

339 (270806-)
349 (340001-)
359 (345001-)
459 (276036-)
Balers

John Deere Arc-lès-Gray
OMCC49852 Issue H9
(This manual replaces OMCC31430 G1)
European Version
Printed in Germany
ANGLAIS

General Information

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 SHOULD BE CONSIDERED a permanent part of your machine and should 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 the direction the implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) 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. After operating for the first 100 hours, schedule an after-sale inspection with your dealer to ensure best performance.

THIS RECTANGULAR 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 RECTANGULAR BALER SHOULD 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 rectangular baler will relieve the manufacturer of all liability for any resulting damage or injury.

Predelivery Inspection

Dealer's name		Town		Dealer's Account No.		J.D. Branch No.	
Servicing Dealer, if not identical with above — Name, Address							
Customer (initials and surname)				Street + No.			
Town and Postcode				Vehicle Registration No.			
Delivery Day		Month		Year		Machine Name	
Date							
Product Identification No. (Serial No.)				Customer Group			
				A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/>			
A = Farmer B = Contractor C = Commercial D = Community E = Home Owner							

TO THE DEALER

THE FOLLOWING PREDELIVERY SERVICE MUST be performed by you. Refer to the Operator's Manual for detailed information.

- | | | |
|--|--|---|
| <input type="checkbox"/> 1. Lubricate all grease fittings | <input type="checkbox"/> 4. Tighten all bolts and nuts to specified torque | <input type="checkbox"/> 7. Check hydraulic hoses and connections for leaks |
| <input type="checkbox"/> 2. Check tire inflation | <input type="checkbox"/> 5. Install all parts | <input type="checkbox"/> 8. Make a test run of the machine |
| <input type="checkbox"/> 3. Make sure that all loosely packed parts have been removed from baler | <input type="checkbox"/> 6. Install all shields | <input type="checkbox"/> 9. Cut the powerline to correct dimensions |

The following inspections have been made at the factory. Prior to delivery the following items must be rechecked by you. Refer to the Operator's Manual for detailed information.

Mark the YES box if condition WAS FOUND acceptable, or NO, if not. If the answer is NO, give a short explanation in the "COMMENTS" column. Following this, make corrections if necessary prior to delivery.

- | | | |
|--|---|---|
| <p>Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/> 1. Is gear case oil level correct?</p> <p><input type="checkbox"/> <input type="checkbox"/> 2. Has shipping plug been replaced with relief valve on gear case?</p> <p><input type="checkbox"/> <input type="checkbox"/> 3. Is drive slip clutch correctly adjusted?</p> <p><input type="checkbox"/> <input type="checkbox"/> 4. Are paint and decals smooth and neat?</p> <p><input type="checkbox"/> <input type="checkbox"/> 5. Is clearance between plunger-head and stationary knives correct?</p> | <p>Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/> 6. All moving parts are working freely?</p> <p><input type="checkbox"/> <input type="checkbox"/> 7. Measuring arm adjustment is correct?</p> <p><input type="checkbox"/> <input type="checkbox"/> 8. Operator's Manual given to customer?</p> <p><input type="checkbox"/> <input type="checkbox"/> 9. Have all controls and safety rules etc. been explained to the customer?</p> | <p>Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/> 10. Are chains correctly tensioned and lubricated?</p> <p><input type="checkbox"/> <input type="checkbox"/> 11. Are knotters or twistlers correctly adjusted?</p> <p><input type="checkbox"/> <input type="checkbox"/> 12. Is baler correctly timed?</p> <p><input type="checkbox"/> <input type="checkbox"/> 13. Is pickup spring tension properly adjusted?</p> |
|--|---|---|

COMMENTS: _____

Delivery Report and Operator's Manual OMCC49852 Issue H9 were handed over to the customer together with the machine.

Dealer — Service Technician

Date

DISTRIBUTION:

1—white = JD Sales Branch, 2—green = Factory, 3—yellow = JD Dealer, 4—blue = Servicing Dealer, 5—pink = Customer

CC.339SQBCHECK -19-22JUL99

Predelivery Inspection

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All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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European Office Mannheim
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A John Deere ILLUSTRATION® Manual

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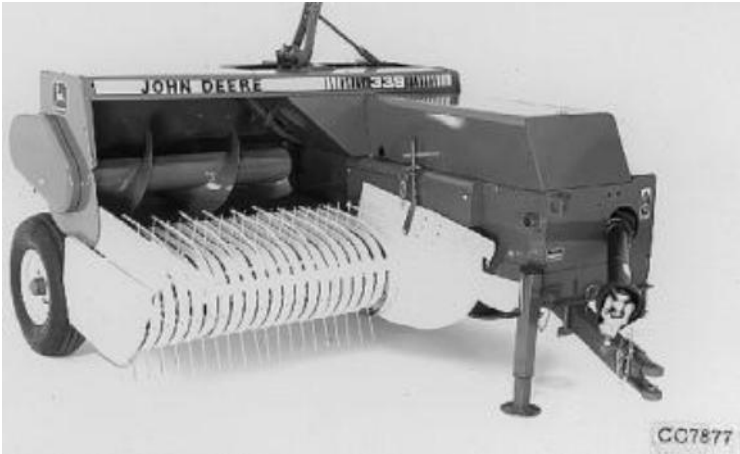
Serial Number

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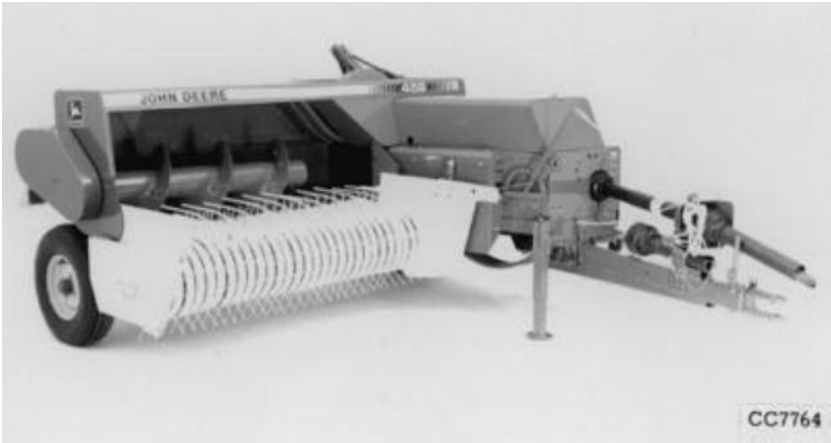
Identification Views



339 Baler with short tongue

-JUN-23SEP98

CC7877



459 Baler

-JUN-05OCT98

CC7764

CC,339SQB004286-19-01AUG98

Safety

RECOGNIZE SAFETY INFORMATION

This is the 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.



DX,ALERT -19-29SEP98

T81389 -UN-07DEC68

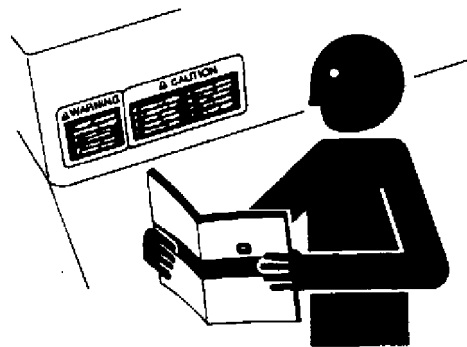
FOLLOW SAFETY INSTRUCTIONS

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.

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.

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



DX,READ -19-03MAR93

T5201 -UN-23AUG88

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.



DX,SIGNAL -19-03MAR93

T5187 -19-30SEP88



OBSERVE ROAD TRAFFIC REGULATIONS

Always observe local road traffic regulations when using public roads.



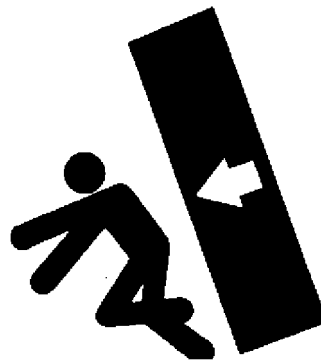
FX,ROAD -19-01MAY91

H28930 -UN-30JUN89

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.



DX,STORE -19-03MAR93

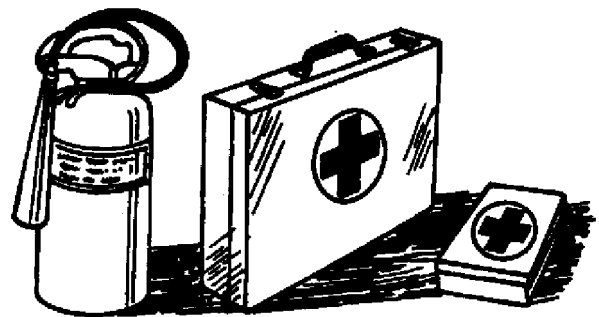
TS219 -UN-23AUG88

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



DX,FIRE2 -19-03MAR93

TS291 -UN-23AUG88



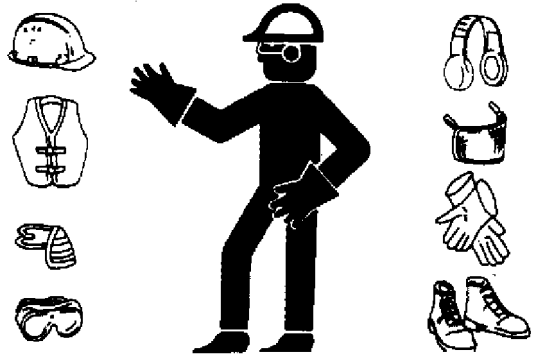
WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

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

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

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



DX,WEAR -19-10SEP90

TS206 -UN-23AUG68

CHECK MACHINE SAFETY

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

FX,READY -19-28FEB91

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.



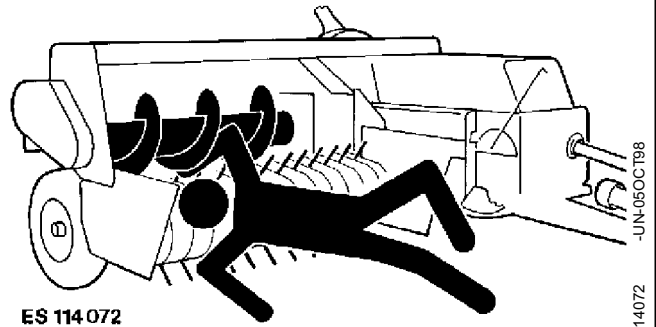
DX,PTO -19-12SEP95

TS1644 -UN-22AUG95



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 shielded by constructional measures.



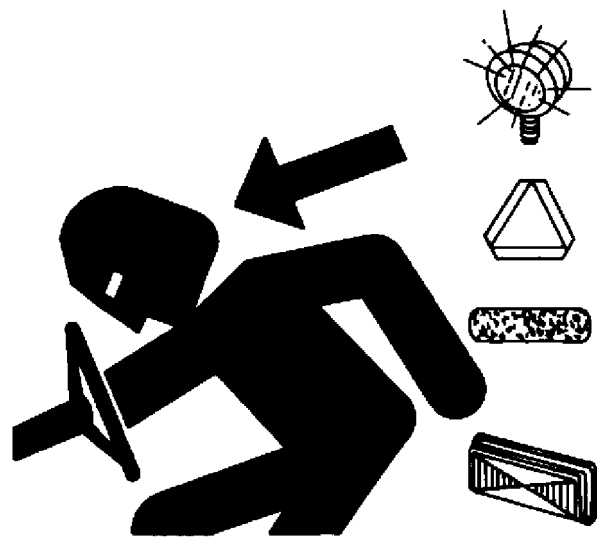
-UN-05OCT98
ES114072

CC,339SQB004288-19-01AUG98

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.



-UN-12APR90
TS951

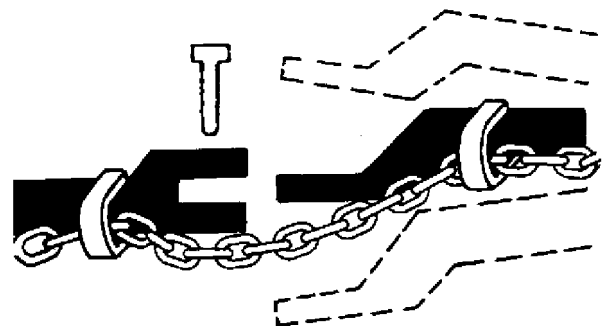
DX,FLASH -19-07JUL99

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.



-UN-23AUG88
TS217

DX,CHAIN -19-03MAR93



TRANSPORT SAFELY

Never tow baler faster than 25 km/h (15.5 mph).

Be sure reflectors and warning lights are clean and visible.

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

CC,339SQB004287-19-01AUG98

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 -19-04FEB99



SERVICE TIRES SAFELY

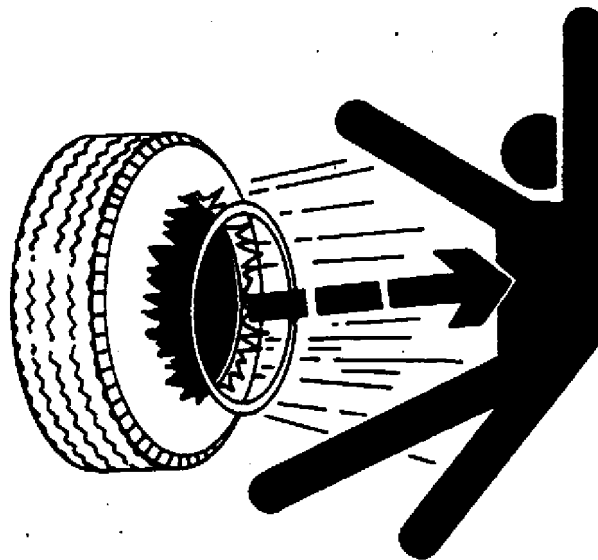
Explosive separation of a tire and rim parts can cause serious injury or death.

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.



-UN-23AUG88
TS211

DX,RIM -19-24AUG90

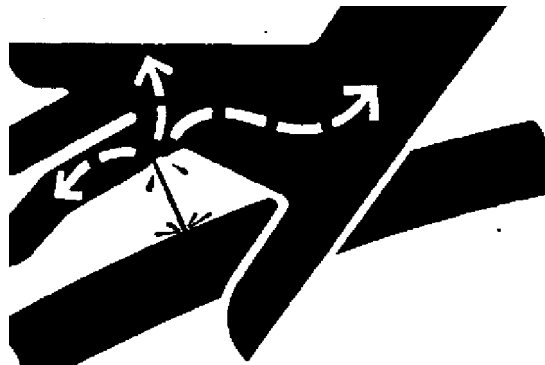
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.



-UN-23AUG88
X9811

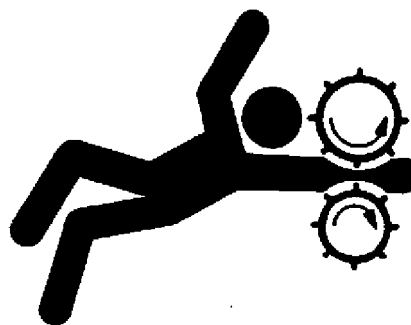
DX,FLUID -19-03MAR93



SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



DX, LOOSE -19-04JUN90

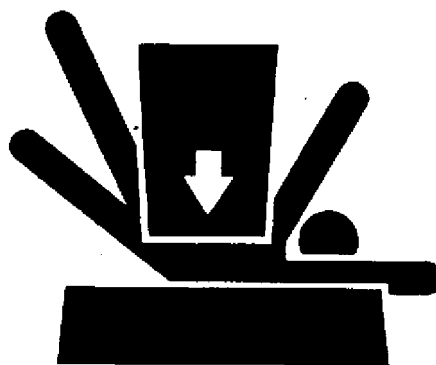
TS228
-UN-23AUG88

SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment. 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 tractor, always follow safety precautions listed in the implement operator's manual.



DX, LOWER -19-04FEB99

TS229
-UN-23AUG88



REMOVE PAINT BEFORE WELDING OR HEATING

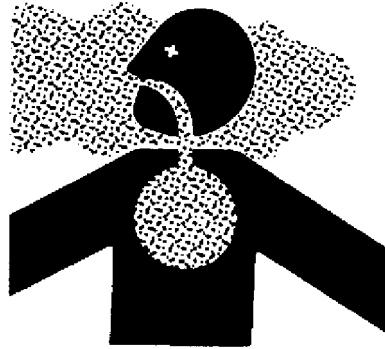
Avoid potentially toxic fumes and dust.

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

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



DX,PAINT -19-03MAR93

TS220 -UN-23AUG68

AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.



DX,TORCH -19-03MAR93

TS953 -UN-15MAY90



DISPOSE OF WASTE PROPERLY

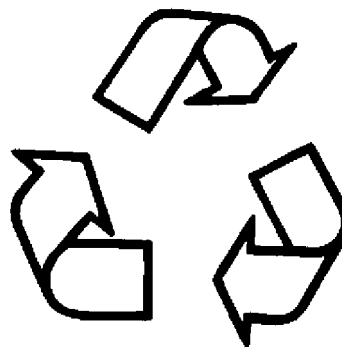
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.



TS1133 -UN-26NOV90

DX,DRAIN -19-03MAR93

Safety Decals

PICTORIAL SAFETY SIGNS

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

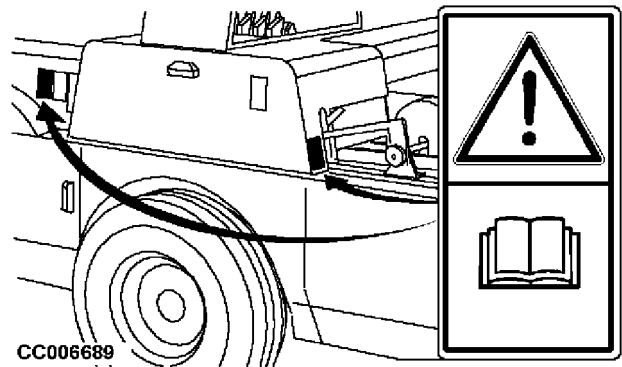


FX,WBZ -19-19NOV91

TS231 -19-07OCT88

OPERATOR'S MANUAL

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



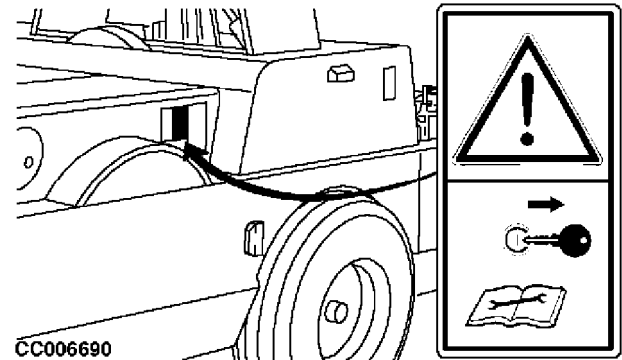
CC006689

CC.339SB 002511-19-13DEC94

CC006689 -UN-23FEB95

REPAIR AND MAINTENANCE

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



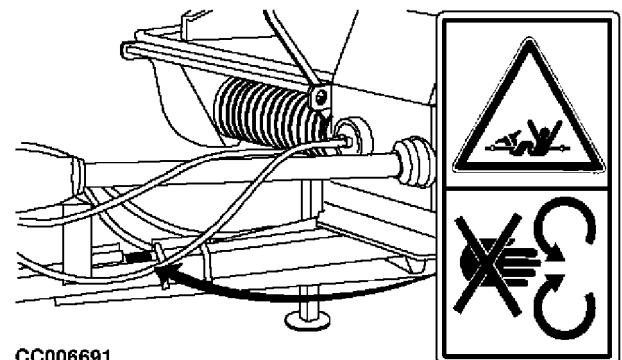
CC006690

CC.339SB 002512-19-13DEC94

CC006690 -UN-23FEB95

BALER DRIVE LINE

Stay clear of rotating drive line to avoid personal injury.



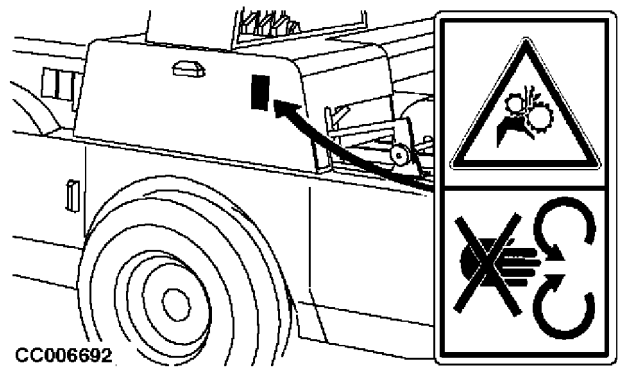
CC006691

CC.339SB 002513-19-13DEC94

CC006691 -UN-23FEB95

DRIVE GEARS

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



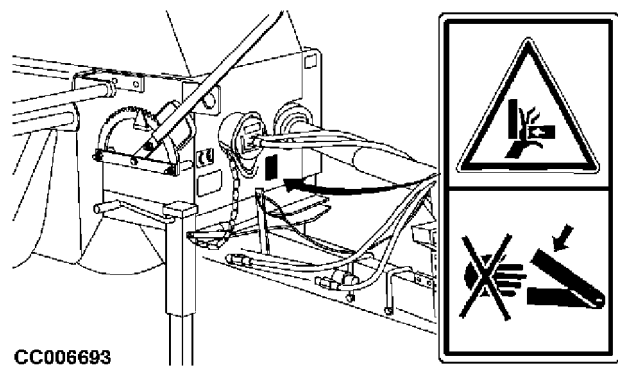
CC006692

CC.339SB 002514-19-13DEC94

CC006692 -UN-23FEB95

TONGUE POSITIONING

Stay clear of swinging tongue when positioning in work or transport position to avoid personal injury.



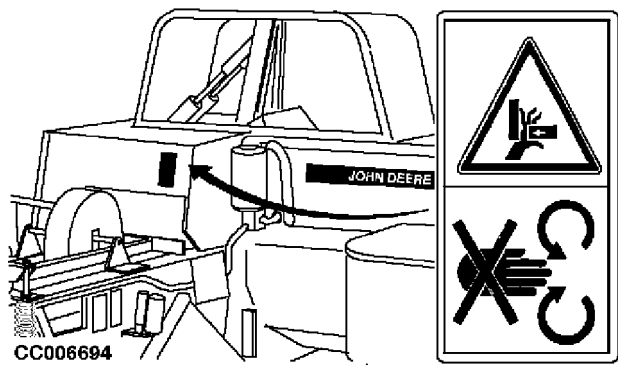
CC006693

CC.339SB 002515-19-13DEC94

CC006693 -UN-23FEB95

KNOTTER MECHANISM

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



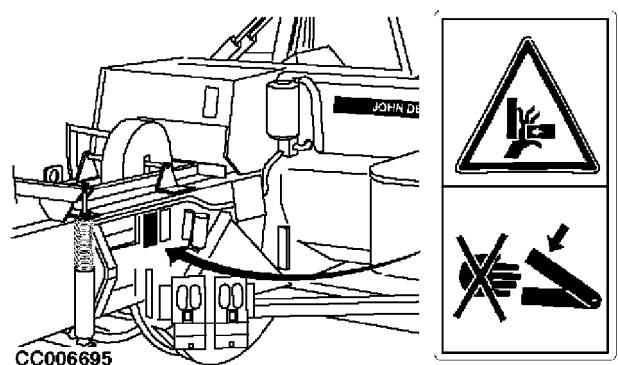
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CC.339SB 002416-19-13DEC94

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NEEDLES

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



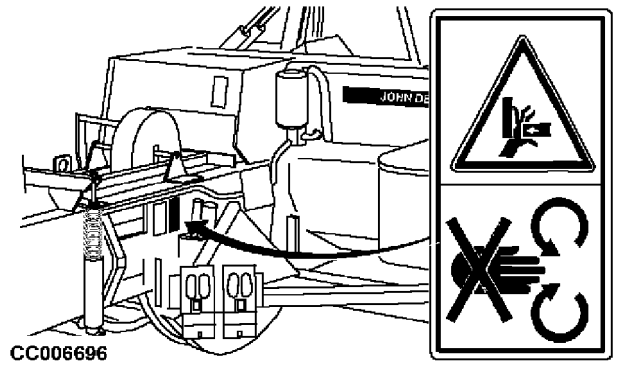
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CC.339SB 002517-19-13DEC94

CC006695 -UN-23FEB95

NEEDLES TRIPPING

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

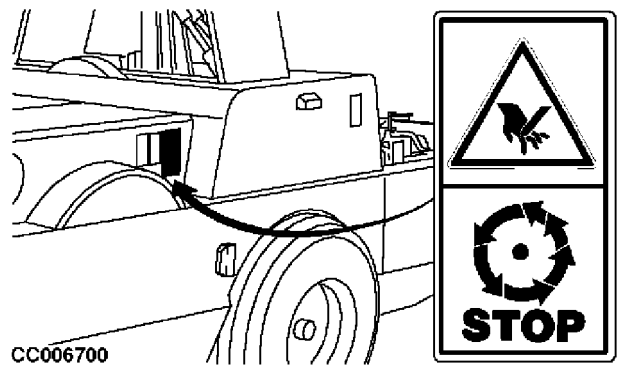


CC.339SB 002518-19-13DEC94

CC006696 -UN-23FEB95

FLYWHEEL

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



CC.339SB 002522-19-13DEC94

CC006700 -UN-23FEB95


Preparing the Tractor

CHECKING BALLAST, WHEEL SPACING AND TIRE INFLATION

- Provide sufficient weight to stabilize the tractor when operating on hilly ground or under other adverse conditions. See your tractor Operator's Manual.
- To ensure proper stability, adjust ballast, wheel spacing and tire inflation pressure as described in your tractor Operator's Manual.

CC,339SQB004289-19-01AUG98

SELECTING TRACTOR PTO SPEED

-  **CAUTION:** Under no circumstances should a baler equipped for 540 rpm PTO drive be operated with a tractor at 1000 rpm PTO speed.

CC,339SQB004290-19-01AUG98

Attaching and Detaching

PTO SPEED

Your 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's powershaft speed.

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

CC,339SQB004293-19-01AUG98

ATTACHING AND DETACHING 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 or powershaft.

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

IMPORTANT: Keep hookup and powershaft splines free from paint, dirt, chaff, and burrs.

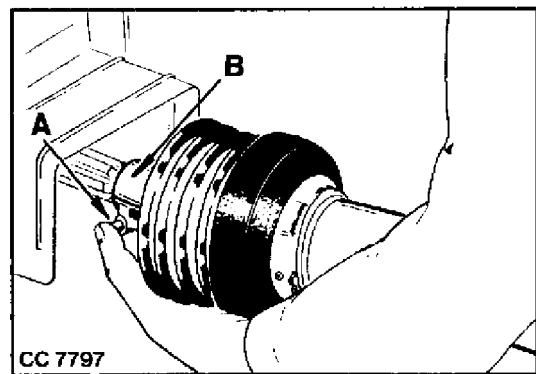
- Shut off tractor engine and wait until baler flywheel has come to a standstill.

Attaching:

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

Detaching:

- Press pin (A) and simultaneously hold telescoping shaft (B) at guard tube. Retract shaft from tractor PTO.



CC7797 -UN-25SEP98

CC,339SQB004294-19-01AUG98

ATTACHING AND DETACHING 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 or powershaft.

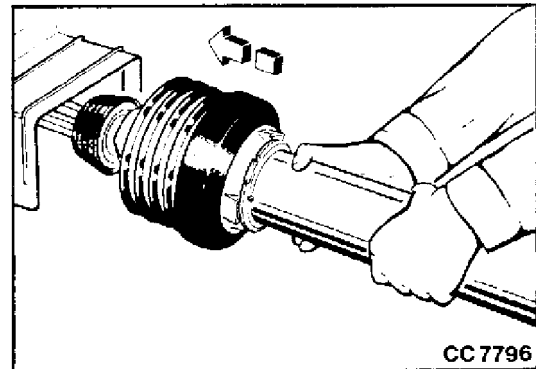
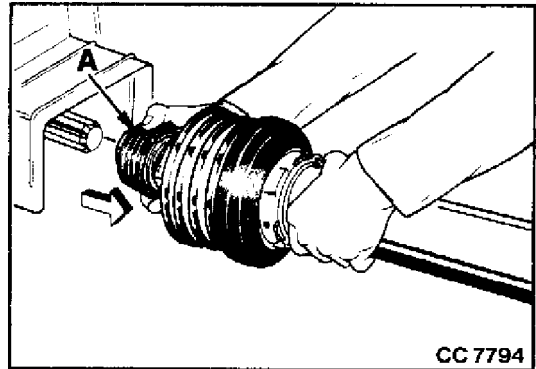
- Shut off tractor engine and wait until baler flywheel has come to a standstill.

Attaching:

- Pull back locking collar (A) until it remains in open position.
- Push telescoping shaft onto tractor PTO until the lock engages automatically. In this position the locking collar must rotate freely.

Detaching:

- Pull back locking collar until it remains in open position. Hold telescoping shaft at guard tube and retract it from tractor PTO.



CC7794 -UN-25SEP98

CC7796 -UN-25SEP98

CC,339SQB004295-19-01AUG98

ATTACHING AND DETACHING CV TELESCOPIC HOOKUP (339, 349 AND 359)

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

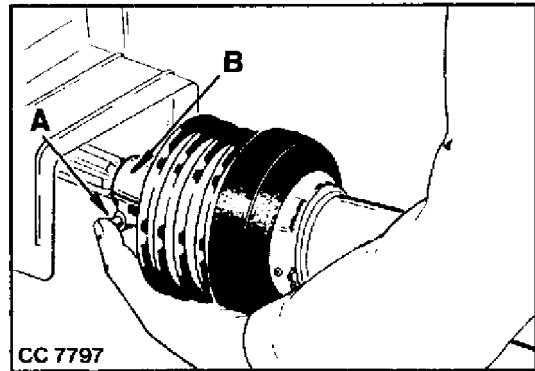
- Shut off tractor engine and wait until baler flywheel has come to a standstill.

Attaching:

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

Detaching:

- Press pin (A) and simultaneously hold telescoping shaft (B) at guard tube. Retract shaft from tractor PTO.

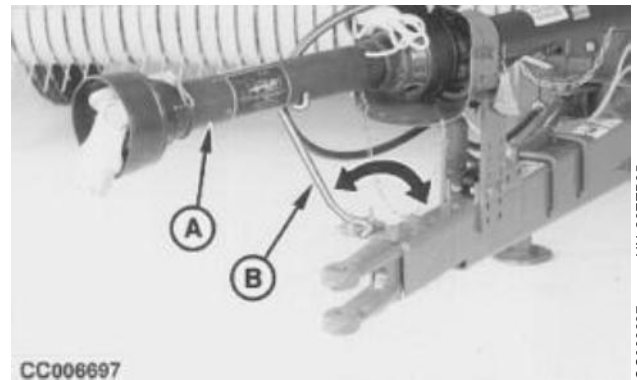


CC7797 -UN-25SEP98

CC,339SQB004296-19-01AUG98

STORING HOOKUP (ALL TYPES OF HOOKUP)

- After detaching baler from the tractor, store hookup (A) on support (B) as shown.
- After attaching baler to the tractor, store support (B) in down position.

