If timing marks, 1 and 2, have been added to the right side of the baler, use them to check the feeder timing. Remove the cover over the right feeder bearings. The timing mark on the long tine feeder shaft support and the timing mark on the frame must align.

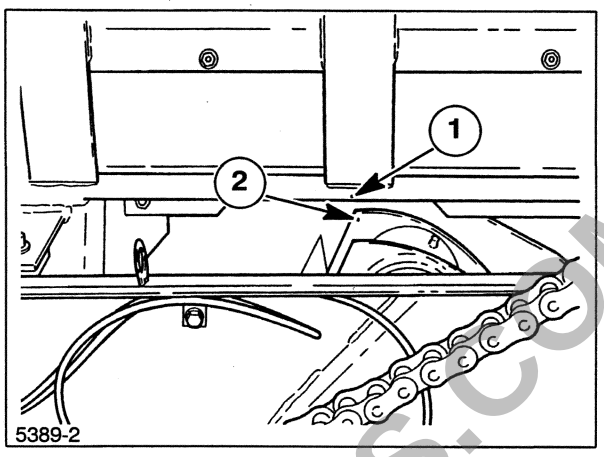

Figure 1-29

To Set the Feeder Timing:

Rotate the flywheel by hand until the crank arm, 1, is straight down. If there are timing marks, align the marks.

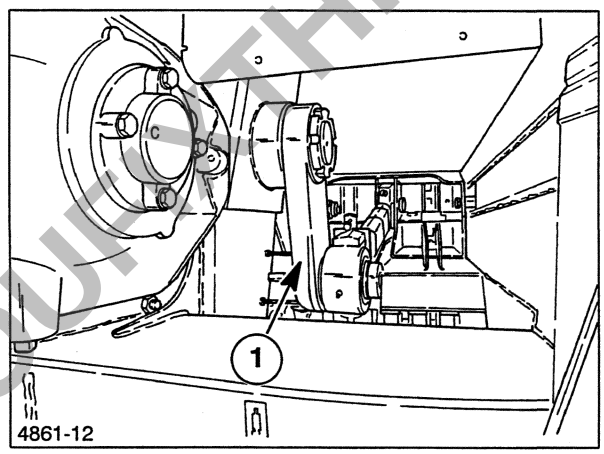

Figure 1-30

Loosen the feeder drive chain idler, 2. Adjust the idler at, 3, to take the tension off the chain, 1. Remove the feeder drive chain connector link.

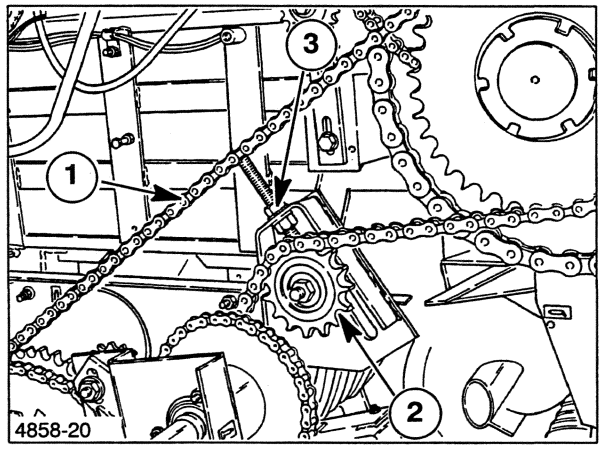

Figure 1-31

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TROUBLESHOOTING

Problem	Possible cause	Correction
Chains won't stay adjusted	Worn chain or sprocket Idler slipping	Replace worn part Tighten idler to specs
Chain wear	Lack of lubrication Chain too loose	Replace chain Keep lubricated Adjust chain
Sprocket wear	Chain too loose Misaligned	Adjust chain Align sprockets
Chain "jumps" out of time	Chain too loose Chain or sprockets worn	Adjust chain Replace chain or sprockets
Belt slips	Belt too loose	Adjust belt
Belt comes out of grooves	Sheaves not in line	Align sheaves
Clutch slips, baler lacks capacity	Engagement force too low	Adjust clutch
Excessive shear bolt failures	Needle latch not adjusted correctly Incorrect knotter timing Incorrect shear bolt Shear sleeve or hub worn Flywheel bushing worn	Adjust latch Check and adjust the knotter timing Use specified shear bolt Replace sleeve or hub Replace bushing

NOTE: Refer to the operator's manual for additional causes of shear bolt failure.

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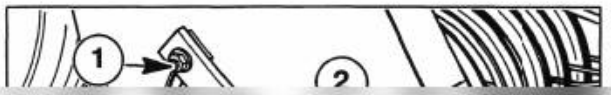
PICKUP GAUGE WHEELS

GAUGE WHEEL REMOVAL AND INSTALLATION



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585 BALER REPAIR MANUAL CONTENTS

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SECTION 3 – FEEDER
SECTION 4 – PLUNGER AND TENSION
SECTION 5 – KNOTTER
SECTION 6 – HYDRAULIC SYSTEM
SECTION 7 – ELECTRICAL SYSTEM
SECTION 8 – OILER SYSTEM
SECTION 9 – HITCH, WHEELS AND ENGINE
SECTION 10 – SPECIFICATIONS

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Remove the drive chain, 1.

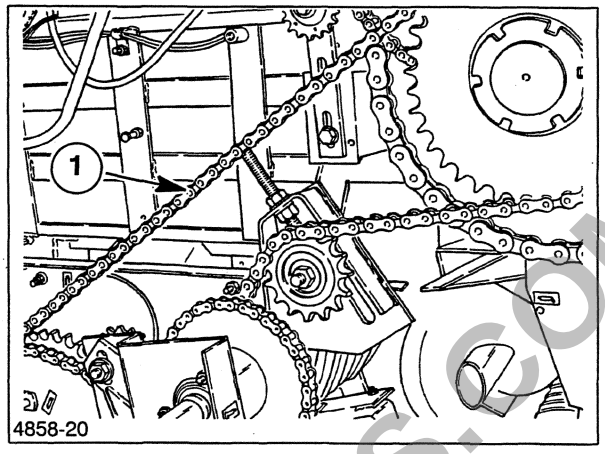

Figure 1-87

Rotate the feeder till the nut at the large gear, 1, for the feeder bar with the longest tines is visible through the small hole, 2, Figure 1-89, in the side sheet.

