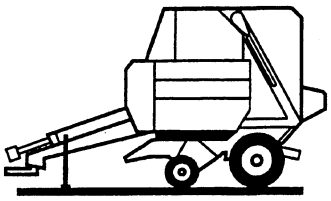
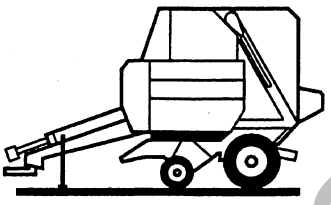
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ROUND BALER REPAIR

634, 644, 654, 664

40063440



ROUND BALER REPAIR

634, 644, 654, 664

40063440

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ROUND BALER SERVICE MANUAL CONTENTS

SECTION 1 - GENERAL INFORMATION
SECTION 2 - PTO DRIVELINE
SECTION 3 - GEARBOX REMOVAL
SECTION 4 - STANDARD AND WIDE PICKUPS
SECTION 5 - SLIP CLUTCHES
SECTION 6 - FLOOR ROLL AND STARTER ROLL GROUP
SECTION 7 - APRON ROLL GROUP
SECTION 8 - APRON BELTS
SECTION 9 - SLEDGE ROLL GROUP
SECTION 10 - HYDRAULIC SYSTEM
SECTION 11 - TWINE WRAPPER SYSTEM - MODEL 634
SECTION 12 - AUTO-WRAP TWINE SYSTEM - MODELS 644, 654, AND 664
SECTION 13 - BALE COMMAND MECHANICAL SYSTEM - MODELS 644, 654, AND 664
SECTION 14 - BALE COMMAND ELECTRICAL SYSTEM - MODELS 644, 654, AND 664

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PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, you will find precautionary statements ("CAUTION", "WARNING", and "DANGER") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.



CAUTION: THE WORD "CAUTION" IS USED WHERE A SAFE BEHAVIORAL PRACTICE ACCORDING TO OPERATING AND MAINTENANCE INSTRUCTIONS AND COMMON SAFETY PRACTICES WILL PROTECT THE OPERATOR AND OTHERS FROM ACCIDENT INVOLVEMENT.



WARNING: THE WORD "WARNING" DENOTES A POTENTIAL OR HIDDEN HAZARD WHICH HAS A POTENTIAL FOR SERIOUS INJURY. IT IS USED TO WARN OPERATORS AND OTHERS TO EXERCISE EVERY APPROPRIATE MEANS TO AVOID A SURPRISE INVOLVEMENT WITH MACHINERY.



DANGER: THE WORD "DANGER" DENOTES A FORBIDDEN PRACTICE IN CONNECTION WITH A SERIOUS HAZARD.

FAILURE TO FOLLOW THE "CAUTION", "WARNING", AND "DANGER" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

MACHINE SAFETY

Additional precautionary statements ("ATTENTION" and "IMPORTANT") are followed by specific instructions. These statements are intended for machine safety.

ATTENTION: The word "ATTENTION" is used to warn the operator of potential machine damage if a certain procedure is not followed.

IMPORTANT: The word "IMPORTANT" is used to inform the reader of something he needs to know to prevent minor machine damage if a certain procedure is not followed.

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BASIC COMPONENTS - Model 634

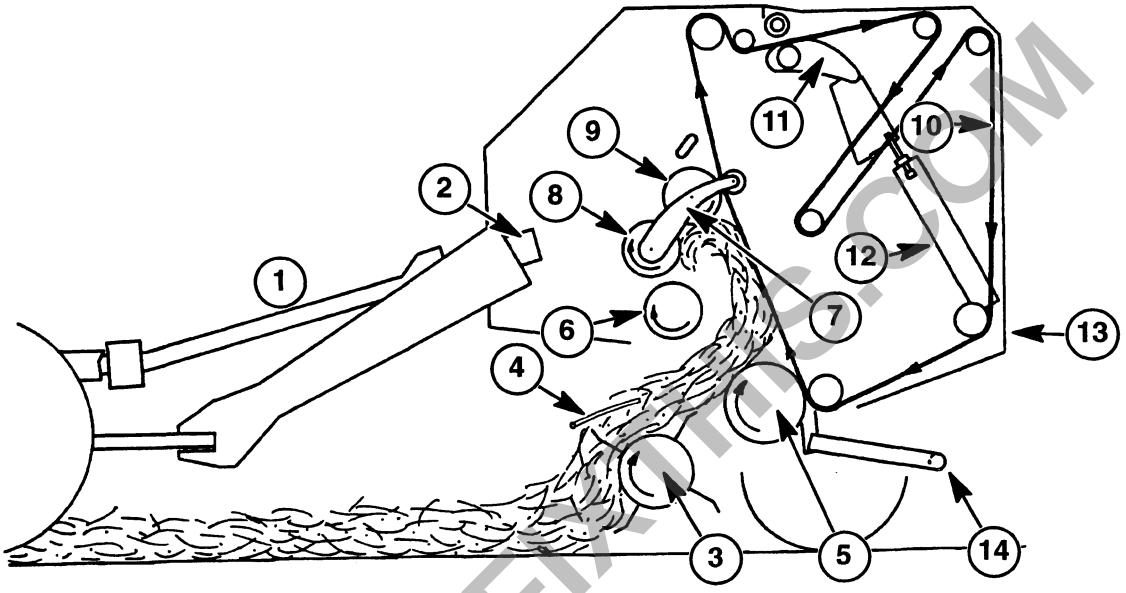


Figure 1-1

1 Power shaft
2 Gearbox
3 Pickup
4 Wind guard
5 Floor roll
6 Smooth roll
7 Pivot-roll arm
8 Fixed-position roll
9 Pivot roll
10 Belts
11 Belt tension arm
12 Bale density spring
13 Tailgate
14 Bale ejector

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HARDWARE

General

The Models 634, 644, 654, and 664 balers have been built using mostly metric hardware. However, there are some places where inch hardware is required.

