Challenger®

Product Information Guide

SB Square Balers

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CHALLENGER® SB SERIES SMALL SQUARE BALERS

INTRODUCTION

The Challenger® SB Series “Center-Line Balers” give you the options you want and the features you need to produce high quality hay. The center-line design allows crop to move in a straight line from the time it leaves the pickup until it drops out the back as a finished bale. By using this advanced bale-forming concept, we have eliminated many high maintenance cross-conveying mechanisms still used in other baler designs.

The wide, low-profile pickup sits squarely up front, so the center-line baler tows narrower than conventional designs, even when they are in “transport” position. Since field and road positions are the same, you don’t have to back bale or move bales when opening a field. Just pull in and start baling.

If quality hay, unmatched maneuverability and high capacity are required, the Challenger® SB Series center-line balers will fill the need.

PRODUCT DESCRIPTION

The Challenger® model numbers SB34 and SB36 are small rectangular balers that build 14" high by 18" wide bales with uniform density. These balers incorporate many options that adapt them to most any square baling application. The SB34 has a wide pickup and is designed with the medium and small farm operation in mind. The SB36 has a higher capacity pickup and heavy-duty construction for large farms or custom operators.

The SB44 is a rectangular baler that builds a 16" high by 18" wide bale. This size bale is popular with high volume hay producers and custom operators who transport a lot of hay.

MARKET

Baling is essentially a "packaging" operation. The materials that can be packaged with a rectangular baler range from high-quality hay to straw and other crop residues. The acceptance of the small rectangular baler has come about because people like the size, shape and density of the bales. Bales are small enough to be stacked and fed by hand and dense enough for efficient long distance hauling and inside storage.

MAJOR COMPETITORS

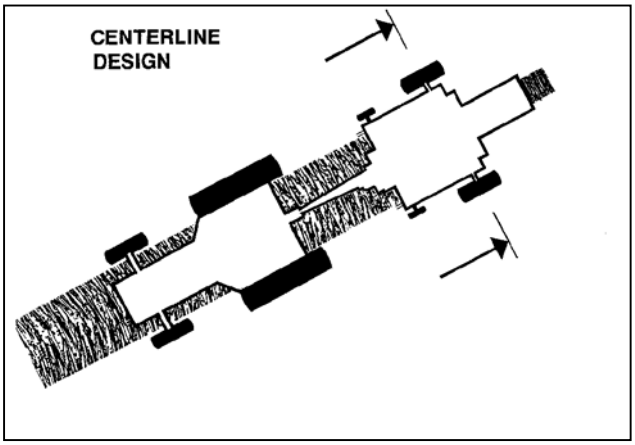
CHALLENGER SB34	CHALLENGER SB36	CHALLENGER SB44
New Holland 570	New Holland 575	New Holland 580
John Deere 338	John Deere 348	No entry Freeman200/270

GENERAL

Center-Line Design

The term “center-line” means the hay flows in a straight line from the pickup to the finished bale. Since the baler is not offset, the operator can straddle the windrow as is done when round baling.

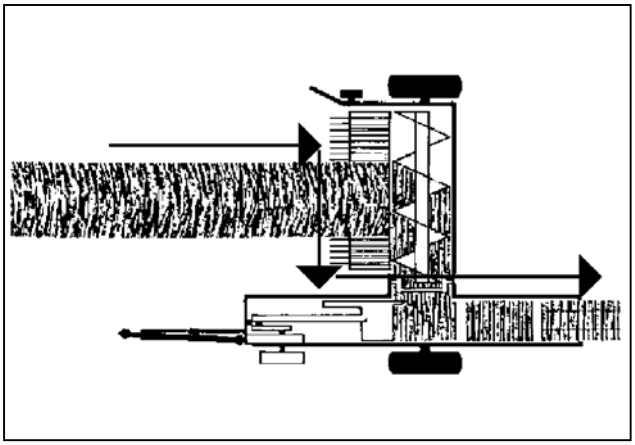
Crop flowing through the baler in a straight line, reduces the amount of crop handling, minimizing leaf loss, and makes a better quality package.



NI7200–5

Field And Road Position Are The Same

The operator is saved the time and effort required to change the machine from field to road position every time the baler is transported. With some balers, moving the tongue into transport position, can be a difficult operation. The benefit to the customer is increased productivity, as time is saved at the beginning and end of the field by not having to switch between field and transport position.



NI7200–6A

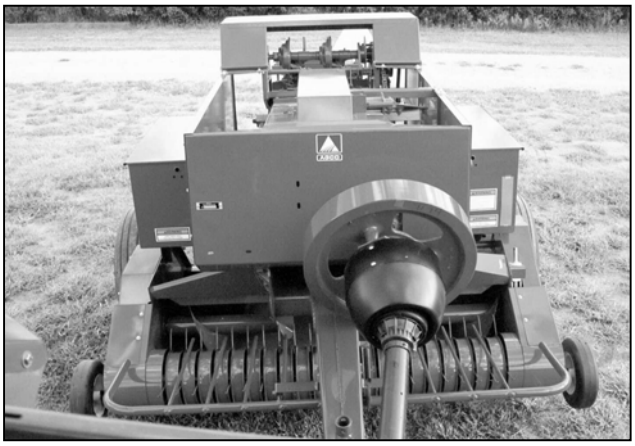
Narrow Towing Width

All of the Challenger® SB Series balers have an overall width of less than 9’. Our competitors’ units are 9’ and over on their smaller balers and 10’ wide on their larger balers. The narrower width allows for safer transport, the capability of crossing narrower bridges, and entering through smaller gates.

NI7200–24H

Compact Low-Profile Design

The compact low-profile design allows the operator to see the rear of the baler with ease. This is extremely important when using the optional bale thrower and towing a wagon. Productivity is increased by allowing the operator to spot any potential knotter problems and to see where the bale is being thrown.



NI7200–6B

Equal Size Tires-Equal Weight Distribution

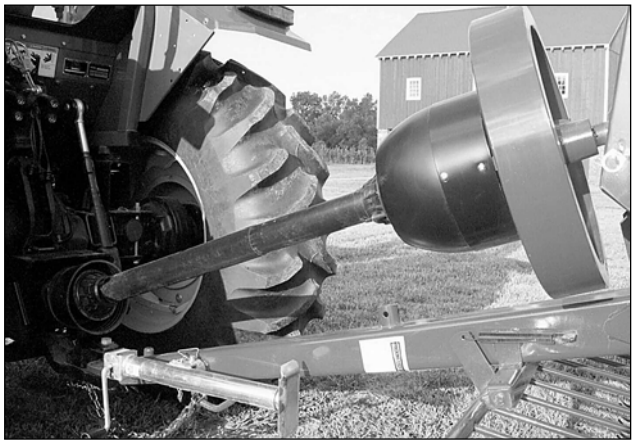
The equal weight distribution from side to side on the baler allows equal size tires to be used on both sides of the baler, helping eliminate ground compaction and machine side draft on hills. Since the baler is directly in line with the tractor drawbar, and the tires are the same size, side draft is virtually eliminated. This is particularly critical when using a thrower and a wagon in hilly conditions.

NI7200–7

BALER DRIVES

Constant Velocity Driveline

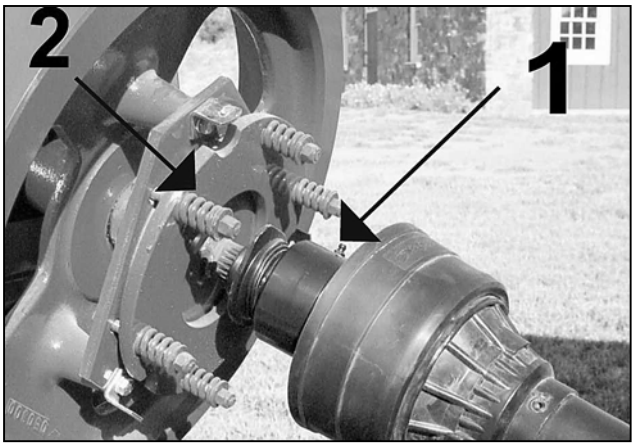
The constant velocity driveline allows sharp turns (up to 80 degrees) without driveline chatter and vibration. Tighter turns allow quicker turnarounds at the ends of the field, improving productivity. Less driveline chatter during turns will increase the drivelines life, reducing maintenance costs.



