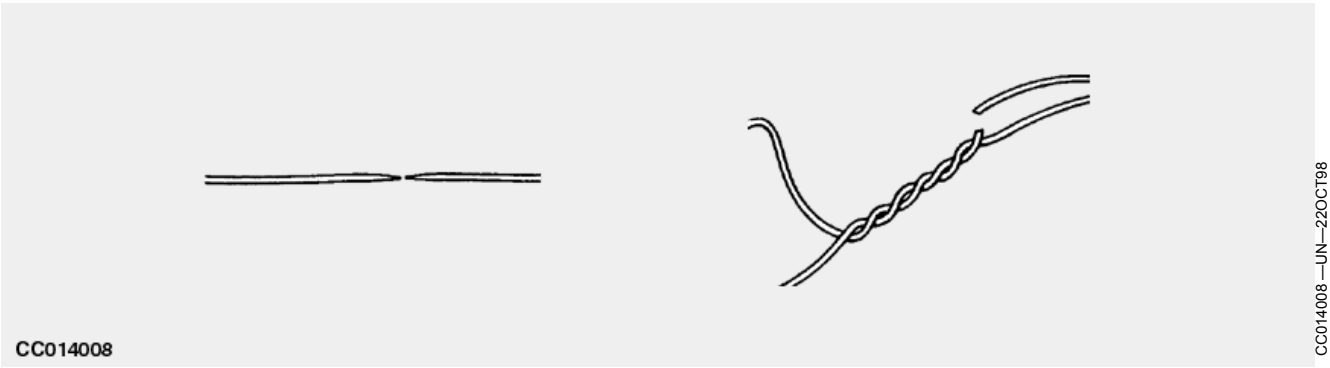



CC1261 —UN—23SEP98

| Symptom | Problem | Solution |
|---|---|---|
| **"Horseshoes": Short pieces of wire with both ends cut because wire is caught over gripper nose** | Needle adjusted too far sideways | Adjust needle.<br>Replace needle, if damaged. |
| | Gripper nose extremely rough or grooved | Grind gripper nose or replace gripper. |

OUCC002,00022ED -19-09MAR10-1/1

## Twister Mechanism Difficulties—Continued




| Symptom | Problem | Solution |
|---|---|---|
| **Tension break on top of bale** | Force required to feed wire around bale exceeds wire strength | Reduce bale density (it may be necessary to remove side hay resistors). |
| | | Oil wire coils (light oil). |
| | | Adjust feeder fingers to put less hay on side where wire is breaking. |
| | | Use proper size wire (1.9 mm dia., 14-1/2 gauge). |
| | | Change wire coils. |
| | Too much force required to pull wire from wire cartons | Check wire pulleys. Pulleys must turn freely. |
| | | Check for proper wire threading. |
| | | Make sure all of the knockout disk is removed from the front of wire cartons. |
| | | Check for any indication of catching wire. |
| | | Check front of needle for grooves or buildup of foreign material retarding wire flow. |
| | | Check for rough or uneven wire. |
| | | Check top wire guide for grooves deep enough to cause wire to wedge. |
| **Tension break on front end of bale** | Wire catches in wire pulleys | Check wire pulleys and other locations where wire could catch. |
| **Wire breaks at base of knot** | Repeated bending of wire after tying cycle because no hay is entering baler | Stop baler when no hay is being fed. |
| | | Plan windrows to avoid traveling in areas without hay. |
| | | Rake heavier windrows. |
| | | Increase ground speed. |

Continued on next page

| Symptom | Problem | Solution |
|---|---|---|
| | Tension breaks | See Tension Break on Top of Bale. |
| **Two successive bales not tied. (One long piece of wire with each end twisted, but not twisted together)** | Bottom wire strand was missed by the needle. | Eliminate excessive side movement of needle frame. Check for properly shaped needle tip. Replace needle if necessary. |
| | | Adjust needle. |
| | | Adjust lower center wire guide. |
| | Wire not placed in gripper | Adjust needle. |
| **Wire not cutting clean** | Worn or broken parts | Replace parts as necessary. |
| | Gripper and shear blade assembly not adjusted properly | Place shims between top of gripper arm and mounting plate. |
| **Wires not twisted together** | Foreign material in twister assembly | Clean twister assembly. |
| | Needles not adjusted properly | Adjust needles. |
| | Spring seized in gripper drive tube assembly | Clean gripper drive tube. |
| **Excessive wear on indexing surfaces of intermittent gear and pinion** | Twister hooks retarded beyond maximum limits | Advance twister hooks. |

OUCC002,00022EE -19-23MAR10-2/2

## Multi-Luber Difficulties

| Symptom | Problem | Solution |
|---|---|---|
| **Pump not delivering lubricant, or handle cannot be depressed to full stroke** | Clogged bearings | Remove and clean bearings thoroughly. |
| | Clogged line | Using multi-luber, force lubricant through line. |
| | Broken line | See Repair Broken Oil Lines in Service Section. |
| | Lubricant of wrong viscosity | Use lubricant approved for multi-luber. See Lubrication and Maintenance Section. |

OUCC002,00022EF -19-23MAR10-1/1

## Bale Quality

| Symptom | Problem | Solution |
|---|---|---|
| **Bale too light** | Insufficient bale tension | Increase bale tension. |
| **Bale too heavy** | Excessive bale tension | Decrease bale tension. |
| **Bale too heavy with crank turned out** | Hay too wet or too green | Let hay dry or cure before baling.<br>Remove side hay resistors. |
| **Bale too long** | Not enough material in top of bale and/or measuring wheel not contacting crop properly | Increase bale tension. |
| **Bale too short** | Measuring arm not dropping home | Adjust bale measuring control. |
| **Material not distributed evenly in bale** | Feeder fingers out of adjustment | Adjust feeder fingers. |
| **Irregular bale length** | Measuring arm bounces | Add or remove shims as necessary. |
| | Low bale density | Increase ground speed, windrow size and/or bale tension. |
| **Banana-shaped bale** | Ground speed too slow and/or windrow too small | Increase ground speed, reduce baler rpm and/or make larger windrows. |
| | Insufficient bale tension | Increase bale tension. |
| | Baling extremely light hay | Incorrect feeding. See Start and Operate the Baler in Operating the Baler Section. |
| **Ragged bale** | Dull knives | Sharpen knives. |
| | Plungerhead out of adjustment | Adjust plungerhead. |

OUCC002,00022F0 -19-23MAR10-1/1

## Pickup Difficulties

| Symptom | Problem | Solution |
|---|---|---|
| **Pickup teeth digging in ground** | Pickup set too low | Raise pickup. |
| **Not picking up hay cleanly** | Pickup does not lower correctly | Loosen lift spring. Check pivots. |
| | Pickup teeth set too high | Lower pickup. |
| | Ground speed too high | Reduce ground speed. |
| | Hay not raked properly | Turn all hay onto clean stubble. |
| | Pickup teeth bent or broken | Straighten or replace teeth. |
| | Windrows too light | Rake heavier windrows. |
| **Pickup teeth do not revolve** | Belt slipping | Replace or tighten belt. Raise compressor. |
| **Pickup teeth breakage** | Pickup set too low | Raise pickup. |
| | Foreign material in pickup | Remove foreign material. |

OUCC002,00022F1 -19-03JUL06-1/1

## Feed Difficulties

| Symptom | Problem | Solution |
|---|---|---|
| **Plungerhead hitting feeder teeth at top of case** | Baler out of time | Retime plungerhead and feeder assembly. |
| **Baler stalls when plungerhead is level with rear side of feed opening** | Dull knives and/or plungerhead out of adjustment | Sharpen knives and/or adjust plungerhead. |
| **Baler stalls on compression stroke** | Too heavy bales | Decrease bale tension. Reduce ground speed. |
| | Plungerhead obstructed | Remove obstruction. |
| **Baler fails to start after being stalled on compression stroke** | Plungerhead obstructed | With needle in ”home” position, turn flywheel in clockwise direction by two or three revolutions, then engage PTO. |
| **Hay not feeding under auger** | Auger drive V-belt slipping | Adjust V-belt. |
| | Rear of compressor rods set too high | Adjust compressor rods. |

OUCC002,00022F2 -19-19MAR10-1/1

## Needles Not Rising

| Symptom | Problem | Solution |
|---|---|---|
| **Trip dog not functioning** | Broken release arm spring or trip dog spring lost | Replace broken or lost spring. |
| **Sheared needle drive shear bolt** | | See Shear Bolt Difficulties in this Section. |

OUCC002,00022F3 -19-23MAR10-1/1

## Power Drive Difficulties

| Symptom | Problem | Solution |
|---|---|---|
| **PTO slip clutch slips excessively during normal operation** | Slip clutch screws loose | Tighten clutch screws. |
| | Flywheel shear bolt sheared | Replace shear bolt. |
| | Clutch facings glazed, oil or grease on facings | Clean or replace facings. |

OUCC002,00022F4 -19-23MAR10-1/1

## Shear Bolt Difficulties

| Symptom | Problem | Solution |
|---|---|---|
| **Flywheel shear bolt sheared** | Dull knives | Sharpen knives. |
| | Obstruction in bale case | Remove all obstructions. |
| | Too much clearance between knives | Adjust plungerhead. |
| | Crank stop improperly adjusted | Adjust stop. |
| | Worn clutch ring | Replace. |
| | Bales too heavy | Decrease bale tension. |
| | Needles in bale case | Place needles in home position. |
| **Sheared knotter and needle drive bolt** | Knotter drive brake too tight | Loosen knotter drive brake. |
| | Needles out of time | Retime needles. |
| | Needles hitting obstructions | Remove all obstructions. |
| | Obstruction in knotter | Remove all obstructions. |
| | Needles out of adjustment | Adjust needles. |

OUCC002,00022F5 -19-03JUL06-1/1

## Hydraulic Pump Difficulties

| Symptom | Problem | Solution |
|---|---|---|
| **Pump not delivering oil** | Clogged filter | Remove, flush, and clean filter thoroughly. |
| | Not enough oil in tank | Add oil as necessary. |
| **Insufficient pump pressure** | Valve surfaces scored by abrasive matter | Replace all scored or worn parts. |
| | Leak in hydraulic connections and cylinders | Repair leaks. |
| | Oil of wrong viscosity | Use correct viscosity oil. See Lubrication and Maintenance Section. |
| **External leakage** | Shaft oil seal defective | Replace oil seal. |

OUCC002,00022F6 -19-03JUL06-1/1

## Wheel Lock Device

| Symptom | Problem | Solution |
|---|---|---|
| **No locking effect** | Cable defective | Check cable. |
| | System misadjusted | Adjust spring washers. |
| | Disk worn out | Check serrated disk surfaces. |

OUCC002,00022F7 -19-03JUL06-1/1

## Metric Bolt and Screw Torque Values

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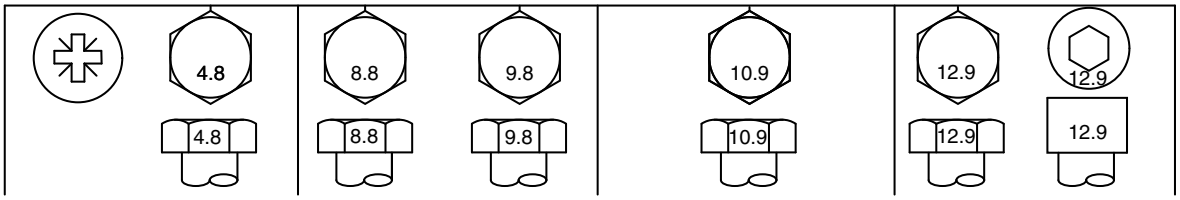



| Bolt or | Class 4.8 | | | | Class 8.8 or 9.8 | | | | Class 10.9 | | | | Class 12.9 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Screw | Lubricated[a] | | Dry[b] | | Lubricated[a] | | Dry[b] | | Lubricated[a] | | Dry[b] | | Lubricated[a] | | Dry[b] | |
| Size | N·m | lb.-in. | N·m | lb.-in. | N·m | lb.-in. | N·m | lb.-in. | N·m | lb.-in. | N·m | lb.-in. | N·m | lb.-in. | N·m | lb.-in. |
| M6 | 4.7 | 42 | 6 | 53 | 8.9 | 79 | 11.3 | 100 | 13 | 115 | 16.5 | 146 | 15.5 | 137 | 19.5 | 172 |
| | | | | | | | | | N·m | lb.-ft. | N·m | lb.-ft. | N·m | lb.-ft. | N·m | lb.-ft. |
| M8 | 11.5 | 102 | 14.5 | 128 | 22 | 194 | 27.5 | 243 | 32 | 23.5 | 40 | 29.5 | 37 | 27.5 | 47 | 35 |
| | | | N·m | lb.-ft. | N·m | lb.-ft. | N·m | lb.-ft. | | | | | | | | |
| M10 | 23 | 204 | 29 | 21 | 43 | 32 | 55 | 40 | 63 | 46 | 80 | 59 | 75 | 55 | 95 | 70 |
| | N·m | lb.-ft. | | | | | | | | | | | | | | |
| M12 | 40 | 29.5 | 50 | 37 | 75 | 55 | 95 | 70 | 110 | 80 | 140 | 105 | 130 | 95 | 165 | 120 |
| M14 | 63 | 46 | 80 | 59 | 120 | 88 | 150 | 110 | 175 | 130 | 220 | 165 | 205 | 150 | 260 | 190 |
| M16 | 100 | 74 | 125 | 92 | 190 | 140 | 240 | 175 | 275 | 200 | 350 | 255 | 320 | 235 | 400 | 300 |
| M18 | 135 | 100 | 170 | 125 | 265 | 195 | 330 | 245 | 375 | 275 | 475 | 350 | 440 | 325 | 560 | 410 |
| M20 | 190 | 140 | 245 | 180 | 375 | 275 | 475 | 350 | 530 | 390 | 675 | 500 | 625 | 460 | 790 | 580 |
| M22 | 265 | 195 | 330 | 245 | 510 | 375 | 650 | 480 | 725 | 535 | 920 | 680 | 850 | 625 | 1080 | 800 |
| M24 | 330 | 245 | 425 | 315 | 650 | 480 | 820 | 600 | 920 | 680 | 1150 | 850 | 1080 | 800 | 1350 | 1000 |
| M27 | 490 | 360 | 625 | 460 | 950 | 700 | 1200 | 885 | 1350 | 1000 | 1700 | 1250 | 1580 | 1160 | 2000 | 1475 |
| M30 | 660 | 490 | 850 | 625 | 1290 | 950 | 1630 | 1200 | 1850 | 1350 | 2300 | 1700 | 2140 | 1580 | 2700 | 2000 |
| M33 | 900 | 665 | 1150 | 850 | 1750 | 1300 | 2200 | 1625 | 2500 | 1850 | 3150 | 2325 | 2900 | 2150 | 3700 | 2730 |
| M36 | 1150 | 850 | 1450 | 1075 | 2250 | 1650 | 2850 | 2100 | 3200 | 2350 | 4050 | 3000 | 3750 | 2770 | 4750 | 3500 |

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a] *"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C zinc flake coating.*

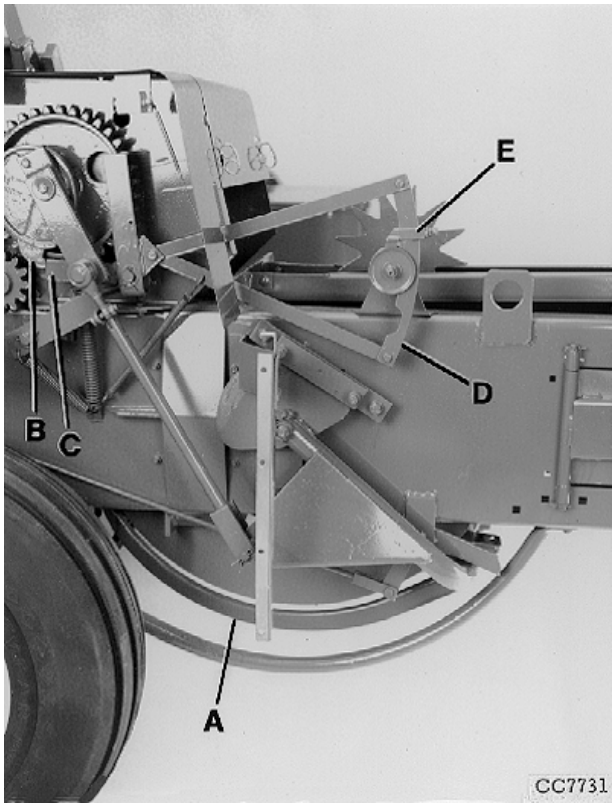
[b] *"Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B zinc flake coating.*

DX,TORQ2 -19-08DEC09-1/1

## Place Needles in Home Position

Needles (A) are in home position when:
- They are in the rearmost position.
- Trip dog (B) contacts trip arm (C).
- Measuring arm (D) is against its stop (E).

**A—Needles**
**B—Trip Dog**
**C—Trip Arm**
**D—Measuring Arm**
**E—Stop**

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OUCC002,0002303 -19-19MAR10-1/1

## Time the Baler (339, 349 and 359)

Timing is controlled by the main drive chain, the feeder drive chain, and the knotter drive gears. Check all timing operations before operating baler. Each of the following checks or adjustments must be made while turning the baler by hand through one complete cycle.

Time the baler as follows:

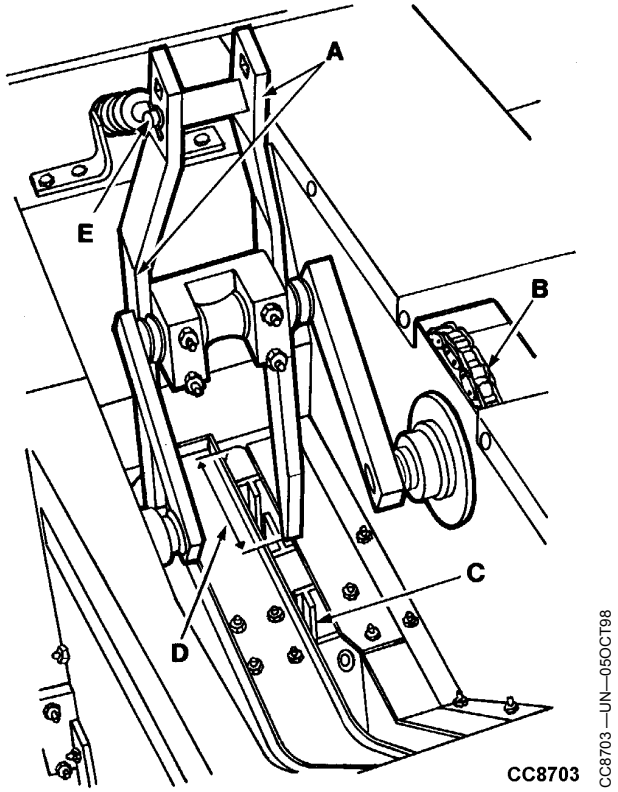
Place pivot pin (E) in center hole of feeder fingers (A) as shown.

Turn flywheel counterclockwise by hand until face of plungerhead (C) (on a compression stroke) is centered in front feeder slot.

Check that distance (D) between left corner of front feeder tooth and left end of front tooth slot is 240—290 mm (9.44—11.41 in.) on 339 or 292—342 mm (11.49—13.46 in.) on 349 and 359.

If not, disconnect feeder drive chain (B) and set tooth to obtain a distance of 265 mm (10.43 in.) on 339 or 317 mm (12.48 in.) on 349 and 359 (measured horizontally). A wooden block will help to hold fingers in this position during chain adjustment.

Connect feeder drive chain. Turn flywheel clockwise as necessary to install chain with drive side tight. Tighten idler against chain with thumb pressure.




**A—Feeder Fingers**
**B—Feeder Drive Chain**
**C—Plungerhead**
**D—240—290 mm (9.44—11.41 in.) on 339; 292—342 mm (11.49—13.46 in.) on 349 and 359**
**E—Pivot Pin**

**Continued on next page**

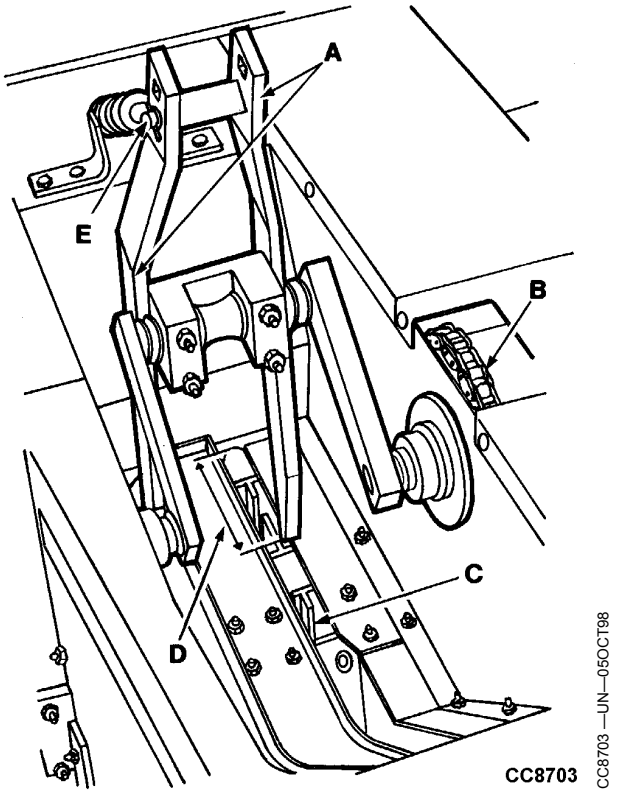
OUCC002,0002304 -19-26MAR10-1/2

After connecting chain, relocate plungerhead face in slot center. If dimension (D) cannot be obtained, retime feeder. For a finer adjustment, use main drive chain instead of feeder drive chain (B).

**IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead and needles. See Synchronize Plungerhead and Needles in this Section.**

With feeder pivot pin (E) in any of the recommended positions (see Adjust Feeder Fingers in Operating the Baler Section), move plungerhead (C) through one complete cycle to ensure feeder fingers (A) and plungerhead will clear.

With needles in ”home” position, trip bale measuring arm. Turn flywheel counterclockwise until top of highest needle is flush with top edge of bale groover. Then check position of plungerhead. See Basic Adjustment of Plungerhead with Needles. Readjust synchronization of plungerhead with needles if necessary. See Synchronize Plungerhead and Needles in this Section.