NOTE: Be sure to use the hardware specified when using tapped holes, as trying to install a metric bolt in an inch thread, or an inch bolt in a metric thread, will damage the thread.

The standard metric hardware callout might be for example M 8 x 16. The M indicates metric. The first number (8) is the diameter in millimeters. The second number (16) is the length in millimeters. Following the numbers there may be a letter designation such as CS (cap screw) or CB (carriage bolt).

Certain hardware must be tightened to specific torque specifications. If specific torque specifications are not noted, tighten the hardware to the standard torque chart specification listed in this manual.

PLATING

Hardware used on New Holland balers is plated with zinc-chromate (gold color). Gold- colored hardware has different torquing requirements from unplated or zinc-plated (silver color) hardware because of the difference in the coefficient of friction of the plating material. The torque charts in this manual list the correct specifications for gold, silver, and unplated bolts.

NUT TIGHTENING

Whenever possible, the nut should be tightened, not the head of the bolt. When tightening using the bolt head, the clamp load can be lost because some of the torque applied twists the bolt instead of tensioning (stretching) it. The tension on the bolt is what holds the joint together.

Approximately 90% of the torque applied during assembly goes to overcoming friction between the parts. The other 10% is used to tension (stretch) the bolt. After assembly, the frictional forces disappear, which is the basis for the saying "If it does not fail during assembly, it will not fail in service." The bolt may later fail due to other factors, but not from being over-tightened.

LOCKNUTS

Most locknuts are coated with a special lubricant that is dry to the touch. Anytime a locknut is used, a lower than normal torque is required. Refer to the torque charts in this manual for specific values.

JAM NUTS

When using a jam nut to lock a regular nut, the jam nut should be installed first and tightened to one-half the recommended torque, then held in place while installing a regular nut to the recommended torque.

THREAD LUBRICATION

The addition of antiseize compound, Molykote, oil, graphite, or any other lubricant to a bolt decreases the friction between it and a nut. This makes it necessary to reduce the recommended torque to prevent over-tensioning of the bolt. When using the torque charts in this manual, decrease the value by 20% whenever a lubricant is used.

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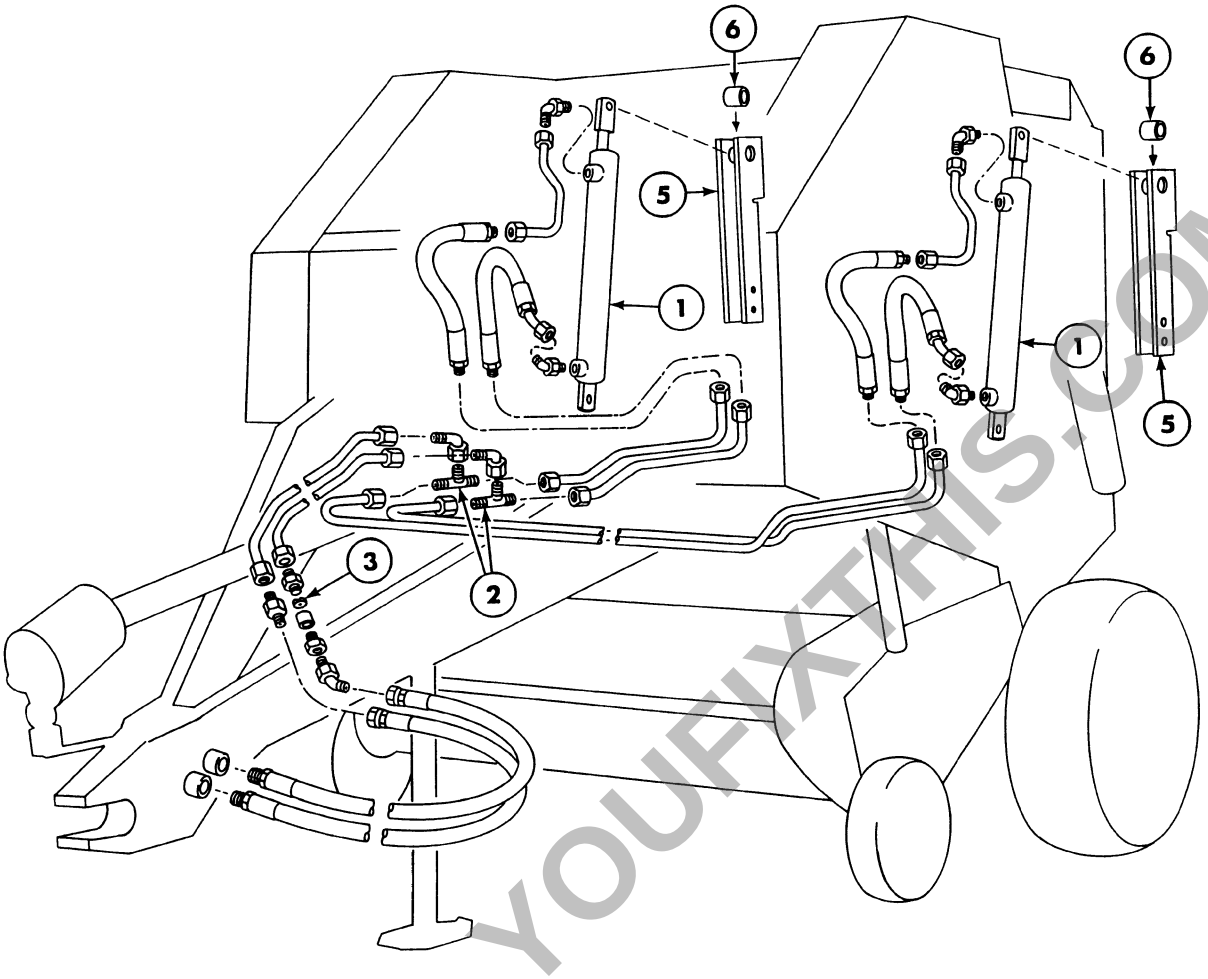


