Performance Tips
New Holland BR Series Round Baler
Introduction

Thank you for taking the time to participate in this New Holland round baler customer clinic. Our goal is to enhance your awareness of product features and function, as well as certain maintenance procedures and products that will prolong the life of your baler.

We have included information in these Performance Tips that will be helpful in operating and maintaining your New Holland baler. Your Operator’s Manual will include most of this information, however some helpful hints and operating suggestions in this booklet have been assembled by listening to the experiences of baler owners just like you. If your baler is operated or maintained by more than one person, be sure to share helpful hints in this booklet with all operators to keep your machine working at top efficiency. While this information will prove helpful in achieving top performance we remind you that it is not a replacement for your Operator’s Manual.

At New Holland, we want to see you achieve a level of performance and reliability that exceeds your expectations, and confirms the belief that you have purchased the best round baler available. What makes a New Holland BR baler so special? Let's take a look—
We value our customers, and hope that each baling season is safe and productive. Sometimes, in the rush to beat the weather, start chores, or avoid missing the first inning of the softball game, safety vigilance fails—and the risk of an accident soars. Never attempt to save a moment by compromising safety, the result can cost more time than ever was saved—and sometimes the cost may be immeasurable.

The Operator’s Manual contains a comprehensive list of safety rules for your BR Series baler. Please take a few moments to review the entire list. We've listed some of the most important here.

**General Safety Rules**

- Read the Operator's Manual thoroughly before starting, operating, servicing or carrying out any other operation on the machine. The time invested in reviewing the manual will pay off in terms of time saved later.

- Read all the safety decals on the machine and follow the instructions. Immediately replace any decals that are missing or damaged.

- The baler should be operated only by responsible individuals, who are familiar with the machine.

- Avoid fire hazards by keeping the baler clean. Inspect the unit daily for signs of hydraulic leaks, and have leaks repaired before further use.

- A fire extinguisher should be mounted on the baler, easily accessible from the ground and away from moving parts and areas where debris is likely to accumulate. The presence of hydraulic and lubricating oil dictates that an ABC extinguisher is the best choice.

- Though not directly related to baler operation—a word of caution about handling large bales. Every year, individuals are injured when using incorrect methods of handling that do not completely restrain and control the weight of large bales. Use the correct spear or grapple equipment to handle bales. Refer to loader or bale carrier Operator Manuals for correct bale handling methods.

**Baler Hookup, Transport and Field Operation**

- Before connecting the baler to the tractor, be sure the tractor meets minimum horsepower requirements and is ballasted to control the weight of the baler, especially when operating in hilly terrain.

- DO NOT enter the area between the tractor wheels and the baler when the tractor engine is running.

- Be sure the tractor drawbar capacity is sufficient for the baler tongue weight. The hitch pin must be securely cross-pinned, and the safety chain properly connected to the tractor before road transport. Check warning lights before entering a public roadway.

- When transporting the baler on a public road, fully raise the pickup, and engage the flywheel brake. Raise the bale chute to close the bale chamber.

- Always use SMV sign, flashing warning lights, and turn signals when transporting the machine on public roads.

- Maintain a safe speed when transporting and maneuvering the baler in traffic. Be constantly aware of the size and weight of the towed baler. DO NOT transport the baler with a bale in the chamber.

- DO NOT work around the baler wearing loose clothing that could get caught in the moving parts.

- Prior to operating the baler, assure that all guards and covers provided are properly installed, including PTO shaft shielding.

- Never allow anyone to ride on the baler or the tractor. Keep children away from and off the baler at all times.

- Prior to engaging the PTO, always make sure there are no bystanders nearby. Sound a warning with the tractor horn as an added precaution.

- Always operate the baler at a safe speed, especially when on uneven ground or inclines. Use particular care when turning on hillsides or near embankments.

- Always make sure that the area behind the machine is clear before ejecting the bale.
SAFETY

Baler Hookup, Transport and Field Operation (cont.)

• Keep hands, feet and/or garments away from moving parts. ALWAYS DISENGAGE THE PTO AND STOP THE TRACTOR ENGINE before attempting service, adjustments or clearing the baler of crop or debris. DO NOT dismount the tractor until all machine rotation has stopped. Remove the ignition key from the tractor when leaving the equipment unattended.

• If the baler is equipped with a Crop Cutter™ or BaleSlice™, use special care when working in the area near the cutter knives. Lower the knives out of the feeder area using the tractor hydraulic valve prior to servicing or removing crop from the feeder.

Machine Maintenance

• When adjusting, cleaning, lubricating or performing repairs, the baler must be completely stopped. Disengage the PTO, and stop the tractor engine.

• If the gate is opened for service operations, close the gate lock valve before entering the area under or near the gate.

• Always block the baler wheels and set the tractor parking brake before working on or under the machine.

• When working on the hydraulic system, always ensure that the system is not under pressure before disconnecting pipes and/or hoses.

• When servicing belts or rollers, tension must be removed from the belts. Use the procedure detailed in the Operator's Manual to relieve belt tension.

• Oil escaping under pressure can be injected into the skin and cause serious injury. When searching for oil leaks, wear safety glasses and use a piece of wood or cardboard to locate high-pressure leaks. NEVER use your hands to detect an oil leak.

• When servicing or repairs are complete, make sure that all guards are in place.

BASIC CONFIGURATION SPECIFICATIONS

The BR series of Round Balers are offered in two basic bale widths 46.5” (nominal 4’) and 61.5” (nominal 5’). Minimum bale diameter is 30” on BR730, and 36” on all other models.

Maximum nominal bale size, in feet, for all models is 4 X 4 (BR730); 4 X 5 (BR740); 4 X 6 (BR750); 5 X 5 (BR770); and 5 X 6 (BR780).

Four pickup variations include SuperSweep™, UltraSweep™ and two sizes of Wide Pickups. Pickup style and width are matched to baler size and specialty function for optimum crop movement from stubble to the baler.

High-moisture models are offered in the BR730 high moisture, BR740 Silage Special and BR750 All-Purpose. A rotor-cutter is available in the BR740 Silage Special.

BaleSlice is available in the BR740 Silage Special and BR780.

A stuffer feeder is available on all models except the BR730. All BR models are equipped for twine wrapping. The BR730 uses a single arm, double twine electrically actuated system. All others except the BR750 All-Purpose have standard dual arm twine AutoWrap™ twine system. AutoWrap can be equipped with the AutoWrap monitor, which includes bale shape and size indicators, and full bale alarm.

Bale Command Plus™ offers programmable twine and net placement. Bale Command Plus is available on all models except BR730, and is standard on the BR750 All-Purpose. The net wrapping system can be used with Standard-width net that covers the outer bale surface. The BR EdgeWrap™ system provides clearance for wider net to wrap around the outer edges of the bale for improved appearance, weather resistance and handling characteristics.
Take Full Advantage of its Capabilities

- Getting the most from your New Holland baler is the purpose of this booklet.
- New Holland wants to help owners achieve peak efficiency from all of their equipment.

Have you, or someone you know, purchased a new baler in the last few years and continued to use it in much the same way as the baler it replaced? Many times we fail to take advantage of the advanced features available on today’s modern equipment, such as Bale Command Plus. As a result the owner may not be getting all the value from the money spent.

Many of the items suggested in this booklet can be completed by the owner when preparing for the season or by the operator when starting a new field. Other adjustments, service procedures, or repairs might be more effectively completed by your dealer’s trained service technicians.

New Holland Maintenance Inspections — prepare your baler for peak performance

Ask your New Holland dealer about New Holland Maintenance Inspections. It is a proactive way to be sure your baler will operate at its best possible performance in demanding conditions.

New Holland Maintenance Inspections include a visual and functional inspection of your baler. They can be used as a pre-season or as a post-season tune-up. Benefits include:

- Increased productivity
- Less downtime during the season
- Lower operating costs
- Improved fuel economy
- Documented maintenance
- Serviced by New Holland-trained service professionals
- Serviced with Genuine New Holland lubricants, kits, and parts

The combined advantages of New Holland Maintenance Inspections should result in a lower cost of ownership and higher resale values.

Documented Service Promotes High Resale Value

When you schedule your equipment for annual maintenance inspection services, your New Holland dealership places annual Service Plus Maintenance decals on your equipment after each inspection (see figure 5.1), distinguishing your commitment to keep your machines running in top condition. Not only does annual maintenance support your productivity in the field, each decal symbolizes completed service—which may increase the resale value of your equipment.

