

PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, you will find precautionary statements (“**DANGER**”, “**WARNING**”, and “**CAUTION**”) 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.



DANGER



This word “**DANGER**” indicates an immediate hazardous situation that, if not avoided, will result in death or serious injury. The color associated with Danger is RED.



WARNING



This word “**WARNING**” indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.



CAUTION



This word “**CAUTION**” indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

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

MACHINE SAFETY

The precautionary statement (“**IMPORTANT**”) is followed by specific instructions. This statement is intended for machine safety.

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.

INFORMATION

NOTE: Instructions used to identify and present supplementary information.

TORQUES AND ADJUSTMENTS

TORQUES

Wheel bolts	156 N·m (115 ft.-lbs.)
19/45-17	380 N·m (289 ft.-lbs.)
Cam follower bearing	61 N·m (45 ft.-lbs.)
Pickup finger	15 N·m (133 in.-lbs.)
PTO on gearbox	142 N·m (105 ft.-lbs.)

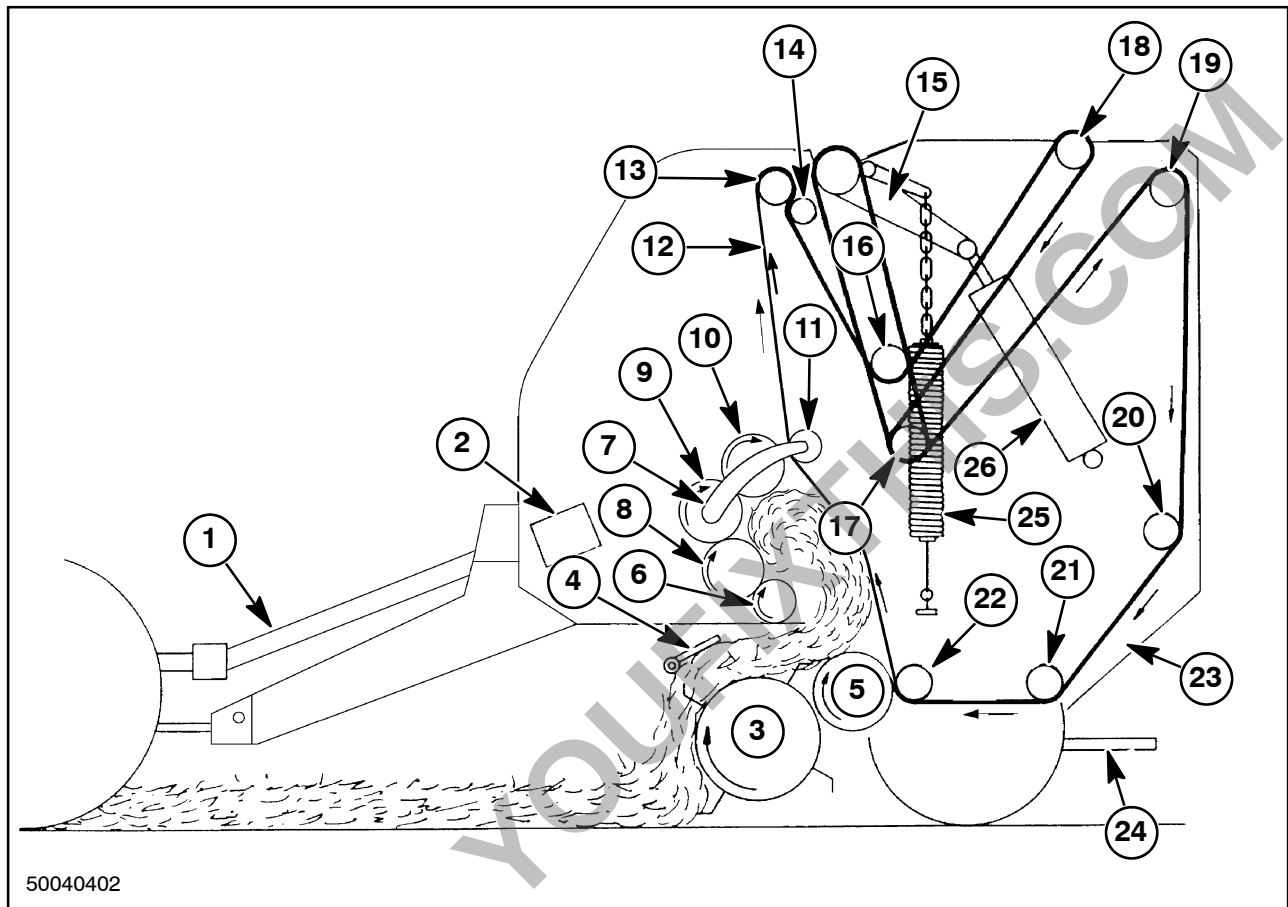
ADJUSTMENTS

Tire pressure	
31-13.5x15, 8 ply	234 kPa (34 psi)
19/45-17, 10 ply	193 kPa to 220 kPa (28 psi to 32 psi)
14L-16.1, 8 ply	207 kPa (30 psi)
Net wrapper brake pad	2 to 4 mm (3/32 to 5/32")
Brake spring	Machines built on or before 09/03: 180 to 186 mm (7-1/8 to 7-3/8")
	Machines built after 09/03: 119 to 123 mm (4-11/16 to 4-27/32")
Duckbill spring	384 to 390 mm (15-1/8 to 15-3/8")
Knife spring	289 to 295 mm (11-3/8 to 11-5/8")
Twine wrapper	
Knife tension springs	64 mm (2-1/2")
Wide PU drive chain idler spring	130 mm (5-1/8")
Standard PU clutch	316 N·m (233 ft.-lbs.)
Sledge slip clutch	677 to 767 N·m (500 to 567 ft.-lbs.)
PTO clutch - RBX562	
540 rpm	19.1 to 19.5 mm (0.75 to 0.77")
1000 rpm	20.1 to 20.5 mm (0.79 to 0.80")

SPECIFICATIONS

		RBX452		RBX462		RBX552	RBX562	
		Std	Silage	Std	Silage	Std	540 PTO	1000 PTO
		4 x 5	4 x 5	4 x 6	4 x 6	5 x 5	5 x 6	5 x 6
OVERALL DIMENSION								
Length (From hitch to end of bale ramp)	mm	4470	4470	4775	4775	4470	4775	4775
	Inch	176	176	188	188	176	188	188
Baler widths based on following configs*								
Std pickup with 14Lx16.1 tire	mm					2794	2794	2794
	Inch					110	110	110
1.5 m pickup with 31x13.5-15 tire	mm	2400		2400				
	Inch	94.5		94.5				
1.8 m pickup with 31x13.5-15 tire	mm		2400		2400			
	Inch		94.5		94.5			
2.1 m pickup with 14Lx16.1 tire pickup tires removed	mm						2794	2794
	Inch						110	110
2.1 m pickup with 19/45-17 tire* * with pickup tires removed	mm		2591					
	Inch		102					
Height								
Std pickup unit equipped with 14L-16.1 tire	mm					2580	2809	2809
	Inch					102	111	111
Stuffer unit equipped with 31x13.5 tire	mm	2655	2655	2884	2884			
	Inch	105	105	114	114			
Stuffer unit equipped with 14L-16.1 tire	mm						2882	2882
	Inch						114	114
Rotor unit equipped with 19/45-17 tire	mm		2759					
	Inch		108.6					

