



Service Manual

RB452

Round Baler



CHALLENGER®
RB452
Round Baler
79033773 A Rev.
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Challenger®

RB452 Round Baler

SERVICE MANUAL 79033773 A Rev.

01 - General Information

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GENERAL INFORMATION

SAFETY

Safety Alert Symbol

FIG. 1: The safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

This safety alert symbol indicates important safety messages in this Operator Manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

Safety Signs

If a used machine has been purchased, be sure all safety signs are in the correct location and can be read.

Replace any safety signs that can not be read or are missing. Replacement safety signs are available from your dealer. The location of safety signs is illustrated at the end of this division.

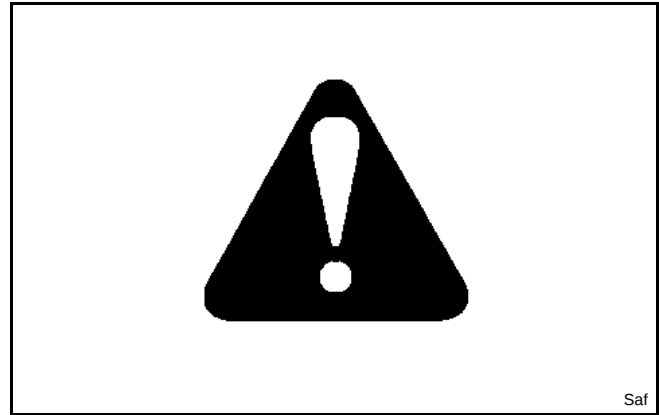


FIG. 1

Safety Messages

FIG. 2: Whenever you see the words and symbols shown below, used in this manual, you **MUST** take note of their instructions as they relate to personal safety.



DANGER: Indicates an imminently hazardous situation that, if not avoided, will cause death or very serious injury.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor injury.



FIG. 2

Informational Messages

The words **IMPORTANT** and **NOTE** are not related to personal safety, but are used to give additional information and tips for operating or servicing this equipment.

IMPORTANT: Identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of the machine, process, or its surroundings.

NOTE: Identifies points of particular interest for more efficient and convenient repair or operation.

General Information

Manual

The photos, illustrations, and data used in this manual were current at the time of printing, but due to possible in-line production changes, your machine can vary slightly in detail. The manufacturer reserves the right to redesign and change the machine as necessary without notification.



WARNING: In some of the illustrations or photos used in this manual, panels or guards may have been removed for clarity. Never operate the machine with any panels or guards removed. If the removal of panels or guards is necessary to make a repair, they **MUST** be replaced before operation.

A Word to the Operator

FIG. 3: It is YOUR responsibility to read and understand the Safety section in this book before operating this machine. Remember that YOU are the key to safety. Good safety practices not only protect you, but also the people around you. Study the features in this book and make them a working part of your safety program. Keep in mind that this Safety section is written only for this type of machine. Practice all other usual and customary safe working precautions, and above all **REMEMBER - SAFETY IS YOUR RESPONSIBILITY. YOU CAN PREVENT SERIOUS INJURY OR DEATH.**

This Safety section is intended to point out some of the basic safety situations that may be encountered during the normal operation and maintenance of your machine, and to suggest possible ways of dealing with these situations. This section is **NOT** a replacement for other safety practices featured in other sections of this book.

IMPORTANT: *This manual covers general safety practices for this machine. It must always be kept with the machine.*



WARNING: An operator should not use alcohol or drugs which can affect their alertness or coordination. An operator on prescription or 'over the counter' drugs needs medical advice on whether or not they can properly operate machines.

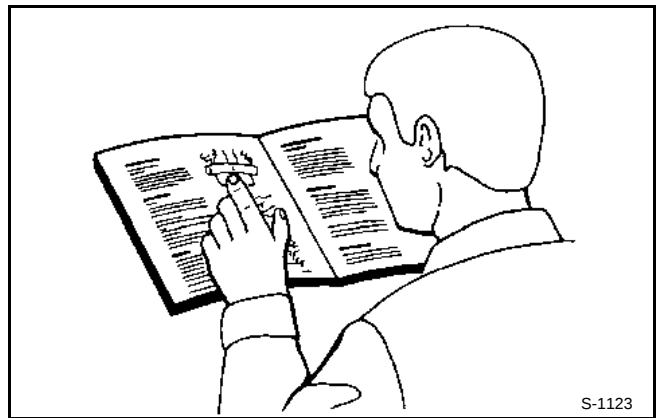


FIG. 3

Prepare for Operation

Read this manual completely and make sure you understand the controls. Know the positions and operations of all controls before you operate this machine. Check all controls in an area clear of people and obstacles before starting your work.

All equipment has a limit. Make sure you understand the speed, brakes, steering, stability, and load characteristics of this machine before you start.

Make sure your machine has the correct equipment needed by the local regulations.

Operation

Make sure the machine is in the proper operating condition as stated in the Operator Manual.

Make sure the tractor is in proper operating condition with the brakes adjusted, especially when operating on terrain that is not even.

To achieve proper braking capacity, the weight of the baler with a bale must not exceed 1.5 times the weight of the tractor.

FIG. 4: Wear all protective clothing and personal protective equipment issued to you or called for by job conditions. Wear approved hearing protection whenever operating the machine as required by country/local regulations. Do not wear loose clothing, jewelry, or other items that could entangle in moving parts. Tie up long hair that also could entangle in moving parts. Always keep hands, feet, hair, and clothing away from moving parts.

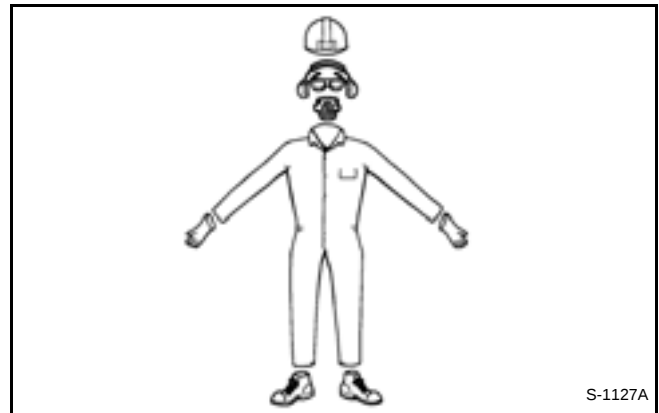


FIG. 4

FIG. 5: Securely fasten your seat belt before operating the machine. Always remain seated when operating the machine.

Never start the tractor with PTO engaged.

Always slide the hitch pin lock plate over the hitch pin and install the Klik pin when connecting the baler to the tractor.

Always install the safety transport chain between the baler and tractor drawbar.

- Use a chain with a strength rating equal to or more than the gross weight of the towed machine.
- Supply only enough slack in the chain to permit turning.
- Do not use the safety transport chain as a tow chain for towing.

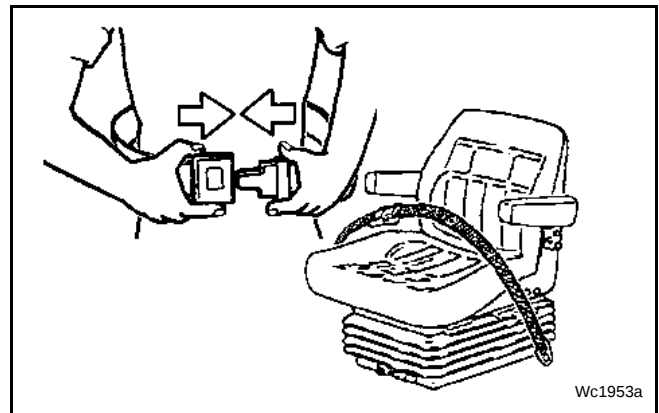


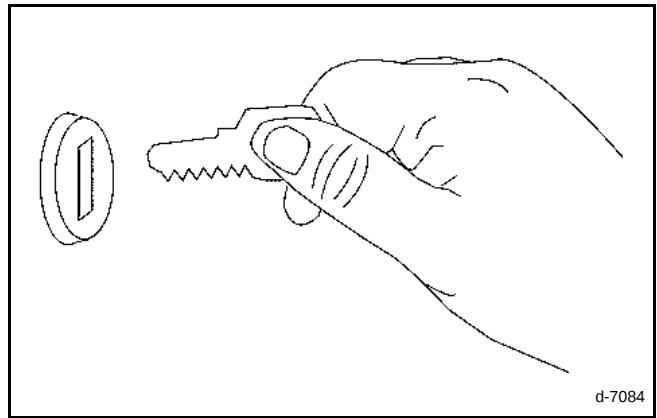
FIG. 5

General Information

FIG. 6: Always put the tractor transmission in park and apply the parking brake and remove the tractor key when parking the machine and take the key with you.

