GENERAL MACHINE SPECIFICATIONS

MODEL ..... 8580 Large Rectangular Baler and Optional Bale Accumulator

WEIGHT *(approx.)*
Baler, empty ..... 18 600 LB (8440 kg)
Tongue, empty ..... 2900 LB (1315 kg)
Bale chute ..... 250 LB (115 kg)
Baler and accumulator, empty ... 21850 LB (9911 kg)

LENGTH
Without bale chute ..... 284.5 IN (7230 mm)
With bale chute ..... 350.5 IN (8900 mm)
With accumulator ..... 409 IN (10 390 mm)

WIDTH *(overall)*
Shipping, less tires ..... 103 IN (2615 mm)
With 28L x 26 tires ..... 125.5 IN (3190 mm)
With accumulator ..... 156 IN (3960 mm)

HEIGHT
Top of knotter shielding ..... 124 IN (3150 mm)
Top of hand railing ..... 145 IN (3680 mm)

BALE CHAMBER
Width ..... 46.5 IN (1180 mm)
Height ..... 50 IN (1270 mm)

BALE LENGTH
Adjustable ..... up to 108 IN (2743 mm)

TIRE SIZE
Baler ..... 28L x 26, 12 ply
Pickup Gauge Wheel ..... 4.00 x 16 (2) pneumatic w/inner tube
Accumulator ..... 9.5L x 14, 6 ply (4) w/inner tube

TIRE PRESSURE
Baler
- 28L x 26, 12 ply ..... 22 psi / 152 kPa
- 23.1 X 26, 10 ply ..... 26 psi / 158 kPa

Pickup Gauge Wheels ..... 40 psi / 276 kPa
Accumulator ..... 32 psi (193 kPa)

WHEEL NUTS / BOLTS
Baler
- size ..... 3/4-16 UNF-2B nuts with hardened washers (10)
- bolt circle diameter ..... 13.19 IN (335 mm)
- torque ..... 425 to 450 LB·FT (575 to 610 N·m)

Accumulator
- size ..... 9/16-18 UNF-2A bolt
- torque ..... 120 LB·FT (165 N·m)

MAIN DRIVE
Standard PTO speed ..... 1000 rpm (r/rim)
PTO optional ..... ASAE type 2, 1-3/8 IN, 21 teeth
PTO optional ..... ASAE type 3, 1-3/4 IN, 20 teeth
Drive line category ..... ASAE 6
Drive protection ..... overrunning and slip clutches, and shearbolt
Flywheel brake ..... direct acting
Flywheel bearings ..... taper roller (2)
Flywheel diameter ..... 34.0 IN (864 mm)
Flywheel weight ..... 460 LBS (209 kg)
Gearbox
- type ..... enclosed triple reduction
- gears ..... spiral bevel (1st set) spur (2nd & 3rd set)

Bearings ..... taper roller, and spherical
Lubrication ..... oil bath
Temperature switch setting ..... 160° to 175° F (71° to 80° C)

PICKUP ASSEMBLY
Pickup outside width ..... 97.5 IN (2475 mm)
Width tine to tine ..... 77.9 IN (1978 mm)
Width inside ..... 83.6 IN (2125 mm)
Overall width incl. tires ..... 110.5 IN (2810 mm)
Number of bars 5
Number of tines 120
Tine spacing ..... 3.375 IN (86 mm)
Tine bar bearings ..... sealed ball
Drive ..... RC50 roller chain
Protection ..... slip and overrunning clutches
Height control ..... gauge wheels (2) and adjustable control arm
Pickup lift (standard) ..... hydraulic cylinder

BALE CHAMBER FEEDING SYSTEM
Packers ..... fork type with 6 hard surfaced tines
- crank ..... heavy duty
- drive ..... RC80 roller chain
- protection ..... splined slip clutch

Charge chamber volume ..... 12.5 FT^3 (.354 m^3)
Windrow size compensation ..... automatic charge sensor engages stuffer clutch
Stuffer ..... fork type with 6 tines
- drive ..... RC100 roller chain
- drive protection ..... shearbolt

PLUNGER
Speed ..... 25.4 strokes/min
Length of stroke ..... 30.7 IN (780 mm)
Mounting ..... 4 tapered roller bearings (sealed); 2 ball bearing rollers (sealed)

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MAINTENANCE

Maintenance Checklists

See the safety warnings at the beginning of this section and follow the procedures.

After One Hour of Operation

____ Check the adjustment of the main drive slip clutch.

Daily

____ Visually check for loose or missing fasteners and parts as you do the maintenance. Also check for damage and excessive wear of parts.

____ Lubricate all lubrication points as required. Visually inspect all lubrication points to make sure lubrication is being received. See Lubrication in this section.

____ If the baler is equipped with a CLS (Centralized Lubrication System), check for broken or missing lubrication lines. Visually inspect all lubrication points to make sure lubrication is being received.

____ If the baler is equipped with an accumulator, check the CLS for broken or missing lubrication lines. Visually inspect all lubrication points to make sure lubrication is being received. See Lubrication in this section.

____ Check tractor for correct hitch, implement drive line, hydraulic, and electrical connections. Make sure all controls work correctly.

____ If the baler is equipped with an accumulator, check that accumulator attaching bolts are tight.

____ Check that all safety and working lamps work correctly.

____ Check the tension for all of the drive chains for excessive tightness or looseness.

____ Check tire pressure. See Specifications in section 1002.

____ Check the flywheel brake adjustment. See Section 2002.

____ Check supply of shearbolts.

____ Check the quantity of twine in the twine compartments.

____ Check twine for correct routing and threading. Check that twine is not tangled, knotted, or caught over a bolt. See Section 6001.

____ Check twine tension. See Section 6001.

____ Check the needle protection linkage adjustment. See Section 6001.

____ Check when starting to bale that the baler control console is on and the tractor hydraulic control valve is engaged and locked on to supply power to the baler control valve.

Every 50 Hours

____ Check baler wheel nut torque. See Specifications in section 1002.

____ If the baler is equipped with an accumulator, check the wheel bolt torque on the accumulator. See Specifications in section 1002.

Every 1000 Bales

____ Check needle protection linkage. See Section 6001.

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STANDARD TORQUE SPECIFICATIONS

U.S. Standard Hardware

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers, dry, or when lubricated with engine oil. Not applicable if special graphites, molydisulfide greases, or other extreme pressure lubricants are used.