BALER COMPONENTS



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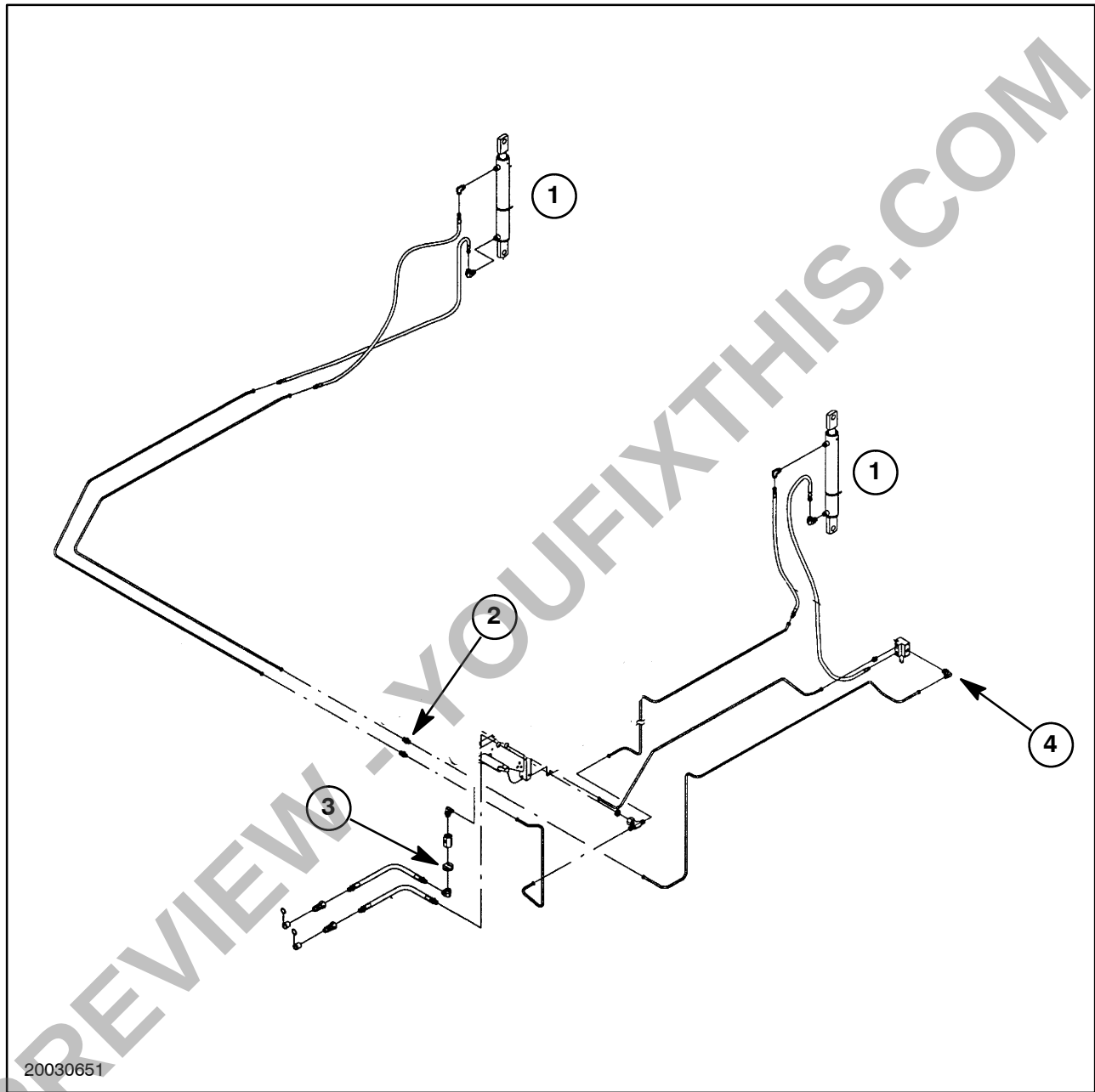
BASIC COMPONENTS

- | | |
|---------------------------|---|
| 1. Drive shaft | 14. Back wrap roll |
| 2. Gearbox | 15. Belt tension arm |
| 3. Pickup | 16. Front take-up roll |
| 4. Wind guard | 17. Rear take-up roll |
| 5. Floor roll | 18. Top front tailgate idler roll |
| 6. Starter roll | 19. Top rear tailgate idler roll |
| 7. Sledge/Pivot arm | 20. Middle tailgate idler roll (belt tracking) |
| 8. Stationary Dimple roll | 21. Bottom tailgate idler roll (RBX552 and RBX562 only) |
| 9. Sledge/Pivot roll | 22. Tailgate nose roll |
| 10. Stripper roll | 23. Tailgate |
| 11. Sledge follower roll | 24. Bale ramp |
| 12. Belts | 25. Belt tension spring(s) |
| 13. Belt drive roll | 26. Belt density cylinder(s) |