Because New Holland technicians use New Holland Maintenance Inspection Checklists for each inspection, you can rest assured that the service is thorough and nothing is overlooked.

Figure 5.1
## SERVICE INSPECTIONS

### BR Series Round Balers

Ask your dealer about performing a New Holland Maintenance Inspection service to keep you up and running!

### Checklist

<table>
<thead>
<tr>
<th>Safety Equipment</th>
<th>Replace/ Adjust</th>
<th>Bale Chamber and Gear Box</th>
<th>Replace/ Adjust</th>
<th>Miscellaneous</th>
<th>Replace/ Adjust</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Flasher Lights</td>
<td>○ ○</td>
<td>2. Gearbox Oil Level (change if after specified number of bales)</td>
<td>○ ○</td>
<td>2. Electrical Connections</td>
<td>○ ○</td>
</tr>
<tr>
<td>5. Fire Extinguisher? Yes ○ No ○</td>
<td>○ ○</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Pickup Area

<table>
<thead>
<tr>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track, Cam Bearings, and Augers</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>2. Pickup Drive Chain Condition and Tension</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>3. Auger Drive Chains</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>4. Overrunning Clutch Function and Adjustment</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>5. Pickup Flotation Adjustment</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>6. Stuffer Drive Chain Condition and Tension</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
</tbody>
</table>

### Tie-Off System

<table>
<thead>
<tr>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twine Knife Condition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>Twine Routing Tube Condition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>Twine Tube Breakaway</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>Twine Cut-off Adjustment Mesh Wrap (if equipped)</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>5. Roller Condition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>6. Cam Bearings</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>7. Hold-down Arm Adjustment</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>8. Brake Pad</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>9. Cut-off Knife Condition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Starting Roll Flap Condition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>6. Starter Roll Drive Chain</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>7. Sledge Roll Drive Chain</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>8. Sledge Slip Clutch</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>9. Main Slip Clutch/ Shear Bolt (PTO)</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>10. Rotor Drive Chains (if equipped)</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>11. Roller Bearings</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>12. Bale Shape Sensing Function (if equipped)</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>13. BaleSlice Operation/ Knife Condition (if equipped)</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
<th>Replace/ Adjust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twine Tube Breakaway</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>Twine Cut-off Adjustment Mesh Wrap (if equipped)</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>5. Roller Condition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>6. Cam Bearings</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>7. Hold-down Arm Adjustment</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>8. Brake Pad</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>9. Cut-off Knife Condition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
</tbody>
</table>
Bale Command Plus

The Bale Command Plus baler control monitor gives the operator in-cab control or display of bale size, bale shape, net or twine wrap, number of wraps, wrap pattern, BaleSlice knives, and crop cutter knives. Bale Command Plus is required to control net wrapping on the BR series balers.

The operation of the monitor divides controls into 6 basic areas of function. These functions are illustrated in terms of touchpad control grouping, identification and control action explanation (see figure 7.1).

![Figure 7.1](image-url)

- **Visual Alarm**: Turns the Net-Twine Wrapper system on and off
- **Wrap Control**: Toggles between system Setup and Diagnostic modes
- **Bale Counting**: Toggles between Automatic and Manual operation of the Wrap system
- **Twine or Net Actuator**: Toggles between wrapping bales with Net and Twine
- **Clear**: Manually starts wrap cycle
- **Clear Daily**: Clears daily bale counts, turn off audible alarm and error message displays
- **Toggles**: Toggles between Daily and Total bale counts
- **Adjustment Controls**: Manually retracts twine or net actuator
- **Basic Control**: Display or change pre-set bale diameter
- **Adjustment Controls**: Display or change number of wraps of twine or net
- **Adjustment Controls**: Increase bale diameter or number of wraps values
- **Adjustment Controls**: Decrease bale diameter or number of wraps values
- **Turns**: Turns the BaleSlice feature on and off
- **Adjustment Controls**: Manually extend the BaleSlice knives
- **Adjustment Controls**: Manually retract the BaleSlice knives

Figure 7.1
The Bale Command Plus Monitor display window provides the operator with indicators for modes of operation (Twine or Net, Automatic, Manual), bale status (Full Bale, Wrap Bale, Eject Bale), and system status or position (Tailgate latch, slice/cutter knives, Actuator (Twine, Net insertion)). Indicator triangles may flash or be displayed steady depending on the current status of the specific system (see figure 8.1).

The display window format adjusts for each type of information that is placed in view. The more commonly displayed information is shown, along with the basic keystroke commands that are used to enter the display mode and make value changes.

**Bale size**

- **Check** Bale Size—press the “Bale Size” button, Bale Size displayed for 2 seconds after releasing button (see figure 8.2)

- **Change** Bale Size—press and hold the “Bale Size” button, use + and - keys to change size

**NOTE:** Display returns to previous data 2 seconds after releasing the Bale Size button.
Number of Net Wraps

- Must be in Net mode
- Displayed in quarter wrap steps (see figure 9.1)
- Check Number of Wraps—press the “Number Wraps” button, Number of wraps displayed for 2 seconds after releasing button
- Change Number of Wraps—press and hold the “Number Wraps” button, use + and - keys to change Number of Wraps

**NOTE:** Display returns to previous data 2 seconds after releasing the Number Wraps button.

Number of Twine Wraps

In twine wrap mode, three pre-programmed wrap selections are available standard with the Bale Command Plus system. The number of end wraps can be temporarily changed within these selections, and returns to the pre-programmed number when the wrap selection is changed. In addition, the operator can program a custom wrap selection if the pre-programmed selections are not suitable for a specific application. The number of wraps is time-based, and assumes the baler is operating at Rated PTO RPM during the wrap cycle.

- Must be in Twine mode
- Displayed with wraps on left, end wraps on right (see figure 9.2)
- Check Number of Wraps—press the “Number Wraps” button, Number of wraps displayed for 2 seconds after releasing button
- Change Number of Wraps—press and hold the “Number Wraps” button, use + and - keys to change Number of Wraps selection

**NOTE:** Display returns to previous data 2 seconds after releasing the Number Wraps button.

Change Number of Twine End Wraps

- Must be in Twine mode
- Press and release “Number Wraps” button (see figure 9.3)
- While display is showing number of wraps, press and hold the Number Wraps button.
- Display will show only end wraps at right side of window, use + and - keys to change Number of End Wraps.

**NOTE:** Display returns to previous data 2 seconds after releasing the Number Wraps button.
**BAKER MONITOR FUNCTIONS**

**Change to Custom Wrap Pattern**
- Must be in Twine mode
- Change to Custom Pattern—press and hold the “Number Wraps” button, use + and - keys to change to “PAt 4” selection *(see figure 10.1)*
- Refer to Operator’s Manual and Monitor Setup section to program custom pattern.

**NOTE:** Display returns to previous data 2 seconds after releasing the Number Wraps button.

**Bale Counts**
- To read Daily Bale count—press and release “Bales” button. Daily count will be displayed for 2 seconds after releasing button
- To read Total Bale count, press and hold “Bales” button while Daily count is displayed to read Total Bale count *(see figure 10.2).*

**Clear Daily Bale Count**
- Press and release “Bales” button. Daily count will be displayed for 2 seconds after releasing button.
- Press “Clear” button while Daily count is displayed.
- Total Bale count CANNOT be cleared.

**Error Message**
- Audible alarm will sound if malfunction occurs and “Error” message is displayed.
- Press “Clear” button to turn audible alarm off *(see figure 10.3).*

**SELECTING TWINE WRAP PATTERN ON AUTOWRAP BALERS**
- Balers with AutoWrap twine wrap system—up to four patterns can be selected by changing the twine drive sheave combinations for the twine arm drive sheaves *(see figure 10.4).*
Connecting the Baler to the Tractor

Baler performance can be directly affected by certain tractor adjustments. Prior to connecting the baler to the tractor, take some time to assure tractor conditions meet the following standards. Specific details for each step are in the Operator’s Manual.

- Tractor meets minimum size requirements. Consider crop cutter power requirements, if equipped; and assure the size and weight of the tractor is sufficient to control the weight of the baler, especially on grades and inclines (see table 11.1).

- Adjust the tractor tread width so the wheels do not run over the windrow. Use a tractor with sufficient ground clearance to prevent crop from snagging and bunching on the underside of the tractor.

- Refer to figure 11.1 for measurements to assure the correct drawbar-to-PTO shaft dimensional relationship position prior to connecting the baler hitch and PTO shaft.

- Three-point hitch lower arms should be removed if at all possible to avoid the possibility of driveline damage due to contact with the hitch arms.