NI7200–8

Main Drive Slip Clutch/Overrunning Clutch

The power transmission is directed from the driveshaft through an overrunning clutch (1) and then through a dual plate slip clutch (2). The overrunning clutch allows the baler flywheel to free wheel when the tractor PTO is shut off, eliminating wear on the tractor PTO clutch discs and brake. The slip clutch also reduces the shock load on the tractor PTO by slipping slightly every plunger stroke. The overrunning clutch and slip clutch reduce tractor PTO wear, lowering tractor service costs.



NI7200–9

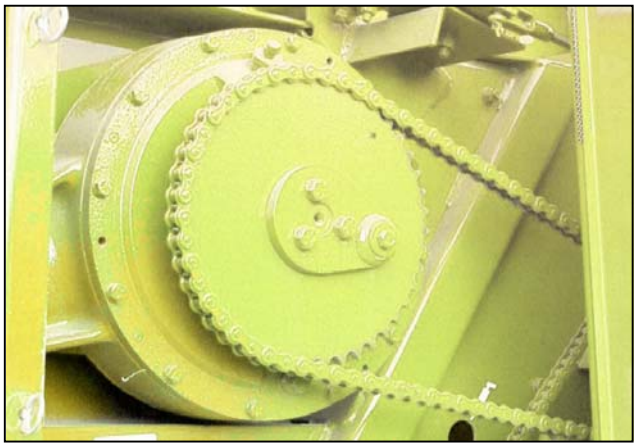
Flywheel

The flywheel helps the baler maintain momentum throughout the entire plunger stroke, smoothing out baler operation. The drive system is shearbolt protected at the flywheel. Smooth operation lessens the possibility of fatigue related baler failures, and increases operator comfort.

NI7200–10

Gearbox/Baler Drives

The hypoid gearbox is the heart of the baler drive system. The center-line drives are much simpler than those on conventional rectangular balers. The plunger is driven by a crank arm from the right side of the gearbox, and the stuffer, pickup, and knotters are driven from a shearbolt protected sprocket on the left side of the gearbox.



NI7200–11

PICKUP

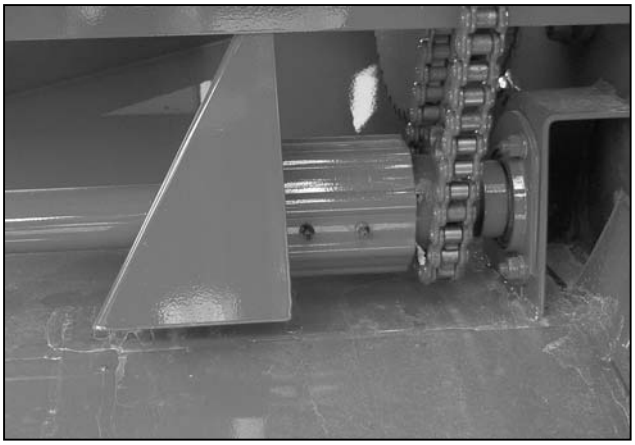
Wide Low-Profile Pickup

The pickup is centrally positioned in front of the baler to evenly feed the pre-forming chamber, allowing the use of an extra-wide pickup. The operator is able to bale wider windrows or swaths without raking, which reduces crop leaf loss. The low profile design means the crop doesn't have to be lifted as high, minimizing crop disturbance, again saving leaves.

NI7200–12

Pickup Drive Slip Clutch

The Challenger® SB36 and SB44 pickup reel and centering augers are protected from damage by slip and overrunning clutches. The SB36 has a maintenance-free radial pin slip clutch while the SB44 has a dual plate slip clutch. The SB34 and uses a belt drive that will slip for protection from hidden objects in the windrow. This reduces damage and downtime to the balers, making your customers more productive.



NI7200–50

Pickup Flotation And Gauge Wheels

The flotation of the pickup is adjustable through a spring on the right side of the pickup. The flotation can be quickly set to match even the roughest field conditions for clean crop pickup. The pickup also comes standard with gauge wheels, one on each side of the pickup. Most competitive designs have, at most, one gauge wheel. The flotation and gauge wheels protect both the pickup and the field from damage, for reduced maintenance costs and better crop regrowth.

NI7200–13

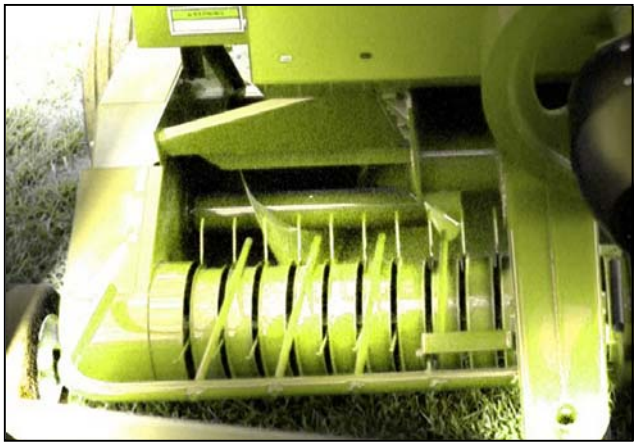
Floating Windguard

The floating windguard holds the crop down on the pickup wrappers to ensure positive feeding in all crop conditions. The windguard is especially useful in light crops and windy conditions. The floating windguard increases productivity by allowing the operator to work in most crop and wind conditions.

NI7200–14

Centering Augers

The pickup centering augers move the crop to the center of the pickup to be collected by the stuffer. The augers feed the crop smoothly, keeping the amount of crop even on each side. This increases baling capacity in heavy crop or wide windrows and is the first important factor in our ability to bale uniformly dense bales from side to side (no banana shaped bales). When conventional small square balers are used in uneven or light windrows, they have a difficult time filling both sides of the bale chamber evenly. This produces the banana shaped bale syndrome. Twines easily pop off this type of bale. Not with Challenger's center-line balers.

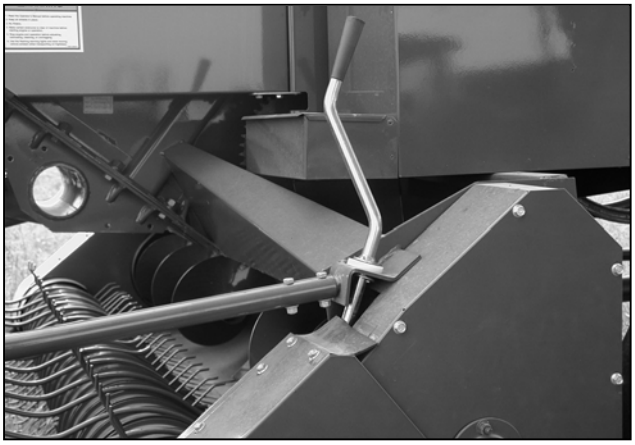


NI7200–15

Pickup Lift

The pickup is lowered to field position and raised for transport with a simple hand crank on the SB34, and the SB36. The crank allows infinite adjustment of the pickup height in the working range. When the optional hydraulic pickup lift is installed, the crank is only used to set the working height, with the hydraulic cylinder used to raise and lower the pickup. The SB44 uses a customer supplied standard 3”x8” hydraulic cylinder to raise and lower the pickup.

SB34 *NI7200–16*



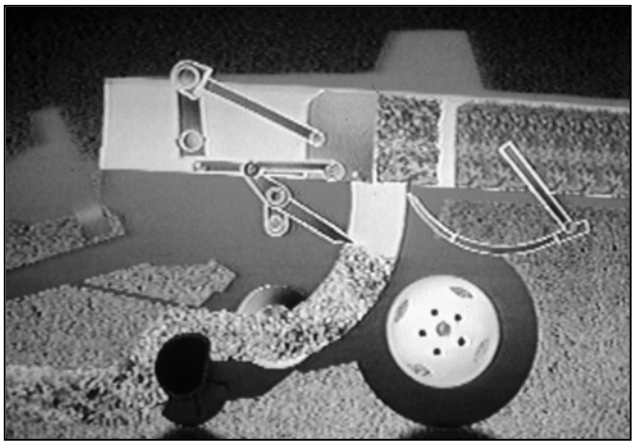
SB36 *NI7200–17H*

PRE–FORMING & BALE CHAMBER

On a conventional baler, the plunger has to totally form, cut, and compress the hay fed to the bale chamber into a bale slice. These operations are evenly distributed on the center-line balers to minimize peak loading of the drive system, which extends the life of drive components.

