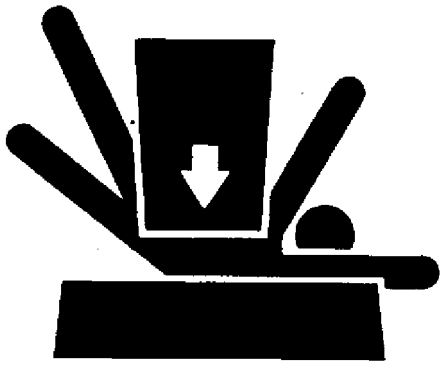
327, 328
336, 337, 338
346, 347, 348
466, 467, 468
Square Balers

John Deere Ottumwa Works
TM1243 (25APR01)
LITHO IN U.S.A.
ENGLISH

SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



TS229 -UN-23AUG88

DX,LOWER -19-04JUN90

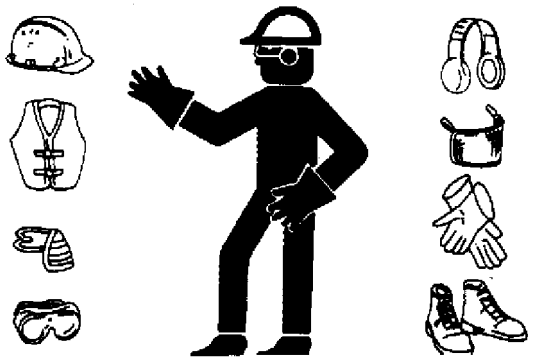
WEAR PROTECTIVE CLOTHING

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

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

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

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



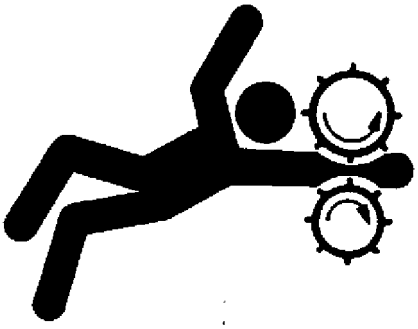
TS206 -UN-23AUG88

DX,WEAR -19-10SEP90

SERVICE MACHINES SAFELY

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

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



TS228 -UN-23AUG88

DX,LOOSE -19-04JUN90

Item	Measurement	Specification
	Width	
	336	2438 mm (96 in.)
	327 (Std. tires)	2490 mm (98 in.)
	327 (Float. tires)	2540 mm (100 in.)
	328 (Std. tires)	2692 mm (106 in.)
	328 (Float. tires), 337 338, 346, 347, 348 (Std. tires)	2743 mm (108 in.)
	466	3023 mm (119 in.)
	467, 468 (Std. tires)	3073 mm (121 in.)
	Length	
	327, 328 With bale chute and 2-joint hitch	5029 mm (198 in.)
	336, 346 with bale chute and tongue	5740 mm (226 in.)
	337, 338, 347, 348 With bale chute and 3-joint hitch	5766 mm (227 in.)
	466, 467, 468 With bale chute and 3-joint hitch	6096 mm (240 in.)
	336, 346 less tongue and bale chute	3378 mm (133 in.)
	327, 328, 337, 338, 347, 348 Less tongue and bale chute	3404 mm (134 in.)
	466, 467, 468 Less tongue and bale chute	3759 mm (148 in.)
Weight	Twine Units	
	327, 328 Minimum	1108 kg (2441 lb)
	327, 328 Maximum	1239 kg (2728 lb)
	336 Maximum	1120 kg (2470 lb)
	337, 338 Minimum	1273 kg (2805 lb)
	337, 338 Maximum	1349 kg (2972 lb)
	346 Maximum	1325 kg (2920 lb)
	347, 348 Minimum	1412 kg (3110 lb)
	347, 348 Maximum	1507 kg (3320 lb)
	466 Maximum	1497 kg (3300 lb)
	467, 468 Minimum	1680 kg (3700 lb)
	467, 468 Maximum	1719 kg (3786 lb)

Continued on next page

GEAR CASE AND BALE TENSION PUMP OIL

TRANSMISSION, HYDRAULIC,AND GEAR CASE 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®

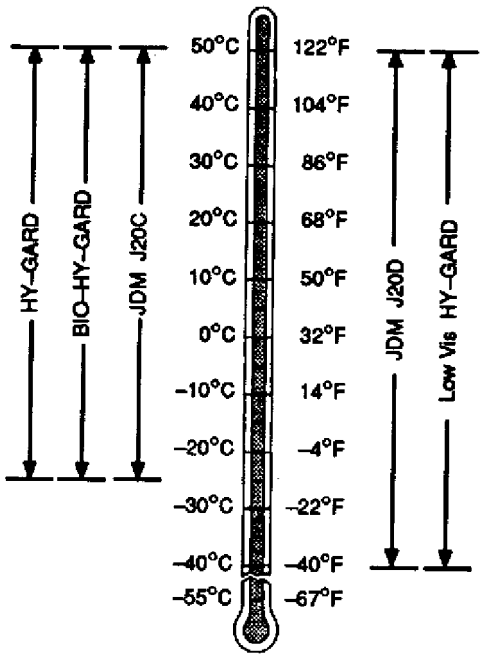
The following oil is also recommended:

- John Deere BIO-HY-GARD™[1]

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

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

Arctic oils (such as Military Specification MIL-L-46167B) may be used at temperatures below -30˚C (-22˚F).



TS1614 -UN-31JAN94

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

EX,1243,1020,A -19-17AUG95

ALTERNATIVE AND SYNTHETIC LUBRICANTS

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

DX,ALTER -19-01FEB94

GENERAL INFORMATION

The 327, 328 and 336 balers use a Category 3 hookup.

The 337, 338 and 346 balers use a Category 4 hookup.

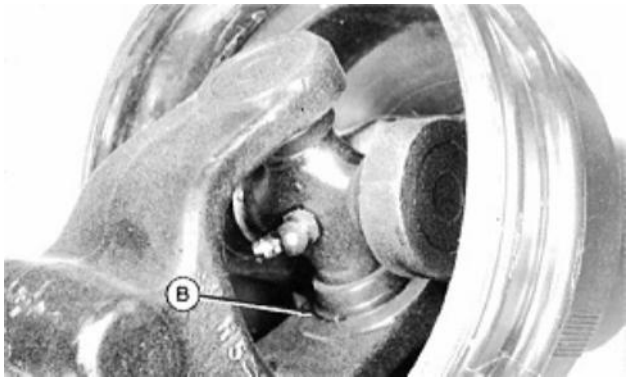
347 and 348 balers use a Category 4 hookup with an optional Category 5 available.

The 466, 467 and 468 balers use a Category 5 hookup.

Categories can be identified by outside diameter of U-joint bearing cup and location of snap ring which retains the bearing cup.

U-Joint Category	Bearing O.D.	Snap Ring Location
3	28.6 mm (1-1/8 in.)	Outside (A)
4	31.8 mm (1-1/4 in.)	Outside (A)
5	33.3 mm (1-5/16 in.)	Inside (B)

-UN-29APR92
E36456



-UN-29APR92
E36457

EX,1243,2015,A -19-23JUN92

REMOVE AND INSTALL PTO HOOKUP

1. Remove cap screw (A) and nut.

2. Remove PTO hookup from baler.

3. Install PTO hookup on powershaft. Be sure groove (B) in powershaft aligns with cap screw of PTO hookup.

4. Install and tighten cap screw and nut.

5. Lubricate telescoping components.

-UN-27OCT89
E33772

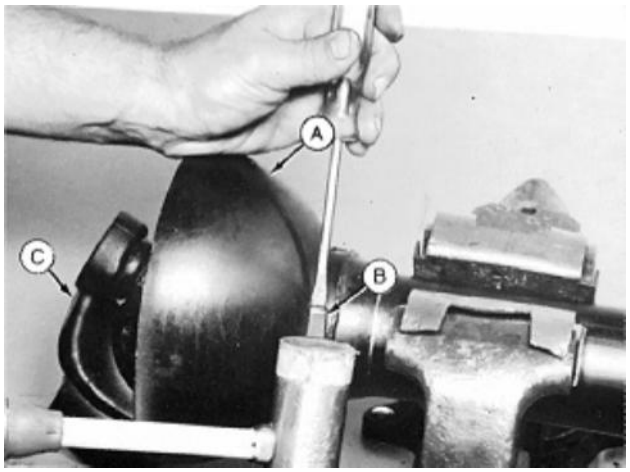
-UN-29APR92
E36447

EX,1243,2015,B -19-23JUN92

INSPECT AND REPAIR RECIRCULATING BALL SLIP PTO SHAFT AND TUBE

NOTE: Recirculating ball slip type PTO hookups, Cat. 5, are used on 347, 466, 467 and 468 (S.N. —915000) balers.

Before removing front section of hookup, slide section backward and forward. If excessive drag is noticed, recirculating ball slip must be disassembled and checked for wear.



E16713 -UN-14NOV91

1. Pull front and rear sections of PTO hookup apart.

2. Lift locking bearing (B) up and remove from PTO shaft groove. Repeat for other locking bearing.

3. Remove yoke and shaft from PTO shield.

4. Repeat steps 2 and 3 for other section of PTO hookup.

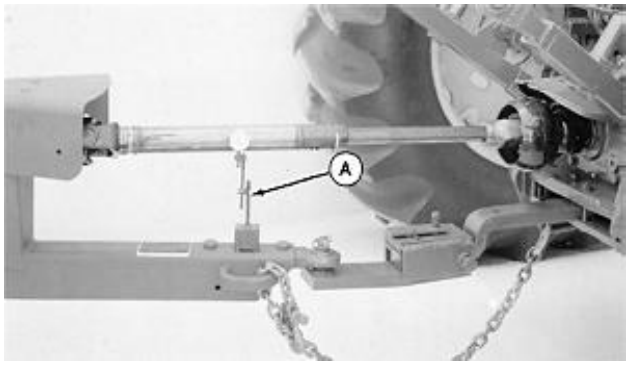
EX,1243,2020,I -19-23JUN92

5. Clean rust, dirt and paint from center of PTO hookup. Slide PTO hookup sections together by aligning tabs and grooves.