Do not allow children or unqualified persons to operate your machine.

Do not permit others to ride on the machine. Keep others away from your area of work.

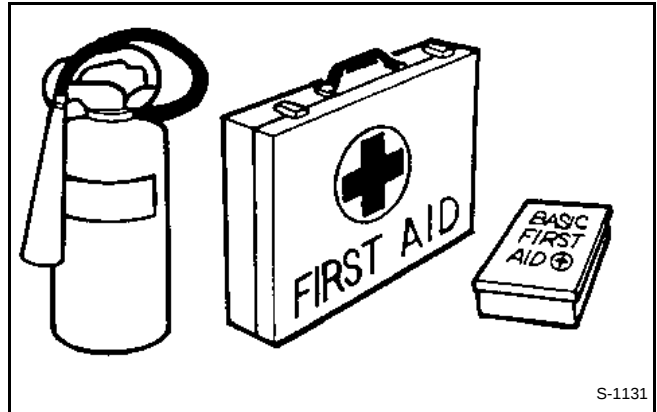


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FIG. 6

FIG. 7: Because of the flammable nature of many hay crops, a water fire extinguisher must be placed within easy reach.

Keep a first aid kit handy for treatment for minor cuts and scratches.



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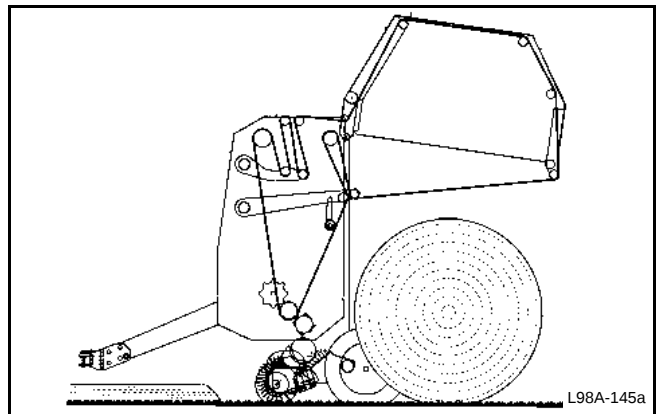
FIG. 7

FIG. 8: Stay at least 3.7 m (12 ft) away from the tailgate at all times. The tailgate operates faster than you can move away.

Always make sure the area around the tailgate is clear for at least 3.7 m (12 ft) before opening the tailgate and unloading the bale. Keep bystanders away from the baler and the tailgate when unloading a bale.

Before raising the tailgate, make sure the baler is securely fastened to the tractor drawbar. The baler tongue may lift up when the tailgate is raised. This can cause the baler to tip to the rear, causing personal injury or damage to the machine.

Avoid contact with electrical power lines. Never open the tailgate near electrical wires. Contact with electrical power lines can cause electrical shock, resulting in very serious injury or death.



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FIG. 8

FIG. 9: When moving bales, never use a tractor front end loader that is not equipped with a grapple or the proper bale handling equipment. Use the grapple to prevent the bale from rolling down the loader frame onto the operator. Always keep the load close to the ground to keep from off-balancing the tractor.

Never unload or store bales on a slope where bales can roll.

Always disengage the tractor PTO, put the tractor transmission in PARK and apply the parking brake before getting off of the tractor. Stop the tractor engine and remove the key before servicing or doing any maintenance on the machine.

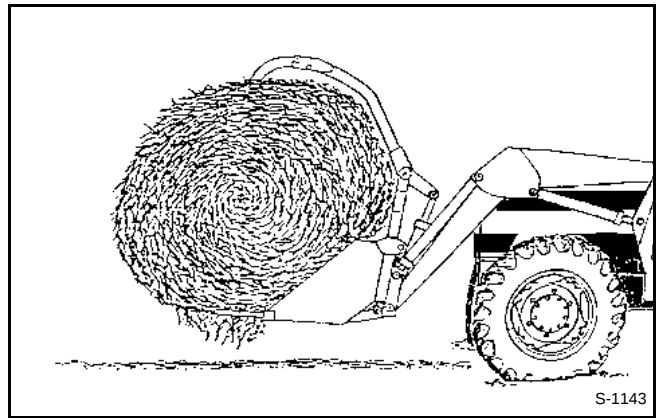


FIG. 9

Travel On Public Roads

FIG. 10: Use the lighting and marking system supplied with the machine when roading.

Make sure reflectors are correctly installed, in good condition, and wiped clean. Be sure the SMV emblem is clean, visible, and correctly mounted on the rear of the machine.

Familiarize yourself with and obey all road regulations that apply to your machine. Consult your local law enforcement agency for local regulations regarding movement of farm equipment on public roads.

Adjust travel speed to maintain control at all times. Limit speeds to 32 km/hr (20 mi/hr).

Be aware of other traffic on the road. Keep well over to your own side of the road and pull over, whenever possible, to let faster traffic pass.

Be aware of the overall width and length of the machine. Be careful when transporting the machine on narrow roads and across narrow bridges.

Do not road the baler with a bale in the chamber.

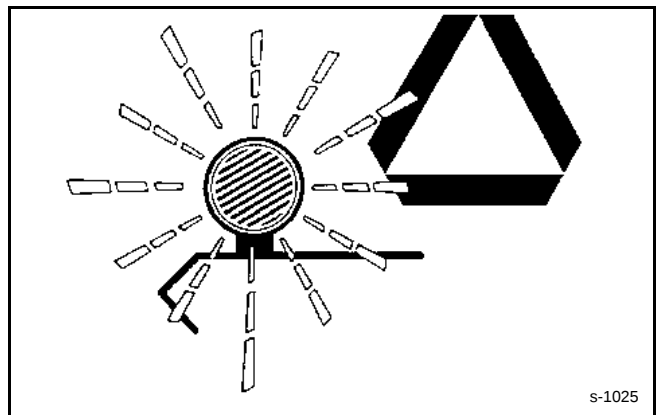


FIG. 10

General Information

Fire Prevention

FIG. 11: Due to the nature of the crops this machine will operate in, the risk of fire is of concern. Regular inspection of the machine can reduce the risk of fire. Keep the machine free of crop debris.

Check the machine daily for any noises that are not normal. Such noises could indicate a failed bearing that can cause heat buildup.

When finished baling and before leaving baler, remove the bale from the bale chamber. Raise the tailgate and put the tailgate lockout valve in the lock position. Check for accumulation of hay or hot spots in the bale chamber and pickup area. Remove hay accumulation. Put the tailgate lockout valve in the unlock position and lower the tailgate.

If a fire occurs while baling, eject the bale, move tractor and baler upwind away from bale 12 m (40 ft). Raise the tailgate. Engage the tailgate lockout valve in the LOCKED position. Use a fire extinguisher or other water source to put out the fire.



FIG. 11

Maintenance

FIG. 12: Before doing any unplugging, lubricating, servicing, cleaning, or adjusting:

- Park the machine on a solid level surface.
- Close the tailgate.
- Disengage the tractor PTO.
- Put the tractor transmission in PARK and apply the tractor parking brake.
- Stop the tractor engine and take the key with you.
- Put the tailgate lockout valve into the LOCKED position if the tailgate is raised.
- Look and Listen! Make sure all moving parts have stopped.
- Put blocks in front of and behind the wheels of the tractor and the baler before working on or under the baler.