- Install the hitch pin from the bottom up to reduce crop snagging. Use 1- or 1-¼" diameter by 6" long pin or bolt. Install the safety chain as specified before road transport.

- Move the jack to the operation storage position.

- Verify the correct PTO shaft length after the baler hitch is connected to the tractor drawbar. See instructions in the Operator’s Manual to assure adequate operating clearance.

- Connect the hydraulic hoses to the tractor couplers. Up to four circuits may be required, depending on baler features. The hose connector covers are color coded for ease of connection:
  - **Black** - Double-acting tailgate lift
  - **Green** - Single-acting pickup lift circuit
  - **Red** - Double-acting crop cutting knife retraction
  - **Blue** - Double-acting rotor reverser circuit

- The tractor hydraulics should have a minimum flow of 9 GPM to assure acceptable tailgate cycle time.

- Make necessary electrical connections for the baler monitor, as well as transport warning and turn signal lights (see figure 11.2).

- Refer to the Operator's Manual for correct wiring connections for the monitor, depending on the type of tractor electrical system.

- Newer tractors have a mating lighting connector, with wiring compatible with the baler circuits. Older tractors may require addition of wiring connections for proper lighting operation.

### Table 11.1

<table>
<thead>
<tr>
<th>PICKUP WIDTH</th>
<th>MIN INSIDE TIRE CLEARANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4' STD</td>
<td>55&quot;</td>
</tr>
<tr>
<td>5' STD</td>
<td>70&quot;</td>
</tr>
<tr>
<td>1.5 m wide</td>
<td>70&quot;</td>
</tr>
<tr>
<td>1.8 m wide</td>
<td>80&quot;</td>
</tr>
<tr>
<td>2.1 m wide</td>
<td>92&quot;</td>
</tr>
</tbody>
</table>

### Figure 11.1

- 356 mm (14") FOR 540 RPM
- 406 mm (16") FOR 1000 RPM
- 152 to 305 mm (6" to 12")
- (203 mm (8") RECOMMENDED)
- AT LEAST 25 mm (1") FROM GROUND
- 330 to 508 mm (13" to 20")
- FROM GROUND (381 mm (15") RECOMMENDED)

### Figure 11.2

1. Ground
2. Not used
3. Directional, left
4. Brake lights
5. Directional, right
6. Tail lights
7. Not used
Loading Twine

Twine used in a round baler application is less demanding than that for square balers, however, quality twine of consistent thickness and strength is important in maintaining bale integrity, especially with repeated handling and long-term storage.

One twine box is mounted on each side of the baler. Twine loading is similar on twine-only and twine-net balers.

- Each box holds three balls of twine
- Thread inside loose end of front ball through wireform or angle guide above the ball, then through twine tension clamp
- Thread twine out of front of twine box.
- Twine tension adjusted to 8-12 lb. pull. Twine too tight may not start properly. Twine too loose may be loose on bale and may not cut properly.

Route twine around idlers below front end of twine boxes.

- Through twine guide above idler
- Through twine guide below idler (see figure 12.1)

At center of baler, route twine:

- Through ring on bottom side of cross-tube
- Through guide on twine tube mounting bracket
- BR740 and BR750 have additional guide on twine tube (see figure 12.2)

Threading twine out of twine arm:

Units with “bullet” type twine retainer—

- Push bullet retainer bolt toward spring, or push bullet sideways to create clearance between bullet and ring
- Pass twine between bullet and ring, out end of twine arm (see figure 12.3)

Units with “spring clip” type twine retainer—

- Feed twine through guide ring approximately 10” back from end of twine arm
- Make sure twine is under tabs between the ring and end of twine arm
- Use the special tool to place twine between spring clips out the end of the twine arm (see figure 12.4)
- Pull about 18” of twine out of the twine arm
- Place the twine between the twine knife and striker (see figure 12.5)
Loading Net

Several types of wrapping material can be used with the BR series baler wrapping system. Standard width and wide width net wrap can be used to provide a neat bale that has a high degree of weather resistance, and retains bale integrity with repeated handling and extended storage.

Refer to table 13.1 for net roll and center tube width specifications. The wrap material must be oriented so the material comes off the top of the roll when installed in the baler. The inner diameter of the tube toward the right side of the baler may require trimming to fit over the mounting shaft.

When working with the wrap mounting shaft, be aware that the ‘Round tooth grippers’ on the right end of the shaft are somewhat sharp, and could cause injury if contacted carelessly (see figure 13.1). These are designed to grip the cardboard tube to allow proper function of the net wrap brake that is mounted on the shaft.

To load net into the baler:

• Rotate the brake drum until the locking pin aligns with the hole in the drum. Move the locking pin into the hole.

• Release the latch and swing the net roll mounting shaft outward

• Remove the hairpin cotter, washer and plastic cone from the left end of the mounting shaft. Rotate the used core counterclockwise to disengage the grippers. Remove and discard the core.

• Slide the roll of net onto the shaft with the loose end coming off the top of the roll. As you slide the roll of net over the right end of the shaft, rotate the core counterclockwise to slide over the round tooth grippers. Slide the net far enough onto the shaft to center it in the bale chamber, then install the plastic cone and washer on the left end of the shaft.

• Release lock pin from the brake drum

To route net from the roll to the net insertion duckbill:

• Free the end of the net on the roll, and pull out 4-5’ of net

• The net passes over spiral-wrapped spreader rolls (see figure 13.2). The spirals pull the net outward to the ends of the bale, pulling the net tight over the width of the bale. If net is not spread across the full width of the rolls, it will spread out while wrapping the first bale. Add an extra wrap on first bale to allow full width wrapping after the net is spread.

Route the net as shown in figure 14.1:

• Over the smooth roll

• Under the lower spreader roll

• Over the top spreader roll

• Around the front of the center spreader roll

• Into the duckbill

• Use the tool to push the net through the duckbill

• Leave 2-3” of loose tail of net hanging out from the bottom of the duckbill. Pull any excess net length toward the front of the baler, away from the knife.

<table>
<thead>
<tr>
<th>BALER MODEL</th>
<th>BALE CHAMBER WIDTH</th>
<th>MAX. WIDTH OF NET OR TUBE</th>
<th>MIN. WIDTH OF NET OR TUBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR740/750</td>
<td>46.5”</td>
<td>52”</td>
<td>44.5”</td>
</tr>
<tr>
<td>BR770/780</td>
<td>61.5”</td>
<td>67”</td>
<td>59.5”</td>
</tr>
</tbody>
</table>

Table 13.1
Loading Net (cont.)

- Roll the front of the roll down while swinging the roll back into the baler to take up excess slack in the net. Latch the roll into the operating position.
- Visually confirm that the roll is centered over the bale chamber.

Make and wrap a bale. Check for even placement of net across the bale. If the net is wrapped more toward one side, the net roll must be moved to center the wrap.

- Remove the left and right net roll retaining clips. Shift the net roll as necessary to center the net.
- Install the clip onto the right end of the shaft in the groove closest the end of the cardboard tube.
- Move the cone into the left end of the tube. Install the hairpin clip in the groove that fits best with the available clearance on the left end.

**USE CARE WHEN WORKING IN THE AREA OF THE DUCKBILL AND THE SHARP NET CUTTING KNIFE.**

**Crop Feeding and Cutting for Proper Bale Formation**

In addition to the visual quality of the bale, the manner in which bales are formed when breaking in a new baler or belts can have an effect on the overall belt life. Make smaller bales, and use special care to keep bales filled evenly when baling the first 25-50 bales, to reduce stress that can remain in the belt its entire service life.
Pickup

Several factors affect the overall bale shape and integrity, all related primarily to the manner in which crop is fed into the baler and processed prior to being moved into the bale chamber (see figure 15.1). Key factors are:

- Windrow size, shape and density
- Pickup
- Packer or rotor
- Adjust gauge wheels to carry the pickup. Pickup teeth should be approximately 1" above the ground on a level surface. Set gauge wheels lower to provide more clearance in rocky or uneven field conditions.
- Flotation should be set to keep the pickup contact with the ground as light as possible, while not allowing the pickup to bounce and leave crop in the field
- Pickup windguard upward travel stops should be adjusted with about 2" clearance to the pickup bands. Higher volume windrows may require additional clearance; lighter crops require less clearance and greater contact with the windguard
- Downward travel stops should prevent windguard tines from contacting pickup bands or floor roll
- Upper windguard on wide pickups with stuffer has adjustable stops to maintain minimum clearance to the starter roll, as explained in the Operator's Manual

Crop centering augers on each side of the pickup are intended to move the edges of the windrow into the feeder area of the pickup.