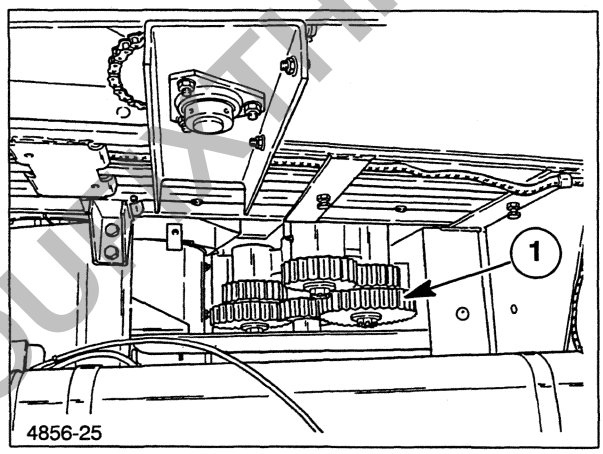

Figure 1-88

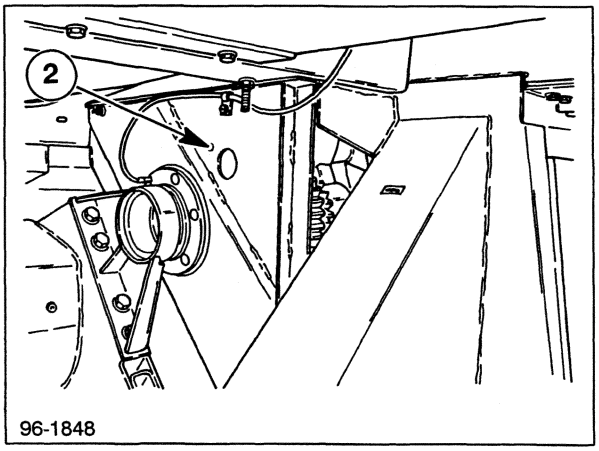

Figure 1-89

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IMPORTANT: The rear cover, 1, must always be in place before adjusting the bearing preload.

7. If the crankshaft bearings do not have sufficient preload, remove an equal thickness of shims at 6 and 13 from under both right and left bearing caps, 5 and 10. Remove shims until the correct preload is obtained.

8. If the bearing preload is too great, add an equal thickness of shims under the bearing caps on each side. This will decrease the preload on the bearings.

9. After the proper preload has been obtained, check the backlash again to be certain it is still correct. (Occasionally, the backlash may be affected when the bearing preload is being adjusted.)

   NOTE: If all the shims have been removed from under either bearing cap and the correct backlash or bearing preload cannot be obtained, remove a crankshaft bearing, 9 or 12. Install approximately .010″ thickness of shim stock between the bearing and the ring gear hub. This will allow additional shims to be placed under the bearing cap and provide a means for further backlash and preload adjustment.

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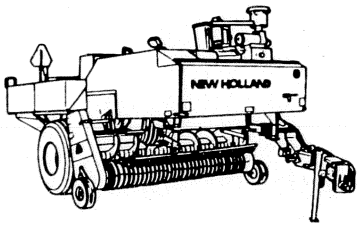

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REPAIR MANUAL

Section 2 – Pickup

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4. Remove the locknut, 1, from the cam follower bearing. Two different cam follower bearings have been used. either an allen wrench or a 5/8 inch wrench is required to hold the bearing.

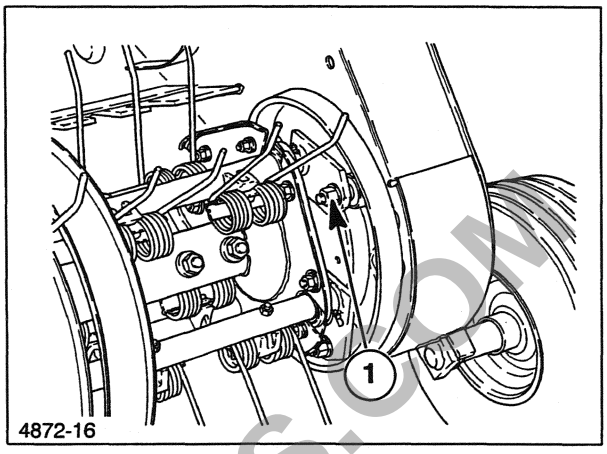

Figure 2-82

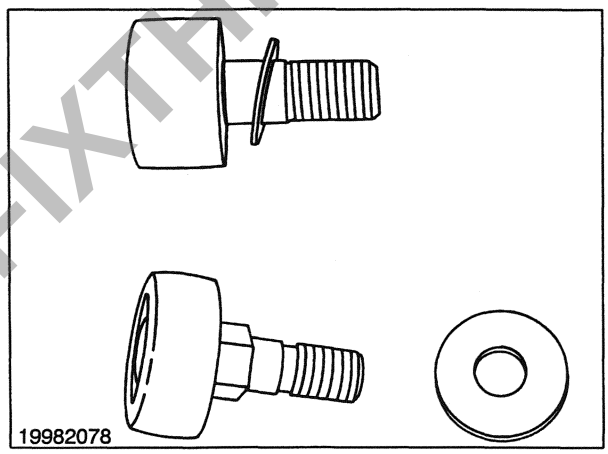

Figure 2-83

CAM FOLLOWER BEARING INSTALLATION

1. At baler serial number 948382 the cam follower bearing was changed. The original units require a 5/8 inch wrench to hold the cam follower bearing, 1, while installing the 1/2 inch UNF locknut. A heavy washer, 2, must be assembled under the locknut. Tighten the nuts to 61 N·m (45 ft. lbs.).

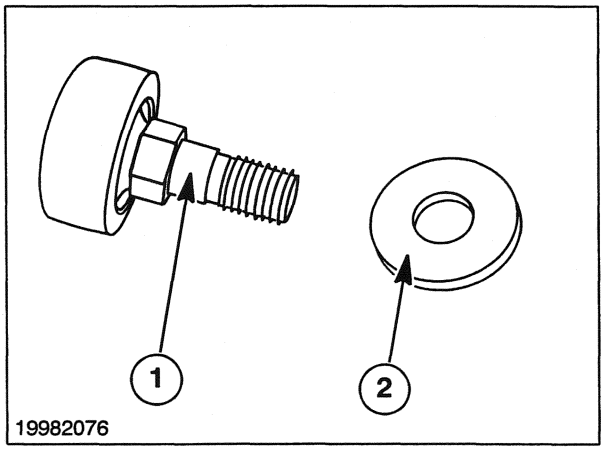

Figure 2-84

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FEEDER OPERATION

Crop is picked up and moved to the center of the baler by the pickup. From the center of the baler the crop is moved into the bale chamber by the feeder. The action of the feeder delivers the crop in charges, one slice at a time. The knife on the plunger shears off this charge, to separate the crop. The feeder will deliver in the next charge.

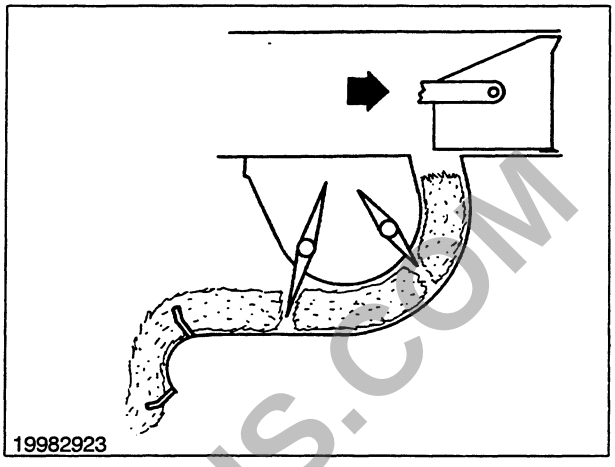

Figure 3-1

The feeder consists of two tine bars, one with 8 short tines and one with 6 long tines. The leading edge of the long tines are hardened. On the right side the tine bars are mounted on a driven arm. This arm drives the tine bars in a circular path. On the left side a series of gears is used to rotate the individual tine bars as they are rotating together around the feeder drive. This orients the tines on the tine bar and determines when the tines enter and leave the crop.