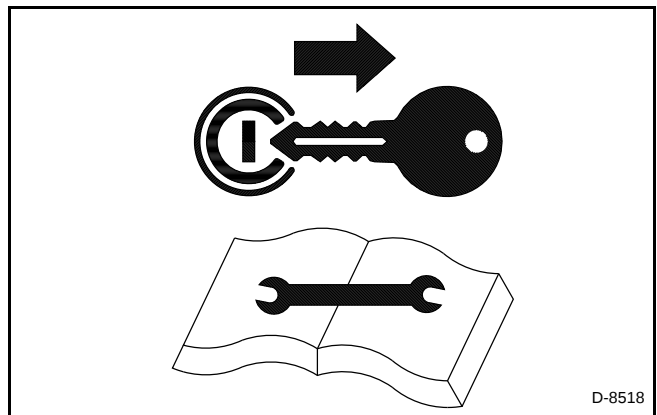


FIG. 12

FIG. 13: Never service, check or adjust drive chains or belts while the tractor engine is running.

Never remove crop, twine, or mesh from the machine while the tractor engine is running. Moving parts can pull you in faster than you can move away.

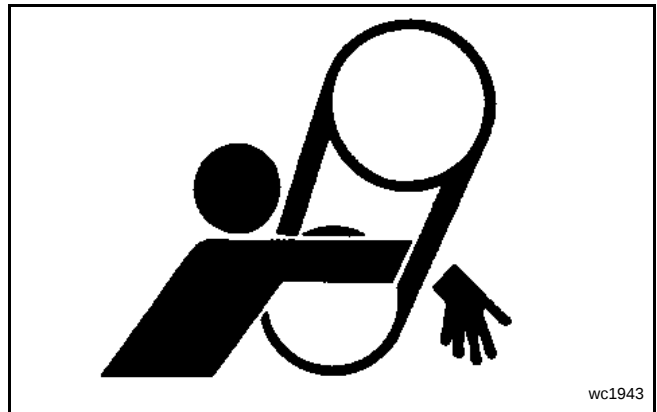


FIG. 13

FIG. 14: DO NOT operate the machine with drive shafts shields open or removed. Entanglement in rotating drive shafts can cause serious injury or death.

Stay clear of rotating components.

Make sure rotating guards turn freely.

A loose yoke can slip off the tractor PTO shaft and result in injury to persons or damage to the machine.

When installing a quick disconnect yoke, the spring activated locking pins must slide freely and be seated in the groove on the PTO shaft.

Pull on the implement driveline to make sure the quick disconnect yoke cannot be pulled off the PTO shaft.



FIG. 14

FIG. 15: When the tailgate is raised for any maintenance or service work, put the tailgate lockout valve (1) into the LOCKED position.

Always unload the bale from the bale chamber before raising or working under the machine.

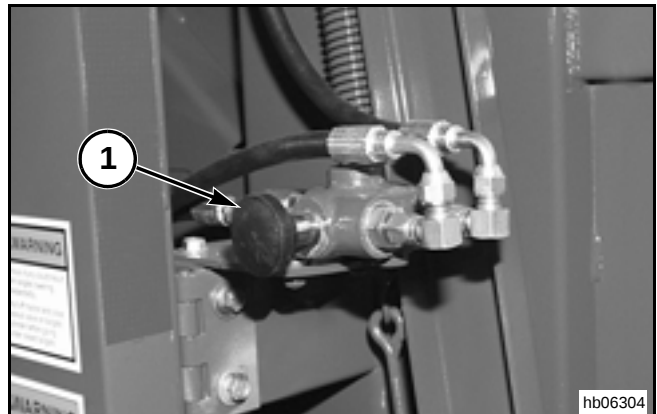


FIG. 15

FIG. 16: Escaping hydraulic fluid under high pressure can be almost invisible but can penetrate the skin causing serious injury.

Fluid injected into the skin must be surgically removed within a few hours. If not treated immediately, serious infection or reaction can develop. See a doctor familiar with this type of injury immediately.

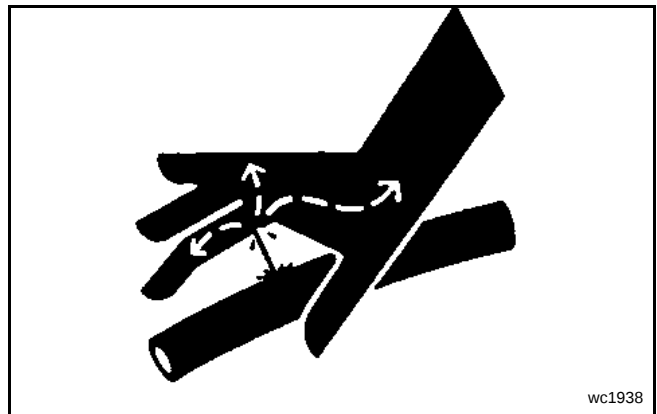


FIG. 16

FIG. 17: Use a piece of cardboard or wood to search for possible leaks, never use your hands. Wear leather gloves for hand protection and safety goggles for eye protection. DO NOT use your bare hand.

Relieve all pressure before disconnecting any hydraulic lines. Make sure all connections are tight and hydraulic lines are not damaged before applying pressure.

Make sure electrical connectors are free of dirt and grease before connecting.

Check for loose, broken, missing, or damaged parts. Have everything in good repair. Make sure all guards and shields are in place.

Check all nuts and bolts periodically for tightness.

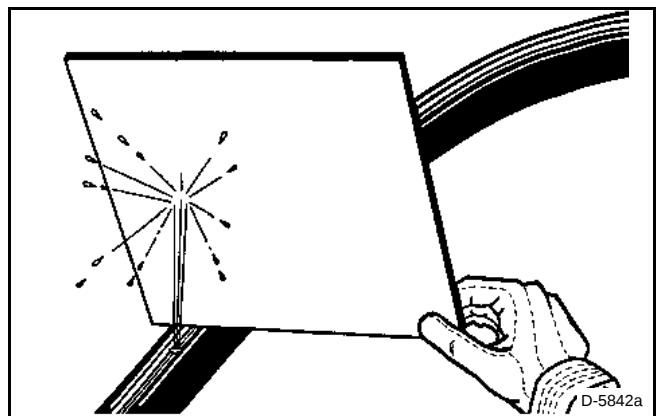


FIG. 17

General Information

After unplugging, lubricating, servicing, cleaning, or adjusting the machine make sure all tools and equipment have been removed.

Tire Safety

FIG. 18: Tire explosion and/or serious injury can result from over inflation. Do not exceed tire inflation pressures. See Tires in Specifications for correct tire pressure.

Check tires for cuts and bulges. Replace worn or damaged tires. When tire service is necessary, have a qualified tire mechanic service the tire. See Tires in Specifications for correct tire size.

Do not weld on the rim when a tire is installed. Welding will cause an explosive air/gas mixture that will ignite with high temperatures. This can happen to tires that are inflated or deflated. Removing air or breaking the bead is NOT enough.

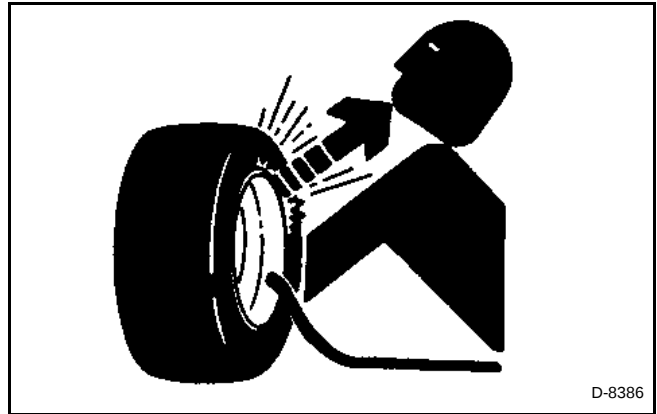


FIG. 18

INTRODUCTION

The operation and maintenance instructions included in this manual are assembled from field testing and other data. The information is written for general conditions. Make adjustments as necessary for specific conditions.