**A—Feeder Fingers**
**B—Feeder Drive Chain**
**C—Plungerhead**
**D—240—290 mm (9.44—11.41 in.) on 339; 292—342 mm (11.49—13.46 in.) on 349 and 359**
**E—Pivot Pin**

OUCC002,0002304 -19-26MAR10-2/2

## Time the Baler (459 without Double Feeder Fork)

Timing is controlled by the main drive chain, the feeder drive chain, and the knotter drive gears. Check all timing operations before operating baler. Each of the following checks or adjustments must be made while turning the baler by hand through one complete cycle.

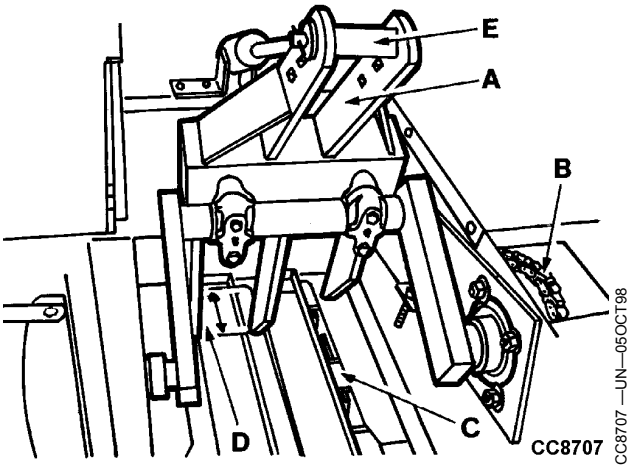
Time the baler as follows:

Place pivot pin (E) in top hole of feeder fingers (A) as shown.

Turn flywheel counterclockwise by hand until face of plungerhead (C) (on a compression stroke) is centered in front feeder slot.

Check that distance (D) between left corner of center feeder tooth and left end of center tooth slot is 230—250 mm (9.05—9.84 in.).

If not, disconnect feeder drive chain (B) and set tooth to obtain a distance of 240 mm (9.44 in.) (measured horizontally). A wooden block will help to hold fingers in this position during chain adjustment.




**A—Feeder Fingers**
**B—Feeder Drive Chain**
**C—Plungerhead**
**D—230—250 mm (9.05—9.84 in.)**
**E—Pivot Pin**

Connect feeder drive chain. Turn flywheel clockwise as necessary to install chain with drive side tight. Tighten idler against chain with thumb pressure.

**Continued on next page**

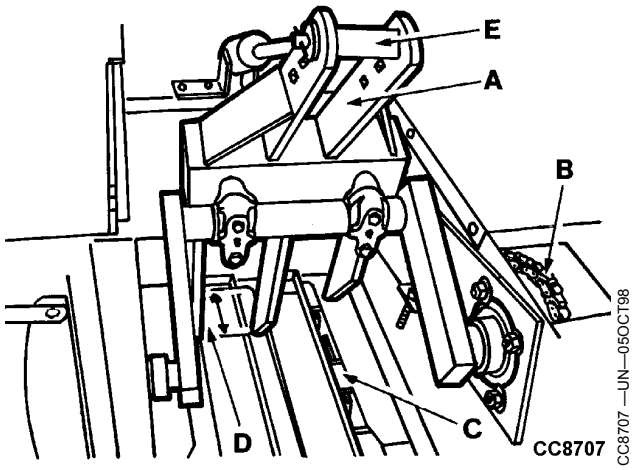
OUCC002,0002305 -19-29MAR10-1/2

After connecting chain, relocate plungerhead face in slot center. If distance (D) cannot be obtained, retime feeder. For a finer adjustment, use main drive chain instead of feeder drive chain (B).

**IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead with needles. See Synchronize Plungerhead and Needles in this Section.**

With feeder pivot pin (E) in any of the recommended positions (see Adjust Feeder Fingers in Operating the Baler Section), move plungerhead (C) through one complete cycle to ensure feeder fingers (A) and plungerhead will clear.

With needles in ”home” position, trip bale measuring arm. Turn flywheel counterclockwise until top of highest needle is flush with top edge of bale groover. Then check position of plungerhead. See Basic Adjustment of Plungerhead with Needles. Readjust synchronization of plungerhead with needles if necessary. See Synchronize Plungerhead and Needles in this Section.




**A—Feeder Fingers**
**B—Feeder Drive Chain**
**C—Plungerhead**
**D—230—250 mm (9.05—9.84 in.)**
**E—Pivot Pin**

OUCC002,0002305 -19-29MAR10-2/2

## Time the Baler (459 with Double Feeder Fork and Adjustable Front Pitman)

Timing is controlled by the main drive chain, feeder drive chain, and the knotter drive gears. Check all timing operations before operating baler. Each of the following checks or adjustments must be made while turning the baler by hand through one complete cycle.

Time the baler as follows:

Check that distance (A) between the centers of the connecting points for front pitman (B) is 532 mm (20.94 in.) and that distance (C) between the centers of the connecting points for rear pitman (D) is 552 mm (21.73 in.). Readjust if necessary.

Place pivot pin (E) in top hole of front feeder fingers (F) and pivot pin (G) in second hole of rear feeder fingers (H) as shown.

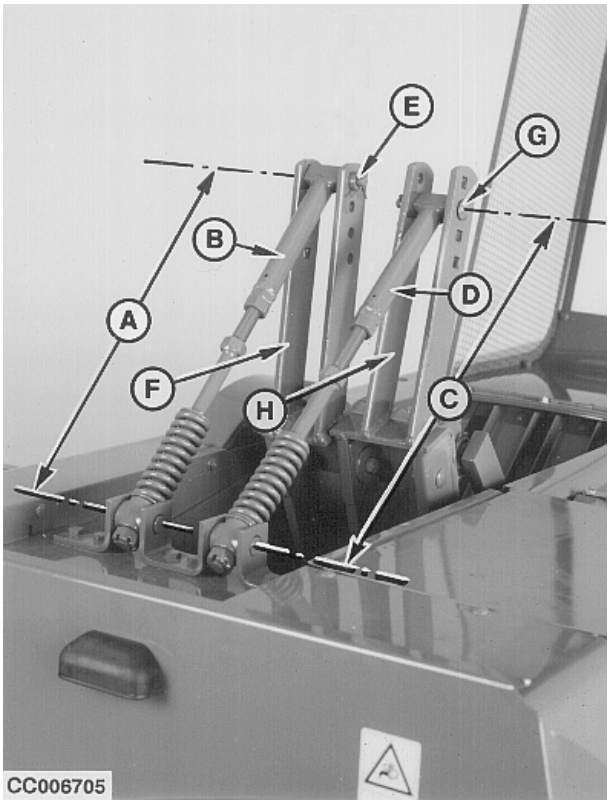
Turn flywheel counterclockwise by hand until face of plungerhead (I) (on a compression stroke) is centered in front feeder slot.

Check that distance (J) between left corner of center feeder tooth and left end of center tooth slot is 390 mm (15.35 in.).

If not, disconnect feeder drive chain (K) and set tooth to obtain specified distance (J; measured horizontally). A wooden block will help to hold fingers in this position during chain adjustment.

Connect feeder drive chain (K). Turn flywheel clockwise as necessary to install chain with drive side tight. Tighten idler against chain with thumb pressure.

**A—532 mm (20.94 in.)**
**B—Front Pitman**
**C—552 mm (21.73 in.)**
**D—Rear Pitman**
**E—Pivot Pin**
**F—Front Feeder Fingers**
**G—Pivot Pin**
**H—Rear Feeder Fingers**
**I— Plungerhead**
**J—390 mm (15.35 in.)**
**K—Feeder Drive Chain**

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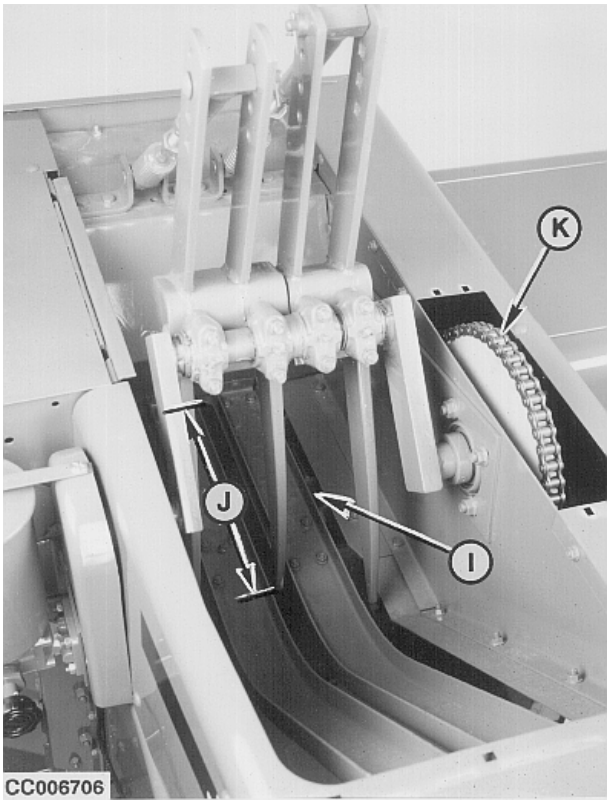


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OUCC002,0002306 -19-26MAR10-1/2

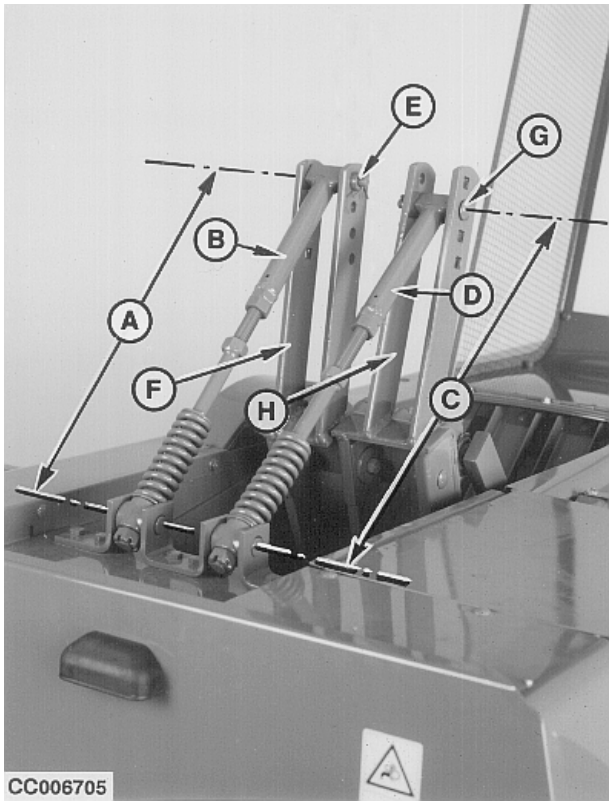
After connecting chain, relocate plungerhead face in slot center. If distance (J) cannot be obtained, retime feeder. For a finer adjustment, use main drive chain instead of feeder drive chain (K).

**IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead and needles. See Synchronize Plungerhead and Needles in this Section.**

With feeder pivot pins (E) and (G) in any of the recommended positions (see Adjust Feeder Fingers in Operating the Baler Section), move plungerhead (I) through one complete cycle to ensure feeder fingers (F) and (H) and plungerhead will clear.

With needles in ”home” position, trip bale measuring arm. Turn flywheel counterclockwise until top of highest needle is flush with top edge of bale groover. Then check position of plungerhead. See Basic Adjustment of Plungerhead with Needles. Readjust synchronization of plungerhead and needles if necessary. See Synchronize Plungerhead and Needles in this Section.

**A—532 mm (20.94 in.)**
**B—Front Pitman**
**C—552 mm (21.73 in.)**
**D—Rear Pitman**
**E—Pivot Pin**
**F—Front Feeder Fingers**
**G—Pivot Pin**
**H—Rear Feeder Fingers**
**I— Plungerhead**
**J— 390 mm (15.35 in.)**
**K—Feeder Drive Chain**

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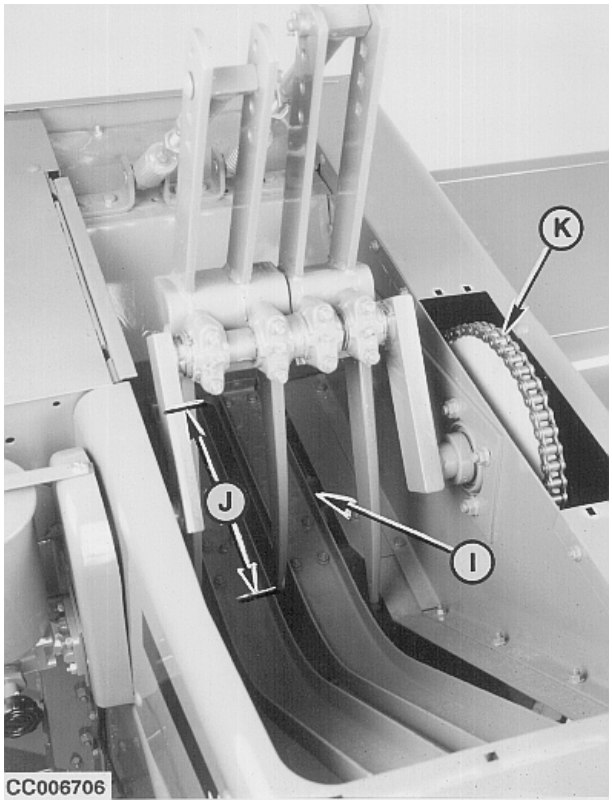


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OUCC002,0002306 -19-26MAR10-2/2

## Time the Baler (459 with Double Feeder Fork and Non-Adjustable Front Pitman)

Timing is controlled by the main drive chain, feeder drive chain, and the knotter drive gears. Check all timing operations before operating baler. Each of the following checks or adjustments must be made while turning the baler by hand through one complete cycle.

Time the baler as follows:

Check that distance (A) between the centers of the connecting points for rear pitman (B) is 552 mm (21.73 in.). Readjust if necessary.

Place pivot pin (C) in top hole of front feeder fingers (D) and pivot pin (E) in second hole of rear feeder fingers (F) as shown.

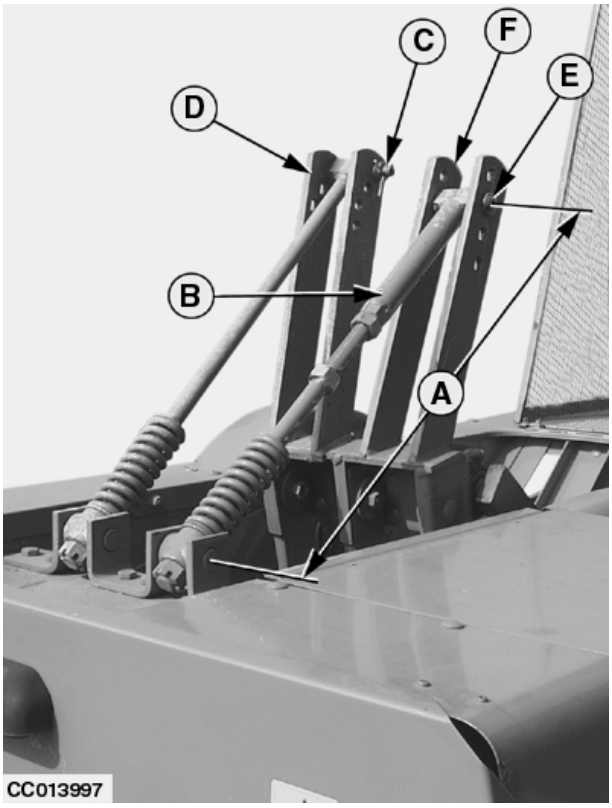
Turn flywheel counterclockwise by hand until face of plungerhead (G) (on a compression stroke) is centered in front feeder slot.

Check that distance (H) between left corner of center feeder tooth and left end of center tooth slot is 390 mm (15.35 in.).

If not, disconnect feeder drive chain (J) and set tooth to obtain specified distance (H) measured horizontally. A wooden block will help to hold fingers in this position during chain adjustment.

Connect feeder drive chain (J). Turn flywheel clockwise as necessary to install chain with drive side tight. Tighten idler against chain with thumb pressure.

**A—552 mm (21.73 in.)**
**B—Rear Pitman**
**C—Pivot Pin**
**D—Front Feeder Fingers**
**E—Pivot Pin**
**F—Rear Feeder Fingers**
**G—Plungerhead**
**H—390 mm (15.35 in.)**
**J—Feeder Drive Chain**

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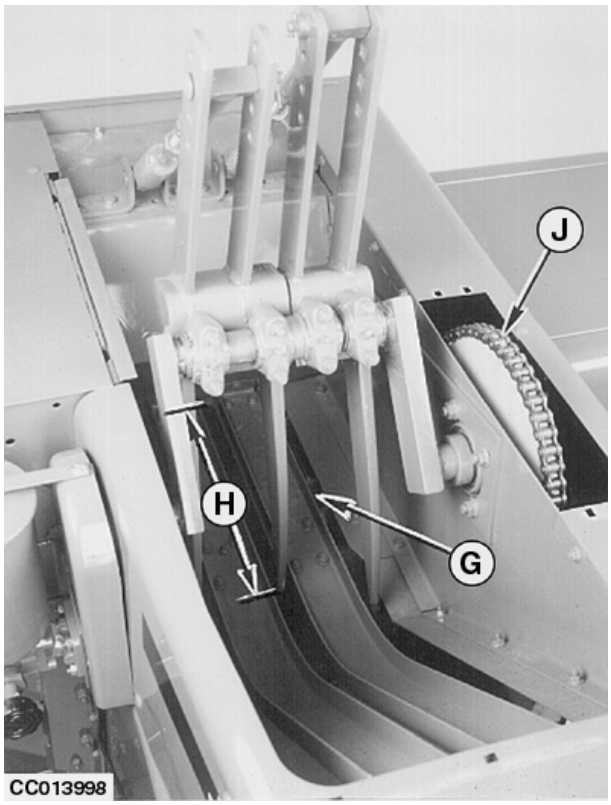


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OUCC002,0002307 -19-31MAR10-1/2

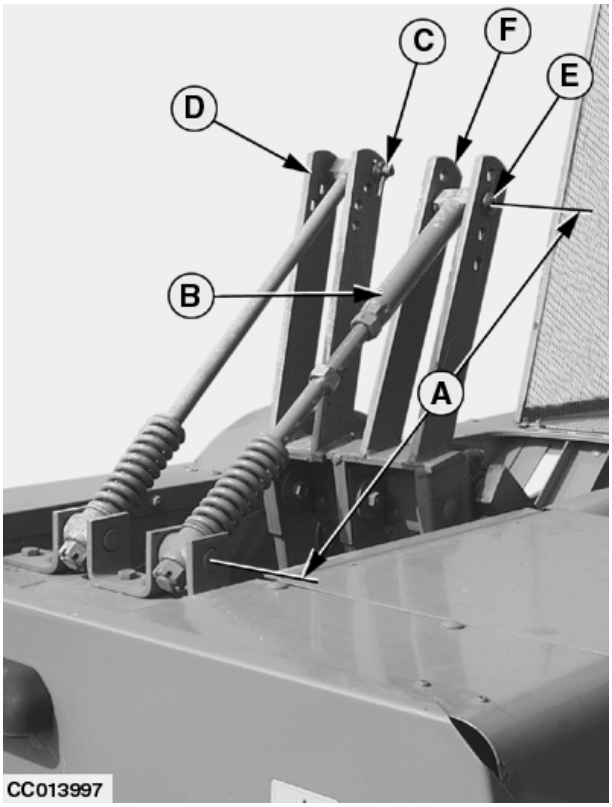
After connecting chain, relocate plungerhead face in slot center. If dimension (H) cannot be obtained, retime feeder. For a finer adjustment, use main drive chain instead of feeder drive chain (J).

**IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead and needles. See Synchronize Plungerhead and Needles in this Section.**

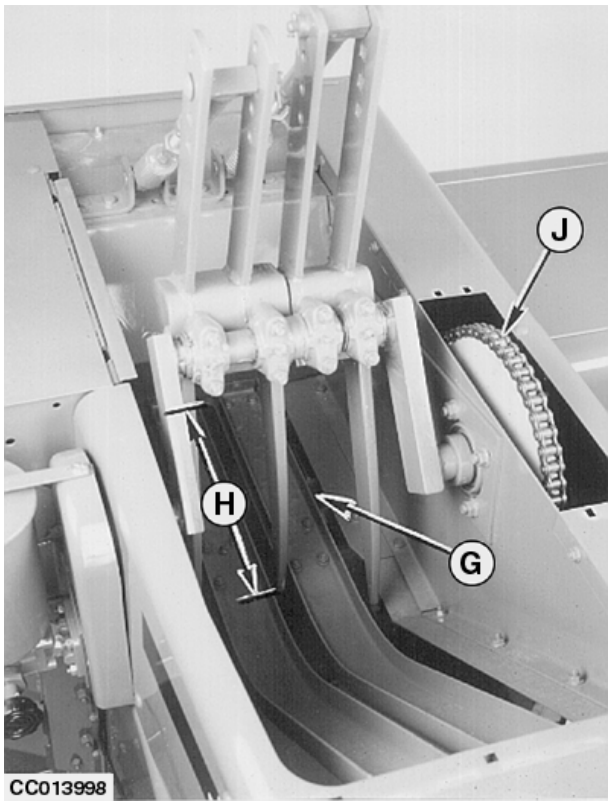
With feeder pivot pins (C) and (E) in any of the recommended positions (see Adjust Feeder Fingers in Operating the Baler Section), move plungerhead (G) through one complete cycle to ensure feeder fingers (D) and (F) and plungerhead will clear.

With needles in ”home” position, trip bale measuring arm. Turn flywheel counterclockwise until top of highest needle is flush with top edge of bale groover. Then check position of plungerhead. See Basic Adjustment of Plungerhead with Needles. Readjust synchronization of plungerhead and needles if necessary. See Synchronize Plungerhead and Needles in this Section.