The crop is contained in a curved chute. The chute is formed by the feeder floor and the feeder guards. The chute extends from the back of the pickup to the floor of the bale chamber. Both sets of tines moves material from the pickup into the feeder chute. The long tines stay in contact with the crop much longer and delivers a charge of crop from the chute to the bale chamber. The long tines exit the crop as the plunger starts to compress the charge and cut it from the material remaining in the chute for the next charge. The short tines and then the long tines rake through the chute for each charge. The next charge will be moved into the bale chamber by the tines on the other side of both tine bars. The feeder makes one revolution for every plunger stroke. The tine bars make a half revolution for every plunger stroke. Therefore the tines on one side of each bar will be used for one stroke and the tines on the opposite side of both tine bars will be used for the following stroke.

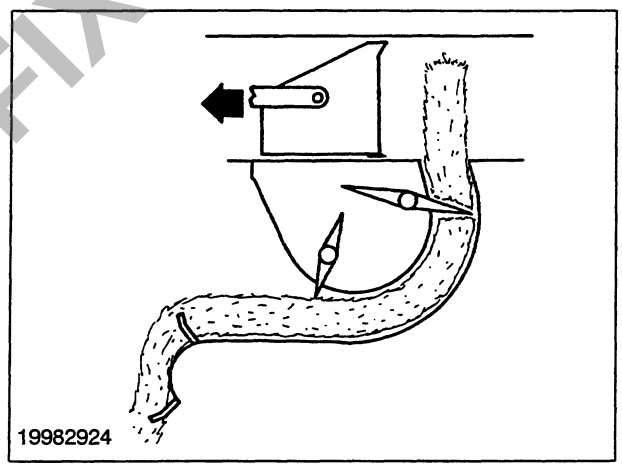

Figure 3-2

The tine bars must be timed to their rotation about the feeder driveshaft. This will cause the tines to enter and leave the crop at the proper time. The feeder must be timed to the plunger stroke. This will cause the charge to be delivered to the bale chamber at the right time.

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9. With a large puller, 1, and the special tool pull the hub off the shaft. The picture does not show the special tool that must be used to protect the end of the shaft. The bearing is a tight fit and heat may be required to break it loose.

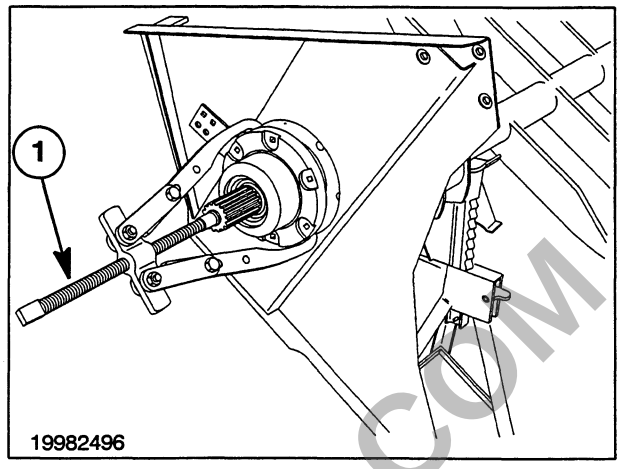

Figure 3-71

10. If the arm and shaft weld assembly is to be replaced, remove the cotter pin, 1, castle nut, 2, and washer, 3, from the right end of both tine bars.
11. Use the tool described above and a large two arm puller. Pull the arm away from the tine bars. Both tine bars will have to be removed at the same time.

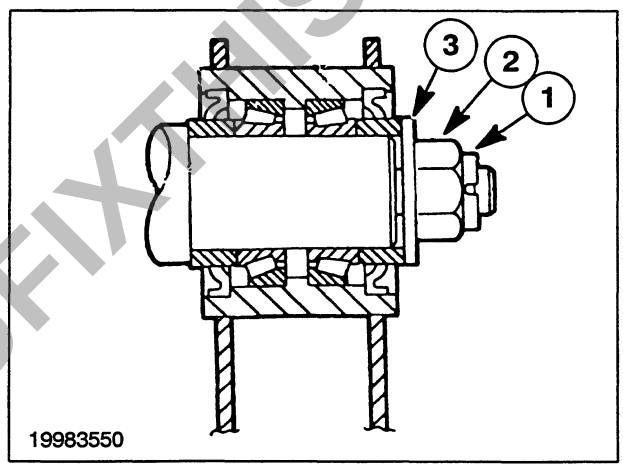

Figure 3-72

FEEDER RIGHT SIDE INSPECTION

1. It is difficult to remove the bearing cups from the housings. If the baler has low usage and the bearings appear to be in good condition, it is much easier not to remove them. If the baler has high usage it may be best to replace all the bearings and seals while the feeder is disassembled.
2. Clean and inspect the six bearings and six seals. Any parts that do not appear to be in perfect condition are to be replaced.
3. Each shaft will have a bearing and seal on it after the shaft is pulled out. If either part is to be replaced, the bearing will have to be removed in a press.

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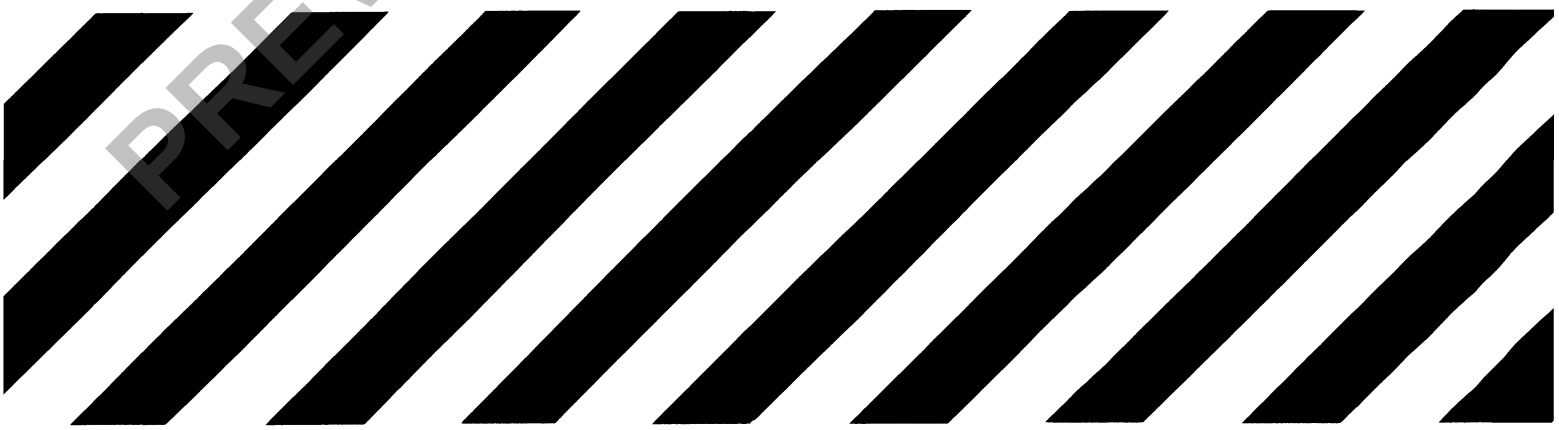

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1. Swing the knotter fan, 1, up.