- Augers are not intended to “re-position” the windrow to fill the edges of the feeder if windrows are not wide enough to evenly fill the feeder across the entire bale width
- Excessively wide windrows may overload and plug the pickup augers

Core Formation

The core is the center portion of the bale that forms before the belt tension begins to increase significantly. Generally, the core is approximately 30" diameter. In most crops, the core forms easily, however some crops do not roll readily in the bale chamber, and core formation may require special baling techniques. Some of the more challenging core formation conditions are:

- Long-stemmed, slippery, unconditioned dry grasses or straw
- Heavy double windrows or bunches
- Unconditioned stalky crops such as cane
- Very dry, short crop
- Brittle, slippery crop such as cornstalks

Corrective action to promote core formation:

- For most crops, reduce PTO speed and feed rate to allow crop to begin to tumble and roll in the baler. In some conditions, “force feeding” a small amount of crop may help start the core.
- Maintain PTO speed, but be prepared to stop movement when in stalky crops such as cane and corn stalks, until the core is established.
- Stop PTO when not feeding crop (such as short rotary combine straw) into the baler to help retain bale integrity. (DO NOT Stop PTO with silage, high-moisture or very heavy crops in the bale chamber).
Windrows and Driving Patterns

The operator has the ability to monitor the bale shape as the bale is formed using the AutoWrap or Bale Command Plus baler monitors (see figure 16.1).

The bale shape indicators use bars that move up progressively relative to the side-to-side fill rate of the bale chamber. Using the shape indicators allows the operator to compensate if necessary for uneven or inconsistent windrows.

Allowing the bale to form heavily on one side will also affect belt tracking. Flat belts track toward the tight side of the belt. Therefore, uneven bale formation will be observed as the belts will move toward the larger side of the bale. Quickly begin to fill the opposite side and even out the bale, before the belts are damaged due to interference and the belts climbing over adjacent belts.

An important fact to remember is that if crop is fed into the baler unevenly, the bale will likely be uneven and mis-shapen, as well.

The key to making well-filled and well-shaped bales is to follow a rule that the windrow, whenever possible, must be built to suit the baler. Attempting to adapt the baler to the windrow will usually result in a less-than-desirable outcome.

The desired windrow width is slightly wider than the width of the bale. In this condition, the crop centering augers will move just enough crop to fill the sides of the bale chamber. The sides of the bale will then be well-filled and firm (see figure 16.2).

If windrows are not full bale width and uniform, the desired scenario, the operator must understand the crop flow into the baler and follow driving patterns to lessen the affect of the lower quality windrows (see figure 16.3).

If windrows are not full width, narrower windrows, approximately one-half the width of the bale, are the next-best option. In this case, weave from side to side initially to distribute hay across the bale chamber while forming the bale core (see figure 16.4). Once the core is formed, alternately feed hay into each side of the baler to fill the sides of the bale (see figure 16.3).
**Windrows and Driving Patterns (cont.)**

Watch the bale shape indicator and try to keep the bars even as the bale is formed. Some operators may want to change the bale shape alarm sensitivity to better match windrow size.

When wrapping with twine, have the baler centered over the windrow as the bale reaches completion, to facilitate twine pickup. Using this feeding pattern, the edges of the bale are filled, along with the center, as the windrow moves back and forth from side to side across the pickup.

Weaving continuously, in intervals less than six to eight seconds, will likely overfill the center of the bale. Loose end twine wraps will be likely (see figure 16.4).

Medium windrows, approximately three-fourths the width of the feeder, are the most difficult to bale and maintain well-shaped bales. Even with weaving, the center of the bale tends to be over-filled. The edge twines will likely be loose, and eventual difficulty in handling is a possibility (see figure 16.5).

---

**CropCutter**

Crop is moved from the pickup to the starter roll by the rotor lobes. Incorporated into the bottom of the feeder of rotor-cutter equipped units are crop cutter knives that extend into the rotor area (see figure 17.1). Crop material is cut as it moves across the knives.

Advantages of Crop Cutting:

- Bale density is increased
- Bales are easier to break apart when feeding
- Silage fermentation is improved as bales pack tighter, with a greater degree of air removal

The crop cutter system is available on the BR740 Silage Special. With the maximum 15 knives in use, the system will cut material to a theoretical length as short as 2.6”.

- Different knife position combinations can be selected to change the cut length, or to leave longer crop at the bale edges for greater bale integrity
- Knife blanks must be installed in unused knife slots to prevent plugging
- The knives can be hydraulically retracted by the operator, if desired
- Each knife is mounted individually, with breakaway protection in the event a heavy slug or solid object enters the pickup and is passed through the cutter
BALER OPERATION

BaleSlice

The BaleSlice feature uses a modified starter roll with non-rotating retractable knives that continuously slice into the bale outer circumference as it rotates in the chamber (see figure 18.1 and 18.2). Knives move out of the rear side of the segmented roller when in the cutting position. BaleSlice enhances feed quality, bale density and improves feeding ease as bales are readily broken apart.

- Knives are extended and retracted with an electric actuator and linkage
- Can be used with 1, 3, 4, or 7 knives
- Knives are automatically inserted after the bale core is formed
- When wrapping with twine, knives retract and do not cut the final 2” of crop on the bale surface
- When wrapping with net, system can be set to leave knives inserted and cut bales completely to the outer surface. Knives retract prior to application of net.

Adding, removing or changing knives is performed by opening the tailgate.

- Close tailgate lock valve
- Remove the single M10 capscrew in each knife to release knives
- Install fillers when removing individual knives to reduce the wear on the knife mount

Density Control

Bale density is a function of crop preparation, windrow conditions, baling technique, and baler adjustment.

Consider these crop and windrow conditions:

- Crop type, condition, and moisture
- Type of crop conditioning, material sizing
- Crop Cutter or BaleSlice applications
- Size, shape of windrow and feed rate

The more time the crop spends in the baler, the greater the bale density. Movement across the rollers as the bale rotates presses more air from the crop mat, and allows crop to “settle” together, resulting in a tighter bale. Fast feed rates and short cycle times, a common occurrence with large windrows, will result in lower bale density. The importance of cycle time productivity, in-field crop loss and bale density must be balanced by the operator to achieve the most desirable outcome. Some dry grass hay will be broken by the dimpled roll and fall out of the bale chamber if allowed to remain in the bale chamber longer than necessary.

Bale density is controlled by spring tension, or a combination of spring tension and hydraulic resistance.

- BR730—2-double extension spring assemblies
- BR740—1 extension spring, 1 hydraulic cylinder
- BR750—2 extension springs, 1 hydraulic cylinder
- BR770/BR780—2 extension springs, 2 hydraulic cylinders
Density Control (cont.)

The springs hold tension on the belts when the baler is empty, and provide the tension during core formation. As the bale grows and the chamber begins to expand, the effect of the hydraulic density control supplements spring tension, and provides the controllable element in belt tension and bale density.

The hydraulic density control system consists of a self-contained hydraulic cylinder with an adjustable relief valve between the two ends of the cylinder. The cylinder is connected to the belt tension arm, which carries the front and rear take-up rolls. The tension arm must move to allow the bale chamber to expand as the bale is formed. By restricting the flow of oil from one end of the cylinder to the other, the cylinder restricts the movement of the belt tension arm, controlling the belt tension, and thus the density of the bale (see figure 19.1).