Pre-Forming Chamber

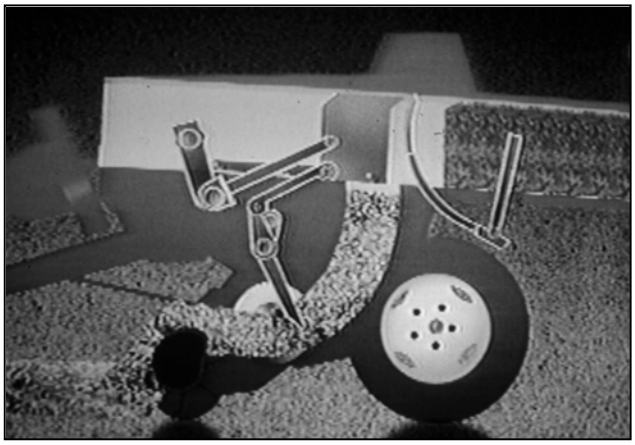
The crop is moved from the pickup directly into the pre-forming chamber. The crop continues in a straight line, assuring the leaves will be distributed evenly throughout the bale, and not end up on the ground. There the hay is pre-formed and pre-compressed into a slice before it enters the bale chamber, reducing the amount of compression the plunger has to perform.



NI7200–18

Stuffer

The stuffer then pushes the pre-formed flake into the bale chamber. The plunger, timed to the stuffer, collects the crop, and further compresses it into the bale. Since the stuffer separates the flake from the incoming crop, the main job of the plunger knives is to trim the tails off the bottom of the flake, further reducing plunger loading. The pre-formed bale slice (flake) ensures uniform density throughout the bale, and that the bale is well shaped and square shouldered. Since the same amount of crop is distributed to each side of the bale, “banana shaped” bales are virtually eliminated.

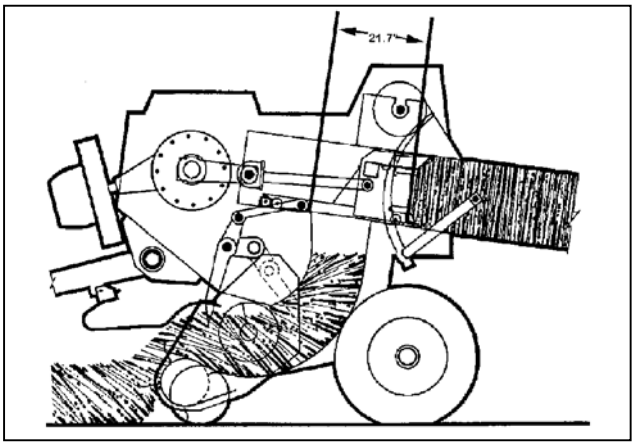


NI7200–19

Direct, straight crop feeding causes less crop disturbance, resulting in higher quality bales. These square shouldered, uniform bales handle easier and stack better, making transportation and storage more efficient.

Short Plunger Stroke

The pre-formed slice concept allows the plunger to travel a shorter distance while forming a bale. The short 21.7 inch plunger stroke on the SB34 and SB36 balers and 23 inch on the SB44 reduces wear on the plunger and plunger rollers by as much as 30% over competitive balers. This can calculate into not just less feet, but **"less miles"** for the plunger to travel in a days baling.

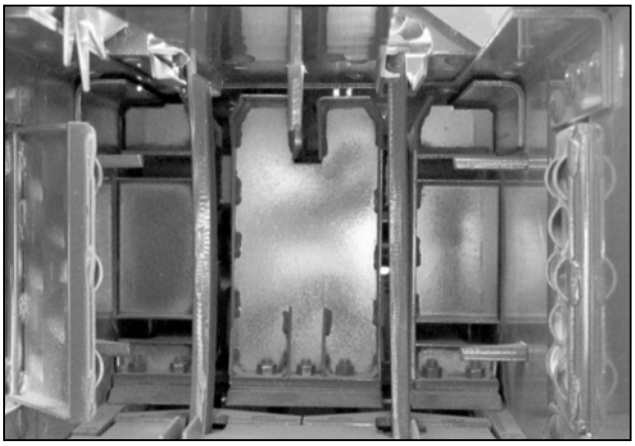


NI7200–20

The service life of plunger rollers is increased, reducing total cost of operation over the life of the baler.

High Speed Plunger

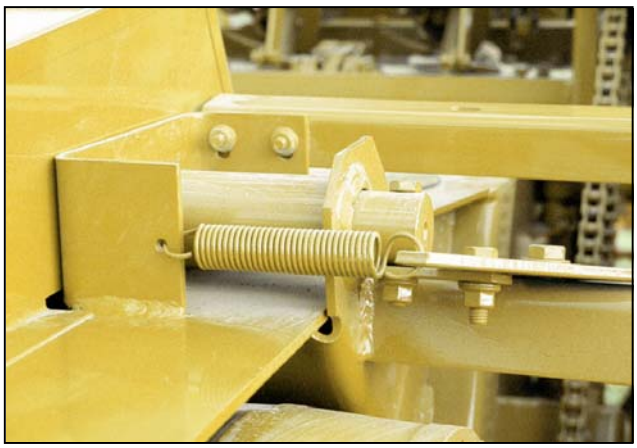
The plunger operates at 100 strokes per minute on the SB34, SB36, and SB44. The plunger has segmented knives fitted to the bottom. Since every flake of crop entering the bale chamber is pre-formed, the knife clearance adjustment becomes less critical.


NI7200–21

The faster plunger speed increases the baler capacity, for increased productivity.

Plunger Safety Stop

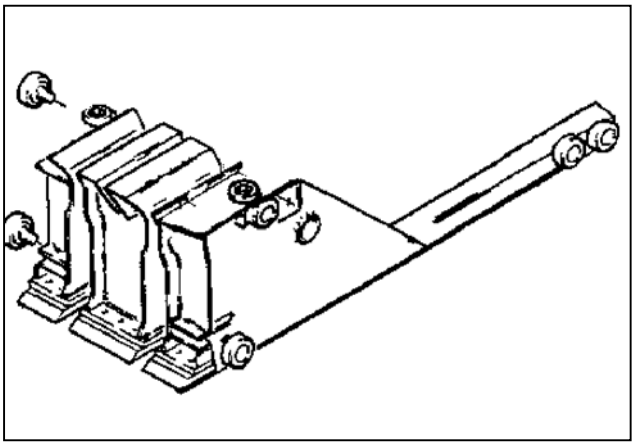
The plunger safety stop will engage if the needles remain in the bale chamber during a plunger compression stroke, minimizing the possibility of needle damage. The mechanism works on a simple bellcrank arrangement, with adjustment being very easy to set and maintain. The safety stop is simple and effective, reducing the possibility of needle damage, and minimizing machine downtime.


NI7200–22

Plunger Bearings

The plunger is positioned and moved on sealed roller bearings (7 on the Challenger® SB36, and 8 on the SB36 and SB44) to insure smooth plunger operation, and proper plunger to knife clearance.

The plunger bearings are sealed for long life and low maintenance requirements.

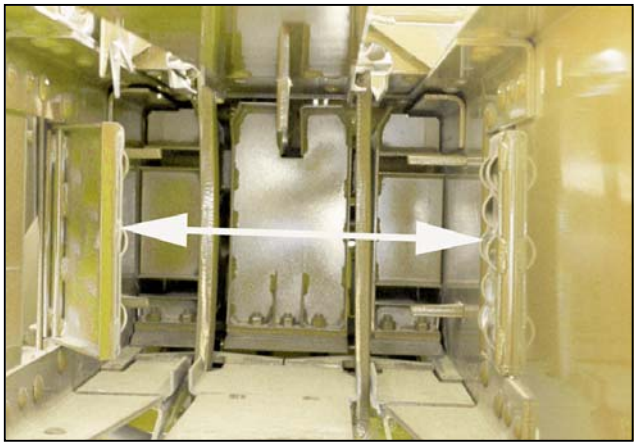


NI7200–49

Hay Resistor Doors

The Hay resistor doors in the sides of the bale chamber add pressure to the sides and the front of the bale, instead of just the top and bottom pressure that would be supplied by using only the density control rails. Correct adjustment of the resistor doors permit a heavier bale to be made without the twine being pulled from the twine holder. A set of bolt-in cast iron resistors are also included with the baler to be installed in springy crops such as straw.

The door resistors are very versatile, as they can be adjusted without removing crop from the bale chamber.



NI7200–23

Tension Spring Density Control Rails

The Challenger® SB balers are equipped with a tension spring density control system. These heavy springs maintain consistent bale weight and density and are easy to adjust with built in crank handles.
The tension springs are a simple and dependable method to regulate bale density.

