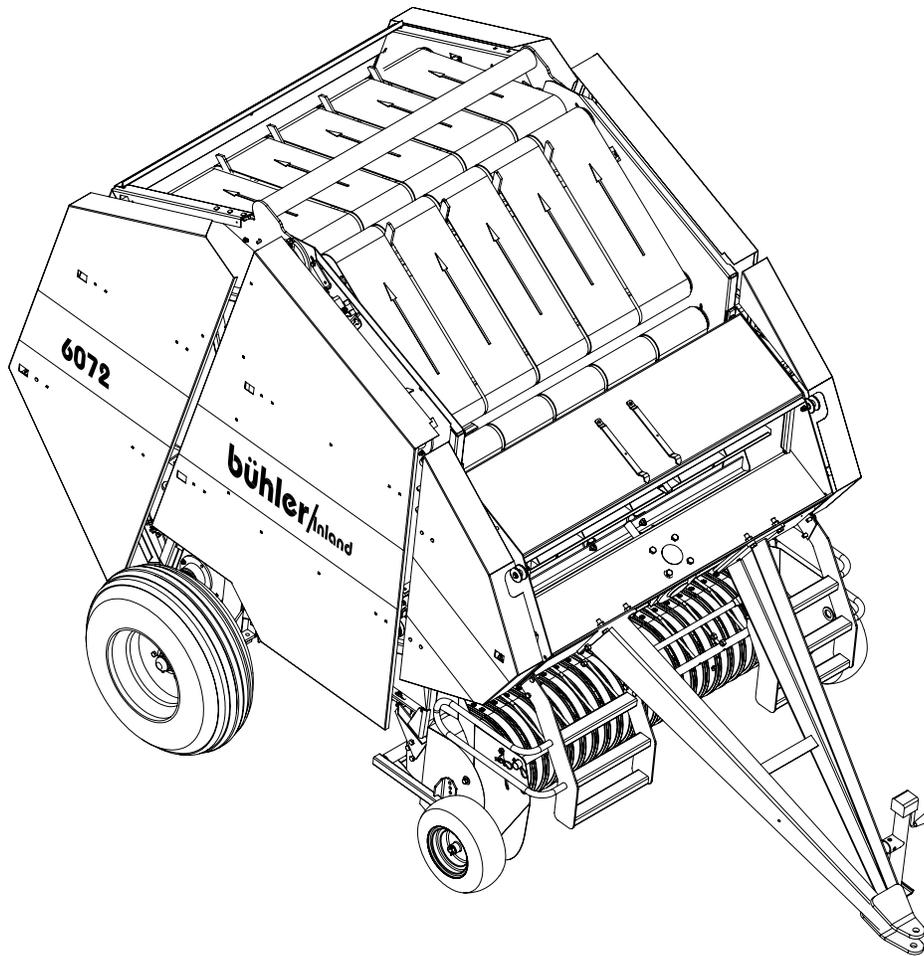


# bühler inland



Round Baler Models 6060 and 6072  
For Serial No. 03RB6060II001, 03RB6072II001 and later

Operator's Manual  
Fixed Chamber Round Baler  
P4332, 05/05

## INLAND WARRANTY POLICY

Buhler Manufacturing products are warranted for a period of twelve (12) months (90 days for commercial application) from original date of purchase, by original purchaser, to be free from defects in material and workmanship under correct, normal agricultural use and proper applications.

Buhler Manufacturing's obligations under this warranty shall be limited to the repair or exchange, at Buhler Manufacturing's option, of any Buhler Manufacturing product or part which proves to be defective as provided. Buhler Manufacturing reserves the right to either inspect the product at the buyer's location or have it returned to the factory for inspection.

The above warranty does not extend to goods damaged or subject to accident, abuse or misuse after shipment from Buhler Manufacturing's factory, nor to goods altered or repaired by anyone other than an authorized Buhler Manufacturing representative.

Buhler Manufacturing makes no Express Warranties other than those, which are specifically described. Any description of goods, including any references and specifications in catalogues, circulars and other written material published, is for the sole purpose of identifying goods and shall conform to such descriptions. Any sample or model is for illustrative purposes only and does not create an Express Warranty that the goods conform to sample or model shown.

The purchaser is solely responsible for determining suitability of goods sold. This warranty is expressly in lieu of all other warranties expressed or implied. Buhler Manufacturing will in no event be liable for any incidental or consequential damages whatsoever. Nor for any sum in excess of the price received for the goods for which liability is claimed.

### **WARRANTY CLAIMS:**

Warranty requests must be prepared on Buhler Manufacturing Warranty Claim Forms with all requested information properly completed. Warranty Claims must be submitted within a thirty (30) day period from date of failure repair.

### **WARRANTY LABOR:**

Any labor subject to warranty **must** be authorized by Buhler Manufacturing. The labor rate for replacing defective parts, where applicable, will be credited at 100% of the dealers posted shop rate. Defective parts will receive an extra 10% discount to assist with freight or other incidental costs.

### **GOVERNMENT LEGISLATION:**

Warranty terms and conditions are subject to Provincial or State legislation.

### **IMPORTANT FACTS:**

**Buckets and Bucket Tines Carry No Warranty**

**Bent Spears Carry No Warranty**

**Snowblower Fan Shafts Carry No Warranty**

**Mower Blades Carry No Warranty**

**Portable Auger Parts Have Two (2) Year Warranty**

# OPERATION CONTENTS

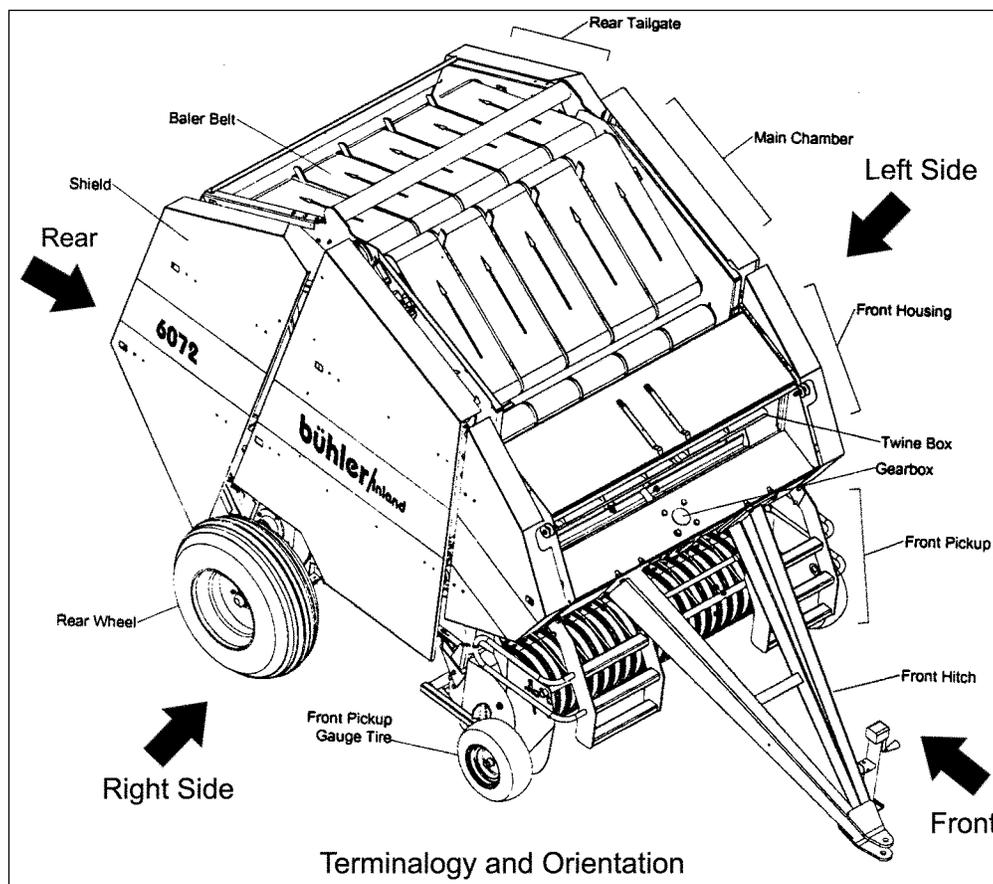
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**INTRODUCTION**

**⚠ CAUTION:** The baler requires a minimum 75 hp (50 kw) tractor and a 12 volt electrical system. The drawbar must be capable of supporting the baler when loaded.

The Buhler / Inland 6060 and 6072 are soft core, fixed chamber round balers designed to create 5' (1.5 m) diameter by 5' (1.5 m) wide or 6' (1.8 m) diameter by 5' (1.5m) wide bales respectively.

This section contains the procedures to operate the baler safely at maximum performance. You must read and understand the procedures outlined in this manual and the tractor's manual before operating the equipment. Keep this manual for reference and forward it to new operators and owners. Contact your local Buhler / Inland dealer if you require any assistance, information or additional manuals.



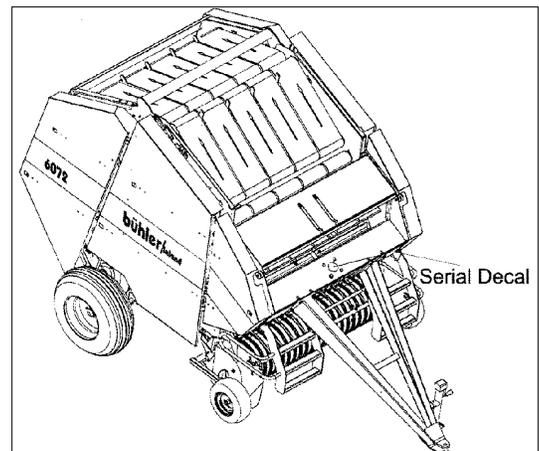
**Baler Specifications**

Description	Model 6060	Model 6072
Baler Weight	3875 lbs. (1760 kg.)	4080 lbs. (1850 kg.)
Baler Height	88 in. (2.24 m)	96 in. (2.40 m)
Baler Width	102 in. (2.59 m)	102 in. (2.59 m)
Bale Weight Straw Hay	900 lbs. (408 kg.) 1000-1500 lbs. (400-680 kg.)	1075 lbs. (487 kg.) 1200-1800 lbs. (500-800 Kg.)
Bale Diameter	60 in. (1.5 m)	72 in. (1.8 m)
Bale Length	60 in. (1.5 m)	60 in. (1.7.5 m)
Floating Pick-up Width	69 in. (1.75 m)	69 in. (1.75 m)
Pick-up Tine Spacing	2.75 in. (70 mm)	2.75 in. (70 mm)
Tine Bars	6	6
Main Tire Size Tire Pressure	31 x 13.5 15 NHS 8 Ply 35 psi (240 kPa)	31 x 13.5 15 NHS 8 Ply 35 psi (240 kPa)
Pick-up Tire Size Tire Pressure	16 x 650 x 8 2 Ply 15 psi (103 kPa)	16 x 650 x 8 2 Ply 15 psi (103 kPa)
PTO Speed	540 or 1000rpm	540 or 1000rpm
Twine Type	Plastic or Sisal	Plastic or Sisal
Twine Tie	Operator Programmable Double Arm	Operator Programmable Double Arm
Min. Tractor Size	75 hp (56 kw)	75 hp (56 kw)
Hydraulic Cylinders	Double Acting Remote	Double Acting Remote
Electrical System	12 Volt	12 Volt

**Serial Decal Location**

The serial decal is located on the left side on the front crossmember. Please record the serial number in the space provided for future reference. The serial decal will provide the model and date of manufacture and will be required to obtain correct replacement parts and complete warranty claims.

Record Serial  
Number Here: \_\_\_\_\_



**Warranty Registration**

The warranty registration and delivery report **MUST** be completed and returned within thirty (30) days of delivery to validate the warranty.

**SAFETY**

You must read and understand all safety messages listed in this manual and future bulletins before operating, inspecting or servicing the baler. It is your responsibility to inform subsequent operators and owners of these precautions. The alert symbol is used in this manual and on the safety decals to warn of possible hazards.

**DANGER**

The danger symbol indicates an imminently hazardous situation, which could result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components, which, for functional purposes cannot be guarded.

**WARNING**

The warning indicates a potentially hazardous situation, which could result in death or serious injury. It includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

**CAUTION**

The caution symbol indicates a potentially hazardous situation, which may result in injury or damage to the equipment. It may also be used to alert against unsafe practices.

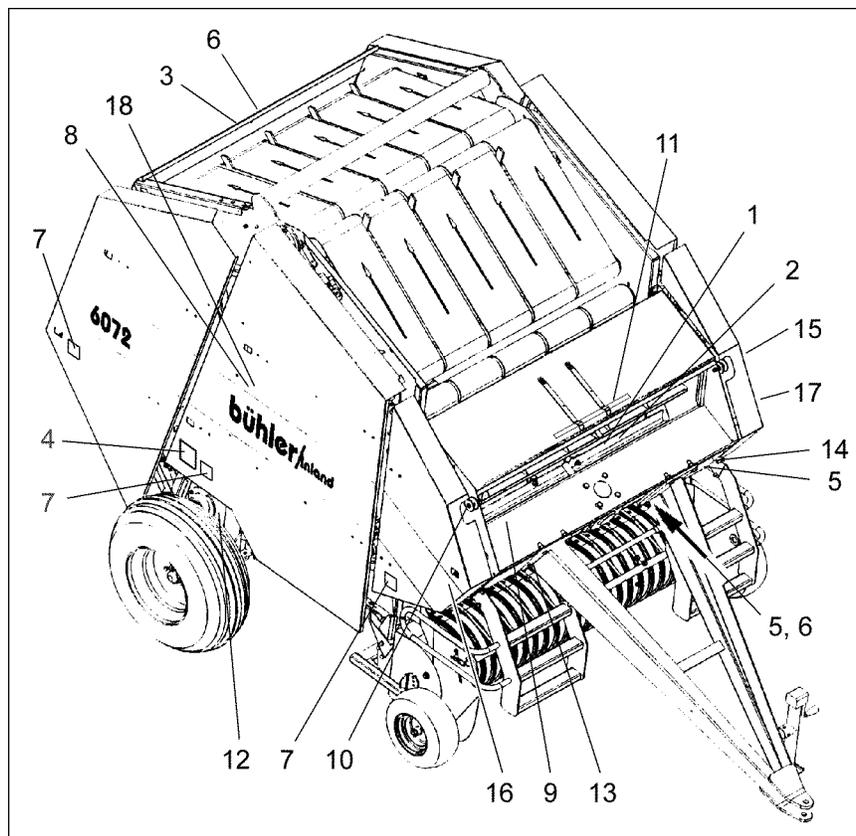
## Important Precautions

- You must read and understand all procedures before operating, inspecting or servicing the equipment.
- Check that all personnel are away from the equipment before starting or operating.
- Keep away from moving parts. Keep away from the twine knife.
- Do not allow any personnel to ride on equipment.
- Wear close-fitting clothing and cover long hair. Do not wear dangling items such as scarves
- Before raising the tailgate, check that all personnel are away from the baler and check for overhead restrictions.
- Follow proper shutdown procedures. Place all controls in neutral, stop the engine, set the park brake, remove the ignition key and wait for all moving part to stop before inspecting or servicing the equipment.
- Wear eye protection and protective clothing when inspecting or servicing the equipment.
- Keep all personnel away when inspecting, operating or servicing the equipment.
- Do not operate the equipment without shields and guards.
- Do not modify or alter any part of the baler without authorized instructions from Buhler Manufacturing or its dealers.
- The baler must be on level ground and in a proper work area for servicing. Support the baler tongue and block the wheels. Disconnect the PTO, electrical harness and hydraulic lines from the tractor.
- Relieve the hydraulic pressure before inspecting or servicing the baler.
- Keep the equipment clean and in good working condition. Clean or replace all safety decals as required.
- Use proper work procedures when operating, inspecting or servicing the equipment.
- Lock the tailgate when it is necessary to work near a partially or fully opened tailgate.
- Use proper lighting and safety warnings when transporting the equipment. The Slow Moving Vehicle (SMV) emblem must be clearly visible.
- High-pressure oil leaks may cause injuries. Wear appropriate clothing and eye protection when checking for hydraulic leaks.
- After servicing the equipment, check that the controls operate the baler correctly.
- Do not operate the equipment with damaged or worn parts.
- Raise pickup, install transport lock and close tailgate before transporting baler.
- When towing baler, install safety chain and turn on hazard flasher. Do not transport faster than 20 mph (32 kmh) on any type of road.
- Follow proper shutdown procedures before entering the bale chamber.