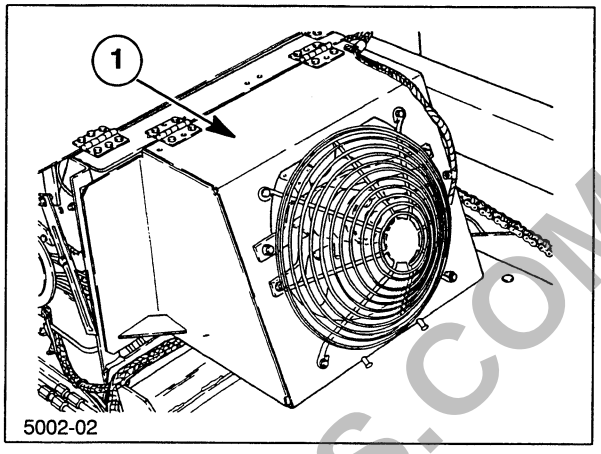

Figure 4-66

2. Remove the bale chamber cover, 1, by removing the six bolts, each with a spacer. Units with a serial number above 948382 have larger, 3/8″, bolts and no spacers.
3. Remove the shield, 2, over the connecting rod, just forward of the chamber cover. There are four bolts on each side and three along the top, front edge.

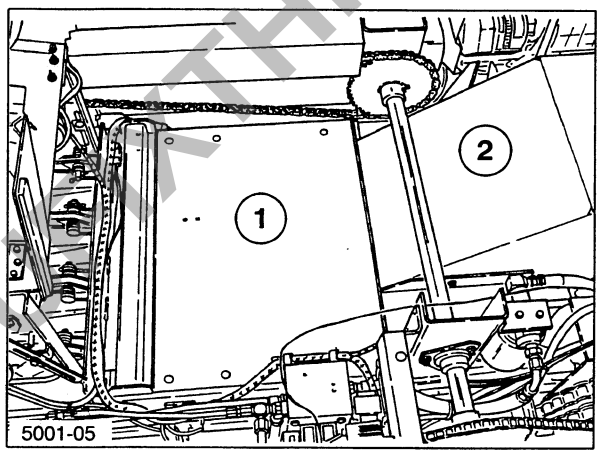

Figure 4-67

4. If the plunger will be lifted out of the bale chamber with a hoist, remove the plate, 1, under the hydraulic filter. There are two bolts, 2, that fasten it to the frame.
5. There will be more room to work if the two right side twine boxes are removed. The rear twine box is removed by taking out the four bolts in the bottom of the box.
6. The front box has six bolts in the bottom. There is a ground wire and a connector for the trouble light plug that must be disconnected. Two wire clamps must be unfastened. Two bolts at the lower end of the twine box brace are to be removed and the brace left assembled to the twine box.

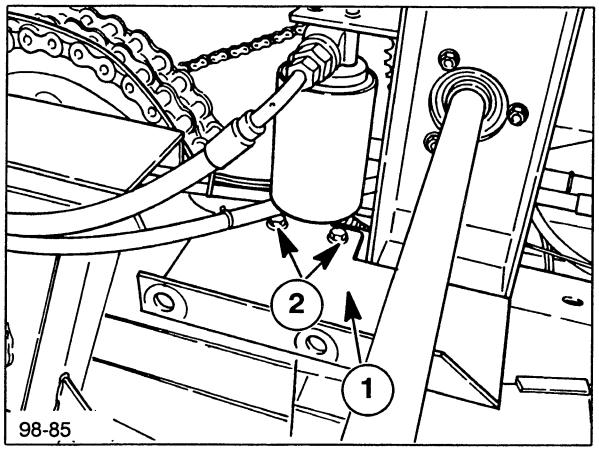

Figure 4-68

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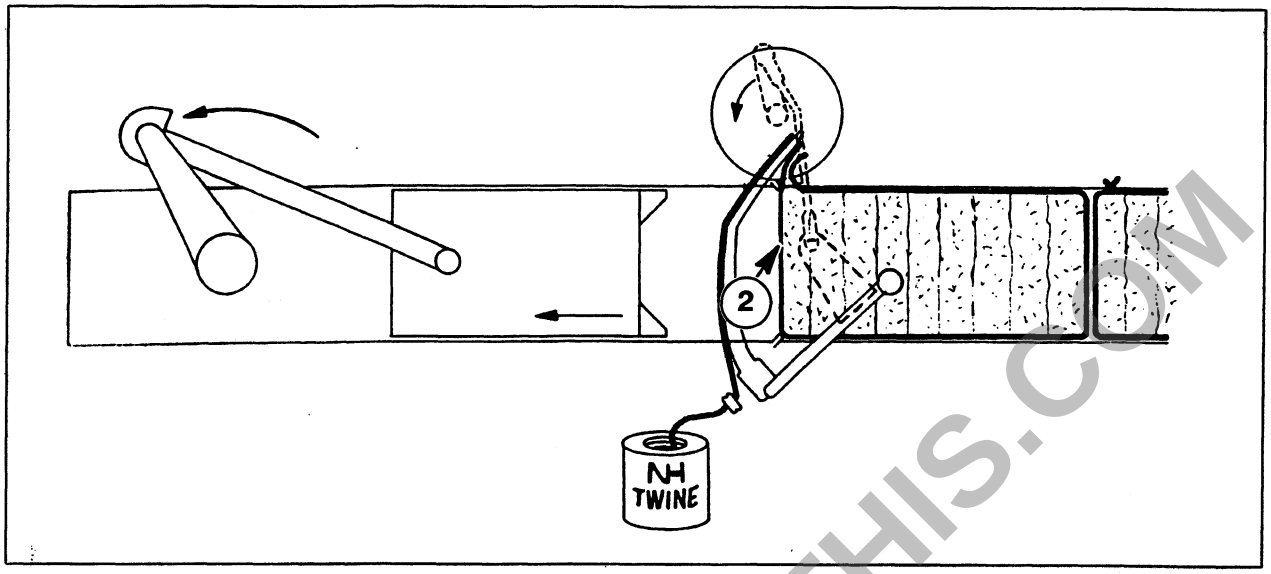

Figure 5-10

As the plunger starts forward, the needles continue in and deliver the twine to the knotter. The hay dogs hold the slice in position.

As the plunger moves forward, the knotter will start to tie the knot and the needles will start pulling back down.