DESCRIPTION OF OPERATION

Op. 35 550

TAILGATE LIFT SYSTEM

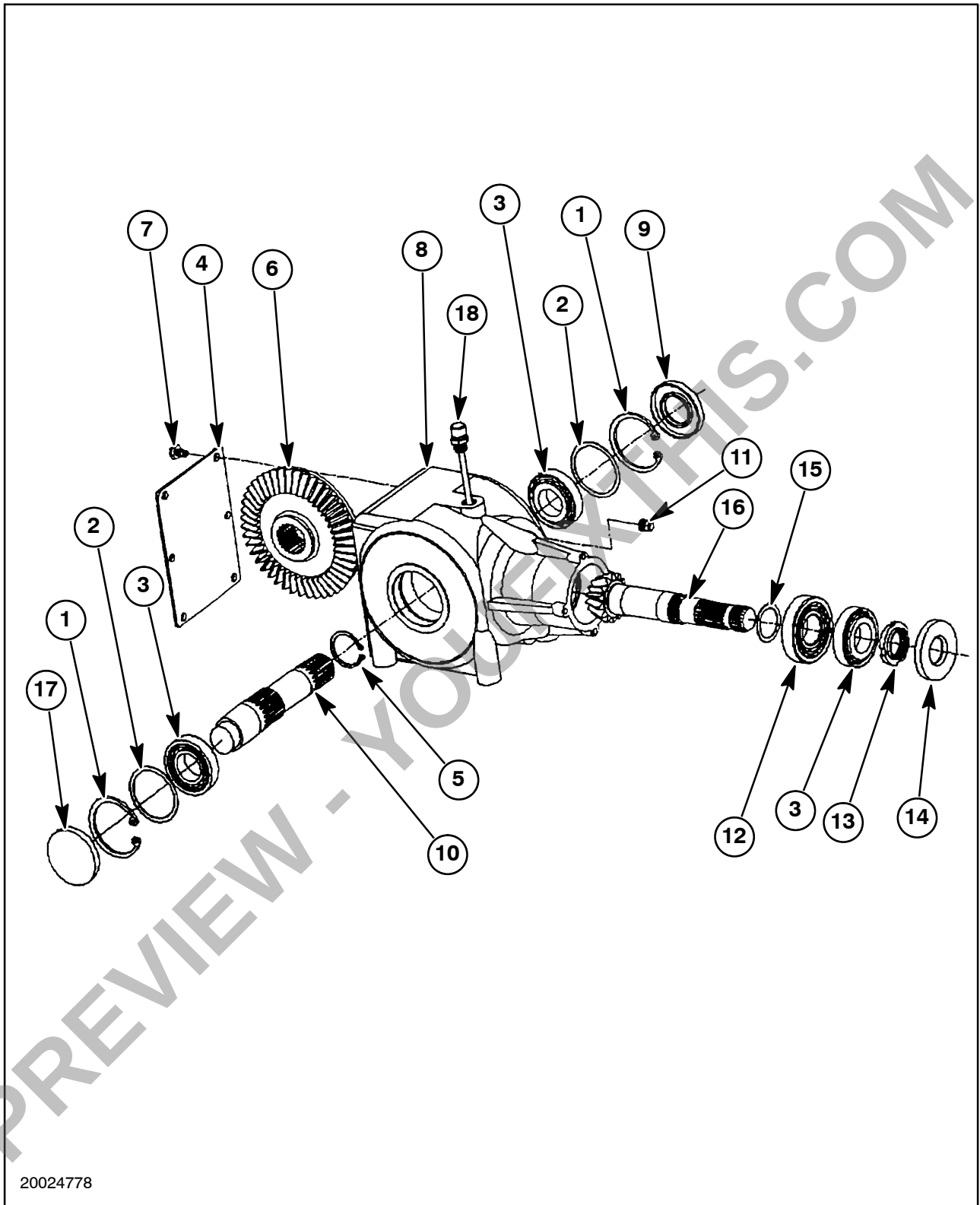


The tailgate lift system consists of two cylinders, 1, a lockout valve, 4, and the steel lines and hoses to connect them to the tractor. There is an orifice, 3, in the line between the tractor and the lockout valve to regulate the speed of the tailgate. The large slot in the orifice should be facing away from the tractor. Never operate the baler with this orifice removed. Damage to the main frame and tailgate will occur if the orifice is removed. The lockout valve is connected to the

bottom of each cylinder. The lines from the top of each cylinder are connected at a tee, 2, to the other tractor hose. When the lockout valve is placed in the lock position, oil is trapped in the base of both cylinders to keep them from moving. If one line should fail, the other cylinder will support the tailgate as the two lines are not connected on the cylinder side of the valve.

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TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	CORRECTION
TAILGATE CYLINDERS		
Internal leakage.	Worn or damaged seals.	Replace.
External leakage.	Worn or damaged seals. Internal leakage in a single- acting cylinder.	Replace. See internal leakage.
Tailgate opens slowly.	Restriction in line. Lockout valve incorrectly adjusted. Orifice installed wrong. Low flow or pressure.	Remove restriction. Readjust so spool has full travel. Install with slot facing away from tractor. Repair tractor hydraulic system.
Tailgate closes fast.	No orifice in line. Orifice installed wrong.	Install orifice. Install with large slot facing away from tractor.
Tailgate drifts open.	Internal leak in cylinder. Tractor remote not sealing. Tailgate not latched.	See internal leakage. Repair tractor. Check latch is locked before baling.

TROUBLESHOOTING

ERROR CODES

ERROR MESSAGE AT START-UP AND/OR WHILE OPERATING

NOTE: When checking continuity between connector pins further apart than the 12 volt/ohmmeter leads will reach, use a jumper wire to common ground at the one pin and connect the 12 volt/ohmmeter leads to common ground and the other pin. Be sure to use the same common ground.

The operator's panel will provide a visual and/or audible warning if the controller detects a problem. The malfunction can be either a problem with the operating sequence of the baling cycle or a circuit fault where the wire harness or component has failed. An "ERROR" message will be displayed. The pointer(s) on the display will flash when a problem is detected. When the "ERROR" message is displayed, the operator's panel will beep. The flashing pointer will indicate which circuit is experiencing a problem.

1. "Error and flashing Full Bale pointer"
 - Problem with the Bale Size potentiometer circuit
2. "Error" and flashing TAILGATE pointer
 - Problem with Tailgate Sensor circuit
3. "Error" and flashing LEFT BALE SHAPE bars
 - Problem with the Left Bale Shape potentiometer circuit
4. "Error" and flashing RIGHT BALE SHAPE BARS
 - Problem with the Right Bale Shape potentiometer circuit
5. "Error" and flashing WRAP BALE/ACTUATOR pointer
 - Problem with the Net Wrap potentiometer circuit
 - Problem with the Net Counter wheel Sensor circuit
 - Problem with the Net Wrap actuator circuit.
 - Problem with the Twine Wrap potentiometer circuit
 - Problem with the Twine Wrap actuator circuit
6. Code Er 1
 - Net actuator stalled or lost power for longer than 5 seconds
 - Twine actuator stalled or lost power for longer than 5 seconds
7. Code Er 3
 - Slice actuator stalled or lost power for longer than 5 seconds

OVERHAUL

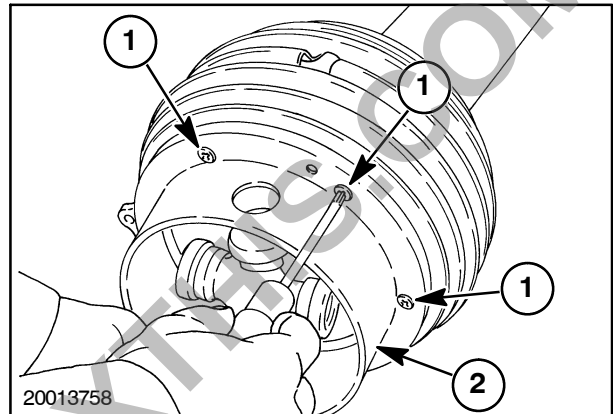
Op. 31 201

FRONT PTO AND CV U-JOINT

Disassembly

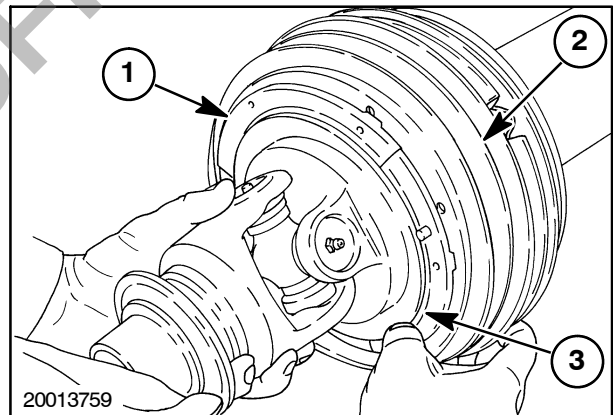
The front of the PTO assembly includes an 80° constant velocity joint.

Remove the Philips head screws, 1, and the rigid shield, 2.



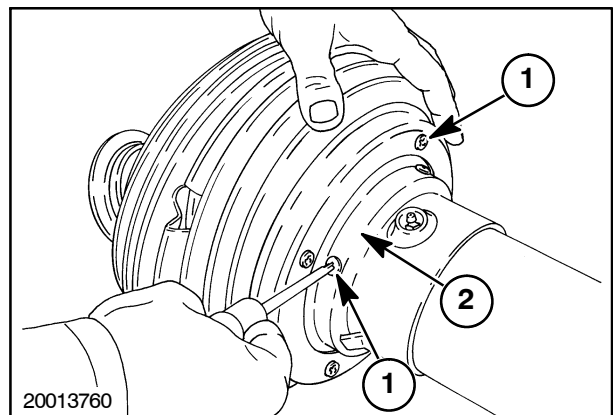
6

Extract the bearing ring, 1, from the CV shield, 2. The two notches, 3, in the CV shield facilitate removal of the ring. Remove the bearing ring from the CV body.