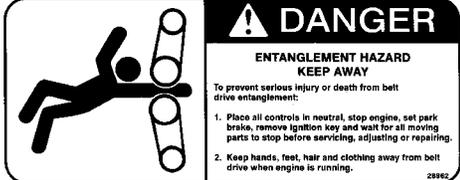
## Safety Decals

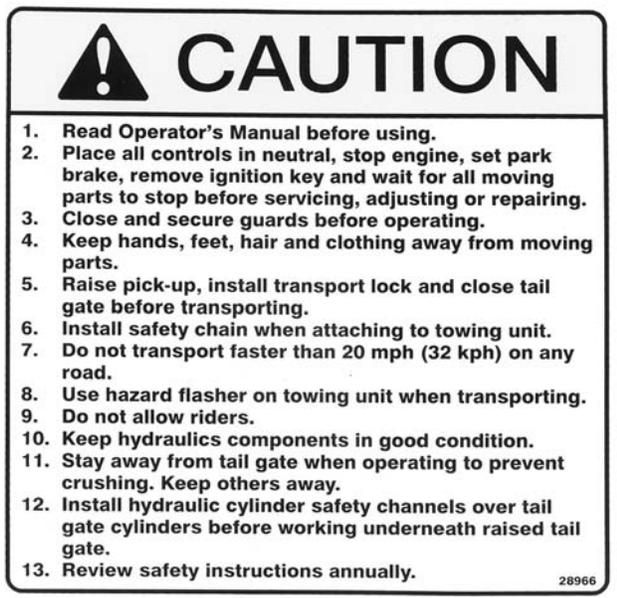
All operators must read and understand the decals and instructions that are placed on the baler. Keep the decals clean and replace damaged or illegible decals.

To replace existing safety decals, place the new ones in the same location as the old ones unless instructed otherwise. Remove the old decals first then clean and dry the area. Remove the smallest portion of the backing paper and align the decal over the specified area. Remove the remaining backing paper and apply the decal with a plastic scraper. Push from the center of the decal outward to remove the air bubbles. Pierce air bubbles with a pin then use the scraper to remove the air bubbles.



Decals

Decal and Part Number	Decal and Part Number
<div data-bbox="240 315 706 781" style="border: 1px solid black; padding: 5px;">  <p><b>! DANGER</b></p> <p>To avoid injury and save your life...</p> <ul style="list-style-type: none"> <li>- Disengage PTO &amp; shut off engine.</li> <li>- Do not push crop, unplug, adjust or service with equipment running.</li> </ul> </div> <p>Item 1, Danger 4"x4" Part No. 28965, 1 place</p>	<div data-bbox="917 304 1377 760" style="border: 1px solid black; padding: 5px;">  <p><b>! DANGER</b></p> <p><b>ROTATING DRIVELINE CONTACT CAN CAUSE DEATH KEEP AWAY!</b></p> <p>Do not operate without-</p> <ul style="list-style-type: none"> <li>• All driveline, tractor and equipment shields in place.</li> <li>• Drivelines securely attached at both ends.</li> <li>• Driveline shields that turn freely on driveline.</li> </ul> </div> <p>Item 2, Danger Rotating Driveline 4"x4" Part No. 28964, 1 place</p>
<div data-bbox="175 886 771 1354" style="border: 1px solid black; padding: 5px;">  <p><b>! DANGER</b></p> <p><b>CRUSHING HAZARD KEEP AWAY</b></p> <p>To prevent serious injury or death:</p> <ol style="list-style-type: none"> <li>1. Stay away from rear of baler when raising tail gate and ejecting bales.</li> <li>2. Keep others away.</li> </ol> </div> <p>Item 3, Danger Crushing Hazard 6.25"x5.5" Part No. 28963, 1 place</p>	<div data-bbox="977 886 1312 1444" style="border: 1px solid black; padding: 5px;">  <p><b>! DANGER</b></p> <p><b>CRUSHING HAZARD KEEP AWAY</b></p> <p>To prevent serious injury or death from falling tail gate:</p> <ol style="list-style-type: none"> <li>1. Stand clear of raised tail gate when engine is running. Keep others away.</li> <li>2. Place all controls in neutral, stop engine, set park brake, remove ignition key and engage hydraulic cylinder safety channels over tail gate lift cylinders before working underneath raised tail gate.</li> </ol> </div> <p>Item 4, Danger Crushing Hazard 3.5"x6" Part No. 28960, 2 places</p>
<div data-bbox="235 1547 711 1759" style="border: 1px solid black; padding: 5px;">  <p><b>! DANGER</b></p> <p><b>SWING BLADE HAZARD</b></p> <p>Keep fingers, hands and feet away from the twine knife area.</p> <p>Spring loaded knife may swing out quickly.</p> </div> <p>Item 5, Danger Swing Blade Hazard 7"x3.25" Part No. 28961, 2 places</p>	<div data-bbox="906 1547 1388 1749" style="border: 1px solid black; padding: 5px;">  <p><b>! DANGER</b></p> <p><b>ENTANGLEMENT HAZARD KEEP AWAY</b></p> <p>To prevent serious injury or death from belt drive entanglement:</p> <ol style="list-style-type: none"> <li>1. Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting or repairing.</li> <li>2. Keep hands, feet, hair and clothing away from belt drive when engine is running.</li> </ol> </div> <p>Item 6, Danger Entanglement Hazard, 7"x3" Part No. 28962, 2 place</p>

Decal and Part Number	Decal and Part Number
 <p><b>WARNING</b></p> <p><b>MOVING PART HAZARD</b> To prevent serious injury or death from moving parts:</p> <ul style="list-style-type: none"> <li>• Close and secure guards and shields before starting.</li> <li>• Keep hands, feet, hair and clothing away from moving parts.</li> <li>• Disconnect and lockout power source before adjusting or servicing.</li> <li>• Do not stand or climb on machine when operating</li> </ul> <p>813627</p> <p>Item 7, Moving Part Hazard, 4"x4" Part No. 813627, 7 places</p>	 <p><b>WARNING</b></p> <p><b>HIGH-PRESSURE FLUID HAZARD</b> To prevent serious injury or death:</p> <ul style="list-style-type: none"> <li>• Relieve pressure on system before repairing or adjusting or disconnecting.</li> <li>• Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.</li> <li>• Keep all components in good repair.</li> </ul> <p>813635</p> <p>Item 8, High Pressure Fluid Hazard 4"x4" Part No. 813635, 2 places</p>
 <p><b>CAUTION</b></p> <ol style="list-style-type: none"> <li>1. Read Operator's Manual before using.</li> <li>2. Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting or repairing.</li> <li>3. Close and secure guards before operating.</li> <li>4. Keep hands, feet, hair and clothing away from moving parts.</li> <li>5. Raise pick-up, install transport lock and close tail gate before transporting.</li> <li>6. Install safety chain when attaching to towing unit.</li> <li>7. Do not transport faster than 20 mph (32 kph) on any road.</li> <li>8. Use hazard flasher on towing unit when transporting.</li> <li>9. Do not allow riders.</li> <li>10. Keep hydraulics components in good condition.</li> <li>11. Stay away from tail gate when operating to prevent crushing. Keep others away.</li> <li>12. Install hydraulic cylinder safety channels over tail gate cylinders before working underneath raised tail gate.</li> <li>13. Review safety instructions annually.</li> </ol> <p>28966</p> <p>Item 9, Caution 5.5"x5.5" Part No. 28966, 1 place</p>	 <p>Item 10, Twine Wheel 11/16"x1/4" Part No. 28952, 4 places</p>  <p>Item 11, Density Scale 19.25"x2.25" Part No. 28957, 1 place</p>  <p>DAILY 21867</p> <p>Item 12, Lubrication Decal Part No. 21867</p>

Decal and Part Number	Decal and Part Number
<div data-bbox="243 315 706 766" data-label="Image"> <p><b>IMPORTANT</b> ROUTE TWINE UNDER TAB OF TWINE BRAKE</p> <p>TAB</p> <p>TWINE ARM</p> <p>28953</p> </div> <p data-bbox="224 772 730 840">Item 13, Important Twine Routing 4"x4" Part No. 28953, 1 place</p>	<div data-bbox="909 315 1372 766" data-label="Image"> <p><b>IMPORTANT</b> ROUTE TWINE UNDER TAB OF TWINE BRAKE</p> <p>TAB</p> <p>TWINE ARM</p> <p>28954</p> </div> <p data-bbox="893 772 1404 840">Item 14, Important Twine Routing 4"x4" Part No. 28954, 1 place</p>
<div data-bbox="284 871 665 1480" data-label="Image"> <p><b>IMPORTANT</b> ROUTE TWINE AS SHOWN</p> <p>28956</p> </div> <p data-bbox="224 1491 730 1554">Item 15, Important Twine Routing 3"x5" Part No. 28956, 1 place</p>	<div data-bbox="966 871 1347 1480" data-label="Image"> <p><b>IMPORTANT</b> ROUTE TWINE AS SHOWN</p> <p>28955</p> </div> <p data-bbox="893 1470 1404 1533">Item 16, Important Twine Routing 3"x5" Part No. 28955, 1 place</p>
<div data-bbox="251 1596 698 1795" data-label="Image"> <p><b>IMPORTANT</b> Raise pick-up and install transport lock before transporting.</p> <p>28959</p> </div> <p data-bbox="203 1816 747 1879">Item 17, Important Transport Lock 3"x1.5" Part No. 28959, 1 place</p>	<div data-bbox="917 1596 1372 1795" data-label="Image"> <p><b>IMPORTANT</b> Do not adjust springs. Springs are adjusted to correct tension at factory.</p> <p>28958</p> </div> <p data-bbox="933 1816 1356 1879">Item 18, Spring Tension, 3"x1.5" Part No. 28958, 1 place</p>

**Pre-Operation Inspection**

**⚠ WARNING:** Do not operate equipment without understanding operating procedures.

To ensure safe and proper operation, inspect the following items prior to first operation and daily thereafter. Refer to the operation, lubrication and maintenance sections for detailed instructions.

<b>Component</b>	<b>Detail</b>
✓ Safety Decals	Check SMV sign & decals are clearly displayed
✓ Clean Baler	Remove hay/straw if built up
✓ Bolts and Nuts	Torque them to specifications
✓ Tires	Check pressure and signs of excess wear
✓ Baler Axle	Check for proper height setting
✓ Drawbar	Check proper for hitch pin and verify height for operation
✓ Baler Jack	Should be mounted in transport location
✓ PTO Shaft	Tractor PTO shaft must be correct distance from drawbar
✓ PTO Guard	Check that guard and shaft are installed correctly
✓ Gearbox	Check for proper PTO speed setting
✓ Shields & Guards	Check that all shields and guards are in place
✓ Hydraulics	Check hoses, fittings and cylinders for leaks
✓ Lubrication	Grease all points as required
✓ Oiler Reservoir	Check fluid level
✓ Drive Chain	Check for proper lubrication and chain tension
✓ Flat Belts	Check tension and tracking
✓ Pickup Drive Belt	Check tension
✓ Pickup Adjustment	Check pickup teeth and gauge wheel height from ground
✓ Pickup Teeth	Check for missing/damaged teeth and replace
✓ Windguard	Adjust for size of windrow.
✓ Twine Box	Check that twine spools are tied together
✓ Twine Routing	Check that twine is properly routed to tie arms
✓ Roller Scrapers	Check gap setting
✓ Electrical	Check harness connections, inspect for damage
✓ Controls	Check that all controls operate as intended

**SETUP**

**Attaching Baler to Tractor**

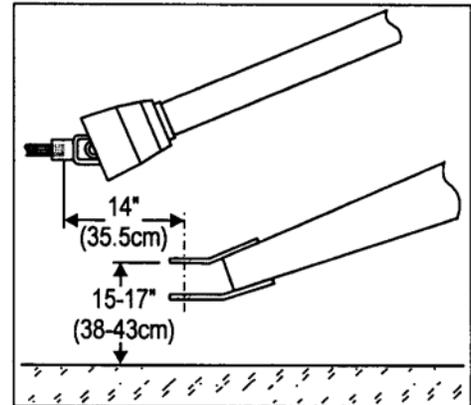
**⚠ WARNING:** Engage the park brake, turn the engine off and remove the ignition key before working near the hitch.

**⚠ WARNING:** The tractor should have at least a 75 hp engine and a drawbar capable of supporting the baler when loaded. Attach the baler to drawbar only. Do not attach the baler to axle or three point hitch.

**IMPORTANT:** The baler gearbox is factory installed for a 540 RPM PTO input. Verify the gearbox orientation and your tractor PTO speed prior to operation. See **Reversing Gearbox**.

The correct tractor drawbar height is important for proper tailgate operation. If the drawbar is too high, the tailgate may not clear the ejected bales.

1. Adjust the tractor wheel tread width to at least 70 in. (178 cm) to straddle the windrows.
2. Adjust the tractor drawbar height to 15 to 17 in. (38 to 43 cm) above the ground.
3. Adjust the drawbar length so that it extends 14 in. (35.5 cm) past the PTO shaft.
4. Check that the PTO shaft is 6 to 10 in. (15 to 25 cm) above the tractor drawbar.

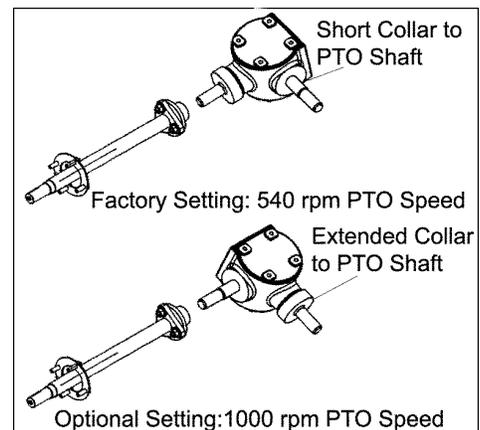


Hitch Height & Position

5. Lift the three point hitch and lock it in place. Remove or secure the lift rod.

6. Attach the baler hitch to the tractor drawbar and lock it with an approved hitch pin. Install the safety chain. Raise the baler jack and move it into the transport position.

7. Determine if the tractor's PTO speed is 540 or 1000 rpm. Check that the baler gearbox is setup to match the tractor's PTO speed. Refer to **Reversing Gearbox** if you need to change the setup.



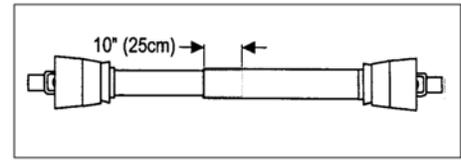
Reversing Gearbox

8. Install the PTO shaft so that the flange with the shear bolt is mounted to the gearbox shaft.

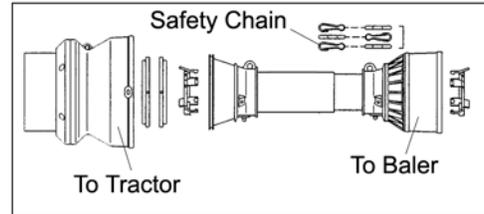
9. Install the other end of the PTO shaft to the tractor's PTO. Check that the PTO shields overlap at least 10 in. (25 cm). If the PTO shaft does not fit properly, refer to **Adjusting PTO Length**.

10. Install the PTO shield and safety chains.

11. Clean the hydraulic fittings and install the quick couplers to the tractor.



PTO Overlap



PTO Shield

**Bale Twine Controller**

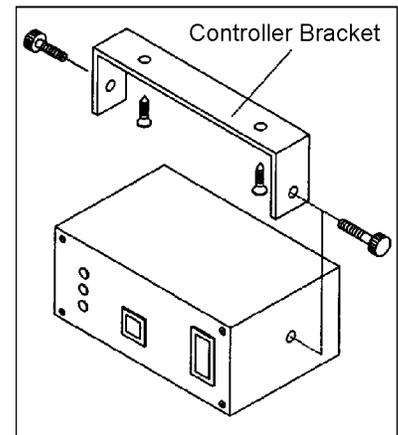
**CAUTION:** The controller and actuator require a 12 volt, 40 amp power supply.

1. Mount the controller bracket in a convenient location with two ¼ in. bolts or self-tapping screws.

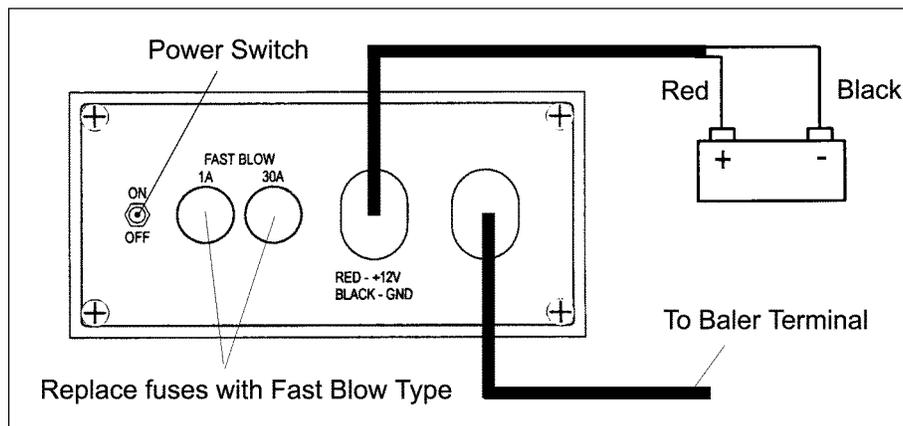
2. Attach the controller to the mounting bracket using the two thumbscrews provided.