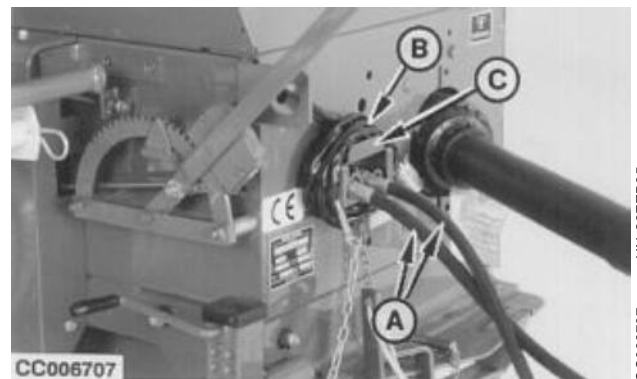


CC006697 -UN-28FEB95

CC,339SQB004291-19-01AUG98

STORING HYDRAULIC HOSES AND WIRING HARNESS

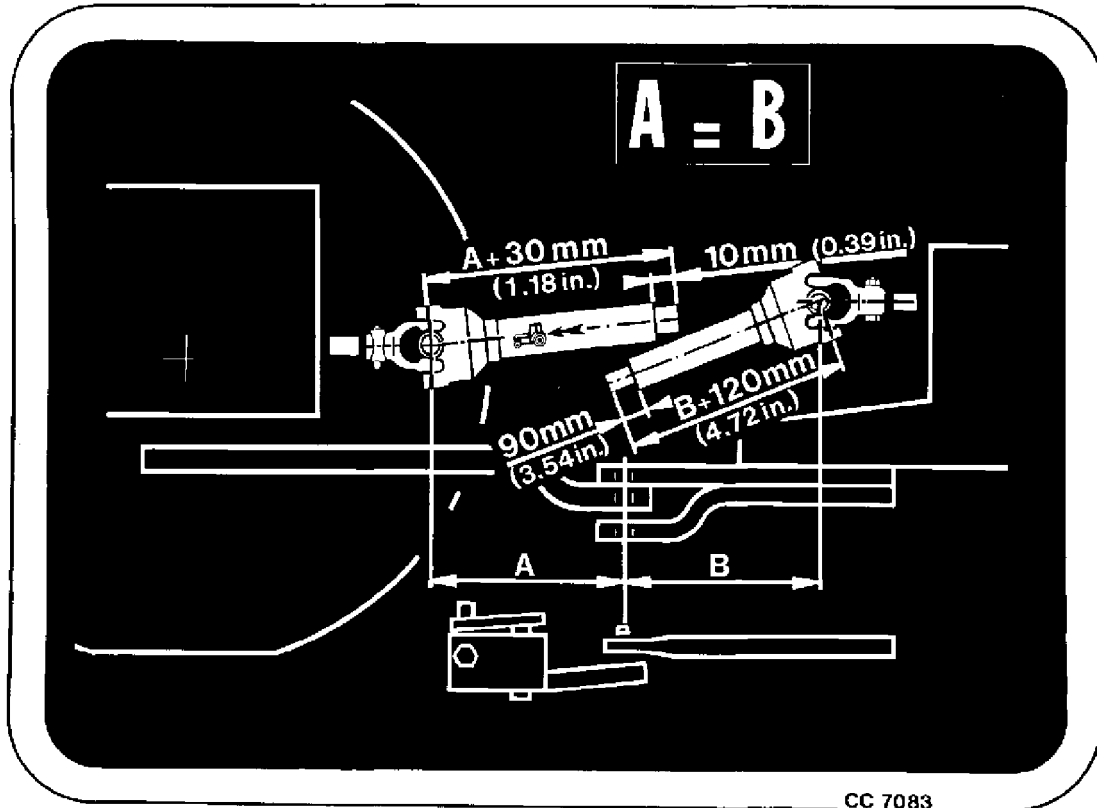
Once the baler has been detached from the tractor, hydraulic hoses (A) and wiring harness (B) can be stored on support (C), keeping them clean by avoiding contact with the soil.



CC006707 -UN-28FEB95

CC,339SQB004292-19-01AUG98

ADJUSTING STANDARD TELESCOPIC HOOKUP



CC7083 -UN-05OCT98

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

- Keep telescopic shafts free from burrs.

- Cut the telescopic drive shafts and plastic shields according to the dimensions shown above.

CC,339SQB004297-19-01AUG98

ADJUSTING CV TELESCOPIC HOOKUP

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

- However, a good telescopic hookup length must exhibit a minimum telescopic hookup overlap of 200 mm (7.87 in.).

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

CC,339SQB004298-19-01AUG98

ADJUSTING POWERSHAFT SUPPORT (BALER WITHOUT CV POWERLINE)

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

- Lower or raise powershaft support into one of the six possible positions and 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 right-hand turn until telescopic shaft ends make slight contact.

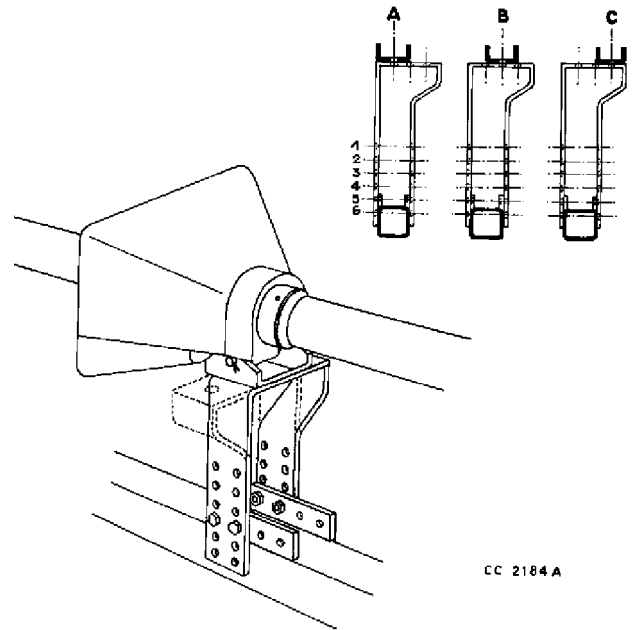
- Then engage PTO drive gently. If an abnormal noise is heard at the slip clutch, lower or raise support under the powershaft until the noise is eliminated.

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 imperative to comply with the instructions for hitching; this will increase the life of powerline parts and eliminate strains and jerks on the PTO and on the powershaft pillow-block.



CC 2184 A

-JUN-06OCT98

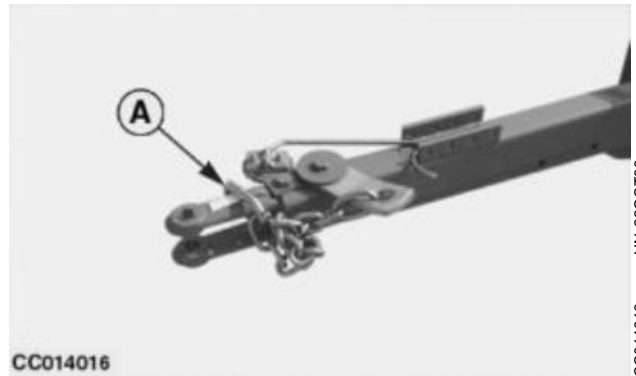
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CONNECTING SAFETY CHAIN

If baler is equipped with safety chain (A), connect and fasten chain (A) 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, especially in France where the use of safety chain is mandatory.

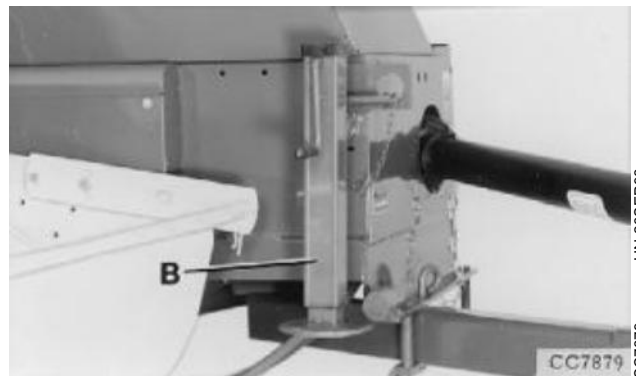
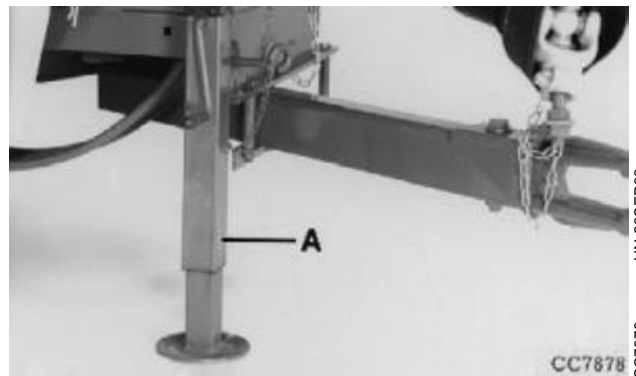


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OPERATING JACKSTAND (339)

⚠ CAUTION: Danger of crushing!

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

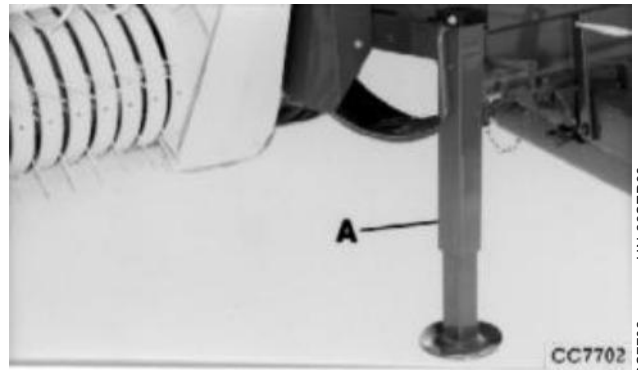


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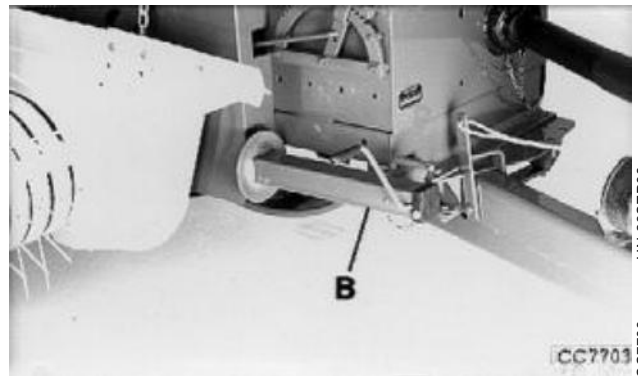
OPERATING JACKSTAND (349, 359 AND 459)

⚠ CAUTION: Danger of crushing!

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



-UN-23SEP98
CC7702



-UN-23SEP98
CC7703

CC,339SQB004301-19-01AUG98

Preparing the Baler

BREAK-IN PERIOD

- After baler has been attached to the tractor, inspect it to be sure that all bolts 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 should 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 idling speed, stop machine and inspect for loose bolts, overheated bearings, binding parts etc. Also check chain tension. Run baler at slow idling speed 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 holder.

A—Clutch ring gear
B—Auger drive gear
C—Main drive gear
D—Cluster gear

CC,339SQB004302-19-01AUG98

PREPARING 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 regulation when driving on public roads, especially in France where the use of safety chain is mandatory (see “Connecting 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).

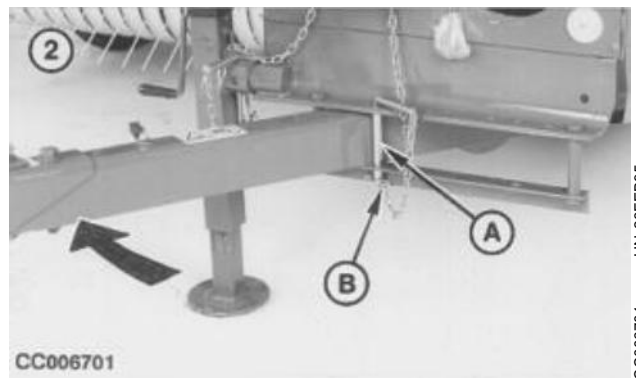
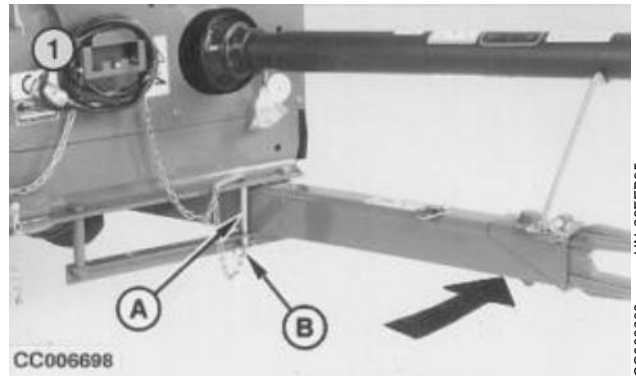
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POSITIONING TONGUE (339)

⚠ CAUTION: Danger of crushing!

- To change from operating to transport position, put a chock block behind the right-hand 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-hand wheel and remove pin (A).
- Shift tongue to the left and secure it with pin (A) and quick lock pin (B).
- Remove chock block.

1—Tongue in operating position
2—Tongue in transport position



CC,339SQB004303-19-01AUG98

POSITIONING TONGUE (349, 359 AND 459)

⚠ CAUTION: Danger of crushing!

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

- Pull latch (B) by means of the 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.

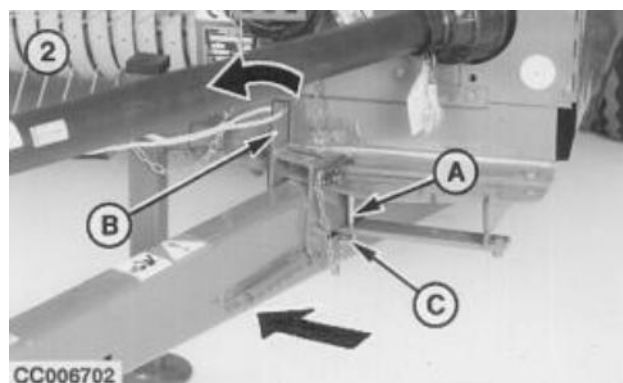
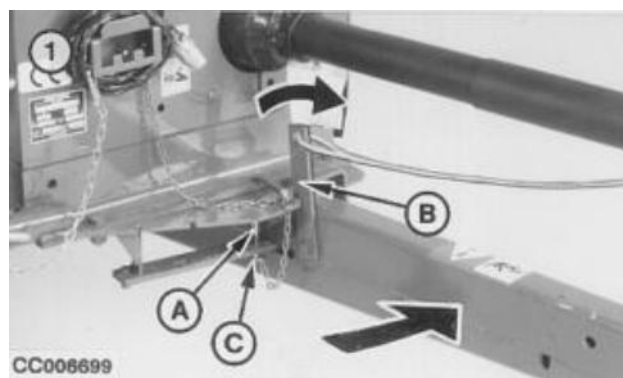
- To change from transport to operating position, put a chock block in front of the right-hand wheel and remove pin (A).

- Pull latch (B) by means of the 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: In case of baler equipped with the right-hand wheel lock system, always stop the tractor before operating at a very low ground speed. Pull latch (B) by means of the rope to engage the lock system and thus to change tongue position.



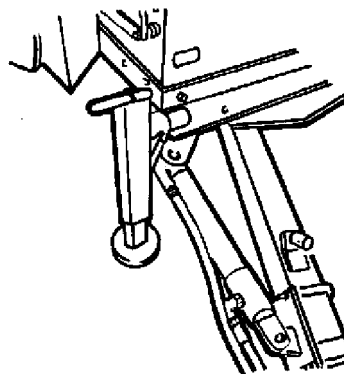
1—Tongue in operating position
2—Tongue in transport position

CC,339SQB004304-19-01AUG98

HYDRAULIC TONGUE POSITIONING (339 WITH LONG TONGUE, 349, 359 AND 459)

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

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

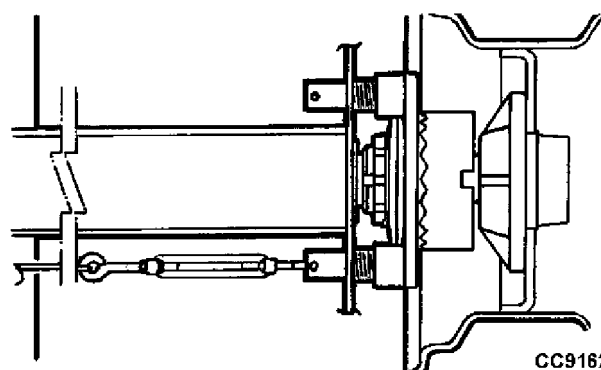


CC9161

CC,339SQB004305-19-01AUG98

MECHANICAL TONGUE POSITIONING 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 the need for a chock block in front of the right-hand wheel.
- When the latch is pulled using the rope, the right-hand wheel is automatically locked.



CC,339SQB004306-19-01AUG98

CC9162 -JUN-23SEP98

SELECTING CORRECT TWINE AND WIRE

- For trouble-free baling operation, select twine or wire of good quality.
- Select twine of good tensile strength and uniformity in size for proper knotter operation. This will also help prevent twine from breaking during handling and transporting of bales.

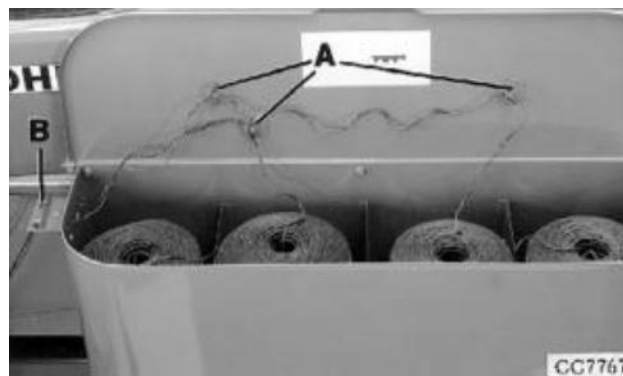
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LOADING TWINE BOX

- 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 first ball to inside end of the next. 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-hand compartment.
- Thread both ends of twine through tension plate (B) on the side of the twine box.



CC7718 -JUN-23SEP98



CC7767 -JUN-23SEP98

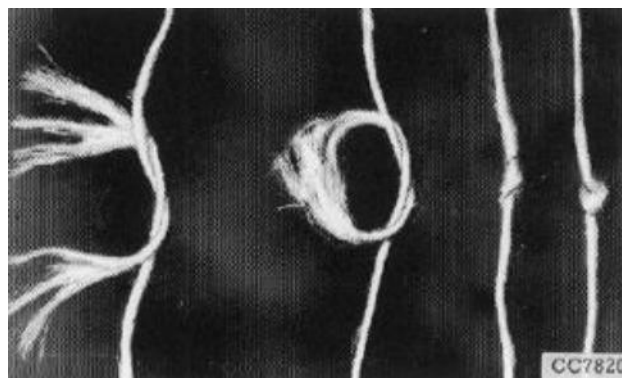
CC,339SQB004308-19-01AUG98

Preparing the Baler

TYING 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.



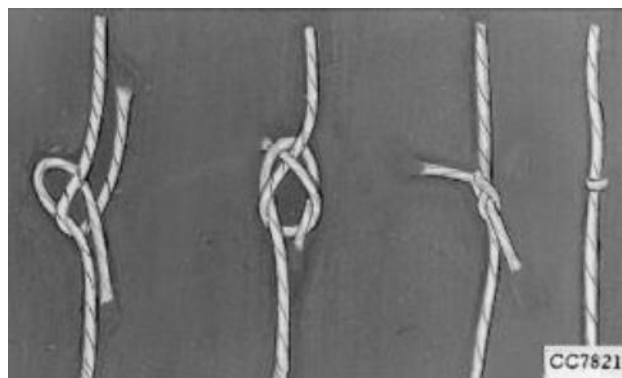
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-JUN-23SEP98
CC7820

TYING 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.



CC,339SQB004310-19-01AUG98

-JUN-23SEP98
CC7821

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 the baler will travel.



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CC1248A

THREADING NEEDLES (TWINE BALER)

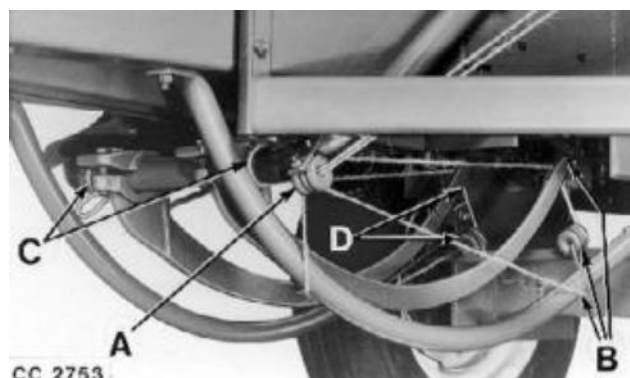
1. Thread both ends of the twine through eye (A) on needle frame.

IMPORTANT: Be sure twine strands are not crossed during threading.

2. With needles in "home" position, run end of one strand of twine below needle guard, through the eye beneath the right-hand needle and through right-hand needle (B).

3. Run twine back to needle frame and fasten as illustrated (C).

4. Repeat steps 2 and 3 with the other strand of twine to thread left-hand needle (D).



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AFTER THREADING NEEDLES

- When both right-hand and left-hand 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.

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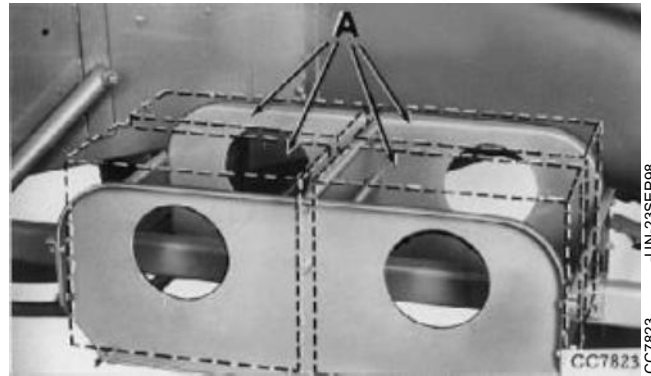
LOADING WIRE BOX

- 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.

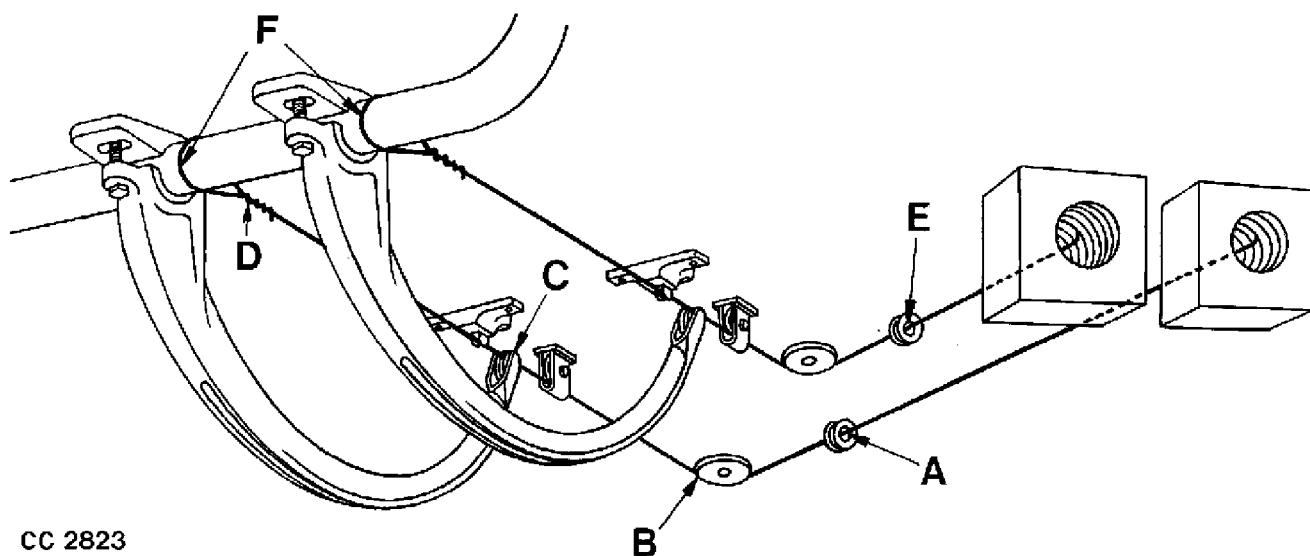
- When front coils of wire have run out, place rear coils forward, locate two new cartons of wire in the wire box and splice wires.

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



CC,339SQB004314-19-01AUG98

THREADING NEEDLES (WIRE BALER)



CC 2823

A—Guide
B—Wire pulley

C—Needle pulley
D—Twist

E—Guide

F—Wire

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

5. Thread left-hand wire through guide (E) and rear hole in main frame; then repeat steps 2, 3 and 4 on right-hand 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 loose wire (F) from the needle frame.

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

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CC2823 -UN-23SEP98

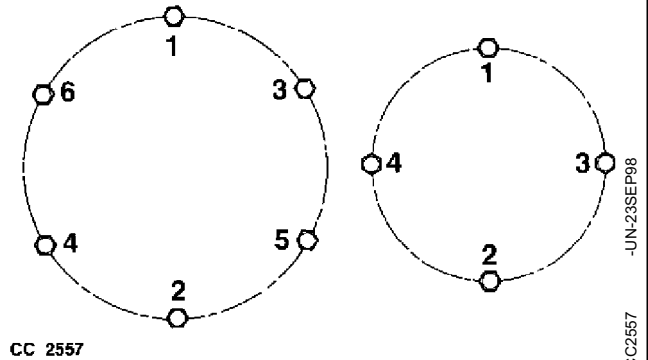
TIRE INFLATION

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

CC,339SQB004316-19-01AUG98

TIGHTENING WHEEL BOLTS

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



CC,339SQB004317-19-01AUG98

Operating the Baler

STARTING AND OPERATING THE BALER

IMPORTANT: Do not disengage PTO during the tying cycle as flywheel shear bolt will shear when reengaged.

- Engage tractor PTO and slowly increase engine speed to obtain a powershaft speed of 540 rpm (the plungerhead should normally be making 80 strokes per minute under load for a 339 and 349 baler, 92 strokes for a 359 baler and 100 strokes for a 459 baler). The baler may not produce uniform bales until the compression is built up sufficiently to turn the bale measuring wheel.

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

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.

IMPORTANT: If the auger drive belt slips, you are crowding your baler which may result in damage.

- 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.

CC,339SQB004318-19-01AUG98

PREPARING THE CROP

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

CC,339SQB004319-19-01AUG98

SELECTING CORRECT DIRECTION OF TRAVEL

- Bale the driest hay first; therefore start baling at the outside of the field.
- Travel in direction that rake or windrower travelled to pickup hay.

CC,339SQB004320-19-01AUG98

UNDERSTANDING TWINE TYING CYCLE

Basic Position Of Knotter

- Understanding the twine tying cycle is very important for performing baler adjustments. The twine tying cycle is as follows:
- Twine is held in twine disk (B) by twine holder (A). As the bale is formed, it pulls twine from the twine box.

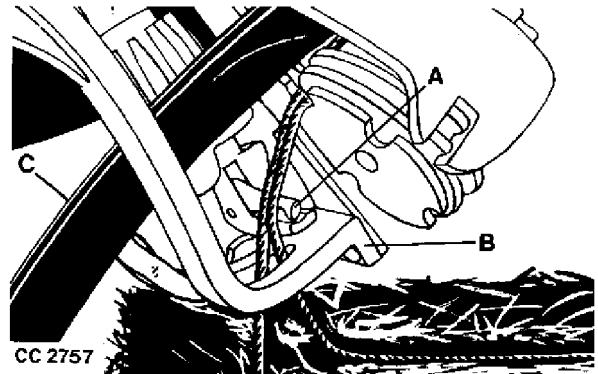


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Operating the Baler

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.

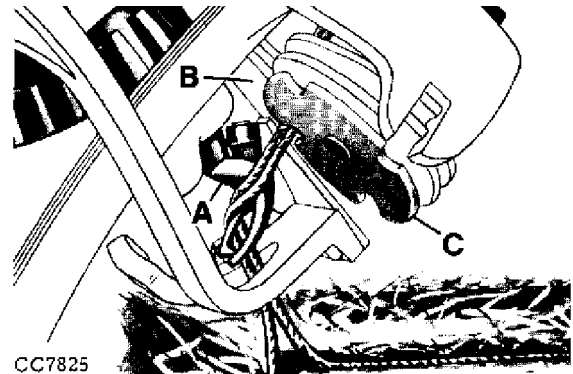


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Start Of Twine Tying

- 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).



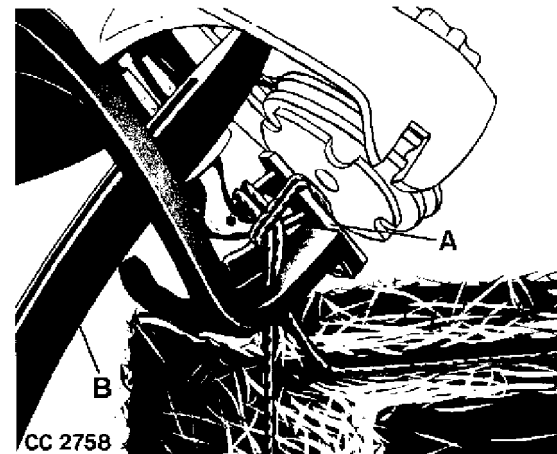
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Preparing The Knot

- As the billhook turns, it forms a loop of twine around the hook and the jaw opens to receive the twine. Knife (A) advances, 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.



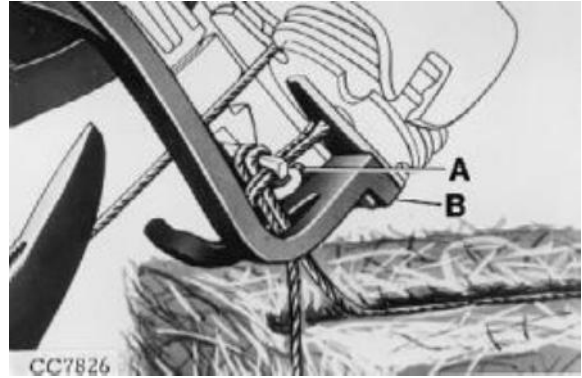
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Operating the Baler

Twine Cutting

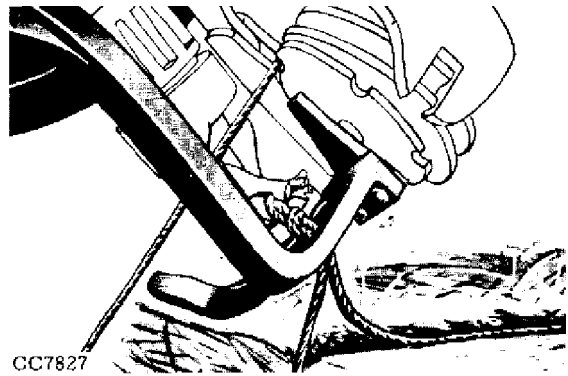
- Billhook jaw has now closed and holds the ends of the twine tightly. The twine has been cut and wiper (A) on knife arm (B) wipes looped twine from the outside of the billhook to complete the knot.



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End Of Tying Cycle

- 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 chamber ready to receive material for the next bale, at the end of which another tying cycle begins.



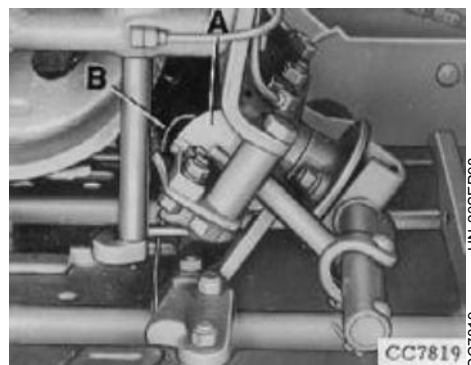
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UNDERSTANDING TWISTING CYCLE

Basic Position Of Twister

• Understanding the twisting cycle is very important for performing baler adjustments. The twisting cycle is as follows:

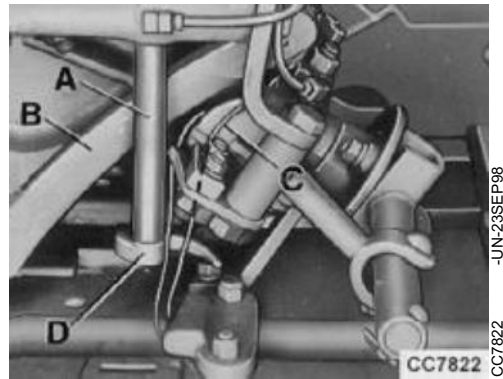
- After needle has been threaded, the end of the wire is anchored (B) by wire gripper (A). As the bale is being formed, needle wire is pulled from the wire box around the bale.



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Catching 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 is rotating clockwise. The twister hook completes one revolution and grasps both strands of wire.

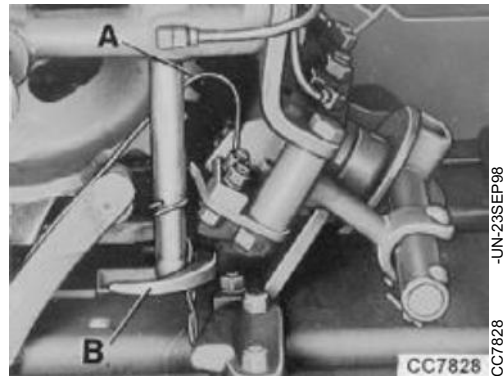


A—Twister shaft
B—Needle
C—Wire
D—Twister hook

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Twisting The Wire

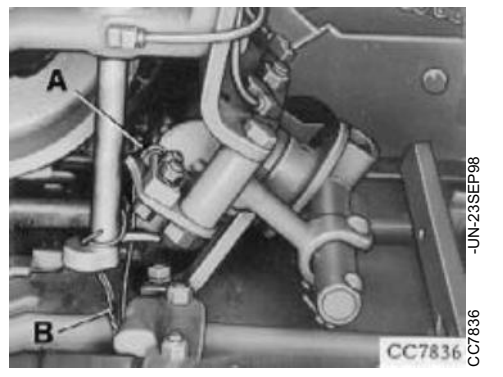
- The wire gripper drive pinion engages in the intermittent drive gear. This pinion drives the gripper shaft, which actuates the arm of the gripper to release the anchored wire (A), also shearing and anchoring needle wire as gripper moves to the other side. The needle returns home and twister hook (B)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



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End Of Twisting Cycle

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



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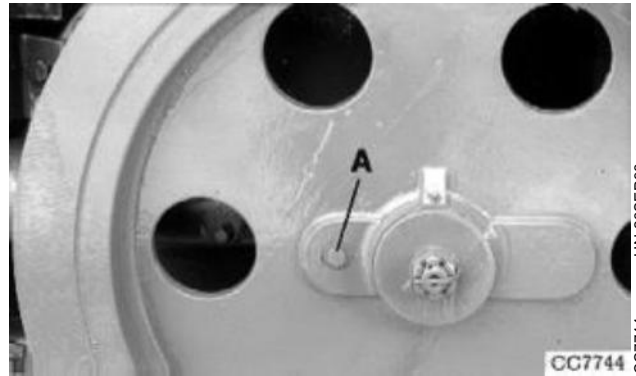
REPLACING FLYWHEEL SHEAR BOLT

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 having replaced shear bolt, move plungerhead forward (towards tractor) before returning needles to the "home" position. This prevents damage to the safety stop rod.