Grade 5 Bolts, Nuts, and Studs



Size	Pound-Feet (LB·FT)	Newton meters (N·m)
1/4-20	8.4	11
1/4-28	9.7	13
5/16-18	19	24
5/16-24	19	26
3/8-16	31	42
3/8-24	35	47
7/16-14	49	67
7/16-20	55	75
1/2-13	76	105
1/2-20	85	115
9/16-12	110	150
9/16-18	120	165
5/8-11	150	205
5/8-18	170	230
3/4-10	265	360
3/4-16	295	405
7/8-9	430	585
7/8-14	475	640
1-8	645	875
1-12	705	955
1-1/8-7	795	1080
1-1/8-12	890	1210
1-1/4-7	1120	1520
1-1/4-12	1240	1680
1-3/8-6	1470	1990
1-3/8-12	1670	2270
1-1/2-6	1950	2640
1-1/2-12	2190	2970

Grade 8 Bolts, Nuts, and Studs



Size	Pound-Feet (LB·FT)	Newton meters (N·m)
1/4-20	12	16
1/4-28	14	18
5/16-18	25	33
5/16-24	27	37
3/8-16	44	59
3/8-24	49	67
7/16-14	70	95
7/16-20	78	105
1/2-13	105	145
1/2-20	120	165
9/16-12	155	210
9/16-18	170	235
5/8-11	210	285
5/8-18	240	325
3/4-10	375	510
3/4-16	420	570
7/8-9	605	820
7/8-14	670	905
1-8	910	1230
1-12	995	1350
1-1/8-7	1290	1750
1-1/8-12	1440	1960
1-1/4-7	1820	2460
1-1/4-12	2010	2730
1-3/8-6	2380	3230
1-3/8-12	2710	3680
1-1/2-6	3160	4290
1-1/2-12	3560	4820

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PROBLEM	POSSIBLE CAUSE	CORRECTION
FEED SYSTEM		
Excessive slipping of packing finger clutch	Damp, lumpy windrows	Let windrow dry and make more uniform windrows, or reduce ground speed.
	Driving to one side of the windrow	Drive on center of windrow per driving meter indicator.
	Packer clutch not adjusted correctly	Adjust packer clutch.
	Foreign object in hay	Remove object.
	Excessive rate of feed	Reduce feeding rate by reducing ground speed. Check adjustment of pickup clutch.
	Stuffer not functioning properly	Check stuffer mechanism for correct adjustment or damaged components.
	Stuffer brake set to loose	Adjust stuffer brake.
	Stuffer sensor door spring too tight	Adjust stuffer sensor door. See Section 5002.

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The baler, the contents of the baler, and the accumulator, if equipped, must not be more than 1.5 times the weight of the tractor.

Limit the towing speed to 20 mph (32 km/h).

BE AWARE of the overall width and length of the machine. Be careful when roading or transporting the machine on narrow roads and across narrow bridges. See Specifications for the overall dimensions.

If equipped with an accumulator, never road or transport the machine with bales on the accumulator.

Check the operation of all warning lamps before roading the machine. Clean the lens covers. If the bulbs are not functional, replace with units available from your dealer. If the lighting does not work after replacing bulbs, see your dealer for immediate repairs.

The warning lamps must be turned on when roading the machine, except where prohibited by law.

Check all reflectors before roading the machine. Clean the reflectors. Replace reflectors that are damaged with units available from your dealer.

Make sure the SMV (Slow Moving Vehicle) emblem is installed in the correct location. Make sure the SMV emblem is clean and visible.

Comply with your state and local laws when roading or transporting the machine.

To reduce the risk of fire or damage if fire occurs, do the following:

- **Equip the machine with a water fire extinguisher available from your dealer.**
- **Check the baler daily for any noises which are not normal. Such noises can indicate a failed bearing which can cause heat buildup.**
- **Always make sure the pickup area is free of hay crops before leaving the machine after baling.**
- **Check for hot areas on the machine and clean loose hay from the machine.**
- **Keep the tractor and machine free of trash.**

Because of the flammable nature of many hay crops, it is recommended that a water fire extinguisher be placed in an easily reached location on the tractor or machine when baling.

Tire explosion and/or serious injury can result from over inflation. Do not exceed tire inflation pressures. See Specifications for the correct pressure.

When tire service is necessary, have a qualified tire mechanic service the tire.

Do not weld to the rim when a tire is installed. Welding will cause an explosive air/gas mixture that will ignite with high temperatures. This can happen to tires that are inflated or deflated. Removing air or breaking the bead is NOT enough. The tire must be completely removed from the rim prior to welding.

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General Service Procedures

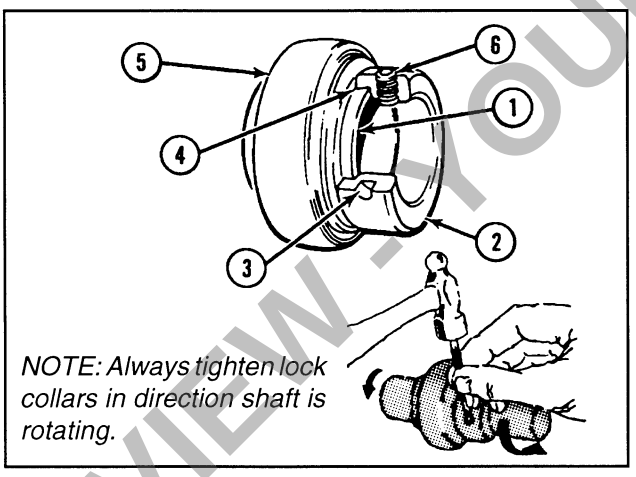
See the safety warnings at the beginning of this section and follow the procedures.

Bearing Replacement (Eccentric Locking Collar)

Sealed ball bearings are used on several shafts and are usually held in position with bearing flanges. The bearings are held in position on the shaft by a locking collar. The locking collar has an eccentric counterbore. The counterbore engages the eccentric end of the bearing inner ring when the bearing is assembled. The locking collar is rotated on the bearing to lock the assembly on the shaft. The assembly grips the shaft tightly with a positive binding action that increases with use. A set screw in the locking collar applies additional locking.

1. Loosen the set screw.

2. Use a drift punch inserted in the drift pin hole to rotate and loosen the locking collar. Rotate the locking collar opposite the direction of normal shaft rotation.



L89A-0001

1. Bearing Inner Ring
2. Locking Collar
3. Drift Pin Hole
4. Collar Cam
5. Bearing
6. Set Screw

3. Remove the locking collar.

4. Support the shaft.

5. Remove the bolts for the bearing flanges.

6. Slide the bearing and the bearing flanges from the shaft.

NOTE: Removing paint and corrosion from the shaft will make removal easier.

7. Put the bearing and the bearing flanges on the shaft. Make sure the bearing inner ring is turned the correct direction.

8. Install the bolts for the bearing flanges. Make sure the bearing is straight within the bearing flanges. Tighten the bolts evenly.

9. If a bearing is being installed on the other end of the shaft, repeat steps 7 and 8 for the other bearing.

10. Put the locking collar on the bearing inner ring.

11. Push the locking collar against the bearing inner ring and turn the locking collar in the direction of normal shaft rotation until tightly engaged. Tighten the locking collar by hitting on a drift punch inserted in the drift pin hole.

12. Tighten the set screw in the locking collar.

Set Screw Size	LB·INCHES	N·m
1/4-20	78	4.8
5/16-18	156	18
3/8-16	273	31
7/16-14	428	49

13. If a bearing is installed on the other end of the shaft, repeat steps 10 through 12 for the other bearing.

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IMPLEMENT DRIVE LINE

Troubleshooting

PROBLEM	POSSIBLE CAUSE	CORRECTION
Excessive noise in baler IDL drive shaft	Hitch points not properly located	Adjust the hitch according to specification.
	Angles at universal joints not equal	Adjust support for carrier bearing to make universal joint angles equal. Check drawbar dimensions and implement drive line alignment. See Connecting The Tractor in this section.
	IDL slip tube dry	Lubricate IDL slip tube. See Lubrication in Section 1003.
	Bent shielding	Straighten or replace bent unit.
	Universal joints worn	Replace joints.
	Worn splines on shaft or universal joint	Replace worn parts. If the splines on the PTO shaft or in the yoke at the front of the IDL have excessive wear, a special bolt clamp yoke can be installed on the IDL. The bolt clamp yoke is available from your dealer.

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32. Install the retaining ring for the output cap.

33. Apply sealant to the cap screws for the upper flange and the lower flange in the housing. Install the cap screws, and tighten the cap screws to 29 LB·FT (39 N·m).