3. Attach the red lead from the electrical cable to the positive (+) battery terminal and the black lead to the negative (-) battery terminal.

4. Check that the electrical cable is properly installed so that it does not get damaged during operation.



Controller Installation



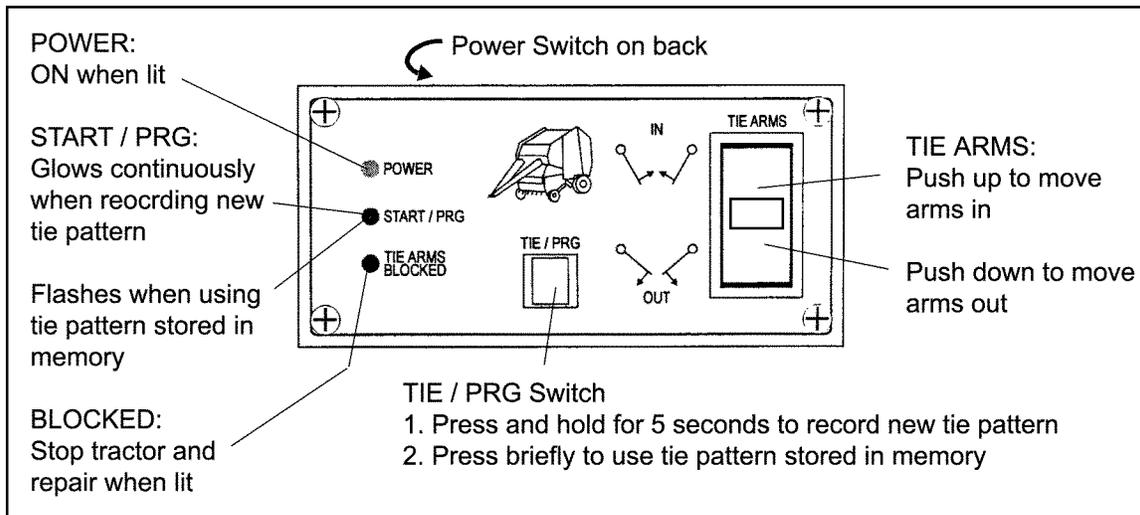
Bale Controller - Rear View

**Twine Controller Functions**

The electronic controller allows the operator to control the bale tie pattern manually or with a programmed cycle. The controller has three indicator lights and three switches.

**⚠ WARNING:** When the “TIE AMRS BLOCKED” indicator is lit, stop the tractor, engage the park brake and disengage the PTO before attempting to free the tie arms. **Keep away from the twine knife.**

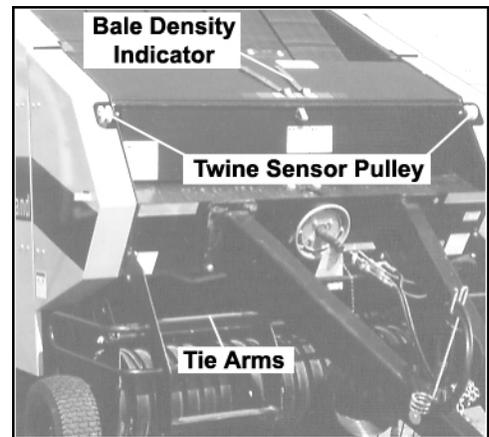
**IMPORTANT:** The controller must be reset after the tie arms are freed. Turn off the power switch momentarily and resume operation.



**Bale Controller - Front View**

**Using Manual Mode**

1. When the bale density indicators move into the green range, push and hold the TIE ARM switch until the tie arms are in the Total-out position.
2. Check that the twine is pulled into the bale chamber. The rotation of the twine sensor pulleys indicates that the twine is wrapping. Check that the twine knife is set.
3. Stop the tractor but operate the PTO at constant speed.
4. When the desired number of wraps are made near the bale edge, push and hold the TIE ARM switch to move the tie arms inward at a speed that reflects the desired twine spacing.

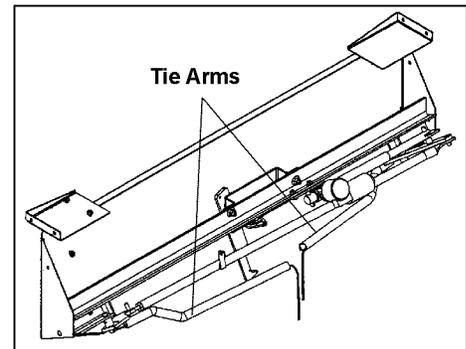


**Baling**

5. Release the TIE ARM switch so that the tie arms stop at the location where you want the Final twine to wrap.

6. Press the TIE ARM switch so that the tie arms move to the Total-in position to activate the twine knife and to complete the cycle.

7. Eject the bale. Check that the tailgate is closed and that the tie arms are in the Total-in position.

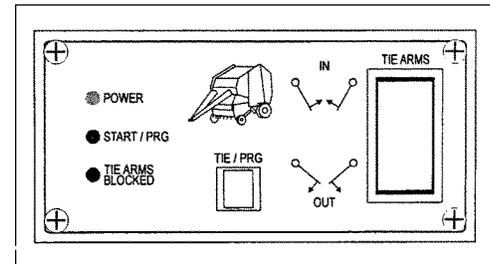


**Total-in Position**

**IMPORTANT:** The twine knife will not release in manual mode until the tie arms are returned to the Total-in position.

### Programming Semi-automatic Mode

The controller may be programmed to repeat any desired tie pattern with as many as 40 events of starting and stopping the tie arms. Once a pattern has been programmed into the controller it will stay there indefinitely, even when the controller is detached from the battery. You may reprogram the controller at any time to suite the operating conditions.



**Bale Controller**

1. When the bale is ready for tying, press and hold the TIE/PRG switch for approximately five seconds until the START/PRG light stops flashing and remains lit. The controller is now recording the tie pattern.

2. Press and hold the TIE ARM switch until the tie arms are in the Total-out position.

3. Check that the twine is pulled into the bale chamber. The rotation of the twine sensor pulleys indicates that the twine is wrapping. Check that the twine knife is set.

4. Stop the tractor but operate the PTO at constant speed.

5. When the desired number of wraps are made near the bale edge, push and hold the TIE ARM switch to move the tie arms inward at a speed that reflects the desired twine spacing.

6. When the twine is cut, push the TIE/PRG switch briefly to stop recording the tie pattern.

7. Eject the bale. Check that the tailgate is closed and that the tie arms are in the Total-in position.

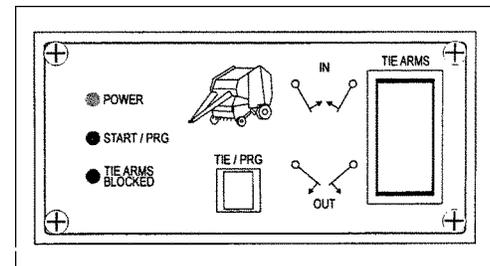
## Twine Controller Operation

**⚠ WARNING:** When the “TIE AMRS BLOCKED” indicator is lit, stop the tractor, engage the park brake and disengage the PTO before attempting to free the tie arms. **Keep away from the twine knife.**

**IMPORTANT:** During the tie cycle, the travel speed and the PTO rpm must be the same speed as when the tie pattern was recorded.

**NOTE:** It may take several seconds for the controller to move the tie arms out.

1. When the bale is ready for tying, press TIE/PRG switch briefly to use the semi-automatic mode.
2. Check that the twine is wrapping.
3. Stop the tractor but operate the PTO at constant speed.
4. Eject the bale. Check that the tailgate is closed and that the tie arms are in the Total-in position.



**Bale Controller**

**IMPORTANT:** To suite field conditions, you may temporally over-ride the semi-automatic function by using the TIE ARM switch but you must complete the tie cycle manually by moving the tie arms to the Total-in position to cut the twine.

## Bale Counter

The baler is equipped with a mechanical counter that is activated every time the rear gate is closed. It is located near the left wheel. Reset the counter as required by turning the knob.



## Bale Density Indicators

The bale density indicators allow the operator to determine when to start the bale tie operation by observing the movement of the indicators. As the bale chamber fills and the outer layers of the bale begin to compact, the indicators move apart. Field condition, material and operator's preference determine exactly when the bale needs be tied.

The position of the indicators on the colored squares means the following:

### Yellow Squares:

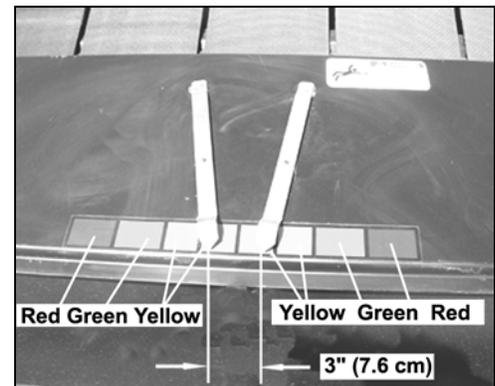
When the baler is empty, the indicators should be centered and approximately 3 in. (7.6 cm) apart. As the bale starts to form, the indicators move to the second yellow square.

### Green Squares:

This range indicates that the bale is ready for tying.

### Red Squares:

This range should be avoided because the high bale density increases the baler load.



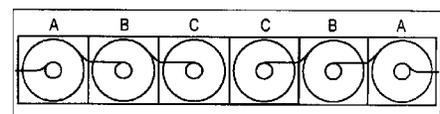
**NOTE:** If the bale density leavers need adjusting, refer to **Bale Density Indicators** in the Maintenance Section.

## Twine Routing

**⚠ WARNING:** Disengage the PTO, place all controls in neutral, stop engine, set parking brake, remove ignition key and wait for all moving parts to stop before inspecting or servicing baler. Twine knife must be disengaged

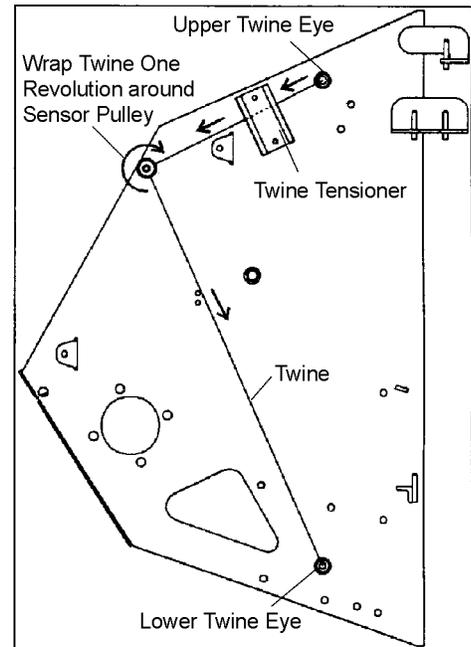
Use a quality plastic or sisal twine. Plastic twine is recommended for bales that are stored outside.

1. Place six spools into the twine box and tie them together so that three spools form one continuous strand.

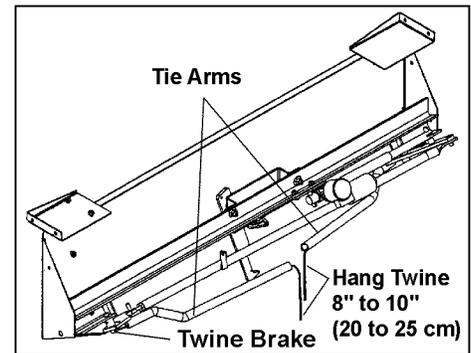


Twine Spools

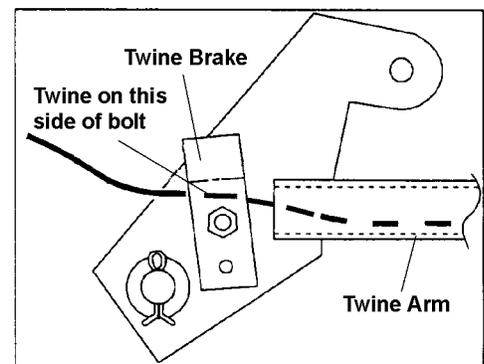
2. Route the twine through the upper twine eye and twine tensioner.
3. Place the twine under the twine sensor pulley and wrap it one complete revolution around the pulley.
4. Route the twine through the lower twine eye.

**Twine Routing**

5. Move the twine to the twine brake near the twine arm.

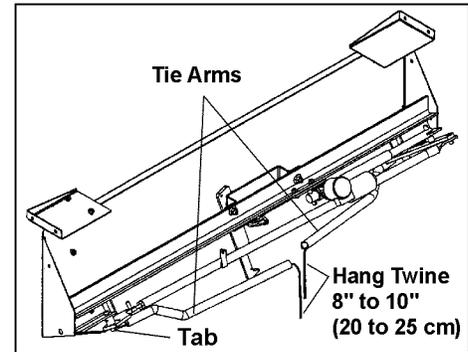
**Twine Routing**

6. Place the twine under the twine brake.

**Twine Brake**

7. Thread the twine through the twine arm and pull it so that the end of the twine hangs approximately 8 to 10 in. (20 to 25 cm) from the twine arm.

8. Repeat the above procedures to route the twine on the other side of the baler.

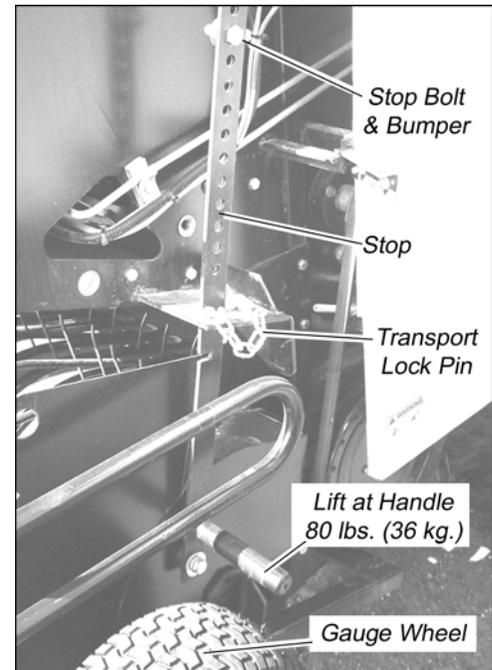
**Twine Routing**

### Pick-up Adjustment

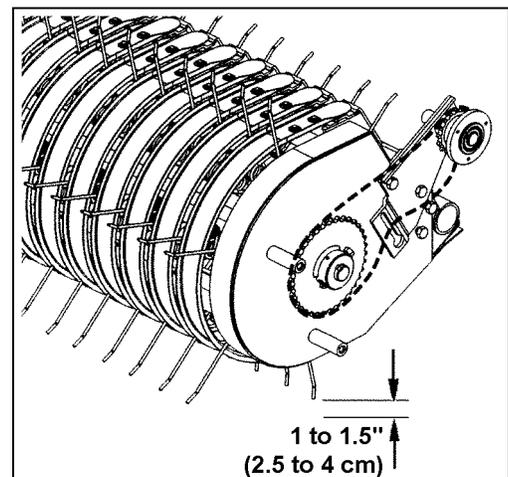
The pick-up is designed to float just above the ground using a suspension and gauge wheel system. It must be adjusted properly to minimize the breakage of pick-up teeth in rough and bumpy field conditions.

1. Remove the transport lock pin and place it into the storage slot.

2. Hold the handle to support the pick-up then pull the stop. Lower the pick-up to the ground.

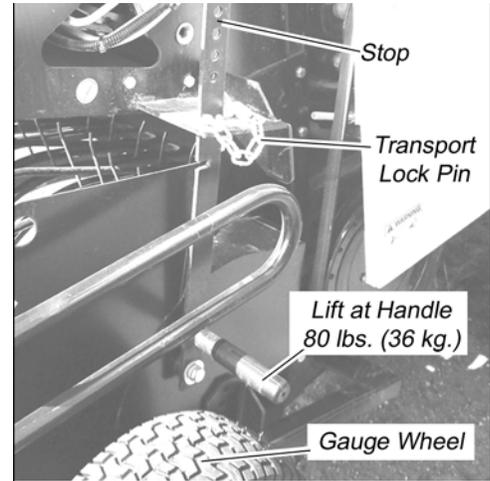
**Pick-up Height**

3. Adjust the pick-up so that the pick-up teeth are 1 to 1.5 in. (2.5 to 4 cm) above the ground by moving the stop bolt and bumper.