**A—552 mm (21.73 in.)**
**B—Rear Pitman**
**C—Pivot Pin**
**D—Front Feeder Fingers**
**E—Pivot Pin**
**F—Rear Feeder Fingers**
**G—Plungerhead**
**H—390 mm (15.35 in.)**
**J—Feeder Drive Chain**




CC013997 —UN—22OCT98




CC013998 —UN—22OCT98

OUCC002,0002307 -19-31MAR10-2/2

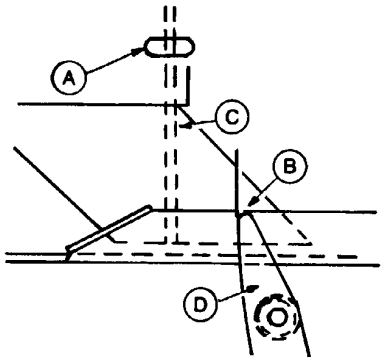
## Basic Adjustment of Plungerhead with Needles

**On Twine Baler:**

Position plungerhead to needles as shown.

*NOTE: It is preferable to adjust plungerhead (C) closer to front than to rear of slot (A).*

**A—Face of Plungerhead in Slot on Side of Bale Case**
**B—Needle Flush with Top Edge of Bale Groover**
**C—Face of Plungerhead**
**D—Needle**



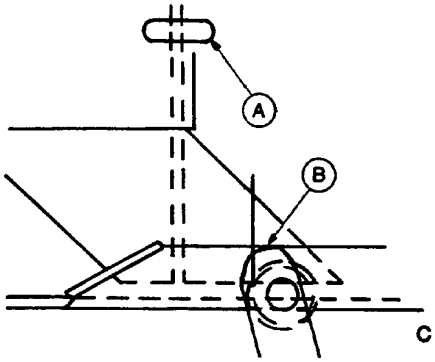

CC9135 —UN—25SEP98

OUCC002,0002308 -19-19MAR10-1/2

**On Wire Baler:**

Position plungerhead relative to front of needle pulley as shown.

**A—Face of Plungerhead in Slot on Side of Bale Case**
**B—Needle Flush with Top Edge of Bale Groover**




CC9136 —UN—06OCT98

OUCC002,0002308 -19-19MAR10-2/2

## Synchronize Plungerhead and Needles

If needles (D) do not have the basic adjustment, remove cluster gear (E).

Trip measuring arm and raise the needles (by hand) until tip of highest needle is flush with top edge of bale groover (B).

Move plungerhead face (C) to center of slot (A). Rotate clutch ring (F) (counterclockwise) until it contacts trip dog roller (G).

**IMPORTANT: Cluster gear (E) must be rotated to find the position where all teeth mesh with the mating gears.**

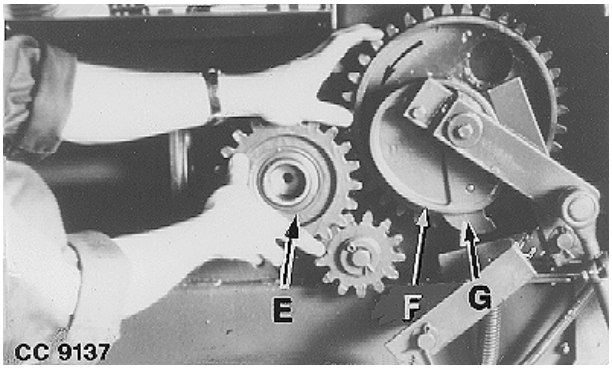
Reinstall cluster gear on shaft.

To check timing, back up the plungerhead and pull needles (D) out of bale case (by hand). Move flywheel slowly clockwise until needles are level with bale case.

Check position of plungerhead again.

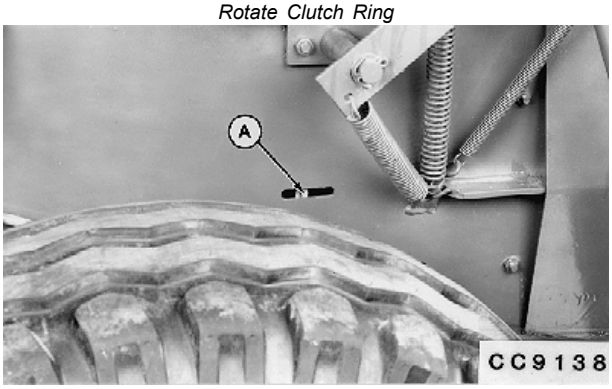
If the needles are still out of time, repeat timing and synchronization procedure.

**A—Face of Plungerhead in Slot on Side of Bale Case**
**B—Needle Flush with Top Edge of Bale Groover**
**C—Face of Plungerhead**
**D—Needle**
**E—Cluster Gear**
**F—Clutch Ring**
**G—Trip Dog Roller**



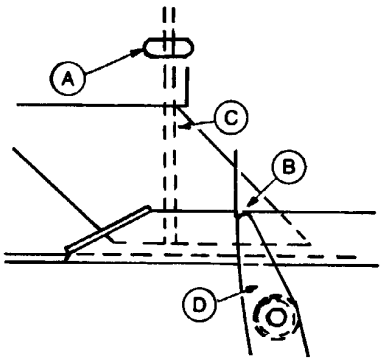

CC9137 —UN—23SEP98

*Rotate Clutch Ring*




CC9138 —UN—23SEP98

*Plungerhead Face in Bale Case Slot*




CC9135 —UN—25SEP98

*Twine Baler Shown*

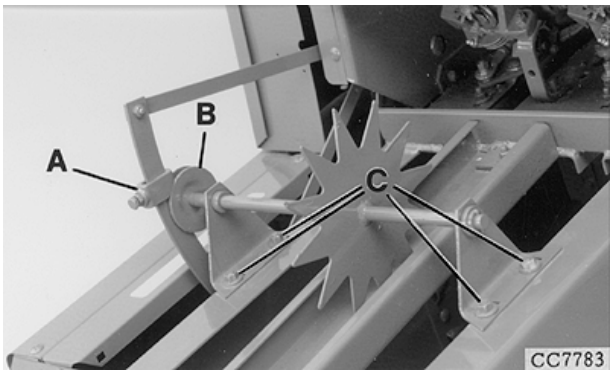
OUCC002,0002309 -19-26MAR10-1/1

## Adjust Bale Measuring Control

Locate the needles in ”home” position as shown with measuring arm stop (A) resting on measuring wheel shaft sheave (B).

Slightly loosen the four measuring wheel mounting screws (C).

**A—Stop**
**B—Sheave**
**C—Screws**




CC7783 —UN—06OCT98

**Continued on next page**

OUCC002,000230A -19-19MAR10-1/5

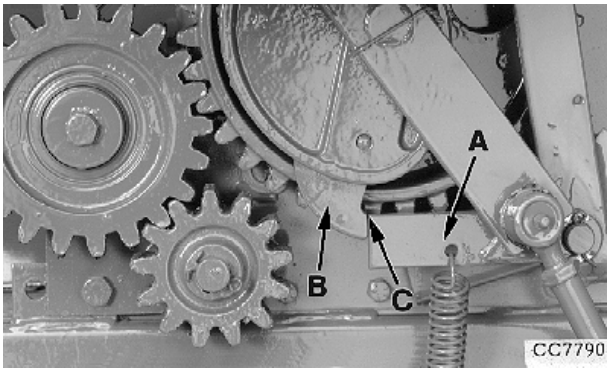
1. **Adjust Trip Arm**

**IMPORTANT: Adjust BOTH sides of measuring wheel mounting equally to prevent binding.**

Move the measuring wheel mounting slightly forward or rearward until top corner of trip arm (A) is flush with top corner of flat surface of trip dog (B) as shown at (C) (maximum tolerance ± 1.5 mm; 0.06 in.).

Tighten measuring wheel mounting screws securely.

**A—Trip Arm**
**B—Trip Dog**
**C—± 1.5 mm (0.06 in.)**




CC7790 —UN—23SEP98

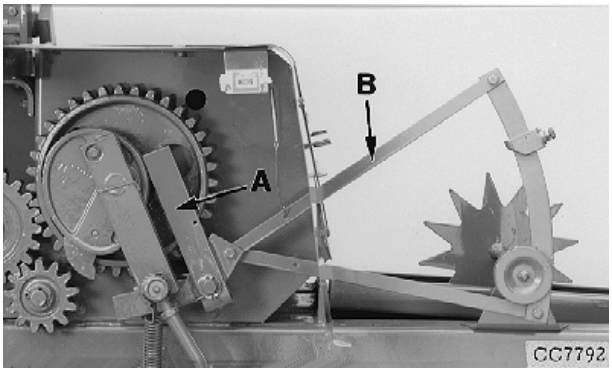
OUCC002,000230A -19-19MAR10-2/5

2. **Check Trip Arm Adjustment**

**⚠ CAUTION: Arm (A) is spring-loaded; pay extreme attention.**

Pull trip arm (A) back until arm (B) drops.

**A—Trip Arm**
**B—Arm**




CC7792 —UN—23SEP98

OUCC002,000230A -19-19MAR10-3/5

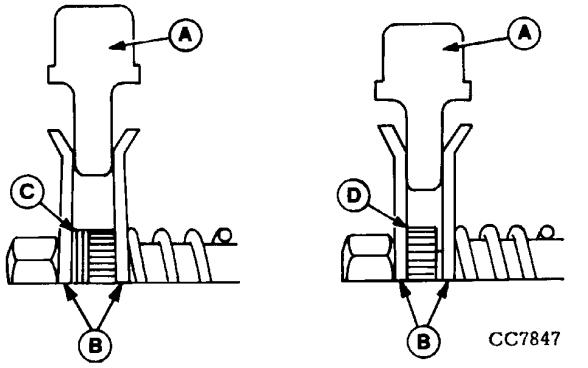
3. **Stop Adjustment**

**IMPORTANT: Sheave with larger diameter hole must be next to spring and away from shims.**

If stop (A) bounces while falling into place between sheave sides (B), the area is too WIDE. Remove shims (C) as required.

If stop does not fall all the way in between sheaves, the area is too NARROW. Add shim (D) as needed.

**A—Stop**
**B—Sheave Side**
**C—Shim**
**D—Shim**




CC7847 —UN—25SEP98

*Right Side - Narrow Adjustment; Left Side - Wide Adjustment*

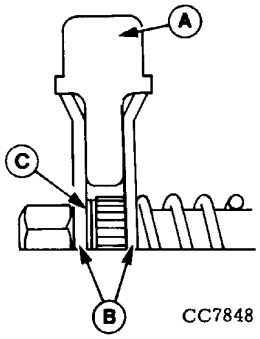
**Continued on next page**

OUCC002,000230A -19-19MAR10-4/5

4. **Check Stop Adjustment**

   If blade of stop (A) drops between sheave sides (B) snugly without bouncing, the number of shims (C) is correct.

**A—Stop**
**B—Sheave Side**
**C—Shim**




CC7848 —UN—05OCT98

OUCC002,000230A -19-19MAR10-5/5

## Adjust Crank Stop

*NOTE: Needle-to-plungerhead timing must be correct before adjusting crank stop (see Time the Baler in this Section).*

With the needles in ”home” position, adjust control rod yoke (A) so that clearance (D) between right-hand side of safety stop (B) and lug (C) on plungerhead crank is 22—28 mm (0.86—1.10 in.) on 339 balers and 29—35 mm (1.14—1.37 in.) on 349, 359 and 459 balers.

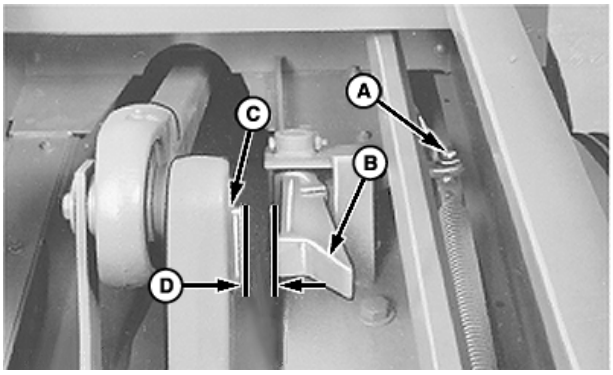
Trip needles and turn flywheel counterclockwise until needles have risen and are on the down stroke.

When stop starts the return swing to the left, distance (E) between plungerhead crank lug and stop must be greater than 70 mm (2.75 in.).

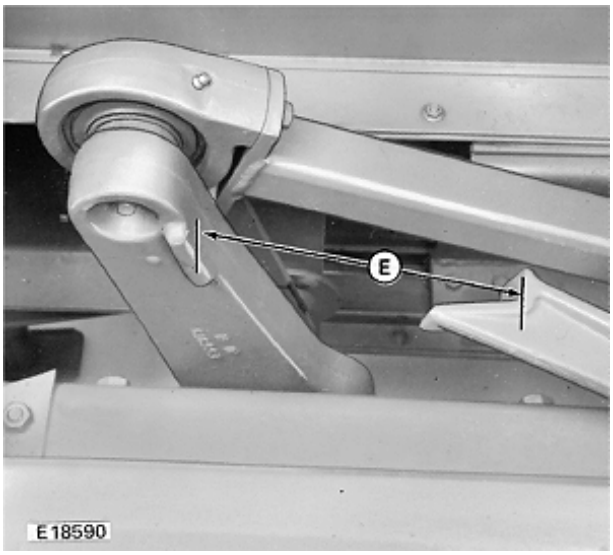
If distance (E) is less than 70 mm (2.75 in.) and distance (D) is 22—28 mm (0.86—1.10 in.) on a 339 baler or 29—35 mm (1.14—1.37 in.) on a 349, 359 or 459 baler, check needle timing (see Time the Baler in this Section).

Recheck clearance (70 mm; 2.75 in. minimum).

**A—Rod Yoke**
**B—Safety Stop**
**C—Lug**
**D—22—28 mm (0.86—1.10 in.) on 339; 29—35 mm (1.14—1.37 in.) on 349, 359 and 459**
**E—70 mm (2.75 in.) Minimum**




E18610 —UN—03OCT00




E18590 —UN—20SEP88

OUCC002,000230B -19-23MAR10-1/1

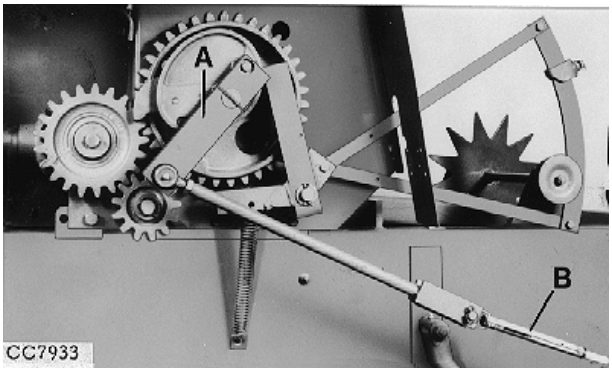
## Adjust Knotter Drive Brake (339 and 349)

Place needles in ”home” position and trip measuring arm.

Disconnect lower end of lift link from needle frame.

Attach a spring balance (B) to the lift link mounting hole. Pull link rearward at an angle of approximately 90° to the center line of lift arm (A).

**A—Lift Arm** **B—Spring Balance**




OUCC002,000230C -19-22MAR10-1/2

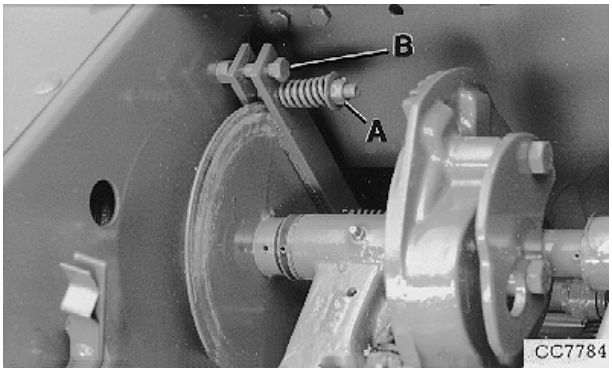
### Adjust Brake Pressure Plate

Loosen or tighten brake adjusting nuts (A) until 270 N (60 lb.) pull will move needle lift arm.

**IMPORTANT: Paint on brake disk must be completely worn off before adjusting the brake. Do not remove paint with sand paper or emery cloth.**

*NOTE: Brake retaining screws (B) must not contact the brake pressure plate.*

**A—Nuts** **B—Screws**




OUCC002,000230C -19-22MAR10-2/2

## Adjust Knotter Drive Brake (359 and 459)

Place needles in ”home” position and trip measuring arm.

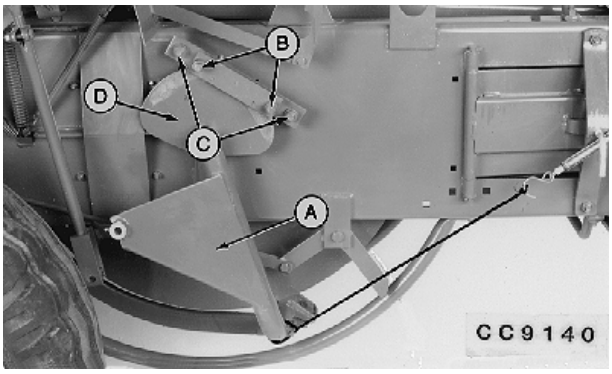
Disconnect lower end of lift link from needle frame (A).

Attach twine to needle frame and pull rearward at a 90° angle to needle frame as shown.

**IMPORTANT: Brake retaining screws (C) must not contact brake pressure plate (D).**

Loosen or tighten brake adjusting nuts (B) until 245 N (55 lb.) pull will move needle lift arm.

**A—Needle Frame** **C—Retaining Screws**
**B—Adjusting Nuts** **D—Pressure Plate**




OUCC002,000230D -19-22MAR10-1/1

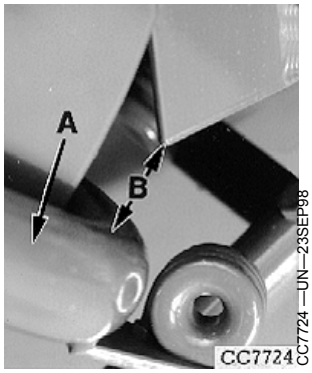
## Adjust Needle Frame and Needle Link on Twine Baler (339 Only)

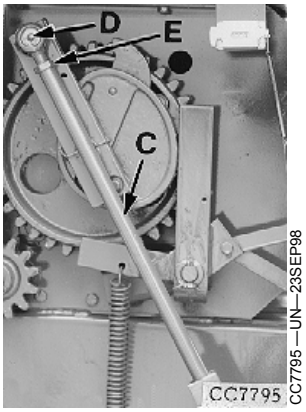
**IMPORTANT: Plungerhead adjustment, needle timing and crank stop must be checked after making any adjustments to needle lift link.**

With needles fully raised, needle frame (A) is adjusted properly when it clears main frame on right-hand side of bale case by distance (B).

Adjust needle frame clearance by loosening clamp (E), disconnecting needle lift link (C) from the needle frame and turning link.

**IMPORTANT: After adjusting length of needle lift link (C), hold ball joint (D) parallel to link bar while tightening clamp (E).**




**A—Needle Frame**
**B—47—53 mm (1.85—2.08 in.)**
**C—Needle Lift Link**
**D—Ball Joint**
**E—Clamp**

OUCC002,000230E -19-19MAR10-1/1

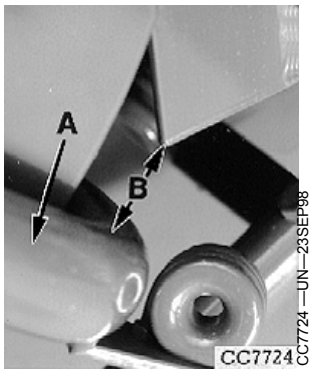
## Adjust Needle Frame and Needle Link on Twine Baler (349, 359 and 459)

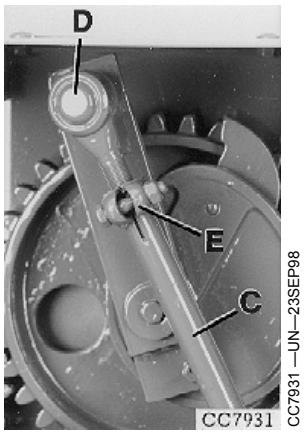
**IMPORTANT: Plungerhead adjustment, needle timing and crank stop must be checked after making any adjustments to needle lift link.**

With needles fully raised, needle frame (A) is adjusted properly when it clears main frame on right-hand side of bale case by distance (B).

Adjust needle frame clearance by loosening clamp (E), disconnecting needle lift link (C) from the needle frame and turning link.

**IMPORTANT: After adjusting length of needle lift link (C), position clamp (E) with screw to outside. Hold ball joint (D) parallel to link bar while tightening clamp.**




**A—Needle Frame**
**B—25—32 mm (0.98—1.26 in.)**
**C—Needle Lift Link**
**D—Ball Joint**
**E—Clamp**

OUCC002,000230F -19-23MAR10-1/1

## Adjust Needles (Twine Baler)

During the free portion of needle stroke (before needles enter knotters), each needle (A) must clear right and left edges of lower and upper bale case slots by more than 6 mm (0.23 in.).

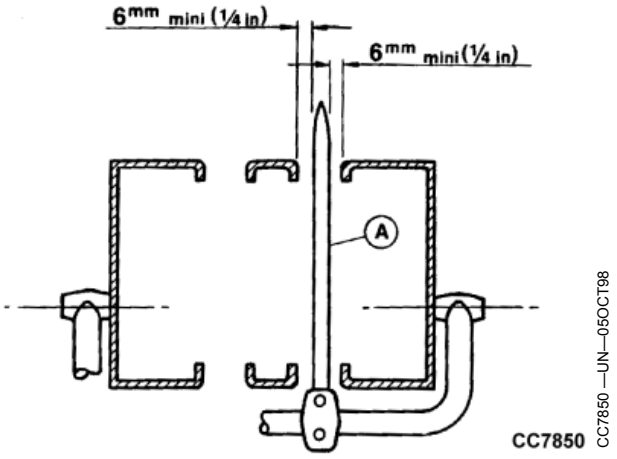
Trip knotting mechanism by hand to raise needles.

Loosen the four needle mounting screws.

Move needle sideways to obtain proper clearance.

Slightly tighten needle mounting screws.