7

Remove the Philips head screws, 1, from the base cone, 2.



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SECTION 31 - IMPLEMENT DRIVELINE

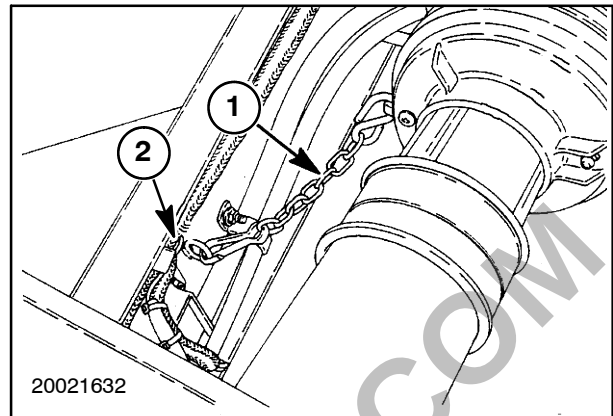
BOOK 1 - 87352307

Chapter 2 - Gearbox

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10. Attach the rear PTO shield anti rotation chain, 1, to the baler tongue at, 2. (Only on PTO assemblies with splined plastic shields.)



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Burnishing

Burnishing the Main Drive Slip Clutch

The main drive slip clutch must be burnished at the start of each season, after a long period of storage or after it has been rebuilt to be sure that it will slip within the specified range to protect the baler. The clutch is not adjustable. When the clutch becomes worn, it must be rebuilt using new friction discs.

IMPORTANT: Repeated slippage of the clutch assembly will cause the friction discs to overheat. As a result, the torque transmitted by the clutch will drop off significantly. Allow the clutch to cool down, and the torque setting will return to its original setting.



CAUTION

The clutch will become hot when it is slipped. Avoid contact with the hot clutch.

Burnishing the PTO Clutch

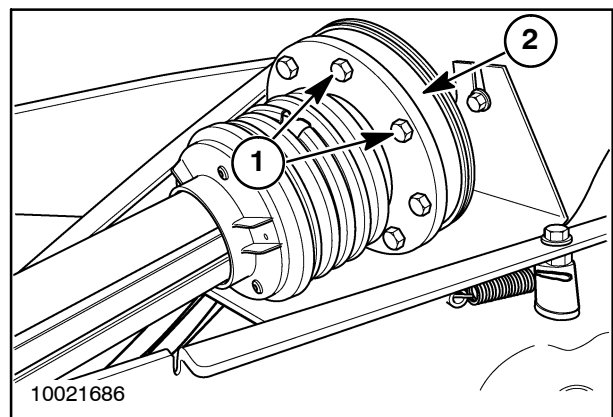
Mark the location of each of the eight bolts, 1. Loosen the bolts a total of three and one half turns each by loosening each bolt sequentially one turn until the total three and one half turns have been reached.

Engage the PTO at low RPM for two seconds.

Allow the clutch to cool for two minutes and engage the PTO for another two seconds.

Allow the clutch to cool for another two minutes. Tighten the eight bolts, 1, sequentially one turn each until the bolts have returned to their original location. Make a final adjustment to the bolts so there is 0.5 mm (0.020") clearance between the drive plate and ring, 2.

The ring must be free to turn.



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Disassembly

NOTE: Cylinder configuration may vary slightly due to multiple suppliers. However, disassembly and assembly procedures are the same.

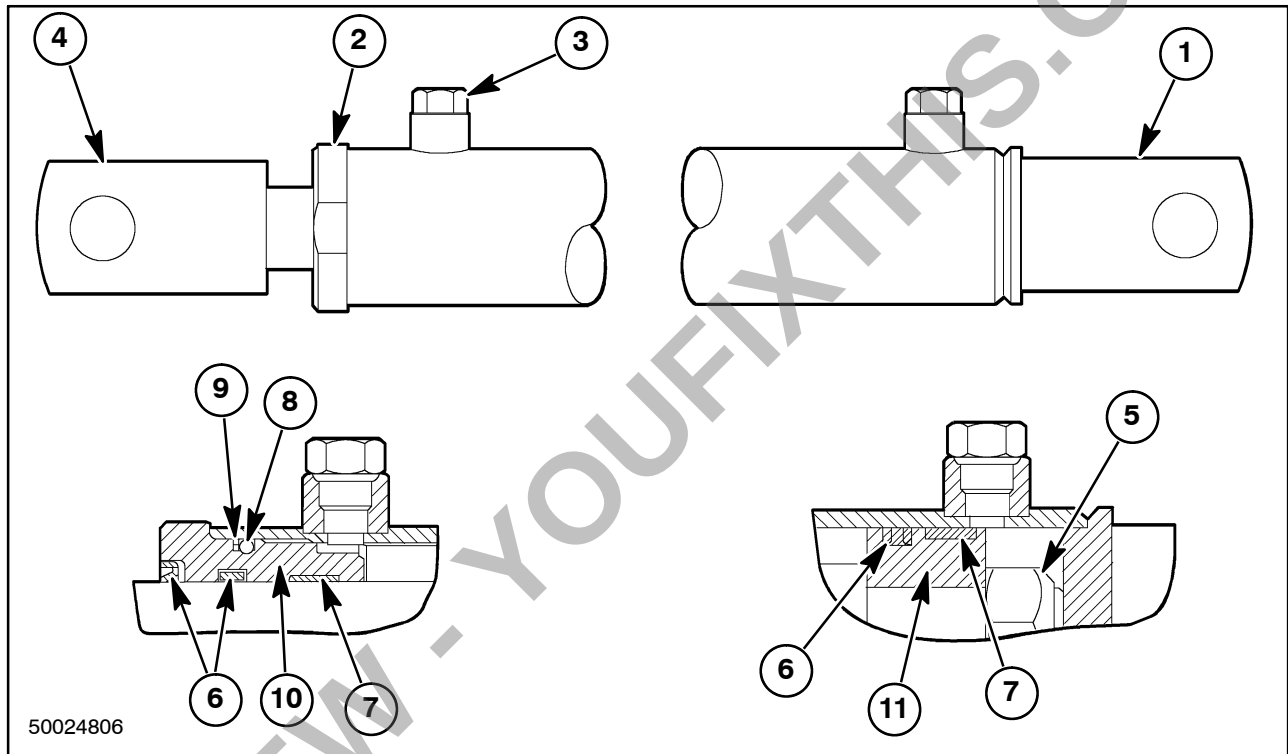
Clean the cylinder assembly to reduce the possibility of damage to the cylinder components.

Clamp the cylinder base, 1, in a vise. DO NOT clamp the barrel in a vise as it may be distorted by the pressure from the vise.