**Ground Clearance**

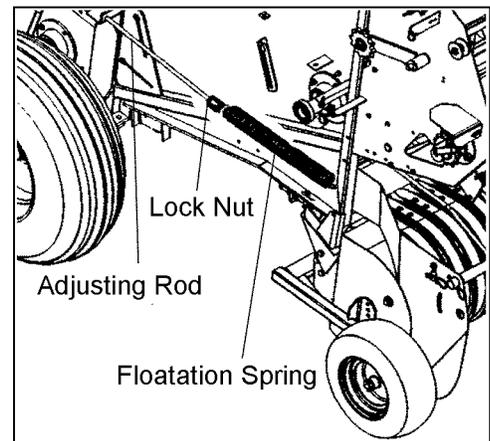
4. Adjust the gauge wheels by removing the bolts and washers. Move the gauge wheels so that they are  $\frac{3}{4}$  to 1 in. (2 to 2.4 cm) above the ground. Reinstall the bolts and washers.

5. Lift the pick-up at the handle to check for proper adjustment. It should require a force of approximately 80 lbs. (36 kg.) to lift it.



**Pick-up Height**

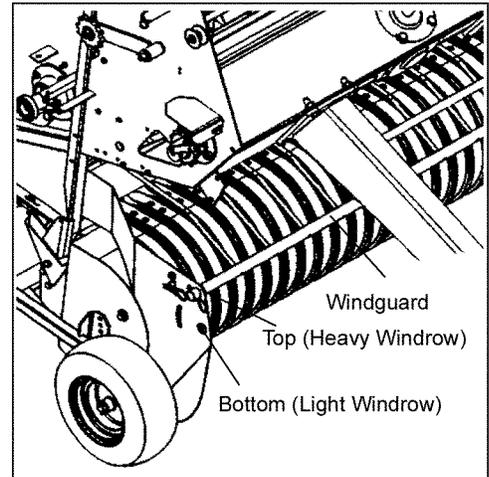
6. The adjusting rod is located on the right side of the baler. Adjust the floatation spring as required and tighten the lock nut.



**Floatation Adjustment**

## Windguard

Set the windguard suitable for the type of crop that needs to be baled. The top setting is for heavy windrow such as alfalfa and the lower setting is for light windrow such as stalk crops.



Windguard Settings

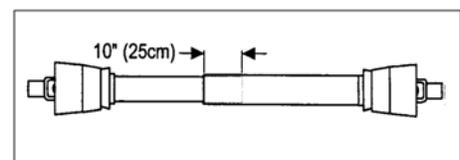
## Adjusting PTO Shaft

**IMPORTANT:** ASAE Standards require that the PTO shields overlap at least 10 in. (25 cm).

Check the PTO shaft for proper length by driving the tractor and baler to the left and right as tight as possible. If the PTO shield binds, lengthen the drawbar or shorten the PTO shaft as follows:

1. Drive the tractor so that the baler is straight behind the tractor. Follow proper shutdown procedure.

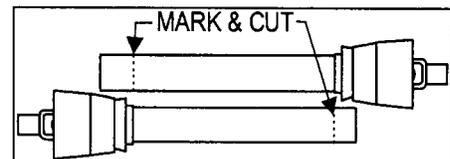
2. Determine how much the PTO shaft has to be shortened. Make sure that the minimum overlap is present. Remove the PTO shaft.



PTO Overlap

3. Cut an equal amount off both PTO shaft halves.

4. Remove all burrs and clean the PTO shaft and shield. Apply a coat of grease to the inner shaft.



MARK PTO OVERLAP

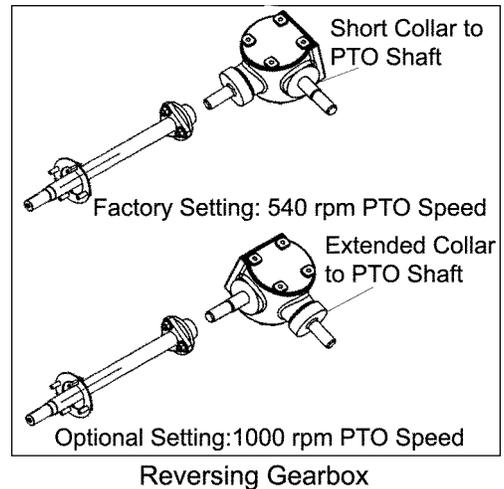
5. Assemble the PTO shaft and reinstall it with the PTO shield.

6. Check it for proper operation.

Reversing Gearbox

**IMPORTANT:** The gearbox is installed at the factory for 540 rpm PTO input speed. The input speed maybe changed to 1000 rpm by reversing the gearbox and installing a new PTO shaft.

1. Move the baler to a proper work area and follow proper shutdown procedure.
2. Remove the PTO shield and the PTO shaft.
3. Check that the present speed setting is 540 rpm. The short collar should be facing the front of the baler.



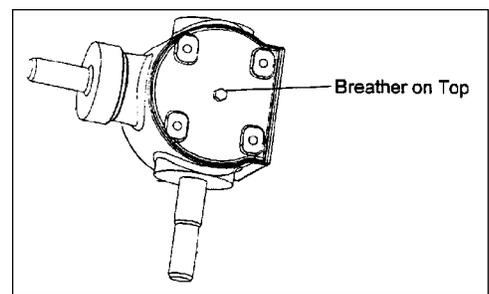
**⚠ WARNING:** Support the gearbox before loosening the mounting bolts. The gearbox may drop or slide off the shaft after the mounting bolts are removed.

4. Remove the breather valve and the mounting bolts.
5. Slide the gearbox away from the shaft and remove it from the baler.
6. Place the gearbox on a surface with the extended collar facing up.
7. Remove the breather valve from the top of the gearbox and install it on the bottom where the plug is located. Install the plug where the breather was originally located.

8. Turn the gearbox so that the breather is on top. Remove the fill plug and add SAE EP 90 gear oil so that the fluid level is up to the lower fill plug.

9. Install the gearbox in reverse order. The extended collar must be facing the baler front for the 1000 rpm PTO input speed. Torque the bolts to specifications.

10. Install the PTO shaft (1000 rpm type) Check the baler for proper operation.



Switching Breather with Plug

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**OPERATION**

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**⚠ WARNING:** You must read and understand all safety and operating procedures before operating the equipment. Follow proper startup and shutdown procedures.

---

**Startup Procedure**

Use this procedure before you start the tractor or baler.

1. Inspect the baler as noted in **Operation Checklist**.
2. Check that the tractor controls are in neutral. The park brake must be applied. The PTO must be disengaged.
3. Check that all personnel is away from the equipment before starting the tractor.

**Shutdown Procedure**

Use this procedure when inspecting or servicing the equipment.

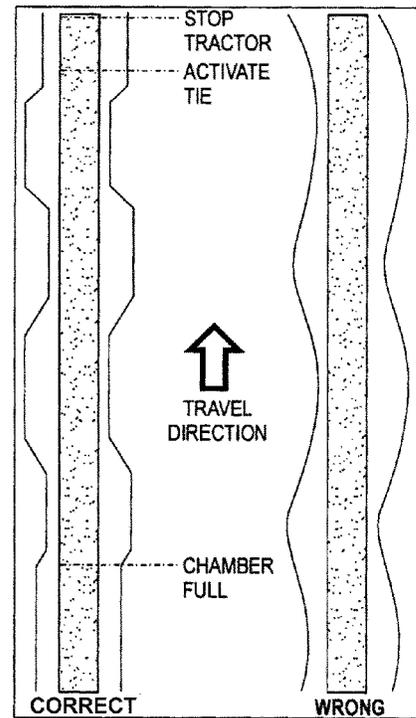
1. Stop the PTO drive and set the park brake on the tractor.
2. Stop the tractor engine and remove the ignition key.
3. Turn Twine Controller off.
4. When the baler is not attached to the tractor, block the baler wheels and check that the baler tongue is properly supported.

## Baling

The driving pattern and bale density depend on crop conditions as well as operator's preference. Inspect the first bale made and make the necessary adjustments.

**⚠ WARNING:** Do not eject bales on slopes where they may roll away. Check for overhead restrictions before opening tailgate.

1. Check that the equipment is ready and that the tailgate is closed properly.
2. Turn on the controller switch and drive the tractor so that the windrow is centered on the pick-up.
3. Observe the bale density indicators. They should move the same amount away from the center of the scale.
4. Adjust the driving pattern so that the bale is formed uniformly. If the indicators are not the same distance from the center of the scale, drive the tractor so that more crop is fed to the "less dense" side.
5. Start the tie cycle just before the desired bale density is reached. The material moving into the bale chamber should pull the twine and wrap the bale.
6. Maintain constant PTO speed when stopping the tractor. The twine sensor pulleys stop turning when the twine is cut.
7. Operate the tractor hydraulics immediately to open the tailgate. Check that the tailgate is completely open.
8. Close the tailgate when the bale has rolled away from the tractor.
9. When finished baling, remove the partial or complete bale from the baler. Leaving material in the baler for an extended time may cause the belts to fail prematurely.



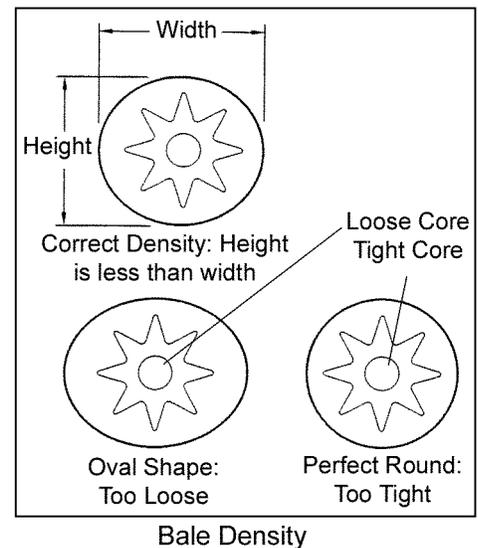
DRIVING PATTERN

## Bale Inspection

**⚠ WARNING:** Disengage the PTO, place all controls in neutral and set the parking brake before leaving the tractor.

Soft core balers create a star-like pattern from the center of the bale. The density is determined by the bales shape and the compaction in the bale's center.

1. Inspect the bale diameter. The width should be slightly larger than the height. If both ends are not the same diameter, see **Bale Density Control**.
2. Check that the bale twine is wrapped properly. Adjust the controller as required.
3. Check the ground for marks that were created by the pick-up teeth. Adjust the pick-up height as required.
4. Check that the bale kicker is adjusted properly so that the bales move away to clear the tailgate when closing.

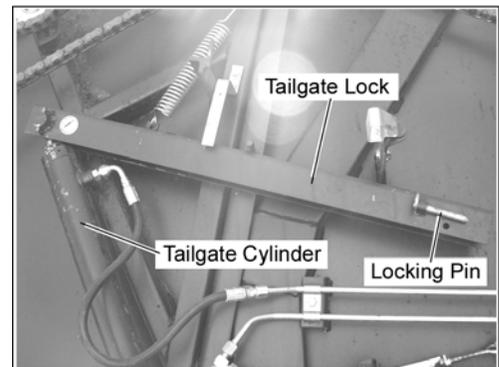


## Raising and Locking Tailgate

**⚠ WARNING:** Check for overhead restrictions before raising the tailgate. Check that all personnel is away from the baler and that there is enough space for the tailgate to swing open.

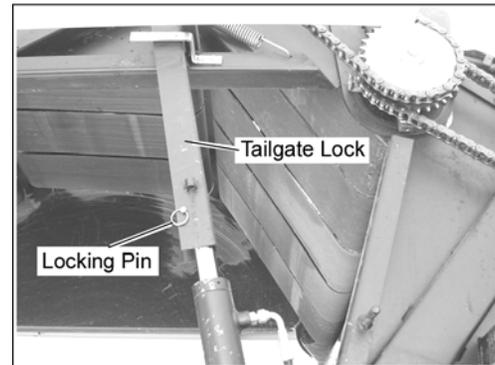
Lock the tailgate when it is necessary to work near a partially or fully opened tailgate. The tailgate locks move automatically into the locking position when the tailgate is lifted but the locking pins have to be installed manually.

1. Check that there is sufficient space above and behind the baler. Operate the tractor hydraulics to lift the tailgate.
2. Follow proper shutdown procedure.



Tailgate Lock

3. Install the locking pins into both tailgate locks.
4. Lower the tailgate lock onto the hydraulic cylinders without starting the tractor engine.
5. Check that the tailgate is properly supported.
6. To lower the tailgate, remove both locking pins before operating the tractor hydraulics.



Locked Tailgate

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**⚠ CAUTION:** Failing to remove both locking pins could damage the baler when lowering the tailgate.

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### Trash Removal and Inspection

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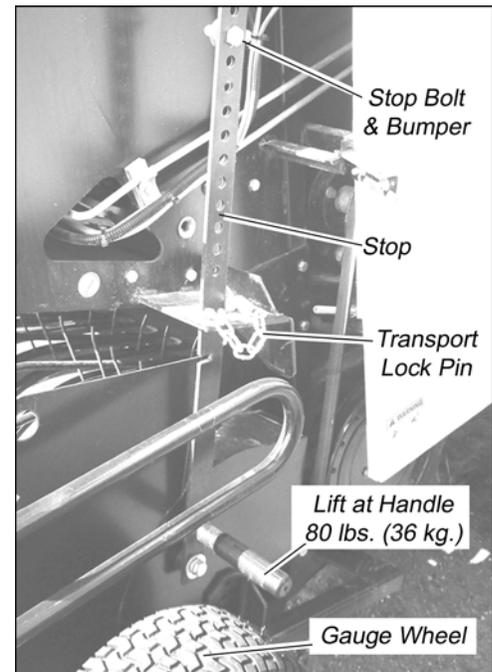
**⚠ WARNING:** Disengage the PTO, place all controls in neutral, stop engine, set park brake, remove ignition key before removing trash or servicing the baler.

---

1. Periodically stop the tractor and remove the trash at rollers and belts.
2. Check the baler belts for proper tension.
3. Check the drive chains and drive belts for proper tension.

## Transporting Baler

1. Check that the baler is empty and that the tailgate is closed properly.
2. Lift the pick-up and secure it in the transport position using the locking pin.
3. Attach the baler to the tractor and lock it with an approved hitch pin. Install the safety chain.
4. Raise the baler jack and move it into the transport position.
5. Check that the slow moving vehicle sign is attached to the baler rear.
6. Turn on the warning flashers when traveling on public roads.
7. Do not travel over 20 mph (32 kmh).



**Pick-up Height**

## Bale Storage

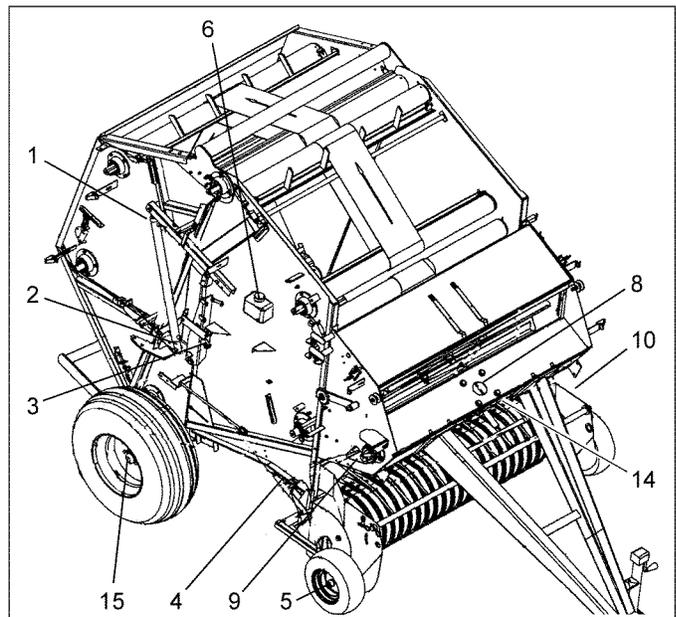
Bales stored outside for winter should be placed in an open and well-drained area with the ends of the bales placed parallel to the prevailing wind (this means that the wind will travel in the same direction as the twine wraps). Space the bales about 1' to 2' (30 to 61cm) apart on all sides (smaller gaps may cause snow to build up which can absorb into the bales and cause spoilage). The area should have easy and safe access for bale handling and transportation equipment. Use caution when retrieving or stacking bales. Stack the bales so that they will not move. Do not extend bale-lifting equipment beyond its capacity.

**LUBRICATION**

**⚠ WARNING:** Disengage the PTO, place all controls in neutral, stop engine, set parking brake, remove ignition key and wait for all moving parts to stop before inspecting or servicing baler.

**IMPORTANT:** Clean all grease fittings prior to lubrication. Replace grease fittings that are plugged. Use an SAE Multipurpose grease.