34. Make sure the bearing cups for the ring gear assembly are installed in the housing and the cover plate.

35. Put the left-hand cap on the housing and install the cap screws. Do not install the shims at this time. Tighten the cap screws to 50 LB·FT (69 N·m).

36. Apply EP 90 oil to the bearings on the ring gear assembly. Use lifting equipment to install the ring gear assembly in the housing. There is an alignment mark (X) stamped on the end of one of the teeth on the pinion shaft and on the ends of two of the teeth on the ring gear. Align the tooth on the pinion shaft with the teeth on the ring gear. The tooth on the pinion shaft must be within one tooth of either of the teeth on the ring gear.

NOTE: The marks must be in alignment when you adjust the backlash. When you rotate the pinion shaft, always return the pinion shaft to this position until after the backlash is adjusted.

37. Put the upper flange and a new gasket on the cover plate and install a cap screw in one end of the upper flange. Do not tighten the cap screw. Move the upper flange away from the bore so the upper flange will not contact the bearing.

38. Put the scraper on the cover plate. Apply sealant to the threads of the cap screws, and install the cap screws.

39. Apply sealant to the sealing surface of the housing. Make sure there is sealant between each of the holes for the bolts and the inside edge of the housing.

40. Use lifting equipment to put the cover plate in position and start the cover plate onto the bearings. Use a hammer and a brass drift to keep the outer race of the spherical bearings straight in the bores.

41. Install the bolts, lock washers, and nuts that fasten the cover plate to the housing. Tighten the nuts to 67 LB·FT (91 N·m). Make sure the head of the bolts are toward the outside of the gearbox except at the three holes marked at disassembly.

42. Install the right-hand cap on the cover plate and install two of the cap screws. Do not install the seal or the shims at this time. Tighten the two cap screws to 25 LB·FT (34 N·m).

43. Turn the pinion shaft five turns clockwise.

44. Loosen the cap screws in the right-hand cap.

45. Turn the pinion shaft five turns counterclockwise.

46. Tighten the cap screws in the right-hand cap to 105 LB·INCHES (12 N·m).

47. Turn the pinion shaft five turns clockwise.

48. Tighten the cap screws in the right-hand cap to 210 LB·INCHES (24 N·m).

49. Turn the pinion shaft five turns counterclockwise. The alignment marks on the pinion shaft and the ring gear must be in alignment.

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SAFETY PRECAUTIONS

Understand that your safety and the safety of other persons is measured by how you service and operate this machine. Know the positions and operations of all controls before you try to operate this machine. MAKE SURE YOU CHECK ALL CONTROLS IN A SAFE AREA BEFORE STARTING YOUR WORK.

READ THIS MANUAL COMPLETELY and make sure you understand the controls. All equipment has a limit. Make sure you understand the speed, brakes, steering, stability, and load characteristics of this machine and your power unit before you start to operate the machine.

The safety information given in this manual does not replace safety codes, insurance needs, state and local laws. Make sure your machine has the correct equipment needed by the local laws and regulations.



THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

Read and understand all the operating instructions and precautions before operating the machine.

If equipped with an accumulator, see the Operator's Manual for the accumulator for additional safety precautions.

Before doing any maintenance or service work on the machine, you must:

- **Park the machine on a solid level surface.**
- **Disengage the PTO.**
- **Put the tractor transmission in PARK or apply the tractor parking brake.**
- **Turn off the baler control console.**
- **Stop the tractor engine and take the key with you.**
- **Apply the baler flywheel brake.**
- **Look and Listen! Make sure all moving parts have stopped.**

After lubricating, servicing, or adjusting the machine, make sure all tools and equipment have been removed.

All shields and guards must be in position before operating the machine.

Always unload bales from the accumulator side carts before working under the accumulator

Before doing any maintenance or service work on the accumulator, put the tractor remote valve in NEUTRAL and shut off the baler control console.

Always disengage the tractor PTO and shut off the tractor engine before:

1. **leaving tractor seat**
2. **lubricating**
3. **cleaning the machine**
4. **adjusting the machine**

If equipped with an accumulator, stay off the accumulator at all times. The unit operates automatically and without warning.

Do not carry riders on the machine at any time.

Keep children away from the machine at all times.

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Section 1001

INTRODUCTION

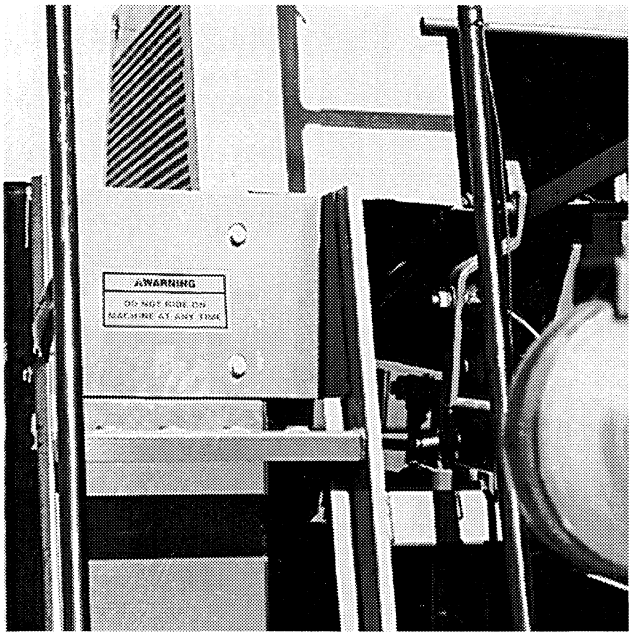
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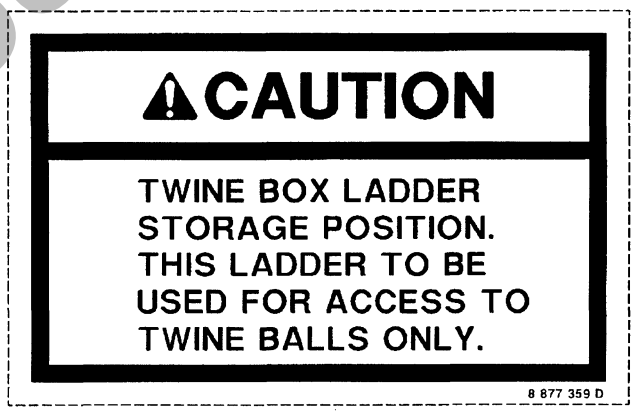
8. TOP OF LADDER



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9. TWINE BOX LADDER





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24. Make a plate that can be fastened to the flywheel. The plate must have a hole for the installation of the torque wrench in alignment with the center line of the pinion shaft. Keep the pinion shaft from turning by blocking one of the plunger crank arms on the gearbox. Install a torque wrench in the plate and turn the flywheel. The rolling torque must be 100 to 250 LB·INCHES (11.3 to 28.3 N·m). If the rolling torque is too high, install shim in the outer shim pack. If the rolling torque is too low, remove shims from the outer shim pack. Make sure the lifting equipment is connected to the flywheel before removing or installing the shims.

NOTE: The clutch pilot from the flywheel assembly can be used in place of a plate.