**A—Needle**




OUCC002,0002310 -19-31MAR10-1/4

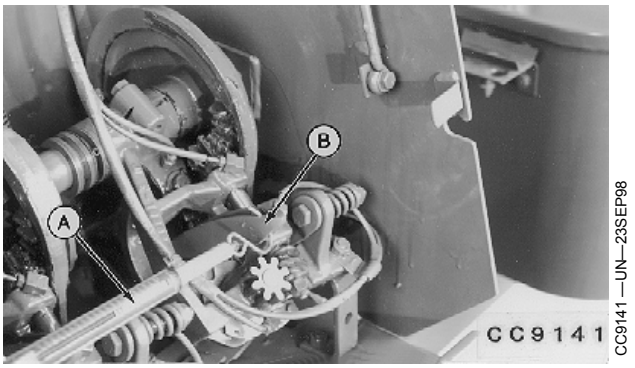
1. **Adjust Needle Pressure**

   Attach a spring balance (A) to needle (B) as shown.

   Move needle sideways until right-hand side exerts a pressure of 14—27 N (3—6 lb.) on knotter frame.

*NOTE: It is advisable to adjust this pressure closer to 14 N (3 lb.) rather than to 27 N (6 lb.).*

**A—Spring Balance** **B—Needle**

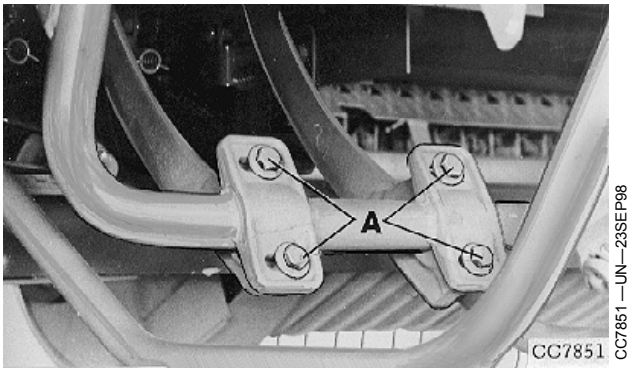



OUCC002,0002310 -19-31MAR10-2/4

2. **Obtain Proper Pressure**

   Loosen four mounting screws (A) and tap needles sideways until proper pressure is obtained.

**A—Screws**

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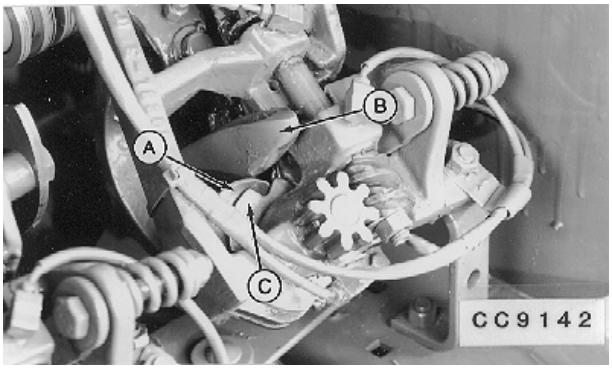
OUCC002,0002310 -19-31MAR10-3/4

3. **Adjust Needles with Twine Cleaner**

   Needle (B) must clear twine cleaner or twine disk (C) by 1.5—3 mm (0.06—0.12 in.) (A) at the closest point. Measure this clearance at the level of rounded section of needle eye by pressing twine cleaner up and to left.

   Each needle may be adjusted forward or rearward by loosening one of the needle mounting screws and tightening the other, or it may be shifted sideways by loosening both mounting screws.

   When needles are properly adjusted, tighten all screws to 70—110 N·m (50—80 lb.-ft.). Recheck the needles through their cycle.




CC9142 —UN—23SEP98

**A—1.5—3 mm (0.06—0.12 in.)**
**B—Needle**
**C—Twine Disk**

OUCC002,0002310 -19-31MAR10-4/4

## Adjust Twine Holder

*NOTE: Incorrect twine holder adjustment is one of the major causes of tying difficulties.*

If twine holder is not adjusted correctly, the twine will be over the bale and pulled out of the twine disk. This can be detected by a square cut end which has been flattened in the disks. The twine is usually shorter than mating twine tied on opposite side of bale.

The twine could also be over the bale, but sheared out of the twine disks. The twine ends will be frayed and torn, not cut squarely as in the illustration.

**IMPORTANT: Adjustments to twine holder must be made in one turn increments.**

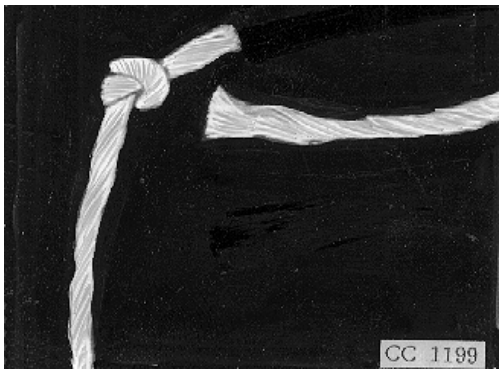
*NOTE: Varying hay conditions and moisture content may require greater or less twine holder tension.*

### Adjust Twine Holder

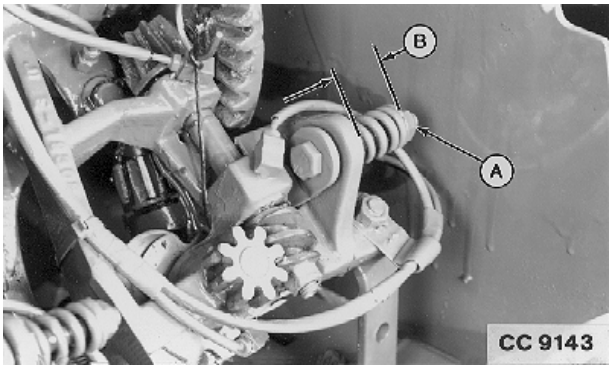
To adjust, loosen nut (A) until twine disk pullouts occur when baling.

Using one turn increments on the nut, adjust the twine holder only as tight as necessary to prevent the twine from pulling out of the disk when baling.

An approximate starting distance (B) of spring length is 37 mm (1.45 in.).




CC1199 —UN—23SEP98




CC9143 —UN—23SEP98

**A—Adjusting Nut**
**B—37 mm (1.45 in.)**

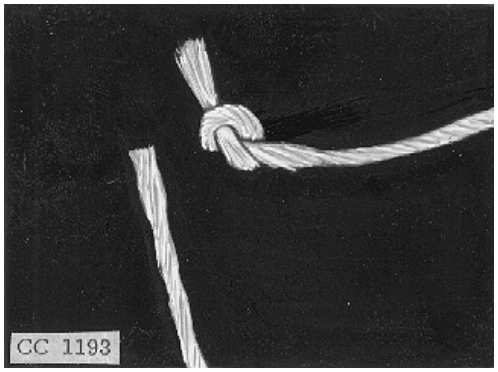
OUCC002,0002311 -19-19MAR10-1/1

## Adjust Tucker Fingers

*NOTE: Incorrect tucker finger adjustment is a major cause of tying difficulties.*

To observe knotter operation, remove hay from the bale case, trip measuring arm and turn flywheel by hand until one tying cycle is completed.

With incorrect tucker finger adjustment, the knot will appear as illustrated (tucker fingers not picking up needle twine or moving it into correct tying position).




CC1193 —UN—23SEP98

OUCC002,0002312 -19-17MAR10-1/3

1. **Adjust Tucker Fingers with Needles**

   With needles (A) properly adjusted, proceed as follows:

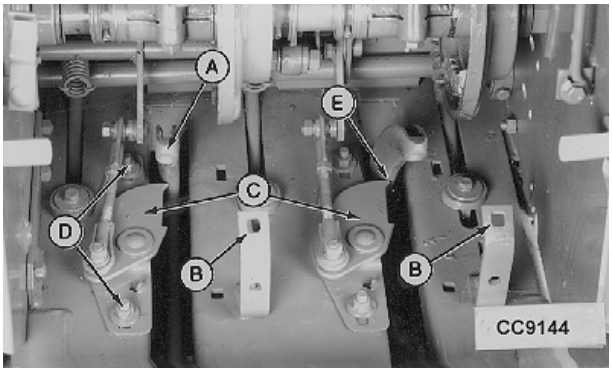
   Remove two carriage screws from knotter bracket (B) and lift knotter assemblies up and out of the needle path.

   Trip bale measuring arm and turn flywheel (by hand) until tucker fingers (C) are closest to the needles as shown.

**IMPORTANT: End of each tucker finger must be held upward and to the left by hand while setting clearance.**

   Loosen tucker finger mounting nuts (D). Move tucker fingers back or forth in the mounting slots until fingers clear needles by 1.5—3 mm (0.06—0.12 in.) (E).

   Finally tighten tucker finger mounting nuts to 50 N·m (35 lb.-ft.).




CC9144 —UN—23SEP98

**A—Needle**
**B—Knotter Bracket**
**C—Tucker Fingers**
**D—Mounting Nuts**
**E—1.5—3 mm (0.06—0.12 in.)**

OUCC002,0002312 -19-17MAR10-2/3

2. **Adjust Tucker Fingers with Bale Case**

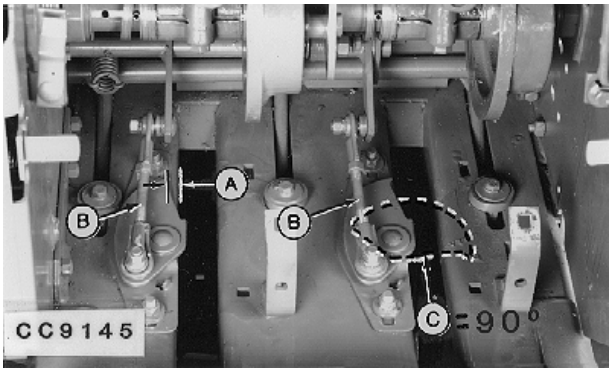
   Continue turning flywheel until the tucker fingers have returned to their ”home” position.

   Tucker finger tips must be set within distance (A) to the left of the needle slot while tip is held to the left.

   When tucker finger brings twine to the knotter, it must be perpendicular to the needle slot at the end of its stroke (C).

   Adjust pull rods (B) to obtain correct finger position.

   Secure the knotter bracket using the two carriage screws removed at the beginning of procedure.




CC9145 —UN—23SEP98

**A—2—5 mm (0.08—0.2 in.)**
**B—Pull Rods**
**C—90° Angle**

OUCC002,0002312 -19-17MAR10-3/3

## Adjust Knife Arm

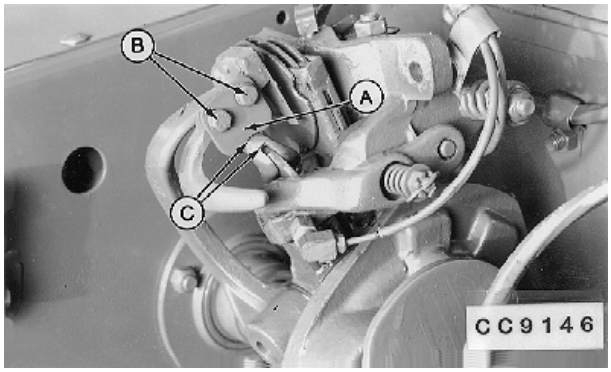
Remove carriage screw from knotter bracket and rotate knotter assembly to vertical position as shown.

Wiper plate (A) must be centered with billhook heel.

Loosen screws (B) and move arm until wiper plate is approx. 5 mm (0.2 in.) (C) from the billhook tongue groove.

Tighten screws enough to hold wiper plate for next adjustment.

**A—Wiper Plate**
**B—Screws**
**C—5 mm (0.2 in.)**




CC9146 —UN—23SEP98

OUCC002,0002313 -19-26MAR10-1/6

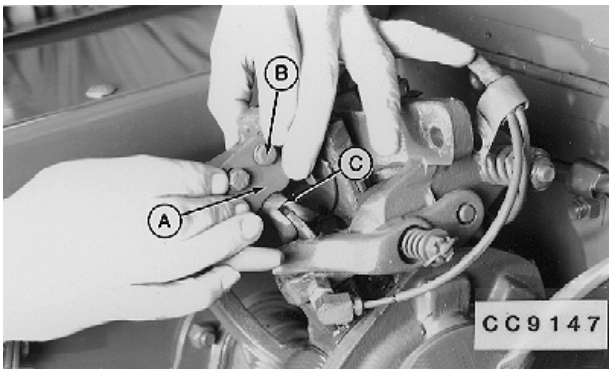
1. **Check Knife Arm Adjustment**

   Rotate the knotter assembly down slightly while pulling across billhook.

   To move wiper plate (A) across jaw of billhook (C), a pull of 30—60 N (7—14 lb.) is required.

   Tighten screws (B) to 10 ±2 N·m (7.5 ±1.5 lb.-ft.).

**A—Wiper Plate**
**B—Screw**
**C—Billhook**




CC9147 —UN—23SEP98

OUCC002,0002313 -19-26MAR10-2/6

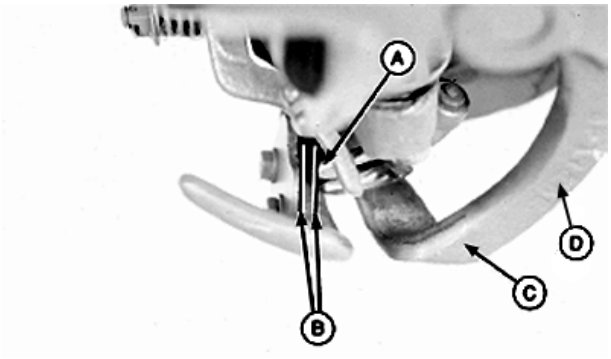
2. **Adjust Billhook to Wiper Plate**

   Billhook tongue (A) must clear the wiper plate by 1—2.5 mm (0.04—0.1 in.) (B) as billhook tongue passes knife (wiper) arm.

   Rotate the billhook through 180° and move tongue by hand up and down to check the clearance at the closest point between tongue and plate.

   Model or bend arm (C) in area (D) to obtain correct clearance.

**A—Billhook Tongue**
**B—1—2.5 mm (0.04—0.1 in.)**
**C—Arm**
**D—Model or Bend Area**




E18489 —UN—09NOV99

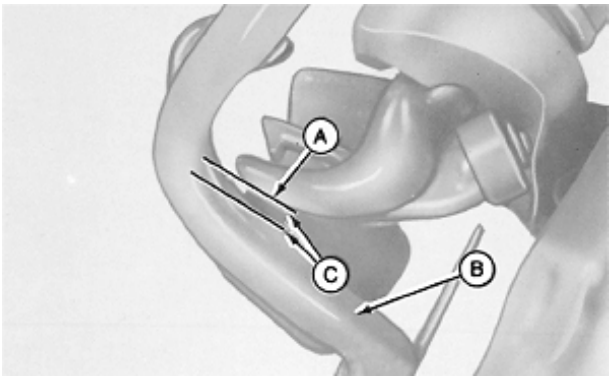
**Continued on next page**

OUCC002,0002313 -19-26MAR10-3/6

3. **Adjust Billhook to Knife Arm**

   As billhook is revolved through its 360° cycle, lower surface of billhook (A) must clear knife (wiper) arm (B) by a minimum of 1.5 mm (0.06 in.) (C).

**A—Billhook**
**B—Knife Arm**
**C—1.5 mm (0.06 in.) Minimum**



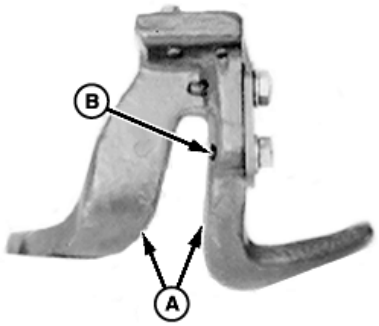

E18733 —UN—15JUN89

OUCC002,0002313 -19-26MAR10-4/6

4. **Check Knife (Wiper) Arm**

   After modelling, check knife (wiper) arm for well rounded and smooth surfaces at ALL portions that contact twine or knots - particularly in throat area (A) and at hole (B) - to prevent twine fracture.

**A—Throat Area**
**B—Hole**




E22712 —UN—15SEP00

OUCC002,0002313 -19-26MAR10-5/6

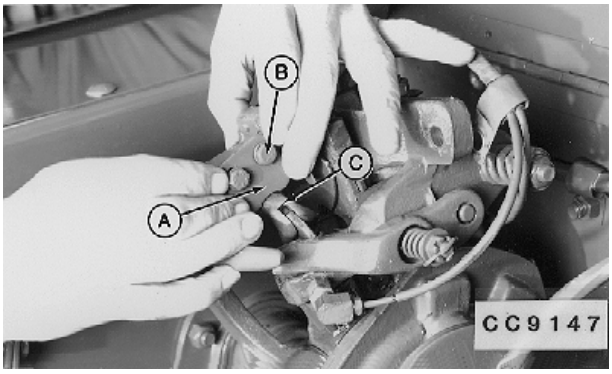
5. **Check Wiper Plate**

   Recheck wiping force by rotating knotter assembly down slightly while pulling across billhook (C).

   To move wiper plate (A) across jaw of billhook (C), a pull of 30—60 N (7—14 lb.) is required.

   Check that screws (B) are tightened to 10 ±2 N·m (7.5 ±1.5 lb.-ft.).

**A—Wiper Plate**
**B—Screw**
**C—Billhook**




CC9147 —UN—23SEP98

OUCC002,0002313 -19-26MAR10-6/6

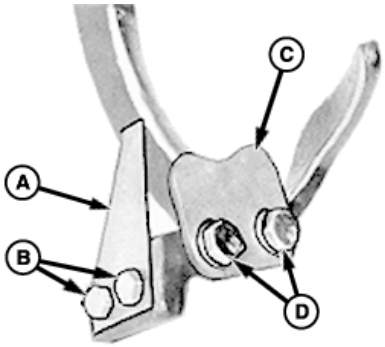
## Replace Knife and Wiper Plate

**CAUTION: Use only metric tools to replace knife or wiper plate. Other tools may not fit properly. They may slip and cause injury.**

Remove knife (A) and replace when it becomes dull.

To replace knife, remove two mounting screws (B) and the old knife. Replace with new knife. Tighten to 6 ±1 N·m (4.4 ±0.7 lb.-ft.).

To replace wiper plate (C), remove mounting screws (D), washers, and wiper plate. Replace with new wiper plate (see Adjust Knife Arm in this Section).




E18027 —UN—18SEP00

**A—Knife**
**B—Mounting Screws**
**C—Wiper Plate**
**D—Mounting Screws**

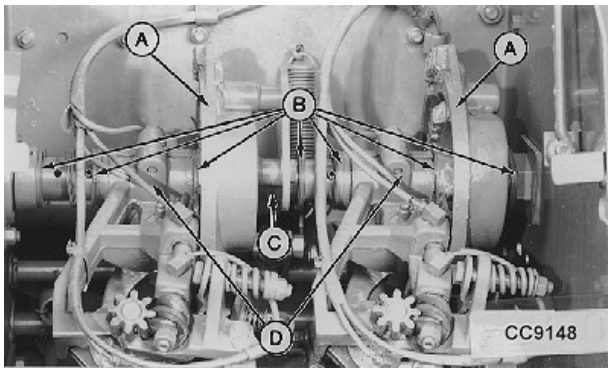
OUCC002,0002314 -19-23MAR10-1/1

## Adjust Knotter Gears

*NOTE: If necessary, cut off washers without removing shaft.*

Adjust intermittent gear (A) relative to billhook pinion as described below by shifting washers (B) on needle lift shaft (C).

Install a sufficient number of these washers between intermittent gear hub and knotter frame (D) to obtain the following clearances.




CC9148 —UN—23SEP98

**A—Intermittent Gear**
**B—Washers**
**C—Needle Lift Shaft**
**D—Knotter Frame**

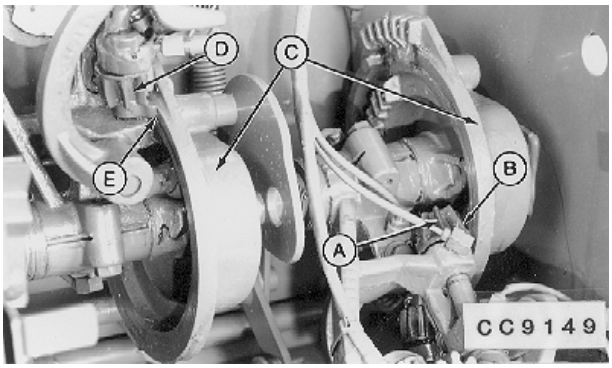
OUCC002,0002315 -19-18MAR10-1/2

### Adjust Knotter Gear Clearance

1. Clearance (E) between the flat surfaces of billhook pinion (D) and intermittent gear (C) must be 0.2 mm (0.008 in.) maximum.
2. Clearance (B) between the flat surfaces of twine disk pinion (A) and intermittent gear (C) must be 0.5 mm (0.02 in.) maximum.

*NOTE: If this clearance cannot be obtained, file flat surface of billhook pinion (D). File twine disk pinion if billhook pinion is not against intermittent knotter gear (E).*

*Once these adjustments are completed and the spring pins are installed on needle lift shaft, make sure that knotters are not jammed on the needle lift shaft. Remove knotter mounting screw and pivot knotter upward around shaft, then drop knotter. It must return to initial position under its own weight.*




CC9149 —UN—23SEP98

**A—Twine Disk Pinion**
**B—0—0.5 mm (0—0.02 in.)**
**C—Intermittent Gear**
**D—Billhook Pinion**
**E—0—0.2 mm (0—0.008 in.)**

OUCC002,0002315 -19-18MAR10-2/2

## Remove Knotter Assembly

Remove two mounting screws (A) and screw (B).

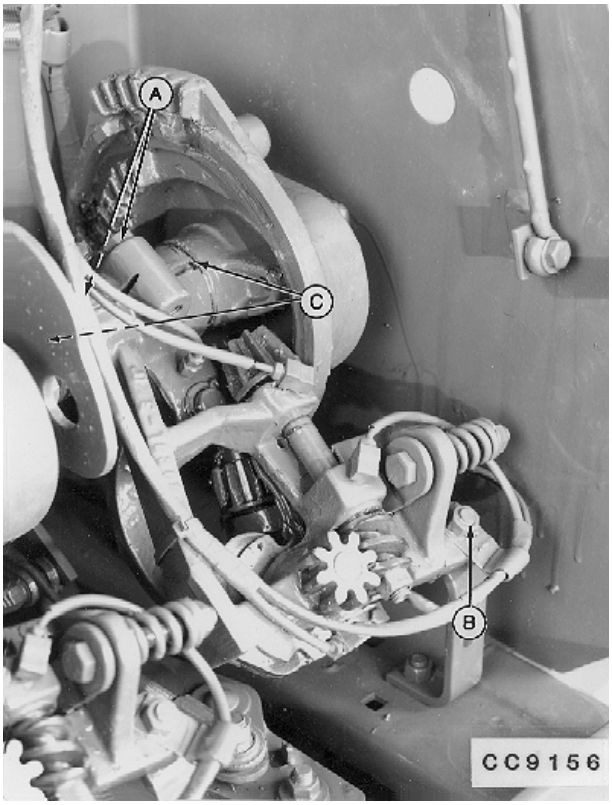
Disconnect multi-luber lines, if equipped.