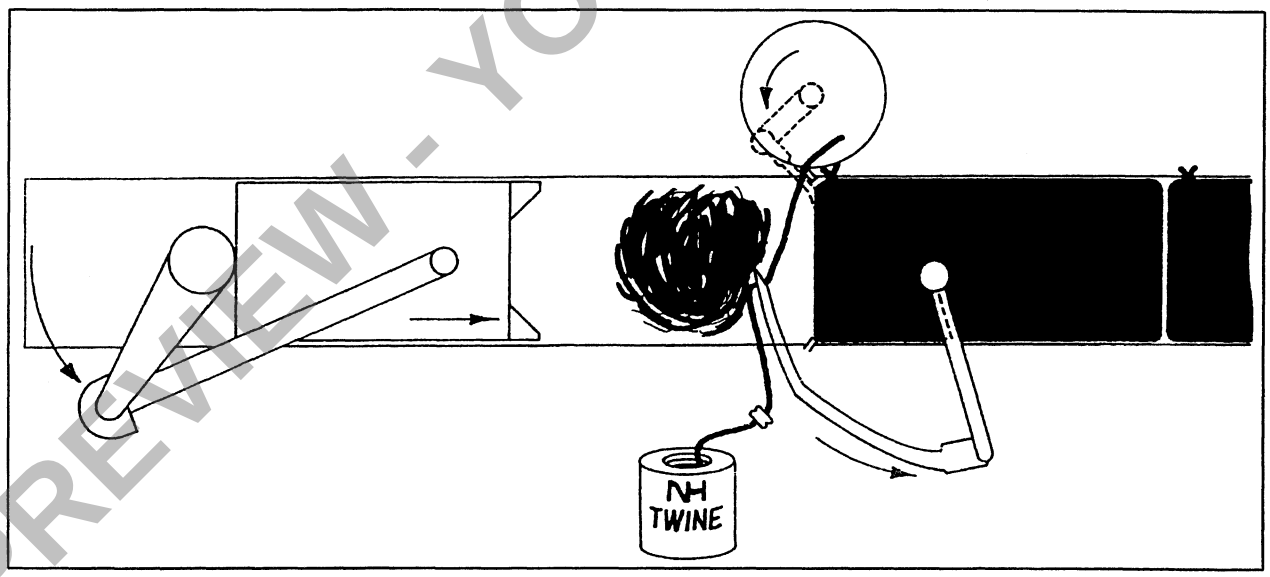

Figure 5-11

As the knotter completes the knot, the needles will continue downward to the home position. The plunger will travel rearward to compress the next charge of hay that will be the first charge in the next bale.

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PROBLEM	POSSIBLE CAUSE	CORRECTION
	Groove worn in cam gear lobe for knife arm reducing knife arm travel.	Replace cam gear.
Knot on twine held in knotter (No. 1) but not on twine brought up by needle.	Twine fingers too far from needles and missing the twine.	Adjust twine finger clearance to 1 to 2 mm (1/32″ to 1/16″).
	Incorrect twine finger home position causing the twine to be missed or not pulled close enough to the billhook.	Readjust so tip is even with needle slot.
	Broken twine finger return spring keeping fingers from returning home.	Replace spring.
	Key sheared in twine finger cam and twine fingers not moving.	Replace key.
	Twine finger cam worn out causing fingers not to move far enough.	Replace cam.
	Cam follower bearing failed.	Replace cam.
	Hay dogs not working causing crop to spring forward and deflect twine.	1. Clean hay and dirt from under hay dogs. 2. Replace broken hay dogs or springs.
	Not enough tension on twine at twine box causing too much slack in twine.	Increase spring pressure on twine tension plates at twine box. Check for wear on plates.
	Billhook does not open far enough and misses twine.	1. Replace billhook tongue and roller assembly. 2. Replace billhook roller cam on the knotter frame if it has a groove worn in it.
	Bent billhook tongue missing a twine or not holding tails.	Replace billhook tongue and roller assembly.
	Incorrect twine disc timing preventing twine from getting into disc.	Adjust timing so both twines are caught in the disc notch.
	Lack of needle penetration preventing twine from getting into twine disc.	Adjust needles to properly deliver twine.
	Needles adjusted too far from twine disc preventing twine from getting into twine disc.	Adjust needles to 1 to 2 mm (1/16″ to 1/8″) clearance to twine disc.
Knot on twine delivered by needle (No. 2) but not on twine held by knotter (No. 1).	Twine holder tension too low causing twine to slip out of holder during bale formation.	Tighten twine holder spring bolt 1/4 turn at a time.
	Twine holder spring cracked resulting in low tension.	Replace spring.
	Twine holder spring worn.	Replace spring.

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Needle Drive Arms

Left Arm Removal

The knotter clutch pawl assembly is part of the left drive arm.

Loosen the drive chain tension and remove the knotter drive shearbolt.

Push forward on the drive arm to remove spring pressure from the pawl, 1.

Remove the cap screw, three hardened washers and spacer at 2 attaching the needle drive rod, 3, to the arm.

Loosen the clutch clamp bolt, 4.

Remove the cotter pin, 5, and washers from the end on the knotter shaft.

Remove the drive arm and clutch, 6, from the shaft.

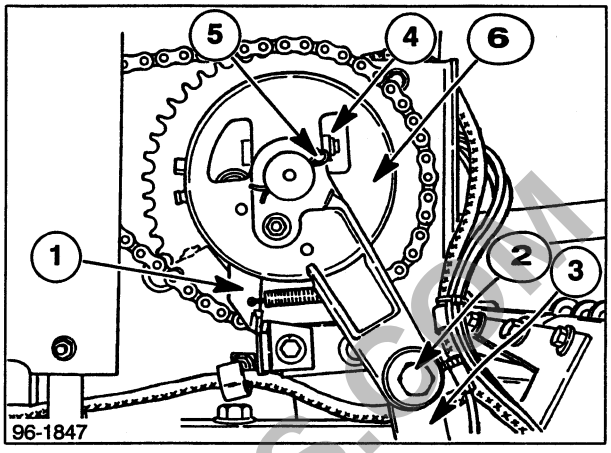

Figure 5-174

Left Arm Installation

Inspect the key for the clutch and drive arm. Replace if required.

Install the drive arm and clutch on the shaft. The hub must be against the washer on the shaft. Tighten the clamp bolt, 4.

Install hardened washers as required and the cotter pin, 5, at the end of the shaft.

Tighten the clamp bolt, 4.

Install the shearbolt.

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To replace the spring, lever and bracket:

Remove the jam nuts, 1, and washer from the spring mounting bolt. Remove the spring, 2, and spacer.

NOTE: Machines below serial number 948383 do not have the spacer.

Remove the spacer and washer, 3, to separate the lever, 4, and the bracket, 5.