25. Make sure the cap screws are tightened to 150 LB·FT (205 N·m).

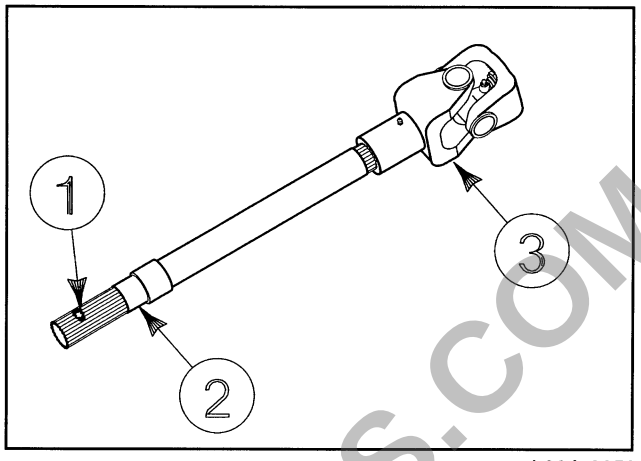
26. Bend a corner of the lock plate over the head of each of the cap screws. Do not use any corner that has been used before.

27. Rotate the flywheel to align the hole in the shear arm with the bushing in the flywheel Install the shearbolt and special nut. Tighten the special nut to 45 LB·FT (61 N·m).

28. Connect lifting equipment to the main drive clutch. Put the main drive clutch in position on the flywheel. Install and tighten the cap screws.

29. Remove the lifting equipment.

30. Slide the main drive shaft into the yoke on the main drive clutch. Make sure the bolt grove in the bottom of the main drive shaft is in alignment with the cross in the universal joint of the main drive clutch within one spline. This alignment keeps the universal joints in the IDL in phase with the universal joint in the main drive clutch. Install the bolts, lock washers, and nuts for the carrier bearing.



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1. Bolt Groove
2. Main Drive Shaft
3. Universal Joint

31. Install the flywheel cover and the drive shaft shield.

32. Lubricate the splines of tractor PTO shaft with oil or grease. Connect the baler IDL (implement drive line) to the tractor PTO shaft.

If the IDL has a quick disconnect yoke, make sure the locking pins are engaged in the notch of the PTO shaft.

If the IDL has a clamp yoke with one 5/8 bolt, tighten the bolt to 150 LB·FT (205 N·m).

If the IDL has a clamp yoke with two 1/2 bolts, tighten the bolts to 76 LB·FT (105 N·m).

⚠ WARNING

A loose yoke can slip off a shaft and result in injury to personnel or damage to the machine.

When installing a quick disconnect yoke, make sure the spring activated locking pins slide freely and are seated in the groove in the shaft.

When installing a clamp yoke, tighten the bolt(s) to the correct torque.

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Installation

See the safety warnings at the beginning of this section and follow the procedures.

1. If a new stuffer/knotter drive sprocket is being installed, install the bushing in the center of the new stuffer/knotter drive sprocket. Install the grease fitting in the sprocket hub.

2. If a new shear arm hub is being installed, install the bushing for the shearbolt and the set screws in the new shear arm hub.

3. Install the shearbolt in the shear arm hub. If a new shearbolt or nut is being installed, see Shearbolt in this section to make sure the correct parts are being used. The head of the shearbolt must be on the outside of the shear arm hub.

4. Install the stuffer/knotter drive sprocket on the shear arm hub. Install the stuffer/knotter drive sprocket so the grease fitting is toward the baler.

5. Install the nut on the shearbolt and tighten the nut to 80 LB·FT (110 N·m).

6. Connect lifting equipment to the shear arm hub and the stuffer/knotter drive sprocket.

7. Install the shear arm hub on the shaft.

8. Align the keyway in the shear arm hub with the keyway in the shaft, and install the key.

9. Push the shear arm hub in so the shear arm hub is against the bearing on the shaft. Tighten the set screws to 80 LB·FT (110 N·m). Tighten the jam nuts on the set screws.

10. Remove the lifting equipment from the shear arm hub.

11. Install the needle protection rod, machinery bushing, and the cotter pin on the shear arm hub.

12. Make sure the timing marks are in alignment at the stuffer drive sprocket and at the knotter drive sprocket.

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PICKUP CAM BEARING

Removal

See the safety warnings at the beginning of this section and follow the procedures.

1. Remove the front shields at the right end of the pickup assembly.

2. Remove the two pickup wrappers from the right end of the pickup assembly.

3. Rotate the reel to align the pickup cam bearing with the access hole in the pickup cam.

4. Remove the nut and lock washer fastening the cam bearing to the tine channel crank arm.

5. Remove the cam bearing from the tine channel crank arm through the hole in the pickup cam.

Installation

See the safety warnings at the beginning of this section and follow the procedures.

1. Install the cam bearing into the tine channel crank arm through the hole in the pickup cam.

2. Apply four or five drops of Loctite No. 242 or equivalent to the threads of the cam bearing.

3. Install the lock washer and lock nut. Tighten the nut to 85 LB·FT (115. N·m).

4. Install the two pickup wrappers on the right end of the pickup assembly.

5. Install the front shield on the right side of the pickup assembly.

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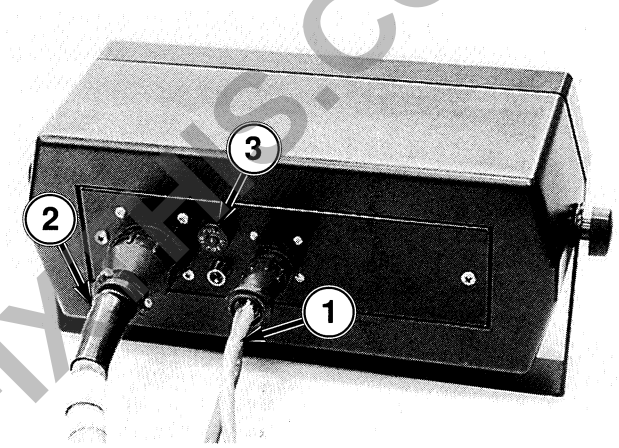
Checking Supply Voltage To The Baler Control Console

The power supply harness for the baler control console must be connected to a circuit that DOES NOT include a switch. This includes the tractor key switch. The use of a switch can cause the loss of the nonvolatile memory in the baler control console.

Check the power supply harness for the baler control console to make sure the connections are correct. Make sure the power supply harness is connected directly to the tractor battery circuit. The red lead must be connected to the positive terminal and the black lead to the negative terminal.

If the baler control console is connected to an auxiliary power connection on the tractor, check the connection. The positive lead in the auxiliary power connection must be connected directly to the battery and must not be connected through the key switch.

If the baler control console will not start-up, reset the circuit breaker on the rear of the baler control console. If the baler control console still does not start-up, disconnect the power supply harness from the rear of the baler control console. Adjust a multimeter to indicate volts DC. Connect the positive lead of the multimeter to socket 1 in the connector on the power supply harness. Connect the negative lead to socket 2 in the connector on the power supply harness. The multimeter must indicate 10.8 to 16.8 volts.



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1. Power Supply Harness
2. Baler Control Harness
3. Resetable Circuit Breaker

If the voltage reading is not correct, check the voltage at the tractor battery. If the voltage reading at the tractor battery is correct, there is a problem in the power supply harness. Repair or replace the power supply harness. If the voltage reading is not correct at the tractor battery, there is a problem in the tractor battery or the tractor charging system.

NOTE: If the multimeter indicates a negative reading, the leads of the power supply harness are not connected correctly at the tractor battery. Connect the red lead to the positive terminal of the tractor battery. Connect the black lead to the negative terminal of the tractor battery.