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REPLACING KNOTTER AND NEEDLE DRIVE SHEAR BOLT

IMPORTANT: If breakage occurs, see your 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.



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ADJUSTING COMPRESSOR ROD HEIGHT

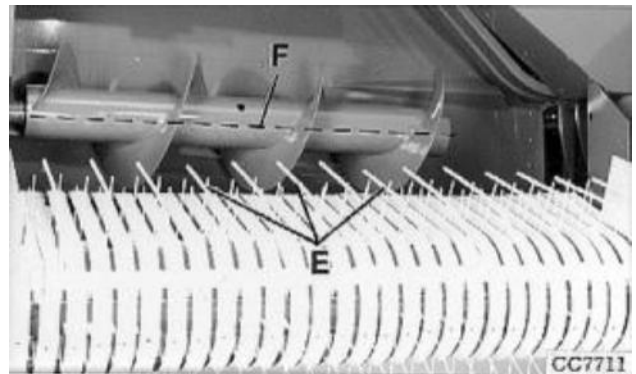
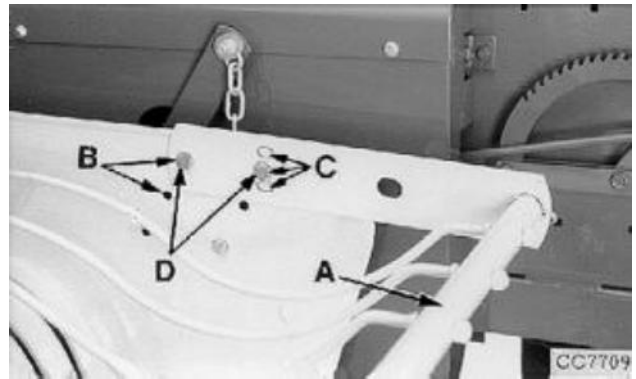
IMPORTANT: Compressor rod bar should clear highest part of windrow.

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

- 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 bolts.

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

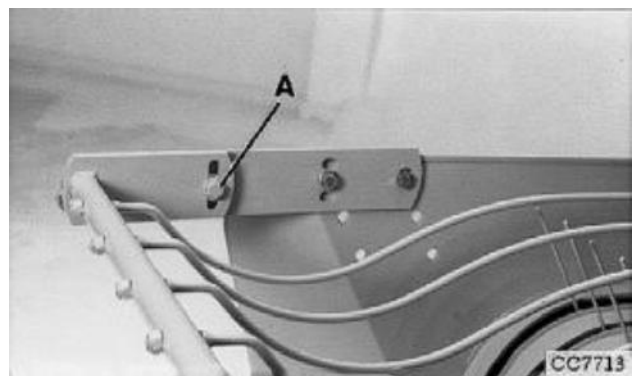
- A—Compressor rod bar
- B—Height adjustment holes
- C—Angle adjustment holes
- D—Carriage bolt
- E—Compressor rods
- F—Auger



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ADJUSTING 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.

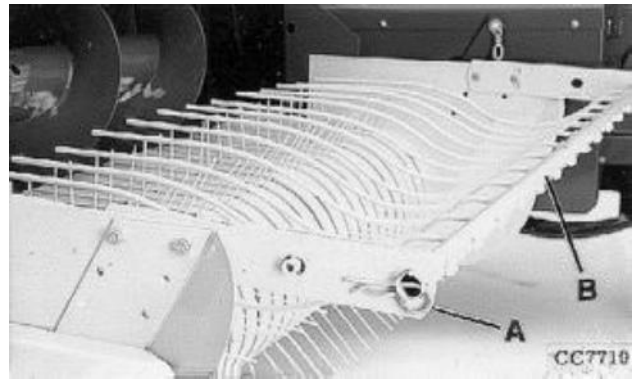


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REMOVING COMPRESSOR RODS

CAUTION: Shut off both baler and tractor, 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.



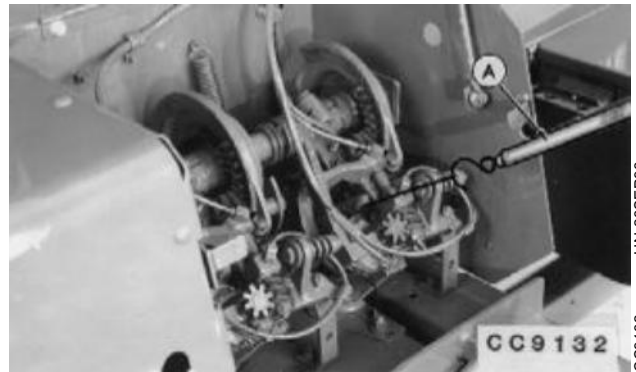
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CHECKING TWINE TENSION

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

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

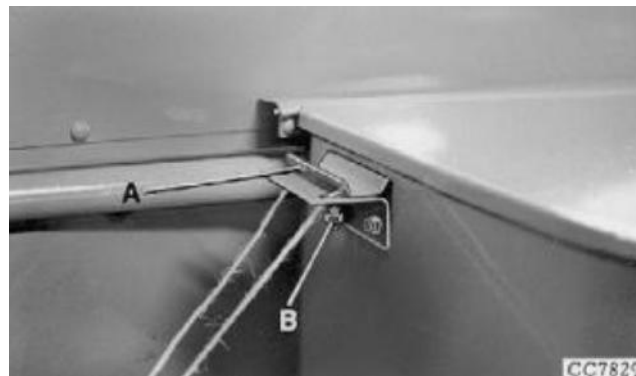
NOTE: Sisal twine in springy hay may need a slightly higher tension than 44 N (10 lb).



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ADJUSTING TWINE TENSION

Tension is controlled by a spring-loaded tension plate (A). To adjust use twine tension adjusting nut (B).



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ADJUSTING 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 chamber.

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

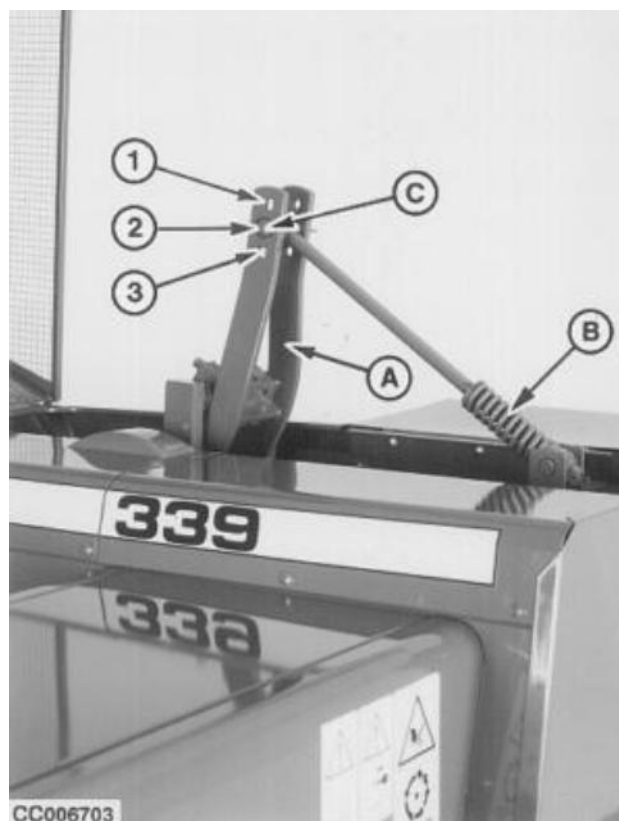
- Three positions of feeder fingers (A) are usable.

- To place more hay in right-hand side of bale chamber, 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 fingers (A).

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



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ADJUSTING FEEDER FINGERS (459 WITH DOUBLE FEEDER FORK)

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

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

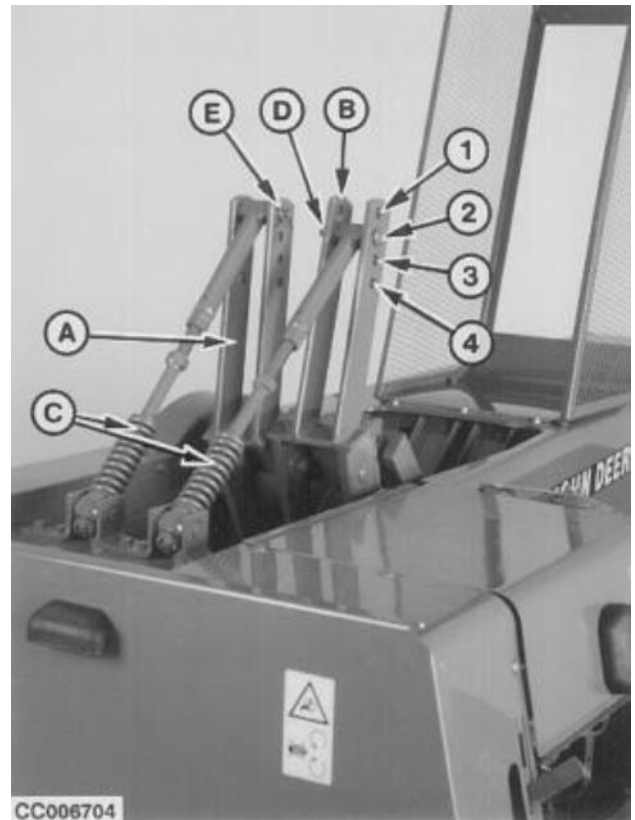
- Four positions of front and rear feeder finger (A) and (B) are usable.

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

NOTE: Position 1 of front feeder finger (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 finger (A).

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



A—Front feeder finger
B—Rear feeder fingers
C—Spring
D—Rear pivot pin
E—Front pivot pin

Baler with adjustable front pitman shown.

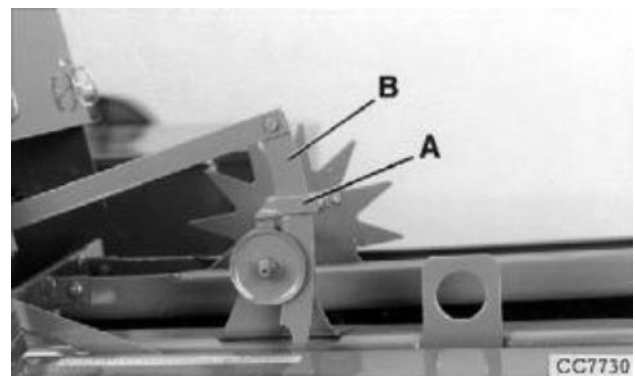
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ADJUSTING BALE LENGTH

- Adjust the 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.).

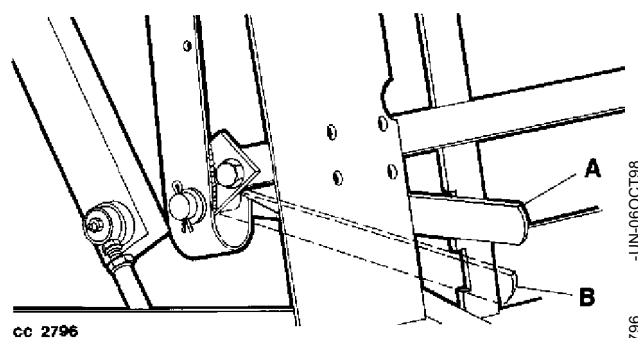


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OPERATING THE SAFETY LATCH

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.



A—Unlatched position
B—Latched position

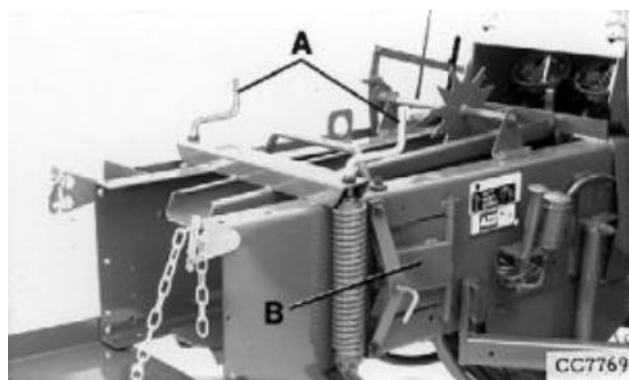
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ADJUSTING BALE WEIGHT MANUALLY

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

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 chamber tension. The tension is adjusted by means of cranks (A).

- When baling light windrows, the weight of bales can be increased by tightening the two 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.

- Reduce bale chamber tension at the end of each day's operation.

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SIDE STRAW RESISTORS (ATTACHMENT 349, 359 AND 459)

- Side straw resistors which can be mounted on each side of the bale case provide increased bale density, which is especially desirable 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, it should be bolted in the front holes.
- As the baling conditions become normal, remove the resistors set by set, starting at the rear of the bale case.



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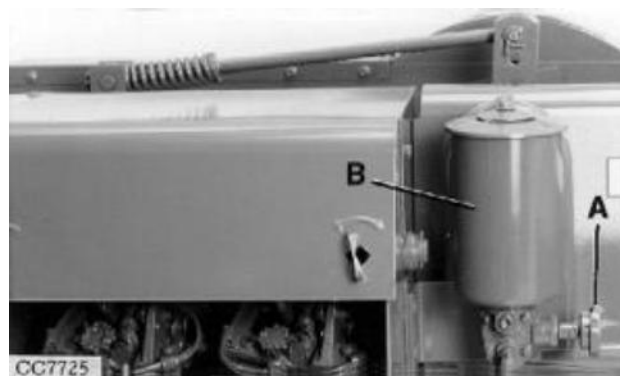
ADJUSTING BALE WEIGHT AND HYDRAULIC TENSION (OPTION 359 AND 459)

- 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, make adjustment 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 a type specified under "Lubrication and Maintenance" Section.

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



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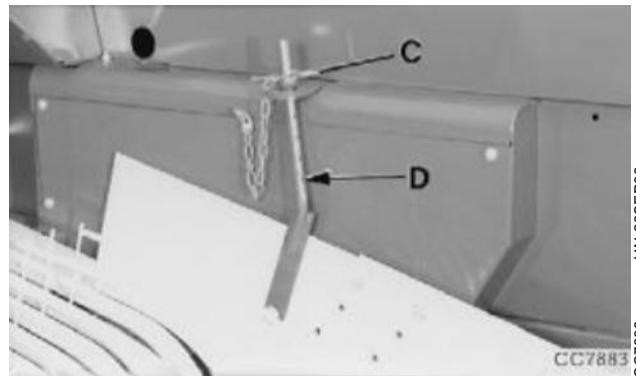
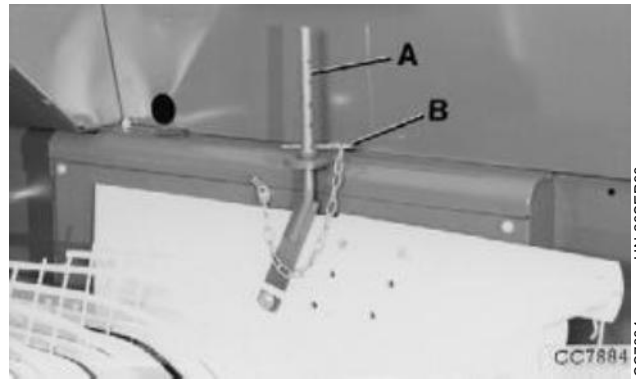
ADJUSTING HEIGHT OF PICKUP TEETH (339)

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.
- Height of the pickup teeth can be adjusted by means of adjusting rod (A) and quick lock pin (B).

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

- A—Adjusting rod
- B—Quick lock pin
- C—Lowest position
- D—Transport position



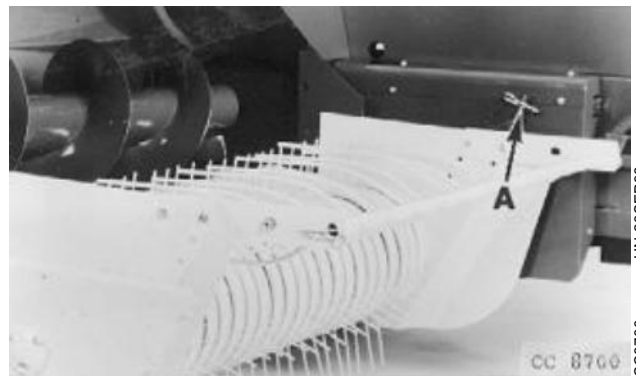
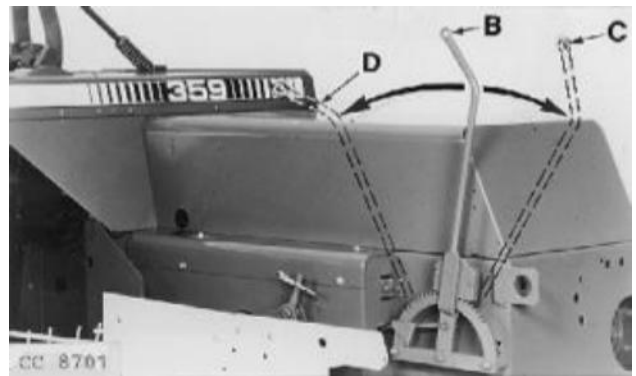
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ADJUSTING PICK-UP TEETH HEIGHT (349, 359 AND 459)

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

- Set pick-up teeth as high as possible, but low enough to pick up all the crop, by means of the 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



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ADJUSTING PICK-UP 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.



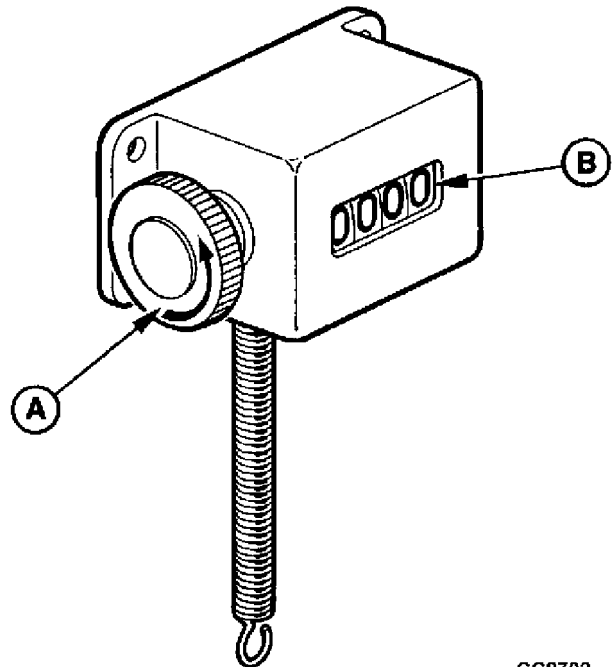
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RESETTING BALE COUNTER

- The bale counter must always be correctly reset.
- Turn knob (A) counter-clockwise (arrow) until 0000 (B) appears in the window. In addition 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.



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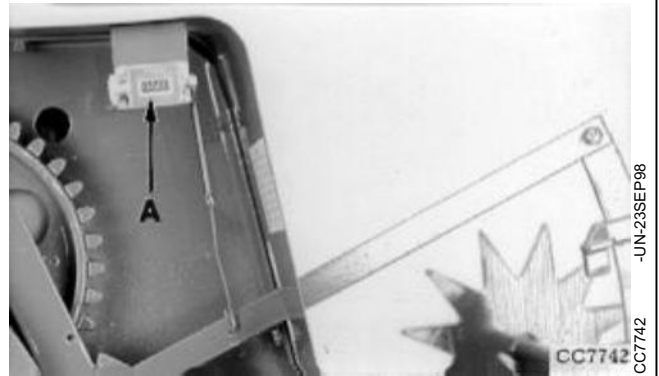
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Attachments

BALE COUNTER

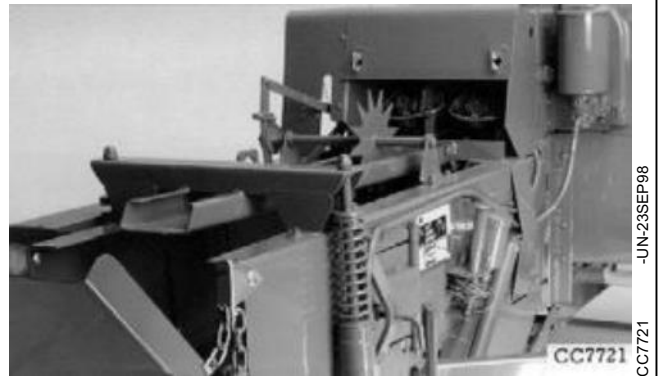
Bale counter (A) keeps an exact record of the number of bales made. It can be reset to zero.



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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.



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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.

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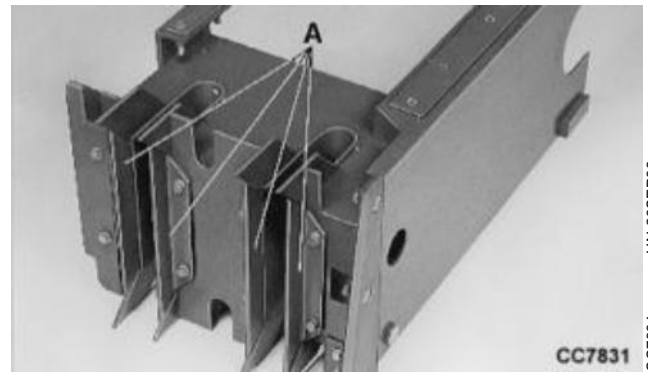
LIGHTING EQUIPMENT

A road lighting kit is available as an attachment.

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PLUNGERHEAD EXTENSIONS (349, 359 AND 459)

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



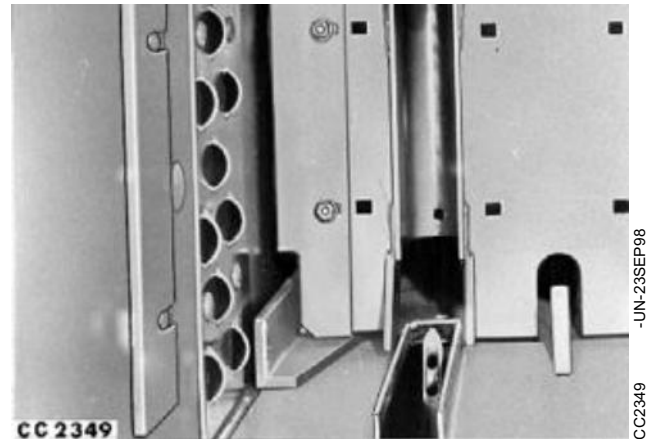
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SIDE STRAW RESISTORS (349, 359 AND 459)

Side straw resistors which can be mounted on each side of the bale case provide increased bale density, which is especially desirable 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 should be bolted in the front holes. As the baling conditions become normal, remove the resistors set by set, starting at the rear of the bale case.



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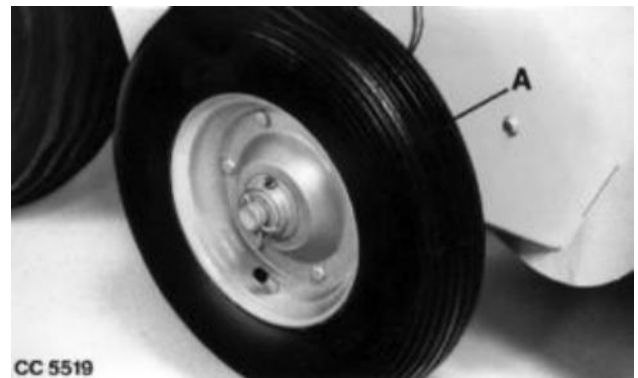
BALE CASE SPRINGS (349, 359 AND 459)

Bale case springs are available as an attachment.

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PICKUP GAUGE WHEEL

- The 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.

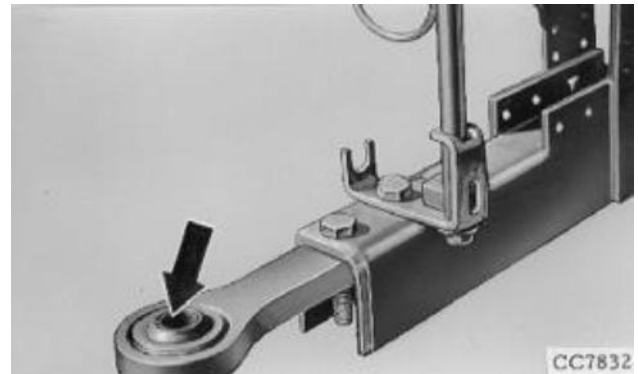


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BALL JOINT HITCH

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

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

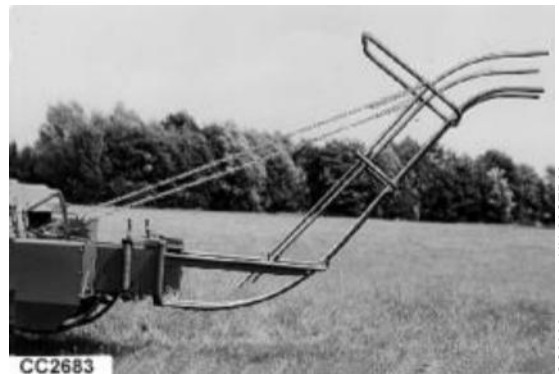


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Attachments

LOADING FRAME (339)

- A loading frame is available for the 339 baler.
- This attachment requires the use of the trailer hitch.



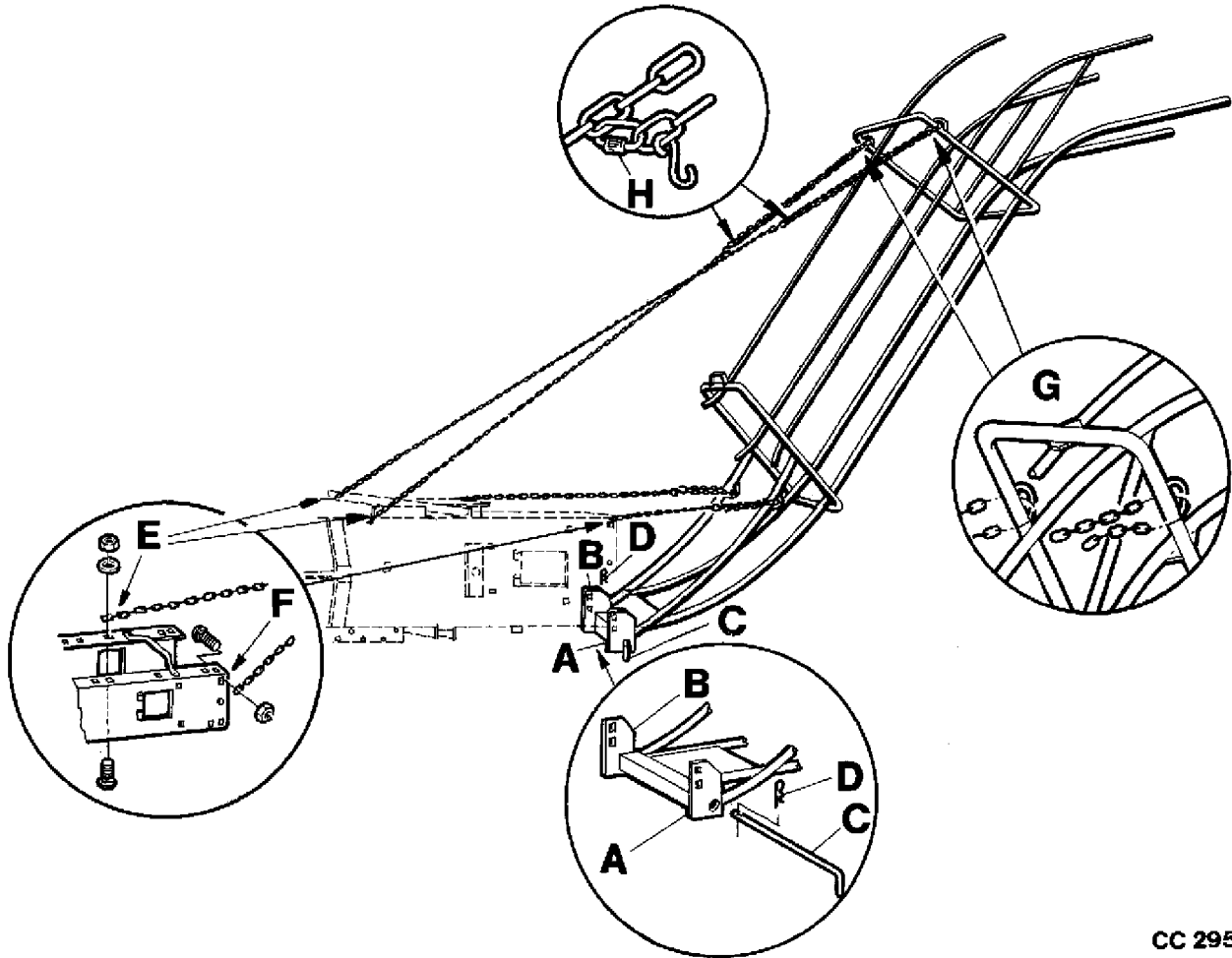
Working position



Transport position

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LOADING FRAME (349, 359 AND 459)



CC 2959

Installation of loading frame

• 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 the upper chains to (E) and the lower chains to (F).

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

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

- Attach chains as shown in (H), tightening links securely.

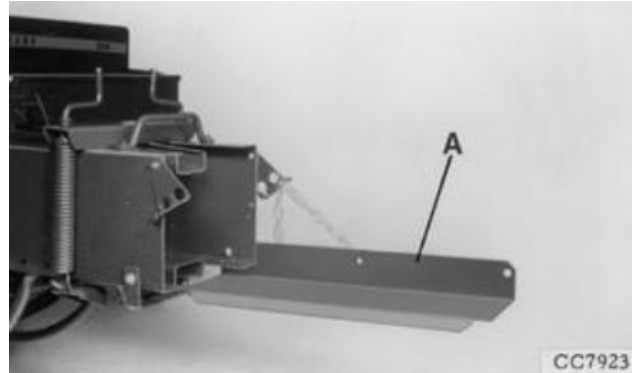
NOTE: The loading frame requires the use of the trailer hitch.

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Attachments

SIDE DROP BALE CHUTE (339)

The 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.



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-UN-06OCT98

SIDE DROP BALE CHUTE (349, 359 AND 459)

The 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.

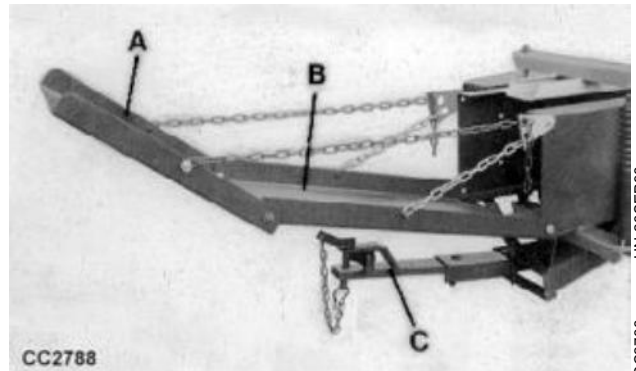


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-UN-23SEP98

TRAILER HITCH, BALE CHUTE AND BALE CHUTE EXTENSION

- These attachments allow the bales to be loaded directly from the baler to a trailer, thus eliminating the job of picking up bales.
- The bale chute extension (B) is attached by chains in the same way as the regular bale chute (A).
- The support of the adjustable trailer hitch (C) is bolted directly to the bale case. The telescopic trailer hitch is adjustable for trailers having tongues of variable length.