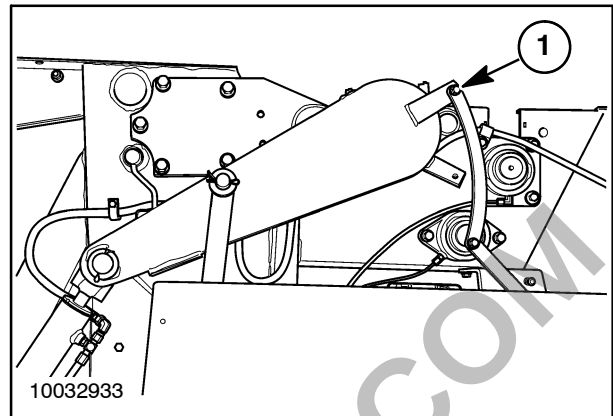
Use a large wrench, 2-3/8" (RBX452 and RBX462) or 2-5/8" (RBX552 and RBX562) to unscrew the cylinder head, 2. Cover the port, 3, near the head with a rag to catch any residual oil that may be forced out. Remove the rod and head by grasping the rod end, 4, and rapidly pulling the assembly out of the cylinder

Clamp the rod end, 4, in a vise to remove the piston nut, 5. Remove the piston, 11, and cylinder head, 10, from the rod.

Remove the seals, 6, wear rings, 7, O ring, 8, and back-up washer, 9, from the head and piston.



On the right side remove the bolt, 1, and spacer for the potentiometer link on a baler with a Net-Twine Wrapper.

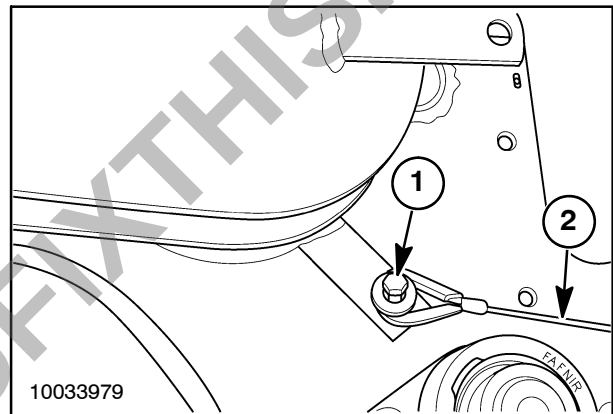


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On a baler with Electric Wrap remove the bolt, 1, attaching the bale size cable, 2.

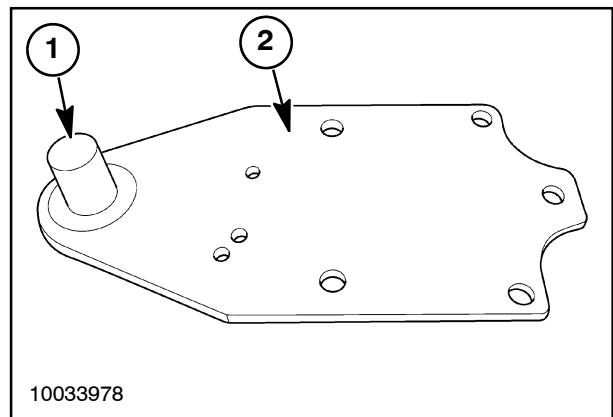
Attach a hoist to the take-up arm and lift it several inches.

The pivot plates can now be removed from the main frame.



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Check the pivot plates for bends, wear or broken welds. Replace if required.



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NET-TWINE WRAPPER DIAGNOSTIC MODE QUICK REFERENCE CARD

Round Balers RBX452, RBX462, RBX562

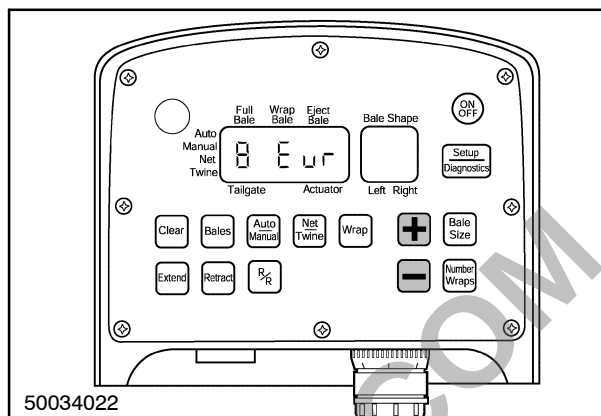
PRESS THE SETUP/DIAGNOSTIC KEY TO CYCLE TO A PARTICULAR MODE

Mode	Function/Configuration	Information/Conditions/ Operator's Display	Change/Adjust With	Save/Next Step With
1	Bale size calibration	Baler empty, tailgate closed	 or 	 Press and hold for 2 seconds
2	Select configuration A. Net wrapping B. (*) Twine wrapping C. (*) Twine/net wrapping	A. Three dashes B. Flashing "2" and wrap bale and twine pointers flashing C. Flashing "2" and wrap bale pointer flashing	 Press and hold net/twine key for 3 seconds	 Press
	(*) Programming "PAT 4"	Custom twine wrapping patterns	 or 	 Press
3	Select configuration A. Not used B. Rotor/cutter feeder functions	B. Flashing "3" and flashing pointer and a symbol "=o"	 Press and hold for 3 seconds	 Press
4	Not used	Three dashes		
5	Bale shape alarm off/on	Bottom bale shape bars flashing and "on" or "off"	 or 	 Press
6	A. Bale shape alarm threshold	A. Each bar graph indicates 10% of sensor movement, will indicate when alarm sounds	A.  or 	 Press
	B. Bale shape sensitivity	B. Flashing "6" with a number between 2 (slow) and 50 (fast)	B.  Press and hold for 3 seconds	
7	Near full bale alarm	Flashing "7" with a number between 0 (full bale) and 6 (inches before full bale)	 or 	 Press
8	Standard/metric configuration	Flashing "8" and USA (standard) or Eur (metric)	 or 	 Press
9	Model number configuration	Flashing "9" and model number	 or 	 Press
10	Buffer zone	Three dashes		
11	Buffer zone	Three dashes		
12	Bale size sensor adjustment	Flashing "12" with a number between 28 to 32	Rotate potentiometer in the home position only	 Press
13	A. Net wrap actuator potentiometer adjustment and calibration B. Buffer zone in twine only configuration	• Actuator fully extended, flashing "13" with a number between 23 and 27	Rotate potentiometer	 Press for 2 seconds
		• Actuator in duck bill pre cut position, flashing "13" with a number between 41 and 190	 or  Place knife trip roller 25 mm, (1 in.) from exiting narrow cam slot	 Press for 2 seconds
		• Actuator fully retracted, (home position), flashing "13" with a number between 150 and 249	 Press	 Press for 2 seconds

3. Press either the + (plus) or - (minus) key to change the display between inches and centimeters.
4. To advance to setup item 9 - Press and release the setup/diagnostic key.

OR

To exit the setup/diagnostic mode, press and hold the setup/diagnostic 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.



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ITEM 9 - Model number selection

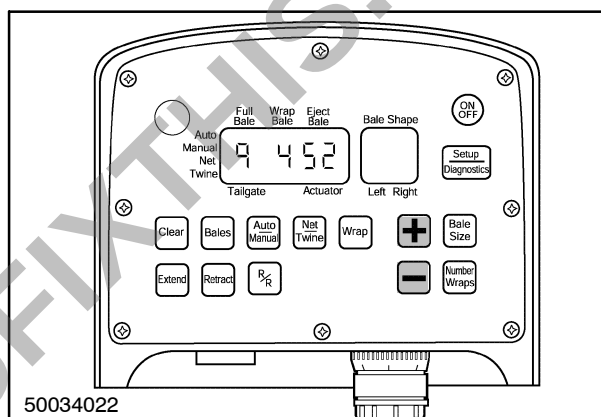
Item 9 in the setup/diagnostic mode displays the model the controller is programmed to operate. For the Net-Twine Wrapper system to operate properly, the operator's panel **display must match the baler model number**.