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PROBLEM	POSSIBLE CAUSE	CORRECTION
CHECK 6: Both load arm transducers or circuits fail	Open circuit from faulty connection or broken wire	See CHECK 6 Test in this section. Repair or replace bad parts or wires.
	Faulty load arm transducer	See CHECK 6 Test in this section. Replace load arms if necessary.
	Faulty baler control console	bad parts or wires. Replace baler control console.
CHECK 7: Left	Open circuit from faulty connection or broken wire	See CHECK 7 Test in this section. Repair or replace bad wire.
	Faulty load arm transducer	See CHECK 7 Test in this section. Replace load arm if necessary.
	Faulty baler control console	Replace baler control console.
CHECK 8: Left	Open circuit from faulty connection or broken wire	See CHECK 8 Test in this section. Repair or replace bad wire.
	Faulty load arm transducer	See CHECK 8 Test in this section. Replace load arm if necessary.
	Faulty baler control console	Replace baler control console.
CHECK 9: Pressure Transducer *NOTE: Pressure will generally be 0000.*	Open circuit from faulty connector or broken wire	Repair or replace bad parts.
	Pressure transducer not receiving 12 volts	See Load Arm Load Transducer Test in this section.
	Faulty pressure transducer	Replace pressure transducer.
	Faulty baler control console	Replace baler control console.
CHECK 10: Stuffer Drive CHECK 11: Feeder Clutch CHECK 12: Baler Timing Sensors	Tractor PTO engaged at about the same time as the baler control console was turned on	Disengage tractor PTO. Wait for baler to stop rotating. Turn baler control console off and back on with baler NOT running.
	Also see items 2 through 4 under CHECK 5	
CHECK 13: Left CHECK 14: Right Accumulator Solenoid	See items 2 through 5 under CHECK 2	

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Voltage Check

A voltage check is a test used to measure the amount of voltage in the circuit. The voltage check also determines if a circuit has continuity. The circuit can be a single wire, a single component, or a combination of wires and components. A circuit that has continuity is complete and current can flow through the circuit. A circuit that does not have continuity has a break in the circuit that will not let current flow through the circuit. The break is called an open and the circuit is called an open circuit. An open can be caused by a broken wire, a loose connection, dirty contacts in a switch or connector, or any other condition that keeps the circuit from being complete. Visually check for these conditions before doing a voltage test.

An open that comes in contact with a ground connection such as the mainframe is called a short circuit to ground.

A voltage check is used to test a circuit that is connected to a power supply. To check a circuit that is not connected to a power supply, do a continuity check.

Adjust the multimeter to indicate volts DC and, if necessary, the correct range. Connect the leads of the multimeter to the circuit.

If the multimeter does not indicate any voltage, there is an open in the circuit or the tractor battery is completely discharged.

If the multimeter indicates a negative (-) reading, make sure the test leads are not reversed. Also make sure the wires in the circuit being tested are connected correctly.

If the multimeter indicates voltage, compare the reading to the voltage specified in the test.

If the test specifies a reading of system voltage, the multimeter must indicate 10.8 to 16.8 volts. System voltage is the amount of voltage in the tractor battery, which is normally 13.8 volts.

NOTE: The system voltage can be several volts different with the tractor engine running or tractor engine not running. Unless otherwise specified, use the system voltage for tractor engine not running.

If the voltage reading is not correct, check the condition of the batteries and the charging system.

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Gearbox Temperature Switch

See the safety warnings at the beginning of this section and follow the procedures.

1. Disconnect the implement drive line from the tractor PTO shaft.

2. Make sure the temperature of the gearbox is less than 140˚ F (60˚ C).

3. Press the ON•OFF switch on the baler control console to turn the baler control console on.

4. Look at the bottom screen on the baler control console. The gearbox temperature symbol must not be shown on the bottom screen.

If the gearbox temperature symbol is shown on the bottom screen, there is an open circuit in the circuit or the temperature switch is bad. The gearbox temperature switch is a normally closed switch. Disconnect the connector at the gearbox temperature switch. Adjust a multimeter to indicate ohms (Ω). Connect the two leads of the multimeter to the terminals in the connector on the gearbox temperature switch. The multimeter must indicate continuity. See General Testing Procedures; Continuity Check in this section. If the multimeter does not indicate continuity, replace the gearbox temperature switch.

5. Disconnect the connector at the gearbox temperature switch. The gearbox temperature symbol must be shown on the bottom screen. If the symbol is not shown on the bottom screen, there is a short circuit to ground in the wiring harness for the gearbox temperature switch. Repair the wire or replace the wiring harness.

6. Connect the IDL (implement drive line) to the tractor PTO shaft.

If the IDL has a quick disconnect yoke, make sure the locking pins are engaged in the notch of the PTO shaft.

If the IDL has a clamp yoke with one 5/8 bolt, tighten the bolt to 150 LB·FT (205 N·m). If the IDL has a clamp yoke with two 1/2 bolts, tighten the bolts to 76 LB·FT (105 N·m).

⚠ WARNING

A loose yoke can slip off a shaft and result in injury to personnel or damage to the machine.
When attaching a quick disconnect yoke, it is important that the spring activated locking pins slide freely and are seated in the groove in the tractor PTO shaft.
When attaching a clamp yoke, tighten the bolts to the correct torque.

Accumulator

See Section 9002.

Bale Weight System

See Section 9002.

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STUFFER ARM

Removal

See the safety warnings at the beginning of this section and follow the procedures.