Figure 10-1

TAILGATE LIFT SYSTEM - MODEL 634

The tailgate lift system on the Model 634 consists of two cylinders, 1, and the steel lines and hoses required to connect them to the tractor. The lines to the cylinders are connected to a tee, 2, so that the cylinders operate together to raise or lower the tailgate. There is a 0.082″ (2.08 mm) orifice, 3, in the lift part of the circuit to regulate the speed of the tailgate. The slot in the orifice should be facing away from the tractor.

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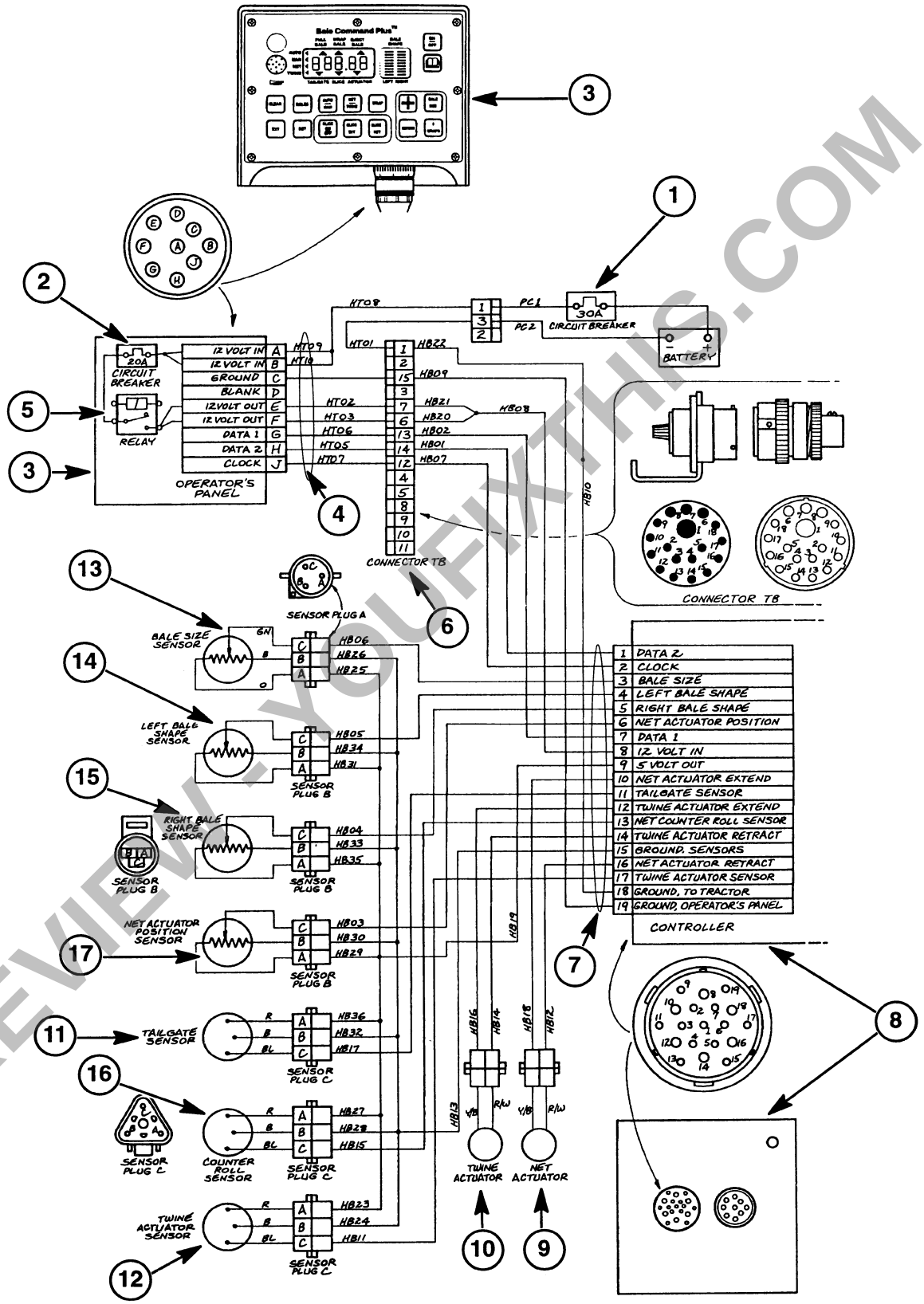