To check and/or change the model number:

1. Enter the setup/diagnostic mode by pressing and holding the setup/diagnostic key for two seconds. The display should indicate "1" and the full bale size.
2. Press and release the setup/diagnostic key repeatedly to advance to item 9. The display should indicate "9" and the model number. In the example, Model RBX452 is shown.
3. Press either the + (plus) or - (minus) key to scroll through the model numbers available. Pressing + (plus) repeatedly will scroll up through the model choices while pressing - (minus) repeatedly will scroll down through the model numbers.
4. To advance to setup item 10 - Press and release the setup/diagnostic key.

OR

To exit the setup/diagnostic mode, press and hold the setup/diagnostic 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.



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SETUP ITEMS

Setup/Diagnostic Item 1 - Model Size

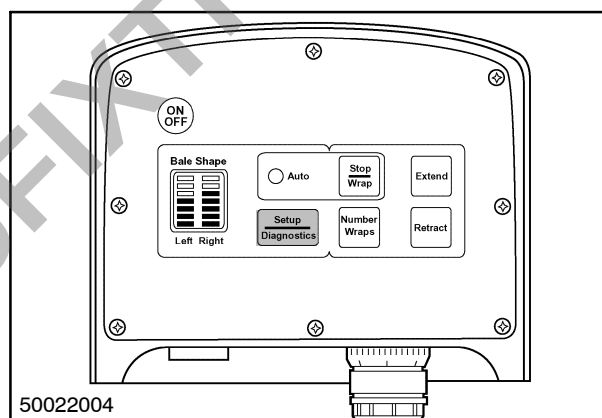
The first item in the setup/diagnostic mode is the baler model size selection. The baler model size determines the time base for the twine wrap pattern programs based on the width and diameter of the bale.

Baler Model Size Selection		Segments lit	
Model	Bale Size	Left Bar Graph	Right Bar Graph
RBX452	4'x5'	4	5
RBX462	4'x6'	4	6
RBX552	5'x5'	5	5
RBX562	5'x6'	5	6

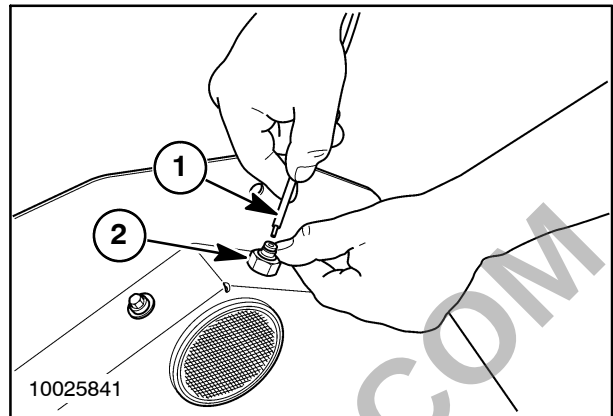
NOTE: Other model sizes are shown on the display that are not available.

Enter the Setup/Diagnostic mode by pressing and holding the Setup/Diagnostic key for two seconds.

The bale shape bar graph will display a graphic representation of the model selected by baler size. The number of segments lit on the left bale shape bar graph represents the width of the bale. The number of segments lit on the right bale shape bar graph represents the full bale diameter.

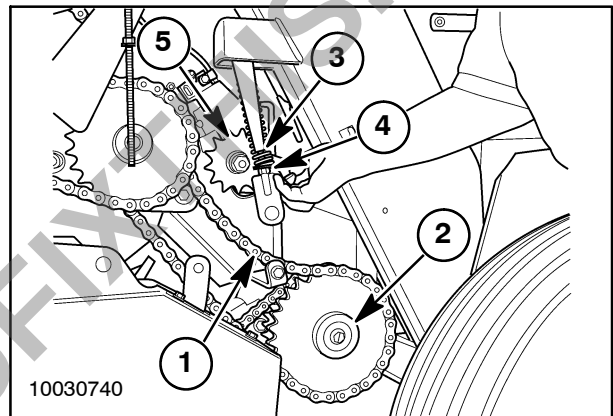


If the baler is equipped with an oiler, remove the oil lines, 1, on the pickup by pushing the locking sleeves, 2, in and pulling the tubes out.



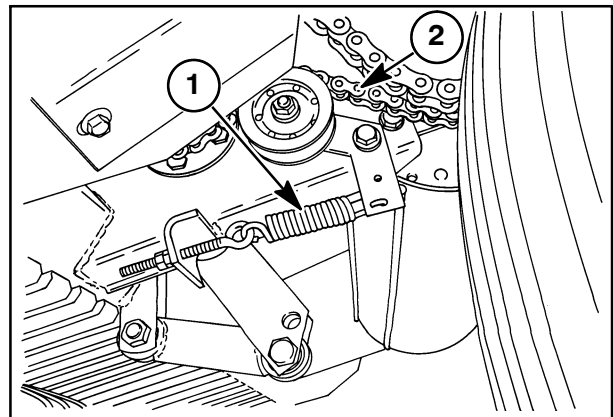
3

The floor roll drive chain, 1, floor roll sprocket, 2, and pickup drive chain on the left side of the baler must be removed. Rotate the PTO to place the chain connector link in an accessible location. Loosen the idler spring, 2, at jam nut, 3. Remove the spring link from the sprocket, 4. Remove the floor roll drive chain.



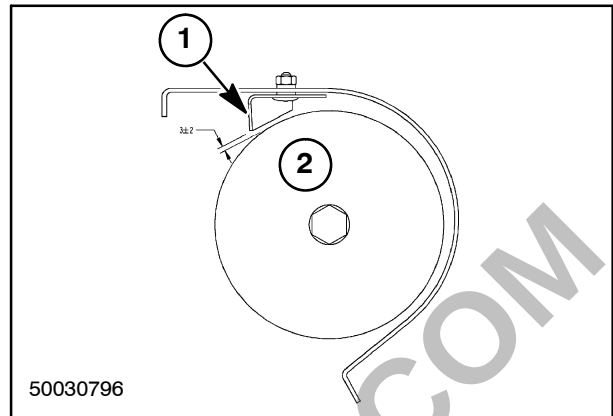
4

Loosen the idler spring at, 1, and remove the pickup drive chain, 2.



5

Check the clearance between the angle, 1, and the auger flighting, 2. Adjust the angle to 1 to 5 mm ($1/32$ to $3/16$ ") at the closest point through the auger rotation.

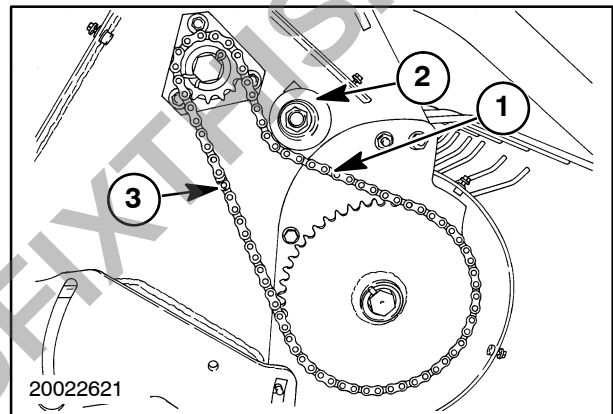


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Check the alignment of the sprockets and adjust as required.

Install the chain, 1, on the sprockets.