1. Remove the stuffer finger bar. See Stuffer Finger Bar in this section.

2. Remove the cotter pin and machinery bushing from stuffer arm crank pivot.

3. Remove the stuffer arm and the machinery bushing from stuffer arm crank pivot.

Installation

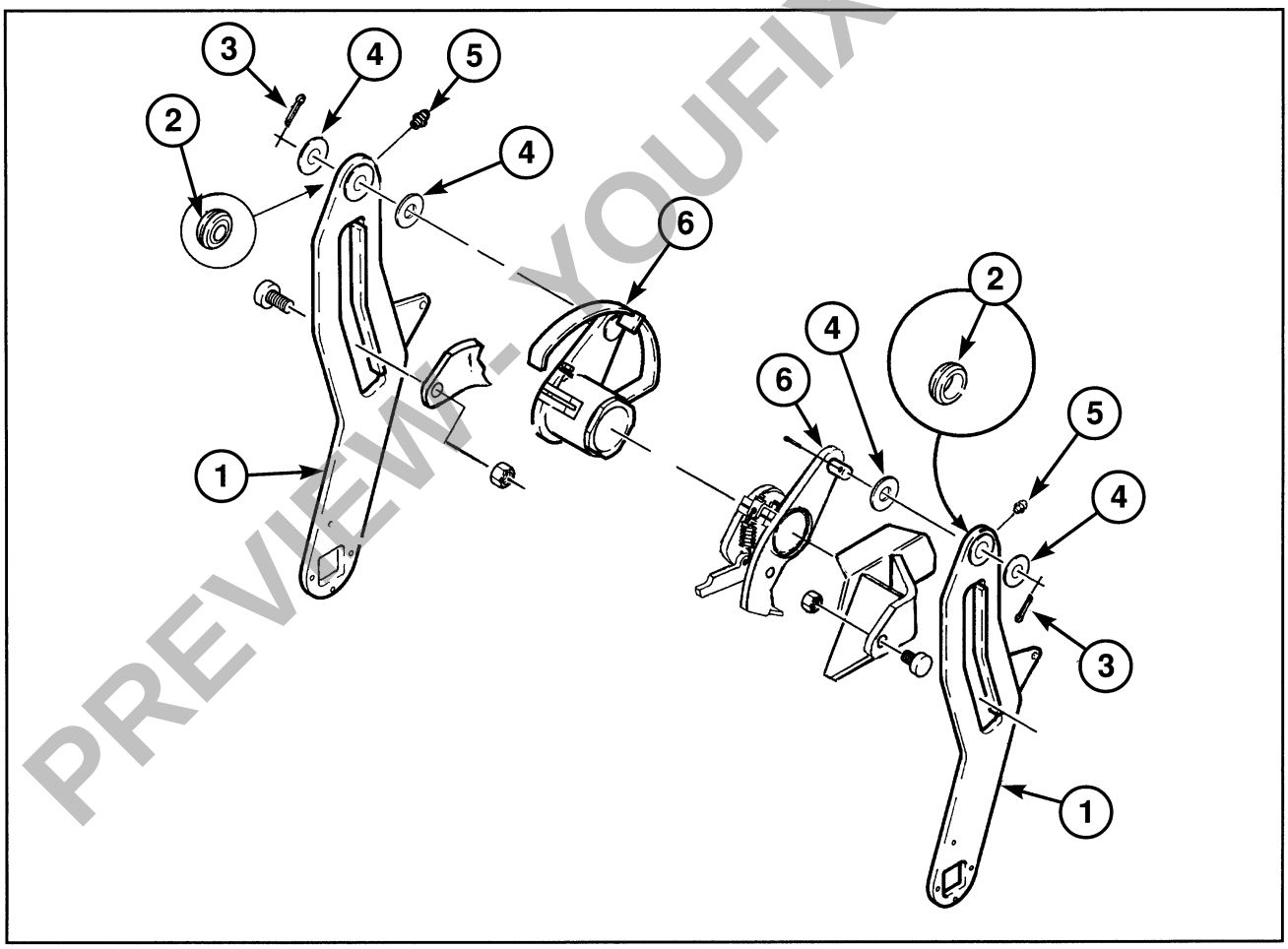
See the safety warnings at the beginning of this section and follow the procedures.

1. Install the machinery bushing on the stuffer arm crank pivot.

2. Install the stuffer arm on the stuffer arm crank pivot. Make sure the cam roller is in the slot of the stuffer arm.

3. Install the machinery bushing and cotter pin.

4. Install the stuffer finger bar. See Stuffer Finger Bar in this section.



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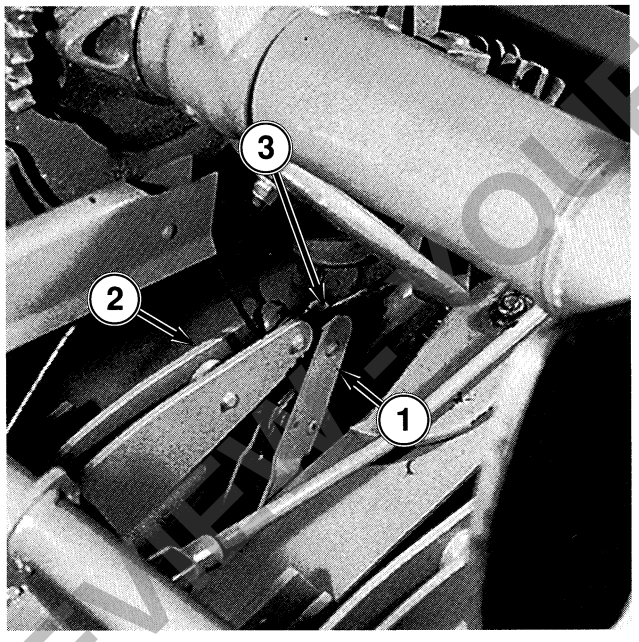
1. Stuffer Arm
2. Bearing
3. Cotter Pin
4. Machinery Bushing
5. Grease Fitting
6. Stuffer Crank

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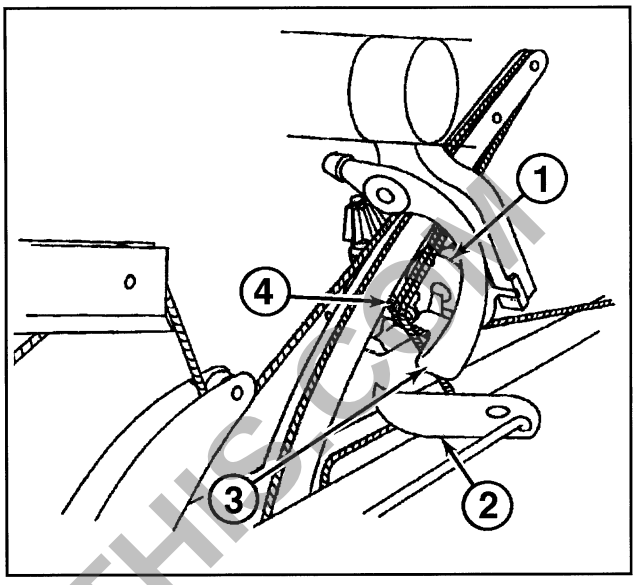
3. A metering wheel located at the top of the baler is rotated by the moving bale. At a set bale length the metering wheel actuates the needle and knotter trip arm. The needles and the knotters are timed to the plunger. During one cycle of the plunger the needles bring the twine to the knotters where the twine is tied.

4. The needle moves up through the bale chamber and plunger putting the bottom twine up across the front of the bale. The twine finger moves away from the needle slot. The tucker arm moves up to get out of the way of the needle. The needle continues up, picking up the top twine from the tucker arm roller so the top twine is on the tip roller of the needle. The needle then pushes the top twine into the slot in the stripper arm. The needle also pushes both twines across the billhook, and into the recess in the twine disc. The twine finger takes the bottom twine from the back of the needle and moves the bottom twine rearward into the slot in the stripper arm and into the route of the billhook.



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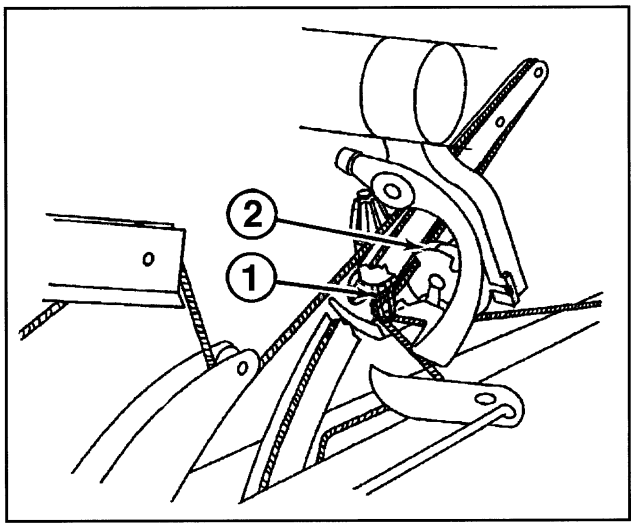
1. Needle
2. Tucker Arm
3. Needle picking up tucker arm twine