Right-hand and left-hand, as used in this manual, is determined by facing the direction the machine will travel when in use.

Units of Measurement

Measurements are given in metric units of measurement followed by the equivalent in U.S. units. Hardware sizes are given in millimeters for metric hardware and inches for U.S. hardware.

Replacement Parts

To receive prompt efficient service, always remember to give the dealer the following information:

- Correct part description or part number.
- Model number of your machine.
- Serial number of your machine.

Serial Number Plate Location

FIG. 19: The serial number plate (1) is located on the inside of the left-hand side panel.

Machine Identification

Machine Model No.: _____

Machine Serial No.: _____

Date of Delivery: _____

Dealer Name and Address: _____

Dealer's Telephone No.: _____

Dealer's Fax No.: _____

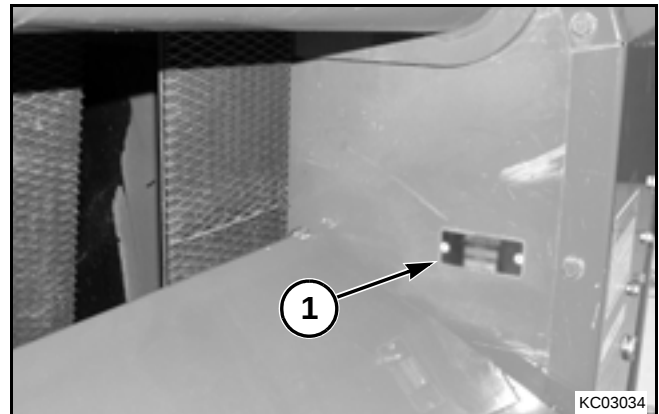


FIG. 19

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General Information

Baler Operation

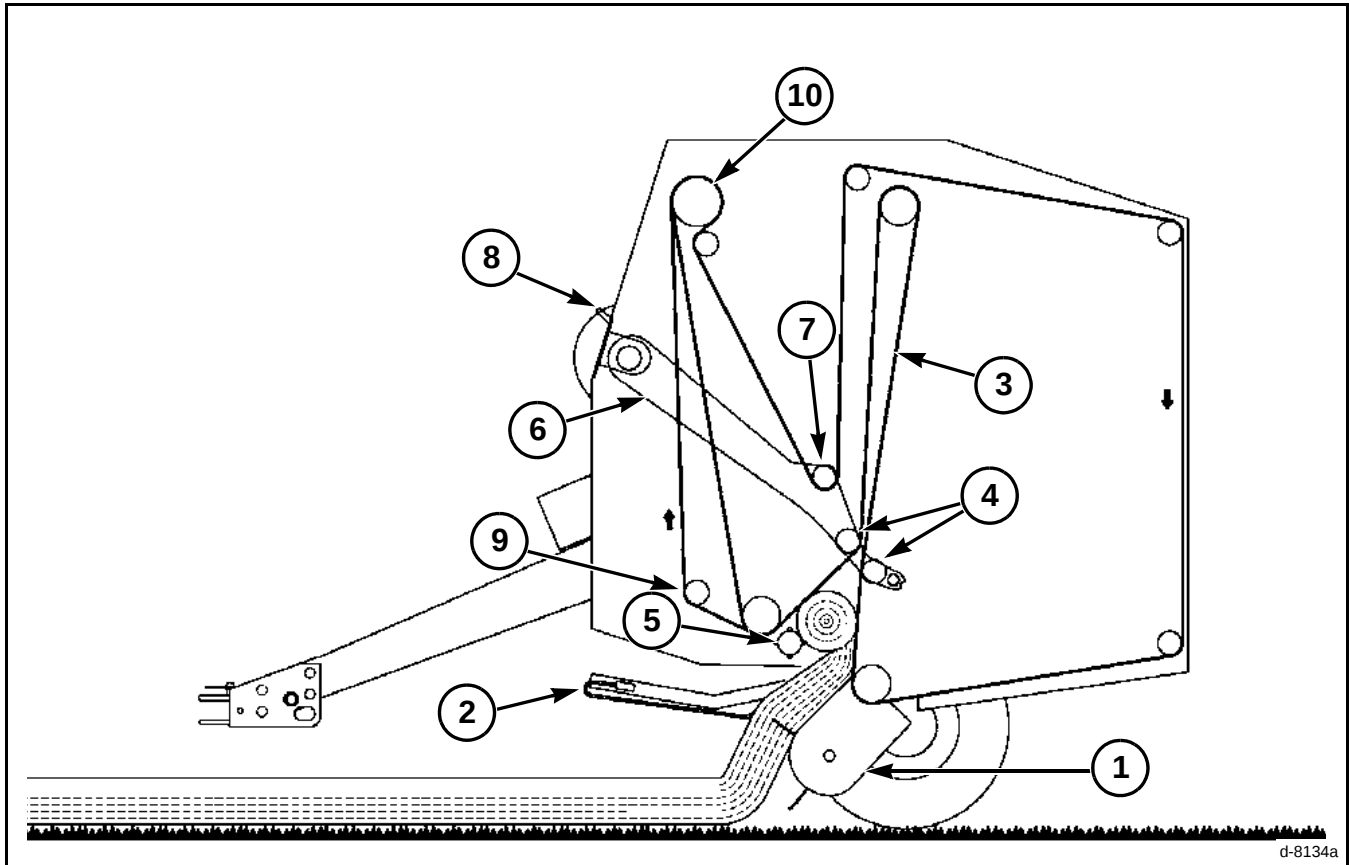


FIG. 20

FIG. 20: The illustration shows the windrowed crop being picked up. The crop moves across the pickup assembly (1) into the bottom of the open throat bale chamber. The windguard (2) holds the crop against the pickup assembly. In the bale chamber the crop contacts the rough top surface of the forming belts (3), which are moving upward. The forming belts carry the crop to the top of the starting chamber which is formed by the bale density rolls (4). The downward motion of the forming belts turns the crop downward against the starting roll (5). The starting roll folds the crop rearward into the crop coming in. The core is started and begins to roll.

Springs and hydraulic cylinders pull down on the tension arm (6). The bale density rolls are held down to reduce the size of the bale chamber to a starting size. The belt tension roll (7) is held down to remove the slack from the forming belts. As the bale increases in size, the bale density rolls are forced upward moving the bale size indicator (8) downward. The bale density roll puts an increasing downward force against the bale. This force keeps tension on the bale and compresses the crop coming into the baler.

The stagger roll (9) holds the outside forming belts in front of the other forming belts. This releases crop deposits from behind the forming belts.

The forming belts are driven by the drive roll (10).

FIG. 21: The illustration shows the full size bale. The bale density rolls (1) have moved upward, to increase the size of the bale chamber. The bale is on the tailgate carrier roll (2).

The bale must now be wrapped with twine and unloaded.

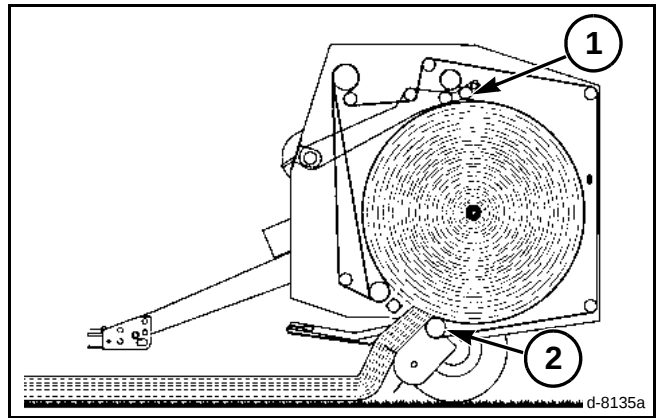


FIG. 21

Tailgate Lockout Valve

FIG. 22: When the tailgate is raised for any maintenance or service work, push the lockout valve (1) into the LOCKED position to prevent the tailgate from being lowered. The tailgate can only be lowered when the tailgate lockout valve is released (pulled out).