6. Replace cross and bearing assembly if worn. (See Section 20, Group 25.)

CAUTION: DO NOT start tractor while inspecting shaft for straightness.

7. Check tube and shaft for straightness using dial indicator (A). TIR (Total Indicator Readout) should be within 0.90 mm (0.035 in.) at middle of hookup. If hookup is not within specification, straighten or replace.



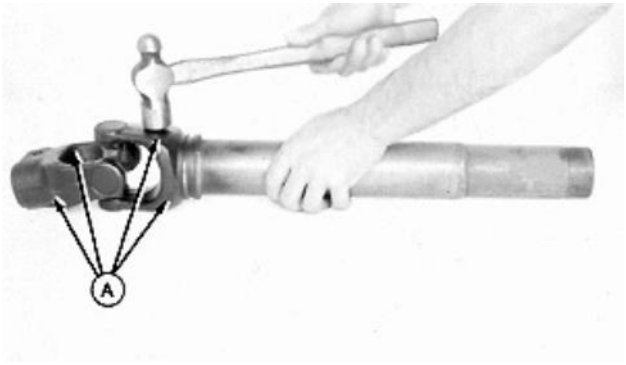
E18298 -UN-07JUN89

EX,1243,2020,J -19-23JUN92

17. If U-joint is stiff and does not move freely after assembling, strike each ear of yoke on radius (A) to relieve binding.

18. Install PTO hookup shields. (See procedure in Section 20, Group 20.)

19. Apply grease to lubrication fitting.

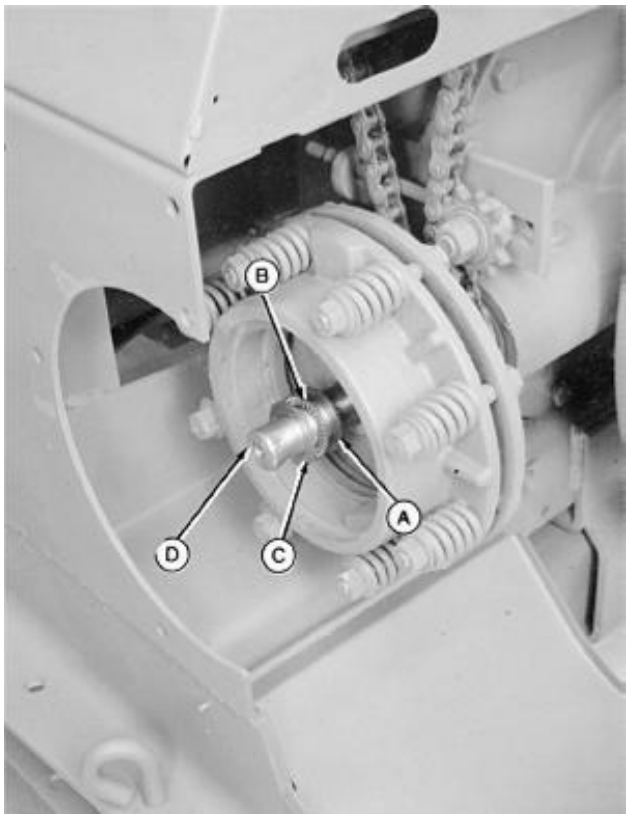


E18749 -UN-12JUN89

EX,1243,2025,G -19-23JUN92

2. 337-347-348-466-467-468: Position thrust washer (A), needle bearing (B), and thrust washer (C) on gear case input shaft (D).

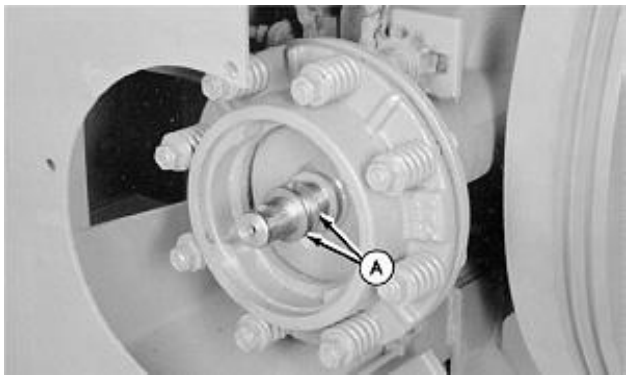
A—Thrust Washer
B—Needle Bearing
C—Thrust Washer
D—Input Shaft



E18323 -UN-12JUN89

EX,1243,2030,G -19-23JUN92

327-328-336-338-346: Position thrust washers (A) on gear case input shaft.



E18324 -UN-12JUN89

EX,1243,2025,H -19-23JUN92

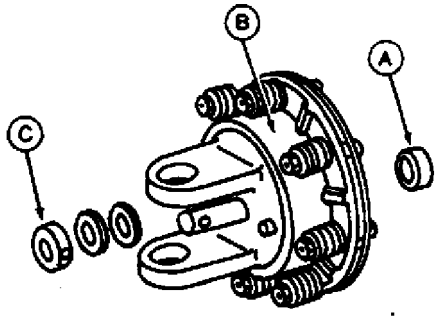
ADJUST SLIP CLUTCH END PLAY—327, 328, 336, 338 AND 346 BALERS

IMPORTANT: When correctly adjusted, slip clutch should have 0.635 mm (0.025 in.) end play.

1. Pull slip clutch towards yoke to check for 0.635 mm (0.025 in.) clearance between spacer (A) and slip clutch hub (B).

2. Remove collar (C), add washers (as necessary).

3. Replace collar and secure with spring pin.



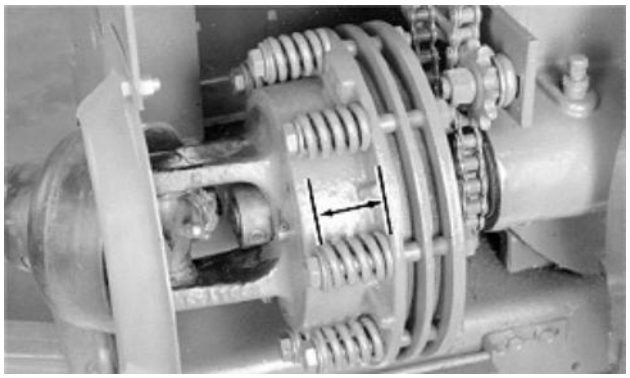
E18561 -UN-21NOV89

EX,1243,2035,N -19-23JUN92

ADJUST SLIP CLUTCH

SPRING INITIAL LENGTH

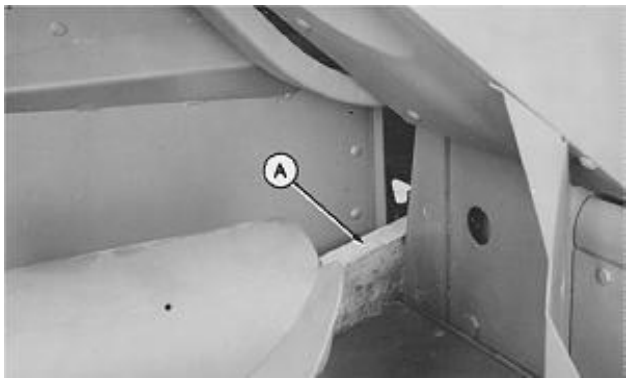
Balers	mm	(in.)
327-328-336	41.4 ± 0.8	1-21/32 ± 1/32
337-338-346-347-348 With Cat. 4 hookup	39.9 ± 0.8	1-9/16 ± 1/32
347-348-466-467-468 With Cat. 5 hookup	43.7 ± 0.8	1-23/32 ± 1/32



E18720 -UN-15JUN89

EX,1243,2035,O -19-23JUN92

1. Check clutch by blocking movement of plungerhead with block of wood (A) between knives.



E18335 -UN-12JUN89

E01,2030,N -19-24FEB83

ASSEMBLE GEAR CASE

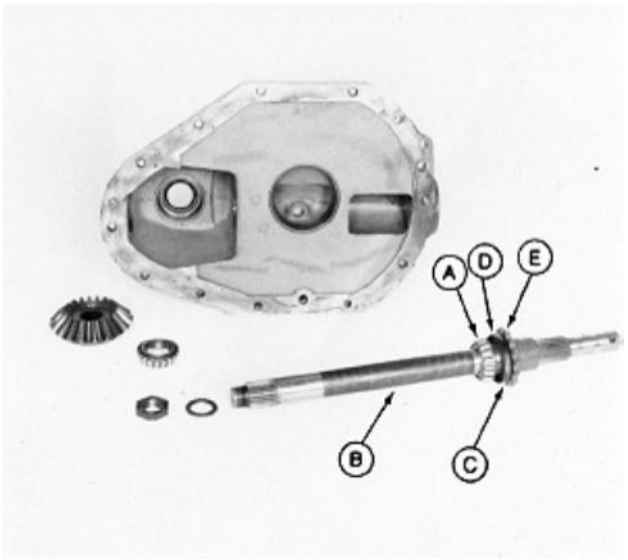
NOTE: If using existing bearings, tighten nut to lower torque value.