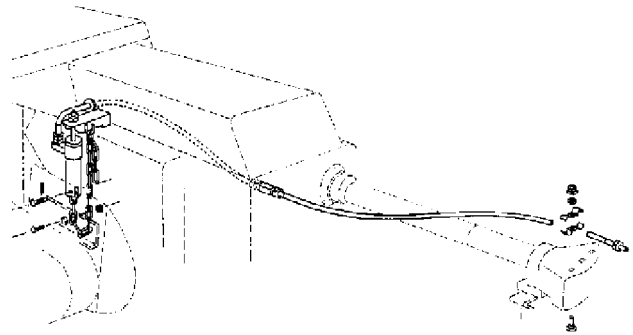
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CC2788
-UN-23SEP98

Attachments

HYDRAULIC PICKUP LIFT (349, 359 AND 459)

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



CC7834

CC,339SQB004365-19-01AUG98

WIRE CONTAINERS (349, 359 AND 459)

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

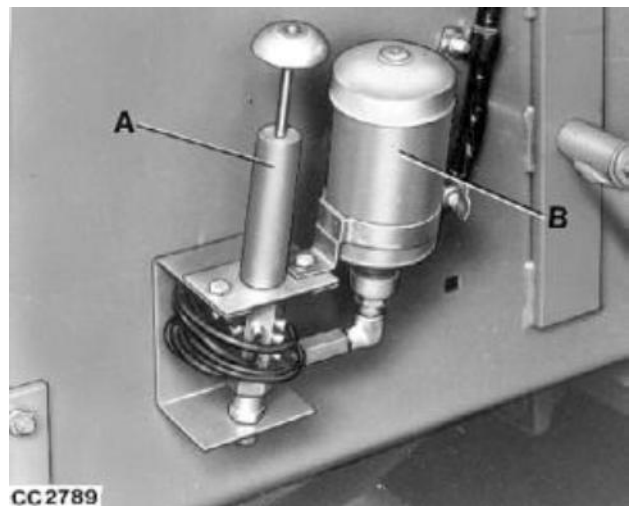


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MULTI-LUBER DEVICE (349)

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

- A—Pump
- B—Reservoir



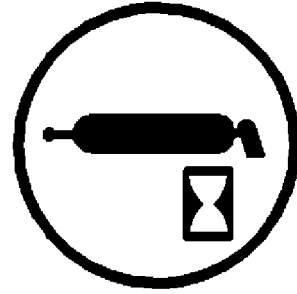
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Lubrication and Maintenance

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

CC,575RB 001329-19-15SEP98

-UN-05APR95
CC000934

GREASE

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

The following grease is preferred:

- John Deere SD POLYUREA GREASE

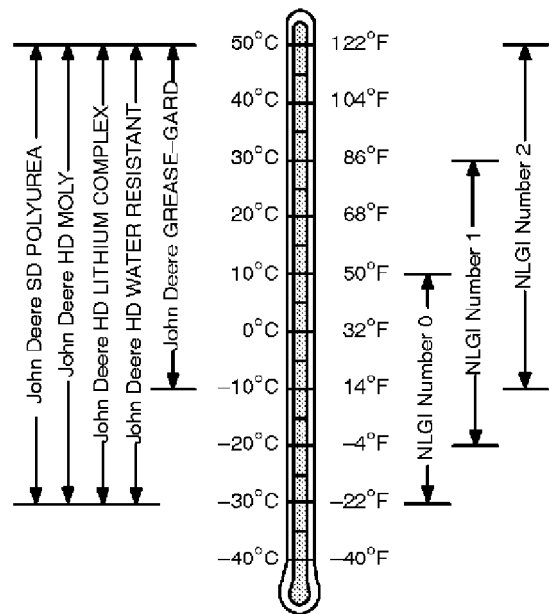
The following greases are also recommended:

- John Deere HD MOLY GREASE
- 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 thickener are not compatible with others.



-UN-30JUN99
TS1667

DX, GREAS1 -19-07JUL99

GEAR OIL

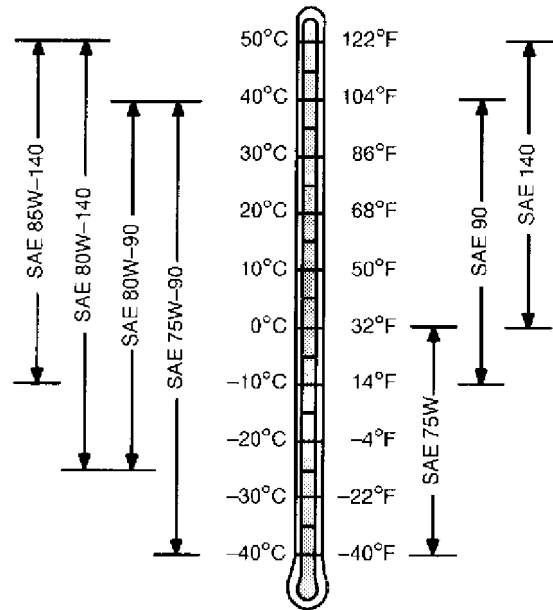
Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

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

Other oils may be used if they meet the following:

- API Service Classification GL-5



-UN-14MAR96

TS1653

DX,GEOIL -19-07JUL99

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:

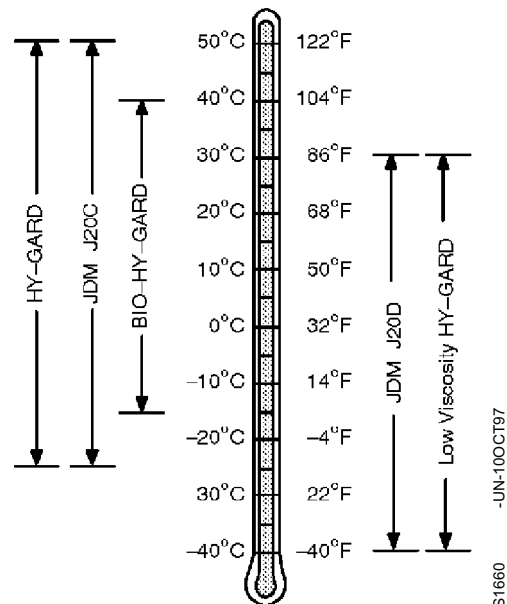
- John Deere HY-GARD®
- John Deere Low Viscosity HY-GARD®

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

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

Use the following oil when a biodegradable fluid is required:

- John Deere BIO-HY-GARD™¹



-UN-10OCT97

TS1660

DX,ANTI -19-10OCT97

¹BIO-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.

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.

Consult your John Deere dealer to obtain information and recommendations.

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.

DX,ALTER -19-18MAR96

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

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

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.

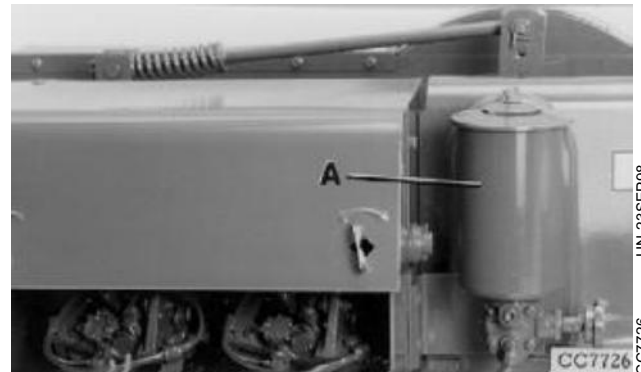
- Perform each lubrication and service illustrated in this Section.
- Clean grease fittings before using grease gun. Replace any lost or broken fittings immediately. If a new fitting fails to take grease, remove and check for failure of adjoining parts.

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AS REQUIRED—HYDRAULIC BALE TENSIONER

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

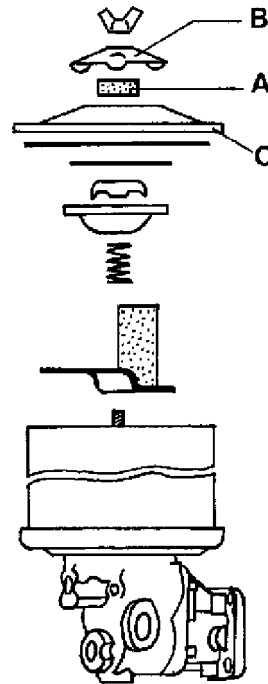
If necessary, add oil. Use a type specified under "Transmission and Hydraulic Oil" in this Section.



CC,339SQB004369-19-01AUG98

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.



CC2346

CC2346
-UN-06OCT98

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AS REQUIRED—TRACTOR PTO SHAFT

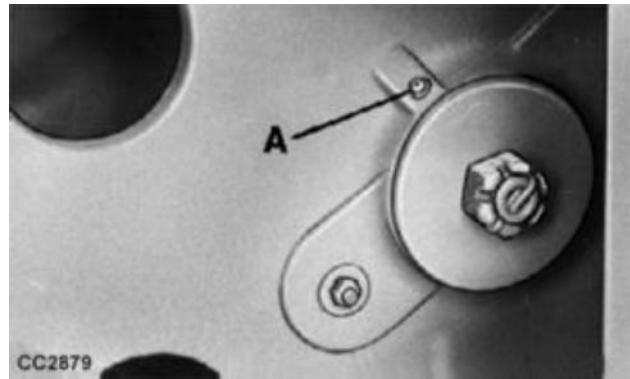
Coat tractor PTO shaft with John Deere GREASE GARD.

CC,339SQB004371-19-01AUG98

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.



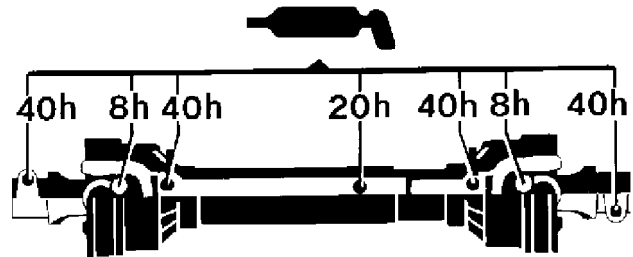
CC2879 -UN-23SEP98

CC,339SQB004372-19-01AUG98

AS REQUIRED—STANDARD POWERLINE

- Lubricate at the intervals indicated in the illustration opposite.

- Lubricate with John Deere GREASE GARD.



CC2338 -UN-25SEP98

CC,339SQB004373-19-01AUG98

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.



CC7720 -UN-23SEP98

CC,339SQB004374-19-01AUG98

EVERY 8 HOURS—(339)

Lubricate with John Deere GREASE GARD.

1—Plungerhead pitman

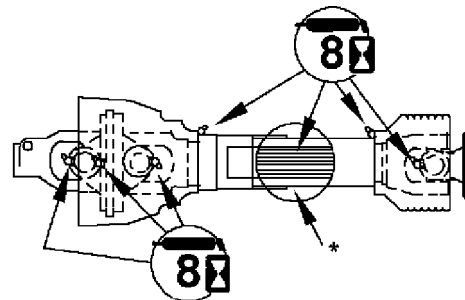


CC014020 -UN-24OCT98

CC,339SQB004391-19-01AUG98

EVERY 8 HOURS—CV POWERLINE

Lubricate with John Deere GREASE GARD.



CC014021

CC014021 -UN-24OCT98

* Grease guard tubes in winter to prevent freezing.

CC,339SQB004392-19-01AUG98

EVERY 10 HOURS—CHAINS

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

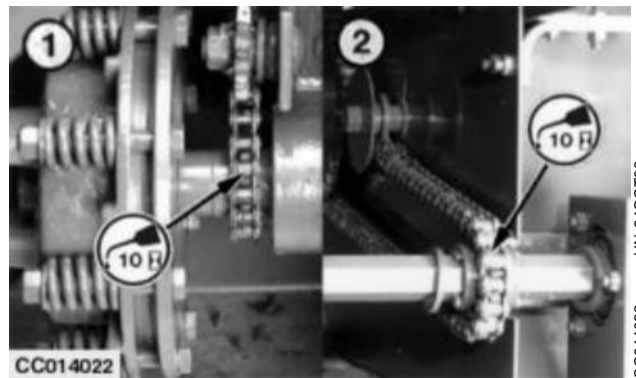
- Lubricate chains immediately after operation when the chains are still warm. Let the machine stand idle for a short period to insure effective oil penetration, resulting in longer chain life.

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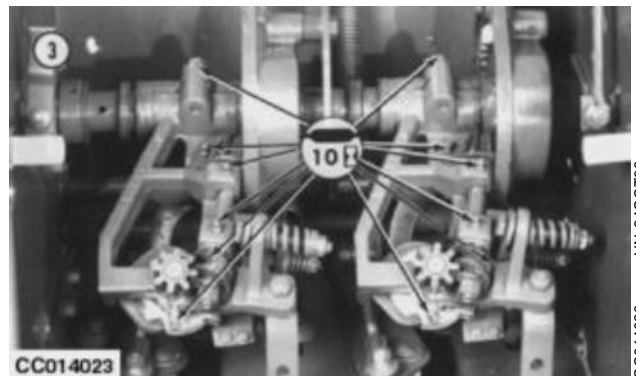
EVERY 10 HOURS

Lubricate with John Deere GREASE GARD.

- 1—Main drive chain
- 2—Feeder finger drive chain
- 3—Knotters (baler without Multiluber)



CC014022 -UN-24OCT98



CC014023 -UN-24OCT98

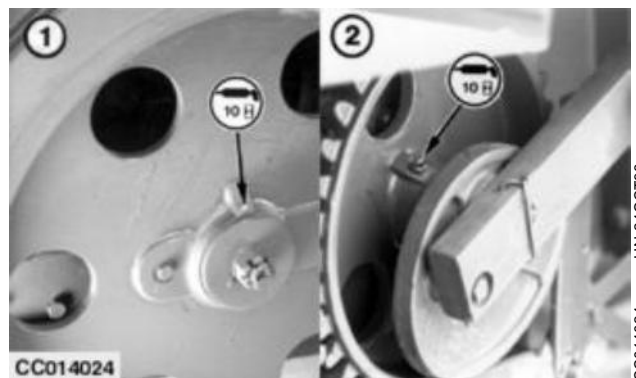
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EVERY 10 HOURS

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

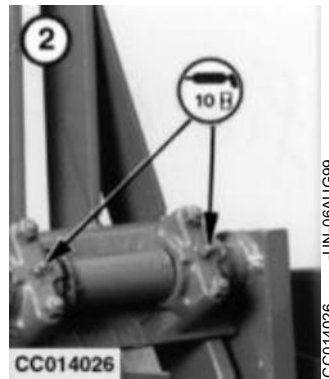
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EVERY 10 HOURS—(359 AND 459)

Lubricate with John Deere GREASE GARD.

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

- 1—Plungerhead pin
- 2—Feeder fingers (459)

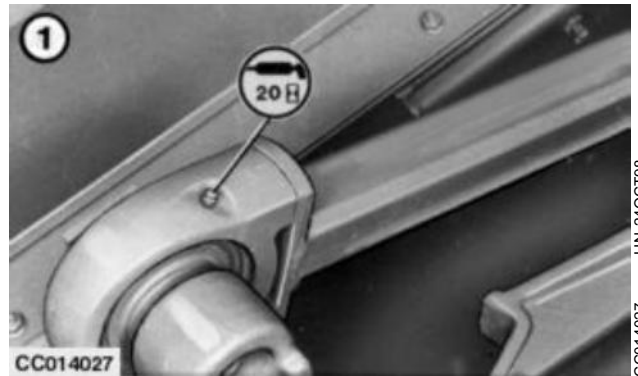


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EVERY 20 HOURS—(359 AND 459)

Lubricate with John Deere GREASE GARD.

- 1—Pitman bearing

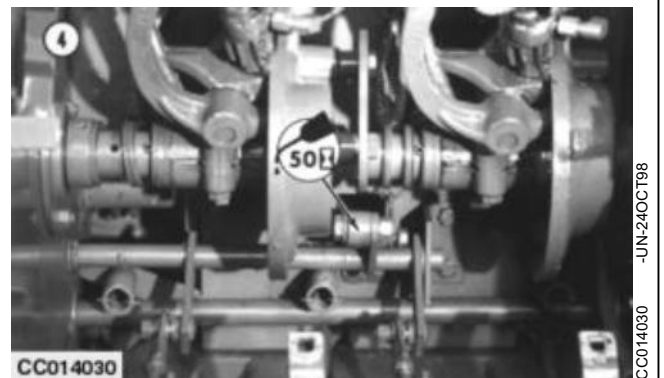
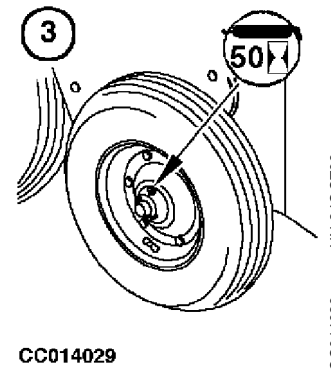
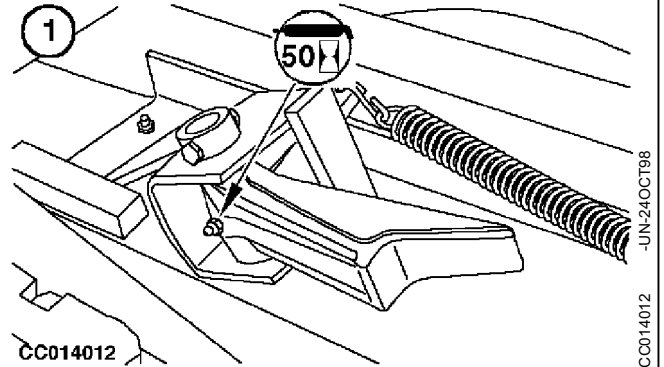


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EVERY 50 HOURS

Lubricate with John Deere GREASE GARD.

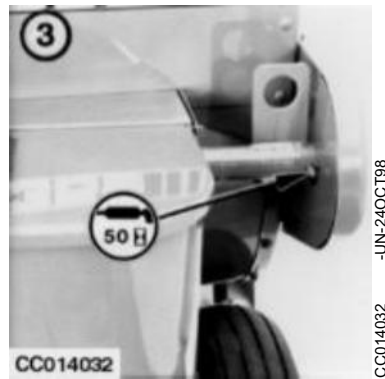
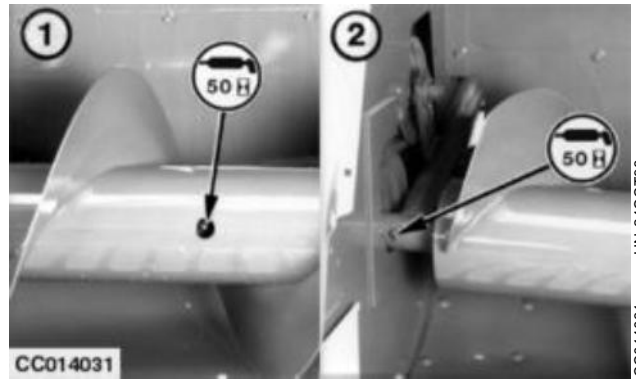
- 1—Plungerhead safety stop
- 2—Needle frame pin (lubricate both sides)
- 3—Pickup gauge wheel
- 4—Tucker finger drive roller



EVERY 50 HOURS

Lubricate with John Deere GREASE GARD.

- 1—Auger center grease fitting
- 2—Auger right-hand side grease fitting
- 3—Auger drive grease fitting

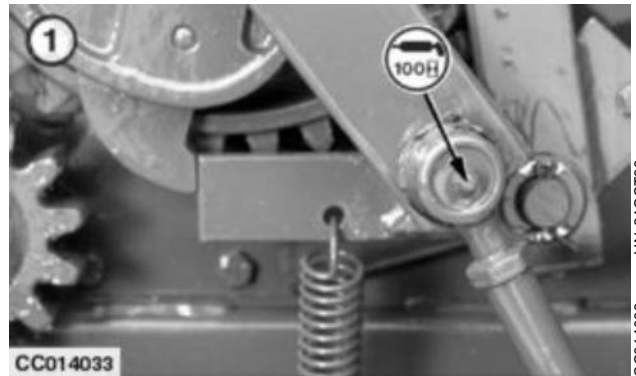


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EVERY 100 HOURS

Lubricate with John Deere GREASE GARD.

- 1—Needle lift link
- 2—Needle frame pin



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EVERY 100 HOURS

Lubricate with John Deere GREASE GARD.

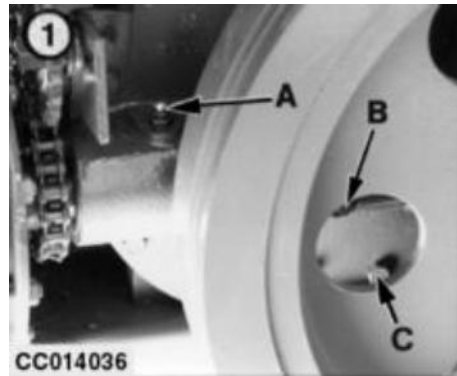
1—Slip clutch (balers with CV powerline)



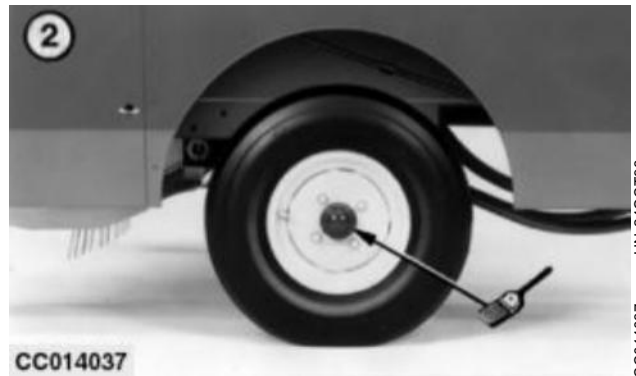
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EVERY SEASON

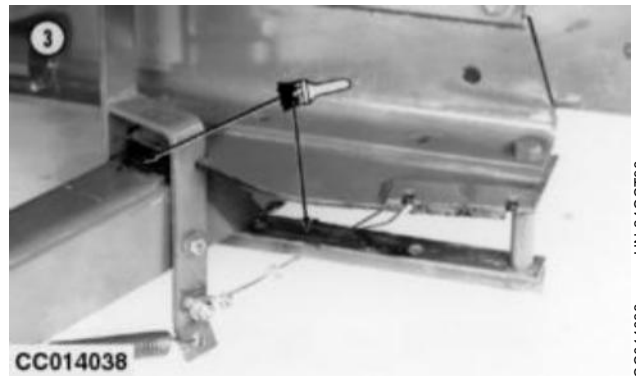
1. Check oil level and fill gear case to check plug level using a type specified under "Gear Oil" in this Section. Capacity: 3.8 l (1 US.gal).



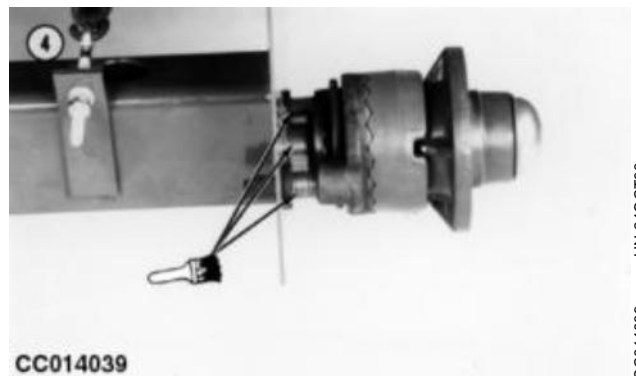
2. Remove wheels, clean, repack and adjust bearings. Lubricate with John Deere GREASE GARD.



3. Tongue. Lubricate with John Deere GREASE GARD.



4. Wheel lock axle (349, 359 and 459). Lubricate with John Deere GREASE GARD.

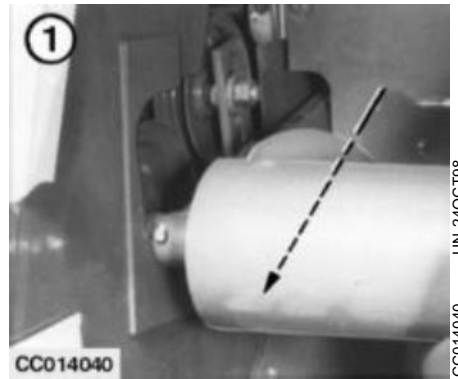


- A—Refill plug
- B—Check plug
- C—Drain plug

EVERY SEASON—(459)

Lubricate with John Deere GREASE GARD.

1—Wooden auger bearing



CC,339SQB004404-19-01AUG98

Troubleshooting

CAUTION: Do not take chances! Before working on baler, disengage tractor PTO, shut off the 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.

CC,339SQB004405-19-01AUG98

KNOTTER DIFFICULTIES



CC013999

CC013999 -JUN-22OCT98

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. Adjust twine disk and/or needles. Check twine tension at twine disk and twine box. Install plungerhead extensions.
	Hay dogs not holding end of bale*	Free seized hay dogs. Replace broken hay dog springs. Reduce feeding rate. Install plungerhead extensions.

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

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KNOTTER DIFFICULTIES—CONTINUED



CC014000 -JUN-22OCT98

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.
	Hay dogs not holding end of bale*	Adjust twine disk and/or needles. Check twine tension at twine disk and twine box. Install plungerhead extensions. Free seized hay dogs. Replace broken hay dog springs. Reduce feeding rate. 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 holder spring. 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.

Continued on next page

Troubleshooting

Symptom	Problem	Solution
Twine ends frayed	Dull twine knife	Sharpen or replace knife.

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

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KNOTTER DIFFICULTIES—CONTINUED



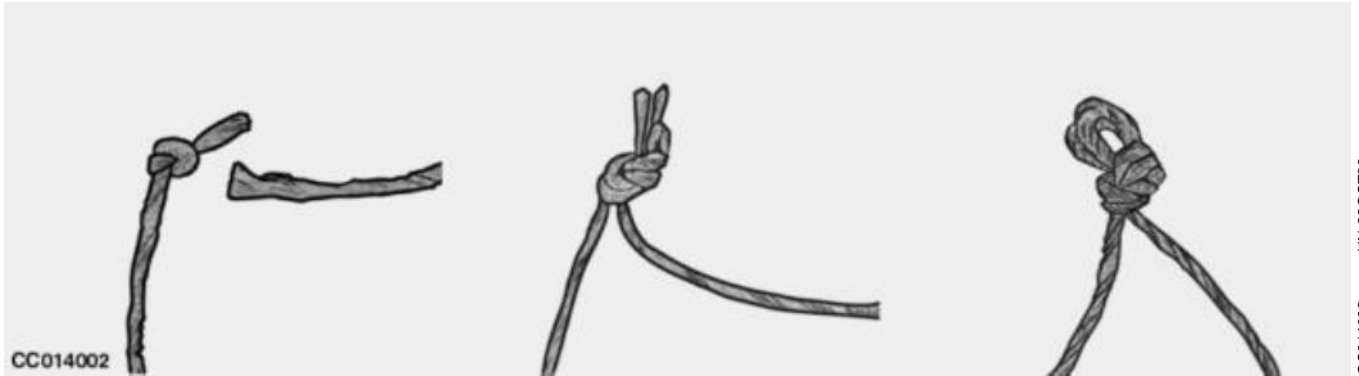
CC014001

CC014001 -JN-22OCT98

Symptom	Problem	Solution
Knot too loose	Worn or damaged billhook tongue	Replace billhook. See your 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 holder	Tighten twine disk holder 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.

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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 will usually be shorter than mating twine tied on opposite side of bale.)	Increase tension on twine holder disk spring and/or decrease bale tension.
	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.)	Relocate feeder fingers. Decrease tension on twine holder disk spring.
		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.
	Twine hanging up on knife arm	Adjust timing of twine disks. 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.

Continued on next page

Troubleshooting

Symptom	Problem	Solution
	Billhook pressure arm spring to loose	<p>Tighten adjusting nut on billhook pressure arm spring.</p> <p>Bend knife arm to obtain more clearance between knife and twine disk.</p> <p>Check knife arm cam in intermittent gear for excessive wear. Replace gear if cam is worn.</p>

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KNOTTER DIFFICULTIES—CONTINUED

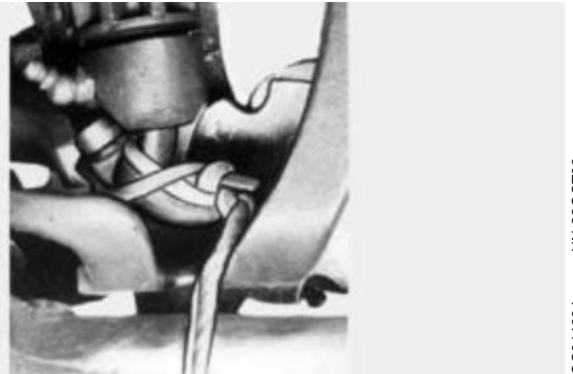
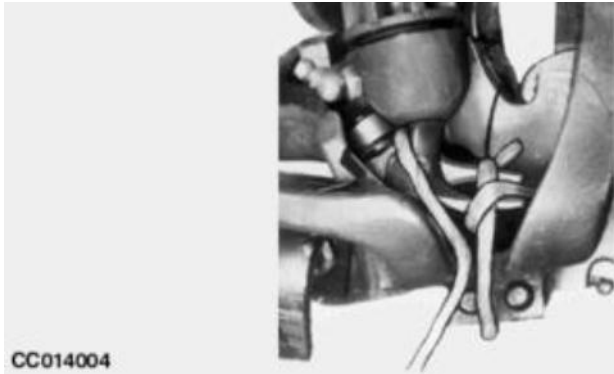


CC014003 -JN-22OCT98

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.
	Twine is not sliding back on knife arm properly	Check knife arm cam in intermittent gear for excessive wear. Replace gear if cam is worn. 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 to 25 mm (0.51 to 0.98 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 to 32 mm (0.75 to 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.

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KNOTTER DIFFICULTIES—CONTINUED

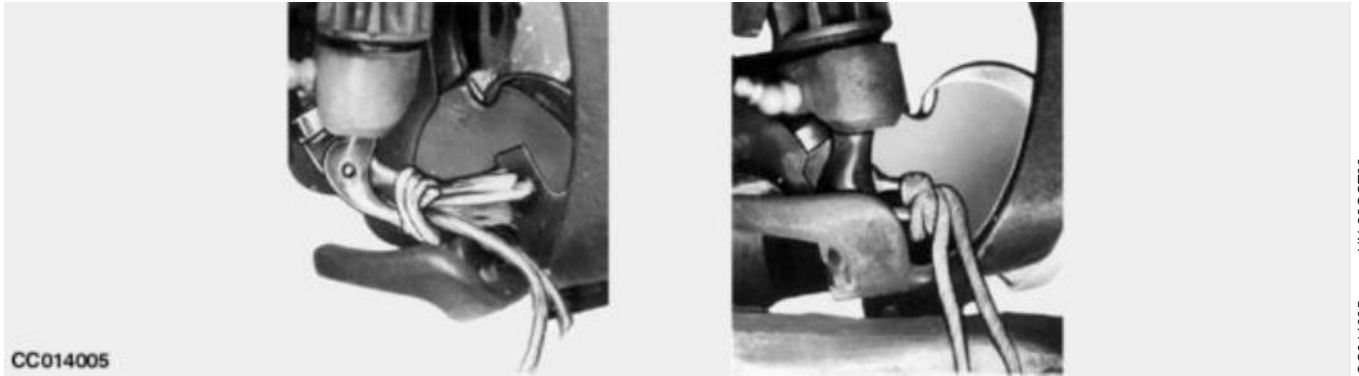


CC014004 -UN-22OCT98

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

CC,339SQB004411-19-01AUG98

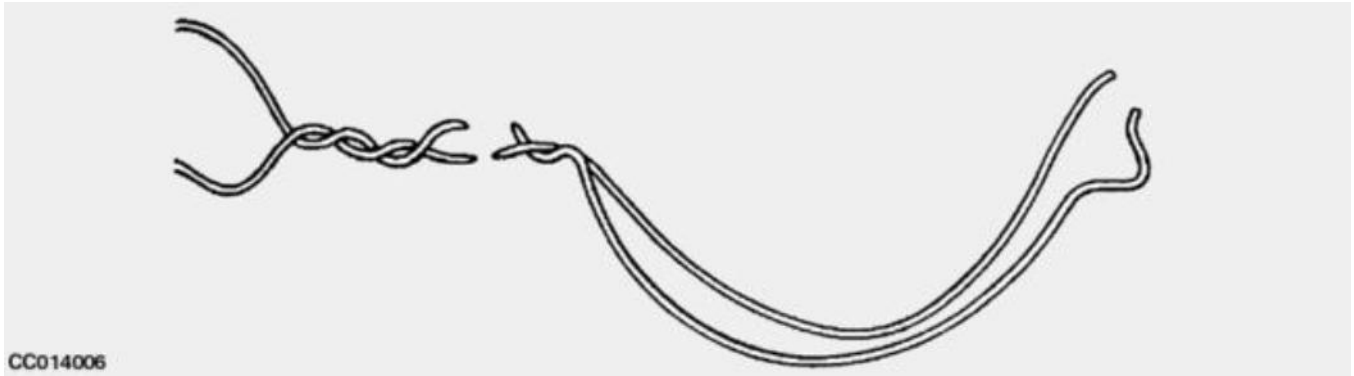
KNOTTER DIFFICULTIES—CONTINUED



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 your John Deere dealer.
	Insufficient bale density	Increase bale density.
	Twine tension too high	Reduce tension.
Needle twine goes under billhook tongue during first quarter of billhook travel	Improper twine disk adjustment	Adjust disk timing.
	Tucker fingers not carrying twine back to tying position	Adjust tucker fingers.