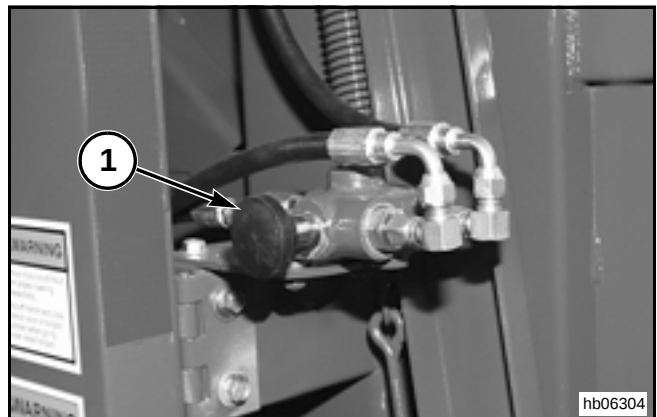


FIG. 22

General Information

Baler Components

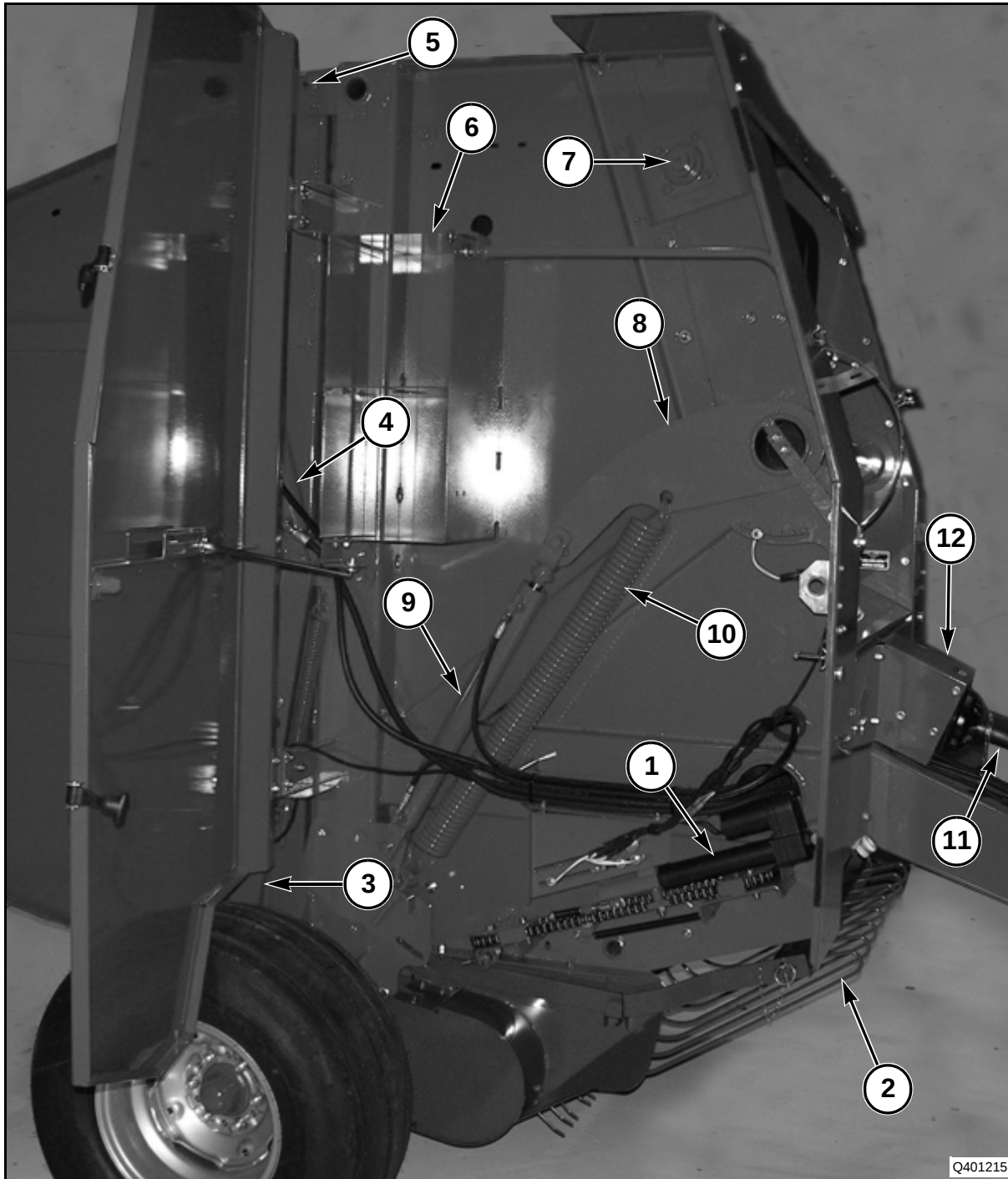


FIG. 23

FIG. 23: Right-hand side of the baler.

(1) Twine arm actuator

(2) Windguard

(3) Tailgate latch strap

(4) Tailgate hydraulic cylinder

(5) Tailgate hinge pivot point

(6) Right-hand twine box

(7) Drive roll shaft

(8) Forming belts tensioning arm

(9) Forming belts tensioning cylinder

(10) Forming belts tensioning spring

(11) Implement driveline

(12) Slip clutch

Tailgate

The tailgate is the rear half section of the bale chamber and is supported by a hinge at the top. The tailgate is operated by two hydraulic cylinders to unload the bale. The tailgate has two forming belt idler rolls and a bale carrier roll.

When the tailgate closes, the hydraulic cylinder must be completely retracted in to latch the tailgate. If the tailgate is not latched, the tailgate will swing open as the core is started and the core will stop rolling. The bale must be unloaded. The tailgate hydraulic cylinders are connected to linkage that releases the latches when the tailgate is opened.

Pickup Assembly

FIG. 24: The pickup assembly (1) picks up and feeds the hay into the bale chamber. The major components of the pickup assembly are the rotor shaft, tine bars, cam track, windguard, and the pickup height control crank.

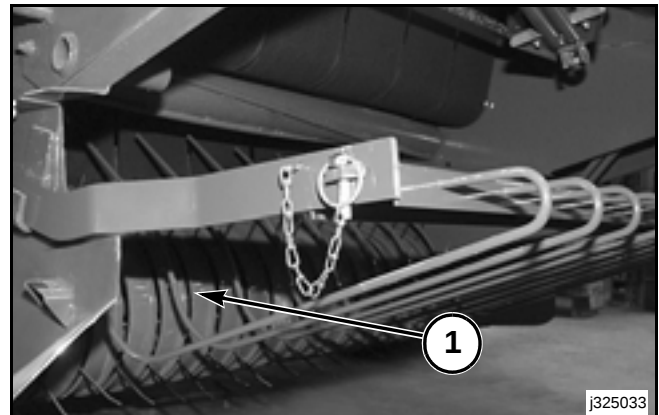


FIG. 24

Forming Belts

FIG. 25: The forming belts are made of a high tensile strength, controlled stretch, synthetic fabric bonded to the covering material. The surface pattern on the forming belts helps to roll the bale. See Specifications for more information on the forming belts.



FIG. 25

General Information

Bale Density System

FIG. 26: The bale density is controlled by two springs (1) and a hydraulic tension system. As the bale increases in size, oil is forced from the rod end of the forming belts tensioning cylinder (2) through a non-adjustable relief valve (3) to the base end. The pressure in the hydraulic tension system is held at 13 790 kPa (2000 psi).