*NOTE: Check number of washers (C) for reinstallation.*

Remove knotter assembly.

For reinstallation, reverse removal procedure taking care to join the correct half pairs of each knotter frame. Tighten mounting screws (A) to 40 N·m (30 lb.-ft.).

**A—Mounting Screws**
**B—Screw**
**C—Washers**




CC9156 —UN—23SEP98

OUCC002,0002316 -19-19MAR10-1/1

## Replace Billhook Cam

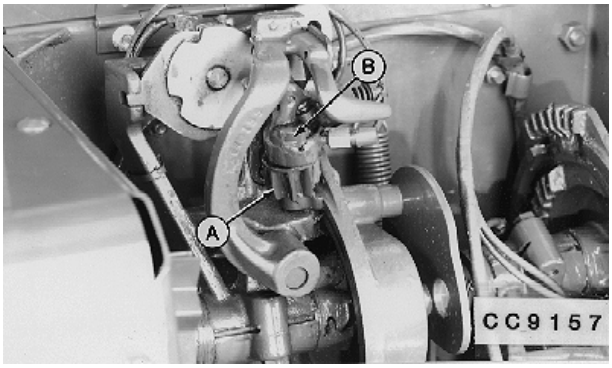
Remove pin (A) from gear.

Pull out billhook and remove cam (B).

Install cam, billhook, washers, gear, and pin.

*NOTE: End play must be 0—0.38 mm (0—0.015 in.).*

**A—Cam**
**B—Pin**




CC9157 —UN—23SEP98

OUCC002,0002317 -19-19MAR10-1/1

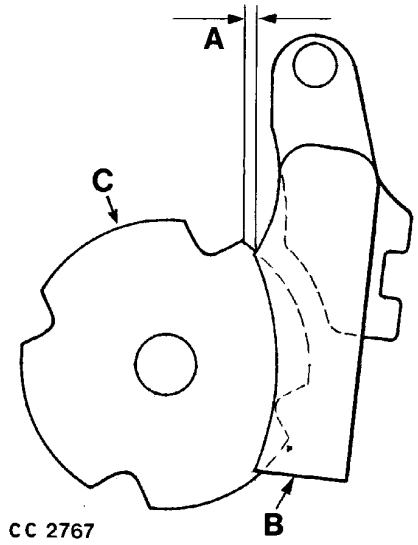
## Adjust Twine Disk

*NOTE: Make this adjustment after tying a minimum of two bales and with twine still in twine disk.*

Twine disk adjustment is determined by the position of notches in twine disk (C) relative to twine holder (B).

The right corner of the notch in the twine disk center plate must be 0.5—1.5 mm (0.02—0.06 in.) (A) to the left twine holder edge (with twine in twine disk).

**A—0.5—1.5 mm (0.02—0.06 in.) C—Center Twine Disk**
**B—Twine Holder**




CC2767 —UN—23SEP98

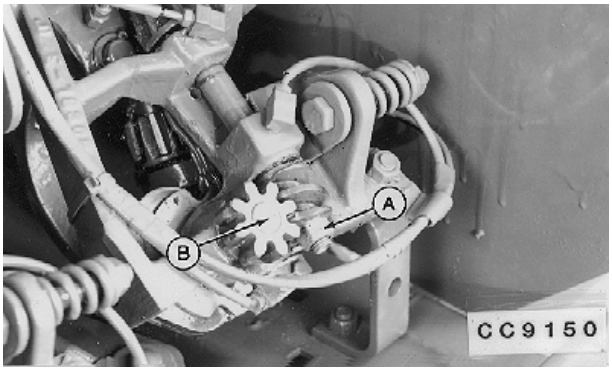
OUCC002,0002318 -19-26MAR10-1/2

**Adjust Twine Disk Position:**

1. Loosen nut (A). Do not remove nut. Tap nut end of shaft to break tapered joint loose.
2. Move twine disk (B) to desired location.
3. Tap pinion end of shaft.
4. Rotate worm gear counterclockwise until seated. Tighten nut (A).

*NOTE: End play must be 0.12—0.38 mm (0.005—0.015 in.).*

**A—Nut** **B—Twine Disk**




CC9150 —UN—23SEP98

OUCC002,0002318 -19-26MAR10-2/2

## Adjust Billhook Tongue

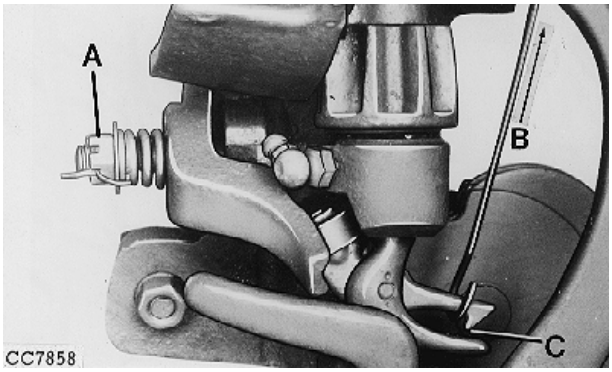
Adjust billhook tongue pressure when tongue is free of twine.

Billhook is properly adjusted when an outward pull of 23—68 N (5—15 lb.) (B) on billhook tongue will separate jaws of 3 mm (0.12 in.) (C). Tongue must be tight when closed.

To increase pressure on billhook tongue, tighten nut on stud (A). Loosen nut to reduce pressure.

Excessive pressure on billhook tongue may cause knots to remain on the billhook, thus breaking the twine. Incomplete knots may be the result of insufficient pressure on billhook tongue.

**IMPORTANT: When using thick sisal twine (150 m/kg; 74.5 yd/lb.), correct billhook tongue pressure is 23 N (5 lb.), otherwise excessive stress on knotter parts will result during wiping operation.**



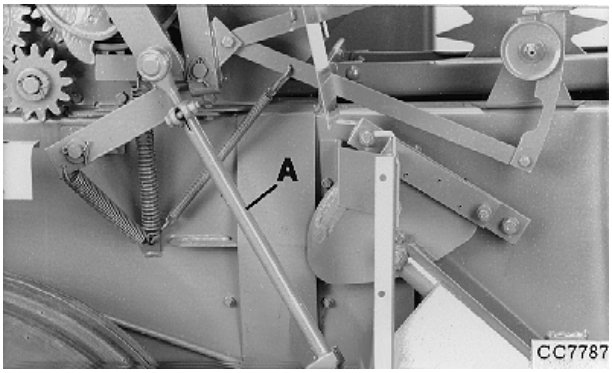

**A—Stud**
**B—23—68 N (5—15 lb.)**
**C—3 mm (0.12 in.)**

OUCC002,0002319 -19-19MAR10-1/1

## Adjust Needle Link (Wire Baler)

Needle lift link (A) controls the height of the needles in relation to wire and wire pulleys as well as bale case bottom.

**A—Needle Lift Link**

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OUCC002,000231A -19-17MAR10-1/2

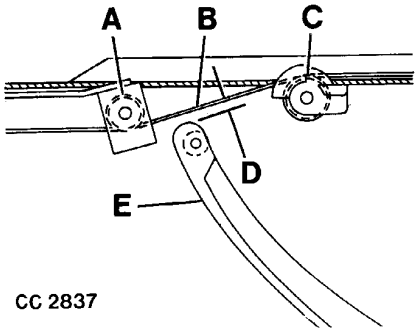
**Adjust needle lift link:**

**IMPORTANT: Crank stop, plungerhead and needle timing must be checked after making needle lift link adjustments.**

1. When in home position, each needle (E) must be 6.5—16 mm (0.25—0.63 in.) (D) below wire (B) passing under center wire pulley (A) and over rear wire pulley (C).
2. Adjust needle clearance by loosening clamp (F) and disconnecting needle lift link (G) from needle frame. Turn needle lift link as required.

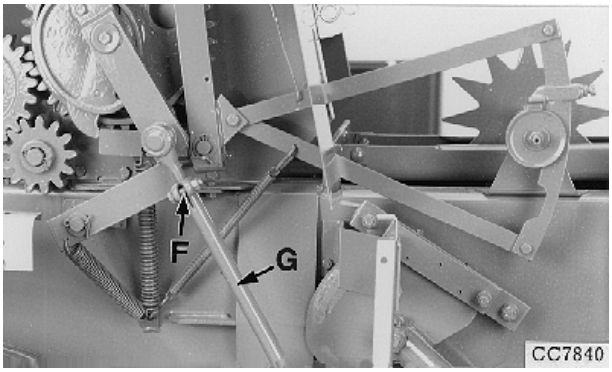
*NOTE: After adjusting length of needle lift link (G), position clamp (F) with screw facing outside. Hold ball joint parallel to link bar while tightening clamp.*

**A—Center Wire Pulley**
**B—Wire**
**C—Rear Wire Pulley**
**D—6.5—16 mm (0.25—0.63 in.)**
**E—Needle**
**F—Clamp**
**G—Needle Lift Link**



CC 2837

CC2837 —UN—06OCT98




CC7840 —UN—23SEP98

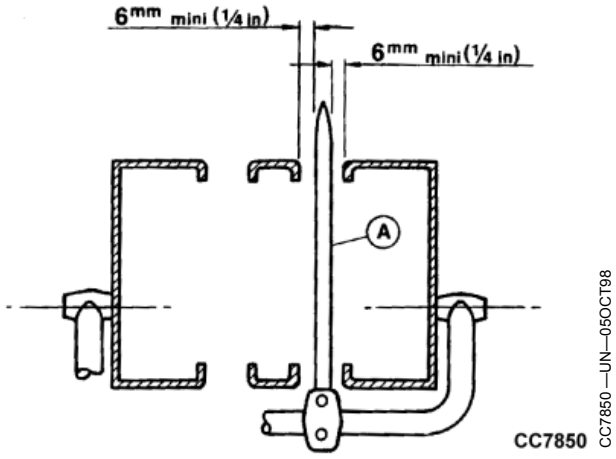
OUCC002,000231A -19-17MAR10-2/2

## Adjust Needles (Wire Baler)

During the stroke, each needle (A) must clear right and left edges of lower and upper bale case slots by more than 6 mm (0.23 in.).

- Trip twisting mechanism by hand to raise needles
- Loosen the four needle mounting screws
- Move needle sideways to obtain proper clearance
- Slightly tighten needle mounting screws.

**A—Needle**




CC7850 —UN—05OCT98

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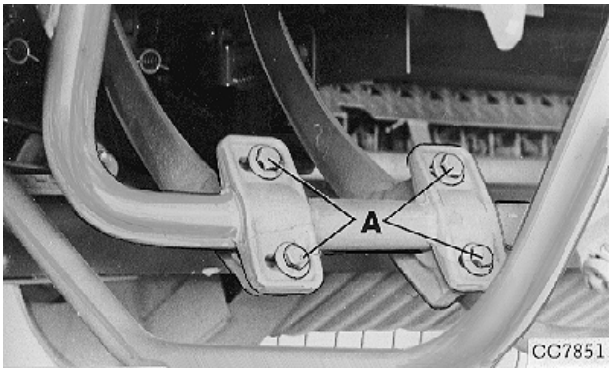
OUCC002,000231B -19-23MAR10-1/4

1. **Adjust Needle Position**

   Needle mounting screws (A) control position of needles in relation to center and rear wire guides, slots in twister mounting plate and wire grippers.

   Each needle may be adjusted forward or rearward by loosening one of the needle mounting screws and tightening the other. Or it may be shifted sideways by loosening both mounting screws.

**A—Screws**




CC7851 —UN—23SEP98

OUCC002,000231B -19-23MAR10-2/4

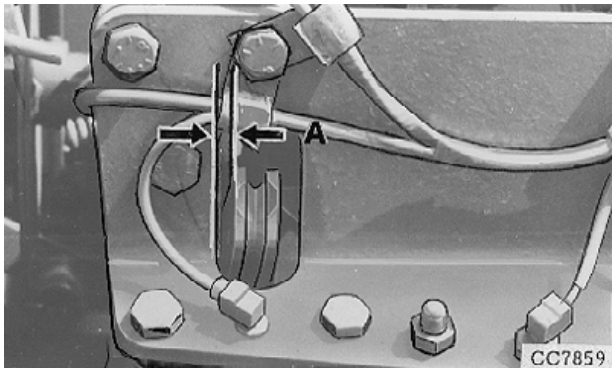
2. **Align Needles**

   In highest position, each needle must be 3—8 mm (0.12—0.31 in.) (A) from left-hand side of its respective slot in twister mounting plate.

   To align needles with wire guide pulleys and the slot in twister mounting plate, trip measuring arm and raise needles. Loosen both needle mounting screws and move needle sideways until it is aligned (see Guide Alignment and Clearance in this Section).

   Tighten the needle mounting screws to 88 ±20 N·m (65 ±15 lb.-ft.).

**A—3—8 mm (0.12—0.31 in.)**




CC7859 —UN—05OCT98

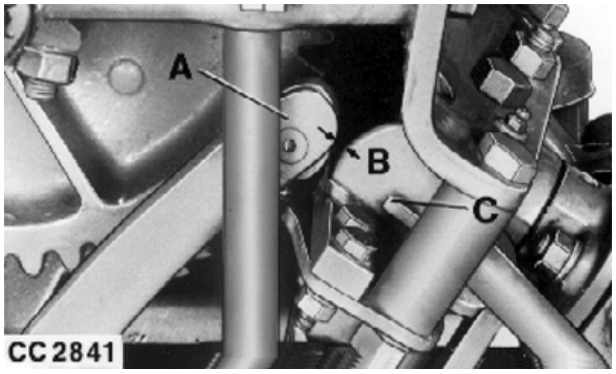
OUCC002,000231B -19-23MAR10-3/4

3. **Adjust Needle to Gripper**

   As needles pass through the twisting mechanism, each needle (A) must clear front of wire gripper (C) by 1.5—4 mm (0.06—0.15 in.) (B) at the closest point (when checked without wire in the grippers).

   To increase the distance between needles and grippers, slightly loosen front needle mounting screws and tighten rear screws. Reverse this procedure to reduce the distance.

   With the needles properly adjusted, tighten all screws to 70—110 N·m (50—80 lb.-ft.). Recheck needles through their cycle.




CC2841 —UN—23SEP98

**A—Needle**
**B—1.5—4 mm (0.06—0.15 in.)**
**C—Wire Gripper**

OUCC002,000231B -19-23MAR10-4/4

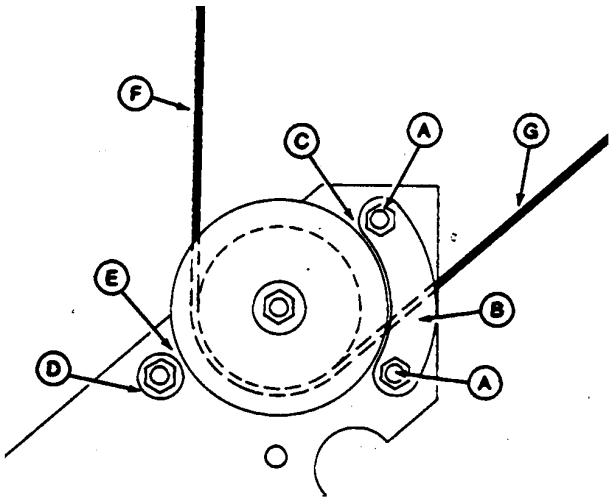
## Adjust Wire Guides

**IMPORTANT: All rollers must turn freely to ensure proper operation of wire twister.**

Loosen screws (A) and adjust front pulleys and cast wire guides (B) to clear each other by distance (C).

Loosen screw and adjust front sleeve guide (D) to clear pulleys by distance (E). Each pulley must turn freely.

**A—Screws**
**B—Wire Guides**
**C—1.5 ±0.8 mm (0.06 ±0.03 in.)**
**D—Front Sleeve Guide**
**E—0.13—0.8 mm (0.005—0.031 in.)**
**F—Outgoing Wire**
**G—Incoming Wire**



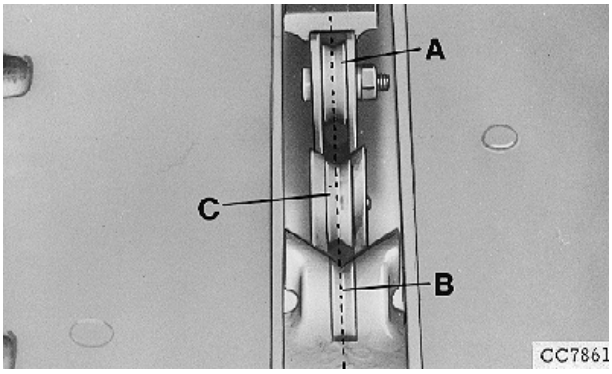

E24760 —UN—14SEP88

OUCC002,000231C -19-23MAR10-1/1

## Adjust Center Pulley

With baler threaded, adjust center pulley (A) to the side, as necessary, to allow needle to pick up the wire as the needles rise.

**A—Center Wire Pulley**
**B—Rear Wire Pulley**
**C—Needle Pulley**




CC7861 —UN—23SEP98

OUCC002,000231D -19-19MAR10-1/1

## Guide Alignment and Clearance

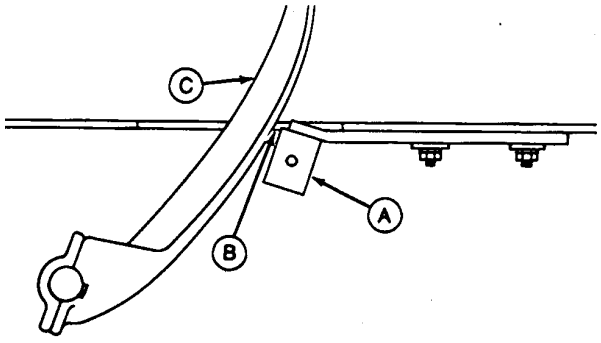
With needles (C) in highest position, center pulley (A) must be within 6.4 ±1.5 mm (0.25 ±0.06 in.) (B) in front of closest point to needle.

Adjust guides by loosening two mounting screws in each guide.

Shift guides to left or right for alignment and forward or rearward for desired clearance.

Tighten mounting screws.

**A—Center Pulley**
**B—6.4 ±1.5 mm (0.25 ±0.06 in.)**
**C—Needle**




E11961 —UN—20SEP88

OUCC002,000231E -19-23MAR10-1/1

## Adjust Grippers

To provide a positive shearing action on the wire, adjust grippers using shims (B).

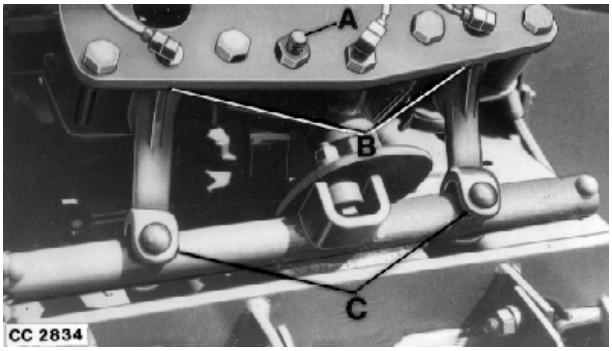
To shim a gripper, pivot twister assemblies upward by loosening lock screw (A) and removing lock nut from bottom of gripper pivot pin.

Remove pivot pin, then insert necessary shims on top of gripper arm (C) and twister mounting plate.

Replace pivot pin.

Tighten pivot pin and secure with lock nut.

Move twister assemblies back to their original position and secure with lock screw.




CC2834 —UN—23SEP98

**A—Lock Screw**
**B—Shims**
**C—Gripper Arm**

OUCC002,000231F -19-23MAR10-1/1

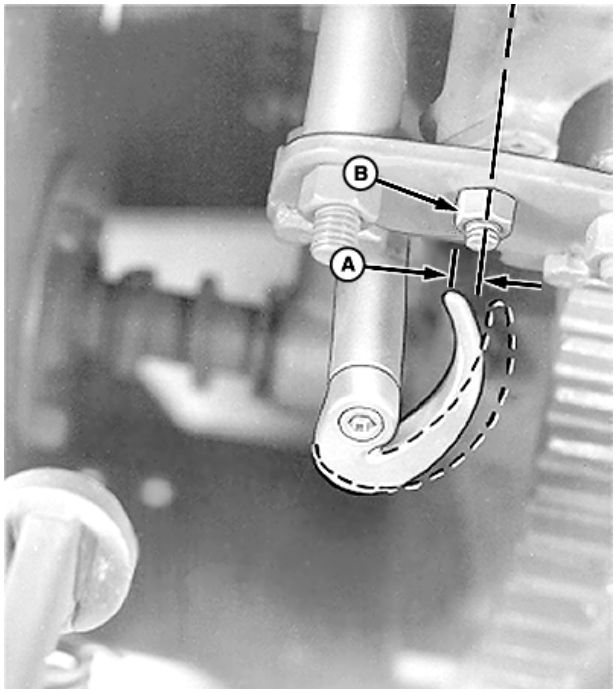
## Adjust Twister Hooks

*NOTE: Torque socket head screw through twister hook to 34 N·m (25 lb.-ft.).*

With needles in home position, twister hook is properly adjusted when the inside of the hook point (pointing rearward) is within 9.5 mm (0.37 in.) maximum clearance (A) to either side of center of gripper pin (B), when finger pressure is applied to delay the twister hook.

Adjust each twister hook by moving the bevel gear to the left and rotating the twister shaft as necessary. Relocate bevel gear on shaft and secure with spring pin.