Figure 14-59

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DRIVELINE COMPONENTS

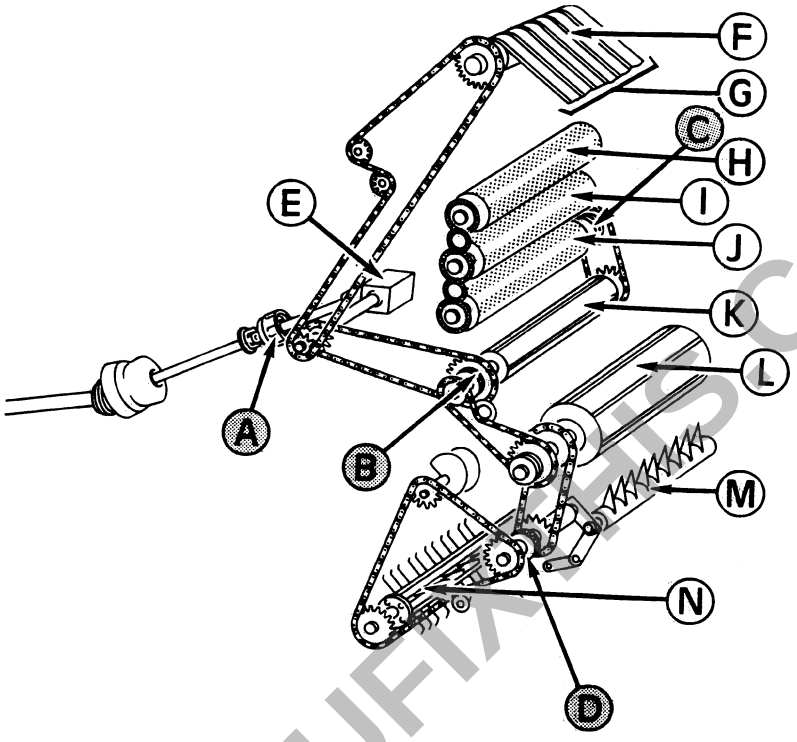


Figure 1-3

BASIC COMPONENTS

A PTO slip clutch (disc-type - Models 654 and 664 only)
NOTE: The Model 644 uses a shear bolt
B Floor roll slip clutch (jaw-type)
C Sledge roll slip clutch (disc-type)
D Pickup slip clutch
(disc-type - standard pickup)
(jaw-type - wide pickup)
E Gearbox (540 RPM or 1000 RPM)
F Apron drive roll
G Apron belts
H Stripper roll
I Middle roll
J Pivot roll
K Starter roll
L Floor roll
M Stuffer (wide pickup only)
N Pickup (wide pickup shown)

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TELESCOPING PTO

Model 634

This model baler uses a PTO driveline that combines the universal joint in a constant velocity-type driveline. At the rear of the assembly is the shear bolt protection system.

The Model 634 requires only that the rear slide collar, 1, be released to remove the PTO assembly from the baler.

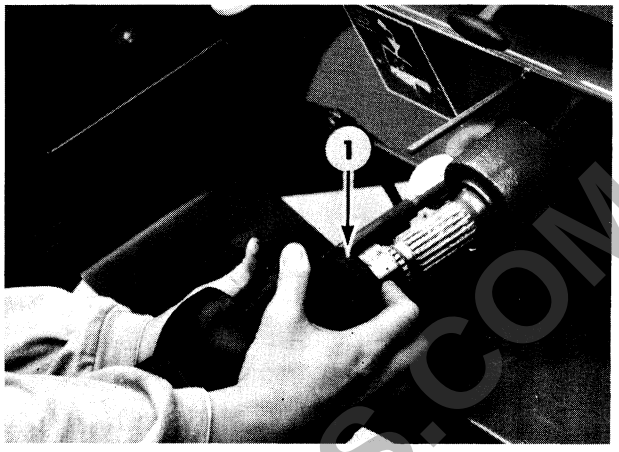


Figure 2-1

2509-4

PTO SHAFT

634

The 634 PTO shaft can be disassembled and assembled in a similar manner to most universal joints. This section will cover the complete disassembly of the shaft. Disassemble only the amount of the shaft that is needed to make the repair.

Figure 2-2 shows the complete PTO assembly:
1 is the front PTO assembly.
2 is the rear PTO assembly.

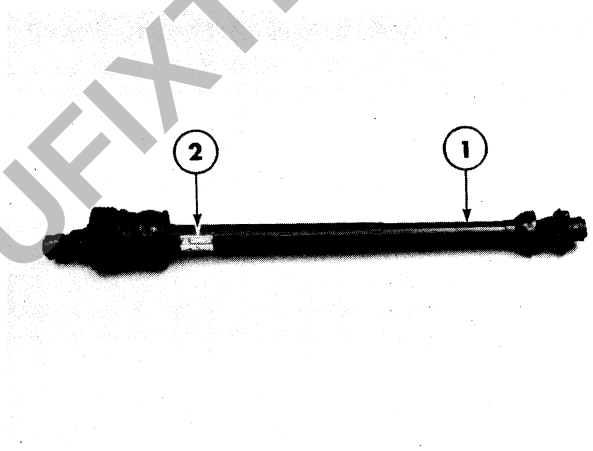


Figure 2-2

A595-1

FRONT PTO SHAFT DISASSEMBLY

Use a screwdriver to disengage snap ring, 1, from the groove in shield, 2. Slide the PTO shaft, 3, out of shield, 2.

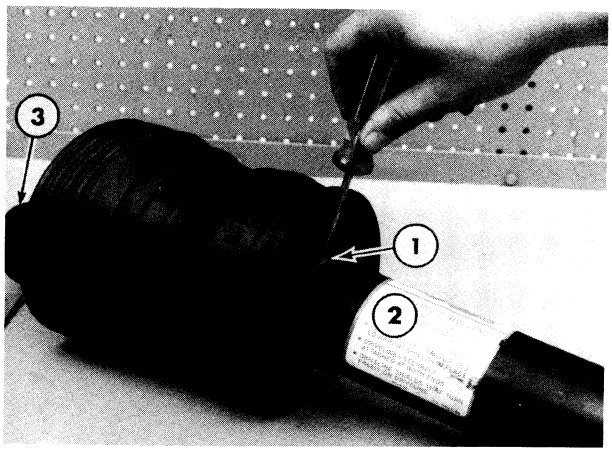


Figure 2-3

A595-8

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ERROR MESSAGES AT START-UP

The Bale Command Plus system goes through a self test when it is turned on. If a problem is found, the operator is alerted by the audible alarm and an Error message and/or flashing pointer on the display on the operator's panel.