NI7200–25

KNOTTER

Rugged Knotter Mechanism

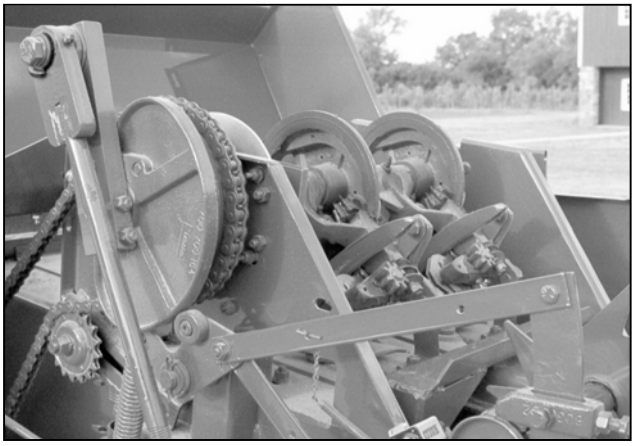
Designed for years of trouble free service, the knotters have the capability of handling plastic or sisal twine with equal ease. All the knotter parts are machined and assembled in our plant and then each knotter is adjusted and tested after installation on the baler.

This proven knotter design reduces downtime and costly repairs during the baling season.

Knotter Trip Arm

The knotter trip arm works in conjunction with the bale meter wheel, making for a very positive bale length mechanism. This system maintains a consistent bale length from 12 to 52 in.

Consistent bale length makes handling and stacking the bales much easier.



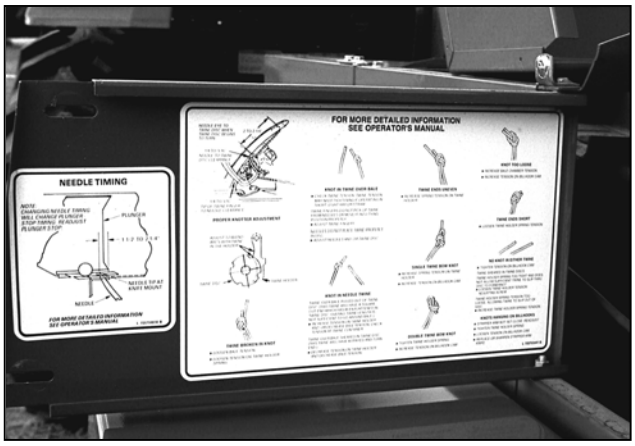
NI7200–26

Twine Boxes

The easy access twine boxes hold enough twine for a good days running without stopping. The Challenger® SB34 holds 4 balls of twine and the SB36 and SB44 hold 6 balls. A twine box is located on each side of the baler, improving twine routing for more reliable twine tying. On conventional balers, the twine storage is all behind the pickup on the right side of the machine. That setup increases the likelihood of twine tension problems and miss-ties. The twine boxes on the Challenger® balers are well placed for better tying reliability. The boxes also hold plenty of twine, increasing output because of fewer refilling stops.

Knotter/Stuffer Timing Decal

There is a knotter troubleshooting decal installed inside the left-hand side shield. There is a similar decal inside the left, front gearbox shield that covers stuffer timing. These decals give necessary maintenance and troubleshooting information for quick access when the baler is in the field. This information can be accessed in the field even if the operators manual cannot be found. Having this information always with the baler can save hours of troubleshooting time and possibly save the expense of service calls.



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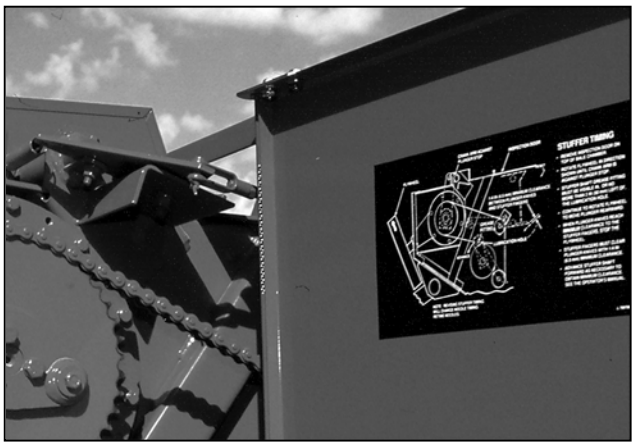


NI7200–30

MAINFRAME

Flotation Tires

Flotation tires are used to reduce ground compaction in the field. The SB34 uses 11Lx14, 6 ply tires, while the SB36 and the SB44 both come standard with 31x13.5-15, 8 ply tires.

Less soil compaction promotes faster regrowth of hay crops, maximizing crop performance.

NI7200–31

High Ground Clearance

The raised location of the bale chamber on the Challenger® balers protects the needles from damage. When the needles are in the down or home position, they are still above the axle, and cannot be deflected or damaged from high centering the baler on rocks or rough ground conditions. The sheltered position of the needles reduces downtime caused by miss-tied bales or damaged needles, increasing productivity.

OPTIONAL EQUIPMENT (FIELD INSTALLED)

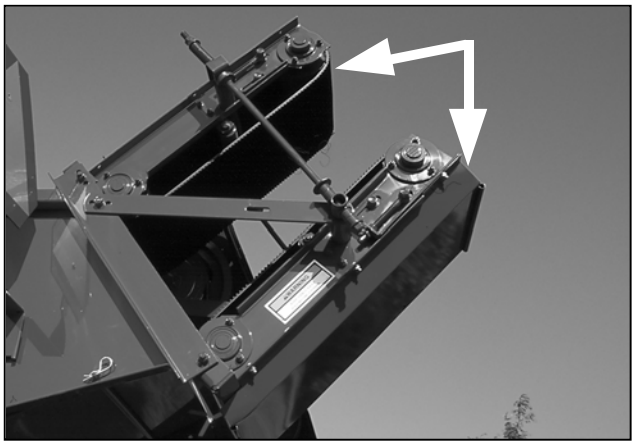
Balers are supplied less bale chute, so either a bale chute, a quarter turn chute, or a bale thrower should be ordered for each baler.

Bale Thrower

The Challenger® SB bale thrower offers the ultimate in time and labor savings. Not only is it easy to operate, but the hydraulic direction and distance control allow the operator to fill the wagon from side to side and from front to back for full wagon loads every time. The bale thrower also offers a range of features for high production and simple servicing.

The Challenger® Bale Thrower (BK40634) is designed to be used with the Challenger® Models SB34 and SB36 small square balers.

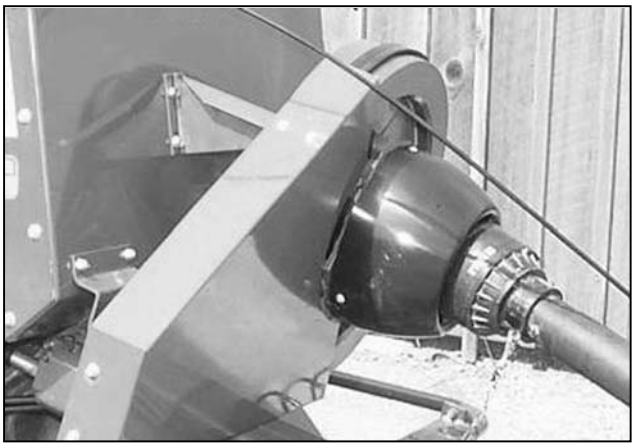
The Challenger® SB bale thrower uses two diamond tread belts to throw the bales to a towed wagon. The diamond tread on the thrower belts gets a firm grip on each bale for good distance and control. The belts don't contact the bale until it is clear of the density control rails. Therefore the belts don't burn or break the twine trying to pull the bale out of the chamber.



NI7200–34

The thrower is powered by it's own hydraulic system driven directly off the baler flywheel. It consists of the pump, reservoir, filter, control valve and hydraulic motor. The hydraulic flow to the motor does not fluctuate in response to the load on the baler.

The side to side motion of the thrower for aiming the bales is handled by using a tractor remote valve.