The Grease Gun Decal indicates the lubrication points. Inspect all lubrication points for excessive leaks of grease and repair them as required.



Lubrication

Item	Components	Details	Lubrication Type	Intervals
1	Tailgate Cylinder	Upper Bushing	SAE Grease	10 Hrs.
2	Tailgate Cylinder	Lower Bushing	SAE Grease	10 Hrs.
3	Tailgate Lever	Bushing	SAE Grease	10 Hrs.
4	Pick-up Block	Bearing	SAE Grease	10 Hrs.
5	Gauge Wheel	Bearing	SAE Grease	10 Hrs.
6	Chain Oiler	Check Fluid Level	Oil SAE 30	10 Hrs.
7	Chain Oiler Brushes	Must Contact Chain	-	10 Hrs.
8	Gearbox	Check Fluid Level	Gear Oil SAE 90 EP	10 Hrs.
9	Tie arm	Bushings	SAE Grease	10 Hrs.
10	Pick-up chain	Lubricate	Oil SAE 30	10 Hrs.
11	Driveshaft, not shown	U-joint (4 places)	SAE Grease	10 Hrs.
12	Driveshaft Lock Pin	Lubricate	Oil SAE 30	50 Hrs.
13	Driveshaft, inner shaft	Lubricate	SAE Grease	50 Hrs.
14	Twine Knife Pivot	Lubricate	SAE Grease	50 Hrs.
15	Baler Wheels	Lubricate	SAE Grease	Yearly

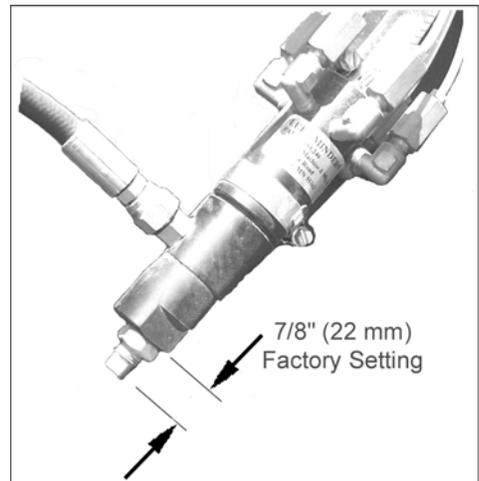
### Chain Oiler

Each time the tailgate is lifted, the hydraulic hose to the chain oiler becomes pressurized. This moves the oiler's piston and ejects lubrication onto the chain drives.

1. Check that the oiler brushes make proper contact with the chains. Check the oil lines for leaks.
2. Check that the chains are lubricated sufficiently.
3. Adjust the chain oiler as required. The factory setting is 7/8" (22 mm) to the end of the adjusting screw. Turn it out to increase the flow.
4. Fill the oil reservoir to the desired level.



Oiler Brush



Chain Oiler

### Gearbox Inspection

**⚠ CAUTION:** Do not overfill the gearbox. Excessive fluid may create extreme heat that could destroy the seals.

1. Clean the gearbox and check it for leaks.
2. Clean and inspect the breather valve located on top of the gearbox and replace it as required.
3. Add lubrication so that the fluid level is up to the upper fill plug when the gearbox is mounted in the baler. When the gearbox is removed from the baler and placed on a level surface, the fluid level should be up to the lower fill plug.



Gearbox Lubrication

On gearboxes with only one fill plug, the fluid level should be slightly above the fill plug.

**APPENDIX A-MAINTENANCE**

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## Every 10 Hour Schedule

Service the baler every 10 hours of operation.

Item	Components	Details
1	Lubrication	Lubricate all grease fittings, check chain oiler reservoir
2	Gearbox	Check fluid level
3	Bolts and nuts	Torque bolts and nuts to specifications
4	Tires	Check tire pressure
5	Drive chains and belts	Check for proper tension
6	Flat belts	Check for proper tension and tracking
7	Hydraulics	Check hoses, fittings and cylinders for leaks
8	Electrical	Check harness for damage
9	Safety decals	Check that SMV sign and decals are clearly displayed
10	Roller scrapers	Check roller scraper for proper adjustment
11	Shields and guards	Check that all shields and guards are in place
12	Clean baler	Remove all debris from baler
13	Tailgate pin and latch	Check tailgate for proper operation
14	Pick-up teeth	Check for broken or missing pick-up teeth

## Every 50 Hour

Service the baler every 50 hours of operation.

Item	Components	Details
1	Baler	Repeat the 10 Hour Schedule
2	Pick-up	Check cam follower bearings for wear
3	Bearings	Check bearings for wear
4	Baler	Check baler for damage or wear
5	Twine arms and knife	Check twine arms and knife for proper operation
6	Hydraulic system	Bleed hydraulic system by moving tailgate up & down several times
7	Gearbox	Change oil (SAE W90), clean breather <b>(FIRST 50 HOURS ONLY)</b>

## Every 500 Hour / Yearly Schedule

Service the baler every 500 hours of operation and once at the beginning of the season.

Item	Components	Details
1	Baler	Repeat the 50 Hour Schedule
2	Gearbox	Change oil with SAE W90, clean breather valve
3	Wheel bearing	Repack wheel bearings with multipurpose grease

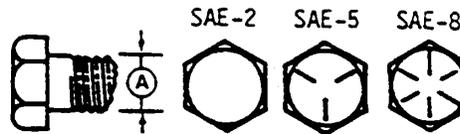
**Note:** Service intervals should be increased when operating in extreme or difficult conditions.

**⚠ CAUTION:** Follow proper shutdown procedures. Move the baler to a proper work area. Block the baler wheels. Check that the baler tongue is properly supported on the jack or tractor drawbar.

**Bolt Torque Specifications**

The tables below list the correct bolt torque values for various bolts. Retighten all bolts every 50 hours of operation. Replace broken or missing bolts with the same bolt grades. Tighten all bolts to the specified values unless noted otherwise.

BOLT DIAMETER "A"	BOLT TORQUE					
	SAE 2		SAE 5		SAE 8	
	lb-ft	N.m	lb-ft	N.m	lb-ft	N.m
1/4"	6	8	9	12	12	17
5/16"	10	13	19	25	27	36
3/8"	20	27	33	45	45	63
7/16"	30	41	53	72	75	100
1/2"	45	61	80	110	115	155
9/16"	70	95	115	155	165	220
5/8"	95	123	160	215	220	298
3/4"	155	225	290	390	400	540
7/8"	170	230	420	570	650	880
1"	225	305	630	850	970	1320
<b>LOCATION</b>					<b>lb-ft</b>	<b>N.m</b>
WHEEL HUB BOLTS					125	170
ALL CARRIAGE BOLTS					33	45



Bolt Size (mm)	Class 5.6		Grade 8.8		Grade 10.9		Grade 12.9	
	Torque		Torque		Torque		Torque	
	ft-lbs	NM	ft-lbs	NM	ft-lbs	NM	ft-lbs	NM
6	3.1	4.3	7.3	9.9	10.3	14	12.1	16.5
8	7.7	10.5	17.7	24	25	34	29	40
10	15	21	35	48	49	67	59	81
12	26	36	61	83	86.2	117	103	140
14	42	58	97	132	136	185	162	220
16	64	88	147	200	210	285	250	340
18	89	121	202	275	287	390	346	470
20	126	171	287	390	405	550	486	660
22	169	230	390	530	549	745	656	890
24	217	295	497	675	708	960	840	1140
27	320	435	733	995	1032	1400	1239	1680
30	435	590	995	1350	1401	1900	1681	2280
33	590	800	1349	1830	1902	2580	2278	3090
36	759	1030	1740	2360	2441	3310	2935	3980
39	988	1340	2249	3050	3163	4290	3798	5150

Metric Bolt Torque

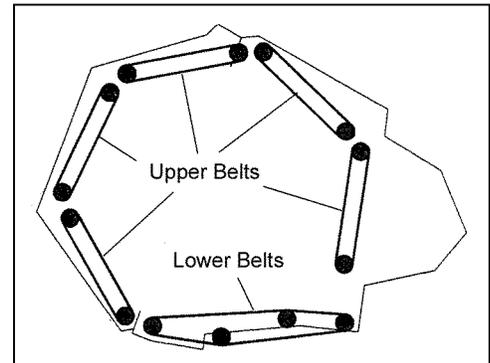
LOCATION	lb-ft	N.m
WHEEL MOUNTING BOLTS	80	110
BEARING HOUSING MOUNTING BOLTS	33	45
ALL 3/8" CARRIAGE BOLTS	33	45

## Flat Belt Adjustment

**⚠ DANGER:** Follow proper shutdown procedures. Lock the tailgate when it is necessary to work near a partially or fully opened tailgate.

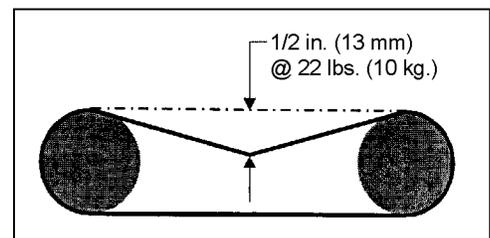
The flat belts should be checked daily for proper tension and tracking. There are five sets of upper belts and one set of lower belts.

1. Remove any material wrapped around the rollers. Check the belts for wear signs. Worn belt edges indicate that the belts need tracking.



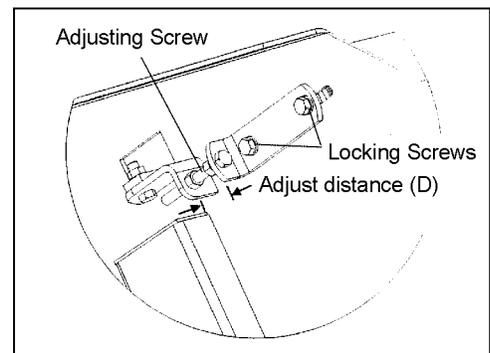
Flat Belts

2. Check the tension of each upper belt set. The deflection should be 1/2" (13 mm) with a force of 22 lbs. (10 kg).



Upper Belt Deflection

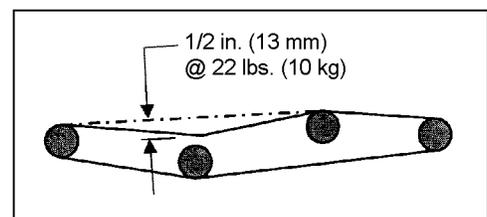
3. Loosen the locking screws and move each tightening roller as required so that distance (D) is the same on both sides of the roller. Tighten the locking screws.



Belt Tensioning and Tracking

4. Adjust the lower belt set as noted above.

5. Check the belt operation as noted in **Flat Belt Tracking**.



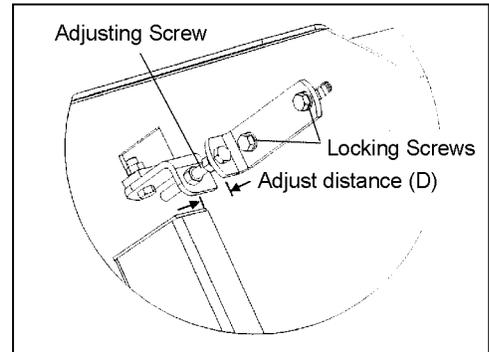
Lower Belt Deflection

**Flat Belt Tracking**

**⚠ WARNING:** Keep away from moving belts. Follow proper shutdown procedures.

**IMPORTANT:** Check the flat belt tension before adjusting the belt tracking.

1. Check that the tailgate is closed and that the baler is safe to start.
2. Start the baler and note the tracking of each belt set.
3. Stop the baler.
4. Adjust the left or right bracket depending to which side the belts are drifting to. For example, if the belts drift to the right side, increase the belt tension on the right side.
5. Start the baler and recheck the belt tracking. Repeat the above until all belts are properly tracked.

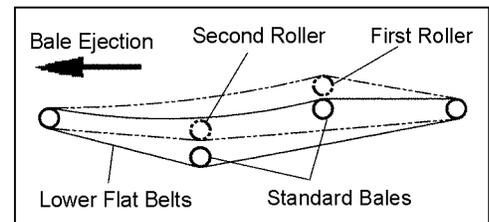


Belt Tensioning and Tracking

**Ejection of Heavy Bales**

The lower flat belts may be adjusted to improve the ejection of heavy bales with a high moisture content.

1. Loosen the tension on the lower flat belts.
2. Move the first roller up for heavy bales. Move the first and second roller up for extremely heavy bales.
3. Tighten and track the belts.

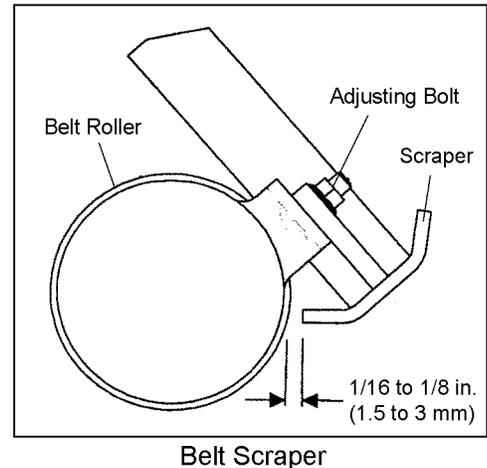


Bale Weight Adjustment

## Roller Scraper Adjustment

The roller scrapers are designed to remove material buildup from the rollers. Clean rollers have a longer service life and reduce the load. The scraper blades are mounted to carriers and do not need to be adjusted after the belt tension has been adjusted.

1. Loosen the belt tension so that the belt scrapers become accessible.
2. Loosen the adjusting bolts on the scrapers.
3. Adjust the scraper gaps to 1/16 to 1/8 in. (1.5 to 3 mm).
4. Tighten the adjusting bolts and recheck the scraper gaps. Tension and track the flat belts as required.



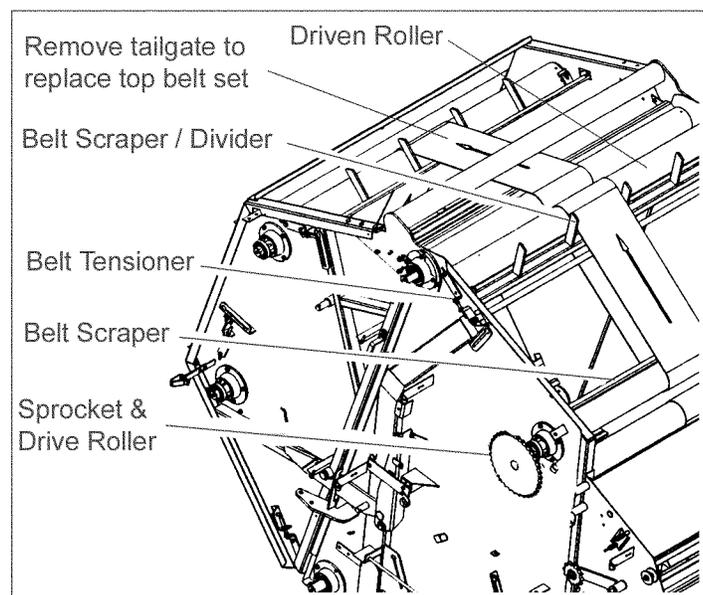
## Belt and Roller Replacement

**⚠ WARNING:** Lock the tailgate when it is necessary to work near a partially or fully opened tailgate. Follow proper shutdown procedures.

**IMPORTANT:** When replacing the top tailgate belts, remove the tailgate first (see **Tailgate Removal**).

Do not remove all rollers at the same time. Complete the installation of one set of belts before doing the next set.

1. Remove the drive chain and sprocket.
2. Loosen the locking screws on the belt tensioner before relieving the belt tension.
3. Remove the belt scraper at the drive roller.
4. Remove the bolts on the drive roller mounts and pull the drive roller partially through the hole in the baler wall.

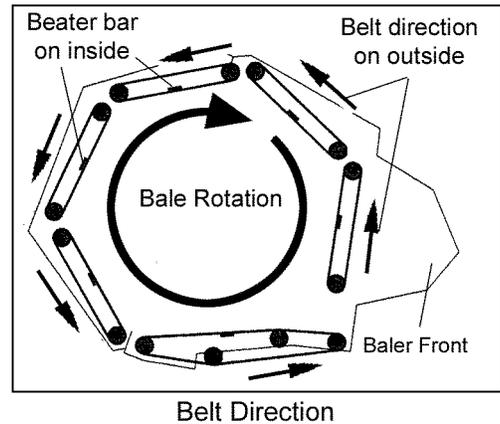


Belt / Roller Replacement

5. Remove the belt scraper/divider and driven roller.

6. Install the flat belts with the arrow pointing toward the travel direction. The beater bar must be on the inside of the belts. It is designed to chop and remove material that is wrapped around the rollers.