- The pressure gauge on the front of the baler registers the density system pressure (see figure 19.3)
- Raise the tailgate to the top of its travel. The tension arm will be pulled up the same as if a bale were forming. Read the density system pressure.
- Turning the density valve knob clockwise increases the restriction to oil flow, with a corresponding increase of bale density (see figure 19.2)
- Turning the valve counterclockwise reduces flow restriction, along with bale density

Density Setting Recommendations

<table>
<thead>
<tr>
<th></th>
<th>ALFALFA</th>
<th>GRASS HAY</th>
<th>STRAW</th>
<th>SILAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR740</td>
<td>110 - 152 Bar</td>
<td>110 - 172 Bar</td>
<td>83 - 138 Bar</td>
<td>103 - 158 Bar</td>
</tr>
<tr>
<td></td>
<td>1600 - 2200 PSI</td>
<td>1600 - 2500 PSI</td>
<td>1200 - 2000 PSI</td>
<td>1500 - 2300 PSI</td>
</tr>
<tr>
<td>BR750</td>
<td>110 -152 Bar</td>
<td>110 - 172 Bar</td>
<td>83 - 138 Bar</td>
<td>103 - 158 Bar</td>
</tr>
<tr>
<td></td>
<td>1600 - 2200 PSI</td>
<td>1600 - 2500 PSI</td>
<td>1200 - 2000 PSI</td>
<td>1500 - 2300 PSI</td>
</tr>
<tr>
<td>BR770</td>
<td>90 - 138 Bar</td>
<td>90 - 138 Bar</td>
<td>69 - 110 Bar</td>
<td>100 - 1600 PSI</td>
</tr>
<tr>
<td></td>
<td>1300 - 2000 PSI</td>
<td>1300 - 2000 PSI</td>
<td>1000 - 1600 PSI</td>
<td></td>
</tr>
<tr>
<td>BR780</td>
<td>90 - 138 Bar</td>
<td>90 - 138 Bar</td>
<td>69 - 110 Bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1300 - 2000 PSI</td>
<td>1300 - 2000 PSI</td>
<td>1000 - 1600 PSI</td>
<td></td>
</tr>
</tbody>
</table>

Bale Size

Bale size is adjusted in either of two ways:

- Balers equipped with Bale Command Plus-set bale size electronically using the baler monitor
- Balers with AutoWrap twine wrap system-place the pin in a hole in the bale size indicator cable end. Move the pin closer to the spring at the end of the cable to increase bale size (see figure 19.4). (Last two holes may result in an oversized bale)
Daily Lubrication

The BR baler is provided with numerous grease fittings to lubricate bearings in the various drives. Some are lubricated by tubes leading from grease banks to remote grease points. Until the operator is familiar with the location of all grease and lubrication points, it is advisable to use the Operator’s Manual as a guide to assure complete lubrication service. The following chart is a general guide to the location of those areas where daily service is required.

Lubricate Daily with Grease

1. RH Rotor Shaft*
2. Tailgate RH Noseroll Bearing
3. Tailgate RH Lower Rear Bearing BR750/BR780
4. Tailgate RH Top Rear Idler Bearing*
5. Tailgate RH Top Front Idler Bearing
6. RH Belt Drive and Backwrap Roll Bearings *
7. RH Duckbill Pivot
8. Auto Wrap
   • Worm Drive Shaft
   • Cam Follower
   • Trip Pivot
   • Large Sheave
9. RH Sledge Pivot
10. RH Floor and Starter Roll Bearings*

Lubricate Daily with SAE 10W-30 Engine Oil

11. Wide Pickup RH Chain Case
12. Rotor Drive Chain
13. RH Sledge Roll Drive Chain

* Grease Bank
Lubricate Daily with Grease

1. Twine Tube Pivots
2. Front PTO Driveline, U-joint and Shields
3. LH Belt Drive and Backwrap Roll Bearings*
4. Tailgate LH Top Front Idler Bearing*
5. Tailgate LH Top Rear Idler Bearing
6. Belt Drive Declutch BR750/BR780*
7. LH Sledge Pivot
8. Tailgate LH Lower Rear Bearing BR750/BR780
9. Tailgate LH Noseroll Bearing
10. LH Floor and Starter Roll Bearings*
11. Driveshaft Bearing
12. LH Rotor Shaft

* Grease Bank

Lubricate Daily with SAE 10W-30 Engine Oil

13. Floor Roll Drive Chain
14. Wide Pickup LH Chain Case
15. Pickup
   - Jackshaft
   - Drive
   - Chain
   - (Rotor)
16. Pickup Drive Chain
17. Starter Roll Drive Chain
18. Stationary Dimpled Roll Drive Chain
19. Belts Drive Chain
Maintenance

Scheduled maintenance is an essential part of keeping your BR Baler working at top performance, with the highest level of reliability and minimal downtime.

We know it can be very easy to sidestep the time necessary for some routine maintenance. The people who designed your baler have taken your hectic schedule into consideration and have included centralized lubrication and other convenient features to save time. Operators must still make some time to assure all necessary maintenance is performed in a timely and conscientious manner.

In addition to prioritizing the time necessary to perform normal maintenance operations, using top quality New Holland replacement parts and lubricants will go far in assuring your efforts to will be rewarded with trouble-free and productive baling.

Cleaning the Baler

Prior to performing regular inspections, adjustments and lubrication, the baler should be cleaned following use. This is especially critical if the baler is stored outdoors where it is exposed to rain and high moisture. Using the time while cleaning to visually check the unit is a good way to perform a basic baler inspection.

Compressed air is most effective for removing chaff and debris from the many cracks, crevices and corners on the baler. Another highly effective, and very portable option, is the high velocity, high volume air blast from a gas- or electric-powered leaf blower. Remember to wear eye protection any time air is used to clean the baler.

DO NOT use water to clean the baler. Any debris that inadvertently remains after cleaning, but is soaked with water, may become the source of accelerated rust and corrosion damage.

Use the following maintenance guide (see table 23.1) as a reference of prescribed service points and intervals. This guide is part of the baler Operator's Manual.

Close the tailgate lock valve prior to performing any work requiring the tailgate to be opened (see figure 22.1). Unless performing service on BaleSlice or Crop Cutter knives, make sure knives are retracted when working in the feeder or bale chamber area.
Under normal operating conditions, follow this maintenance schedule. Under extreme conditions, perform service more frequently.

### SERVICE CHART

<table>
<thead>
<tr>
<th>SERVICE ITEM</th>
<th>MAXIMUM HOURLY INTERVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8/DAY</td>
</tr>
<tr>
<td>8 Hour lubrication</td>
<td>X</td>
</tr>
<tr>
<td>Inspect and tighten hardware</td>
<td>X</td>
</tr>
<tr>
<td>Check drive chains for proper adjustment</td>
<td>X</td>
</tr>
<tr>
<td>50 hour lubrication</td>
<td>X</td>
</tr>
<tr>
<td>Check for failing bearings (heat)</td>
<td>X</td>
</tr>
<tr>
<td>Inspect pickup tines</td>
<td>X</td>
</tr>
<tr>
<td>Inspect the belts and lacing</td>
<td>X</td>
</tr>
<tr>
<td>Check roll scraper adjustment</td>
<td>X</td>
</tr>
<tr>
<td>Torque tailgate belt adjusting roll bolts (Middle tailgate idler roll)</td>
<td>X</td>
</tr>
<tr>
<td>Inspect pickup cam bearings</td>
<td>X</td>
</tr>
<tr>
<td>Check tire pressure</td>
<td>X</td>
</tr>
<tr>
<td>1000 hour lubrication</td>
<td>X</td>
</tr>
<tr>
<td>Change gearbox oil</td>
<td>X</td>
</tr>
<tr>
<td>Check hydraulic belt tension fluid level</td>
<td>X</td>
</tr>
</tbody>
</table>

Table 23.1

**Roller Chains**

Numerous roller chains are used on BR balers. *(See table 24.1)* for quick reference to each chain, type of adjustment and adjustment specifications.

- BR balers can be equipped with an optional roller chain oiler system *(see figure 23.1)*. The oil pump dispenses oil through tubes to small manifolds, then through small tubes and brushes to the chains.

- The oil is dispensed onto the exposed chains, and therefore occasionally will be thrown off into the environment. Use a biodegradable oil to prevent contamination and pollution.

- Pump damage may occur if the system is allowed to run dry

- It is generally accepted that if roller chains are oiled once, they must then be oiled regularly to continually flush contaminants from the internal bearing areas of the chain

*Figure 23.1*
## Gearbox

Two enclosed gearcases on the BR baler require service and lubricant level checks.

- The main gearbox has a level check dipstick. SAE 80W90 lubricant is used for replenishment. Check weekly, or every 50 hours of operation.

- The AutoWrap gearbox has a check/fill plug that is used to check level. SAE 80W90 lubricant is used for replenishment. Check every 50 hours of operation in twine wrapping operation.

### Bale Density and Belt Tension

The bale density system is a sealed and self-contained hydraulic system. A hose connected to a tractor remote hydraulic circuit is used to charge the density control cylinder. The complete procedure is explained in the Operator's Manual.

The tension must be removed from the baler belts before performing service on the belts and rollers.