1. Press bearing (A) on front of input shaft (B).

2. Place new oil seal (C), spacer (D), and chain sprocket (E) on input shaft and secure using snap ring.

To ensure correct pre-load on bearing, press bearing, spacer, and sprocket tight against snap ring.

A—Bearing
B—Input Shaft
C—Oil Seal
D—Spacer
E—Sprocket



E18344 -UN-12JUN89

E01,2035,O -19-23JUN92

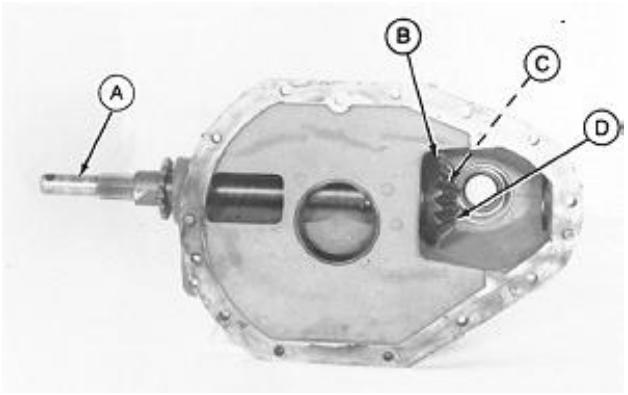
3. Slide input shaft (A) into left half of gear case.

IMPORTANT: Do not press seal into gear case at this time.

4. On 327, 328, 336, 338 and 346 Balers, place bevel gear, special washer and slotted nut on rear of shaft.

On 337, 347, 348, 466, 467, and 468 Balers, place bevel gear (B) special washer (C) and stake nut (D) on rear of shaft.

A—Input Shaft
B—Bevel Gear
C—Special Washer
D—Stake Nut



E18345 -UN-12JUN89

EX,1243,2040,J -19-23JUN92

INSTALL FLYWHEEL

IMPORTANT: 327, 328, 336, 337 and 338 Balers shear bolts are 9/32 x 2-1/4 in. “F” quality. 346, 347, 348, 466, 467, and 468 Balers shear bolts are 11/32 x 2-1/4 in. “F” quality.

1. Install flywheel (F) on shear bolt arm.

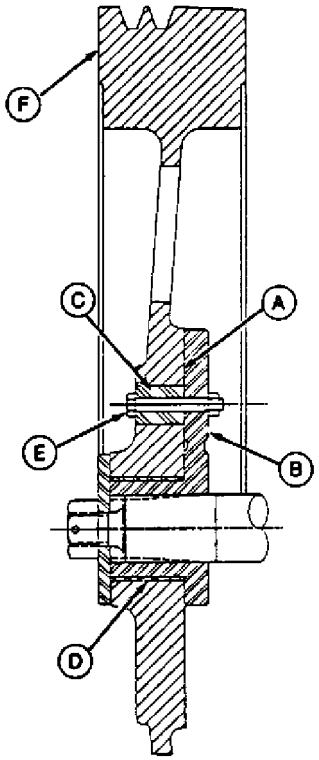
2. Secure flywheel on shaft using washer and nut.

IMPORTANT: Before installing shear bolt, make sure shear bolt hub is seated on tapered spline.

Remove gap from shear plane (A) by moving flywheel (F) tight against shear bolt hub (B) before installing shear bolt. Removing gap by tightening shear bolt will tip flywheel causing premature shear bolt failure.

3. Align holes and install shear bolt (E). Do not overtighten. Refer to Section 20, Group 50.

A—Shear Plane
B—Shear Bolt Hub
C—Shear Bolt Sleeve
D—Bushing
E—Shear Bolt
F—Flywheel



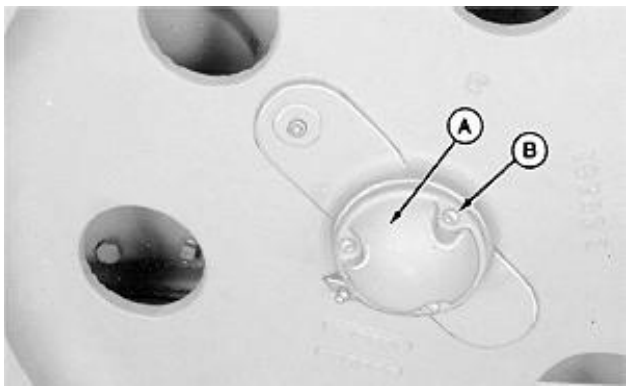
E33744 -UN-25OCT89

EX,1243,2045,E -19-23JUN92

NOTE: Shield (A) and screws (B) are not used on 466 and 467 Balers.

4. Install flywheel nut shield (A) using three machine screws (B).

IMPORTANT: Lubricate at fitting when replacing shear bolt to eliminate excessive wear on bushing.



E18362 -UN-12JUN89

EX,1243,2045,F -19-23JUN92

SERVICE PARTS KIT

The following kit is available through your parts catalog:

Seal Kit

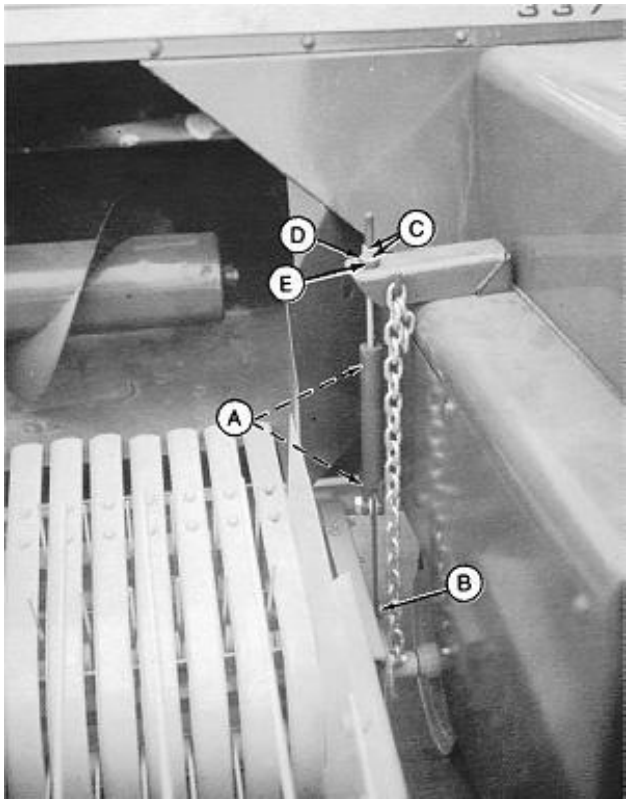
E01,3010,BE -19-13MAR87

REMOVE CYLINDER

1. Wash area around cylinder.

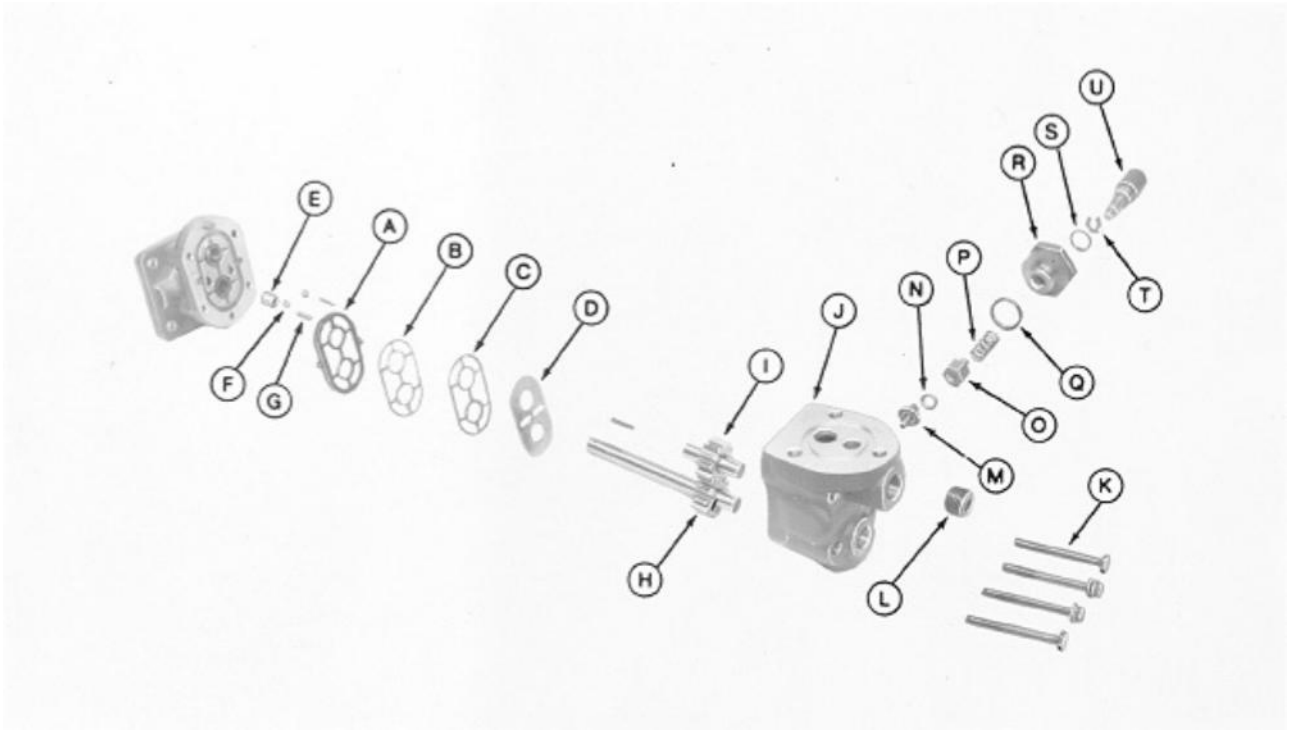
2. Remove hoses (A), cotter pin (B), nuts (C), washer (D) and spherical washer (E).