L90A-0010

1. Twine Disc
2. Twine Finger
3. Stripper Arm
4. Billhook

5. The top slot of the twine disc starts to rotate down. The billhook then starts turning, picking up the two twines.



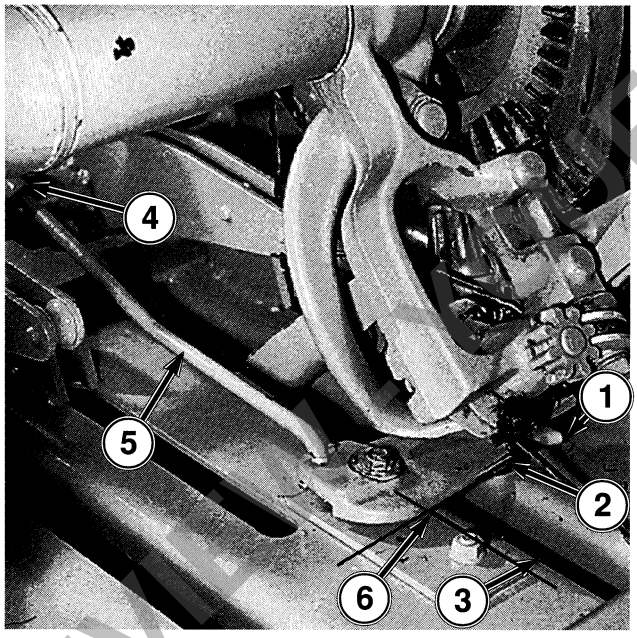
L90A-0011

1. Billhook
2. Twine Disc

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4. Push the outer end of the twine finger toward the front of the baler to remove the slack from the linkage. The inner face of the twine finger must be at a 90˚ angle to the needle slot as shown. If the position of the twine is not correct, adjust the clevis end on the twine finger rod to move the twine finger.

NOTE: If all six of the knotters do not tie, the cause is normally one or more twine fingers not moving freely. Make sure that there are not any twine fingers that move over center. If a twine finger moves over center, adjust the clevis on the twine finger rod. Also check that all twine fingers are receiving lubrication and are moving freely on the bushing or sealing washers. Make sure the twine fingers are not coming in contact with the needles. Check the left side of each needle for damage approximately 10 IN (254 mm) from the roller end. If the twine fingers are coming in contact with the needles, adjust the twine fingers.



48BB-86064-18

1. Tip of Twine Finger
2. Inner Face of Twine Finger
3. Needle Slot
4. Clevis
5. Twine Finger Rod
6. 90° Angle

Tucker Arm Adjustment

See the safety warnings at the beginning of this section and follow the procedures.

One of the most common causes of missing ties is a tucker arm that is out of adjustment. If the adjustment is not correct, the twine can wrap around the billhook. Another indication that the adjustment is not correct is when the top twine wraps around two bales.

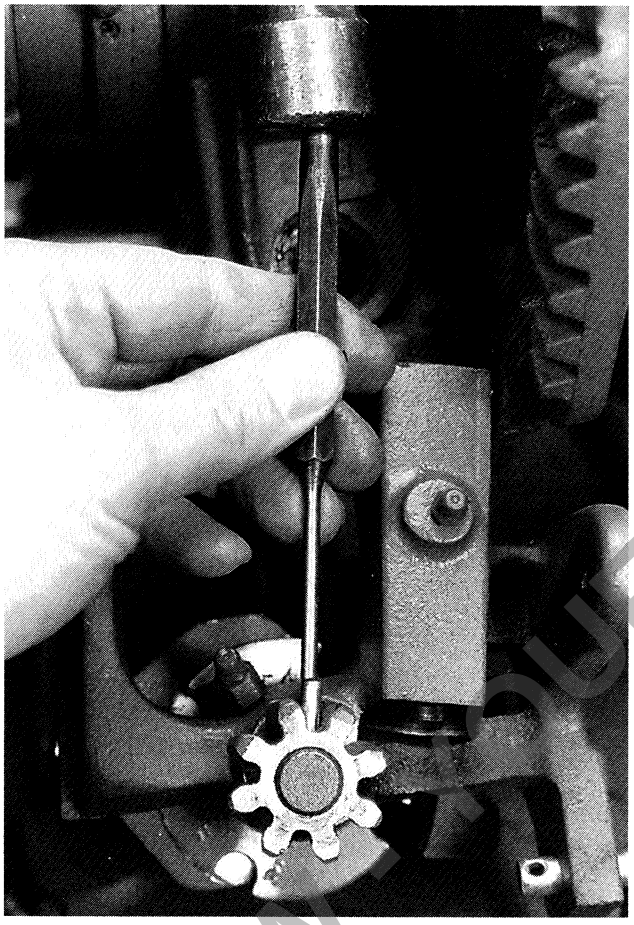
The tucker arms hold the top twines in position to be picked up by the tip roller on the needles. If the tucker arms are not adjusted correctly, the needles will not pick up the top twines.

The needles must be adjusted correctly before adjusting the tucker arms. See Needle Installation and Adjustment in this section and check the adjustment of the needles.

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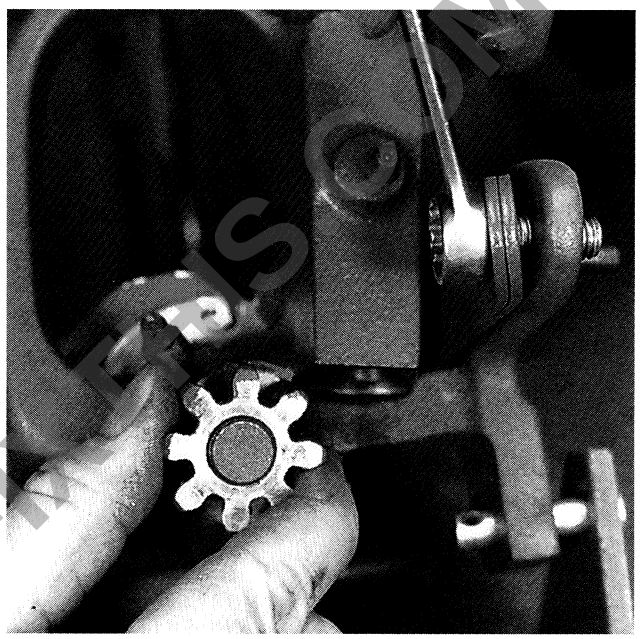
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5. Put the twine disc gear on the shaft and align the holes. Drive the groove pin into the twine disc gear. Make sure the groove pin is flush with the face of the twine disc gear.



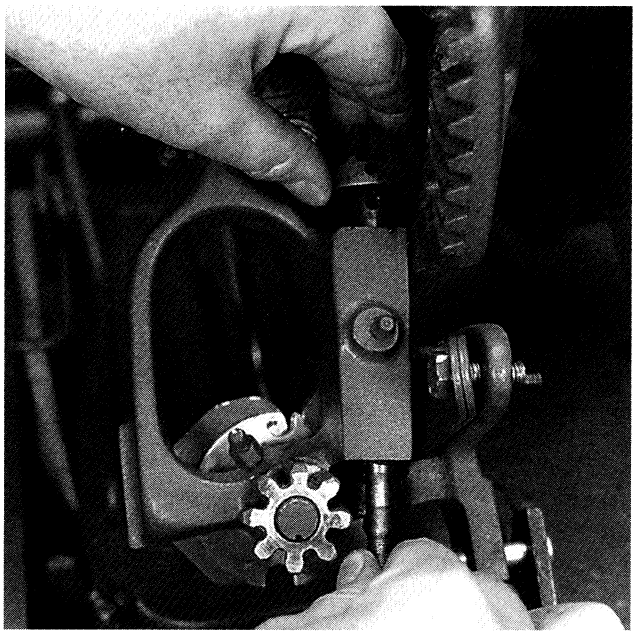
49BB-90027-01

6. Install the twine holder springs and the cap screw. Make sure the twine holder is in the correct position on the twine disc. Tighten the cap screw enough to apply a small amount of tension to the twine disc so the twine disc gear does not rotate freely. Do not install the jam nut at this time.