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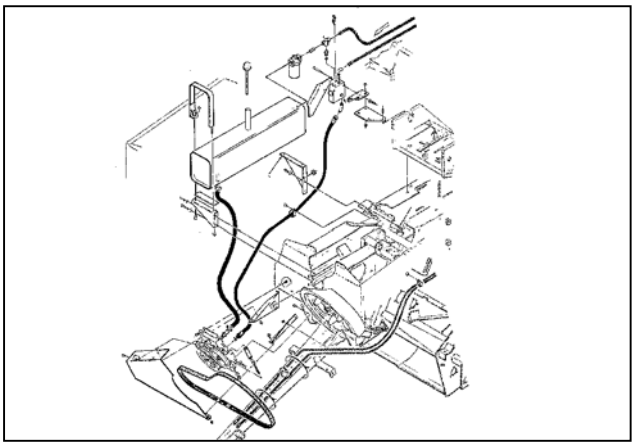
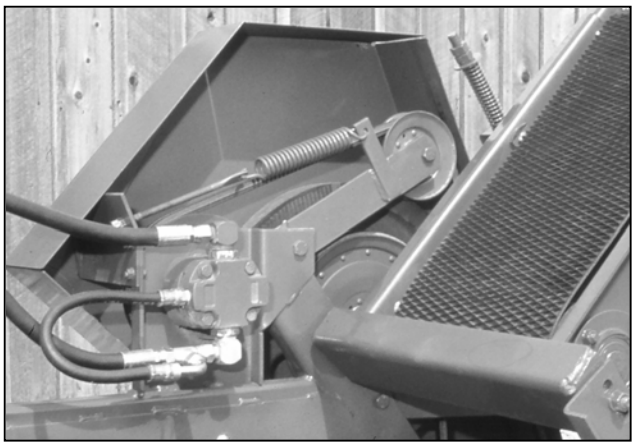


NI7200–48

Throwing distance can easily be controlled for uniform loading of the bale wagon by the tractor mounted electronic variable speed control. It has a toggle switch that controls an electric actuator mounted to the hydraulic control valve. The valve varies the amount of hydraulic fluid going to the hydraulic drive motor on the thrower. The hydraulic drive motor speeds up or slows the belt speed, which determines how far the bale will be thrown. This allows the operator to more efficiently fill the wagon.

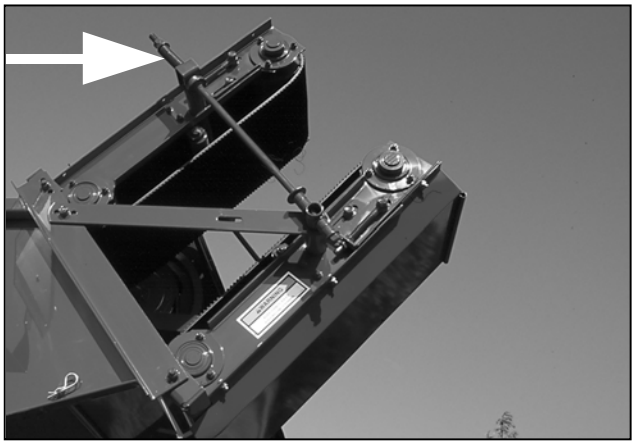


NI7200–46H

Full wagons reduce the number of trips to the barn or storage area, which saves on fuel and unloading time.

Adjustable compression springs permit adjustment of gripping pressure. The gripping pressure between the top and bottom belt can be increased or decreased to match crop material and bale weight.

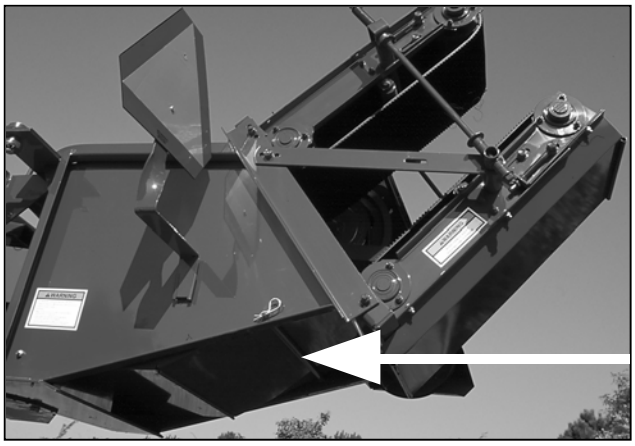
This provides the owner/operator the flexibility of working with several types of crops and bale weights.



NI7200–35

Bales can be dropped directly on the ground through a chute at the bottom of the thrower assembly. The thrower doesn't have to be removed or tilted forward to drop bales directly on the ground.

If the operator wants to bale and there is not a wagon around, he can quickly change the position of one pan and drop bales on the ground. Then when he wants to throw bales again, shift the pan back and the bales go through the thrower.

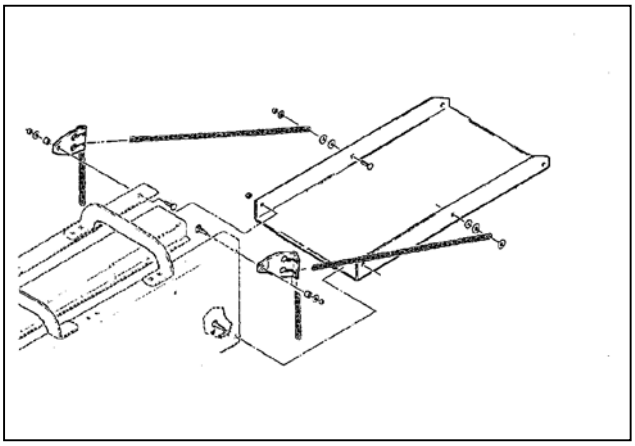


NI7200–36

Bale Chute

A one-piece chute extending from the bale chamber is used for a rear drop bale chute. This chute fits on the Challenger® SB34, SB36 and SB44 balers.

- Wholegoods Kit – BK40416
- Estimated installation time – 0.5 Hr.

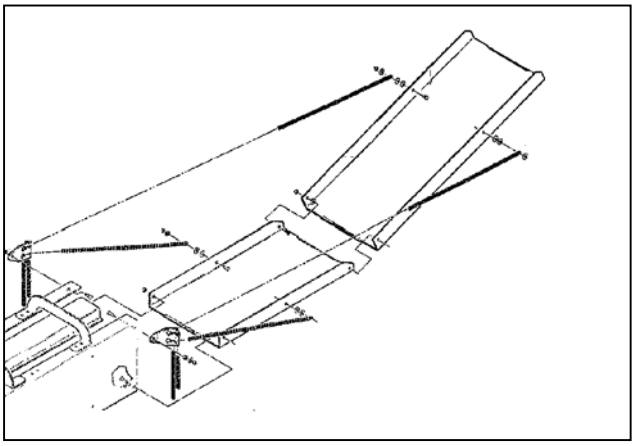


NI7200–37

Bale Chute Extension
(Requires BK40416 Bale Chute)

This is an extension chute used in combination with the BK40416 bale chute. It is most commonly used to unload bales straight from the baler to a wagon for manual stacking.

- Wholegoods Kit – BK40417
- Estimated installation time – 0.3 Hr.

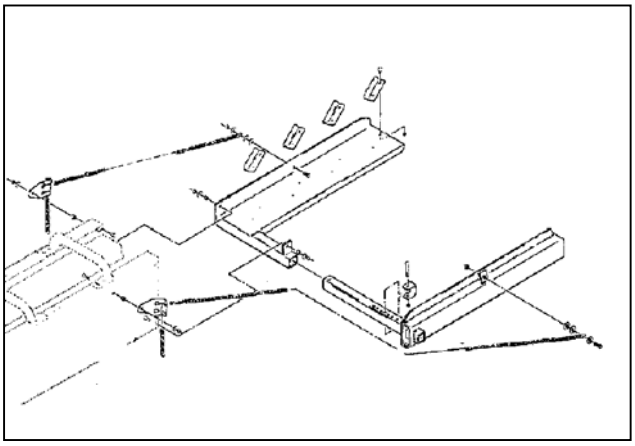


NI7200–38

Quarter Turn Chute

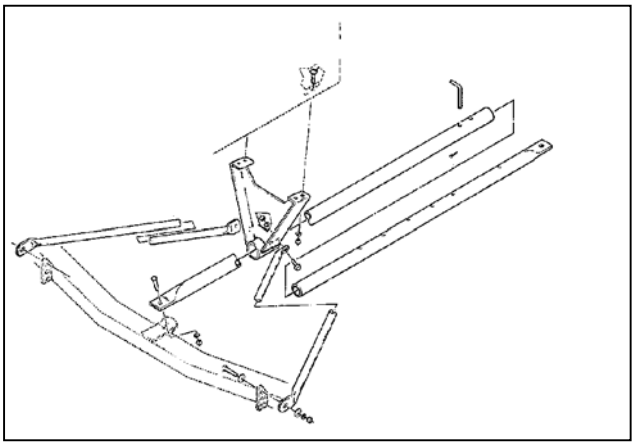
This chute is used when the operator wants to turn the bale 90° and drop it on the ground with the twines on the sides of the bale for pickup with an automatic stacking bale wagon. This chute can be set up to turn bales to the right or left or to drop them with the twines on top, like the normal bale chute.