A—Hoses
B—Cotter Pin
C—Nuts
D—Washer
E—Spherical Washer



E01,3010,BF -19-30APR87

ASSEMBLE PUMP



A—Diaphragm Seal
B—Gasket
C—Backup Gasket
D—Diaphragm
E—Shaft Seal
F—3/16-In. Diameter Steel Ball
G—Springs
H—Drive Gear
I—Idler Gear Assembly
J—Housing
K—Cap Screws and Washers
L—Pipe Plug
M—Poppet Assembly
N—0.25 mm (0.010-In.) Shim
O—Spring Guide
P—Spring
Q—O-Ring
R—Hex Plug
S—O-Ring
T—Special Snap Ring
U—Adjusting Screw

1. Lubricate all parts before assembling. Diaphragm seal (A), gasket (B), backup gasket (C), diaphragm (D), shaft seal (E), and all O-rings are included in seal kit.

2. Install shaft seal (E).

3. Tuck diaphragm seal (A) into grooves in front plate with open part of “V” section down. (Use a blunt tool.).

4. Press gasket (B) and backup gasket (C) into diaphragm seal.

5. Place 3/16-in. diameter steel balls (F) into seals and place springs (G) on balls.

6. Place diaphragm (D) on top of backup gasket (bronze face up).

7. Entire diaphragm must fit inside raised rim of diaphragm seal.

8. Install drive gear (H) and idler gear assembly (I).

9. Attach housing (J) to plate and secure using four 1/4 x 2-1/4-in. cap screws (K). Torque to 10 to 14 N·m (7 to 10 lb-ft).

10. Install 3/8-in. pipe plug (L). Torque to 41 N·m (30 lb-ft).

11. Install poppet assembly (M), 0.25 mm (0.010-in.) shim (N), spring guide (O), spring (P), O-ring (Q), hex plug (R), O-ring (S). On 327, 328, 337, and 338 Balers only, install special snap ring (T) and adjusting screw (U).

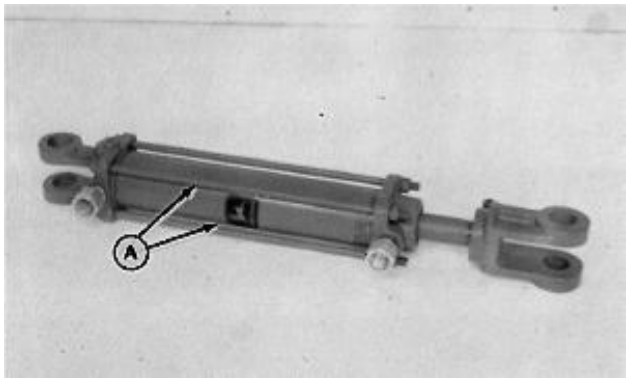
E01,3015,BH -19-13MAR87

DISASSEMBLE TIE-BOLT CYLINDER

1. Remove nuts and four tie rods (A).

IMPORTANT: Do not clamp barrel in a vise.

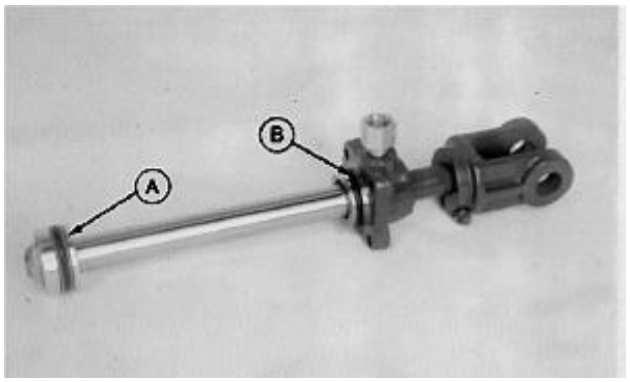
2. Separate cylinder.



E01,3025,AL -19-13MAR87

3. Remove nylon O-ring, rubber O-ring, and nylon O-ring from piston (A).

4. Remove rubber O-ring (B) from rod guide.

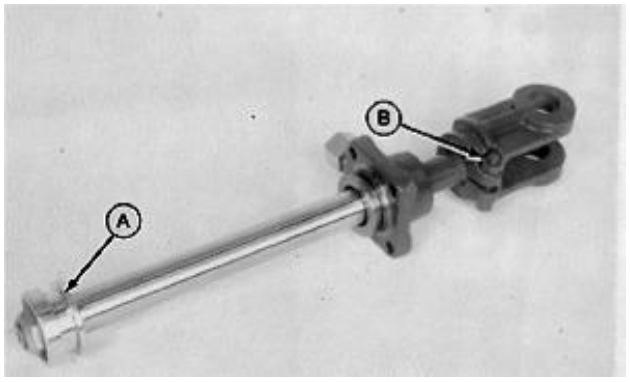


E01,3025,AM -19-13MAR87

5. If necessary to remove piston (A), pad jaws of vise and clamp cylinder securely.

6. Remove lock nut and piston (A).

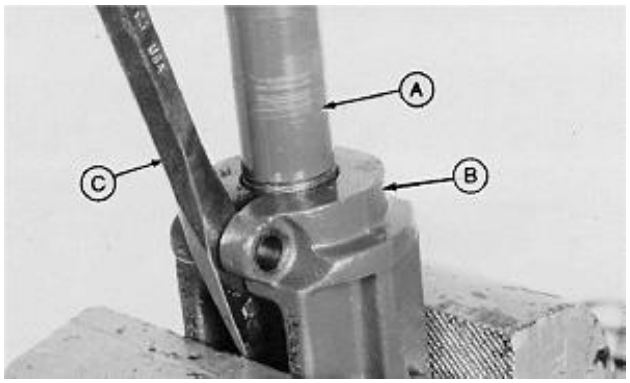
7. Remove cap screw and nut (B).



E01,3025,AN -19-13MAR87

8. Unthread rod (A) from clevis (B).

NOTE: Removal is easier if the clevis can be opened slightly using a chisel (C).



E01,3025,AO -19-30APR87

PICKUP DIFFICULTIES

Symptom	Problem	Solution
Pickup Teeth Digging In Ground	Pickup set too low.	Raise pickup.
Not Picking Up Hay	Pickup stays up.	Check pivots.
		Loosen float spring.
		Loosen pickup drive idler spring.
	Pickup teeth set too high.	Lower pickup.
	Ground speed too fast.	Reduce ground speed.
	Hay not all raked.	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 and raise compressor.
	Foreign material inside and/or broken teeth.	Remove foreign material and/or replace teeth.
Pickup Tooth Breakage	Pickup set too low.	Raise pickup.
	Foreign material inside and/or broken teeth.	Remove foreign material and/or replace teeth.

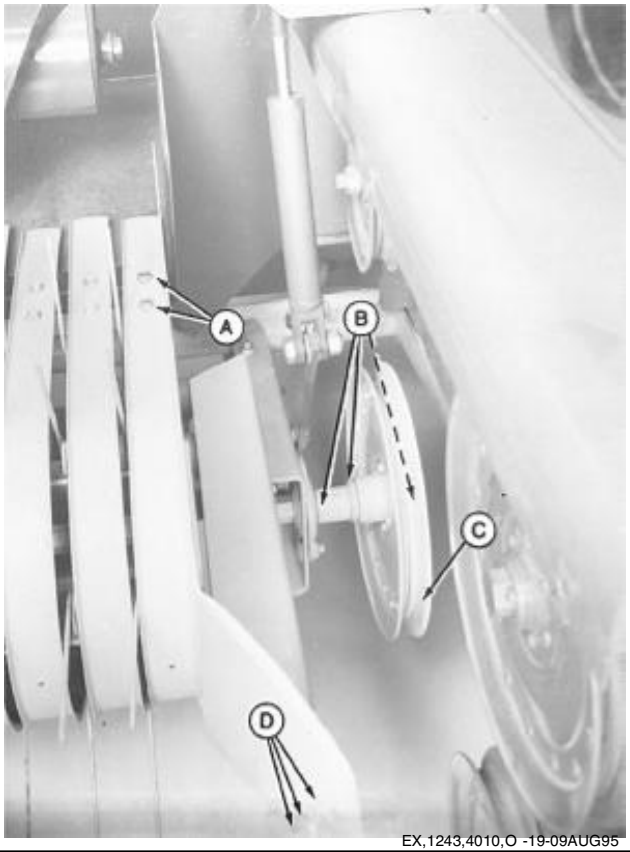
EX,1243,4005,A -19-09AUG95

8. Install left stripper/divider using four self-tapping screws (A).

9. Install spacer and washers (B), pickup driven sheave (C) and secure with cotter pin. Install washers as necessary on each side of sheave so sheave is aligned with the other pickup drive sheaves.