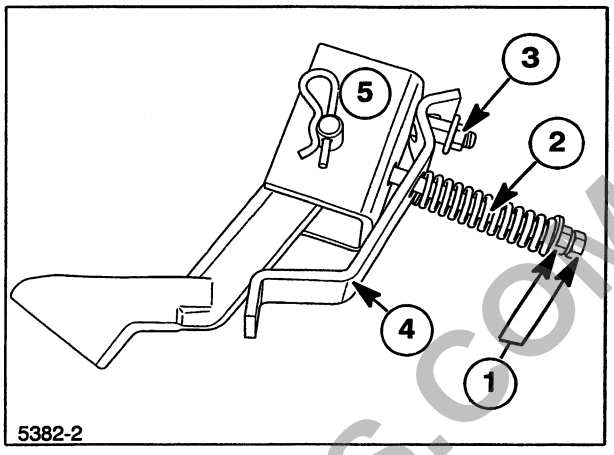

Figure 5-269

Attach the lever, 2, to the bracket, 1, using a carriage bolt, a 20.6 mm(13/16″) long spacer, 3, a washer, 4, and a lock nut, 5.

Place the spring bolt, 6, through the bracket and lever.

Add the spacer over the spring bolt, if the baler uses spacers.

Install the spring, 7, washer, 8, and nuts, 9. Do not tighten the nuts for now.

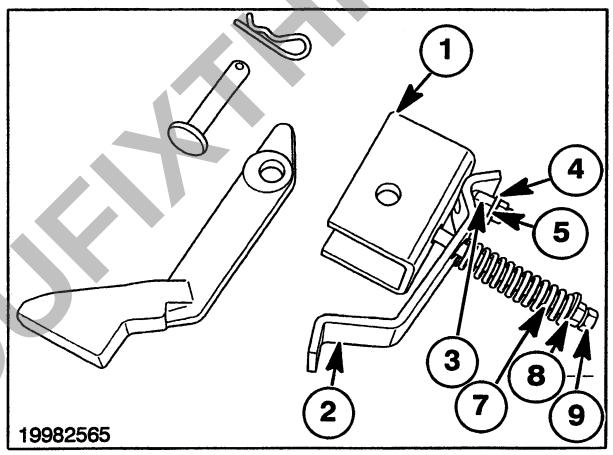

Figure 5-270

Place the hay dog, 1, inside the mounts, 2.

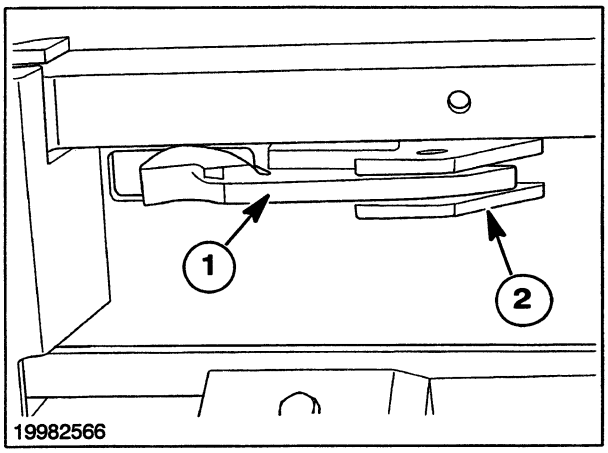

Figure 5-271

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RELIEF VALVE

The relief valve is a direct acting differential area, poppet type. It determines the maximum operating pressure in the system. It is located at the lower front corner of the manifold and does not include a solenoid. The cartridge is rated for infinite life at 280 bar (4200 PSI) and 30.3 l/min. (8 GPM) flow rate. The operating temperature range is from -40° to 120°C (-40° to 248°F).

Operation: The relief valve remains closed until the predetermined 138 bar (2000 PSI) is reached at port 2. The force created by the pressure acting on the differential poppet area lifts the poppet off the seat and allows flow from port 2 to port 1.

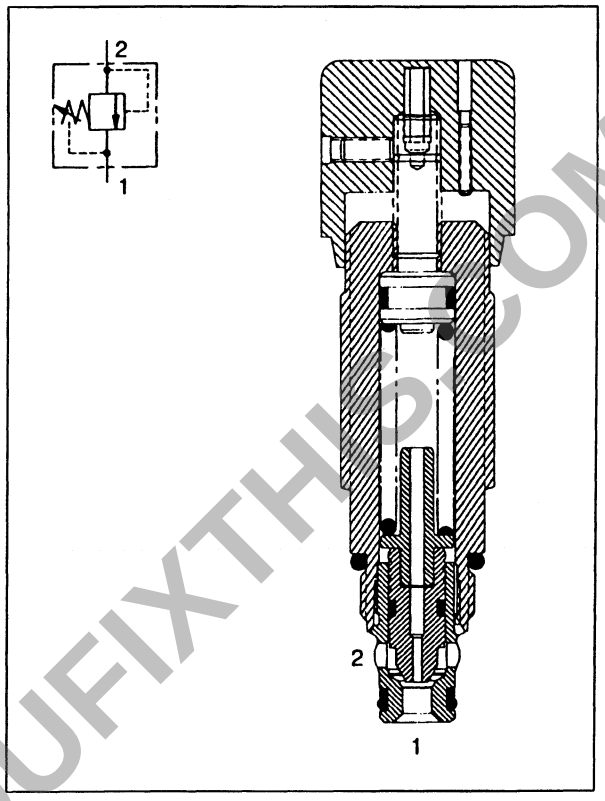

Figure 6-44

TESTING

The maximum pressure can be determined by installing a pressure gauge between the pump and manifold. Operate the baler at full throttle. If the pressure does not read 83 bar (2000 PSI), the relief valve or pump needs cleaning or replacement.

SERVICE PARTS

The only parts available from New Holland Service Parts are the external seal kit and the cartridge. These part numbers are listed on the Component Information Chart in this section.

REPLACEMENT

WARNING: Hydraulic fluid under pressure can cause serious injury. Make sure there is no pressure in the hydraulic system. If necessary carefully break one connection to relieve the pressure. If fluid punctures the skin, obtain immediate medical help.

1. Clean the area around the relief valve, 1.
2. To remove the relief valve use a 7/8" wrench.
3. The cap, 2, on the top of the valve can be removed with a 1/2" wrench. This will allow adjustment of the relief pressure with a 5/32" Allen wrench. This adjustment should not be required as the screw should be all the way in and operating at 138 bar (2000 PSI). The HydraForce brand relief valve is preset and is not adjustable.