- Wholegoods Kit – BK50391
- Estimated installation time – 0.5 Hr.



NI7200–39

Wagon Hitch Kit

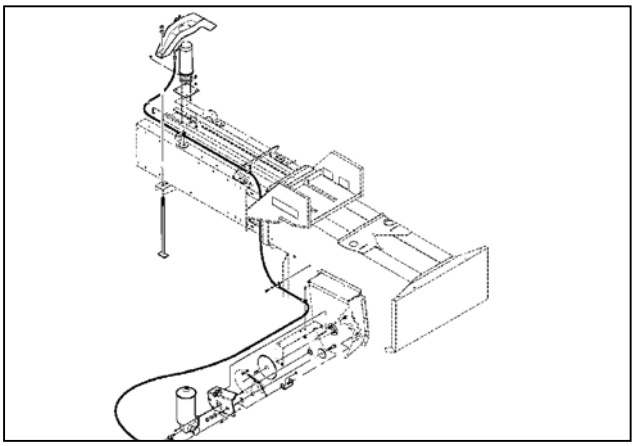


NI7200–40

A telescoping hitch is available for pulling a wagon behind the baler. This hitch is used in conjunction with the bale chute and extension or bale thrower kit. This kit should only be used to pull wagons through the field. It is not to be used to pull loaded wagons or other vehicles on the road.

- Wholegoods Kit – BK50392 for the SB34 and SB44.
- Estimated installation time – 1.0 Hr.

Hydraulic Bale Tension Kit
(Standard on SB44)



NI7200–41

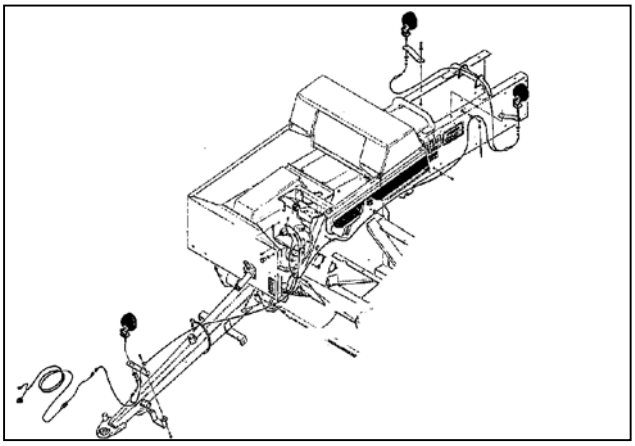
This bale density system is hydraulically operated, and it provides a more effective and automatically reactive means of controlling bale density. The hydraulic system uses its own self-contained pump and reservoir. The operator selects the pressure required to build a specific weight bale. As conditions become damper or dryer, the density cylinder will retract or extend to maintain the desired bale weight. The SB36 can be ordered with the hydraulic baler tensioner installed from the factory.

- Wholegoods Kit – BK40933
- Estimated installation time – 3.5 Hr.

Light Kit

A kit consisting of three lights is available for installation on balers for operation at night.

- Wholegoods Kit
  – BK40445 for SB34 and SB36.
  – BK40291 for SB44



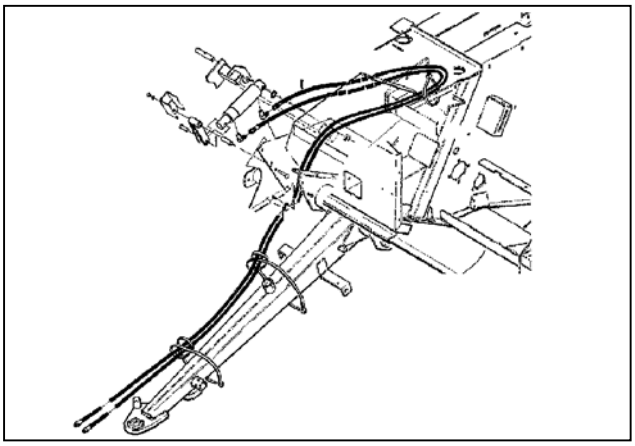
NI7200–42

Hydraulic Pickup Lift Kit

This kit consists of a hydraulic cylinder, which utilizes a tractor hydraulic remote valve to raise and lower the baler pickup from the tractor seat.

The SB44 comes with brackets to accept an ASAE standard 3” x 8” hydraulic cylinder which is supplied by the customer

- Wholegoods Kit
  – BK40422 for SB34
  – BK40555 for SB36
- Estimated installation time – 1.5 Hr.

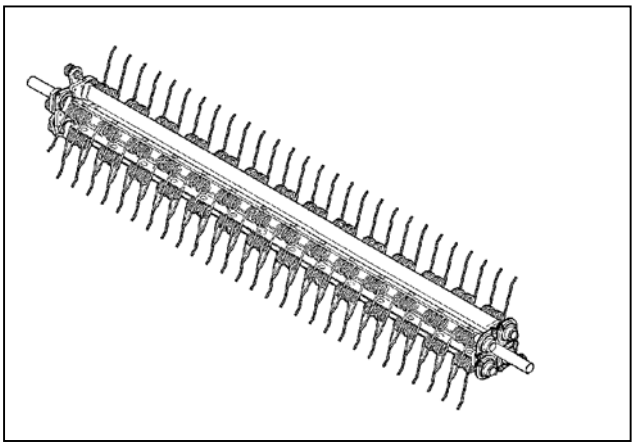


NI7200–45

Heavy Duty Pickup Upgrade Rotor Kit (SB44 Only)

This kit upgrades the pickup rotor with heavier components for longer life in heavier crop conditions.
The rotor shaft, tine channels, bearings and cranks are all heavier built for longer reliability in high usage operations. This upgrade is usually ordered as a replacement after the machine has seen several seasons in a high usage operation.

- Wholegoods Kit – BK40940
- Estimated installation time – 4 Hrs.

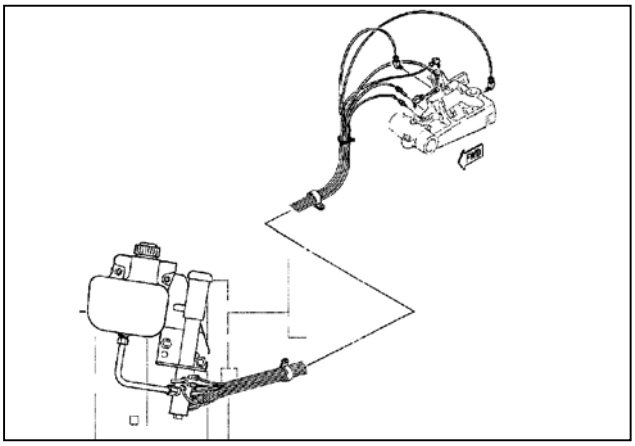


NI7200–43

Knotter Lubrication System (SB44 Only)

A centralized lubrication system for the knotters speeds up servicing the baler. With only one hand pump servicing all knotter grease fittings, it is more probable that these areas will be greased on a timely basis. Not as much time will be spent servicing the baler, which makes the operator and machine more productive.

- Wholegoods Kit _ BK40582
- Estimated installation time _ 5.0 Hrs.



NI7200–44

SPECIFICATIONS
CHALLENGER® MODEL SB34

MODEL ..... SB34 Rectangular Baler

DIMENSIONS AND WEIGHTS

Weight lb (kg) 3050 (1384)
Length
- w/o Bale Chute in (mm) 168 (4267)
- w/Bale Chute in (mm) 204 (5182)
- w/Bale Thrower in (mm) 240 (6096)

Width (Overall) in (mm) 101 (2565)
Height w/Shielding in (mm) 65 (1651)

TIRES

Size
- Standard ..... 11L x 14, 6 Ply
- Pickup Gauge Wheels in (mm) ..... 3 x 12 (76 x 305)

PICKUP

Width
- Outside End Panel in (mm) 89.1 (2264)
- Tine to Tine in (mm) 70.2 (1782)
- Inside End Panel to Panel in (mm) 75.9 (1928)

No. of Tine Bars 3
No. and Type of Tines ..... 42, Double tines
Tine Spacing in (mm) 2.6 (66)
Augers in (mm) ..... 13 O.D. (330)
Protection ..... Belt Drive
Gauge Wheels ..... 2 (One Per Side)

FEEDING SYSTEM

Stuffer ..... Crank Type w/4 Tines
Drive ..... No. 60 Chain
Protection ..... Shearbolt