10. Install three M8 x 16 carriage bolts (D).

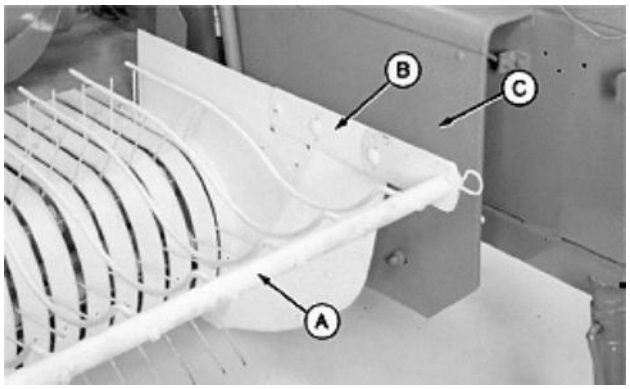
A—Self-Tapping Screws
B—Spacer and Washers
C—Pickup Driven Sheave
D—Carriage Bolts and Nuts



E18756 -UN-12JUN89

EX,1243,4010,O -19-09AUG95

11. Install pickup drive belt, pickup drive shield (C), left compressor support (B), and compressor rods (A).

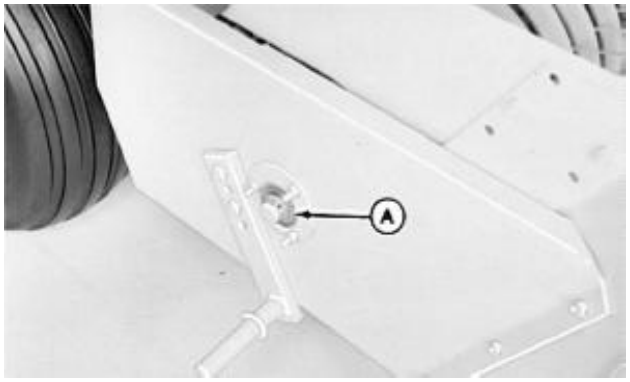


E18736 -UN-12JUN89

EX,1243,4010,P -19-09AUG95

7. Install pickup cylinder assembly in pickup frame.

Install bearing (A) in right support using three M10 x 25 carriage bolts, and position pickup shaft through bearing.



EX,1243,4015,V -19-09AUG95

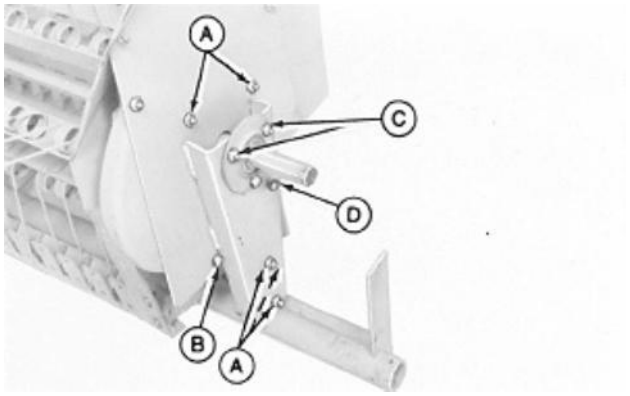
NOTE: For 6-series balers, left support is not removable.

8. Install left support using five M10 x 25 carriage bolts (A) and one M10 x 20 cap screw (B).

9. Install bearing using two M10 x 25 carriage bolts (C) and one M10 x 25 cap screw (D).

For 6-series, use three carriage bolts and nuts to install left bearing.

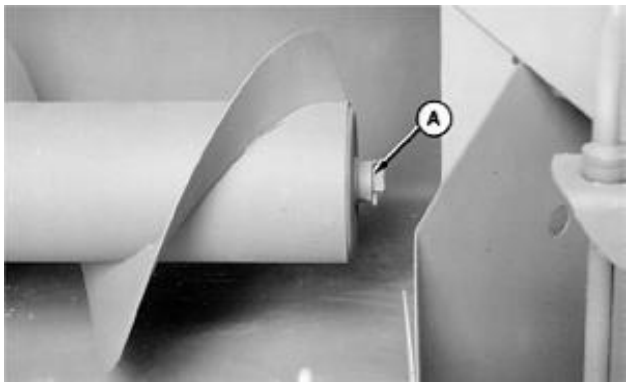
A—Carriage Bolts and Nuts
B—Cap Screw
C—Carriage Bolts and Nuts
D—Cap Screw



EX,1243,4015,W -19-09AUG95

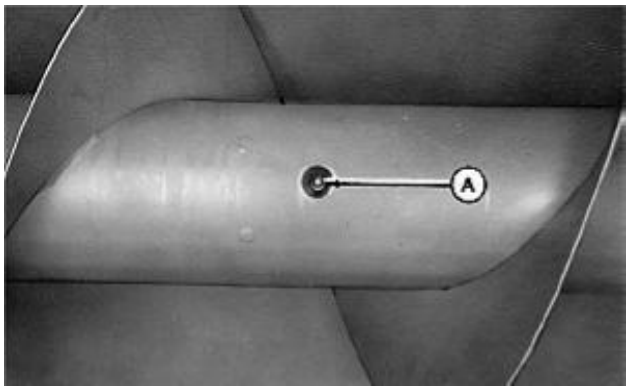
7. 337-338-346-347-348-466-467 and 468 Balers: Remove 3/16 x 1-1/2 in. cotter pin (A).

8. 327-328-336 Balers: Remove 5/16 x 2 in. cap screw.



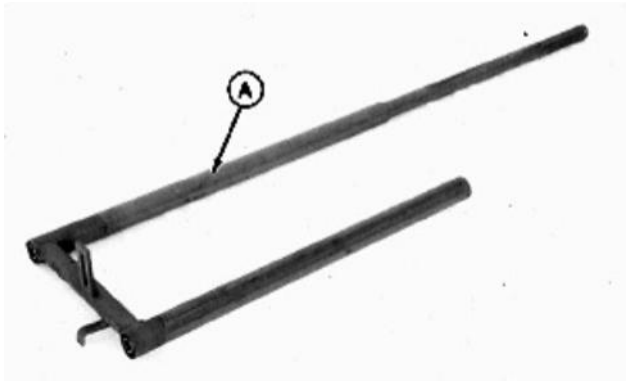
EX,1243,4020,G -19-09AUG95

9. On 327-336 Balers: Remove lubrication fitting (A) from inside auger.



EX,1243,4020,H -19-09AUG95

10. With someone to steady the auger, remove auger frame (A).



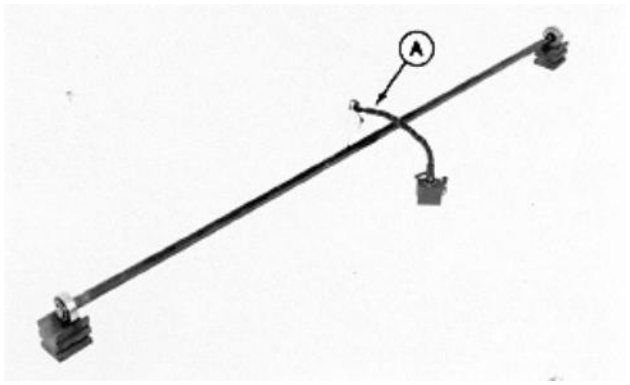
EX,1243,4020,I -19-09AUG95

INSPECT AUGER PARTS

1. Replace bearings and bushings if loose or scored.

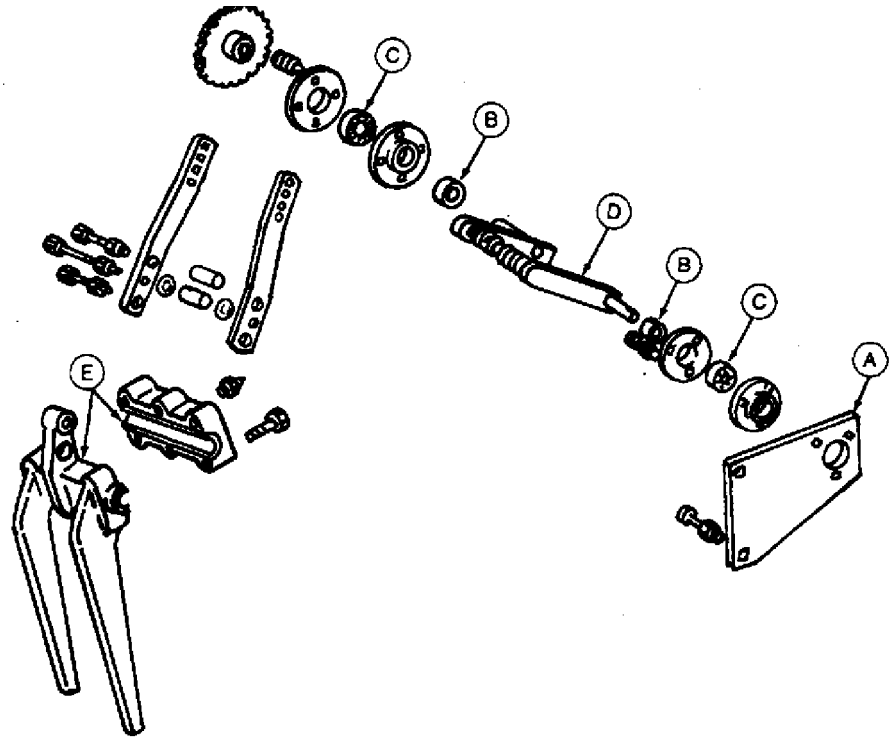
2. Using dial indicator (A), check auger shaft for straightness. If TIR is more than 1.6 mm (0.060 in.), straighten or replace.

3. Using dial indicator check auger drive shaft for straightness. If TIR is more than 2 mm (0.10 in.), straighten or replace.



EX,1243,4020,J -19-09AUG95

DISASSEMBLE FEEDER FINGERS—466, 467 AND 468 BALERS



E18540 -UN-13APR89

A—Bearing Support
B—Locking Collar
C—Bearing
D—Feeder Crank
E—Feeder Fingers With Cap

1. Remove bearing support (A) from bearing. Loosen locking collar by loosening set screw and use a punch to turn collar. Remove locking collars (B) and bearings (C) from feeder crank (D).