If Error is displayed, there will also be an indicator triangle on the display to indicate what circuit of the system is causing the problem.

Pressing the CLEAR key will cancel the alarm.

The following are errors that may appear:

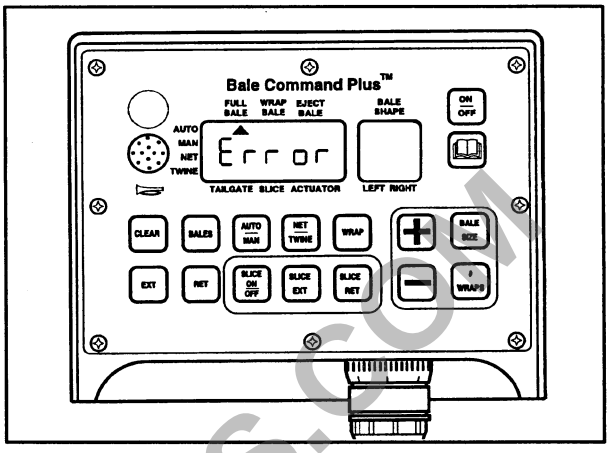


Figure 14-61

Error and the FULL BALE pointer is flashing - Bale size circuit

The bale size should indicate 30 (75 if metric display is selected) when the system is turned ON with an empty bale chamber.

Check to be sure the sensor is adjusted correctly and that the take-up arm is in the home position before checking the wiring or testing the sensor.

Error and TAILGATE pointer is flashing - Tailgate sensor circuit

The sensor must indicate that the tailgate is closed and latched before starting to make a bale.

Check to be sure the sensor is adjusted correctly and that the tailgate is closed and latched before checking the wiring.

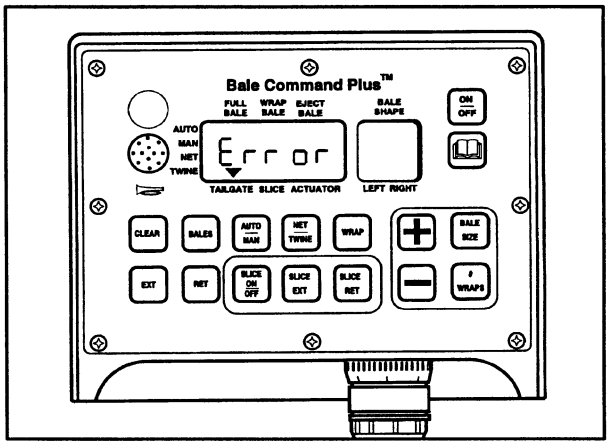


Figure 14-62

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TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTION
Internal leakage.	Worn or damaged seals.	Replace.
	Piston nut not tight.	Torque to specification.
External leakage.	Worn or damaged seals.	Replace.
	Internal leakage in a single-acting cylinder.	See internal leakage.
Tailgate opens slowly.	Restriction in line.	Remove restriction.
	Lockout valve incorrectly adjusted.	Readjust so spool has full travel.
	Orifice installed wrong.	Install with slot facing away from tractor.
	Incorrect orifice.	Install 0.104″ orifice.
	Low flow or pressure.	Repair tractor hydraulic system.
Tailgate closes fast.	No orifice in line.	Install orifice.
	Orifice installed wrong.	Install with slot facing away from tractor.
Tailgate drifts open.	Internal leak in cylinder.	See internal leakage.
	Tractor remote not sealing.	Repair tractor.
	Tailgate not latched.	Check latch is locked before baling.
Density pressure drop (some drop is normal when not adding crop).	Internal leakage.	See internal leakage.
	Air in the system.	Bleed the system.
	Dirt in the relief valve.	Clean valve.

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BALE SIZE SENSOR AND BRACKET (All Models)

The bale size sensor bracket, 1, adjustment may need to be checked if a problem with the bale size occurs or if the sensor cannot be calibrated.

WARNING: IF THE CONTROLLER IS IN THE AUTOMATIC MODE, THE WRAPPER ATTACHMENT WILL START MOVING WHEN THE SENSOR REACHES THE PRESET FULL BALE SIZE. THE CONTROLLER SHOULD BE PLACED IN THE MANUAL OR SETUP/DIAGNOSTIC MODE BEFORE MAKING ANY ADJUSTMENT OR TROUBLESHOOTING THE SYSTEM.

To check the adjustment, place the controller in the SETUP/DIAGNOSTIC mode by pressing and holding the OPEN BOOK KEY. Select setup/diagnostic item 11 by pressing the OPEN BOOK key repeatedly. This will display a number between 33 and 245 on the operator's panel. When the bale chamber is empty, the number should be between 33 and 50.

If the number is not between 30 and 50, loosen the mounting bolts and rotate bracket, 1, until the lowest number is displayed.

Rotate bracket, 1, until the count increases 5 to 10 greater than the minimum and tighten the bolts. The bale size sensor is now adjusted properly.

To exit the setup/diagnostic mode, press and hold the OPEN BOOK symbol for two seconds. The alarm will sound to indicate that the controller has been taken out of the setup/diagnostic mode and returned to normal operation.