7. Check that all bolts are tight. Tension and track the belts as required.

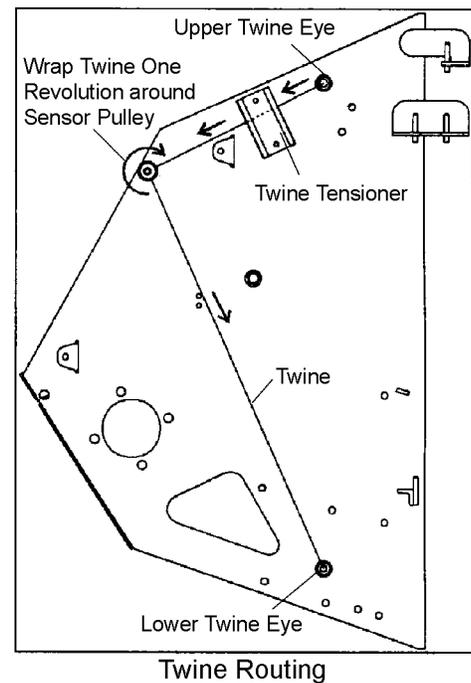


### Twine Tensioner

**Note:** The amount of spring pressure required depends on type and diameter of the twine.

The twine tensioners provide a braking effect to ensure that the bales are tightly tied. The twine tensioners are located behind both front side shields.

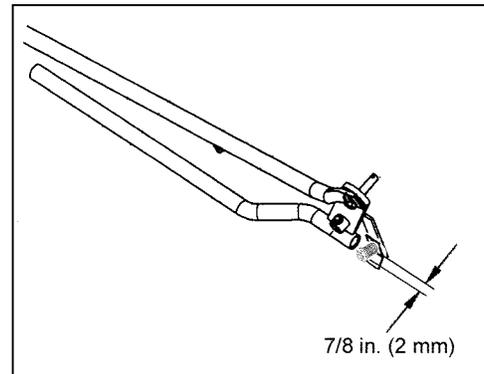
1. Check that the bales are tied correctly.
2. Check that the twine is wrapped one complete revolution around the sensor pulley.
3. Adjust the tensioner spring as required.
4. Repeat the above procedure on the other side.



## Twine Brake

The twine brake ensures continuous feeding of the twine after it has been cut. The twine brakes are mounted to the twine arms.

1. Remove the debris from the twine brake.
2. Adjust the spring height to 7/8 in. (20 mm) by turning the adjusting nut.
3. Check that the twine is placed under the brake plate.



Twine Brake

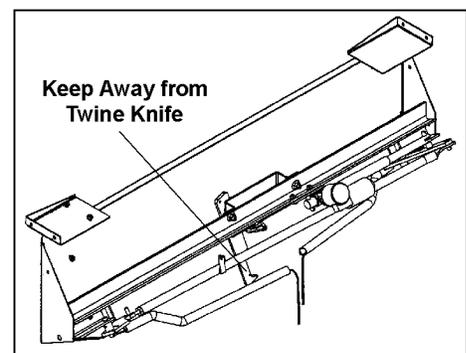
## Twine Arm Adjustment

**⚠ WARNING:** Follow proper shutdown procedure before servicing. This adjustment requires electrical power to the tie controller. Do not start the tractor engine.

**⚠ WARNING:** Keep away from the twine knife. Tripping the twine knife causes it to swing out quickly.

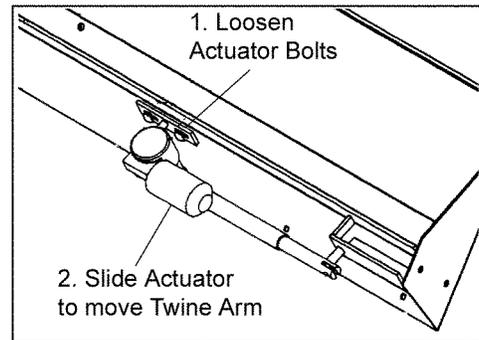
The twine arms must be adjusted so that the twine starts wrapping approximately 6 in. (150 mm) from the bale ends.

1. Move the baler to a proper work area and check that it is safe to work on.
2. Turn on the bale tie controller and move the twine arms out using the tie arm switch. Stop when the twine arm near the electric actuator is in the Total-out position.



Twine Knife

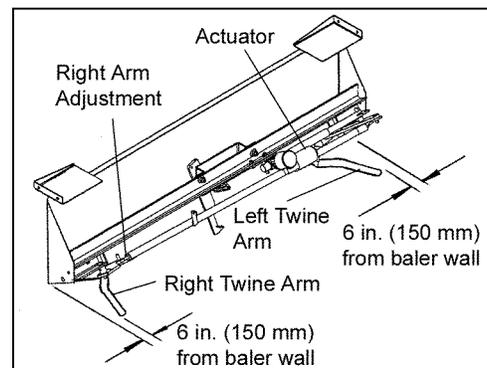
3. Loosen the actuator bolts and move the actuator so that the twine arm near the actuator is 6 in. (150 mm) from the baler wall. Tighten the actuator bolts.



Left Twine Arm Adjustment

4. Loosen the lock nut on the other arm. Adjust this arm so that it is 6 in. (150 mm) from the baler wall. Tighten the lock nut.

5. Move the twine arms to the Total-in position and check that they have free movement.



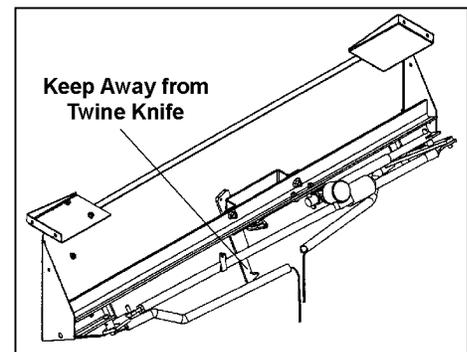
Twine Arm Adjustment

### Twine Knife Adjustment

**⚠ WARNING:** Follow proper shutdown procedures. Keep away from the twine knife. Tripping the twine knife will move it out quickly.

**IMPORTANT:** Adjust the twine arms **first** then do this procedure.

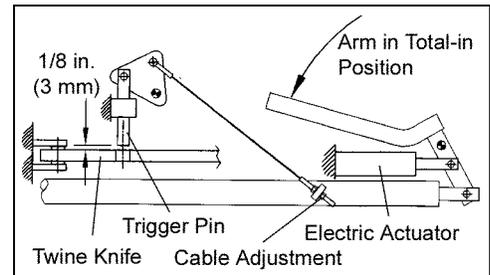
1. Move the twine arms to the Total-in position.



Twine Knife

2. Adjust the cable near the electric actuator so that the gap between the trigger pin and the twine knife is 1/8 in. (3 mm).

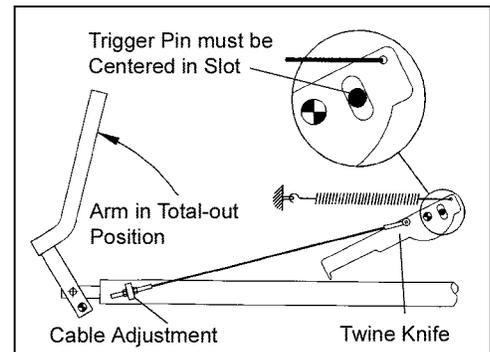
3. Move the twine arms to the Total-out position.



Knife Trigger Setting

4. Adjust the other cable so that the trigger pin is centered in the knife slot.

5. Check that the twine knife is operating properly.



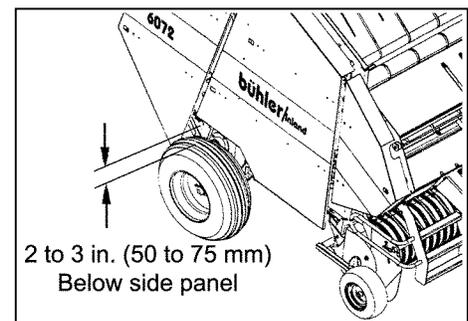
Knife Setting

### Axle Height Setting

**WARNING:** Move the baler to a proper work area. Check that the baler tongue is properly supported. Lift the baler with a jack that is suitable for this procedure. Support the baler on blocking. Do not attempt to crawl under improperly supported equipment.

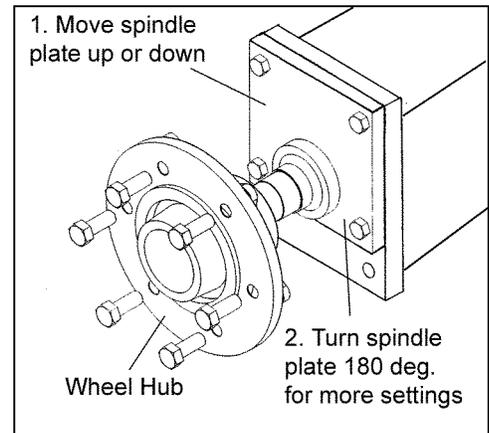
Raise the axle height under the following conditions:

- A. The tailgate fails to clear ejected bales
- B. The axle height interferes with the windrow
- C. The baler tongue height does not match the tractor's drawbar height



Standard Axle Height

1. Loosen the wheel bolts but do not remove them. Lift the baler and support it on proper blocking.
2. Remove the wheel. Remove the bolts on the spindle plate.
3. Slide the spindle plate up or down to create the proper axle height.



Axle Height Settings

**Note:** Additional axle height settings are available when the spindle plate is rotated 180°.

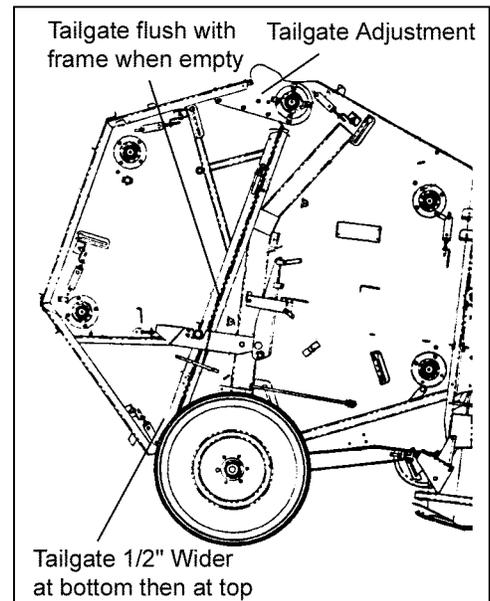
4. Reinstall all bolts and nuts.
5. Change the axle setting on the other side. Check that both axles are set at the same height.
6. Install the wheels, lower the baler and torque the wheel bolts to 106 ft-lbs. (144 Nm).

## Tailgate Adjustment

**⚠ WARNING:** Lock the tailgate when it is necessary to work near a partially or fully opened tailgate.

The tailgate should be adjusted so that it is flush with the tailgate frame when looking at the baler side. The tailgate should also be centered over the tailgate frame when looking at the baler rear.

1. Check that the baler is empty. Remove the debris as required.
2. Check that the tailgate is flush with the baler frame.
3. From the baler rear, check that the tailgate is centered on the tailgate frame. The bale chamber is  $\frac{1}{2}$ " wider at the bottom than at the top to improve bale ejection.
4. Adjust the tailgate at the hinges as required to correct any misalignment.



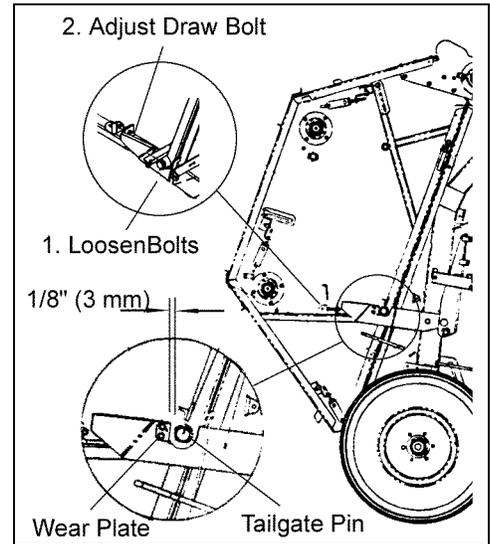
Tailgate Adjustment

## Tailgate Pin

**⚠ CAUTION:** The tailgate may get damaged if the tailgate pins are not set properly.

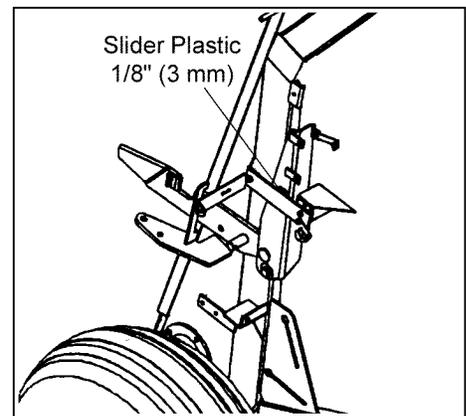
The tailgate pins need to be adjusted so that tailgate locks securely during the baling process. A pilot operated check valve is installed in the hydraulic line to ensure that the latches remain closed. Hydraulic pressure is required to open the latches.

1. Check that both tailgate latches are closed.
2. Check that the gap between the tailgate pin and the wear plate is 1/8" (3 mm).
3. Adjust the tailgate pin as required.



Tailgate Pin

4. Check the condition of the slider plastic which is located behind the sliding bar. It should be approximately 1/8" (3 mm) thick. Replace it as required.
5. Repeat the above procedures on the other side.



Density Lever

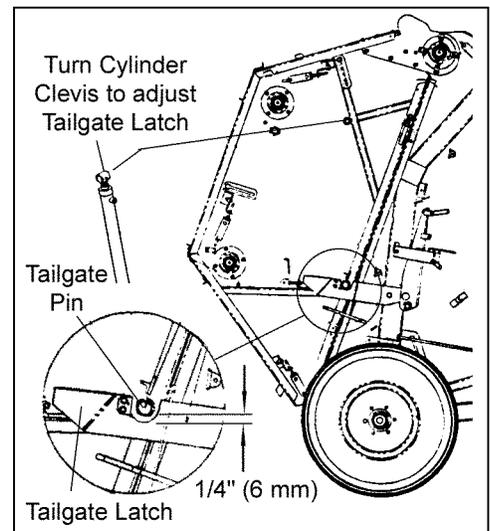
## Tailgate Latch

**⚠ CAUTION:** The tailgate may get damaged if the tailgate latches are not set properly.

**IMPORTANT:** Adjust the tailgate pins before doing this procedure.

The tailgate latches need to be adjusted so that tailgate locks securely during the baling process. A pilot operated check valve is installed in the hydraulic line to ensure that the latches remains closed. Hydraulic pressure is required to open the latches.

1. Check that both tailgate latches are closed.
2. Check that the gap below the tailgate pin and the latch is  $\frac{1}{4}$ " (6 mm).
3. Adjust the cylinder clevis as required to create the correct gap.
4. Repeat the above procedures on the other side.

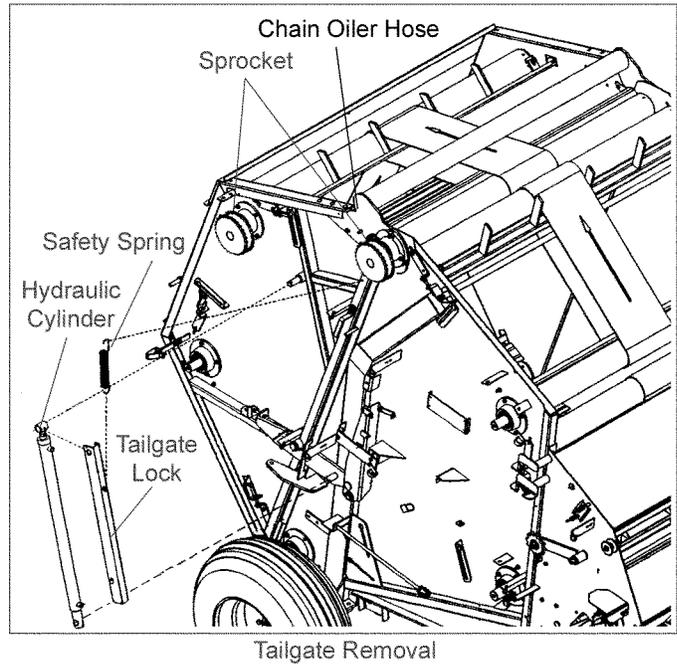


Tailgate Latch

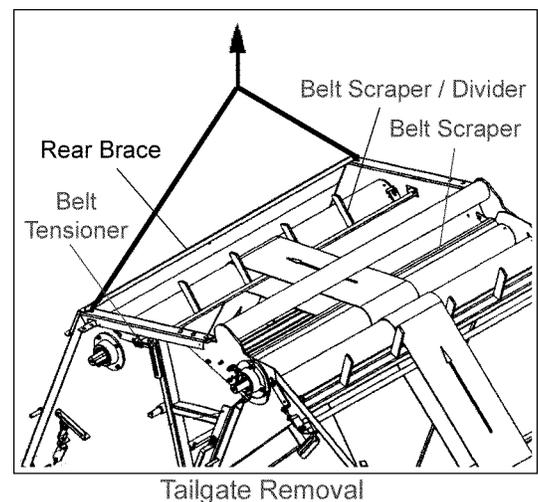
## Tailgate Removal

**⚠ WARNING:** Move the baler to a level and proper work area. Use an appropriate lifting device and attach it to a structural member that can support the tailgate weight.