IMPORTANT: For correct assembly, mark end of cap (E).

2. Remove feeder fingers and cap (E) from feeder crank.

EX,1243,4025,AC-19-09AUG95

INSPECT FEEDER FINGERS

1. Check bearing for looseness and wear. Replace if necessary.

2. Place crank in V-block and check for straightness using a square.

3. Using a square, check sides of feeder fingers for straightness.

EX,1243,4025,AD-19-09AUG95

REMOVE PLUNGERHEAD

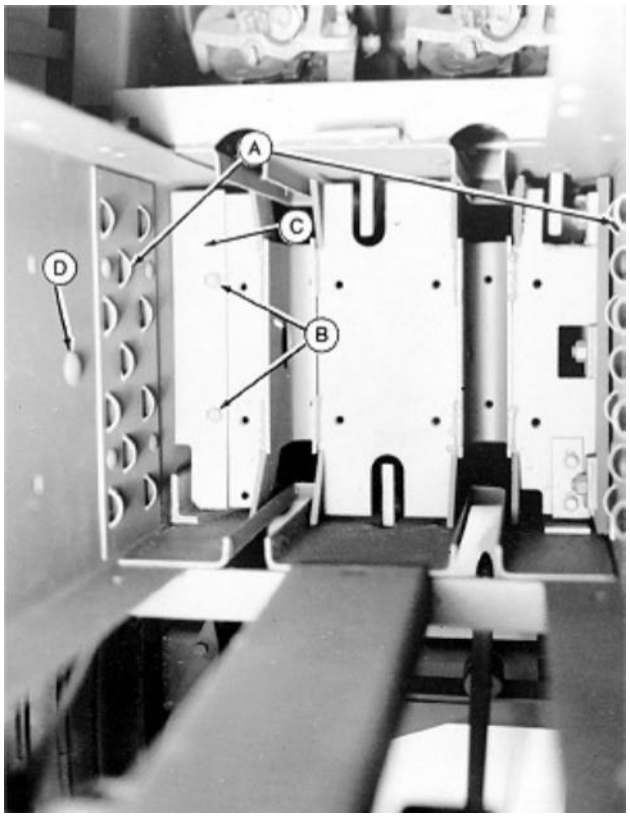
1. Remove all material from inside bale case.

2. Remove all side resisters (A). Note that right side resister has notch in lower corner.

3. Loosen cap screws (B) and move left rear scraper (C) to extreme right.

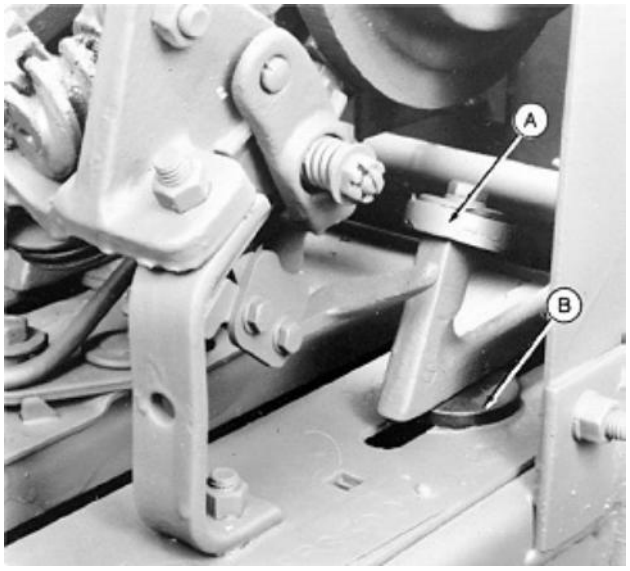
NOTE: If scraper (C) will not clear left needle frame pivot bolt (D), remove bolt. Note size and location of washers.

A—Right and Left Resisters
B—Cap Screws
C—Left Rear Scraper
D—Needle Frame Pivot Carriage Bolt



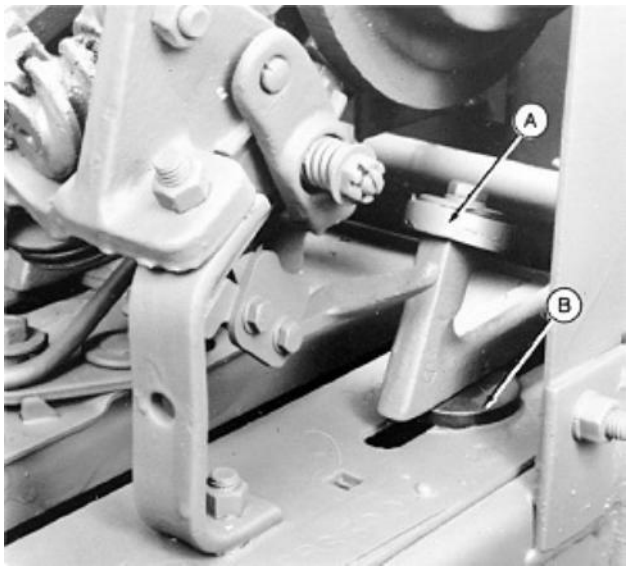
EX,1243,4030,BA-19-09AUG95

4. Lock both top and bottom hay dogs (A) out of bale case by positioning washer (B) between hay dog and bale case.



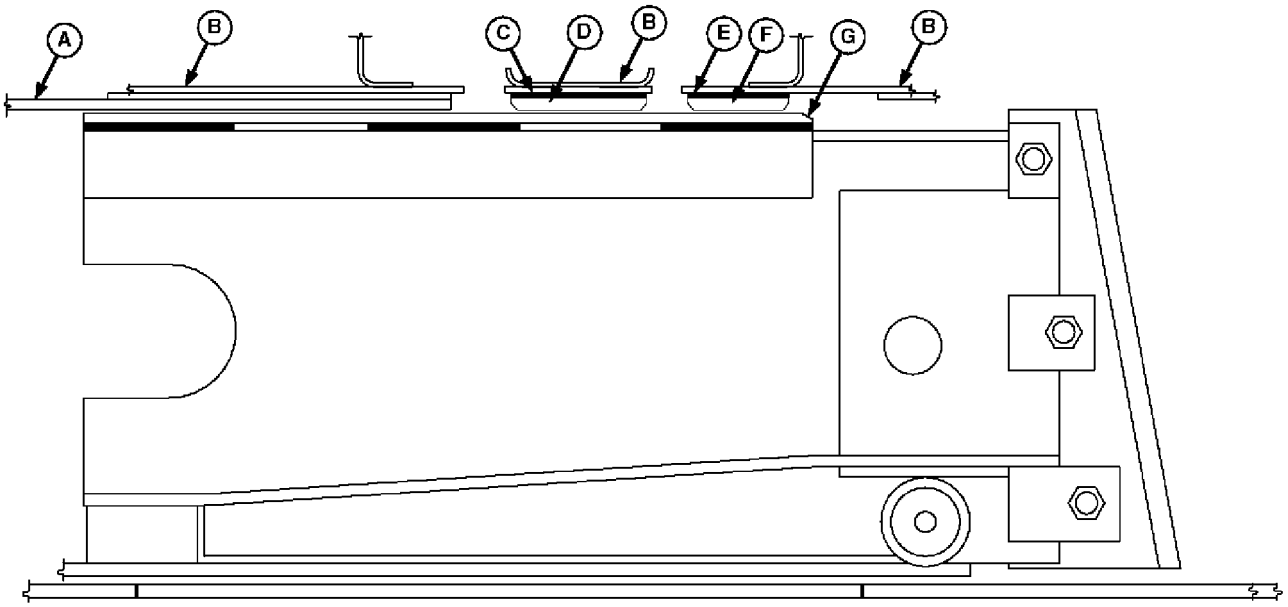
EX,1243,4030,BB-19-09AUG95

5. Remove washers (B) used to lock hay dogs (A) out of bale case.

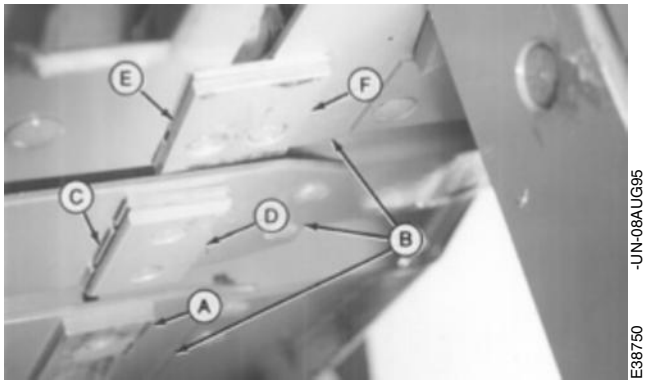


E18765 -UN-12JUN89

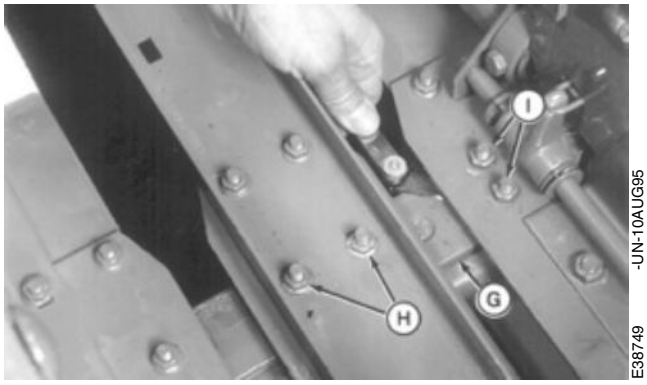
EX,1243,4030,BT-19-09AUG95



-UN-08AUG95
E38760



-UN-08AUG95
E38750



-UN-10AUG95
E38749

A—Upper Right Guide Plate
B—Bale Case
C—Slotted Shim (as required)
D—Upper Right Guide Extension Plate
E—Slotted Shim (as required)
F—Upper Right Guide Extension Plate
G—Plungerhead Upper Right Wear Plate
H—Nuts (2 used)
I—Nuts (2 used)

IMPORTANT: Incorrect adjustment of bale case upper right guide extension plates (D and F) may cause plungerhead knock (too much clearance) or may cause plungerhead to bind in bale case (too little clearance) causing shear bolts to break.