- Tailgate is opened until the lock pin is below the tension arm
- Pull down and rotate the handle, moving the pin into position under the tension arm
- Lower the tailgate until the pin is holding the tension. The belts will continue to loosen as the tailgate is lowered.
- Close the tailgate lock valve before working under or near the tailgate

### Table 24.1

<table>
<thead>
<tr>
<th>Chain Location</th>
<th>Type of Adjustment</th>
<th>Spec. Deflection</th>
<th>Spec SPRING ADJ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starter roll drive chain</td>
<td>Spring-loaded idler</td>
<td>7-3/8&quot;</td>
<td></td>
</tr>
<tr>
<td>Stationary dimpled roll drive chain</td>
<td>Spring-loaded idler</td>
<td>7-3/8&quot;</td>
<td></td>
</tr>
<tr>
<td>Floor roll drive chain</td>
<td>Spring-loaded idler</td>
<td>7-3/8&quot;</td>
<td></td>
</tr>
<tr>
<td>Sledge roll drive chain</td>
<td>Spring-loaded idler</td>
<td>2-1/2&quot;</td>
<td></td>
</tr>
<tr>
<td>Belt drive roll drive chain</td>
<td>Spring-loaded idler</td>
<td>14-3/4&quot;</td>
<td></td>
</tr>
<tr>
<td>Wide pickup drive chain</td>
<td>Spring-loaded idler</td>
<td>5-1/4&quot;</td>
<td></td>
</tr>
<tr>
<td>Wide pickup left drive chain</td>
<td>Solid idler</td>
<td>⅛&quot; - ⅜&quot;</td>
<td></td>
</tr>
<tr>
<td>Wide pickup right drive chain</td>
<td>Solid idler</td>
<td>⅛&quot; - ⅜&quot;</td>
<td></td>
</tr>
<tr>
<td>Standard pickup drive chain</td>
<td>Solid tightener</td>
<td>⅛&quot; - ⅜&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>CROP CUTTER BALERS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LH Jackshaft drive idler</td>
<td>Spring-loaded idler</td>
<td>0-⅜&quot;</td>
<td></td>
</tr>
<tr>
<td>RH Jackshaft drive idler</td>
<td>Spring-loaded idler</td>
<td>0-⅜&quot;</td>
<td></td>
</tr>
<tr>
<td>Pickup drive idler</td>
<td>Spring-loaded idler</td>
<td>0-⅜&quot;</td>
<td></td>
</tr>
<tr>
<td>Rotor pickup drive chain</td>
<td>Spring-loaded idler</td>
<td>4-⅜&quot;</td>
<td></td>
</tr>
<tr>
<td>AutoWrap drive belt</td>
<td>Spring-loaded idler</td>
<td>2&quot; @ 15lb.</td>
<td></td>
</tr>
</tbody>
</table>
Belts

Belts and lacing should be inspected weekly (see figure 25.1).

- Check belts for wear or damage
- Check lacing cables for excessive wear or breakage
- Follow instructions for belt repair and installation

Belt Operation

- Observe belt tracking during operation. Belts will normally shift as the bale is formed.
- Contact with belt guides is normal, but belts should not curl against guides or flip over
- Rollers can be shifted to change belt tension across the baler, altering tracking characteristics of the belts
- Belt slippage at core start can be corrected by increasing density spring tension. Additional tension can be added by re-positioning upper rear tailgate roller.
- Belt slippage at full bale can be reduced with infeed disc kit to reduce friction between bale and baler sides
- Inspect rollers for material debris that can affect belt tracking and tension

Crop Cutter

Crop cutter knives must be kept sharp to maintain optimal crop cutting performance.

- Dull knives adversely affect the quality of cutting, and baler capacity
- Cutting with dull knives increases horsepower requirements and fuel consumption
- Spare knife set allows the baler cutter to be serviced quickly with minimal downtime
- Standard and hard-surfaced knives can be sharpened with a powered grinder
- Clamp knives with the serrated front edge of the knife down. Grind on the flat, back side of the knife. Hard-surfaced knives can be sharpened only on the back side.
- BaleSlice knives can be sharpened in place, reversed or replaced to maintain sharp edge

Driveline Protection

Driveline protection on the BR balers takes the form of shearbolts, slip clutches, or in the case of the crop cutter, a “cut-out” clutch. Each type of system has some specific service requirements.

Shearbolts are the most simple form of driveline protection. When a shearbolt is overloaded and fails, all or a portion of the baler stops functioning.

- BR730 and the BR740 Standard balers use a shearbolt in the PTO driveline
- Stop the tractor, and inspect the baler to determine the reason for the shearbolt failure
- If sufficient free movement is not available in the tractor PTO or baler driveline to align the shearbolt holes, it may be necessary to remove the PTO shaft to gain sufficient rotation
- The pickup on rotor-cutter equipped balers is also protected by a shearbolt
MAINTENANCE

Driveline Protection (cont.)

Slip clutches offer protection to components that may be momentarily overloaded. Often, a clutch may slip without the operator being aware of the condition, as the overload passes and the machine continues to function normally. Slip clutches are friction disc type clutches.

- Slip clutches are used on the PTO driveline on BR740, BR750, BR770 and BR780 balers, except the BR740 Silage Special with rotor-cutter. Torque specifications vary between models.

Other slip clutch applications on BR balers:
- Sledge drive
- Standard (non-rotor-cutter) pickup
- Specifications vary for the different clutches on the baler. The Operator's Manual should be consulted if clutches do not function correctly, and require service or adjustment.

Jaw-type slip clutch
- Used on wide pickup, stuffer equipped balers

Clutch Burnishing

- Slip clutch discs may stick when the baler has been in storage. The clutch may not slip as designed, hindering the protective effect of the clutch.
- Burnishing is a way of polishing the clutch components to relieve sticking, assuring proper clutch function
- Basic procedure is to reduce the clutch spring pressure, and block the output from turning. Slowly engaging the PTO allows the clutch to slip momentarily, relieving any seizure and wearing away contamination that may prevent the clutch from performing as designed.
- Reset the clutch pressure springs as specified in the Operator's Manual, in reference to the specific slip clutch
- It is highly recommended that this procedure be included in your dealer’s pre-season maintenance inspection

The rotor-cutter drive is protected by a cut-out type torque-limiting clutch. The cut-out clutch is designed to disengage at a pre-set torque limit.
- The cut-out clutch interrupts power, but does not re-set until the PTO is turned off, and the machine coasts to a stop. The clutch automatically re-sets.
- Clear the obstruction or crop accumulation that caused the torque overload before attempting to re-start the PTO
- No service, maintenance or adjustment is required for the cut-out clutch. Refer clutch repairs to your authorized Dealer.

An apron belt drive clutch is also used on the BR780, and is available a field installed kit on BR750. The clutch stops the belts when the tailgate is opened. See the Operator's Manual if adjustment is required to stop the belts at approximately 36° of tailgate opening.

Twine and Net Knives

Twine and net cutting knives must be sharpened periodically to maintain clean material cutoff.
- Twine knives can be removed and file sharpened. Be sure to keep the cutting surface straight and retain the original bevel.
- Net knives can be removed and file sharpened. Be sure to keep the cutting surface straight and retain the original bevel. Be sure to install the knife and comb properly. Install the comb first, followed by the knife with the sharp knife edge installed against the comb.
<table>
<thead>
<tr>
<th>BALE QUALITY</th>
<th>SYMPTOM</th>
<th>SUGGESTED ACTION</th>
</tr>
</thead>
</table>
| Core Formation | Uneven or unstable core, difficulty forming core | • Reduce PTO speed or feed rate  
• Stop PTO if crop is not being fed into baler  
• Revise windrow size and shape  
• Adjust belt tension arm spring tension |
| Bale Size      | Bale is not the desired size                 | **AutoWrap System**  
• Change position of pin in bale size indicator cable end to increase or decrease bale size  
**Bale Command Plus**  
• Change bale diameter value in monitor  
• Actual bale diameter does not match monitor setting. Calibrate bale diameter setting in Bale Command Plus.  
• See Operator’s Manual for monitor setup |
| Bale shape     | Bale is cone-shaped                          | • Baler fed unevenly, too much crop fed to one side of the baler. Watch bale shape indicators and use care to fill baler evenly side-to-side when baling narrow windrows.  
• Make windrows slightly wider than the bale chamber. (Excessive window width may cause pickup augers to plug) |
|                | Bale is barrel-shaped                        | • Baler fed unevenly, too much crop fed into the center of the baler. Medium-sized windrows overfill center of the bale  
• Make windrows slightly wider than the bale chamber |
|                | Bale is hourglass-shaped                     | • Baler fed unevenly, too much crop fed into the edges of the baler. Watch bale shape indicators and use care to use weave pattern that distributes crop to center of baler as well as the edges.  
• Make windrows slightly wider than the bale chamber  
• Incorrectly adjusted V-rake leaving void in the center of the windrow |
|                | Actual shape of bale does not match bale shape indicators | • Debris accumulation in bale shape sensor linkage preventing free movement of sensor and accurate shape indication  
**AutoWrap System**  
• Bale shape sensors require adjustment  
**Bale Command Plus**  
• Bale shape sensors require calibration |
| Bale density   | Bale is too tight/dense                      | • Reduce pressure in bale density hydraulic system  
• Increase ground speed and feed rate |
|                | Bale is loose                                | • Increase pressure in bale density hydraulic system  
• Decrease ground speed and feed rate |
| Tailgate       | Tailgate moves slowly                        | • Inadequate baler hydraulic flow |
|                | Tailgate latches to not lock                 | • Debris or crop material in latches  
• Inadequate baler hydraulic pressure |
| Bale Ejection  | Bales do not eject properly                  | • Excessive crop moisture  
• Bales too dense  
• Tailgate movement too slow, hydraulic system malfunction or inadequate flow  
• Add infeed disk kit if not already installed |
|                | Ejection ramp noisy                          | • Rubber bumpers on ramp return spring rods broken  
• If optional extra spring kit is installed, light crop bales such as straw may require removal of one or more springs |
# Troubleshooting