1. Follow proper shutdown procedures. Remove the side shields.
2. Drain the hydraulic cylinders, plug the hydraulic fittings, and remove the hydraulic cylinders.
3. Remove the drive chains and sprockets.
4. Remove the chain oiler hose from the tailgate.



5. Remove the top bolts that secure the rear brace to the baler walls and install two proper lifting eyes through the bolt holes.

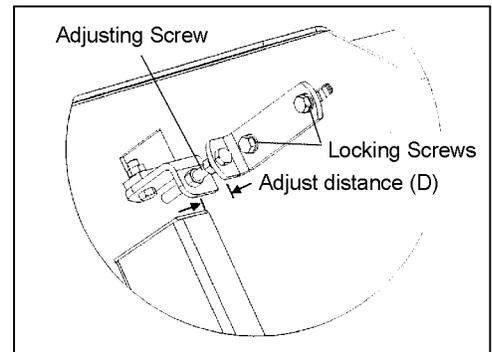


**⚠ WARNING:** The lifting eyes must have a load rating suitable for lifting the tailgate.

6. Attach a lifting device to the tailgate and remove the slack in the lifting chain so that the tailgate is secured.

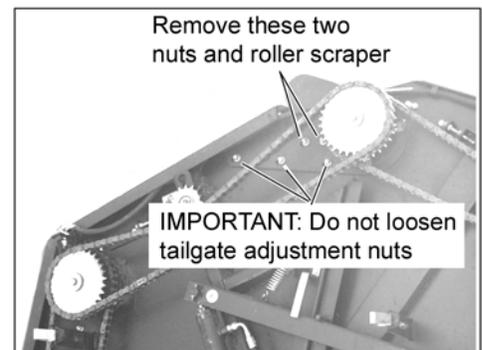
**⚠ WARNING:** Check that the tailgate is supported properly.

7. Loosen the locking screws on the belt tensioner before relieving the belt tension.



Belt Tensioning and Tracking

8. Remove the roller scraper near the drive roller. Do not loosen the tailgate adjustment nuts unless the tailgate requires adjustment.



Roller Scraper Removal

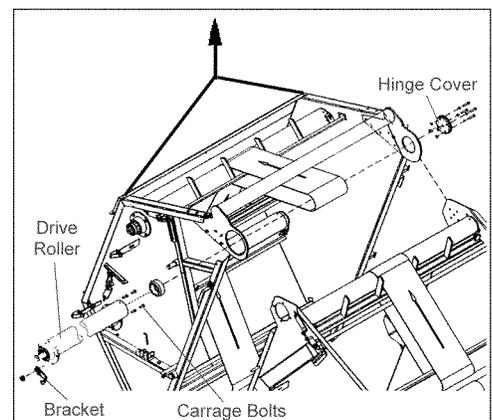
9. Lift the tailgate so that it is approximately one half to one quarter way open and block it securely.

10. Remove the hinge cover on the drive roller.

11. Remove the brackets on the drive roller and pull the roller out.

12. Lift the tailgate from the baler and place it on blocks with the rear facing up.

13. Replace the belts and roller as required.



Tailgate Removal

14. Reassemble the tailgate in reverse order. Install the flat belts before installing the drive roller.
15. Check that the baler is assembled correctly.
16. Do the following procedures in order:
  - a) **Tailgate Adjustment**
  - b) **Tailgate Pin and Latch Adjustments**
  - c) **Belt Scraper Adjustment**
  - d) **Chain Tension**
  - e) **Flat Belt Adjustment**
  - f) **Flat Belt Tracking**
17. Bleed the hydraulic system by lifting and lowering the tailgate several times.

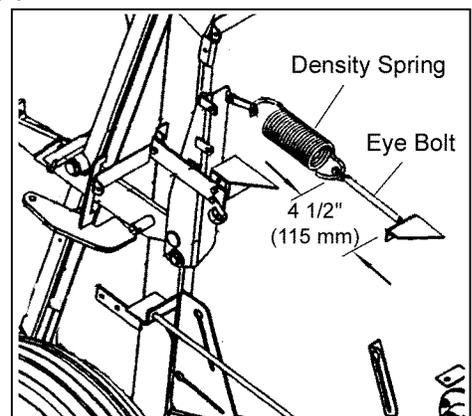
## Bale Density Control

**⚠ WARNING:** Follow proper shutdown procedures before servicing.

**IMPORTANT:** Make this adjustment with a completely finished bale inside the chamber.

The bale density springs are set at the factory to provide even pressure on both sides of the bale. Fine-tuning may be required if one side of the bale is consistently tighter than the other side, even though both sides were fed evenly during the baling process.

1. Stop the tractor and follow proper shutdown procedures.
2. Check that both tailgate latches are locked.
3. Increase the spring tension on the side where the bale density needs to be increased. Turn the nut on the eye bolt two complete revolutions. Note that a small change in spring tension, increases the bale density significantly.



Bale Density Control

- Resume operation and eject the bale. Check that the density indicators have moved to the yellow section on the density scale.
- Make another bale and eject it. Check that the bale density is uniform. Adjust the density spring as required.

## Bale Density Indicators

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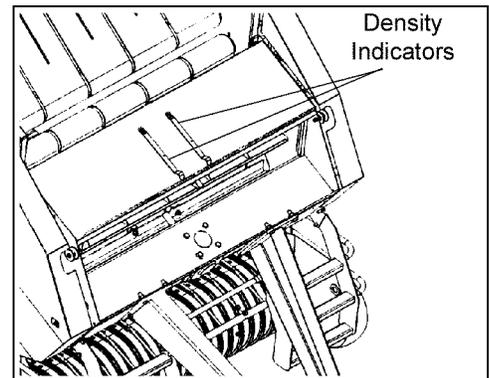
**⚠ WARNING:** Follow proper shutdown procedures before servicing.

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**IMPORTANT:** Make this adjustment with a completely finished bale inside the chamber.

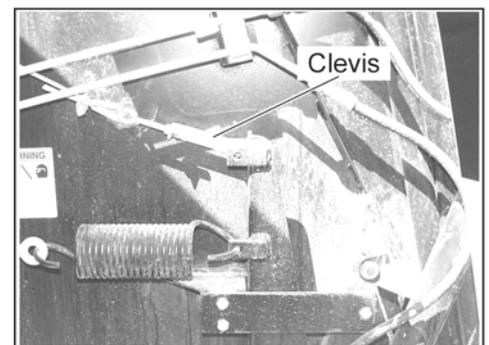
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- Check that the density indicators have free movement.



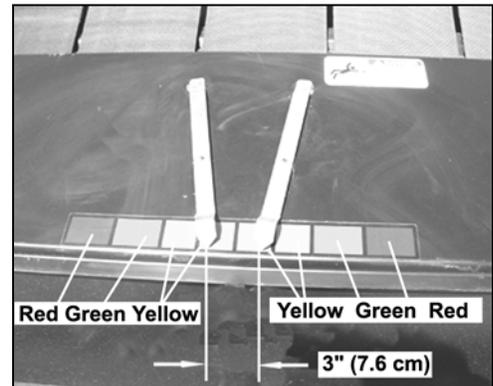
Bale Density Indicators

- Remove all debris from the indicator cables.
- Adjust the clevises as required to move the indicators into the green area on the density scale.



Indicator Adjustment

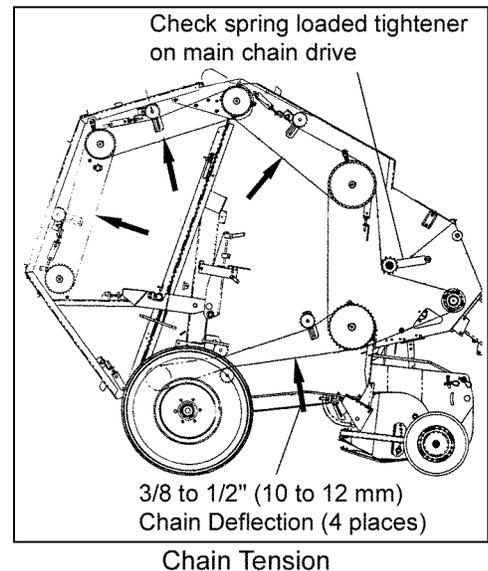
4. Resume operation and eject the bale. Check that the density indicators moved to the first yellow area on the density scale. They should be approximately 3" (7.6 mm) apart.



### Chain Tension (Flat Belt Drive)

If the tighteners do not provide enough adjustment, remove a full or half link from the chain. Install the closed end of the link coupler facing the direction of chain travel.

1. Check that the chains are properly lubricated with the automatic oiler.
2. Check the shaft bearings by wobbling each sprocket back and forth.
3. Check each chain and adjust them to a deflection of 3/8 to 1/2 in. (10 to 12 mm) at midspan.



**Note:** The main chain drive is automatically tensioned with the spring-loaded idler.

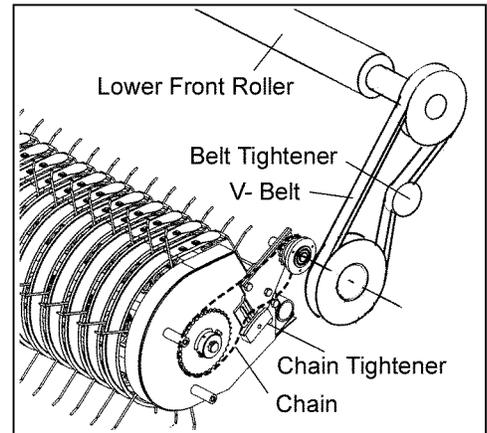
4. Check the spring-loaded tightener on the main chain drive.

**Pick-up Drive**

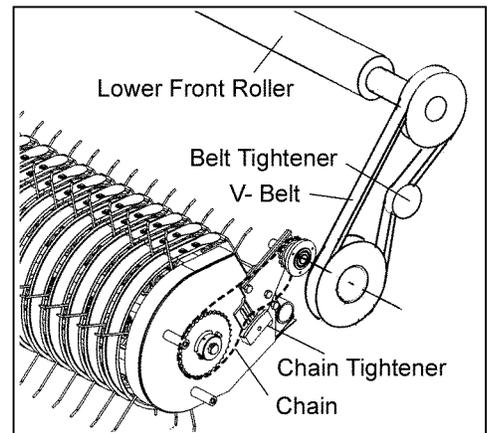
**IMPORTANT:** Do not use belt dressing on the V-belt because it shortens the service life.

The pick-up is driven with the lower front roller shaft using a V-belt and chain drive.

1. Follow proper shutdown procedures and remove the left front shield.
2. Check the belt deflection at midspan and adjust it as required. It should be  $\frac{1}{4}$ " (6 mm) with a force of 17 lbs. (7.7 kg).
3. Check the chain tension at midspan and adjust it as required. The deflection should be  $\frac{1}{8}$ " (3 mm) at the long span.
4. Check that all bolts are tight and reinstall the left front shield.



Pick-up Drive



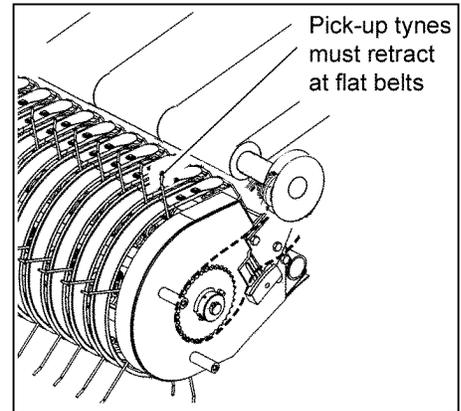
Pick-up Drive

## Pick-up Inspection

The pick-up reel is designed to retract the pick-up tynes when they rotate past the flat belts. The cam follower bearings must be checked periodically for proper operation.

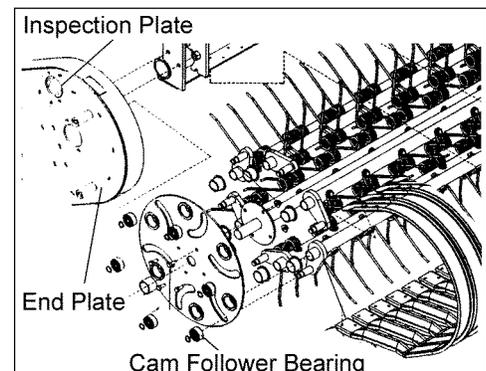
**⚠ CAUTION:** Failing to replace worn cam follower bearings may damage the pick-up.

1. Remove the right end plate located on the pick-up.
2. Remove the pick-up drive belt. Turn the pick-up by hand and remove all debris from the reel ends.



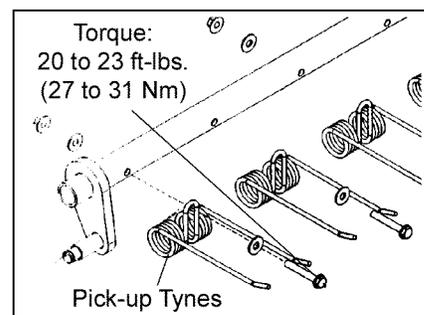
Pick-up Drive

3. Remove the inspection cover in the end plate and check the cam follower bearings. Replace any bearings that show signs of wear.



Pick-up Inspection

4. Check for broken pick-up tynes and replace them as required.
5. Torque the tyne bolts to 20 to 23 ft-lbs. (27 to 31 Nm).



Pick-up Tynes

## Bale Kicker

The bale kicker must be adjusted so that the ejected bales move away from the baler to allow the tailgate to close. Reduce the spring tension if the bale rests against the kicker or the kicker moves only a short distance downward.

**Note:** Model 6060 has one set of kicker springs. Model 6072 has two sets of kicker springs.

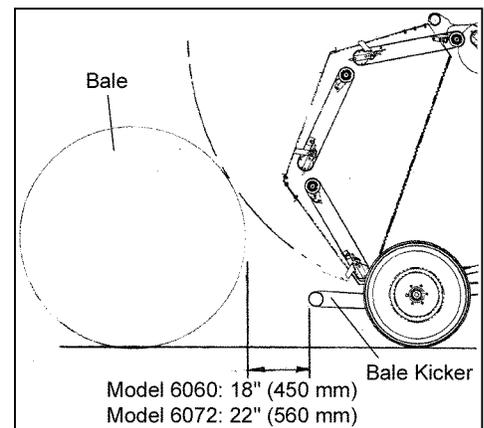
1. Loosen the locking nuts on the adjusting rods.



Bale Kicker Adjustment

2. Adjust the spring tension so that bales move away on level ground as noted.

3. Check that the spring tensions are equal by measuring each spring length. Tighten the locking nuts.



Bale Clearing

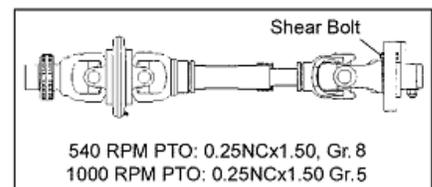
## PTO Shaft

If the pick-up stops turning when the tractor PTO is engaged, check the shear bolt on the PTO shaft.

1. Follow proper shutdown procedures and remove the PTO shield.

2. Rotate the PTO shaft until the shear bolt holes are aligned. Remove the broken shear bolt.

3. Install a new shear bolt as noted in the illustration.



Shear Bolt

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**HYDRAULIC SYSTEM**

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**⚠ WARNING:** Relieve the hydraulic pressure before servicing or disconnecting any hydraulic components. High pressure oil leaks may cause injuries. Wear protective clothing and eye protection when checking for hydraulic leaks.

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**⚠ WARNING:** Lock the tailgate when it is necessary to work near a partially or fully opened tailgate.