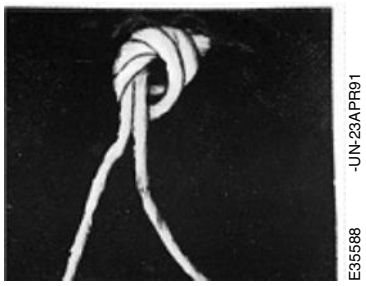
When plungerhead is at the "top scissor position", clearance between plungerhead upper right wear plate and bale case upper right guide extension plates should not exceed 1.5 mm (0.030 in.).

31. With plungerhead at the "top scissor position", check clearance between plungerhead upper right wear plate (G) and bale case upper right guide extension plates (D and F). Clearance must be within 0—0.8 mm (0—0.030 in.) at the closest point between wear plate and guide plates without plungerhead binding.

32. Loosen nuts (H) to add or remove slotted shims (C).

33. Loosen nuts (I) to add or remove slotted shims (E).

EX,1243,4030,CJ-19-10AUG95



EX,1243,5005,D -19-23JUN92

Symptom	Problem	Solution	Section/Group
Knot too loose.	Worn or damaged billhook tongue.	Replace billhook.	50-10
	Bale density too low.	Increase bale case tension.	—
		Install side hay resisters.	—
	Normal wear of knotter.	Adjust knife/wiper arm plate.	50-10
	Low billhook tongue pressure.	Adjust billhook tongue.	50-10
	Twine disk out of adjustment.	Adjust twine disk.	50-10

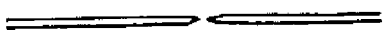
EX,1243,5005,D1-19-23JUN92

EX,1243,5005,N -19-23JUN92

Symptom	Problem	Solution	Section/Group
Twine broken or frayed in knot. One or both twines not completely cut.	Extreme tension on twine around billhook during tying cycle causes twine to shear or pull apart.	Loosen twine disk holder spring.	50-10
		Smooth off all rough surfaces and edges on billhook.	50-10
	Dull knife.	Replace knife.	50-10
	Twine disk out of adjustment.	Adjust twine disk.	50-10
	Knot pulled from billhook (not wiped).	Adjust wiper plate.	50-10
	Insufficient clearance between billhook and knife/wiper arm.	Adjust clearance.	50-10
	Poor quality twine.	Replace with better quality twine.	—

EX,1243,5005,N1-19-23JUN92

E35906 -UN-23APR91



EX,1243,5005,X -19-23JUN92

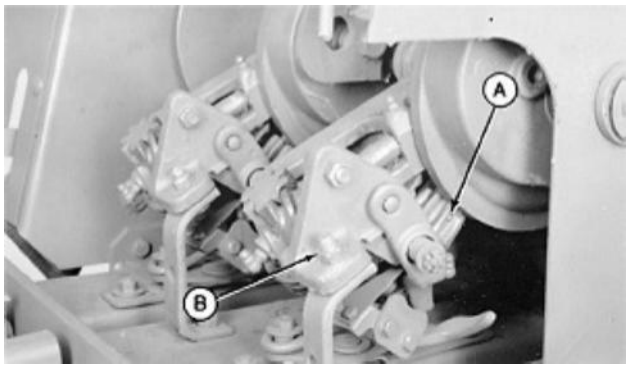
Symptom	Problem	Solution	Section/Group
Tension break on top of bale.	Force required to feed wire around bale exceeds the strength of the wire.	Reduce bale density (may be necessary to remove side hay resisters.).	—
		Apply light oil to wire coils.	—
		Adjust feeder fingers to put less hay on side where wire is breaking.	40-25
		Use 14-1/2 gauge wire.	—
		Change wire coils.	—
	Too much force required to pull wire from wire cartons.	Check all wire pulleys. Pulleys must spin freely.	50-15
		Check wire threading.	50-15
		All of knockout disk must be removed from the front of wire cartons.	—
		Check for any indication where wire has been catching.	—
		Check front side of needle for groove or buildup of foreign material that would retard wire flow.	—
		Check for rough or uneven wire.	—
		Check top wire guide for grooves deep enough to allow wire to wedge.	—
Tension break on front end of bale.	Wire catches in wire pulleys.	Check wire pulleys and any other place where wire could catch.	—

EX,1243,5005,X1-19-23JUN92

REMOVE BILLHOOK (S.N. —740000)

1. Remove spring pin and slide intermittent gear to right.

2. Remove groove pin (A) and 3/8 x 1-1/4 in. carriage bolt (B). Rotate knotter assembly to vertical position.

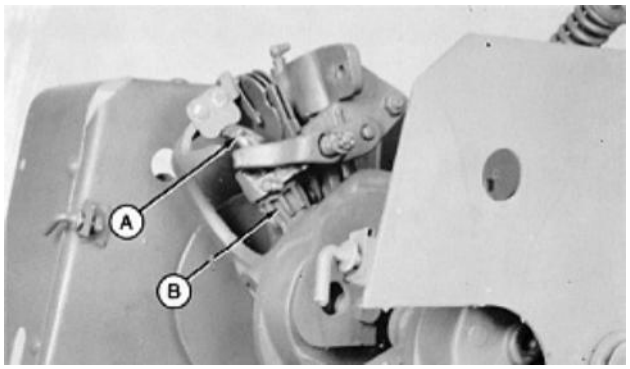


E18474 -UN-12JUN89

EX,1243,5010,L -19-23JUN92

NOTE: Record location and number of washers under pinion.

3. Remove billhook (A) and pinion gear (B).



E18476 -UN-12JUN89

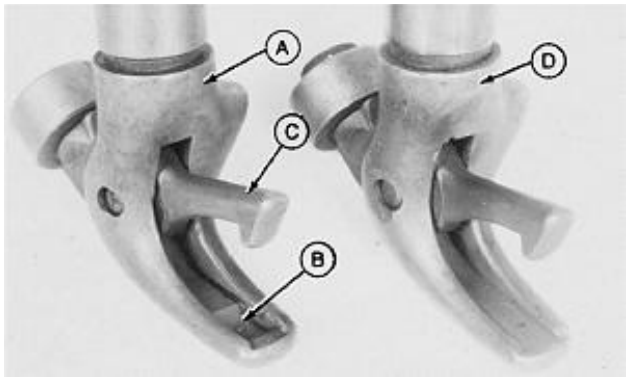
E01,5010,L -19-23JUN81

INSTALL BILLHOOK (S.N. —740000)

1. Install sisal billhook (D) for use with heavier grades of sisal twine, or multi-twine billhook (A) for use with lighter grades of sisal and plastic twine.

The multi-twine billhook (A) has a depression (B) in the groove of the billhook that allows the billhook tongue (C) to rest deeper in the groove than the sisal billhook (D).

A—Multi-Twine Billhook
B—Depression
C—Billhook Tongue
D—Sisal Billhook



E23901 -UN-14SEP88

EX,1243,5010,M -19-23JUN92

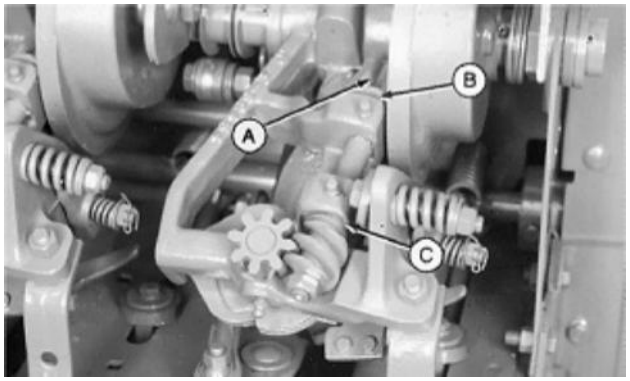
6. Hold pinion (A) and check for 0.13—0.38 mm (0.005—0.015 in.) clearance (B).

7. Add or remove washers (C) until correct clearance is obtained.

NOTE: If clearance is less than 0.13 mm (0.005 in.), knotter malfunctions will occur.

8. Install knotter assembly. (See procedure in this group.)

9. Lubricate knotter assembly.



EX,1243,5010,AC-19-23JUN92

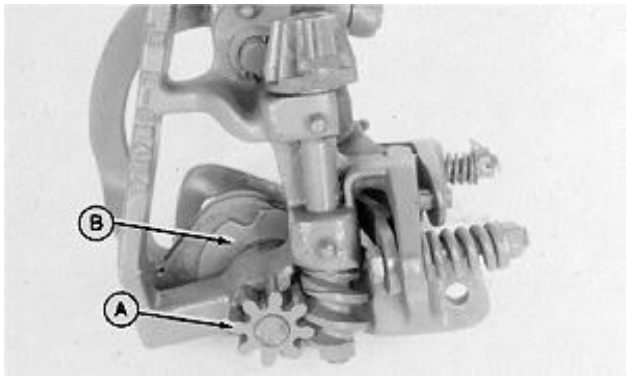
REMOVE TWINE DISK ASSEMBLY (S.N. 740001—)

1. Remove billhook. (See procedure in this group.)

2. Release twine holder spring tension.

3. Remove groove pin and gear (A).

4. Remove disk (B), retainer and strippers.



EX,1243,5010,AD-19-23JUN92

50
10
17

INSPECT TWINE DISK ASSEMBLY (S.N. 740001—)

Check gear for wear and cracks.