CC,339SQB004412-19-01AUG98

TWISTER MECHANISM DIFFICULTIES



CC014006 -JN-22OCT98

Symptom	Problem	Solution
<p>“Tails”: One end cut and other end twisted off</p>	<p>Radius on top of twister hook too sharp</p>	<p>Polish throat of twister hook.</p> <p>Install new twister hook.</p> <p>Retard twister hook to specified range.</p>
	<p>Excessive wire tension between bale and wire coil during first stage of tying cycle</p>	<p>Check all wire pulleys. Pulleys must turn freely.</p> <p>Check for proper wire threading.</p> <p>Make sure all of knockout disk is removed from front of wire carton.</p> <p>Check for any indication where wire has been catching.</p> <p>Check front of needle for grooves or build-up of foreign material retarding wire flow.</p> <p>Check for rough or uneven wire.</p> <p>Check top wire guide for grooves deep enough to cause wire to wedge.</p>

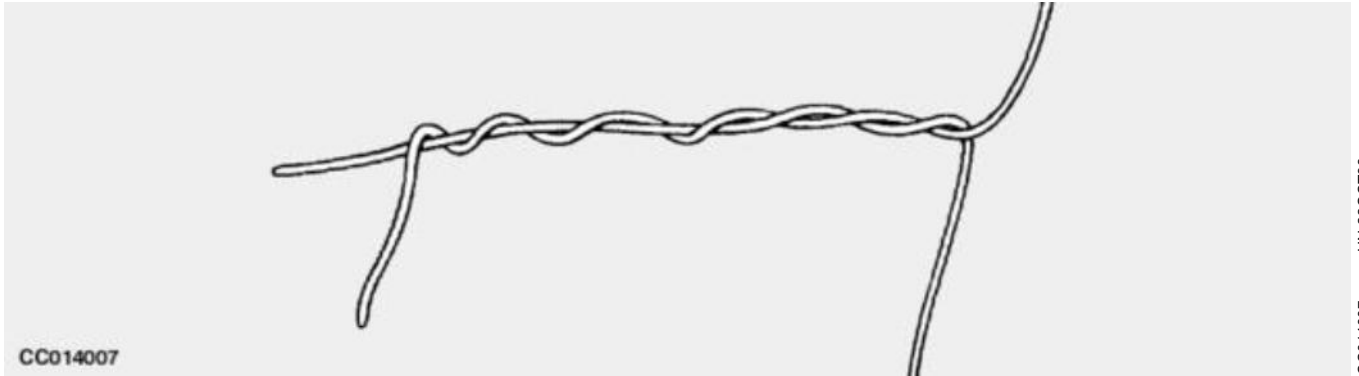
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Troubleshooting

Symptom	Problem	Solution
	Wire cannot feed down twister hook slots because of rough twister shaft	Polish or replace shaft.

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TWISTER MECHANISM DIFFICULTIES—CONTINUED

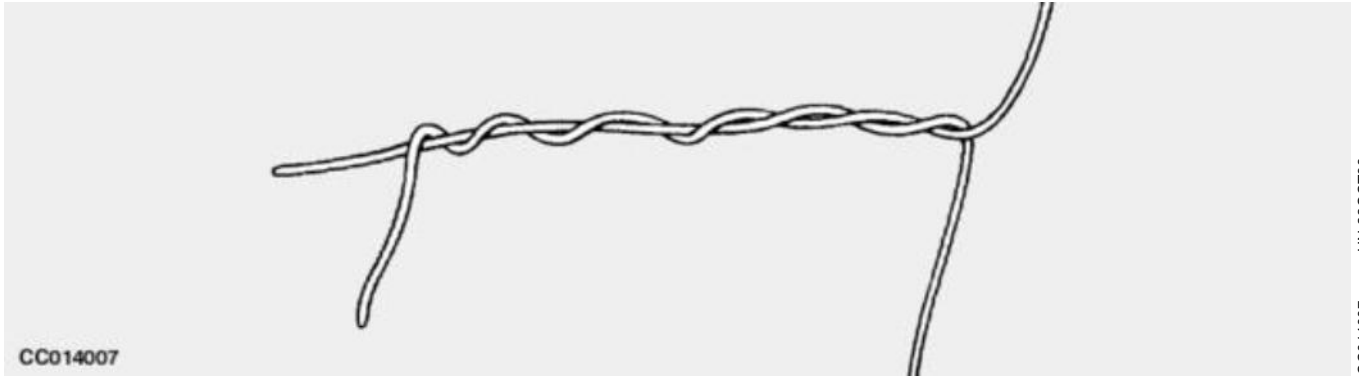


CC014007 -JN-22OCT98

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

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TWISTER MECHANISM DIFFICULTIES—CONTINUED



Symptom

Knot consists of one wire twisted around the other (Continued)

Problem

Twister hook catches needle wire on second revolution instead of first

Hay dogs not holding end of bale

Solution

Adjust needle closer to gripper.

Check timing.

Replace bent needle.

Install plungerhead extensions.

Free seized hay dogs.

Reduce feeding rate.

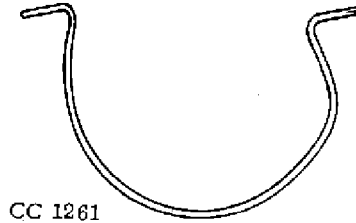
Replace broken hay dog springs.

Install plungerhead extensions.

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CC014007 -JN-22OCT98

TWISTER MECHANISM DIFFICULTIES—CONTINUED



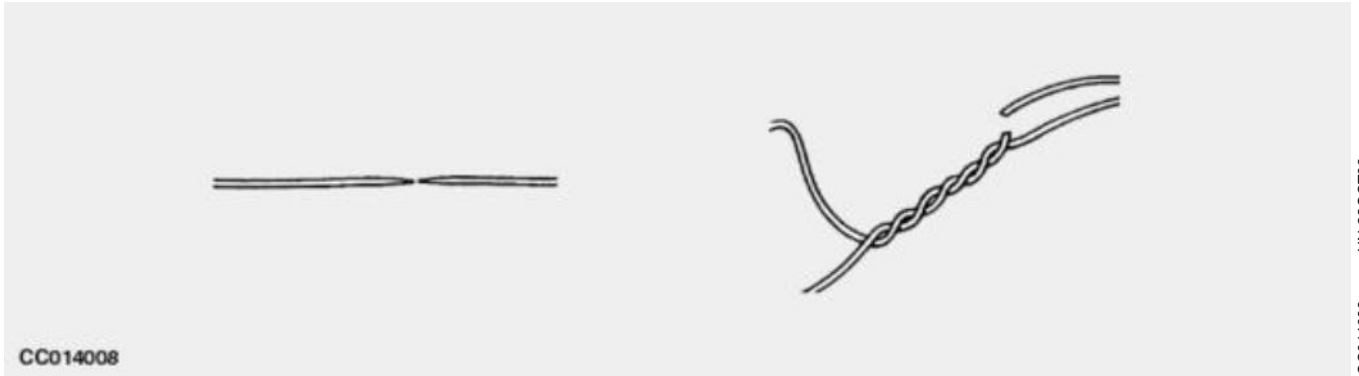
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CC1261

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.
	Gripper nose extremely rough or grooved	Replace needle, if damaged. Grind gripper nose or replace gripper.

CC,339SQB004416-19-01AUG98

TWISTER MECHANISM DIFFICULTIES—CONTINUED



CC014008 -JN-22OCT98

Symptom	Problem	Solution
Tension break on top of bale	Force required to feed wire around bale exceeds wire strength	<p>Reduce bale density (it may be necessary to remove side hay resistors).</p> <p>Oil wire coils (light oil).</p> <p>Adjust feeder fingers to put less hay on side where wire is breaking.</p> <p>Use proper size wire (1.9 mm dia., 14-1/2 gauge).</p> <p>Change wire coils.</p>
	Too much force required to pull wire from wire cartons	<p>Check wire pulleys. Pulleys must turn freely.</p> <p>Check for proper wire threading.</p> <p>Make sure all of the knockout disk is removed from the front of wire cartons.</p> <p>Check for any indication of catching wire.</p> <p>Check front of needle for grooves or buildup of foreign material retarding wire flow.</p> <p>Check for rough or uneven wire.</p> <p>Check top wire guide for grooves deep enough to cause wire to wedge.</p>

Continued on next page

Troubleshooting

Symptom	Problem	Solution
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.
	Tension breaks	See "Tension Break on Top of Bale" in this Section.

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TWISTER MECHANISM DIFFICULTIES—CONTINUED

Symptom	Problem	Solution
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 cutting clean	Wire not placed in gripper	Adjust needle.
	Worn or broken parts	Replace parts as necessary.
Wires not twisted together	Gripper and shear blade assembly not adjusted properly	Place shims between top of gripper arm and mounting plate.
	Foreign material in twister assembly	Clean twister assembly.
	Needles not adjusted properly	Adjust needles.
Excessive wear on indexing surfaces of intermittent gear and pinion	Spring seized in gripper drive tube assembly	Clean gripper drive tube.
	Twister hooks retarded beyond maximum limits	Advance twister hooks.

CC,339SQB004418-19-01AUG98

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 "Broken Oil Lines" in "Service" Section.
	Lubricant of wrong viscosity	Use lubricant approved for multi-luber. See "Lubrication and Maintenance" Section.

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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.
		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 "Starting and Operating the Baler" in "Operating the Baler" Section.
Ragged bale	Dull knives	Sharpen knives.
	Plungerhead out of adjustment	Adjust plungerhead.

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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.

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FEEDING 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.

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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.

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POWER DRIVE DIFFICULTIES

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

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SHEAR BOLT DIFFICULTIES

Symptom	Problem	Solution
Flywheel shear bolt sheared	Dull knives	Sharpen knives.
	Obstruction in bale chamber	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.

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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.

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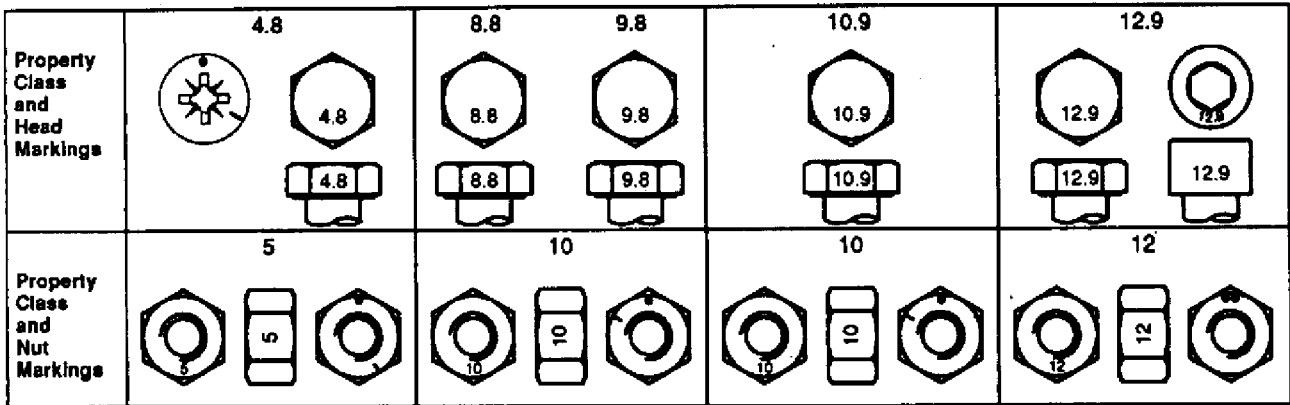
WHEEL LOCK DEVICE

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

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Service

METRIC BOLT AND CAP SCREW TORQUE VALUES



TS1163 -19-04MAR91

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

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

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

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

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

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

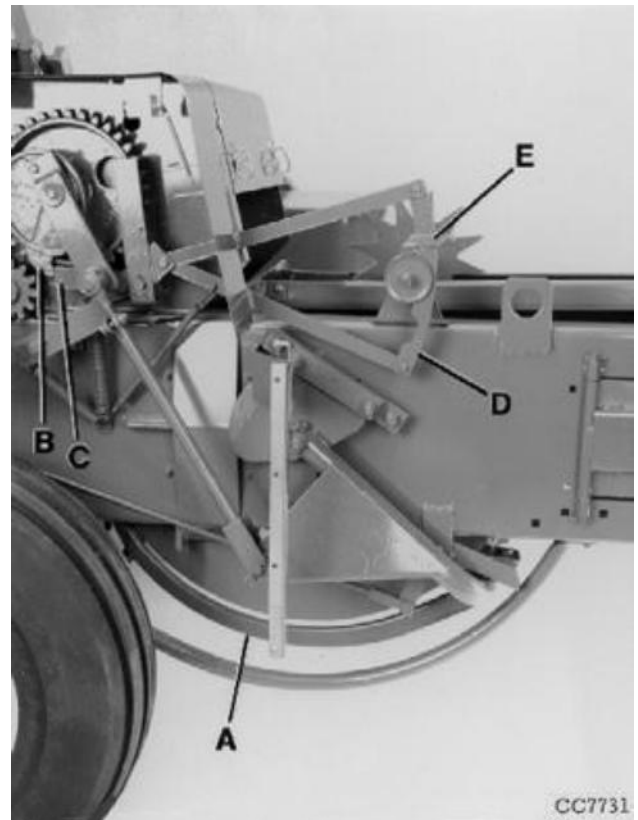
Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

PLACING NEEDLES IN HOME POSITION

Needles are in home position when:

- Needles (A) are in the rearmost position, trip dog (B) contacts trip arm (C) and 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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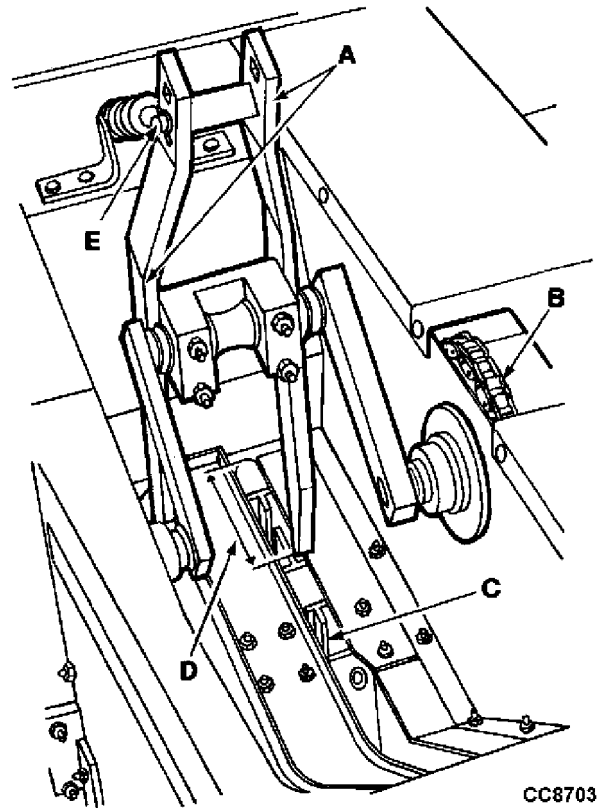
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TIMING THE BALER (339, 349 AND 359)

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 should be made as the baler is turned 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-hand corner of front feeder tooth and left-hand end of front tooth slot is 240 to 290 mm (9.44 to 11.41 in.) on 339 or 292 to 342 mm (11.49 to 13.46 in.) on 349 and 359.
- If not, disconnect feeder drive chain (B) and set tooth to obtain a distance measured horizontally of 265 mm (10.43 in.) on 339 or 317 mm (12.48 in.) on 349 and 359. 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.



CC8703

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CC8703

- A—Feeder fingers
- B—Drive chain
- C—Plungerhead
- D—240 to 290 mm (9.44 to 11.41 in.) on 339
292 to 342 mm (11.49 to 13.46 in.) on 349 and 359
- E—Pivot pin

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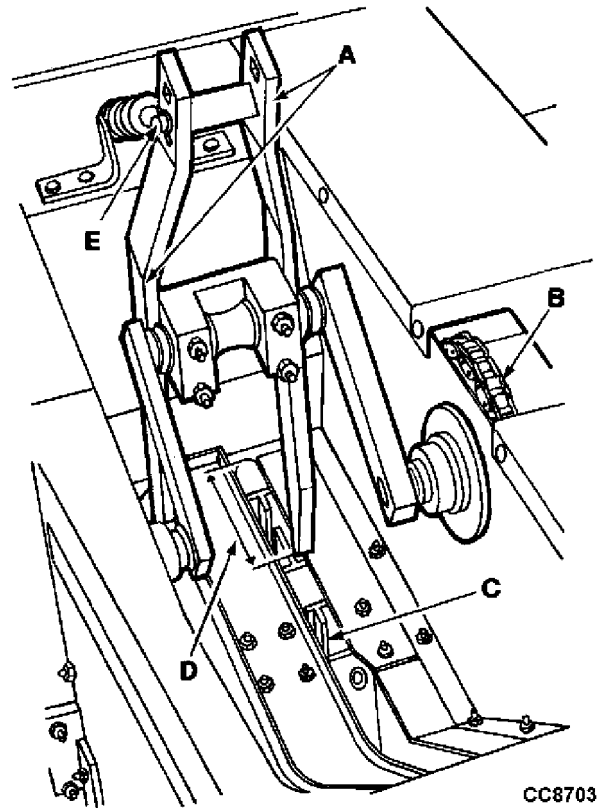
TIMING THE BALER (339, 349 AND 359)—CONTINUED

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

IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead/needles. See “Plungerhead/Needles—Synchronization” in this Section.

- With feeder pivot pin in any of the recommended positions (see “Adjusting Feeder Fingers” in “Operating the Baler” Section), move plungerhead 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 and check position of plungerhead. See “Plungerhead/Needles—Basic Adjustment”. Readjust synchronization of plungerhead/needles if necessary. See “Plungerhead/Needles—Synchronization” in this Section.



CC8703

CC8703 -UN-05OCT98

- A—Feeder fingers
- B—Drive chain
- C—Plungerhead
- D—240 to 290 mm (9.44 to 11.41 in.) on 339
292 to 342 mm (11.49 to 13.46 in.) on 349 and 359
- E—Pivot pin

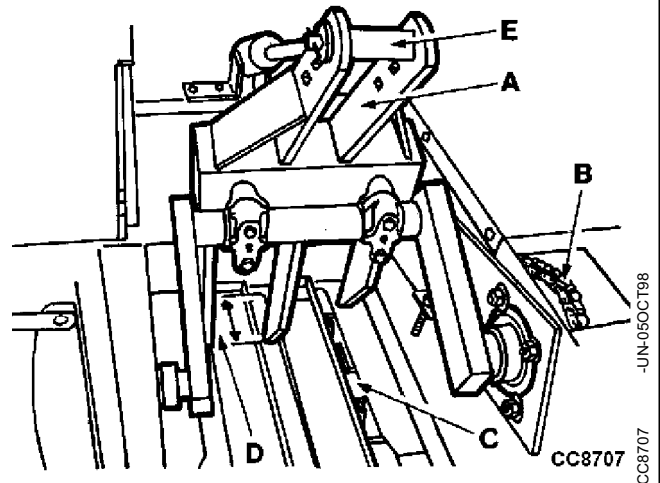
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TIMING THE BALER (459 WITHOUT DOUBLE FEEDER FORK)

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 should be made as the baler is turned 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-hand corner of center feeder tooth and left-hand end of center tooth slot is 230 to 250 mm (9.05 to 9.84 in.).
- If not, disconnect feeder drive chain (B) and set tooth to obtain a distance measured horizontally of 240 mm (9.44 in.). 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—Drive chain
- C—Plungerhead
- D—230 to 250 mm (9.05 to 9.84 in.)
- E—Pivot pin

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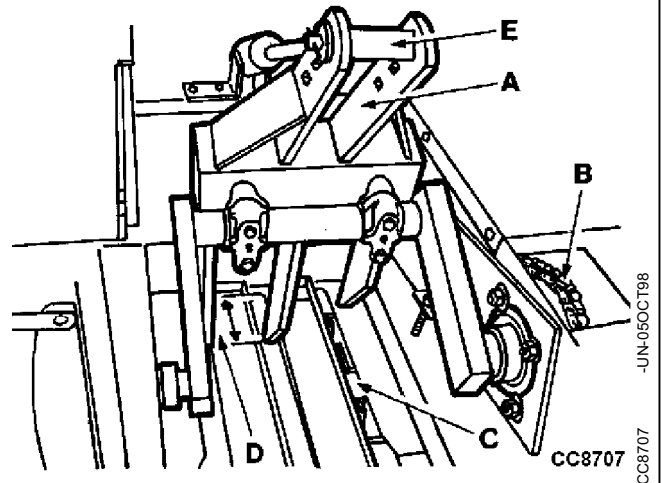
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TIMING THE BALER (459 WITHOUT DOUBLE FEEDER FORK)—CONTINUED

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

IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead/needles. See “Plungerhead/Needles—Synchronization” in this Section.

- With feeder pivot pin in any of the recommended positions (see “Adjusting Feeder Fingers” in “Operating the Baler” Section), move plungerhead 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 and check position of plungerhead. See “Plungerhead/Needles—Basic Adjustment”. Readjust synchronization of plungerhead/needles if necessary. See “Plungerhead/Needles—Synchronization” in this Section.



- A—Feeder fingers
- B—Drive chain
- C—Plungerhead
- D—230 to 250 mm (9.05 to 9.84 in.)
- E—Pivot pin

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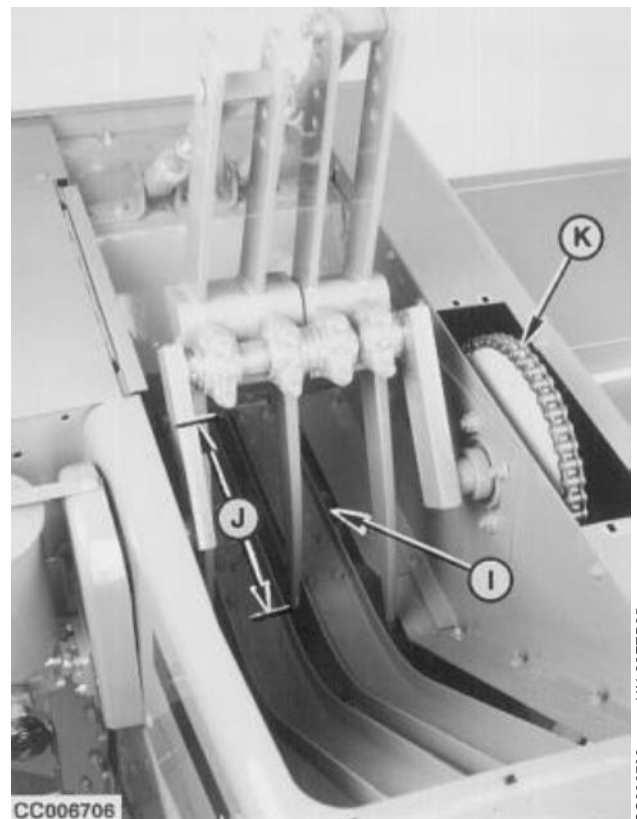
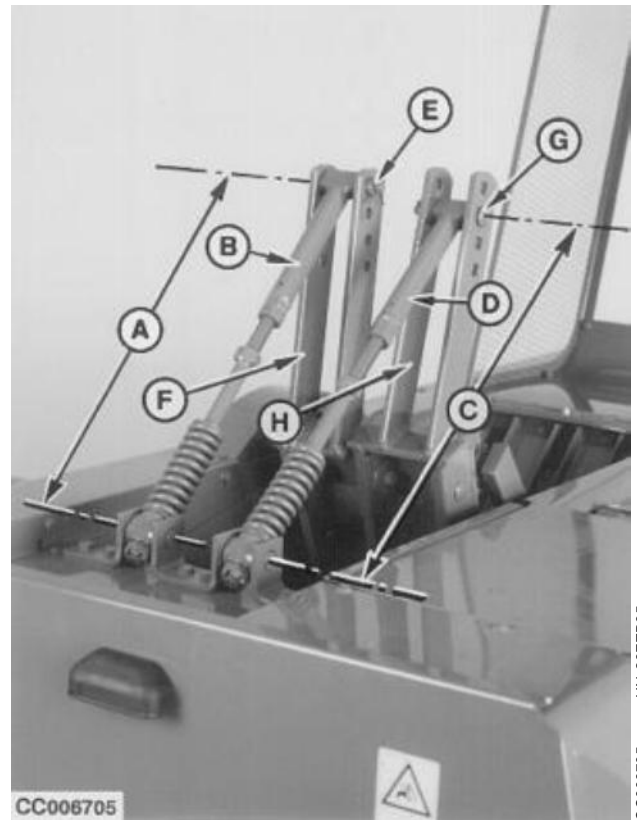
TIMING THE BALER (459 WITH DOUBLE FEEDER FORK AND ADJUSTABLE FRONT PITMAN)

Timing is controlled by the main drive chain, feeder drive chain and the knottter drive gears. Check all timing operations before operating baler. Each of the following checks or adjustments should be made as the baler is turned 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 finger (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-hand corner of center feeder tooth and left-hand 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. 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 finger
- G—Pivot pin
- H—Rear feeder fingers
- I—Plungerhead
- J—390 mm (15.35 in.)
- K—Drive chain



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TIMING THE BALER (459 WITH DOUBLE FEEDER FORK AND ADJUSTABLE FRONT PITMAN)—CONTINUED

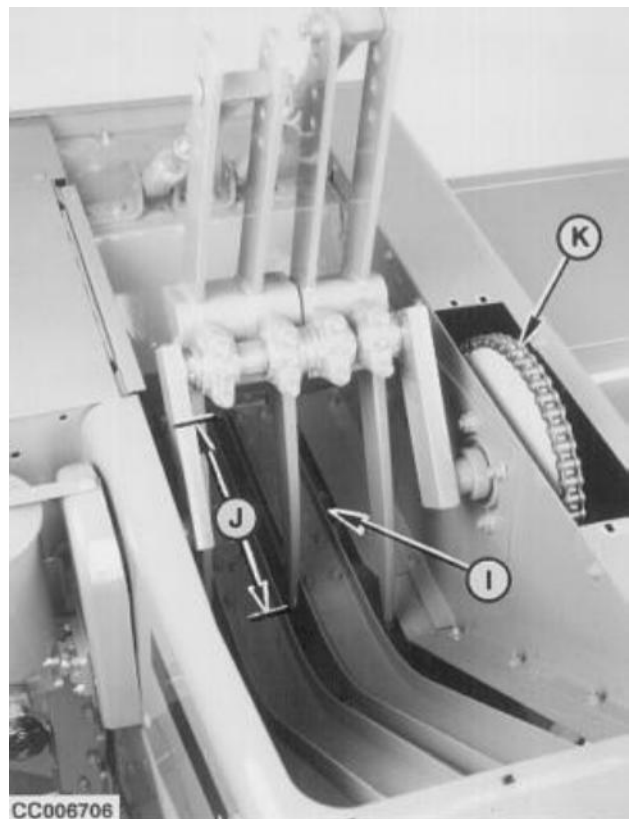
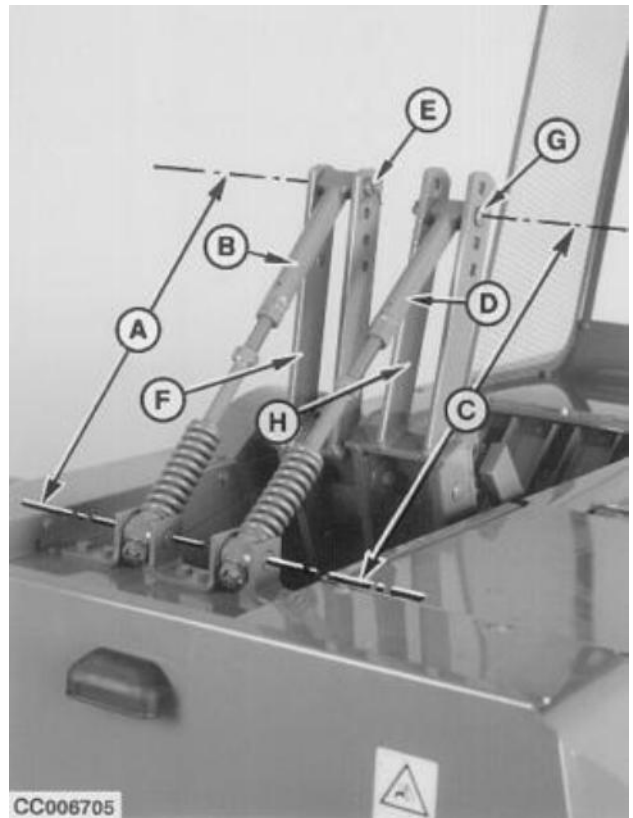
- After connecting chain, relocate plungerhead face in slot center. If dimension (J) cannot be obtained, retime feeder. For a finer adjustment use the main drive chain instead of the feeder drive chain.

IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead/needles. See “Plungerhead/Needles—Synchronization” in this Section.

- With feeder pivot pin in any of the recommended positions (see “Adjusting Feeder Fingers” in “Operating the Baler” Section), move plungerhead 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 and check position of plungerhead. See “Plungerhead/Needles—Basic Adjustment”. Readjust synchronization of plungerhead/needles if necessary. See “Plungerhead/Needles—Synchronization” 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 finger
- G—Pivot pin
- H—Rear feeder fingers
- I—Plungerhead
- J—390 mm (15.35 in.)
- K—Drive chain



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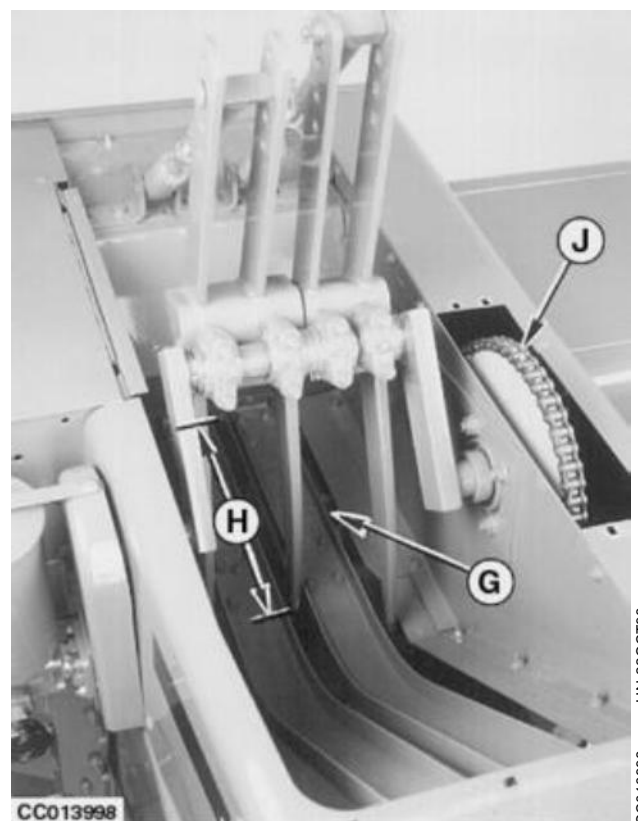
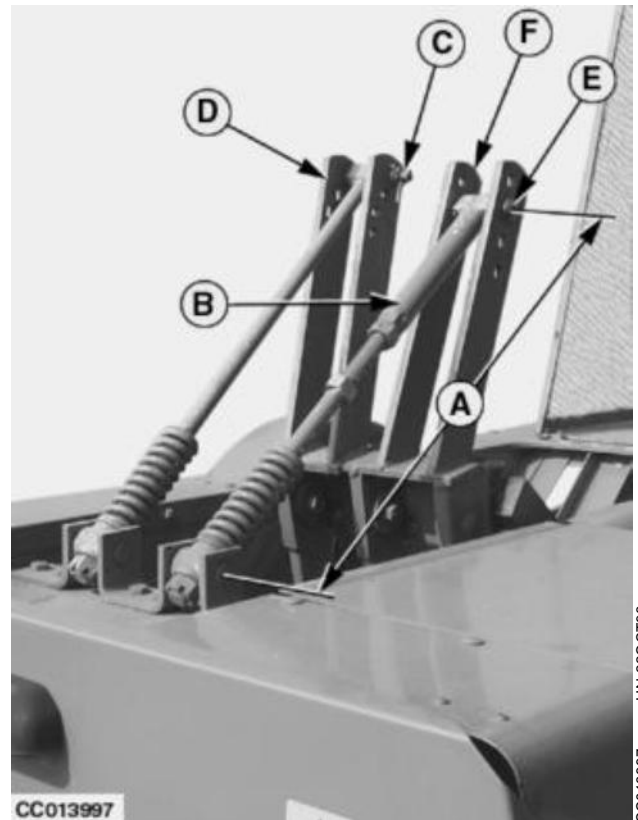
TIMING THE BALER (459 WITH DOUBLE FEEDER FORK AND NON-ADJUSTABLE FRONT PITMAN)

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 should be made as the baler is turned 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 finger (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-hand corner of center feeder tooth and left-hand 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. 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 finger
- E—Pivot pin
- F—Rear feeder fingers
- G—Plungerhead
- H—390 mm (15.35 in.)
- J—Drive chain



Continued overleaf

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TIMING THE BALER (459 WITH DOUBLE FEEDER FORK AND NON-ADJUSTABLE FRONT PITMAN)—CONTINUED

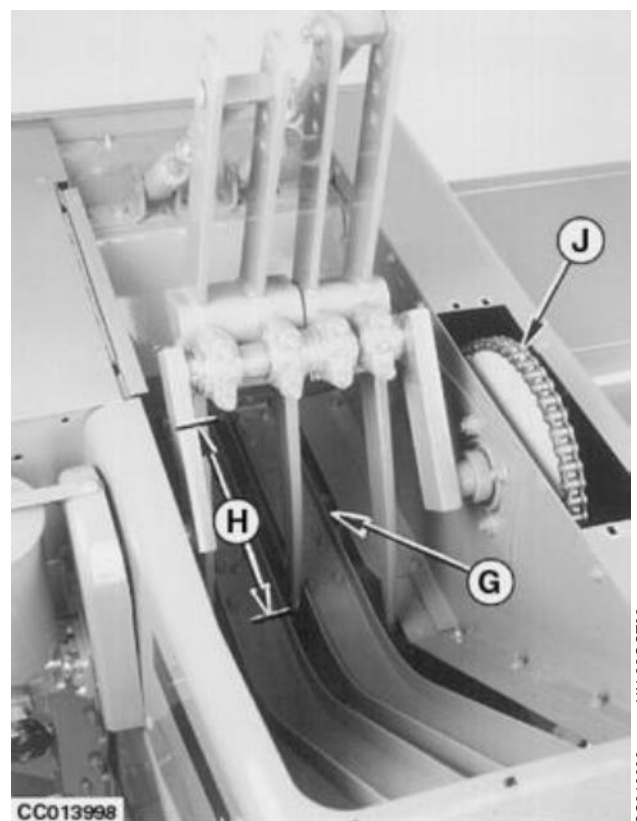
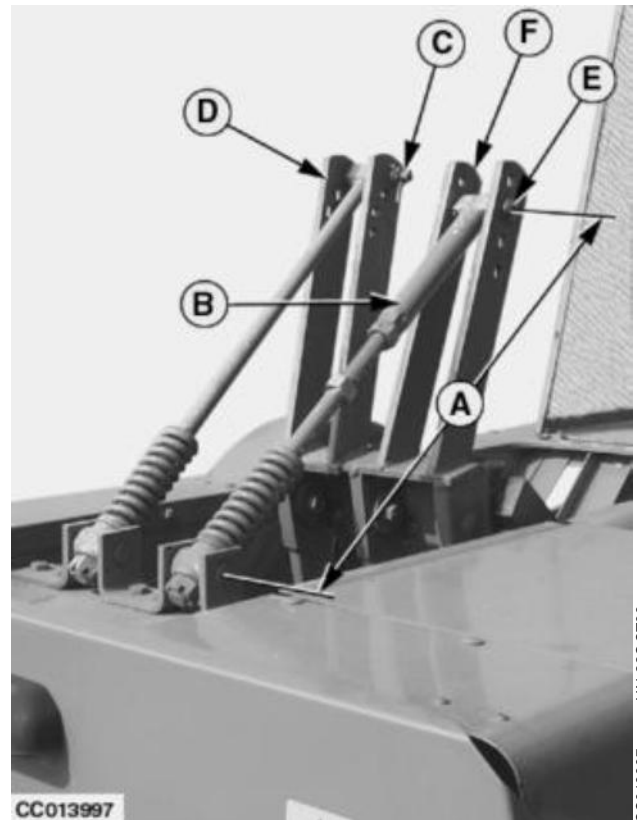
- After connecting chain, relocate plungerhead face in slot center. If dimension (H) cannot be obtained, retime feeder. For a finer adjustment use the main drive chain instead of the feeder drive chain.