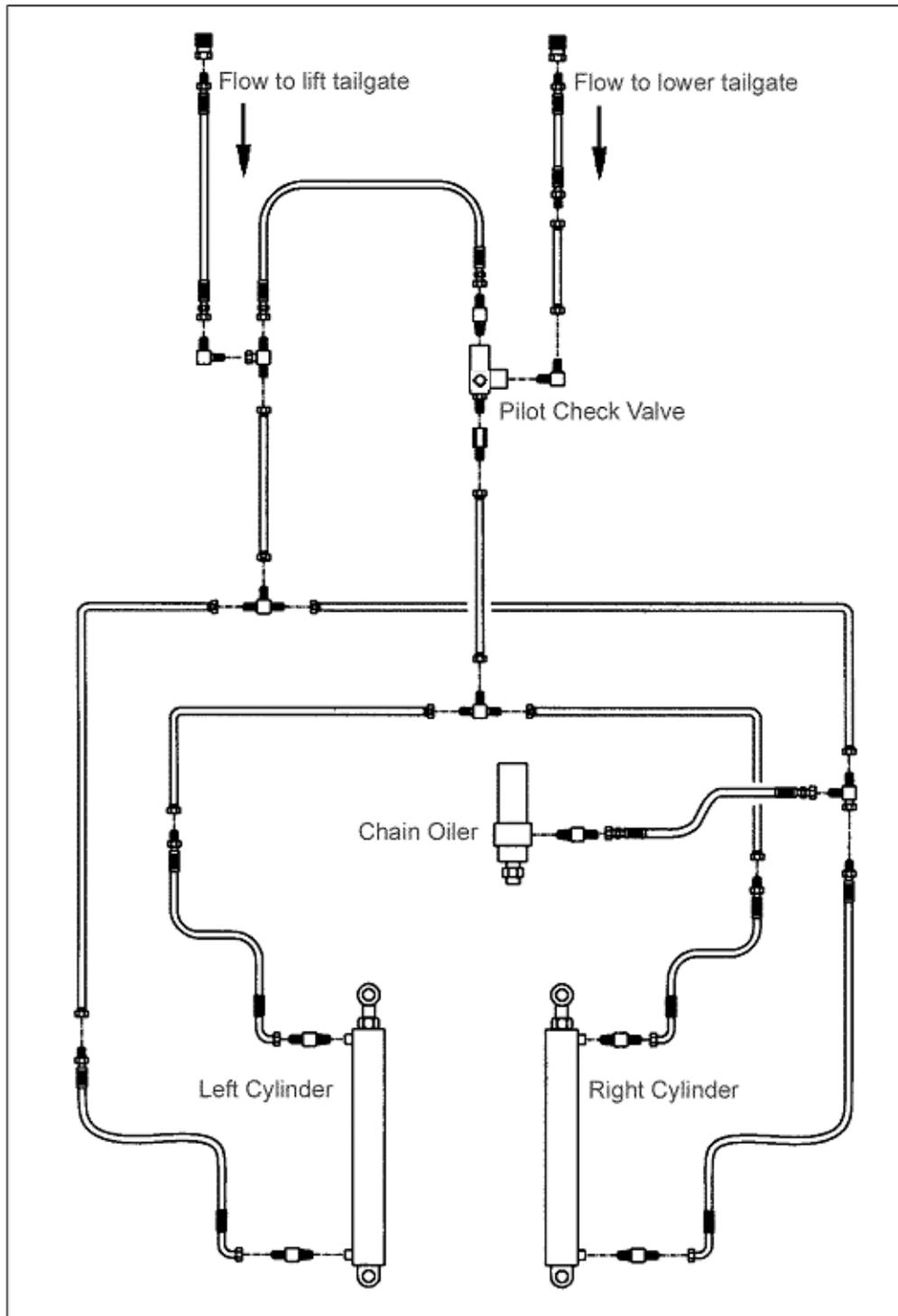
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The hydraulic system operates the tailgate and the chain oiler. Each time the tailgate is lifted, the hydraulic hose to the oiler becomes pressurized. The pressure moves the oiler's piston and ejects oil onto the chain drives. When troubleshooting, refer to the schematic drawing.

**Servicing the Hydraulic System**

Cleanliness is a primary means of assuring satisfactory equipment life. When performing service activities, protect all exposed surfaces from damage and foreign material. Clean parts with solvent and dry them with compressed air.

1. Keep the cylinder rods and quick couplers clean. These are the main source where contamination may enter into the hydraulic system.
2. Regularly check the fluid level in the tractor reservoir and follow the maintenance procedures in the tractor Operator's Manual.
3. Regularly inspect cylinders, hoses and fittings for leaks and damage.
4. Do not operate the baler with damaged or worn hydraulic components. Repair the equipment immediately.
5. Check that all components are in good working condition. Tighten any loose components.
6. Bleed the hydraulic system by lifting and lowering the tailgate several times.



Hydraulic Schematics  
(Viewed from baler rear)

**ELECTRICAL SYSTEM**

**⚠ WARNING:** Keep away from the twine knife. Operating the electrical actuator momentarily may set or trip the twine knife. Tripping the twine knife may cause it to swing out quickly.

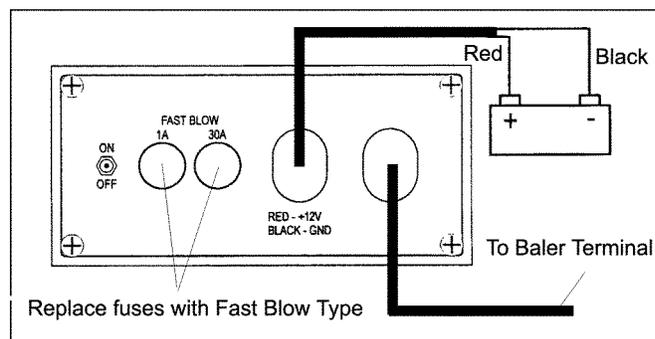
**⚠ WARNING:** Follow proper shutdown procedures and disconnect the electrical plug at the baler tongue, before inspecting or servicing the electrical actuator.

**⚠ CAUTION:** The baler has a 12 volt electrical system. Using higher voltage may damage the bale controller. Disconnect the bale controller before boosting the tractor battery.

The electrical system consists of the bale controller and electrical actuator. When the actuator moves the tie arms out, the twine knife is automatically set. When the tie arms move in, the twine knife is tripped.

**Electrical Troubleshooting**

Electrical problems usually stem from simple causes, such as loose or corroded connections, blown fuses or failed relays. Inspect the condition of the fuses in the controller and replace them as required with Fast Blow Type.



**Tie Controller Fuses**

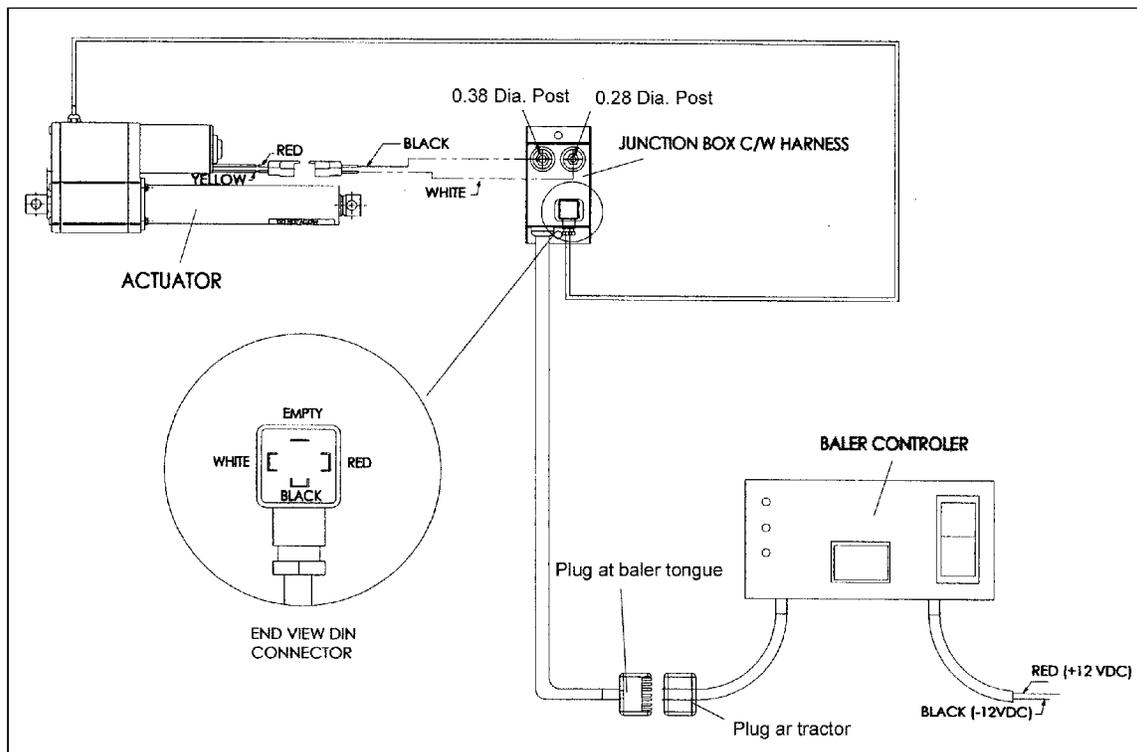
**Finding a Short**

One method of finding a short in a circuit is to remove the fuse and connect a voltmeter in place of the fuse. There should be no voltage present in the circuit. Move the wiring harness side-to-side while watching the voltmeter. If the voltmeter indicates current, there is a short to ground somewhere in that area.

### Finding an Open Circuit

When diagnosing for a possible open circuit, it is often difficult to locate them by sight because the connectors hide oxidation or terminal misalignment. Wiggling a connector or wiring harness may correct the open circuit condition. Intermittent problems may be caused by oxidized or loose connections.

### Calibrating the Electrical Actuator



Electical Schematic

Check the following with a multimeter when troubleshooting the electrical actuator.

1. Move the shaft out to full extension; the multimeter should read 0 (zero) volt (controller requires <0.04 volt).
2. Move the shaft to full retraction; the multimeter should read 2.5 volts.
3. For calibration, extend the shaft and allow it to rotate clockwise until the multimeter reads 0.0 volt. Allow the shaft to rotate clockwise during the extension. To align the shaft hole with the housing pin, rotate the shaft clockwise only. This way the potentiometer setting does not change.

**TROUBLESHOOTING**

This section contains solutions to common problems or malfunctions. If a problem arises that is not listed in this section, or if a problem remains after trying the recommended solution(s), please contact your dealer for further assistance.

<b>PROBLEM</b>	<b>PROBABLE CAUSE</b>	<b>SOLUTION</b>
Flattened windrow is not picked up.	Pick-up height set too high.	Adjust pick-up height by changing stop bolt and reset gauge wheel to maintain specified ground clearance.
Windrow material not gathered by pick-up.	Windrow is too wide for the pick-up.  Pick-up teeth are broken or missing.  Too much ground pressure on the gauge wheel.	Form windrow to a narrower width.  Replace teeth.  Raise gauge wheel to the specified height.
Material is pushed forward and does not fall back onto pick-up.	Short material.  Pick-up teeth are broken or missing.  Starting too quickly into heavy windrows.  Bottom belts and/or lower belts on tailgate are slipping.	Move windguard to lower position.  Replace teeth.  Slow tractor speed when entering heavy windrows.  Tighten belts to specified tension.
Pick-up doesn't work.	Loose or broken drive belt.  Worn or broken cam bearings.  Broken cam plate.	Adjust or replace belt.  Replace cam bearings.  Replace cam plate.
Material wrapped around roller.	Material is wet and sticky.  Beater bar on flat belt missing.	Check and adjust roller scraper. Replace flat belts.
Improperly formed bale.	Material incorrectly fed to the bale chamber during final stages of bale creation.	Observe bale density indicators to ensure equal density.  Use proper driving technique to evenly feed material into bale chamber.
Barrel shaped bales.	Too much material fed into center of baler.	Feed material to one side of the baler then to the other.
Conical shaped bale.	Baling on slope or side of hill.	Crowd windrow to upper side of bale.

<b>PROBLEM</b>	<b>PROBABLE CAUSE</b>	<b>SOLUTION</b>
Bale will not eject.	<p>Driving down incline.</p> <p>Too much pre-tension on kicker springs.</p> <p>Bottom belts slipping.</p> <p>Insufficient twine wrap on bales for baling conditions. Bales are expanding after tailgate opens.</p> <p>Heavy or dense material.</p>	<p>Turn baler crosswise to slope before ejecting.</p> <p>Eject on level ground.</p> <p>Adjust kicker springs tension.</p> <p>Adjust bottom belt tension.</p> <p>Increase number of start and end wraps and decrease spacing between wraps.</p> <p>Raise middle roller on bottom flat belt.</p>
Bale will not clear underside of tailgate.	<p>Baler is hitched too high lowering back of baler.</p> <p>Baler adjustable axle set too low.</p>	<p>Check and adjust hitch height.</p> <p>Raise adjustable axle.</p>
Forming belts stretching or breaking prematurely.	<p>Bale density too high for crop being baled.</p> <p>Forming belts are over-tensioned.</p> <p>Misaligned belts are fouling belt guides.</p> <p>Different belt lengths and tension.</p>	<p>Check and adjust density indicators.</p> <p>Recalibrate density springs (see your dealer).</p> <p>Check and adjust belt deflection.</p> <p>Check and ensure rollers are parallel.</p> <p>Check all forming belts for proper length and tension.</p>
Bale stops during formation.	<p>Bottom forming belts or lower belts on door are too loose.</p>	<p>Check and adjust belt tension.</p>

PROBLEM	PROBABLE CAUSE	SOLUTION
Twine not gripping properly.	<p>Twine tensioners are too tight.</p> <p>Twine is not catching and not running smoothly in the guides.</p> <p>Knife trip cable is set too short causing knife to trip too early leaving short twine tails.</p> <p>Twine arms outer position is set too close to the sidewalls. Twine arms are not allowed to move forward far enough in the "home" position leaving short twine tails.</p> <p>Material is slippery and will not grab twine.</p>	<p>Adjust twine tensioners to provide proper drag on twine.</p> <p>Use specified size and quality of twine.</p> <p>Adjust trip cable to obtain longer twine tails.</p> <p>Adjust twine arm outer positions to increase sidewall to arm distance and get longer twine tails.</p> <p>Initiate tie cycle sooner to allow twine to be picked up by material flowing into bale chamber.</p>
Twine not cutting properly.	<p>Dull knife blade and/or twine tensioners are too loose.</p> <p>Trip cable is set too long and is not tripping knife.</p>	<p>Replace knife blade and/or adjust twine tensioners.</p> <p>Adjust trip cable.</p>
Twine tube or electric actuator is not functioning properly.	<p>Electronic circuitry is faulty.</p> <p>Discharged or weak battery.</p> <p>Dirt accumulation.</p> <p>Twine tube movement is restricted.</p>	<p>Inspect and repair electrical connections.</p> <p>Recharge or replace battery.</p> <p>Clear away any accumulated dirt and material residue from actuator and electrical components and connections.</p> <p>Check movement of tubes. Ensure that linkages are not bent. Clear away any accumulated dirt.</p>
Twine arms stop in mid cycle or jerk but do not move.	<p>Twine motor retention screws have fallen off allowing drive gears to slip on each other.</p>	<p>Remove and disassemble actuator and replace the gear set. Use Loctite and tighten screws sufficiently.</p>

<b>PROBLEM</b>	<b>PROBABLE CAUSE</b>	<b>SOLUTION</b>
Tailgate opens during baling.	Tailgate is not locking correctly. Hydraulic cylinders are not retracting fully.	Ensure cylinders retract fully and engage latch rollers on tailgate.
	Excessive internal pressure.	Check hydraulic pressure.
	Internal cylinder leakage.	Check and repair cylinders.
Insufficient bale density.	Irregular material fed into bale chamber.	Maintain uniform feeding by using proper driving technique.
	Ground speed is too fast during final stages of bale creation.	Reduce ground speed.
Bales are too soft.	Tension springs require adjustment.	Readjust tension springs (contact your dealer for large adjustments).
Baler stops operating.	Shearbolt failure.	Replace shearbolt and open tailgate slightly before tying.
	Incorrect grade shearbolt.	Use proper shearbolts.
	Excessive build-up on scrapers and belts.	Clean and reset scrapers and belts.
Baler emits high-pitched noise when baling.	Tractor RPM dropping off when finishing bale.	Slow tractor ground speed while keeping RPM up.
	Scrapers are contacting roller.	Adjust scraper clearance.
Twine tie controller does not work.	Power switch is off.	Turn switch <i>ON</i> .
	Blown fuse.	Replace fuse.
	Low or no electrical power.	Check connection to battery. Check battery and cables and repair or replace if necessary.
Baled material plugs between the front housing and front belts.	Windguard travel is too great.	Adjust stop bolt in end panel to limit travel.
	Bottom or rear belts are not turning.	Tension bottom and rear belts so that they turn over material fed into the bale chamber.
Twine arms hit knife during the tie cycle.	Stop bolt is missing from the windguard travel slot, allowing the windguard to travel too high.	Replace stop bolt and adjust to limit windguard's upward travel.

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