**A—Clearance**
**B—Gripper Pin**




E18622 —UN—09OCT00

OUCC002,0002320 -19-19MAR10-1/1

## Adjust Bevel Gear and Pinion

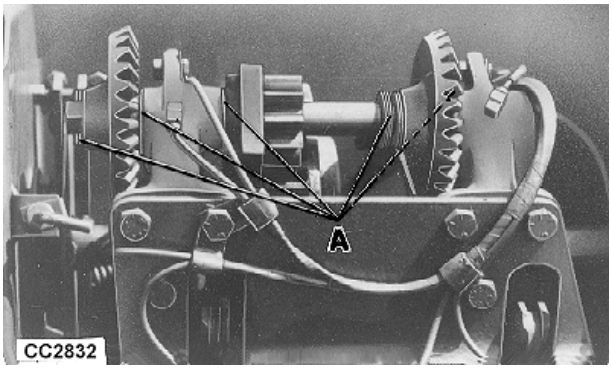
**IMPORTANT: Check twister hook adjustment after replacing bevel gears.**

The bevel gears must be adjusted to mesh properly and have even heel alignment with pinions on twister shafts.

Adjust bevel gears to right or left by adding or removing washers (A) on gear shaft at the locations shown.

Twister pinions may be adjusted higher by adding washers between pinions and twister frames.

**A—Washers**




CC2832 —UN—23SEP98

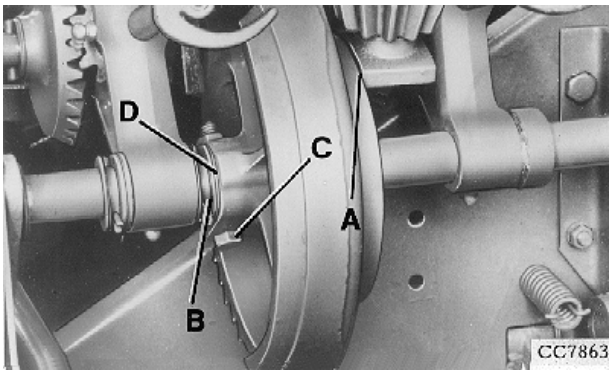
OUCC002,0002321 -19-19MAR10-1/1

## Adjust Intermittent Drive Gear on Wire Baler

To eliminate tooth breakage and ensure proper mesh, the flat side of the gripper drive pinion must be flush to 0.2 mm (0.01 in.) (A) maximum with the smooth surface of the intermittent drive gear.

Adjust gears by removing pin (B) and loosening screw (C) in needle lift shaft and locating washers (D) on shaft as necessary to obtain proper mesh. Install pin and tighten screw.

**A—0.2 mm (0.01 in.) Clearance**
**B—Pin**
**C—Screw**
**D—Washers**




CC7863 —UN—23SEP98

OUCC002,0002322 -19-23MAR10-1/1

## Adjust Slip Clutch (339 and 349)

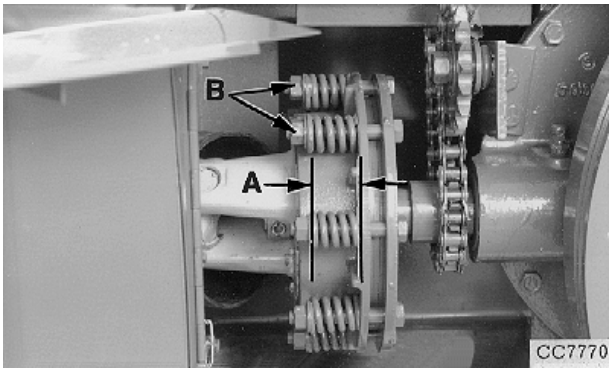
1. **Adjust Spring Length**

   Spring dimension (A) (coil to coil) must be 35.5—37.5 mm (1.4—1.45 in.) on 339 balers and 34.5—36.0 mm (1.35—1.4 in.) on 349 balers.

**IMPORTANT: Adjust all springs to the same length.**

Tighten or loosen spring adjusting nuts (B) until the correct spring dimension is obtained.

**A—Spring Dimension**
**B—Spring Adjusting Nuts**




CC7770 —UN—23SEP98

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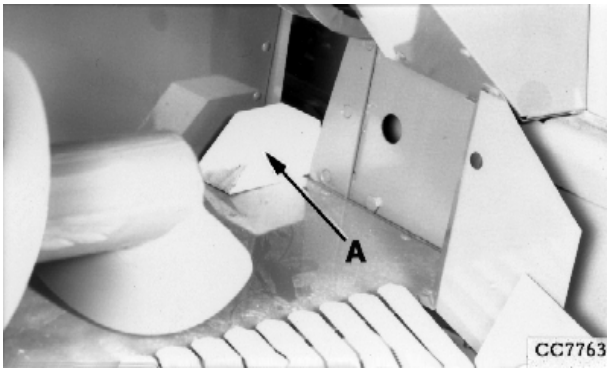
OUCC002,0002323 -19-19MAR10-1/3

2. **Secure Plungerhead**

Prevent movement of plungerhead by placing a wood block (A) as shown.

**A—Wood Block**




OUCC002,0002323 -19-19MAR10-2/3

3. **Check Slip Clutch Torque**

**IMPORTANT: Check slip clutch to be sure linings are not bonded to metal plates.**

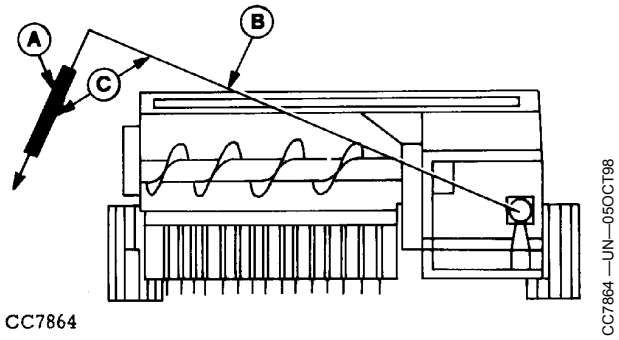
Check clutch slippage using spring balance (A) and 3 m (10 ft.) lever (B) attached to power shaft. Exert force at an angle of 90° (C).

For proper force on lever for clutch slippage, refer to the following specifications:

**339 Baler:**
- 180—230 N (40—51 lb.)
- 540—690 N·m (390—500 lb.-ft.)

**349 Baler:**
- 220—270 N (49—60 lb.)
- 660—810 N·m (477—585 lb.-ft.)

**IMPORTANT: Excessive slippage will damage the slip clutch. A slip clutch adjusted too tight will not give any protection to the power train.**




**A—Spring Balance**
**B—Lever**
**C—90° Angle**

OUCC002,0002323 -19-19MAR10-3/3

## Adjust Slip Clutch (359 and 459)

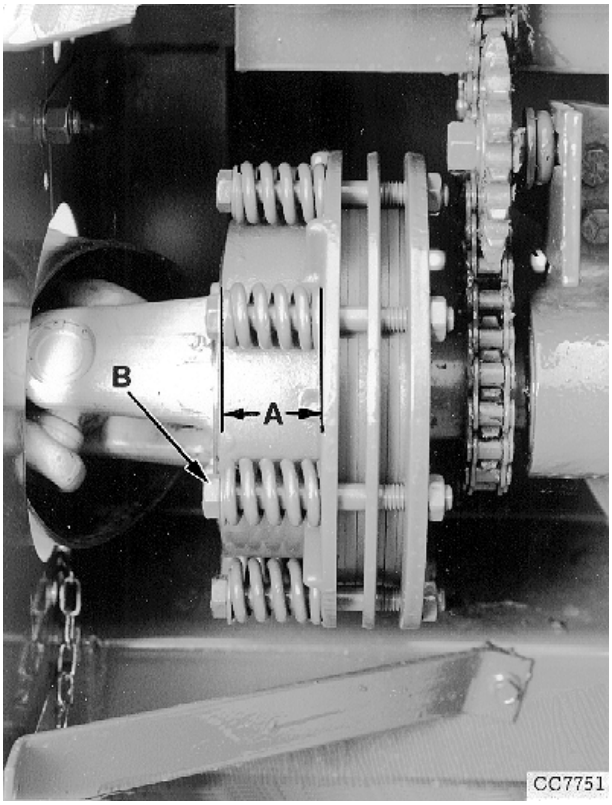
1. **Adjust Spring Length**

   Spring dimension (A) (coil to coil) must be 34—35 mm (1.33—1.37 in.) on 359 balers and 43—43.5 mm (1.69—1.71 in.) on 459 balers.

**IMPORTANT: Adjust all springs to the same length.**

Tighten or loosen spring adjusting nuts (B) until the correct spring dimension is obtained.

**A—Spring Dimension** **B—Spring Adjusting Nuts**




CC7751 —UN—23SEP98

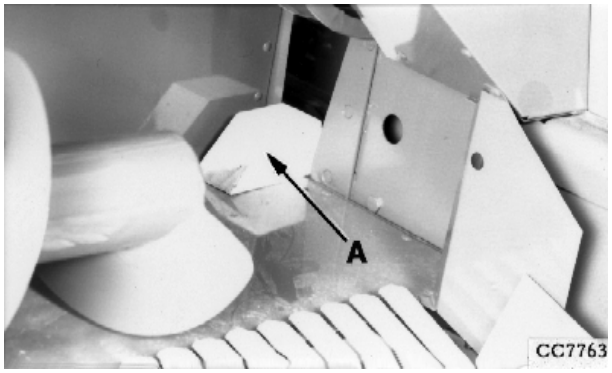
*459 Baler Shown*

OUCC002,0002324 -19-19MAR10-1/3

2. **Secure Plungerhead**

   Prevent movement of plungerhead by placing a wood block (A) as shown.

**A—Wood Block**




CC7763 —UN—23SEP98

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OUCC002,0002324 -19-19MAR10-2/3

3. **Check Clutch Slip Torque**

**IMPORTANT: Check slip clutch to be sure linings are not bonded to metal plates.**

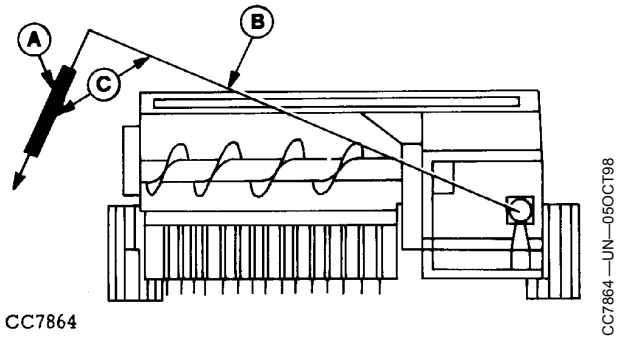
Check clutch slippage using spring balance (A) and 3 m (10 ft) lever (B) attached to power shaft. Exert force at an angle of 90° (C).

For proper force on lever for clutch slippage, refer to the following specifications:

**359 Baler:**
- 240—290 N (53—65 lb.)
- 720—870 N·m (520—629 lb.-ft.)

**459 Baler:**
- 315—360 N (70—80 lb.)
- 945—1080 N·m (683—781 lb.-ft.)

**IMPORTANT: Excessive slippage will damage the slip clutch. A slip clutch adjusted too tight will not give any protection to the power train.**




**A—Spring Balance**
**B—Lever**
**C—90° Angle**

OUCC002,0002324 -19-19MAR10-3/3

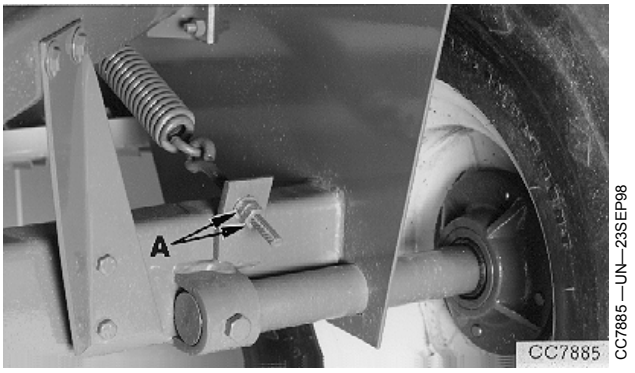
## Adjust Pickup Float

Under normal operating conditions, the float spring must be absolutely tight.

Tighten nuts (A) as far as possible.

*NOTE: If pickup bounces over hay, loosen float spring slightly.*

**A—Nut**




OUCC002,0002325 -19-19MAR10-1/1

## Adjust Pickup V-Belt

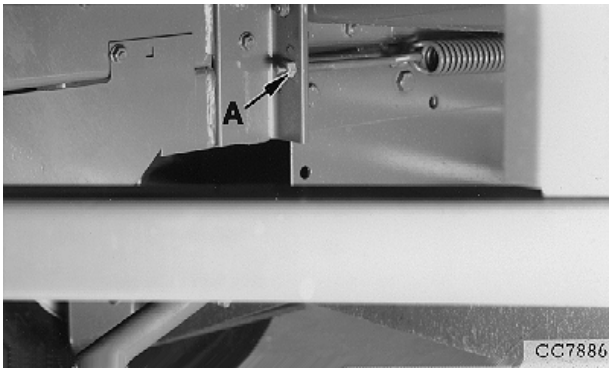
**IMPORTANT: Pickup V-belt tension affects pickup float.**

*NOTE: If belt slippage occurs, adjust nuts (A).*

Place pickup in normal operating position.

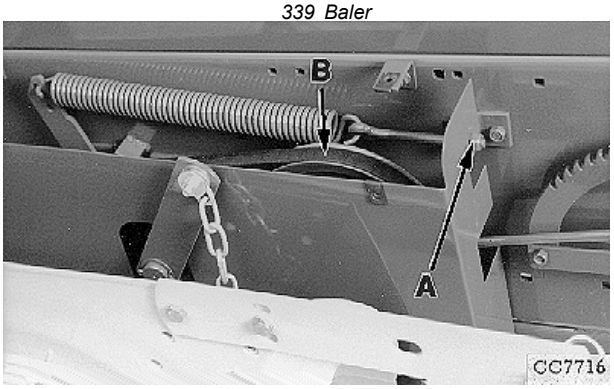
Adjust tension of V-belt (B) by tightening or loosening adjusting nuts (A) on tension spring until slippage is eliminated when operating under normal conditions.

**A—Nut** **B—V-Belt**




CC7886 —UN—23SEP98

*339 Baler*

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*349, 359 and 459 Baler*

OUCC002,0002326 -19-19MAR10-1/1

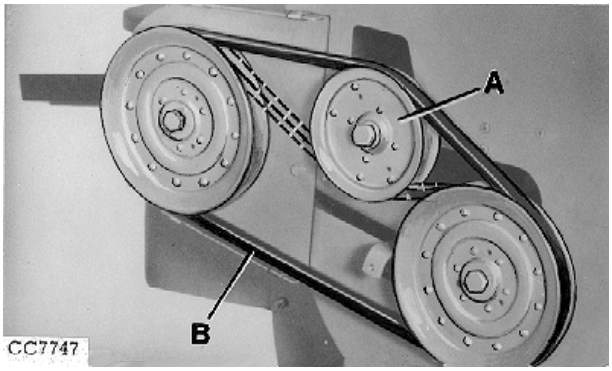
## Adjust Auger Drive Belt

Loosen idler (A) and adjust until belt (B) will deflect 16—29 mm (0.62—1.14 in.) when 88 N (20 lb.) pressure is applied at center of belt opposite idler.

Tighten idler. Install shield.

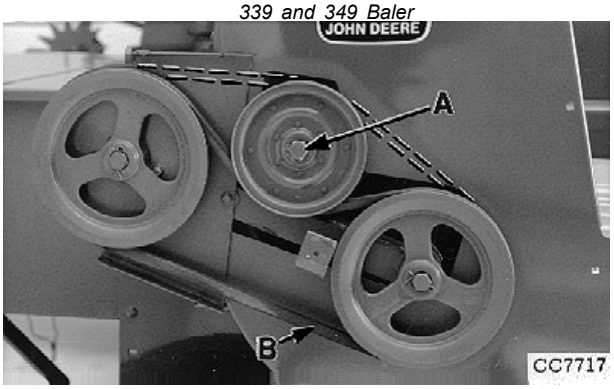
*NOTE: To obtain proper belt tension, the belt can be placed over or under the idler pulley.*

**A—Idler** **B—Belt**




CC7747 —UN—23SEP98

*339 and 349 Baler*




CC7717 —UN—23SEP98

*359 and 459 Baler*

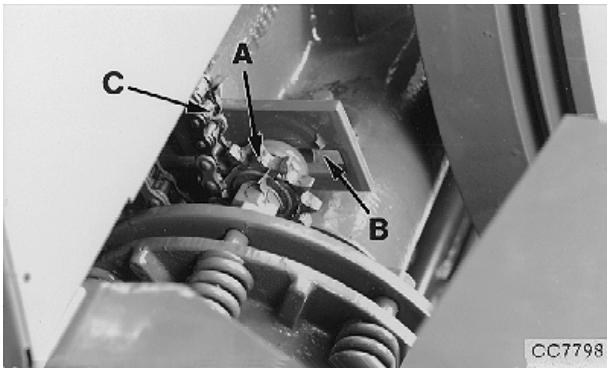
OUCC002,0002327 -19-19MAR10-1/1

## Adjust Main Drive Chain

Loosen idler (A) and shift it in slot (B) until chain (C) will deflect 5—6 mm (0.2—0.23 in.) when a pressure of 24.5 N (5.5 lb.) is applied.

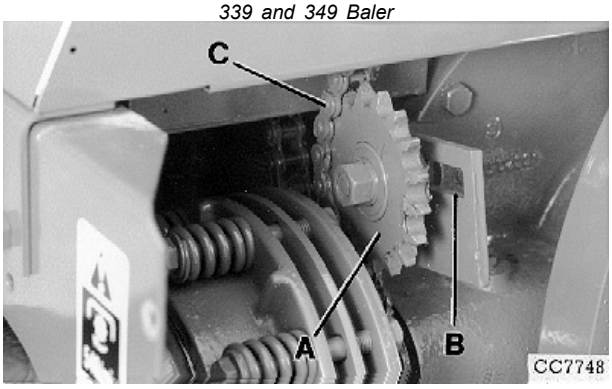
Tighten idler.

**A—Idler**
**B—Slot**
**C—Chain**




CC7798 —UN—23SEP98

*339 and 349 Baler*




CC7748 —UN—23SEP98

*359 and 459 Baler*

OUCC002,0002328 -19-19MAR10-1/1

## Adjust Feeder Finger Chain

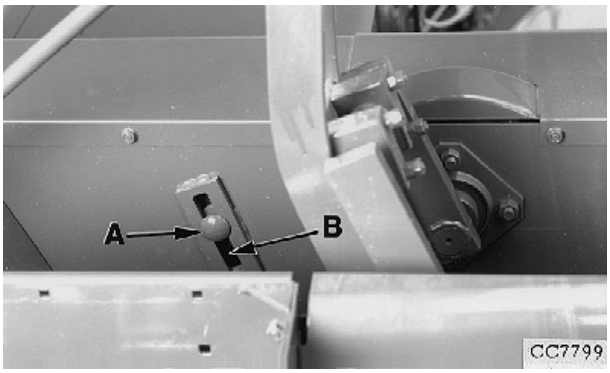
The feeder finger chain transmits power to the feeder fingers. This operates the hydraulic pump (optional) driven from the opposite side of the feeder fingers. If any of these parts is removed for servicing, check all timing operations before operating baler.

1. **339 and 349 Baler**

   Loosen idler screw (A) and shift in slot (B) until chain deflects 7—8 mm (0.27—0.31 in.) when applying a pressure of 24.5 N (5.5 lb.).

   Tighten idler screw. Recheck adjustment.

**A—Screw**
**B—Slot**




CC7799 —UN—23SEP98

*339 and 349 Baler*

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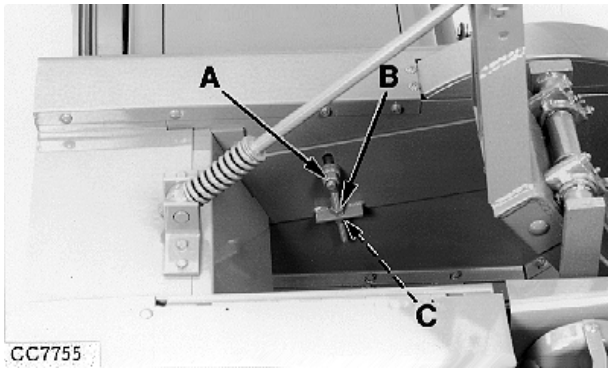
OUCC002,0002329 -19-23MAR10-1/2

2. **359 and 459 Baler**

   Loosen nut (A). Loosen upper adjusting nut (B) and tighten lower adjusting nut (C) to increase chain tension. Tension is correct when 13 mm (0.51 in.) deflection can be obtained by applying thumb pressure to center of chain.

   Tighten nuts securely. Recheck adjustment.

**A—Nut**
**B—Upper Adjusting Nut**
**C—Lower Adjusting Nut**




CC7755 —UN—23SEP98

*359 and 459 Baler*

OUCC002,0002329 -19-23MAR10-2/2

## Adjust Hydraulic Bale Tension Pump Chain (359 and 459)

To adjust roller chain (A), loosen set screw (B) and slide sprocket (C) on drive gear shaft (D) until it is vertically in line with drive sprocket (E).

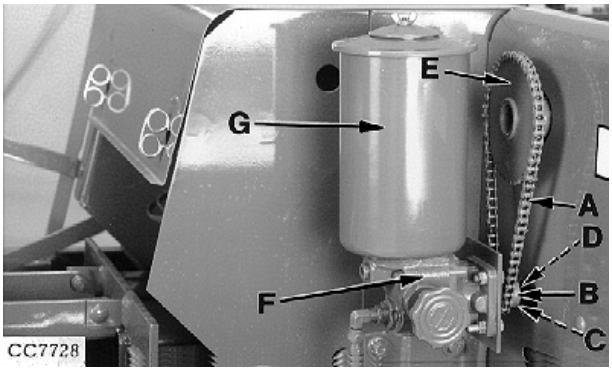
When installing chain, position chain clip (H) on master link (I) so the split end of the clip trails in direction of travel (arrow).

Adjust chain by loosening mounting screws and moving pump until chain is tight but can still be deflected by thumb pressure. Tighten pump mounting screws.

Turn flywheel until feeder crank moves approximately 90°. Check pump chain tension. If chain is tight at this position, loosen pump (F) and adjust chain until it is tight but can be deflected by thumb pressure. Turn flywheel until feeder crank moves another 90°.

Recheck chain tension and adjust, if necessary.