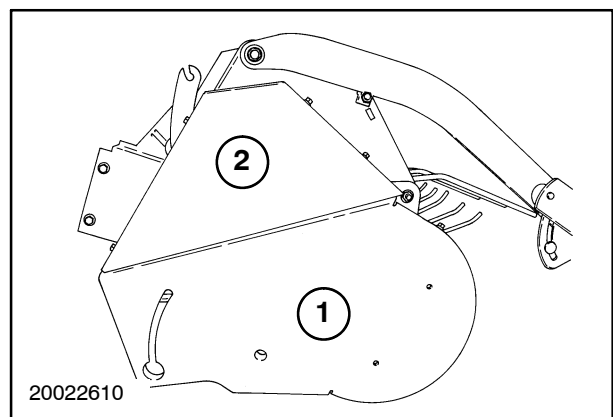
Tighten the idler, 2, to have a chain deflection of approximately 6 mm ($1/4$ ") at 3.



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Install the lower shield, 1.

Install the top shield, 2, and the gauge wheel.

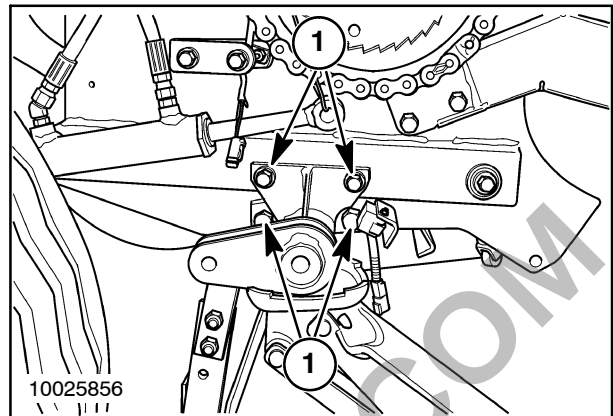


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Installation

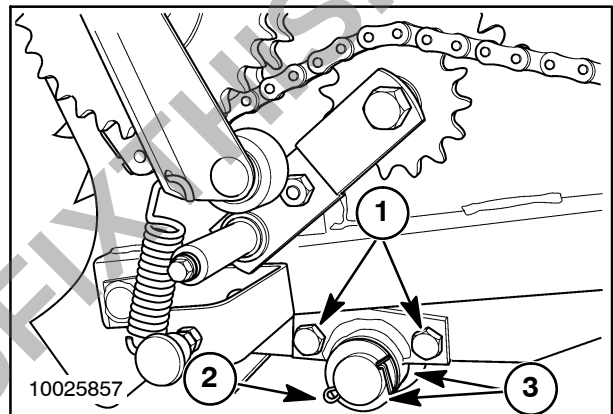
Place the rotor knife carriage on a pair of jacks and slide it under the baler. Raise the shaft end into position.

Install the four bolts, 1, in the right support.



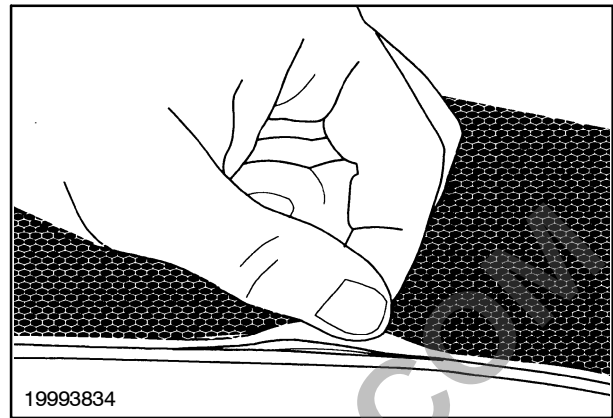
54

Install the two bolts, 1, in the left support. If the knife supports do not align with the knives properly, remove the cotter pin, 2, on the end of the knife support shaft. Move washers from one side of the support hub, 3, to the other as required.



55

The failure shown in this belt is due to poor bonding of the belt. The side of the belt is not marked from poor tracking.



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Additional Information

If the guidelines in the operator's manual are followed, most belt tracking problems can be eliminated. Belt tracking can be affected by improper feeding and poor bale formation. Too much crop on one side of the bale will cause the belts to track to one side. Changing a belt's location on the baler may also change the way it tracks.

When relacing the belts, the length of the belts should not vary more than one inch. If there is more than one inch difference, all the belts must be cut to the length of the shortest belt. The belts can be shortened until the size of the bale is affected. Five foot diameter balers use a 8712 mm (343") long belt. The six foot diameter balers use a 10,671 mm (420") long belt. The belts can be shortened 7.6 - 10.2 cm (3" - 4") before bale size is noticeably affected. At that time, 1830 mm (72") repair section of belt is available from parts that can be cut to fit and added to bring the belt back to the proper length.

OVERHAUL

Op. 62 140

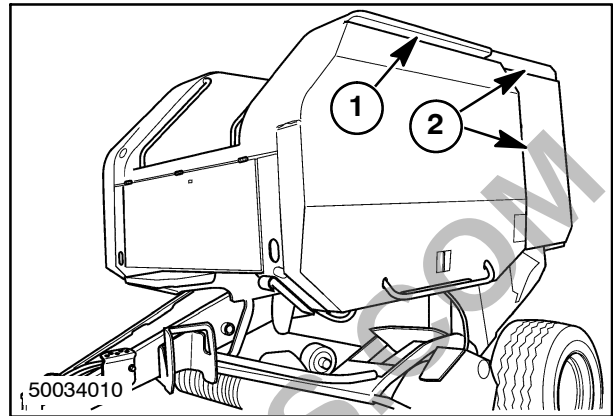
DRIVE ROLL

Removal

RBX452 AND RBX552 BALERS

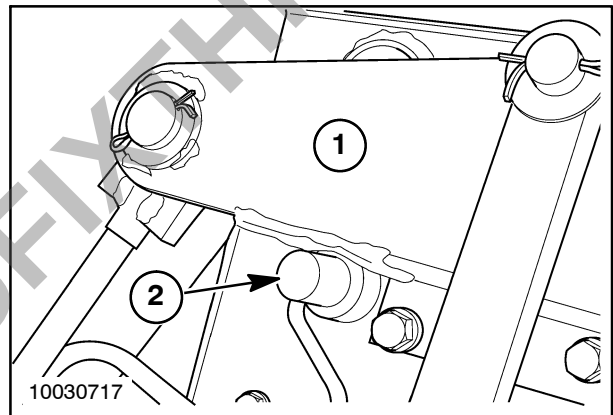
The top shields, 1, must be removed from each side of the baler. Shields, 2, are shown removed for clarity only.

Follow the directions in Section 90, Chapter 1 to remove both side doors.



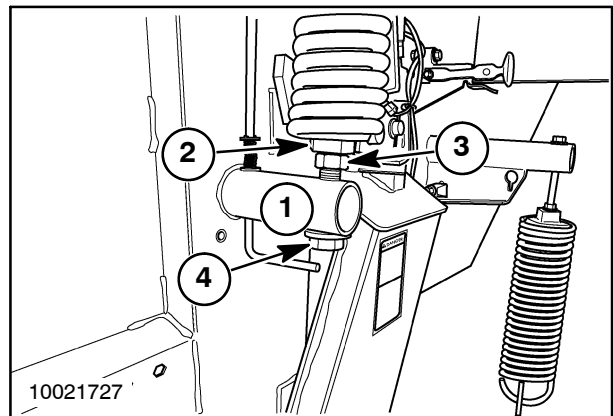
2

On a baler with laced belts, the belt laces can be removed with the tension arms, 1, resting on the lockout pin, 2. The following method, as required for endless belts, can also be used.