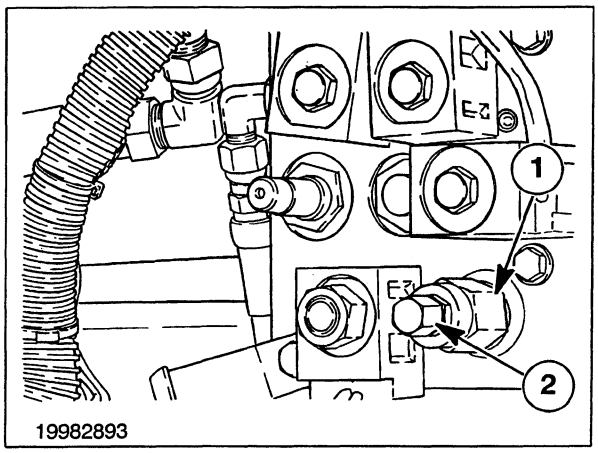

Figure 6-45

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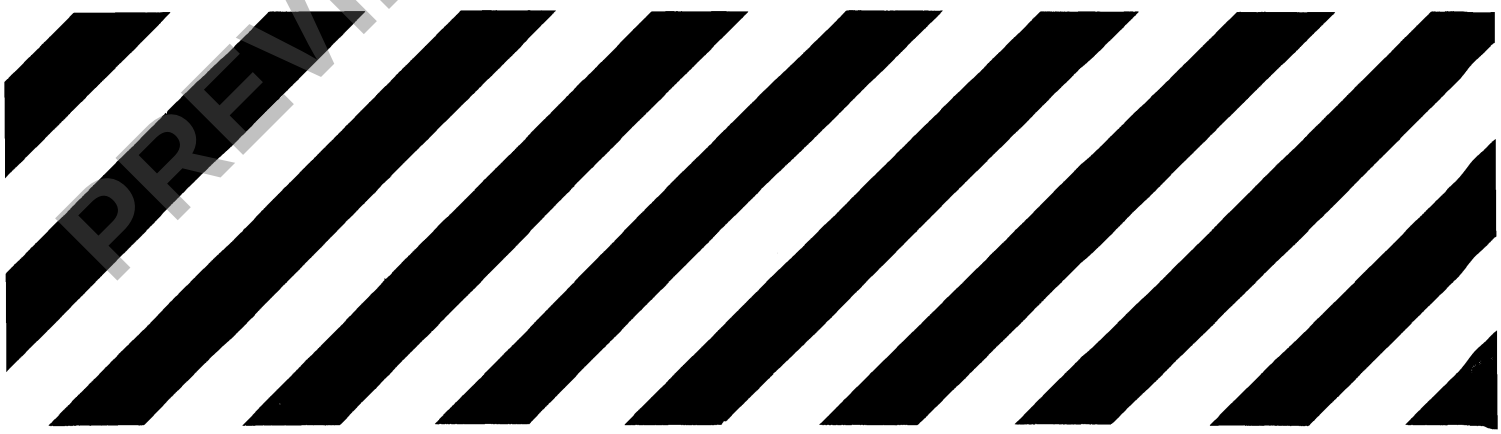

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TEST PROCEDURE 3: RESISTANCE TEST FOR ELECTRICAL COMPONENTS

Do this test if:

- Components such as lamps, blowers, or motors are working sluggishly.
- Components are within specified resistance levels.
- You are directed to by a troubleshooting chart.

1. Disconnect the part you are testing by unplugging its connector to expose it for testing.
2. Set the Function/Range switch on your test meter to measure resistance (Ohms). Insert the test leads into the connector terminals specified for the part you are testing.

   When checking rocker or rotary switches, actuate the switch while measuring for opens and shorts.

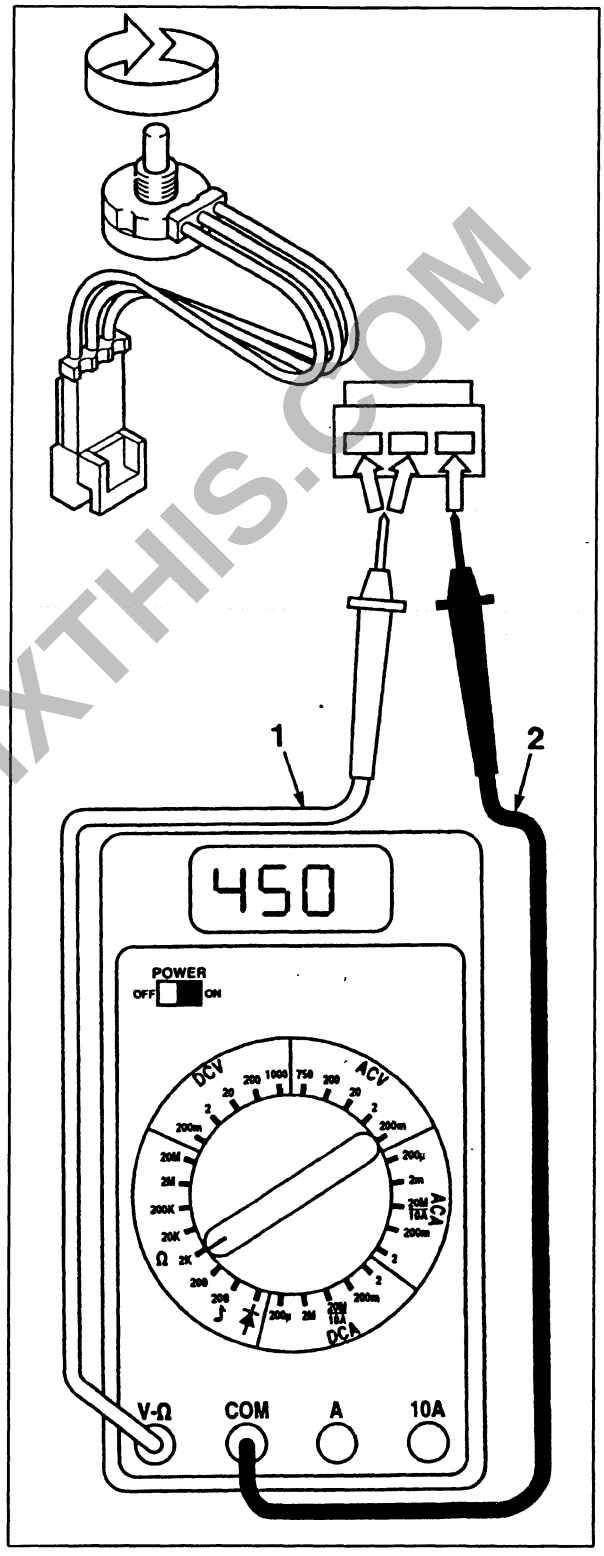

Figure 7-57

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ALTERNATOR REMOVAL

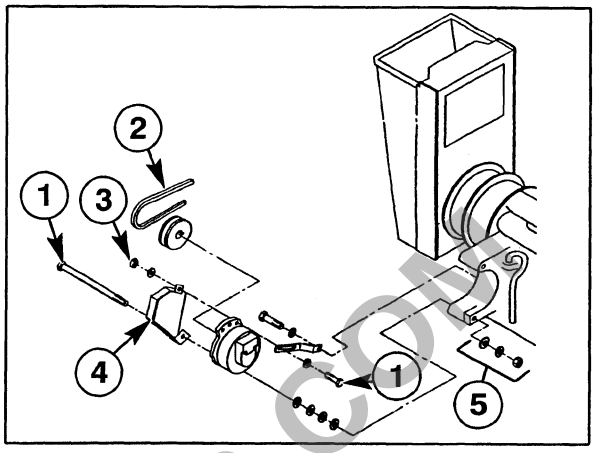

Figure 7-90

1. Disconnect the battery ground cable. Remove the three wires from the wire harness that attach to the alternator, one yellow, one red and one black. After serial # 948382, there are four wires, the additional wire is at the D+ terminal.
2. Remove the shield at the back of the alternator by removing the three 1/4 X 3/4 bolts. The bolts hold the shield to the air intake screen frame. There are weld nuts inside the frame.
3. Loosen the top and bottom bolts, 1, on the alternator. Pivot the alternator toward the engine. This will permit removing the V - belt, 2.
4. Remove the nut, 3, on the top bolt. This nut holds the small air shield, 4, in place. The top mounting hole on the alternator is threaded.
5. Remove the nut, lockwasher and washer, 5, from the bottom bolt. Remove the alternator, air shield, bolt and spacers together.