**A—Roller Chain**
**B—Set Screw**
**C—Sprocket**
**D—Drive Gear Shaft**
**E—Drive Sprocket**
**F—Pump**
**G—Reservoir**
**H—Chain Clip**
**I— Master Link**

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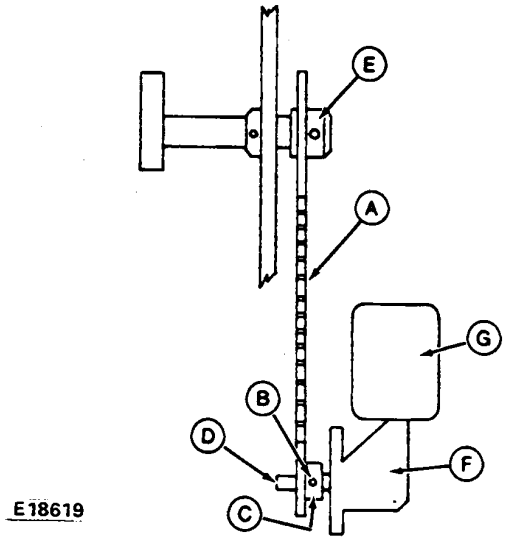
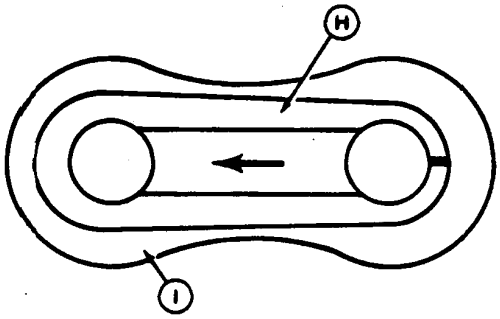



E18619 —UN—20SEP88




E22702 —UN—14SEP88

OUCC002,000232A -19-31MAR10-1/1

## Adjust Multi-Luber (349, 359 and 459)

**CAUTION: Do not force oil through oil line with a pressure grease gun. Burst pressure of the oil line is 20 685 kPa (207 bar; 3000 psi).**

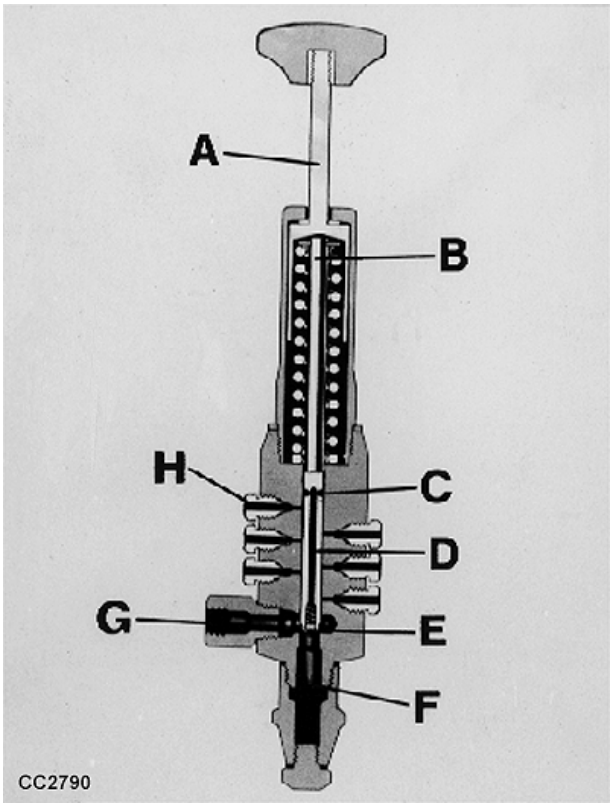
**IMPORTANT: Periodically check lines to ensure that lubricant is reaching all outlet ports.**

When operating properly, plunger will move through its full stroke without difficulty. If an oil line or bearing becomes clogged, normal plunger stroke will be interrupted when it reaches the outlet port (H) of the clogged line. Clear the obstruction as follows:

Determine which line is clogged by estimating how far plunger (B) has moved. This can be verified by disconnecting the suspected oil line at bearing and moving plunger (B).

After disconnecting line, move plunger (B) to determine whether clogging is in the bearing or in the oil line.

Clean bearing if clogged and refill with John Deere Multi-Lube Lubricant before attaching multi-luber feed line. If oil line is clogged, operate pump until lubricant is forced through the line.




CC2790 —UN—23SEP98

**A—Handle**
**B—Plunger**
**C—Oil Seal**
**D—Outlet Passage**
**E—Check Ball**
**F—Measuring Chamber**
**G—Lubricant Inlet**
**H—Outlet Port**

OUCC002,000232B -19-26MAR10-1/1

## Repair Broken Oil Lines

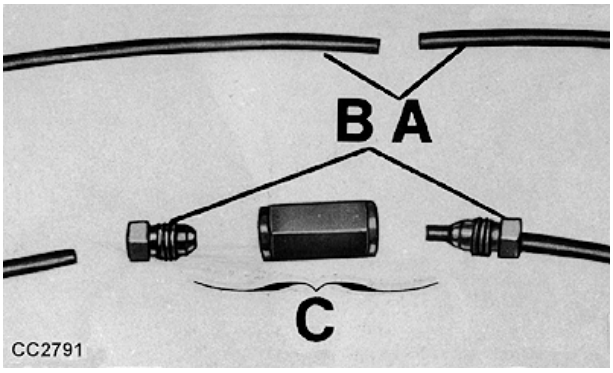
Whenever an oil line is damaged or broken, the plunger action will speed up as it passes the outlet port having a broken or punctured oil line.

Determine the location of the break-in oil line (A).

Cut broken line ends squarely and insert them into compression nuts (B) and union (C) as shown.

Tighten nuts firmly.

*NOTE: Compression nuts (B) can be used only once.*




CC2791 —UN—23SEP98

**A—Oil Line**
**B—Compression Nut**
**C—Union**

OUCC002,000232C -19-31MAR10-1/1

## Adjust Plungerhead in Bale Case

Perform the following procedure to adjust plungerhead properly into bale case:

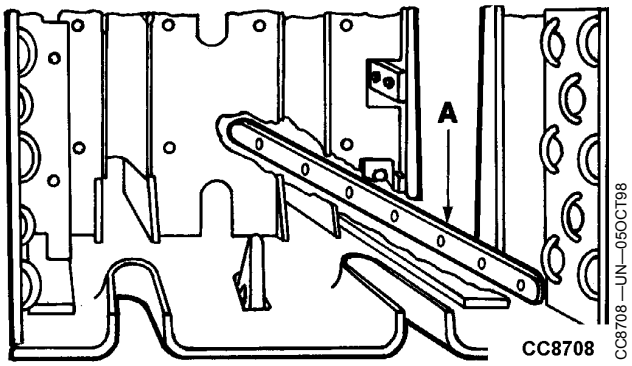
1. **Inspect Lower Right Bale Case Guide**

*NOTE: It is easier to check bale case guide for wear and straightness with plungerhead removed.*

Inspect lower right bale case guide (A) for wear. Replace if worn.

Inspect guide (A) for straightness. It must be completely straight, within 0.8 mm (0.03 in.), along the entire length.

Shim the guide if necessary.




**A—Guide**

OUCC002,000232D -19-26MAR10-1/13

2. **Adjust Position of Pitman (339 and 349)**

Centerline (B) of pitman (A) must be 180 mm (7 in.) from right-hand side of bale case on a 339 baler and 190 mm (7.5 in.) on a 349 baler.

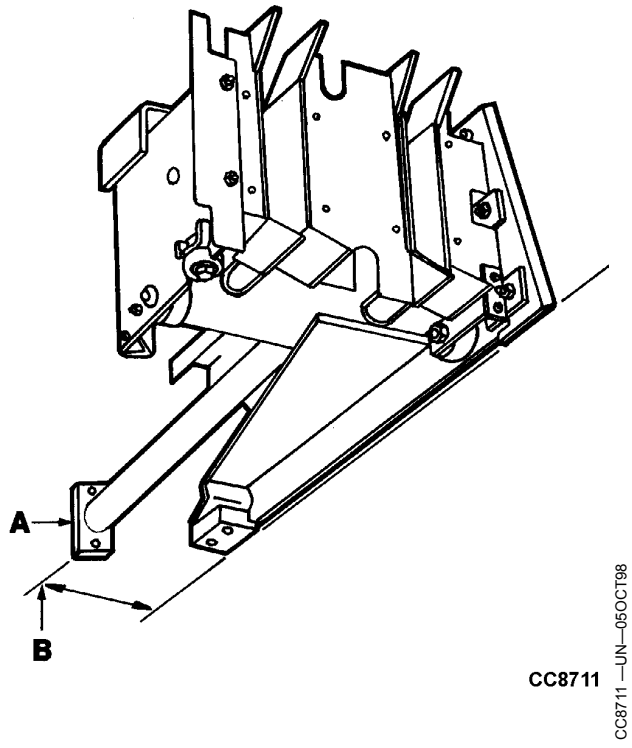
When plungerhead is out of bale case, measure distance from right-hand side of plungerhead.

If necessary, adjust distance by repositioning washers on pitman wrist.

Loosen all scrapers to prevent binding of plungerhead.

Install plungerhead.

**A—Pitman** **B—Centerline**

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OUCC002,000232D -19-26MAR10-2/13

3. **Adjust Knife to Stationary Knife**

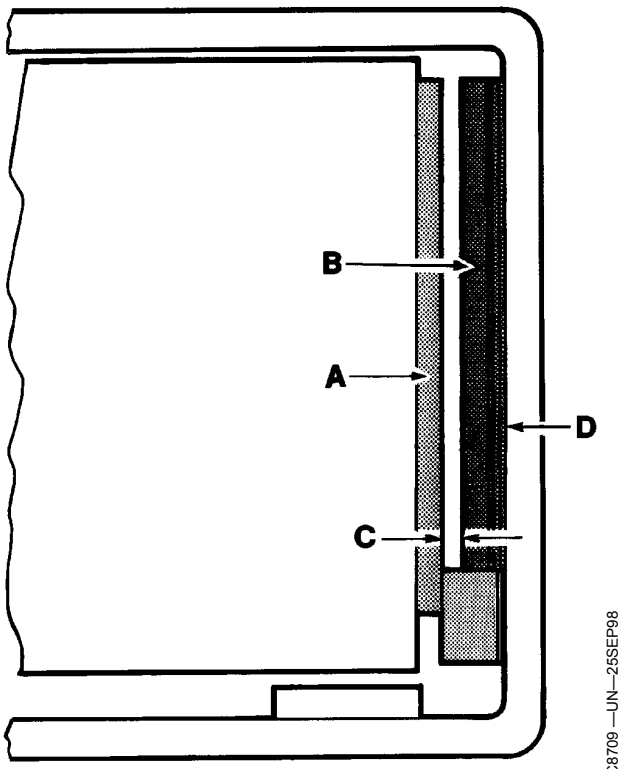
   Move the plungerhead until plungerhead knife (A) is opposite stationary knife (B).

   When pushing plungerhead to the right, clearance (C) between plungerhead and stationary knife must be 0.5—0.8 mm (0.02—0.03 in.) at the bottom.

   Add or remove shims (D) behind stationary knife (B) to adjust clearance.

   To seat stationary knife screws, hammer repeatedly while tightening the screws to 100—120 N·m (71—86 lb.-ft.).

**A—Plungerhead Knife**
**B—Stationary Knife**
**C—Clearance**
**D—Shims**

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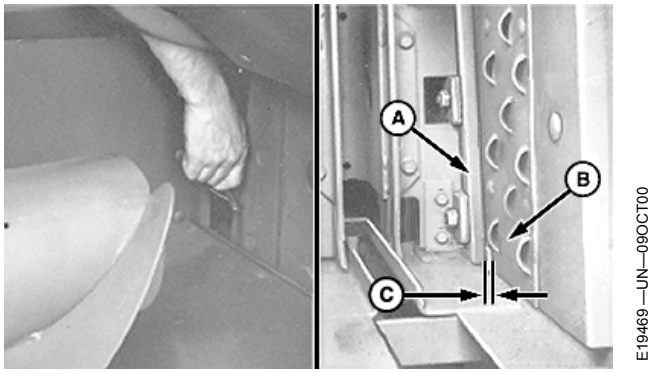
OUCC002,000232D -19-26MAR10-3/13

4. **Inspect Rear Plungerhead Side Clearance**

   Move plungerhead to rear position.

   Push plungerhead to the left and measure clearance (C) between plungerhead knife (A) and side guide (B). Clearance must be 0.1—1.4 mm (0.003—0.05 in.).

**A—Knife**
**B—Side Guide**
**C—0.1—1.4 mm (0.003—0.05 in.)**

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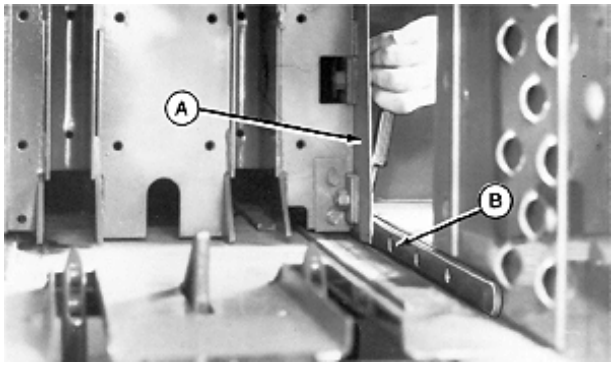
OUCC002,000232D -19-26MAR10-4/13

5. **Inspect Front Plungerhead Side Clearance**

   Move plungerhead to front position.

   Push plungerhead to the left and measure clearance between plungerhead knife (A) and side guide (B). Clearance must be less than 0.8 mm (0.03 in.).

**A—Knife** **B—Guide**




E19470 —UN—20SEP88

OUCC002,000232D -19-26MAR10-5/13

6. **Adjust Plungerhead Side Clearance**

**IMPORTANT: Do not use T-screws for adjusting; use only to maintain clearance after adjustment.**

   To adjust, loosen four screws (A) and lock nuts (B). Pry plungerhead to extreme right.

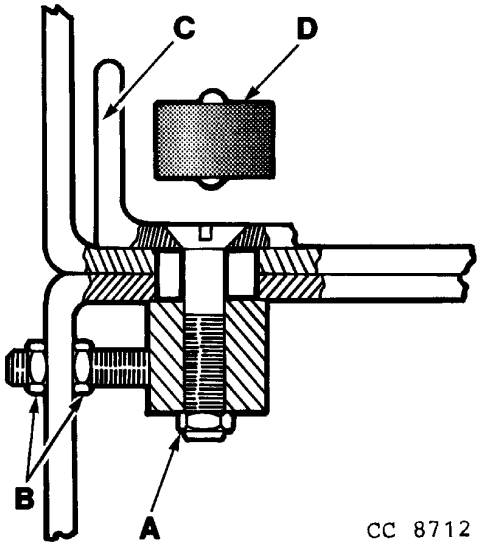
   Move guide angle (C) against roller (D) and tighten mounting screw (A) and lock nuts (B) of the respective guide.

   Move the plungerhead to the next guide mounting screw (A) and repeat previous step.

   Repeat this procedure on all guide mounting screws.

   Recheck the clearances and readjust if necessary.

**A—Screws** **C—Guide Angle**
**B—Lock Nuts** **D—Roller**




CC8712 —UN—05OCT98

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OUCC002,000232D -19-26MAR10-6/13

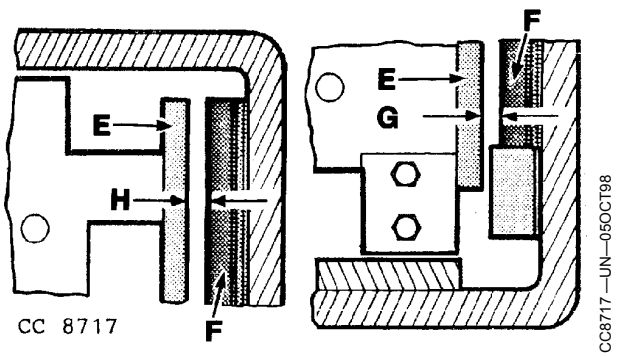
7. **Adjust Knife Top and Bottom Clearance**

While pushing plungerhead to the left (without tilting), clearance between plungerhead knife (E) and stationary knife (F) must be 0.8—1.3 mm (0.03—0.05 in.) at the bottom (G) and 1.5—1.8 mm (0.06—0.07 in.) at the top (H).

If necessary, move plungerhead to align nut (A) of support roller with hole (B) in left-hand side of bale case.

Loosen nut (A). Adjust nuts (C) and (D) to obtain correct knife top clearance (H).

Tighten nut (A) to 137 N·m (98 lb.-ft.).

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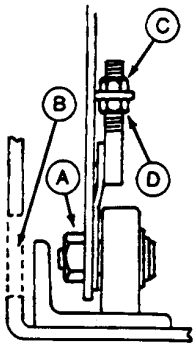
CC7754 —UN—23SEP98




E18456 —UN—03OCT88

**A—Lock Nut**
**B—Hole**
**C—Adjusting Nuts**
**D—Adjusting Nuts**
**E—Knife**
**F—Stationary Knife**
**G—0.8—1.3 mm (0.03—0.05 in.)**
**H—1.5—1.8 mm (0.06—0.07 in.)**

OUCC002,000232D -19-26MAR10-7/13

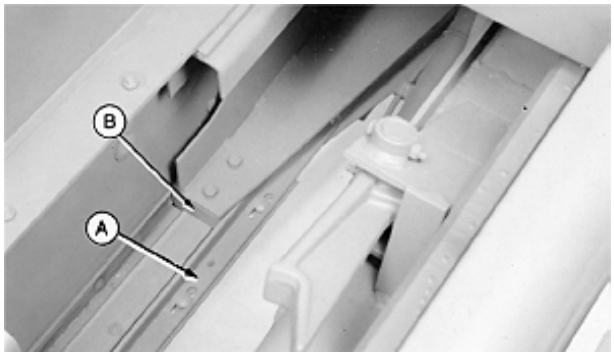
8. **Adjust Plungerhead Front Side Clearance**

While pushing the plungerhead to the right, the front plungerhead side clearance must not exceed 0.8 mm (0.03 in.) over the entire stroke.

*NOTE: To prevent knocking of the plungerhead, this adjustment must be as tight as possible, but avoiding binding.*

To adjust, loosen five screws of lower right guide (A) and move it to obtain required clearance to front lower pad (B).

Tighten screws.




E18463 —UN—20SEP88

**A—Guide** **B—Pad**

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OUCC002,000232D -19-26MAR10-8/13

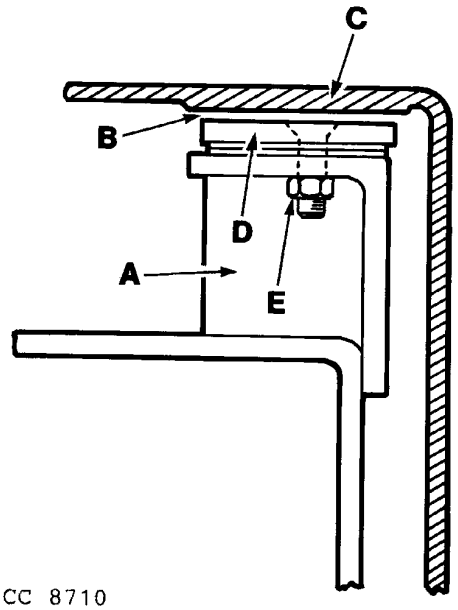
9. **Adjust Plungerhead Vertical Clearance on Left-Hand Side**

**IMPORTANT: Incorrect adjustment may cause plungerhead knife to strike against stationary knife and/or cause shear bolt breakage.**

Move plungerhead (A) from the rear to the front and measure clearance (B) between case (C) and top guide (D), over the entire length. Clearance must be 0.8 mm (0.03 in.) maximum.

If necessary, loosen nuts and remove or add shims (E).

**A—Plungerhead**
**B—0.8 mm (0.03 in.) Maximum**
**C—Bale Case**
**D—Top Guide**
**E—Shims**




CC8710 —UN—05OCT98

OUCC002,000232D -19-26MAR10-9/13

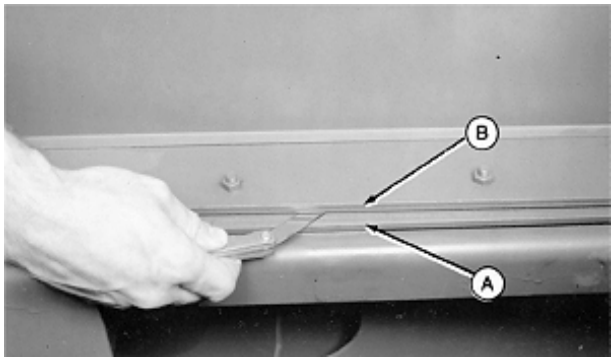
10. **Adjust Plungerhead Vertical Clearance on Right-Hand Side**

Clearance between right top wear pad (A) and bale case (B), measured along the entire length, must be 0.8 mm (0.03 in.).

Add or remove shims as necessary.

*NOTE: It is not necessary to have the same number of shims in all three locations, but do not use more shims in center than at the ends.*

**A—Pad**
**B—Bale Case**

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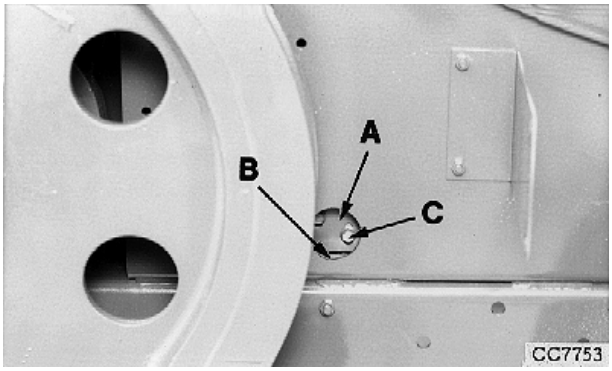
OUCC002,000232D -19-26MAR10-10/13

11. **Adjust Front Scrapers**

**IMPORTANT: Scrapers must have a certain clearance to bale case in all plungerhead positions so that they cannot hold rollers off the guide. Move plungerhead along its entire stroke in order to find highest points of scrapers.**

Adjust front scraper (A) to obtain a clearance of 0.2 mm (0.01 in.) to plungerhead guide (B) by loosening two cap screws (C).