IMPORTANT: Using the main drive chain for timing may require synchronization of plungerhead/needles. See “Plungerhead/Needles—Synchronization” in this Section.

- With feeder pivot pin in any of the recommended positions (see “Adjusting Feeder Fingers” in “Operating the Baler” Section), move plungerhead 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 and check position of plungerhead. See “Plungerhead/Needles—Basic Adjustment”. Readjust synchronization of plungerhead/needles if necessary. See “Plungerhead/Needles—Synchronization” in this Section.

- A—552 mm (21.73 in.)
- B—Rear pitman
- C—Pivot pin
- D—Front feeder finger
- E—Pivot pin
- F—Rear feeder fingers
- G—Plungerhead
- H—390 mm (15.35 in.)
- J—Drive chain



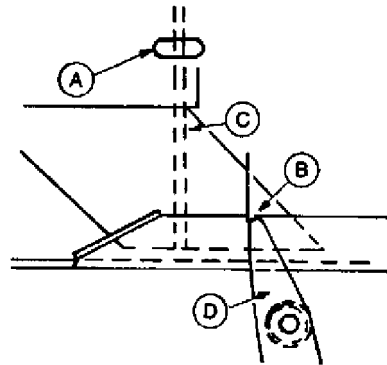
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PLUNGERHEAD/NEEDLES —BASIC ADJUSTMENT

On Twine Baler:

- Position plungerhead to needles as shown.

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



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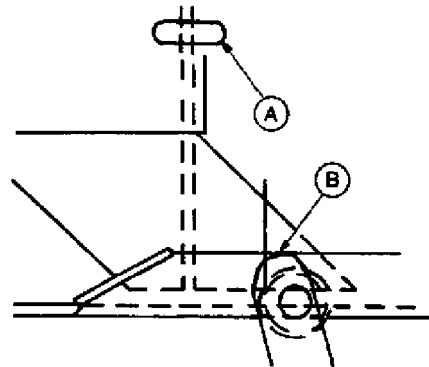
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On Wire Baler:

- Position plungerhead relative to front of needle pulley as shown.

- A—Face of plungerhead in slot of side of bale case
- B—Needle flush with top edge of bale groove
- C—Face of plungerhead
- D—Needle



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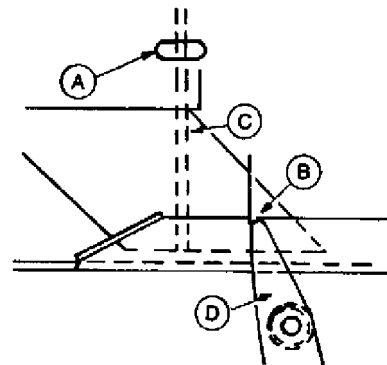
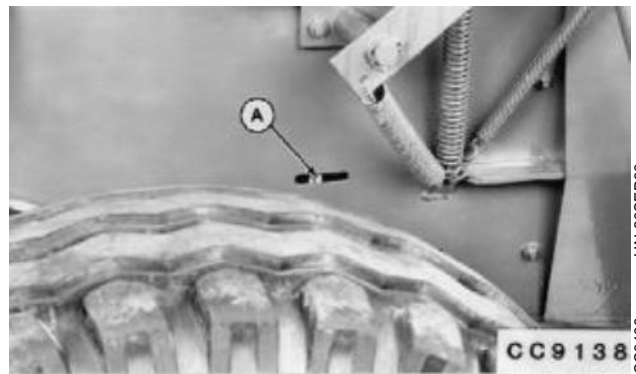
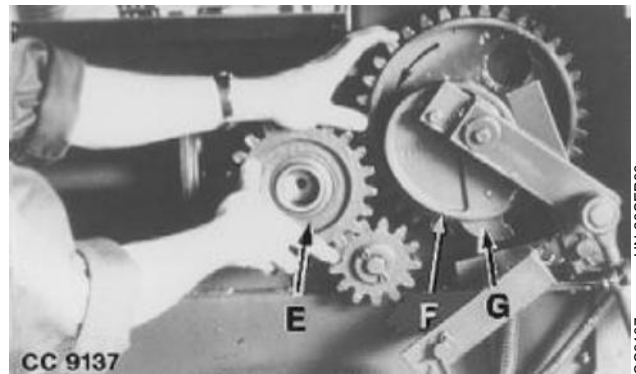
PLUNGERHEAD/NEEDLES —SYNCHRONIZATION

- If needles 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.
- Move plungerhead face to centre of slot (A). Rotate clutch ring (F) (counterclockwise) until it contacts trip dog roller (G).

IMPORTANT: Cluster gear (E) should 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 the needles (D) out of bale case (by hand). Move flywheel slowly forward 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 of 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

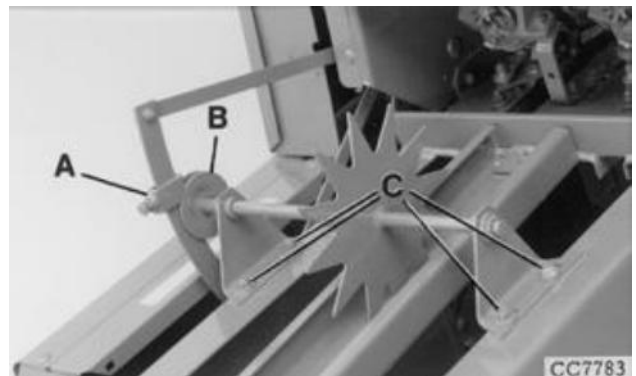


Twine baler shown

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ADJUSTING BALE MEASURING CONTROL

- Locate the needles in “home” position as shown with measuring arm stop (A) resting on the measuring wheel shaft sheave (B).
- Slightly loosen the four measuring wheel mounting bolts (C).



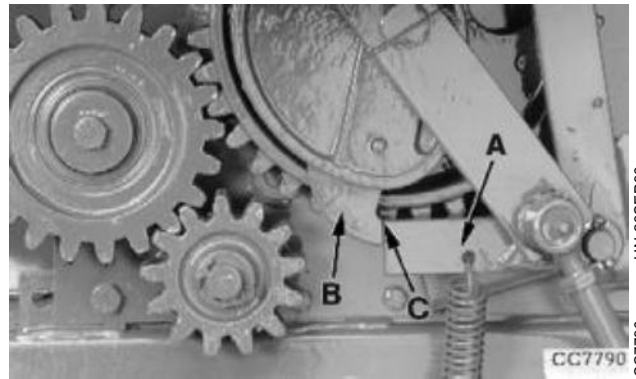
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Adjusting Trip Arm

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 bolts securely.



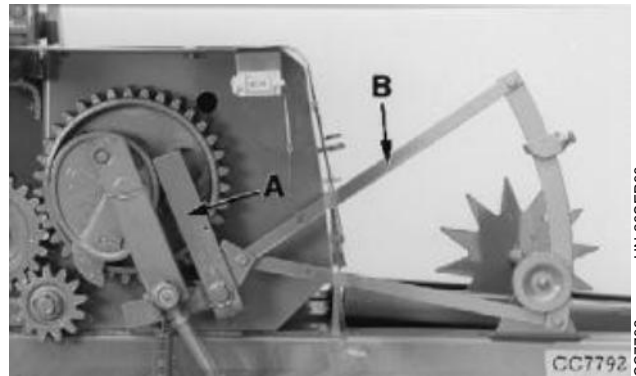
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Checking Trip Arm Adjustment

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

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



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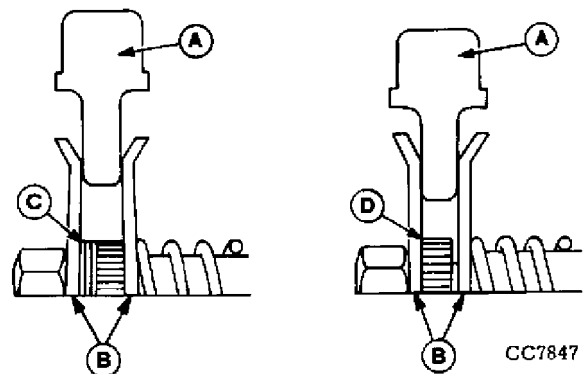
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Stop Adjustment

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

- If stop (A) bounces while falling into place between the 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 a shim (D) as needed.



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- A—Stop
- B—Sheave side
- C—Shim
- D—Shim

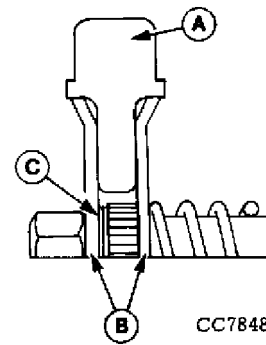
L.H. illustration - Wide

R.H. illustration - Narrow

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Checking Stop Adjustment

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



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ADJUSTING CRANK STOP

NOTE: Needle-to-plungerhead timing must be correct before adjusting crank stop (see “Timing 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 to 28 mm (0.86 to 1.10 in.) on 339 balers and 29 to 35 mm (1.14 to 1.37 in.) on 349, 359 and 459 balers.

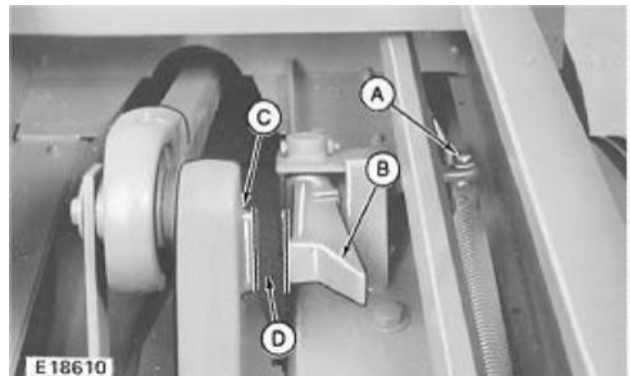
- Trip needles and turn flywheel counterclockwise until needles have risen and are on the down stroke.

- 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.).

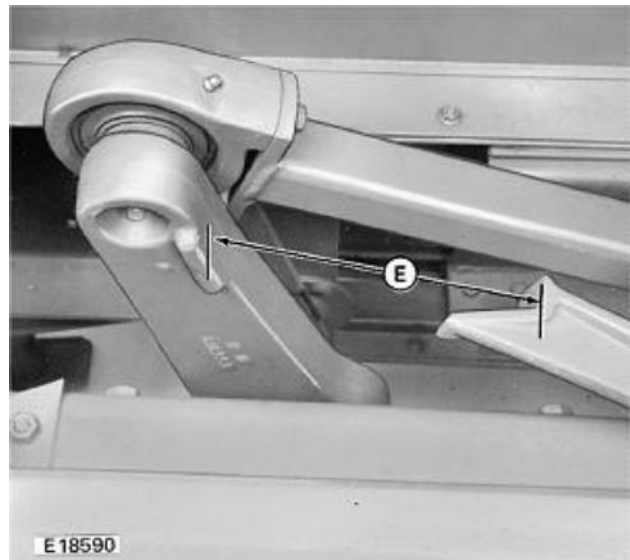
- If this distance (E) is less than 70 mm (2.75 in.) and distance (D) is 22 to 28 mm (0.86 to 1.10 in.) on a 339 baler or 29 to 35 mm (1.14 to 1.37 in.) on a 349, 359 or 459 baler, check needle timing (see “Timing the Baler” in this Section).

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

- A—Rod yoke
- B—Safety stop
- C—Lug
- D—22 to 28 mm (0.86 to 1.10 in.) on 339
29 to 35 mm (1.14 to 1.37 in.) on 349, 359
and 459
- E—70 mm (2.75 in.) minimum



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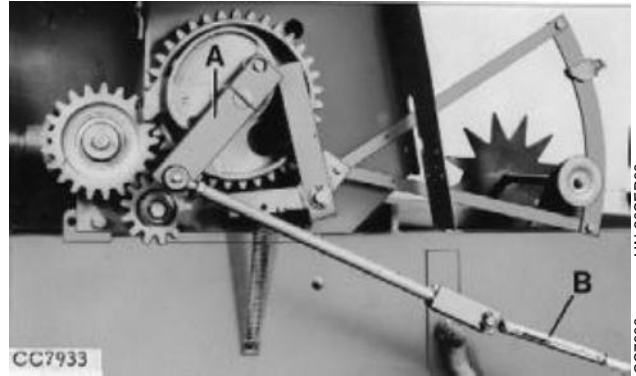


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ADJUSTING KNOTTER DRIVE BRAKE (339 AND 349)

- 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).



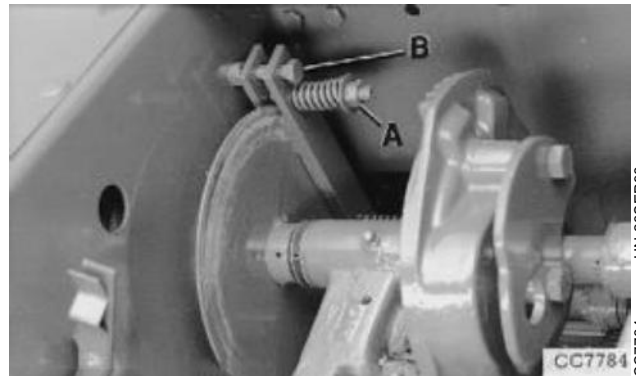
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Adjust Brake Pressure Plate

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

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

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



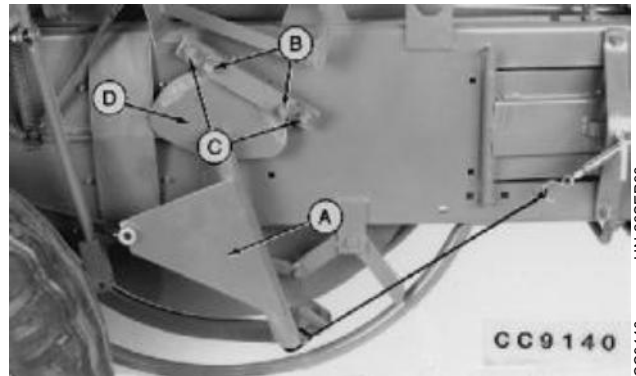
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ADJUSTING KNOTTER DRIVE BRAKE (359 AND 459)

- 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 bolts (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
B—Adjusting nuts
C—Retaining bolts
D—Pressure plate

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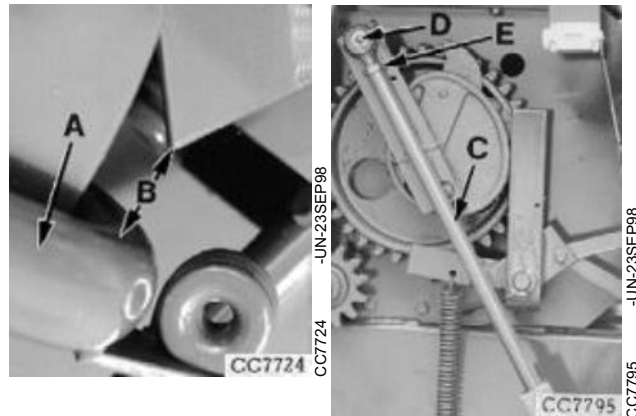
ADJUSTING NEEDLE FRAME AND NEEDLE LINK—TWINE BALER (339 ONLY)

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 lift link (C) from the needle frame and turning link.

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



A—Needle frame
B—47 to 53 mm (1.85 to 2.08 in.)
C—Lift link
D—Ball joint
E—Clamp

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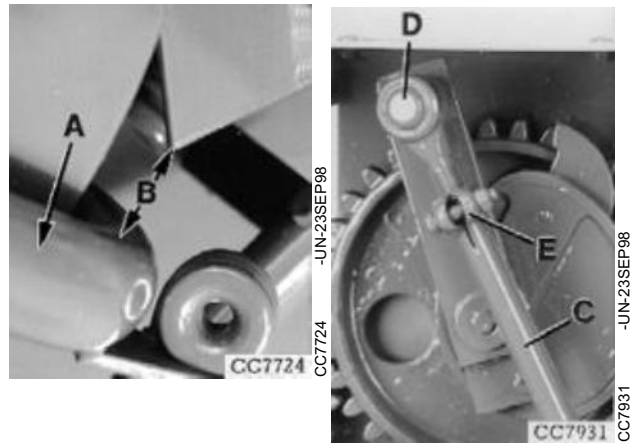
ADJUSTING NEEDLE FRAME AND NEEDLE LINK—TWINE BALER (349, 359 AND 459)

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 lift link (C) from the needle frame and turning link.

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



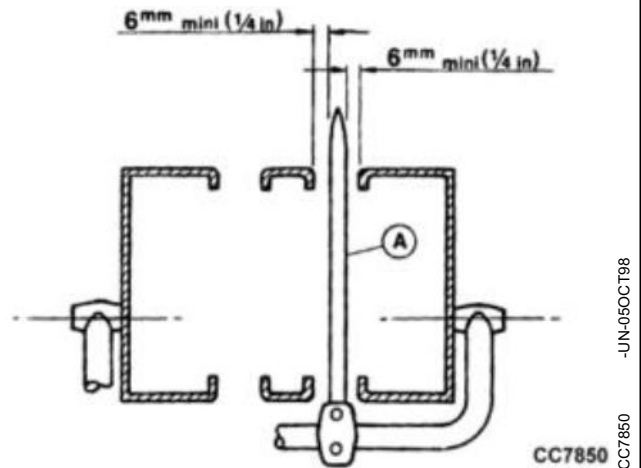
- A—Needle frame
- B—25 to 32 mm (0.98 to 1.26 in.)
- C—Lift link
- D—Ball joint
- E—Clamp

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ADJUSTING NEEDLES—TWINE BALER

• During the free portion of needle stroke (before needles enter knotters), each needle (A) should clear right and left-hand 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 bolts
- Move needle sideways to obtain proper clearance
- Slightly tighten needle mounting bolts

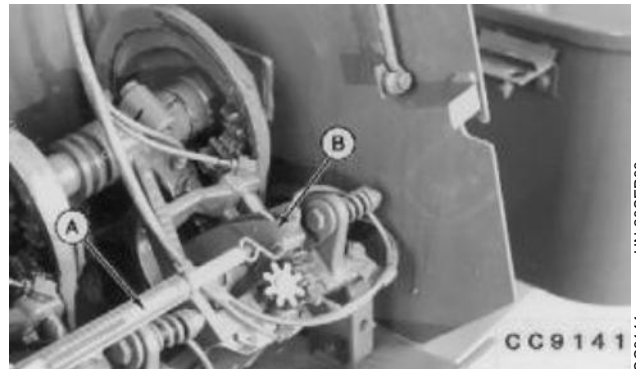


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Adjust Needle Pressure

- Attach a spring balance (A) to needle (B) as shown.
- Move needle sideways until right-hand side exerts a pressure of 14 to 27 N (3 to 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).

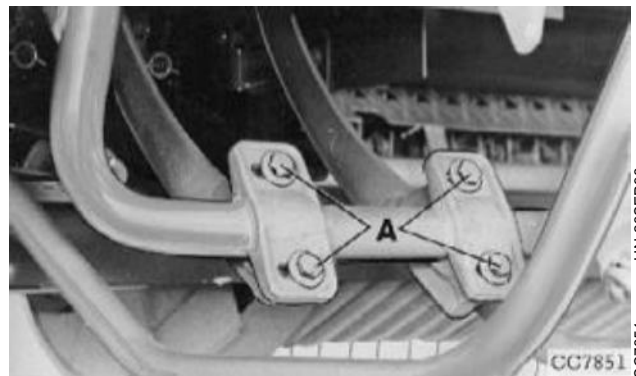


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Obtain Proper Pressure

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



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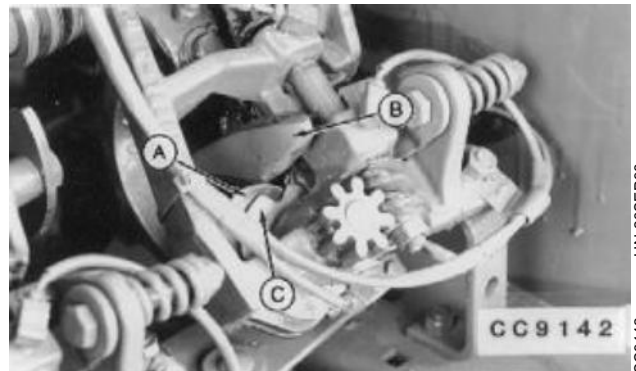
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Adjust Needles/Twine Cleaner

• Needle (B) should clear twine cleaner or twine disk (C) by 1.5 to 3 mm (0.06 to 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 bolts and tightening the other, or it may be shifted sideways by loosening both mounting bolts.

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



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CC9142

ADJUSTING 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 will usually be 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.

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

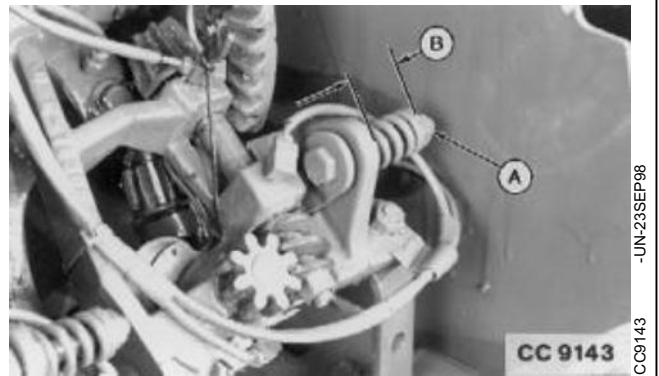
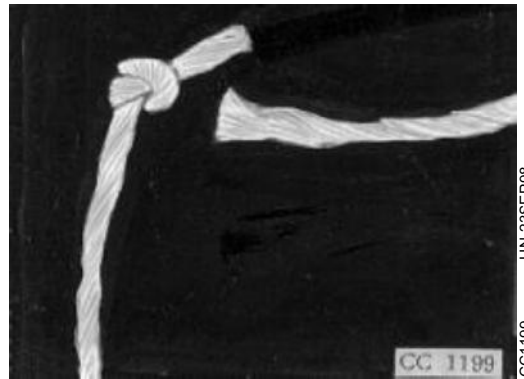
IMPORTANT: Adjustments to twine holder should be made in one turn increments.

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.).

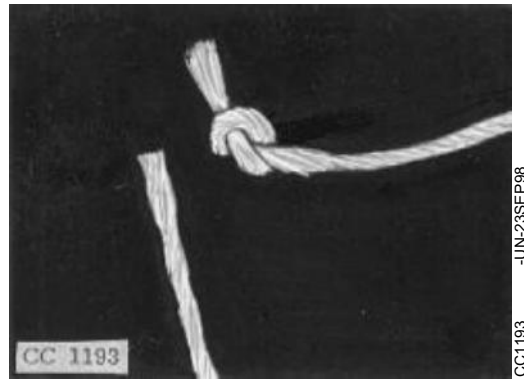


A—Adjusting nut
B—37 mm (1.45 in.)

ADJUSTING TUCKER FINGERS

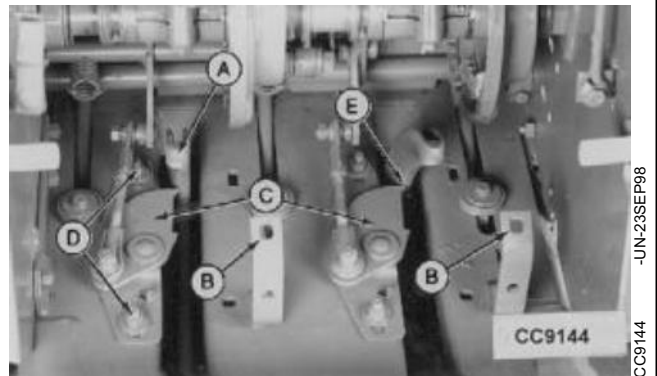
NOTE: *Incorrect tucker finger adjustment is a major cause of tying difficulties.*

- 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).



Adjust Tucker Fingers/Needles

- With needles (A) properly adjusted, proceed as follows:
 - Remove two carriage bolts 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 bolts (D). Move tucker fingers back or forth in the mounting slots until fingers clear needles by 1.5 to 3 mm (0.06 to 0.12 in.) (E).
- Finally tighten tucker finger mounting bolts to 50 N·m (35 lb-ft).

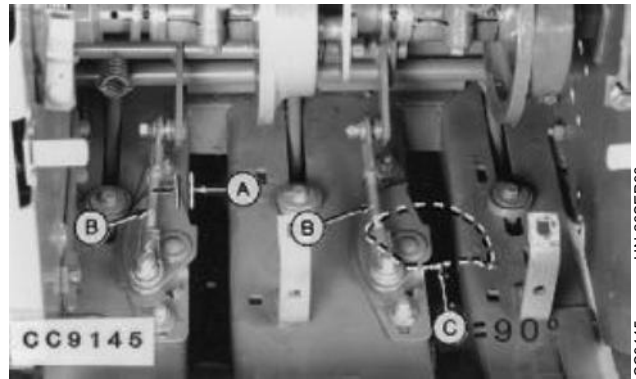
- A—Needle
- B—Knotter bracket
- C—Tucker fingers
- D—Mounting bolts
- E—1.5 to 3 mm (0.06 to 0.12 in.)

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Adjust Tucker Fingers/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 bolts removed at the beginning of procedure.

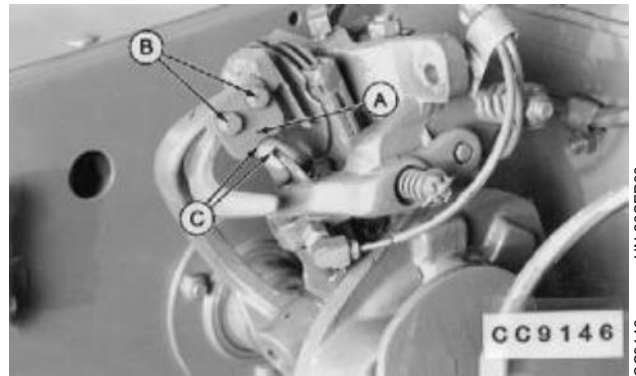


- A—2 to 5 mm (0.08 to 0.2 in.)
- B—Pull rods
- C—90° angle

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ADJUSTING KNIFE ARM

- Remove carriage bolt from knotter bracket and rotate knotter assembly to vertical position as shown.
- Wiper plate (A) must be centered with heel of billhook.
- Loosen adjusting bolts (B) and move arm until wiper plate is approx. 5 mm (0.2 in.) (C) from the billhook tongue groove.
- Tighten adjusting bolts enough to hold wiper plate for next adjustment.

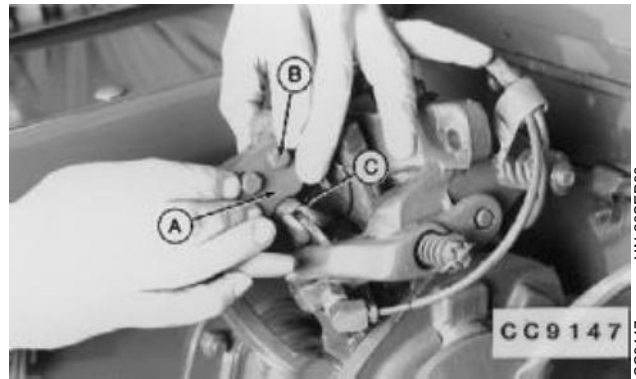


- A—Wiper plate
- B—Adjusting nuts
- C—5 mm (0.2 in.)

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Check Knife Arm Adjustment

- Rotate the knotter assembly down slightly while pulling across billhook.
- To move wiper plate (A) across jaw of billhook (B), a pull of 30 to 60 N (7 to 14 lb) is required.
- Tighten adjusting bolts (C) to 10 ± 2 N·m (7.5 ± 1.5 lb-ft).



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Adjusting Billhook/Wiper Plate

- Billhook tongue (A) must clear the wiper plate by 1 to 2.5 mm (0.04 to 0.98 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 to 2.5 mm (0.04 to 0.98 in.)
- C—Arm
- D—Model or bend area

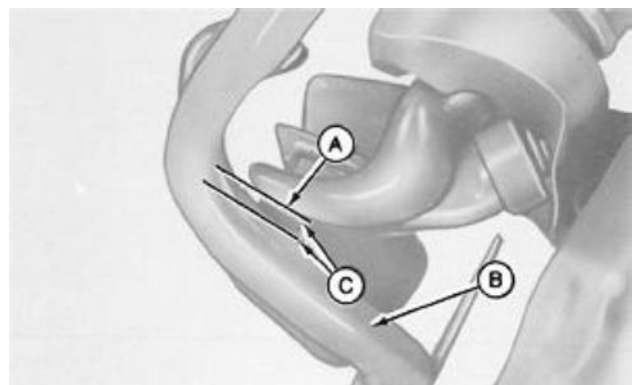
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Adjusting Billhook/Knife Arm

- 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

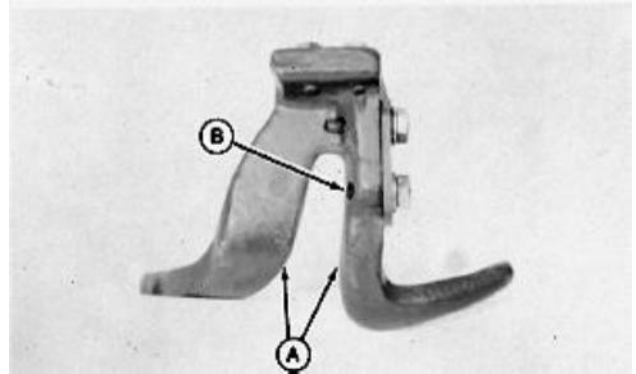


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Checking Knife (Wiper) Arm

- 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.