<table>
<thead>
<tr>
<th>BALE QUALITY</th>
<th>SYMPTOM</th>
<th>SUGGESTED ACTION</th>
</tr>
</thead>
</table>
| Twine wrapping    | Difficulty starting twine feed | • Excessive twine tension  
• Twine tangled, incorrectly routed or very tight in the center of a new ball  
• In some slick grasses, adjust twine arms to come together no closer than 4” for improved twine pickup  
• Complete bale with windrow at center of pickup allowing crop to pull twine into baler  
Prefer different wrap pattern | AutoWrap System  
Bale Command Plus | Change AutoWrap sheave combination  
Select new twine wrap pattern  
A revised profile cam is available from service parts that changes twine spacing on the outer 12” of the bale  

Edge twines loose | • Twine tension loose  
• Bale edges not adequately filled, barrel-shaped bale  
• Insufficient end wraps  
• End wraps too close to edge of bale  

All twines loose | Insufficient twine tension  
Twine not cut | • Insufficient twine tension  
• Dull twine knives  
• Bale too small  

Net wrapping | Difficulty starting net feed | • Debris buildup  
• Net tail too short or not cleanly cut  
• Net tension excessive (brake setting)  
• Net pulls out of duckbill on insertion, duckbill too tight  
• Incorrect net routing  
• Duckbill adjusted in too far, pinching baffle  
• Film-film sticking to itself, tearing or sticking to duckbill or spreader rolls  
Net not spreading across bale | • Debris buildup in net path  
• Excessive net tension (brake)  
• Outer edges of duckbill baffles too tight  
• Net roll not centered  
• Poor bale shape, uneven feeding across bale  
• Spreader roll not rotating freely  
Net loose on bale | • Insufficient net tension  
• Inadequate wraps, net slipping  

Net not cut | • Knife dull or incorrectly adjusted  
• Insufficient net tension (brake)  
• Knife force or timing incorrect  
• Duckbill baffles too loose  
• Net roll “knives” slipped in cardboard tube, brake ineffective  

Net damaged after ejection | • Debris in duckbill  
• Duckbill too tight, net torn moving through duckbill  
• Sharp edges on spreader rolls or net wrapping on rolls  
• Poor quality net  
• Inadequate film or net wraps  
• Slow tailgate movement, bale ejection  
• BaleSlice knives not fully retracted  
• Sharp edge on floor roll  
• Sharp edge on bale ramp mounting  

The duckbill adjustment can be given a preliminary check by “plucking” the lower baffle with one finger. At the outer edges, the baffles should be loose enough to produce a slight vibrating sound instantly after striking the lower baffle. In the center, the baffles should be slightly tighter, and should be adjusted until the vibration is not detected.
Natural Sisal Twine

- Uniform thickness
- Entirely biodegradable
- Mildew resistant
- Consistent tensile/knot strength
- Only the best Brazilian fibers used
- Every bale contains exact footage shown on the label

Plastic Baling Twine

- Makes tight bales
- Strength and diameter are always uniform
- Will not rot
- Non-toxic and harmless if eaten by animals
- Can be stored outdoors for up to 18 months without significant deterioration
- Designed to provide maximum strength and ultimate performance
- UV stabilized to withstand extreme sunlight

**ROUND BALER TWINE**

<table>
<thead>
<tr>
<th>Ft. per Bale</th>
<th>Tensile Strength (lbs.)</th>
<th>Gross Wt. (lbs.)</th>
<th>End Use Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>16,000</td>
<td>180</td>
<td>40</td>
<td>Round Bales</td>
</tr>
</tbody>
</table>

**RED WINDER UNTREATED TWINE**

<table>
<thead>
<tr>
<th>Ft. per Bale</th>
<th>Tensile Strength (lbs.)</th>
<th>Gross Wt. (lbs.)</th>
<th>End Use Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>16,000</td>
<td>180</td>
<td>40</td>
<td>Round Silage Bales</td>
</tr>
</tbody>
</table>

**ROUND BALER TWINE (MONOFILAMENT)**

<table>
<thead>
<tr>
<th>Ft. Per Bale</th>
<th>Tensile Strength (lbs.)</th>
<th>End Use Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>16,000</td>
<td>110 Solar Degradable</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>20,000</td>
<td>100 Big Ball</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>20,000</td>
<td>110 Economy</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>20,000</td>
<td>110 High Visibility</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>20,000</td>
<td>125 High Visibility</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>20,000</td>
<td>140 High Visibility</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>28,000</td>
<td>110 High Visibility</td>
<td>All Round Bales</td>
</tr>
</tbody>
</table>

**ROUND BALER TWINE (SLIT FILM)**

<table>
<thead>
<tr>
<th>Ft. Per Box</th>
<th>Tensile Strength (lbs.)</th>
<th>End Use Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,000</td>
<td>110</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>20,000</td>
<td>125</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>20,000</td>
<td>140</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>25,000</td>
<td>90</td>
<td>All Round Bales</td>
</tr>
<tr>
<td>28,000</td>
<td>110</td>
<td>All Round Bales</td>
</tr>
</tbody>
</table>
**WhiteNet™ Mesh Wrap**
- White, woven netting is light, easier to use and cost-effective
- Wraps tight and smooth to reduce water penetration
- Locks in more nutrients and helps maintain hay and forage quality
- Drastically reduces spoilage, leaf loss and baling time
- Covers bale from edge to edge and holds the shape of the bale during transport and stacking

**WHITE MESH WRAP**

<table>
<thead>
<tr>
<th>Width (Inches)</th>
<th>Length (Feet)</th>
<th>Length (Meters)</th>
<th>End Use Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>9,840</td>
<td>3,000</td>
<td>New Holland Balers</td>
</tr>
<tr>
<td>48</td>
<td>5,000</td>
<td>1,524</td>
<td>640/644/650/654/648/658/848</td>
</tr>
<tr>
<td>48</td>
<td>6,200</td>
<td>1,890</td>
<td>640/644/650/654/648/658/848</td>
</tr>
<tr>
<td>51</td>
<td>9,840</td>
<td>3,000</td>
<td>BR740/BR750</td>
</tr>
<tr>
<td>57</td>
<td>6,560</td>
<td>2,000</td>
<td>853(chain)</td>
</tr>
<tr>
<td>64</td>
<td>6,560</td>
<td>2,000</td>
<td>600/664(belt)/688/678</td>
</tr>
<tr>
<td>64</td>
<td>7,000</td>
<td>2,134</td>
<td>600/664(belt)/688/678</td>
</tr>
<tr>
<td>67</td>
<td>6,560</td>
<td>2,000</td>
<td>855(chain)</td>
</tr>
<tr>
<td>67</td>
<td>6,560</td>
<td>2,000</td>
<td>BR770/BR780</td>
</tr>
</tbody>
</table>

**White Silage Wrap for Round Bales**
- High-strength reflective white film
- Creates an air-tight tension seal for 12 months
- Reflects solar heat
- Keeps silage virtually spoilage-free
- 12-month guarantee against UV breakdown
- Puncture and tear resistant
- Tested worldwide in all climates

**WHITE SILEAGE WRAP FOR ROUND BALES**

- 20’ x 6,000’ x 1 mil.
- 30’ x 5,000’ x 1 mil.