**A—Scrapper**
**B—Plungerhead Guide**
**C—Screws**




CC7753 —UN—23SEP98

OUCC002,000232D -19-26MAR10-11/13

12. **Adjust Right Rear Scraper**

Adjust right rear scraper (A) to obtain a maximum clearance of 0.2 mm (0.01 in.) to the plungerhead guides.

**A—Scrapper**


E18465 —UN—20SEP88

OUCC002,000232D -19-26MAR10-12/13

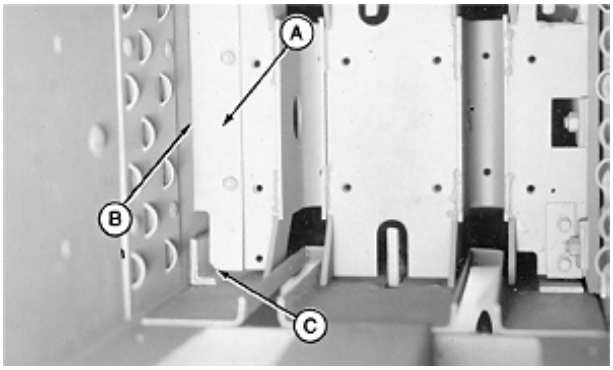
13. **Adjust Left Rear Scraper**

To adjust left rear scraper, move adjustable plungerhead face (A) to clear inside of left bale case side by 1.5—4.5 mm (0.06—0.18 in.) (B) over entire stroke of plungerhead.

*NOTE: It is preferable to use the 1.5 mm (0.06 in.) dimension.*

Adjust face down to guide (C) with a maximum clearance of 0.2 mm (0.01 in.).

Plungerhead must move easily by hand through a complete cycle after all adjustments have been carried out.




E18467 —UN—20SEP88

**A—Plungerhead Face**
**B—1.5—4.5 mm (0.06—0.18 in.)**
**C—Guide**

OUCC002,000232D -19-26MAR10-13/13

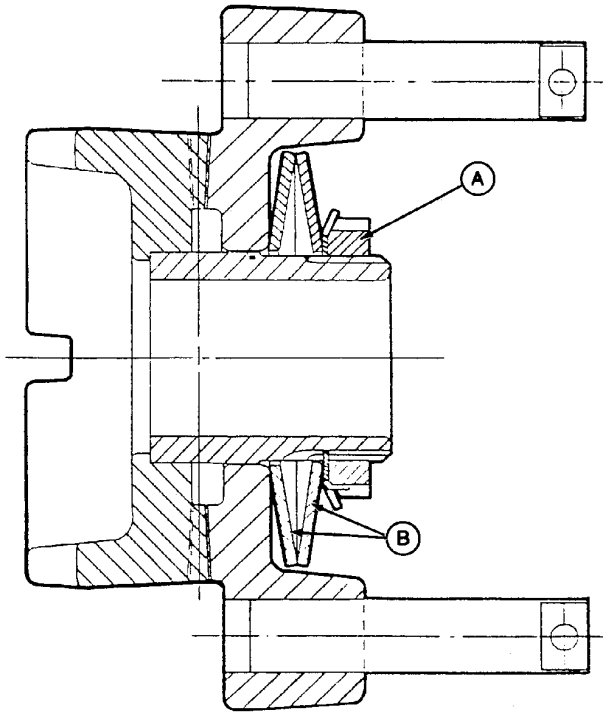
## Adjust Right-Hand Wheel Lock Device

If too much slippage occurs when operating the device, proceed as follows:

Loosen nut (A) until spring washers (B) are no longer in contact.

Tighten nut (A) so that spring washers (B) are just in contact, then tighten a further 1/4 turn.

**A—Nut** **B—Spring Washers**




CC9168 —UN—25SEP98

**CC9168**

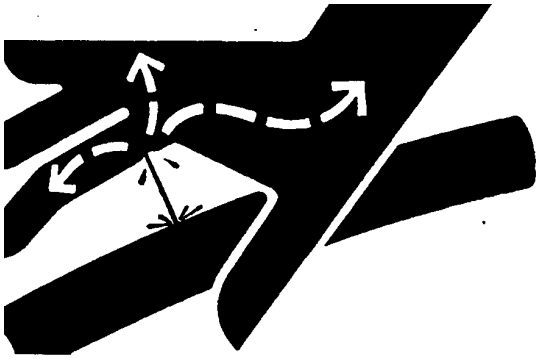
OUCC002,000232E -19-19MAR10-1/1

## Bleed Hydraulic System

**CAUTION: 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 must reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.**

Whenever necessary, bleed air from hydraulic system by loosening the hose at the hydraulic cylinder. Start the tractor engine and engage the PTO. The engine must be idling while air is being forced out of the hose. When all the air has been forced out, tighten the hose at the hydraulic cylinder.



X9811 —UN—23AUG88

Loosen bale tension as hay becomes tough and at the end of each day's operation.

OUCC002,000232F -19-19MAR10-1/1

# Storage

## Store Baler at End of Season

Shelter baler in a dry place.

Clean inside and outside of baler thoroughly. Trash and dirt will draw moisture and cause rust.

Clean out knotter or twister mechanism and coat with grease.

Thoroughly lubricate baler (see Lubrication and Maintenance Section).

Paint all parts from which paint has been worn, except inside of bale case. Brush bale case with grease.

Clean all chains by washing them with diesel fuel. Dry well and coat with a heavy oil.

Loosen slip clutch springs. When stored under pressure, slip clutch linings may draw moisture. Linings may bond to metal parts causing slip clutch to be ineffective and resulting in machine damage.

Block up baler under axle, taking load off tires. DO NOT DEFLATE TIRES. Cover tires to protect them from light, grease, oil etc.

List replacement parts that will be needed and order them early. The John Deere dealer can expedite delivery of parts and install them during slack periods, avoiding delays at the next baling season.

OUCC002,0002300 -19-19MAR10-1/1

## Prepare for Beginning of Season

Remove grease from the knotter or twister mechanism.

Remove heavy oil and grease from bale case and chains.

Lubricate complete baler (see Lubrication and Maintenance Section). This will force any collected moisture out of bearings.

Check tires for proper inflation pressure.

Check and fill gear case to check plug level.

Tighten all screws, nuts and set screws.

Check timing of entire baler and adjust, if necessary.

If any major parts have been replaced, they must be run in.

Check slip clutch to be sure linings are not bonded to metal plates. Readjust slip clutch (see Adjust Slip Clutch in Service Section).

Review your Operator's Manual.

OUCC002,0002301 -19-23MAR10-1/1

## Specifications for 339 Baler

**Bale**

| | |
|---|---|
| Cross-section | 31 x 41 cm (12 x 16 in.) |
| Length | 0.30—1.30 m (12—50 in.) |

**Pickup**

| | |
|---|---|
| Width (inside) | 1.31 m (51.5 in.) |
| Width (on flare) | 1.55 m (61 in.) |
| Width (between outer teeth) | 1.16 m (45.5 in.) |
| Cylinder diameter | 360 mm (14 in.) |
| Number of teeth | 80 |
| Number of tooth bars | 4 |

**Auger**

| | |
|---|---|
| Diameter | 400 mm (16 in.) |
| Length | 950 mm (37 in.) |

**Plungerhead**

| | |
|---|---|
| Speed | 80 strokes/minute |
| Stroke | 760 mm (30 in.) |

**Flywheel**

| | |
|---|---|
| Diameter | 670 mm (26 in.) |
| Weight | 88 kg (194 lb.) |

**Transmission**

| | |
|---|---|
| Recommended tractor power | 26 kW (35 hp.) minimum at PTO |
| PTO speed | 540 rpm |
| Hardware | metric |
| Right tire size | 7.00-12 (6 PR) |
| Left tire size | 10.00/80-12 (6 PR) |
| Pickup gauge wheel | 4.00-8 (4 PR) |

**Miscellaneous**

| | |
|---|---|
| Feed opening area | 1568 $cm^2$ (213 sq. in.) |
| Length, transport position | 3.88 m (153 in.) |
| Width | 2.21 m (87 in.) |
| Height | 1.70 m (66 in.) |
| Weight | 1200 kg (2645 lb.) |
| Maximum load at hitch | 900 kg (1984 lb.) |
| Maximum load on axle | 3000 N (677.4 lbf) |

**Sound Level**

| | |
|---|---|
| Max. sound level in accordance with prEN1553; measurement method in accordance with ISO3744 (average value) | 83 dB(A) |

OUCC002,00022FC -19-16MAR10-1/1

## Specifications for 349 Baler

| | |
|---|---|
| **Bale** | |
| Cross-section | 36 x 46 cm (14 x 18 in.) |
| Length | 0.30—1.30 m (12—50 in.) |
| **Pickup** | |
| Width (inside) | 1.56 m (61 in.) |
| Width (on flare) | 1.75 m (68.5 in.) |
| Width (between outer teeth) | 1.41 m (55.5 in.) |
| Cylinder diameter | 360 mm (14 in.) |
| Number of teeth | 96 |
| Number of tooth bars | 4 |
| **Auger** | |
| Diameter | 400 mm (16 in.) |
| Length | 1.30 m (51 in.) |
| **Plungerhead** | |
| Speed | 80 strokes/minute |
| Stroke | 760 mm (30 in.) |
| **Flywheel** | |
| Diameter | 690 mm (27 in.) |
| Weight | 135 kg (297 lb.) |
| **Transmission** | |
| Recommended tractor power | 30 kW (41 hp.) minimum at PTO |
| PTO speed | 540 rpm |
| Hardware | metric |
| Right tire size | 7.00-12 (6 PR) |
| Left tire size | 10.00/75-15.3 (6 PR) |
| Pickup gauge wheel | 4.00-8 (4 PR) |
| **Miscellaneous** | |
| Feed opening area | 1914 $cm^2$ (296.5 sq. in.) |
| Length, transport position | 4.78 m (188.5 in.) |
| Width | 2.59 m (101.5 in.) |
| Height | 1.70 m (66 in.) |
| Weight | 1400 kg (3086 lb.) |
| Maximum load at hitch | 1050 kg (2314 lb.) |
| Maximum load on axle | 3500 N (790 lbf) |
| **Sound Level** | |
| Max. sound level in accordance with prEN1553; measurement method in accordance with ISO3744 (average value) | 83 dB(A) |

OUCC002,00022FD -19-16MAR10-1/1

## Specifications for 359 Baler

**Bale**

| | |
|---|---|
| Cross-section | 36 x 46 cm (14 x 18 in.) |
| Length | 0.30—1.30 m (12—50 in.) |

**Pickup**

| | |
|---|---|
| Width (inside) | 1.56 m (61 in.) |
| Width (on flare) | 1.75 m (68.5 in.) |
| Width (between outer teeth) | 1.41 m (55.5 in.) |
| Cylinder diameter | 360 mm (14 in.) |
| Number of teeth | 144 |
| Number of tooth bars | 6 |

**Auger**

| | |
|---|---|
| Diameter | 400 mm (16 in.) |
| Length | 1.30 m (51 in.) |

**Plungerhead**

| | |
|---|---|
| Speed | 92 strokes/minute |
| Stroke | 760 mm (30 in.) |

**Flywheel**

| | |
|---|---|
| Diameter | 690 mm (27 in.) |
| Weight | 135 kg (297 lb.) |

**Transmission**

| | |
|---|---|
| Recommended tractor power | 35 kW (47 hp.) minimum at PTO |
| PTO speed | 540 rpm |
| Hardware | metric |
| Right tire size | 7.00-12 (6 PR) |
| Left tire size | 10.00/75-15.3 (6 PR)<br>11.5/80-15.3 (10 PR) |
| Pickup gauge wheel | 4.00-8 (4 PR) |

**Miscellaneous**

| | |
|---|---|
| Feed opening area | 1914 $cm^2$ (296.5 sq. in.) |
| Length, transport position | 4.78 m (188.5 in.) |
| Width | 2.59 m (101.5 in.) |
| Height | 1.78 m (70 in.) |
| Weight | 1600 kg (3530 lb.) |
| Maximum load at hitch | 1200 kg (2645 lb.) |
| Maximum load on axle | 4000 N (905 lbf) |

**Wire**

| | |
|---|---|
| Diameter | 1.9 mm (14-1/2 gauge), annealed, oiled |
| Wire coils | approx. 2000 m (6550 ft.) of wire |
| Wire carton size | 340x340x160 mm (13.5x13.5x6.5 in.) |

**Sound Level**

| | |
|---|---|
| Max. sound level in accordance with prEN1553; measurement method in accordance with ISO3744 (average value) | 83 dB(A) |

OUCC002,00022FE -19-18MAR10-1/1

## Specifications for 459 Baler

**Bale**

| | |
|---|---|
| Cross-section | 36 x 46 cm (14 x 18 in.) |
| Length | 0.30—1.30 m (12—50 in.) |

**Pickup**

| | |
|---|---|
| Width (inside) | 1.80 m (70.5 in.) |
| Width (on flare) | 2.00 m (78.5 in.) |
| Width (between outer teeth) | 1.65 m (65 in.) |
| Cylinder diameter | 360 mm (14 in.) |
| Number of teeth | 168 |
| Number of tooth bars | 6 |

**Auger**

| | |
|---|---|
| Diameter | 400 mm (16 in.) |
| Length | 1.30 m (51 in.) |

**Plungerhead**

| | |
|---|---|
| Speed | 100 strokes/minute |
| Stroke | 760 mm (30 in.) |

**Flywheel**

| | |
|---|---|
| Diameter | 690 mm (27 in.) |
| Weight | 135 kg (297 lb.) |

**Transmission**

| | |
|---|---|
| Recommended tractor power | 45 kW (61 hp.) minimum at PTO |
| PTO speed | 540 rpm |
| Hardware | metric |
| Right tire size | 7.00-12 (6 PR) |
| Left tire size | 10.00/75-15.3 (6 PR)<br>11.5/80-15.3 (10 PR) |
| Pickup gauge wheel | 4.00-8 (4 PR) |

**Miscellaneous**

| | |
|---|---|
| Feed opening area | 1914 $cm^2$ (296.5 sq. in.) |
| Length, transport position | 5.14 m (202.5 in.) |
| Width | 2.91 m (114.5 in.) |
| Height | 1.78 m (70 in.) |
| Weight | 1700 kg (3750 lb.) |
| Maximum load at hitch | 1300 kg (2865 lb.) |
| Maximum load on axle | 4000 N (905 lbf) |

**Wire**

| | |
|---|---|
| Diameter | 1.9 mm (14-1/2 gauge), annealed, oiled |
| Wire coils | approx. 2000 m (6550 ft.) of wire |
| Wire carton size | 340x340x160 mm (13.5x13.5x6.5 in.) |

**Sound Level**

| | |
|---|---|
| Max. sound level in accordance with prEN1553; measurement method in accordance with ISO3744 (average value) | 83 dB(A) |

OUCC002,00022FF -19-16MAR10-1/1

## Declaration of Conformity

John Deere Arc-lès-Gray
Avenue Jean Jaurès
F-70103 Gray

The Square Balers

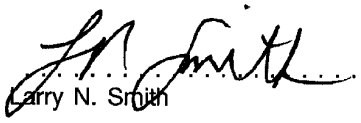
Models: ..... 339, 349, 359 and 459

comply with the EC provisions:

98/37/EEC..... Machinery Directive
and prEN704 ..... Pickup Balers

Arc-lès-Gray, 01 May 1999

CE



Larry N. Smith

*Manager Product Engineering*

CC1018689 —UN—07NOV00

CC03745,0001006 -19-02APR10-1/1

## EC Declaration of Conformity

**Deere & Company**
**Moline, Illinois USA**

The person named below declares that:

Machine type: Square Baler
Models: 349, 359 and 459

fulfills all relevant provisions and essential requirements of the following directives:

| DIRECTIVE | NUMBER | CERTIFICATION METHOD |
|---|---|---|
| Machinery Directive | 2006/42/EC | Self-certification |
| Agricultural Machinery - Safety - Part 1: General Requirements | ISO 4254-1 | Self-certification |
| Agricultural Machinery - Safety - Part 11: Pick-up Balers | prISO 4254-11 | Self-certification |

Name and address of the person in the European Community authorized to compile the technical construction file:

Henning Oppermann
Deere & Company European Office
John Deere Strasse 70
Mannheim, Germany D-68163
EUConformity@JohnDeere.com

Place of declaration: Arc-lès-Gray, France
Date of declaration: 29 December 2009
Manufacturing unit: John Deere Arc-lès-Gray

Name: Miles R KEATON
Title: Manager Product Engineering

CE

DXCE01 —UN—28APR09

CC03745,0001007 -19-29MAR10-1/1

# Identification Numbers

## Serial Number Plate

Serial number identifying the baler is stamped on factory serial number plate.

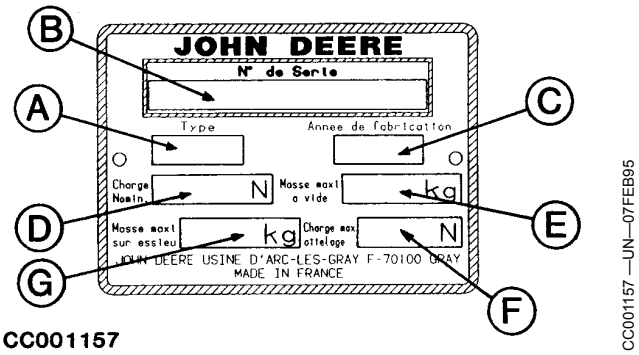
This number and letters are required when ordering baler replacement parts.

To ensure that you have this number at hand, enter the appropriate serial number in the spaces provided in each illustration.

OUCC002,00022F8 -19-03JUL06-1/1

## Baler Serial Number Plate (Up to SN 353279)

**A—Model designation**
**B—Serial number**
**C—Year of production**
**D—Nominal load**
**E—Weight**
**F—Maximum load at hitch**
**G—Maximum load on axle**



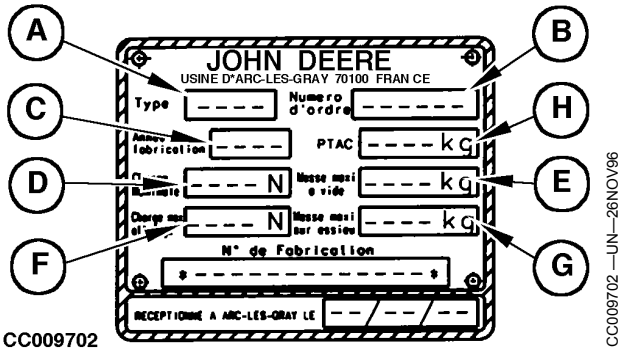

CC001157

CC001157 —UN—07FEB95

OUCC002,00022F9 -19-31MAR10-1/1

## Baler Serial Number Plate (From SN 353280)

**A—Model designation**
**B—Serial number**
**C—Year of production**
**D—Nominal load**
**E—Weight**
**F—Maximum load at hitch**
**G—Maximum load on axle**
**H—Maximum permissible total weight**



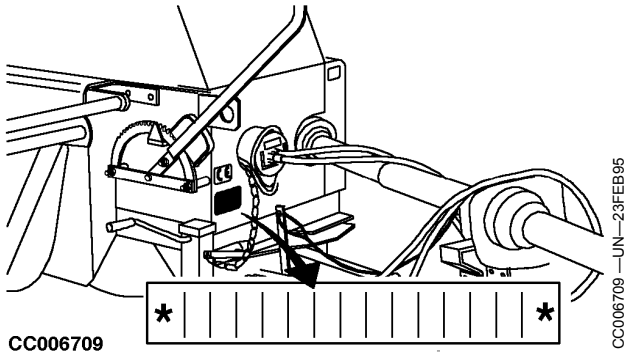

CC009702

CC009702 —UN—26NOV96

OUCC002,00022FA -19-31MAR10-1/1

## Product Identification Number

The product identification number plate is located on the front of the bale case.




CC006709

CC006709 —UN—23FEB95

OUCC002,00022FB -19-03JUL06-1/1

## Keep Proof of Ownership

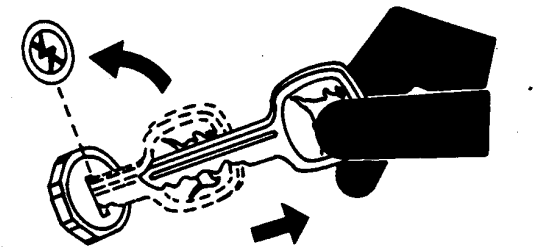
1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:
   - Mark your machine with your own numbering system
   - Take color photographs from several angles of each machine


TS1680 —UN—09DEC03

DX,SECURE1 -19-18NOV03-1/1

## Keep Machines Secure

1. Install vandal-proof devices.
2. When machine is in storage:
   - Lower equipment to the ground
   - Set wheels to widest position to make loading more difficult
   - Remove any keys and batteries
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When parking outdoors, store in a well-lighted and fenced area.
5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
6. Notify your John Deere dealer of any losses.



TS230 —UN—24MAY89

DX,SECURE2 -19-18NOV03-1/1

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## T



Page



## U



## W

## John Deere Parts

We help minimize downtime by putting genuine John Deere parts in your hands in a hurry.

That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.


TS100 —UN—23AUG88

DX,IBC,A -19-04JUN90-1/1

## The Right Tools

Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly . . . to save you time and money.

TS101 —UN—23AUG88

DX,IBC,B -19-04JUN90-1/1

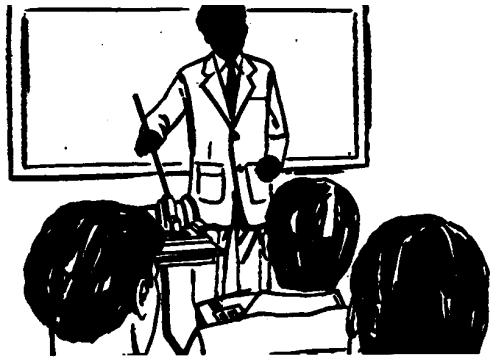
## Well-Trained Technicians

School is never out for John Deere service technicians.

Training schools are held regularly to be sure our personnel know your equipment and how to maintain it.

Result?

Experience you can count on!



TS102 —UN—23AUG88

DX,IBC,C -19-04JUN90-1/1

## Prompt Service

Our goal is to provide prompt, efficient care when you want it and where you want it.

We can make repairs at your place or at ours, depending on the circumstances: see us, depend on us.

JOHN DEERE SERVICE SUPERIORITY: We'll be around when you need us.

TS103 —UN—23AUG88

DX,IBC,D -19-04JUN90-1/1