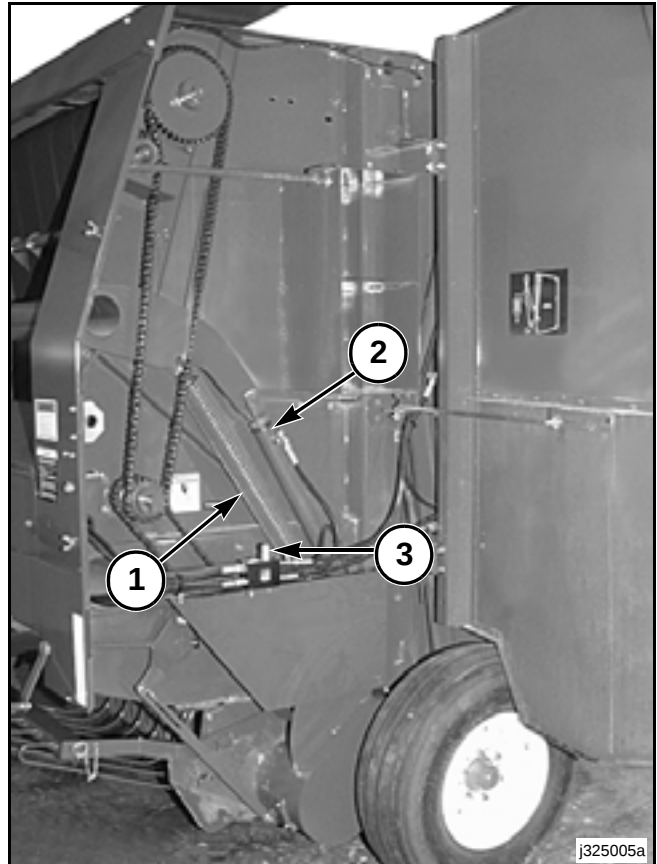


FIG. 26

Bale Size Indication

FIG. 27: The bale size indicator (1) is located on the front right-hand side of the baler. As the bale increases in size, the bale size indicator pointer will move down. Begin wrapping the bale immediately when the bale has reached the desired size.

The bale size indicator must be checked for accuracy for each tractor used.

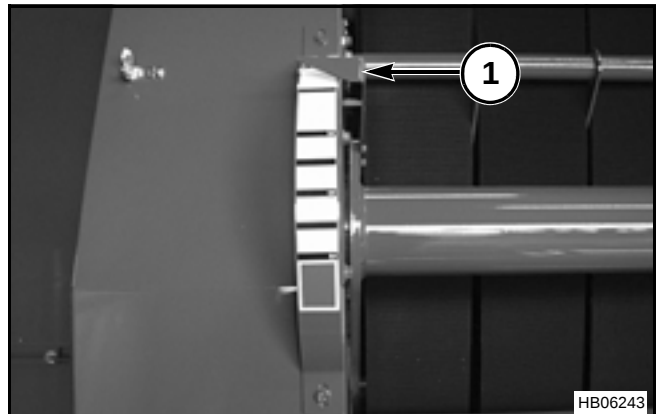


FIG. 27

Lighting and Reflectors

FIG. 28: The baler is equipped with a lighting and reflector system. The lighting system includes the lighting wiring harness, seven pin SAE connector and the warning lamps (1). The reflector system includes yellow front reflectors, red rear reflectors (2) and the SMV (slow moving vehicle) emblem (3) mounted on the back of the tailgate.

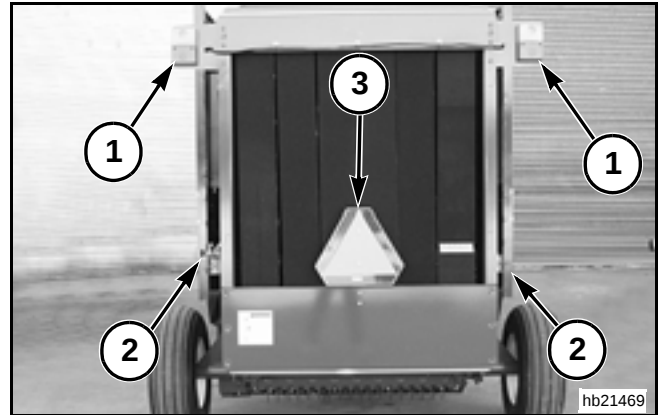


FIG. 28

Main Drive Slip Clutch

FIG. 29: The radial pin clutch (1) on the baler end of the implement driveline gives overload protection for all mechanical components.

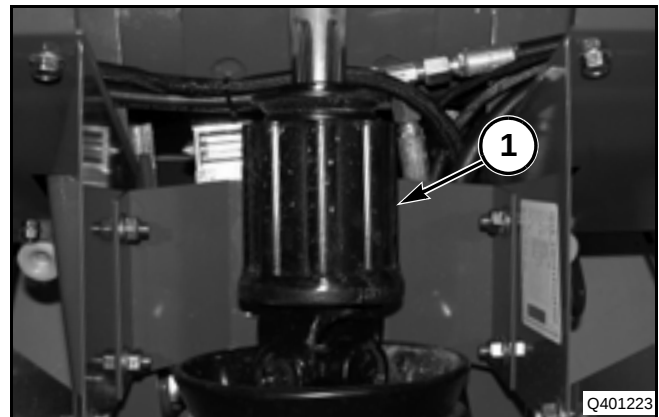


FIG. 29

Hydraulic System

Two hydraulic hoses connect to the tractor remote hydraulic system outlets for the tailgate cylinders. The hydraulic system requires tractor hydraulic pressure of 12 410 kPa (1800 psi) and a flow of 30 to 38 l/min (8 to 10 gal/min).

Twine System

The bales are wrapped with twine when the desired size is reached. The twine boxes are located behind the side doors of the baler. Each twine box holds two balls of twine for a total of four balls. The twine feeds through the twine tubes then between the twine tension plates, through the front shields and down to the twine arm and the main twine tensioning spring plates within the twine arm. The arm is controlled by an electrically controlled actuator.

General Information

Baler Control Box

Three types of baler control boxes are available for this baler.

FIG. 30: Twine Tie Only Control Box

One type of baler control box contains the switch (1) and a 30 amp fuse (2) for the electric twine tying system.

This control box is used on early production balers.

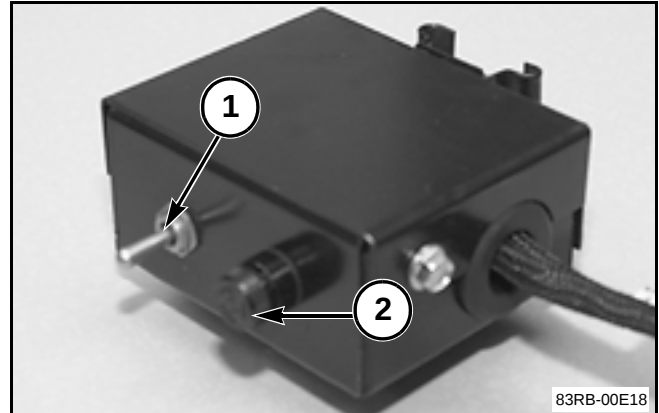


FIG. 30

FIG. 31: Full Bale Alarm Control Box

The full bale alarm baler control box contains the following:

- (1) Twine tying switch
- (2) Power switch with lamp
- (3) Full bale alarm
- (4) Tailgate down lamp

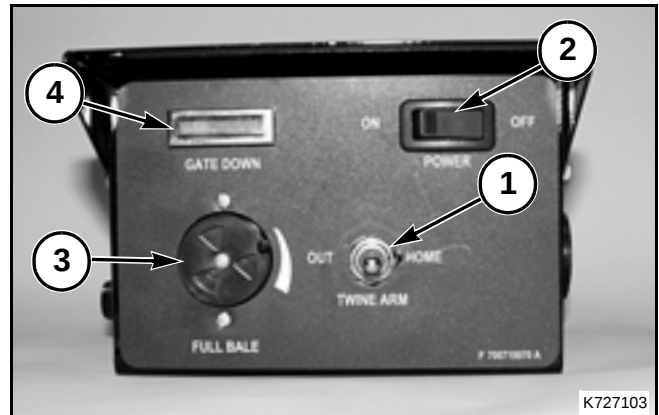


FIG. 31

FIG. 32: Auto Tie Control Box

The auto tie baler control box contains the following:

- (1) Twine tying switch
- (2) Power switch with lamp
- (3) Full bale alarm
- (4) Tailgate down lamp
- (5) Auto tie switch
- (6) Twine wraps knob

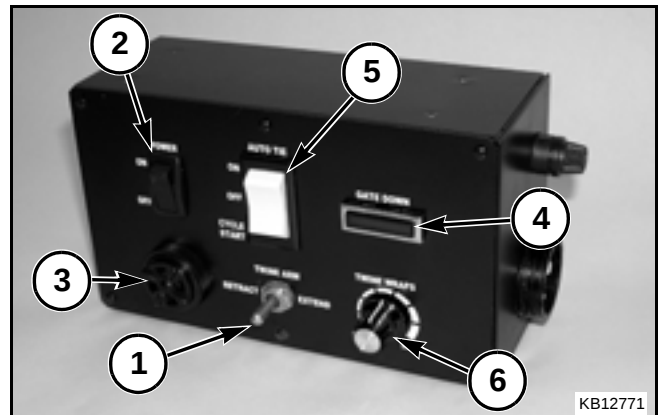


FIG. 32

SPECIFICATIONS

Specifications and design are subject to change without notice and without liability therefore.

Dimensions and Weights

Width (overall)	2350 mm (92.5 in)
Length (overall)	3734 mm (147 in)
Height (overall)	2565 mm (101 in)
Weight (approximate)	1687 kg (3720 lb)
Tongue weight (empty)	200 kg (440 lb)

Bale Size

Bale diameter	
minimum	762 mm (30 in)
maximum	1575 mm (62 in)
Bale width	1182 mm (46.5 in)
Bale weight (maximum *)	up to 567 kg (1250 lb)
Bale density*	264 kg/cu m (16.5 lb/cu ft)
Capacity (approximate*)	up to 13.6 tonne/hr (15 tons/hr)

* Depends on crop and moisture conditions

Bale Chamber

Width of chamber	1182 mm (46.5 in)
Number of belts	6
Belt width	178 mm (7 in)
Belt length	
inner four belts - mini rough	12078 mm (475.5 in)
inner four belts - wedge grip	12230 mm (481.5 in)
outer two belts (serial number HN89309 and earlier)	12157 mm (478.625 in)
outer two belts (serial number HP89101 and after or with long stagger kit)	12357 mm (486.5 in)
Number of bale forming rolls	13
Types of rolls	
crowned rubber drive roll	1
round steel rolls	11
starting roll	1

NOTE: Some early production balers have 12 bale forming rolls with 10 round steel rolls. Balers with the long stagger kit will have 14 bale forming rolls with 12 round steel rolls.

Bale size indicator	yes
---------------------------	-----

General Information

Tires

Size

standard 11L x 15, 6 ply rib implement

optional..... 31 x 13.50 - 15, 8 ply rib implement

Wheel nut size 9/16-18

Wheel nut torque 165 Nm (120 lbf ft)

Tire pressure..... 193 Kpa (28 psi)

Drives

PTO speed 540 rev/min

Pickup..... chain driven

Forming belts chain driven

Gearbox 540 rev/min, 90 degree

Pickup

Width

on flare 1417 mm (55.8 in)

tine to tine..... 1122 mm (44.17 in)

gathering wheel to gathering wheel (optional)..... 1651 mm (65 in)

Number of tine bars 4

Number of tines 36

Type of tines double

Tine control cam track

Windguard..... standard

Twine Wrapping Mechanism

Type..... electric actuated

Number of twine balls..... 4

Type of twine plastic or sisal

Number of twines..... 2 twines, single twine arm

Lighting

Type..... red tail lamps and flashing amber warning lamps with turn signals.

Power and control..... 12V dc by using the SAE 7-pin connector

Tractor Requirements

PTO speeds	540 rev/min
Minimum recommended PTO power	29.84 kW (40 hp)
Minimum tractor weight	1814 kg (4000 lb)
Hydraulics	single remote
Electrical system	12V dc
Tractor tire spacing	
maximum rear	2591 mm (102 in)
minimum front and rear	1346 mm (53 in)

Lubrication

Grease fitting lubricant	No. 2 multipurpose lithium grease
Roller chain lubricant	clean engine oil
Gearbox	
capacity	0.83 liter (1-3/4 pint)
lubricant	SAE EP 90 W
Wheel bearing lubricant	heavy duty wheel bearing grease
Forming belt tension system	
capacity	2.25 liter (2-1/2 qt)
type of fluid	20W hydraulic oil

General Information

GENERAL SERVICE PROCEDURES

Bolt Torque Values

All bolts used on this machine are Grade 5 plated bolts unless specified. Always replace with Grade 5 hardware except where higher grades are specified. All Grade 5 bolts have three radial marks on the bolt head. Tighten all hardware according to the following charts unless specified differently in the manual.

Do not over tighten bolts as this can cause a bolt to fail during operation.

See Specifications for wheel hardware torque.

Standard Bolt Torque Chart

Bolt Size	Grade 2		Grade 5		Grade 8	
	Nm	Lbf ft	Nm	Lbf ft	Nm	Lbf ft
5/16-18	15	11	24	17	33	25
3/8-16	27	20	42	31	59	44
7/16-14	43	32	67	49	95	70
1/2-13	66	49	105	76	145	105
9/16-12	95	70	150	110	210	155
5/8-11	130	97	205	150	285	210
3/4-10	235	170	360	265	510	375
7/8-9	225	165	585	430	820	605
1-8	340	250	875	645	1230	910
Standard Bolt Identification  Grade 2 No Marks  Grade 5 3 Marks  Grade 8 6 Marks						

Metric Bolt Torque Chart

Bolt Size	Class 5.8		Class 8.8		Class 10.9	
	Nm	Lbf ft	Nm	Lbf ft	Nm	Lbf ft
M 5 x 0.8	4	3	6	5	9	7
M 6 x 1	7	5	11	8	15	11
M 8 x 1.25	17	12	26	19	36	27
M 10 x 1.5	33	24	52	39	72	53
M 12 x 1.75	58	42	91	67	125	93
M 14 x 2	92	68	145	105	200	150
M 16 x 2	145	105	225	165	315	230
M 18 x 2.5	195	145	310	230	405	300
M 20 x 2.5	280	205	440	325	610	450
M 24 x 3	480	355	760	560	1050	780
Identify metric bolts by the class number stamped on the bolt head or nut. Higher numbers indicate higher strength.						

Working Under the Tailgate

When the tailgate is raised for any maintenance or service work, push the lockout valve into the LOCKED position. This prevents the tailgate from being lowered. The tailgate can only be lowered when the tailgate lockout valve is released (pulled out).

Wheel Hardware

The wheels are fastened to the hubs with wheel nuts installed on threaded studs in the hub flange. When installing a wheel, clean the threads on the studs with a steel brush and lubricate threads with oil. Tighten the wheel hardware after every 50 hours of operation. See Specifications for the correct torque.

Bearing Replacement (Eccentric Self-Locking Collar)

Bearings with eccentric self-locking collars are used on several shafts and are held in position on the structure with bearing flanges.

FIG. 33: The bearing (1) is held in position on the shaft by a locking collar (2). The locking collar has an eccentric counterbore. This counterbore engages the eccentric end of the bearing inner race (3) when the bearing is assembled. The locking collar is rotated on the bearing to lock the assembly on the shaft. The assembly grips the shaft tightly with a positive locking action that increases with use. A set screw (4) in the locking collar applies additional locking pressure. A set screw (4) in the locking collar applies additional locking pressure.