**Black Silage Wrap for Round Bales**
- Economical
- Creates an air-tight tension seal
- Keeps silage virtually spoilage-free
- Puncture and tear resistant
- Recommended for last cutting of season

**BLACK SILEAGE WRAP FOR ROUND BALES**

- 20’ x 6,000’ x 1 mil.
- 30’ x 5,000’ x 1 mil.
New Holland CropSaver™ is a buffered acid used to help preserve all types of hay including alfalfa and grass. CropSaver is composed of two main ingredients—propionic acid and citric acid. The propionic level in CropSaver, although one of the highest in the industry, is completely safe because it is chemically buffered and neutralized. It is as gentle as rainwater with a pH of 6.0 and does everything straight propionic acid will do but without the corrosion or danger. Citric acid has been used for years to preserve food color and smell. In CropSaver, it helps to maintain both the fresh smell and green color of hay, even after it’s stored. Used with a New Holland applicator, CropSaver enables you to bale your hay at a maximum 30% moisture level!

Use on Large Round Bales

CropSaver works just as well on large round bales as it does on small square bales. Loose core round bales are safe to bale without preservative at moistures under 20%. Dense core bales have to be 18%. With the added capacity of a round baler, it is important to be set up properly to apply preservative. Hay can be baled at moistures up to 30% with a large round baler. The hours of operation can be extended. Although no preservative product can reduce outside weathering, CropSaver can keep the quality consistent through the entire round bale.
New Holland BR Series Round Balers

3-Ply Mini Rough Top Belt Design

- Provides the ideal combination of positive yet gentle grip between crop and belts
- Mini Rough Top texture design moves crop quickly to baling chamber for fast and efficient bale starts
- Mini Rough surface releases crop during bale formation for minimal leaf loss
- High strength polyester/nylon construction provides the ideal combination of working tension, elongation (under load), and faster retention
- 3-ply Mini Rough Top belts are standard on all BR Series models
- New Holland 3-ply Mini Rough Top Endless belts are truly endless with the highest tension rating in the industry

New Holland balers do not require a highly aggressive belt to start a bale. New Holland “low profile” texture Mini Rough is incorporated to “assist” in bale formation in difficult conditions. Other OEM balers require an aggressive texture to start a bale in virtually any and all conditions. As the highly aggressive texture wears down on the others, starting a bale becomes difficult. Belts need replacement not because they are worn out, but because they have lost their grip. New Holland textures are minimal and are designed to “assist”, in the baling process, not as a requirement for the baler to perform.

Standards a Cut Above the Competition
The Quicklub® Advantage

Through Lincoln's unique Quicklub system, small, measured amounts of grease are delivered to each bearing at specific time intervals (every 10 minutes) while the equipment is operating. This method produces a grease seal around each bearing….this acts as a barrier to keep contamination out. Wear surfaces are lubricated dynamically during operation while the critical components are in motion.

Benefits From Automatic Lubrication

- Gain 30 to 45 minutes a day of increased productivity by lubricating “on the fly”
- Improve bearing life by delivering frequent, smaller amounts of grease to 23 lube points
- Lower maintenance costs by eliminating daily lubrication and reducing repairs
- Proper lubrication no matter the environment or weather conditions
- Increased resale value of equipment
**Lincoln PowerLuber®**

Lincoln’s new, heavy-duty 14.4 volt PowerLuber gives you the power to lubricate just about anything, anytime, anywhere.

- Two-speed switch for high-pressure or high-volume delivery
- Cycle indicator pin to monitor grease output
- “Smart” charging system delivers reliable power

All the features you need, including comfortable grip and balanced design, hook for shoulder strap, built-in hose and coupler holder, and a slim, compact carrying case.

— Model 1442 - Part No. 87298560, one battery
— Model 1444 - Part No. 87298561, two batteries

Powerluber is a registered trademark of Lincoln Industrial Corp.

**Automatic Chain Lubrication System**

Keep all your baler chains running cool and lubricated automatically every time you activate the tailgate.

- Easy installation
- Fully adjustable flow
- Increases productivity
- Up to 300% increase in chain and sprocket life

Kit No. B96494 contains the LubeMinder® pump and enough brushes to lubricate all 7 chains found on the BR Series Balers. Installation is easy, taking only a few hours when done by your dealer.

LubeMinder is a registered trademark of Suburban MFG.
DHT-1 Portable Hay Tester

**Features**
- Direct readout for % moisture and temperature (°F std.—°C opt.)
- Electronics module separate from probe
- Extra-rugged probe shaft made from aircraft aluminum
- Sturdy pistol-grip handle
- 3 Models available: 18” (std.), 24” and 32” probe lengths
- Padded carrying case included

**Specifications**
- Accurate throughout the normal range of stored, baled Alfalfa, Timothy and Clover Hay
- Testing range: 14% - 44% moisture, 33° - 250°F temperature
- 1 year warranty

**Part No.:** FM07100DS
- Tester with 18” probe,
  - FM07101DS Tester with 24” probe, FM07102DS Tester with 32” probe.

**Probe Only:** FM07018DS
- 18”, FM07024DS 24”, FM07032DS 32”.

HMT-2 Portable Hay Tester

**Features**
- Expanded low moisture range down to 8%
- Backlit display for night use
- Built-in calibration button
- Extra-rugged 20” probe for testing square or round bales
- Direct readout for % moisture and temperature (°F/°C)
- Above and below moisture limit indication

**Specifications**
- Accurate throughout the normal range of stored, baled Alfalfa, Timothy and Clover Hay
- Testing range: 8% - 44% moisture, 33° - 225°F = (0°-107°C) temperature
- 1 year warranty

**Part No.:** FM07410DS

HMT-3 Portable Hay Tester

**Features**
- Direct readout 0° temperature in °F/°C
- Multi-language
- Adjustable for Density of bale, Hay cutting, Hay type
- Displays running average
- Backlit display for night use
- Sturdy pistol grip handle
- Extra-rugged 18” probe
- Includes a 3 in x 36 yd. roll of white baleage wrap patch tape.
  - Reorder Part No. 39847.

**Specifications**
- Testing range: 35%–75% moisture
- 1 year warranty

**Part No.:** FM07470DS

BHT-1 Baler Mounted Hay Tester

**Features**
- Direct readout for % moisture—while baling Hay
- Average of readings updated and displayed every 3-5 seconds
- Backlit display for night use
- Built-in calibration button
- Above and below moisture limit indicator
- Sturdy display module mounting bracket with adjusting knobs
- Includes sensor kit
- Long-lasting sensor pad and stainless steel hardware
- Fits square or round balers

**Specifications**
- Testing range: 8%-44% moisture
- 1 year warranty

**Part No.:** FM07450DS

**Accessories**
- Sensor Pad Kit (FM07157DS)
  - Sensor pad and bolts

**Extension Sensor Cable** (FM07158DS)
- 10’ cable
- Weather-proof connectors

**Complete Sensor Kit** (FM07159DS)
- Sensor pad and bolts
- 25’ sensor cable
- Display module mounting bracket
- 8’ power cable
When you place your confidence in innovative New Holland agricultural equipment, you also get the finest support. Your local New Holland dealer stands behind you at every step with the equipment, parts, service, and financial services you and your operation need.

Quality parts and service. Turn to your New Holland dealer after the sale for expert, factory-trained service and genuine New Holland-branded parts to keep you working productively season after season.

Financing solutions. Your New Holland dealer can tell you about smart ways to turn your financial challenges into opportunities with a portfolio of innovative financial services available through CNH Capital, including customized financing, leasing, insurance, and the purchasing convenience of a Commercial Revolving Account.

For reliable equipment, parts and service – or just honest advice on farming and finance – turn to New Holland and your trusted New Holland dealer.

Visit our Web site at www.newholland.com/na or call toll-free: 1-888-290-7377

The information presented herein is intended for sales education purposes and is intended for the use of CNH America LLC, its affiliates, and its independent dealers only. This information is to be treated as CONFIDENTIAL and is not to be used for advertising purposes. Sources of information include published industry specifications and data. General statements made herein are the opinions of the authors concluded from supporting data. Specifications are stated in accordance with industry standards or recommended practices, where applicable.

Important: CNH America LLC reserves the right to change product specification without notice and without incurring any obligation relating to such changes.

Design, materials and/or specifications are subject to change without notice and without liability therefor. Specifications are applicable to units sold in Canada, the United States, its territories and possessions, and may vary outside these areas.