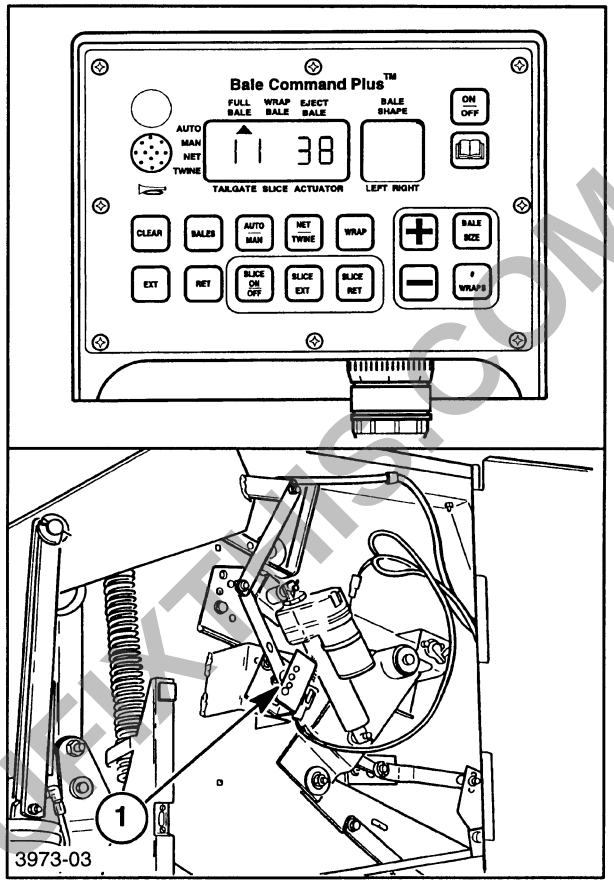


Figure 14-16

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Loosen and remove the flotation spring and eyebolt at 2. With the pickup down resting on the wheels, remove the cap screw at 3. Loosen and remove the drive chain at 4. Loosen cap screws at 5, but do not remove at this time.

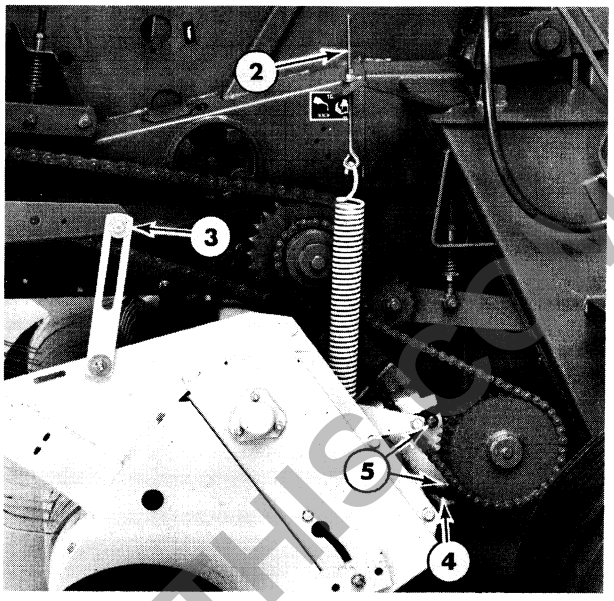


Figure 4-31

2381-2

Loosen the jam nut and remove the flotation spring bolt at 6, Figure 4-32. Position a floor jack or rolling dolly under the center of the pickup. See Figure 4-33. Remove the two cap screws from each end of the pickup at 5, Figures 4-31 and 4-32. Disengage the pickup from the pivots and remove from under the baler. See Figure 4-33.