49BB-90027-04

7. Install the worm gear shaft and the worm pinion gear. Make sure the holes in the worm pinion gear and the worm gear shaft are in alignment.



49BB-90027-06

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CHANGING BALER TO CLOSED CENTER SYSTEM

1. Inspect the O-rings and the backup rings on the closed center plug and replace as necessary.

2. Disconnect the wires from the coil on the open center solenoid valve.

NOTE: The wires MUST be installed on the insulated storage terminals above the baler control valve. The baler control console can malfunction if the terminals on the wires contact the mainframe or the baler control valve.

3. Remove the nut and the coil from the cartridge.

4. Clean the area around the cartridge.

5. Use a deep well socket to remove the valve cartridge from the valve body. Be careful not to bend the stem of the cartridge.

NOTE: The cartridge and the nut for the open center solenoid valve are not interchangeable with the other two solenoid valves.

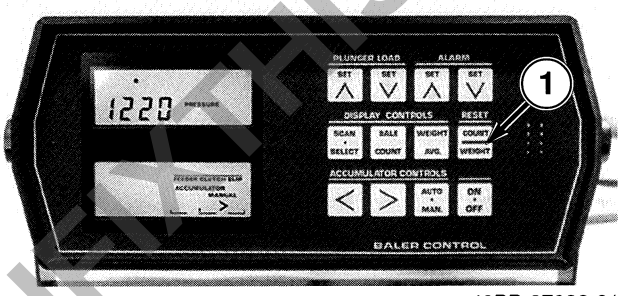
6. Install the coil and the nut on the open center cartridge. Store the open center solenoid valve in a clean area.

7. Start the closed center plug into the opening in the valve body. Tighten the closed center plug to 30 LB·FT (41 N·m).

8. Make sure the baler control console is properly connected to the tractor and the baler.

9. Before changing the hydraulic mode on the baler control console, you must determine if the baler has early production electronics or late production electronics.

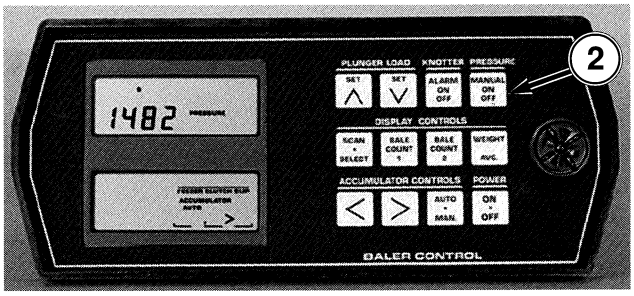
If the baler control console has a RESET switch, the electronics system is early production. Do Steps 10 to change the hydraulic mode of the baler control console.



49BB-87038-01

1. RESET switch

If the baler control console has a PRESSURE MANUAL ON·OFF switch, the electronics system is late production. Do Step 11 to change the hydraulic mode of the baler control console.



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1. PRESSURE MANUAL ON·OFF switch

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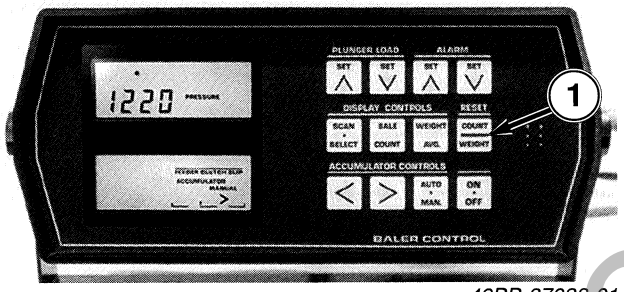
REPLACING A CARTRIDGE

See the safety warnings at the beginning of this section and follow the procedures.

1. When replacing a cartridge for a solenoid valve, you must first relieve the pressure in the hydraulic system.

Before relieving the pressure in the hydraulic system, you must determine if the baler has early production electronics or late production electronics.

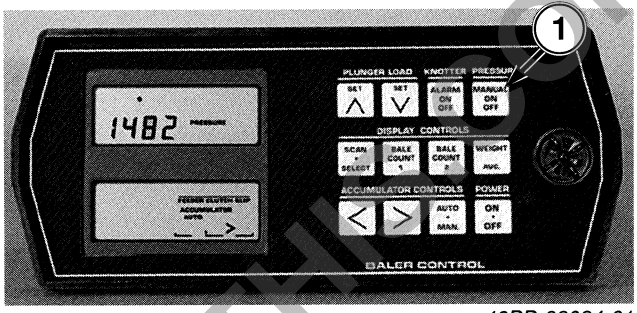
If the baler control console has a RESET switch, the electronic system is early production. Do Step 2 to change the pressure in the hydraulic system.



49BB-87038-01

1. RESET switch

If the baler control console has a PRESSURE MANUAL ON·OFF switch, the electronic system is late production. Do Step 3 to change the pressure in the hydraulic system.



49BB-93034-01

1. PRESSURE MANUAL ON·OFF switch

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Broken Lubrication Lines

When there is a partial restriction in the lubrication system, extra force will be required to pump the grease gun. If the restriction is complete, grease cannot be pumped into the divider valve. If there is a broken lubrication line or a lubrication line is disconnected, the operator will not be able to tell by the feel of the divider valve. Regularly inspect all of the lubrication lines visually for breaks and to make sure the connections are tight. Periodically pump extra grease and visually inspect each bearing to make sure the grease is being received at the bearing. See the schematics in this section. Repair part are supplied with the baler and are available from your dealer.

Repairing A Lubrication Line

See the safety warnings at the beginning of this section and follow the procedures.

1. Make sure the lubrication line is cut straight across the end.

2. Install the nut on the lubrication line.

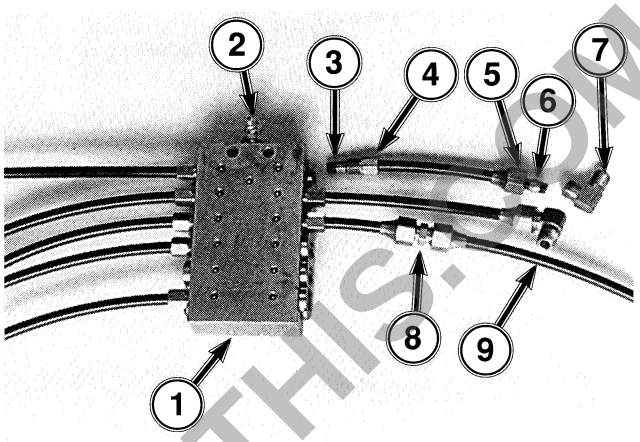
3. Install the ferrule or the ball sleeve on the lubrication line.

4. Push the lubrication line into the fitting until the lubrication line is seated in the bottom of the fitting.

5. Make sure the ferrule or the ball sleeve is seated in the fitting and start the nut onto the fitting.

6. Continue to push in on the lubrication line and tighten the nut.

NOTE: Always use a new ferrule/or ball sleeve when installing a new lubrication line.



49BB-87077-09

1. Divider Valve
2. Supply Grease Fitting
3. Valve Ferrule
4. Valve Nut
5. Bearing Port Fitting Nut
6. Port Ball Sleeve
7. Bearing Port Fitting
8. Repair Union
9. 1/4 IN Lubrication Line

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