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TROUBLESHOOTING THE LIGHTS/ SWITCH CIRCUIT

Troubleshooting the Components

If only one component in the engine warning circuit is not functioning, the component can be checked as described under that component.

Troubleshooting the Circuit

Disconnect the battery ground cable and turn off the key switch for all the resistance tests. As wires are disconnected, do not re-connect them until the tests are complete. The more isolated a wire or component under test is, the more accurate the results. Once the area of a short is determined, make as many disconnections as possible to isolate the suspects.

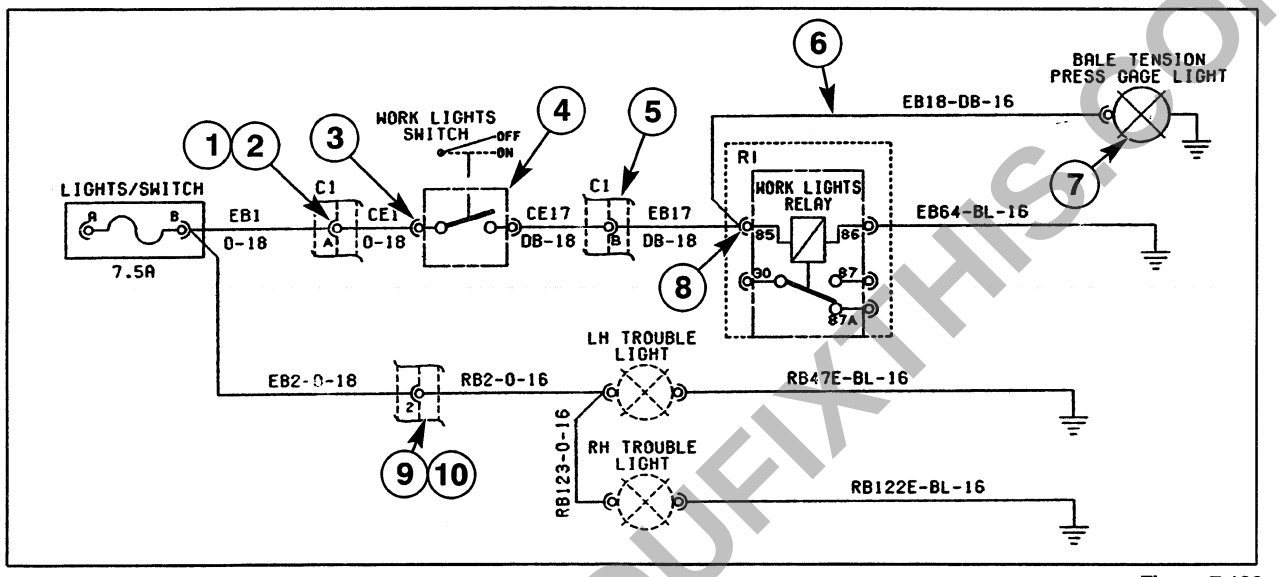

Figure 7-136

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8. Cut the plastic tie, 1, holding the wire harness to the front shield support.
9. Remove the switch mounting, 2, for the clutch safety switch. The mounting is held on with a bolt in the front flange of the transmission.

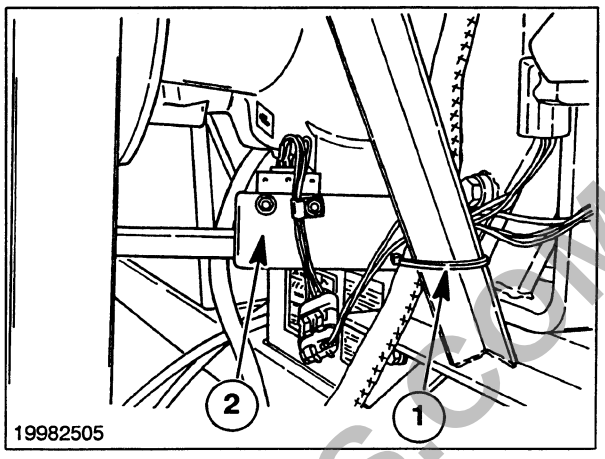

Figure 9-17

10. Mark the spline on the clutch lever, 2, and the clutch shaft, 3.

    Loosen the clamping bolt, 1, on the yellow clutch lever, 2. Place the lever in the out of gear position. Slide the lever off the shaft.

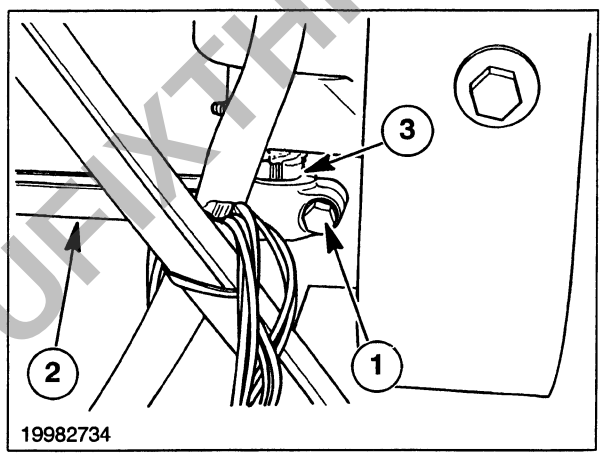

Figure 9-18

11. The fuel return line attaches to the engine near the first cylinder valve cover. Loosen the hose clamp, 1, on the fuel return line, 2. Pull the hose off the barbed fitting. Unscrew the other end of the fuel return line, 3, on top of the fuel tank.

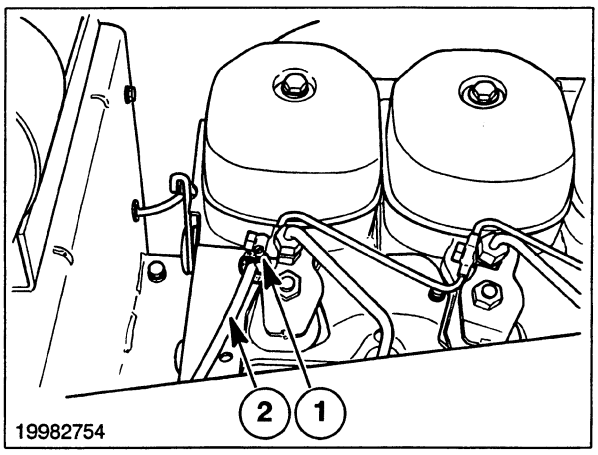

Figure 9-19

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