BALE CHAMBER

Size of Chamber in (mm) ..... 14 x 18 (356 x 457)
Bale Length in (mm) ..... 12 to 52 (305 to 1321)
Density Control ..... Spring Loaded Density Control Rails

PLUNGER

Speed ..... 100 Strokes/min
Length of Stroke in (mm) 21.7 (550)
Mounting ..... 7 Sealed Ball Bearing Rollers

TYING MECHANISM

Conventional Twine Tie

Drive	No. 50 Chain
Protection	Shearbolt
Type of Twine	Plastic or Sisal
Twine Container Capacity	4 Balls

MAIN DRIVE

Power Drive Gearbox	Hypoid w/Tapered Roller Bearings Flywheel w/Shearbolt Protection
PTO	540 rpm
Protection	Slip Clutch
U-Joint	Direct Constant Velocity

TRACTOR REQUIREMENTS

Horsepower	35 hp min (26 kW)
PTO Speed	540 rpm
Hydraulics	No Remote Valves Required for Standard Baler

OPTIONAL KITS (Field Installed)

Bale Chute
Bale Chute Extension
Bale Chute Quarter Turn
Wagon Hitch Kit
Hydraulic Bale Tension Kit
Hydraulic Pickup Lift Kit (Requires One Double Acting Remote Valve)
Light Kit
Bale Thrower with electronic control (Requires One Double Acting Remote)

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

Sales Engineering, July 2002

SPECIFICATIONS
CHALLENGER® MODEL SB36

MODEL ..... SB36 Rectangular Baler

DIMENSIONS AND WEIGHTS

Weight lb (kg) 3300 (1497)
Length
- w/o Bale Chute in (mm) 168 (4267)
- w/Bale Chute in (mm) 204 (5182)
- w/Bale Thrower in (mm) 240 (6096)

Width (Overall) in (mm) 101 (2565)
Height w/Shielding in (mm) 65 (1651)

TIRES

Size
- Standard ..... 31 x 13.5-15, 8 Ply
- Pickup Gauge Wheels in (mm) ..... 3 x 12 (76 x 305)

PICKUP

Width
- Tine to Tine in (mm) 70.2 (1782)
- Inside Panel to Panel in (mm) 75.9 (1928)
- Outside End Panel in (mm) 89.1 (2264)

No. of Tine Bars 4
No. and Type of Tines ..... 56, Double Tines
Tine Spacing in (mm) 2.6 (66)
Augers in (mm) ..... 11 O.D. (280)
Protection ..... Overrunning Torque Limiter
Gauge Wheels ..... 2 (One per Side)

FEEDING SYSTEM

Stuffer ..... Crank Type w/4 Tines
Drive ..... No. 60HD Chain
Protection ..... Shearbolt

BALE CHAMBER

Size of Chamber in (mm) ..... 14 x 18 (356 x 457)
Bale Length in (mm) ..... 12 x 52 (305 x 1321)
Density Control ..... Spring Loaded Density Control Rails
- Optional ..... Hydraulic Density Control Rails

PLUNGER

Speed ..... 100 Strokes/min
Length of Stroke in (mm) 21.7 (550)
Mounting ..... 8 Sealed Ball Bearing Rollers

TYING MECHANISM

Conventional Twine Tie
- Drive.....No. 50 Chain
- Protection..... Shearbolt
- Type of Twine ..... Plastic or Sisal
- Twine Container Capacity.....6 Balls

Wire Twister
- Drive.....No. 50 Chain
- Protection..... Shearbolt
- Wire Container Capacity .....4 Rolls

MAIN DRIVE

Power Drive Gearbox..... Hypoid w/Tapered Roller Bearings
Flywheel w/Shearbolt Protection
- PTO.....540 rpm
- Protection..... Slip Clutch
- U-Joint..... Direct Constant Velocity

TRACTOR REQUIREMENTS

Horsepower..... 35 hp Min (26 kW)
PTO Speed.....540 rpm
Hydraulics..... No Remote Valves Required for Standard Baler

OPTIONAL KITS (Field Installed)

Bale Chute
Bale Chute Extension
Bale Chute Quarter Turn
Wagon Hitch Kit
Hydraulic Pickup Lift Kit (Requires One Double Acting Remote Valve)
Hydraulic Bale Tension Kit (Factory or Field Installed)
Light Kit
Bale Thrower with electronic control (Requires One Double Acting Remote Valve)

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

Sales Engineering, July 2002

SPECIFICATIONS
CHALLENGER® MODEL SB44

MODEL ..... SB44 Rectangular Baler

DIMENSIONS AND WEIGHTS

Weight lb (kg) 4375 (1985)
Length
w/o Bale Chute in (mm) 202 (5121)
w/Bale Chute in (mm) 244 (6187)
Width (Overall) in (mm) 104 (2652)
Height w/Shielding in (mm) 66 (1676)

TIRES

Size
Standard ..... 31x13.5-15, 8 Ply
Pickup Gauge Wheels in ..... 3.5 x 12

PICKUP

Width
Tine to Tine in (mm) 70.2 (1782)
Inside Panel to Panel in (mm) 77.5 (1968)
Outside End Panel in (mm) 91.2 (2316)
No. of Tine Bars 4
No. and Type of Tines ..... 56, Double Tines
Tine Spacing in (mm) 2.6 (66)
Augers in (mm) ..... 12.5 O.D. (318)
Protection ..... Slip and Overrunning Clutch
Gauge Wheels ..... Two (One per Side)

FEEDING SYSTEM

Stuffer ..... Crank Type Cam Controlled w/3 Tines
Drive ..... No. 80 Chain
Protection ..... Shearbolt

BALE CHAMBER

Size of Chamber in (mm) ..... 16 x 18 (406 x 457)
Bale Length in (mm) ..... 12 to 52 (305 to 1321)
Density Control ..... Hydraulic Density Control Rails

PLUNGER

Speed ..... 100 Strokes/Min
Length of Stroke in (mm) 23 (584)
Mounting ..... Total of 8 Sealed Ball Bearing Rollers

TYING MECHANISM

Conventional	Twine Tie
Drive	No. 50 Chain
Protection	Shearbolt
Type of Twine	Plastic or Sisal
Twine Container Capacity	6 Balls

MAIN DRIVE

Power Drive Gearbox	Hypoid w/Tapered Roller Bearings Flywheel w/Shearbolt Protection
PTO	540 rpm
Protection	Overrunning and Slip Clutch
U-Joint	Four Equal Angle

TRACTOR REQUIREMENTS

Horsepower	50 hp (37 kW)
PTO Speed	540 rpm
Hydraulics	One Double Acting Remote Valve (For Hydraulic Pickup Lift)

OPTIONAL KITS (Field Installed)

Bale Chute
Bale Chute Extension
Bale Chute Quarter Turn
Light Kit
Knotter Lubrication System
Pickup Rotor Upgrade Kit

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

Sales Engineering, July 2002

COMPETITIVE COMPARISONS
CHALLENGER® MODEL SB34

MAKE MODEL	CHALLENGER® SB34	JOHN DEERE 338	NEW HOLLAND 570
GENERAL			
Bale Size inxin (mmxmm)	14x18 (356x457)	14x18 (356x457)	14x18 (356x457)
Bale Length-Range in (mm)	12-52 (305-1321)	12-50 (305-1270)	12-52 (305-1321)
Concept	In-line	Offset	Offset
Tying Material	Twine	Twine/Wire	Twine/Wire
PTO HP Required hp (kW)	35 (26)	INA	62 (45)
PTO RPM Required	540	540	540
Hyd Remote Required (#)	1 da for Thrower	1 da for Thrower	1 da for Thrower
PRIMARY DRIVE			
CV Joints	Yes	No	No
Protection	sc, orc	sc	sb, sc, orc
Flywheel Diameter in (mm)	22 (557)	27 (686)	22 (557)
Flywheel Weight lb (kg)	165 (75)	227 (103)	297 (135)
PICKUP			
Pickup Width-Inside in (mm)	75.9 (1929)	64 (1626)	65 (1651)
Number of Bars	3	6	5
Number of Tines/Bar	14 dt	13 dt	11 dt
Pickup Auger Diameter in (mm)	13 (330)	16 (406)	DNA
CHAMBER & PLUNGER			
Bale Chamber Feed-Type	Pre-compression stuffer	Fork	Fork + rotors
Plunger Speed	100	80	93
Plunger Stroke in (mm)	21.65 (550)	30 (76.2)	30 (76.2)
Plunger Travel/Hour ft (m)	10,825 (3300	12000 (3658)	13950 (4253)
Type of Plunger Rollers	Sealed Ball	Sealed Ball	Sealed Ball
No. of Plunger Rollers	7	4	5
Density Control	Spring	Spring	Spring
Twine Box Capacity	4	4	6
Wire Box Capacity	DNA	4	4
DIMENSIONS & WEIGHTS			
Weight lb (kg)	3050 (1386)	2805 (1272)	3393 (1543)
Length w/o Chute ft (mm)	14' 0" (4267)	INA	17' 1" (5207)
Length w/Chute ft (mm)	17' 0" (5182)	18' 11" (5766)	20' 7" (6274)
Machine Width ft (mm)	8' 5" (2565)	9' 0" (2743)	9' 2" (2794)
TIRES			
Left - Standard	11L x 14	11L x 14	31 x 13.5 - 15
Left - Optional	NA	NA	NA
Right - Standard	11L x 14	26 x 12.00-12	25 X 9.50-15
Right - Optional	NA	NA	NA
BALE THROWER	Optional	Optional	Optional
Drive	Hydraulic	Hydraulic	Mech or Hydraulic
Direction Control	Hydraulic	Hydraulic	Electric/Hyd/Mech
Bale Propulsion	2 - 12" Belts	Pan	Belts
Distance ft (m)	Variable	Variable	Variable
Bale Length in (mm)	36 (914)	38 (965)	36 (914)
Bale Weight lb (kg)	70 (31.8)	80 (36.4)	INA