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Checking Wiper Plate

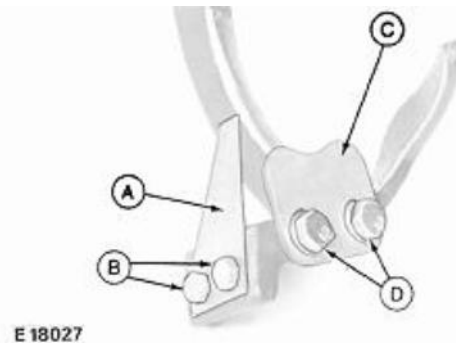
- Recheck wiping force by rotating knotter assembly down slightly while pulling across billhook. To move wiper plate across jaw of billhook, 30 to 60 N (7 to 14 lb) pull is required.
- Torque adjusting bolts to 10 ± 2 N·m (7.5 ± 1.5 lb-ft).

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REPLACING 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 and replace when it becomes dull.
- To replace knife (A), remove two mounting bolts (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 bolts (D), washers, and wiper plate. Replace with new wiper plate (see "Adjusting Knife Arm" in this Section).



- A—Knife
- B—Mounting bolts
- C—Wiper plate
- D—Mounting bolts

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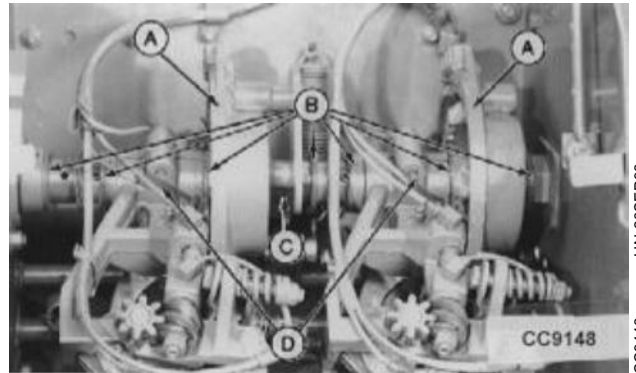
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ADJUSTING KNOTTER GEARS

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.

A—Intermittent gear
B—Washers
C—Needle lift shaft
D—Knotter frame



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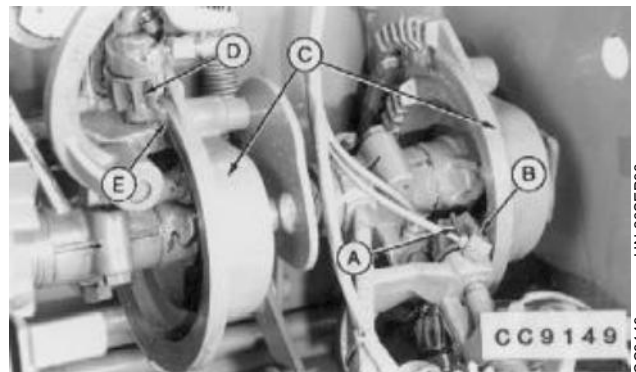
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Adjust Knotter Gear Clearance

- Clearance (E) between the flat surfaces of billhook pinion (D) and intermittent gear (C) must be 0.2 mm (0.008 in.) maximum.
- 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).

NOTE: 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 bolt and pivot knotter upward around shaft, then drop knotter. It should return to initial position under its own weight.



A—Twine disk pinion
B—0 to 0.5 mm (0 to 0.02 in.)
C—Intermittent gear
D—Billhook pinion
E—0 to 0.2 mm (0 to 0.008 in.)

-UN-23SEP98
CC9149

CC,339SQB004467-19-01AUG98

REMOVING KNOTTER ASSEMBLY

- Remove two mounting bolts (A) and bolt (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 undersection halves of each knotter frame. Tighten mounting screws (A) to 40 N·m (30 lb-ft).



-UN-23SEP98
CC9156

CC,339SQB004468-19-01AUG98

REPLACING 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 to 0.38 mm (0 to 0.015 in.)



-UN-23SEP98
CC9157

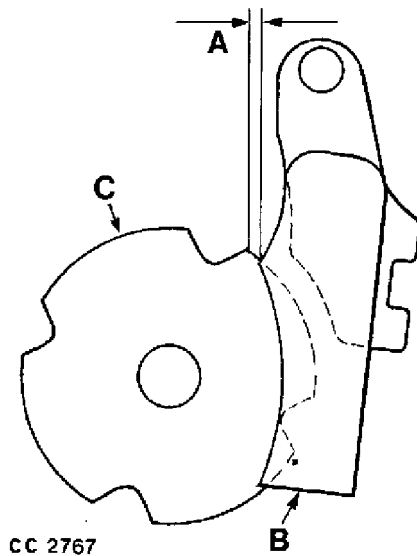
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ADJUSTING TWINE DISK

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-hand corner of the notch in the twine disk center plate should be 0.5 to 1.5 mm (0.02 to 0.06 in.) to the left of left-hand twine holder edge (with twine in twine disk).

- A—0.5 to 1.5 mm (0.02 to 0.06 in.)
- B—Twine holder
- C—Center twine disk



CC 2767

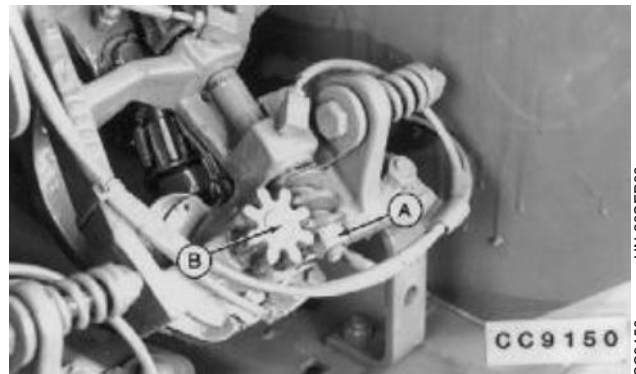
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CC2767 -UN-23SEP98

Adjust Twine Disk Position

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

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



CC9150

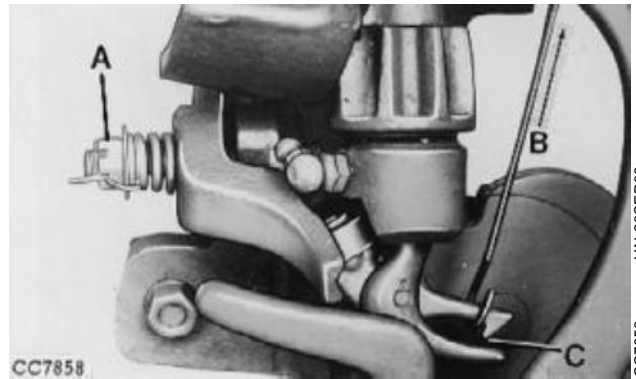
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CC9150 -UN-23SEP98

ADJUSTING BILLHOOK TONGUE

- Adjust billhook tongue pressure when tongue is free of twine.
- Billhook is properly adjusted when an outward pull of 23 to 68 N (5 to 15 lb) (B) on billhook tongue will separate jaws 3 mm (0.12 in.) (C). Tongue should 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.



CC,339SQB004472-19-01AUG98

ADJUSTING 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.



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Adjust Lift Link

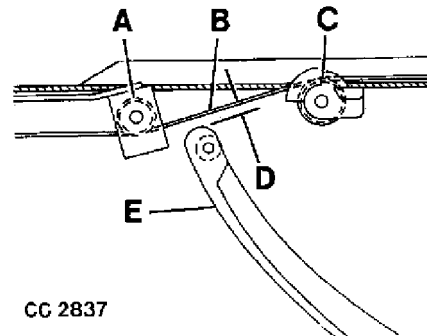
IMPORTANT: Crank stop, plungerhead and needle timing must be checked after making needle lift link adjustments.

- With needles (E) in home position, each needle must be 6.5 to 16 mm (0.25 to 0.63 in.) (D) below the wire (B) passing under center wire pulley (A) and over the rear wire pulley (C).

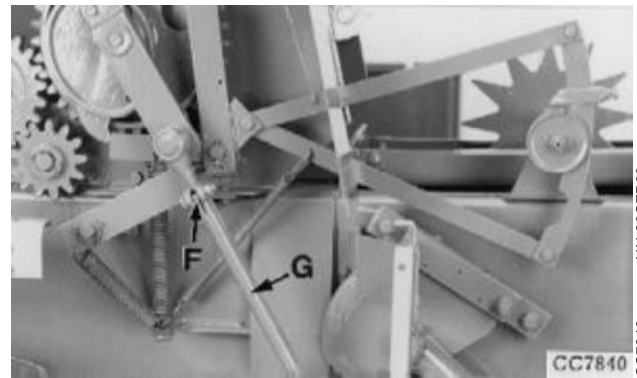
- Adjust needle clearance by loosening clamp (F) and disconnecting lift link (G) from needle frame. Turn lift link as required.

NOTE: After adjusting length of lift link (G), position clamp (F) with bolt 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 to 16 mm (0.25 to 0.63 in.)
- E—Needle
- F—Clamp
- G—Lift link



CC 2837



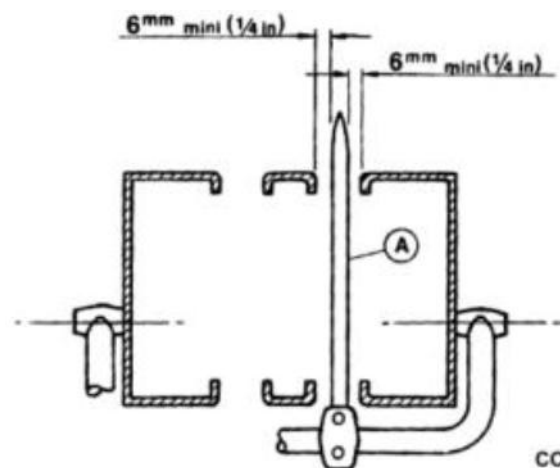
CC7840

CC,339SQB004478-19-01AUG98

ADJUSTING NEEDLES—WIRE BALER

- During the needle stroke, each needle (A) should clear right and left-hand 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 bolts
- Move needle sideways to obtain proper clearance
- Slightly tighten needle mounting bolts

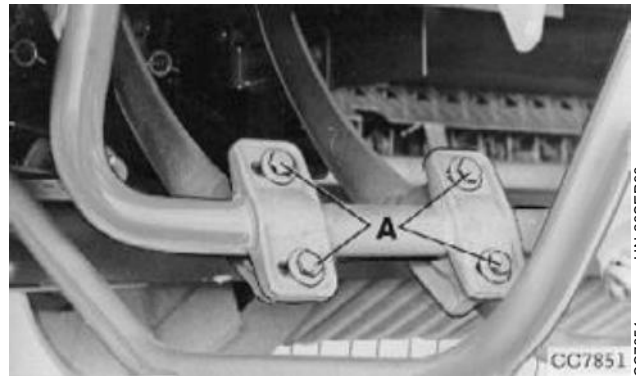


CC7850

CC,339SQB004473-19-01AUG98

Adjust Needle Position

- Needle mounting bolts (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 bolts and tightening the other, or may be shifted sideways by loosening both mounting bolts.

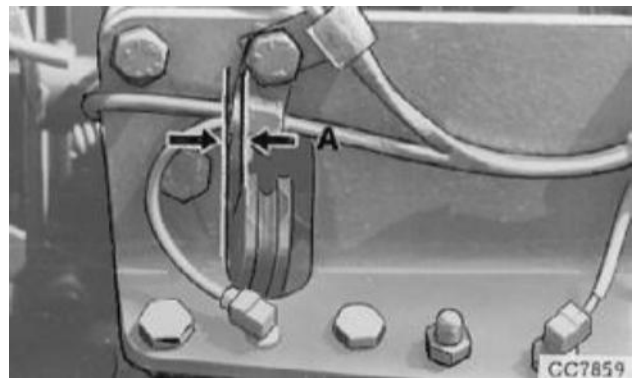


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-UN-23SEP98
CC7851

Align Needles

- Each needle must be 3 to 8 mm (0.12 to 0.31 in.) (A) from left-hand side of its respective slot in twister mounting plate with needle in its highest position.
- To align needles with wire guide pulleys and the slot in twister mounting plate, trip measuring arm and raise needles. Loosen both needle mounting bolts and move needle sideways until it is aligned (see "Guide Alignment and Clearance" in this Section).
- Tighten the needle mounting bolts to 88 ± 20 N·m (50 to 80 lb-ft).



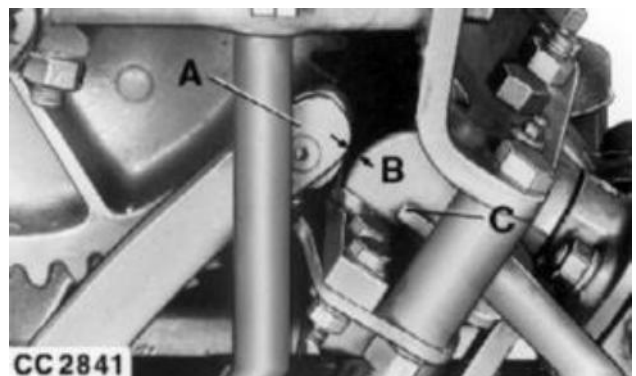
A—3 to 8 mm (0.12 to 0.31 in.)

CC,339SQB004475-19-01AUG98

-UN-05OCT98
CC7859

Adjust Needle/Gripper

- As needles pass through the twisting mechanism, each needle (A) should clear front of wire gripper (C) by 1.5 to 4 mm (0.12 to 0.06 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 bolts and tighten rear bolts. Reverse this procedure to reduce the distance.
- With the needles properly adjusted, tighten all bolts to 70 to 110 N·m (50 to 80 lb-ft). Recheck needles through their cycle.



A—Needle
B—1.5 to 4 mm (0.12 to 0.06 in.)
C—Wire gripper

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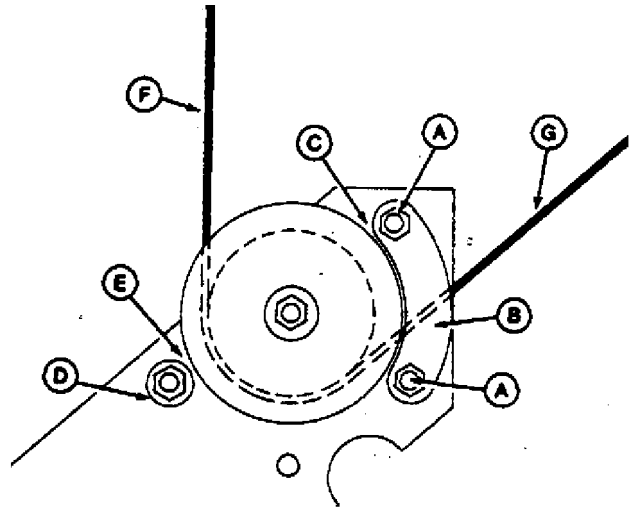
-UN-23SEP98
CC2841

ADJUSTING WIRE GUIDES

IMPORTANT: All rollers must turn freely to ensure proper operation of wire twister.

- Loosen bolts (A) and adjust front pulleys and cast wire guides (B) to clear each other by distance (C).
- Loosen bolt and adjust front sleeve guide (D) to clear pulleys by distance (E). Each pulley must turn freely.

- A—Bolts
- B—Wire guides
- C— 1.5 ± 0.8 mm (0.06 \pm 0.03 in.)
- D—Front sleeve guide
- E—0.13 to 0.8 mm (0.005 to 0.031 in.)
- F—Outgoing wire
- G—Incoming wire



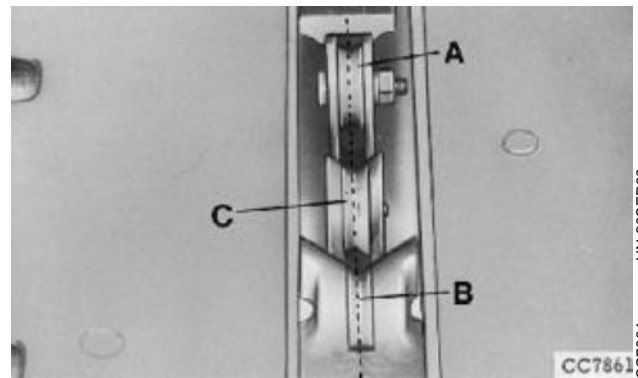
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E24760 -UN-14SEP88

ADJUSTING 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

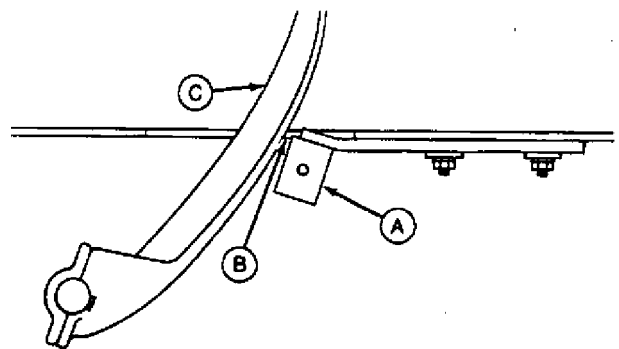


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CC7861 -UN-23SEP98

GUIDE ALIGNMENT AND CLEARANCE

- With needles in highest position (C), center pulley (A) must be within 6.4 ± 1.5 mm (0.25 \pm 0.06 in.) (B) forward of closest point to needle.
- Adjust guides by loosening two mounting bolts in each guide.
- Shift guides to left or right for alignment and forward or rearward for desired clearance.
- Tighten mounting bolts.



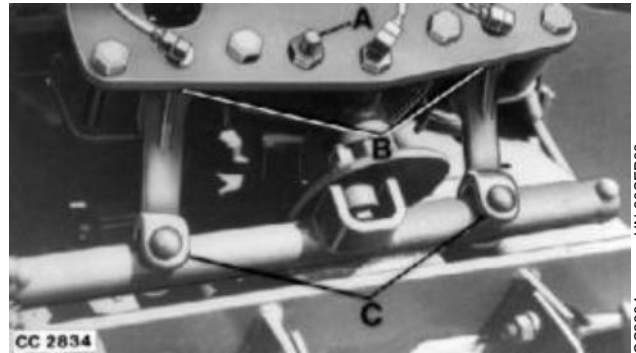
- A—Center pulley
- B— 6.4 ± 1.5 mm (0.25 \pm 0.06 in.)
- C—Needle

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E11961 -UN-20SEP88

ADJUSTING GRIPPERS

- To provide a positive shearing action on the wire, adjust grippers with shims (B).
- To shim a gripper, pivot twister assemblies upward by loosening lock bolt (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.
- Replace twister assemblies to their original position and secure with lock bolt.



CC,339SQB004482-19-01AUG98

ADJUSTING TWISTER HOOKS

NOTE: Torque socket head cap 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 retard 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.



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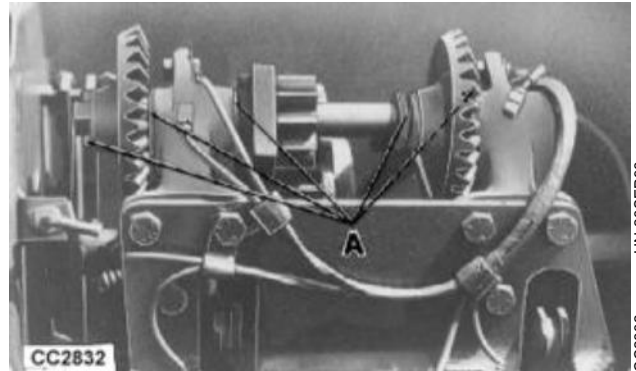
ADJUSTING BEVEL GEAR AND PINION

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.

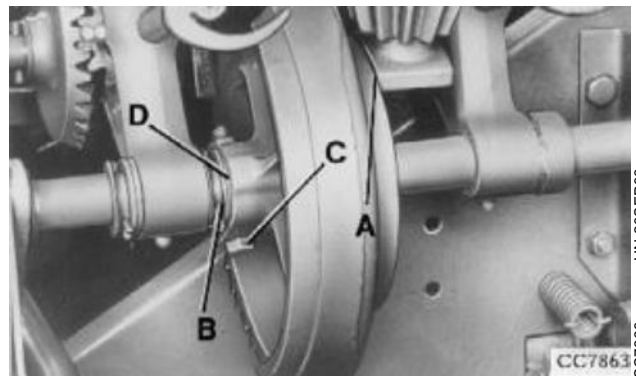


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ADJUSTING INTERMITTENT DRIVE GEAR—WIRE BALER

- 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 clearance from the smooth surface of the intermittent drive gear.

- Adjust gears by removing pin (B) and loosening bolt (C) in needle lift shaft and locating washers (D) on shaft as necessary to obtain proper mesh. Replace pin and tighten bolt.



- A—0.2 mm (0.01 in.) clearance
- B—Pin
- C—Bolt
- D—Washers

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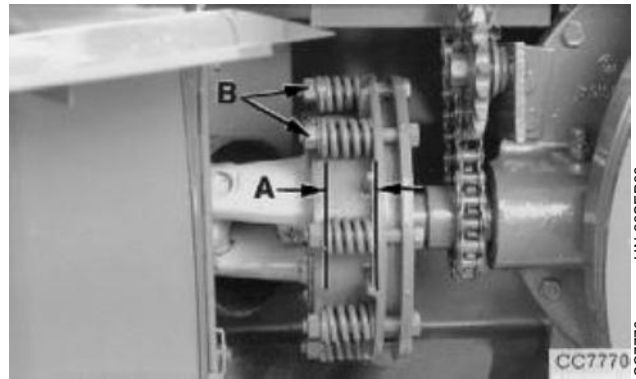
ADJUSTING SLIP CLUTCH (339 AND 349)

- Spring dimension (A) (coil to coil) should be 35.5 to 37.5 mm (1.39 to 1.46 in.) on 339 balers and 34.5 to 36.0 mm (1.35 to 1.41 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.

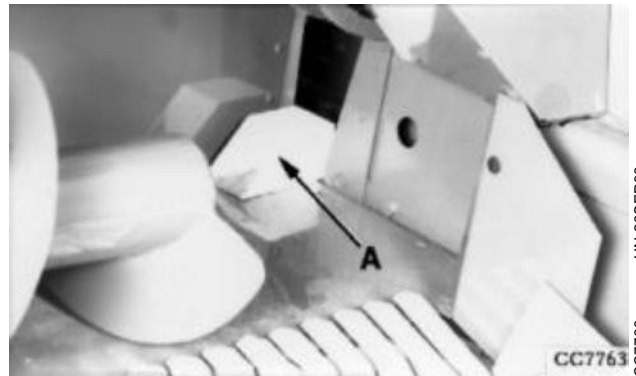
- A—35.5 to 37.5 mm (1.39 to 1.46 in.) on 339
34.5 to 36.0 mm (1.35 to 1.41 in.) on 349
- B—Spring adjusting nuts



CC,339SQB004486-19-01AUG98

Secure Plungerhead

- Prevent movement of plungerhead by placing a block of wood (A) as shown.



CC,339SQB004487-19-01AUG98

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 powershaft. Exert force at an angle of 90° (C).

- For proper force on lever for clutch slippage, refer to the following specifications:

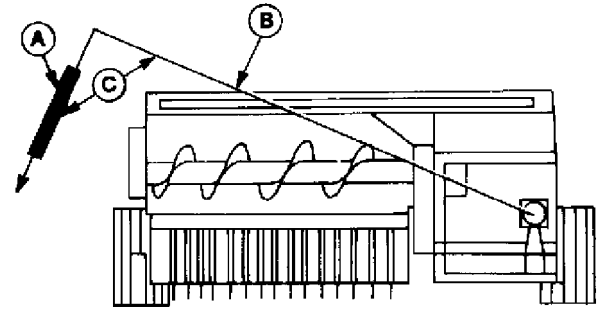
339 Baler:

- 180 to 230 N (40 to 51 lb).
- 540 to 690 N·m (390 to 500 lb-ft).

349 Baler:

- 220 to 270 N (49 to 60 lb).
- 660 to 810 N·m (477 to 585 lb-ft).

IMPORTANT: Excessive slippage will damage the slip clutch. A slip clutch adjusted too tight will not give any protection to the drive train.



CC7864

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CC7864

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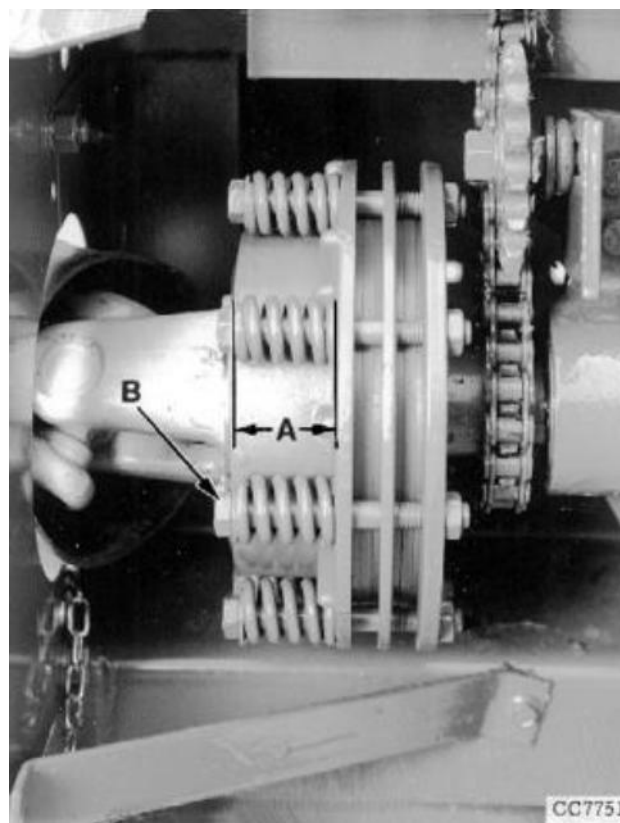
ADJUSTING SLIP CLUTCH (359 AND 459)

- Spring dimension (A) (coil to coil) should be 34.0 to 35.0 mm (1.33 to 1.37 in.) on 359 balers and 43.0 to 43.5 mm (1.69 to 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—34.0 to 35.0 mm (1.33 to 1.37 in.) on 359
43.0 to 43.5 mm (1.69 to 1.71 in.) on 459
- B—Spring adjusting nuts



CC,339SQB004489-19-01AUG98

Secure Plungerhead

- Prevent movement of plungerhead by placing a block of wood (A) as shown.



CC,339SQB004490-19-01AUG98

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 powershaft. Exert force at an angle of 90° (C).

- For proper force on lever for clutch slippage, refer to the following specifications:

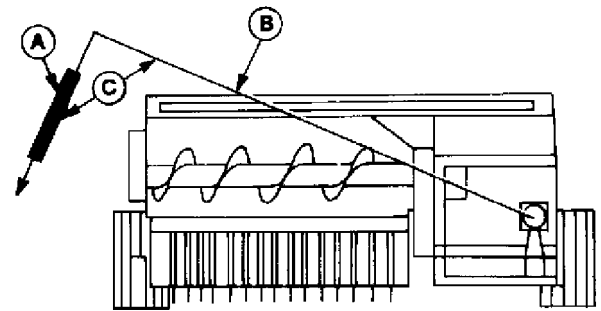
359 Baler:

- 240 to 290 N (53 to 65 lb).
- 720 to 870 N·m (520 to 629 lb-ft).

459 Baler:

- 315 to 360 N (70 to 80 lb).
- 945 to 1080 N·m (683 to 781 lb-ft).

IMPORTANT: Excessive slippage will damage the slip clutch. A slip clutch adjusted too tight will not give any protection to the drive train.



CC7864

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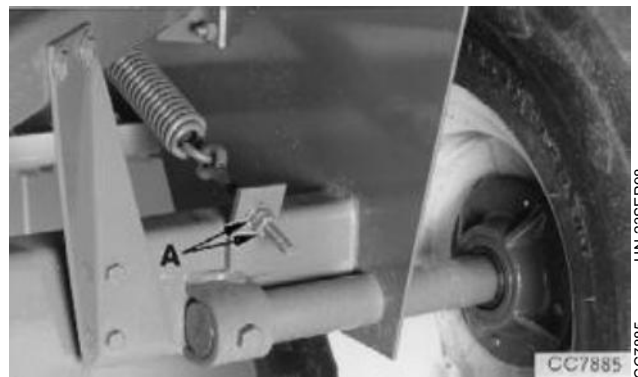
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ADJUSTING PICKUP FLOAT

- Under normal operating conditions, the float spring should be absolutely tight.

- Tighten nuts (A) as far as possible.

NOTE: If pickup bounces over hay, loosen float spring slightly.



CC7885

CC7885 -UN-23SEP98

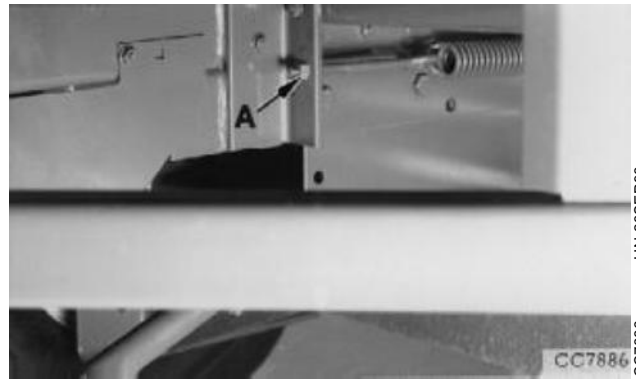
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ADJUSTING PICKUP V-BELT

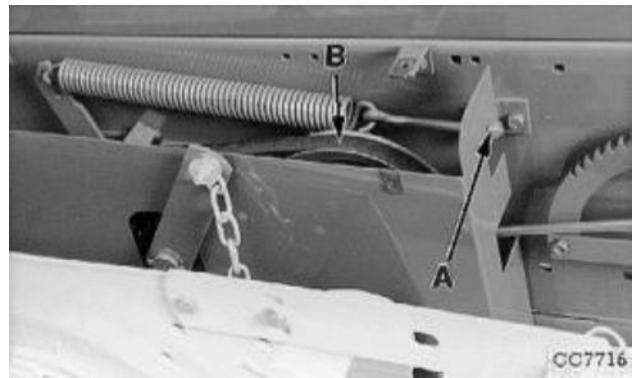
IMPORTANT: Pickup V-belt tension affects pickup float.

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.



339 Baler



349, 359 and 459 Baler

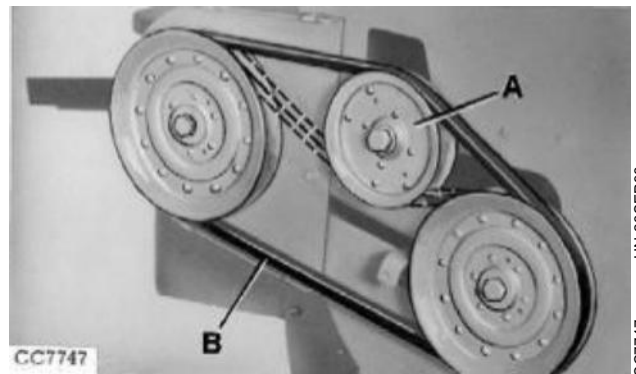
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ADJUSTING AUGER DRIVE BELT

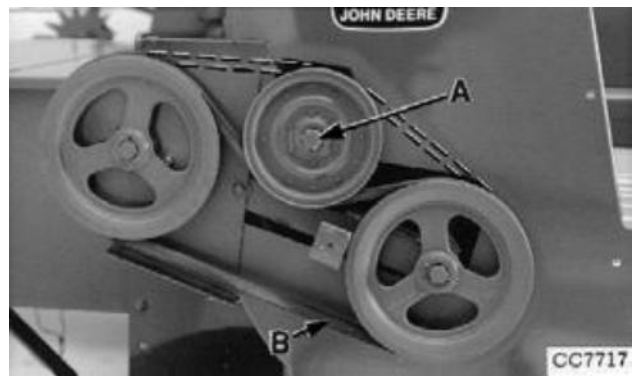
- Loosen idler (A) and adjust until belt (B) will deflect 16 to 29 mm (0.62 to 1.14 in.) when 88 N (20 lb) pressure is applied at center of belt opposite idler.

- Tighten idler. Install shield.

NOTE: To obtain proper belt tension, the belt can be placed over or under the idler pulley.



339 and 349 Baler



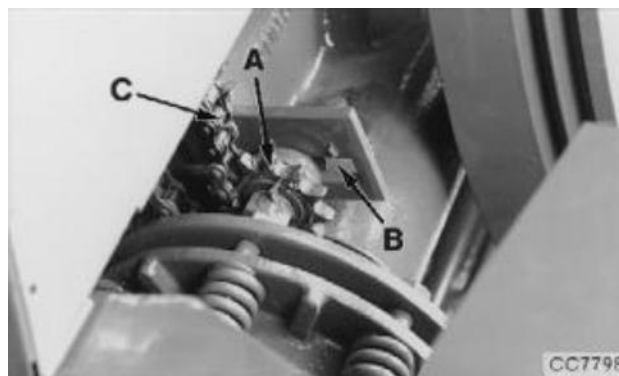
359 and 459 Baler

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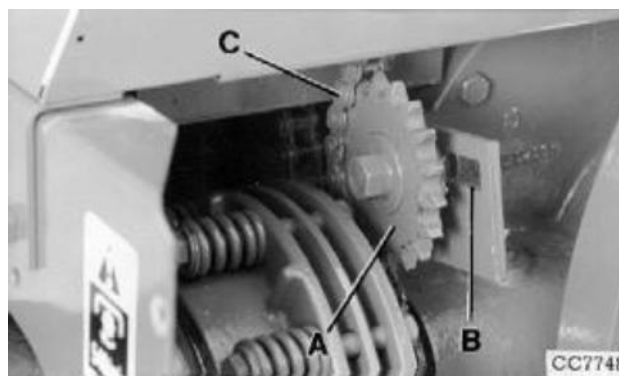
ADJUSTING MAIN DRIVE CHAIN

- Loosen idler (A) and shift it in slot (B) until chain (C) will deflect 5 to 6 mm (0.19 to 0.23 in.) when a pressure of 24.5 N (5.5 lb) is applied.