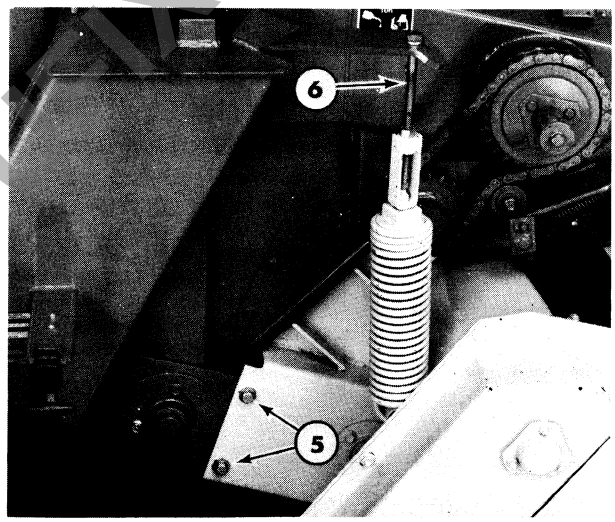


Figure 4-32

2381-3

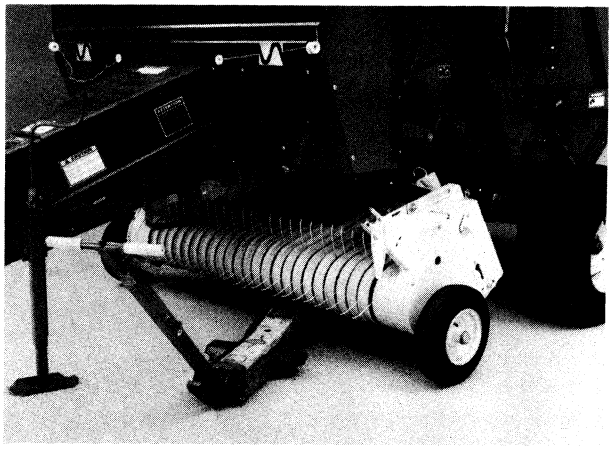


Figure 4-33

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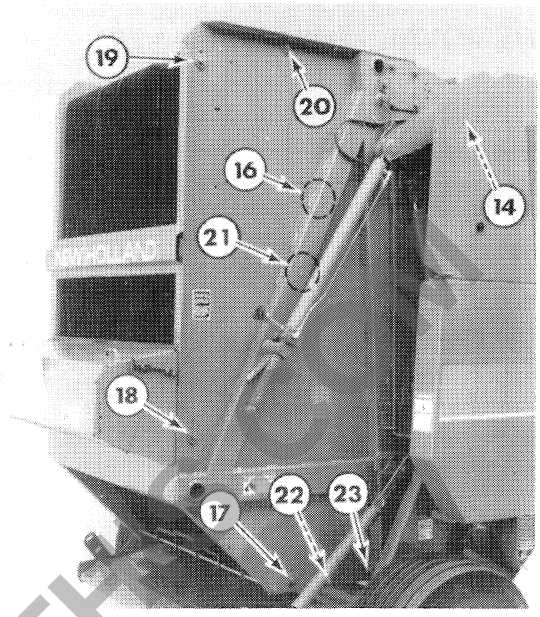


Figure 7-27

2361-5

Models 654-664

REMOVAL - ROLLS 14, 17, 18, 19, 20, 22, and 23

To remove, use the appropriate size wrench with a punch inserted through the frame to prevent the support hub from rotating.

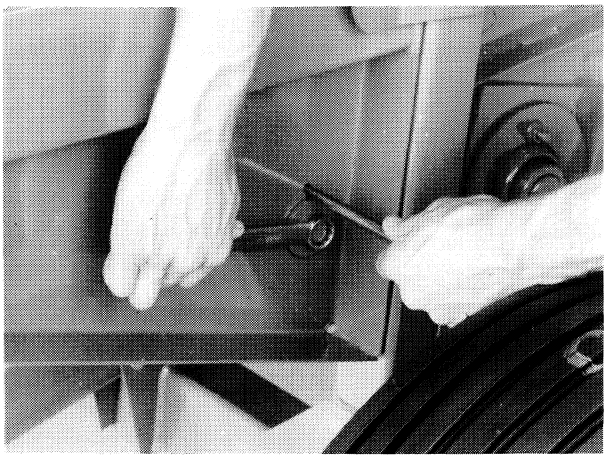


Figure 7-28

8312-8

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8. Install key and sprocket, 1. Install and tighten the cap screw and washers at 2.
9. Rotate the pivot roll and make sure the roll does not rub the sledge frame at any point. If rubbing occurs, remove or add shims between the two left bearings at 1, Figure 9-51.

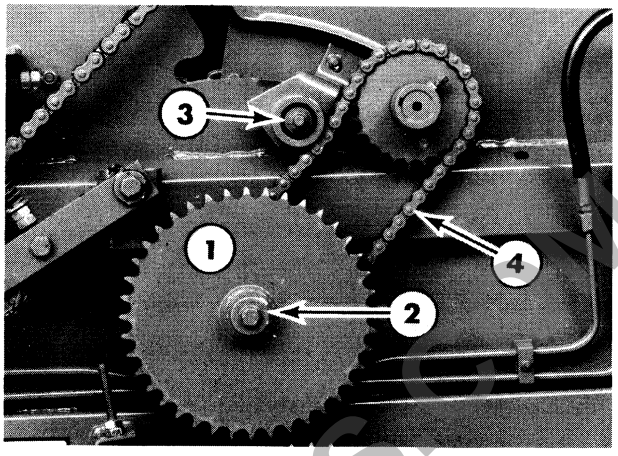


Figure 9-64

1020-10

10. With the left side tight, support the sledge frame and remove the cover plate and bearing assembly on the right side, 1. Install and tighten the lock collar on the inner fixed pivot roll bearing. Install the cover plate and bearing assembly and tighten the hardware at 1. Install and tighten lock collar, 2.
11. Install idler bracket, 3, Figure 9-64, and fixed pivot roll drive chain, 4.

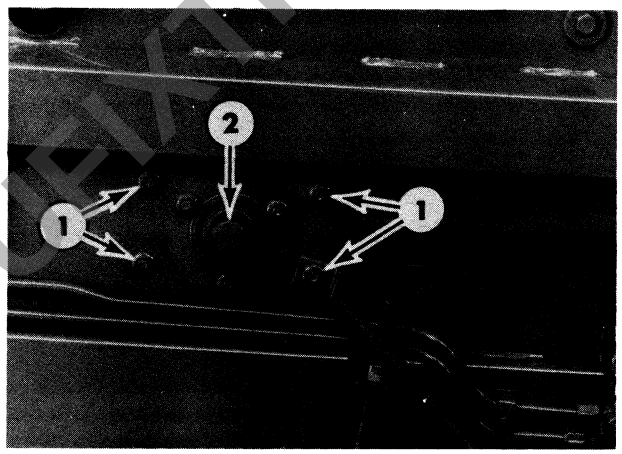


Figure 9-65

1020-6

12. Check the sprocket alignment and install and adjust the remaining drive chains as shown. The shields and apron belts can now be installed.
13. Open the tailgate and remove the bolt at 2, Figure 9-46. Replace the bolt in the storage location and close the tailgate.