COMPETITIVE COMPARISONS
CHALLENGER® MODEL SB36

MAKE MODEL	CHALLENGER® SB36	JOHN DEERE 348	NEW HOLLAND 575
GENERAL			
Bale Size inxin (mmxmm)	14x18 (356x457)	14x18 (356x457)	14X18 (356X457)
Bale Length-Range in (mm)	12-52 (305-1321)	12-50 (305-1270)	12--52 (305-1321)
Concept	In-line	Offset	Offset
Tying Material	Twine	Twine/Wire	Twine/Wire
PTO HP Required hp (kW)	35 (26)	INA	75 (56)
PTO RPM Required	540	540	540
Hyd Remote Required (#)	1 da for Thrower	1 da for Thrower	1 da for Thrower
PRIMARY DRIVE			
CV Joints	Yes	No	No
Protection	sc, orc	sc	sc, orc, sb
Flywheel Diameter in (mm)	22 (557)	27 (686)	22 (557)
Flywheel Weight lb (kg)	196 (89)	295 (134)	297 (135)
PICKUP			
Pickup Width-Inside in (mm)	70.16 (1782)	64 (1626)	75 (1905)
Number of Bars	4	6	6
Number of Tines/Bar	14 dt	13 dt	13 dt
Pickup Auger Diameter in (mm)	11 (279)	16 (406)	DNA
CHAMBER & PLUNGER			
Bale Chamber Feed-Type	Pre-compression stuffer	Fork	Fork + rotors
Plunger Speed	100	93	93
Plunger Stroke in (mm)	21.65 (550)	30 (76.2)	30 (76.2)
Plunger Travel/Hour ft (m)	10,825 (3300)	13950 (4253)	13950 (4253)
Type of Plunger Rollers	Sealed Ball	Sealed Ball	Sealed Ball
No. of Plunger Rollers	8	4	5
Density Control	Spring	Spring	Spring
Twine Box Capacity	6	4	6
Wire Box Capacity	4	4	4
DIMENSIONS & WEIGHTS			
Weight lb (kg)	3250 (1472)	3110 (1411)	3570 (1619)
Length w/o Chute ft (mm)	14' 0" (4267)	INA	17' 1" (5207)
Length w/Chute ft (mm)	17' 0" (5182)	18' 11" (5766)	20' 7" (6274)
Machine Width ft (mm)	8' 5" (2565)	9' 0" (2743)	10' 0" (3048)
TIRES			
Left - Standard	31 x 13.5-15	11L x 14	31 x 13.50-15
Left - Optional	NA	NA	NA
Right - Standard	31 x 13.5 - 15	26 x 12.00-12	27 x 9.50-15
Right - Optional	NA	NA	NA
BALE THROWER	Optional	Optional	Optional
Drive	Hydraulic	Hydraulic	Mech or Hydraulic
Direction Control	Hydraulic	Hydraulic	Elect/Hyd/Mech
Bale Propulsion	2 - 12" Belts	Pan	Belts
Distance ft (m)	Variable	Variable	Variable
Bale Length in (mm)	36 (914)	38 (965)	36 (914)
Bale Weight lb (kg)	70 (31.8)	80 (36.4)	INA

COMPETITIVE COMPARISONS
CHALLENGER® MODEL SB44

MAKE MODEL	CHALLENGER® SB44	NEW HOLLAND 580	FREEMAN 270
GENERAL			
Bale Size inxin (mmxmm)	16x18 (406x457)	16x18 (406x457)	16x18 (406x457)
Bale Length-Range in (mm)	12-52 (305-1321)	12-52 (305-1321)	Up to 52 (1321)
Concept	In-line	Offset	Offset
Tying Material	Twine	Twine	Twine/Wire
PTO HP Required hp (kW)	70 (50)	80 (60)	70 (50)
PTO RPM Required	540	540	540/1000
Hyd Remote Required (#)	1 da for Pickup Lift	1 da for Tongue Swing	None
PRIMARY DRIVE			
Protection	sb, sc, orc	sb, sc, orc	sc, orc
Flywheel Diameter in (mm)	26.5 (673)	22 (557)	INA
Flywheel Weight lb (kg)	292 (133)	354 (461)	420 (924)
PICKUP			
Pickup Width-Inside in (mm)	77.5 (1968)	75 (1905)	70 (178)
Number of Bars	4	6	6
Number of Tines/Bar	14 dt	13 dt	11 dt
Pickup Auger Diameter in (mm)	12.5 (318)	DNA	17 (43)
CHAMBER & PLUNGER			
Bale Chamber Feed-Type	Pre-compression stuffer	Fork + rotors	Auger
Plunger Speed	105	93	84
Plunger Stroke in (mm)	23 (584)	30 (762)	30 (72)
Plunger Travel/Hour ft (m)	12,075 (3681)	13,950 (4253)	12600 (3840)
Type of Plunger Rollers	Sealed Ball	Sealed Ball	Sealed Ball
No. of Plunger Rollers	8	6, 2 slides	INA
Density Control	Spring	Hydraulic	Hydraulic
Twine Box Capacity	6	6	INA
DIMENSIONS & WEIGHTS			
Weight lb (kg)	4360 (1982)	3640 (1651)	6470 (2935)
Length w/o Chute ft (mm)	INA	INA	18' 4" (5588)
Length w/Chute ft (mm)	16' 10" (5131)	20' 7" (6260)	INA
Machine Width ft (mm)	8' 8" (2642)	10' (3040)	9' 4" (2845)
TIRES			
Left - Standard	31 x 13.50-15	14L x 16.1	750 x 16
Left - Optional	NA	NA	Tandem 750 x 16
Right - Standard	31 x 13.50-15	11L x 14	750 x 16
Right - Optional	NA	NA	Tandem 750 x 16

COMPETITIVE COMPARISONS
CHALLENGER® SB SMALL SQUARE BALERS

Challenger® SB features to sell compared to conventional square balers.

Driveline
- Challenger has a CV joint PTO shaft for tighter turns with less driveline chatter.

Tongue
- With a Challenger SB baler there is no changing tongue position to go from road to field position.

Pickup
- Challenger SB balers have a much lower profile pickup. The less distance you lift fragile crop, the less leaf loss you will experience and the more nutrition you will keep in the bale.

Center-Line Design
- We have eliminated three 90° changes in crop direction. These abrupt crop direction changes in conventional baler design cause more leaf loss.
- The weight is equal on both sides of the baler. We don't need different sized tires on either side of the baler therefore we don't have the inherent "side draft" problems that conventional balers have. This problem can be exaggerated when baling on hillsides.
- Our baler and wagons both tow in a straight line centered behind the tractor. This causes less stress on the baler frame and is easier on the operator.

Knotters
- Challenger SB balers features twine boxes on both sides of the baler. This reduces the twine travel distance to the knotters. With the twine traveling the same distance to both knotters, it is a lot easier to maintain equal twine tension, which helps avoid miss-ties.
- The needles are significantly higher off the ground when in the home position on Challenger® balers. The needles are protected when in the home position by the heavy box-beam axle. This helps avoid miss-ties as well as prevents physical damage to the needles.