- Retighten idler.



339 and 349 Baler



359 and 459 Baler

CC,339SQB004495-19-01AUG98

CC7798 -UN-23SEP98

CC7748 -UN-23SEP98

ADJUSTING FEEDER FINGER CHAIN

- The feeder finger chain transmits power to the feeder fingers. This in turn 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.

On 339 And 349 Baler

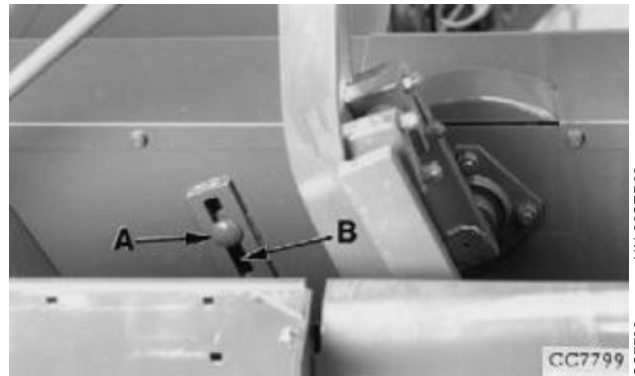
- Loosen idler bolt (A) and shift in slot (B) until chain deflects 7 to 8 mm (0.27 to 0.31 in.) when applying a pressure of 24.5 N (5.5 lb).

- Tighten idler bolt. Recheck adjustment.

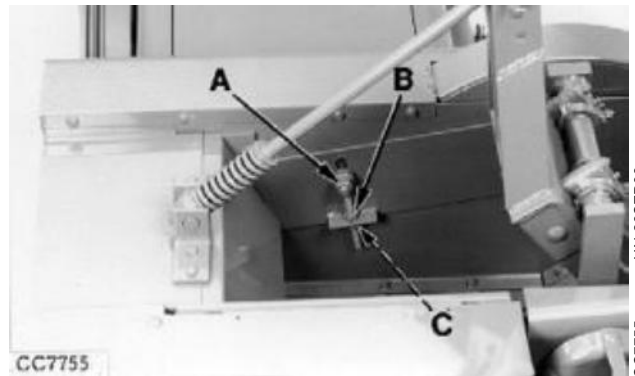
On 359 And 459 Baler

- 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.



339 and 349 Baler



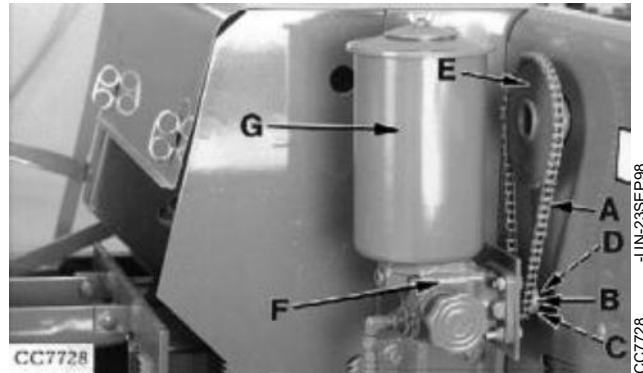
359 and 459 Baler

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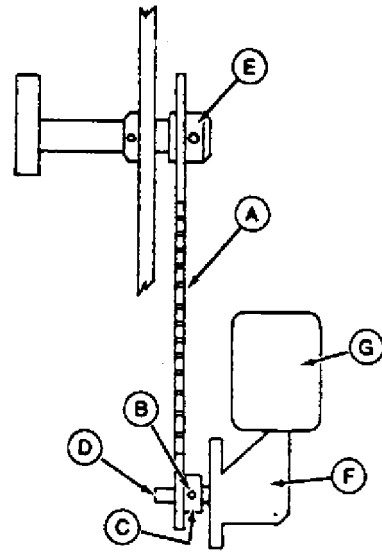
ADJUSTING HYDRAULIC BALE TENSION PUMP CHAIN (359 AND 459)

- 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 (arrowed).
- Adjust chain by loosening mounting bolts and moving pump until chain is tight but can still be deflected by thumb pressure. Tighten pump mounting bolts.
- 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

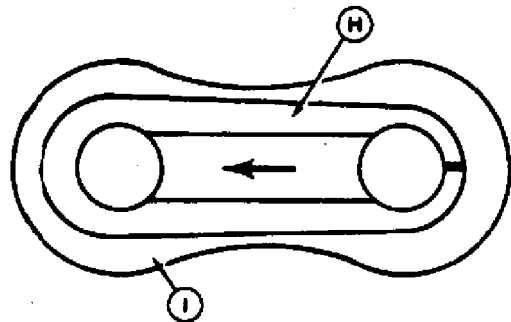


CC7728 -UN-23SEP98



E18619

E18619 -UN-20SEP88



E22702 -UN-14SEP88

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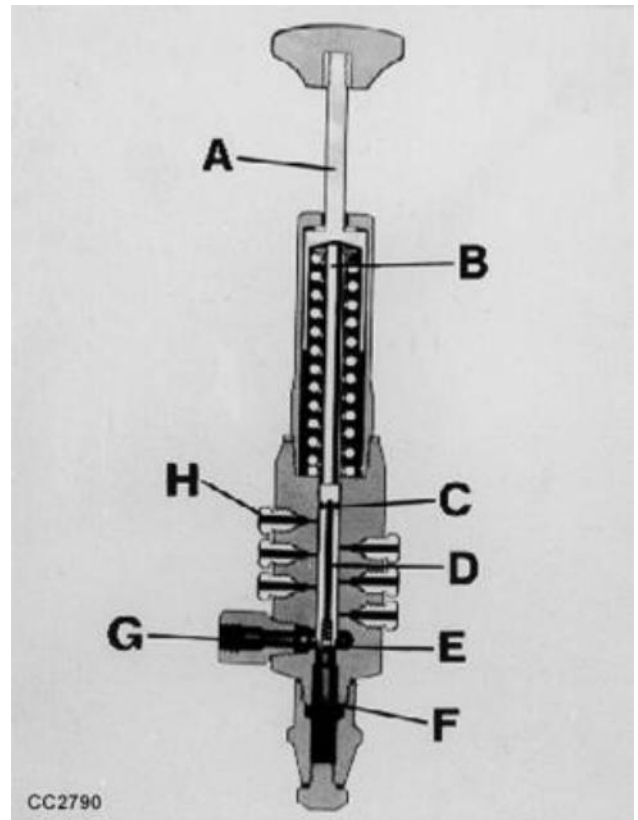
ADJUSTING MULTI-LUBER (349, 359 AND 459)

CAUTION: Do not force oil through oil line with a pressure grease gun. Burst pressure of the oil line is 20685 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 of the clogged line. Clear the obstruction as follows:

- Determine which line is clogged by estimating how far plunger (B) has moved. Make sure 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.



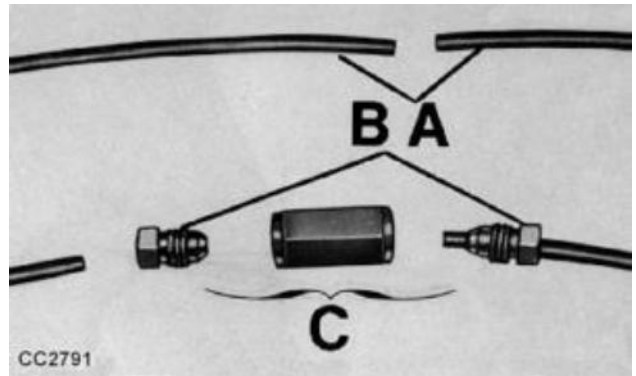
- A—Handle
- B—Plunger
- C—Oil seal
- D—Outlet passage
- E—Check ball
- F—Measuring chamber
- G—Lubricant inlet
- H—Outlet ports

CC,339SQB004498-19-01AUG98

REPAIRING BROKEN OIL LINES (349, 359 AND 459)

- 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 the 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.



-UN-23SEP98
CC2791

CC,339SQB004499-19-01AUG98

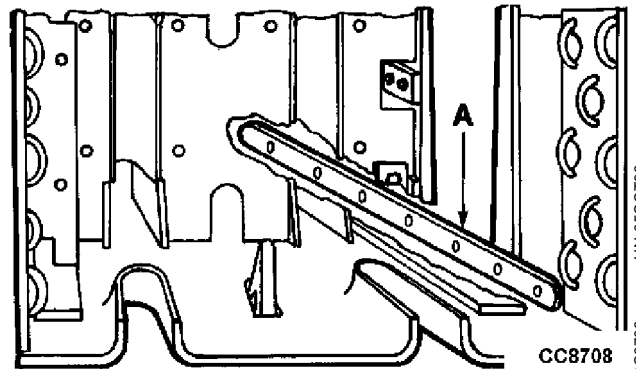
ADJUSTING PLUNGERHEAD/BALE CASE

- Follow the procedure hereafter to properly adjust plungerhead into bale case:

Inspect Lower Right-Hand Bale Case Guide

NOTE: It is easier to check bale case guide for wear and straightness with plungerhead removed.

- Inspect lower right-hand bale case guide (A) for wear. Replace if worn.
- Inspect guide (A) for straightness. Within a tolerance of 0.8 mm (0.03 in.) along the entire length it must be completely straight.
- Shim the guide if necessary.

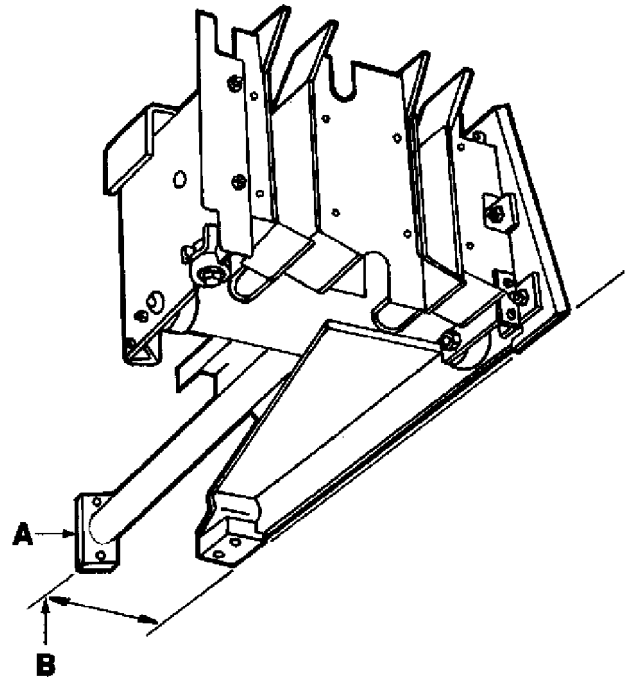


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CC8708

CC,339SQB004500-19-01AUG98

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.) from right-hand side 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 wrist of pitman.
- Loosen all scrapers to prevent binding of plungerhead.
- Install plungerhead.



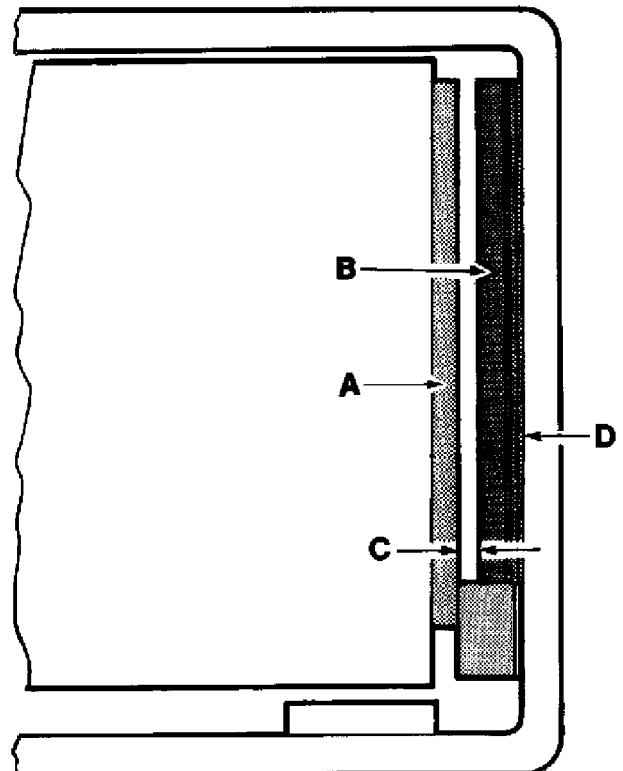
CC8711

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-UN-05OCT98
CC8711

Adjust Knife/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 should be 0.5 to 0.8 mm (0.02 to 0.03 in.) at the bottom.
- Add or remove shims (D) behind stationary knife (B) to adjust clearance.
- Stationary knife bolts must be seated by repeated blows of a hammer while tightening the bolts to between 100 and 120 N·m (71 to 86 lb-ft).



CC8709

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-UN-25SEP98
CC8709

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) which should be 0.1 to 1.4 mm (0.003 to 0.05 in.).

- A—Knife
- B—Side guide
- C—0.1 to 1.4 mm (0.003 to 0.05 in.)

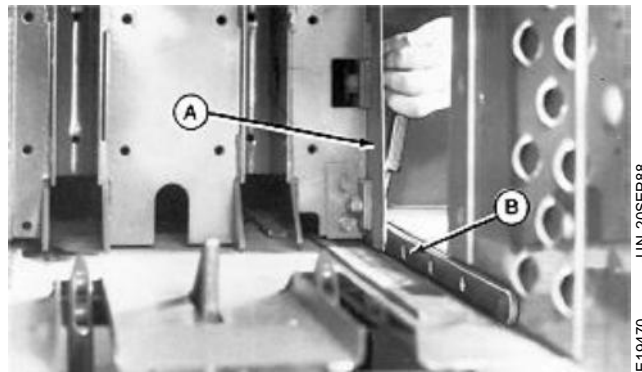


E19469
-JUN-20SEP88

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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), which should be less than 0.8 mm (0.03 in.).



E19470
-JUN-20SEP88

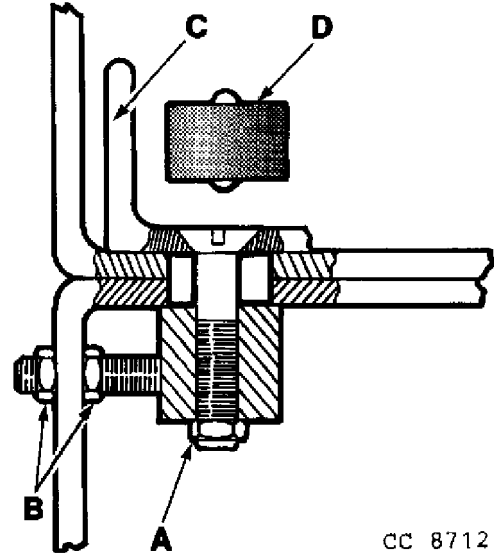
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Adjust Plungerhead Side Clearance

IMPORTANT: Do not use T-bolts for adjusting; use only to maintain clearance after adjustment.

- To adjust, loosen four bolts (A) and lock nuts (B). Pry plungerhead to extreme right.
- Move guide angle (C) against roller (D) and tighten mounting bolt (A) and lock nuts (B) of the respective guide.
- Move the plungerhead to the next guide mounting bolt (A) and repeat previous step.
- Repeat this procedure on all guide mounting bolts.
- Recheck the clearances and readjust if necessary.

- A—Bolts
- B—Lock nuts
- C—Guide angle
- D—Roller



CC 8712

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-UN-05OCT98

CC8712

Adjust Knife Top And Bottom Clearance

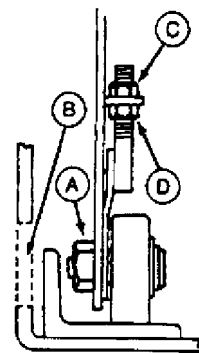
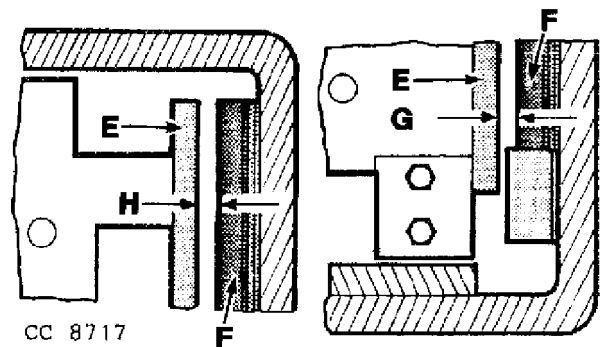
• While pushing plungerhead to the left (without tilting), clearance between plungerhead knife (E) and stationary knife (F) should be 0.8 to 1.3 mm (0.03 to 0.05 in.) at the bottom (G) and 1.5 to 1.8 mm (0.06 to 0.07 in.) at the top (H).

- 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).

- A—Lock nut
- B—Hole
- C—Adjusting nuts
- D—Adjusting nuts
- E—Knife
- F—Stationary knife
- G—0.8 to 1.3 mm (0.03 to 0.05 in.)
- H—1.5 to 1.8 mm (0.06 to 0.07 in.)



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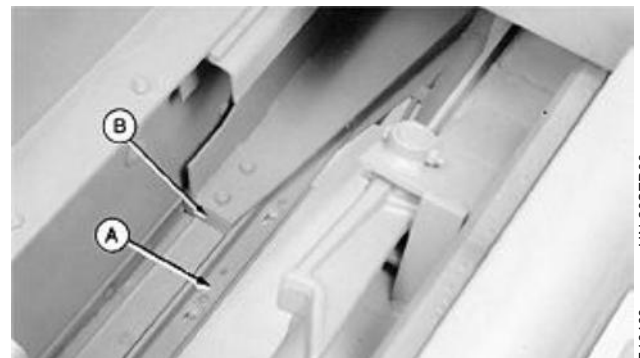
Adjust Plungerhead Front Side Clearance

• While pushing the plungerhead to the right, the front plungerhead side clearance should not exceed 0.8 mm (0.03 in.) over the entire stroke.

NOTE: To prevent knocking of the plungerhead, this adjustment should be as tight as possible, but avoiding binding.

- To adjust, loosen five bolts of lower right-hand guide (A) and move it to obtain required clearance to front lower pad (B).

- Tighten bolts.



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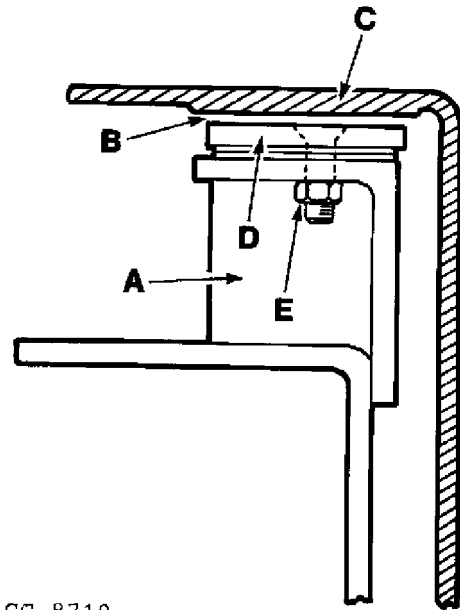
Adjust Plungerhead Vertical Clearance On Left-Hand Side

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 should 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



CC 8710

-UN-05OCT98

CC8710

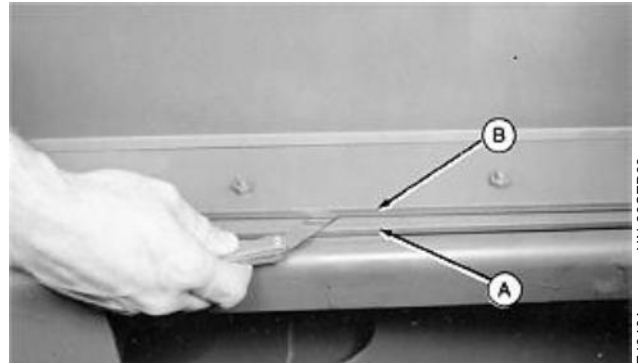
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Adjust Plungerhead Vertical Clearance On Right-Hand Side

- Clearance between right-hand top wear pad (A) and bale case (B), measured along the entire length should 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.



-UN-20SEP88

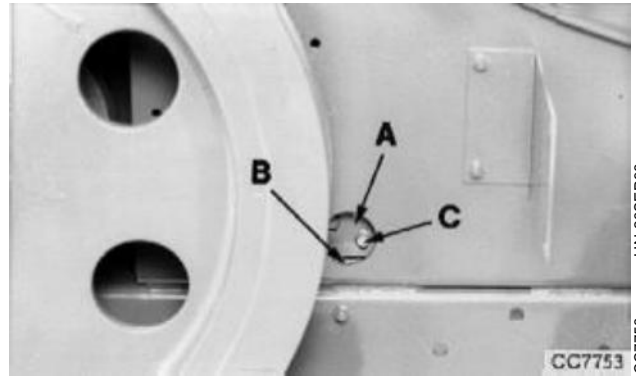
E18464

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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 the plungerhead guide (B) by loosening two cap screws (C).



-UN-23SEP98
CC7753

CC,339SQB004510-19-01AUG98

Adjust Right-Hand Rear Scraper

- Adjust right-hand rear scraper (A) to obtain a maximum clearance of 0.2 mm (0.01 in.) to the plungerhead guides.



-UN-20SEP88
E18465

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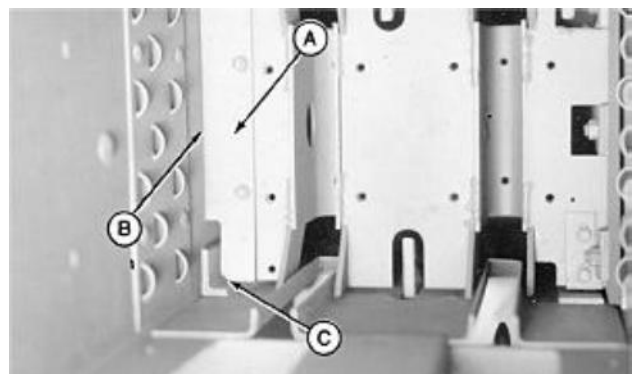
Adjust Left-Hand Rear Scraper

- To adjust left-hand rear scraper, move the adjustable plungerhead face (A) to clear inside of left-hand bale case side by 1.5 to 4.5 mm (0.06 to 0.18 in.) (B) over entire stroke of plungerhead.

NOTE: The 1.5 mm (0.06 in.) dimension is preferred.

- 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.



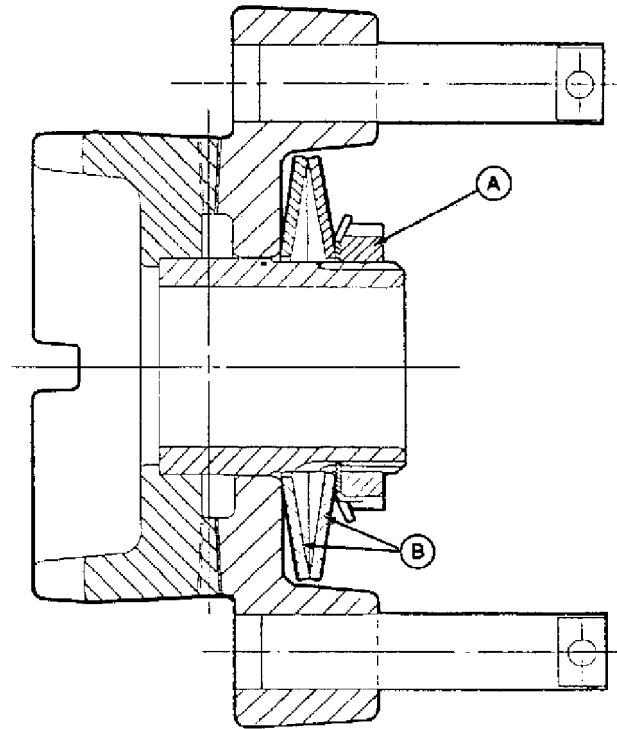
-UN-20SEP88
E18467

- A—Plungerhead face
- B—1.5 to 4.5 mm (0.06 to 0.18 in.)
- C—Guide

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ADJUSTING 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.



CC9168

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-UN-25SEP98

CC9168

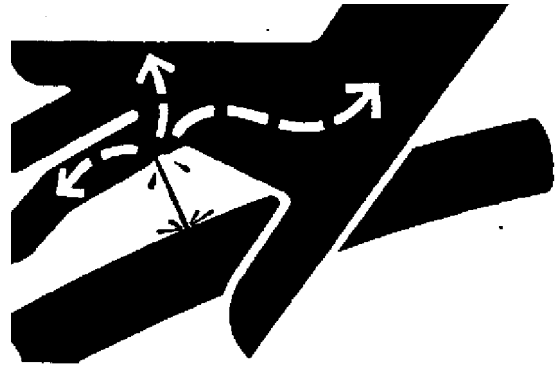
BLEEDING HYDRAULIC SYSTEM

! **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 should 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.

- Loosen bale tension as hay becomes tough and at the end of each day's operation.



X9811 -UN-23AUG88

CC,339SQB004346-19-01AUG98

Storage

STORING BALER AT END OF SEASON

- Shelter baler in a dry place.
- Clean baler thoroughly inside and out. 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. At this time your John Deere dealer can expedite delivery of parts and install them during slack periods - avoiding delays next baling season.

CC,339SQB004428-19-01AUG98

PREPARING 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 bolts, nuts and set screws.
- Check timing of entire baler and adjust, if necessary.
- If any major parts have been replaced, they should be run in.
- Check slip clutch to be sure linings are not bonded to metal plates. Readjust slip clutch (see “Adjusting Slip Clutch” in “Service” Section).
- Review your Operator’s Manual.

CC,339SQB004429-19-01AUG98

Specifications

SPECIFICATIONS FOR 339 BALER

BALE

Cross-section 31 x 41 cm (12 x 16 in.)
Length 0.30 to 1.30 m (12 to 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

Gears Steel cut, enclosed
Recommended tractor power 26 kW (35 hp) minimum at PTO
PTO speed 540 rpm
Hardware metric
R.H tire size 7.00-12 (6 PR)
L.H tire size 10.00/80-12 (6 PR)
Pickup gauge wheel 4.00-8 (4 PR)

DIMENSIONS

Feed opening area 1568 cm² (213.04 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)

**SPECIFICATIONS FOR 339 BALER
(CONTINUED)**

SOUND LEVEL

Max. sound level in accordance
with prEN1553; measurement method
in accordance with ISO3744
(average value) 83 dB(A)

CC.339SB 002529-19-16DEC94

SPECIFICATIONS FOR 349 BALER

BALE

Cross-section 36 x 46 cm (14 x 18 in.)
 Length 0.30 to 1.30 m (12 to 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

Gears Steel cut, enclosed
 Recommended tractor power 30 kW (41 hp) minimum at PTO
 PTO speed 540 rpm
 Hardware metric
 R.H tire size 7.00-12 (6 PR)
 L.H tire size 10.00/75-15.3 (6 PR)
 Pickup gauge wheel 4.00-8 (4 PR)

DIMENSIONS

Feed opening area 1914 cm² (296.67 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 (790.3 lbf)

**SPECIFICATIONS FOR 349 BALER
(CONTINUED)**

SOUND LEVEL

Max. sound level in accordance
with prEN1553; measurement method
in accordance with ISO3744
(average value) 83 dB(A)

CC.339SB 002534-19-16DEC94

SPECIFICATIONS FOR 359 BALER

BALE

Cross-section	36 x 46 cm (14 x 18 in.)
Length	0.30 to 1.30 m (12 to 50 in.)

PICKUP

Width (inside)	1.56 m (61.5 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

Gears	Steel cut, enclosed
Recommended tractor power	35 kW (47 hp) minimum at PTO
PTO speed	540 rpm
Hardware	metric
R.H tire size	7.00-12 (6 PR)
L.H tire size	10.00/75-15.3 (6 PR) 11.5/80-15.3 (10 PR)
Pickup gauge wheel	4.00-8 (4 PR)

DIMENSIONS

Feed opening area	1914 cm ² (296.67 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 (3527 lb)
Maximum load at hitch	1200 kg (2645 lb)
Maximum load on axle	4000 N (903.2 lbf)

**SPECIFICATIONS FOR 359 BALER
(CONTINUED)**

WIRE

Diameter 1.9 mm (14-1/2 gauge), annealed, oiled
Wire coils approx. 2000 m (6561 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)

CC.339SB 002536-19-04AUG99

Specifications

**SPECIFICATIONS FOR 459 BALER
(CONTINUED)**

WIRE

Diameter 1.9 mm (14-1/2 gauge), annealed, oiled
Wire coils approx. 2000 m (6561 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)

CC.339SB 002538-19-04AUG99

DECLARATION OF CONFORMITY

John Deere Arc-lès-Gray
Avenue Jean Jaurès
F-70103 Gray



The Rectangular Baler

comply with the EC provisions:

Models 339, 349, 359, 98/37/EEC Machine Directive
and 459 and prEN704 Pick-up Balers

Arc-lès-Gray 01 May 1999

L. N. Smith
Larry N. SMITH
(Manager Product Engineering)

CC015431 -19-10AUG99

CC.339SQB004916-19-06MAY99

Serial Number

SERIAL NUMBER PLATE

Serial number identifying the baler is stamped on factory serial number plate.

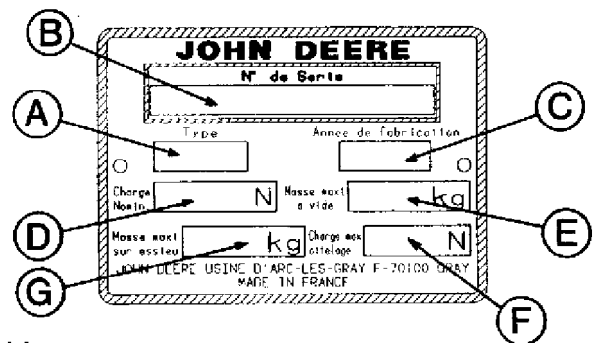
This number and letters are required when ordering baler replacement parts.

To ensure that you have this number at hand, enter the appropriate serial number in the spaces provided in each illustration.

CC,339SB 002530-19-16DEC94

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



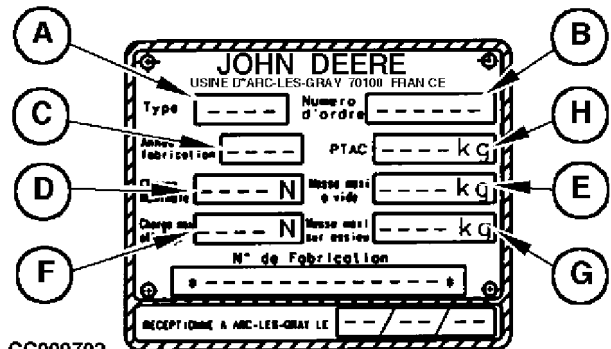
CC001157

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-JUN-07FEB95
CC001157

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



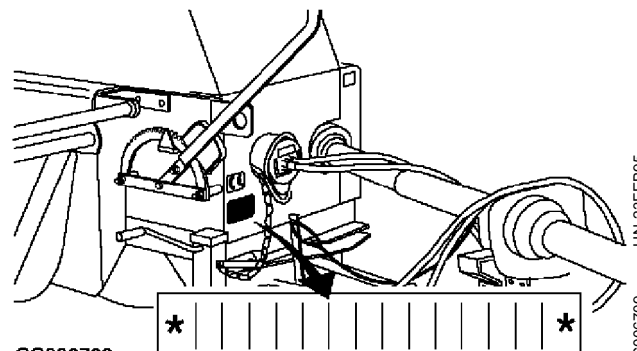
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-JUN-26NOV96
CC009702

PRODUCT IDENTIFICATION NUMBER

The product identification number plate is located on the front of the bale case.



CC006709

CC,339SB 002532-19-16DEC94

-JUN-23FEB95
CC006709

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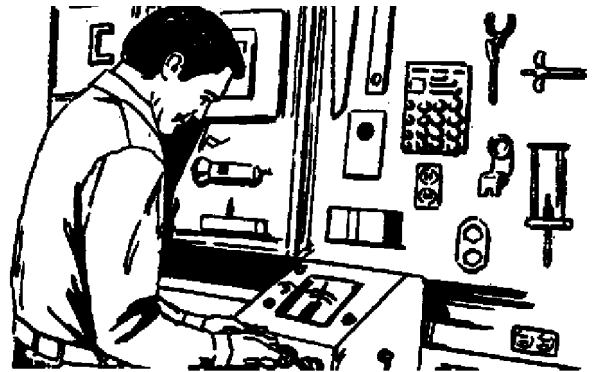


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