To replace a bearing:

- Loosen the set screw.
- Use a drift punch inserted in the drift pin hole (5) to rotate and loosen the locking collar. Rotate the locking collar opposite the direction of normal shaft rotation. Remove the locking collar.
- Support the shaft. Remove the bolts for the bearing flanges.
- Slide the bearing and the bearing flanges from the shaft.

NOTE: Removing paint and corrosion from the shaft will make removal easier.

- Put the bearing and bearing flanges on the shaft. Make sure the bearing inner race is turned in the correct direction.
- Install the bolts for the bearing flanges. Make sure the bearing is straight within the bearing flanges. Tighten the bolts evenly.
- Put the locking collar on the shaft. Push the locking collar against the bearing inner race. Rotate the locking collar in the direction of normal shaft rotation until tightly engaged. Tighten the locking collar by hitting with a drift punch inserted in the drift pin hole.

NOTE: Always tighten the locking collar in the direction of normal shaft rotation.

- Tighten the set screw in the locking collar. Use the following chart for set screw torque.

Set Screw Size	Nm	lbf in
1/4-20	4.8	78
5/16-18	18	156
3/8-16	31	273
7/16-14	49	428

- If a bearing is replaced on the other end of the shaft, repeat this procedure for the other bearing.

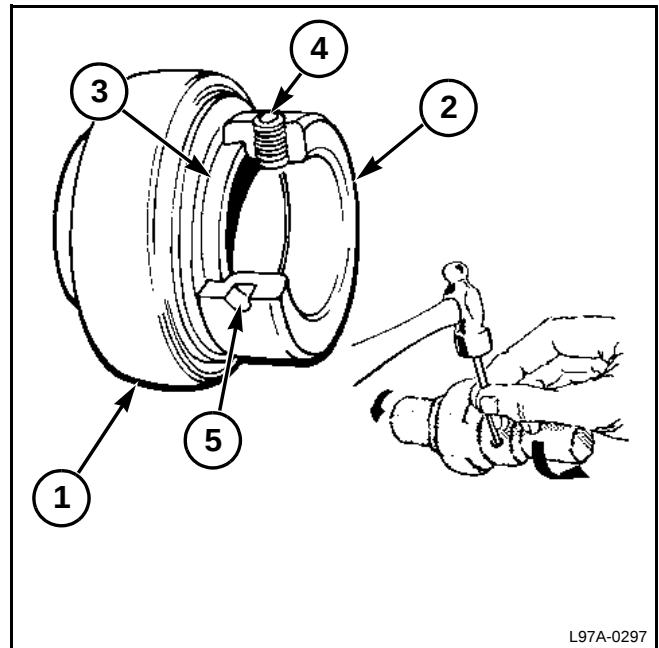


FIG. 33

General Information

Gib Key Removal And Installation

FIG. 34: Gib keys (1) are tapered keys with a tang on the thick end. A gib key is both a locking component and hub retainer. The hub must have a tapered key way that fits the gib key. The gib key will lock the hub in position. No other locking component such as a set screw is needed.

Remove paint from the shaft on both sides of the hub.

Use a pry bar (2) to apply pressure between the gib key and the hub. While holding pressure on the gib key, drive the hub away from the gib key by hitting the hub with a hammer.

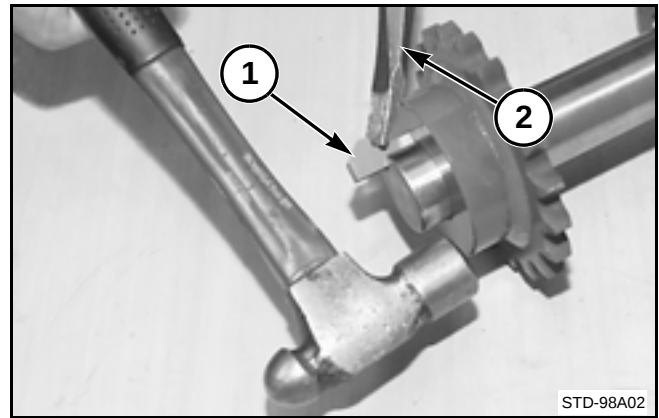


FIG. 34

FIG. 35: Make a special tool to remove gib keys from locations with little access. Use a 25 mm (1 in) wide chisel and grind the width of the chisel to 16 mm (5/8 in) (1). Grind a slot (2) in each side of the head of the chisel. The slot is used to keep the chisel from slipping.

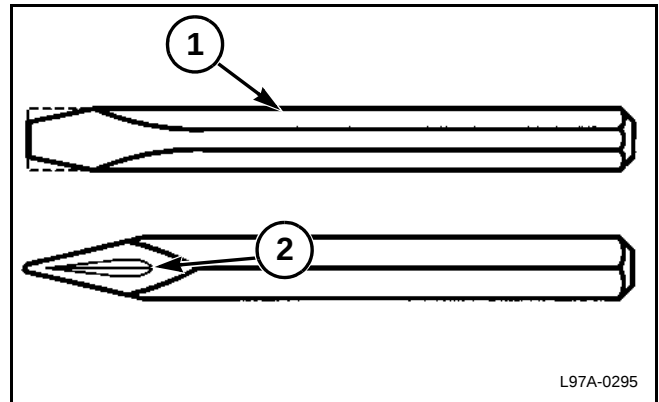


FIG. 35

FIG. 36: Insert the chisel between the gib key head and the hub. Drive against the chisel with a hammer. Use the narrow side of the chisel for smaller gib keys and the wide side of the chisel for large gib keys.

After the hub and gib key loosens, remove the gib key with the pry bar.

Remove the hub.

Put a thin layer of anti-seize compound or grease on the shaft to prevent sticking or the formation of rust between the hub and shaft.

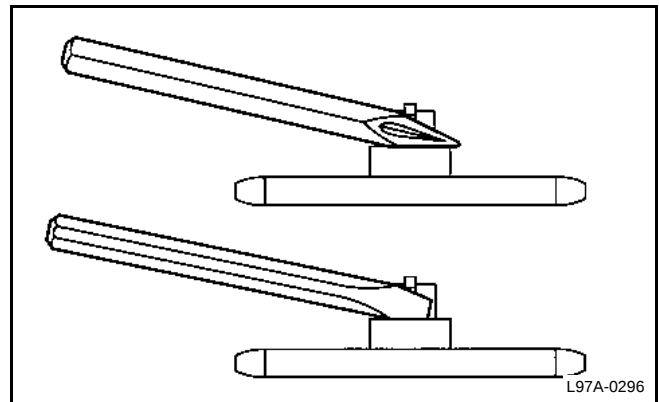


FIG. 36

FIG. 37: Install the hub. Make sure the taper in the hub is in the same direction as the gib key taper. Align the key way in the hub with the key way on the shaft. Install the gib key.

Hold the sheave or sprocket in position on the shaft. Hit the gib key with a hammer until the gib key is seated.

NOTE: The gib key does not have to be driven extremely hard into the hub to seat. Make sure the head of the gib key is deformed.

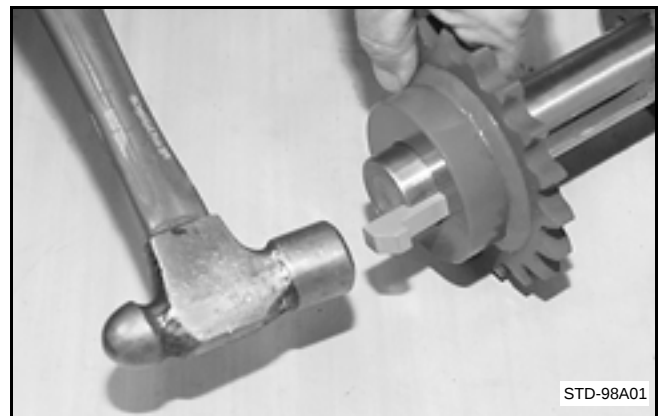


FIG. 37

Challenger®

RB452 Round Baler

SERVICE MANUAL 79033773 A Rev.

02 - Drives

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