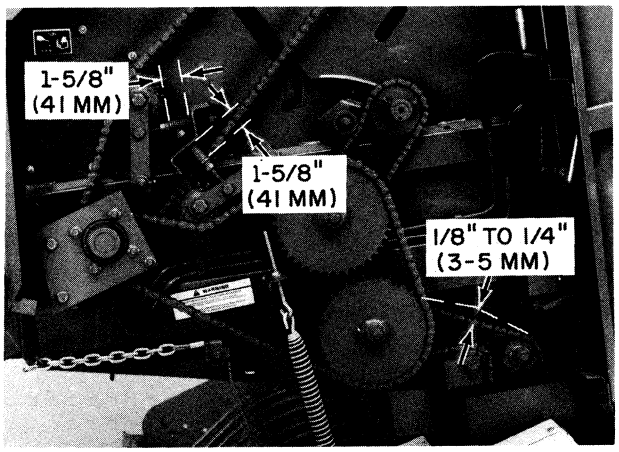


Figure 9-66

1461-8

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Return the twine tubes to the home position so the clutch is disengaged.

Adjust the nuts on the knife actuating rods to compress the springs, 14, to a total length of 2-1/2″ (64 mm). Adjust the nuts, 15, so there is a gap of 1/8″ (3.5 mm) between the washer and the tab.

NOTE: If the washers between nuts, 15, and the slide are against the slide with the Auto-Wrap in the home position, the twine may not be cut as the springs, 14, cannot pull the knives tight against the striker plates.

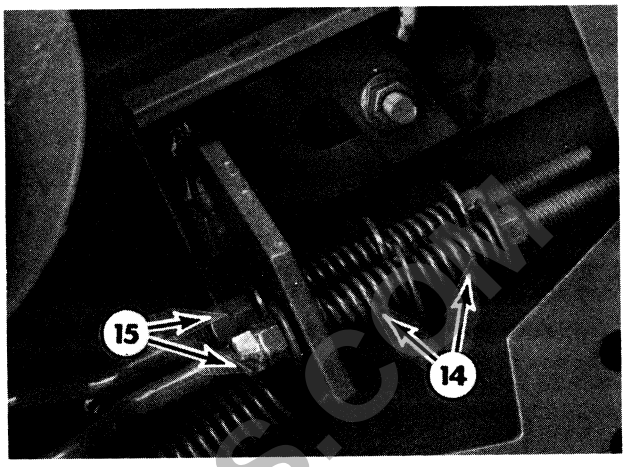


Figure 12-36

A4399-15

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NET BRAKE AND COUNTER ROLL

When the actuator extends to insert the net, the cam plate contacts the roller on the brake operating link and lifts the brake away from the roll of net. As the actuator moves to the precut position, the roller is released and the brake contacts the roll of net.

BRAKE OPERATING LINK AND BEARING

Model 644

Disassembly

Remove the nut and washer from the carriage bolt to remove the bearing, 1, from the pivot plate, 2.

Remove the cap screw, 3, and spacer attaching the operating link, 4, to the pivot plate.

Remove the cotter pin and washer from the end of pivot shaft, 5, to remove the plate. Remove the cotter pin and washer at 6 to move the cam plate, 7, for clearance with the plate.

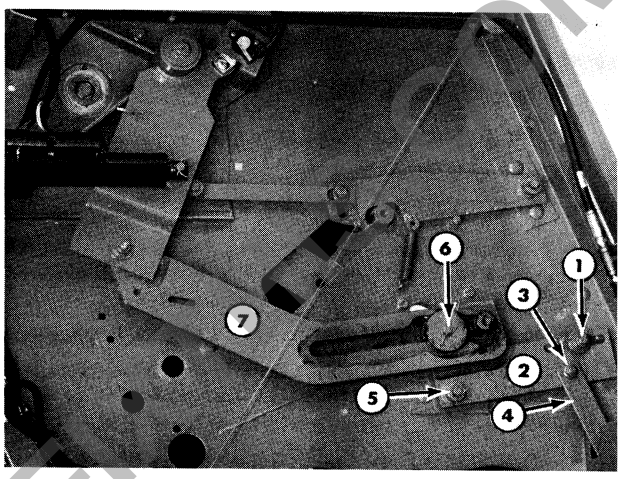


Figure 13-83

A4101-14

Remove the carriage bolt and spacer at 8, to remove the lower end of the link from the brake shaft and pad assembly.

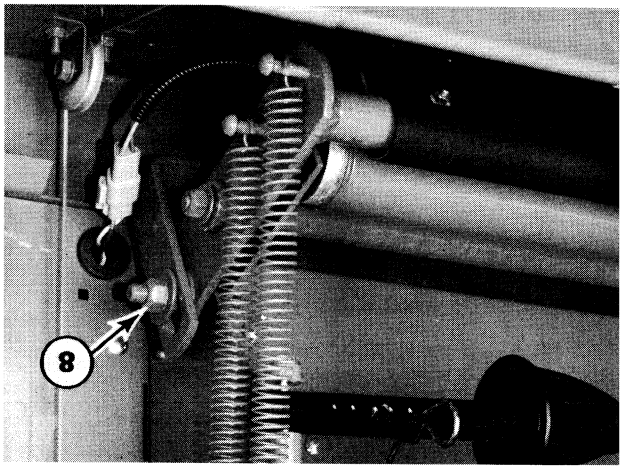


Figure 13-84

A4640-9

Assembly

Attach the lower end on the link to the brake shaft and pad assembly using a 13/32" (10.3 mm) long spacer, M12 x 40 carriage bolt, lock washer, and nut at 8.

Install the pivot plate, 2, Figure 13-83, on the pivot shaft and secure using a cotter pin and washer.

Reinstall the washer and cotter pin at 6 to secure the cam plate, 7.

Attach the upper end of the operating link, 4, to the pivot plate using a spacer, M10 x 30 cap screw, washer, and flanged nut.

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