3

Note the distance between the pipe, 1, and the cast spring nut, 2, at the bottom of the spring. Loosen the jam nut, 3. Remove the bolt, 4, from the bottom of the belt tension spring. On a RBX552 there is a spring on each side. Leave the springs hanging from the take-up arm.

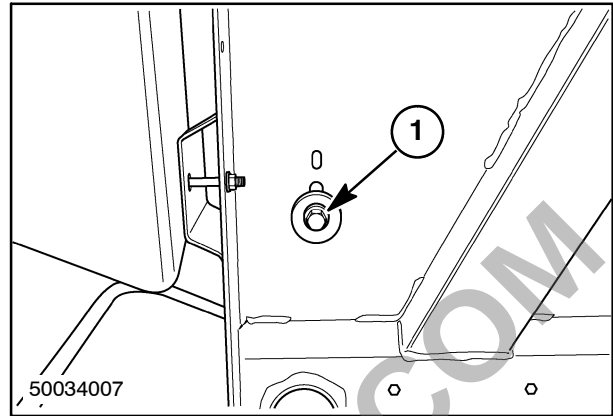


4

The belts can be shifted by adjusting the rear roller.

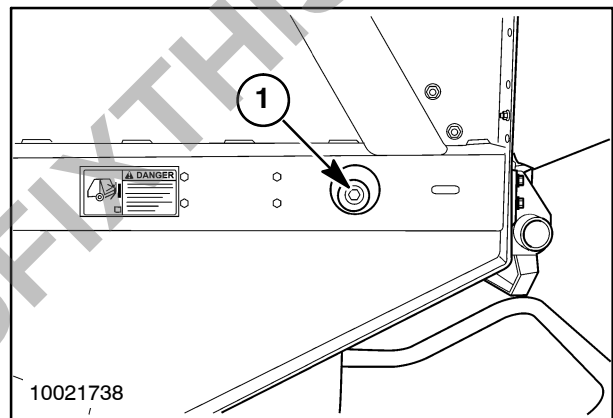
Loosen the bolt, 1, on either side. Raise the bolt to shift the belts toward that side or lower the bolt to shift the belts toward the other side. This adjustment can be made on either side of the baler. Tighten the bolt and check the belt tracking again.

When the final location for the adjustable roll is determined, torque the bolts to 92 to 98 N·m (68 to 72 ft. lbs.).



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SHOWN WITHOUT SHIELDS
SIX FOOT DIAMETER BALERS



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SHOWN WITHOUT SHIELDS
FIVE FOOT DIAMETER BALERS

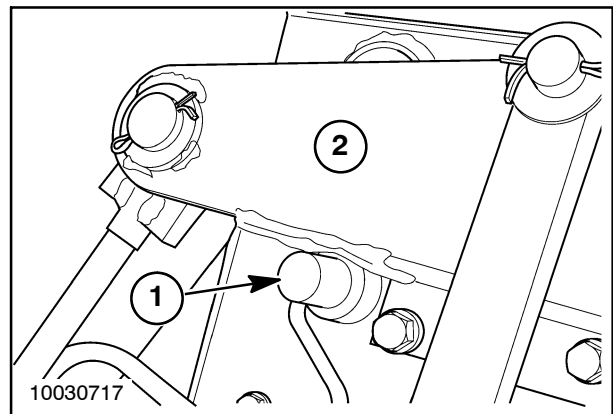
Op. 62 140

LOWER TAILGATE ROLL (RBX462 AND RBX562)

The RBX462 and RBX562 have a lower tailgate roll that is not on a RBX452 or RBX552.

Removal

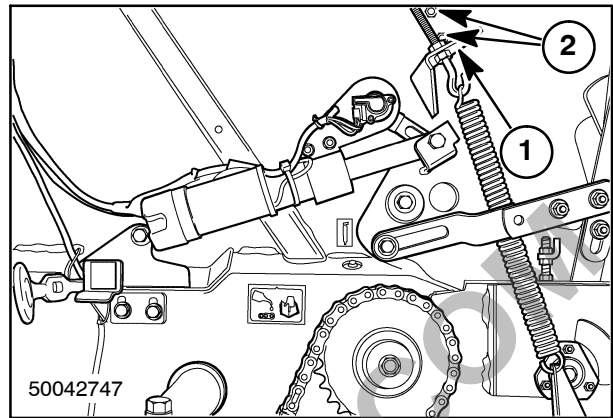
Remove the tension from the belts. Open tailgate and engage the tension release pin, 1, under the tension arm, 2. Close the tailgate.



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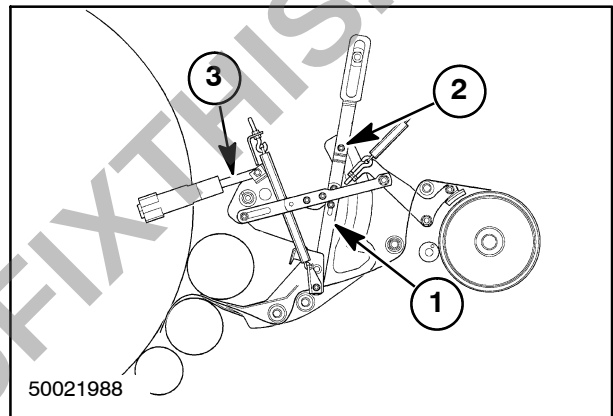
SHOWN WITHOUT SHIELDS

Make sure the spring mounting bracket, 1, is set to trip the knife over center. If not adjust it in the slots, 2.



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Set the knife link length, at 1. The cam follower bearing, 2, must be centered in the curved slot and have clearance to the end of the slot when actuator, 3, fully extended.



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Move duckbill to the home position with the retract key.

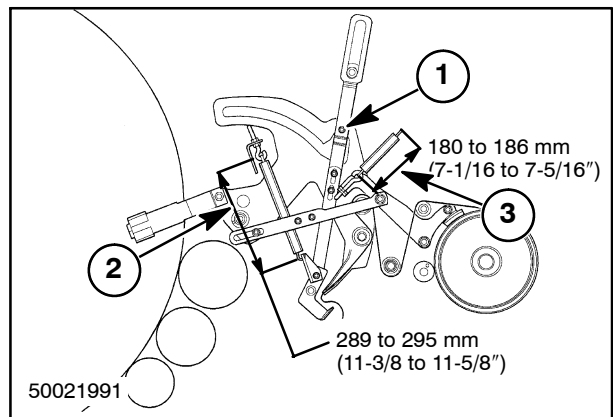
Check that the cam follower bearing, 1, does not hit the end of the notch in the cam.

If it does adjust the length of the knife link.

Recheck the cam follower clearance at both ends of it's travel in the cam slot.

With the duckbill in the home position, adjust the knife spring, 2, to a length of 289 to 295 mm (11-3/8 to 11-5/8").

With the duckbill in the home position, adjust the brake spring, 3, to a length of 180 to 186 mm (7-1/16 to 7-5/16") inside the hooks on machines built on or before 09/03 or 119 to 123 mm (4-11/16 to 4-27/32"), inside the hooks on machines built after 09/03.



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