Check opening in casting for wear or pitting.

Check disk and strippers for wear.

Clean all parts and knotter assembly.

EX,1243,5010,AE-19-23JUN92

11. Refer to table for review of adjustment procedure Steps 3—9:

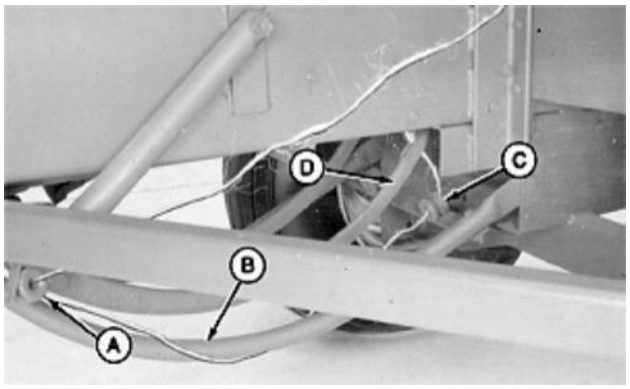
PROBLEM	POSSIBLE CAUSE	SOLUTION
Billhook NOT tight against intermittent gear.	Twine disk pinion tight against intermittent gear. Clearance exists between knotter frame and intermittent gear.	File flat side of twine disk pinion. (Refer to Step 4.)
	Knotter frame tight against intermittent gear. Clearance exists between twine disk pinion and intermittent gear.	Remove shim(s) as necessary. (Refer to Step 5.)
More than 0.38 mm (0.015 in.) clearance between twine disk pinion and intermittent gear.	Billhook pinion tight against intermittent gear. Clearance exists between knotter frame and intermittent gear.	File flat side of billhook pinion. (Refer to step 6.)
	Knotter frame tight against intermittent gear. Clearance exists between billhook pinion and intermittent gear.	Remove shim(s) (C) as necessary. (Refer to step 7.)
More than 0.76 mm (0.030 in.) clearance between knotter frame and intermittent gear.		Add shim(s) as necessary. (Refer to step 8.)
Knotter frame/intermittent gear end play.		Add shim(s) to left side of knotter frame or right side of intermittent gear as necessary. (Refer to Step 9.)

11. Check and adjust needle side pressure and need-to-twine stripper clearance. (Refer to Adjust Needles—Twine Baler in this group.)

EX,1243,5010,AW-19-23JUN92

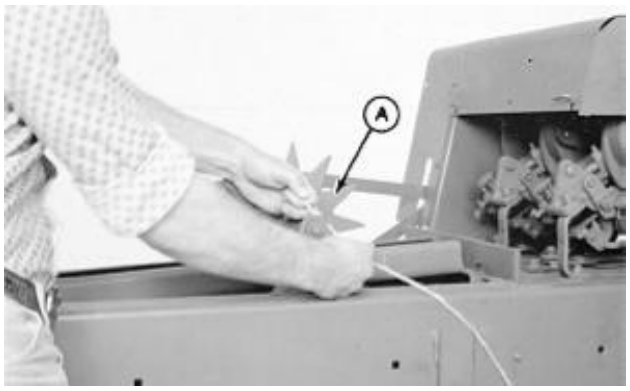
2. Thread through eye (A) on needle frame, UNDER needle guard (B), through eye (C) under right needle, and through guide on end of needle (D).

A—Eye
B—Needle Guard
C—Eye
D—Guide In (End of Needle)



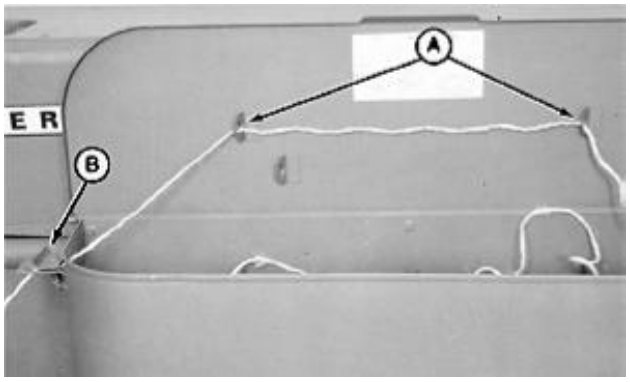
EX,1243,5010,BQ-19-23JUN92

3. Secure twine to shaft of measuring wheel (A) as shown.



E01,5010,AQ -19-23JUN81

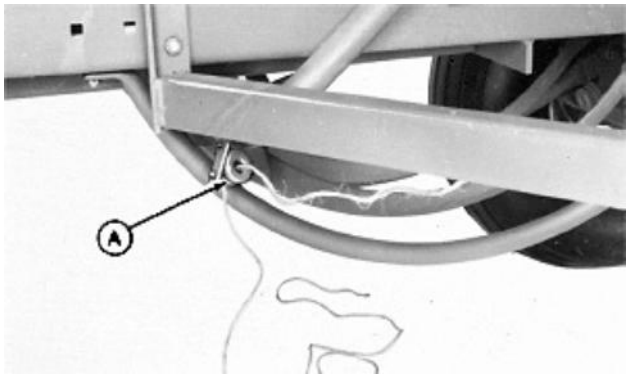
4. To thread left needle, thread twine from outside ball, through guides (A), and through REAR of tension plate (B).



E01,5010,AR -19-23JUN92

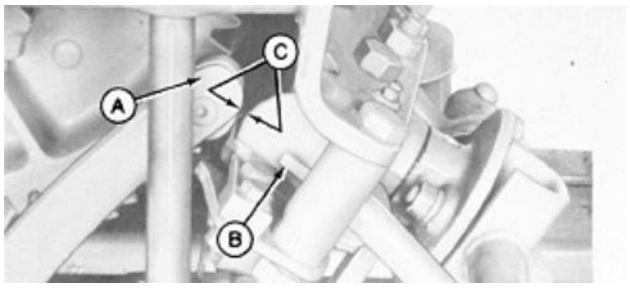
5. Thread through eye (A) on needle frame.

6. Throw twine under bale case as shown.



E01,5010,AS -19-23JUN81

IMPORTANT: As needles pass through twisting mechanism, closest point of each needle (A) should clear front of each wire gripper (B) by 1.6 to 4.0 mm (1/16 x 5/32 in.) (C) (when checked without wire in grippers).



E18517 -UN-12JUN89

6. Increase distance between needles and grippers by loosening front needle mounting bolts slightly and tightening rear bolts. Reverse this procedure to reduce distance.

7. When needles are properly adjusted, torque all bolts to 68—108 N·m (50—80 lb-ft) and again check needles through their cycle.

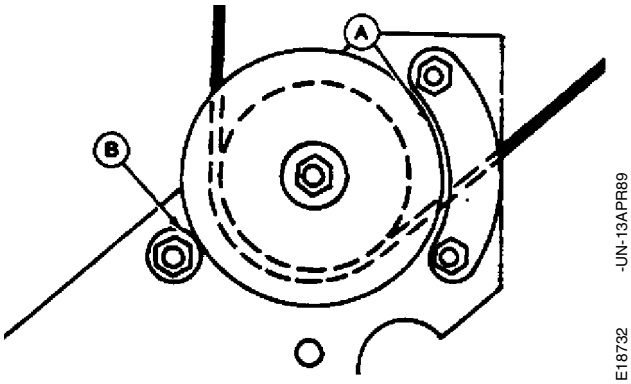
EX,1243,5015,J -19-23JUN92

ADJUST WIRE GUIDES

IMPORTANT: All rollers must spin freely to insure proper operation of wire twister.

1. Adjust front pulleys and cast wire guides to clear each other by 0.76—2.29 mm (0.030—0.090 in.) (A).

2. Adjust front sleeve guide to clear pulleys by 0.13—0.76 mm (0.005—0.030 in.) (B). Each pulley must turn freely.

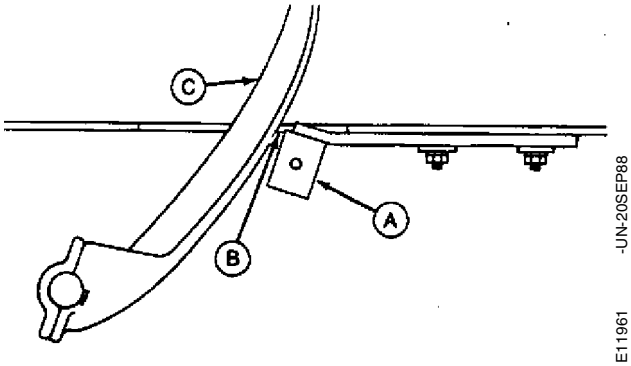


E18732 -UN-13APR89

EX,1243,5015,K -19-23JUN92

3. Center wire guides (A) must be 6.4 mm (1/4 in.) (B) forward of closest point of needles (C) when needles are in their highest position, and wire guides are aligned with needle pulley.

4. Adjust guides by loosening two mounting bolts in each guide. Shift guides to left or right for alignment. Shift them forward or rearward for desired clearance. Tighten mounting bolts.



E11961 -UN-20SEP88

EX,1243,5015,L -19-23JUN92